



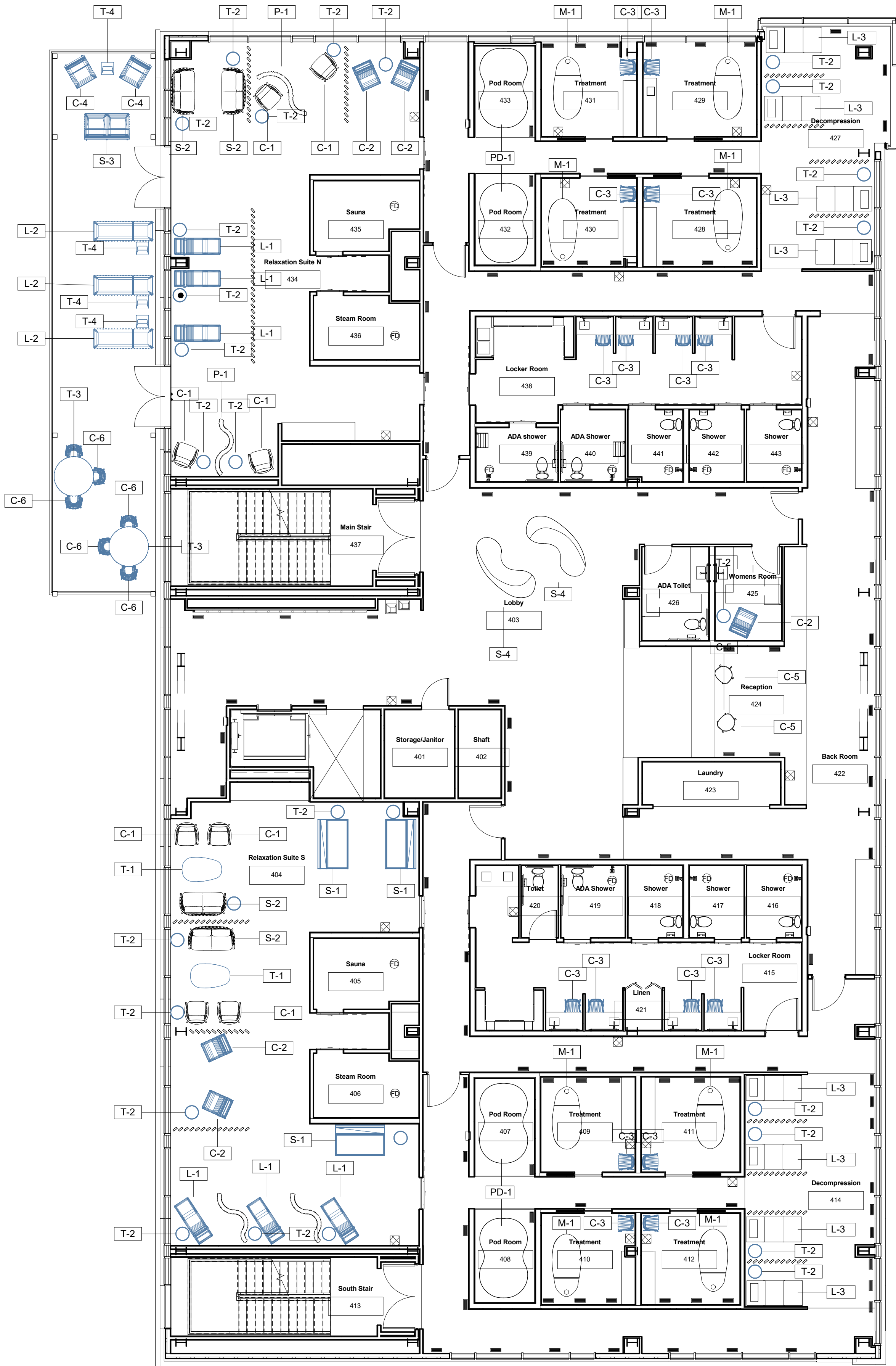
# *Origins*

Manhattan's Holistic  
Health Resource

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Furniture Schedule		
Count	Type Mark	Manufacturer
8	C-1	Geiger International, Inc.
5	C-2	BLUDOT
16	C-3	BLUDOT
2	C-4	BLUDOT
2	C-5	HAY
6	C-6	BLUDOT
6	L-1	BLUDOT
3	L-2	BLUDOT
8	M-1	NILO
4	P-1	MOLO
3	S-1	BLUDOT
4	S-2	Herman Miller, Inc.
1	S-3	BLUDOT
2	S-4	B&B ITALIA
2	T-1	BLUDOT
29	T-2	Herman Miller, Inc.
2	T-3	BLUDOT
4	T-4	BLUDOT

KEY

- L-1

Deep Thoughts Leather Chaise
- C-2

Deep Thoughts Leather Lounge Chair
- L-2

Perch Outdoor Sun Lounger
- C-3

Clutch Chair
- L-3

Relax Lounger
- C-4

Perch Outdoor Lounge Chair
- S-1

Sunday 65" Armless Sofa
- C-5

About a Chair 153 Office Chair
- S-2

Crosshatch Settee
- C-6

Mate Outdoor Dining Chair
- S-3

Perch Outdoor 2 Seat Sofa
- T-1

Swole Coffee Table
- S-4

Edamame Sofa
- T-2

Hew Side Table
- C-1

Crosshatch Chair
- T-3

Circula 52" Dining Table
- M-1

The Pedestal Rectangular
- T-4

Skiff Low Side Table
- PD-1

Royal Spa float pod

FURNITURE NOTES

1. USE FURNITURE PROTECTORS TO MAKE SURE ALL PIECES OF FURNITURE ARE NOT DAMAGED UPON MOVE IN.
2. WOODEN AND VINYL FURNITURE AND UPHOLSTERY SHOULD NOT GET WEST DURING CONSTRUCTION.

GENERAL NOTES

1. REFER TO POWER AND COMMUNICATION PLAN FOR CORRELATION OF FLOOR OUTLETS TO CORRESPONDING FURNITURE.
2. EDGES AND CORNER OF FURNTIURE SHOULD BE PROTECTED AT ALL TIMES DURING CONSTRUCTION.
3. FURNITURE SHOULD BE INSTALLED AND LAYED PRECISELY AS DIRECTED ON PLAN TO ACCOUNT FOR ADA CLEARANCES.
4. CHECK F.F.E SPECIFICATIONS PROVIDED BY DESIGNER.



# Furniture Specifications

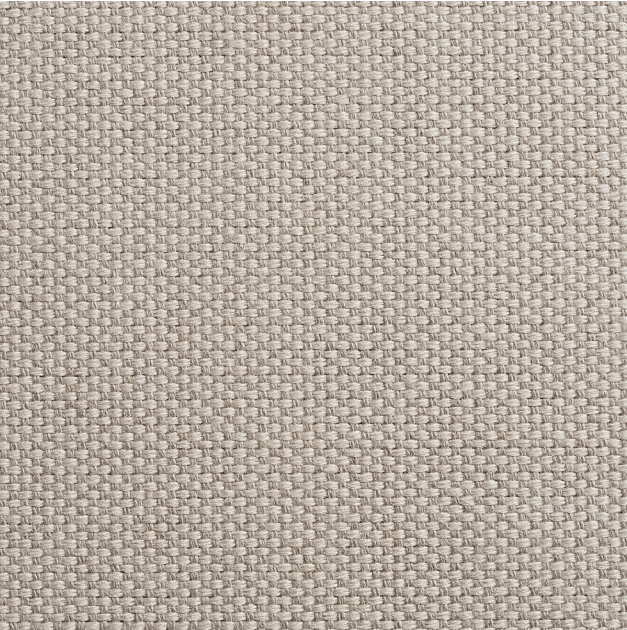
Furniture		Deep Thoughts Leather Chaise		
Location		Rooms 4 & 34		
Number of Items		6		
Item Code		L-1		
Item Description		Chaise longue		
Manufacturer		BluDot		
Dimensions		H: 16"-39"	W: 22"	D: 60"
Price		\$2,099.00		
				
Finishes				
Manufacturer		BluDot		
Name		Loden Green Leather		
Product #		DS1-CHAISE-GR		
Color		Green		
Width		45 sqft		
Repeat		N/A		
Content		leather		
Finish		Full Aniline		
Sustainability/Life Cycle Factors		N/A, see testing		
Leg Finish		Oblivion powder-coated steel base		
Caster		Adjustable glides		
				
		<b>Testing:</b> BIFMA rated		





# Furniture Specifications

Furniture		Perch Outdoor Sun Lounger		
Location	Room 44			
Number of Items	3			
Item Code	L-2			
Item Description	Outdoor lounge			
Manufacturer	BluDot			
Dimensions	H: 15"	W: 28"	D: 78"	
Price	\$1,699.00			


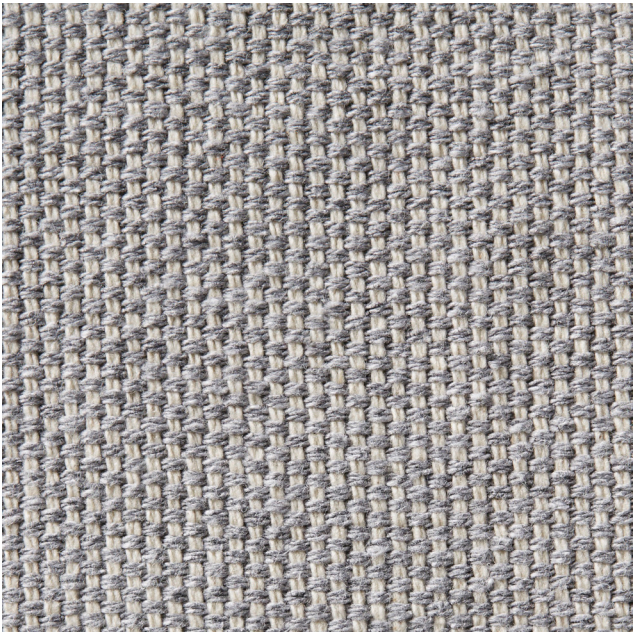
A modern outdoor sun lounger with a dark grey fabric cushion and backrest. The frame is made of light-colored wood slats and dark metal legs. It is shown from a side profile, angled slightly towards the right.

Finishes			
	<b>Manufacturer</b>	BluDot	
	<b>Name</b>	Sunbrella Linen	
	<b>Product #</b>	PH1-SUNLNG-LN	
	<b>Color</b>	light beige	
	<b>Width</b>	N/A	
	<b>Repeat</b>	N/A	
	<b>Content</b>	97% Acrylic / 3% Other	
	<b>Finish</b>	Full Aniline	
	<b>Sustainability/Life Cycle Factors</b>	Green Guard and Green Guard Gold certified	
	<b>Leg Finish</b>	White powder-coated aluminum frame	
	<b>Caster</b>	Wheel and base	
2	<b>Testing:</b> Cleaned and sanitized using bleach or any additional disinfectants without experiencing color loss or degradation  Wear Test :45,000 Double Rubs (Wyzenbeek, Wire Screen)		

# Furniture Specifications



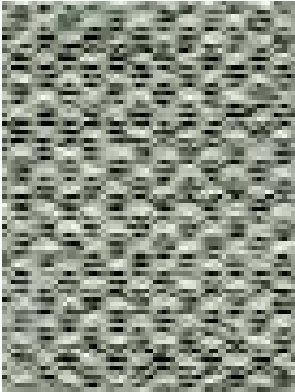

Furniture		Relax Lounger		
	Location	Rooms 14 & 27		
	Number of Items	3		
	Item Code	L-3		
	Item Description	Ergonomic bed		
	Manufacturer	Nilo		
	Dimensions	H: 14"      W: 29"      D: 71"		
	Price	Meet with manufacturer representative to get quote		
Finishes				
	Manufacturer	Nilo		
	Name	Skay Green		
	Product #	823 fabric		
	Color	N/A		
	Width	N/A		
	Repeat	N/A		
	Content	N/A		
	Finish	N/A		
	Sustainability/Life Cycle Factors	N/A		
	Leg Finish			
	Caster			
				
				
		<a href="https://www.spavision.com/pdf/391700.pdf">https://www.spavision.com/pdf/391700.pdf</a>		
		<b>Testing:</b> <a href="https://www.spavision.com/pdf/391700.pdf">https://www.spavision.com/pdf/391700.pdf</a>		

# Furniture Specifications



Furniture		Sunday 65" Armless Sofa		
	Location	Room 4		
	Number of Items	3		
	Item Code	S-1		
	Item Description	Armless sofa		
	Manufacturer	BluDot		
	Dimensions	H: 17-30"	W: 85"	D: 40"
	Price	\$2,499.00		
				
Finishes				
	Manufacturer	BluDot		
	Name	Agnew Grey		
	Product #	SN1-NARMSF-GY		
	Color	light beige		
	Width	N/A		
	Repeat	N/A		
	Content	54% Cotton / 29% Recycled Cotton / 17% Polyester		
	Finish	N/A		
	Sustainability/Life Cycle Factors	N/A		
	Leg Finish	Oblivion powder-coated steel base		
	Caster	Adjustable glides		
				
		<b>Testing:</b> DURABILITY 100,000 Martindale		



# Furniture Specifications

Furniture		Crosshatch Settee		
	Location	Rooms 4 & 34		
	Number of Items	3		
	Item Code	S-2		
	Item Description	Sofa with Arms and crosshatch feature		
	Manufacturer	Herman Miller		
	Dimensions	H: 15-29"      W: 62"      D: 30"		
	Price	\$5,345.00		
				
Finishes				
	Manufacturer	Geiger Textiles		
	Name	Amenia		
	Product #	1GX09		
	Color	Willow and Fog		
	Width	53"		
	Repeat	N/A		
	Content	67% Wool, 23% Nylon, 10% Polyester		
	Finish	PFOA-Free Stain Resistant		
	Sustainability/Life Cycle Factors	SCS Indoor Advantage™ Gold		
	Leg Finish	Solid Ash Frame		
	Caster	N/A		
		  		
		<b>Testing:</b> ABRASION 100,000 Double Rubs, Wyzenbeek FLAMMABILITY CA TB 117-2013 Contains Bio-Based Materials Contains Recycled Content FR Chemical Free Prop 65 Chemical Free MAINTENANCE S – Clean with Mild, Dry Cleaning Solvent		

# Furniture Specifications

Furniture		Perch Outdoor 2 Seat Sofa			
Location	Room 44				
Number of Items	1				
Item Code	S-3				
Item Description	Outdoor lounge couch				
Manufacturer	BluDot				
Dimensions	H: 16”-34”	W: 59”	D: 35”		
Price	\$2,199.00				
					
Finishes					
Manufacturer	BluDot				
Name	Sunbrella Linen				
Product #	PH1-SUNLNG-LN				
Color	light beige				
Width	N/A				
Repeat	N/A				
Content	97% Acrylic / 3% Other				
Finish	UV and mildew resistant				
Sustainability/Life Cycle Factors	Green Guard and Green Guard Gold certified				
Leg Finish	White powder-coated aluminum frame				
Caster	Adjustable glides				
					<b>Testing:</b> Cleaned and sanitized using bleach or any additional disinfectants without experiencing color loss or degradation  Wear Test :45,000 Double Rubs (Wyzenbeek, Wire Screen)



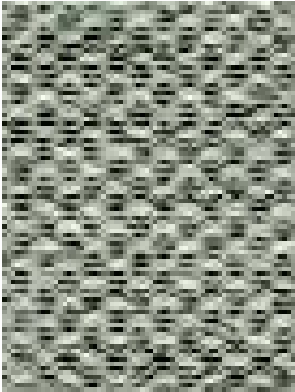

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# Furniture Specifications



Furniture		Edamame Sofa		
	Location	Room 3		
	Number of Items	2		
	Item Code	S-4		
	Item Description	Organic Waiting couch		
	Manufacturer	B&B Italia		
	Dimensions	H: 16"-30"      W: 97.25"      D: 43"		
	Price	Meet with manufacturer representative to get quote		
				
Finishes				
	Manufacturer	B&B Italia		
	Name	Lidia 505		
	Product #	2567505		
	Color	Lidia 505		
	Width	N/A		
	Repeat	N/A		
	Content	50% LI - 28% WO - 11% EA - 11% PA		
	Finish	Antimacchia / Stain resistant		
	Sustainability/Life Cycle Factors	N/A		
	Leg Finish	Pewter Painted finish		
	Caster	gliders		
	Notes	<a href="https://www.bebitalia.com/en/resources-download/fabric-finishes">https://www.bebitalia.com/en/resources-download/fabric-finishes</a>		
				
		Testing:		
		TB 117-2013 - BS 5852-0&1		



# Furniture Specifications

Furniture		Crosshatch Chair		
	Location	Rooms 4 & 34		
	Number of Items	6		
	Item Code	C-1		
	Item Description	Chair with crosshatch and higher arms		
	Manufacturer	Herman Miller		
	Dimensions	H: 15-29"      W: 31"      D: 30"		
	Price	\$2,995.00		
				
Finishes				
	Manufacturer	Geiger Textiles		
	Name	Amenia		
	Product #	1GX09		
	Color	Willow		
	Width	53"		
	Repeat	N/A		
	Content	67% Wool, 23% Nylon, 10% Polyester		
	Finish	PFOA-Free Stain Resistant		
	Sustainability/Life Cycle Factors	SCS Indoor Advantage™ Gold		
	Leg Finish	Solid Ash Frame		
	Caster	N/A		
		  		
		<b>Testing:</b> ABRASION 100,000 Double Rubs, Wyzenbeek FLAMMABILITY CA TB 117-2013 Contains Bio-Based Materials Contains Recycled Content FR Chemical Free Prop 65 Chemical Free MAINTENANCE S – Clean with Mild, Dry Cleaning Solvent		

# Furniture Specifications

Furniture		Deep Thoughts Leather Lounge Chair		
	Location	Rooms 4 & 34		
	Number of Items	4		
	Item Code	C-2		
	Item Description	Chair with no arms		
	Manufacturer	BluDot		
	Dimensions	H: 17"-36"	W: 26"	D: 34"
	Price	\$1,899.00		
				
Finishes				
	Manufacturer	BluDot		
	Name	Camel Leather		
	Product #	DS1-LNGCHR-CA		
	Color	Camel		
	Width	45 sqft		
	Repeat	N/A		
	Content	leather		
	Finish	Full Aniline		
	Sustainability/Life Cycle Factors	N/A, see testing		
	Leg Finish	Oblivion powder-coated steel base		
	Caster	Adjustable glides		
				
		Testing: BIFMA rated		


# Furniture Specifications

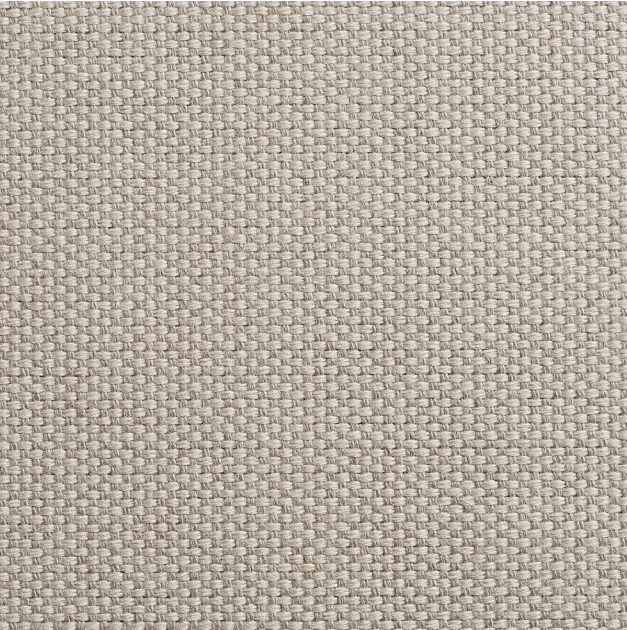
Furniture		Clutch Chair		
	Location	Rooms 15, 38, 7-12, 28-33		
	Number of Items	20		
	Item Code	C-3		
	Item Description	Chair with low arms		
	Manufacturer	BluDot		
	Dimensions	H: 18"-30"	W: 22"	D: 20"
	Price	\$549.00		
				
Finishes				
	Manufacturer	BluDot		
	Name	Camel Leather		
	Product #	CC1-CHRWHO-CA		
	Color	Camel		
	Width	45 sqft		
	Repeat	N/A		
	Content	leather		
	Finish	Full Aniline		
	Sustainability/Life Cycle Factors	N/A, see testing		
	Leg Finish	White Oak		
	Caster	Adjustable glides		
				
		Testing: BIFMA rated		



# Furniture Specifications

Furniture		Perch Outdoor Lounge Chair		
Location	Room 44			
Number of Items	2			
Item Code	C-4			
Item Description	Outdoor lounge chair			
Manufacturer	BluDot			
Dimensions	H: 16"-34"	W: 30"	D: 35"	
Price	\$1,099.00			

A modern outdoor lounge chair with a dark gray fabric seat and backrest. The backrest is composed of two rectangular cushions. The chair features a light-colored wooden slatted back and a matching wooden seat. It is supported by a sturdy metal frame with four legs.

Finishes		
Manufacturer	BluDot	
Name	Sunbrella Linen	
Product #	PH1-SUNLNG-LN	
Color	light beige	
Width	N/A	
Repeat	N/A	
Content	97% Acrylic / 3% Other	
Finish	UV and mildew resistant	
Sustainability/Life Cycle Factors	Green Guard and Green Guard Gold certified	
Leg Finish	White powder-coated aluminum frame	
Caster	Adjustable glides	


# Furniture Specifications

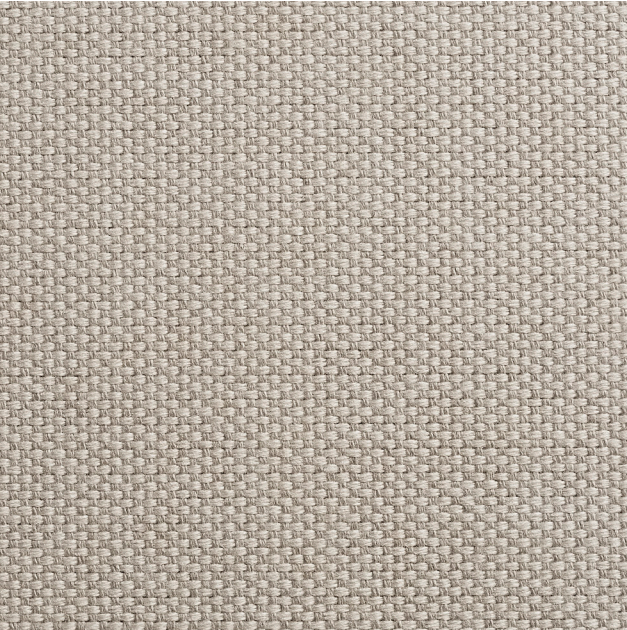
Furniture		About a Chair 153 Office Chair		
	Location	Room 24		
	Number of Items	2		
	Item Code	C-5		
	Item Description	Office chair		
	Manufacturer	Herman Miller		
	Dimensions	H: 32.75"—38.25"	W: 27.25"	D: 27.25"
	Price	\$795.00		
				
Finishes				
	Manufacturer	Kvadrat		
	Name	Devina Melange		
	Product #	N/A		
	Color	Atlas		
	Width	59"		
	Repeat	N/A		
	Content	100% new wool		
	Finish	UV and mildew resistant		
	Sustainability/Life Cycle Factors	EU Ecolabel, Greenguard Gold, HPD, EPDBlack		
	Leg Finish	powder coated aluminium (RAL 9005)		
	Caster	SOFT BLACK WHEELS		
				
		<b>Testing:</b> DURABILITY 45,000 Martindale PILLING 3 (ISO 1-5) LIGHTFASTNESS 6-7 WARRANTY 10 year Warranty FIRE TESTS AS/NZS 1530.3 • BS 5852 Crib 5 • BS 5852 part 1 • BS 5867 part 2 type B • IMO FTP Code 2010 Part 8 • NF D 60 013 • NFPA 260 • SN 198 898 5.3 with treatment • UNI 9175 1IM • US Cal. Bull. 117-2013 • EN 1021-1/2 • EN 13501, C-s1, d0, glued • Chinese GB 50222B1 with treatment • ÖNORM B1/Q1 • NFPA 701 with treatment • ASTM E84 Class B Unadhered • ASTM E84 Class A Adhered		



# Furniture Specifications

Furniture		Mate Outdoor Dining Chair		
Location	Room 44			
Number of Items	6			
Item Code	C-6			
Item Description	Outdoor dining chair			
Manufacturer	BluDot			
Dimensions	H: 19"-30"	W: 23"	D: 22"	
Price	\$499.00			

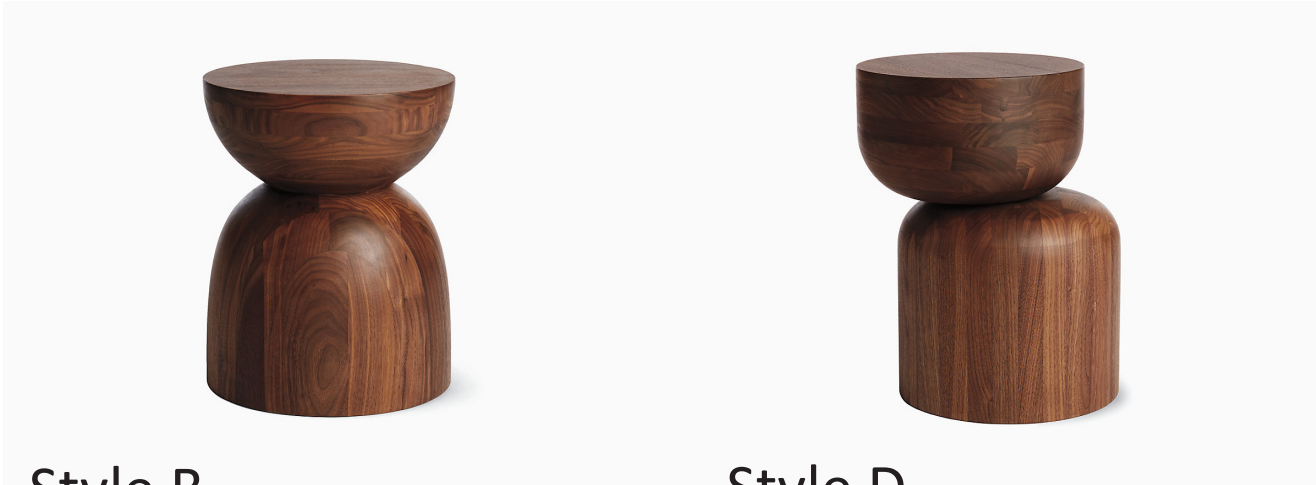



Finishes			
	<b>Manufacturer</b>	BluDot	
	<b>Name</b>	Sunbrella Linen	
	<b>Product #</b>	MA1-ODDNCR-LN	
	<b>Color</b>	light beige	
	<b>Width</b>	N/A	
	<b>Repeat</b>	N/A	
	<b>Content</b>	97% Acrylic / 3% Other	
	<b>Finish</b>	UV and mildew resistant	
	<b>Sustainability/Life Cycle Factors</b>	Green Guard and Green Guard Gold certified	
	<b>Leg Finish</b>	White powder-coated aluminum frame	
	<b>Caster</b>	Adjustable glides	
			<b>Testing:</b> Cleaned and sanitized using bleach or any additional disinfectants without experiencing color loss or degradation  Wear Test :45,000 Double Rubs (Wyzenbeek, Wire Screen)  BIFMA rated

# Furniture Specifications

Furniture		Swole Coffee Table		
	Location	Room 4		
	Number of Items	2		
	Item Code	T-1		
	Item Description	Organic Coffee table		
	Manufacturer	BluDot		
	Dimensions	H: 14"	W: 32"	D: 52"
	Price	\$649.00		
Finishes				
	Manufacturer	BluDot		
	Name	Walnut		
	Product #	SO1-LRGTBL-WL		
	Color	dark walnut		
	Width	N/A		
	Repeat	N/A		
	Content	Plain sliced walnut		
	Finish	veneer on wood		
	Sustainability/Life Cycle Factors	N/A		
	Leg Finish	solid walnut legs		
	Caster	N/A		
				
				
		Testing:		

# Furniture Specifications


Furniture		Hew Side Table	
Location	Rooms 4 & 34		
Number of Items	6		
Item Code	T-2		
Item Description	Organic side table		
Manufacturer	Herman Miller		
Dimensions	H: 15"-18"   W: 12.5-14.25"   D: 12.5"		
Price	\$1,295.00	Style B	Style D

Finishes				Testing:	
	<b>Manufacturer</b>	Herman Miller			
	<b>Name</b>	Walnut			
	<b>Product #</b>	N/A			
	<b>Color</b>	N/A			
	<b>Width</b>	N/A			
	<b>Repeat</b>	N/A			
	<b>Content</b>	Solid Wood			
	<b>Finish</b>	N/A			
	<b>Sustainability/Life Cycle Factors</b>	N/A			
	<b>Leg Finish</b>				
	<b>Caster</b>				

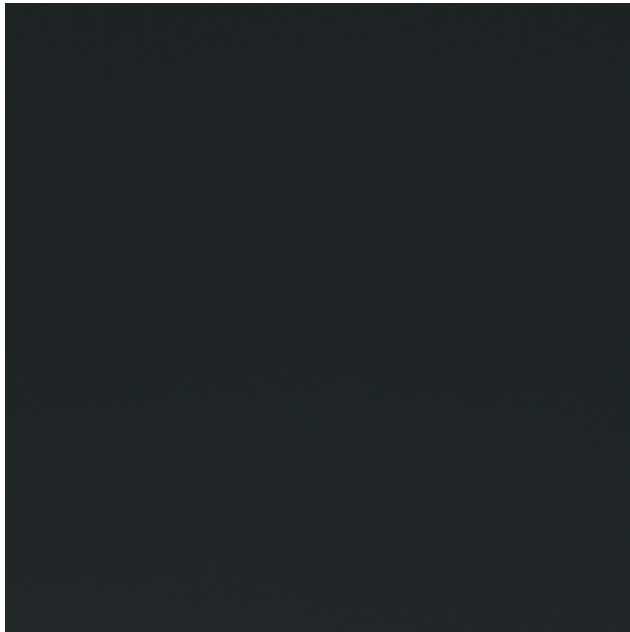


# Furniture Specifications

Furniture		Circula 52" Dining Table		
Location	Room 44			
Number of Items	2			
Item Code	T-3			
Item Description	Dining table			
Manufacturer	BluDot			
Dimensions	H: 30"	W: 52"	D: 52"	
Price	\$1,699.00			



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Finishes				Testing:
Manufacturer	BluDot			BIFMA rated
Name	Powder-coated aluminum			
Product #	CI1-52DNTB-OB			
Color	Oblivion			
Width	N/A			
Repeat	N/A			
Content	Powder-coated aluminum			
Finish	Powder-coated			
Sustainability/Life Cycle Factors	N/A			
Leg Finish	Powder-coated aluminum			
Caster	Adjustable feet keep base level			


# Furniture Specifications

Furniture		Skiff Low Side Table			
Location	Room 44				
Number of Items	3				
Item Code	T-4				
Item Description	Side Table				
Manufacturer	BluDot				
Dimensions	H: 15"	W: 16"	D: 16"		
Price	\$299.00				
					
Finishes					
Manufacturer	BluDot				<b>Testing:</b> N/A
Name	Anodised aluminium				
Product #	SK1-LOWSID-CB				
Color	CARBON				
Width	N/A				
Repeat	N/A				
Content	Anodised aluminium				
Finish	UV resistant powder-coat steel				
Sustainability/Life Cyle Factors	N/A				
Leg Finish	UV resistant powder-coat steel				
Caster	Adjustable feet keep base level				
					

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# Furniture Specifications

Furniture		The Pedestal Rectangular		
Location	Rooms 28-31, 9-12			
Number of Items	8			
Item Code	M-1			
Item Description	Height adjustable massage table			
Manufacturer	Nilo			
Dimensions	H: 24" - 39.8"      W: 30.7"      D: 76.4"			
Price	Meet with manufacturer representative to get quote			



Finishes

Manufacturer

Name

Product #

Color

Width

Repeat

Content

Finish

Sustainability/Life Cycle Factors

Leg Finish

Caster

Nilo

Gharieni

N/A

white

N/A

N/A

Upholstery in White synthetic leather

N/A

N/A, see testing

Base made from solid steel

gliders

Testing:

Warranty: 1 year parts,  
plus 1 year labour  
(available only from Spa  
Vision)

Certifications: CE Marked  
Lifting capacity: 300kg /  
660lbs

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# Furniture Specifications

Furniture		Royal Spa float pod		
	Location	Rooms 7, 8, 33, 32		
	Number of Items	4		
	Item Code	PD-1		
	Item Description	Sensory deprivation pods		
	Manufacturer	Royal Spa		
	Dimensions	H: 70.5”      L: 103.5”      W: 54”		
	Price	\$12,293.00 – \$25,325.00		
				
Finishes				
	Manufacturer	Royal Spa		
	Name	N/A		
	Product #	N/A		
	Color	N/A		
	Width	N/A		
	Repeat	N/A		
	Content	N/A		
	Finish	N/A		
	Sustainability/Life Cycle Factors	N/A		
	Leg Finish	N/A		
	Caster	N/A		
		<b>Testing:</b> 5-year structural warranty 5-year shell warranty 1-year surface warranty		

# Lighting Specifications

Location	Rooms 4 & 34		
Item Code	CH-1		
Item Description	Donut bamboo chandelier		
Manufacturer	David Trubridge		
Dimensions	H: 8"	W: 43"	L: 43"
Product #	5002970		
Shade Material	Bamboo plywood		
Body Finish	Natural		
Lamp	LED		
Wattage	60		
Dimmer	Yes		
Luminous Flux			
Color Temperature	2700K		
Price	Meet with manufacturer representative to get quote		
Notes			

## Maru



### Testing:

CONFORMS TO :  
UL STD 1598  
certified to CSA STD  
C22.2 No.250.0  
Canada / USA

warranted for three years from  
date of purchase for failure of parts.

# Lighting Specifications

Location	Rooms 4 & 34
Item Code	CH-2
Item Description	Smushed sphere
Manufacturer	David Trubridge
Dimensions	H: 8"-26"      W: 17"-55"
Product #	N/A
Shade Material	Bamboo plywood
Body Finish	Natural
Lamp	LED
Wattage	60
Dimmer	Yes
Luminous Flux	N/A
Color Temperature	N/A
Price	Meet with manufacturer representative to get quote
Notes	

## Kina



### Testing:

CONFORMS TO :  
CE  
AS/NZS  
EPD certified

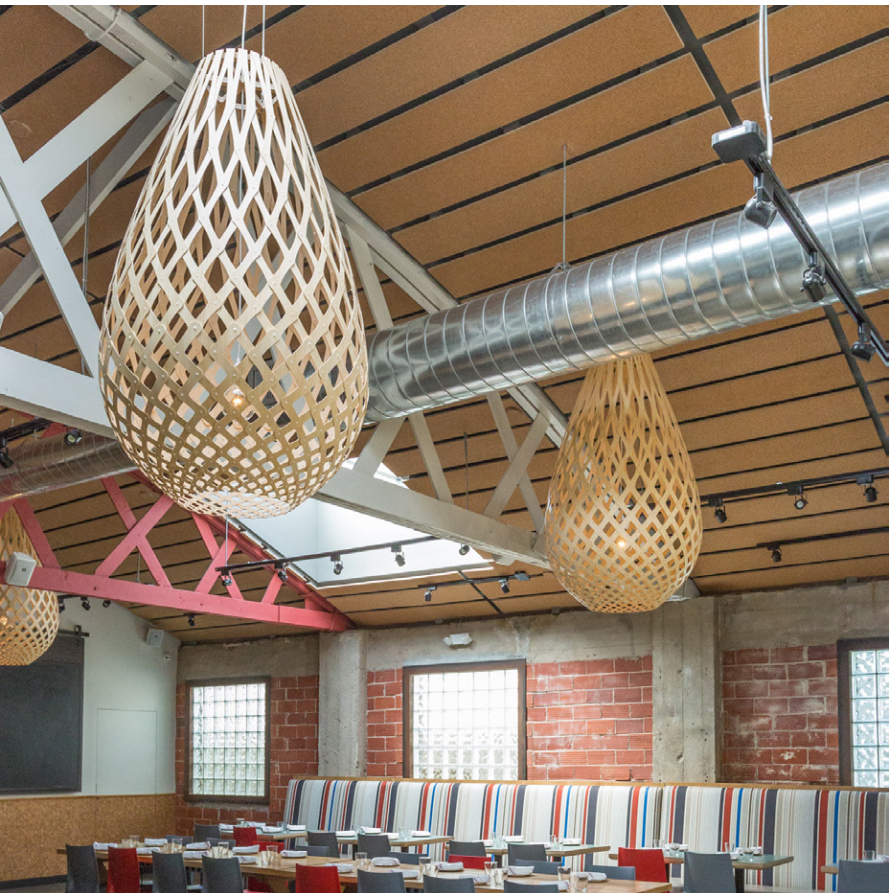
warranted for three years from  
date of purchase for failure of parts.



# Lighting Specifications

Location	Rooms 4, 24 & 34
Item Code	P-1
Item Description	Tear drop Pendant
Manufacturer	David Trubridge
Dimensions	H: 20-94”      W: 12”-55”
Product #	N/A
Shade Material	Bamboo Plywood
Body Finish	Natural
Lamp	LED
Wattage	60
Dimmer	Yes
Luminous Flux	N/A
Color Temperature	N/A
Price	Meet with manufacturer representative to get quote
Notes	

## Koura



### Testing:

CE  
AS/NZS  
EPD certified

warranted for three years from  
date of purchase for failure of parts.

# Lighting Specifications

Location	Rooms 4 & 34		
Item Code	CH-3		
Item Description	Sphere light		
Manufacturer	David Trubridge		
Dimensions	H: 16"-43"	W: 16"-43"	L: 16"-43"
Product #	N/A		
Shade Material	Bamboo Plywood		
Body Finish	Natural		
Lamp	LED		
Wattage	60		
Dimmer	Yes		
Luminous Flux	N/A		
Color Temperature	N/A		
Price	Meet with manufacturer representative to get quote		
Notes			

Coral



Testing:

CE  
AS/NZS  
EPD certified

warranted for three years from  
date of purchase for failure of parts.



# Lighting Specifications

Location	Rooms 4 & 34
Item Code	P-2
Item Description	Elongated light
Manufacturer	David Trubridge
Dimensions	H: 7"-20"      W: 20"-55"
Product #	N/A
Shade Material	Bamboo Plywood
Body Finish	Natural
Lamp	LED
Wattage	60
Dimmer	Yes
Luminous Flux	N/A
Color Temperature	N/A
Price	Meet with manufacturer representative to get quote
Notes	

Hinaki



Testing:

CE  
AS/NZS  
EPD certified

warranted for three years from  
date of purchase for failure of parts.

# Lighting Specifications

Location	Rooms 4, 34, 15, & 38		
Item Code	CH-4		
Item Description	Leaf-like chandelier		
Manufacturer	David Trubridge		
Dimensions	H: 8"-18"	W: 22"-39"	L: 57"-98"
Product #	N/A		
Shade Material	Bamboo Plywood		
Body Finish	Natural		
Lamp	LED		
Wattage	60		
Dimmer	Yes		
Luminous Flux	N/A		
Color Temperature	N/A		
Price	Meet with manufacturer representative to get quote		
Notes			

## Navicula



### Testing:

CE  
AS/NZS  
EPD certified

warranted for three years from  
date of purchase for failure of parts.

# Lighting Specifications

<b>Location</b>	Rooms 6, 16-20, 36, 39-43
<b>Item Code</b>	R-1
<b>Item Description</b>	Recessed downlight
<b>Manufacturer</b>	Lutron
<b>Dimensions</b>	W: 3"      L: 3"
<b>Product #</b>	367-2708h
<b>Shade Material</b>	high efficiency frosted lens.
<b>Body Finish</b>	Matte White Trim
<b>Lamp</b>	LED
<b>Wattage</b>	14.0
<b>Dimmer</b>	yes
<b>Luminous Flux</b>	896.2
<b>Color Temperature</b>	2700 K CCT.
<b>Price</b>	Meet with manufacturer representative to get quote
<b>Notes</b>	Wet location trim available.

## Finire Prime



### Testing:

Title 24 and Energy Star compliant.  
Rated for direct application of spray foam with less than R-21 insulative value or 3 in (76 mm) of closed cell spray foam. 95 °F (35 °C) maximum operating temperature.

# Lighting Specifications

Location	Everywhere but rooms 6, 16-20, 36, 39-43
Item Code	R-2
Item Description	Recessed downlight
Manufacturer	Prudential Lighting
Dimensions	W: 4"      L: 4"
Product #	RDOT LED27
Shade Material	Frosted lens.
Body Finish	Textured Matte White
Lamp	N/A
Wattage	5
Dimmer	yes
Luminous Flux	332
Color Temperature	3500
Price	Meet with manufacturer representative to get quote
Notes	Wet location trim available.

Stream dot

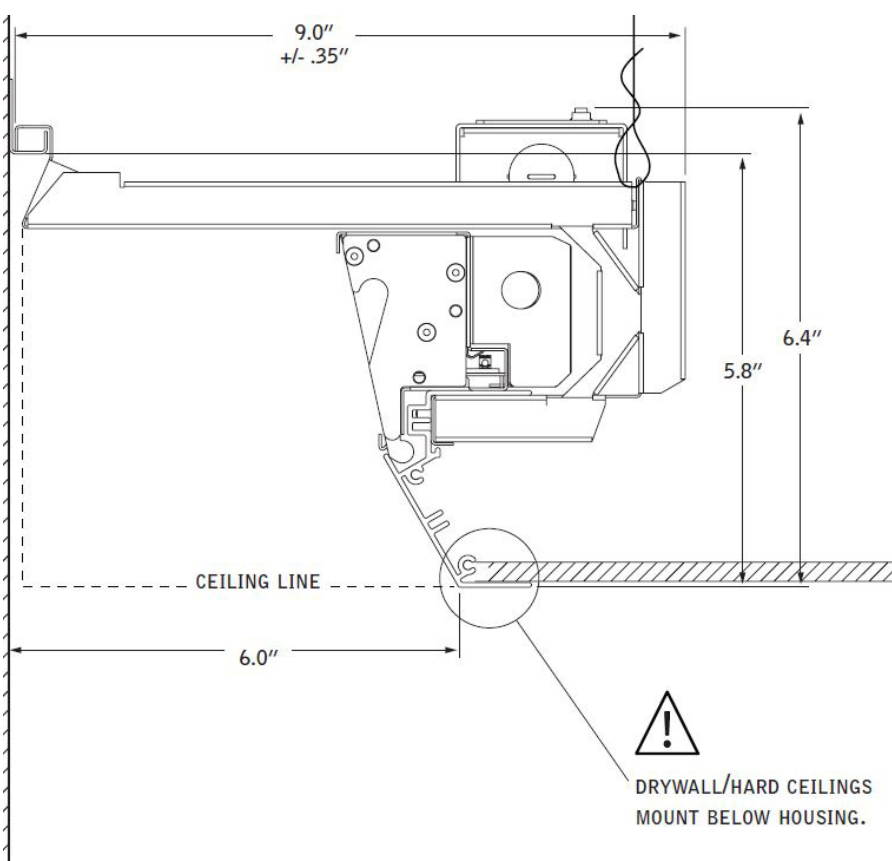


**Testing:**  
IC Rated. CSA and ETL damp labeled and I.B.E.W. manufactured.  
Single-source, 5 year limited warranty covers standard components and construction

# Lighting Specifications

Location	Hallways
Item Code	WW-1
Item Description	Recessed Wall wash
Manufacturer	Focal Point
Dimensions	H: 6.4"      W: 9"      L: 2'-6'
Product #	FWSL
Shade Material	Frosted Lens
Body Finish	Matte White Housing
Lamp	LED
Wattage	28W
Dimmer	yes
Luminous Flux	2700lm
Color Temperature	2700K, 80+ CRI
Price	Meet with manufacturer representative to get quote
Notes	Suitable for Dry or Damp Locations, indoor use only. Suitable for wood ceiling applications.

## focus™ wall wash



**Testing:**  
UL and cUL listed.  
LED system rated for operation in ambient environments up to 25°C. 5 year limited warranty.

# Lighting Specifications

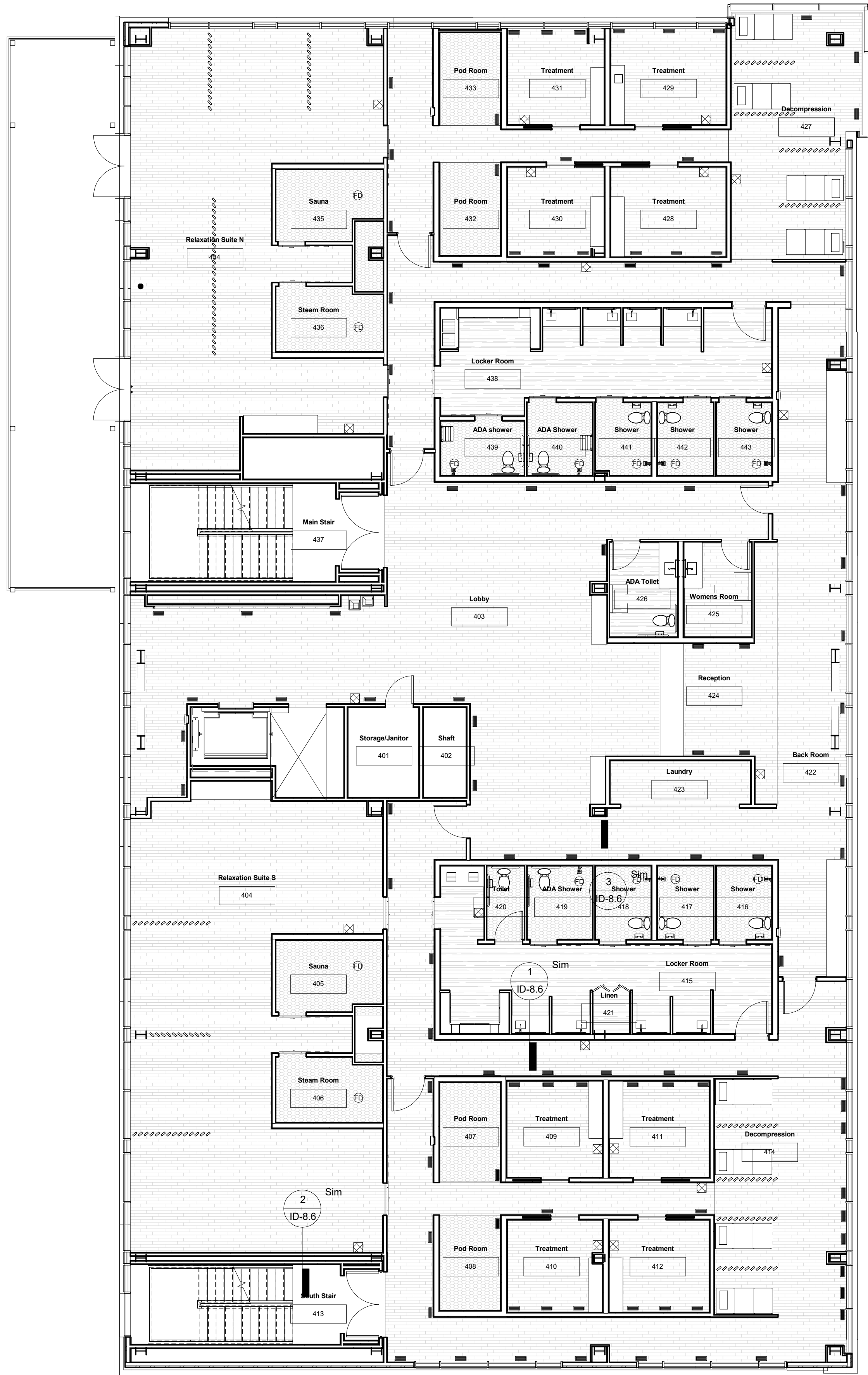
Location	Relaxation Suites		
Item Code	WS-1		
Item Description	Modern Wall Sconce		
Manufacturer	Tech Lighting		
Dimensions	H: 5"	W: 3"	L: 5"
Product #	MTR		
Shade Material	Aged Brass		
Body Finish	Aged Brass		
Lamp	LED		
Wattage	9W		
Dimmer	yes		
Luminous Flux	455lm		
Color Temperature	3000K, 90+ CRI		
Price	Meet with manufacturer representative to get quote		
Notes			

## Mortar Wall



**Testing:**  
This product can be used to comply with California Building Energy Efficiency Standards 2016 Title 24 Part 6.





2 Finish Plan 2  
1/8" = 1'-0"



No.	Room	Floor	Base	Walls			Ceiling	Ceiling Ht.	Notes
				N	S	E			
403	Lobby	F3	B1	CK	W1	W1	W1	AC1	10'-10"
424	Reception	F3	B1	W1	W1	W	W	AC1	9'-6"
426	Bathroom	F1	B1	W1	W1	W1	W1	AC1	8'-6"
423	Laundry	F3	B1	W1	W1	W1	W1	AC1	9'-0"
415	Locker Room S	F1	B1	W5	WT	W2	W2	AC1	9'-0"
438	Locker Room N	F1	B1	WT	W4	W2	W2	AC1	9'-0"
439	Shower	F2	B1	CK	CK	W1	CK	AC1	8'-6"
440	shower	F2	B1	CK	CK	CK	W1	AC1	8'-6"
441	Shower	F2	B1	W1	CK	CK	CK	AC1	8'-6"
442	Shower	F2	B1	W1	CK	CK	CK	AC1	8'-6"
443	Shower	F2	B1	W1	CK	CK	CK	AC1	8'-6"
416	Shower	F2	B1	CK	W1	CK	CK	AC1	8'-6"
417	Shower	F2	B1	CK	W1	CK	CK	AC1	8'-6"
418	Shower	F2	B1	CK	W1	CK	CK	AC1	8'-6"
419	Shower	F2	B1	CK	CK	CK	W1	AC1	8'-6"
425	Mother's Room	F3	B1	W2	W2	W2	W2	AC1	8'-6"
404	Relaxation Suite S	F3	B1	W4	CT	W2	W	AC1 & FW	9'-6"
434	Relaxation Suite N	F3	B1	W4	CT	W2	W	AC1 & FW	9'-6"
405&435	Sauna	F2	CT	CT	CT	CT	CT	AC1	8'-6"
406&436	Steam	F2	CT	CT	CT	CT	CT	AC1	8'-6"
407	Sensory Deprivation	F2	B1	W3	W3	W3	W3	AC1	8'-0"
408	Sensory Deprivation	F2	B1	W3	W3	W3	W3	AC1	8'-0"
432	Sensory Deprivation	F2	B1	W3	W3	W3	W3	AC1	8'-0"
433	Sensory Deprivation	F2	B1	W3	W3	W3	W3	AC1	8'-0"
409	Treatment room	F3	B1	CK	W3	W3	W3	AC1&RAD	9'-6"
410	Treatment room	F3	B1	W3	CK	W3	W3	AC1&RAD	9'-6"
411	Treatment room	F3	B1	CK	W3	W3	W3	AC1&RAD	9'-6"
412	Treatment room	F3	B1	W3	CK	W3	W3	AC1&RAD	9'-6"
428	Treatment room	F3	B1	W3	CK	W3	W3	AC1&RAD	9'-6"
429	Treatment room	F3	B1	W	W3	CT	W3	AC1&RAD	9'-6"
430	Treatment room	F3	B1	W3	CK	W3	W3	AC1&RAD	9'-6"
431	Treatment room	F3	B1	W	W3	W3	CT	AC1&RAD	9'-6"
414	Decompression Zone	F3	B1	W3	W3	W3	w	AC1&DP	11'-0"
427	Decompression Zone	F3	B1	W3	W3	W3	w	AC1&DP	11'-0"

- Key
- W4 = Wall paper
  - WT = porcelain wall Tile
  - F3 = Wood
  - F1 = porcelain tile
  - F2 & CT = cork
  - AC1 = ACOUSTIBUILT
  - FW = feltworks
  - RAD = radial drop
  - W1 = Light wall paint
  - B1 = Laminate Base
  - W = Window
  - W2 = Neutral wall paint
  - W3 = Green wall paint
  - DP = Swagged Drapery

KSU  
ID

Kylie Arett

Kylie Arett  
ID 645  
Spring Semester  
kkarett@ksu.edu

The Origins Wellness Center  
4TH & PIERRE ST. MANHATTAN,  
KS. 66502

Description	Date

Finish  
Schedule

Date Issue Date  
Drawn by  
Checked by

ID-4.2

Scale As indicated

# Finish Specifications

Wall		Wallcovering	
Location(s)		Rooms 4 & 34	
Name		Willow Leaf	
Item Code		W-5	
Item Description		Leafy wallpaper	
Manufacturer		Schumacher	
Color		Flax	
Width		27"	
Repeat		V: 10.25" H: 9"	
Content		N/A	
Sustainability		N/A	
STC/NRC		N/A	
Installation		Follow manufacturer instructions	
Price		Single Roll Price \$88.20	<p><b>JUSTIFICATION:</b></p> <p>Works with the concept of elemental soothing neutral color</p>
Notes			



# Finish Specifications

Wall		Wallpaint	
	Location(s)	Everywhere but rooms 6, 16-20, 36, 39-43	
	Name	Whitetail	
	Item Code	W-1	
	Item Description	white paint	
	Manufacturer	Sherwin Williams	
	Color	whitetail	
	Width	N/A	
	Repeat	N/A	
	Content	N/A	
	Sustainability	N/A	
	LRV	86	JUSTIFICATION:
	Installation	2 or more coats as needed	
	Price	\$94.99 - \$101.99 / Gallon	
	Notes		


# Finish Specifications

Wall		Wallpaint	
	Location(s)	Everywhere but rooms 6, 16-20, 36, 39-43	
	Name	Naturalist	
	Item Code	W-2	
	Item Description	biege neutral paint	
	Manufacturer	Sherwin Williams	
	Color	Shitake	
	Width	N/A	
	Repeat	N/A	
	Content	N/A	
	Sustainability	N/A	
	LRV	51	JUSTIFICATION:
	Installation	2 or more coats as needed	
	Price	\$94.99 - \$101.99 / Gallon	
	Notes		

# Finish Specifications

Wall	Wallpaint	
Location(s)	Decompression and accents, walls	
Name	Smoky Slate	
Item Code	W-4	
Item Description	Dark biege neutral paint	
Manufacturer	PPG	
Color	Smoky Slate	
Width	N/A	
Repeat	N/A	
Content	N/A	
Sustainability	N/A	
LRV	34	<b>JUSTIFICATION:</b>  A nice neutral sage, calming green.
Installation	2 or more coats as needed	
Price	\$94.99 - \$101.99 / Gallon	
Notes		

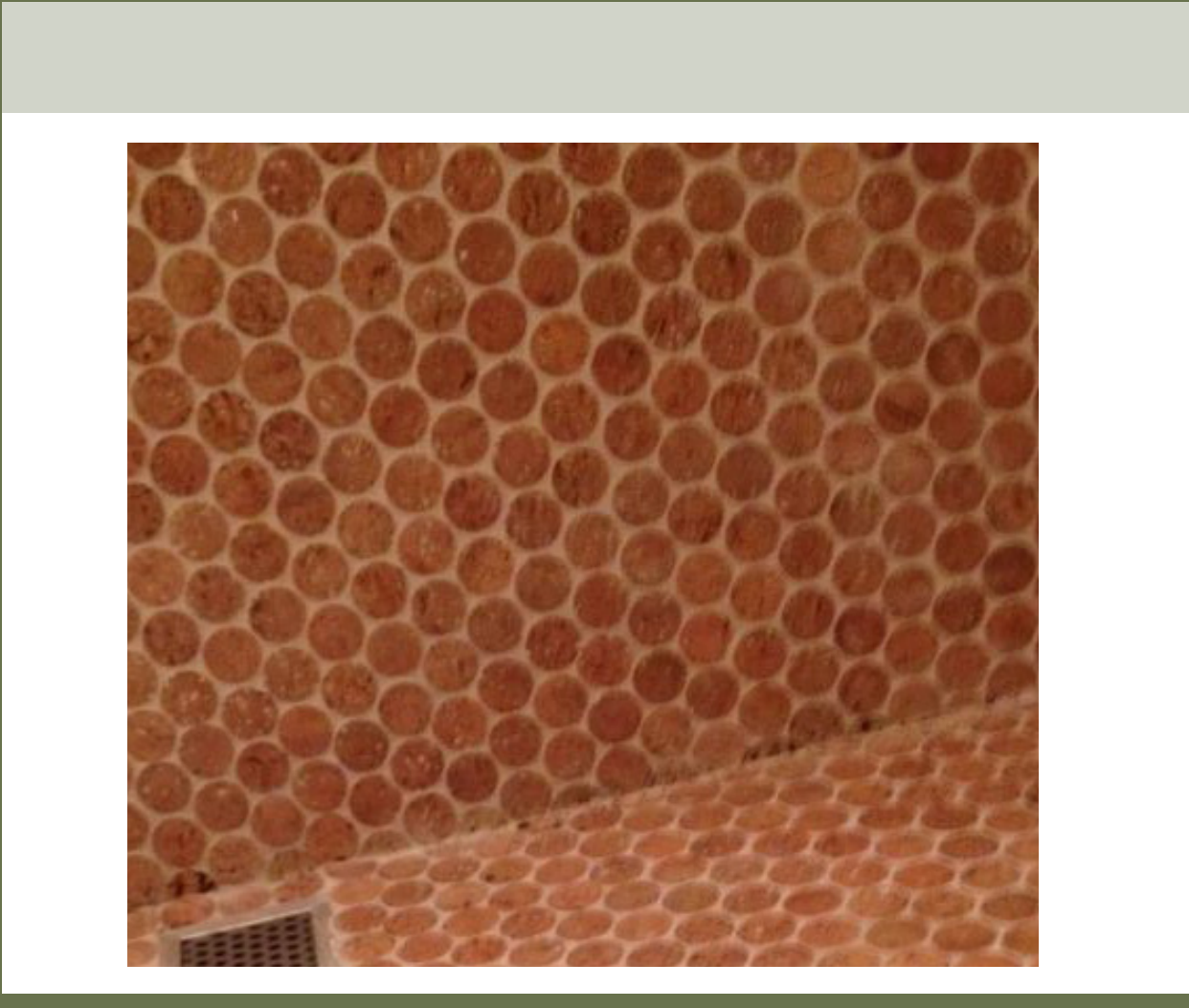
# Finish Specifications

Floor		Porcelain Tile	
Location(s)		bathroom and locker rooms	
Name		CASALGRANDE PORCELAIN	
Item Code		F-1	
Item Description		White Porcelain tile	
Manufacturer		CasalGrande	
Color		Bianco Cassero	
Dimensions		L: 24” W: 12”	
Pattern		tile	
Content		Rubber Floor Tile (ASTM F1344)	
Sustainability		FloorScore Certified	
STC/NRC		N/A	
Installation		glue down	
Price		Meet with manufacturer representative to get quote	
Notes			
			<b>JUSTIFICATION:</b>  Porcelain is durable and non slip



# Finish Specifications


Floor		Cork
Location(s)		showers
Name		Prefinished cork
Item Code		F2 & CT
Item Description		Cork penny tile flooring
Manufacturer		Versacork
Finish		Prefinished (nano-ceramic urethane)
Dimensions		Sheet size: ¼” x 12” x 24”
Pattern		Pre-finished penny tile
Content		100% natural cork
Sustainability		Sustainably harvested, renewable resource
STC/NRC		N/A
Installation		Follow manufacturer instructions
Price		Meet with manufacturer representative to get quote
Notes		Must build up from finish floor, removing Raised floor system



## JUSTIFICATION:

Wet rated, durable, non-slip. Eco friendly, soft under foot.

# Finish Specifications

Floor		PLANK HARDWOOD	
	Location(s)	lobby, Decompression, halls, relax	
	Name	PLANK HARDWOOD	
	Item Code	F-3	
	Item Description	Wood Flooring	
	Manufacturer	STILE	
	Finish	N/A	
	Color	Rovere Smoked Dark	
	Dimensions	N/A	
	Pattern	tile	
	Content	Rubber Floor Tile (ASTM F1344)	
	Sustainability	FloorScore Certified	
	STC/NRC	N/A	
	Installation	Glue down	
	Price	Meet with manufacturer representative to get quote	
	Notes		

## JUSTIFICATION:

Dark wood to create a sense of luxury and to contrast with bright walls

# Finish Specifications

Wall		Tile	
Location(s)	locker rooms, backsplashes		
Name	Retro Rounds		
Item Code	WT		
Item Description	White penny tiles		
Manufacturer	Daltille		
Finish	Matte		
Color	White		
Dimensions	12-7/16" x 11-9/16" Sheet		
Pattern	N/A		
Content	Porcelain		
Sustainability	N/A		
STC/NRC	N/A		
Installation	Follow manufacturer instructions		
Price	Meet with manufacturer representative to get quote		
Notes			



**JUSTIFICATION:**

Adds texture to the locker rooms

36

# Finish Specifications

## Counter

## Granite

Location(s)	locker rooms, relax suite, treatment
Name	Costa Smeralda
Item Code	CO-1
Item Description	Greenish Granite
Manufacturer	Sti-Stone
Finish	Polished
Color	Green/multi-color
Dimensions	N/A
Edge	Bevel
Content	Granite
Sustainability	N/A
STC/NRC	N/A
Installation	Follow manufacturer instructions
Price	Meet with manufacturer representative to get quote
Notes	




### JUSTIFICATION:

Green to pull in the color scheme  
Less expensive  
Lower environmental impact



# Finish Specifications

Counter		Quartz	
Location(s)		Reception	
Name		Calacatta Serchio	
Item Code		CO-2	
Item Description		White Quartz with minimal striation	
Manufacturer		Wilsonart	
Finish		Polished	
Color		Serchio	
Dimensions		N/A	
Edge		Bevel	
Content		Quartz	
Sustainability		N/A	
STC/NRC		N/A	
Installation		Follow manufacturer instructions	
Price		Meet with manufacturer representative to get quote	JUSTIFICATION:
Notes			

# Finish Specifications

## Casework

## Laminate


Location(s)	Every room w/ casework
Name	Thermally Fused Laminate Panel
Item Code	CA-1
Item Description	Heavily distressed, characted wood laminate
Manufacturer	WilsonArt
Finish	16 casual rustic
Color	Lost Pine
Dimensions	62" X 49"
Pattern	N/A
Content	34% Post-Consumer Recycled Wood Fiber Content.
Sustainability	Indoor Air Quality Certified to SCS-EC10.3-2014 v4.0
STC/NRC	N/A
Installation	Follow manufacturer instructions
Price	Meet with manufacturer representative to get quote
Notes	



### JUSTIFICATION:

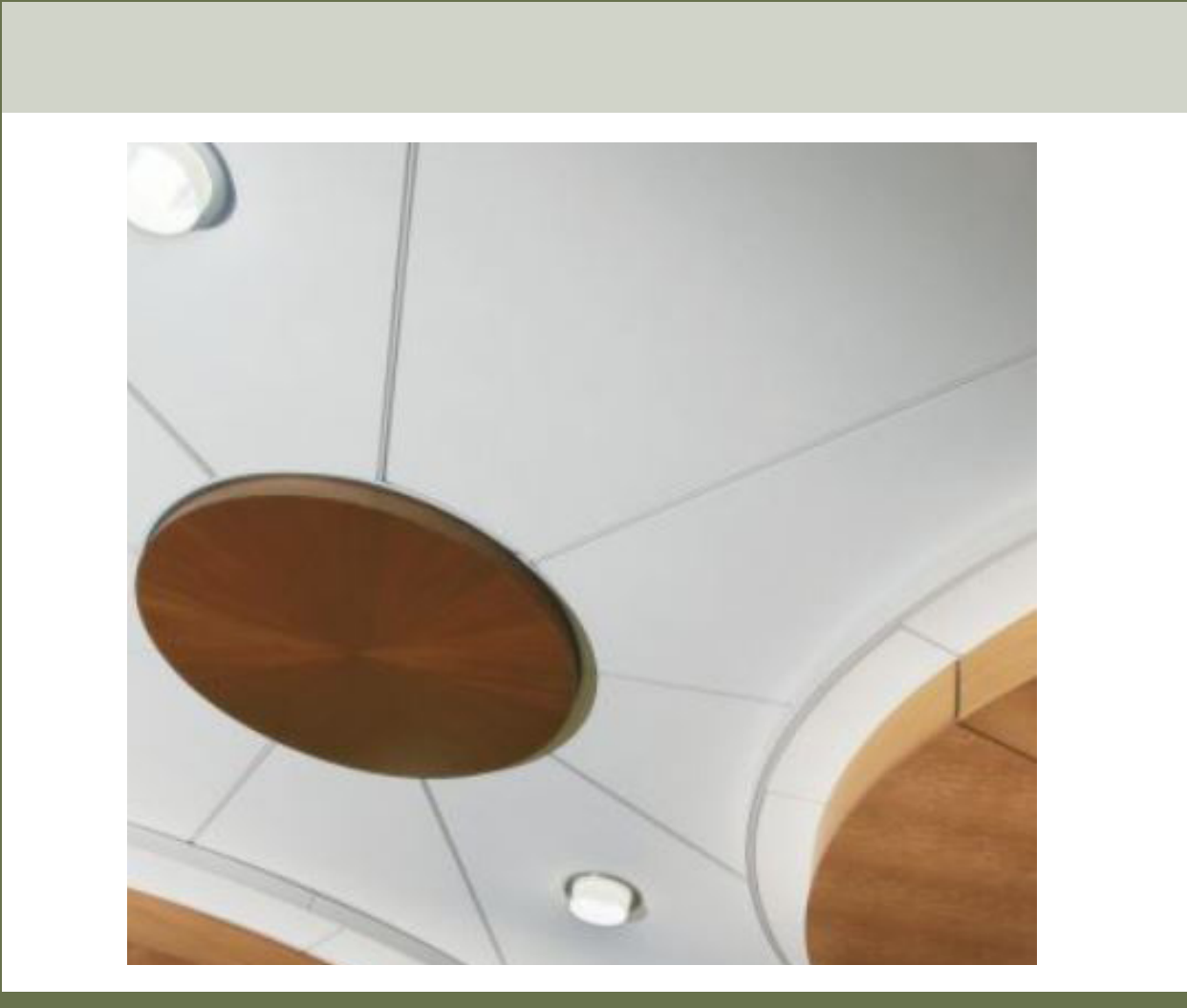
Sustainable  
Good color palette

# Finish Specifications

Ceiling	Felt	
Location(s)	Relax suite	
Name	FELTWORKS	
Item Code	FW	
Item Description	Felt blades	
Manufacturer	Armstrong Ceilings	
Finish	N/A	
Color	Wheat	
Dimensions	8'	
Pattern	Blades Peaks & Valleys Kits	
Content	60% post-consumer recycled PET fibers	
Sustainability	GREENGUARD Certified	
STC/NRC	.85 NRC	
Installation	Follow manufacturer instructions	
Price	Meet with manufacturer representative to get quote	
Notes		
		<b>JUSTIFICATION:</b>  Creates a wayfinding element for walkways while reducing acoustic irritation.

# Finish Specifications

Ceiling	Fiberglass Panels
Location(s)	Treatment rooms
Name	OPTIMA
Item Code	RAD
Item Description	Radial drop cloud
Manufacturer	Armstrong Ceilings
Finish	N/A
Color	White
Dimensions	N/A
Pattern	Radial Custom Ceilings
Content	Fiberglass with DuraBritev
Sustainability	GREENGUARD Certified
STC/NRC	.95 NRC
Installation	Follow manufacturer instructions
Price	Meet with manufacturer representative to get quote
Notes	




## JUSTIFICATION:


Can create a ceiling element over the treatment tables that repeats the refelction motif throughout the spa.



# Finish Specifications


Ceiling	ACOUSTIBuilt	
Location(s)	All spaces	
Name	ACOUSTIBuilt	
Item Code	AC-1	
Item Description	seamless acoustic ceiling	
Manufacturer	Armstrong Ceilings	
Finish	N/A	
Color	White	
Dimensions	N/A	
Pattern	N/A	
Content	Fiberglass with DuraBritev	
Sustainability	USDA certified biobased content 95%	
STC/NRC	0.80	
Installation	Follow manufacturer instructions	
Price	Meet with manufacturer representative to get quote	<b>JUSTIFICATION:</b>  Can create a seamless ceiling
Notes		

# Finish Specifications

Ceiling	Sheer Drapery	
Location(s)	Decompression Zones	
Name	Bewitched	
Item Code	DP	
Item Description	Sheer Drapery	
Manufacturer	Knoll Textiles	
Finish	N/A	
Color	Hush	
Dimensions	66 in.	
Pattern	N/A	
Content	80% PES Trevira CS Polyester, 20% Flame Resistant Polyester	
Sustainability	Greenguard Certification, Clean Air Silver	<p><b>JUSTIFICATION:</b> TESTING: NFPA 701 2010 TM1, as stocked Pass Lightfastness 60 hrs 4.0 Colorfastness Wet 5 Colorfastness Dry 5 ASTM C423 Acoustical Drapery NRC .65 @100% fullness</p>
STC/NRC	.65 NRC	
Installation	Swag Drapery in irregular and stagger heights to create an ethereal atmosphere	
Price	Price per linear yard: \$48.00	
Notes		

# Finish Specifications

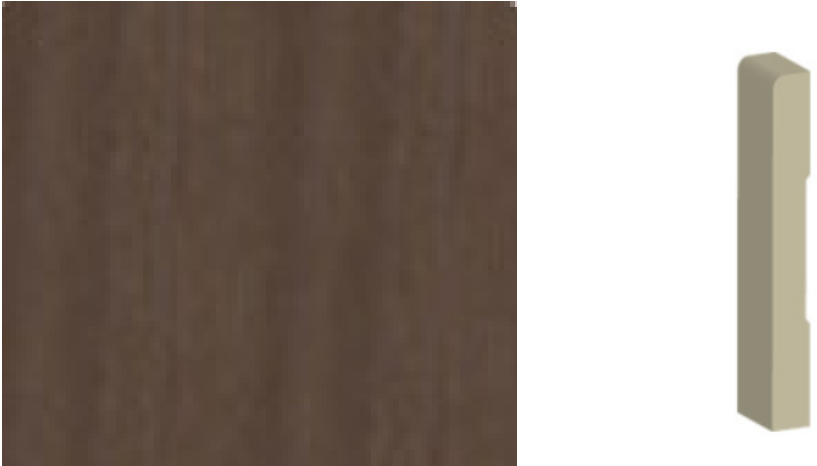
Floor		Raised Floor System	
	Location(s)	Everywhere but wet areas	
	Name	Concrete Filled Welded Steel Panels	
	Item Code	N/A	
	Item Description	Raised System	
	Manufacturer	ASM	
	Finish	N/A	
	Color	N/A	
	Dimensions	24 in x 24 in	
	Pattern	N/A	
	Content	Steel sheet, concrete	
	Sustainability	N/A	
	STC/NRC	N/A	
	Installation	Follow manufacturer instructions	
	Price	Meet with manufacturer representative to get quote	
	Notes		



**JUSTIFICATION:**

- Concentrated Live Load - 2,000 lbf (8.90 kN)  
Per IBC Table 1607.1
- Concentrated Point Load - 500 lbf (2.22 kN)
- Uniform Live Load - 2,000 lbf (8.90 kN)
- Ultimate Load Safety Factor - 2-to-1 Min.
- Rolling Loads - 10 PASS  
CISCA Wheel A (3” dia.) - 460 lb  
8” dia. x 2” Semi-Pneumatic - 500 lb

# Finish Specifications

Floor		Raised Floor System	
	Location(s)	Everywhere but showers and sauna/steam room	
	Name	Mouldings 236A	
	Item Code	B-1	
	Item Description	Wall Base	
	Manufacturer	Bayer Built	
	Finish	None	
	Color	752 Cardamom- North Shore- Standard	
	Dimensions	3/8 in x 3 1/4 in	
	Style	Transitional farmhouse, modern	
	Content	Wood	
	Sustainability	No VOC, Green Pre-finish	
	STC/NRC	N/A	
	Installation	Follow manufacturer instructions	
	Price	Meet with manufacturer representative to get quote	
	Notes		
			
		JUSTIFICATION:	





## Relax Lounger

Product Code: 3982E8

**\$2840.00**



Relaxation bed with curved wooden base in Walnut finish with lateral glass shelf.  
Ergonomic upholstered mattress.

### Page link:

[www.spavision.com/product/3982e8](http://www.spavision.com/product/3982e8)

### Features:

- ✔ Wooden base with walnut finish
- ✔ Choice of upholstery colours

- ✔ Glass lateral shelf

### Specifications:

- ⚙ Length: 1800mm
- ⚙ Height: 350mm

- ⚙ Width: 730mm

### Optional Extras:

- ⦿ Heated mattress + \$710.00

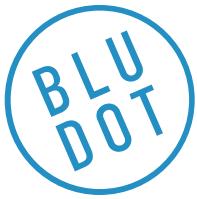
# GEIGER

## Crosshatch® Settee

DESIGNED BY EOOS, 2019

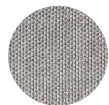
DIMENSIONS	Depth: 30 ¼" Width: 62" Overall Height: 28 ½" Seat Height: 14 ¾" Arm Height: 22 ½"
PRODUCT NO.	Ash Frame: SES4A Walnut Frame: SES4W
CONSTRUCTION	Frame: Solid Ash or Walnut Cushion: High Density Foam, Dacron
WARRANTY	12 Years
RELATED DESIGNS	Lounge Chair, Ottoman, Side Chair, Stool
MADE IN USA	





## Sunday 65" Armless Sofa

Sure, you can multitask on Sunday. But why, when you can just melt instead? Refined and well-bred enough for the poshest of interiors, the Sunday collection is designed to look good, but still be all about the comfort, baby! A simple recessed leg eliminates distraction and lets the cozy cushions and thin frame levitate. On Sunday, you rest. Shop the entire Sunday Collection.



AGNEW GREY



MAKADA  
CHARCOAL



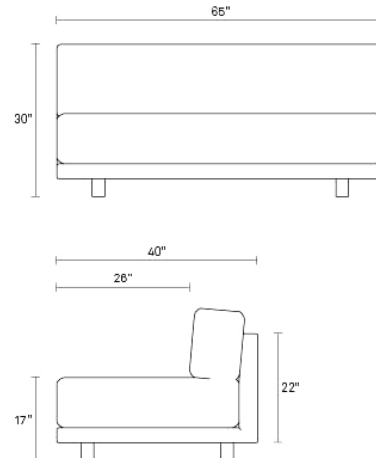
SANFORD BLACK



SANFORD LINEN

### Materials

- Sturdy kiln-dried American hardwood frame, doweled and corner blocked for added strength
- Webbing provides durable support beneath cushions
- Innerspring core cushions are surrounded by high resiliency foam, then wrapped in feather and down to provide a plush, comfortable seat, and with use will take on a more casual appearance. To promote even wear over time, we recommend fluffing and flipping cushions frequently after use.
- Extra deep seat and lower profile lends a loungey and laidback feel
- Agnew Grey: 54% Cotton / 29% Recycled Cotton / 17% Polyester blend upholstery | 100,000 Double Rubs
- Makada Charcoal: 80% Polyester / 20% Cotton blend upholstery | 50,000 Double Rubs
- Sanford Black/Linen: 63% Polyester / 37% Acrylic blend upholstery | 50,000 Double Rubs
- Some assembly required

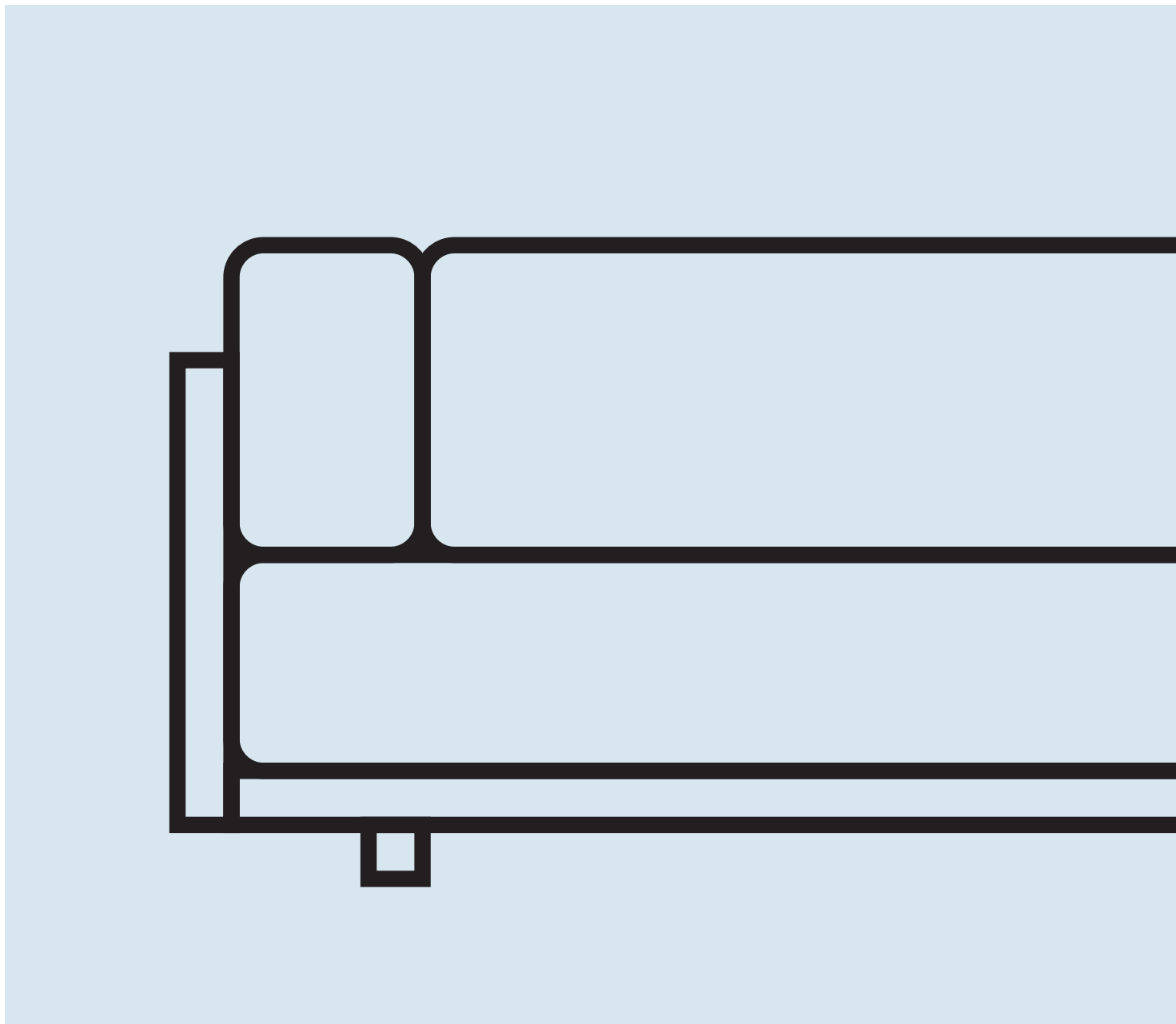
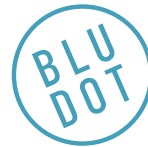


SN1-NARMSF-GY	AGNEW GREY	\$2,499.00
SN1-SFNARM-CL	MAKADA CHARCOAL	\$2,499.00
SN1-SFNARM-BK	SANFORD BLACK	\$2,499.00
SN1-SFNARM-LN	SANFORD LINEN	\$2,499.00

# Sunday Sofa Collection

DESIGNED IN 2016

ASSEMBLY NOTES | REV 00



## SLOTH GETS A BAD RAP.

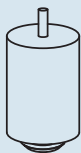
Sure, you can multitask on Sunday. But why, when you can just melt instead?

## NEED A HAND?

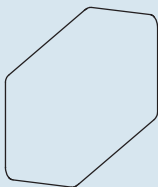
Contact us at [service@bludot.com](mailto:service@bludot.com) or **844.425.8368** for assistance.



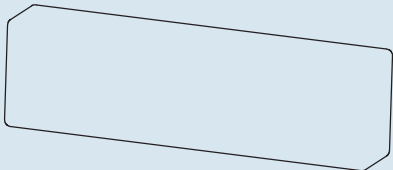
# Parts & Hardware



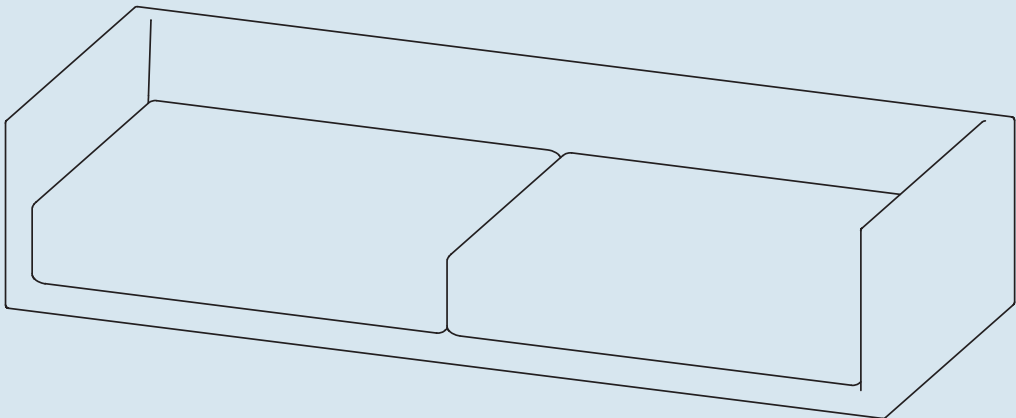
QTY 6  
Foot



QTY 2  
Side cushion



QTY 2  
Rear cushion



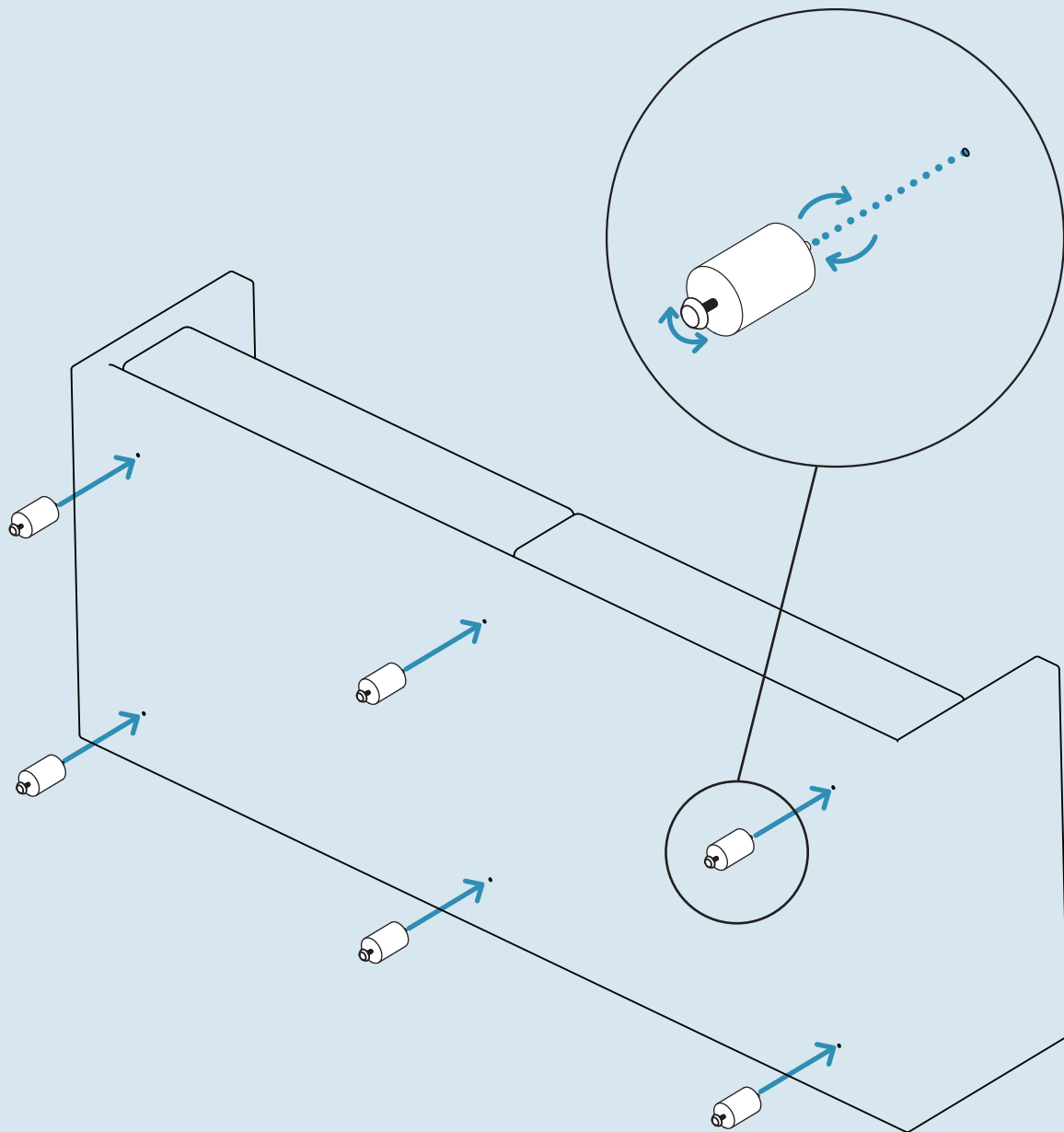
QTY 1  
Sofa

# Step 01

## ATTACH FEET.

Attach adjustable feet as shown.

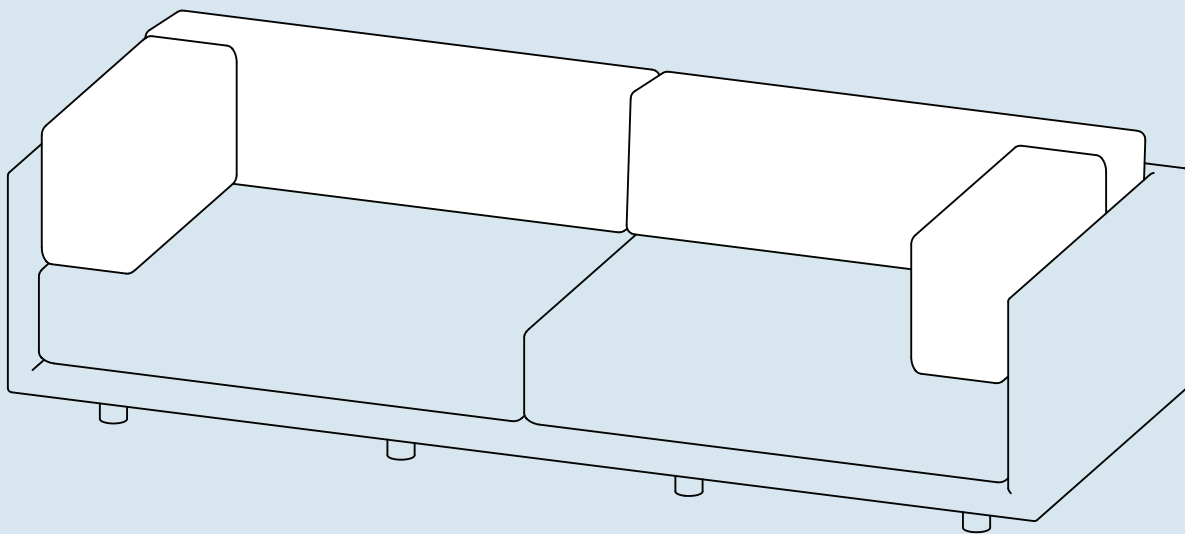
Note: After the feet have been attached, have a second person help lift and bring the sofa upright in order to prevent foot damage.



## Step 02

### PLACE CUSHIONS.

Place cushions as shown.



## Additional Information

### CLEAN

Vacuum your upholstery regularly.

### SPILLS

Act quickly with spills. Absorb the spill with a clean white cloth or paper towel. Never rub the surface. Do not use water or other liquids to clean, as they may stain the fabric. Consult a commercial cleaning specialist for removal of stubborn stains.

### AVOID

Keep upholstery out of direct sunlight and away from heat sources; excessive exposure to sunlight may fade the color of the upholstery. Avoid placing heavy or sharp objects on the furniture surface for long periods of time; this can cause permanent indentations in the fabric. For snags in the fabric, tuck loose threads into fabric or carefully push to reverse side. Never pull out or cut off loose threads.



---

# Eda-Mame

SOFAS

Piero Lissoni



## Description

Shaped by an organic development inspired by the form of a soy bean, the typical ingredient in Oriental cuisine, Eda-Mame is a furnishing element with a strong impact created by a sculptural design that can give great incisiveness to a space. A single object that is a fusion of three types of seating - high-back chair, easy chair and pouf. Its threefold nature lends Eda-Mame extreme versatility in both residential and public settings, and can also highlight areas for co-working, passage and short stays, like hotel lobbies. Made of moulded foam, Eda-Mame is upholstered in a stretch fabric with a light stitching. The support base is made of crosspieces with rounded steel feet connected to each other by a bar, all in pewter painted finish.



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## Technical information

### Internal frame

tubular steel and steel profiles

### Upholstery

Bayfit® flexible cold shaped polyurethane foam

### Support frame

steel

### Ferrules

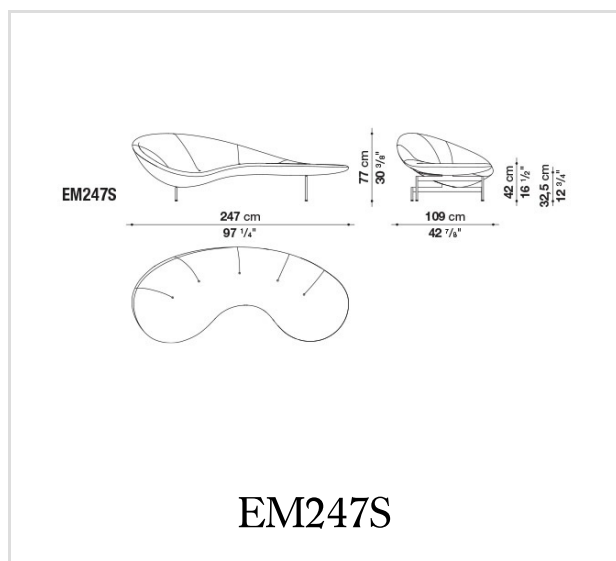
thermoplastic material

### Cover

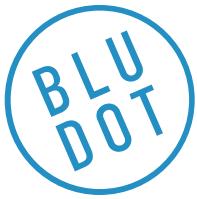
fabric in limited categories

---

# Technical drawings



B&B Italia reserves the right to make technological and aesthetic improvements to its models, including changes to the sizes and materials, without notice. The technical drawings do not define the details of the product. The measurements shown are indicative and may undergo changes. In particular, the dimensions relevant to the padded parts are subject to usage tolerances over time caused by the normal adjustment of the padding. For the specific information, please contact the dealer closest to you.

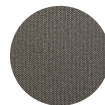


## Perch Outdoor 2 Seat Sofa

Rectangular teak slats and a matte white or grey aluminum frame cut a stylish and airy swath, whether it be the Riviera or the suburbs of Reno. Perch makes every day look like vacation. Beautiful to behold from the back side, the side side or the front side, the collection is made lounge-worthy with cushions covered in mildew and fade resistant Sunbrella™ fabric. Shop the entire Perch Collection.



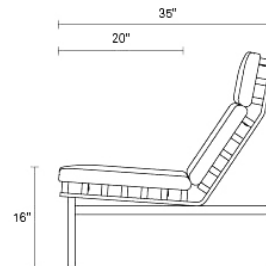
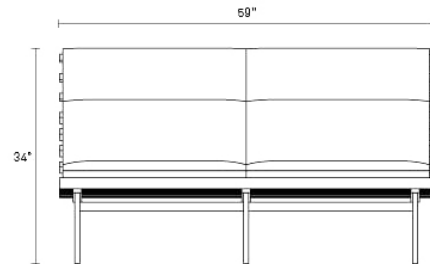
SUNBRELLA  
LINEN



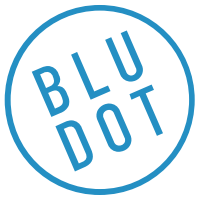
TOOHEY  
CHARCOAL

### Materials

- White powder-coated aluminum frame with FSC teak solid wood slats
- Sunbrella Linen: 97% Acrylic / 3% Other | 45,000 Double Rubs
- Toohey Charcoal: 97% Acrylic / 3% Other | 45,000 Double Rubs
- Sunbrella fabrics can be cleaned and sanitized using bleach or any additional disinfectants without experiencing color loss or degradation
- Sunbrella (Toohey) upholstery fabrics are Green Guard and Green Guard Gold certified to meet the standards for low chemical emissions and VOCs, contributing to healthy indoor air
- High resiliency foam cushions with waterproof wrap
- Cushions snap to frame to stay in place and are not reversible
- Oils in wood may transfer to cushions



PH1-2STSFA-LN	SUNBRELLA LINEN	\$2,199.00
PH1-2STSFA-CL	TOOHEY CHARCOAL	\$2,199.00



## Deep Thoughts Leather Chaise

Leather wrapped contours form a relaxing position that equally invites introspection and socialization. The contrasting lumbar pillow slides to be where you want it and blackened steel base provides all the support needed to start your journey of taking a damn load off. Lounge chair also available.



CAMEL LEATHER



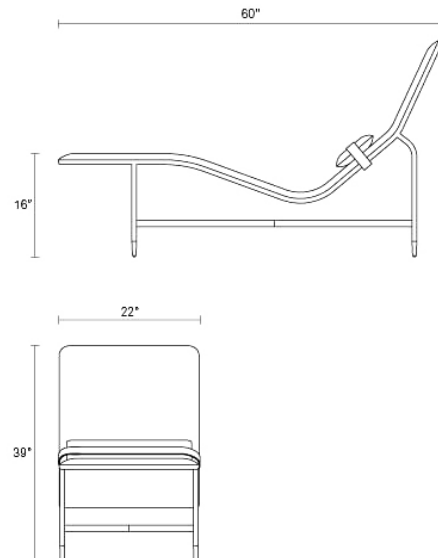
INK LEATHER



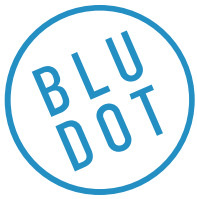
LODEN GREEN  
LEATHER

### Materials

- Oblivion powder-coated steel base
- Adjustable glides
- Adjustable lumbar pillow with snap closure strap; magnet holds pillow in high or low position
- Steel tube frame with wood shell wrapped in foam and batting
- Camel Leather: An aniline leather that has been burnished and polished to create a cool hand and velvety texture with a slight sheen, enhancing the natural character of the leather; A lovely patina will develop over time; Leather seat with coordinating camel velvet chair back
- Ink Leather: An aniline leather with a soft matte finish and velvety feel; Variation in the natural leather becomes more beautiful with use; Leather seat with coordinating ink velvet chair back
- Lodén Green Leather: A full aniline leather that is buffed and finished with a light wax and clear topcoat for a smooth, natural look and feel; the leather's surface is further polished with heat and pressure for a clean, modern aesthetic
- Color variation is a signature to the authenticity of natural leather
- BIFMA rated



DS1-CHAISE-CA	CAMEL LEATHER	\$2,099.00
DS1-CHAISE-IN	INK LEATHER	\$2,099.00
DS1-CHAISE-GR	LODEN GREEN LEATHER	\$2,099.00

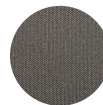


## Perch Outdoor Sun Lounger

Rectangular teak slats and a matte white or grey aluminum frame cut a stylish and airy swath, whether it be the Riviera or the suburbs of Reno. Perch makes every day look like vacation. Beautiful to behold from the back side, the side side or the front side, the collection is made lounge-worthy with cushions covered in mildew and fade resistant Sunbrella™ fabric. Shop the entire Perch Collection.



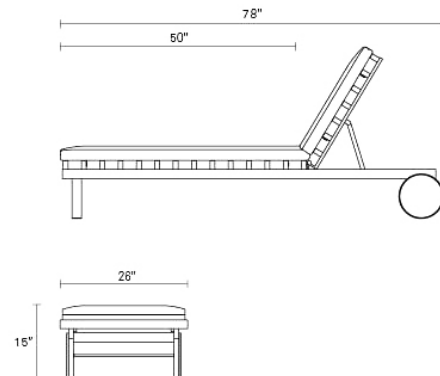
SUNBRELLA  
LINEN



TOOHEY  
CHARCOAL

### Materials

- White powder-coated aluminum frame with FSC teak solid wood slats
- Sunbrella Linen: 97% Acrylic / 3% Other | 45,000 Double Rubs
- Toohey Charcoal: 97% Acrylic / 3% Other | 45,000 Double Rubs
- Sunbrella fabrics can be cleaned and sanitized using bleach or any additional disinfectants without experiencing color loss or degradation
- Sunbrella (Toohey) upholstery fabrics are Green Guard and Green Guard Gold certified to meet the standards for low chemical emissions and VOCs, contributing to healthy indoor air
- High resiliency foam cushions with waterproof wrap
- Cushions snap to frame to stay in place and are not reversible
- Oils in wood may transfer to cushions



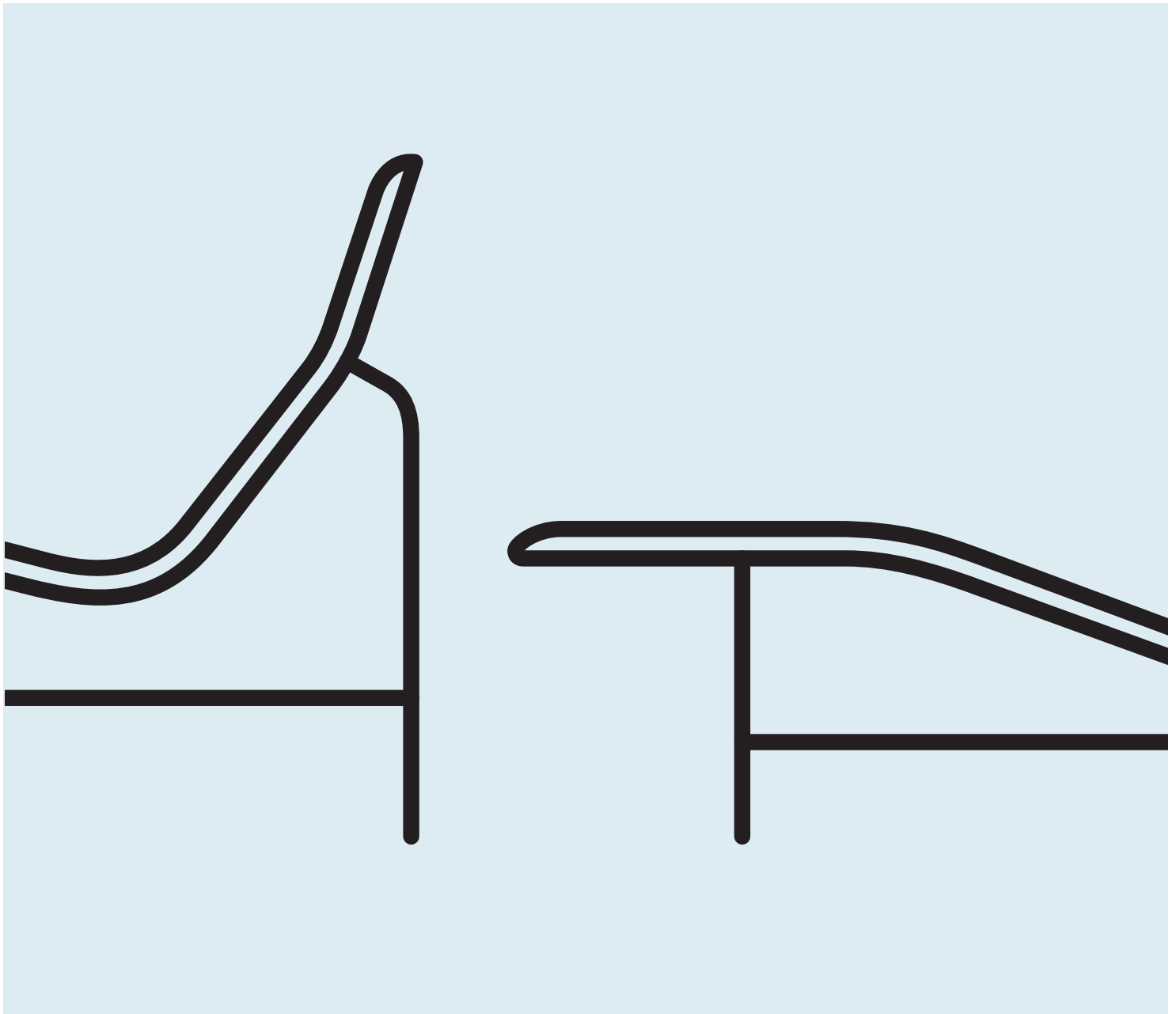
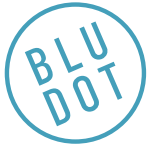
PH1-SUNLNG-LN	SUNBRELLA LINEN	\$1,699.00
PH1-SUNLNG-CL	TOOHEY CHARCOAL	\$1,699.00



# Deep Thoughts Collection

DESIGNED IN 2018

ASSEMBLY NOTES | REV 00



## FREUDIAN SLIPPER CHAIR.

Leather wrapped contours form a relaxing position that equally invites introspection and socialization.

## NEED A HAND?

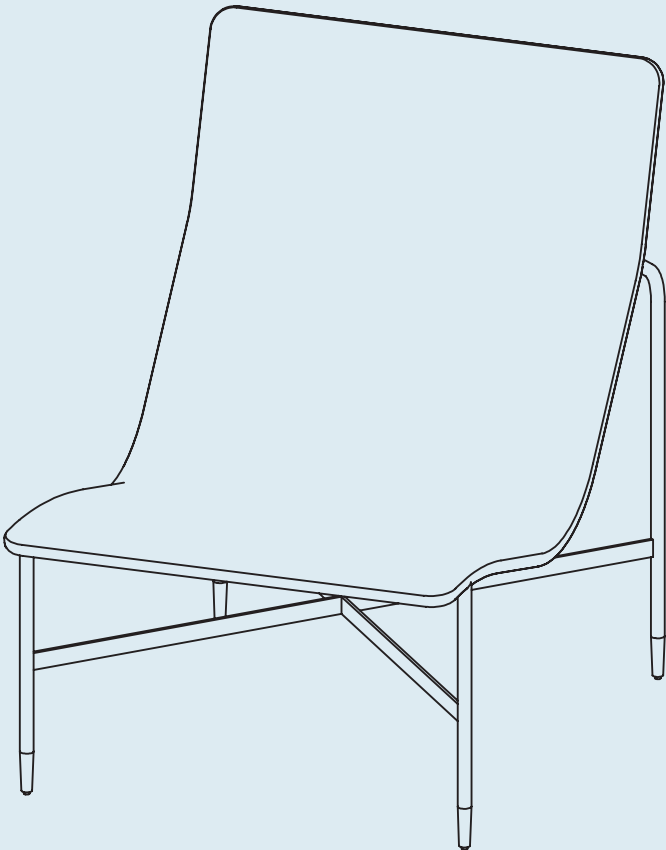
Contact us at [service@bludot.com](mailto:service@bludot.com) or **844.425.8368** for assistance.

Parts & Hardware



QTY	1
-----	---

Lumbar Pillow



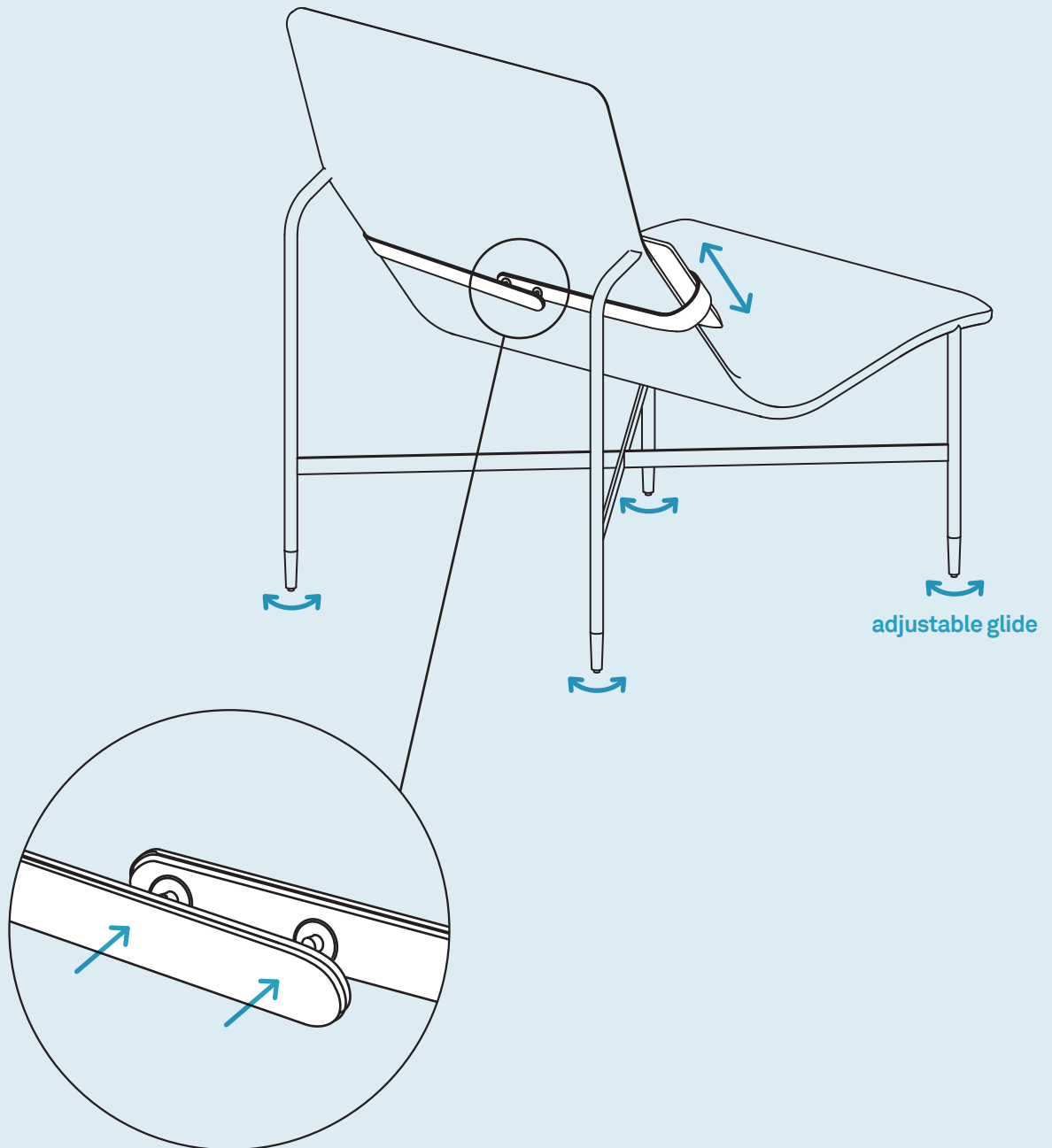
QTY	1
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Chair

# Step 01

## ATTACH PILLOW.

Position the pillow in the desired location. Secure the pillow by wrapping the straps around the back, joining the snap buttons, and aligning the magnet against the back of the seat.



## Additional Information

### CLEAN

Vacuum your upholstery regularly. For leather furniture dust regularly with a dry cloth.

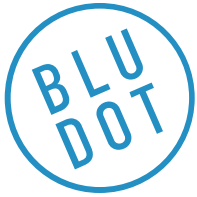
### SPILLS

Act quickly with spills. Absorb the spill with a clean white cloth or paper towel. Never rub the surface. Do not use water or other liquids to clean, as they may cause stains. Consult a commercial cleaning specialist for removal of stubborn stains.

### AVOID

Keep furniture out of direct sunlight and away from heat sources; excessive exposure to sunlight may cause color fading. Avoid placing heavy or sharp objects on the furniture surface for long periods of time; this can cause permanent surface indentations. For snags in the fabric, tuck loose threads into fabric or carefully push to reverse side. Never pull out or cut off loose threads.





## Deep Thoughts Leather Lounge Chair

Leather wrapped contours form a relaxing position that equally invites introspection and socialization. The contrasting lumbar pillow slides to be where you want it and blackened steel base provides all the support needed to start your journey of taking a damn load off. Chaise lounge chair also available.



CAMEL LEATHER



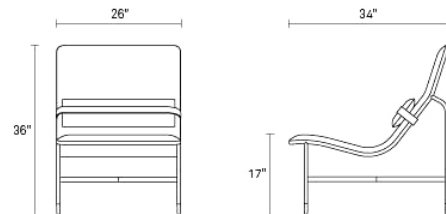
INK LEATHER



LODEN GREEN  
LEATHER

### Materials

- Oblivion powder-coated steel base
- Adjustable glides
- Adjustable lumbar pillow with snap closure strap; magnet holds pillow in high or low position
- Steel tube frame with wood shell wrapped in foam and batting
- Camel Leather: An aniline leather that has been burnished and polished to create a cool hand and velvety texture with a slight sheen, enhancing the natural character of the leather; A lovely patina will develop over time; Leather seat with coordinating camel velvet chair back
- Ink Leather: An aniline leather with a soft matte finish and velvety feel; Variation in the natural leather becomes more beautiful with use; Leather seat with coordinating ink velvet chair back
- Loden Green Leather: A full aniline leather that is buffed and finished with a light wax and clear topcoat for a smooth, natural look and feel; the leather's surface is further polished with heat and pressure for a clean, modern aesthetic
- Color variation is a signature to the authenticity of natural leather
- BIFMA rated



DS1-LNGCHR-CA	CAMEL LEATHER	\$1,899.00
DS1-LNGCHR-IN	INK LEATHER	\$1,899.00
DS1-LNGCHR-GR	LODEN GREEN LEATHER	\$1,899.00



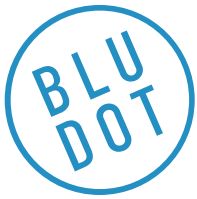
# GEIGER

## Crosshatch<sup>®</sup> Chair

DESIGNED BY EOOS, 2014

DIMENSIONS	Depth: 30 ¼" Width: 31 ¼" Overall Height: 28 ½" Seat Height: 14 ¾" Arm Height: 22 ½"
PRODUCT NO.	Ash Frame: SES1A Walnut Frame: SES1W
CONSTRUCTION	Frame: Solid Ash or Walnut Cushion: High Density Foam, Dacron
WARRANTY	12 Years
RELATED DESIGNS	Ottoman, Side Chair, Stool
MADE IN USA	





## Clutch Chair

Sturdy yet elegant and comfortable without being overly plush, Clutch's rounded edges and curved back wrap around to provide the perfect resting spot for arms. Clutch Lounge Chair also available.



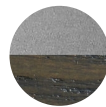
CAMEL LEATHER /  
WHITE OAK



NAVY ON ASH /  
EDWARDS NAVY



SLATE LEATHER /  
WALNUT



SMOKE /  
PEWTER



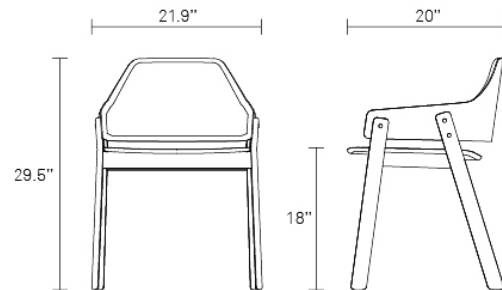
WALNUT / EDWARDS  
LIGHT GREY



WHITE OAK /  
PEWTER

### Materials

- Comfortable upholstered bent wood seat back
- Navy on Ash, Smoke: Stained or painted solid ash wood legs, molded wood seat with ash wood veneer
- White Oak: Solid white oak wood legs, molded wood seat with oak wood veneer
- Walnut: Solid walnut wood legs, molded wood seat with walnut wood veneer
- Olive / Pewter: 100% polyester upholstery | 30,000 Double Rubs
- Edwards Light Grey / Navy: 28% Wool / 70% Acrylic / 2% Nylon blend upholstery | 30,000 Double Rubs
- Camel / Slate Leather: An aniline leather that has been burnished and polished to create a cool hand and velvety texture with a slight sheen, enhancing the natural character of the leather; A lovely patina will develop over time; Color variation is a signature to the authenticity of natural leather.
- Ships fully assembled
- BIFMA rated



CC1-CHRWHO-CA	CAMEL LEATHER / WHITE OAK	\$549.00
CC1-CHRASH-NV	NAVY ON ASH / EDWARDS NAVY	\$449.00
CC1-CHRWAL-SL	SLATE LEATHER / WALNUT	\$649.00
CC1-CHRSMK-PW	SMOKE / PEWTER	\$449.00
CC1-CHRWAL-GY	WALNUT / EDWARDS LIGHT GREY	\$549.00
CC1-CHRWHO-PW	WHITE OAK / PEWTER	\$449.00

# ABOUT A CHAIR / AAC 153

DESIGN BY HEE WELLING & HAY



Featuring a five-legged castor base, the AAC 153 combines optimal functionality with modern aesthetics. Retaining the same high backrest and generous seat that characterises the series, the base is designed with a gas lift that can adjust the seat height by a range of 14 cm. The base is available in either polished or powder-coated aluminium, and the shell comes in a variety of upholstery options, providing a multitude of design combinations that give this series versatility in a wide range of corporate, public, and private contexts.

## PRODUCT DETAILS

- / Part of a multi-functional family of dining and conference chairs, office chairs, bar stools, lounge chairs, tables, an ottoman and a sofa.
- / Variety of textiles and base finishes.
- / Available in a standard moulded foam upholstery and a soft quilted version with added wadding in a large selection of fabrics and leathers.
- / The 5 legged base is equipped with a semi-automatic gas lift.
- / Adjustable seat height varies from 42 to 56 cm.
- / Other base options are: 4 star swivel base, moulded plywood base and 4-leg steel tube base.
- / Suitable for a wide variety of private and public environments.
- / Qualified for contract use.

# HAY

## MATERIAL

SHELL / 10 mm injection moulded polypropylene with 10% glass fibre. Full upholstered.

FOAM / 20-50 mm moulded polyurethane foam.

BASE / 5 star swivel base in cast aluminium with soft wheels and gas lift.

## FABRICS

Available in a large selection of standard fabrics and leathers.

### KVADRAT

/ Remix	/ Canvas
/ Surface by HAY	/ Compound
/ Steelcut	/ Harald
/ Steelcut Trio	/ Lila
/ Melange Nap	/ Coda
/ Divina	/ Balder
/ Divina Melange	/ Atlas
/ Divina MD	/ Raas
/ Fiord	/ Vidar
/ Hallingdal	/ Re-wool

### MAHARAM\*

/ Mode

### ROMO\*

/ Ruskin	/ Olavi by HAY
/ Roden	/ Linara

### VELOUR\*

/ Lola	/ Ice (UK only)
--------	-----------------

### HAY COTTON LINEN COLLECTION\*

/ Swarm	/ Lint
/ Linen Grid	/ Random Fade

### HAY WOOL COTTON COLLECTION\*

/ Bolgheri	/ Flamiber
/ DOT 1682	/ Fairway

### CAMO LEATHERS

/ California	/ Nevada*
/ Sierra	/ Silk

\*Only available in colours selected by HAY.

Following textiles are not available in UK: Harald, Lola, Linen Grid, Lint, Flamiber.

## BASE FINISH

Please note that the colour codes are indicative.

BASE FINISH / Available in 2 different base finishes.

/ Black powder coated aluminium (RAL 9005)

/ Polished aluminium



BLACK POWDER  
COATED STEEL



POLISHED  
ALUMINIUM

## DIMENSIONS

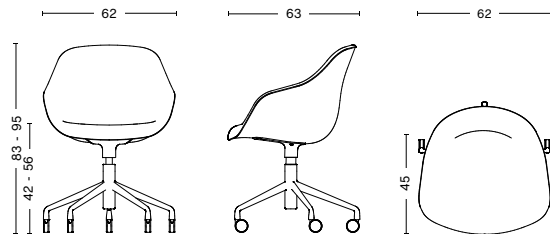
WIDTH / 62 cm / 24.41"

DEPTH / 63 cm / 24.8"

HEIGHT / 83 - 95 cm / 32.68" - 37.40"

SEAT HEIGHT / 42 - 56 cm / 16.54" - 22.05"

SEAT DEPTH / 45 cm / 17.72"



## GLIDERS

SOFT BLACK WHEELS / Standard on all. Suitable for all floorings.

## OPTIONS

/ CMHR foam (fire retardant).

## TESTS

Will be tested.

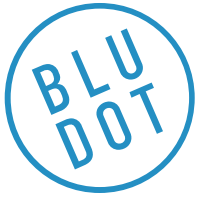
## DOWNLOADS

Packshots and lifestyle photos, 2D / 3D files, care and maintenance instructions, test certificates, product fact sheets, and product presentations are available in our Image Bank at hay.com.

[Link to downloads.](#)

# HAY



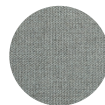


## Mate Outdoor Dining Chair

Tubular aluminum frame is wrapped up in all-weather woven rope to form a seat back that is textured, tender and tough. Dine, sip or caffeinate al fresco without disaster. Seat cushion is upholstered in UV and mildew resistant Sunbrella fabric. Also available in Lounge Chair and Ottoman.



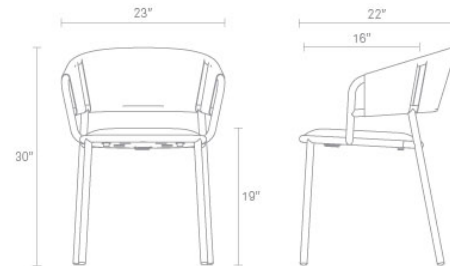
SUNBRELLA  
LINEN



TOOHEY BREEZY  
BLUE

### Materials

- Powder-coated aluminum frame
- All weather woven rope
- UV and mildew resistant Sunbrella upholstered seat cushion
- Sunbrella Linen: 97% Acrylic / 3% Other | 45,000 Double Rubs
- Toohey Breezy Blue: 97% Acrylic / 3% Other | 45,000 Double Rubs
- Sunbrella fabrics can be cleaned and sanitized using bleach or any additional disinfectants without experiencing color loss or degradation
- Sunbrella (Toohey) upholstery fabrics are Green Guard and Green Guard Gold certified to meet the standards for low chemical emissions and VOCs, contributing to healthy indoor air
- Ships fully assembled
- BIFMA rated

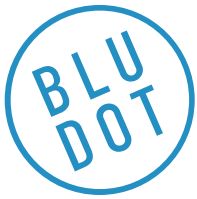


MA1-ODDNCR-LN	SUNBRELLA LINEN	\$499.00
MA1-ODDNCR-TB	TOOHEY BREEZY BLUE	\$499.00

BLUDOT.COM

TEL 844.425.8368

service@bludot.com

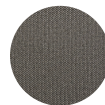


## Perch Outdoor Lounge Chair

Rectangular teak slats and a matte white or grey aluminum frame cut a stylish and airy swath, whether it be the Riviera or the suburbs of Reno. Perch makes every day look like vacation. Beautiful to behold from the back side, the side side or the front side, the collection is made lounge-worthy with cushions covered in mildew and fade resistant Sunbrella™ fabric. Shop the entire Perch Collection.



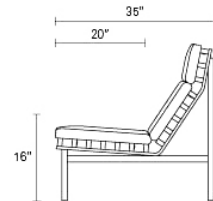
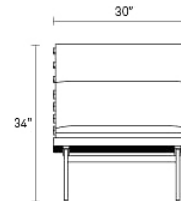
SUNBRELLA  
LINEN



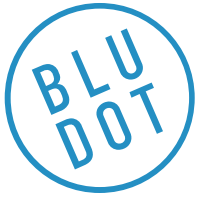
TOOHEY  
CHARCOAL

### Materials

- White powder-coated aluminum frame with FSC teak solid wood slats
- Sunbrella Linen: 97% Acrylic / 3% Other | 45,000 Double Rubs
- Toohey Charcoal: 97% Acrylic / 3% Other | 45,000 Double Rubs
- Sunbrella fabrics can be cleaned and sanitized using bleach or any additional disinfectants without experiencing color loss or degradation
- Sunbrella (Toohey) upholstery fabrics are Green Guard and Green Guard Gold certified to meet the standards for low chemical emissions and VOCs, contributing to healthy indoor air
- High resiliency foam cushions with waterproof wrap
- Cushions snap to frame to stay in place and are not reversible
- Oils in wood may transfer to cushions



PH1-LNGCHR-LN	SUNBRELLA LINEN	\$1,099.00
PH1-LNGCHR-CL	TOOHEY CHARCOAL	\$1,099.00



## Circula 52" Dining Table

Loud and proud. Circula knows just who it is. Generous proportions command a room and create a congenial space to gather 'round. Fit for patio or palace. Shop the entire Circula Collection.



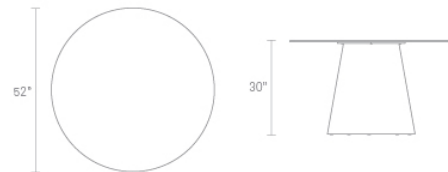
OBLIVION



WHITE

### Materials

- Suitable for indoor or outdoor use
- Powder-coated aluminum
- Adjustable feet keep base level
- Seats four comfortably
- To protect the product's finish, avoid direct exposure to salt air, snow, sleet, and heavy rain
- BIFMA rated
- Some assembly required

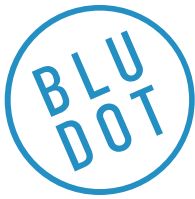


CI1-52DNTB-OB	OBLIVION	\$1,699.00
CI1-52DNTB-WH	WHITE	\$1,699.00

BLUDOT.COM

TEL 844.425.8368

service@bludot.com



## Skiff Low Side Table

Crisp minimal powder-coated aluminum. Clean lines designed to weather the elements. Shop the entire Skiff Collection.



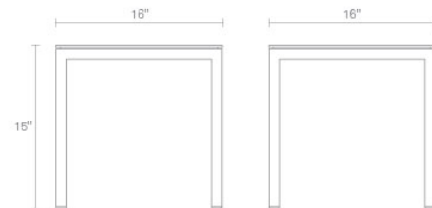
CARBON



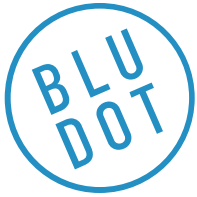
WHITE

### Materials

- Powder-coated aluminum frame and top
- Ships fully assembled
- Anodised aluminium, UV resistant powder-coat steel and outdoor fabric may discolour over time. To assist with the longevity and the ongoing enjoyment of your outdoor furniture, we recommend cleaning with warm soapy water. In addition, the avoidance of direct sunlight and harsh weather conditions is helpful in extending the life of your outdoor furniture
- On occasion minor corrosion spots may appear at spot welds and joints. This does not affect the structural integrity of the product and is not covered by warranty
- Whilst thoughtful consideration is given to the materiality and finish of our outdoor designs we can not warrant against chipping, scuffing, fading or corrosion, especially in seaside or harsh urban environments



SK1-LOWSID-CB	CARBON	\$299.00
SK1-LOWSID-WH	WHITE	\$299.00



## Swole Coffee Table

A pebble-like shape meets with solid dowel legs in this well-proportioned coffee table. Gang with the Swole small table and Swole medium table to create a landscape of function and awesomeness. Shop the entire Swole Collection.



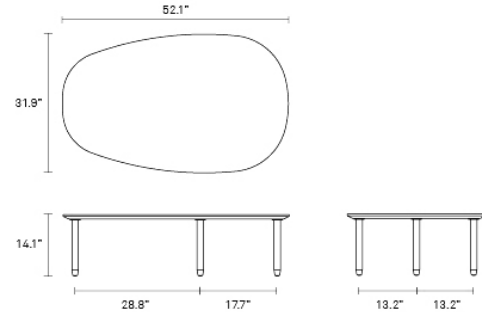
BLACK ON ASH



WALNUT

### Materials

- Walnut: Plain sliced walnut veneer over wood, solid walnut legs
- Black on Ash: Plain sliced ash veneer over wood, solid ash wood legs
- Adjustable leveling foot glides
- Assembly required



SO1-LRGTBK-BK	BLACK ON ASH	\$549.00
SO1-LRGTBK-WL	WALNUT	\$649.00

BLUDOT.COM

TEL 844.425.8368

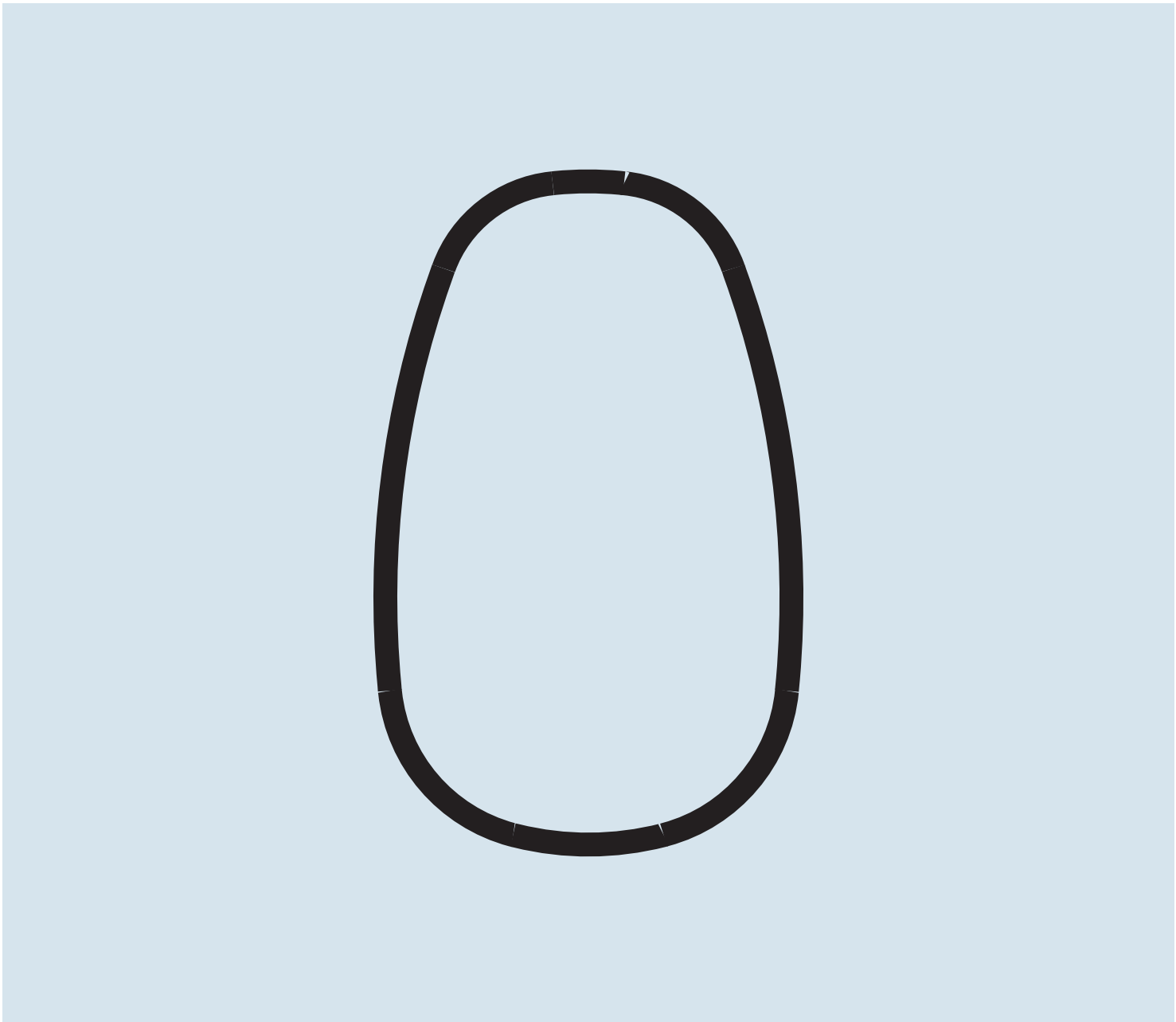
service@bludot.com



# Swole Coffee Table

DESIGNED IN 2015

ASSEMBLY NOTES | REV 00



## Additional Information

### CLEAN

Clean with a slightly damp, soft cloth. To remove dirt and fingerprints, use a quality cleaner formulate for wood furniture. Wipe completely dry with a soft cloth in the direction of the wood grain.

### ROCK OUT.

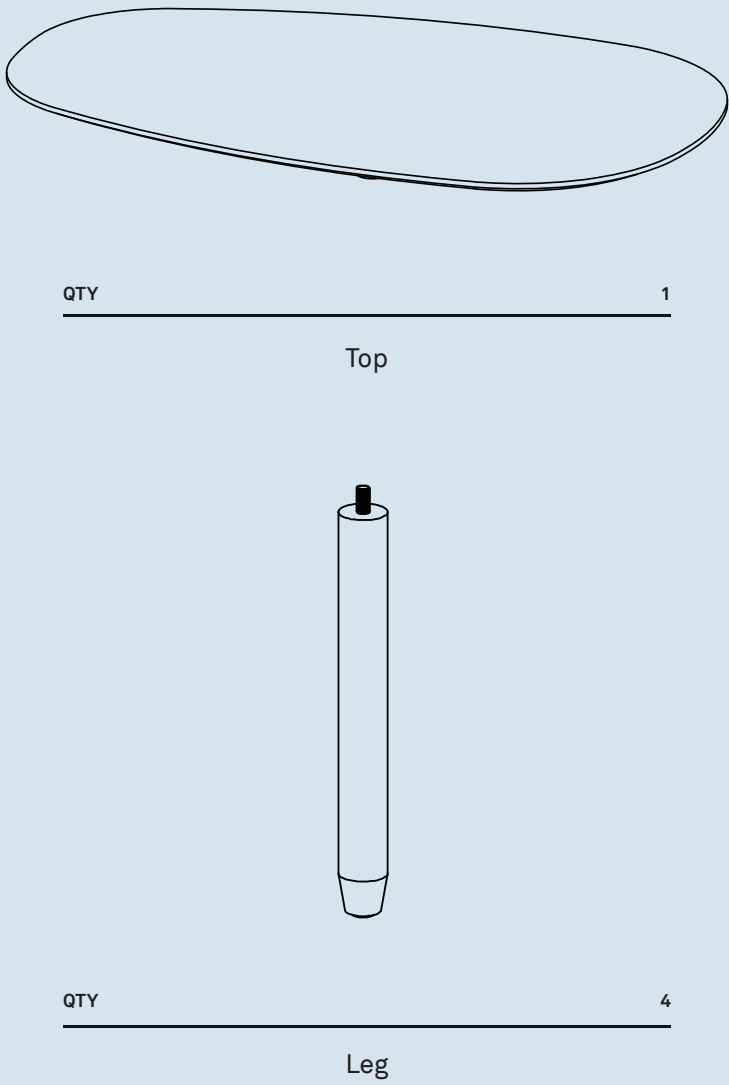
A pebble-like shape meets with solid dowel legs in this well-proportioned coffee table.

### NEED A HAND?

Contact us at [service@bludot.com](mailto:service@bludot.com) or **844.425.8368** for assistance.



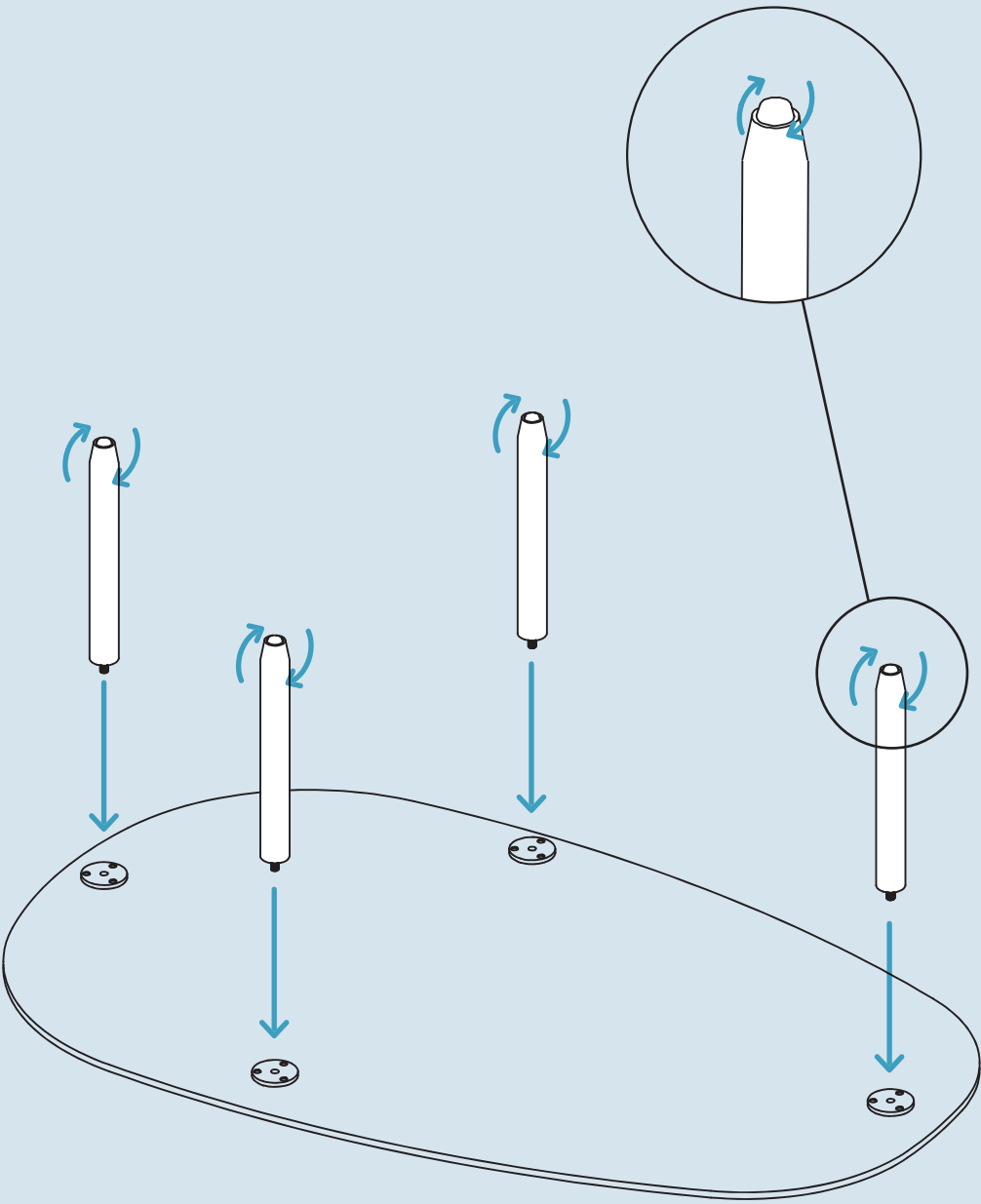
Parts & Hardware



Step 01

ATTACHING THE LEGS.

Place the top panel face down on a soft surface. Align pre-attached threaded rod on the leg to the threaded insert on the top panel. Thread the leg clockwise to tighten.



\*Legs have pre-attached adjustable levelers. Ensure unit is level prior to first use.



★★★★★ (1) Item No. 100118321

## Hew Side Table

~~\$1,295.00~~ **\$1,100.75** 15% off1 **Style** D ▲2 **Finish** Walnut ● ▼

Available to ship in: 8 weeks

 [See in Store](#)

## Enchanted by the wood lathe

After graduating from Pratt Institute with a degree in product design, Pat Kim went in a more organic direction when a woodworker took him under his wing. Now working out of his Brooklyn studio, he's still enchanted with the lathe and the shapes it encourages. "I'll often take a bunch of wood scraps and start turning them just for form exploration," he says. The Hew Side Table (2018) derived from those musings. "With wood, I get to basically play all the time." Made in Poland.

- Beautifully crafted side tables.
- Solid wood.
- Variety of shapes available.

---

Brand	<u>Design Within Reach</u>
-------	----------------------------

---

General Dimensions	18" H 14.25" W 12.5" D 12.5" DIA
--------------------	----------------------------------

---

Product Weight	48 lbs
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---

Box Dimensions	14.97" H 16.53" W 20.08" D
----------------	----------------------------

---

Assembly	Comes fully assembled
----------	-----------------------

---

Warranty	1-year warranty (terms and conditions may vary)
----------	---



★★★★★ (1) Item No. 100118317

## Hew Side Table

~~\$995.00~~ **\$845.75** 15% off1 **Style** B ▲2 **Finish** Walnut ● ▼

Available to ship in: 8 weeks

 [See in Store](#)

## Enchanted by the wood lathe

After graduating from Pratt Institute with a degree in product design, Pat Kim went in a more organic direction when a woodworker took him under his wing. Now working out of his Brooklyn studio, he's still enchanted with the lathe and the shapes it encourages. "I'll often take a bunch of wood scraps and start turning them just for form exploration," he says. The Hew Side Table (2018) derived from those musings. "With wood, I get to basically play all the time." Made in Poland.

- Beautifully crafted side tables.
- Solid wood.
- Variety of shapes available.

---

Brand	<u>Design Within Reach</u>
-------	----------------------------

---

General Dimensions	15" H 12.5" W 12.5" D 12.5" DIA
--------------------	---------------------------------

---

Product Weight	35 lbs
----------------	--------

---

Box Dimensions	15.23" H 16.59" W 20.15" D
----------------	----------------------------

---

Assembly	Comes fully assembled
----------	-----------------------

---

Warranty	1-year warranty (terms and conditions may vary)
----------	---



## RLL Ellipse

Product Code: 14AEE8

**\$4250.00**



Treatment table with double lifting column. Elliptical top with base made from solid steel construction for maximum stability. Electrical height adjustment with back section adjustable via pneumatic spring. \* Image shown in Creme upholstery, with wenge base and titan metal parts.

### Page link:

[www.spavision.com/product/14aee8](http://www.spavision.com/product/14aee8)

### Features:

- ✔ Hand control
- ✔ Upholstery in White synthetic leather or PU as standard - see PDF
- ✔ Electric height adjustment
- ✔ Double lifting column technology
- ✔ Metal Parts in White, Titanium or Dk Brown - as standard - see PDF
- ✔ White or Wenge base as standard - see PDF
- ✔ Pneumatic spring adjustable backrest top
- ✔ Base made from solid steel for maximum stability

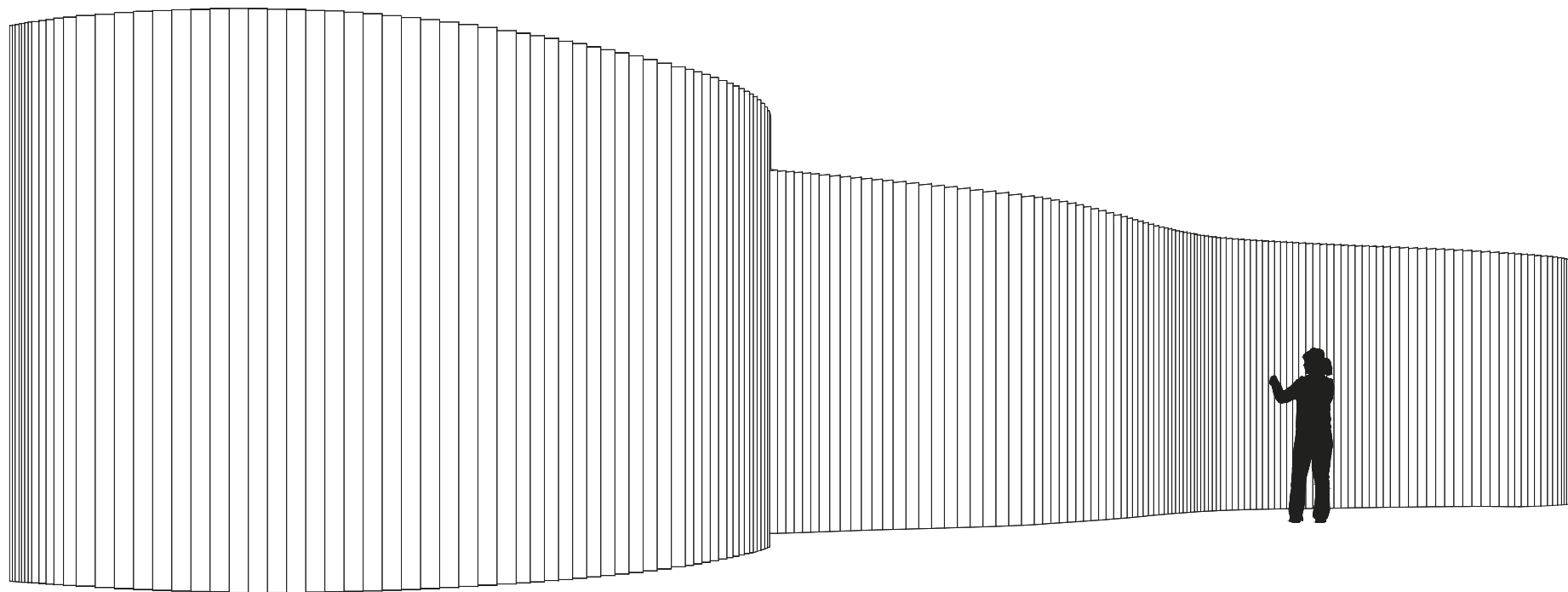
### Specifications:

- ⚙ Length: 1940 mm / 76.4"
- ⚙ Width: 780mm / 30.7"
- ⚙ Electrics: International electrics available
- ⚙ Certifications: CE Marked
- ⚙ Height Range: 610mm - 1010mm / 24" - 39.8"
- ⚙ Lifting capacity: 300kg / 660lbs
- ⚙ Voltage: 110v or 220v
- ⚙ Warranty: 1 year parts, plus 1 year labour (available only from Spa Vision)



**Optional Extras:**

- ⦿ Smart Thermo heating system + \$675.00
- ⦿ Other PU or Synthetic Leather Upholstery colours - see PDF + \$80.00
- ⦿ Other Base Decors (White or Wenge inc) - see PDF + \$675.00
- ⦿ Gel Face Cushion + \$78.00
- ⦿ VibroWellness: gentle vibration system with a range of settings + \$675.00
- ⦿ Metal components in special colour (white, titanium or dk brown as standard) + \$315.00
- ⦿ Foot switch to control basic functions + \$390.00



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1470 Venables Street  
Vancouver, BC  
Canada V5L 2G7

+ 1 604 685 0340  
[www.molodesign.com](http://www.molodesign.com)

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FR treated textile  
softwall + softblock specifications

# FR textile 290mm (11.5") wide softwall + softblock modular system

## colours + materials

- FR white textile (translucent)

The honeycomb geometry of softwall + softblock expands to create a freestanding structure that is over one hundred times longer than its compressed form. Standard softwall + softblock elements expand to a maximum of 4.5 meters, or can be opened partially to achieve shorter lengths. Custom lengths and heights are also available and all elements compress for storage.

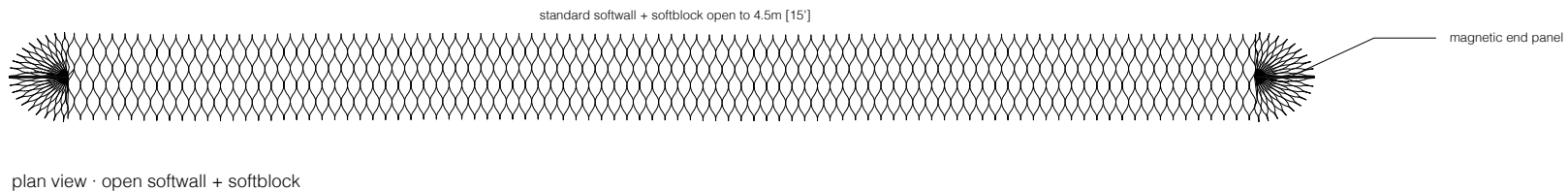
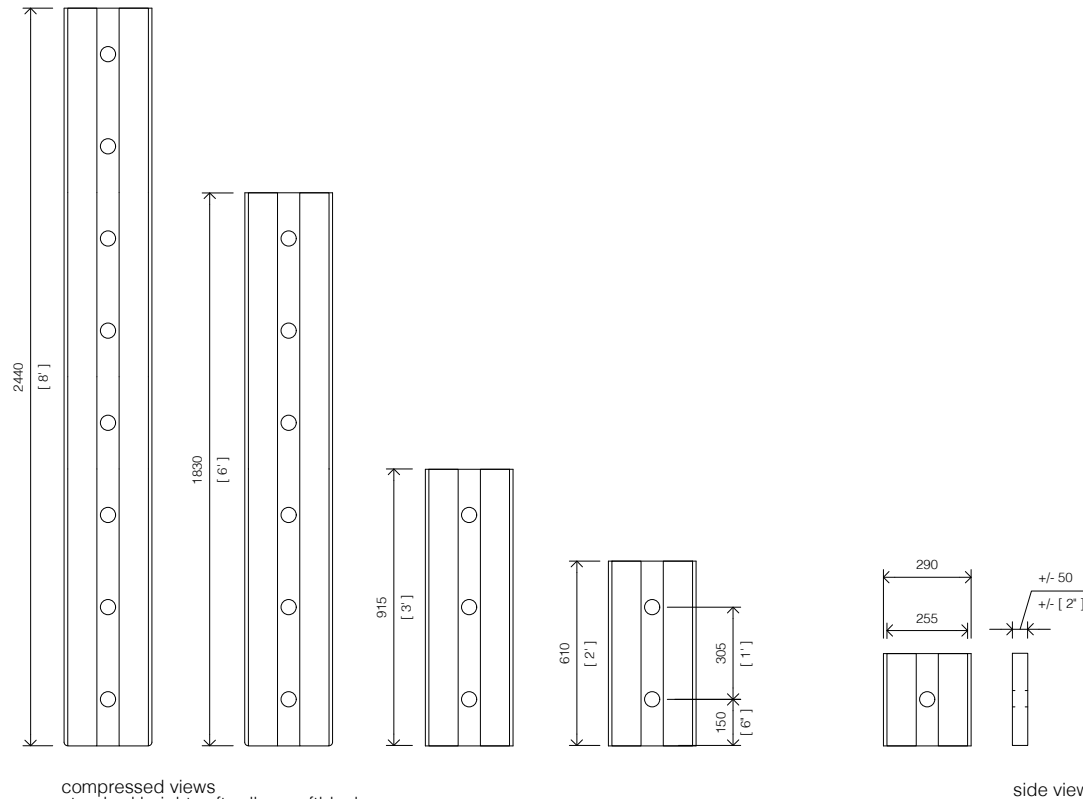
## optional accessories

- LED kit
- steel strips to connect softwall + softblock to walls or vertical structure
- felt handles
- steel base
- clipping system to mount signage + printed materials
- peg and strip

## fire rating certificates available

- M1 · France
- B1 · Germany
- NFPA 701 · United States

## acoustic certificates available



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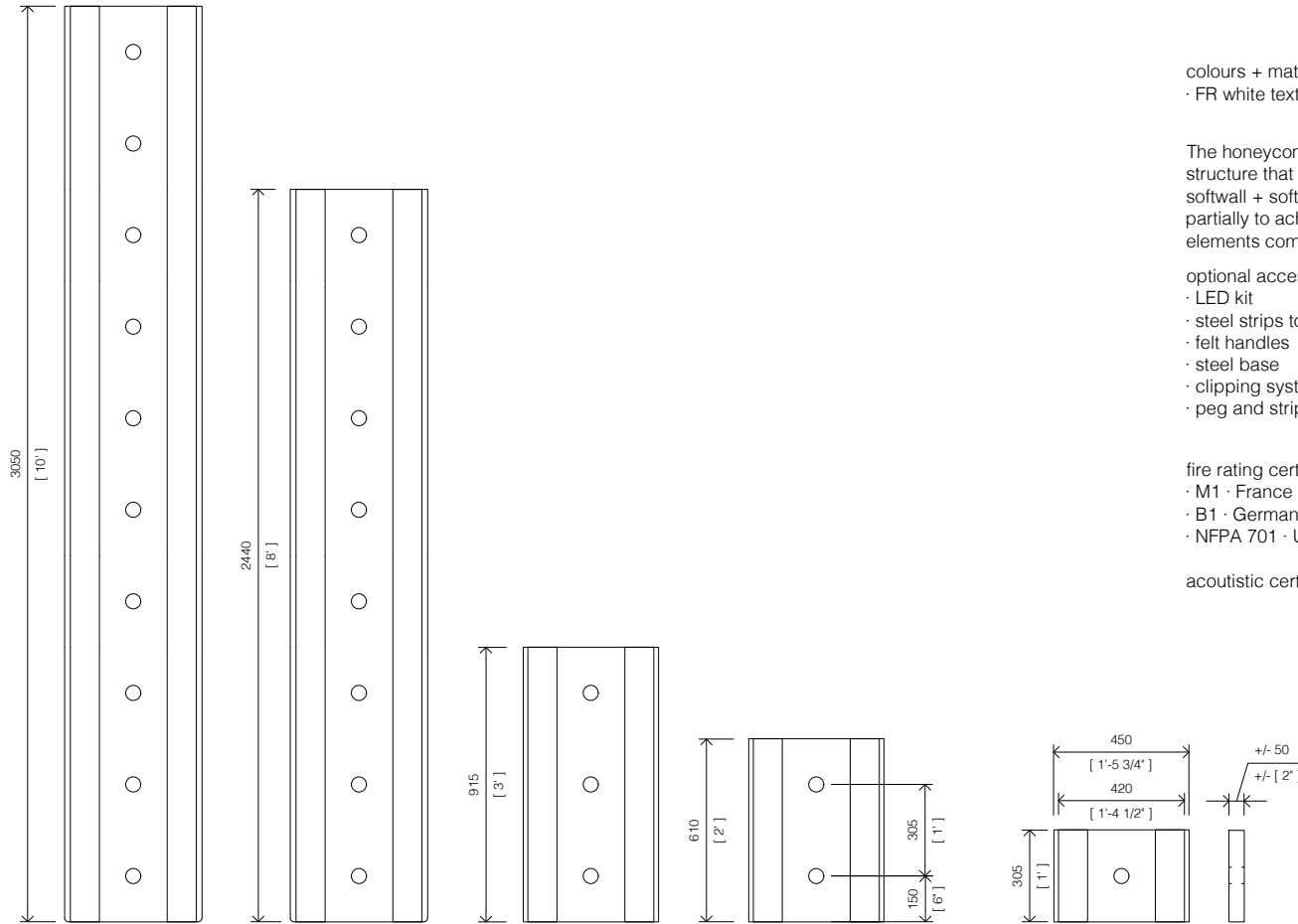
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## softwall + softblock specifications

1:25  
210112

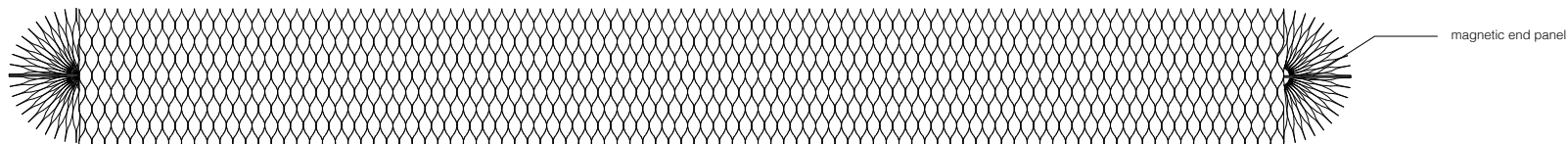
# FR textile 450mm (17.75") wide softwall + softblock modular system



compressed views  
standard height softwalls + softblocks

side view

standard softwall + softblock open to 4.5m [15']



plan view · open softwall + softblock

## colours + materials

- FR white textile (translucent)

The honeycomb geometry of softwall + softblock expands to create a freestanding structure that is over one hundred times longer than its compressed form. Standard softwall + softblock elements expand to a maximum of 4.5 meters, or can be opened partially to achieve shorter lengths. Custom lengths and heights are also available and all elements compress for storage.

## optional accessories

- LED kit
- steel strips to connect softwall + softblock to walls or vertical structure
- felt handles
- steel base
- clipping system to mount signage + printed materials
- peg and strip

## fire rating certificates available

- M1 · France
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## acoustic certificates available

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## softwall and softblock specifications

1:25  
210112

03

# custom cut guidelines for softwall + softblock modular system

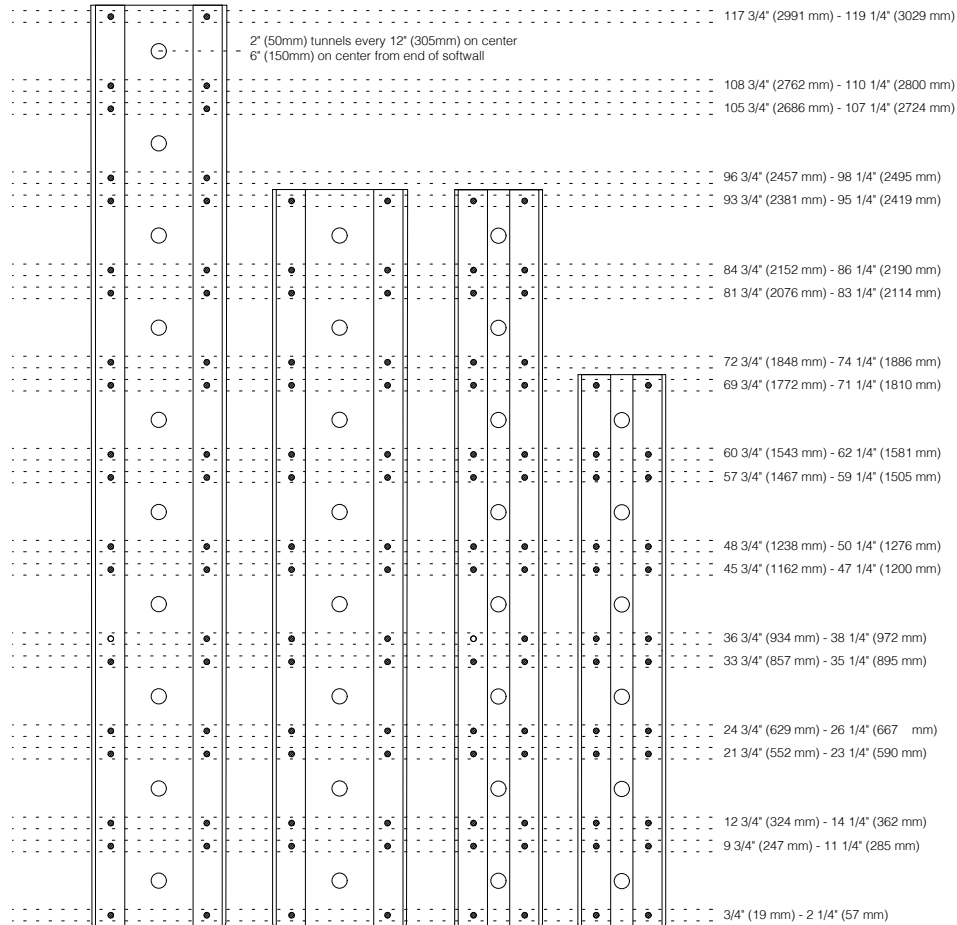
guidelines for custom cut softwall + softblock

- lead times available upon request
- custom cuts can occur anywhere between magnets on all softwalls + softblocks

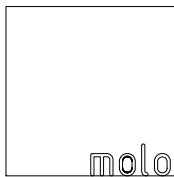
legend

- magnets
- die cut holes through body of product

do not cut within these ranges



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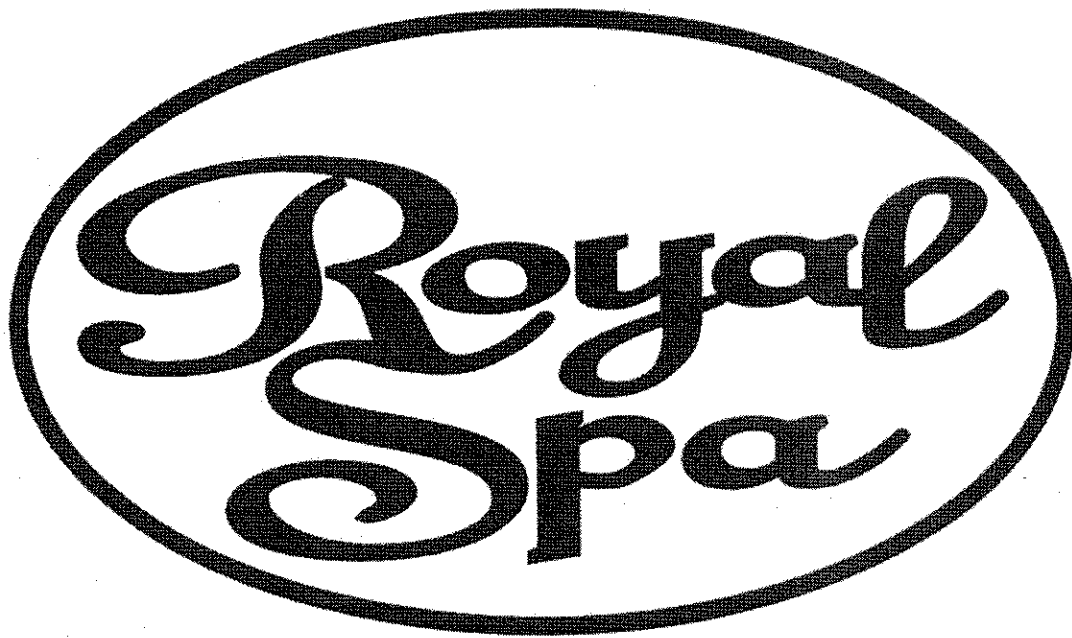
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softwall + softblock specifications

1:25  
210112

02





# **OPERATION AND CARE GUIDE**

THIS GUIDE IS INTENDED TO SUPPLY YOU WITH THE INFORMATION TO GET THE MOST FROM YOUR FLOAT POD. WITH PROPER CARE AND REGULAR MAINTENANCE, YOUR FLOAT POD WILL PROVIDE YOU WITH YEARS OF TROUBLE FREE RELAXATION, HYDROTHERAPY AND ENJOYMENT.

# FLOAT POD PRE-SITE PREPARATION

## Installation Considerations:

It is highly recommended that the owner/user of this Float Pod carefully read all instructions in this manual prior to having your Float Pod installed at your chosen location. **IMPROPER INSTALLATION MAY RESULT IN EQUIPMENT DAMAGE AND VOID THE FLOAT POD'S WARRANTY.**

## GETTING THE FLOAT POD TO YOUR SITE

- All portable Float Pods come in three main sections. The largest section requires clearance for a 32X68X103 inches object through gates, doors, between houses and side fences, around corners and at least 9 feet of overhead clearance for ample moving room. It is the customer's responsibility to make sure all clearance requirements are met.
- We deliver to your door step and do not offer installation and setup. If your drop off spot is not fully prepared, there will be an additional charge for the second delivery. Customer pays for the crane service and/or any additional manpower needed. It is the customer's responsibility to remove and replace all obstacles that may impede proper installation and setup.

## FLOAT POD PAD REQUIREMENTS

Your new Float Pod **MUST BE PLACED ON A UNIFORMLY FIRM AND LEVEL SURFACE.** The pad foundation recommended is a concrete pad at least 4 inches thick. Refer to your brochure for foundation/pad size requirements. You will need at least 2 feet of space being the Float Pod to access electronic components. If a concrete pad is poured, this is the logical time to "plumb-in" your electrical conduit for 220 volt power line if desired. Be sure the concrete has cured for at least one week before setting the Float Pod in place. A typical Float Pod, once filled with water, could weigh as much as 3,600 lbs. **AN UNEVEN OR CRACKED CONCRETE PAD, OR IMPROPERLY SHIMMING YOUR FLOAT POD MAY CAUSE THE FLOAT POD TO BUCKLE, DISTORT AND / OR CRACK, RESULTING IN THE VOIDING OF YOUR FLOAT POD'S WARRANTY.**

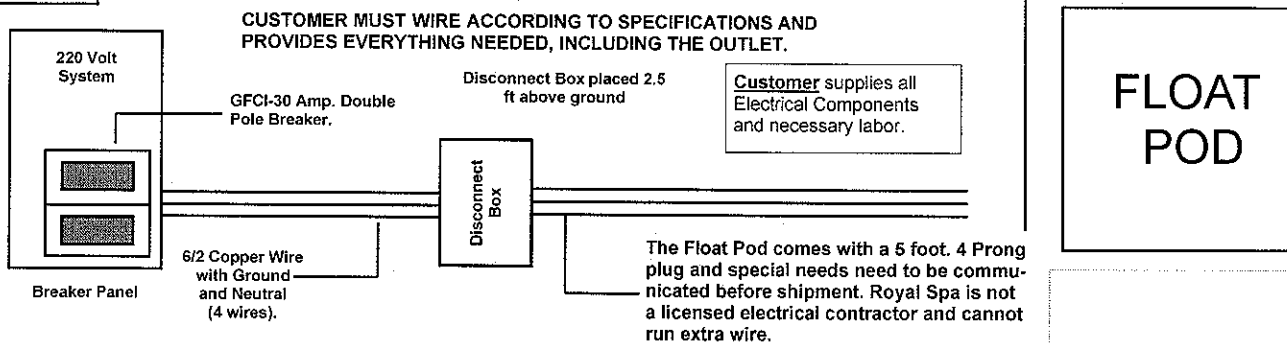
## ADDITIONAL REQUIREMENTS

- All installations require the equipment system to be shielded from the weather. If the equipment system is placed away from the Float Pod then an enclosure will need to be built over it. The customer is responsible for providing this enclosure. Float Pods delivered without their cabinet structure, (not *skirted*) will need additional requirements to prevent environmental damage.
- Balconies and decks must be constructed to current state and local codes to safely support the maximum load of your water filled Float Pod. Check with your construction contractor for these specifications. Balconies and decks should support at least 80 pounds per square foot.
- It is the responsibility of the owner to provide clear access on **all sides** of the Float Pod in the event a repair is necessary. Otherwise, additional costs to the customer for the service and repair of the Float Pod may be incurred.
- It is not recommended to backfill against the Float Pods shell or cabinet. This will damage the Float Pod and void your warranty.
- During colder months: You will need to fill the Float Pod with a hose with a water source. ***The Delivery Carrier does not bring a hose or water.***

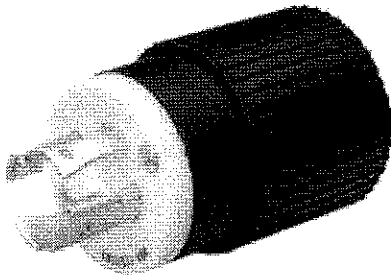
# ELECTRICAL REQUIREMENTS

**220 Volt  
30 Amp.  
(4 Wires Total)**

Most 220 volt, 4.0 KW Equipment Systems requires two #6 gauge wires plus a ground wire and a neutral (**4 wires total**). A 30 Amp. Double Pole GFCI Breaker should be directly hard-wired to the breaker panel. (Copper Wire Only) A Disconnect Box is required within eyesight and 2.5 feet from the ground **or more**. The GFCI may be located in the Main Breaker box or in the Disconnect Box. **IF THE WIRE IS TOO SHORT, ROYAL SPA WILL NOT BE ABLE TO HOOK-UP YOUR FLOAT POD. THE FLOAT POD COMES WITH A 5 FOOT 4 PRONG PLUG AND SPECIAL NEEDS NEED TO BE COMMUNICATED BEFORE SHIPMENT. ROYAL SPA IS NOT A LICENSED ELECTRICAL CONTRACTOR AND CANNOT RUN EXTRA WIRE.**



**THE FLOAT POD COMES WITH A 5 FOOT 4 PRONG PLUG AND SPECIAL NEEDS NEED TO BE COMMUNICATED BEFORE SHIPMENT.**



**NO EXTENTION CORDS** are to be used in conjunction with the operation of the Float Pod. Low voltage damage could result which is not covered by warranty. All electrical work must be done according to NEC (National Electric Code) and any other applicable electrical codes.

# Electrical Stub-Up Locations

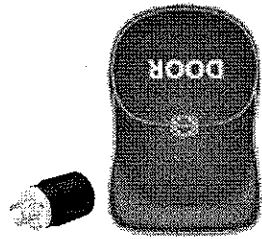
## For Portable Float Pods

### With Their Standard Equipment Location

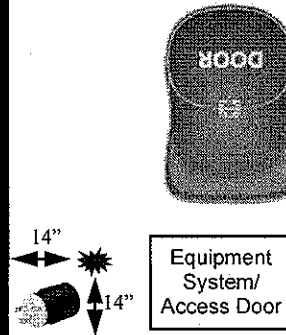
***\*\*Measurements Are For Commercial Float Pods***

**Models:**  
Float Pod

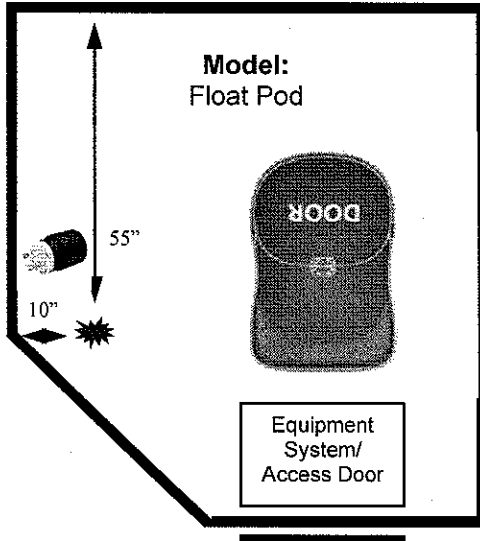
The Float Pod Plug is on the "Driver Side" of the Pod or on the left looking down on the Pod towards the Lid.



**Model:**  
Float Pod



**Model:**  
Float Pod



In the case of an odd room layout you will need to request a custom length Float Pod Plug.

For wiring a "Float Pod", start at the corner immediately to the left of the Access Door. From that left corner go to the left edge of the Float Pod. Measure 2.5 to 4 feet off the ground toward the corner parallel to the Access Panel. This location is the best stub-up location for your electrical connection.

This form refers specifically to Float Pods in their standard equipment locations. Customizing the location of your equipment system or the design of the Float Pod may change the location dimension outlined on this form.

# IMPORTANT SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY

Clearly understand the specifics of safe operation and proper maintenance of your Float Pod. Float Pods are fun; but along with the fun comes serious responsibility. Establish rules and enforce them. It is your responsibility to be sure that you, your family and guests use the Float Pod safely.

## INSTALLATION SAFETY NOTES

**WARNING:** Turning the Float Pod equipment switch **off** does not prevent risk of shock. Power in the equipment area is still live until the main breaker is shut off

**WIRING:** Wiring must be done by a licensed electrical contractor. Spa must be installed with a GFI (ground fault interrupter) in the breaker panel and dedicated to the Float Pod only. Wiring must meet the requirements of National Electric Code, ANSI/NFPA70-1999 and any other applicable state and local codes.

**ELECTRICAL SHOCK:** Never allow any electrical appliance or device within reach (5' to 10') of Float Pod. Electrical appliances include, but not limited to lighting, radio, TV, yard tools, extension cords or any plug-in devices.

**EQUIPMENT MAINTENANCE:** Never perform any work on the Float Pod equipment or electrical components without first turning off the main **Float Pod breaker** in your. It is recommended that a qualified Royal Spa Service Tech do any spa equipment repairs. Any problems with Breakers, GFI, main wire or disconnect should be serviced by a licensed electrician.

**FLOAT POD BASE:** The Floor base must be designed to hold the weight of the spa, water, and occupants. **Base** must be level and designed to prevent settling. **Base** must meet any applicable local and state codes.

## MAINTENANCE SAFETY NOTES

**REPAIRS:** Always contact Royal Spa Service and Repair Department before attempting electrical or mechanical maintenance / repairs.

**FILTERS:** Always turn Float Pod off when removing skimmer or filter for cleaning, reinstall and turn power back on when cleaning is complete.

**WATER BALANCE:** Proper water balance must be maintained to prevent damage to the Float Pod and equipment, and to keep the water a comfortable neutral environment.

**BACTERIA:** Proper use of sanitizers after Float Pod use and at weekly intervals is recommended to maintain safe and bacteria free Float Pod water.

**CHEMICAL LEVELS:** Excessive chemical levels or the lack of chemicals continue to be the main cause of Float Pod damage, strong and unpleasant odor, and floater discomfort.

**CHEMICAL HANDLING:** Always use caution when handling chemicals. Spa chemicals are **concentrated**, poisonous if swallowed or inhaled, corrosive to the touch and can cause burns to the skin and eyes. It is recommended to wear eye protection when working with chemicals and immediately rinse off any chemical that comes in contact with your skin.

**CHEMICAL STORAGE:** Always store chemicals out of the reach of children. Make all family members aware of the chemicals potential dangers. Store chemicals in a dry, cool, safe place. **NEVER** mix chemicals together! **REMEMBER**, chemicals are made to be put into water. **NEVER** add water to the chemicals.

## FLOAT POD USE SAFETY NOTES

**FLOAT POD LID:** The Float Pod lid has been designed for an easy exit. Simply push up on the lid and the hydraulic arms will open the lid. Should the lid become harder to open please contact a representative.

# FLOAT POD USE SAFETY NOTES

- HYPERTHERMIA:** Hyperthermia occurs when the body's internal temperature increases a few degrees above normal body temperature of 98.6°F (37°C). The symptoms include lethargy, drowsiness, dizziness, and fainting. **PREVENTION**– The Float Pod should optimally be operated at 93.5°F. Do not exceed 95°F.
- SICKNESS:** It is not recommended that any person enter a Float Pod with open wounds, sores, viral or infectious diseases.
- SUCTION FITTINGS:** Two skimmer units in the Float Pod are designed to pull in water at a safe suction/flow rate. Do not stick hair, fingers or any other body part into these skimmers. If any of these suction skimmers break or crack, discontinue use and call Royal Spa Service for repair.
- MEDICATION:** Soaking in hot water may intensify or exaggerate the effects of many medications. You should contact your physician for his recommendations prior to Float Pod use.
- ALCOHOL OR DRUGS:** Soaking in hot water will intensify or exaggerate the effects of alcohol and most drugs. The use of alcohol or drugs could make one unable to get out of the Float Pod or cause unconsciousness and drowning. It is recommended that you avoid consuming alcohol or drugs before or while using a Float Pod.
- TIME LIMITS:** Always observe a reasonable time limit and temperature while using your Float Pod. Remind family and guests of these limits.
- WATER TEMPERATURE:** The Float Pod should optimally be operated at 93.5°F. Temperatures should not exceed 95°F (35°C). People with any health condition, including pregnancy, should consult their physician prior to use.
- SALT CONTENT:** The Float Pod should be kept at an ideal salinity level of 1.26 to 1.3 specific gravity. This can be measured with a hydrometer. In order to maintain this range it is recommended that Magnesium Sulfate or Epsom Salt be added daily or weekly. In the US it is recommended that a USP Grade of Epsom Salt be used for the Float Pod. The Float Pod requires approximately 6lbs of Salt per Gallon of water.
- CPR:** It is a good idea to have at least one responsible person who is trained in artificial respiration and/or cardiopulmonary resuscitation (CPR).

## CHILDREN'S SAFETY AND YOUR FLOAT POD

- ACCIDENTAL DROWNING:** Extreme caution must be exercised to prevent unauthorized use or access to the Float Pod by unsupervised children. The Float Pod lid must remain closed when not in use.
- CHILD ACCESS:** Never allow a child to stand or play on or around the Float Pod..
- CONDUCT:** There should be no playing, wrestling or rough-housing in, on or around the Float Pod. Never allow children to walk around the Float Pod, jump or dive into the Float Pod.

## RESPONSIBILITY

The responsibility of proper maintenance, conduct, use, and above all safety is all in your hands as a Float Pod owner. The responsibility of informing your guests and their children of Float Pod rules and safety concerns is also your responsibility and a very important prevention tool.



# USING CHEMICALS

The chemicals needed for your Float Pod help make it clean, disinfected and more attractive to use. But remember, these chemicals are potentially dangerous and may present some hazards if not used properly. Carefully follow the manufacturer's instructions for the use and storage of chemicals.

In general, here are some tips for chemical usage and storage: Before using chemicals, read the labels and directions carefully. Follow label use instructions.

Keep all chemicals out of the reach of children.

## Storage & Usage of Your Float Pod Chemicals

- Chemicals for test kits should be replaced every year.
- Keep the original lids on all chemical containers and make sure the lids are closed tightly when not in use.
- Do not stack different chemicals on top of one another.
- Store your Float Pod chemicals in a clean, cool, dry and well ventilated area preferably off the floor to prevent contamination from other materials. Keep them away from chemicals and equipment used for garden and lawn maintenance.
- Do not store your Float Pod chemicals where other flammable items may mix with them. For example, a mixture of these chemicals and fertilizer can cause a fire or explosion.
- Keep liquid chemicals away from dry chemicals. Keep apart chemicals which are different forms of oxidizing compounds. Physically separate all different forms of chemicals.
- Do not inhale dust or fumes from any chemicals. If necessary, use proper protective devices for breathing, handling and eye protection. Promptly wash off any chemical residues which get on your skin.
- Never reuse old chemical containers unless specified by the manufacturer.
- If you have any questions regarding safe handling, storage or use of Float Pod chemicals, contact the manufacturers.
- Wash out empty disinfectant containers before disposing to eliminate danger of fire, explosion or poisoning
- Carefully clean up any spilled chemicals with large amounts of water, to dilute and wash away the chemicals. Disinfectants and pH adjustment chemicals can usually be sent to the sewer with large quantities of water, since they are intended for use at low levels.

# USING CHEMICALS

## Storage & Usage of Your Float Pod Chemicals (Continued...)

- Always add the chemicals directly to the Float Pod, either in a suitable feeder, distributed across the surface of the water or diluted and poured into the water. Always add chemicals to water. Never add water to chemicals. Follow label use instructions.
- When preparing water solutions for feeder application, pour the chemical slowly into the appropriate amount of water, stirring constantly to provide mixing and dilutions.
- Never add chemicals to the Float Pod water while people are using the facility/spa.
- Test the water in your Float Pod with a reliable test kit on a schedule. Add the necessary chemicals according to the test results and the manufacturer's instructions. In the hot water environments of Float Pods, disinfectants may rapidly break up and spread out, requiring more frequent water testing. Follow your manufacturer's instructions in this regard. The more people who use the facility/pod, the more frequently you should test the water.

- **Notes:** You must come up with your own schedule, but in general we recommend a weekly chlorine shock (do NOT use granules, but instead use diluted liquid). Wait 24 hours before resuming use. Check residual levels are safe to resume using the Float Pod.
- Spa Enzymes and Clarifiers break down body oils, lotions and other substances entering the Float Pod from the skin or hair of floaters.
- The Float Pod filters 24/7 when not in use and Ozone and UV are constantly in operation.

# INITIAL INSTALL AND START UP

1. Put top of Float Pod securely onto base. Insert bolts and tighten accordingly.
2. Put door hinge on. Make sure pull bolt is all the way through. Check hinge screws are tight.
3. Caulk inside of pod, where top and base meet, with white 100% silicon. This keeps moisture out and also finished the look of the Float Pod. **Let silicon set and wait at least 3 hours before continuing to the next step.**
4. Make sure Pod is NOT plugged into wall disconnect box. Plug in and/or wire low voltage equipment. (3 wire Intercom, 3.5mm Lobby Audio, RJ45 plug for Lobby control or WIFI adapter)
5. Fill tub area with 1,200lbs of Epsom Salt.
6. Begin adding hot water from a garden hose.
7. Getting into the Pod with a bucket and adding salt to the bucket will help the process. Keep adding salt to the bucket and keep hot water running into the bucket. Begin agitating Salt.

NOTE: Filling with water through the Skimmer Basket can help prevent an airlock in your circulating pump. Begin doing this once water is approaching fill line.

8. Once your water meets the fill line, stop filling with water. (About 3/4 the way up on the surface skimmer.)
9. Plug Pod in and turn power on at your Disconnect Box.
10. Turn thermostat(s) **OFF** - at Equipment System in cabinet.
11. Be sure **ON/OFF** switch is **ON** at Equipment System in cabinet.
12. Check to be sure the Circulating Pump is operating (water flowing from small jets in foot-well). One jet may be the Ozonator Jet and not appear to be working. You can also check the tube coming out of the small Circulating Pump, (at Equipment System inside of the cabinet) and going into the Heater Housing, to see if the water is flowing properly.
13. Run jets for 2-3 minutes with the heat still in the **OFF** position.

# INITIAL INSTALL AND START UP cont...

14. Check to be sure there are no air locks:
  - a. Filter (loosen Bleeder Valve on top of filter until water runs out)
  - b. Circulating Pump

*(**WARNING** Air locks can cause instantaneous heater failure, known as "dry firing", and this is **not** covered under warranty)*
15. Check for water leaks at Couplers on Pumps-hand tighten if necessary.
16. Turn thermostat(s) **OFF** - at Equipment System in cabinet.
17. Periodically check temperature of water to until desired temperature is reached.  
Reduce thermostat setting until **HEAT** light turns off.
18. Add initial chemicals according to the "Refilling Your Float Pod" section of this manual.
19. Do Timely Maintenance as directed, and **ENJOY YOUR FLOAT SPA!**
20. Contact your local Royal Spa Representative to answer any questions that you may have.

# WATER MAINTENANCE

## **Every Float Pod is Different: Important Chemistry Information**

Every pod is different and maintaining a proper water chemical balance is not an exact art. Different pods will require different maintenance intervals and chemical amounts. Water balance is maintained within a safe range that is friendly to both pod and the spas bathers/occupants.

Many factors effect the maintenance, chemical amount, and frequency of chemical balancing of a pod. Factors that greatly effect pod maintenance and chemicals include: pod size or gallons, source and quality of water, environment around pod, what is tracked into pod water, cleanliness of bathers, number of bathers, frequency of use, temperature of water, drain and refill intervals, and overall quality of maintenance.

The chemical and water balancing information provided in this book is designed to give our customers a base line or starting point. The information may not be perfect or exact for your application but will help give you a good starting point and general idea of what needs to be done to properly maintain your spa. Any of the information can be modified or fine tuned by a qualified Royal Spa professional to match your particular Float Pod needs.

## **In many areas of the country, the pH & Total Alkalinity is very HIGH.**

### **How To Bring Your pH & Alkalinity Down:**

1. Add 1 ounce of pH/Alkalinity Down per 100 gallons of spa water (500 gal. = 5 oz.) and run the jets to mix and dissolve for several minutes.
2. (Approximately 15 minutes later) Re-check the spa water and if either the pH or Alkalinity is still High, add 1/2 ounce of pH/Alkalinity Down per 100 gallons of spa water (500 gal. = 2 to 2.5 oz.) and run the jets to mix and dissolve for several minutes.
3. Repeat step (2) until both the pH and Alkalinity are within the ideal ranges of your testing kit.
4. Re-check the spa two days later and adjust again if needed.
5. Do not add pH Up and pH Down in the same day. This will help avoid pH Bounce.
6. Log the number of ounces used to balance your hot tub water as you balance it the first time so that in the future you can add that amount all at once at time of fill up to achieve balanced water much quicker. (For Example: If it takes 10 ounces over the first day or two to balance the water, then add 10 ounces all at once the next time you refill your spa.)

### **Special Note:**

It is extremely important that you check and re-tighten your pump couplers several times during the initial weeks of ownership of your new Float Pod. We have done this during the delivery process; but, the couplers may need to be re-tightened after the initial fill and warm up of the water.

**Additionally, You should check the couplers often to insure they stay tight. If you have any questions please call your local dealer or 1-800-541-1248.**

# FLOAT POD CHEMISTRY

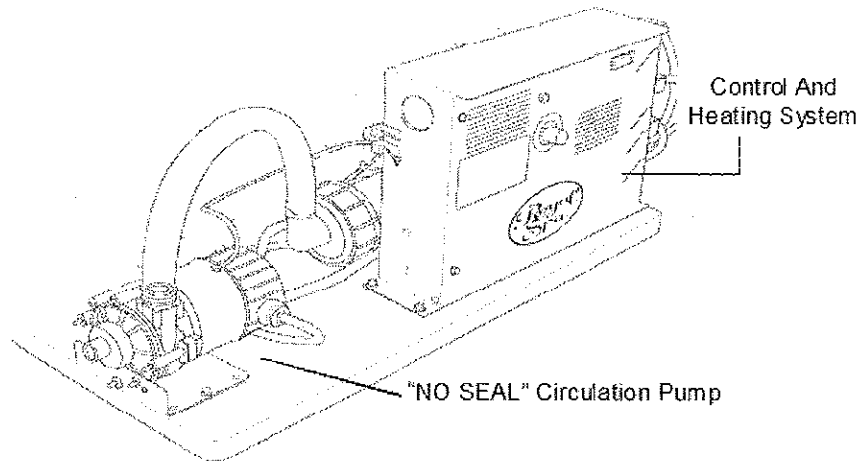
## THINGS TO REMEMBER:

- Clean your **Filter** regularly. (Every 4-6 weeks) Clean your filter by spraying off with your garden hose or under the shower. Cleaning your filter with **Spray and Rinse** will help eliminate oil and grime. You may rotate two filters exchanging the dirty filter with a clean one. If a garden hose is not available, you can run your filter through the dishwasher (DO NOT USE SOAP OR DRY BY HEAT). It is recommended that you clean your filter after the first week of operation.
- Clean your **Skimmer Basket** regularly. (Every 1-2 weeks) Unscrew the basket, pull it out and remove any foreign debris. It is good practice to turn off your Float Pod before removing your Skimmer Basket. (See Page 15)
- It is recommended to rinse all floaters before a Float Session to remove unwanted body oil or lotions.
- Tighten the **Pump Couplers** in the equipment area. They can loosen over time from vibration causing a small drip near the pump. Hand tighten only. Loose couplers are not covered under warranty. (See Page 14)
- Bleed the excess air from the filter **Bleeder Valve** after cleaning the filter or changing the water. (See Page 15)
- **Filling the Float Pod** from inside the Filter Housing or from inside the Skimmer Basket opening can help prevent an air-lock in the Circulating Pump. Keep your **pH & Alkalinity** levels of the water in the proper range to avoid damage to the spa's components. Improper levels may cause damage to the spa that is not covered by your warranty. If your pH and Alkalinity level are high, add pH/Alkalinity-Down. This will lower the levels at the same time. If your pH level and Alkalinity level are low, add pH/Alkalinity-Up. This will raise the levels at the same time. It is very important to keep levels up, if the pH is low for a long period of time the water becomes acidic and will corrode the components on your Float Pod. It is important to keep both the pH and Alkalinity levels balanced because they help to hold each other within desired limits. Proper pH and Alkalinity levels help other chemicals used in your Float Pod to be more effective.
- **High Bromine and High Chlorine** levels may cause damage to the Float Pod that is not covered by your warranty. Contact your authorized Royal Spa Representative for instructions on lowering high levels of Bromine or Chlorine. It may not be necessary to put Bromine or Chlorine into your Float Pod every week depending on use.



# Float Pod Mechanical

## Equipment Identification



### Command Center:

The Float Pod comes with our Command Center controller. This houses a digital temperature reader and can be set to 1/10th of a degree. For Commercial Float Pods different lobby controls will controls different Pod features. The Thermostat control is designed for ease of use and maximum durability. Simply push the Thermostat up/down to the approximate location of the desired temperature and adjust accordingly for the fine tuning.

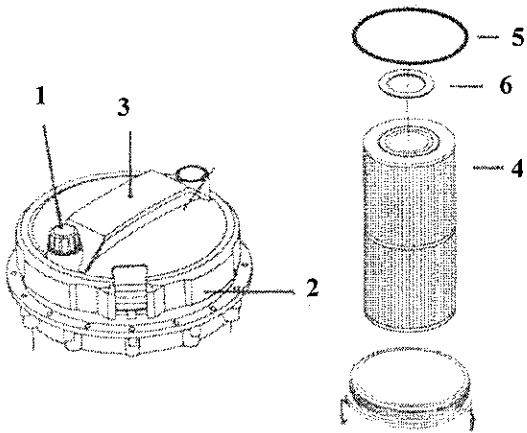
### Indicator Lights:

- READY = Indicates the spa water temperature is at or above the thermostat 's set position.
- HEAT = Indicates the spa water temperature is below the thermostat 's set position and the heater is "ON " to bring the temperature up.

### Commercial Sanitation:

Ultra Pure Ozone Generator and Trident UV are built into Commercial Float Pods.





### REMOVING YOUR FILTER (with power off)

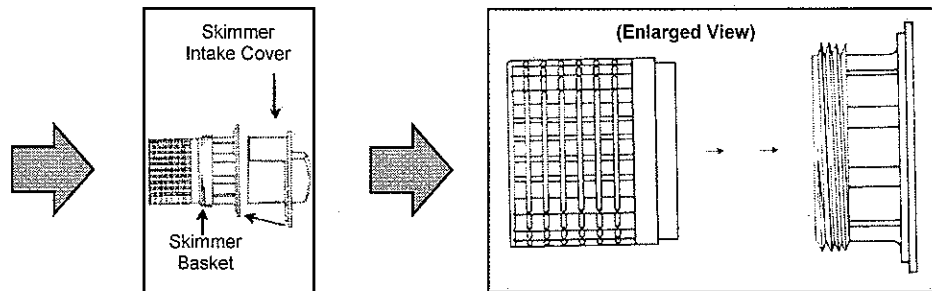
- Bleed air from filter housing and turn knob (1) counter-clockwise.
- Rotate filter ring (2) counter-clockwise and remove.
- Pull up on filter lid handle (3) and remove (4) filter to clean or replace. Check O ring (5) for damage.

### REPLACING YOUR FILTER (with power off)

Replace ring (6), and reverse above steps turning filter ring (2) clockwise until hand tight. Turn power on - when water comes out of bleed knob (1), close, turning clockwise hand tight.



**Float Pod Surface Skimmer:** This device is located at the water level of the Float Pod. It pulls debris from the surface, pre-filters the water through the "Skimmer Basket", and then pumps the water through the fiber filter. The Skimmer Basket should be cleaned about once every two (2) to four (4) weeks. The basket is removed for cleaning by un-threading the Skimmer Retainer and removing the basket.



### DRAINING YOUR POD

Draining your pod is an easy procedure. Place one end of your garden hose in a drain or in your yard, and place the other end against a water jet. Turn on the jets and let it push water through the hose until it produces a stream out of the hose. At this point, put the jet end of the hose in the bottom of the foot-well of your pod, and it will siphon the water down to that point. **Be sure to turn off the jets and power after putting the hose in the foot-well.**

### CAUTION

### Epsom Salt Drain Requirements

### CAUTION

It is NOT recommended to flush 1,200lbs of Epsom Salt into a septic tank or septic system. This could disrupt localized bacteria production. Please consult with a septic system expert for more information. You may be required to drain into storage tanks should you need to drain your Float Pod.

Check with City officials about Epsom Salt into City Sewer. Royal Spa takes no responsibility for damage to septic or sewer systems.

# FLOAT POD CHEMISTRY 101

## **Water Quality Maintenance**

Maintaining the quality of the water within specified limits will enhance your enjoyment and prolong the life of the spa's equipment system and other spa components. It is a fairly simple task, but it requires regular attention because the water chemistry involved is a balance of several factors. There is no simple formula, and there is no avoiding it. A careless attitude in regard to water maintenance will result in poor and potentially unhealthful conditions for soaking and even damage to your spa. For specific guidance on maintaining water quality, consult your authorized Royal Spa dealer who can recommend the appropriate chemical products for sanitizing and maintaining your Float Pod.

## **pH Control**

pH is a measure of relative acidity or alkalinity of water and is measured on a scale of 0 to 14. The midpoint of 7 is said to be neutral, above which is alkaline and below which is acidic. In Float Pod water, IT IS VERY IMPORTANT TO MAINTAIN a slightly alkaline condition of 7.2 to 8.0. Problems become proportionately severe the further outside of this range the water gets. A low pH will be corrosive to metals in the spa equipment. A high pH will cause minerals to deposit on the interior surface of the Float Pod and its components (scaling). In addition, the ability of the sanitizers to keep the Float Pod clean is severely affected as the pH moves beyond the ideal range. That is why most all pod water test kits contain a measure for pH as well as the sanitizer.

## **Total Alkalinity**

Total Alkalinity refers to the ability of the pod water to resist a change in pH. The key purpose total alkalinity serves is to help manage or control the pH in the water. It does this by acting as a buffer so that when materials are added to a spa that would cause the pH to go up or down these changes are controlled and do not result in severe changes to pod water balance. Total alkalinity is measured in parts per million (ppm) using a total alkalinity test kit or test strip. Total alkalinity is best kept in the range of 80-120 ppm. When the value is less than 80 ppm, the water can become aggressive, and the pH can swing easily up, down and back again. If the value is higher than 120 ppm, the water can become cloudy and scale forming and the pH will tend to drift upward.

## **Sanitizing**

To destroy bacteria and organic compounds in the pod water, a sanitizer must be used regularly. Chlorine and Bromine are the two most popular sanitizers used. Shock Out is another sanitizer used that also enhances the effectiveness of Bromine and Chlorine. Many other additives are available for your pod. Some are necessary to compensate for out-of-balance water (pH/Alk Up & pH/Alk Down), some aid in cosmetic water treatment (Spa Brite & Foam Gone) and others simply alter the feel or smell of the water (Scum Out). Your authorized Royal Spa Dealer can advise you on the use of these additives.

## **Ozone Water Purifier**

Float Pods equipped with an Ozone Purifier have drastically better overall water quality. You will find that your water stays fresh and clear with significantly fewer chemicals. You will also likely be able to go longer between complete pod water changes. Most pod testing equipment recommends keeping the bromine level around 3-6 ppm. You will likely not need a level that high with a properly functioning Ozone Purifier.

# SPA CHEMICALS

<b>Metal Protector</b>	A chemical that will prevent iron or metal stains. This chemical is added to the spa water when the spa is filled for the first time or when refilled. (Recommended for weekly use.)
<b>pH/Alkalinity Down</b>	Lowers the pH of the spa water (active ingredients, sodium Bisulfate 100%).
<b>pH/Alkalinity Up</b>	Raises pH, (active ingredient sodium carbonate)& Raises total alkalinity of spa water-initial component of water balance prevents pH bounce and deterioration of spa surfaces, fittings from alkalinity.
<b>Stain &amp; Scale</b>	Stain and scale preventative and clarification eliminates water discoloration caused by mineral and scale deposits in spa water. Also helps filter remove suspended particles that cause cloudiness.
<b>Shock Out</b>	Oxidizes contaminants such as ammonia, perspiration and suntan lotion. Increases the clarity of the water and reduces eye burn. When used with chlorine, it will remove chloramines, which cause "chlorine odor" and enhance the sanitizing effectiveness.
<b>Brom-Tabs</b>	Disinfects spa water keeping it clean, clear and free of odor.
<b>Granulated Chlorine</b>	A concentrated compound prepared to destroy and control the growth of bacteria and algae in spas. Aids in spa water clarity.
<b>Scum Out</b>	An environmentally friendly water cleaner. Nature's own enzymes help eradicate grease, oil and scum build up caused by body oils, suntan oils, and other contaminants. This chemical will not affect water balance.
<b>Foam Gone</b>	An effective anti-foam agent and preventative specifically prepared for use in spas. It safely eliminates foaming from water due to high aeration and soap/detergents.
<b>Spa-Brite</b>	Specially formulated preparation that resolves clarity and refreshes murky water. It increases the efficiency of spa filters by trapping microscopic particles suspended in cloudy water.
<b>Spray &amp; Rinse</b>	Removes minerals and other debris from filter elements. Extends filter life.
<b>In Spa ration</b>	Blend of fragrance formulated especially for spas. Leaves your skin soft and moisturized has no alcohol and is water-soluble.
<b>Go Brom</b>	Develops a bromine reserve in spa water. It is used to prevent the formation of unwanted compounds when using Bromine Tabs—use on each fill of your spa.
<b>Magic Lube</b>	Silicone based lubricant and sealer formulated for use under the most adverse conditions including salt water. Extremely durable, non-hardening and non-carbonizing used on most metals, rubbers, and plastic water proof and chemical

**AVAILABLE ONLINE AT:**  
**[www.royalspa.com](http://www.royalspa.com)**



# UPHOLSTERY COLORS // POLSTERFARBEN

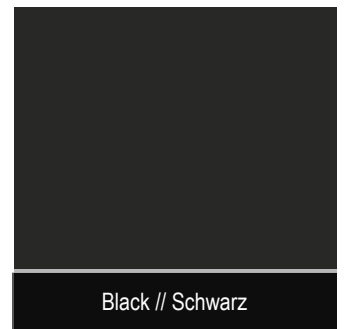
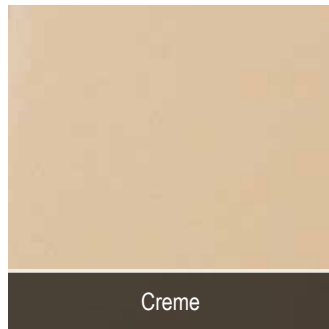
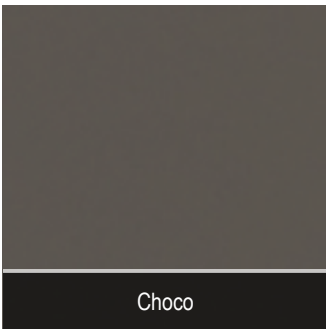
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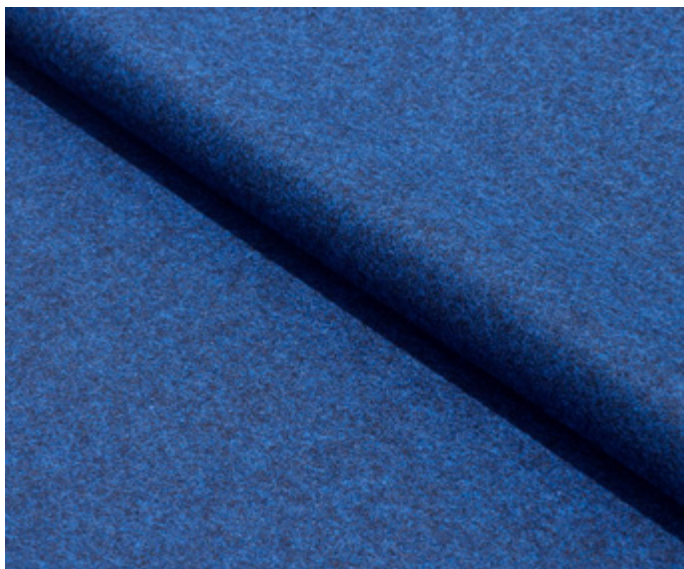
PU-Upholstery // PU-Polster

Free of charge // Ohne Aufpreis:



Extra charge // Mit Aufpreis:





## Divina Melange 3

### Abrasion

Approximately 45.000 Martindale rubs, EN ISO 12947

### Pilling

Note 3, EN ISO 12945

### Seam slippage

Warp: 2 mm Weft: 2 mm

### Lightfastness

Note 5-7 ISO 105-B02

### Fastness to rubbing

Dry note 4-5 ISO 105-X12

Wet note 3-5 ISO 105-X12

### Absorption

0.60/Class C (flat), 0.70/Class C (waved) EN ISO 354

### Airflow

678 Pa s/m EN 29053

### Flame resistance

AS/NZS 1530.3, BS 5852 Crib 5, BS 5852 ignition source 3, BS 5852 part 1, BS 5867 part 2 type B, EN 1021-1/2, EN 13501, C-s1, d0, glued, NF D 60 013, NFPA 260, SN 198 898 5.3 with treatment \*, UNI 9175 1IM, US Cal. Bull. 117-2013, ÖNORM B1/Q1

\* To pass this test flame retardant treatment is necessary. We are looking into more environmental friendly alternatives but for now the external finisher may use a treatment containing halogen based flame retardants

### Benefits of wool

Wool is a renewable resource

Wool is very comfortable because of its ability to absorb / give off humidity

Wool is flame retardant

Wool is biodegradable

Wool is naturally soil resistant

Wool ages with grace

### Quality benefits

Very good abrasion

Very good lightfastness

Flame retardant

Acoustic performance

### Environmental benefits

EU Ecolabel certified

Follow the EU Ecolabel dye restrictions incl. AZO dye and heavy metal restrictions

Complies with REACH regulation

### Reduced emissions

Greenguard and Greenguard Gold certified

For further information

kvadrat.dk

### Divina Melange 3

Design: Finn Sködt

Type: Upholstery

Composition: 100% new wool

Yarn type: Woollen

Binding: 4-end broken twill

Width: 150 cm

Weight: Approximately 820 g/lin.m

Repeat: None

Cleaning: Vacuuming and dry cleaning.

More info: Maintenance instruction—please see website



10 year warranty   



# kvadrat



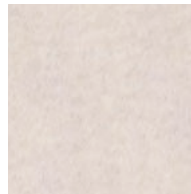
# GEIGER

## TEXTILES

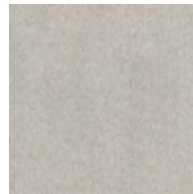
### Allusion

DESIGNED BY BASSAMFELLOWS

APPLICATION	Seating
CONTENT	60% Alpaca, 27% Wool, 13% Nylon
BACKING	Cotton
WIDTH	56"
REPEAT	None
ABRASION	95,000 Cycles, Martindale
FLAMMABILITY	CA TB 117-2013
WEIGHT	25.2 Oz Per Linear Yard
ORIGIN	Italy
ENVIRONMENTAL	SCS Indoor Advantage™ Gold Contains Bio-Based Materials FR Chemical Free Prop 65 Chemical Free REACH Compliant Healthier Hospitals Compliant Living Future Red List Compliant WELL Building Standard Compliant S – Clean with Mild, Dry Cleaning Solvent
MAINTENANCE	Alta™ Plush
CUSTOM FINISHES	
PRICE GROUP	8
NET PRICE	\$135 Per Yard



1GS01 Moonlight



1GS02 Pearl Gray



1GS03 Platinum



1GS04 Smoky Taupe



1GS05 Camel



1GS06 Swiss Red



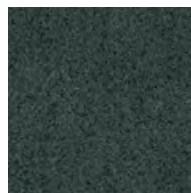
1GS07 Chestnut Brown



1GS08 Deep Cerulean



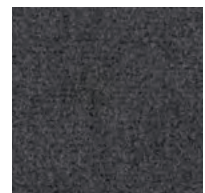
1GS09 Navy



1GS10 Black Green



1GS11 Sterling



1GS12 Anthracite

# GEIGER

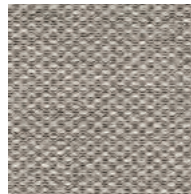
## TEXTILES

### Amenia

DESIGNED BY JOSEPH WHITE

APPLICATION	Seating
CONTENT	67% Wool, 23% Nylon, 10% Post-Consumer Recycled Polyester
FINISH	PFOA-Free Stain Resistant
BACKING	Acrylic
WIDTH	53"
REPEAT	None
ABRASION	100,000 Double Rubs, Wyzenbeek
FLAMMABILITY	CA TB 117-2013
WEIGHT	21.3 Oz Per Linear Yard
ORIGIN	United States
ENVIRONMENTAL	SCS Indoor Advantage™ Gold Contains Bio-Based Materials Contains Recycled Content FR Chemical Free Prop 65 Chemical Free
MAINTENANCE	S – Clean with Mild, Dry Cleaning Solvent
CUSTOM FINISHES	Alta; Alta Food & Beverage; Nanotex; Nanotex with Impermeable Barrier
PRICE GROUP	7
NET PRICE	\$75 Per Yard

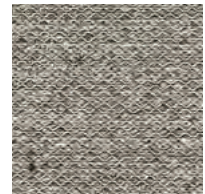
NOTE Irregular variations in color are inherent to this material



1GX01 Fog



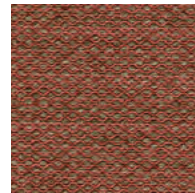
1GX02 Dark Sand



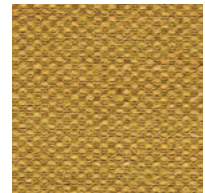
1GX03 Steel



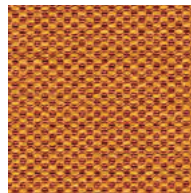
1GX04 Pewter



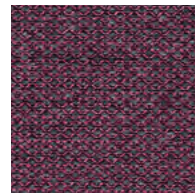
1GX05 Persimmon



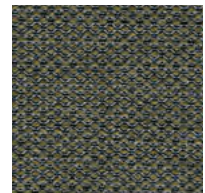
1GX06 Sunflower



1GX07 Bittersweet



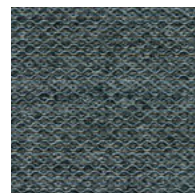
1GX08 Magenta



1GX09 Willow



1GX10 Forest



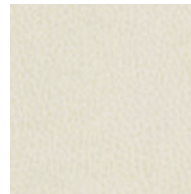
1GX11 Gray Blue

# GEIGER

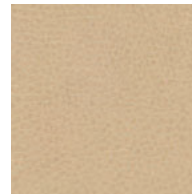
## TEXTILES

### Antico

APPLICATION	Seating
CONTENT	100% Polyurethane
FINISH	Ink and Stain Resistant
BACKING	Polyester/Cotton
WIDTH	54"
REPEAT	None
ABRASION	100,000 Double Rubs, Wyzenbeek
FLAMMABILITY	CA TB 117-2013
WEIGHT	19.5 Oz Per Linear Yard
ORIGIN	China
ENVIRONMENTAL	SCS Indoor Advantage™ Gold FR Chemical Free Heavy Metal Free Prop 65 Chemical Free REACH Compliant Healthier Hospitals Compliant Living Future Red List Compliant WELL Building Standard Compliant
MAINTENANCE	W – Clean with Water-Based Cleanser; Bleach Cleanable – Clean with 10:1 Water to Household Bleach
PRICE GROUP	4
NET PRICE	\$42 Per Yard
NOTE	Bleach Cleanable



1GM01 Cream



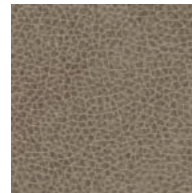
1GM02 Bone



1GM03  
Raw Sienna



1GM04 Desert



1GM05 Ash Gray



1GM06 Hunter



1GM07 Earthen



1GM08 Dark Shale

# GEIGER

## TEXTILES

### Cambrai

DESIGNED BY BASSAMFELLOWS

APPLICATION	Seating, Geiger Tackboards, Upholstered Walls
CONTENT	100% Polyester
FINISH	Antimicrobial Stain Resistant
BACKING	Acrylic
WIDTH	54"
REPEAT	None
ABRASION	100,000 Double Rubs, Wyzenbeek
FLAMMABILITY	CA TB 117-2013; ASTM E84 Unadhered, Class A
WEIGHT	24.3 Oz Per Linear Yard
ORIGIN	China
ENVIRONMENTAL	SCS Indoor Advantage™ Gold FR Chemical Free Prop 65 Chemical Free REACH Compliant
MAINTENANCE	W – Clean with Water-Based Cleanser
CUSTOM FINISHES	Alta; Alta Food & Beverage; Nanotex; Nanotex with Impermeable Barrier
PRICE GROUP	3
NET PRICE	\$33 Per Yard



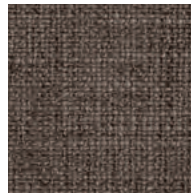
21601 Natural



21602 Khaki



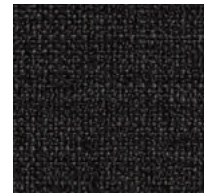
21603 Hemp



21604 Pumice



21605 Lavarock



21606 Carbon



21607 Ink



# GEIGER

## TEXTILES

### Canon

DESIGNED BY BASSAMFELLOWS

APPLICATION	Seating, Geiger Tackboards, Upholstered Walls
CONTENT	100% Polyester
FINISH	PFOA-Free Stain Resistant
BACKING	Acrylic
WIDTH	55"
REPEAT	¼" V
ABRASION	100,000 Double Rubs, Wyzenbeek
FLAMMABILITY	CA TB 117-2013; ASTM E84 Unadhered, Class A
WEIGHT	12.14 Oz Per Linear Yard
ORIGIN	United States
ENVIRONMENTAL	SCS Indoor Advantage™ Gold FR Chemical Free Prop 65 Chemical Free
MAINTENANCE	W/S – Clean with Water-Based Cleanser, or Mild, Dry Cleaning Solvent; Bleach Cleanable – Clean with 10:1 Water to Household Bleach
CUSTOM FINISHES	Alta; Alta Food & Beverage; Nanotex; Nanotex with Impermeable Barrier
PRICE GROUP	2
NET PRICE	\$25 Per Yard
NOTE	Bleach Cleanable



1DB01 Pearl Gray



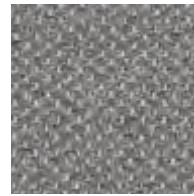
1DB02 Dune



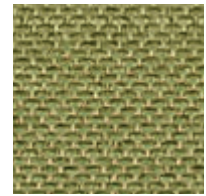
1DB03 Flax



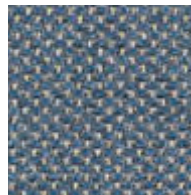
1DB04 Bluestone



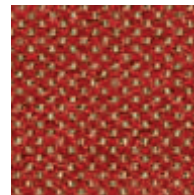
1DB05 Pewter



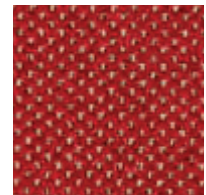
1DB06 Tourmaline



1DB07 Adriatic



1DB08 Red Hot



1DB09 Swiss Red



1DB10 Steel



1DB11 Umber



1DB12 Black

# GEIGER

## TEXTILES

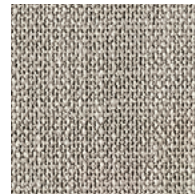
### Capri

DESIGNED BY BASSAMFELLOWS

APPLICATION	Seating
CONTENT	36% Cotton, 32% Acrylic, 24% Rayon, 8% Polyester
FINISH	PFOA-Free Stain Resistant
BACKING	Acrylic
WIDTH	55"
REPEAT	None
ABRASION	80,000 Cycles, Martindale
FLAMMABILITY	CA TB 117-2013
WEIGHT	27 Oz Per Linear Yard
ORIGIN	Italy
ENVIRONMENTAL	SCS Indoor Advantage™ Gold Contains Bio-Based Materials FR Chemical Free Prop 65 Chemical Free REACH Compliant
MAINTENANCE	S – Clean with Mild, Dry Cleaning Solvent
CUSTOM FINISHES	Alta; Alta Food & Beverage; Nanotex; Nanotex with Impermeable Barrier
PRICE GROUP	7
NET PRICE	\$80 Per Yard



17201 Snow



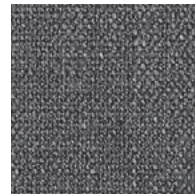
17202 Stone



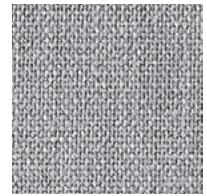
17203 Trench



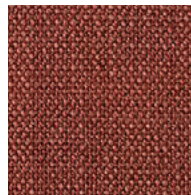
17204 Graphite



17205 Anthracite



17206 Light Silver



17207 Russet



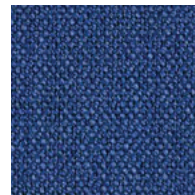
17208 Chestnut  
Brown



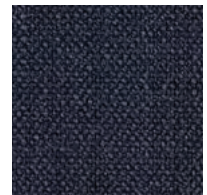
17209 Sand



17210 Sterling



17211 Cobalt



17212 Ink

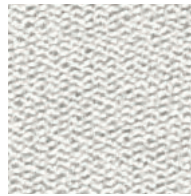
# GEIGER

## TEXTILES

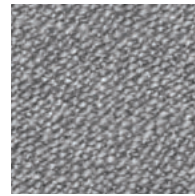
### Cheswick

DESIGNED BY BASSAMFELLOWS

APPLICATION	Seating, Geiger Tackboards
CONTENT	55% Acrylic, 45% Polyester
WIDTH	55"
ABRASION	100,000 Double Rubs, Wyzenbeek
FLAMMABILITY	CA TB 117-2013
WEIGHT	23 Oz Per Linear Yard
ORIGIN	Germany
ENVIRONMENTAL	SCS Indoor Advantage™ Gold FR Chemical Free Prop 65 Chemical Free OEKO-TEX® Certified Yarns REACH Compliant Healthier Hospitals Compliant Living Future Red List Compliant WELL Building Standard Compliant
MAINTENANCE	W/S – Clean with Water-Based Cleanser, or Mild, Dry Cleaning Solvent; Bleach Cleanable – Clean with 10:1 Water to Household Bleach
CUSTOM FINISHES	Alta; Alta Food & Beverage; Alta Workplace; Nanotex; Nanotex; Nanotex with Impermeable Barrier; PFOA-Free Stain Resistant Finish
PRICE GROUP	5
NET PRICE	\$58 Per Yard
NOTE	Bleach Cleanable



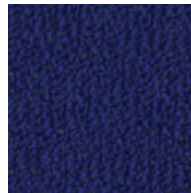
1DD01 Blanc



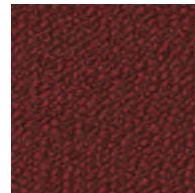
1DD02 Sterling



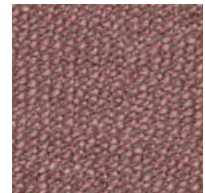
1DD03 Charcoal



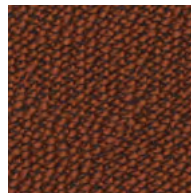
1DD04 Royal



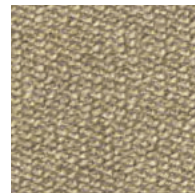
1DD05 Garnet



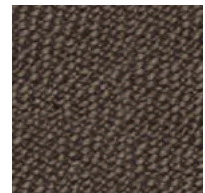
1DD06 Rosa



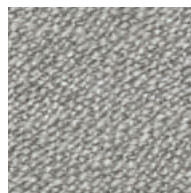
1DD07 Copper



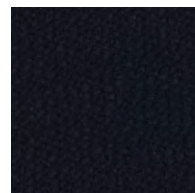
1DD08 Sand Dune



1DD09 Coffee



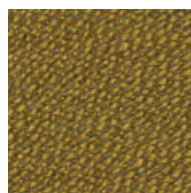
1DD10 Silver Ore



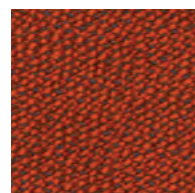
1DD11 Ink



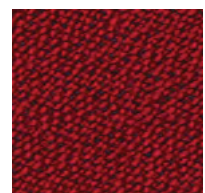
1DD12 Pine



1DD13 Ginger



1DD14 Orange



1DD15 Red



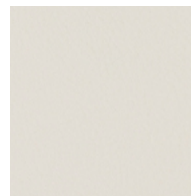
# GEIGER

## TEXTILES

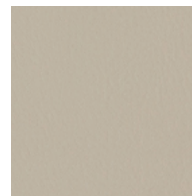
### Ecohide Classic

APPLICATION	Seating
CONTENT	100% Polyurethane
BACKING	Polyester
WIDTH	54"
REPEAT	None
ABRASION	250,000 Double Rubs, Wyzenbeek*
FLAMMABILITY	CA TB 117-2013
WEIGHT	16.5 Oz Per Linear Yard
ORIGIN	Taiwan
ENVIRONMENTAL	SCS Indoor Advantage™ Gold FR Chemical Free Heavy Metal Free Prop 65 Chemical Free REACH Compliant
MAINTENANCE	W – Clean with Water-Based Cleanser; Bleach Cleanable – Clean with 10:1 Water to Household Bleach
PRICE GROUP	4
NET PRICE	\$37 Per Yard
NOTE	Bleach Cleanable

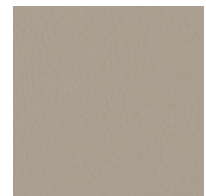
\*Results above 100,000 double rubs have not been shown to be an indicator of increased lifespan.



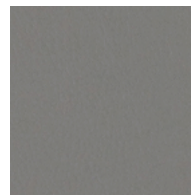
21401 Ivory



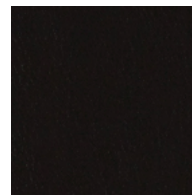
21402 Limestone



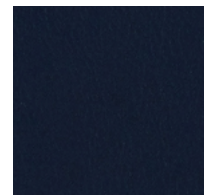
21403 Stone



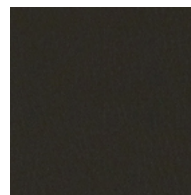
21404 Slate



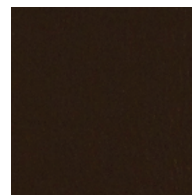
21405 Black



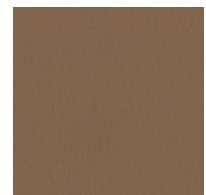
21415 Navy



21416 Grey



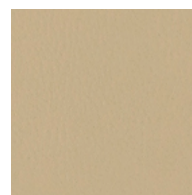
21417 Java



21420 Mink



21421 Caramel



21422 Ecru

# GEIGER

## TEXTILES

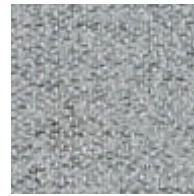
### Even

DESIGNED BY BASSAMFELLOWS

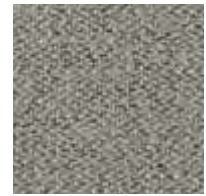
APPLICATION	Seating, Geiger Tackboards, Upholstered Walls
CONTENT	100% Polyester
FINISH	PFOA-Free Stain Resistant
BACKING	Acrylic
WIDTH	55"
REPEAT	None
ABRASION	100,000 Double Rubs, Wyzenbeek
FLAMMABILITY	CA TB 117-2013; ASTM E84 Unadhered, Class A
WEIGHT	10.48 Oz Per Linear Yard
ORIGIN	United States
ENVIRONMENTAL	SCS Indoor Advantage™ Gold FR Chemical Free Prop 65 Chemical Free
MAINTENANCE	W/S – Clean with Water-Based Cleanser, or Mild, Dry Cleaning Solvent; Bleach Cleanable – Clean with 10:1 Water to Household Bleach
CUSTOM FINISHES	Alta; Alta Food & Beverage; Nanotex; Nanotex with Impermeable Barrier
PRICE GROUP	2
NET PRICE	\$25 Per Yard
NOTE	Bleach Cleanable



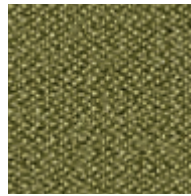
1DA01 Silver Ore



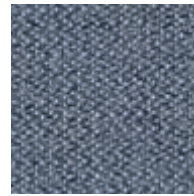
1DA02 Blue Gray



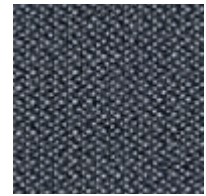
1DA03 Zinc



1DA04 Kale



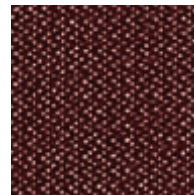
1DA05 Denim



1DA06 Lapis



1DA07 Poppy



1DA08 Sangria



1DA09 Smoke



1DA10 Black

# GEIGER

## TEXTILES

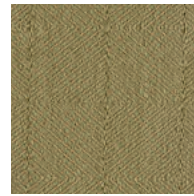
### Graphton

DESIGNED BY JOSEPH WHITE

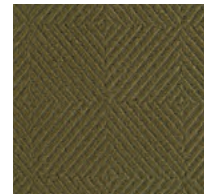
APPLICATION	Seating
CONTENT	61% Wool, 21% Cotton, 18% Nylon
FINISH	PFOA-Free Stain Resistant
WIDTH	52"
REPEAT	4½" V, 4½" H
ABRASION	100,000 Double Rubs, Wyzenbeek
FLAMMABILITY	CA TB 117-2013
WEIGHT	23.6 Oz Per Linear Yard
ORIGIN	United States
ENVIRONMENTAL	SCS Indoor Advantage™ Gold Contains Bio-Based Materials FR Chemical Free Prop 65 Chemical Free
MAINTENANCE	S – Clean with Mild, Dry Cleaning Solvent
CUSTOM FINISHES	Acrylic Backing/PFOA-Free Stain Resistant Finish; Alta; Alta Food & Beverage; Alta Workplace; Nanotex; Nanotex with Impermeable Barrier
PRICE GROUP	7
NET PRICE	\$90 Per Yard
NOTE	Irregular variations in color are inherent to this material



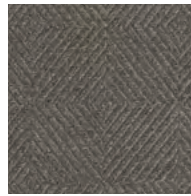
1GU01 Camel



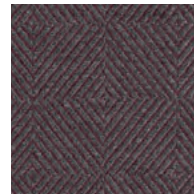
1GU02 Meadow



1GU03 Loden



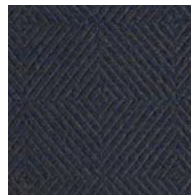
1GU04 Shale



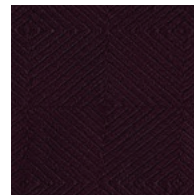
1GU05 Sangria



1GU06 Obsidian



1GU07 Atlantic



1GU08 Bordeaux

# GEIGER

## TEXTILES

### Overture

DESIGNED BY BASSAMFELLOWS

APPLICATION	Seating, Geiger Tackboards
CONTENT	36% Cotton, 26% Acrylic, 16% Rayon, 10% Nylon, 7% Wool, 5% Linen
FINISH	PFOA-Free Stain Resistant
WIDTH	54"
REPEAT	None
ABRASION	60,000 Cycles, Martindale
FLAMMABILITY	CA TB 117-2013
WEIGHT	28.35 Oz Per Linear Yard
ORIGIN	Italy
ENVIRONMENTAL	SCS Indoor Advantage™ Gold Contains Bio-Based Materials FR Chemical Free Prop 65 Chemical Free REACH Compliant
MAINTENANCE	S – Clean with Mild, Dry Cleaning Solvent
CUSTOM FINISHES	Acrylic Backing/PFOA-Free Stain Resistant Finish; Alta; Alta Food & Beverage; Alta Workplace; Nanotex; Nanotex with Impermeable Barrier
PRICE GROUP	6
NET PRICE	\$70 Per Yard



1GF01 Fawn



1GF02 Fog



1GF03 Earthen



1GF04 Dusk



# GEIGER

## TEXTILES

### Pristina

DESIGNED BY BASSAMFELLOWS

APPLICATION	Seating
CONTENT	37% Wool, 25% Viscose, 17% Acrylic, 15% Cotton, 6% Polyester
FINISH	PFOA-Free Stain Resistant
WIDTH	54"
REPEAT	None
ABRASION	85,000 Double Rubs, Wyzenbeek
FLAMMABILITY	CA TB 117-2013
WEIGHT	35 Oz Per Linear Yard
ORIGIN	Italy
ENVIRONMENTAL	SCS Indoor Advantage™ Gold Contains Bio-Based Materials FR Chemical Free Prop 65 Chemical Free REACH Compliant
MAINTENANCE	S – Clean with Mild, Dry Cleaning Solvent
CUSTOM FINISHES	Acrylic Backing/PFOA-Free Stain Resistant Finish; Alta; Alta Food & Beverage; Alta Workplace; Nanotex; Nanotex with Impermeable Barrier
PRICE GROUP	7
NET PRICE	\$94 Per Yard



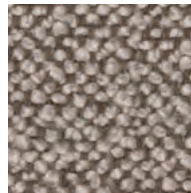
1JC01 Dove



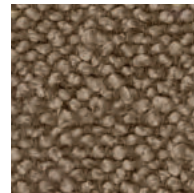
1JC02 Goldstone



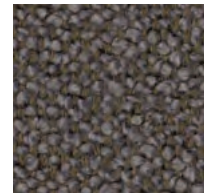
1JC03 Daybreak



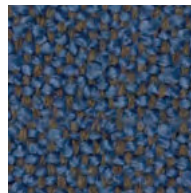
1JC04 Pumice



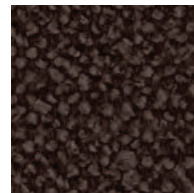
1JC05 Cappuccino



1JC06 Gunmetal



1JC07 Caspian



1JC08 Café Noir



# GEIGER

## TEXTILES

### Resca

DESIGNED BY BASSAMFELLOWS

APPLICATION	Seating, Geiger Tackboards, Upholstered Walls*
CONTENT	75% Wool, 10% Linen, 8% Nylon, 7% Alpaca
WIDTH	56"
REPEAT	None
ABRASION	40,000 Cycles, Martindale
FLAMMABILITY	CA TB 117-2013; ASTM E84 Unadhered, Class A*
WEIGHT	20.7 Oz Per Linear Yard
ORIGIN	Italy
ENVIRONMENTAL	SCS Indoor Advantage™ Gold Contains Bio-Based Materials FR Chemical Free Prop 65 Chemical Free REACH Compliant Healthier Hospitals Compliant Living Future Red List Compliant WELL Building Standard Compliant
MAINTENANCE	S – Clean with Mild, Dry Cleaning Solvent
CUSTOM FINISHES	Acrylic Backing/PFOA-Free Stain Resistant Finish; Alta; Alta Food & Beverage; Alta Workplace; Nanotex; Nanotex with Impermeable Barrier; PFOA-Free Stain Resistant Finish; Fire Retardant (FR) Finish for Upholstered Wall Panel Use
PRICE GROUP	7
NET PRICE	\$86 Per Yard

**NOTE** For upholstered wall application, due to fiber content, puddling and sagging can occur if the installation is not 24/7 climate controlled.

\*Passes ASTM E84, Unadhered Class A for Upholstered Wall application with use of Fire Retardant (FR) Finish for Upholstered Wall Panel, available for upcharge.



1AW01 Fog



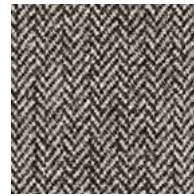
1AW02 Dune



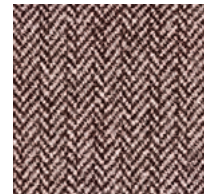
1AW03 Trench



1AW04 Flannel



1AW05 Umber



1AW06 Bordeaux

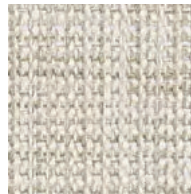
# GEIGER

## TEXTILES

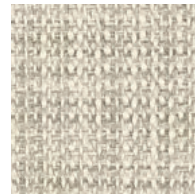
### Sommar

DESIGNED BY BASSAMFELLOWS

APPLICATION	Seating, Geiger Tackboards
CONTENT	62% Cotton, 24% Polyester, 14% Acrylic
FINISH	PFOA-Free Stain Resistant
WIDTH	55"
REPEAT	None
ABRASION	30,000 Cycles, Martindale
FLAMMABILITY	CA TB 117-2013
WEIGHT	22.27 Oz Per Linear Yard
ORIGIN	Italy
ENVIRONMENTAL	SCS Indoor Advantage™ Gold Contains Bio-Based Materials FR Chemical Free Prop 65 Chemical Free REACH Compliant
MAINTENANCE	S – Clean with Mild, Dry Cleaning Solvent
CUSTOM FINISHES	Acrylic Backing/PFOA-Free Stain Resistant Finish; Alta; Alta Food & Beverage; Alta Workplace; Nanotex; Nanotex with Impermeable Barrier
PRICE GROUP	6
NET PRICE	\$68 Per Yard



1AJ01 Cloud



1AJ02 Natural



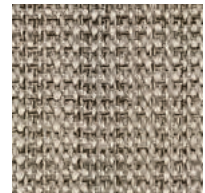
1AJ03 Light Silver



1AJ04 Oxford



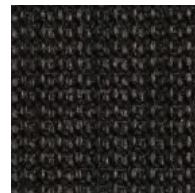
1AJ05 Sweet Tea



1AJ06 Amber



1AJ07 Mocha  
Caramel



1AJ08 Dark Roast



# GEIGER

## TEXTILES

### Staple

DESIGNED BY BASSAMFELLOWS

APPLICATION	Seating
CONTENT	100% Wool
BACKING	Cotton
WIDTH	54"
REPEAT	None
ABRASION	250,000 Cycles, Martindale*
FLAMMABILITY	CA TB 117-2013
WEIGHT	21.7 Oz Per Linear Yard
ORIGIN	Belgium
ENVIRONMENTAL	SCS Indoor Advantage™ Gold Contains Bio-Based Materials FR Chemical Free Prop 65 Chemical Free Healthier Hospitals Compliant Living Future Red List Compliant WELL Building Standard Compliant
MAINTENANCE	S – Clean with Mild, Dry Cleaning Solvent
CUSTOM FINISHES	Alta™ Plush; PFOA-Free Stain Resistant Finish
PRICE GROUP	8
NET PRICE	\$120 Per Yard

\*Results above 100,000 cycles have not been shown to be an indicator of increased lifespan.



16101 Light  
Native Umber



16102 Medium  
Native Umber



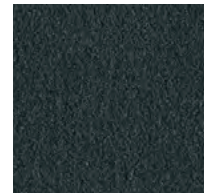
16103 Pearl Gray



16104 Light Gray



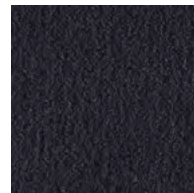
16105 Ferric Gray



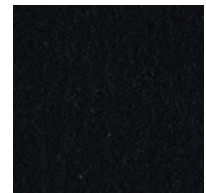
16106 Black Green



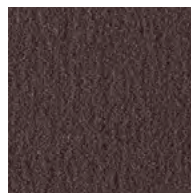
16107 Prussian Blue



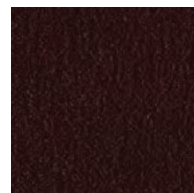
16108 Navy



16109 Burnt Umber



16110 Chestnut  
Brown



16111 Ruby Red

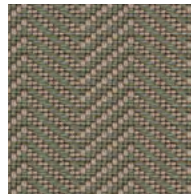
# GEIGER

## TEXTILES

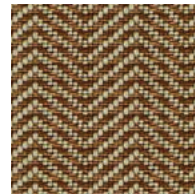
### True Herringbone

DESIGNED BY BASSAMFELLOWS

APPLICATION	Seating
CONTENT	49% Rayon, 48% Post-Consumer Recycled Polyester, 3% Nylon
FINISH	PFOA-Free Stain Resistant
BACKING	Acrylic
WIDTH	53"
REPEAT	¼" V, 1¼" H
ABRASION	100,000 Double Rubs, Wyzenbeek
FLAMMABILITY	CA TB 117-2013
WEIGHT	26.2 Oz Per Linear Yard
ORIGIN	United States
ENVIRONMENTAL	SCS Indoor Advantage™ Gold Contains Recycled Content FR Chemical Free Prop 65 Chemical Free
MAINTENANCE	S – Clean with Mild, Dry Cleaning Solvent
CUSTOM FINISHES	Alta; Alta Food & Beverage; Nanotex; Nanotex with Impermeable Barrier
PRICE GROUP	7
NET PRICE	\$80 Per Yard



22401 Olivine



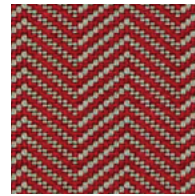
22402 Camel



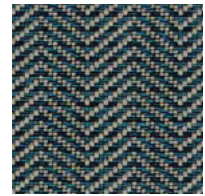
22403 Earthen



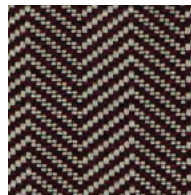
22404 Caribbean  
Sea



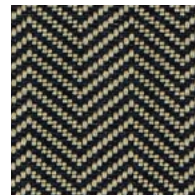
22405 Vermilion



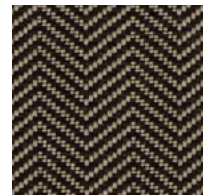
22406 Denim



22407 Bordeaux



22408 Prussian Blue



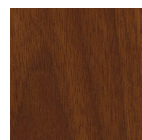
22409 Dark Sienna

# GEIGER

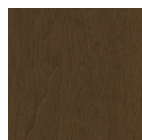
## Crosshatch® Lounge Seating

### MATERIALS

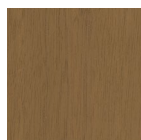
Solid Ash,  
Solid Walnut Frame  
Wood Finish



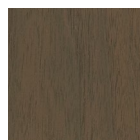
Toasted Walnut  
662, 962



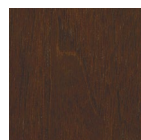
Charred Walnut  
663, 963



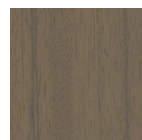
Bronzed Walnut  
664, 964



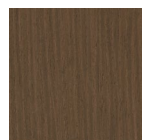
Smoked Walnut  
665, 965



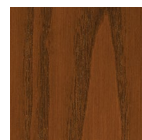
Coffee Walnut  
666, 966



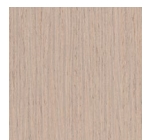
Smoked Paldao  
667, 967



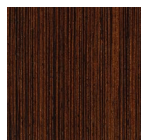
Warm Paldao  
669, 969



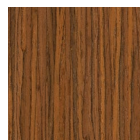
Chocolate Ash  
677, 977



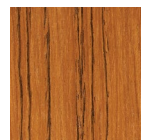
Recograin Frosty  
Ash  
66A, 69A, 96A, 99A



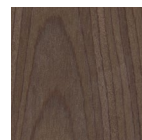
RecoGrain Wenge  
66G, 69G  
96G, 99G



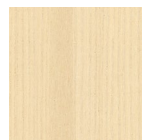
RecoGrain  
Rosewood  
68R, 69R, 98R, 99R



RecoGrain Teak  
69T, 99T



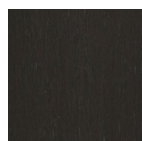
RecoGrain Walnut  
66W, 68W, 69W,  
96W, 98W, 99W



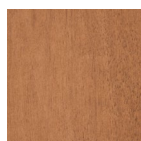
White Ash  
6A1, 9A1



Rift Oak  
6K1, 9K1



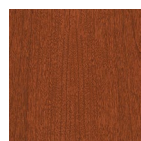
Burnt Oak  
6K6, 9K6



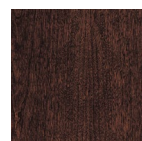
Sundance Cherry on  
Maple  
940



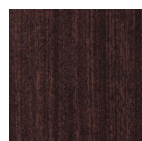
Sundance Walnut  
972



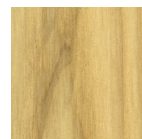
Caramel Cherry  
943



Cocoa Cherry  
946



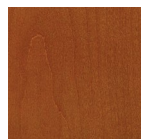
Cocoa Sapele  
956



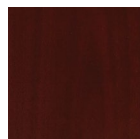
Champagne Ash  
991



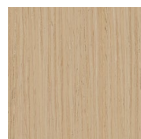
Ebony Ash  
998



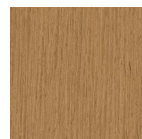
Aged Cherry  
ED



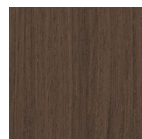
Medium Red Walnut  
EK



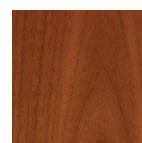
Clear on Ash  
6ET, ET



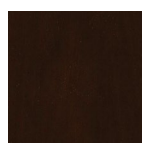
Oak on Ash  
6EU, EU



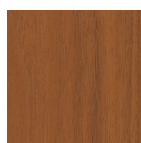
Walnut on Ash  
6EV, EV



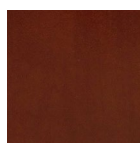
Light Brown Walnut  
G2U



Dark Brown Walnut  
G40



Natural Walnut  
GOU



Walnut on Cherry  
UX

# Perch Outdoor Collection



DESIGNED IN 2017

ASSEMBLY NOTES | REV 00

## NOTE

This product is upholstered with Sunbrella® fabrics. Sunbrella fabrics are treated to be water and stain repellant, and do not promote mildew growth. We recommend regular cleaning as mildew can grow on dirt and dust embedded in the fabric.

## CLEAN

Vacuum your upholstery regularly, this will help prevent dirt and dust from becoming embedded in the fabric. To remove minor wrinkles, we recommend using an iron on the synthetic setting.

## SPILLS

Act quickly with spills. Blot the spill with a clean white cloth or paper towel. Never rub the surface. Apply a solution of mild dish soap and water to the surface containing the spill. Rinse the fabric surface thoroughly to remove any residue, working from seam to seam. Air Dry. Consult a commercial cleaning specialist for removal of stubborn stains.

## MOLD AND MILDEW STAINS

Mildew can grow on dirt and dust embedded in the fabric. Before cleaning we recommend moving the furniture piece to a safe work space or covering the surrounding floor. To remove mold or mildew stains we recommend applying a solution of 1 cup bleach and ¼ cup mild dish soap per 1 gallon of water. Allow the solution to set for up to 15 minutes. Clean the entire surface with a soft sponge and rinse thoroughly to remove any residue, working from seam to seam. Air dry completely before using.

## AVOID

Avoid placing heavy or sharp objects on the furniture surface for long periods of time; this can cause permanent surface indentations. For snags in the fabric, tuck loose threads into fabric or carefully push to reverse side. Never pull out or cut off loose threads. Do not use a fabric steamer to remove wrinkles, this can damage the fabric.

## MAINTAIN

Weathering and color variation over time is natural for teak outdoor furniture. For best results, we recommend the following care: Wipe spills with a clean dry cloth, cover furniture in the off-season, and store indoors during winter months. Store cushions separately from furniture to help prevent staining.

## PROTECT

To protect and revive weathered furniture, it is recommended to seal teak furniture. Water based sealants are most effective on bare wood, consult with your local hardware professional to select the sealant best suited for your outdoor furniture.



## **SECTION 09 50 00**

### **09 54 46 FELTWORKS™ Blades (Ebbs & Flows) Acoustical Panels**

#### **PART 1 - GENERAL**

##### **1.1 RELATED DOCUMENTS**

Drawings and general conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section.

##### **1.2 SUMMARY**

a) Section Includes:

1. Non-Woven layered and formed Polyester felt fiber ceiling panels
2. Wire hangers, fasteners, main runners, cross tees, wall angle moldings and accessories.

b) Related Sections:

1. Section 09 53 00 - Acoustical Ceiling Suspension Assembly
2. Section 09 20 00 - Plaster and Gypsum Board
3. Section 09 22 16 - Non-Structural Metal Framing
4. Section 01 81 13 - Sustainable Design Requirements
5. Section 01 81 19 - Indoor Air Quality Requirements
6. Divisions 23 (15) - HVAC
7. Division 26 (16) Sections - Electrical Work

c) Alternates

1. Prior Approval: Unless otherwise provided for in the Contract documents, submit proposed product substitutions no later than TEN (10) working days prior to the date established for receipt of bids. Acceptability of a proposed substitution is contingent upon the Architect's review and acceptance. Approved products will be set forth by the Addenda. If a substitution is included in a Bid and is not approved by an Addendum, the specified products shall be provided as in place of the substitute without additional compensation.
2. Submittals, which do not provide adequate data for the product evaluation, will not be considered. The proposed substitution must meet all requirements of this section, including but not necessarily limited to, the following: Single source materials suppliers (if specified in Section 1.5); panel design, size, composition, color, and finish; suspension system component profiles and sizes; compliance with the referenced standards.

### 1.3 REFERENCES

- a) American Society for Testing and Materials (ASTM):
  - 1. ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
  - 2. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
  - 3. ASTM E580 Application of Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels in Areas Requiring Seismic Restraint.
  - 4. ASTM C423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
  - 5. ASTM E795 Standard Practices for Mounting Test Specimens During Sound Absorption Tests
  - 6. International Building Code
  - 7. ASHRAE Standard 62.1 2004 Ventilation for Acceptable Indoor Air Quality
  - 8. California Department of Public Health CDPH/EHLB Emission Standard Method Version 1.2 2017
  - 9. California Green Building Standards Code Cal Green Title 24
  - 10. NFPA 70 National Electrical Code
  - 11. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures
  - 12. International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components
  - 13. LEED - Leadership in Energy and Environmental Design is a set of rating systems for the design, construction, operation, and maintenance of green buildings
  - 14. Underwriters Laboratories Green Guard
  - 15. International Living Building Challenge

### 1.4 SUBMITTALS

- a) **Shop Drawings:** Provide layout including panel type and components used in the assembly of the ceiling. Show locations of items that are to be coordinated with the ceiling.
- b) **Installation Instructions:** Submit manufacturer's installation instructions as referenced in Part three, Installation.
- c) **Samples:** Minimum 6 inch x 6 inch sample of the colors selected in the ceiling design, include manufacturer sample of suspension components.
- d) **Product Data:** Submit manufacturer's technical data for each type of ceiling unit and suspension system required.



- e) **Certifications:** Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards.
- f) **Non-Conformance:** All products not conforming to the requirements of this specification and or the manufacturer's published values are to be disposed. The Contractor performing the work will replace with approved product at their expense.

## 1.5 QUALITY ASSURANCE

- a) Single-Source Responsibility: Provide ceiling panel units and suspension components by a single manufacturer.
- b) Fire Performance Characteristics: Identify ceiling components with appropriate markings of applicable testing and inspecting organization.
  - 1. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with Class A products.
    - i. Flame Spread: 25 or less
    - ii. Smoke Developed: 450 or less
- c) Fire Sprinklers: Ceiling systems may obstruct or Skew the planned water distribution pattern of fire sprinkler. In addition to creating a possible delaying or accelerating the activation of the sprinkler of fire detection system. Consult with a fire protection engineer for guidance.
- d) Coordination of Work: Coordinate ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- a) Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
- b) Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.
- c) White gloves recommended for handling to avoid marring, especially on light color panels.

## **1.7 PROJECT CONDITIONS**

- a) Space Enclosure:
  - I. HumiGuard Plus Ceilings: Building areas to receive ceilings shall be free of construction dust and debris. Products with HumiGuard Plus performance and hot dipped galvanized steel suspension systems can be installed up to 120°F (49°C) and in spaces before the building is enclosed, where HVAC systems are cycled or not operating. Cannot be used in exterior applications where standing water is present or where moisture will come in direct contact with the ceiling.

## **1.8 WARRANTY**

- a) Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period.
- b) Warranty Period:
  - I. Acoustical panels and Suspension: One (1) year from date of substantial completion
- c) The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

## **1.9 SUSTAINABLE MATERIALS**

- a) The GREENGUARD Certification Program gives assurance that products designed for use in indoor spaces meet strict chemical emissions limits, which contribute to the creation of healthier interiors. GREENGUARD Certified products meet stringent chemical emissions requirements, such as being screened for more than 10,000 volatile organic compounds (VOCs).
- b) Health Product Declaration. The end use product has a published, complete Health Product Declaration with disclosure at a minimum of 1000ppm of known hazards in compliance with the Health Product Declaration open Standard.
- c) Declare Label. The end use product has a published Declare label by the International Living Future Institute with disclosure of 100 ppm with a designation of Red List Free or Compliant (less than 1% proprietary ingredients).
- d) Low Emitting products with VOC emissions data. Preference will also be given to manufacturers that can provide emissions data showing their products meet CDHP Standard Method v1.2 (Section 01350).
- e) Life cycle analysis. Products that have communicated lifecycle data through Environmental Product Declarations (EPDs) will be preferred.
- f) Products meeting LEED V4 requirements.

## 1.10 MAINTENANCE

- a) Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.
  - 1. Ceiling Units: Furnish quality of full-size units equal to 2.0 percent of amount installed.
  - 2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 1.0 percent of amount installed.

*Attention Design Professional please edit Part 2 based on your project needs. Select product attributes and acceptable product item(s) that fit with the requirements of the FELTWORKS Blades selected for your project. Delete all items from the specification that do not relate to your project needs. Please refer to the Armstrong website ([Click here to link to the Armstrong Ceilings website.](#))*

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- a) Basis of Design FELTWORKS Blades:
  - 1. Armstrong World Industries, Inc.
- b) Suspension Systems:
  - 1. Armstrong World Industries, Inc.

### 2.2.0 CEILING UNITS

- a) Ceiling Panel:
  - 1. Surface Texture: Soft
  - 2. Composition: Non-woven layered and formed Polyester felt (PET) fiber
  - 3. Color: Cotton, Whisper, Flannel, Smoke, Shadow, Midnight, Wheat, Mocha, Iris, Buttercup, Tangerine, Apple, Highland, Elderberry and Celestial
  - 4. Edge Profile: Square
  - 5. Light Reflectance (LR) Cotton Panel: ASTM E 1477; 0.80
  - 6. Material Ingredient Transparency: Health Product Declaration (HPD); Declare Label
  - 7. Green Guard Gold Certified
  - 8. Sizes (*Select appropriate panel size*):
    - i. 6533KEF0001\_\_ 96" Ebbs & Flows Blades Kit Includes 6 unique shapes – 4 of each – 24 pcs per kit Varies x 96" x 3/8"
    - ii. 6533KEF0002\_\_ 48" Ebbs & Flows Blades Kit Includes 12 unique shapes – 2 of each – 24 pcs per kit Varies x 48" x 3/8"

- iii. 6533KPV0001\_\_ 96" Peaks & Valleys Blades Kit Includes 12 unique shapes – 2 of each – 24 pcs per kit Varies x 96" x 3/8"
- iv. 6533KPV0002\_\_ 48" Peaks & Valleys Blades Kit Includes 6 unique shapes – 4 of each – 24 pcs per kit Varies x 48" x 3/8"
- v. Customer Blades Rectangular Vertical Hook Custom Blades Available
  - 1. Length 28"- 96"
  - 2. Depth 5"- 16"
- 9. Acoustical Performance is tested per ASTM C423 and mounted in accordance with ASTM E795. NRC of 0.85 based on E-400 mounting\*
- 10. Flame Spread: Class A
- 11. Dimensional Stability: HumiGuard Plus.
- 12. Acceptable Product: FELTWORKS Blades Ebbs & Flows as manufactured by Armstrong World Industries.

\*Spacing of blades will impact acoustical performance. For more information regarding the FELTWORKS product line, contact *Armstrong Sales Representative Name here*, contact number: 123-345-4567, email [here@armstrongceilings.com](mailto:here@armstrongceilings.com)

### **2.2.1 SUSPENSION SYSTEMS**

#### **a) Armstrong Aluminum Suspension System:**

- 1. Acceptable Product: Listed Below as manufactured by Armstrong World Industries, Inc. Items are available in custom colors; contact ASQuote@armstrongceilings.com.
  - i. Item 8230 – 96" Suspension Bar for 3/8" FeltWorks Blades connector holes on both ends
  - ii. Item 6651AB - 96" Suspension Bar End-to-End Connectors
  - iii. Item 6655 – Blades Hanging Kit – Each kit includes 4 hanging assemblies, use on kit for each suspension

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- a) Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out.
- b) Proper designs for both supply air and return air, maintenance of the HVAC filters and building interior space are essential to minimize soiling. Before starting the HVAC system, make sure supply air is properly filtered and the building interior is free of construction dust.

### **3.2 PREPARATION**

- a) Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders, and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.

### **3.3 INSTALLATION**

- a) Install suspension system and blades in compliance with the approval of the authorities having jurisdiction, and in accordance with the manufacturer's FELTWORKS Blades Installation Instructions.

### **3.4 ADJUSTING AND CLEANING**

- a) Replace damaged and broken panels.
- b) Clean exposed surfaces of ceilings panels, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage.

**END OF SECTION**



WOOD



Noce  
Walnut  
Noyer



Wengè



SCHEDA TECNICA  
TECHNICAL DATA SHEET

Articolo / Article:

Peso / Weight	UNI EN ISO 2296 - 1:2001	Gr/m²	480	±/- 10
Spessore / Thickness	UNI 4818-2	mm	1,00	±/- 0,10
Composizione / Composition		%	COT 19,5 - PES 26,3 - PU 54,2	
Altezza Rotoli / Width		Cm	138 ±/-2	
Resistenza a Trazione / Tensile Strength	UNI EN ISO 1421:2000	N/5 cm	Ordito / Along ≥500 Trama / Across ≥350	
Resistenza alla Lacerazione / Tear Strength	UNI EN ISO 4674 - 1:2005	N	Ordito / Along ≥30 Trama / Across ≥25	
Resistenza alla Cucitura / Seam Resistance	UNI 10606	N/cm	Ordito / Along 17,7 Trama / Across 40,6	
Allungamento Rottura / Ultimate Elongation	UNI EN ISO 1421:2000	%	Ordito / Along ≥15 Trama / Across ≥20	
Delaminazione Supporto / Peel Adhesion	UNI EN ISO 2411:2001	N/ 5cm	Ordito / Along ≥30 Trama / Across ≥25	
Abrasion e Wear (Martindale)	UNI EN ISO 20344:2011	Cicli / Cycles	51.200 Secco/Dry 25.600 Umido/Wet	
Flessione / Flexing Endurance	UNI 4818 -13	Cicli / Cycles	≥100.000	
Idrolisi / Hydrolysis Resistance Jungle test	ISO 1419C:1995(E)	7 giorni 70°C 95% UM	Inalterato dopo flessioni 50.000	
Solidità colore rivestimento allo Stregamento Coloring color fastness to Rubbing	UNI EN ISO 105 - X 12	Scala dei grigi Grey scale	Secco / Dry ≥4	Bagnato / Wet ≥4
Resistenza colore / Color fastness Luce artificiale / Artificial Light	UNI EN ISO 105 - B02:01	Scale del Blu / Blue scale	5 colori bianco e medi white & medium colours 7 colori scuri/dark colours	

Inflamabilità / Flammability	
Standard:	
- UNI 9175 / FA1 (11M);	- AFNOR NF P 92-503 (M2)
- IMO FTP (FTP Code Annex 1 Part 8 (1996) Imo Res A. 652 (16) (1989));	
A richiesta / on demand:	
- BS5852 2006: CLAUSE 11 (CRIB 5)	- BS 7176 / EN 1021 PARTS 1 & 2 1994
- FMVSS 302 U.S.A. Motor Vehicle Safety	- CALIFORNIA 117, SECTION E

**RACCOMANDAZIONI PER LA MANUTENZIONE E LA PULIZIA DEI MATERIALI**  
RIVESTIMENTI IN SKAY: lavare con spugna non abrasiva imbevuta di acqua e sapone neutro.  
Non utilizzare mai solventi chimici o detergenti aggressivi. Rimuovere tempestivamente ogni macchia di tintura lacca o altro prodotti per capelli. La pulizia deve avvenire nei primi secondi dalla formazione della macchia.  
ATTENZIONE: non fare accomodare clienti che indossano tessuti denim scuri (jeans) su poltrone e lavatesta rivestiti in skay chiaro. In alternativa fare indossare ai clienti un camice pulito e di colore neutro. Non è possibile eliminare le macchie di denim senza danneggiare lo skay.

**ECO-LEATHER COVERING MAINTENANCE AND CLEANING:**  
wash with a non-abrasive sponge soaked with water and neutral soap. Never use chemical solvents or aggressive detergents.  
Remove hair dyes and other hair products immediately. Clean any stains within a few seconds.  
IMPORTANT: do not allow clients wearing dark denim (jeans) to sit of chairs or wash units covered with pale coloured eco-leather.  
Alternatively, invite the clients to wear a clean or neutral coloured gown. Denim stains cannot be removed without damaging the eco-leather.

✖ Il prodotto non sopporta trattamento con cloro / *Do not treat with chlorine*

☐ Il prodotto puo' essere stirato al rovescio, ad una temperatura max di 110°C, meglio frapponendo un panno umido.  
*The product can be ironed on the back at a max temperature of 110° C, better interposing a humid cloth.*

TRA DIFFERENTI LOTTI DI PRODUZIONE, POTRANNO VERIFICARSI LIEVI OSCILLAZIONI DI TONALITA' DI COLORE E MANO, CHE COMUNQUE RIENTRANO NELLE CONSUETUDINI DI TOLLERANZA. SI CONSIGLIA PERTANTO DI NON MESCOLARE, IN FASE DI LAVORAZIONE, PEZZE APPARTENENTI A LOTTI DIVERSI.

AMONG THE DIFFERENT PRODUCTION LOTS, IT CAN HAPPEN THAT THE ARE SLIGHT VARIATIONS OF COLOR TONALITY AND TOUCH, WHICH ARE IN ANY CASE WITHIN THE TOLERANCE STANDARDS. WE THEREFORE RECOMMEND NOT TO MIX, DURING PRODUCTION, ROLLS BELONGING TO DIFFERENT LOTS.



NILO P.le G.Maletti, 1- 42019 Scandiano Re - Italia  
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NILO SPA DESIGN

SKAY&WOOD 2019



SKAY&WOOD 2019

STANDARD OPTION GREEN



SKAY STANDARD

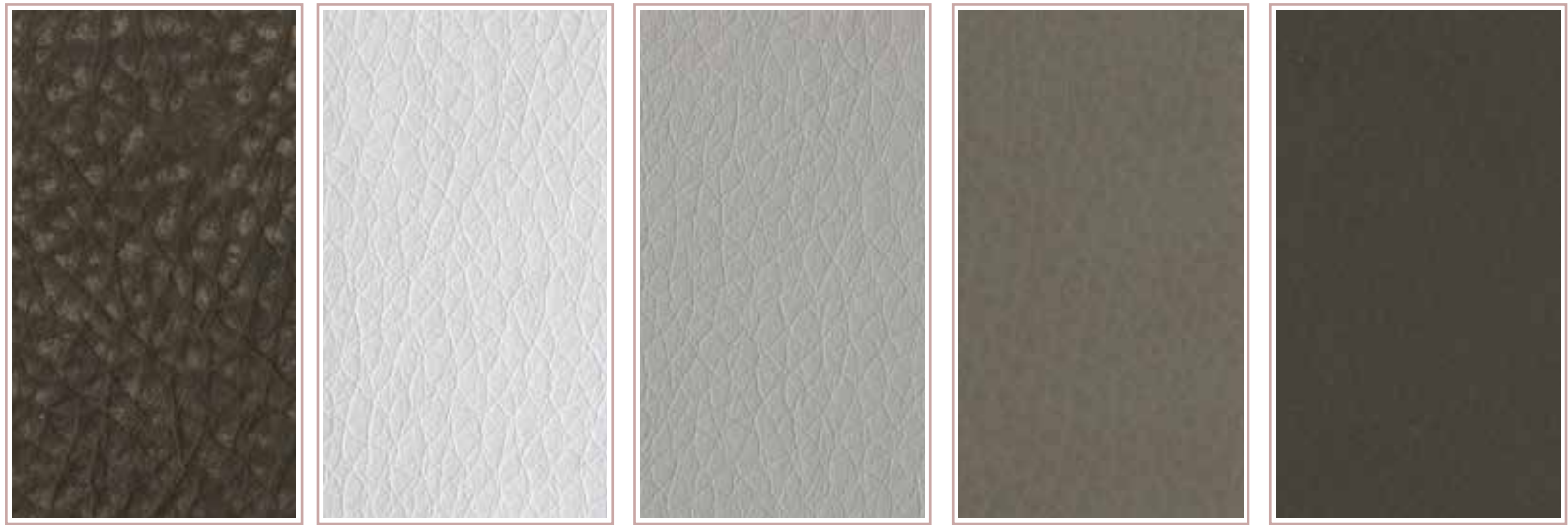


804 white      810 beige      825 light beige      826 bright beige      805 espresso



806 black      840      842

SKAY OPTION

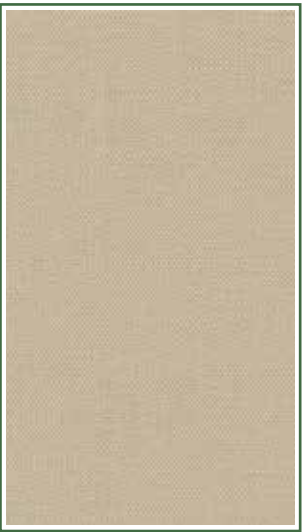


6040 brown genuine leather      818 pearl      819 light grey      822 light mud      827 dark brown



824 dark green

SKAY GREEN



823 fabric

WOOD



Rovere Sbiancato  
White Oak  
Rouvre-Chene Blanc



Rovere Chiaro  
Light Oak  
Rouvre-Chene Claire



Legno Invecchiato  
Old Wood  
Bois Vieilli

5004130  
WILLOW LEAF  
COLOR: FLAX TYPE: WALLCOVERING



WHAT MAKES THIS SPECIAL

Willow Leaf evokes the late 19th-century botanical motifs of the Aesthetic Movement. Intertwining leaves and surface print techniques give this design subtle depth.

To check stock and price, request a physical memo, reserve or place an order, sign in to your account on [www.fschumacher.com](http://www.fschumacher.com) or our iOS app, or give us a call at 1-800-673-4221

Item Width	Horizontal Repeat	Vertical Repeat	Scale
27" WIDE (69CM)	9" (23CM)	10 1/4" (26CM)	M
Match	Country of Origin	Country of Finish	Sold By
STRAIGHT	UNITED STATES OF AMERICA	UNITED STATES OF AMERICA	DOUBLE ROLL
Priced By	Yards Per Roll	Pre-Pasted	Pretrim
SINGLE ROLL	4.50	N	Y

SCHUMACHER

FABRIC WALLPAPER TRIM FURNITURE HOSPITALITY  
RUGS AND CARPETS AVAILABLE AT [PATTERSONFLYNNMARTIN.COM](http://PATTERSONFLYNNMARTIN.COM)

# Living Wall System Comparison

	Tray	Modular	One-Piece	Suite Plants' LivePanel
Indoor and Outdoor	✗	✓	✓	✓
Plant diameter	4"	Varies	Varies	4"
Free root spread: plants planted into system hardware	✗	✓	✓	✓
High degree of plant designability/texturization	✗	✓	✓	✓
Easy maintenance: plants	✓	✓	✗	✓
Easy maintenance: system hardware	✓	✓	✗	✓
System weight load (including plants and water)	10 lbs/sqft	15 lbs/sqft	18 lbs/sqft	8 lbs/sqft
Depth of hardware from underlying wall	8+"	8-13"	5+"	3.75"
Can be installed without waterproofing membrane?	✗	✗	✗	✓
Irrigation: Drip Lines (active) or Wick (passive)	Drip line	Drip Line	Drip Line	Wick
Protects from mold/bacteria AND no exposed water	✗	✗	✗	✓
No catch basin or recirculation pump required - prevents water overflow and potential flooding	✗	✗	✗	✓
Option to pre-grow plants in system hardware off-site before installation - full hardware coverage on day 1	✗	✓	✗	✓
Fully Installed Pricing (px/sqft)	\$125-\$150	\$100-\$175	\$220+	\$125+

Contact Us: +1.855.275.8111

[www.suiteplants.com](http://www.suiteplants.com)





# Plant guide

## Pothos

Latin name: *Epipremnum aureum*

- Light:** Low light requirements/grows in the shade
- Water:** Low water/high drought tolerance
- Notes:** Leaves of plant tend to spread out. Provides a good medium texture and coverage of hardware.



Jade



Golden



Marble Queen

## Philodendron

Latin name: *Philodendron scandens*

- Light:** Low-light / best in indirect sunlight
- Water:** Low-water needs/allow roots to slightly dry before rewatering
- Notes:** Leaves grow down and help to fill space. This plant is best for the top of the wall.



Brazil



Cordatum



Red Congo



Heart-leaf

## Ferns

Latin name: varies by type

- Light:** Low light requirements / grows in the shade
- Water:** Low water needs. Keep soil moist
- Notes:** Leaves tend to grow out and provide great coverage of hardware. Ferns are slower to grow but help to add texture to the walls. There are over 9,000 species of ferns.



Rabbit- foot



Bird's nest

# Plant guide

## Spider Plant

Latin name: *Chlorophytum comosum*

**Light:** Low light requirements.  
Grows in the shade.

**Water:** Low water needs. Plant has a high drought tolerance.

**Notes:** Leaves can cascade down a wall and will provide coverage of hardware. This plant is best for the top of wall.



## Nephtytis

Latin name: *Syngonium podophyllum*

**Light:** Low light requirements

**Water:** Low water needs

**Notes:** Leaves tend to grow down so this plant is best for the top of the wall. There are many varieties.



## Dracaena

Latin name: varies by type

**Light:** Low light/ normally grows in the shade

**Water:** Water to keep soil moist but never soggy

**Notes:** Leaves of plant tend to grow up. This plant should be placed towards bottom of wall. Provides good ground coverage/ spreads out.



Gold star



Lemon lime



Janet Craig

# Plant guide

## Peace Lily

Latin name: *Spathiphyllum*

**Light:** Bright, indirect light needs. More light leads to more flowering; less light leads to a green foliage look.

**Water:** Low water needs. Can tolerate underwatering better than overwatering; keep moist but not let it sit in water

**Notes:** Dark green foliage, pure white flowers. This plant is best for smaller walls.



## Calathea

Latin name: *Calathea makoyana*

**Light:** Filtered light/indoor light is best since bright light can wash out leaf colors. Grows in the shade.

**Water:** Low water needs; keep soil moist but not let it sit in water. Performs humidity/moist air

**Notes:** Leaves are evergreen with white markings that provide ground cover. This plant performs well in containers.



## Prayer Plant

Latin name: *Maranta leuconeura*

**Light:** Low/indirect light and typically grows in the shade. Too much direct light will bleach the leaves.

**Water:** Low water needs. Likes moist soil so will work well with wick system

**Notes:** Leaves tend to grow down/cascade which will help to cover hardware. Suitable for indoor and container planting.





# Plant guide

## Chinese evergreen

Latin name: *Aglaonema modestum*

**Light:** Low light needs. Requires shade.

**Water:** Moderate water needs.

**Notes:** Leaves are a simple spiral pattern of green foliage. High light turns leaves yellow.







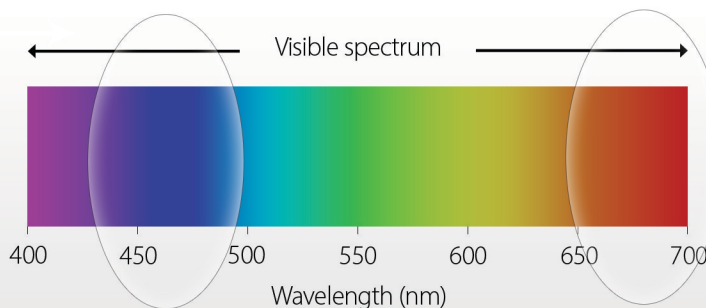
# Greenwall Lighting Guide

1

## Plants NEED Light

The absorption of light by the chlorophyll pigments in the leaves is essential to photosynthesis and plant health. Poor lighting is the #1 problem for greenwalls.

2



## Plants "See" Light Differently

Plants primarily use the blue and red parts of the visible light spectrum. That is why grow lights are typically red or purple.

## Why Are Plants Green?

The chlorophyll absorbs blue and red light and reflects green and yellow light back into our eyes. As a result, plants appear green to us!

3

## How To Measure Light Intensity

Light intensity of brightness is usually measured in foot-candles or lux. Your eyes cannot accurately measure light because they are constantly adjusting to your surroundings. You must use a light meter to measure light accurately.



A proper light meter is essential and we recommend the Leaton Digital Luxmeter (\$20) available on Amazon.com

4

## Determine How Much Light Is Needed

While there are foot candle guidelines for different plant types, light bulbs aren't sold with foot candle readings, but rather with lumen ratings. Given lumens, distance, and beam angle you can find the corresponding foot candle reading easily. For reference, we have added a table to the right.

Condition	LUX	Foot-Candles
Sunlight	107,640	10,000
Daylight	10,764	1,000
Overcast	1,076	100
Very Cloudy	108	10
Twilight	10.76	1

Plant Type	LUX	Foot-Candles
Low Light	500 - 2,500	50 - 250
Medium Light	2,500 - 8,000	250 - 750
High Light	5,500 - 10,500	500 - 1,000
Direct Sun	10,500 +	1,000 +

5

## Greenwall Specific Lighting Issues

- Greenwalls present a unique challenge because they often contain built in irrigation systems. The systems are often designed so that the plants are always being fed water.
- When there isn't enough light, plants slow down their water uptake. However, the greenwall system keeps feeding them water. Eventually the soil gets over saturated and the plants slow down even more. The plants will ultimately end up with root rot in this situation.
- This is different from potted plants as technicians can determine the frequency and amount of water when watering plants. Green wall systems often remove this flexibility.



Weak Lighting



Automatic Watering

=



Sad Plants

6

## Key Factors For Choosing Light Fixtures & Bulbs

**Beam Intensity & Angle:** Light intensity weakens over distance, so a more concentrated beam of light is better for the plants. Choose bulbs with a lower beam angle. Avoid frosted bulbs or fixtures with frosted covers, shrouds, diffusers or reflectors that dilute light intensity.

**Energy Efficiency:** Consider the total watts used to achieve a desired level of light intensity. It can actually be more efficient to use fewer higher powered bulbs rather than an array of more energy efficient bulbs. Furthermore, using fewer fixtures & bulbs also reduces installation time & cost, potential for problems and future maintenance.

**Coverage & Timing:** Every part of the greenwall needs light. High intensity light beams "reach" farther so they are needed to illuminate hard to reach areas like the bottom of the greenwall. Additionally, the lights should remain on for 12-18 hours per day, not be connected to any motion activated systems and not turn off for weekends or holidays.

## Suite Plants recommends...





...using metal halide bulbs (a type of HID bulb) because they emit a balanced spectrum of light, produce an extraordinary amount of lumens per watt and are long lasting. In certain situations, specialized high-power LEDs and high-intensity fluorescent bulbs may also work. Avoid incandescent and halogen bulbs because they produce too much heat (can burn the plants).

(see other side for fixture recommendations)





# Recommended Green Wall LED Lighting Fixtures

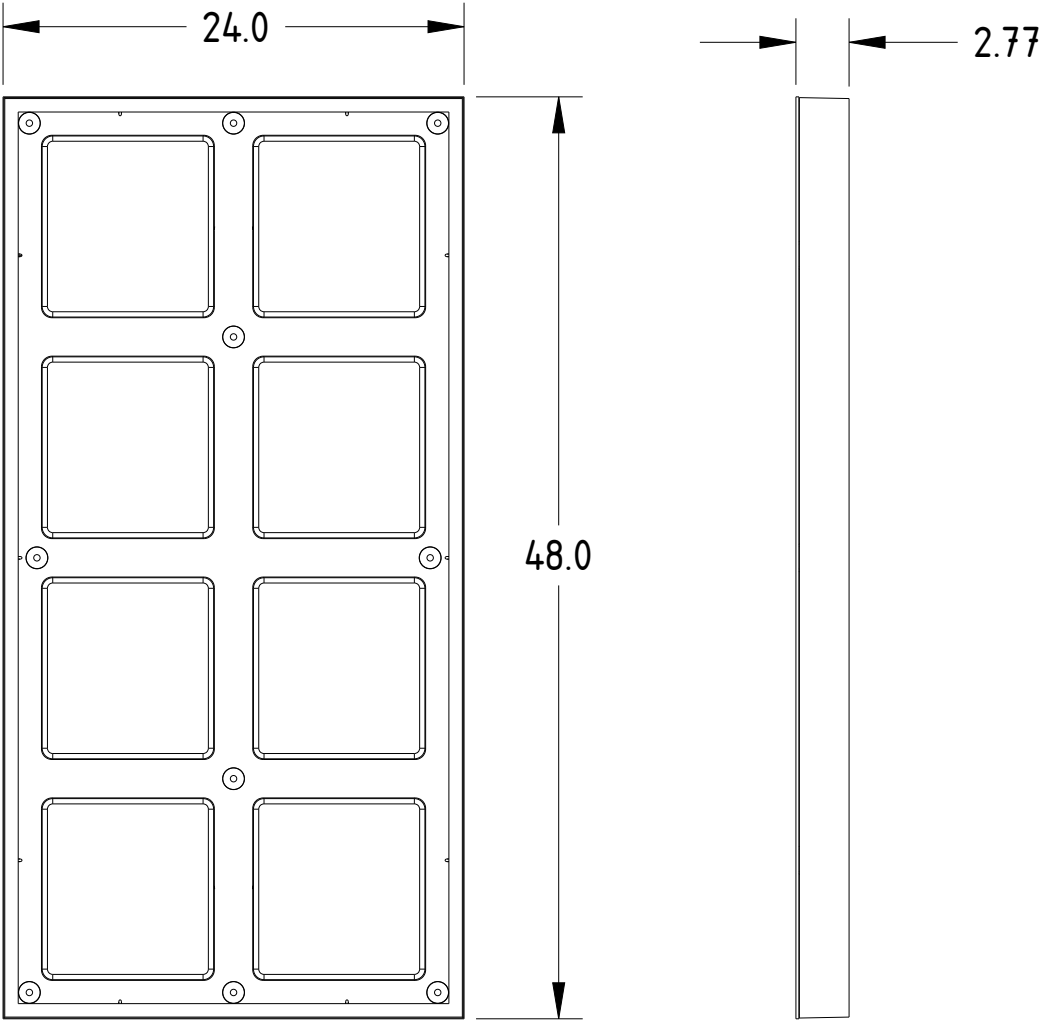
	Track Lighting		Recessed Lighting	Other
				
Model	Eaton L806HO	Phillips LLAB3-VA 39W	LLABR-VA 22W	Sunlite ST30Y48M10X6R
Color Temperature	4000K	4000K	4000K	5500K
Bulb Type: Up to 3' Distance	25 Degree Narrow Flood	23 Degree Narrow Flood	22 Degree Narrow Flood	LED light bar available in 12"-96" lengths
Bulb Type: 3-6'	11 Degree Spot	8 Degree Narrow Spot	10 Degree Narrow Spot	
Bulb Type: >6'	Call Suite Plants	Call Suite Plants	Call Suite Plants	
Cost	\$275 (includes 8' track)	\$285 (includes 8' track)	\$350 and up (multi bulb configurations available)	~\$100 per 12" length



Contact us: +1 (855) 275-8111

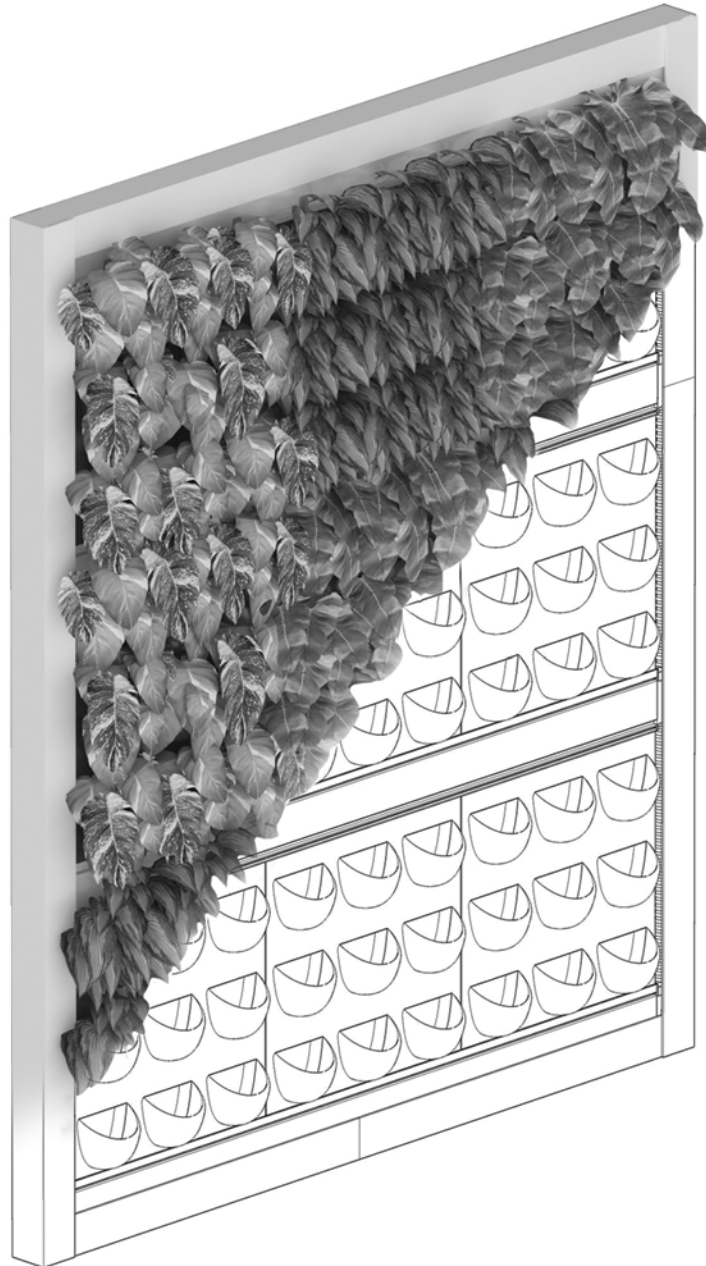
[www.suiteplants.com](http://www.suiteplants.com)

Revisions		



1			1
ITEM	DESCRIPTION	PART NUMBER	QTY
Model Name: BM-FR-2448			
Scale:0.100	Units:INCH	Date:21-Dec-17	Drawn by:AWS
Size: A4	MATERIAL:		

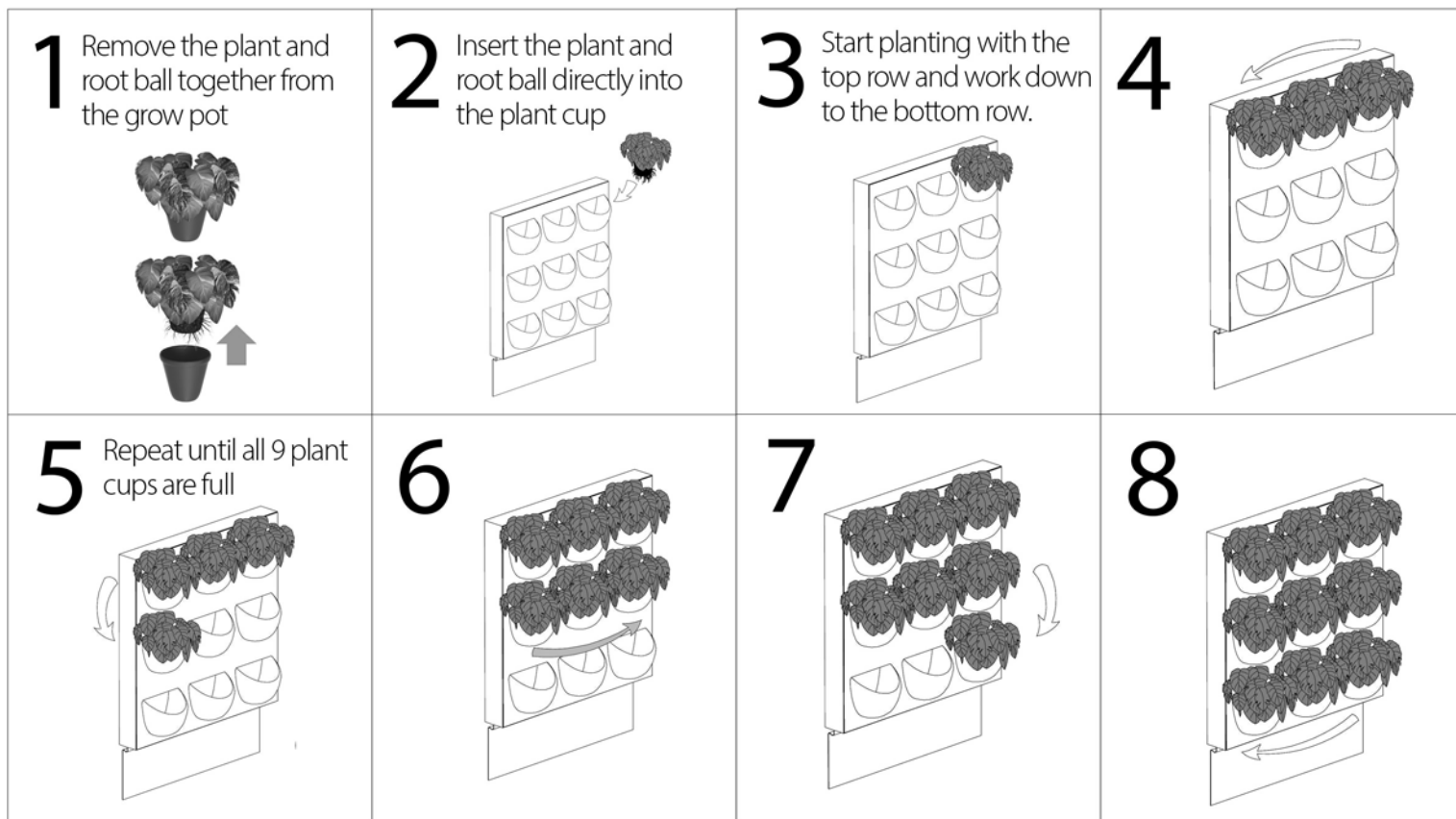
# LivePanel Installation Guide



Planting the Cassette:	Page 2
LivePanel Installation:	Pages 3-9
Indoor Frame Installation:	Pages 10-13
Exterior Frame Installation:	Pages 14-20
Irrigation & Watering:	Pages 21-23



# Planting the Cassettes

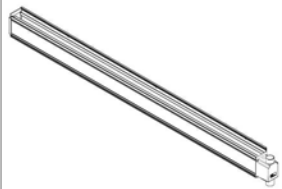


## Pro Tips

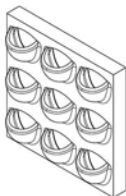
- **Start planting with the top row and work down to the bottom row** -- Do not start planting from the bottom row. If you do it this way any soil that shakes off when planting the top rows will fall on the plants in the bottom rows and get trapped in the leaves. This loose soil will fall out of the leaves over time and make a mess on the floor.
- **Get large & healthy 4" plants** -- A well placed call to your plant grower or broker can make your life a lot easier. Give them a call to ask which 4" plants have the most foliage, what's in season or which plants are most well developed before selecting a plant palette and creating a pattern.
- **The right plant in the right place** -- Consider which plants work best plants for each position in the cassette and for that cassette's position within the living wall. Plants that grow "up" are good for the top row since they'll grow up and cover the gutter above the cassette. Plants that "spill" are good for the bottom row since they'll spill over and cover the gutter below. Plants that grow "out" and get big are good for the middle row. Of course this is just a rule of thumb and sometimes the larger pattern of plants in the living wall will dictate which plants will be in the cassette.
- **No soil mess** -- Once you have the plant in the cassette, try to push the crown of the soil down so that it's in line or below the edge of the plant cup. If the soil is bulging out over the top edge of the cup it could eventually fall off and onto the floor.
- **Keep two un-planted** -- If possible, keep two cassettes un-planted. These will be useful for installing the LivePanel gutters. Bring the plants with you and plant these last two cassettes on site.



# Parts list for LivePanel Installation



Gutters



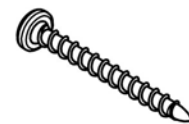
Whole Cassettes



Partial Cassettes



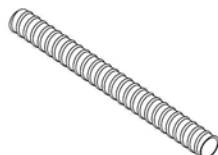
Cassette Clip



Screw



Anchor



Hose



Hose Clamps

# Tools needed for LivePanel installation



Measuring Tape



Level



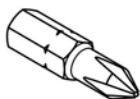
Pencil



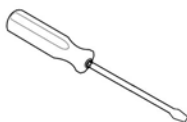
Electric Drill



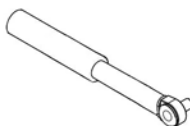
Drill bit (5/16")



Phillips bit



Flathead screwdriver



Socket wrench



7 mm socket



Vacuum



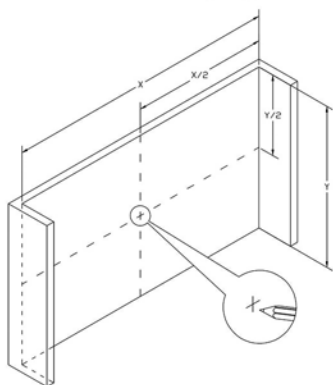
## Pro Tips

- **Long level** -- The longer the level you have, the better. We usually recommend a 4' long level. The longer the level is the more accurate you can be. The only caveat is that the level must be shorter than the gutter you're installing, so if you're installing a very short gutter then you will need a smaller level.

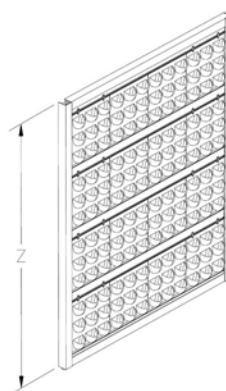
# Installation - Finding and marking your starting points

- 1**
  - **Mark the center bottom edge of your LivePanel wall** -- Assuming you want to center the LivePanel wall on the underlying wall, first measure the underlying wall's width and height to find and mark the center point. Consult your packing list or shop drawing to find the total height of your LivePanel wall. Take half the height of your LivePanel wall and measure that distance straight down from the wall's center point to mark the midpoint of the bottom edge of your LivePanel wall.
  - **Mark the center point of your gutter** - Measure the entire length of one of your gutters and mark the center point. This center point will match up with the center point drawn on your wall.

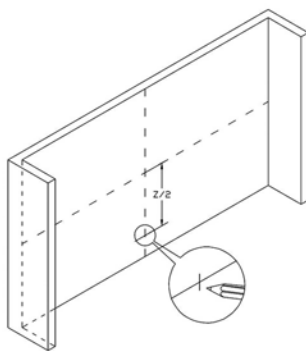
## A Find the center of underlying wall



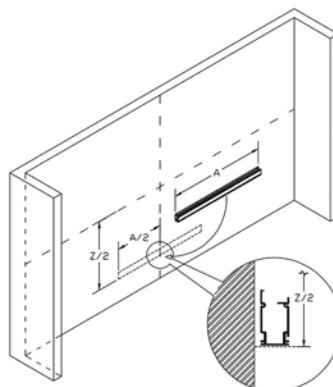
## B Calculate the height of living wall



## C Take half of total living wall height and measure it straight down from the wall's center point



## D Mark the center point of the bottom gutter



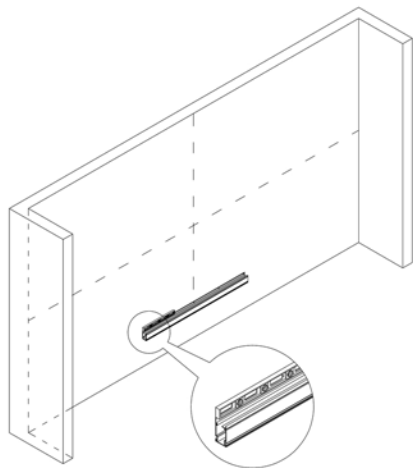
## Pro Tips

- **Be extra careful with tight locations** -- If you're installing in a recessed area or another tight location, be extra careful to measure properly and position your LivePanel wall properly
- **Height can vary slightly** -- There can be small deviations in the LivePanel wall's height from the stated height on your packing list or shop drawing. This variation is usually within +/- 1/16" per gutter. Leave yourself some room at the top of the wall in order to account for any potential variation (i.e. don't plan to go right up to the ceiling - leave yourself an inch or two of safety margin). This is especially important for walls with rows of partial height cassettes.

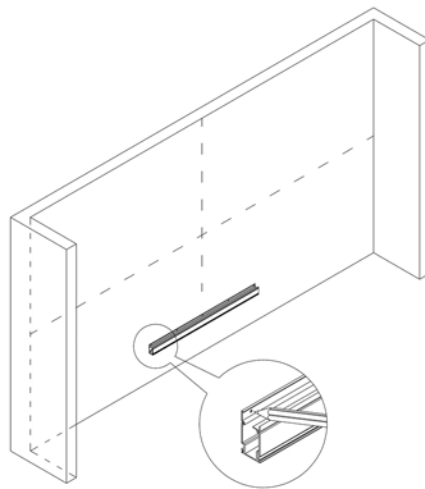
# Installation - Installing the bottom gutter

- 2** • Find the gutter labeled **TOP** and set it aside for later. This **TOP** gutter is special and **MUST** go at the top of the wall

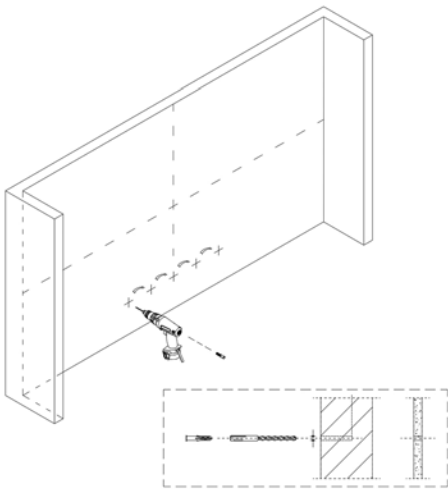
**A** Place the bottom gutter so it levels horizontally



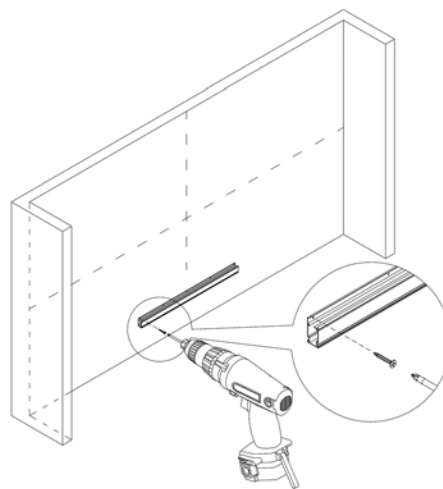
**B** Mark the drill point



**C** Drill the required holes and insert anchors



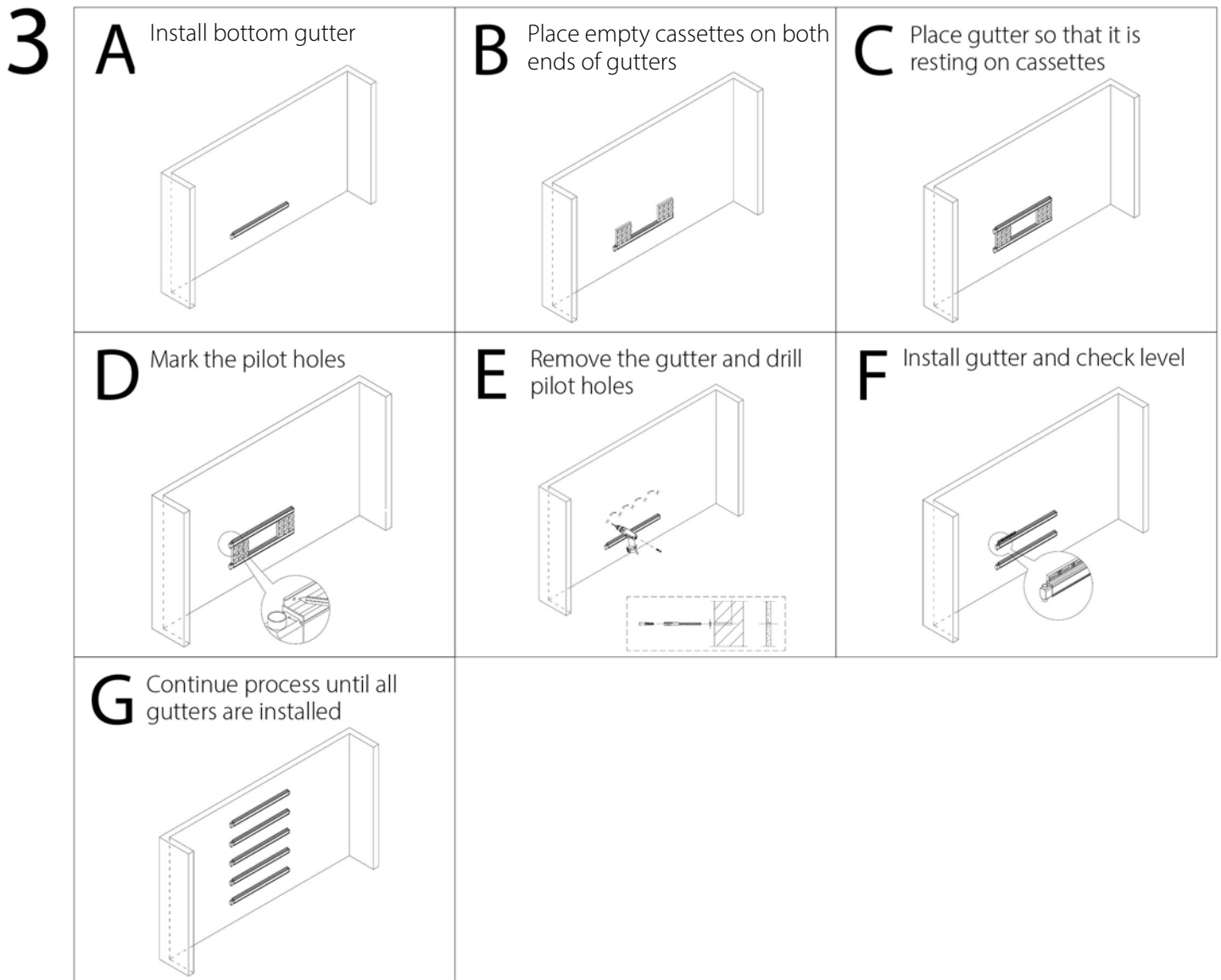
**D** Screw the bottom gutter into place



## Pro Tips

- **Keep it level** -- Keep the level on the gutter while you're securing it onto the wall. There is some leeway with the screws and anchors so it's important to keep everything level. Start with the middle screw since the gutter can pivot on this screw to find the level position. Continue fastening the remaining screws while making sure to keep the gutter level.
- **Most important step** -- The first gutter is the most important one. This gutter **MUST** be level since each the successive gutter builds on this one. Your job will be very difficult if this first gutter is out of level.

# Installation - Using cassettes to install the next gutter



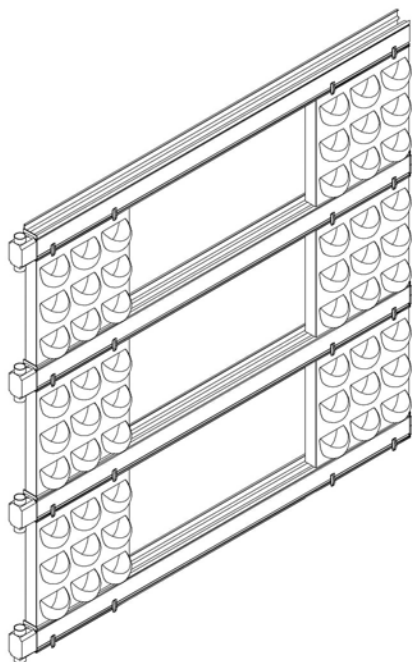
## Pro Tips

- **Dust & debris** -- When drilling each successive gutter, use something to cover up the gutter below so that the dust and debris doesn't fall into that gutter. You can use an empty cassette, a piece of cardboard or anything else that does the job.
- **Partial height cassettes** -- If you have a row of partial height cassettes, make sure to leave some extra spacing. The whole cassettes have a small ridge on the top that creates the extra space needed to easily get them in/out between rows of gutters. The tops of the partial cassettes are cut flat, so you need to leave some extra spacing in order to allow room to get them in/out of the wall. In addition, the partial cassettes can vary slightly in size, so you want to leave enough room to accommodate any potentially larger cassettes. You want to leave about 1/8" of extra space so you can use something like a Bic Pen on top of the partial cassettes to give yourself the proper spacing.

# Installation - Attaching and clamping the flexible hoses

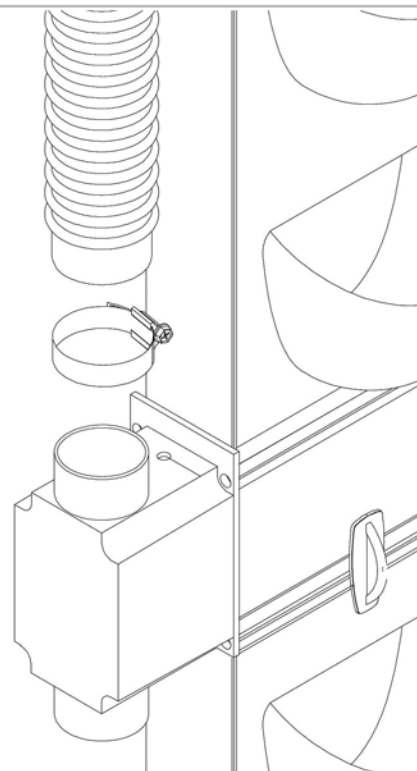
- 4**
- Attach flexible hoses between gutters and tighten hose clamps using flathead screwdriver or 1/4" socket. Start with the bottom of each hose. Make sure hose clamps are in the proper position
  - Hose clamp screws should be positioned on the inside so that the screw is in between the hose and the cassette

**A**



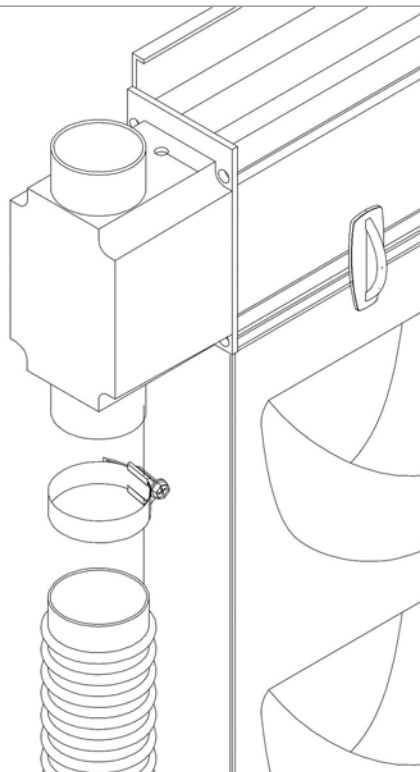
**B**

Install bottom of hose first



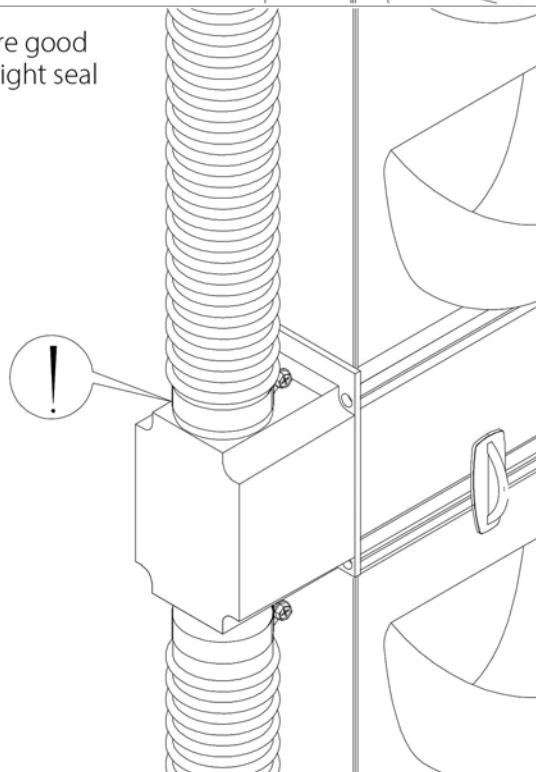
**C**

Install top of hose

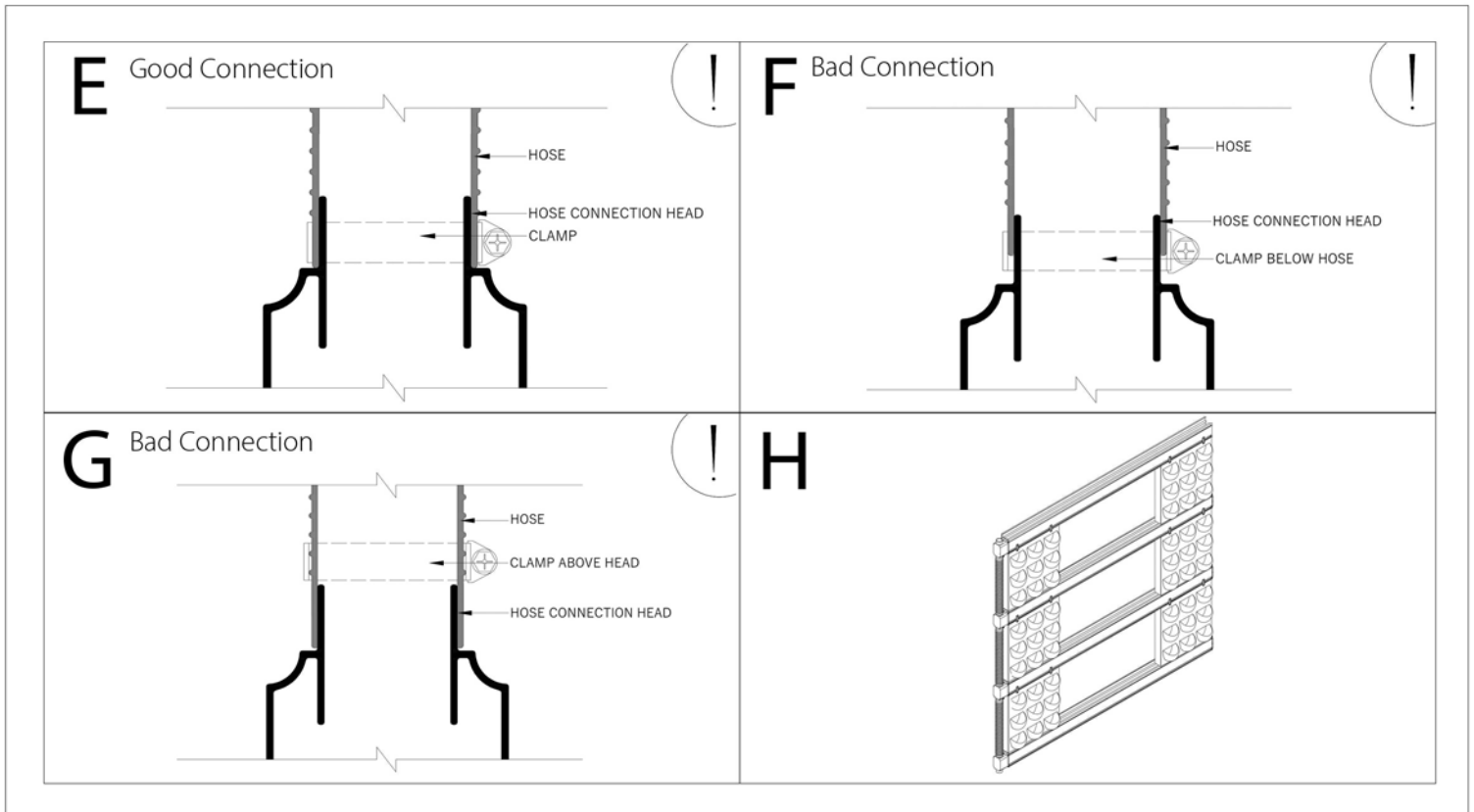


**D**

Ensure good and tight seal



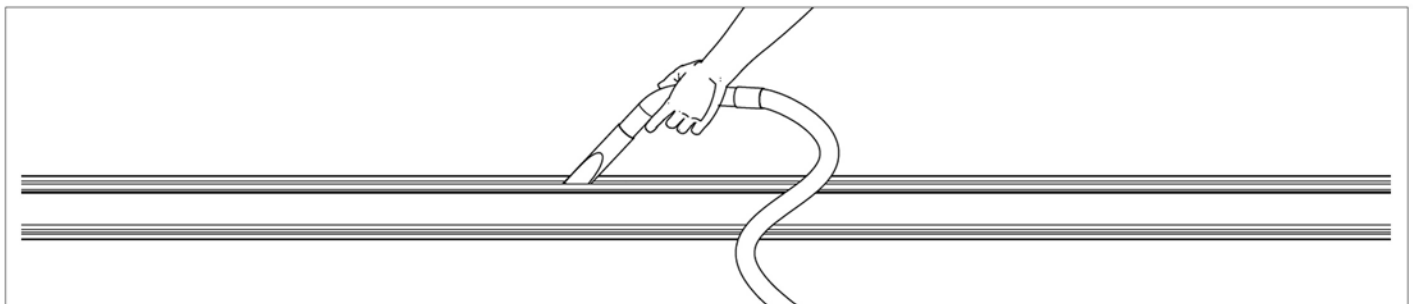
# Installation - Checking for proper clamp position



## Pro Tips

- **Leak prevention** -- Give extra attention to the bottom of each hose. The water flows down the hose and the seal on the bottom must be tight in order to prevent leaks. Make sure the bottom of the hose is fully on first before worrying about the top. Make sure the hose clamp is very tight.
- **Getting the hoses on the end caps** -- Wet the inside edges of the hoses so that they slip on to the hose end caps easier. Twist the hoses while pushing them onto the hose end cap to ensure they get all the way on.

## 5 • Vacuum out any remaining debris from the gutters

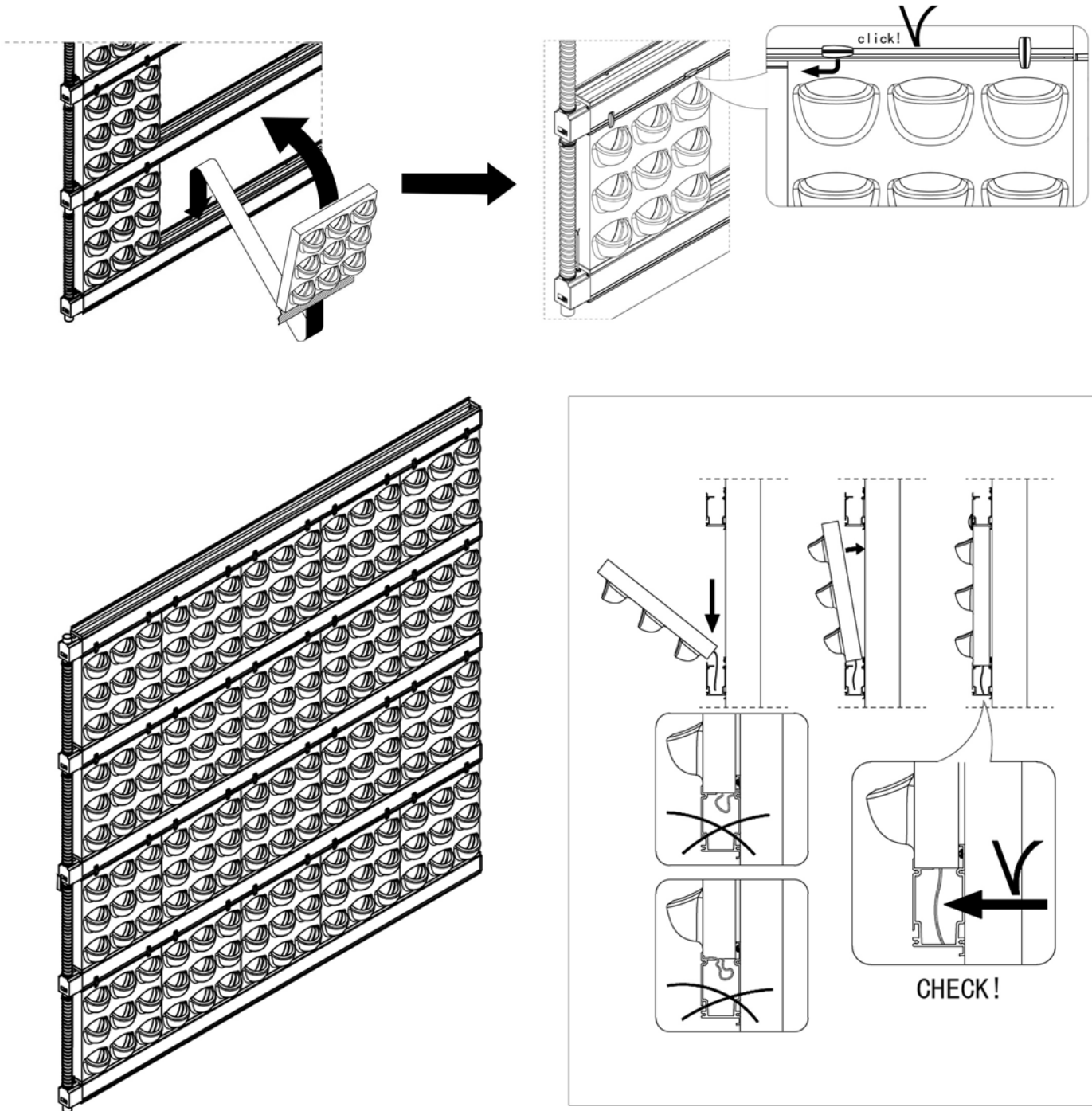




# Installation - Inserting and securing the plant cassettes

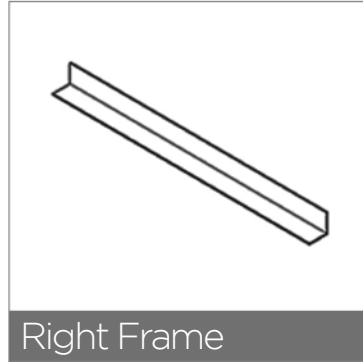
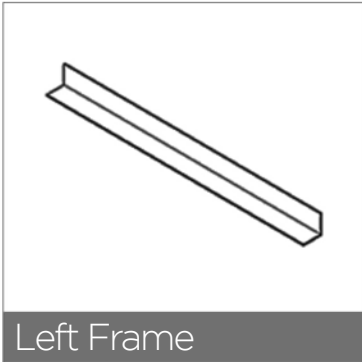
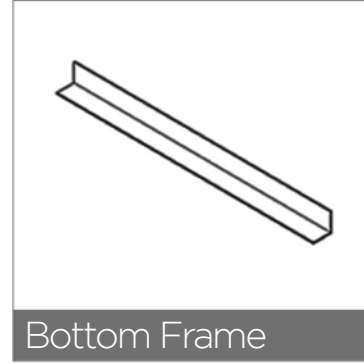
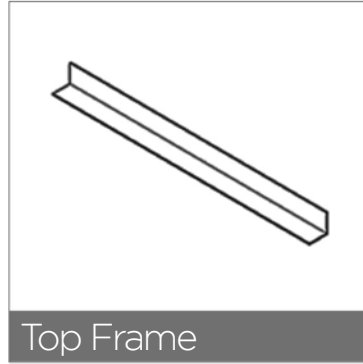
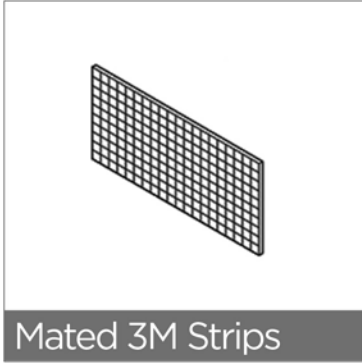
6

- Insert remaining plant cassettes and secure into place using cassette clips. Insert the clips into the channel on the gutter with the tip facing to the right and then turn clockwise to lock into place.
- Indoor installation will have one clip per cassette but outdoor installation will have two clips per cassette.
- Make sure that wick is properly in the gutter



\*Installation shown without plants in cassettes. Cassettes can be pre-planted or planted on site

# Parts list needed for indoor frame installation



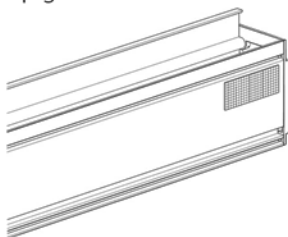
# Indoor Frame Installation

## Step 1: Identify Correct Frame Pieces

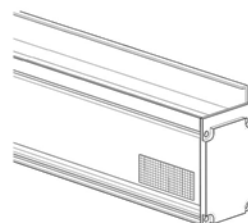
- Each frame piece is cut to size and labeled for a specific location. Check the shop drawing to confirm the frame layout and the correct location for each piece

## Step 2: Install Horizontal 3M

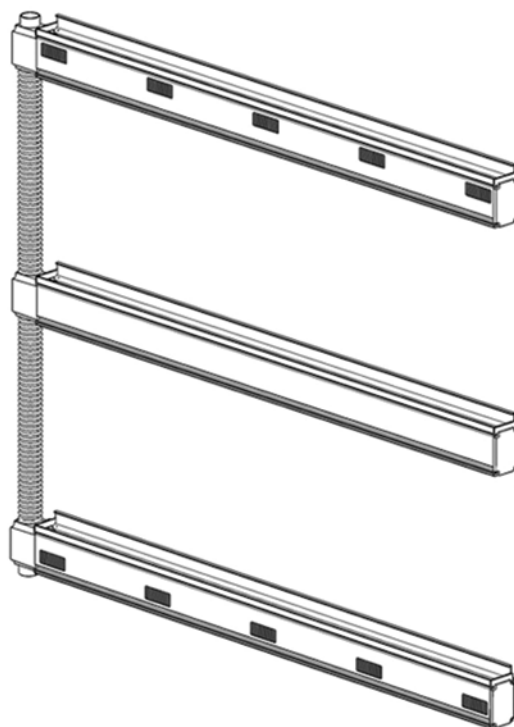
Placement for the top gutter



Placement for the bottom gutter



- Peel off one side of the tape covering the 3M adhesive
- Install on top gutter with edge of 3M just below the channel
- Install on bottom gutter with edge of 3M just above the channel
- Leave pieces of 3M mated to each other

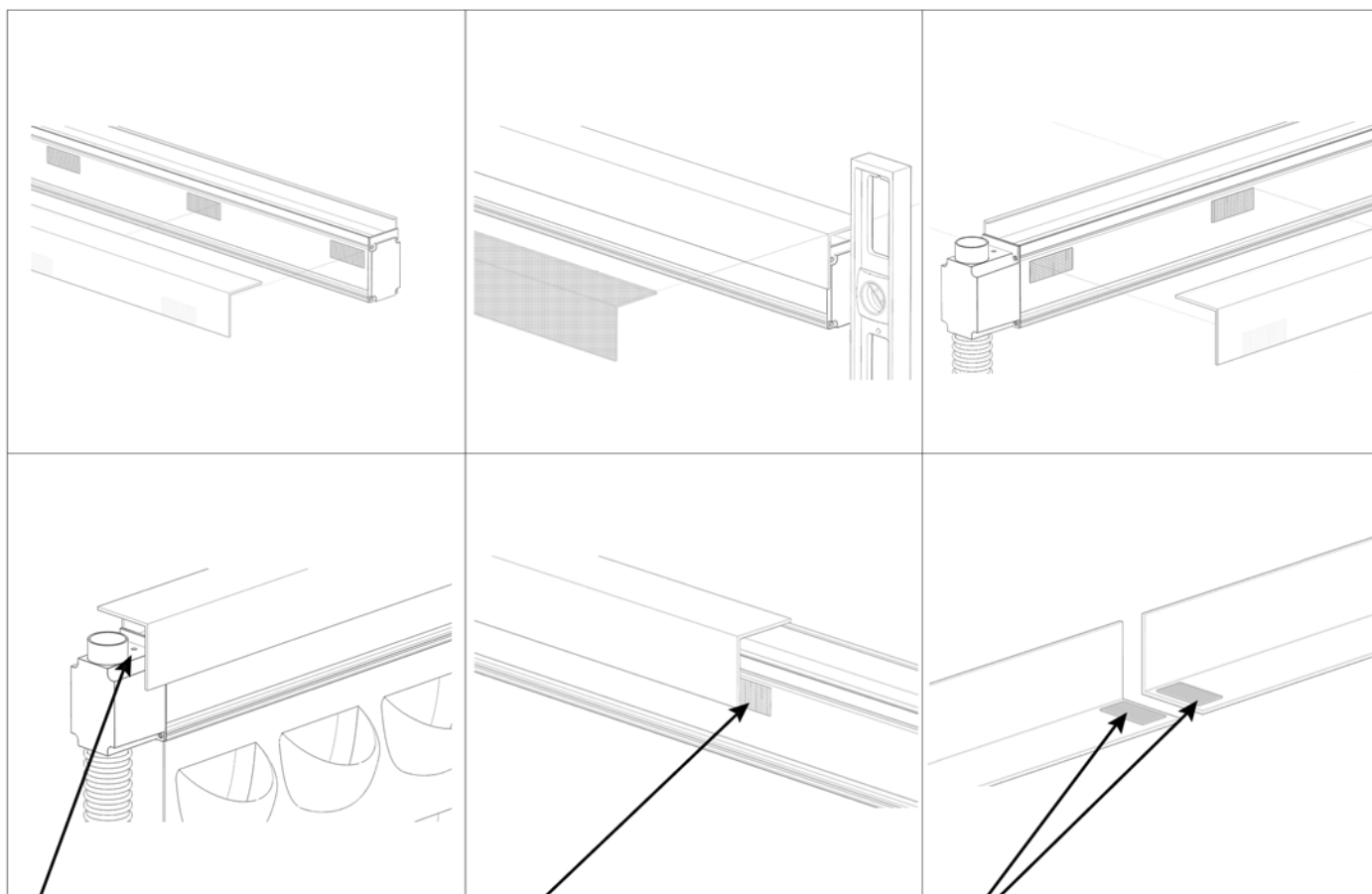


- Start with one on each corner and then one between each cassette

# Indoor Frame Installation

## Step 3: Install Top & Bottom Frame

- Peel off the tape covering the 3M adhesive
- Start at the wall bracket side and make sure the outer edge of horizontal frame piece is level with outer edge of bracket. Top edge of the frame rests over top (bottom) edge of the gutter.
- Finished side (not a side you cut) should face out
- Press frame firmly on to 3M adhesive. When locked into place correctly, 3M strip will make a loud SNAP sound. If you do not hear a SNAP, you **MUST** pull off the frame pieces and redo the process
- Apply the other horizontal pieces next to the piece you just installed



- There should be a gap left above the hose end cap to access water system (for manually watered walls) on top & bottom

- You can add an extra piece of 3M underneath the seam between two gutter pieces to help make them flush.

- Place on piece of 3M on the gutter between the seam and then put one piece on the underside of each gutter

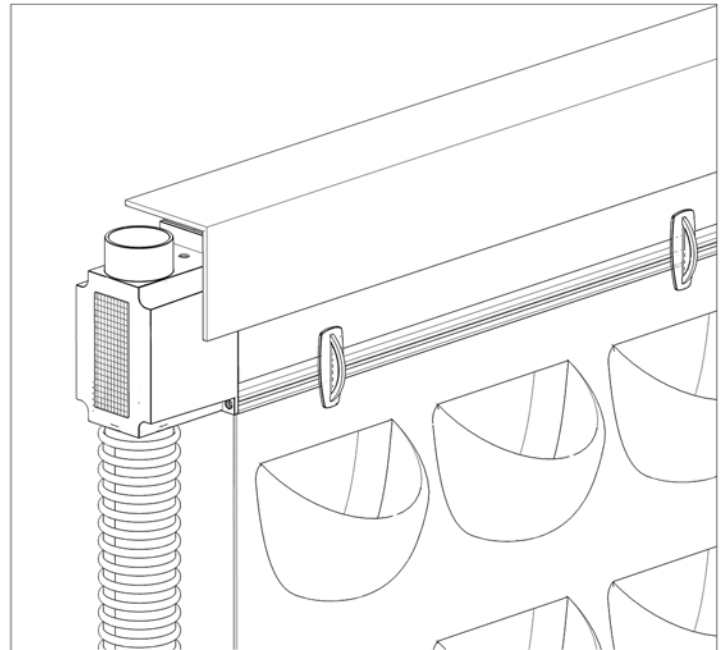
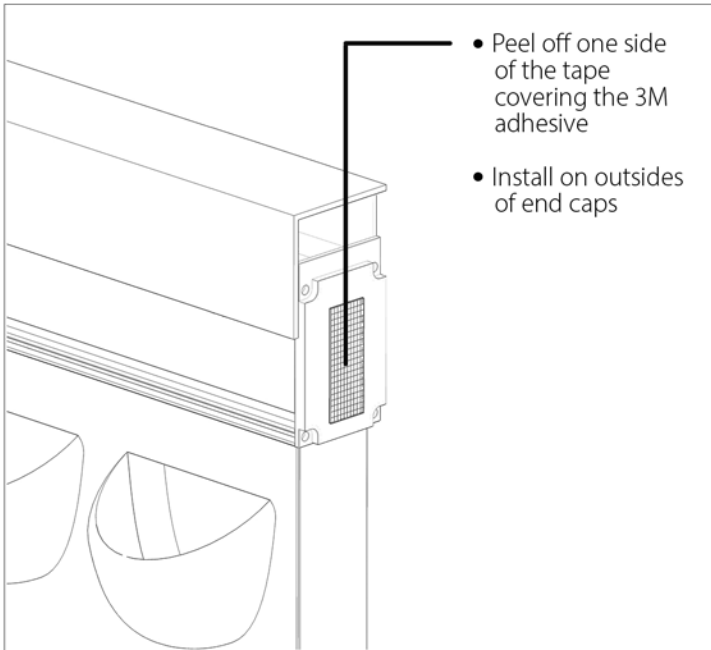


## Pro Tips

- Although the 3M strips already come mated, they are usually not in their LOCKED position. To LOCK, place additional pressure on the two strips until they SNAP together
- If secured properly, Frame pieces should NEVER be loose. If frame pieces are loose, be sure to remove them and reapply them to the 3M strips until you hear a loud SNAP. Check security of each piece by tugging on them to ensure they do not move

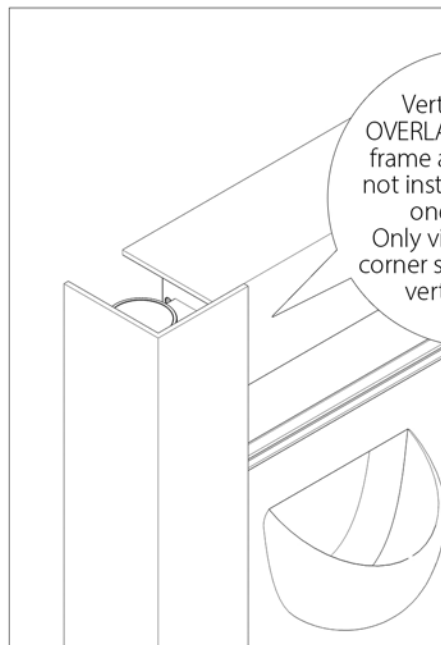
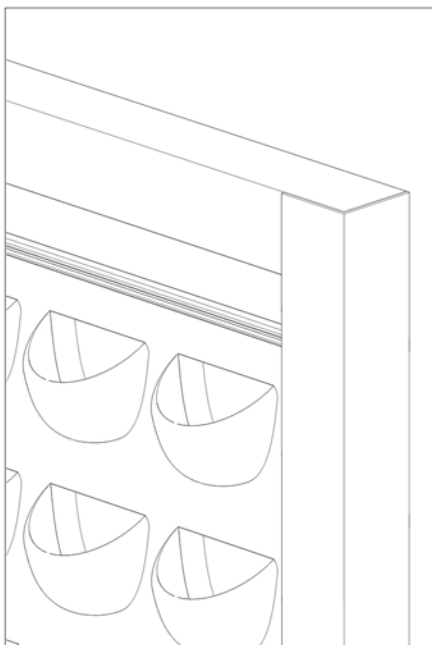
# Indoor Frame Installation

## Step 4: Install Vertical 3M

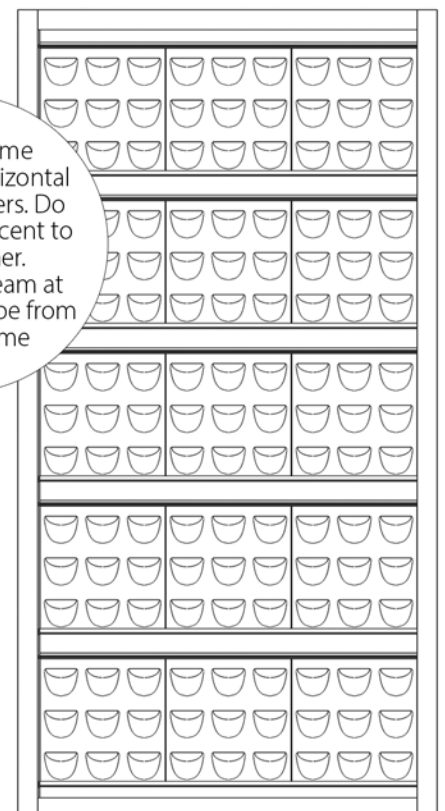


- Slide the cassettes all the way towards the hose end cap side so that there is extra gutter space on the flat end cap side. The frame covers this empty space

## Step 5: Install Vertical Framing

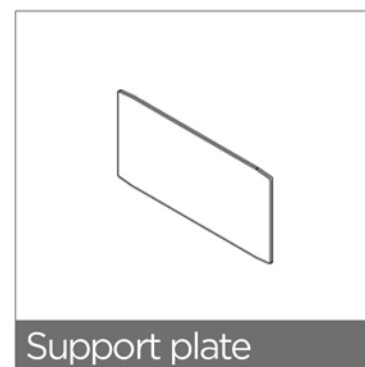
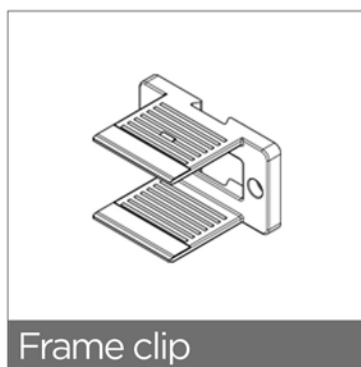
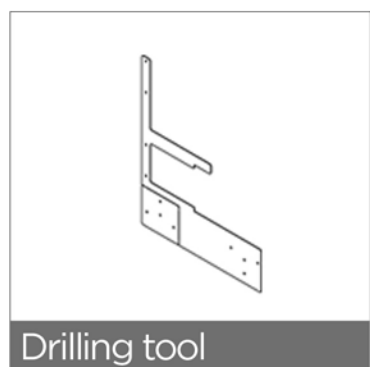
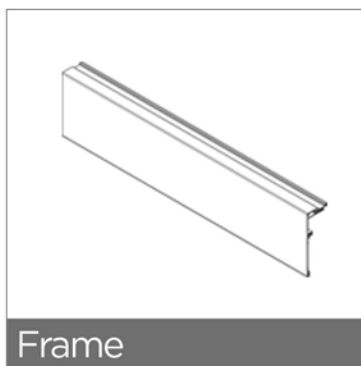
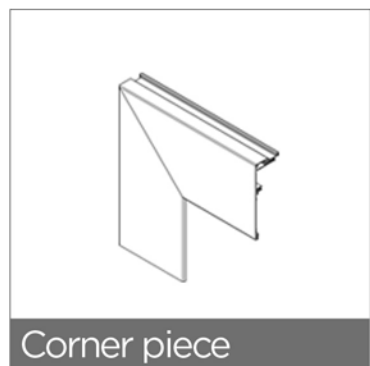


Vertical Frame  
OVERLAPS horizontal  
frame at corners. Do  
not install adjacent to  
one another.  
Only visible seam at  
corner should be from  
vertical frame

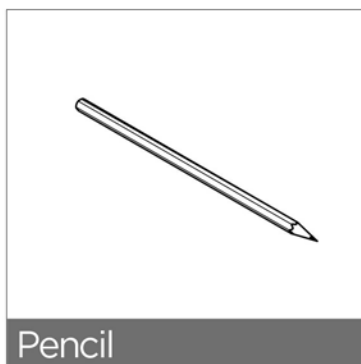


- Peel off one side of the tape covering the 3M adhesive
- Install vertical frame parts overlapping the horizontal frame parts
- If there is a gap in the corner, you can pull the frame pieces off and readjust the spacing – it usually takes some adjustment to get all the seams looking perfect

## Parts list needed for exterior frame installation



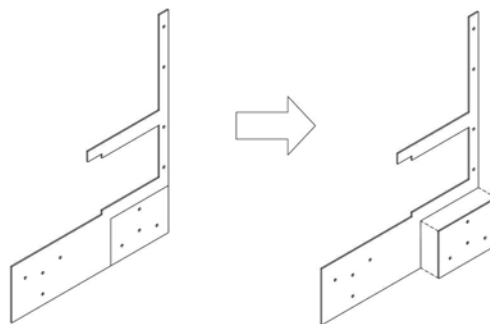
## Tools needed for exterior frame installation



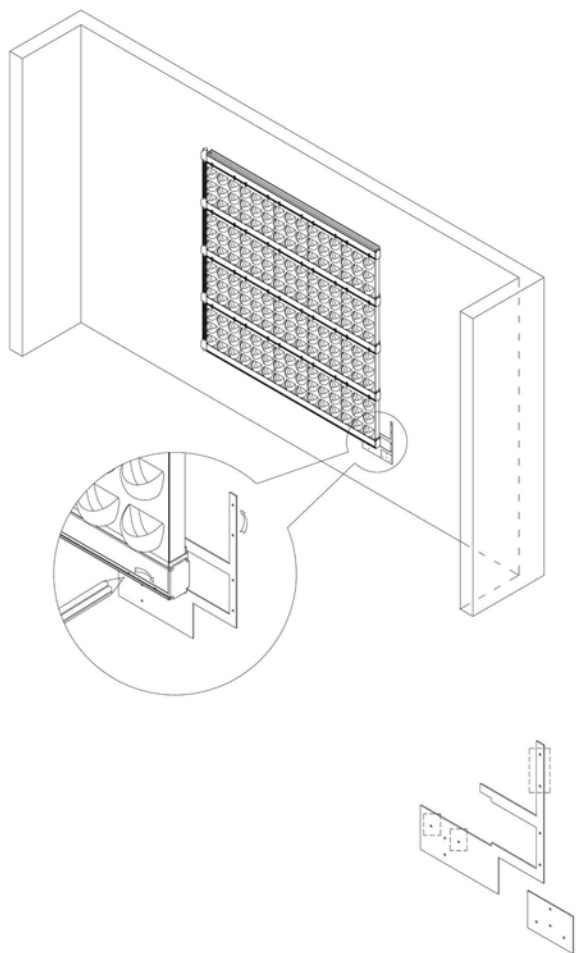


# Exterior Frame Installation

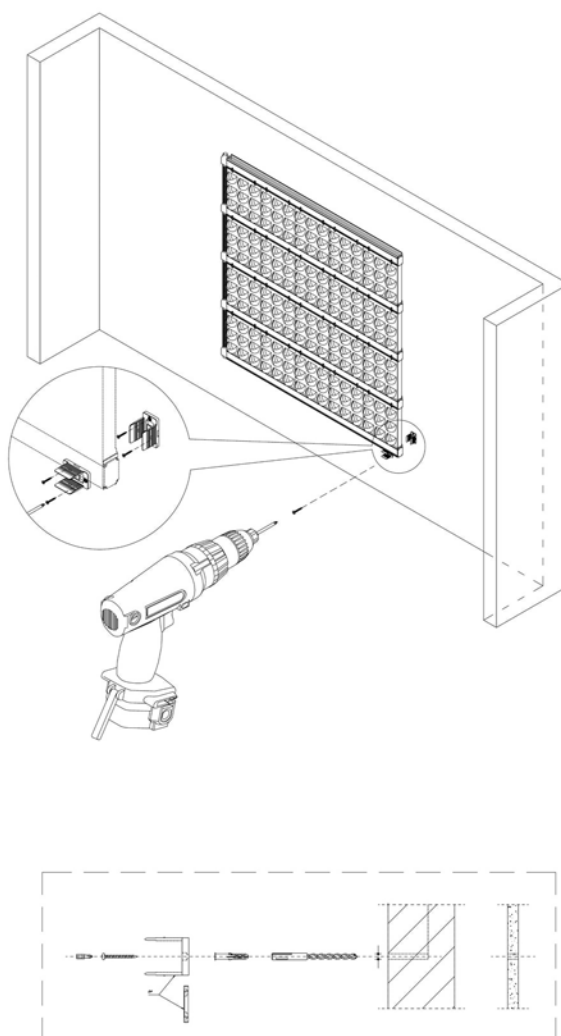
- 1** Split the drilling tool; remove the small square from larger L shaped drilling tool



- 2** Mark drill location at the bottom corners for the 4 frame clips using L shaped drilling tool pointing upwards. Use the 2 horizontally oriented holes below the gutter and the higher vertically oriented holes on the sides.

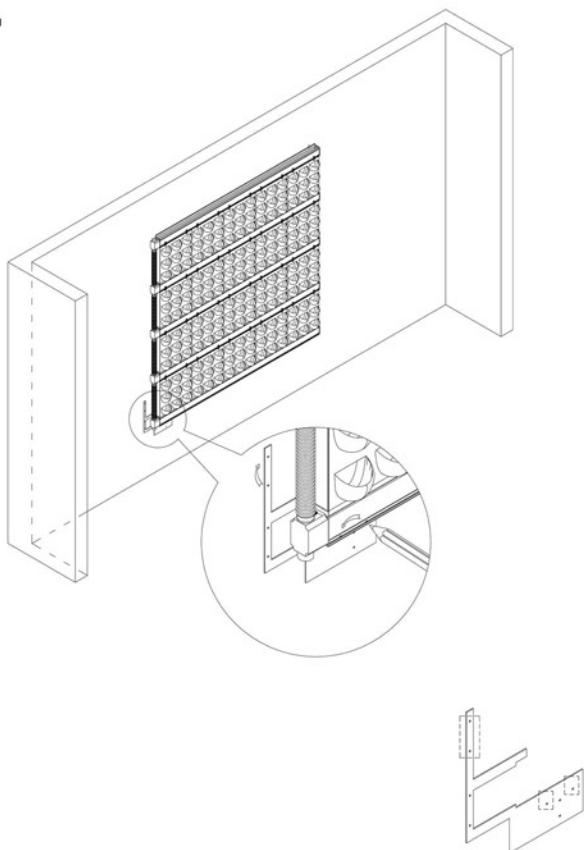


- 3** Install the frame clips

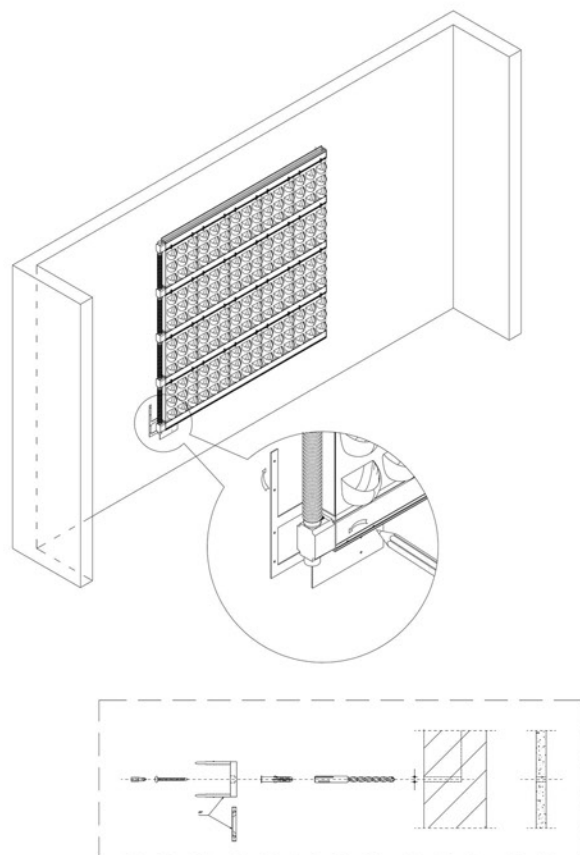


# Exterior Frame Installation

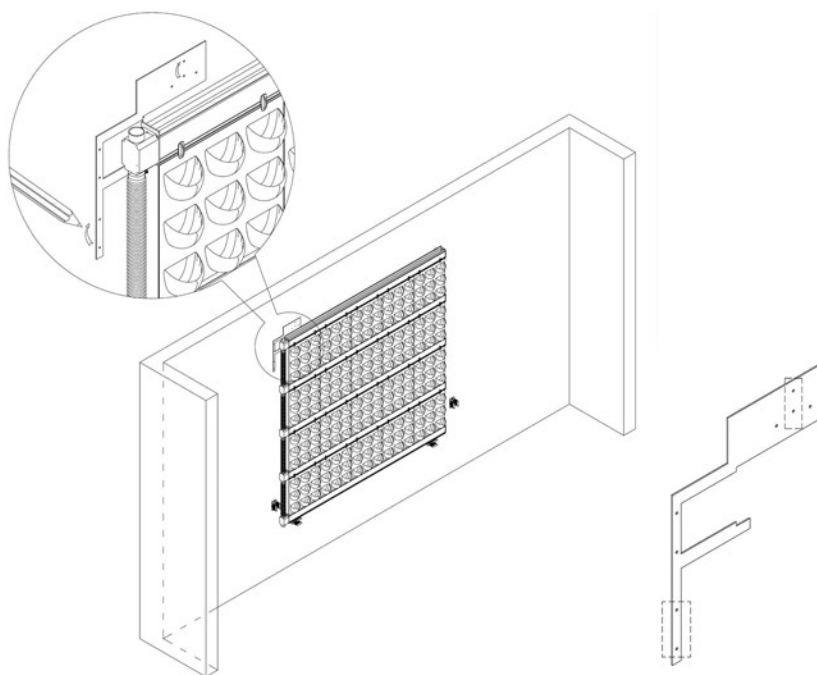
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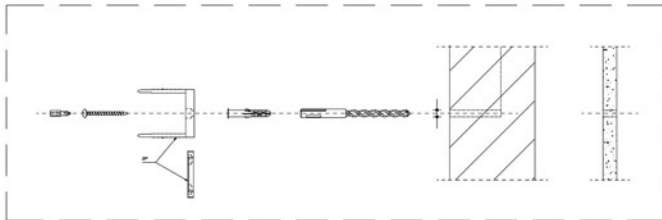
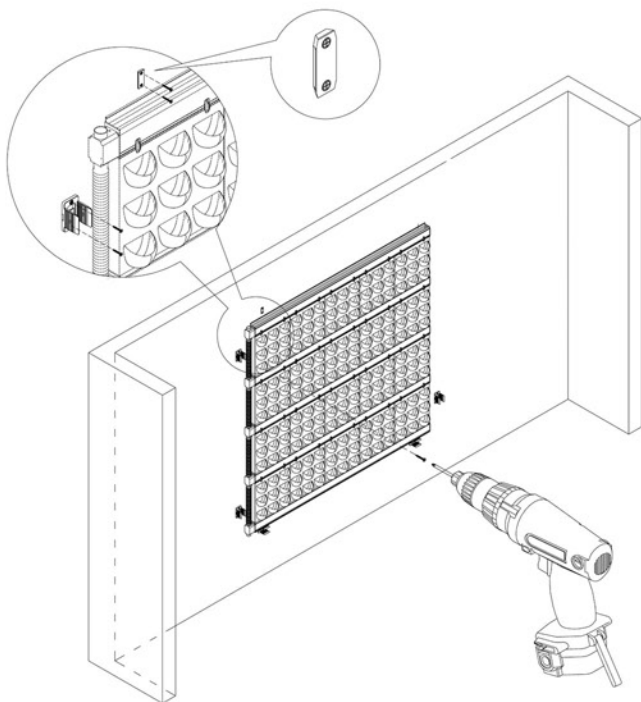


6 Mark drill locations for 2 frame clips along the side of the wall and 2 sherpa plates above the wall. Use the 2 vertically oriented holes at the top of the wall above the gutter to mark the sherpa plates and the holes along the side to mark the frame clips.

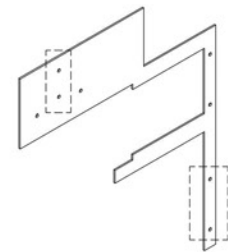
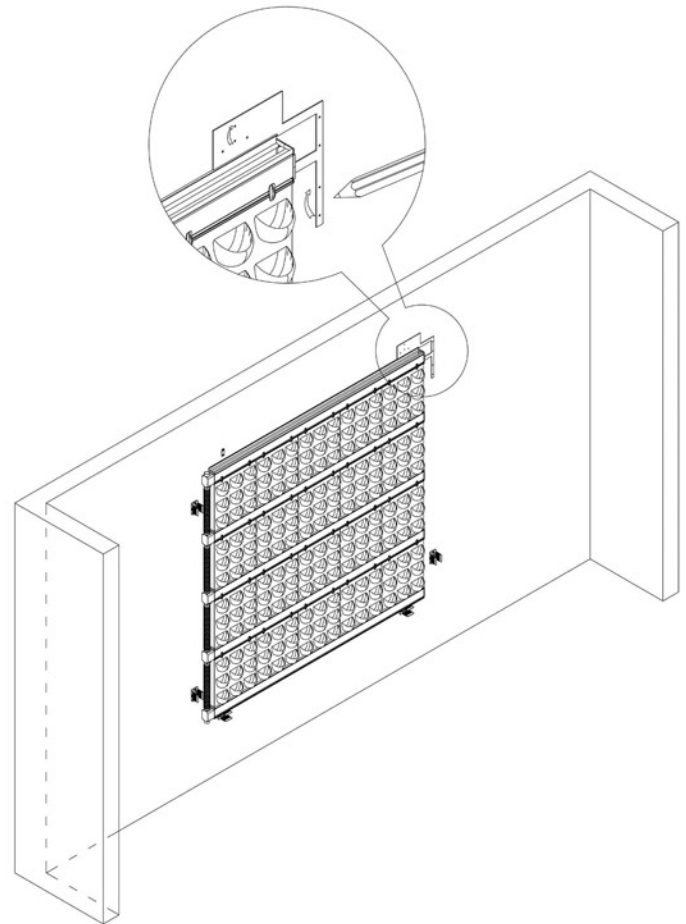


# Exterior Frame Installation

**7** Install the frame clips and the sherpa plates.  
Need to install anchors first then screws

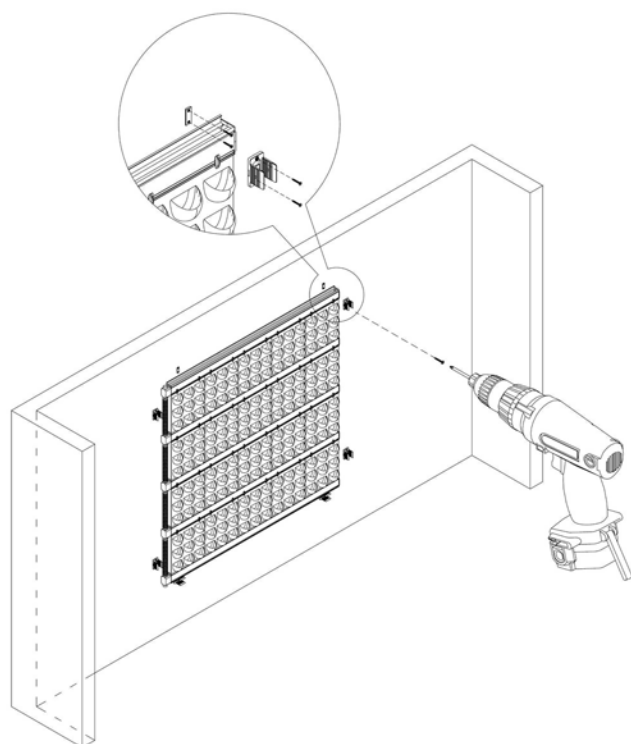


**8**

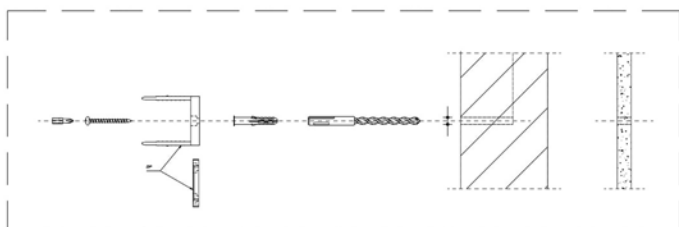
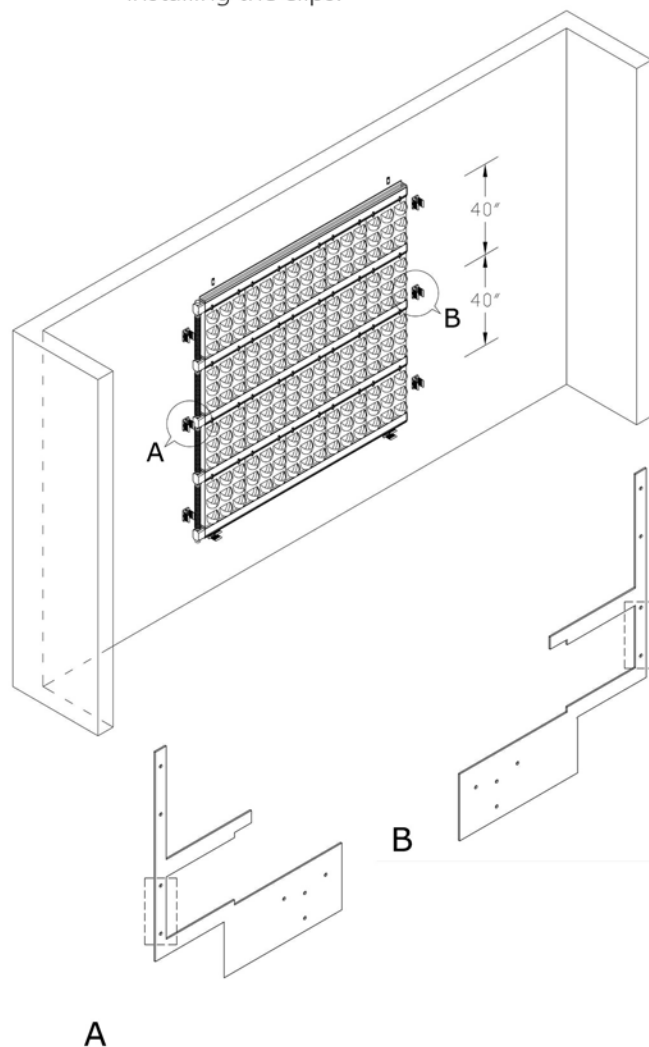


# Exterior Frame Installation

9

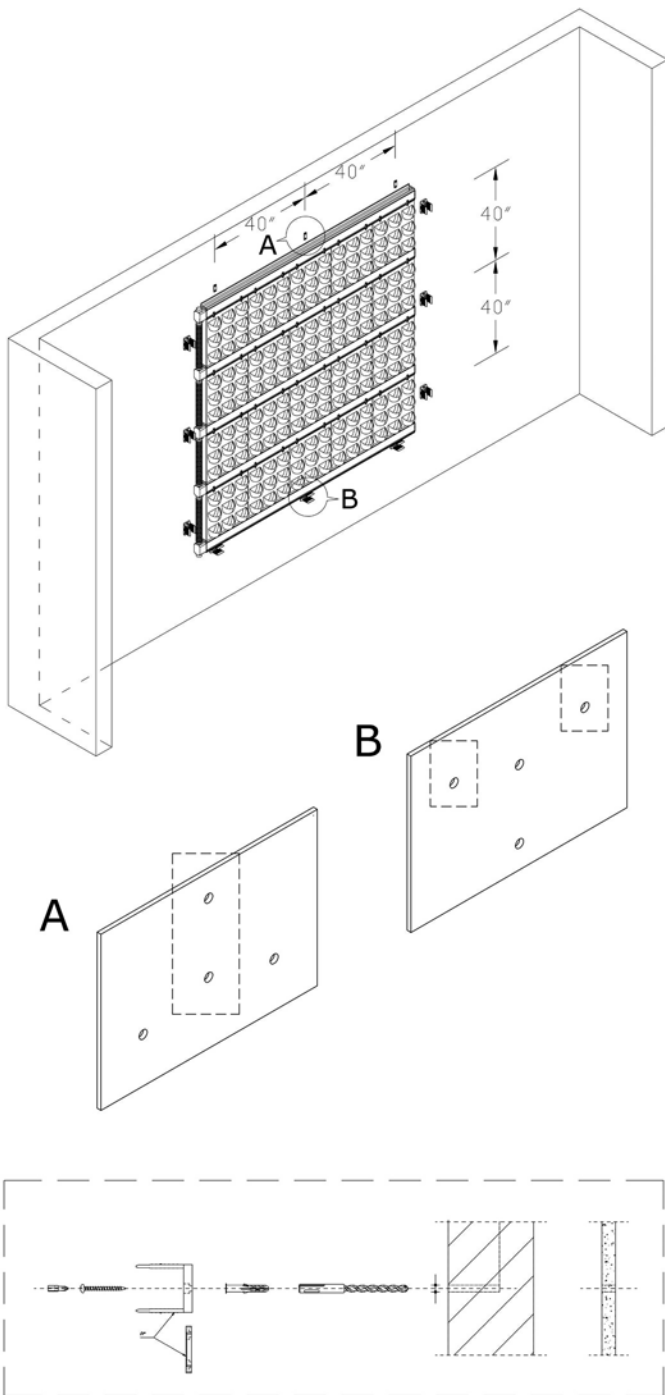


10 Use the L shaped drilling tool and install additional frame clips on both sides of the wall at 40" intervals between each clips. Use the tool at the nearest gutter to where you will be installing the clips.

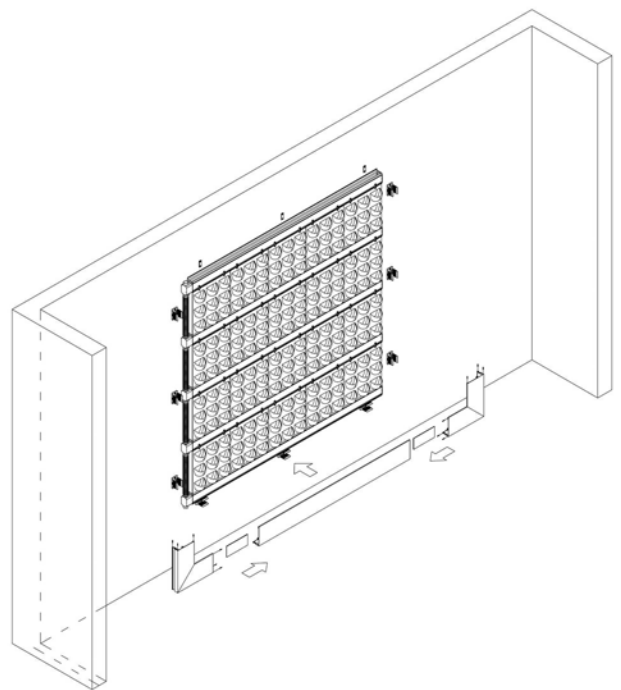
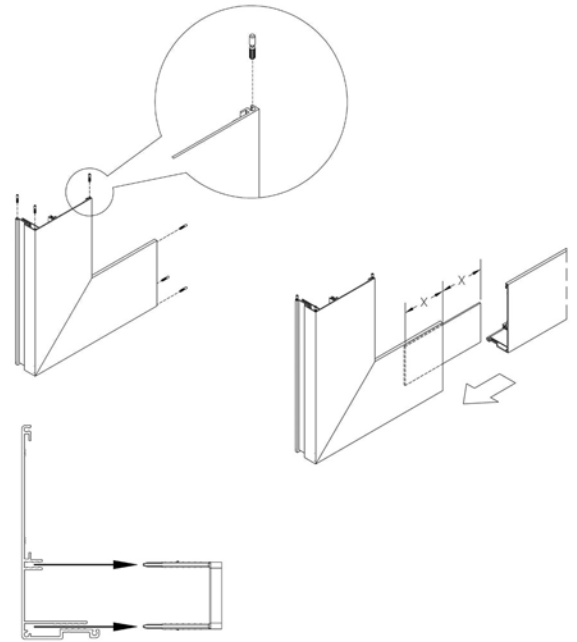


# Exterior Frame Installation

- 11** Using the square shaped dripping plate only, install additional frame clips underneath the bottom gutter at 40" interval between each clips, and install additional sherpa plates above the top gutter at 40" intervals between each sherpa plates.

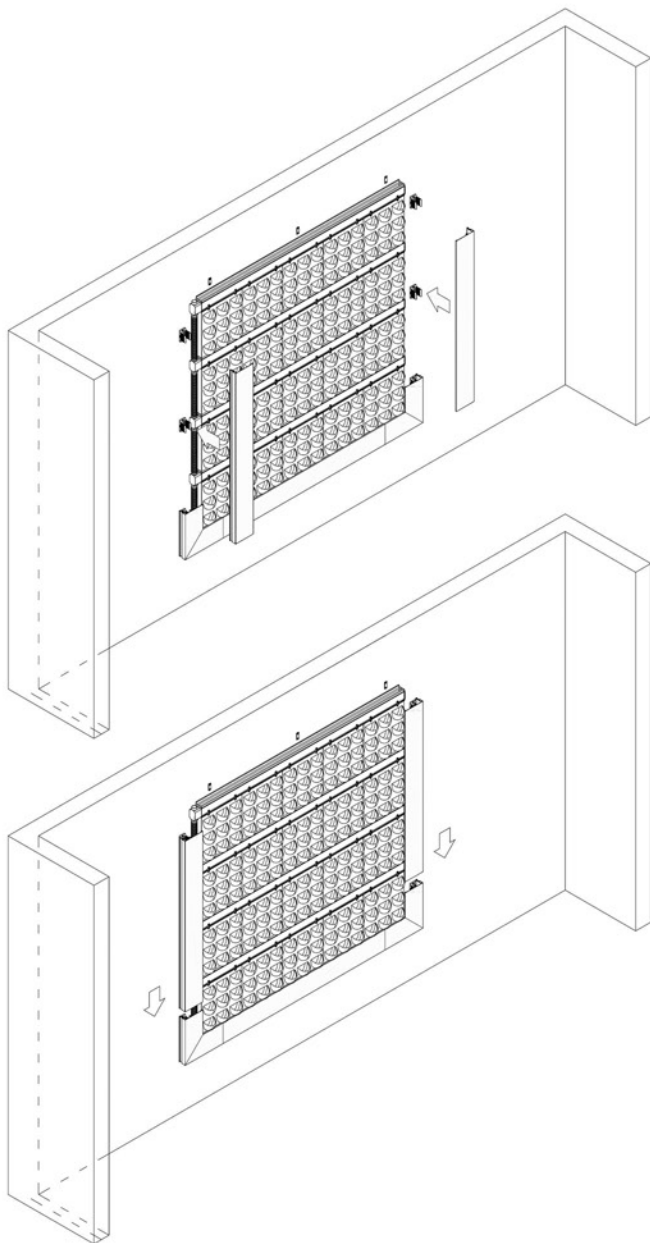


**12**

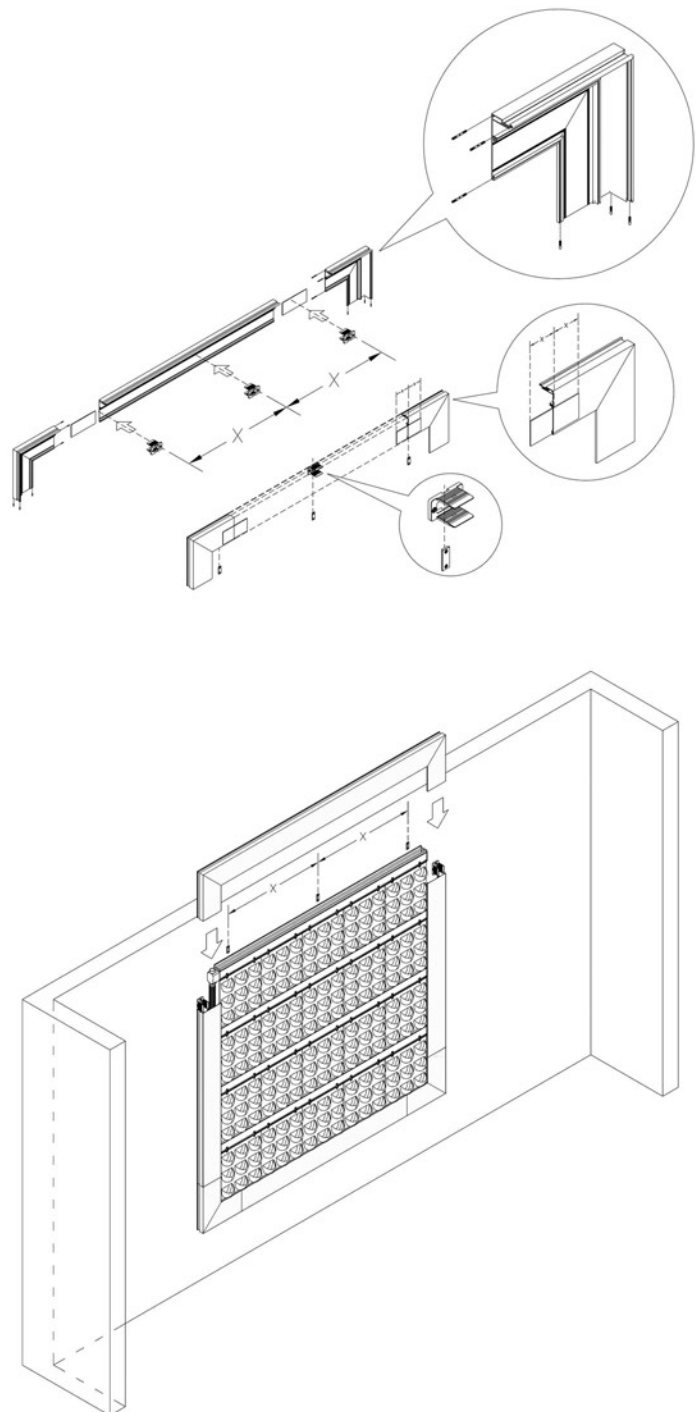


# Exterior Frame Installation

13



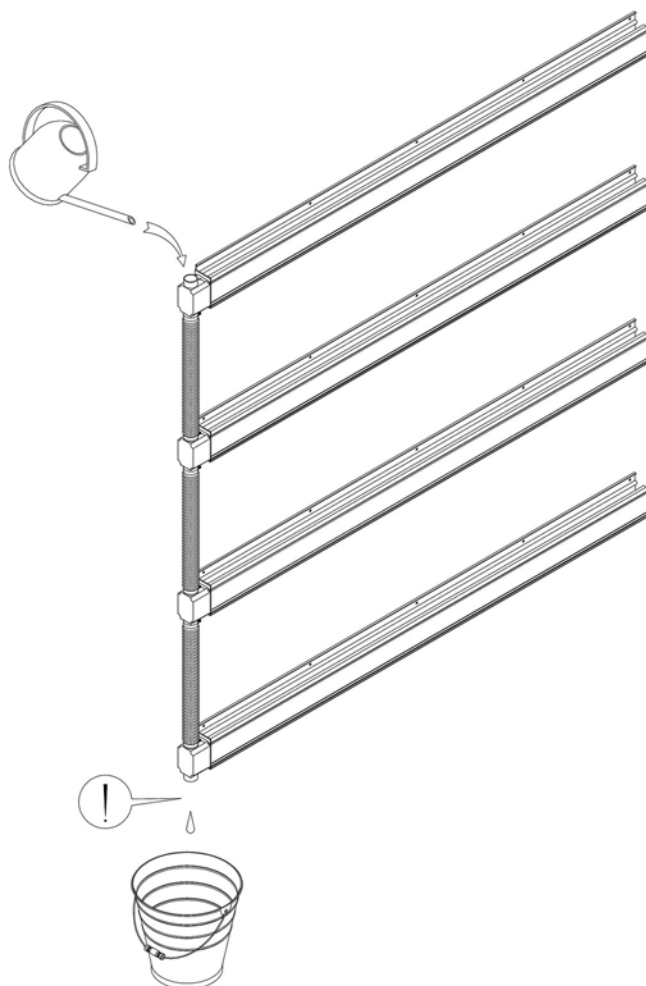
14





# Irrigation & Watering

## Option A - Manual Watering



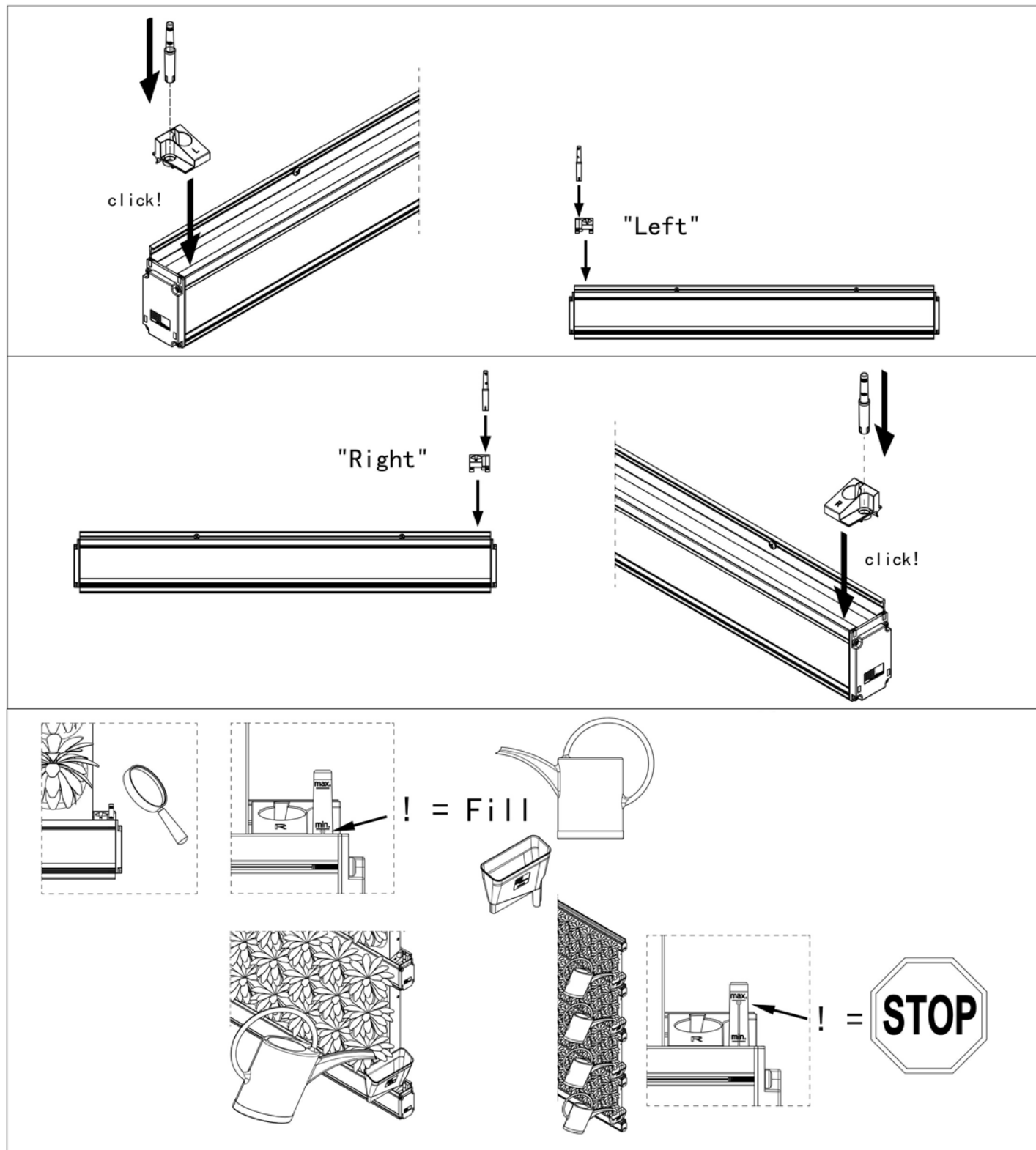
### Pro Tips

- **Add water after cassettes** -- You should add water after the cassettes are in place.
- **Water slowly** -- Add water slowly. Adding water faster than the end caps and hoses can process it will overflow the system.
- **Optional** -- start from the second gutter -- You can elect to start from the second gutter instead of at the top gutter since there aren't any plants using the water from the top gutter. There is no need having water in the top gutter.
- **Use a funnel** -- using a funnel is much easier than trying to go directly into the small opening on the hose end cap.
- If Hose Clamps aren't tight enough around the bottoms of the connecting hoses, you might see water start to drip down the wall. This is most often the cause for water dripping down the wall. If water drips, check to see which clamp might need adjusting/tightening.
- Do not confuse water dripping down the wall with water dripping into the bucket. Keep adding water to the wall until water starts to drip into the bucket from the bottom Endcap.

# Irrigation & Watering

## Option B - Filler Blocks

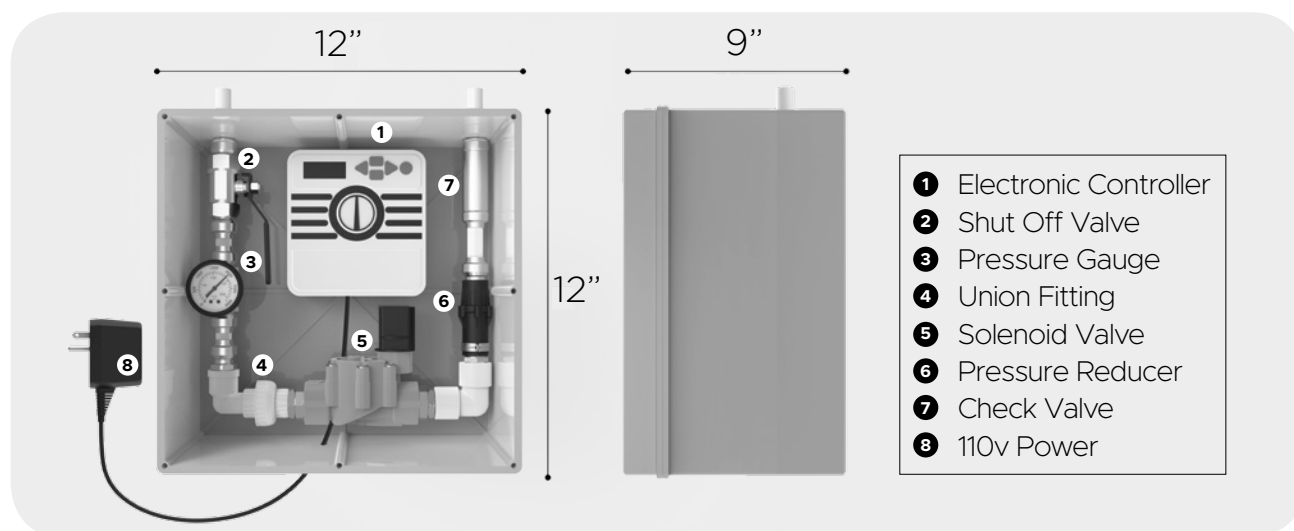
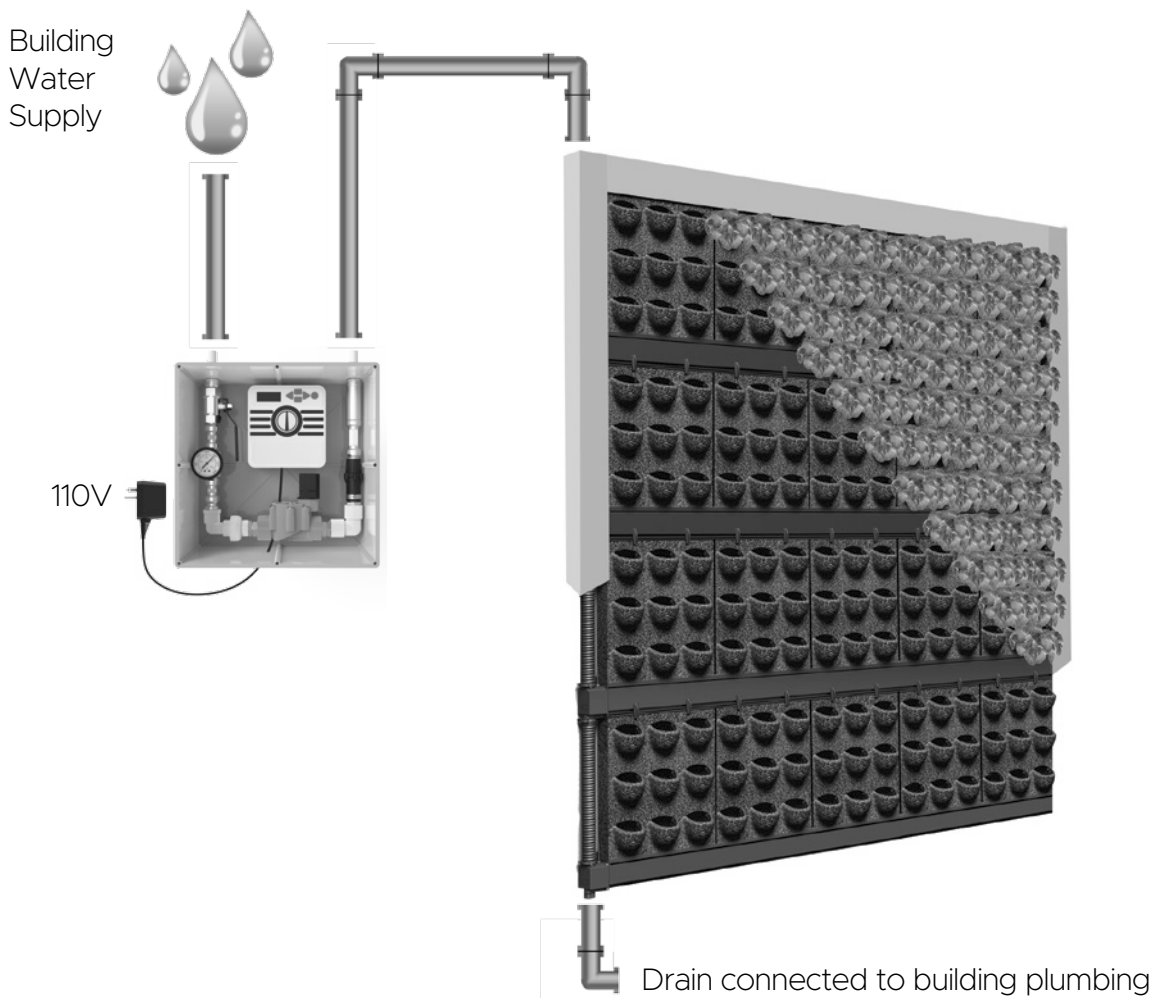
Each gutter is watered individually. Insert the funnel into the filler block and add water until the red float stick indicated the gutter is full.



# Irrigation & Watering

## Option C - Automatic Watering with Irrigation Control Unit

Optional fertilizer injection.



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For more information, contact Wilsonart LLC, 2501 Wilsonart Drive, Temple, TX 76503-6110; Phone: (254) 207-7000; Toll Free (800) 433-3222; Website: [www.wilsonart.com](http://www.wilsonart.com); Sustainable Design Website: <http://sustain.wilsonart.com>.

For information about MasterSpec contact ARCOM at (800) 424-5080 or visit [www.MasterSpec.com](http://www.MasterSpec.com).

## SECTION 064116 - PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

### **TIPS:**

To view non-printing **Editor's Notes** that provide guidance for editing, click on Masterworks/Single-File Formatting/Toggle/Editor's Notes.

To read **detailed research, technical information about products and materials, and coordination checklists**, click on Masterworks/Supporting Information.

Revise this Section by deleting and inserting text to meet Project-specific requirements.

This Section uses the term "Architect." Change this term to match that used to identify the design professional as defined in the General and Supplementary Conditions.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

Before editing this Section, review requirements of the Architectural Woodwork Institute (AWI), Architectural Woodwork Manufacturers Association of Canada (AWMAC), and Woodwork Institute's (WI) "Architectural Woodwork Standards." This review helps to avoid repeating or conflicting with requirements of that standard.

Wilsonart Laminate comprises a vast range of laminate products with colors and patterns to suit virtually any architectural cabinet design requirements, from standard decorative laminate offerings to digital artwork and photorealistic imagery replications. Wilsonart is the largest and most-recognized manufacturer of laminates in the United States with a substantial presence in the global marketplace.

Wilsonart Thermally Fused Laminate (TFL) Panels provide a cost-effective melamine-laminate-based panel construction option. TFL Panel laminate surfaces provide good wear and resistance to stains and scratches. Additionally, urea-formaldehyde-free and moisture-resistant panel core options are available. It is important to note that TFL Panels are one component of the Wilsonart Coordinated Surfaces Program, which enables the design professional to select from multiple laminate surface options without compromising the intended design concept for a particular project.

Wilsonart Laminate and TFL Panels contribute to LEED-NC and LEED-CI points in several categories. Wilsonart Laminate has attained UL GREENGUARD Gold Certification and SCS Gold Certification for low indoor air chemical emissions into indoor air during product usage, and SCS certifications for recycled content and FSC stewardship criteria compliance.

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

Retain or delete this article in all Sections of Project Manual.

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. Section Includes:
  - 1. Plastic-laminate-faced architectural cabinets.
  - 2. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-faced architectural cabinets unless concealed within other construction before cabinet installation.
- B. Related Requirements:

Retain subparagraph below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

- 1. Section 061000 "Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing cabinets and concealed within other construction before cabinet installation.
- 2. Section 123623.13 "Plastic-Laminate-Clad Countertops."
- 3. Section 123661.19 "Quartz Agglomerate Countertops."

### 1.3 REFERENCES

- A. ANSI A 208.1: Particleboard.
- B. ANSI A 208.2: Medium Density Fiberboard (MDF) For Interior Applications
- C. ASTM C 1036: Standard Specification for Flat Glass.

- D. ASTM C 1048: Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.
- E. ASTM C 1503: Standard Specification for Silvered Flat Glass Mirror.
- F. ASTM E 84: Standard Test Method for Surface Burning Characteristics of Building Materials.
- G. AWI: Architectural Woodwork Institute.
- H. AWS: Architectural Woodwork Standards.
- I. BHMA A156.9: Cabinet Hardware.
- J. BHMA A156.11: Cabinet Locks.
- K. BHMA A156.18: Materials and Finishes.
- L. DOC PS 1: Voluntary Product Standard for Structural Plywood.
- M. FSC: Forest Stewardship Council.
- N. FSC 01-001: Principles and Criteria for Forest Stewardship.
- O. FSC 04-004: Standard for Chain of Custody Certification.
- P. GANA: Glass Association of North America.
- Q. HPVA HP-1: American National Standard for Hardwood and Decorative Plywood
- R. ICC: International Code Council.
- S. ICC-ES: ICC Evaluation Service.
- T. ISO 9001: Quality Management Systems.
- U. LEED: Leadership in Energy and Environmental Design.
- V. NEMA LD 3: High Pressure Decorative Laminates.
- W. WI: Woodwork Institute.

#### 1.4 PREINSTALLATION MEETINGS

Retain "Preinstallation Conference" Paragraph below if Work of this Section is extensive or complex enough to justify a conference.

- A. Preinstallation Conference: Conduct conference at **[Project site]** <Insert location>.

If needed, insert list of conference participants not mentioned in Section 013100 "Project Management and Coordination."



## 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product[, **including**] [**panel products**] [**high-pressure decorative laminate**] [**adhesive for bonding plastic laminate**] [**fire-retardant-treated materials**] [**and**] [**cabinet hardware and accessories**].

1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.
2. Include Safety Data Sheets (SDS).

LEED-NC and LEED-CI points are achievable in several categories. Sustainability certifications include UL GREENGUARD Gold Certification and SCS Gold Certification for low indoor air chemical emissions, and SCS certifications for recycled content and FSC stewardship criteria compliance. Full sustainability documentation can be accessed at [www.wilsonart.com/resources](http://www.wilsonart.com/resources).

- B. Sustainable Design Submittals:

1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.

"Product Certificates" Subparagraph below applies to LEED 2009.

2. Product Certificates: For regional materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include distance to Project and cost for each regional material.
3. Chain-of-Custody Certificates: For certified wood products. Include statement of costs.

"Product Data" Subparagraph below applies to LEED 2009 NC and CI Credit IEQ 4.4.

4. Product Data: For adhesives, indicating that product contains no urea formaldehyde.

"Product Data" Subparagraph below applies to LEED 2009 NC and CI Credit IEQ 4.4.

5. Product Data: For composite wood products, indicating that product contains no urea formaldehyde.

- C. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.

Retain first subparagraph below only for ornate, complex, or very high-quality work.

1. Show details full size.
2. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
3. Show locations and sizes of cutouts and holes for [**electrical switches and outlets**] [**and other items**] installed in architectural plastic-laminate cabinets.

Retain one of two subparagraphs below only if retaining other requirements for WI's or AWI's quality certification program.

4. Apply WI Certified Compliance Program label to Shop Drawings.
5. Apply AWI Quality Certification Program label to Shop Drawings.

Delete "Samples for Initial Selection" Paragraph below if colors and other characteristics are preselected and specified or scheduled. Retain "Samples for Verification" Paragraph below with or without "Samples for Initial Selection" Paragraph.

D. Samples for Initial Selection:

Revise list below to suit Project.

1. Plastic laminates.
2. ABS/PVC edge material.
3. Thermoset decorative panels.

E. Samples for Verification:

Delete items in subparagraphs below that are not needed for control of grain character, color, and finish, or insert other items. The "Architectural Woodwork Standards" require samples to be "as wide as practical" by 12 inches (300 mm) for lumber and 12 by 12 inches (300 by 300 mm) for panel products.

1. Plastic laminates, [**8 by 10 inches (200 by 250 mm)**] [**12 by 12 inches (300 by 300 mm)**], for each[ **type,**] color, pattern, and surface finish[, **with one sample applied to core material**] [**and specified edge material applied to one edge**].
2. Thermoset decorative panels, [**8 by 10 inches (200 by 250 mm)**] [**12 by 12 inches (300 by 300 mm)**], for each color, pattern, and surface finish[, **with edge banding on one edge**].
3. Corner pieces as follows:
  - a. Cabinet-front frame joints between stiles and rails, as well as exposed end pieces, **18 inches (450 mm)** high by **18 inches (450 mm)** wide by **6 inches (150 mm)** deep.
  - b. Miter joints for standing trim.

Delete subparagraph below if Product Data are acceptable.

4. Exposed cabinet hardware and accessories, one unit for each type[ **and finish**].

## 1.6 INFORMATIONAL SUBMITTALS

Coordinate "Qualification Data" Paragraph below with qualification requirements in Section 014000 "Quality Requirements" and as may be supplemented in "Quality Assurance" Article.

A. Qualification Data: For [**Installer**] [**fabricator**].

B. Product Certificates: For [**each type of product.**] [**the following:**]

1. Composite wood and agrifiber products.
2. Thermoset decorative panels.
3. High-pressure decorative laminate.
4. Glass.
5. Adhesives.

- C. Woodwork Quality Standard Compliance Certificates: **[AWI Quality Certification Program certificates] [WI Certified Compliance Program certificates]**.
- D. Evaluation Reports: For fire-retardant-treated materials, from ICC-ES.

## 1.7 QUALITY ASSURANCE

Consider retaining one of two options in "Fabricator Qualifications" Paragraph below if AWI quality certification or WI compliance certification is required. Both AWI and WI will inspect work and provide certification for work that passes inspection if fabricator is not certified/licensed.

- A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance. **[Shop is a certified participant in AWI's Quality Certification Program.] [Shop is a licensee of WI's Certified Compliance Program.]**

Delete "Installer Qualifications" Paragraph below if not required or available. If AWI Quality Certification Program labels or certificates are required for installation, installer must be a certified participant. If woodwork must be FSC certified, fabricator must either install woodwork or be FSC certified for chain of custody.

- B. Installer Qualifications: **[Fabricator of products] [Certified participant in AWI's Quality Certification Program] [Licensee of WI's Certified Compliance Program]**.
- C. Laminate Manufacturer Qualifications: Manufacturer producing products in an ISO 9001 certified facility.
- D. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.
- E. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

Retain first subparagraph below and indicate on Drawings plastic-laminate cabinets represented by mockup or draw mockup as separate element; otherwise insert a description of the cabinets to be mocked up.

1. Build mockups of **[typical plastic-laminate cabinets as shown on Drawings] <Insert description>**.

Retain subparagraph below if the intention is to make an exception to the default requirement in Section 014000 "Quality Requirements" for demolishing and removing mockups.

2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver cabinets until painting and similar operations that could damage woodwork have been completed in installation areas. If cabinets must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

## 1.9 FIELD CONDITIONS

Retain first "Environmental Limitations" Paragraph below if humidity will not be controlled during occupancy.

- A. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

Retain "Environmental Limitations" Paragraph below if humidity will be controlled during occupancy and retain one of three relative-humidity ranges or insert another based on local climatological data. Three ranges given are for painted or finished woodwork. First applies to Ontario, Quebec, and most of U.S. Second applies to damp coastal areas of southern U.S. and the Maritime Provinces. Third applies to dry southwestern U.S. and to Alberta, Manitoba, and Saskatchewan. For unfinished woodwork, narrower ranges will be required to maintain optimum moisture content. See map and discussion about relative humidity and moisture content in the "Architectural Woodwork Standards."

- B. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature between **60 and 90 deg F (16 and 32 deg C)** and relative humidity between **[25 and 55] [43 and 70] [17 and 50] <Insert humidity range>** percent during the remainder of the construction period.
- C. Field Measurements: Where cabinets are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
  - 1. Locate concealed framing, blocking, and reinforcements that support cabinets by field measurements before being enclosed, and indicate measurements on Shop Drawings.
- D. Established Dimensions: Where cabinets are indicated to fit to other construction, establish dimensions for areas where cabinets are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

## 1.10 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that cabinets can be supported and installed as indicated.

Retain "Hardware Coordination" Paragraph below if cabinet locks or other hardware applied to woodwork, such as hinges and locks applied to wood jambs, is specified in a hardware Section. Include a

similar paragraph for other specific items requiring coordination, such as light fixtures installed in woodwork.

- B. Hardware Coordination: Distribute copies of approved hardware schedule specified in Section 087111 "Door Hardware (Descriptive Specification)" to fabricator of architectural woodwork; coordinate Shop Drawings and fabrication with hardware requirements.

## PART 2 - PRODUCTS

See Editing Instruction No. 1 in the Evaluations for cautions about named manufacturers and products. For an explanation of options and Contractor's product selection procedures, see Section 016000 "Product Requirements."

### 2.1 ARCHITECTURAL CABINET FABRICATORS

Retain "Fabricators" Paragraph below if a list of preapproved woodworkers is used as a quality-control procedure. See Evaluations. Retain first or second option if additional firms will not be considered; retain third option if they will. If retaining third option, include procedure for approving other firms in the Instructions to Bidders.

- A. Fabricators: Subject to compliance with requirements, **[provide products by the following]** **[provide products by one of the following]** **[available fabricators offering products that may be incorporated into the Work include, but are not limited to, the following]:**

See AWI's or WI's member list for names of woodworking firms.

1. **<Insert, in separate subparagraphs, names and possibly contact information for preapproved woodworking firms>.**

### 2.2 PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of architectural plastic-laminate cabinets indicated for construction, finishes, installation, and other requirements.

If retaining first subparagraph below, verify applicability of certification for Project's geographic location. Certification programs of both organizations are available to member and nonmember firms. Both AWI and WI will inspect work and provide certification for work that passes inspection if fabricator is not certified/licensed. Contact either organization for a list of certified woodworkers in Project's location.

1. Provide **[labels]** **[and]** **[certificates]** from **[AWI]** **[WI]** certification program indicating that woodwork**[, including installation,]** complies with requirements of grades specified.

Retain subparagraph below only if Drawings and Specifications are more restrictive than quality standard.

2. The Contract Documents contain selections chosen from options in the quality standard and additional requirements beyond those of the quality standard. Comply with those selections and requirements in addition to the quality standard.

B. Grade: **[Premium]** **[Custom]** **[Economy]**.

"Regional Materials" Paragraph below applies to LEED 2009 NC Credit MR 5 and to LEED 2009 CI Credit MR 5, Option 2; before retaining, verify availability of materials that comply.

C. Regional Materials: Wood products shall be manufactured within **500 miles (800 km)** of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within **500 miles (800 km)** of Project site.

"Regional Materials" Paragraph below applies to LEED 2009 CI Credit MR 5, Option 1.

D. Regional Materials: Wood products shall be manufactured within **500 miles (800 km)** of Project site.

"Certified Wood" Paragraph below applies to LEED 2009. Manufacturers certifying products as "FSC Mixed Credit" do not have to use 100 percent certified wood in the products; however, in their total production, manufacturers must use an amount equal to or greater than the percentage of their production that is labeled "FSC Mixed Credit."

E. Certified Wood: Wood products shall be certified as "FSC Pure"[ **or "FSC Mixed Credit"**] according to FSC STD-01-00 and FSC STD-40-004.

F. Type of Construction: **[Frameless]** **[Face frame]**.

G. Cabinet, Door, and Drawer Front Interface Style: **[Flush overlay]** **[Reveal overlay]** **[Lipped]** **[Flush inset]**.

H. Reveal Dimension: **[1/2 inch (13 mm)]** **[As indicated]** **<Insert dimension>**.

Wilsonart offers a full complement of decorative plastic laminate product options, including "Standard," "High Definition," "Soligor," WilsonartXYou," "Virtual Design Library," and "Compact Laminate." Other choices are available for fire-rated (Wilsonart Fire-Rated) and chemical-resistant (Wilsonart Chemsurf) products. Complete design and technical information can be accessed at [www.wilsonart.com/products](http://www.wilsonart.com/products).

I. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by woodwork quality standard.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Wilsonart LLC; **Decorative Plastic Laminates** or a comparable product by one of the following:

- a. Abet Laminati Inc.
- b. Formica Corporation.
- c. Lamin-Art, Inc.
- d. Pionite; a Panolam Industries International, Inc. brand.
- e. **<Insert manufacturer's name>**.

J. Laminate Cladding for Exposed Surfaces:



Retain grade designations from options in first four subparagraphs below. Grade HGS is 1.2 mm (0.048 inch) thick, Grades HGL and HGP are 1.0 mm (0.039 inch) thick, and Grade VGS is 0.7 mm (0.028 inch) thick.

1. Horizontal Surfaces: [**Grade HGS**] [**Grade HGL**].
2. Postformed Surfaces: Grade HGP.
3. Vertical Surfaces: [**Grade HGS**] [**Grade VGS**].

The standard decorative edgeband for Wilsonart Laminates is an ABS/PVC extrusion, Wilsonart Edgeband.

4. Edges: ABS/PVC extruded fabrication.
5. Pattern Direction: [**Vertically for drawer fronts, doors, and fixed panels**] [**Horizontally for drawer fronts, doors, and fixed panels**] [**Vertically for doors and fixed panels, horizontally for drawer fronts**] [**As indicated**].

Delete "Materials for Semiexposed Surfaces" Paragraph below for woodworker's option from choices in standard.

K. Materials for Semiexposed Surfaces:

1. Surfaces Other Than Drawer Bodies: [**High-pressure decorative laminate, NEMA LD 3, Grade VGS**] [**High-pressure decorative laminate, NEMA LD 3, Grade CLS**] [**Thermoset decorative panels**].

Retain one edge construction from "Edges of Plastic-Laminate Shelves" Subparagraph below if retaining high-pressure decorative laminate in "Surfaces Other Than Drawer Bodies" Subparagraph above.

- a. Edges of Plastic-Laminate Shelves: ABS/PVC extruded fabrication.
- b. Edges of Thermoset Decorative Panel Shelves: ABS/PVC extruded fabrication.

Retain first subparagraph below if required to provide balanced construction.

- c. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, [**Grade VGS**] [**Grade CLS**].
2. Drawer Sides and Backs: [**Solid-hardwood lumber**] [**Thermoset decorative panels with ABS/PVC extrusion banding**].
3. Drawer Bottoms: [**Hardwood plywood**] [**Thermoset decorative panels**].

Retain "Dust Panels" Paragraph below if required. Dust panels are not required by standards.

- L. Dust Panels: **1/4-inch (6.4-mm)** plywood or tempered hardboard above compartments and drawers unless located directly under tops.

Retain "Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces" Paragraph below if required to provide balanced construction. Complete backer sheet technical information, including Grade designations other than BKL, can be accessed at [www.wilsonart.com/products](http://www.wilsonart.com/products).

- M. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.

- N. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.
1. Join subfronts, backs, and sides with **[glued rabbeted joints supplemented by mechanical fasteners]** **[or]** **[glued dovetail joints]**.
- O. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:

Retain one of first four subparagraphs below. If retaining second, indicate colors, patterns, and finishes in a separate schedule.

1. As specified in SCHEDULE Article of this Section.
2. As indicated by laminate manufacturer's designations.
3. Match Architect's sample.
4. As selected by Architect from laminate manufacturer's full range.
  - a. Patterns, **[gloss]** **[matte]** finish.

## 2.3 WOOD MATERIALS

- A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.

Retain one of three ranges of moisture content in "Wood Moisture Content" Subparagraph below. First range applies to Ontario, Quebec, and most of U.S. Second applies to damp coastal areas of southern U.S. and to the Maritime Provinces. Third applies to dry southwestern U.S. and to Alberta, Manitoba, and Saskatchewan. See relative-humidity and moisture-content map in the "Architectural Woodwork Standards." Note that some areas have micro-climates that differ from the surrounding region.

1. Wood Moisture Content: **[5 to 10]** **[8 to 13]** **[4 to 9]** percent.
- B. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.

Retain "Recycled Content of MDF and Particleboard" Paragraph below to specify recycled content if required. An alternative method of requiring recycled content is to retain requirement in Project's Division 01 sustainable design requirements Section that gives Contractor the option and responsibility to determine how recycled content requirements will be met. Recycled content of MDF and particleboard varies greatly; consult manufacturers before inserting requirement.

1. Recycled Content of MDF and Particleboard: Postconsumer recycled content plus one-half of preconsumer recycled content not less than **<Insert value>** percent.

"Composite Wood Products" Paragraph below applies to LEED 2009 NC, CI, and CS Credit IEQ 4.4.

- C. Composite Wood Products: Products shall be made without urea formaldehyde.

Grades for medium-density fiberboard changed with the 2002 edition of ANSI A208.2. Grade 130 is approximately equivalent to the previous Grade MD.

1. Medium-Density Fiberboard: ANSI A208.2, [**Grade 130**] <Insert grade>.
2. Particleboard: ANSI A208.1, [**Grade M-2**] [**Grade M-2-Exterior Glue**].
3. Particleboard: Straw-based particleboard complying with requirements in ANSI A208.1, Grade M-2, except for density.
  - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - 1) Environ Biocomposites Manufacturing LLC.
    - 2) Sorm Incorporated.
    - 3) <Insert manufacturer's name>.
4. Softwood Plywood: DOC PS 1[, **medium-density overlay**].

Note that the term "plywood" in "Veneer-Faced Panel Products (Hardwood Plywood)" Subparagraph below refers to a wood-based panel with veneers applied to both faces; core may be made up of veneers (either hardwood or softwood), particleboard, medium-density fiberboard, hardboard, or glued-up lumber.

5. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1.

Thermoset decorative panels are frequently called "melamine." If retaining "Thermoset Decorative Panels" Subparagraph below, also retain "Medium-Density Fiberboard" Subparagraph and applicable "Particleboard" Subparagraph above. Note that Wilsonart Thermally Fused Laminate (TFL) Panels are one component of the Wilsonart Coordinated Surfaces program that combines Wilsonart Laminate, TFL Panels, and the standard Wilsonart Edgeband as a suite of products offering the best possible matches in surface, design, and texture, regardless of the pattern(s) selected. Selection of products by other manufacturers, including those submitted as cost-effective (deductive) alternates, may compromise the design concept desired for a particular project. For additional information please visit [www.wilsonart.com/resources](http://www.wilsonart.com/resources).

6. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for test methods 3.3, 3.4, 3.6, 3.8, and 3.10.
  - a. Basis-of-Design Product: Subject to compliance with requirements, provide Wilsonart Thermally Fused Laminate Panels or a comparable product by one of the following:
    - 1) Abet Laminati Inc.
    - 2) Arborite.
    - 3) Lamin-Art, Inc.
    - 4) <Insert manufacturer's name>.

## 2.4 FIRE-RETARDANT-TREATED MATERIALS

If fire-retardant materials are required, verify requirements and acceptability of various materials with authorities having jurisdiction.

- A. Fire-Retardant-Treated Materials, General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

1. Use treated materials that comply with requirements of referenced woodworking standard. Do not use materials that are warped, discolored, or otherwise defective.
  2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
  3. Identify fire-retardant-treated materials with appropriate classification marking of qualified testing agency in the form of removable paper label or imprint on surfaces that will be concealed from view after installation.
- B. Fire-Retardant-Treated Lumber and Plywood: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than **10.5 feet (3.2 m)** beyond the centerline of the burners at any time during the test.
1. Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent, respectively.

Retain first subparagraph below if items are to receive a stained or natural finish. Organic resin treatment is more expensive than salt treatments but helps ensure a better stained or natural finish.

2. For items indicated to receive a stained or natural finish, use organic resin chemical formulation.

Retain one of two subparagraphs below. Before retaining first, verify that wood species and treatment process specified are approved for milling after treatment.

3. Mill lumber after treatment within limits set for wood removal that do not affect listed fire-test-response characteristics, using a woodworking shop certified by testing and inspecting agency.
4. Mill lumber before treatment and implement special procedures during treatment and drying processes that prevent lumber from warping and developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of treated woodwork.

Note that fire-retardant particleboard contains urea formaldehyde. It complies with requirements for Class I (Class A) finish but not requirements of model codes for use where noncombustible materials are required.

- C. Fire-Retardant Particleboard: Panels complying with the following requirements, made from softwood particles and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 25 or less per ASTM E 84.
1. For panels **3/4 inch (19 mm)** thick and less, comply with ANSI A208.1 for Grade M-2 except for the following minimum properties: modulus of rupture, **1600 psi (11 MPa)**; modulus of elasticity, **300,000 psi (2070 MPa)**; internal bond, **80 psi (550 kPa)**; and screw-holding capacity on face and edge, **250 and 225 lbf (1100 and 1000 N)**, respectively.
  2. For panels **13/16 to 1-1/4 inches (20 to 32 mm)** thick, comply with ANSI A208.1 for Grade M-1 except for the following minimum properties: modulus of rupture, **1300 psi (9 MPa)**; modulus of elasticity, **250,000 psi (1720 MPa)**; linear expansion, 0.50 percent; and screw-holding capacity on face and edge, **250 and 175 lbf (1100 and 780 N)**, respectively.

- D. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Flakeboard Company Limited.
  2. SierraPine.
  3. **<Insert manufacturer's name>.**

Fiberboard in "Fire-Retardant Fiberboard" Paragraph below complies with requirements for Class I (Class A) finish but not requirements of model codes for use where noncombustible materials are required.

- E. Fire-Retardant Fiberboard: Medium-density fiberboard panels complying with ANSI A208.2, made from softwood fibers, synthetic resins, and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 200 or less per ASTM E 84.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- a. Panel Source International, Inc.
  - b. SierraPine.
  - c. **<Insert manufacturer's name>.**

## 2.5 CABINET HARDWARE AND ACCESSORIES

Where close matching of cabinet hardware and door hardware is required, it may be preferable to specify cabinet hardware in Section 087111 "Door Hardware (Descriptive Specification)."

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets except for items specified in Section 087111 "Door Hardware (Descriptive Specification)."

Paragraphs below describing hardware items are examples only; revise to suit Project. Delete if schedule is included on Drawings. See the "Architectural Woodwork Standards" or BHMA standards for illustrations of and designations for additional types of cabinet hardware.

- B. Butt Hinges: **2-3/4-inch (70-mm)**, five-knuckle steel hinges made from **0.095-inch- (2.4-mm-)** thick metal, and as follows:
1. Semiconcealed Hinges for Flush Doors: BHMA A156.9, B01361.
  2. Semiconcealed Hinges for Overlay Doors: BHMA A156.9, B01521.

Hinges in "Frameless Concealed Hinges (European Type)" Paragraph below are not as strong as heavy-duty butt hinges above.

- C. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, **[100] [135] [170]** degrees of opening[, **self-closing**].
- D. Back-Mounted Pulls: BHMA A156.9, B02011.

- E. Wire Pulls: Back mounted, solid [metal] [plastic], [4 inches (100 mm) long, 5/16 inch (8 mm) in diameter] [5 inches (127 mm) long, 2-1/2 inches (63.5 mm) deep, and 5/16 inch (8 mm) in diameter].
- F. Catches: [Magnetic catches, BHMA A156.9, B03141] [Push-in magnetic catches, BHMA A156.9, B03131] [Roller catches, BHMA A156.9, B03071] [Ball friction catches, BHMA A156.9, B03013].

First option in "Adjustable Shelf Standards and Supports" Paragraph below specifies standards and clip-type rests for mounting at ends of shelves; second specifies standards and knife-type brackets for mounting at rear of shelves.

- G. Adjustable Shelf Standards and Supports: [BHMA A156.9, B04071; with shelf rests, B04081] [BHMA A156.9, B04102; with shelf brackets, B04112].

Shelf rests in "Shelf Rests" Paragraph below are installed in holes drilled in cabinet sides and partitions.

- H. Shelf Rests: BHMA A156.9, B04013; [metal] [plastic] [metal, two-pin type with shelf hold-down clip].
- I. Drawer Slides: BHMA A156.9.
  - 1. Grade 1 and Grade 2: Side mounted[ and extending under bottom edge of drawer]; [full-extension] [partial-extension] type; [zinc-plated steel] [epoxy-coated steel] with polymer rollers.
  - 2. Grade 1HD-100 and Grade 1HD-200: Side mounted; [full-extension] [full-overtravel-extension] type; zinc-plated-steel ball-bearing slides.

Grades in five subparagraphs below correspond to the following initial load test requirements: Grade 2, 30 lbf (13.3 kg); Grade 1, 50 lbf (22.2 kg); Grade 1HD-100, 100 lbf (44.5 kg); Grade 1HD-200, 200 lbf (90 kg).

- 3. For drawers not more than 3 inches (75 mm) high and not more than 24 inches (600 mm) wide, provide [Grade 2] [Grade 1].
  - 4. For drawers more than 3 inches (75 mm) high but not more than 6 inches (150 mm) high and not more than 24 inches (600 mm) wide, provide [Grade 1] [Grade 1HD-100].
  - 5. For drawers more than 6 inches (150 mm) high or more than 24 inches (600 mm) wide, provide [Grade 1HD-100] [Grade 1HD-200].
  - 6. For computer keyboard shelves, provide [Grade 1] [Grade 1HD-100].
  - 7. For trash bins not more than 20 inches (500 mm) high and 16 inches (400 mm) wide, provide [Grade 1HD-100] [Grade 1HD-200].
- J. [Plastic] [Aluminum] Slides for Sliding Glass Doors: BHMA A156.9, B07063.

Locks specified in "Door Locks" and "Drawer Locks" paragraphs below are deadbolt locks, surface mounted on inside of door or drawer with only the cylinder exposed on outside; revise either paragraph if another type of lock is required.

- K. Door Locks: BHMA A156.11, E07121.
- L. Drawer Locks: BHMA A156.11, E07041.



M. Door and Drawer Silencers: BHMA A156.16, L03011.

Retain "Float Glass for Cabinet Doors" or "Tempered Float Glass for Cabinet Doors" Paragraph below if glass is required for cabinet doors. Retain option in second paragraph for seamed exposed edges if unframed glass doors are used.

N. Float Glass for Cabinet Doors: ASTM C 1036, Type I, [Class 1 (clear)] [Class 2 or 3 (tinted)], Quality-Q3, [3.0 mm] [4.0 mm] [5.0 mm] [6.0 mm] thick.

1. Tint Color: [Blue-green] [Bronze] [Green] [Gray] <Insert color>.

O. Tempered Float Glass for Cabinet Doors: ASTM C 1048, Kind FT, Condition A, Type I, [Class 1 (clear)] [Class 2 or 3 (tinted)], Quality-Q3[, with exposed edges seamed before tempering], 6 mm thick unless otherwise indicated.

1. Tint Color: [Blue-green] [Bronze] [Green] [Gray] <Insert color>.

P. Mirror Glass for Cabinet Doors: ASTM C 1503, Mirror [Select] [Glazing], Quality-Q3, [3.0 mm] [4.0 mm] [5.0 mm] [6.0 mm] thick.

Q. Decorative Glass for Cabinet Doors: Provide decorative glass complying with Section 088113 "Decorative Glass Glazing."

R. Tempered Float Glass for Cabinet Shelves: ASTM C 1048, Kind FT, Condition A, Type I, [Class 1 (clear)] [Class 2 or 3 (tinted)], Quality-Q3; with exposed edges seamed before tempering, 6 mm thick.

1. Tint Color: [Blue-green] [Bronze] [Green] [Gray] <Insert color>.

S. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.

Subparagraphs below are examples only. Revise to suit Project. If more than one finish is required, indicate location of each here or on Drawings. See Evaluations.

1. Dark, Oxidized, Satin Bronze, Oil Rubbed: BHMA 613 for bronze base; BHMA 640 for steel base; match Architect's sample.
2. Bright Brass, Clear Coated: BHMA 605 for brass base; BHMA 632 for steel base.
3. Bright Brass, Vacuum Coated: BHMA 723 for brass base; BHMA 729 for zinc-coated-steel base.
4. Satin Brass, Blackened, Bright Relieved, Clear Coated: BHMA 610 for brass base; BHMA 636 for steel base.
5. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
6. Bright Chromium Plated: BHMA 625 for brass or bronze base; BHMA 651 for steel base.
7. Satin Stainless Steel: BHMA 630.

T. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

## 2.6 MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: [**Softwood or hardwood lumber**] [**Fire-retardant-treated softwood lumber**], kiln dried to less than 15 percent moisture content.
- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.

"Adhesives" Paragraph below applies to LEED 2009 NC and CI Credit IEQ 4.4.

- C. Adhesives: Do not use adhesives that contain urea formaldehyde.

Retain one of five options in "Adhesive for Bonding Plastic Laminate" Paragraph below or delete all and leave as woodworker's option. First and second options are suitable for general use and for postforming. Use only unpigmented product with through-color laminate. Water-based varieties must be used where VOC limits apply. Third option is white or yellow wood glue and is good for use with through-color laminates; it is not for postforming and has poor water, chemical, and heat resistance. Fourth option has good water and chemical resistance and resistance to temperature fluctuations; it is also suitable for postforming and for through-color laminates. Retain fifth option if required for fire resistance; it is the only adhesive with flame-spread index less than 25. Resorcinol also has good water and chemical resistance; it is not for postforming or for through-color laminates. The complete line of Wilsonart laminate adhesives can be accessed at [www.wilsonart.com/products](http://www.wilsonart.com/products).

- D. Adhesive for Bonding Plastic Laminate: [**Unpigmented contact cement**] [**Contact cement**] [**PVA**] [**Urea formaldehyde**] [**Resorcinol**].

Retain "Adhesive for Bonding Edges" Subparagraph below unless good chemical, fire, or temperature resistance is required.

- 1. Adhesive for Bonding Edges: Hot-melt adhesive[ **or adhesive specified above for faces**].

## 2.7 FABRICATION

- A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.
- B. Fabricate cabinets to dimensions, profiles, and details indicated.
- C. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

Retain first subparagraph below if Architect will examine work in woodwork shop before it is shipped to Project site.

- 1. Notify Architect seven days in advance of the dates and times woodwork fabrication will be complete.

Retain subparagraph below for high-quality and large or complex work.

2. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements before disassembling for shipment.
- D. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs. For decorative plastic laminates, comply with manufacturer's written fabrication instructions.
- E. Install glass to comply with applicable requirements in Section 088000 "Glazing" and in GANA's "Glazing Manual." For glass in wood frames, secure glass with removable stops.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Before installation, condition cabinets to average prevailing humidity conditions in installation areas.
- B. Before installing cabinets, examine shop-fabricated work for completion and complete work as required.

#### 3.2 INSTALLATION

Revise "Grade" Paragraph below if installation grade is different from fabrication grade.

- A. Grade: Install cabinets to comply with same grade as item to be installed.
- B. Assemble cabinets and complete fabrication at Project site to the extent that it was not completed in the shop.
- C. Install cabinets level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of **1/8 inch in 96 inches (3 mm in 2400 mm)**.
- D. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing nails[ **or finishing screws**] for exposed fastening, countersunk and filled flush with woodwork.
  1. Use filler matching finish of items being installed.

- F. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
1. Install cabinets with no more than **1/8 inch in 96-inch (3 mm in 2400-mm)** sag, bow, or other variation from a straight line.

Revise requirements in subparagraph below as necessary for seismic restraint of cabinets. Delete if hanging cleats are used and are detailed on Drawings.

2. Fasten wall cabinets through back, near top and bottom, and at ends not more than **16 inches (400 mm)** o.c. with **[No. 10 wafer-head screws sized for not less than 1-1/2-inch (38-mm) penetration into wood framing, blocking, or hanging strips] [No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish] [toggle bolts through metal backing or metal framing behind wall finish].**

### 3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective cabinets, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean cabinets on exposed and semiexposed surfaces. Clean decorative plastic laminate surfaces according to manufacturer's written care and maintenance instructions.
- D. Protect completed work from damage for duration of construction period.

### 3.4 SCHEDULE

END OF SECTION 064116

## 1. Manufacturer

Wilsonart LLC  
2501 Wilsonart Drive  
P.O. Box 6110  
Temple, Texas 76503-6110  
Phone: (254) 207-7000; (800) 433-3222  
Fax: (254) 207-2384  
Web Site: [www.wilsonart.com](http://www.wilsonart.com)

## 2. Product Description

### **Recommended Uses**

Wilsonart® Laminate, types 107, 335, and 350, is suitable for use on fine quality residential and commercial furniture, fixtures and casework, and for architectural application on columns, wainscoting, valances, cornices, interior doors and divider systems.

**General Purpose (HGS) Type 107** is most frequently used for work surfaces on counters, islands, vanities, desks and tables. Typical vertical uses include surfacing for wall panels, teller cages and the front panels of workstations, such as those in hospitals, airports and restaurants. Type 107 is produced for both horizontal and vertical interior applications where the surface must be functional, durable and decorative.

**Vertical Surface (VGP) Type 335** is the usual choice to surface cabinet walls, doors and drawer panels. It often appears on the vertical surfaces of desks, restaurants booths and maître d' stations, and as architectural cladding. Type 335 is intended for vertical applications where a functional, durable, decorative surface must absorb somewhat less impact than a comparable horizontal surface. VGP surfaces may be postformed to achieve radius edges.

**Postforming (HGP) Type 350** adds the decorative capability of a soft edge to any typical laminate use. Common applications of postforming laminates are formed edges for counters, desktops, cabinet doors and drawer panels. Type 350 is intended for use on vertical and horizontal interior surfaces where it is necessary or desirable to roll the laminate on a simple radius over the edge of the substrate. This eliminates seams and leaves an attractive surface.

Wilsonart® HD® finishes feature Antimicrobial Protection that helps inhibit the growth of stain and odor causing bacteria, mold, and mildew on your countertop or surface. Wilsonart's Antimicrobial Protection won't wash away or wear off. Premium and Standard finishes are available with Antimicrobial Protection upon request during the ordering process.

### **Product Composition**

Decorative surface papers impregnated with melamine resins are pressed over Kraft paper core sheets impregnated with phenolic resin. These sheets are then bonded at pressures greater than 1000 pounds per square inch at temperatures approaching 300°F (149°C). Finished sheets are trimmed, and the backs are sanded to facilitate bonding.

### **Basic Limitations**

Wilsonart® Laminate is for interior use only and is not recommended for direct application to plaster, concrete walls, or gypsum wallboard. It is not structural material and must be bonded to a suitable substrate.

Do not subject Wilsonart® Laminate to extremes in humidity or temperatures higher than 275°F (135°C) for substantial periods of time, or intense, continuous, direct sunlight.

### **Patterns & Colors**

Available in a full range of solid colors, stones, marbles, woodgrains, leathers and patterns. See all designs at [www.wilsonart.com](http://www.wilsonart.com). Please see actual sample before specifying.

### **Finishes**

Confirm finish availability on individual designs by going to [www.wilsonart.com](http://www.wilsonart.com)

#### **#01 High Gloss - Premium**

A mirror sheen finish, which gives a smooth, brilliant appearance. #01-High Gloss finish also features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Can be used for horizontal applications such as countertops and light-to-medium commercial applications. Excellent for vertical applications. *Nominal Glossometer Reading = 110*

#### **#05 Timbergrain - Premium**

An overall finish with dimensional low-sheen, realistic ticking and natural variation across the sheet, looks very much like the surface of natural wood veneer. #05 finish features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 4.5*

#### **#07 Textured Gloss - Premium**

A textured finish which reproduces the high sheen of waxed wood furniture. #07 finish features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 42*

#### **#12 SoftGrain - Premium**

A dense wood grain structure that is low gloss and soft to the touch. Subtle highlights of reflectivity randomly occur within the embossed grains, creating a sophisticated raw wood look. #12 finish features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 8*

#### **#16 Casual Rustic - Premium**

A woodgrain texture with a blend of grain variations ranging from linear to subtle movement with random, irregular features. The overall low gloss surface is accented with higher sheen woodgrain ticking and random highlights. #16 finish features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 6*

#### **#18 Linearity - Premium**

A directional texture running the length of the sheet, having a narrow, random and matte-gloss linear quality. It is complementary to linear woodgrains, and linear patterns (such as the “Satin” series), and provides dimension and visual movement to solid colors. #18 finish features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 18*

#### **#19 Leno Weave – Premium**

Random intersecting horizontal and vertical lines create a geometric weave with a matte-gloss finish. Recommended for horizontal and vertical applications. #19 finish features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 15*

#### **#21 Soft Silk – Premium**

A smooth, ultra-matte finish with a silky, soft touch. This minimalist finish gives the surface a genuine stone feel. Recommended for horizontal and vertical applications. #21 finish features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 8*



### **#22 Antique - Premium**

A mixture of varying low gloss features combined with organic movement, indicative of the surface of an aged stone or an antique metal. Antique features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 9*

### **#28 Gloss Line - Premium**

A linear woodgrain texture with varied widths of narrow grain structures in an alternating mix of matte and gloss surfaces areas. Gloss Line features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 5*

### **#35 Mirage-Wilsonart® HD®**

Subtle variations in matte and gloss finish connect to nature's own finishes: rough and weathered, smooth and polished. #35 finish features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical applications. *Nominal Gloss Reading = 50*

### **#38 Fine Velvet Texture**

A smooth textured finish with moderate reflective value. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 14*

### **#52 Quarry - Premium**

Premium finish emulating the "pitted" look of polished natural stone. #52 features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 55*

### **#55 Glaze-Wilsonart® HD®**

A layering of matte features over a semi-gloss glaze, creates this timeworn effect. #55 finish features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical application. *Nominal Gloss Reading = 25*

### **#57 Aligned Oak – Wilsonart® HD®**

Authentic realism is brought to the surfaces using synchronized texture as each elegantly aged oak design exhibits the natural dimension and feel of real world. #57 finish features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 7*

### **#60 Matte - Standard**

Textured finish with a moderate reflective quality. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 10*

### **#78 FineGrain - Premium**

The FineGrain premium finish features the polish and luxe of a real wood veneer, with a subtle, narrow grain structure that runs the length of the sheet. #78 finish features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 38*

### **#79 Ridgewood – Premium**

An overall matte finish with ridged dimensional features creating a linear woodgrain effect. #79 finish features AEON™ Enhanced Scratch & Scuff-Resistant Performance Technology. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 4.5*

NOTE: Nominal Glossometer readings are made at a 60° angle of incidence.

**Finish Availability:** Not all finishes are available in all patterns and colors. Some finish options have limited size availability. Please check with your Wilsonart representative or consult the pattern availability lookup on our website at [www.wilsonart.com](http://www.wilsonart.com), to verify size availability by finish type.

#### **Standard Sheet Widths**

36"	48"	60"
914mm	1219mm	1524mm

#### **Standard Sheet Lengths**

96"	120"	144"
2438mm	3048mm	3658mm

NOTE: Not all sizes are available from stock; contact your Wilsonart representative for details on local availability. Minimums apply to non-standard designs and finishes in sizes other than 48"x96" and 60"x144". Please check with your Wilsonart representative.

**Thickness and Weight**

Description	107	335	350
Thickness	0.048" ± 0.005" (1.22mm ± 0.13mm)	0.028" + 0.001 - 0.004" (0.7mm + 0.03 - 0.10mm)	0.039" ± 0.005" (0.99mm ± 0.13mm)
Weight per square foot	0.322#	0.186#	0.260#

**3. Technical Data****Physical Properties of General Purpose Laminates**

ISO 4586 Test	Typical Wilsonart Type 107	ISO 4586-3 HGS
Thickness	0.048" ± 0.005" (1.22mm ± 0.13mm)	N/A
Appearance	N/A	N/A
Light Resistance	Slight effect	Slight Effect
Cleanability (cycles)	10	10
Stain Resistance Reagents 1-10 Reagents 11-15	No effect Slight effect	No effect Moderate effect
Boiling Water Resistance	Slight Effect (Gloss) No Effect (Other Finishes)	Slight Effect (Gloss) No Effect (Other Finishes)
High Temperature Resistance	Slight effect	Slight Effect (Gloss) No Effect (Other Finishes)
Impact Resistance	65" (1651mm)	31.5" (800mm)
Radiant Heat Resistance	210 seconds	≥ 200 sec.
Dimensional Stability Machine Direction Cross Direction	0.3% 0.7%	1.1% (max.) 1.4% (max.)
Surface Wear Resistance (cycles)	Meets or Exceeds 400	350 (min.)
Formability	Not applicable	Not applicable
Blistering	Not applicable	Not applicable

**Physical Properties of Vertical Surface Laminates**

ISO 4586 Test	Typical Wilsonart Type 335	ISO 4586-3 VGP
Thickness	0.028" + 0.001 - 0.004" (0.7mm + 0.03 - 0.10mm)	N/A
Appearance	N/A	N/A
Light Resistance	Slight effect	Slight effect
Cleanability (cycles)	10	20 (max.)
Stain Resistance Reagents 1-10 Reagents 11-15	No effect Slight effect	No effect Moderate effect
Boiling Water Resistance	Slight Effect (Gloss) No Effect (Other Finishes)	Slight Effect (Gloss) No Effect (Other Finishes)

<b>High Temperature Resistance</b>	Slight Effect (Gloss) No Effect (Other Finishes)	Slight Effect (Gloss) No Effect (Other Finishes)
<b>Impact Resistance</b>	40" (1016mm)	23.5" (600mm)
<b>Radiant Heat Resistance</b>	200 seconds	≥ 200 sec.
<b>Dimensional Stability</b> Machine Direction Cross Direction	0.5% 0.8%	1.1% (max.) 1.4% (max.)
<b>Surface Wear Resistance (cycles)</b>	Meets or Exceeds 400	350 (min.)
<b>Formability</b>	5/16" radius (7.93mm)	7/16" radius (11mm) 9/16" radius (14.7mm)
<b>Blistering</b>	45 seconds	≥ 40 seconds

\*Radius for face is actually the radius of the form around which the laminate is postformed. The radius for back is actually the radius to which the decorative face is postformed.

#### Physical Properties of Postforming Laminate

ISO 4586 Test	Typical Wilsonart Type 350	ISO 4586-3 HGP
<b>Thickness</b>	0.039" ± 0.005" (0.99mm ± 0.13mm)	0.039" ± 0.005" (1mm ± 0.12mm)
<b>Appearance</b>	N/A	N/A
<b>Light Resistance</b>	Slight effect	Slight effect
<b>Cleanability (cycles)</b>	10	20
<b>Stain Resistance</b> Reagents 1-10 Reagents 11-15	No effect Slight effect	No effect Moderate effect
<b>Boiling Water Resistance</b>	Slight Effect (Gloss) No Effect (Other Finishes)	Slight Effect (Gloss) No Effect (Other Finishes)
<b>High Temperature Resistance</b>	Slight Effect (Gloss) No Effect (Other Finishes)	Slight Effect (Gloss) No Effect (Other Finishes)
<b>Impact Resistance</b>	55" (1397mm)	31.5" (800mm)
<b>Radiant Heat Resistance</b>	205 seconds	≥ 200 sec.
<b>Dimensional Stability</b> Machine Direction Cross Direction	0.5% 0.8%	1.1% (max.) 1.4% (max.)
<b>Surface Wear Resistance (cycles)</b>	Meets or Exceeds 400	350 (min.)
<b>Formability*</b>	*5/16" face (7.93mm) *3/8" back (9.52mm)	*9/16" face (14.27mm) *3/4" back (19.05mm)
<b>Blistering</b>	65 seconds	≥ 40 seconds

\*Radius for face is actually the radius of the form around which the laminate is postformed. The radius for back is actually the radius to which the decorative face is postformed.

#### Typical Fire Test Data

High-pressure laminates are subject to flame spread and smoke developed standards in structures where codes establish such conditions.

Test data to determine compliance with these codes are obtained by the Steiner Tunnel Test method of the American Society for Testing Materials (ASTM-E-84, Standard Test Method for Surface Burning Characteristics of Building Materials). Tests were conducted in accordance with test method and mounting procedure as described in paragraph X1.7.2 of the test method. This procedure is cataloged by Underwriters Laboratories, Inc. as UL 723. Here is typical data for Wilsonart® Laminates, averaged from two specific tests:

### Typical Flame Spread and Smoke Developed Properties

Product Type	Test Condition	Flame Spread	Smoke Developed
General Purpose Type 107	Unbonded	50	45
Vertical Surface Type 335	Unbonded	45	40
Postforming Type 350	Unbonded	60	35
General Purpose Type 107	Bonded with contact adhesive to particleboard substrate; 3/8"	40	100
Vertical Surface Type 335	Bonded with contact adhesive to particleboard substrate; 3/8"	40	155
Postforming Type 350	Bonded with contact adhesive to particleboard substrate; 3/8"	50	140

When you wish to specify decorative laminate for a Class I or A fire rating, please refer to the Fire-Rated Laminate Tech Data.

### Model Code Designations used to determine flame spread classification

Flame Spread Classification (Max. Rating)	International (IBC)	Life Safety (NFPA 101)
25	A	A
75	B	B
200	C	C

RE: Architectural Woodwork Quality Standard, 8th Edition, Version 1.0, - 2003

All Model Codes regulate the generation of smoke by interior finish material. In all cases they specify a maximum smoke development rating of 450.

### Codes and Certifications

#### General Standards

Wilsonart® Laminates, types 107, 335 and 350, conform to the voluntary standards of the American National Standards Institute, for thickness, performance properties and appearance. Wilsonart® Laminates 107, 335 and 350 meet or exceed the International Standards Organization specifications as found in ISO 4586, titled "High-Pressure Decorative Laminate (HPDL) – Sheets Based on Thermosetting Resins – Part I: specifications."

#### Specific Product Standards

U.S. Federal Specification L-P 508H, April 9, 1977, "Plastic Sheets, Laminated, Decorative and Non-decorative." Spells out criteria for decorative laminates for federal installations. Wilsonart 107, 335 and 350 laminates comply.

NSF International (NSF) #35 "Laminated Plastic for Surfacing for Food Service Equipment." All solid colors and printed patterns in Basic Types 107, 335 and 350, comply.

U.S. Federal Register, August 9, 1984, Housing and Urban Development Mobile Home Construction and Safety Standard, (24CFR) 3280.203. General Purpose Type 107 and Vertical Surface Type 335 comply.

U.S. Federal Test Method, Federal Aviation Regulation, DOT, Part 25.853, Airworthiness Standards: Transport Category Airplane (Interior Finish). Vertical Surface Type 335 and Postforming Type 350 comply with parts A and C.

U.S. Federal Motor Vehicle Safety Standard (FMVSS) 302, "Flammability of Interior Materials." Basic Types 107, 335 and 350 comply.

U.S. Military Standard MIL-P-17171E (SHIPS)/Plastic Laminate. General Purpose Type 107 complies.

**Branded Cleaner and Sanitizer Resistance for Wilsonart® Laminate per ISO 4586-2 Method 31 (B)**

No effect was exhibited except as noted (\* or \*\*) on the following:

1. Beckart Environmental (Stabilized Chlorine Dioxide Mixed with Water at 3000ppm)
2. Benefect®
3. Claire® Germicidal Cleaner (Country Fresh Scent)
4. Claire® Disinfectant Spray Q (Country Fresh Scent)
5. Clean Republic – All Purpose Everyday Cleaner (Hypochlorous Acid – 0.003% Solution)
6. Clorox® Anywhere® Hard Surface Sanitizing Spray\*
7. Clorox® Clean-Up (Cleaner & Bleach)
8. Clorox® Disinfecting Bleach w/6% Sodium Hypochlorite (24:1/Water:Bleach)
9. Clorox® Disinfecting Spray
10. Clorox® Disinfecting Wipes
11. Clorox Healthcare® Bleach Germicidal Cleaner \*
12. Clorox Healthcare® Hydrogen Peroxide Cleaner Disinfectant
13. Clorox Healthcare® Fuzion® Cleaner Disinfectant\*
14. Clorox Healthcare® VersaSure® Cleaner Disinfectant Wipes
15. Clorox® Total 360 Disinfectant Cleaner
16. Diversey™ Expose® II 256
17. Diversey™ Oxivir 1
18. Diversey™ Oxivir Tb Wipes
19. Diversey™ Stride® Floral Neutral Cleaner
20. Diversey™ Virex® II 256
21. Fabuloso® Complete (Multi-Purpose Cleaner)
22. Lysol® Professional Disinfectant Spray
23. Microban® 24 Hour (Multi-Purpose Cleaner)
24. PDI Sani-Prime® Germicidal Spray
25. PDI Super Sani-Cloth® Germicidal Disposable Wipes
26. Purell® Advanced Hand Sanitizer Gel
27. Purell® Food Service Surface Sanitizer
28. Purell® Professional Surface Disinfectant
29. Purell® Healthcare Surface Disinfectant
30. Simple Green® Concentrated (All-Purpose Cleaner)
31. Spic and Span® Everyday (Antibacterial Cleaner)

Test procedure: Listed materials were placed in contact with Wilsonart® Laminate surface under 1" (25.4mm) diameter watch cover glass for 16 hours duration prior to evaluation for effect. The branded cleaners and sanitizers listed above were cleaned with water only.

\* Causes slight change of gloss or color.

\*\* Causes slight damage, with degree of damage proportionate to length of exposure and concentration.

**Branded Cleaner and Sanitizer Resistance for Wilsonart® Laminate per BIFMA HCF 8.1-2014 (Section 6 / Modified)**

No effect was exhibited except as noted (\* or \*\*) on the following:

1. Beckart Environmental, Inc. (Stabilized Chlorine Dioxide Mixed with Water at 3000ppm)
2. Benefect®
3. Claire® Germicidal Cleaner (Country Fresh Scent)
4. Claire® Disinfectant Spray Q (Country Fresh Scent)
5. Clean Republic – All Purpose Everyday Cleaner (Hypochlorous Acid – 0.003% Solution)
6. Clorox® Anywhere® Hard Surface Sanitizing Spray
7. Clorox® Clean-Up (Cleaner & Bleach)
8. Clorox® Disinfecting Bleach w/6% Sodium Hypochlorite (24:1/Water:Bleach)
9. Clorox® Disinfecting Spray
10. Clorox® Disinfecting Wipes
11. Clorox Healthcare® Bleach Germicidal Cleaner
12. Clorox Healthcare® Hydrogen Peroxide Cleaner Disinfectant

13. Clorox Healthcare® Fuzion® Cleaner Disinfectant
14. Clorox Healthcare® VersaSure® Cleaner Disinfectant Wipes
15. Clorox® Total 360 Disinfectant Cleaner
16. Diversey™ Expose II 256
17. Diversey™ Oxivir 1
18. Diversey™ Stride® Floral Neutral Cleaner
19. Diversey™ Tb Wipes
20. Diversey™ Virex II 256
21. Fabuloso® Complete (Multi-Purpose Cleaner)
22. Lysol® Professional Disinfectant Spray
23. Microban® 24 Hour (Multi-Purpose Cleaner)
24. PDI Sani-Prime® Germicidal Spray
25. PDI Super Sani-Cloth® Germicidal Disposable Wipes
26. Purell® Advanced Hand Sanitizer Gel
27. Purell® Food Service Surface Sanitizer
28. Purell® Professional Surface Disinfectant
29. Purell® Healthcare Surface Disinfectant
30. Simple Green® Concentrated (All-Purpose Cleaner)
31. Spic and Span® Everyday (Antibacterial Cleaner)

Test procedure: Listed reagent materials were placed in contact with Wilsonart® Laminate surface with a one-inch square 100% cotton cloth completely saturated and covered with a 2" (50.8mm) diameter watch cover glass for 15 minute duration. The reagents listed above were removed with clean cloth and the area was then cleaned with clean cloth and distilled water only. The surface area was allowed to dry for 1-hour prior to evaluation for effect.

\* Causes slight change of gloss or color.

\*\* Causes slight damage, with degree of damage proportionate to length of exposure and concentration.

Resistance of Furniture to UV Lights for Wilsonart® Laminate per BIFMA HCF 8.1-201X Section 9 (Alternate Method per ASTM G155 using ISO 4586-2.33 conditions).

Wilsonart® Laminates 107,335,350 and 376 conforms to BIFMA – Healthcare Furniture Design Guidelines for Cleanability, Section 9 Resistance to Furniture to UV Lights. Wilsonart® Laminates 107, 335, 350 and 376 meet or exceed the acceptance level for surface evaluation.

#### **4. Installation: Fabrication and Assembly Recommendations**

Fabrication should follow approved methods. Assembled pieces should meet the specifications of KCMA (Kitchen Cabinetmakers Manufacturers Association), ANSI A-161.2-1998 (revised), and "Architectural Woodwork Quality Standards, Guide Specifications and Quality Certification Program" guidelines of the Architectural Woodwork Institute where applicable.

Wilsonart® Laminates must be bonded to a substrate of reliable quality, such as particleboard, medium density fiberboard or plywood with one A-face. High-Pressure Laminate, plaster, concrete and gypsum board should not be considered suitable substrates. Basic Types laminate may not be used as structural members.

Bond with adhesives and follow the techniques recommended by the adhesive manufacturer. Recommended adhesives are permanent types, such as urea and polyvinyl acetate (PVA), and contact types. Wilsonart adhesives are recommended for most bonding conditions.

To avoid stress cracking, do not use square-cut inside corners. All inside corners should have a minimum of 1/8" (3.175mm) radius and all edges should be routed smooth.

Drill oversized holes for screws or bolts. Screws or bolts should be slightly countersunk into the face side of a laminate-clad substrate.

Take care to ensure an appropriate acclimation between the laminate and the substrate prior to fabrication. The face and backing laminates and the substrate should be conditioned in the same environment for 48



hours before fabrication. Recommended conditioning temperature is about 75°F (24°C). Laminates should be conditioned at 45% to 55% relative humidity.

With postforming machinery, Wilsonart® Laminate types 335 and 350 will postform at a nominal sheet temperature range of 325°F to 338°F (163°C to 170°C) in 20 ± 5 seconds.

Carbide-tipped saw and router blades should be used for cutting. High tool speed and low feed speed are advisable. Cutting blades should be kept sharp. Use a hold-down to prevent any vibration.

5. [Warranty](#)

6. [Maintenance](#)

7. [Technical Services](#)

For samples, literature, questions or technical assistance, please contact our toll-free Hotline at (800) 433-3222, Monday through Friday, 8 am – 5 pm, CST.

**Specification Form:**

Surface shall be Wilsonart® Laminate, produced by Wilsonart LLC, Temple, Texas 76503-6110

Type: Specify 107, 335 or 350

Surface

Color Number: \_\_\_\_\_

Color Name: \_\_\_\_\_

Finish

Number: \_\_\_\_\_

Name: \_\_\_\_\_

Edge Trim

Color Number: \_\_\_\_\_

Color Name: \_\_\_\_\_

Adhesive

Name: \_\_\_\_\_

Grade/Type: \_\_\_\_\_

Brand: Wilsonart® Adhesive

Wilsonart® Laminate Technical Data

Basic Types 107, 335, 350

Revised: September 15, 2020

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•PRODUCT•

# ASM Modular Systems, Inc.

Raised Access Floor Systems



•CATALOG•



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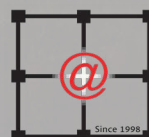


# About ASM Modular Systems, Inc.

ASM Modular Systems, Inc. is one of the largest access floor companies in North America, specializing in the data center and office market. As a wholly owned subsidiary of the Kingspan Group, ASM offers distribution and installation capabilities around the globe. Renowned for its experience, quality, and engineering, ASM has become the product choice for many data center providers and office spaces alike.



ASM Modular Systems is dedicated to providing the very best raised access floor products available in the marketplace with cutting edge system enhancements, superior customer service, and the financial strength of Kingspan Group plc, the largest manufacturer of access floors in the world.



**ASM**  
innovations in access flooring



# Office Space Products

## Concrete Filled Welded Steel Panels



The most specified product, the FSD-Series Panel system is constructed of a welded structural steel assembly and cementitious fill designed to accommodate ultimate and dynamic loads.

Solid Feel Underfoot

Panel	Concentrated Design Load (i.)		Safety Factor (ii.) MIN. 2x	Uniform Loads		Impact Loads		Rolling Loads 10 PASS		Rolling Loads 10K Pass	
	(lbf)	(kN)		(psf)	kg/m²	(lb)	(kg)	(lbf)	(kN)	(lbf)	(kN)
FS100D	1000	4.45	PASS	500	2441.2	150	68	800	3.56	600	2.67
FS200D	1250	5.56	PASS	600	2929.4	150	68	1125	5.00	875	3.89
FS300D	1500	6.67	PASS	700	3417.7	150	68	1250	5.56	1000	4.45
FS400D	2000	8.90	PASS	800	3905.9	200	91	1500	6.67	1250	5.56
FS500D	2500	11.12	PASS	900	4394.2	200	91	2000	8.90	2000	8.90
FS600D	3000	13.34	PASS	1000	4881	300	136	2700	12.01	2400	10.68

**MADE IN USA**

i. Concentrated Design Load is based on permanent set ≤ 0.010" and is verified by loading panels in accordance with the CISC concentrated load method but with panels installed on actual understructure instead of steel blocks. (Testing on blocks does not represent performance of an actual installation.) Ultimate, Rolling, and Impact Load tests are performed using CISC test procedures.

ii. Safety Factor is Ultimate Load divided by Design Load.

## Hollow Steel Panels



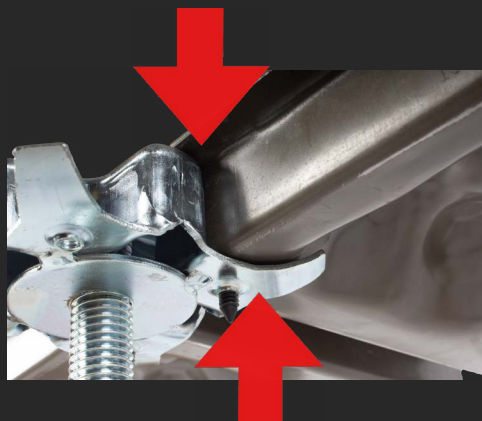
The SD-Series Hollow Steel Panel system uses the same welded steel technology found in the FSD panel. This product is ideal for use in buildings that may have slab weight limitations.

Lighter System Weight

Panel	Concentrated Design Load (i.)		Safety Factor (ii.) MIN. 2x	Impact Load		Rolling Load 10-PASS		Rolling Load 10K PASS	
	lb	kN		lb	kN	lb	kN	lb	kN
S100D	1000	4.45	PASS	150	0.67	400	1.78	400	1.78
S125D	1250	5.56	PASS	150	0.67	500	2.22	500	2.22
S150D	1500	6.67	PASS	150	0.67	600	2.67	600	2.67

**MADE IN USA**

# ASM'S QUICK-LOC<sup>(PAT)</sup> SUPPORT SYSTEM



THE ONE AND ONLY  
DUAL SUPPORT SYSTEM

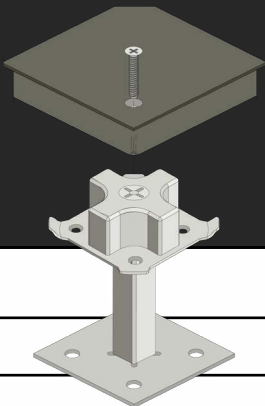
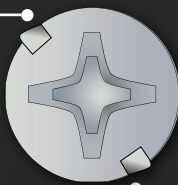







## Support At Its Best

The ASM Quick-Loc<sup>(PAT)</sup> pedestal is stamped and formed from one piece of metal, making it incredibly strong.

- ✓ Solid and Quiet
- ✓ 3" and Up in Floor Height
- ✓ Designed to be the Best

Corner-Lock Fastener has 2 indents for breaking coating on surface of countersink and establishing metal-to-metal ground



Pedestal Options			
	Product Listing	Description	
	Low-Profile	Low-Profile pedestal systems available to achieve floor heights from 2.5" to 4"	
	Standard 4x4 Base Pedestal	Standard pedestals are utilized in low to no seismic significant areas. The standard pedestal has a 500 lb axial load rating.	
	Light Seismic 5x5 Base Pedestal	With a 5x5 inch base these light seismic pedestals can be utilized in locations that do not have critical seismic requirements.	
	Medium Seismic 6x6 Base Pedestal	Medium duty seismic pedestals have a 6x6 inch base plate and are used in locations that have more strict seismic requirements or where heavier loads are placed upon the access floor.	
	Heavy-Duty Seismic 8x8 Base Pedestal	The Heavy-Duty seismic pedestal is utilized in seismic regions that have significant design requirements. The Heavy-Duty pedestal is also used in areas where significant static and dynamic loads are placed upon the access floor.	

\* ADDITIONAL PEDESTAL OPTIONS AVAILABLE



USA Design & Engineering + USA Quality & Testing  
GLOBAL VISION



# Starnet Low Profile Flooring

Ultra Low Fixed Height Wire Management System

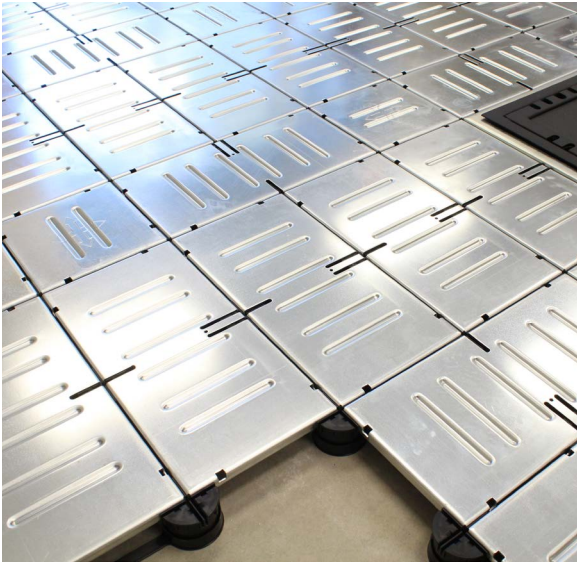


ASM's Ultra Low-Profile Wire Management Flooring System is easy to install and completely adaptable. The Starnet Floor can be installed in new construction and renovation to existing office buildings. Available in 1½" and 2" finish floor heights, our low-profile flooring provides uninterrupted flow of data and power without the need for cable raceways or channels, the Starnet Floor allow complete access to the underfloor plenum power and data to be delivered to any location on the floor.



[www.starnetaccessfloor.com](http://www.starnetaccessfloor.com)

# Applications are limitless



- No foam underlayment required
- Quieter to walk on with more solid feel under foot
- Improved cable access & routing under floor
- Less parts to assemble
- Stronger in all categories
- Vast dealer network/installation network
- Custom packaging for better shipping & handling
- Pre-assembled components
- UL Rated electrical voice & data box, completely interchangeable with standard plate
- Less expensive



## Performance Data

- Concentrated Live Load - 2,000 lbf (8.90 kN)  
Per IBC Table 1607.1
- Concentrated Point Load - 500 lbf (2.22 kN)
- Uniform Live Load - 2,000 lbf (8.90 kN)
- Ultimate Load Safety Factor - 2-to-1 Min.
- Rolling Loads - 10 PASS  
CISCA Wheel A (3" dia.) - 460 lb  
8" dia. x 2" Semi-Pneumatic - 500 lb



## Physical Data

- Weight of System 3.7 psf (18.1 kg/m<sup>2</sup>)
- Height of System - 1 1/2" (40 mm)  
2" (50 mm)
- Fire Rating of Bare Panel:
  - Class A Flame Spread
  - Non-Combustible Materials



## Features

- Available at 1.5" FFH or 2" FFH
- Prefabricated Before Shipment
- Easy to Install
- Heavy Duty Quick-Connect Steel Plates
- Easy to Change Layout and Cable Wiring
- No Adhesive Required
- No Underlayment Required
- No Fasteners Required



# Electrical Distribution System

A FULLY FLEXIBLE WIRE MANAGEMENT SYSTEM

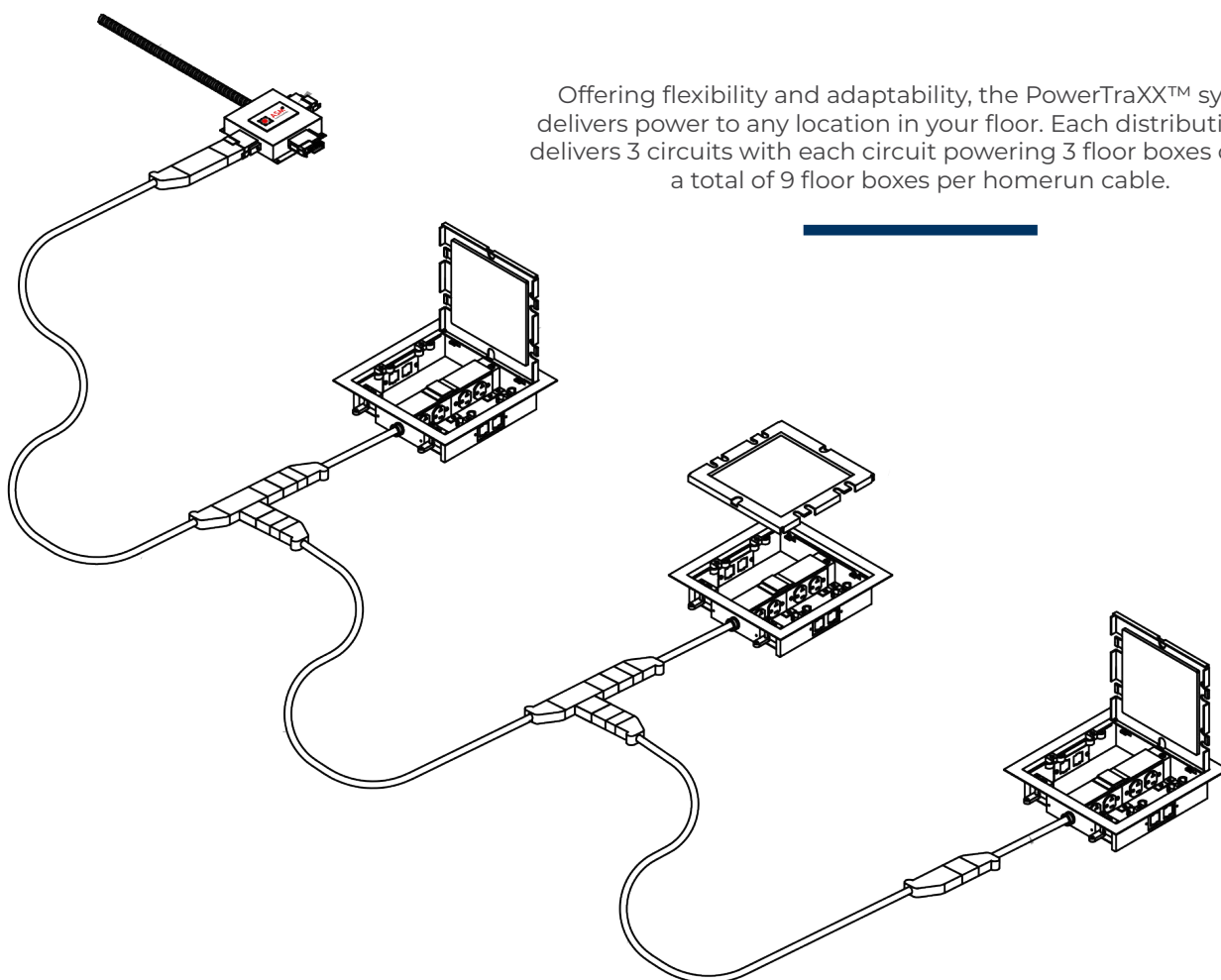


- Office Spaces
- Classrooms
- Casinos
- Call Centers
- Airports
- Computer Labs
- Libraries
- Multi Tenant Space
- Training Rooms

EmPOWERing

Your

Business



Offering flexibility and adaptability, the PowerTraXX™ system delivers power to any location in your floor. Each distribution box delivers 3 circuits with each circuit powering 3 floor boxes offering a total of 9 floor boxes per homerun cable.



## Electrical Box



### PHYSICAL DATA

- Dimensions - 11½ x 11½"
- Floor opening - 10" x 10"
- Height of box fits into ASM 2½" Low-Profile Floor System
- Load rating of lid - 1,000 lbf (4448 N)

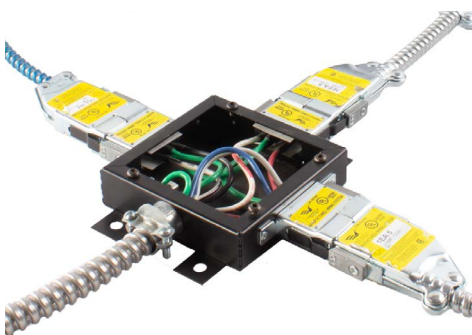
### ELECTRICAL DATA

- 20amp/120V AC
- Extended cables provided 5' increments
- Four receptacles provided
- 3 wire 12 Ga Extender Cables
- 7 wire 10 Ga Homerun Cable
- Standard with 12" long Whip End Extender Cable

### FEATURES

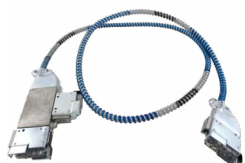
- Standard with four 20A Receptacles
- Lid hinges open or lifts off
- Recessed lid to accept carpet/tile insert
- Powder coat epoxy paint finish
- Welded heavy gauge steel construction
- 4 openings for Keystone jack couplers
- Lid can be closed when in use

## 3 & 6 Port Distribution Box



Each distribution box delivers 3 circuits to the underfloor plenum with 1 homerun cable back to the electrical closet. Each homerun has #10 AWG copper wire that has been tested and fabricated to the length required.

The homerun cable and distribution box are factory assembled for quick and easy installation.



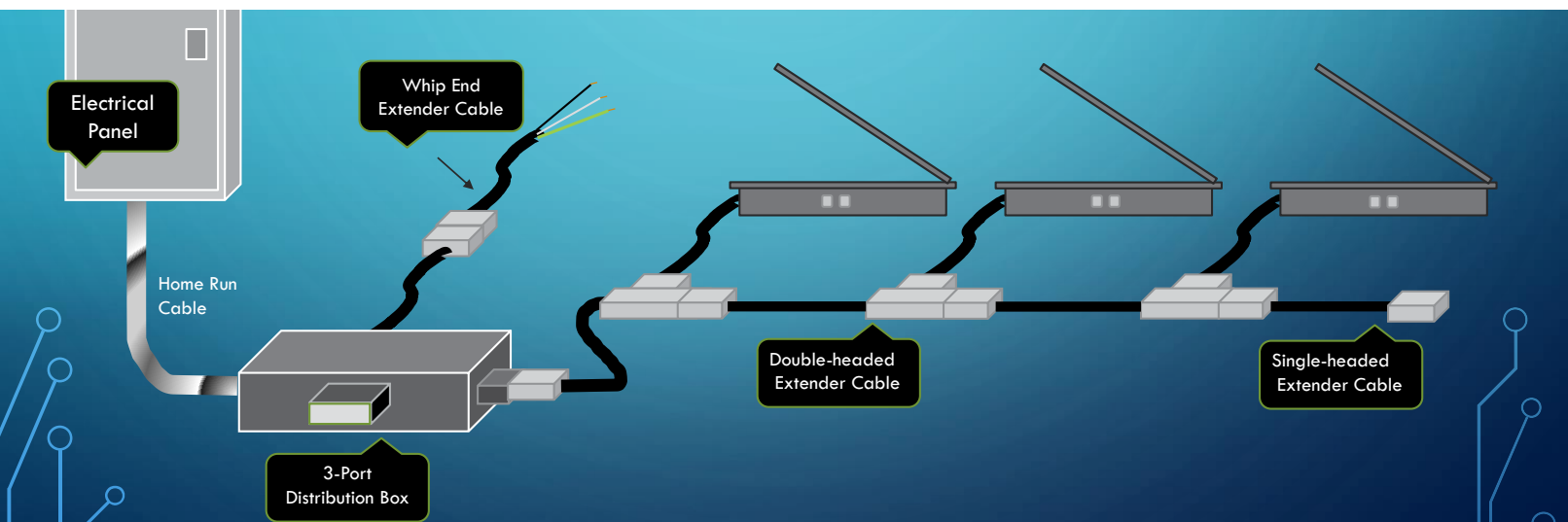
Double Headed Extender Cable



Whip End Extender Cable



Single Headed Extender Cable



Data Center Products

Concrete Filled Welded Steel Panels




The most widely used product in the data center industry, the FSD Series provides superior strength and durability. In todays ever changing data center market, the need for a strong & dependable floor system to handle static and rolling loads has become the standard.

Panel	Concentrated Design Load (i.)		Safety Factor (ii.) MIN. 2x	Uniform Loads		Impact Loads		Rolling Loads 10 PASS		Rolling Loads 10K Pass	
	(lbf)	(kN)		(psf)	kg/m <sup>2</sup>	(lb)	(kg)	(lbf)	(kN)	(lbf)	(kN)
FS100D	1000	4.45	PASS	500	2441.2	150	68	800	3.56	600	2.67
FS200D	1250	5.56	PASS	600	2929.4	150	68	1125	5.00	875	3.89
FS300D	1500	6.67	PASS	700	3417.7	150	68	1250	5.56	1000	4.45
FS400D	2000	8.90	PASS	800	3905.9	200	91	1500	6.67	1250	5.56
FS500D	2500	11.12	PASS	900	4394.2	200	91	2000	8.90	2000	8.90
FS600D	3000	13.34	PASS	1000	4881	300	136	2700	12.01	2400	10.68

i. Concentrated Design Load is based on permanent set ≤ 0.010" and is verified by loading panels in accordance with the CISCA concentrated load method but with panels installed on actual understructure instead of steel blocks. (Testing on blocks does not represent performance of an actual installation.) Ultimate, Rolling, and Impact Load tests are performed using CISCA test procedures.

ii. Safety Factor is Ultimate Load divided by Design Load.

 **MADE IN USA**

Hollow Steel Panels



The SD-Series Hollow Steel Panel system is the ideal solution for older existing buildings that have weight limit restrictions, while maintaining standard load rating requirements.

Panel	Concentrated Design Load (i.)		Safety Factor MIN. (ii.) 2x	Impact Load		Rolling Load 10-PASS		Rolling Load 10K PASS	
	lb	kN		lb	kN	lb	kN	lb	kN
S100D	1000	4.45	PASS	150	0.67	400	1.78	400	1.78
S125D	1250	5.56	PASS	150	0.67	500	2.22	500	2.22
S150D	1500	6.67	PASS	150	0.67	600	2.67	600	2.67

 **MADE IN USA**

# Heavy Duty Equipment Panel

AL8000

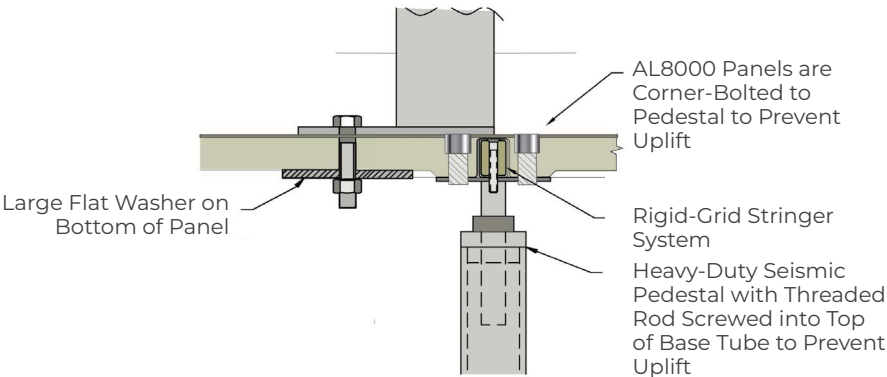
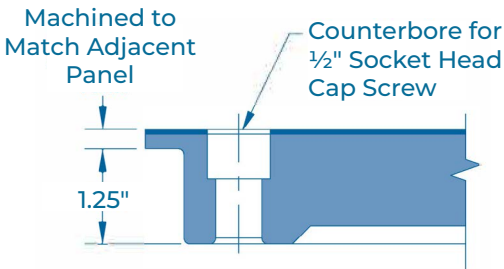
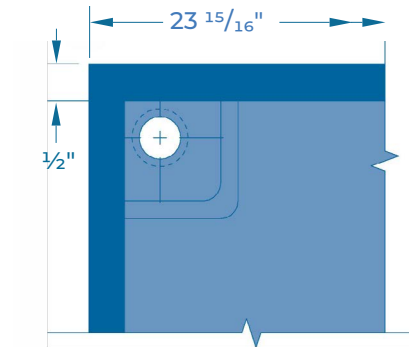
For extreme load requirements, the AL8000 is the right choice. Made of solid aluminum, this panel is capable of handling industrial loads in manufacturing or logistic environments.



## EQUIPsecure

### 3 Easy Steps

1. Determine seismic pedestal system to install under equipment.
2. Install ASM EQUIPsecure system under equipment.
3. Bolt equipment to access floor panels.



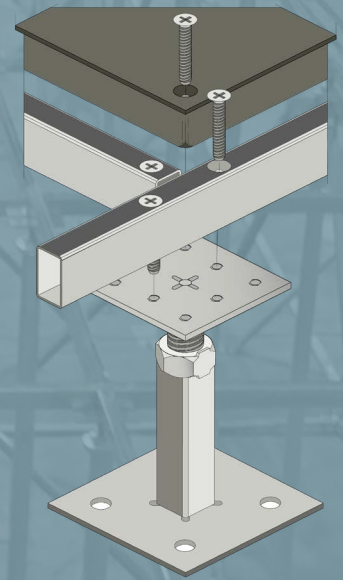
## METHOD OF ATTACHING EQUIPMENT TO RAISED ACCESS FLOOR PANELS

Product Details		
Performance Data	Physical Data	Understructure Options
<ul style="list-style-type: none"><li>• Concentrated load rating: 8,000 lbf (35.7 kN)</li><li>• Uniform load rating: 2,500 psf (12,201 kg/m²)</li><li>• Ultimate load rating: 20,000 lbf (89 kN)</li><li>• Safety factor: 2.5</li><li>• Impact load rating: 1,000 lb (454 kg)</li><li>• Rolling load rating:<ul style="list-style-type: none"><li>• CISC Wheel C (10 PASS): 8,000 lbf (35. kN)</li></ul></li></ul>	<ul style="list-style-type: none"><li>• 24" or 600 mm size</li><li>• Weight of bare panel: 72 lb</li><li>• Fire rating of bare panel:<ul style="list-style-type: none"><li>• Class A flame spread</li><li>• Non-Combustible materials</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Corner-bolted</li><li>• Rigid grid bolted stringers<ul style="list-style-type: none"><li>• 2'x2' system</li><li>• 2'x4' system</li><li>• 4'x4' basketweave system</li></ul></li><li>• Pedestals are sized to suit application</li></ul>



# Understructure

ASM offers the most comprehensive variety of support types, providing economical solutions for non-seismic to high risk seismic regions. This full line of pedestals can be strengthened by anchoring them to the concrete slab or in combination with ASM's seismic bracing for the most solid and seismic resisting access flooring systems available.

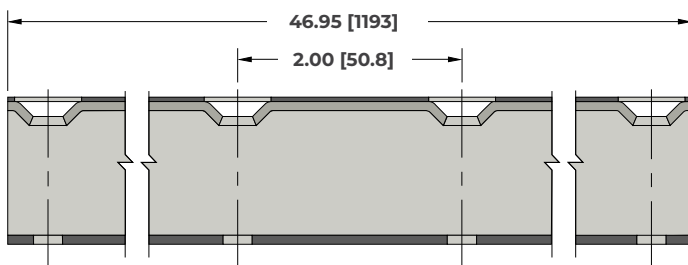


Typical Understructure Configuration

## Stringers

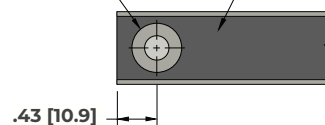
### Available Configurations

- » 2x2
- » 2x4
- » 4x4 Basketweave

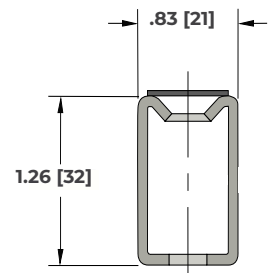


SIDE SECTION VIEW

Countersink for Flat Head Screw  
Sound Deadening Air Sealing Conductive Gasket

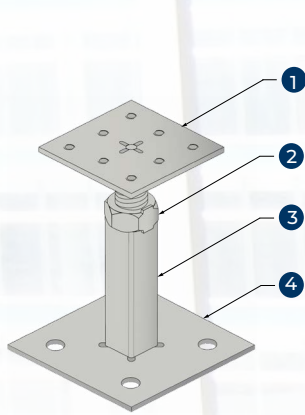


TOP END VIEW



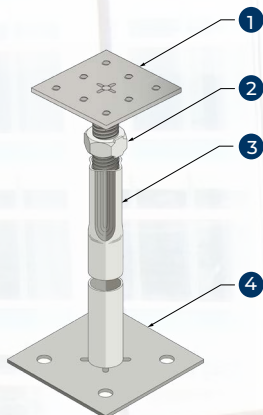
END SECTION VIEW

Every ASM Stringer boasts solid tube construction to resist bowing and spreading during heavy loads. A factory applied solid vinyl gasket creates a quiet fit between the stringer and panel.



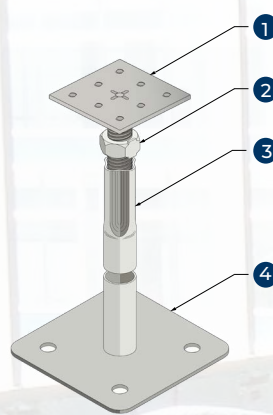
#### B4201D/H100D

- H100D Head • Adjusting Nut
- 7/8" Sq. x 16 Ga. Steel Tube
- 4" Sq. x 1/8" Thick Steel Base Plate



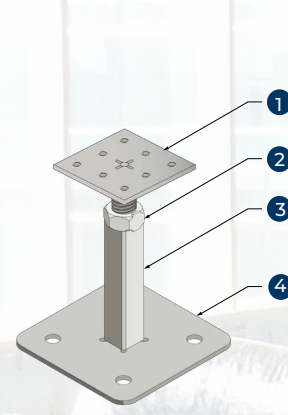
#### B44M10D/H100D

- H100D Head • Adjusting Nut
- B44M10D Base Assembly 1" Dia. x 16 Ga. Wall Structural Steel Tube Swaged for 3" Length to Accept a 3/4" Dia. Rod and Welded to Base Plate • 4.0 mm Thick Steel Base Plate



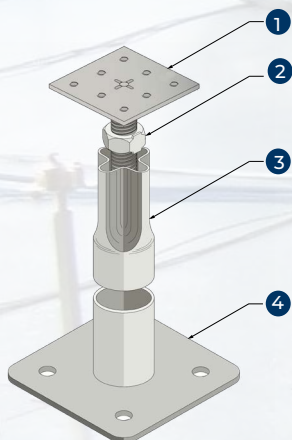
#### B5210D/H100D

- H100D Head • Adjusting Nut
- B5210D Base Assembly 1" Dia. x 16 Ga. Wall Structural Steel Tube Swaged for 3" Length to Accept a 3/4" Dia. Rod and Fillet to Base Plate • 5" Sq. x 1/8" Thick Steel Base Plate



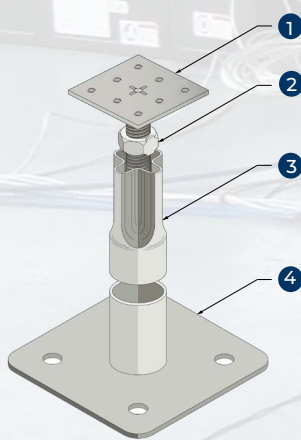
#### B54M01D/H100D

- H100D Head • Adjusting Nut
- 7/8" Sq. x 16 Ga. Steel Tube • 5" Sq. x 4.0 mm Thick Steel Base Plate



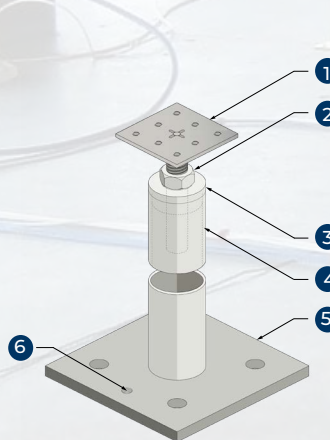
#### B5318D/H100D

- H100D Head • Adjusting Nut
- B5318D Base Assembly 1-3/4" Dia. x 16 Ga. Wall Structural Steel Tube Swaged for 4" Length to Accept a 3/4" Dia. Rod and Fillet to Base Plate • 5" Sq. x 5 mm Thick Steel Base Plate



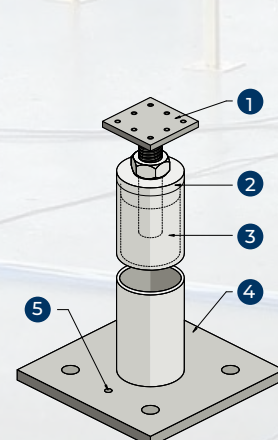
#### B6318D/H100D

- H100D Head • Adjusting Nut
- B6318D Base Assembly 1-3/4" Dia. x 16 Ga. Wall Structural Steel Tube Swaged for 4" Length to Accept a 3/4" Dia. Rod and Fillet Welded to Base Plate • 6" Sq. x 5 mm Thick Steel Base Plate



#### B6613AD/H100D

- H100D Head Assembly 3-1/4" Sq. x 4 mm Thick Head Plate with (8) 1/4-20 Tapped Holes Fillet Welded to 3/4" Dia. x 4" Long Solid Steel Threaded Rod • 3/4-10 Jam Nut 1" Thick Solid Steel Insert with 3/4-10 Threaded Hole Welded to Base Tube 1.660 O.D. x 1.380 I.D. Structural Steel Pipe Fillet Welded to Base Plate • 6" Sq. x 3/8" Thick Steel Base Plate • 1/4-20 Tapped Hole for Ground Connection



#### B8825C/H225

- H225 Head Assembly 3" Sq. x 1/4" Thick Head Plate with (8) 1/4-20 Tapped Holes Fillet Welded to 1"-8 x 4" Long Solid Steel Threaded Rod (NCH) • 1" Thick Solid Steel Insert with 1"-8 Threaded Hole Welded to Base Tube (HDG) • 2.875 O.D. x 2.323 I.D. (2-1/2" Sched. 80 Pipe Size) Structural Steel Pipe Fillet Welded to Base Plate (HDG) • B8825C Base Assembly 8" Sq. x 1/2" Thick Steel Base Plate • 1/4-20 Tapped Hole for Ground Connection

\* ADDITIONAL PEDESTAL OPTIONS AVAILABLE



USA Design & Engineering + USA Quality & Testing  
GLOBAL VISION



# Airflow Panels

Perforated Panels, Standard and Directional Grates

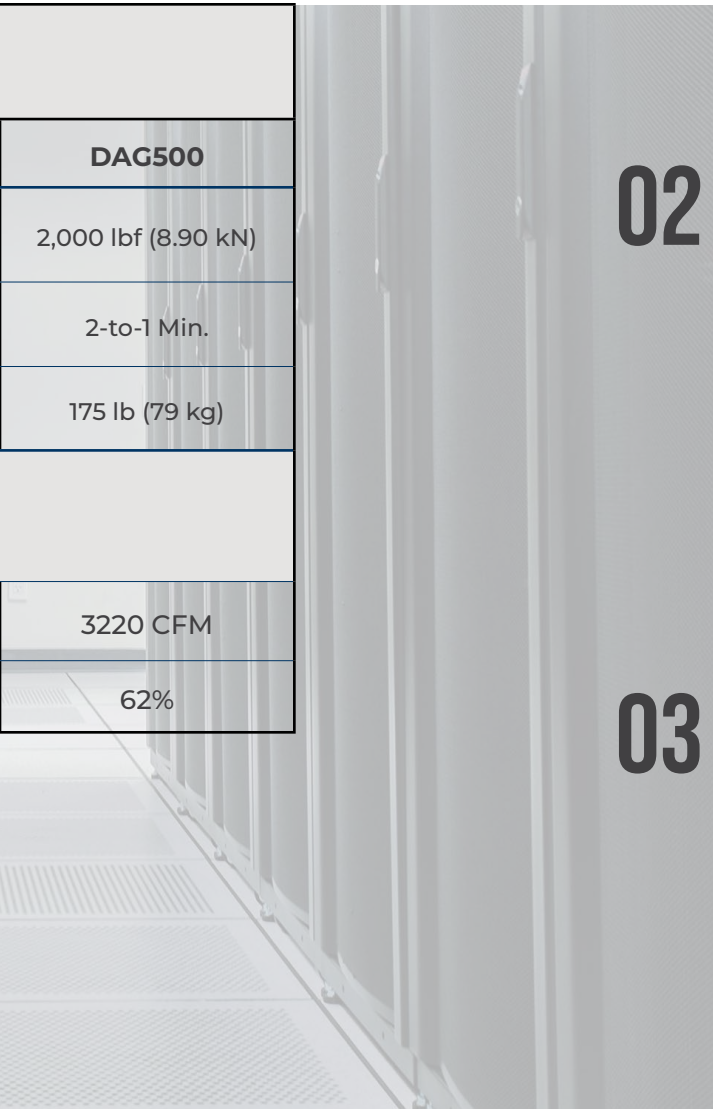
Performance Guide				
	AFI250	AFD320	AF500	AF600
Concentrated Load Rating	1,250 lbf (5.56 kN)	1,250 lbf (5.56 kN)	1,750 lbf (7.79 kN)	2,500 lbf (11.12 kN)
Ultimate Load Rating	2-to-1 Min.	2-to-1 Min.	2-to-1 Min.	2-to-1 Min.
Impact Load Rating	150 lb (68 kg)	150 lb (68 kg)	175 lb (79 kg)	200 lb (91 kg)
Airflow Data:				
At 0.10 Static Pressure without Damper	610 CFM	2060 CFM	3060 CFM	3060 CFM
Open Area	25%	32%	56%	56%



- Data Centers
- Equipment Rooms
- Technical Spaces

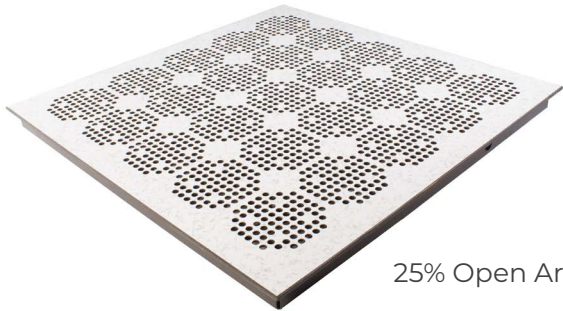
**AIR FLOW**

A complete array of cooling solutions for all applications and loading requirements



01

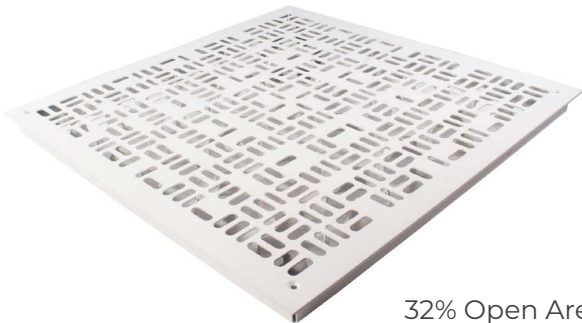
AF1250 STEEL AIR FLOW PERFORATED PANEL



25% Open Area

02

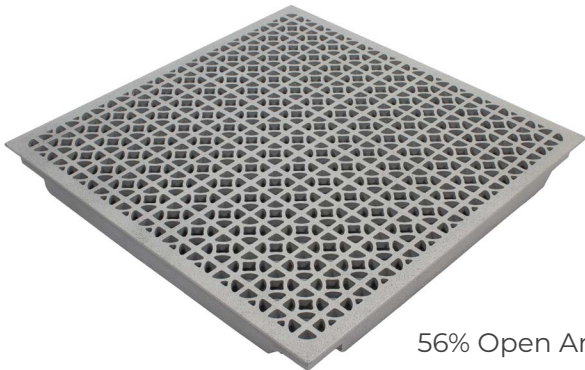
AFD320 STEEL AIR FLOW PERFORATED PANEL



32% Open Area

03

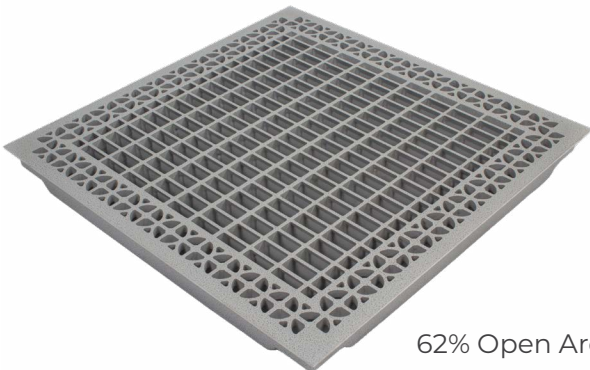
AF500 & AF600 ALUMINUM AIR GRATE



56% Open Area

04

DAG500 DIRECTIONAL AIR GRATE

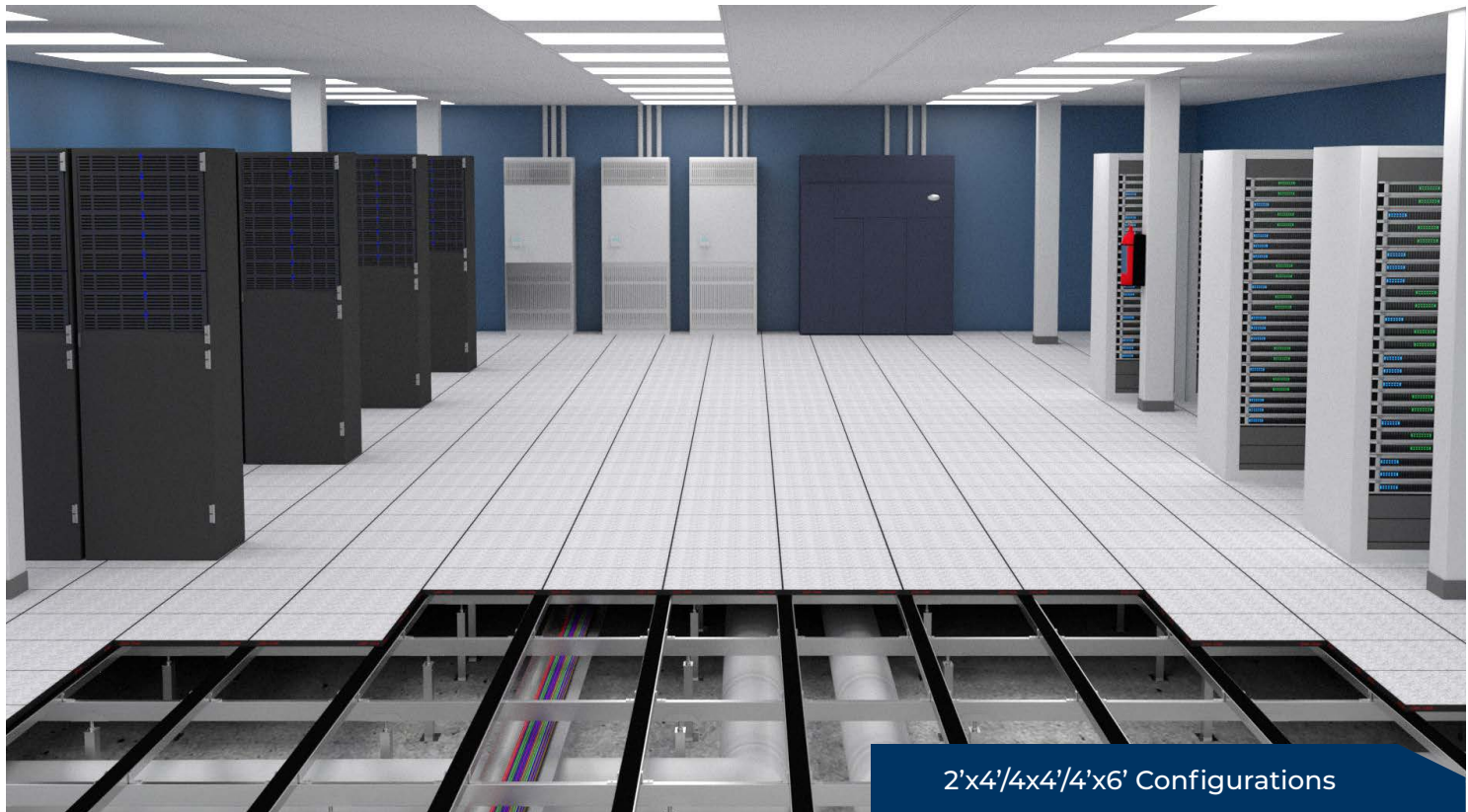


62% Open Area



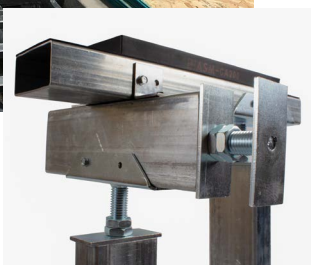
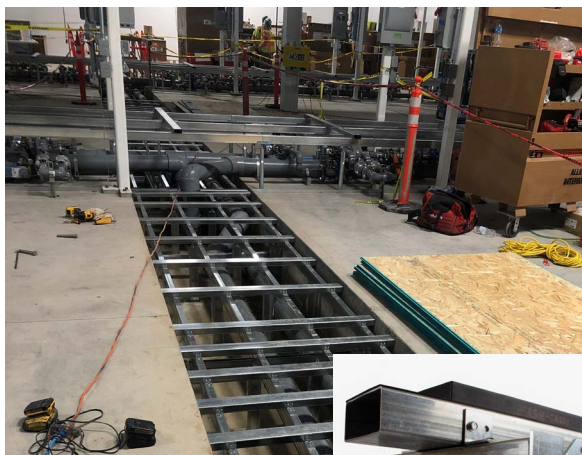


# High Density Flooring System



## INNOVATIONS IN ACCESS FLOORING

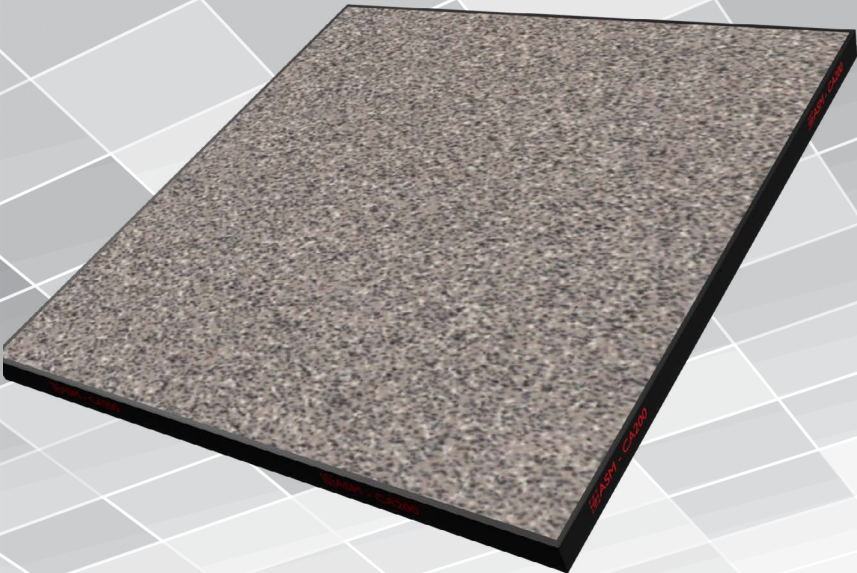
Our High Density Access Flooring supports all data center and mechanical room heavy equipment such as CRAH units, PDUs, Battery's, UPS Systems, and more without the need for separate equipment stands.



### Understructure

- Structural Steel Tubing:
  - 2 mm standard & 3 mm heavy duty wall thickness
  - Pedestal spacing and beam spans up to 72"
  - Standard uniform floor loading up to 325 PSF
- Hot dip galvanized and nickel chrome
- Seismic pedestals and bracing available
- Custom design for heavy equipment (>325 PSF)
- Total system weight (including floor panels):
  - 13 PSF

# CA200 Panel



- Panel designed for use with ASM's High Density Floor System™ free standing and self supporting understructure.
- Different finishes available.

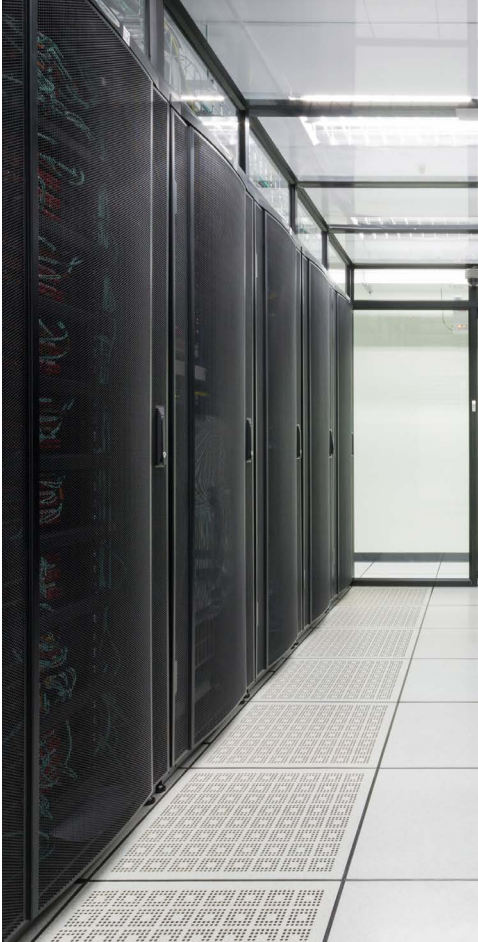
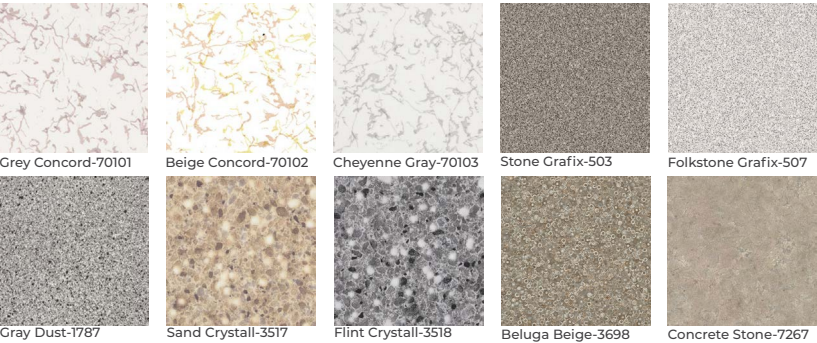
CA200 Panel Performance Data							
Concentrated Load*	Safety Factor	Ultimate Load*		Uniform Load*		Rolling Loads*	
		lbf	kN	psf	kg/m²	10 PASS lbf	10K PASS kN
1,250 lbf	2 - to - 1	2,800	12.46	650	3,172	1,500	6.67

\* Higher loading can be achieved with the addition of Secondary Beams to reduce panel span. Contact ASM for options.



# Floor Finishes

## Formica High Pressure Laminate



## Armstrong - Standard Excelon Vinyl Composition Tile

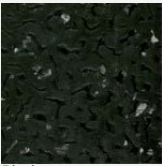


\*More color options available

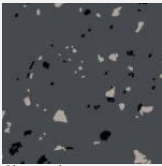


## Flexco Rubber Tile

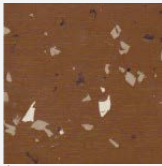
### SpexTones Collection



Black



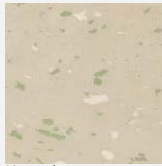
Charcoal



Autumn



Medium Gray



Neutral

### FlexTones Collection



Black



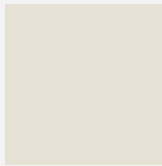
Ginger



Charcoal



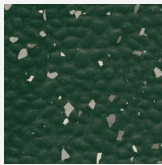
Blue



Linen

\*More color options available

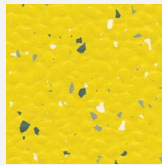
## Johnsonite Microtone & Solid Hammered Rubber Tile



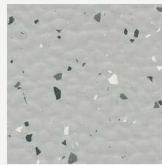
Alpine



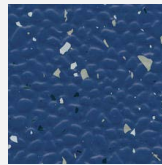
Antique Ivory



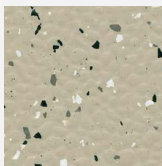
Banana Republic



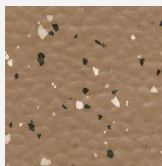
Best Seller



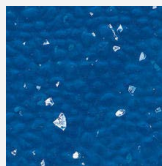
Blueberry



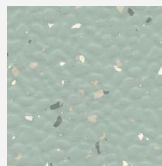
Ceramic Glaze



Chocolate Cream



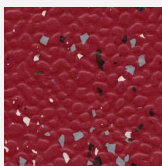
Go Blue



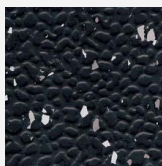
Harmony



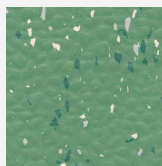
Sizzling



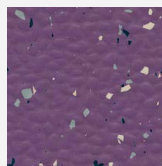
Red Caboose



Vortex



Spring Valley

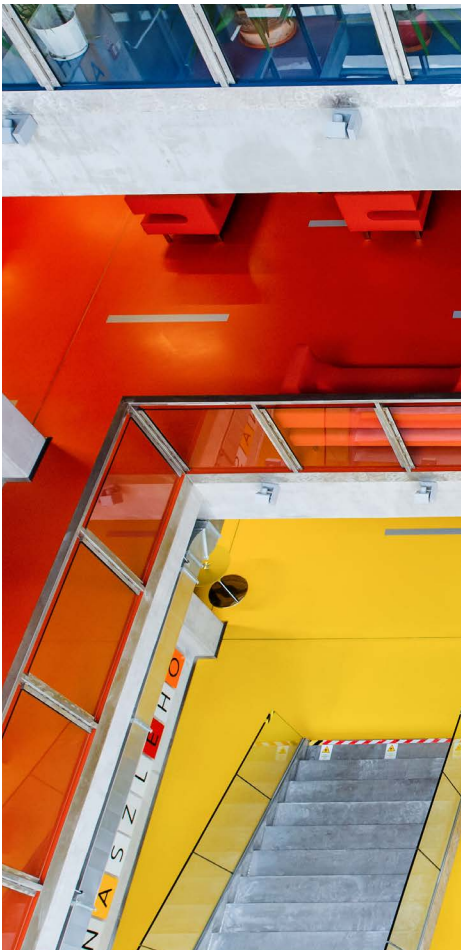


Sugar Plum



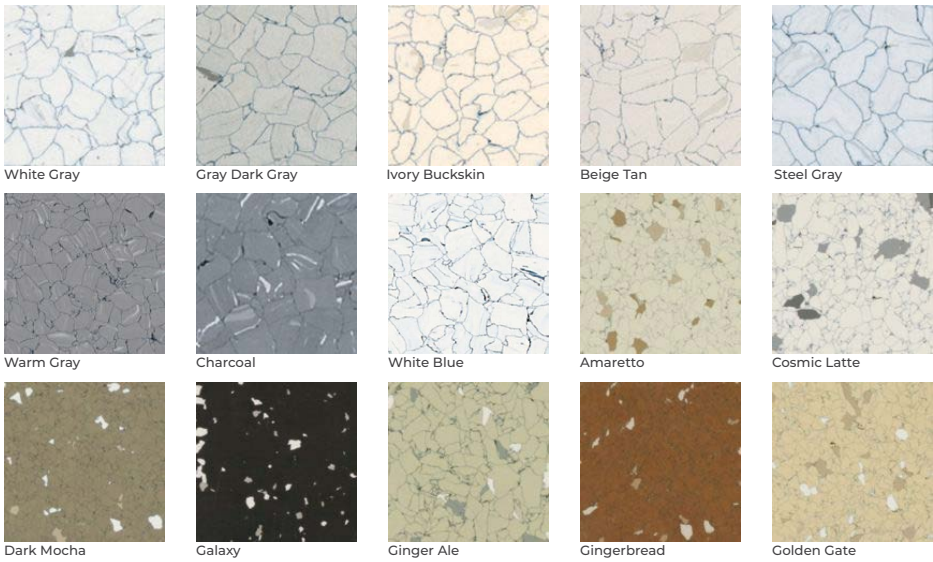
Summerset

\*More color options available

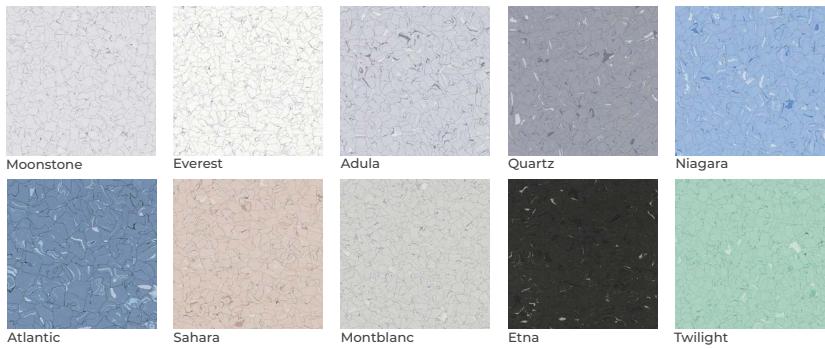




## Flexco - Delane ESD Vinyl



## Forbo - Colorex (SD/EC) Vinyl Tile

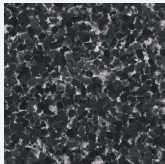


Tarkett IQ

IQ Granite SD Collection



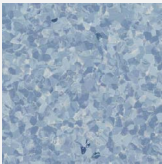
Full Moon



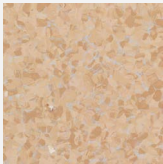
Kettle Black



Misty



Cool Breeze

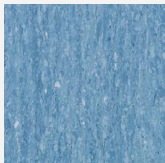


Kahlua

IQ Optima Collection



Almond



Popiu Bay



Carmel Infusion



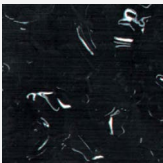
Clover Leaf



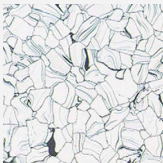
Artic Winter

\*More color options available

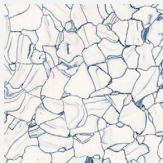
VPI - Statmate and Conductile



Black Ice



Rain Forest



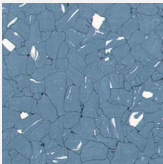
Glacier



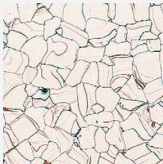
Platinum



Winter White



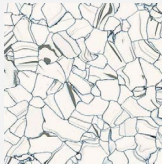
Patriot



Bone



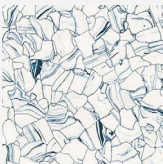
Cloud



White



Egg Plant



Storm





## Casalgrande Porcelain

### Cemento Collection



### Chalon Collection

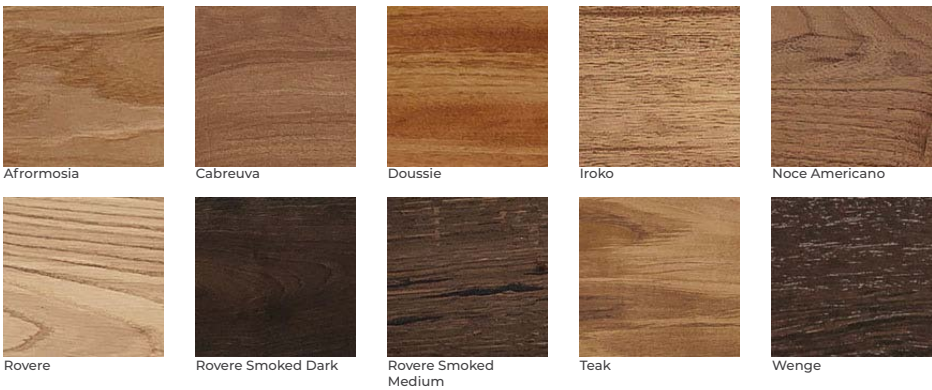


\*More color options available



## Stile - Plank Hardwood

### Stilnovo Collection



\*More color options available

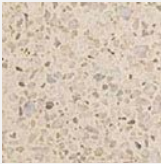


Nurrazzo

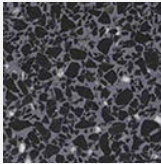
Marble Collection



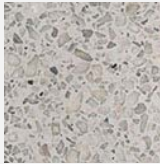
White Smoke



Desert Sand



Twilight



Shadow Grey



Seashell

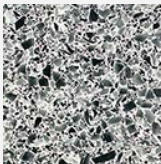
Crystal Collection



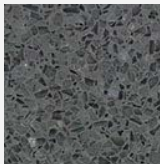
Amber



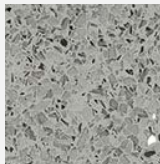
White Ice



Black Diamond



Dusk



Mountainside

\*More color options available

Centiva Luxury Vinyl Tile

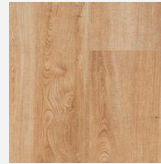
Event Series



Allspice Olivet



American Cherry



Ash



Natural Cherry

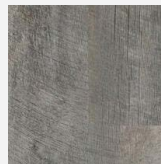


Nutmeg Olivet

Contour Series



Cheshire



Danbury



Hemlock

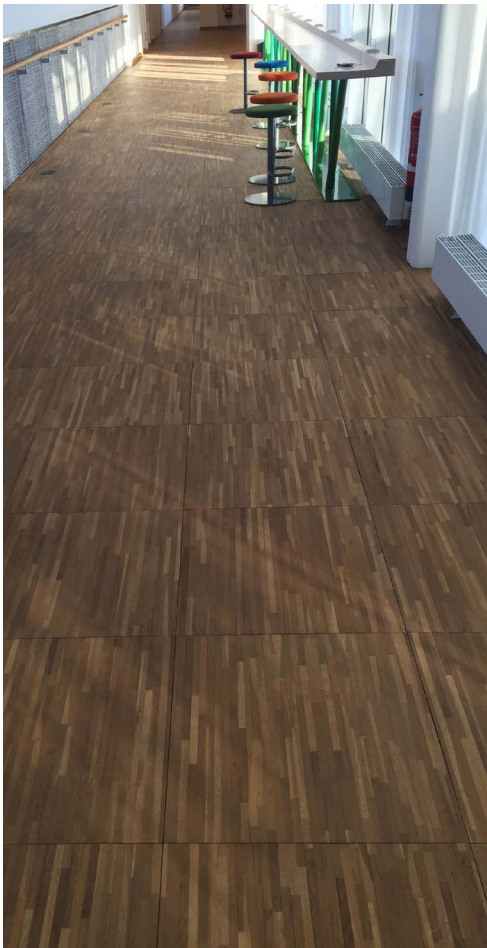


Broadcloth Alum



Cellar Oak

\*More color options available



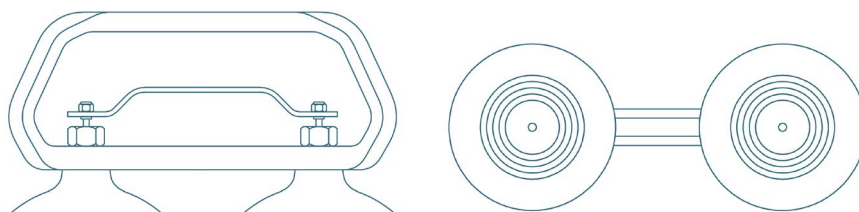


# Accessories



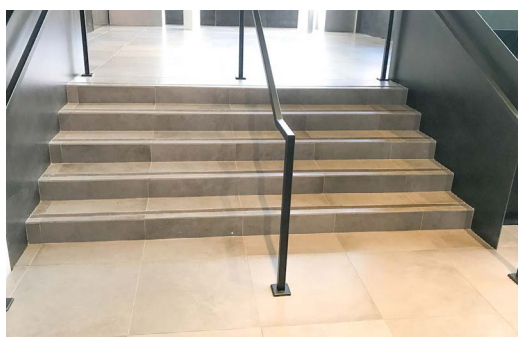
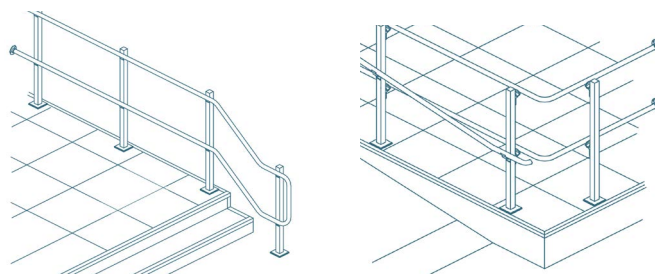
## Panel Lifter Kit

Designed to make access to the under floor simple with the included wall bracket, the Lifters have a home within your space to return to.



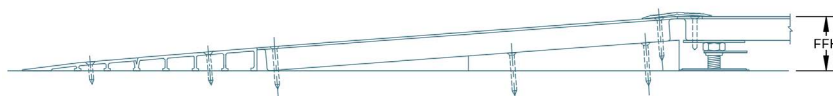
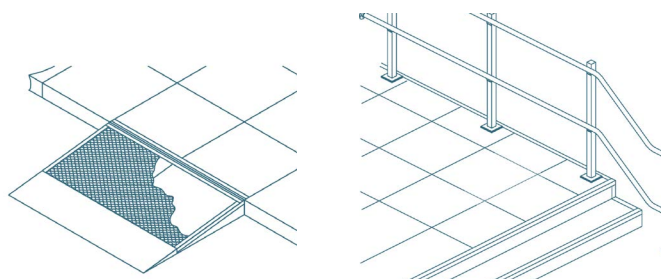
## Rails

The ASM Handrail System is a modular clear anodized extruded aluminum railing. Fabricated to accommodate the job site conditions.



## Ramps & Steps

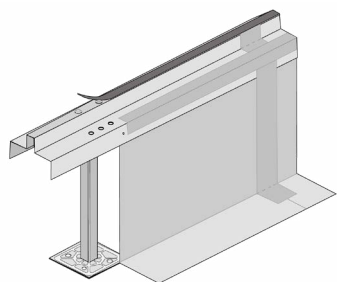
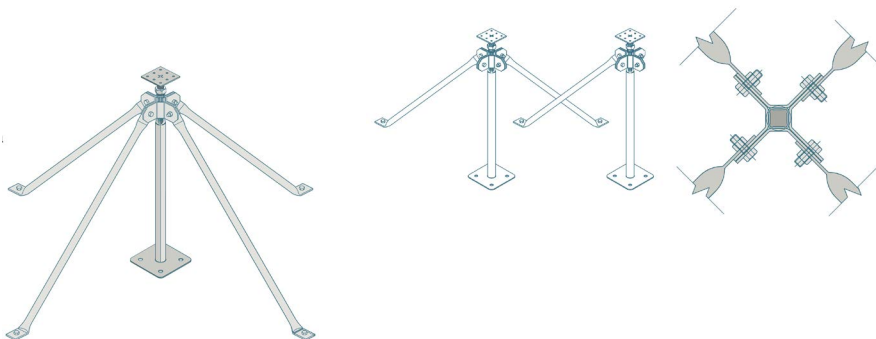
Assembled on site for any size or application. Built from access floor components to satisfy any size or requirement.





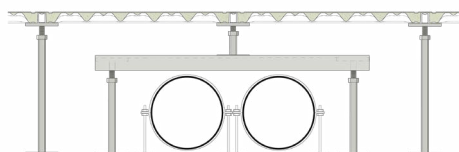
## Seismic Bracing

For high risk seismic projects, ASM offers seismic braces that can easily be attached to any ASM raised floor pedestal for ultimate lateral support.



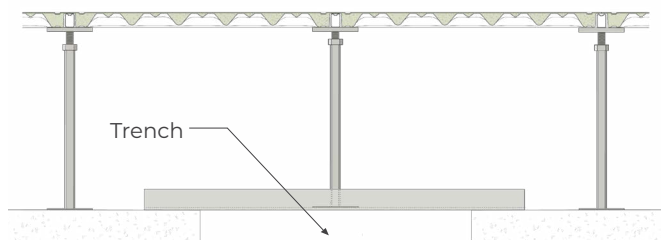
## Plenum Divider & Air Highway

Plenum dividers are used when there is a need to partition the space under the access floor for the purpose of providing air seal between spaces, smoke control, air highway, and other partitioning uses.



## Understructure Bridging

Designed using standard access floor components to bridge underfloor obstructions.

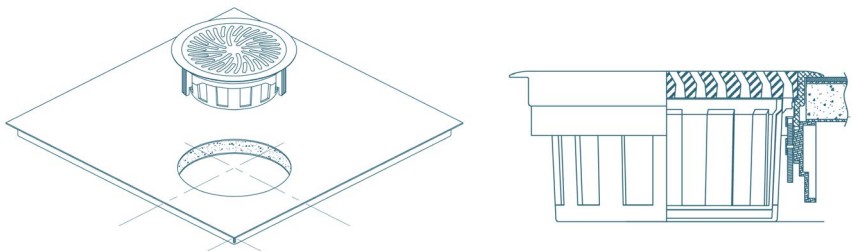


Bridging at top of sub floor to extend beyond trench on each side



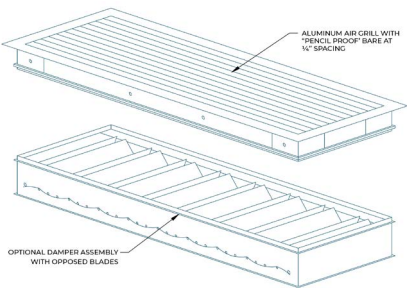
Diffuser

Swirl Diffusers are utilized in general office environments that have Under Floor Air Distribution (UFAD). Provides individual control to the occupant for better personal comfort.



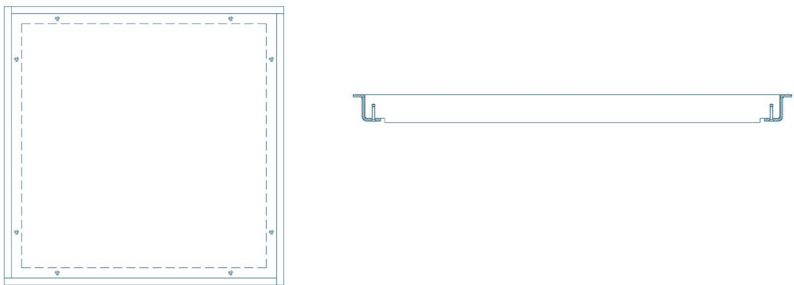
Linear Air Grille

Aluminum air grilles offer conditioned air along windows or in open common space areas.



Clear View Panel

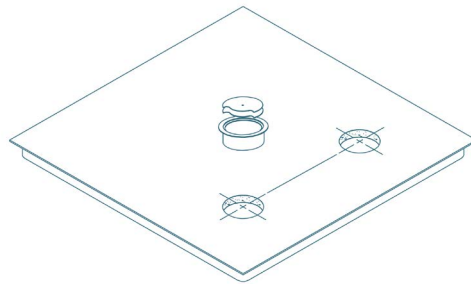
High strength acrylic allows you to monitor under floor area without removing panels.





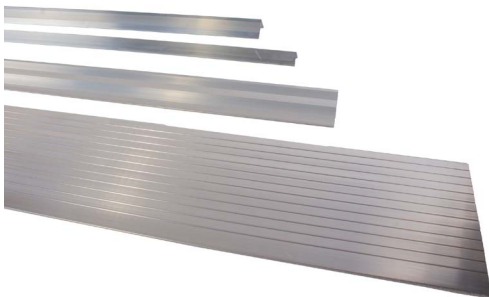
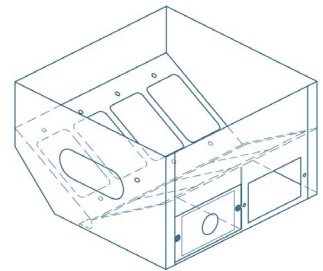
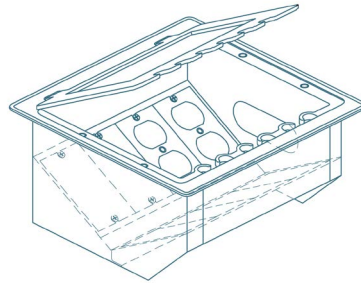
## Grommets

Round, square, and brush type in a multitude of sizes. Provides protection to cables that need to come through from the under floor to furniture or equipment.



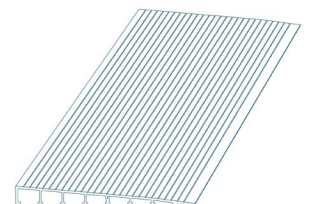
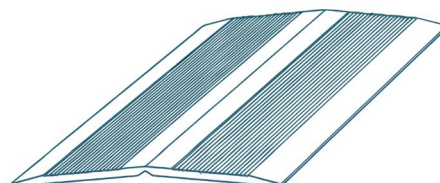
## Service Box

Multiple options that allow field wiring for voice, data and power. Lids are recessed to allow carpet inserts to make your floor aesthetically more pleasing.



## Aluminum Extrusions

Top & bottom angle, fascia, threshold and rampshoe.





ASM Modular Systems, Inc.  
9500 Industrial Center Drive  
Ladson, SC 29456

843-534-1110 (p)  
843-534-1111 (f)  
888-279-9216 (toll free)

[info@asmproducts.com](mailto:info@asmproducts.com) (email)  
[www.asmproducts.com](http://www.asmproducts.com) (web)  
[www.starnetaccessfloor.com](http://www.starnetaccessfloor.com) (web)





# ASM

*Innovations In Access Flooring*

## ACCESS FLOOR FINISHES



IMAGE ID: 12139844

[www.shutterstock.com](http://www.shutterstock.com)

# ASM'S RAISED ACCESS FLOOR FINISHES

Building on a successful past, ASM's history is a long one; long on innovation and on quality. Stringent testing and quality control checks developed by ASM's technical team have served our clients well over the decades. Across the board, ASM's product lines are subject to rigorous examination or floor finishes and floor finishes are no exception.



INFO  
[www.asmproducts.com](http://www.asmproducts.com)  
[info@asmproducts.com](mailto:info@asmproducts.com)  
(843) 534-1110

ADDRESS  
9500 Industrial Center Drive  
Ladson, SC 29456



# CASALGRANDE PORCELAIN

Versatile And Elegant

## FEATURES

Available in 45 colors  
FloorScore Certified

**Classification:** Rubber Floor Tile (ASTM F1344)

**Total Thickness:** 0.125" (3.18 mm)

**Installation Method:** Glue-Down

**Pattern:** Speckled

## CHALON COLLECTION

Beige



Cream



Grey



Khaki



# PRODUCTS



## CEMENTO COLLECTION

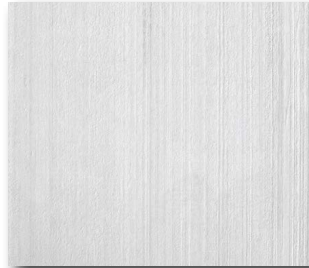
Antracite Cassero



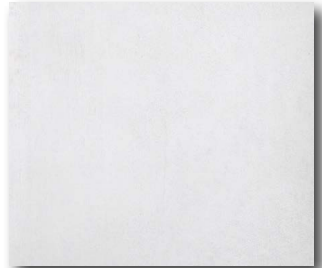
Antracite Rasato



Bianco Cassero



Bianco Rasato



Grigio Cassero



Grigio Rasato



Beige Cassero



Beige Rasato



*More color options available*



# STILE PLANK HARDWOOD



*Two-layer wood floor collection  
available in 10 wood species.*



## FEATURES

Available in 45 colors  
FloorScore Certified

**Classification:** Rubber Floor Tile (ASTM F1344)

**Total Thickness:** 0.125" (3.18 mm)

**Installation Method:** Glue-Down

**Pattern:** Speckled



# PRODUCTS



**Afrormosia**



**Cabreuva**



**Doussie**



**Iroko**



**Noce Americano**



**Rovere**



**Rovere Smoked Dark**



**Rovere Smoked Medium**



**Teak**



**Wenge**



More color options available



• • •

ADDRESS

9500 INDUSTRIAL CENTER DRIVE,  
LADSON, SC 29456

ONLINE

[www.asmproducts.com](http://www.asmproducts.com)

[info@asmproducts.com](mailto:info@asmproducts.com)

OFFICE

(843) 534-1110

• • •

# OPTIMA® Radial

Custom Lay-in & Tegular Ceiling System  
fine texture



▲ Optima® Radial Custom White with Prelude® XL® 15/16" custom suspension system

plus capabilities  
to do more



[armstrongceilings.com/capabilities](http://armstrongceilings.com/capabilities)  
See more photos at:  
[armstrongceilings.com/photogallery](http://armstrongceilings.com/photogallery)

Fine-texture panels designed for dramatic installations requiring outstanding acoustical performance.

## KEY SELECTION ATTRIBUTES

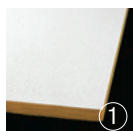
- Outstanding acoustical performance in both Articulation Class 190-200 and NRC 0.90-0.95
- Smooth, clean, durable finish – Washable, Impact-resistant, Scratch-resistant, Soil-resistant
- Mold- and mildew-resistant surface
- Energy-saving high light-reflective finish
- Sag resistant large panels
- 30-Year Limited System Warranty against visible sag, and mold and mildew

## COLOR



White  
(WH)

## DETAILS



1. Optima® Square Lay-in
2. Optima® Square Tegular

# OPTIMA® Radial

Custom Lay-in & Tegular Ceiling System  
fine texture

LEED®  
WELL™ | LBC

UP TO 71% RECYCLED CONTENT

Calculate sustainability with GreenGenie™  
armstrongceilings.com/greengenie

energy management  
construction waste mgmt  
regional materials  
design for flexibility  
EPD  
recyclable/excise producer resp.  
biobased materials  
recycled content  
sourcing of raw materials  
material ingredient reporting  
low emitting materials  
lighting quality  
acoustics

LOCATION DEPENDENT

## OPTIMA® RADIAL SYSTEM OVERVIEW

\$\$\$\$

	Panels	Length	Width	System Capabilities	Suspension System
OPTIMA® Radial	Custom Trapezoid Lay-in Custom Trapezoid Tegular	6" intervals from 24"-66"	12"-48"	Meets taper up to 5° Minimum inside radius 12" Center must be a separate component	Interlude®, Suprafine®, Prelude® (accessible) with custom cross tees

1-sided

2-sided

**One-sided:**

- Refer to Optima® Radial Technical Guide for additional capabilities

**Two-sided:**

- Each tapered side **MUST** be symmetrical
- Refer to Optima Radial Technical Guide for additional capabilities

Minimum radius 12'-0"  
(12" minimum panel edge)

**Minimum Radius:**

- The minimum achievable radius is 12'. This is based on a minimum panel edge of 12" with the maximum tapers noted below
- Optima Radial panels **CANNOT** be used inside this 12' radius – drywall may be a suitable alternative

48" max

12" min

**Width:**

- Trapezoid panels are available in widths from 12" to 48"

1-sided

2.5° max

2-sided

5° max  
2.5° max each

**Taper:**

- The maximum taper angle per side for all trapezoids is 2.5 degrees
- For two-sided trapezoids, the taper angle must be equal on both sides (i.e., symmetrical) for a maximum of 5 degrees

66"

60"

54"

48"

42"

36"

30"

24"

24"-66"

**Length:**

- 8 lengths are available in the following 6" increments: 24," 30," 36," 42," 48," 54," 60," and 66"

Length 24"-66" in 6" increments

## PHYSICAL DATA

### Material

Fiberglass with DuraBrite® acoustically transparent membrane with or without CAC backing

### Surface Finish

DuraBrite with factory-applied latex paint

### Fire Performance

Class A: ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index of 25 or less. Smoke Developed Index of 50 or less (UL labeled).

### ASTM E1264 Classification

Type XII, Form 2, Pattern E  
Fire Class A

### Humidity/Sag Resistance

HumiGuard® Plus ceiling panels are recommended for areas subject to high humidity, up to, but not including, standing water and outdoor applications.

### Anti-Mold/Mildew

Ceiling tiles with BioBlock® performance resist the growth of mold and mildew on the tile surface.

### Primary (Embodied) Energy

See all LCA information on our EPDs.

### High Recycled Content

Contains greater than 50% total recycled content. Total recycled content based on product composition of post-consumer and pre-consumer (post-industrial) recycled content per FTC guidelines.

### Insulation Value

3/4" – R Factor – 3.0 (BTU units) 0.53 (Watts units)  
1" – R Factor – 4.0 (BTU units) 0.70 (Watts units)  
1-1/2" – R Factor – 6.0 (BTU units) 1.05 (Watts units)

### Weight; Square Feet/Carton

Sizes, weight, and square feet vary with order

### 30-Year Performance Guarantee & Warranty

When installed with Armstrong® Suspension System. Details at armstrongceilings.com/warranty

### Minimum Order Quantity

1 carton

## **Sustainable Materials CSI Spec. for Versacork™**

### **PRIMECORK WALL PANELS**

#### **1.03 QUALITY ASSURANCE**

##### **A. Qualifications:**

###### **1. Manufacturer Qualifications:**

- a. Use of cork sourced from the *Quercus Suber* tree as found only in Southwest Europe and North Africa
- b. Use of low-VOC, E1 Compliant, and CARB compliant adhesives in manufacturing of all products.
- c. Prior production of material for no less than 3 years.

#### **1.04 DELIVERY, STORAGE, AND HANDLING**

A. Deliver wall paneling to project site, or fabrication site, not less than 3 days prior to start of installation (to allow for suitable acclimation).

#### **1.05 PROJECT/SITE CONDITIONS**

A. Environmental Requirements: Installation spaces, flooring and adhesive must be maintained at normal occupancy temperature and humidity levels for minimum 3 days prior to installation.

#### **1.06 WARRANTY**

##### **A. Special Warranty:**

Warranty: 10 year against any delamination or separation as a result of a manufacturing defect when installed and maintained in accordance with manufacturer's installation and maintenance instructions.

### **PART 2 – PRODUCTS**

#### **2.01 MANUFACTURER**

A. Versacork Concepts  
PO Box 17636  
Boulder, CO 80308

Distributor (North America):  
Sustainable Materials LLC  
5403 Western Ave #C  
Boulder, CO 80301  
USA

Tel: (720) 449-3063  
e-mail: [info@sustainablematerials.com](mailto:info@sustainablematerials.com)  
Website: <http://www.sustainablematerials.com/muratto>

C. Substitutions: None Permitted.



## 2.02 MATERIALS

### A. VersaCork™ Flooring:

1. Species: Quercus Suber (Cork Oak)
2. Size:
  - a. Versacork Premium - 300mm x 600mm x 6mm (approx. 12"x 24" x ¼")
  - b. Versacork MEGA - 600mm x 600mm x 6mm (approx. 24"x 24" x ¼")
3. Packaging
  - a. Versacork Premium – 130 sheets per carton (approx. 260 sq. ft. of material).
  - b. Versacork MEGA - 66 sheets per carton (approx. 266 sq. ft. of material)

**Important NOTE:** Sheets are interlocking, so actual 'installed' coverage is less than that size of sheet provided. The ordering/overage factor to compensate for the inherent product stagger is 12%. For example, if you need to cover 100 sq. ft. of floor area, in order to have enough material you would need to order no less than 112 sq. ft. to achieve the needed coverage.

4. Finish
  - a. Prefinished – 2 coats of Forbo finish pre-applied
  - b. Unfinished – no finish pre-applied
  - c. 'Stained' – product recommendations available upon request (factory applied pre-stained available with certain minimum quantities)
5. Construction/lamination:
  - a. Prefinished" products – cork discs are glued/laminated onto a paper-backing (the backing to be inset into the glue)
  - b. "Unfinished" products - cork discs are adhered to a plastic film, with the film on the face of the discs (the discs to be inset into glue, then once set, the plastic film is removed).
6. Physical Property Performance Requirements:
  1. Composition: 100% cork
  2. Density:  $\geq 500\text{kg/m}^3$
  3. Thermal Insulation:  $0.0958\text{ Kcal/m}^3\text{h}^\circ\text{C}$
  4. Fire Behavior: Classification CSTB = M3  
(neither spreads flame nor releases toxic gases during combustion)
  5. Smoke Density of VersaCork™ material: Specific Optical Density (per ASTM E 662 and NFPA 258)- Flaming: 148, Non-flaming: 272
  6. Compression Recovery of VersaCork™ material: (per ISO 9727; with loading of 38.5 lbs/sq<sup>2</sup>)  
Initial: 10%; Residual (after 1.5 hours): 1.5%  
Breaking tension on traction: no less than 11lbs/ sq. in.
  7. Thermal Properties of VersaCork™ material: (per ASTM C 518)  
Thermal Conductivity (k) - 0.3490  
Thermal Resistance (r) - 0.49  
Thermal Resistance/inch - 2.87
  8. Water Vapor Transmission: 0.128 grains/h ft<sup>2</sup>
  9. Permeance of VersaCork™ material: 0.183 perms (per ASTM E 96)
  10. Formaldehyde: Class E0 Phenol (No Urea Formaldehyde inclusion acceptable).

11. Coefficient of Friction:			
Premium	Wet .879	Dry 1.1	
Mega	Wet .89	Dry 1.15	

**B. Installation Adhesives and Grouts:**

1. VersaCork™ to substrate: 2 component urethane adhesive, i.e. Greenfusion2 from Bostik.
2. Grout to VersaCork™:
  - a. Dry installations: Starquartz / TruColor Grout by Bostik
  - b. Wet installations: Starquartz / TruColor Grout by Bostik

**PART 3 - EXECUTION**

**3.01 EXAMINATION**

**A. Examine substrates upon which flooring will be installed.**

1. Verify that subfloor is clean, dry, and free of contaminants that would interfere with adhesive bond.
2. If installing on concrete: Test concrete floors for moisture content using a Calcium Chloride test or Tramex Moisture Encounter meter. Do not install flooring if vapor pressure exceeds 3 lbs per 1,000 sf (15 g per m2) in 24 hours.
  - a. In multiple story buildings, test each floor level where cork flooring will be installed.
  - b. Mark test location(s) on As-Built Drawings.

3. Verify that HVAC system is operating and maintaining occupancy level temperature and humidity conditions.

\* If either of the above needs attendance, coordinate with responsible entity to correct unsatisfactory conditions.

**3.02 PREPARATION**

A. Acclimatization: Open all boxes, and let acclimate for a minimum of 3 days.

B. Fix the substrate so all bumps and depressions are completely leveled for the glue-down tile application, and ensure bumps and depressions are less than 1/8" over 8 feet

**3.03 INSTALLATION – see detailed installation instructions for more pertinent information.**

**A. Unfinished Versacork**

1. Cut and dry lay sheets on substrate, cutting with a utility knife if needed.
2. Remove sheets and evenly spread adhesive across substrate. The substrate should be clean and free of debris.
3. Carefully place each full sheet next to one another.
4. Allow adhesive to fully cure. If staining Unfinished VersaCork™, do so now.

5. Apply 2 coats of polyurethane to VersaCork™ sheets to unfinished or stained Versacork.
6. Evenly distribute grout with a rubber float, making certain all joints are completely filled. The finished grout should be uniformly smooth, without any voids or low spots.

#### B. Prefinished Versacork

1. 1. Cut and dry lay sheets on substrate, cutting with a utility knife if needed.
2. Remove sheets and evenly spread adhesive across substrate. The substrate should be clean and free of debris.
3. Carefully place each full sheet next to one another.
4. Allow adhesive to fully cure.
5. Evenly distribute grout with a rubber float, making certain all joints are completely filled. The finished grout should be uniformly smooth, without any voids or low spots.

### 3.04 MAINTENANCE

A. Cleaning: Sweep or vacuum floor frequently to avoid build-up of abrasive particles. Depending on application, regularly dry mop the floor surface to keep the floor surface free of dirt and grit. Use a WELL wrung out damp mop in conjunction with a high ph balance cleaner, such as Bona Hardwood Flooring Cleaner or Simple Green. If the cleaning solution you are using does not evaporate within minutes, you are using too much.

B. Furniture and heavy objects (if applicable): Furniture foot pads are recommended to prevent indentations in the tiles.

C. Wet installations: In wet installations, it is important to ensure that cork material is protected by urethane, and it is therefore recommended to check floor regularly to make sure urethane is on cork. This is a common practice for similar products like natural stone, and will help ensure a beautiful, long lasting installation. Application of finish should be followed by finish manufacturer's installation instruction, and should be repeated as often as necessary to protect cork. As with any natural product where finish is applied, failure to maintain the finish could result in irreparable damage.

D. One maintenance step that can be taken to clean and build finish at same time is use of Bona Kemi Hardwood Floor Refresher. Cleaning with this product on a regular basis will help build up finish and allow for need to refinish floor less often. [www.bona.com](http://www.bona.com)

### 3.05 PROTECTION

A. Cover installed flooring with heavy kraft-paper or other suitable covering. Do not use non-breathable sheet or film that could cause condensation to form. Maintain covering throughout remainder of construction period.

With any questions, or for this in a digital format, contact:

Sustainable Materials  
5403 Western Ave Unit C  
Boulder, CO 80301

Tel: (720)449-3063  
e-mail: [info@sustainablematerials.com](mailto:info@sustainablematerials.com)  
Website: <http://www.sustainablematerials.com>

## Cork Moosaic INSTALLATION

Installation of the Cork Mosaic is similar to typical ceramic or mosaic tile installation using the glue then grout method. The existing substrate should be clean, including complete removal of old adhesives, loose or weak concrete, dirt, debris, and any other contaminant that may impact the bonding of the cork mosaic. Professional installation is recommended.



**SUBFLOOR:** Can be installed on concrete, tile backers, or plywood. Concrete must be fully cured and smooth. Surface may need to be etched to enable a solid bond between the adhesive and cork. Plywood needs minimal flex, no less than 1" thick over joists spaced a maximum of 16" on center

**STEP 1:** Dry Lay – Lay cork mosaic sheets on subfloor where they will be affixed. Make your appropriate cuts and get everything lined up prior to applying adhesive.

**Step 2:** Remove cork mosaic sheets from subfloor and spread evenly a urethane enhanced adhesive on the prepared substrate according to manufacturer's specified instructions. We highly recommend Greenfusion2 or Ultra Set Advanced by Bostik. [www.bostik-us.com](http://www.bostik-us.com)

**NOTE:** SEE INFO ON NEXT SHEET FOR DIFFERENT INSTALLATION DEPENDING ON IF CORK IS ADHERED TO PAPER-BACKING or PLASTIC FILM.



**Step 3:** Carefully place cork mosaic sheets into adhesive with even pressure to ensure they are level and get a solid bond with adhesive. Make sure **each cork disc** is firmly embedded in adhesive, paying strict attention to working with the "open time" of the adhesive used. (Note: Improper adhesion is NOT a product failure). Allow adhesive to fully dry per adhesive manufacturer's instructions. (Not allowing time for adhesive to dry can trap moisture beneath cork can create adhesion / rotting problems)

**Step 4:** Remove Plastic film from the top of the discs. Staining – OPTIONAL (if not staining, skip to step 4B): **4A)** To stain cork mosaic you must first start with "unfinished" discs, by purchasing unfinished product. Apply a water-based wood stain (Minwax, Bona Kemi, etc.) as per manufacturers' specifications. **4B)** Then apply at least 2 coats of water-based polyurethane (Bona Kemi Traffic is highly recommended).



**Step 5:** Apply a urethane or silicone enhanced sanded grout with a rubber trowel, making certain that all joints are filled. We highly recommend StarQuartz QuartzLock2 pre-mixed grout to help with ease of installation, though traditional sanded or epoxy grouts also work. (Note: Improper application of grout is NOT a product failure. If standard grout is not mixed properly can cause gapping between cork and grout). The finished joints should be uniformly smooth, without any voids or low spots. Remove the grout off the top of the cork within 10 minutes to prevent the grout from drying on top of the cork. A commercial tile sponge, first abrading the surface with rough side of sponge and cleaning off grout with smooth side of sponge tends to work well.



**Step 6:** Allow the grout to cure completely (could take 3-4 days). If installing in a residence, the installation is complete at this point. If you are installing in a Wet Application (residential or commercial) or heavy Commercial Applications, finish the installation by evenly applying 2 to 3 additional "thin" coats of water-based polyurethane to seal the floor together (2-3 thin coats is better than 1-2 thick coats). We recommend a 2-component wood sealer/finish (such as Bona Kemi Traffic); 2-component finishes are more durable than single component ones and will last longer in between finishes. For questions on finish or to locate a distributor, please contact Bona at [www.bona.com](http://www.bona.com) or 877-289-2662.



#### Extra Tips for Installation

- 1) In **“wet” applications** (such as, a shower, spa, etc.), it is important to use a “water-proofing and crack prevention membrane” (such as Custom’s Red Guard). Also, in wet applications, a 2 component urethane adhesive, such as Greenfusion2 is highly recommended. **Also, be sure to seal the drain in the shower with caulk and around the edges of the shower so water does not move into areas that would affect the adhesion with cork (this is standard tile setting practice).** This product will have a plastic film on top surface of each sheet that will be peeled off after cork is secured in adhesive.
- 2) Finish is recommended in Wet Applications and Heavier Commercial Traffic Areas.
- 3) Most of the cork mosaic arrives with a **plastic film** on the top side. If there is plastic film on the cork, lay the cork into the thin-set with plastic on top. Once adhesive dries, remove the plastic film and begin steps to stain or finish prior to grouting. If there is a **paper backing (or mesh backing)** on the cork, place the **paper backing(or mesh backing)** side into the thin-set making sure each disc is firmly embedded in the adhesive. Once adhesive is dry, you can begin steps to stain, finish or if prefinished can begin grouting. Any questions, please contact your representative or cork mosaic.

**Maintenance:** A. Cleaning: Sweep or vacuum floor frequently to avoid build-up of abrasive particles. Depending on application, regularly dry mop the floor surface to keep the floor surface free of dirt and grit. Use a WELL wrung out damp mop in conjunction with a high ph balance cleaner, such as Bona Hardwood Flooring Cleaner or Simple Green. If the cleaning solution you are using does not evaporate within minutes, you are using too much. Furniture and heavy objects (if applicable): Furniture foot pads are recommended to prevent indentations in the tiles. Wet installations: In wet installations, it is important to ensure that cork material is protected by urethane, and it is therefore recommended to check floor regularly to make sure urethane is on cork. This is a common practice for similar products like natural stone, and will help ensure a beautiful, long lasting installation. Application of finish should be followed by finish manufacturer’s installation instruction, and should be repeated as often as necessary to protect cork. As with any natural product where finish is applied, failure to maintain the finish could result in irreparable damage. One maintenance step that can be taken to clean and build finish at same time is use of Bona Kemi Hardwood Floor Refresher. Cleaning with this product on a regular basis will help build up finish and allow for need to refinish floor less often.  
[www.bona.com](http://www.bona.com)

**CALL or EMAIL with additional questions!!**





MOSAIC

RETRO ROUNDS™  
GLAZED PORCELAIN



 daltile®  
IMAGINE WHAT'S POSSIBLE™

SIZES:



1 x 1 Penny Round  
Mosaic Solids



1 x 1 Penny Round  
Mosaic Patterns

FINISHES: MATTE | GLOSSY

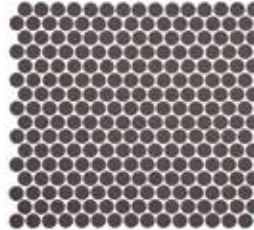
GLOSSY



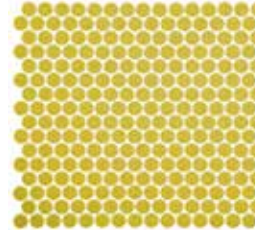
BOLD WHITE GLOSS RR01



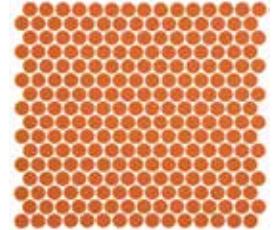
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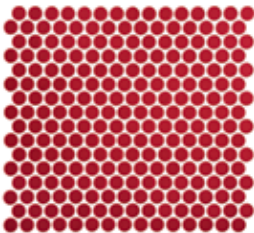
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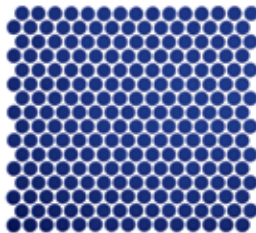
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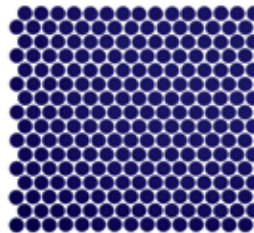
ORANGE SODA RR08



CHERRY RED RR09



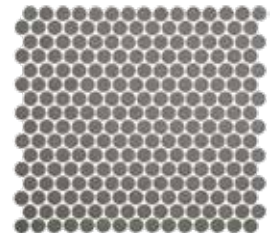
DENIM BLUE RR10



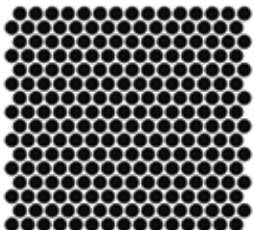
COBALT CIRCLE RR11



SMOKY GRAY RR12



ENGINE GRAY RR13

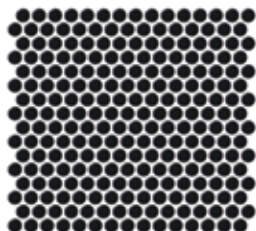


CANVAS BLACK GLOSS RR14

MATTE

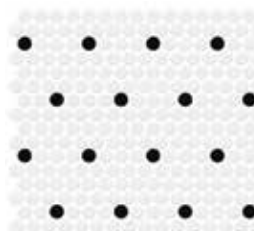


BOLD WHITE MATTE RR02

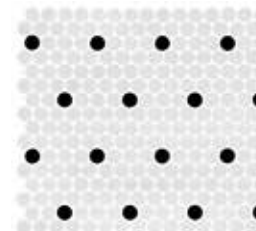


CANVAS BLACK MATTE RR15

PATTERN MOSAICS



POLKA DOT GLOSS RR03



POLKA DOT MATTE RR04



WATERPROOF



STAINPROOF



SCRATCH-RESISTANT\*  
\*Applicable to products with Matte and Textured Finishes



FIRE-RESISTANT\*  
\*Not Applicable to Mesh-Mounted Mosaics



CLIMATEPRO™



SIMPLICLEAN™



VISIT THE WHY TILE PAGE AT [WWW.DAL TILE.COM](http://WWW.DAL TILE.COM) FOR A COMPLETE LIST OF QUALIFICATIONS AND EXCLUSIONS.

# RETRO ROUNDS™

GLAZED PORCELAIN

MOSAIC

## SIZES

			Thickness	Sq. Ft. per Carton	Pieces per Carton
	1 x 1 Penny Round Mosaic Solids (Mesh-mounted on a 12 x 12 sheet)	(12-7/16" x 11-9/16" Sheet) (31.60 cm x 29.40 cm Sheet)	3/16"	10.00	10
	1 x 1 Penny Round Mosaic Patterns (Mesh-mounted on a 13 x 12 sheet)	(13-1/4" x 11-9/16" Sheet) (33.60 cm x 29.40 cm Sheet)	3/16"	10.63	10

## APPLICATIONS

	Target DCOF wet	Suitable
Dry & Level – Interior Floor	N/A	✓*
Wet & Level – Interior Floor	≥ 0.42	
Shower Floors (Residential or Light Commercial)	≥ 0.42	
Exterior Floor Applications (including patios, pool decking & other wet areas with minimal footwear)	≥ 0.60	
Ramps & Inclines	≥ 0.65	
Walls/Backsplashes	N/A	✓
Countertops	N/A	✓**
Pool Linings	N/A	✓

A DCOF value of ≥0.42 is the standard for tiles specified for level interior spaces expected to be walked upon when wet, as stated in ANSI A137.1-A326.3. For more information about DCOF and the DCOF AcuTest™, visit [daltille.com/DCOF](http://daltille.com/DCOF).

### APPLICATION NOTES:

Suitable for exterior applications (provided it is noted as suitable in the applications chart above) in freezing and non-freezing climates, when proper installation methods are followed.

\*Only matte colors suitable for residential and light commercial floors not subject to outside foot traffic

\*\*Darker colors may show scratches. Only matte colors recommended for counter use.

## INSTALLATION

Grout Joint Recommendation	Shade Variation
----------------------------	-----------------

Approximately 1/8"

 Low (V1)

## TEST RESULTS

	ASTM#	Result
Water Absorption	C373	< 0.5%
Breaking Strength	C648	> 250 lbs.
Scratch Hardness	MOHS	4.0
Chemical Resistance	C650	Resistant

## NOTES

**Manufacturer Advisory:** These tiles have a dynamic coefficient of friction < 0.42 as measured by the DCOF Acutest method. Tiles with DCOF values < 0.42 are not recommended for use in areas with wet or slippery conditions. For more information, see ANSI standard A137.1 section 6.2.2.1.10, available at [www.tileusa.com](http://www.tileusa.com).

Since there are variations in all fired ceramic products, tile and trim supplied for your particular installation may not match these samples. Final color selection should be made from actual tiles and trim and not from tile samples or color reproductions. Manufactured in accordance with ANSI A137.1 standards.

Water, oil, grease, etc. create slippery conditions. Floor applications with exposure to these conditions require extra caution in product selection. Not for use on ramps.

For additional information refer to "Factors to Consider" at [daltille.com/Factors](http://daltille.com/Factors).

**ZEROTOX**  
Healthy Homes | Healthy Planet

7834 C.F. Hawn Freeway,  
Dallas, Texas 75217 | 1.800.933.TILE

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IMAGINE WHAT'S POSSIBLE™  
©2021 Daltille (3/21)

TYPE: \_\_\_\_\_ QUANTITY: \_\_\_\_\_ PROJECT: \_\_\_\_\_

CATALOG  
NUMBER:

FIXTURE

SUFFIX

REFLECTOR

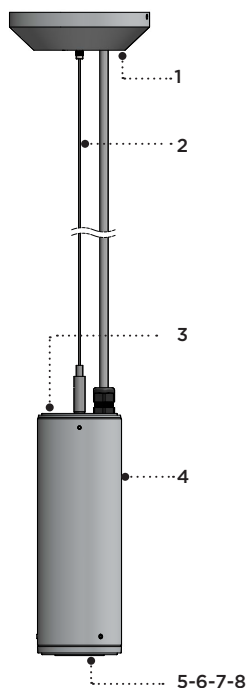
VOLTAGE

FINISH

OPTION

OPTION

OPTION



- 1- Ø 5" (127mm) ceiling mount canopy.
- 2- 36" lg. (914mm) silver braided power cable with aircraft safety cable.  
Other lengths available on request (specify SPG with desired length).
- 3- Cast aluminum top cover.
- 4- Extruded aluminum cylindrical driver housing.
- 5- Sealed cast aluminum down light assembly.
- 6- Sealed cast aluminum lens frame.
- 7- Clear tempered glass lens.
- 8- Faceted specular aluminum reflector.

All stainless steel hardware.

SY305



### MATERIALS

**Syrios LED** is made of corrosion resistant 356 aluminum alloy with a copper (CU) content of less than 0.1%.

The main housing is made of seamless extruded aluminum, with an integrally sealed LED light module designed for optimal heat dissipation, and lighting performance.

**Syrios LED SY305 series** is standard with 29° optic. See options section for alternate selection.

### ELECTRICAL

**DRIVER** Standard driver is 0-10V dimming-ready (dims to 10%) with: 120-277 multi-volt compatibility (50-60Hz), operating temperature range of -30°C/-22°F to 55°C/131°F, output over voltage protection, output over current protection and output short circuit protection with auto-recovery.

**LED** Standard 4000K/80CRI. Optional 2700K, 3000K and 3500K. Optional Amber LED for turtle sensitive areas. Wavelengths: 584.5nm to 597nm.

### LIFE

60,000hrs  $L_{70}B_{50}$  (based on IESNA TM-21 Test Method and LM-80 data). Up to 95,000hrs  $L_{70}B_{50}$  (calculated projection from LM-80 data).

### FINISH

Five-stage preparation process including preheating of cast aluminum parts for air extraction, and an environmentally friendly alloy sealant. Polyester powder coating is applied through an electrostatic process and oven cured for long term finish.

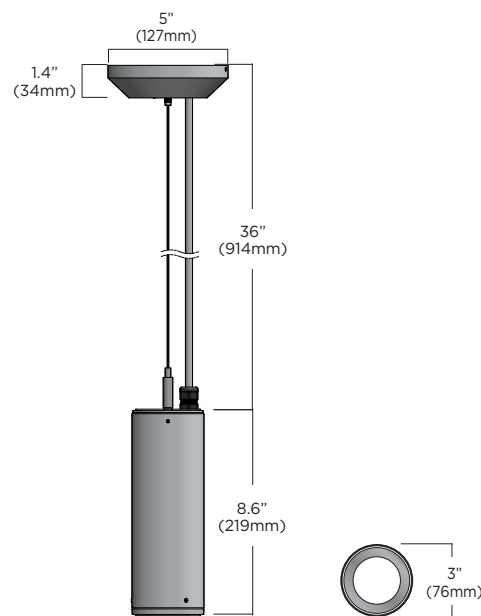
### MOUNTING

Maximum weight: 3.6 lbs (2 kg)

The mounting plate is designed to fit on a 4" (102mm) octagonal electrical box using 3 1/2" (89mm) C/C mounting holes.

### CERTIFICATION


Tested to UL1598 and CSA 22.2 #250. ETL listed damp location. Rated IP52.





# SY305 SERIES SYRIOS - LED

## LUMINAIRE SELECTION

1 MODEL#	2 LED LIGHT SELECTION	3 REFLECTORS*	4 VOLTAGE	5 FINISH																														
 <input type="checkbox"/> SY305	<table border="0"> <thead> <tr> <th>SUFFIX</th> <th>INPUT WATTS</th> <th>DELIVERED LUMENS</th> <th>CRI</th> <th>CCT °K</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> L1L10</td> <td>13W</td> <td>924</td> <td>80</td> <td>4000</td> </tr> <tr> <td colspan="5"><b>AMBER LED IDA - Dark Sky Approved</b></td> </tr> <tr> <td><input type="checkbox"/> L1L1K2A</td> <td>7W</td> <td>124</td> <td>AMBER</td> <td></td> </tr> </tbody> </table> <table border="0"> <thead> <tr> <th colspan="5">VERY NARROW DISTRIBUTION</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> L1L5NR</td> <td>10W</td> <td>539</td> <td>80</td> <td>4000</td> </tr> </tbody> </table>	SUFFIX	INPUT WATTS	DELIVERED LUMENS	CRI	CCT °K	<input type="checkbox"/> L1L10	13W	924	80	4000	<b>AMBER LED IDA - Dark Sky Approved</b>					<input type="checkbox"/> L1L1K2A	7W	124	AMBER		VERY NARROW DISTRIBUTION					<input type="checkbox"/> L1L5NR	10W	539	80	4000	<input type="checkbox"/> <b>R30</b> Flood optics 29° (standard) <input type="checkbox"/> <b>R40</b> Wide flood optics 42°  <input type="checkbox"/> <b>R9</b> Very narrow optics 9° Field angle 21° (12,018 candela)	<input type="checkbox"/> 120V <input type="checkbox"/> 277V	<b>STANDARD COLORS</b> <input type="checkbox"/> WHT Snow white <input type="checkbox"/> BKT Jet black <input type="checkbox"/> BZT Bronze <input type="checkbox"/> MST Matte silver <input type="checkbox"/> GRT Titanium gray <input type="checkbox"/> DGT Gun metal <input type="checkbox"/> CHT Champagne <input type="checkbox"/> SGT Steel gray <input type="checkbox"/> BGT English cream (Refer to color chart) <b>OPTIONAL COLORS</b> <input type="checkbox"/> CS Custom color <input type="checkbox"/> RAL RAL# color <b>NATATORIUM SUITED COLORS</b> <input type="checkbox"/> NWHT White <input type="checkbox"/> NBKT Black
SUFFIX	INPUT WATTS	DELIVERED LUMENS	CRI	CCT °K																														
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VERY NARROW DISTRIBUTION																																		
<input type="checkbox"/> L1L5NR	10W	539	80	4000																														

## OPTIONS

### ELECTRICAL

- ☐ **FS** Fuse
- ☐ **REML2-50** 7W remote emergency battery backup for LED, 90 min. Remote mount 50ft - 12" (305mm) square enclosure with access cover<sup>1</sup>

### MOUNTING

- ☐ **STM** 36" (914mm) stem with adjustable aircraft safety cable.
- ☐ **SPG** Longer silver braided power cord. Please add length with option suffix.

### ACCESSORIES

- ☐ **SL** Solite lens (light loss factor [LLF]: 0.9)
- ☐ **LSL** Linear spread lens
- ☐ **SNT** 1.5" (38mm) snoot<sup>2</sup>
- ☐ **HL** Hexcell louver

### LIGHT & OPTICS

Alternate CCT °K LED (LCF: Lumen conversion factor)

- ☐ **K27** 2700K CCT 80 CRI (LCF: 0.91)<sup>3</sup> IDA - Dark Sky Approved
- ☐ **K3** 3000K CCT 80 CRI (LCF: 0.94) IDA - Dark Sky Approved
- ☐ **K35** 3500K CCT 80 CRI (LCF: 0.983)<sup>3</sup>

NOTE: Other CCT & higher CRI available, please consult factory.

### CONTROL

- ☐ **NLTAIR2** nLight AIR Control gen2 embedded in canopy, with black antenna.<sup>4, 5, 6, 7</sup>

### NOTES

- 1- The remote enclosure must be interior.
- 2- To prevent reflections, interior painted black when a light color finish is selected (ex. WHT, MST, GRT and CHT).
- 3- K27 and K35 options not available with the R9 optics.
- 4- 120/277V only.
- 5- Installed in Ø11" canopy with SPG. Refer to the mounting images for more details.
- 6- Not compatible with REML2-50, Amber Led, Very Narrow Distribution, Natatorium colors.
- 7- White antenna available upon request.

**LUMINIS**®

LUMINIS | Toll free: 866.586.4647 Fax: 514.683.8872 Email: info@luminis.com  
260 Labrosse, Pointe-Claire (QC) Canada H9R 5L5

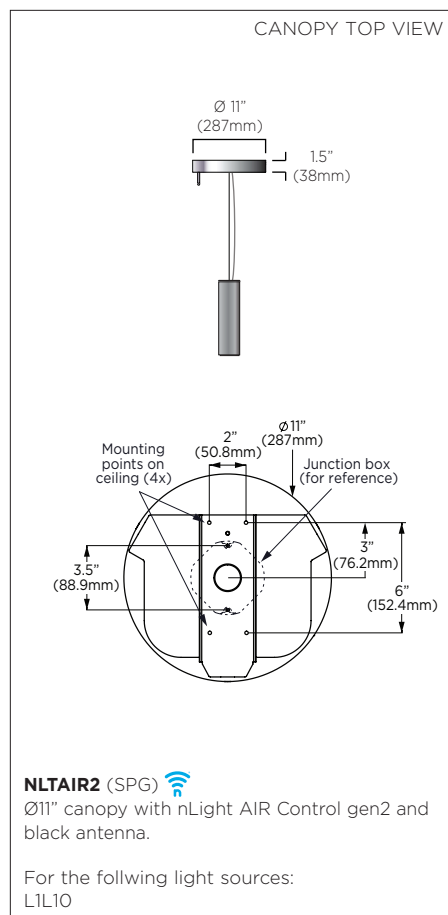
Luminaires may be altered for design improvement or discontinued without prior notice.

LUMINIS.COM

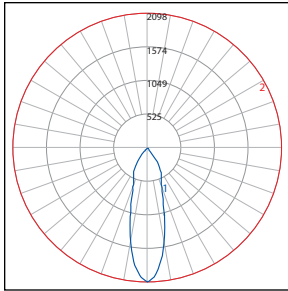
Jan. 2021 Rev.0



### MOUNTING

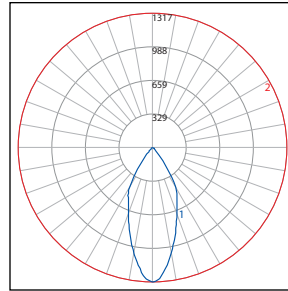


### TYPICAL PHOTOMETRY SUMMARY



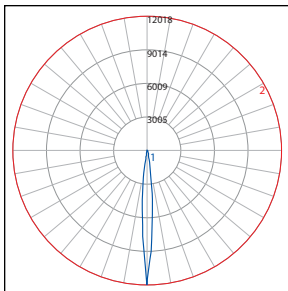
#### Descriptive Information

SY305-L1L10-R30  
 Total Lms: 924 Lumens  
 Total Input Watts: 13 W  
 Efficacy: 74 Lumens/Watt  
 BUG: B1-U0-G0  
 CCT/CRI: 4000K/80  
 Maximum Candela: 2098 @ 0 deg



#### Descriptive Information

SY305-L1L10-R40  
 Total Lms: 846 Lumens  
 Total Input Watts: 13 W  
 Efficacy: 68 Lumens/Watt  
 BUG: B1-U0-G0  
 CCT/CRI: 4000K/80  
 Maximum Candela: 1317 @ 0 deg



#### Descriptive Information

SY305-L1L5NR-R9  
 Total Lms: 539 Lumens  
 Total Input Watts: 10 W  
 Efficacy: 53 Lumens/Watt  
 BUG: B1-U0-G0  
 CCT/CRI: 4000K/80  
 Maximum Candela: 12018 @ 0 deg

Please visit our web site [www.luminis.com](http://www.luminis.com) for complete I.E.S. formatted download data.

) david  
trubridge



Maru

# Maru

Maru is made from 60 identical components that clip together to create an elliptical form. This is inspired by diatoms (continuing on from Navicula released in 2017) which are at the base of the entire oceanic food chain. Through photosynthesis, they liberate enough oxygen for our every second breath.

The swirling panels of sustainably managed bamboo plywood are arrayed around its form, lit internally by low energy LED modules. The effect of shadow play on surrounding walls and ceiling is Maru's hidden quality. The name Maru is found in both New Zealand Maori and Japanese languages, with references to the cycle of life. Maru is available in two sizes and in all stock colour options.





# Features

## Seed System Kitset

Our kitset lightshades are on average 1/30th of the volume of the assembled light. This aims to help minimize the effects of shipping and to reduce the design's environmental footprint.

## Compliance

CE

AS/NZS

(Declarations of conformity available on request).

## Care Instructions

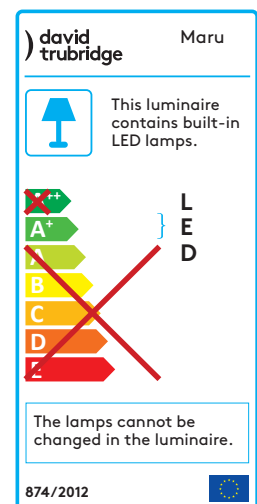
All wooden and/or polycarbonate lights are intended for use in dry interior conditions only and can be cleaned with a soft cloth or duster when the light is switched off. Do not use detergents.

## Warranty

This light is warranted for three years from date of purchase for failure of parts.

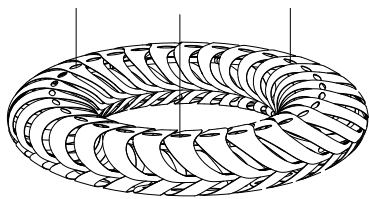


5002970  
CONFORMS TO :  
UL STD 1598  
certified to CSA STD  
C22.2 No.250.0  
Canada / USA

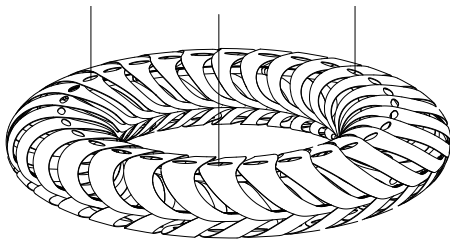




# Technical Data



Small



Large

Dimensions

Width: 1100mm / 43"  
Height: 200mm / 8"  
Length: 1100mm / 43"  
Weight: 3.4kg /7.5lb

Width: 1400mm / 55"  
Height: 250mm / 10"  
Length: 1400mm / 55"  
Weight: 4.9kg /10.8lb

Cordset

5m / 16.4ft

5m / 16.4ft

Material

Bamboo plywood  
(Sourced from FSC accredited factory)  
Aluminuim

Bamboo plywood  
(Sourced from FSC accredited factory)  
Aluminuim

Fasteners

Nylon/Stainless Steel

Nylon/Stainless Steel

Suspension

3 x 5m Suspension Wires

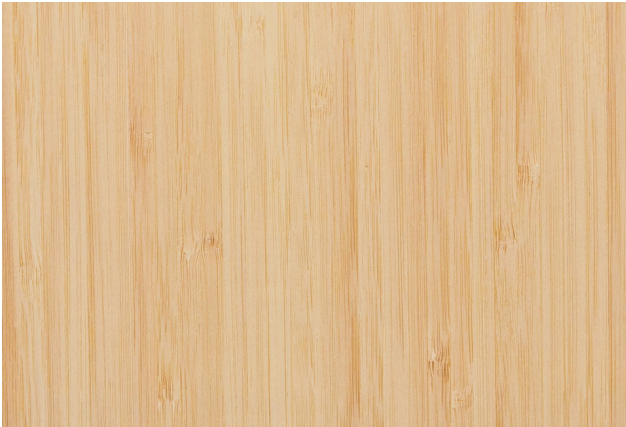
3 x 5m Suspension Wires

Packaging

480mm x 320mm x 190mm  
19"x 12.5" x 7.5"  
0.029m³ / 0.095ft³  
5.4kg / 11.46lb

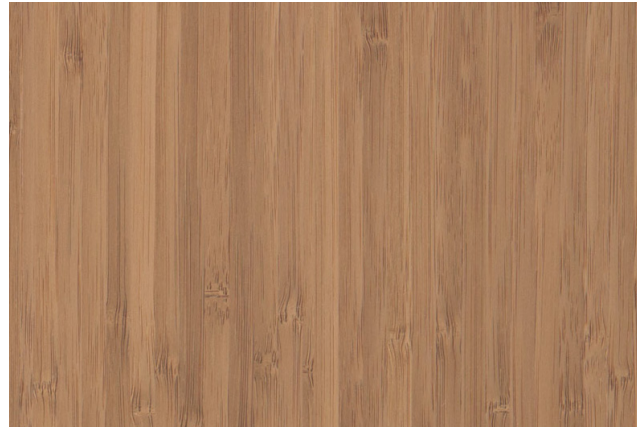
655mm x 340mm x 190mm  
26"x 13" x 7.5"  
0.042m³ / 1.38ft³  
7.2kg / 15.54lb

# Finish Choices



Natural

All bamboo (our primary material) is secondary product, from renewable forests in China grown as a food source. We have visited these plantations and are satisfied with the quality of their systems.



Caramel

Caramel bamboo starts out as natural and is carbonised using steam to caramelise the natural sugars which darken the bamboo. This process creates a different look without using chemicals.



Painted Lights

We use an acrylic low VOC (volatile organic compound) paint that is made in New Zealand. Colour swatches are available in all retailers. See the Resene website for more info.  
[www.resene.co.nz](http://www.resene.co.nz)



Natural



Caramel



Aqua



Lime



Red



Orange



Blue



Pink



Black 1 Side (Outside)



Black 1 Side (Inside)



Black 2 Sides



White 1 Side



White 2 Sides



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# Kina



Kina references the inner shell of the local salt water sea-urchin called kina in Māori. David saw a kina shell in Antarctica – an exquisite jewel sunk in a tiny hollow in the sea ice. The shell had absorbed enough warmth from the sun to melt the ice around it.

Kina comes in a range of sizes from 400mm dia to 1600mm dia. The plywood finish can be all natural or painted creating a wide range of colour options.



Cover Photo: Patrick Reynolds





# Features

## Shipped Kitset

Seed System kitset lightshades are on average 1/30th of the volume of the assembled light. This aims to help minimize the effects of shipping and to reduce the design's environmental footprint.

## Compliance

CE

AS/NZS

(Declarations of conformity available on request).

## Care Instructions

All wooden and/or polycarbonate lights are intended for use in dry interior conditions only and can be cleaned with a soft cloth dampened slightly in warm water when the light is switched off. Do not use detergents.

## Light sizes

David Trubridge kitset lightshades come in various sizes, making it easy to find the right size to any interior space whether it's small or large.

## EPD Certified

An EPD is a standardised and verified way of quantifying the environmental impacts of a product, based on a consistent set of rules that have been developed through a stakeholder consultation process.

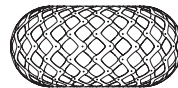
## Warranty

This light is warranted for three years from date of purchase for failure of parts.



THE INTERNATIONAL EPD® SYSTEM

# Technical Data



**440mm/17"**

**600mm/24"**

**800mm/31"**

**1000mm/39"**

**1400mm/55"**

Width: 440mm / 17" Height: 200mm / 8" Weight: 0.5kg / 1.10lb	Width: 600mm / 24" Height: 280mm / 11" Weight: 0.9kg / 1.98lb	Width: 800mm / 31" Height: 370mm / 15" Weight: 1.5kg / 3.30lb	Width: 1000mm / 39" Height: 420mm / 17" Weight: 2.45kg / 5.40lb	Width: 1400mm / 55" Height: 650mm / 26" Weight: 9.2kg / 20.28lb	Dimensions
2m / 6.5ft	2m / 6.5ft	2m / 6.5ft	3m / 9.8ft	5m / 16.4ft	Cordset*
Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory).	Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory)	Material
Nylon	Nylon	Nylon	Nylon	Nylon	Fasteners
Hangs on cord	Hangs on cord	Hangs on cord	1 x Suspension Wire	4 x Suspension Wires	Suspension
565mm x 185mm x 70mm 22" x 7" x 3" 0.007m³ / 0.3ft³ 0.9kg / 2lb	570mm x 240mm x 60mm 22" x 9" x 2" 0.008m³ / 0.29ft³ 1.5kg / 3.31lb	395mm x 335mm x 105mm 16" x 13" x 4" 0.014m³ / 0.5ft³ 2.4kg / 5.3lb	540mm x 450mm x 80mm 21" x 18" x 3" 0.019m³ / 0.674ft³ 3.8kg / 8.38lb	750mm x 590mm x 205mm 30" x 23" x 8" 0.091m³ / 3.2ft³ 9.25kg / 20.4lb	Packaging

\*Black comes with black cordset and fasteners. All others come with white cordset and clear fasteners. Custom lengths available on request.

## You will need

Fixings for cone gripper (fixing screws NOT SUPPLIED).

Note: Choose appropriate hardware to attach base plate (Fig.1) to ceiling substrate.

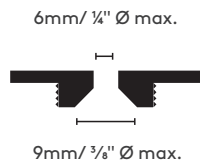
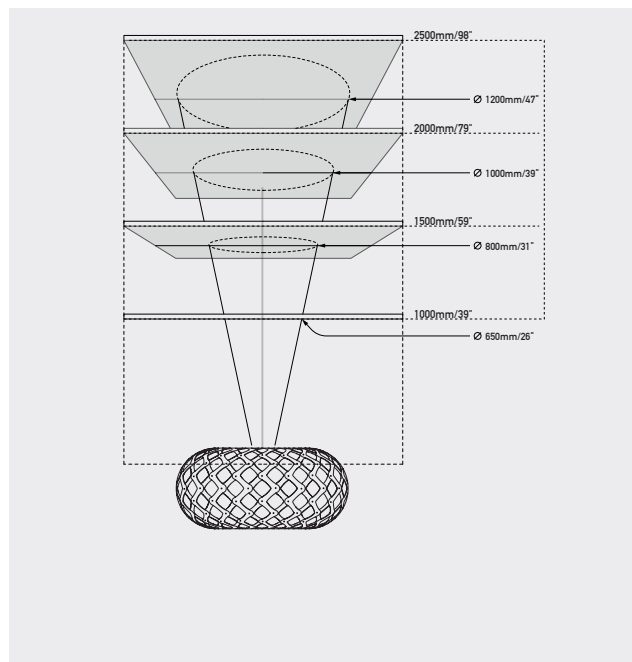


Fig 1. Base Plate

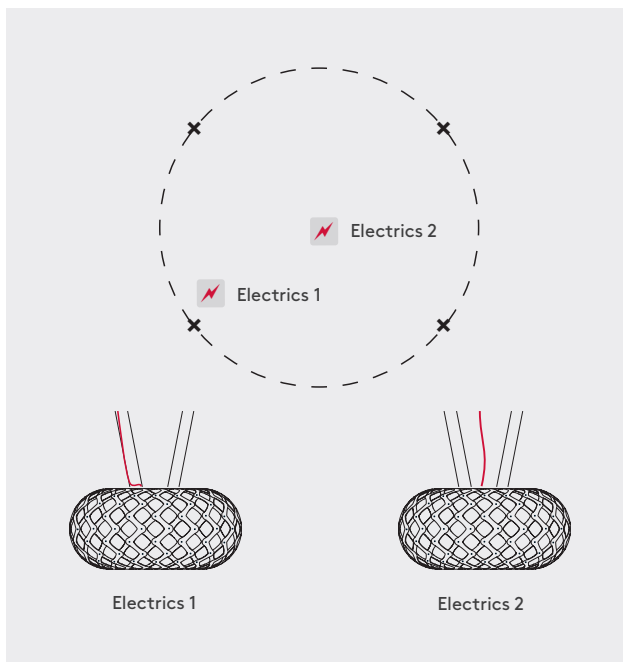
# Installation 1400mm/55"



### Step 1.

Decide upon hanging distance. Use the schematic diagram as a guide to pick a circle radius to be marked out on ceiling. This circle can be marked with a length of timber or string.

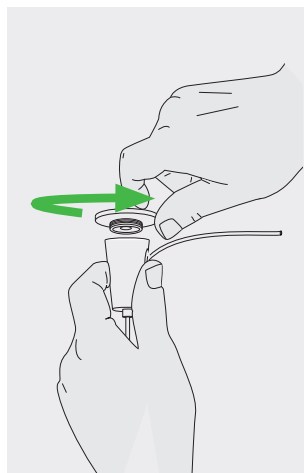
### Options



### Step 2.

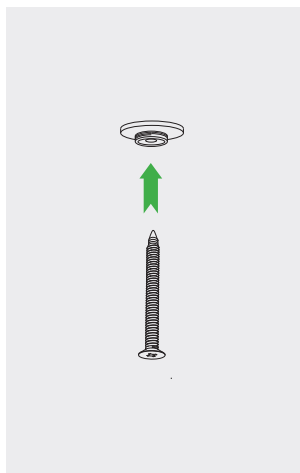
Mark 3 hanging points where your cone grippers will be located. You can either centrally locate the ceiling canopy or run the electric cord up one of the suspension wires.

## Installation - 1000mm / 39" & 1400mm / 55"



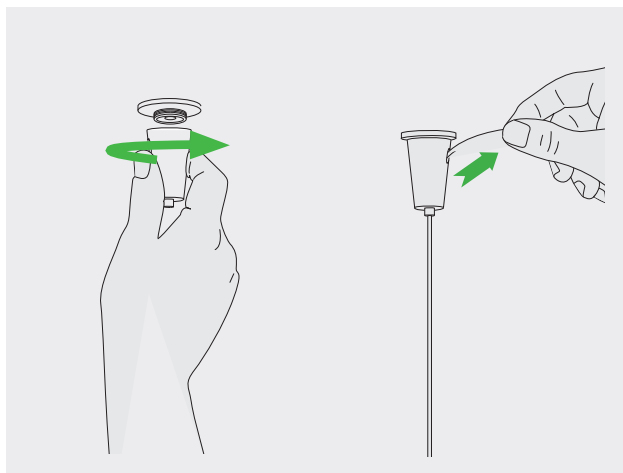
### Step 1.

Unscrew baseplate.



### Step 2.

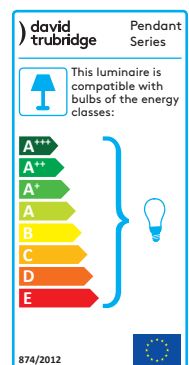
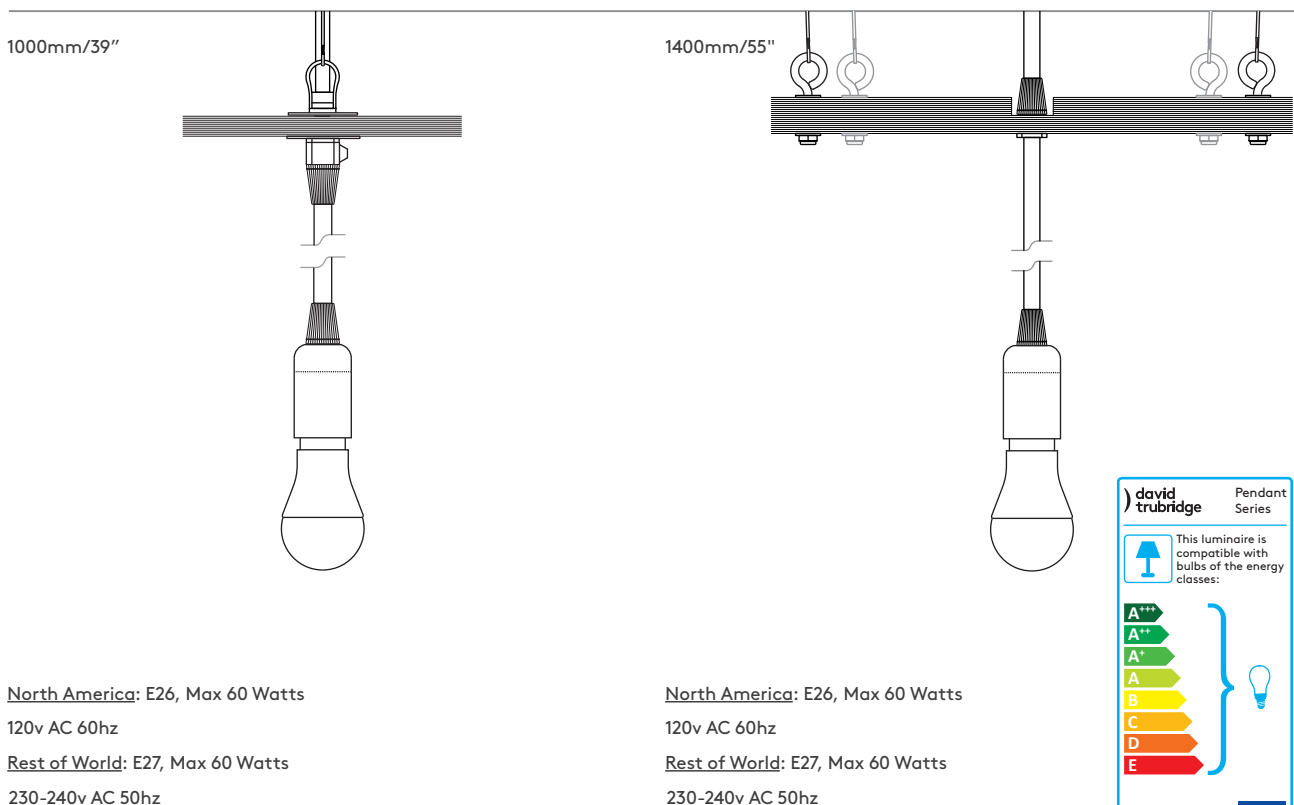
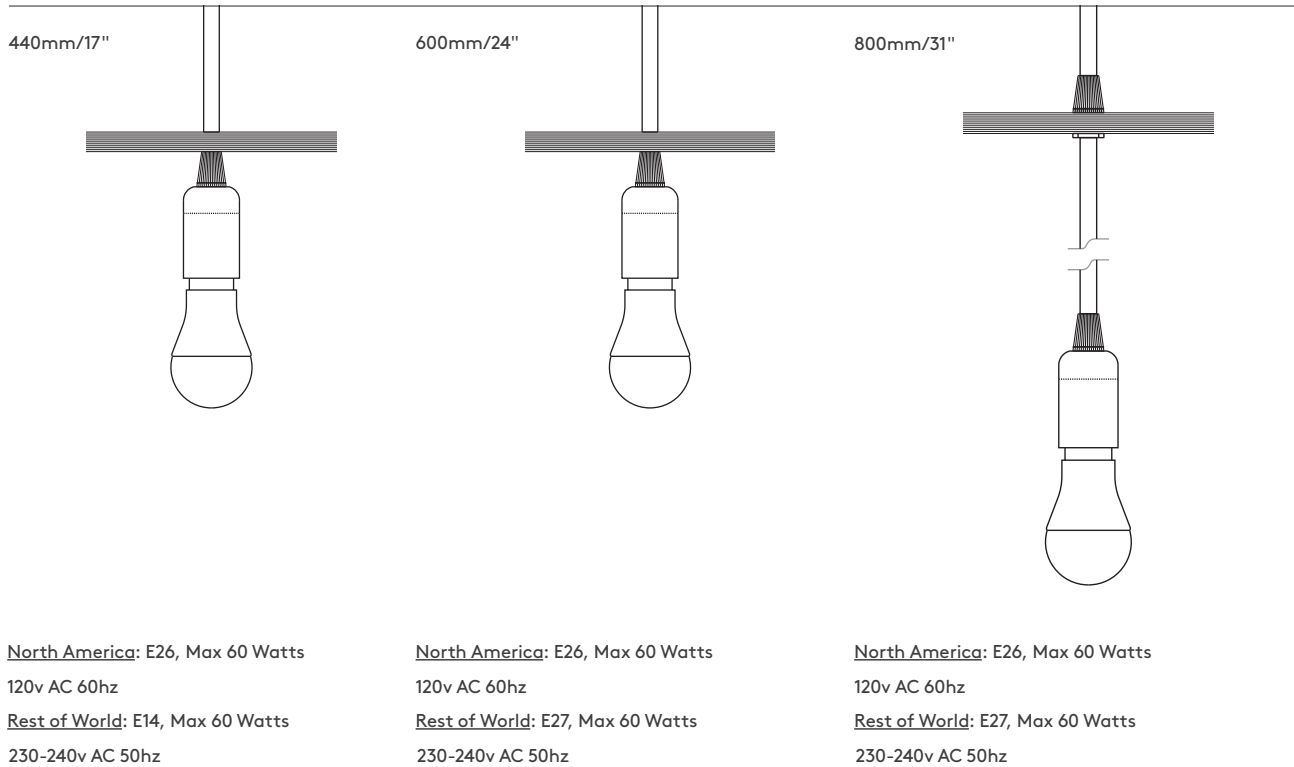
Use appropriate fixing screw to mount base plate (Fig.1).



### Step 3.

Remove cable from cone. Screw cone back onto baseplate. Re-insert cable and level light. Once desired position is set, trim excess cable.

# Diagrams



# Finish Choices



Natural

All bamboo (our primary material) is secondary product, from renewable forests in China grown as a food source. We have visited these plantations and are satisfied with the quality of their systems.



Caramel

Caramel bamboo starts out as natural and is carbonised using steam to caramelise the natural sugars which darken the bamboo. This process creates a different look without using chemicals.



Painted Lights

We use an acrylic low VOC (volatile organic compound) paint that is made in New Zealand. Colour swatches are available in all retailers. See the Resene website for more info. [www.resene.co.nz](http://www.resene.co.nz)





Natural



Caramel



Aqua



Lime



Red



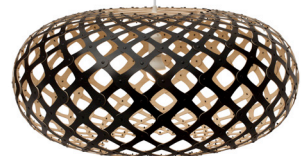
Orange



Blue



Pink



Black 1 Side (Outside)



Black 1 Side (Inside)



Black 2 Sides



White 1 Side



White 2 Sides



) david  
trubridge



Kōura



# Kōura



Inspired by woven baskets and also from the curled form of the New Zealand native fresh water shrimp, kōura, which is its Māori name. Kōura pendant light was inspired by woven baskets and also from the curled form of the New Zealand native fresh water shrimp, kōura, which is its Māori name. Kōura is an early design, undergoing many design changes to tweak its final form.

Kōura comes in a range of size options to suit any home or building. The plywood finish can be all natural or painted creating a wide range of colour options.



# Features

## Shipped Kitset

Seed System kitset lightshades are on average 1/30th of the volume of the assembled light. This aims to help minimize the effects of shipping and to reduce the design's environmental footprint.

## Compliance

CE

AS/NZS

(Declarations of conformity available on request).

## Care Instructions

All wooden and/or polycarbonate lights are intended for use in dry interior conditions only and can be cleaned with a soft cloth dampened slightly in warm water when the light is switched off. Do not use detergents.

## Light sizes

David Trubridge kitset lightshades come in various sizes, making it easy to find the right size to any interior space whether it's small or large.

## EPD Certified

An EPD is a standardised and verified way of quantifying the environmental impacts of a product, based on a consistent set of rules that have been developed through a stakeholder consultation process.

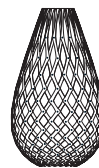
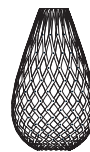
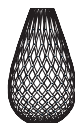
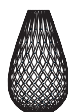
## Warranty

This light is warranted for three years from date of purchase for failure of parts.



THE INTERNATIONAL EPD® SYSTEM

# Technical Data



500mm/20"	750mm/29"	1000mm/39"	1600mm/63"	2000mm/79"	2400mm/94"
Width: 300mm / 12" Height: 500mm / 20" Weight: 0.45kg / 0.99lb	Width: 420mm / 17" Height: 750mm / 30" Weight: 0.75kg / 1.65lb	Width: 550mm / 22" Height: 970mm / 38" Weight: 1.8kg / 3.96lb	Width: 950mm / 37" Height: 1600mm / 63" Weight: 7kg / 15.43lb	Width: 1100mm / 43" Height: 2000mm / 79" Weight: 10kg / 22.04lb	Width: 1400mm / 55" Height: 2400mm / 94" Weight: 12.5kg / 27.55lb
2m / 6.5ft	2m / 6.5ft	2m / 6.5ft	5m / 16.4ft	5m / 16.4ft	5m / 16.4ft
Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory)
Nylon	Nylon	Nylon	Nylon	Nylon	Nylon
Hangs on cord	Hangs on cord	Hangs on cord	3 x Suspension Wires	3 x Suspension Wires	3 x Suspension Wires
565mm x 185mm x 70mm 22" x 7" x 3" 0.007m³ / 0.3ft³ 0.9kg / 2lb	880mm x 200mm x 70mm 35" x 8" x 3" 0.012m³ / 0.435ft³ 2kg / 4.41lb	740mm x 250mm x 90mm 29" x 10" x 3" 0.017m³ / 0.600ft³ 3kg / 6.61lb	1255mm x 370mm x 190mm 49" x 15" x 7" 0.088m³ / 3.1ft³ 9.2kg / 20.3lb	1375mmx 450mm x 160mm 54" x 18" x 6" 0.100m³ / 3.531ft³ 20kg / 44.09lb	1780mm x 530mm x 160mm 70" x 21" x 6" 0.151m³ / 5.332ft³ 30kg / 66.13lb

Dimensions

Cordset\*

Material

Fasteners

Suspension

Packaging

\*Black comes with black cordset and fasteners. All others come with white cordset and clear fasteners. Custom lengths available on request.



## You will need

Fixings for cone gripper (fixing screws NOT SUPPLIED).

Note: Choose appropriate hardware to attach base plate (Fig.1) to ceiling substrate.

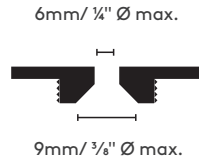


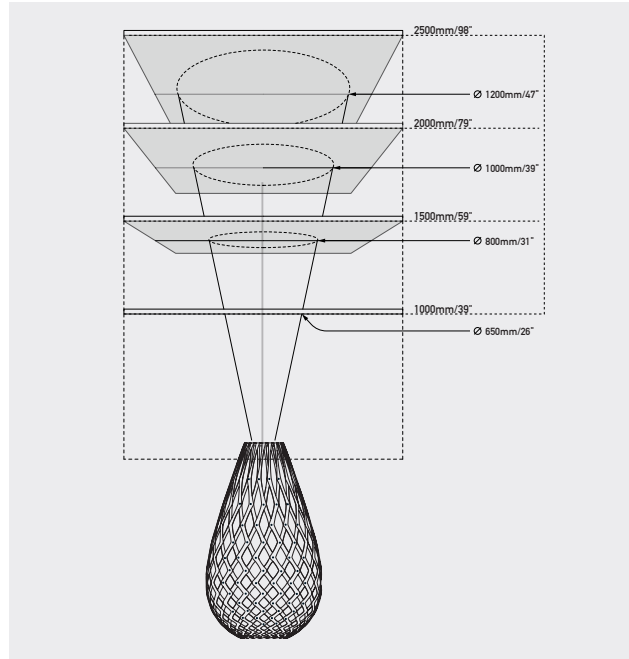
Fig 1. Base Plate

# Installation

## 1600mm/63"

## 2000mm/79"

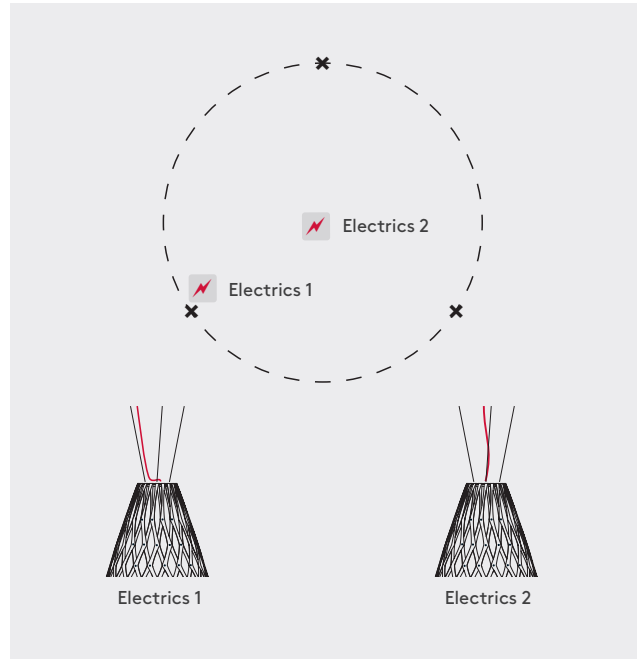
## 2400mm/94"



### Step 1.

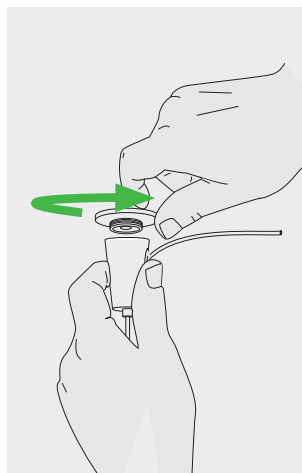
Decide upon hanging distance. Use the schematic diagram as a guide to pick a circle radius to be marked out on ceiling. This circle can be marked with a length of timber or string.

### Options



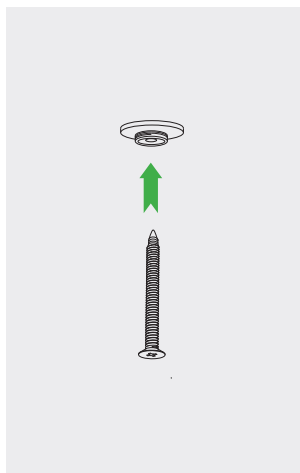
### Step 2.

Mark 3 hanging points where your cone grippers will be located. You can either centrally locate the ceiling canopy or run the electric cord up one of the suspension wires.



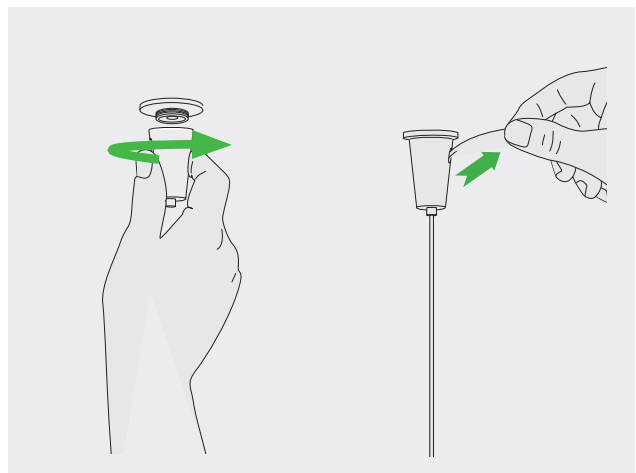
### Step 1.

Unscrew baseplate.



### Step 2.

Use appropriate fixing screw to mount base plate (Fig.1).

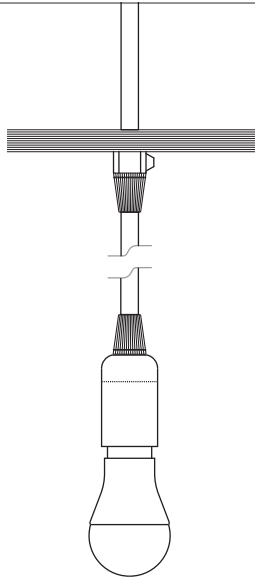


### Step 3.

Remove cable from cone. Screw cone back onto baseplate. Re-insert cable and level light. Once desired position is set, trim excess cable.

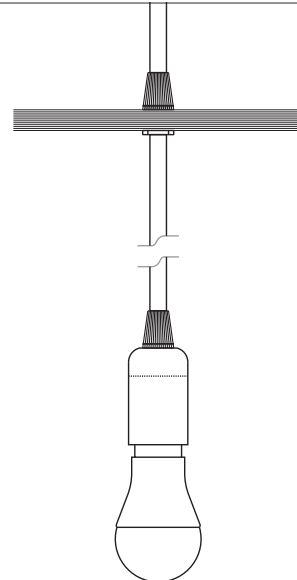
# Diagrams

500mm/20"



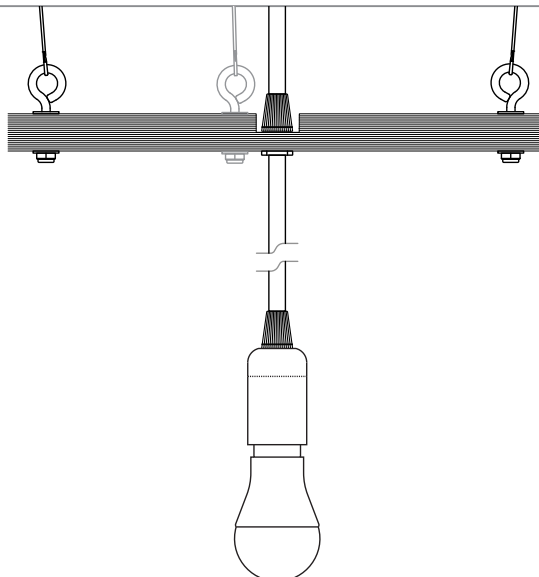
North America: E26, Max 60 Watts  
120v AC 60hz  
Rest of World: E14, Max 60 Watts  
230-240v AC 50hz

750mm/29"  
1000mm/39"

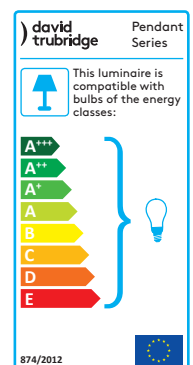


North America: E26, Max 60 Watts  
120v AC 60hz  
Rest of World: E27, Max 60 Watts  
230-240v AC 50hz

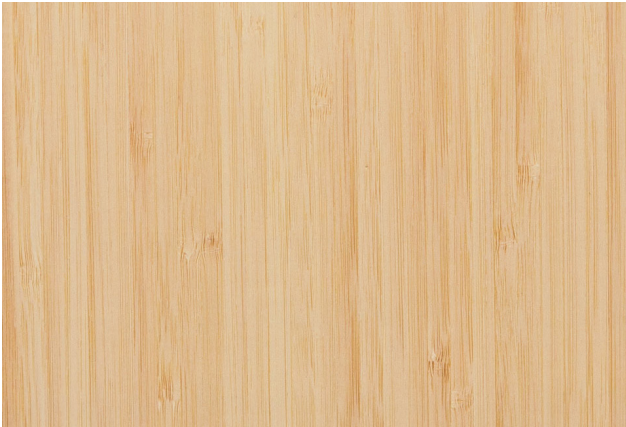
1600mm/63"  
2000mm/79"  
2400mm/94"



North America: E26, Max 60 Watts  
120v AC 60hz  
Rest of World: E27, Max 60 Watts  
230-240v AC 50hz

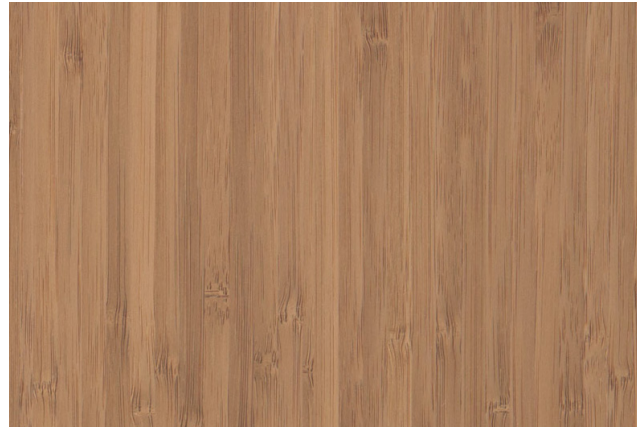


# Finish Choices



Natural

All bamboo (our primary material) is secondary product, from renewable forests in China grown as a food source. We have visited these plantations and are satisfied with the quality of their systems.



Caramel

Caramel bamboo starts out as natural and is carbonised using steam to caramelise the natural sugars which darken the bamboo. This process creates a different look without using chemicals.



Painted Lights

We use an acrylic low VOC (volatile organic compound) paint that is made in New Zealand. Colour swatches are available in all retailers. See the Resene website for more info.  
[www.resene.co.nz](http://www.resene.co.nz)



Natural



Caramel



Aqua



Lime



Red



Orange



Blue



Pink



Black 1 Side (Outside)



Black 1 Side (Inside)



Black 2 Sides



White 1 Side



White 2 Sides



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trubridge

Pro  
Co



# Coral



Coral Pendant is based on one of the geometric polyhedra that have interested David since he was a boy. The intricate form is made from just one single component repeated 60 times. Originally designed purely as an experiment, it only became a light later when David tried to find a use for it by putting a bulb inside.

The plywood finish can be all natural or painted creating a wide range of colour options. Coral was David's first lighting design which now is considered to be a design classic.



# Features

## Shipped Kitset

Seed System kitset lightshades are on average 1/30th of the volume of the assembled light. This aims to help minimize the effects of shipping and to reduce the design's environmental footprint.

## Compliance

CE

AS/NZS

(Declarations of conformity available on request).

## Care Instructions

All wooden and/or polycarbonate lights are intended for use in dry interior conditions only and can be cleaned with a soft cloth dampened slightly in warm soapy water when the light is switched off. Do not use detergents.

## Light sizes

David Trubridge kitset lightshades come in various sizes, making it easy to find the right size to any interior space whether it's small or large.

## EPD Certified

An EPD is a standardised and verified way of quantifying the environmental impacts of a product, based on a consistent set of rules that have been developed through a stakeholder consultation process.

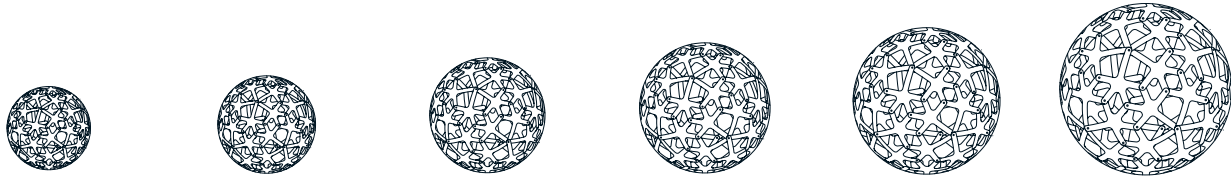
## Warranty

This light is warranted for three years from date of purchase for failure of parts.



THE INTERNATIONAL EPD® SYSTEM

# Technical Data



**400mm/16"      600mm/24"      800mm/31"      1000mm/39"      1200mm/47"      1600mm/63"**

Diameter: 400mm / 16"	Diameter: 600mm / 24"	Diameter: 800mm / 31"	Diameter: 1000mm / 39"	Diameter: 1200mm / 47"	Diameter: 1600mm / 63"	Dimensions
Weight: 0.4kg / 0.88lb	Weight: 1kg / 2.20lb	Weight: 1.5kg / 3.30lb	Weight: 2.3kg / 5.07lb	Weight: 3.8kg / 8.37lb	Weight: 9kg / 19.84lb	
2m / 6.5ft	2m / 6.5ft	2m / 6.5ft	3m / 9.8ft	5m / 16.4ft	5m / 16.4ft	Cordset*
Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory)	Material
Nylon	Nylon	Nylon	Nylon	Nylon	Aluminium	Fasteners
Hangs on cord	Hangs on cord	Hangs on cord	1 x Suspension Wire	1 x Suspension Wire	1 x Suspension Wire	Suspension
290mm x 170mm x 85mm 11" x 7" x 3" 0.004m³ / 0.141ft³ 0.7kg / 1.54lb	385mm x 215mm x 105mm 15" x 8" x 4" 0.009m³ / 0.317ft³ 1.4kg / 3.00lb	500mm x 280mm x 100mm 20" x 11" x 4" 0.014m³ / 0.494ft³ 2.3kg / 5.1lb	400mm x 310mm x 125mm 16" x 12" x 5" 0.016m³ / 0.565ft³ 3.2kg / 7.1lb	365mm x 425mm x 125mm 14" x 17" x 5" 0.019m³ / 0.671ft³ 4.2kg / 9.25lb	470mm x 395mm x 180mm 19" x 16" x 7" 0.33m³ / 1.165ft³ 9.5kg / 20.94lb	Packaging

\*Black comes with black cordset and fasteners. All others come with white cordset and clear fasteners. Custom lengths available on request.

You will need:

Fixings for cone gripper (fixing screws NOT SUPPLIED).

Note: Choose appropriate hardware to attach base plate (Fig.1) to ceiling substrate.

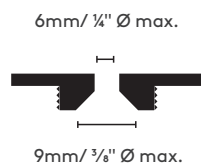


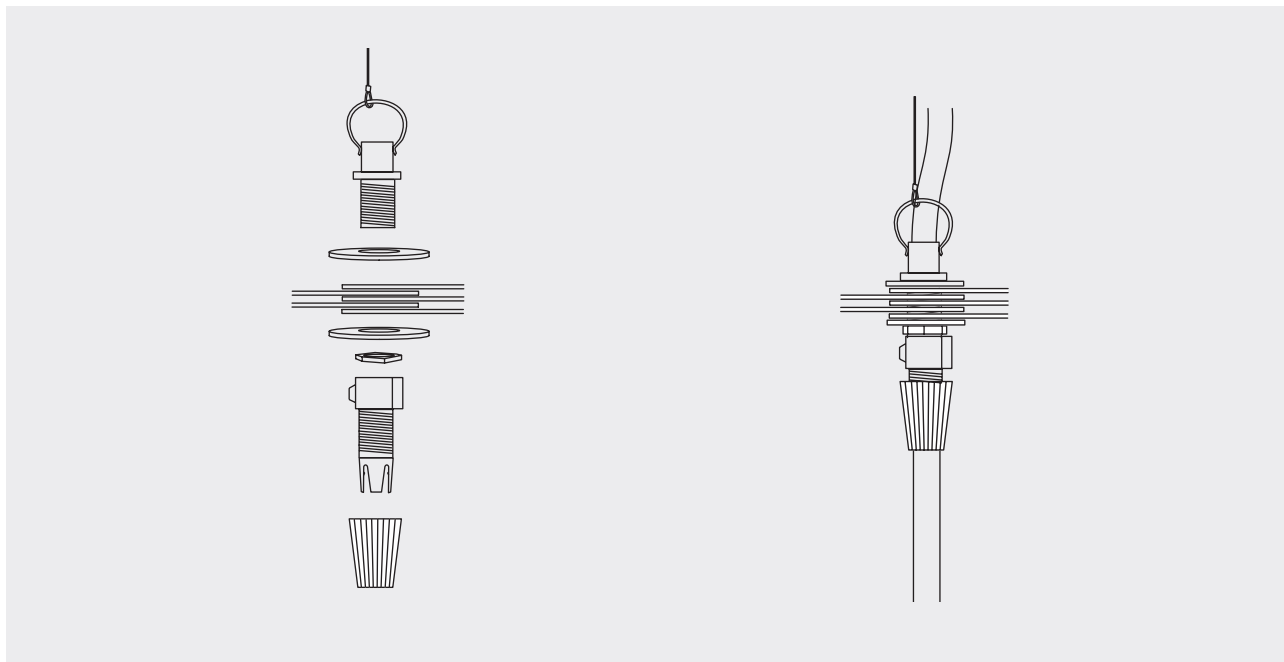
Fig 1. Base Plate

# Installation

## 1000mm/39"

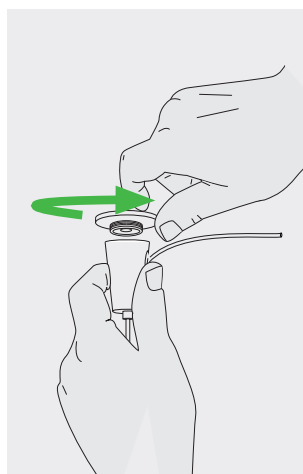
## 1200mm/47"

## 1600mm/63"



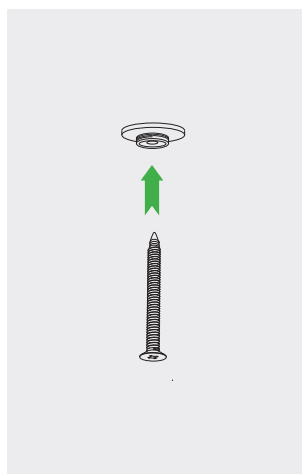
### Step 1.

Follow the order of each component in diagram. Adjust the bulb / lamp to mid way in the pendant lightshade shown in Step 2 and then tighten.



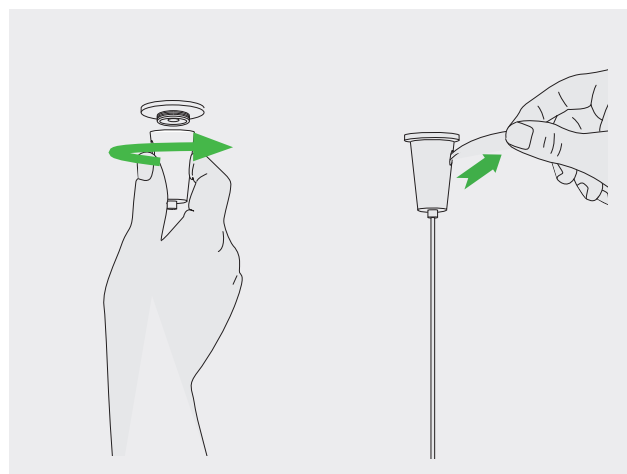
### Step 2.

Unscrew baseplate.



### Step 3.

Use appropriate fixing screw to mount base plate (Fig.1).

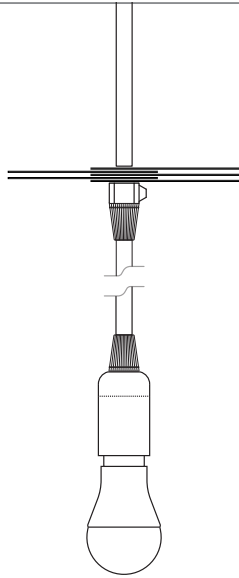


### Step 4.

Remove cable from cone. Screw cone back onto baseplate. Re-insert cable and level light. Once desired position is set, trim excess cable.

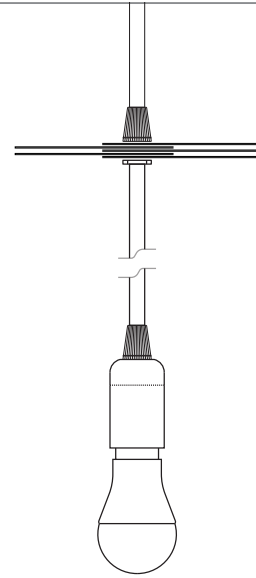
# Diagrams

400mm/16"



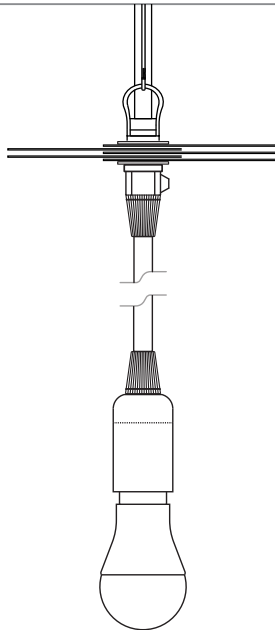
North America: E26, Max 60 Watts  
120v AC 60hz  
Rest of World: E14, Max 60 Watts  
230-240v AC 50hz

600mm/24"  
800mm/31"

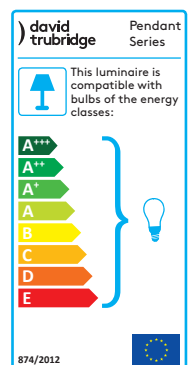


North America: E26, Max 60 Watts  
120v AC 60hz  
Rest of World: E27, Max 60 Watts  
230-240v AC 50hz

1000mm/39"  
1200mm/47"  
1600mm/63"

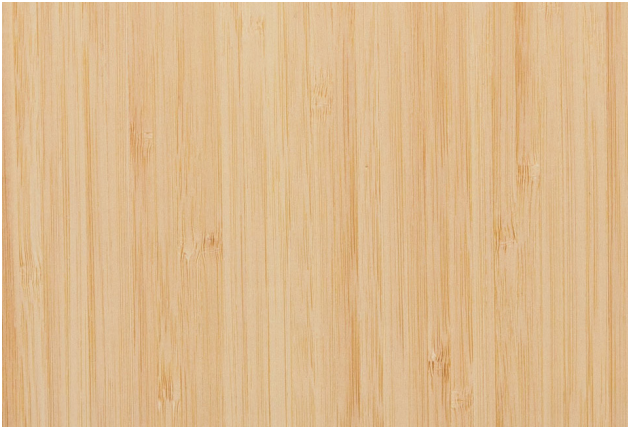


North America: E26, Max 60 Watts  
120v AC 60hz  
Rest of World: E27, Max 60 Watts  
230-240v AC 50hz



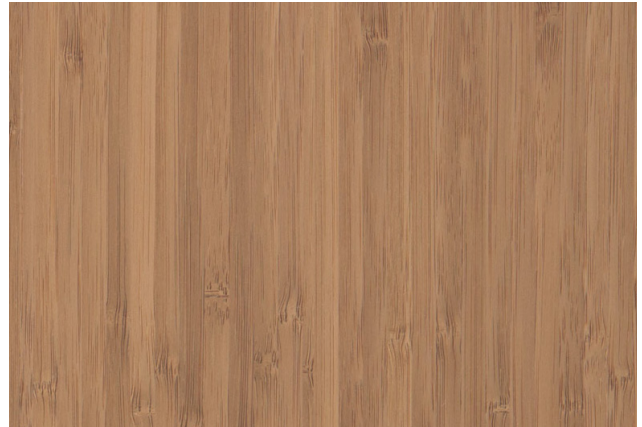


# Finish Choices



Natural

All bamboo (our primary material) is secondary product, from renewable forests in China grown as a food source. We have visited these plantations and are satisfied with the quality of their systems.



Caramel

Caramel bamboo starts out as natural and is carbonised using steam to caramelise the natural sugars which darken the bamboo. This process creates a different look without using chemicals.



Painted Lights

We use an acrylic low VOC (volatile organic compound) paint that is made in New Zealand. Colour swatches are available in all retailers. See the Resene website for more info.  
[www.resene.co.nz](http://www.resene.co.nz)



Natural



Caramel



Aqua



Lime



Red



Orange



Blue



Pink



Black 1 Side (Outside)



Black 1 Side (Inside)



Black 2 Sides



White 1 Side



White 2 Sides



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trubridge

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por  
cel  
lin



# Hīnaki



Based on fish traps which are called hīnaki by Māori. Hīnaki traps were made from woven vines, some in amazingly beautiful forms. Hīnaki was David's first exploration into lighting in 1995 when he made a prototype based on fish traps which are called hīnaki by Maori. Hīnaki traps were made from woven vines, some in amazingly beautiful forms.

Hīnaki comes in 3 sizes; 500mm tall, 900mm tall and 1400mm tall. The plywood finish can be all natural or painted creating a wide range of colour options.



# Features

## Shipped Kitset

Seed System kitset lightshades are on average 1/30th of the volume of the assembled light. This aims to help minimize the effects of shipping and to reduce the design's environmental footprint.

## Compliance

CE

AS/NZS

(Declarations of conformity available on request).

## Care Instructions

All wooden and/or polycarbonate lights are intended for use in dry interior conditions only and can be cleaned with a soft cloth dampened slightly in warm water when the light is switched off. Do not use detergents.

## Light sizes

David Trubridge kitset lightshades come in various sizes, making it easy to find the right size to any interior space whether it's small or large.

## EPD Certified

An EPD is a standardised and verified way of quantifying the environmental impacts of a product, based on a consistent set of rules that have been developed through a stakeholder consultation process.

## Warranty

This light is warranted for three years from date of purchase for failure of parts.



THE INTERNATIONAL EPD® SYSTEM



# Technical Data



500mm / 20"

900mm / 35"

1400mm / 55"

Dimensions	Cordset*	Material	Fasteners	Suspension	Packaging
Width: 170mm / 7" Height: 500mm / 20" Weight: 0.3kg / 0.66lb	2m / 6.5ft	Bamboo plywood (Sourced from FSC accredited factory)	Nylon	Hangs on cord	565mm x 185mm x 70mm 22" x 7" x 3" 0.007m³ / 0.3ft³ 0.9kg / 2lb
Width: 320mm / 13" Height: 900mm / 35" Weight: 0.7kg / 1.54lb	2m / 6.5ft	Bamboo plywood (Sourced from FSC accredited factory)	Nylon	Hangs on cord	530mm x 210mm x 100mm 21" x 8" x 4" 0.011m³ / 0.393ft³ 1.3kg / 2.87lb
Width: 500mm / 20" Height: 1400mm / 55" Weight: 3.8kg / 8.37lb	5m / 16.4ft	Bamboo plywood (Sourced from FSC accredited factory)	Nylon	3 x Suspension Wires	790mm x 270mm x 200mm 31" x 11" x 8" 0.043m³ / 1.5ft³ 4.5kg / 9.9lb

\*Black comes with black cordset and fasteners. All others come with white cordset and clear fasteners. Custom lengths available on request.

## You will need

Fixings for cone gripper (fixing screws NOT SUPPLIED).

Note: Choose appropriate hardware to attach base plate (Fig.1) to ceiling substrate.

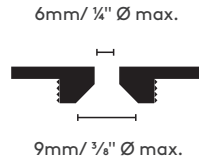
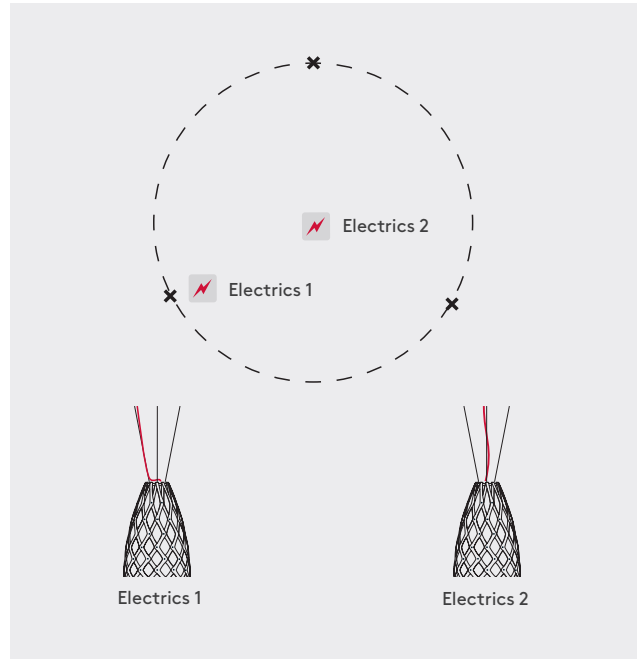
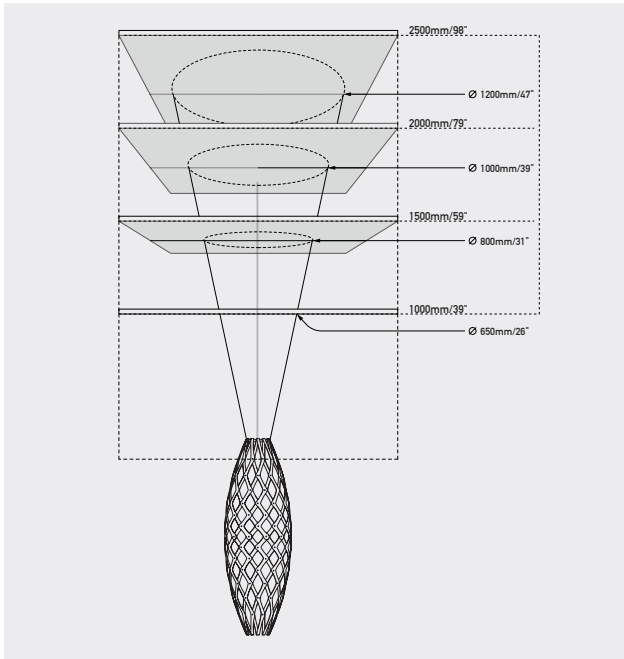


Fig 1. Base Plate

# Installation 1400mm/55"

## Options

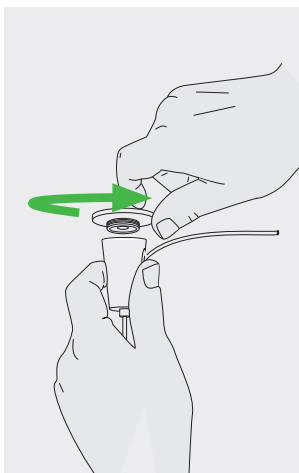


### Step 1.

Decide upon hanging distance. Use the schematic diagram as a guide to pick a circle radius to be marked out on ceiling. This circle can be marked with a length of timber or string.

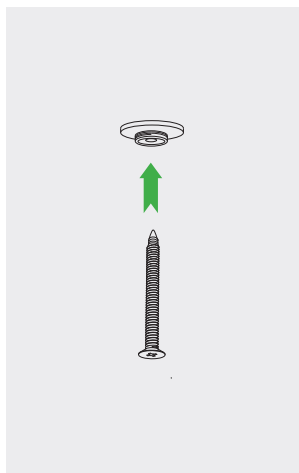
### Step 2.

Mark 3 hanging points where your cone grippers will be located. You can either centrally locate the ceiling canopy or run the electric cord up one of the suspension wires.



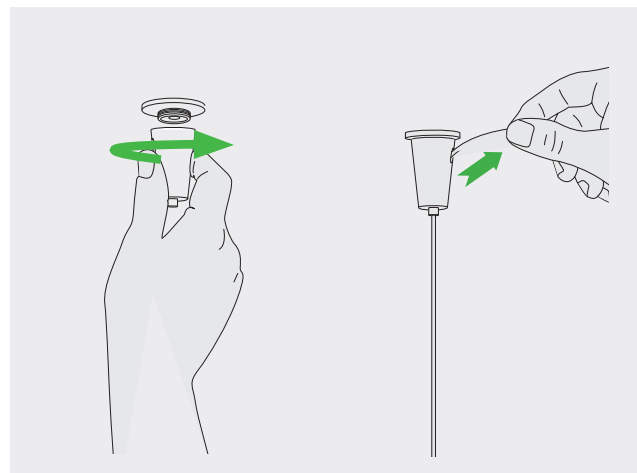
### Step 1.

Unscrew baseplate.



### Step 2.

Use appropriate fixing screw to mount base plate (Fig.1).

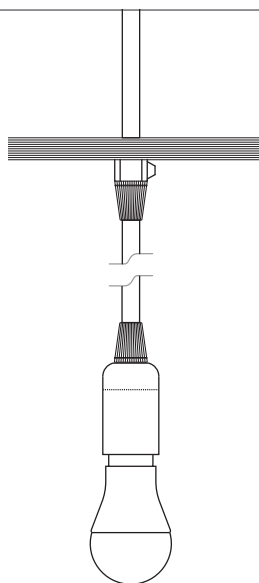


### Step 3.

Remove cable from cone. Screw cone back onto baseplate. Re-insert cable and level light. Once desired position is set, trim excess cable.

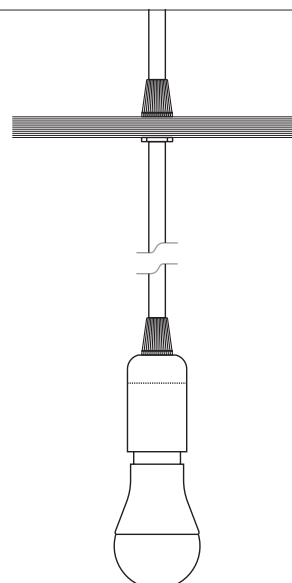
# Technical Drawing

500mm/20"



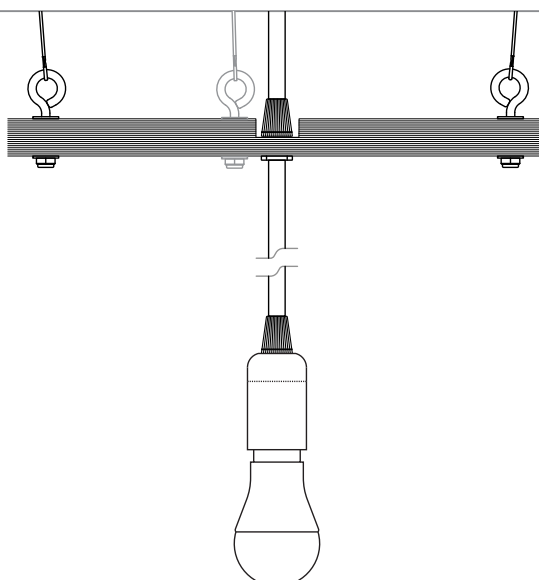
North America: E26, Max 60 Watts  
120v AC 60hz  
Rest of World: E14, Max 60 Watts  
230-240v AC 50hz

900mm/35"

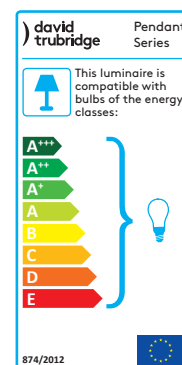


North America: E26, Max 60 Watts  
120v AC 60hz  
Rest of World: E27, Max 60 Watts  
230-240v AC 50hz

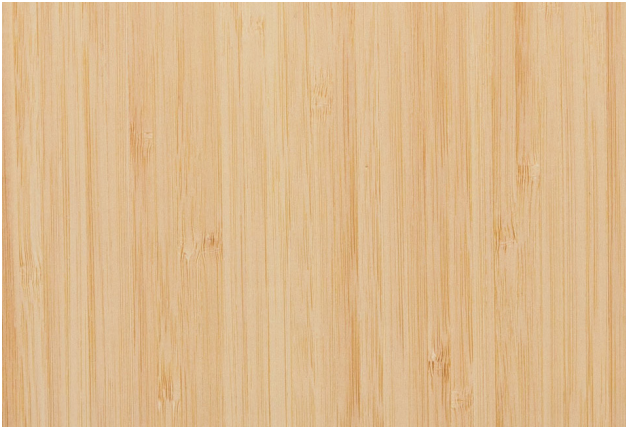
1400mm/55"



North America: E26, Max 60 Watts  
120v AC 60hz  
Rest of World: E27, Max 60 Watts  
230-240v AC 50hz

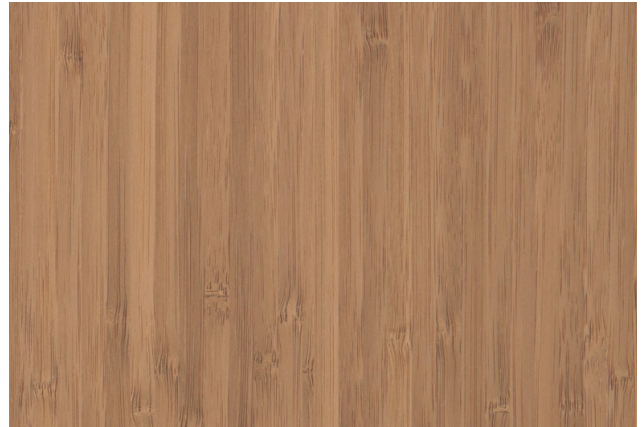


# Finish Choices



Natural

All bamboo (our primary material) is secondary product, from renewable forests in China grown as a food source. We have visited these plantations and are satisfied with the quality of their systems.



Caramel

Caramel bamboo starts out as natural and is carbonised using steam to caramelise the natural sugars which darken the bamboo. This process creates a different look without using chemicals.



Painted Lights

We use an acrylic low VOC (volatile organic compound) paint that is made in New Zealand. Colour swatches are available in all retailers. See the Resene website for more info.  
[www.resene.co.nz](http://www.resene.co.nz)



Natural



Caramel



Aqua



Lime



Red



Orange



Blue



Pink



Black 1 Side (Outside)



Black 1 Side (Inside)



Black 2 Sides



White 1 Side



White 2 Sides

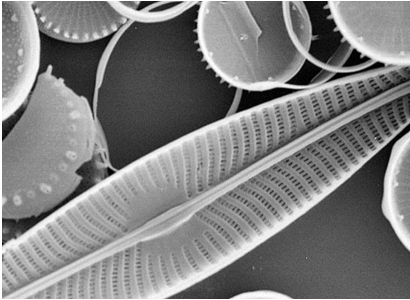


) david  
trubridge

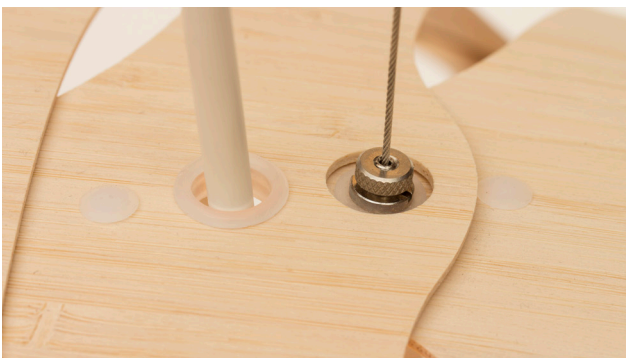
planning



# Navicula



Navicula is derived from nature, in this case from one of the many microscopic diatoms that float around in the worlds oceans. The flowing, segmented form is shipped as flatpack and assembled on site with push-in nylon clips. The thin curved pieces of CNC-cut bamboo plywood create a flowing structure that also casts magical patterns. It is lit from within a row of LED pin-point lights, the light source is aimed upwards to create a soft ambient glow. There are three sizes.



# Features

## Partially assembled Kitset

Our kitset lightshades are on average 1/30th of the volume of the assembled light. This aims to help minimize the effects of shipping and to reduce the design's environmental footprint.

## Care Instructions

All wooden and/or polycarbonate lights are intended for use in dry interior conditions only and can be cleaned with a soft cloth or duster when the light is switched off. Do not use detergents.

## Compliance

CE

AS/NZS

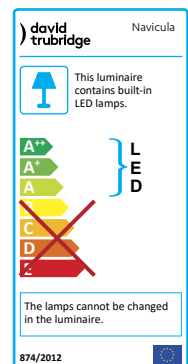
(Declarations of conformity available on request).

## Warranty

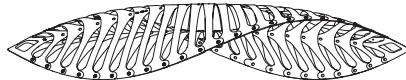
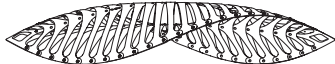
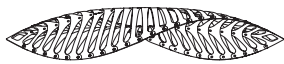
This light is warranted for three years from date of purchase for failure of parts.



5002970  
CONFORMS TO :  
UL STD 1598  
certified to CSA STD  
C22.2 No.250.0  
Canada / USA



# Technical Data



## Small

## Medium

## Large

Width: 570mm / 22" Height: 200mm / 8" Length: 1440mm / 57" Weight: 2kg / 4lb	Width: 900mm / 35" Height: 380mm / 15" Length: 1950mm / 77" Weight: 3kg / 7lb	Width: 1000mm / 39" Height: 450mm / 18" Length: 2500mm / 98" Weight: 6kg /14lb	Dimensions
5m / 16.4ft	5m / 16.4ft	5m / 16.4ft	Cordset
Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory)	Bamboo plywood (Sourced from FSC accredited factory)	Material
Nylon	Nylon	Nylon	Fasteners
2 x 5m Suspension Wires	2 x 5m Suspension Wires	2 x 5m Suspension Wires	Suspension
(Partially assembled)	(Partially assembled)	(Partially assembled)	Packaging
1130mm x 750mm x 90mm 44"x 30" x 4" 0.076m³ / 2.6839ft³ 6kg / 13.22lb	1130mm x 750mm x 90mm 44"x 30" x 4" 0.076m³ / 2.6839ft³ 7kg / 15.43lb	1280mm x 925mm x 130mm 50"x 36" x 5" 0.154m³ / 5.4384ft³ 13kg / 28.66lb	

# Finish Choices



Natural

All bamboo (our primary material) is secondary product, from renewable forests in China grown as a food source. We have visited these plantations and are satisfied with the quality of their systems.



Caramel

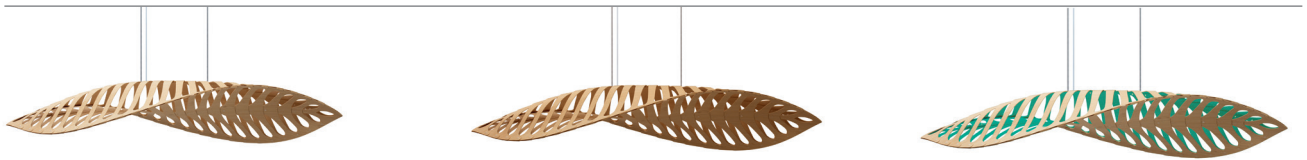
Caramel bamboo starts out as natural and is carbonised using steam to caramelise the natural sugars which darken the bamboo. This process creates a different look without using chemicals.



Painted Lights

We use an acrylic low VOC (volatile organic compound) paint that is made in New Zealand. Colour swatches are available in all retailers. See the Resene website for more info.  
[www.resene.co.nz](http://www.resene.co.nz)

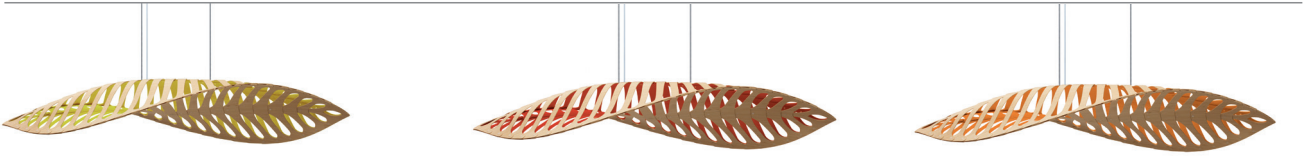




Natural

Caramel

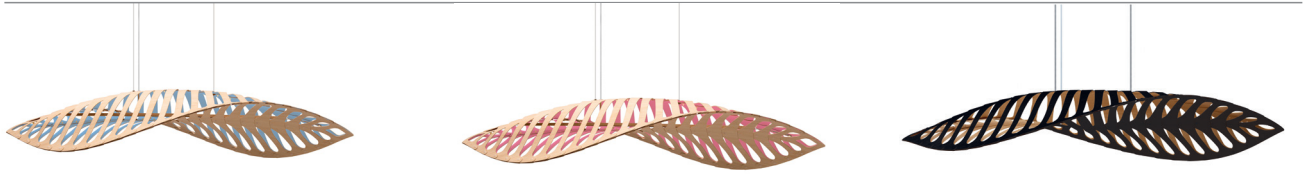
Aqua



Lime

Red

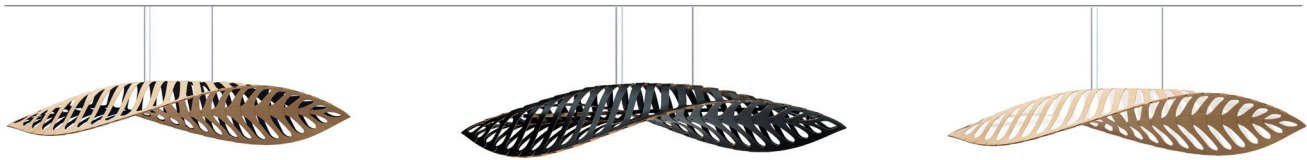
Orange



Blue

Pink

Black 1 Side (Outside)



Black 1 Side (Inside)

Black 2 Sides

White 1 Side



White 2 Sides

You will need

Fixings for cone gripper and canopy  
(fixing screws NOT SUPPLIED).  
Note: Choose appropriate hardware  
to attach base plate (Fig.1) to ceiling  
substrate.

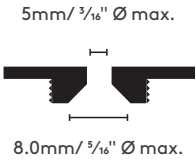


Fig 1. Base Plate

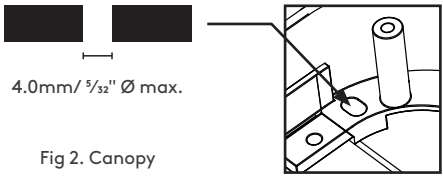
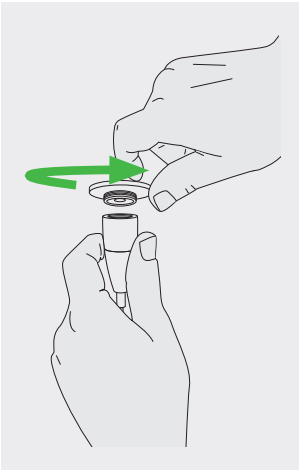
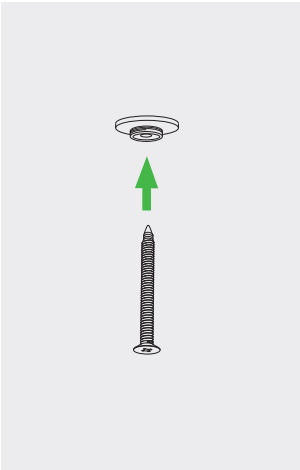


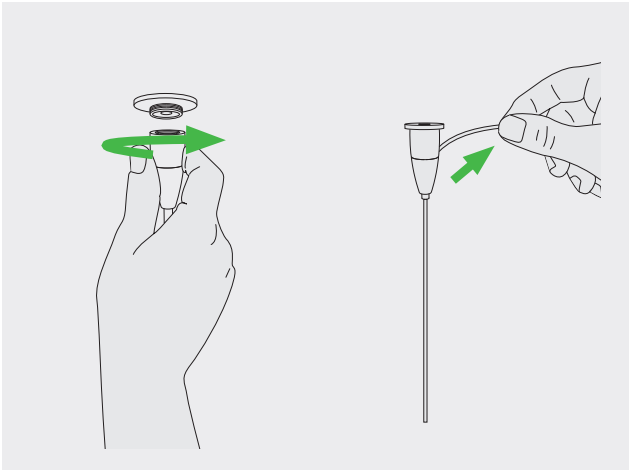
Fig 2. Canopy



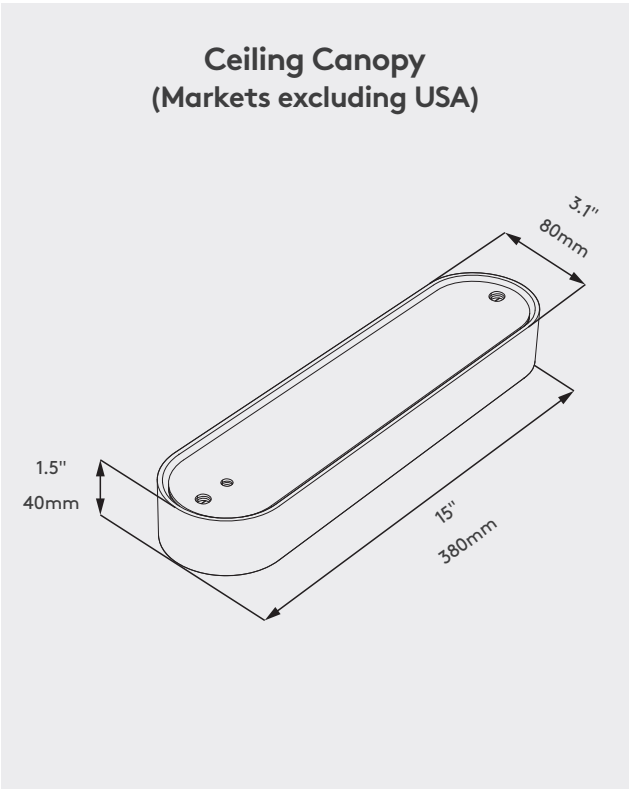
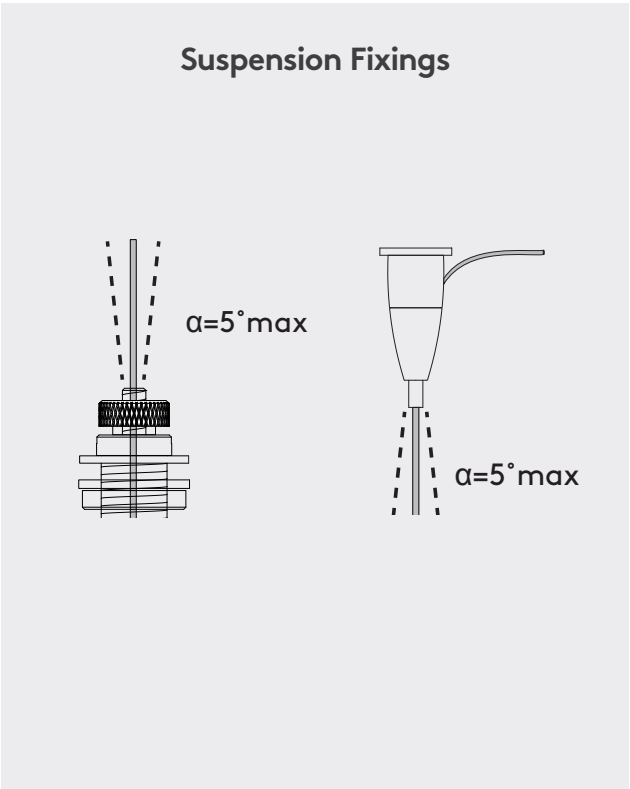
Step 1.  
Unscrew baseplate.



Step 2.  
Use appropriate fixing screw to  
mount base plate (Fig.1).



Step 3.  
Remove cable from cone. Screw cone back onto baseplate. Re-insert  
cable and level light. Once desired position is set, trim excess cable.



(Fig 2) Canopy

# Installation

## Driver/Transformer position option 1: Surface mounted ceiling canopy

### Small

#### Electric details (Rest of the world)

##### LED LIGHT BAR

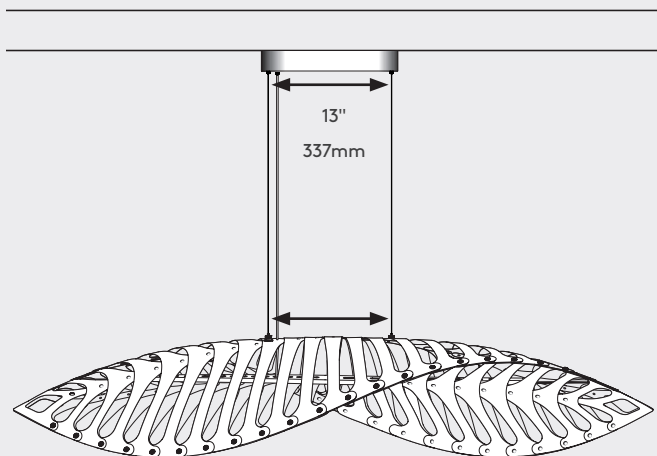
Warm white LED Strip, 24VDC, 8W  
2700K

##### DRIVER / TRANSFORMER

Tridonic, 220-240VAC, 50/60Hz  
\* Dimmable

##### CEILING CANOPY

1kg / 2.2lb



## Driver/Transformer position option 2: Remote location (not using canopy)

### Small

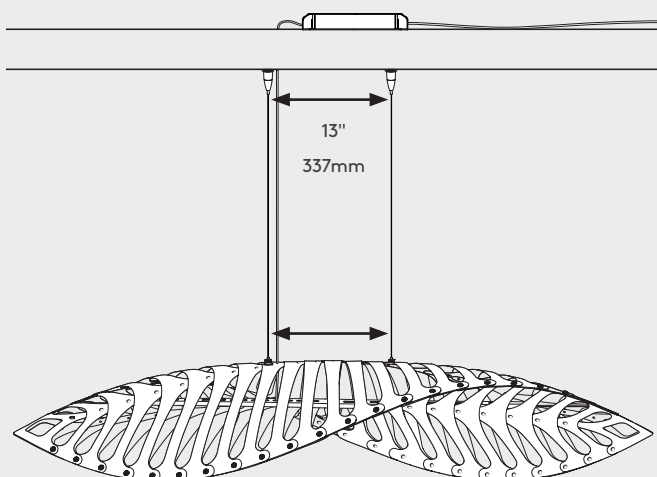
#### Electric details (Rest of the world)

##### LED LIGHT BAR

Warm white LED Strip, 24VDC, 8W  
2700K

##### DRIVER / TRANSFORMER

Tridonic, 220-240VAC, 50/60Hz  
\* Dimmable

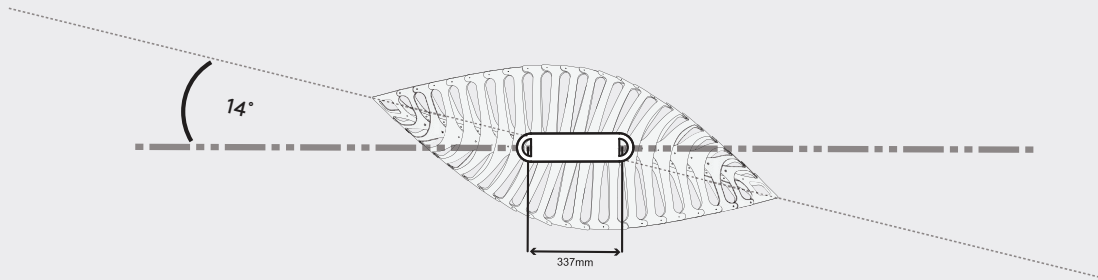


# Installation

Navicula naturally hangs at 14 degree difference to alignment of canopy.

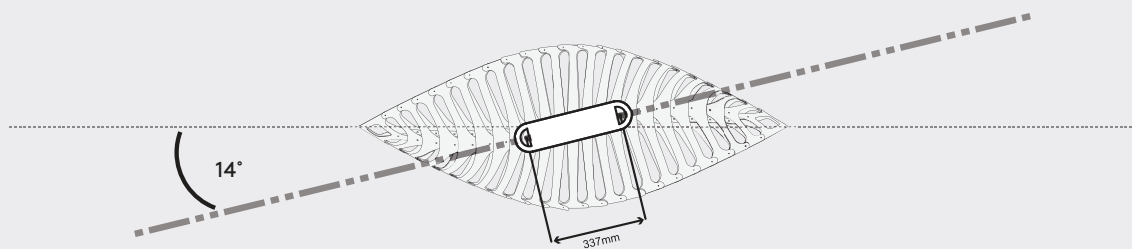
Small

**a**



To align canopy to an edge see diagram a.

**b**



To align Navicula to an edge see diagram b.

# Installation

## Driver/Transformer position option 1: Surface mounted ceiling canopy

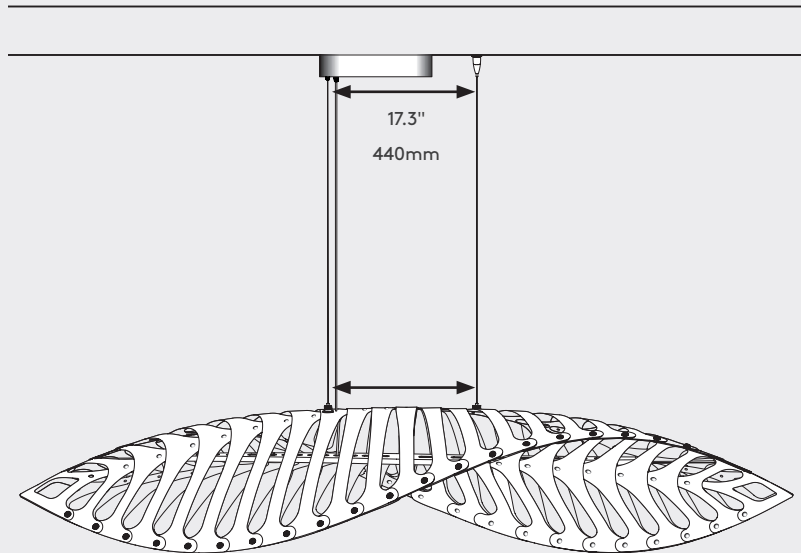
### Medium

#### Electric details (Rest of the world)

LED LIGHT BAR  
Warm white LED Strip, 24VDC, 11W  
2700K

DRIVER / TRANSFORMER  
Tridonic, 220-240VAC, 50/60Hz  
\* Dimmable

CEILING CANOPY  
1kg / 2.2lb



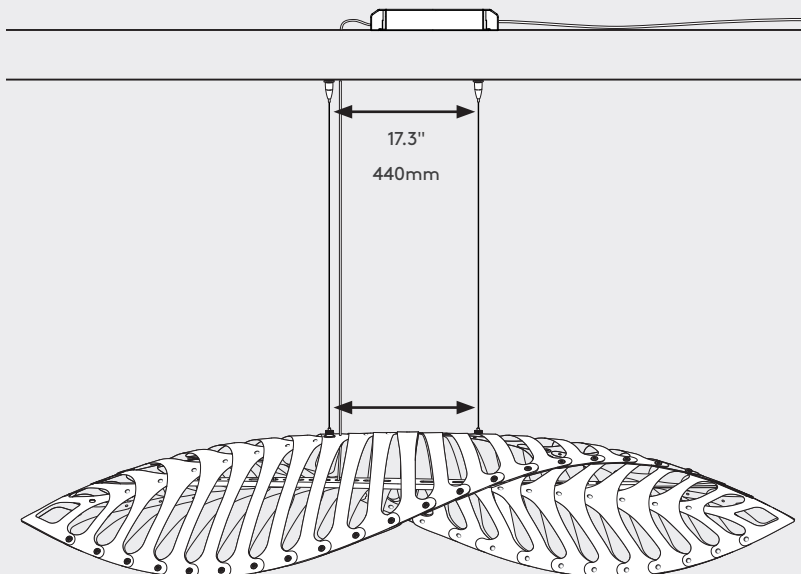
## Driver/Transformer position option 2: Remote location (not using canopy)

### Medium

#### Electric details (Rest of the world)

LED LIGHT BAR  
Warm white LED Strip, 24VDC, 11W  
2700K

DRIVER / TRANSFORMER  
Tridonic, 220-240VAC, 50/60Hz  
\* Dimmable



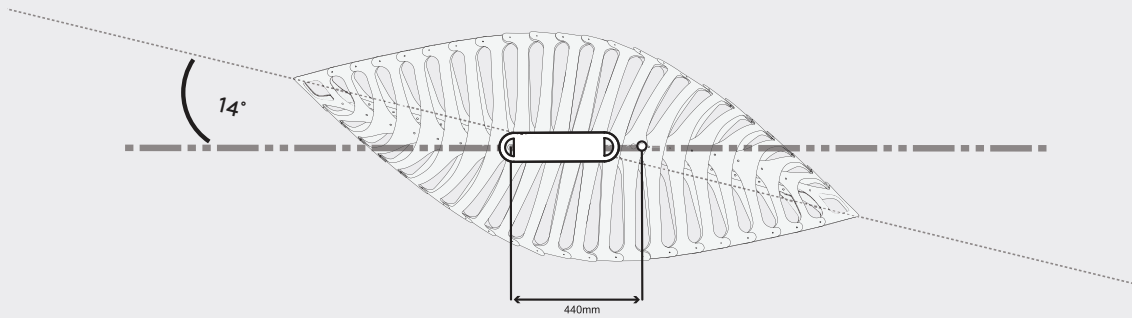


# Installation

Navicula naturally hangs at 14 degree difference to alignment of canopy.

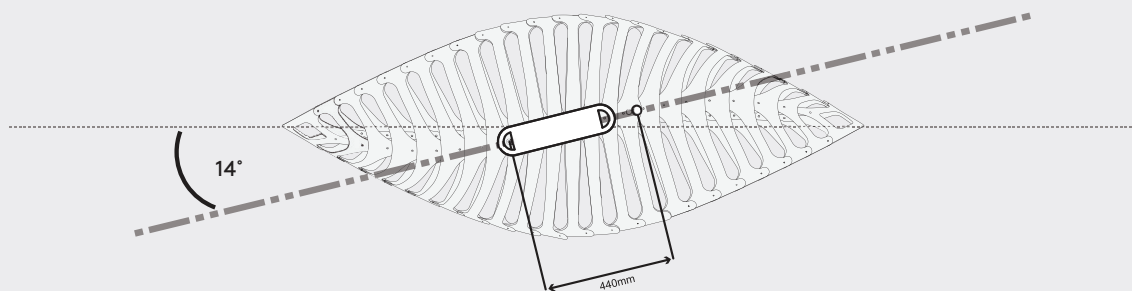
## Medium

**a**



To align canopy to an edge see diagram a.

**b**



To align Navicula to an edge see diagram b.

# Installation

## Driver/Transformer position option 1: Surface mounted ceiling canopy

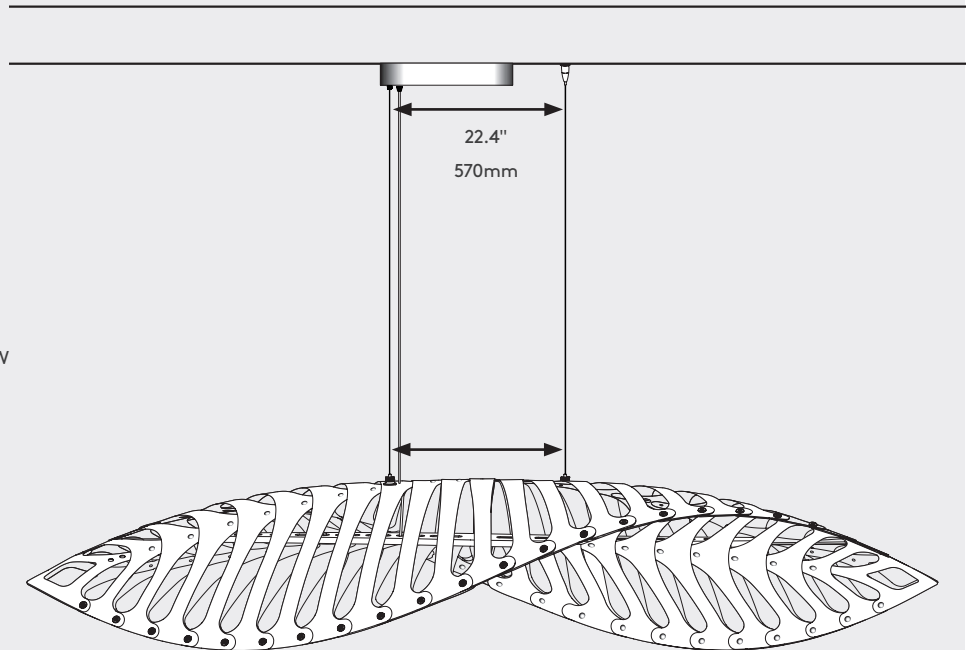
Large

### Electric details (Rest of the world)

LED LIGHT BAR  
Warm white LED Strip, 24VDC, 18W  
2700K

DRIVER / TRANSFORMER  
Tridonic, 220-240V, ac 50/60Hz  
\* Dimmable

CEILING CANOPY  
1kg / 2.2lb



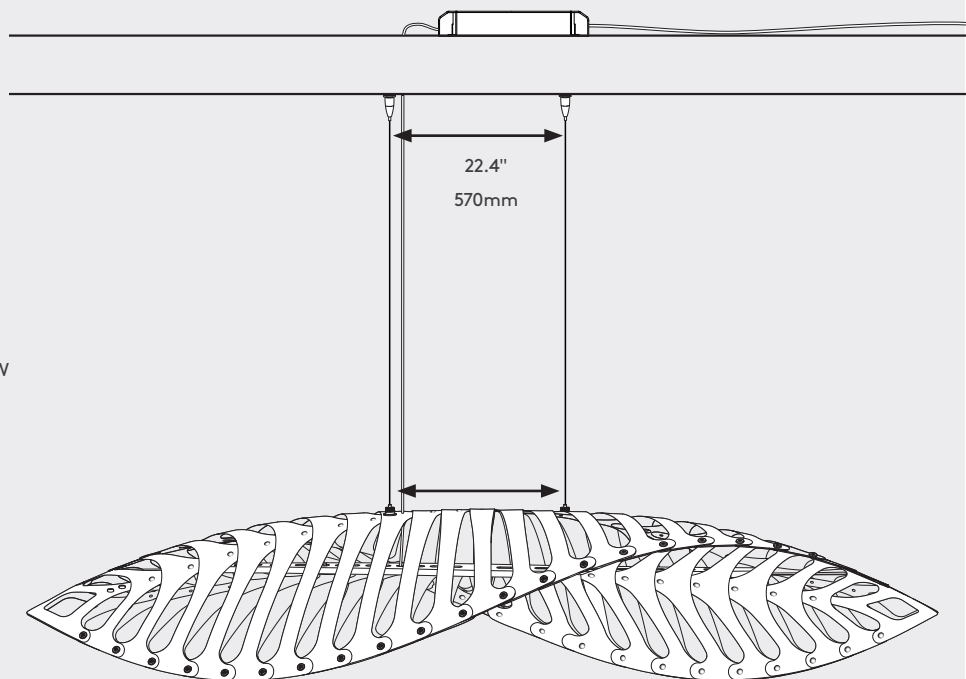
## Driver/Transformer position option 2: Remote location (not using canopy)

Large

### Electric details (Rest of the world)

LED LIGHT BAR  
Warm white LED Strip, 24VDC, 18W  
2700K

DRIVER / TRANSFORMER  
Tridonic, 220-240V, ac 50/60Hz  
\* Dimmable



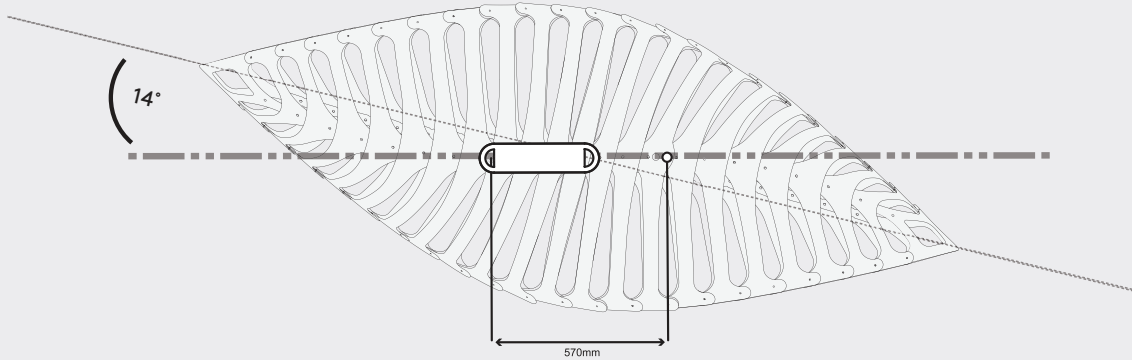
All line drawings are not to scale.

# Installation

Navicula naturally hangs at 14 degree difference to alignment of canopy.

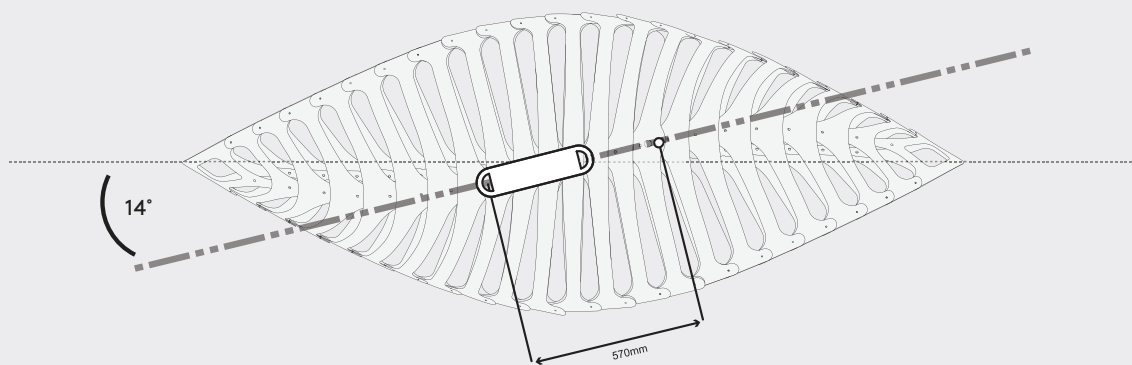
Large

**a**



To align canopy to an edge see diagram a.

**b**



To align Navicula to an edge see diagram b.

All line drawings are not to scale.

# Installation (USA)

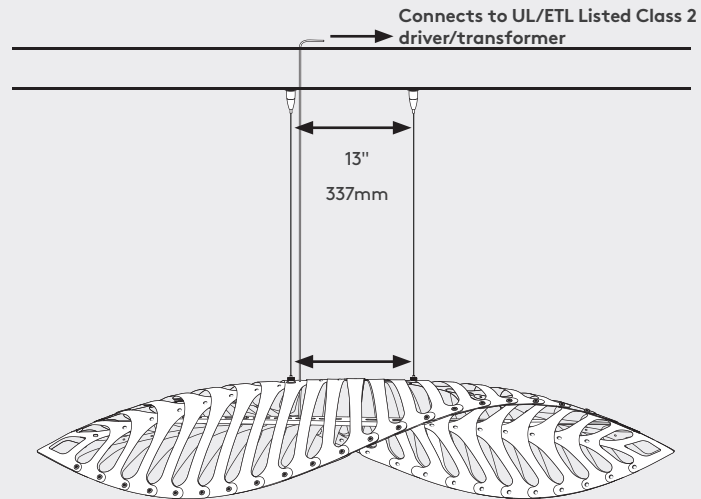
Driver/Transformer position: Remote location (not using canopy)

## Small

### USA details

LED LIGHT BAR  
Warm white LED Strip, 24VDC, 8W  
2700K

DRIVER / TRANSFORMER  
UL/ETL Listed Class 2, 120VAC, 60Hz



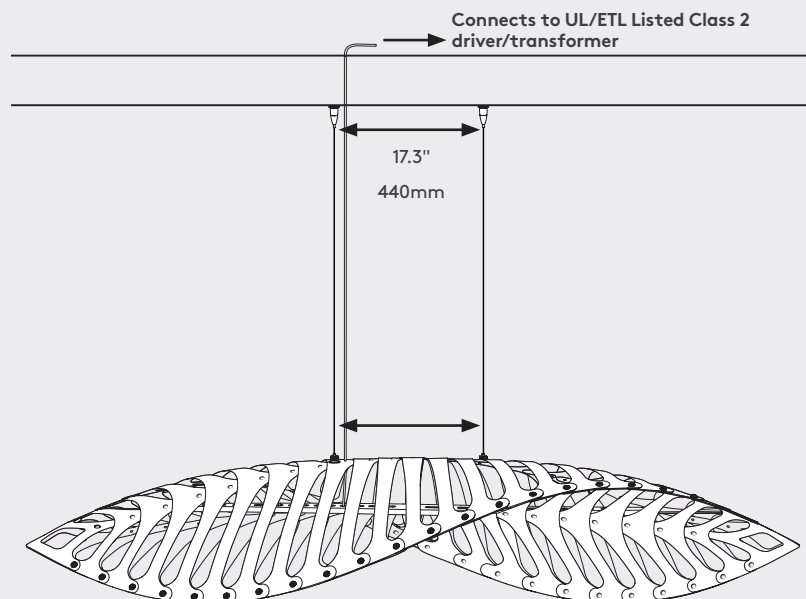
Driver/Transformer position: Remote location (not using canopy)

## Medium

### USA details

LED LIGHT BAR  
Warm white LED Strip, 24VDC, 11W  
2700K

DRIVER / TRANSFORMER  
UL/ETL Listed Class 2, 120VAC, 60Hz



All line drawings are not to scale.

# Installation (USA)

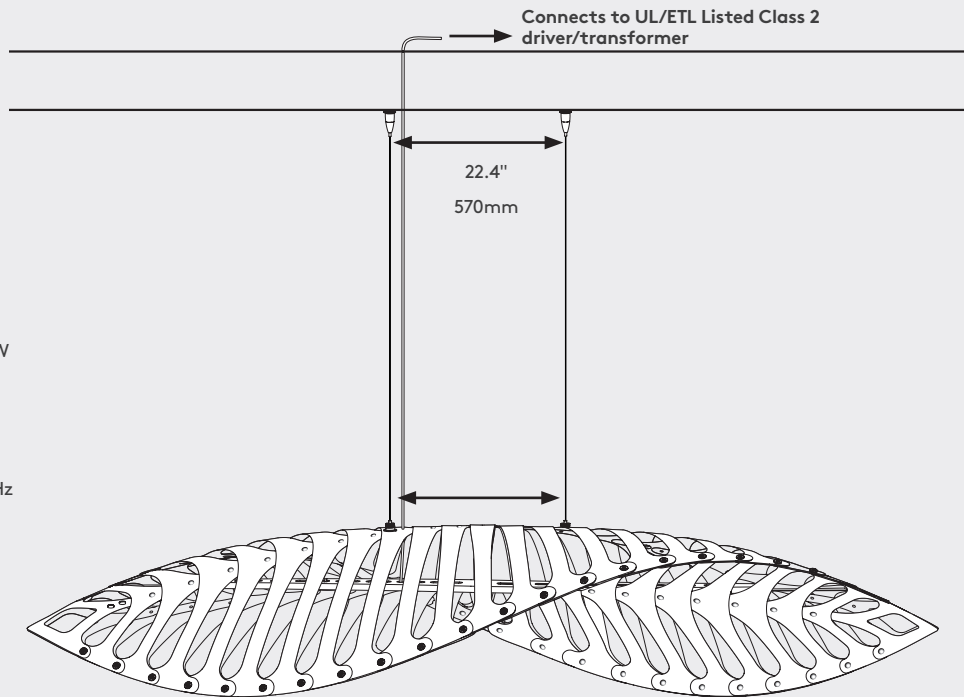
Driver/Transformer position: Remote location (not using canopy)

Large

## USA details

LED LIGHT BAR  
Warm white LED Strip, 24VDC, 18W  
2700K

DRIVER / TRANSFORMER  
UL/ETL Listed Class 2, 120VAC, 60Hz



All line drawings are not to scale.

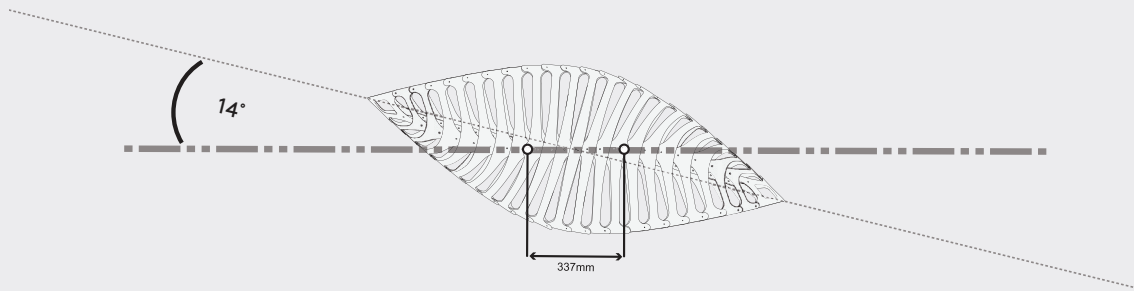
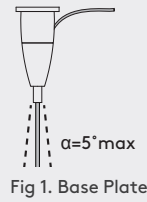


# Installation (USA)

Navicula naturally hangs at 14 degree difference to alignment of cone gripper.

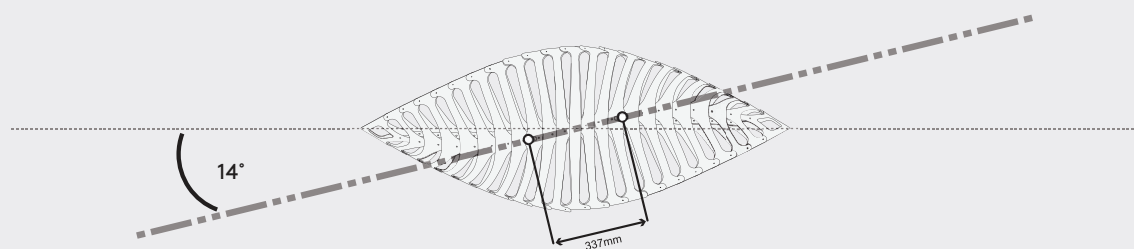
Small

a



To align cone gripper to an edge see diagram a.

b



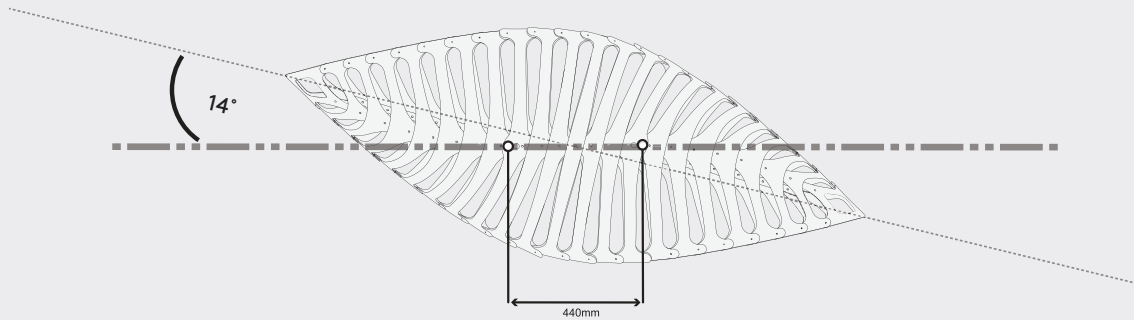
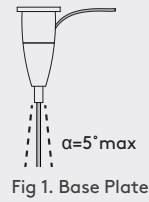
To align Navicula to an edge see diagram b.

# Installation (USA)

Navicula naturally hangs at 14 degree difference to alignment of cone gripper.

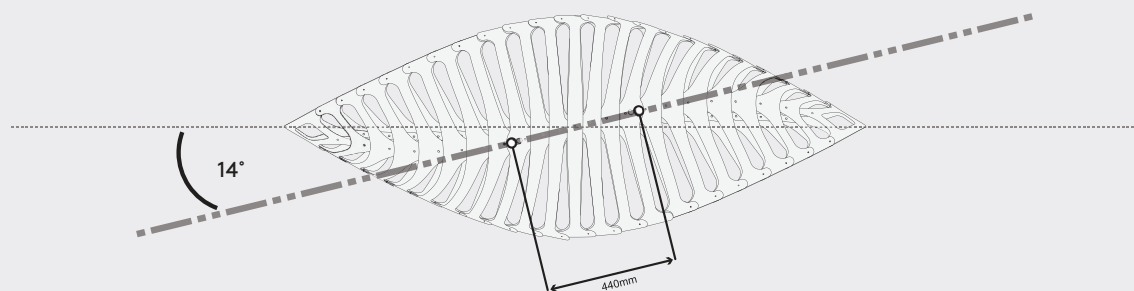
Medium

a



To align cone gripper to an edge see diagram a.

b



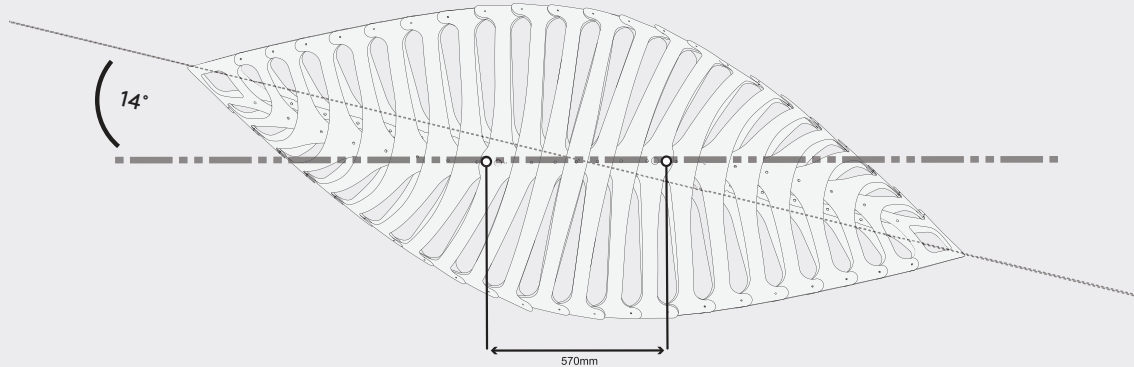
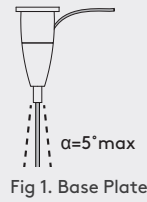
To align Navicula to an edge see diagram b.

# Installation (USA)

Navicula naturally hangs at 14 degree difference to alignment of cone gripper.

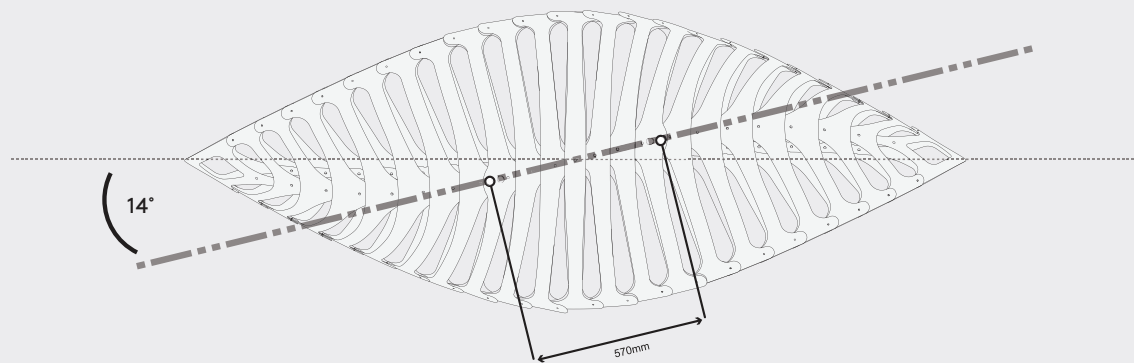
Large

a



To align cone gripper to an edge see diagram a.

b



To align Navicula to an edge see diagram b.

All line drawings are not to scale.

**TRIM/LED MODULE IMAGES<sup>1,2</sup>****ROUND**

Downlight Position

Adjustable Position<sup>2</sup>**SQUARE**

Downlight Position

Adjustable Position<sup>2</sup>**PRINCIPAL FEATURES**

- LED luminaire, 90+ CRI, 1000 lumens maximum for IC and Non-IC, 850 lumens typical for Shallow IC.
- 2 step MacAdam Ellipse color consistency.
- Standard Lutron LED Driver delivers continuous, flicker-free dimming from 100% down to 1% of measured light output.
- Hi-lume 1% EcoSystem LED driver features Soft-on, Fade-to-Black technology.<sup>3</sup>
- Title 24 and Energy Star compliant.
- 5 year fixture, LED driver, and dimming warranty.
- 2-wire and EcoSystem control options.
- 2700 and 3000 K CCT.
- 30° and 65° optics available.
- Includes high efficiency frosted lens.
- IC and non-IC fixture options available.
- IC fixtures are rated for spray foam applications.<sup>4</sup>
- IC fixtures must be used in installations containing insulating materials. Non-IC fixtures cannot be used in these types of applications.
- IC fixtures meet airtight construction requirements for 2.0 CFM or less air leakage.
- Frame constructed using galvanized steel.
- Luminaires offer 25° maximum tilt.
- Fixture rotation is achieved through rotating entire trim/LED module. Round offers 360° rotation and square offers rotation in 90° increments.
- Supplied with standard 14–24 in (356–610 mm) adjustable bar hangers.
- Luminaires accommodate up to 0.625 in (16 mm) ceiling thickness. Thick ceiling accessory available for up to 1.5 in (38 mm) ceiling thickness.
- Field replaceable components [driver and light assembly (trim, reflector, and LED module)].
- Wet location trim available.<sup>2</sup>

**SPECIFICATIONS**

**Ambient Operating Temperature:** 32–104 °F  
(0–40 °C)

**Decibel Rating:** Quiet in a 25 dB room

**Maximum Ceiling Thickness:** 0.625 in (16 mm)

**Ceiling Cutout:** ø 4.5 in (114 mm)

**Fixture Weight:** 8 lb (3.6 kg) IC 4.5 lb (2 kg) Non-IC

**Fixture Size:**

- IC: 18.9 in x 9.5 in x 6.0 in  
(480 mm x 241 mm x 152 mm)
- Non-IC: 10.5 in x 7.7 in x 3.5 in  
(267 mm x 196 mm x 89 mm)
- Shallow IC: 18.9 in x 9.5 in x 3.9 in  
(480 mm x 241 mm x 99 mm)

**Junction Box Size:** 5.6 in x 3.0 in x 1.6 in  
(142 mm x 76 mm x 41 mm). See NEC chart 314.16A for box fill/wiring capacity.

**Note:** Dimensions subject to tolerance. See **Dimensions** section.

**COMPATIBLE CONTROLS**

Visit [www.lutron.com/finire](http://www.lutron.com/finire)

<sup>1</sup> Housing required. See model numbers on page 2 and dimensions on page 6.

<sup>2</sup> Wet location trim only available in Downlight (not adjustable).

<sup>3</sup> PWM dimming below 5% for Hi-lume 1% EcoSystem drivers.

<sup>4</sup> Rated for direct application of spray foam with less than R-21 insulative value or 3 in (76 mm) of closed cell spray foam. 95 °F (35 °C) maximum operating temperature.

## ORDERING GUIDES

Trim and housing are ordered separately and both are required to complete the fixture.

Select appropriate code in each column to complete model numbers.

Product will be shipped in bulk packaging for 4 or more units.

### 1. Trim (includes LED module)

Example:

FPAT      R      27X      30      MW

FAMILY	SHAPE	LED	BEAM SPREAD	FINISH
<b>FPAT</b> Finiré Prime, Adjustable, Trimmed	<b>R</b> Round	<b>27X</b> 2700 K	<b>30</b> 30°	<b>MW</b> Matte White Trim
<b>FPDT</b> Finiré Prime, Wet Location, Downlight, Trimmed	<b>S</b> Square	<b>30X</b> 3000 K	<b>65</b> 65°	

### 2. Housing (includes LED driver)

Example:

FPH      IX      EU

FAMILY	HOUSING TYPE	CONTROL TYPE
<b>FPH</b> Finiré Prime Housing	<b>IX</b> IC 14 W 1000 lumens*	<b>F1</b> 2-wire 120 V~ only
	<b>NX</b> Non-IC 14 W 1000 lumens*	
	<b>IS</b> Shallow IC 13 W 850 lumens*	<b>EU</b> EcoSystem 120/277 V~

\*All wattage, lumen, CCT, and CRI values are typical values. For exact values, reference the photometric data or contact Lutron Customer Service.

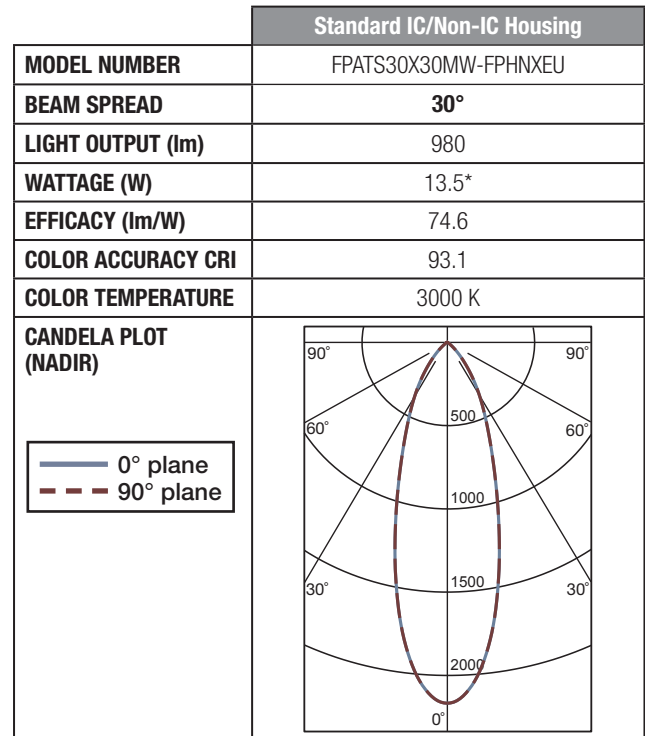
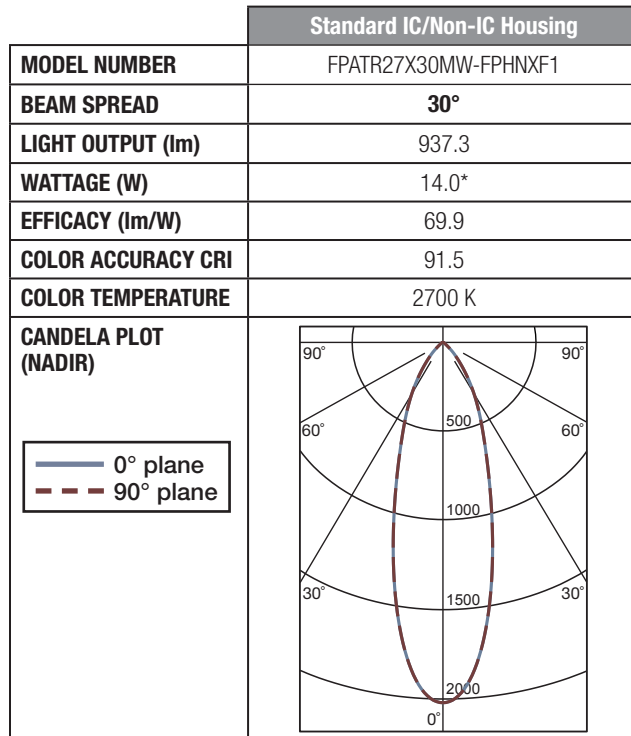
### Accessory Kits (Optional)

MODEL NUMBER	DESCRIPTION
FP-TC075	Thick ceiling clips (0.625 to 0.75 in), 6 sets
FP-TC100	Thick ceiling clips (0.75 to 1.0 in), 6 sets
FP-TC125	Thick ceiling clips (1.0 to 1.25 in), 6 sets
FP-TC150	Thick ceiling clips (1.25 to 1.5 in), 6 sets
FP-OPTIC30	Optics kit, 6 pcs of 30° reflector and 6 pcs of Wall Wash film
FP-OPTIC65	Optics kit, 6 pcs of 65° reflector and 6 pcs of Wall Wash film

For more information, please contact Fixture Customer Service at [fixtures@lutron.com](mailto:fixtures@lutron.com) or 610.282.7472.



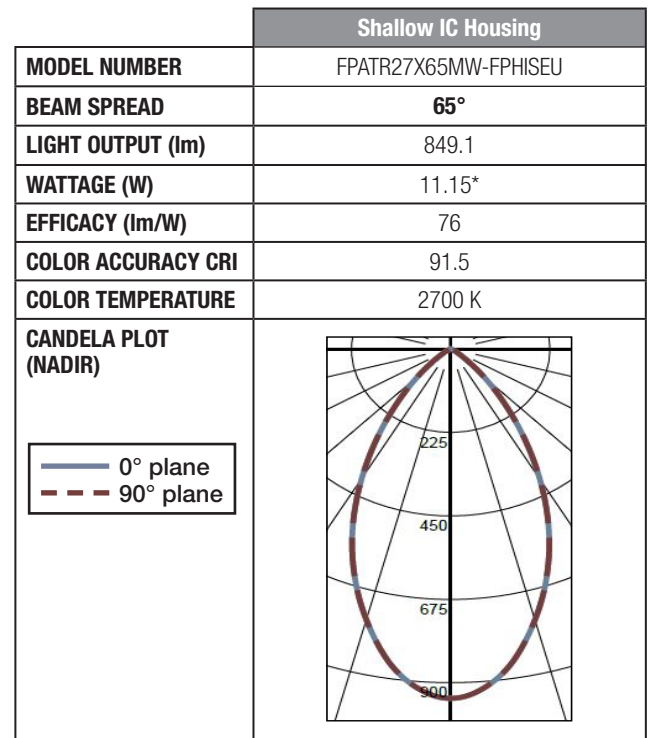
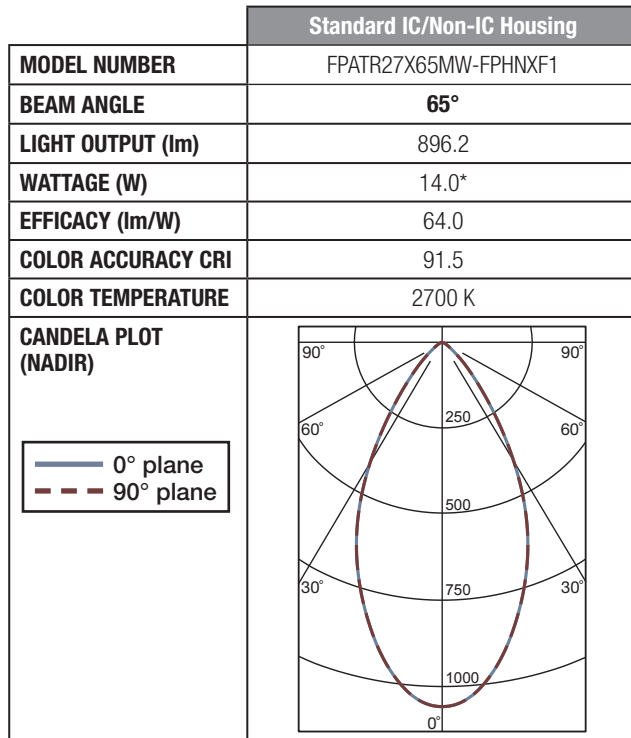
## PHOTOMETRIC DATA



H = DISTANCE FROM CEILING ft(m)	CONE OF LUMINANCE	
	Nadir (fc)	50% Lighted Diameter ft (m)
4 (1.22)	126	2.05 (0.62)
6 (1.83)	56.1	3.07 (0.94)
8 (2.44)	31.6	4.09 (1.25)
10 (3.05)	20.2	5.12 (1.56)
12 (3.66)	14.0	6.14 (1.87)
14 (4.27)	10.3	7.16 (2.18)
16 (4.88)	7.89	8.19 (2.50)

H = DISTANCE FROM CEILING ft(m)	CONE OF LUMINANCE	
	Nadir (fc)	50% Lighted Diameter ft (m)
4 (1.22)	135	2.09 (0.64)
6 (1.83)	60.2	3.14 (0.96)
8 (2.44)	33.9	4.18 (1.27)
10 (3.05)	21.7	5.23 (1.59)
12 (3.66)	15.0	6.27 (1.91)
14 (4.27)	11.1	7.32 (2.23)
16 (4.88)	8.46	8.36 (2.55)

\* Total system power including LED driver.

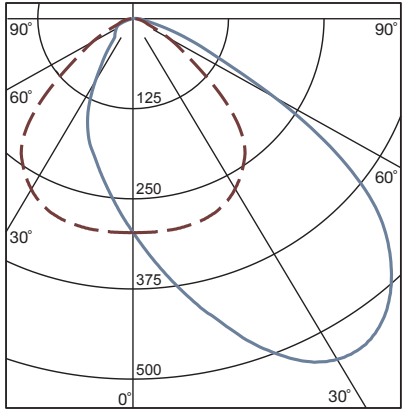
**PHOTOMETRIC DATA**

H = DISTANCE FROM CEILING ft (m)	CONE OF LUMINANCE	
	Nadir (fc)	50% Lighted Diameter ft (m)
<b>4 (1.22)</b>	66.1	3.24 (0.90)
<b>6 (1.83)</b>	29.4	4.86 (1.48)
<b>8 (2.44)</b>	16.5	6.47 (1.97)
<b>10 (3.05)</b>	10.6	8.09 (2.47)
<b>12 (3.66)</b>	7.34	9.71 (2.96)
<b>14 (4.27)</b>	5.39	11.3 (3.44)
<b>16 (4.88)</b>	4.13	12.9 (3.93)

H = DISTANCE FROM CEILING ft (m)	CONE OF LUMINANCE	
	Nadir (fc)	50% Lighted Diameter ft (m)
<b>4 (1.22)</b>	58.9	3.25 (0.99)
<b>6 (1.83)</b>	26.2	4.88 (1.49)
<b>8 (2.44)</b>	14.7	6.50 (1.98)
<b>10 (3.05)</b>	9.42	8.13 (2.48)
<b>12 (3.66)</b>	6.54	9.75 (2.97)
<b>14 (4.27)</b>	4.81	11.4 (3.47)
<b>16 (4.88)</b>	3.68	13.0 (3.96)

\*Total system power including LED driver.

## PHOTOMETRIC DATA

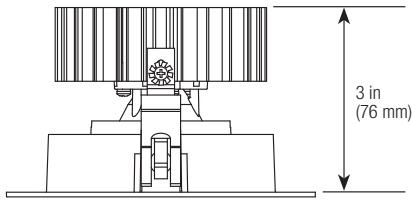
	Standard IC/Non-IC Housing
<b>MODEL NUMBER</b>	FP-OPTIC65 (Wall Wash)
<b>BEAM ANGLE</b>	<b>65°</b>
<b>LIGHT OUTPUT (lm)</b>	855.8
<b>WATTAGE (W)</b>	14.07*
<b>EFFICACY (lm/W)</b>	60.8
<b>COLOR ACCURACY CRI</b>	91.5
<b>COLOR TEMPERATURE</b>	2700 K
<b>CANDELA PLOT (NADIR)</b>	

	CONE OF LUMINANCE	
<b>H = DISTANCE FROM CEILING ft (m)</b>	<b>Nadir (fc)</b>	<b>50% Lighted Diameter ft (m)</b>
<b>4 (1.22)</b>	18.5	5.88 (1.79)
<b>6 (1.83)</b>	8.24	8.83 (2.69)
<b>8 (2.44)</b>	4.64	11.8 (3.60)
<b>10 (3.05)</b>	2.97	14.7 (4.48)
<b>12 (3.66)</b>	2.06	17.7 (5.39)
<b>14 (4.27)</b>	1.51	20.6 (6.28)
<b>16 (4.88)</b>	1.16	23.5 (7.16)

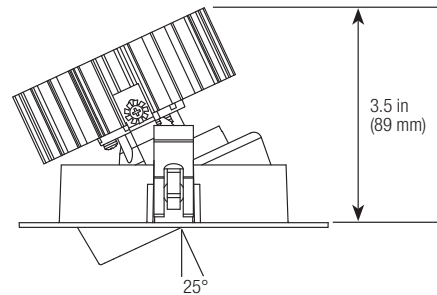
\*Total system power including LED driver.

### TRIM/LED MODULE DIMENSIONS

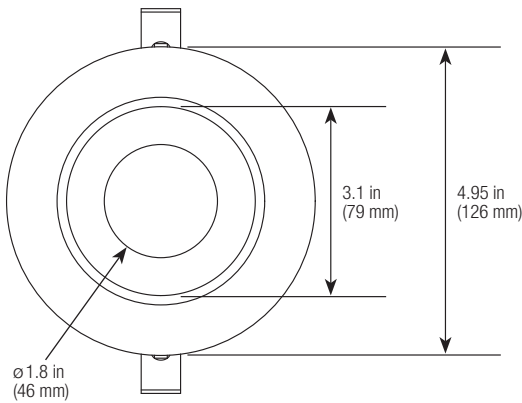
ROUND OR SQUARE: Side View (down position)



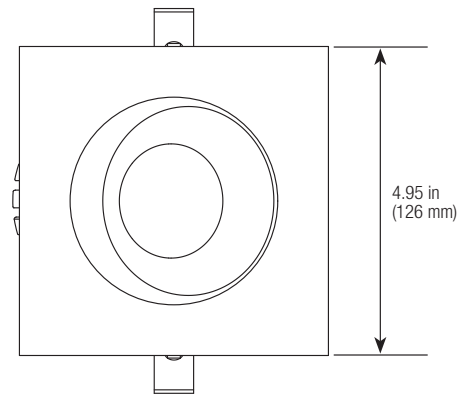
ROUND OR SQUARE: Side View (tilt position)



ROUND: Bottom View (down position)



SQUARE: Bottom View (tilt position)



### HOUSING DIMENSIONS

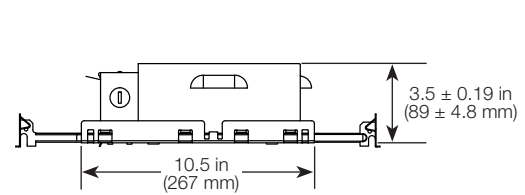
IC Housing (IX/IS)

SIDE VIEW

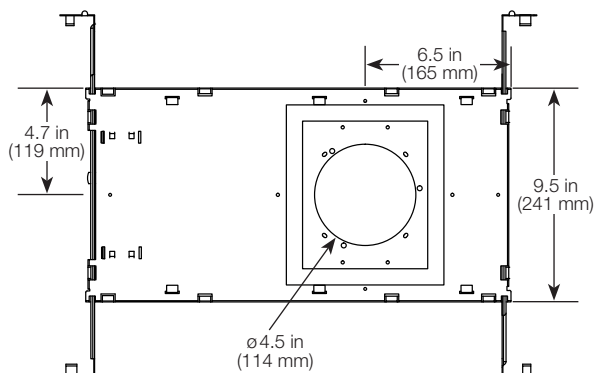


Non-IC Housing (NX)

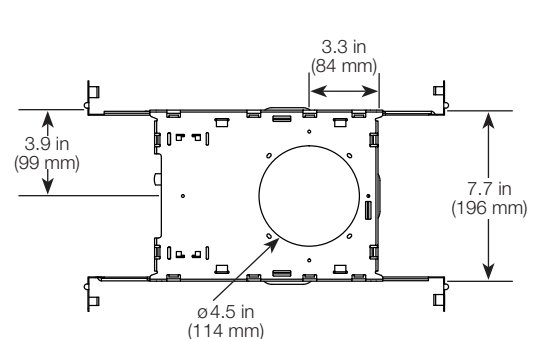
SIDE VIEW



BOTTOM VIEW

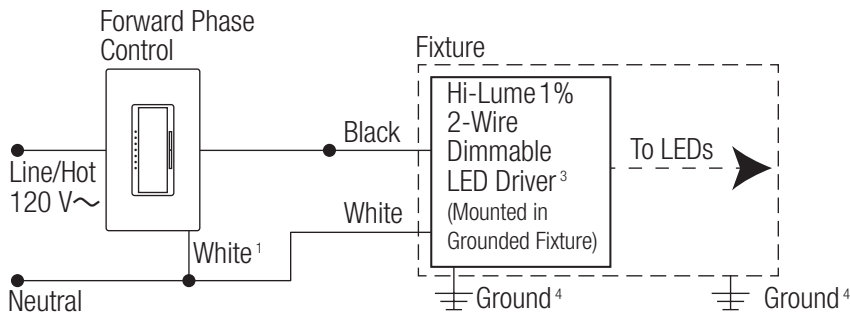
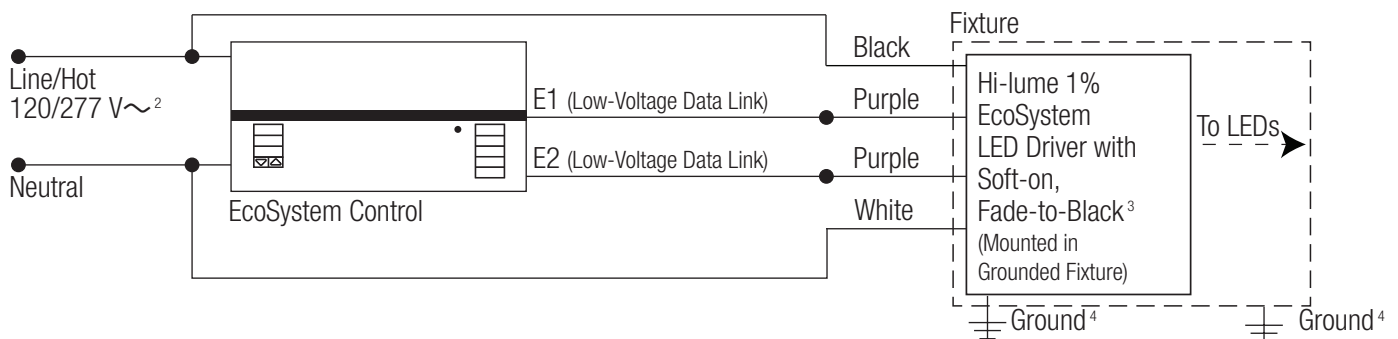


BOTTOM VIEW



#### NOTES:

- Unless otherwise stated, dimensions have ± 0.063 in (1.6 mm) tolerance.
- Bar hangers have an adjustable width from 14 in (356 mm) to 24 in (610 mm).
- Wet location trims are Downlight only and do not tilt.

**CIRCUIT DIAGRAMS****F1: 2-WIRE FORWARD-PHASE CONTROL WITH NEUTRAL (120 V~ ONLY)****EU: EcoSystem DIGITAL CONTROL (120/277 V~)**

<sup>1</sup> Neutral may be optional for certain control types. See product specification submittal for specific wiring diagrams.

<sup>2</sup> Refer to the specific Lutron control specifications for exact input voltage rating of the product.

<sup>3</sup> 40 W maximum rated drivers.

<sup>4</sup> Ensure that both ground wires are connected in the junction box.

- For questions, contact Fixture Customer Service at [fixtures@lutron.com](mailto:fixtures@lutron.com)
- For a list of compatible controls and control ratings, visit [www.lutron.com/finire](http://www.lutron.com/finire) or contact the LED Control Center of Excellence at [leds@lutron.com](mailto:leds@lutron.com) or 1.877.DIM.LED8.



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Lutron Electronics Co., Inc.

7200 Suter Road, Coopersburg, PA 18036

Telephone: 610.282.7472 Fax: 610.282.7600

[fixtures@lutron.com](mailto:fixtures@lutron.com)

For limited 5-year warranty details, see

[www.lutron.com/TechnicalDocumentLibrary/3683454.pdf](http://www.lutron.com/TechnicalDocumentLibrary/3683454.pdf)

Specification subject to change without notice





# Stream™ Dot | Recessed 4" Round 'Architectural Accent'

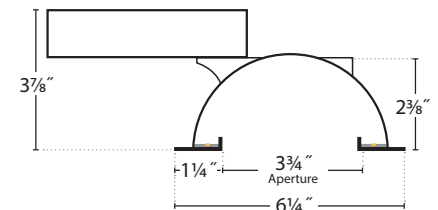


PRUDENTIAL LTG.

PRULITE.COM 213.746.0360

Type:

Job:



## Dot 'accent' lights punctuate architectural interiors.

Our veiled ambient Stream series of recessed and pendant fixtures now include 4" round and square 'architectural accent' lights to complete a recessed line of light. Soft indirect hidden LEDs reduces glare and offer a wide, even distribution of light. Stream Dots have the same form factor as downlights, but look and perform uniquely Stream-like.

RDOT-LED35-LO	
332	Delivered Lumens
5	Watts
67	lm/w
3500	CCT

UPTO 67 LM/W				
	LO	MO	SO	HO
lm	332	460	800	967
w	5.3	7	14.4	18.2



Lumen output may vary +/- 5%  
3500K used for lm/ft estimates above  
4000K +2% llf, 3000K -2%, 2700K -4%

SERIES	LED COLOR	OUTPUT	TRIM COLOR	CIRCUITING	VOLTAGE	CEILING SYSTEMS	DRIVERS	OPTIONS
RDOT								
Round Dot	<b>LED27</b> 2700K, 90 CRI  <b>LED3</b> 3000K, 90 CRI  <b>LED35</b> 3500K, 90 CRI  <b>LED4</b> 4000K, 90 CRI	<b>LO</b> Low (Matches 4" recessed SO)  <b>MO</b> Medium (Matches 4" recessed HO)  <b>SO</b> Standard  <b>HO</b> High (HO not recommended for wall mount)  <b>PROG</b> Pro-grammable Light Output (Specify desired lm/ft or w/ft)	<b>TMW</b> Textured Matte White (Standard)  <b>YGW</b> Gloss White  <b>YSW</b> Seashell White (Premium color)  <b>Y</b> Premium Color  <b>CC</b> Custom Color	SC Single Circuit	<b>UNV</b> (120-277)  <b>347</b> Requires — • Rough-in box • Remote box for TechZone & X3R (See page 5)	<b>X1†</b> T-Bar 1 5/16" or 9/16"  <b>X3</b> Flanged Hard Ceiling (Remodel)  <b>X3R†</b> Flanged Hard Ceiling (New construction)  <b>X7†</b> Flangeless Mud-in Hard Ceiling  † Rough-in Box included	<b>ND</b> Non-Dimming  <b>DM01</b> 0-10v, 1% Dimming (Osram Standard for 0-10V)  <b>LDE5*</b> Lutron 5-Series EcoSystem LED  <b>LDE1*</b> Lutron Hi-lume 1% EcoSystem LED (Soft fade on, fade-to-black dimming)  * SO and HO only  <b>ECO</b> 1% 0-10v, EldoLED (Logarithmic dimming std)  <b>ECDA</b> 1% DALI, EldoLED (Logarithmic dimming std)  <b>SOLO</b> 0.1% 0-10v, EldoLED (Dim-to-dark, Logarithmic dimming std)  <b>SODA</b> 0.1% DALI, EldoLED (Dim-to-dark, Logarithmic dimming std))	<b>EML</b> Emergency Battery (EML not available in certain configurations. See page 5)  <b>NOTE:</b> RTK kit required  <b>ADC</b> Acrylic Dust Cover  <b>CP</b> Chicago Plenum (NA with X3R)  <b>PRUBIN</b> Meticulous Binning and Labeling every LED Board within a 2-Step Mac-Adams Ellipse



# Stream™ Dot | Recessed 4" Round 'Architectural Accent'



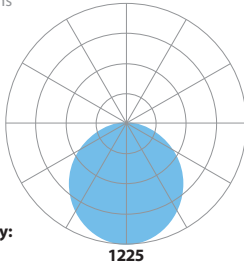
PRUDENTIAL LTG.

PRULITE.COM 213.746.0360

## PHOTOMETRICS

### RDOT-LED35-LO

332 Delivered Lumens  
5 Watts  
67 lm/w  
3500 CCT



**Zonal Lumen Summary:**  
0-90 = 60%

Vertical Angle	0°	25°	45°	65°	90°
0°	121	121	121	121	121
5°	120	120	120	121	120
10°	119	119	119	119	119
15°	117	117	117	117	117
20°	114	114	114	114	114
25°	111	111	111	110	111
30°	108	107	107	106	107
35°	104	103	102	102	102
40°	99	98	98	97	97
45°	93	92	92	91	91
50°	87	86	85	84	84
55°	80	79	78	77	77
60°	71	71	70	69	68
65°	62	61	62	60	68
70°	51	51	51	49	48
75°	38	38	39	37	36
80°	24	25	25	24	23
85°	14	13	13	13	10
90°	0	0	0	0	0

## LUMEN MAINTENANCE

Designed to last with cool running mid-power LEDs projected to maintain 90% (L90) of their initial output for 100,000 hours (at HO), and L70 exceeding 150,000 hours.

### LED SYSTEM

LED modules and drivers are field replaceable.

### PROG (OPTIONAL)

Specify desired lumens or watts per fixture. Round Dot min: 5.3 watts, max: 18.4 watts. Square Dot min: 4.7 watts, max: 16.8 watts.

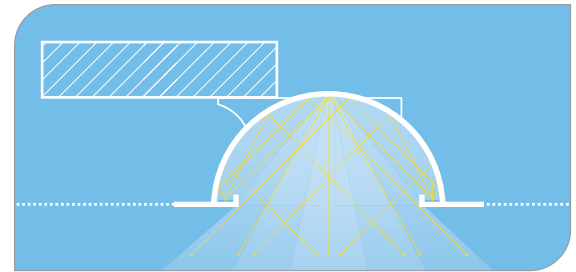
### BINNING

Standard binning (all Prudential LED boards) includes testing at the chip level and board integration to provide consistent color temperature within a 3-step MacAdams ellipse, with +/- 5% lumen output range and +/- .004 Duv.

### PRUBIN™ (OPTIONAL)

Prudential Ltg's exclusive 'job binning' method that ensures color temperature consistency across all luminaires on a project. Meticulously testing and labeling **EVERY LED BOARD** to +/- 25 lumens, +/- 50k CCT and +/- .004 Duv — while also separating positive from negative — allows us to match color, hue and intensity throughout a project and provides a consistent color temperature within a 2-step MacAdams ellipse.

## STREAM SERIES "VEILED AMBIENT" ILLUMINATION



Stream's soft, even hidden light source creates a "skylight" effect.

## LABELS

IC Rated. CSA and ETL damp labeled and I.B.E.W. manufactured.

## ELECTRICAL

Must specify LED dimming controls. LED fixtures have constant current driver(s) with less than 20% THD when loaded to a minimum of 60%. Drivers sink a maximum of 6mA per driver. DM01 LED drivers are 0-10V dimmable and are compatible with most 0-10V wall slide dimmers and direct 0-10V analog signal dimmers.

## CONSTRUCTION

### Housing

20-gauge steel galvanized housing, >20% PC recycled, 100% recyclable, PAF, Painted After Fabrication & cast aluminum trim.

## WARRANTY

Single-source, 5 year limited warranty covers standard components and construction



# Stream™ Dot | Recessed 4" Round 'Architectural Accent'



PRUDENTIAL LTG.

PRULITE.COM 213.746.0360

YSW – Seashell White (Matte)	YCH – Champagne (Metallic)
YSL – Silver (Metallic)	YPE – Pewter (Matte)
YRG – Rain Grey (Gloss)	YSTM – Storm Grey (Matte)
YBK – Black (Matte)	YBB – Black (Semi Gloss)
YSKM – Sky (Matte)	YMB – Military Blue (Matte)
YIB – Interstate Blue (Matte)	YSAM – Sapphire (Matte)
YFGM – Forest Green (Matte)	YBR – Bronze (Matte)
YBY – Boysenberry (Matte)	YSRM – Sunset Red (Matte)
YOR – Orange (Matte)	YDAM – Daffodil (Matte)

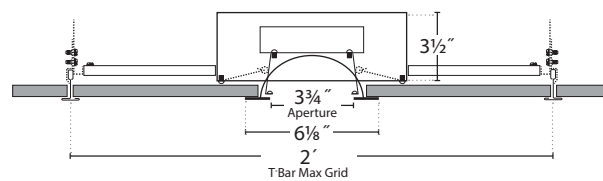
Choose from one of our Premium Colors with no set-up fee.

For paint chip samples, please email: [info@prulite.com](mailto:info@prulite.com)

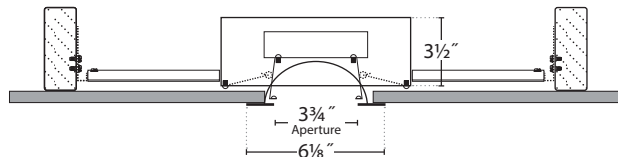


## MOUNTING

### X1 : T-Bar (Flanged)

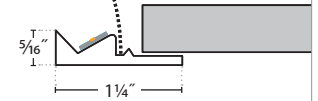


### X3R, X7: Hard Ceiling

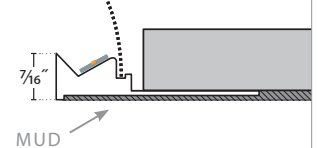


## TRIM DETAILS

### X1, X3, X3R: Flanged

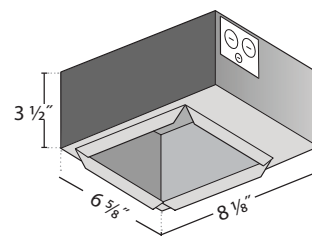


### X7: Mud Over



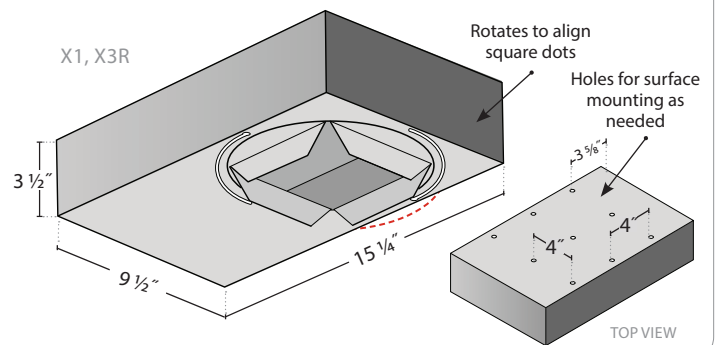
## ROUGH IN BOX

### X7

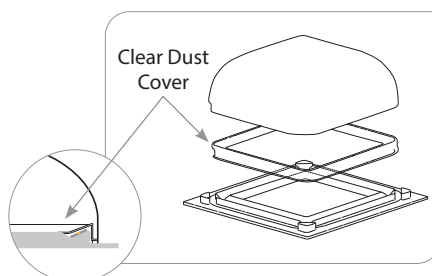


INCLUDED WITH X1, X3R AND X7

### X1, X3R



## ACRYLIC DUST COVER (ADC)





# Stream™ Dot | Recessed 4" Round 'Architectural Accent'

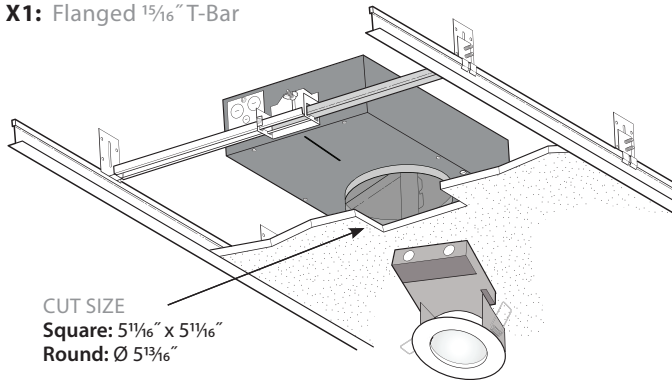


PRUDENTIAL LTG.

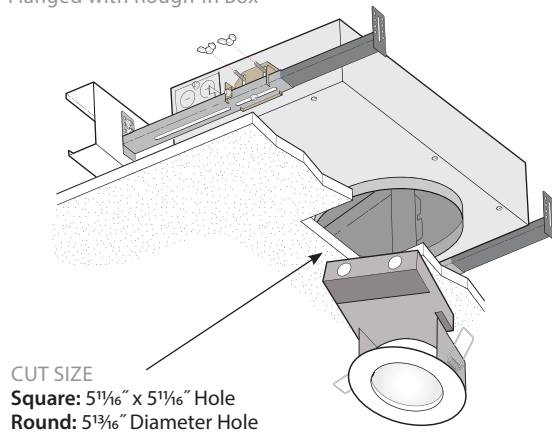
PRULITE.COM 213.746.0360

## CEILING SYSTEMS

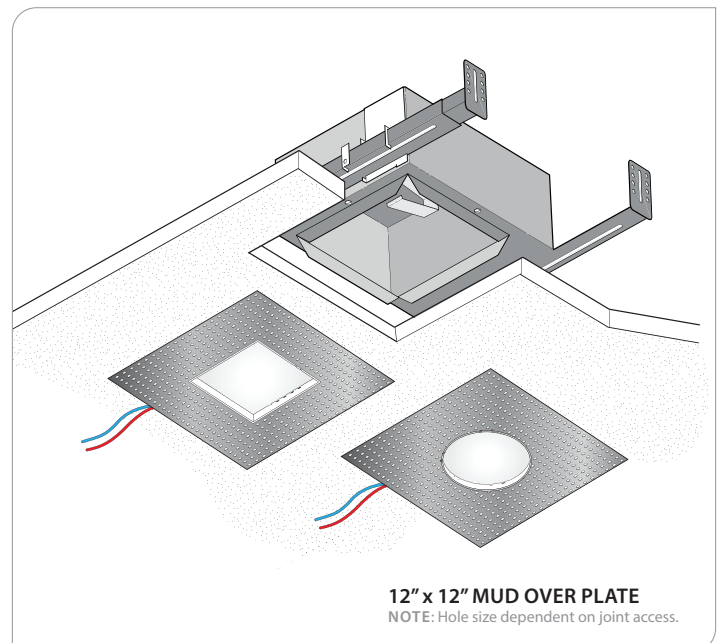
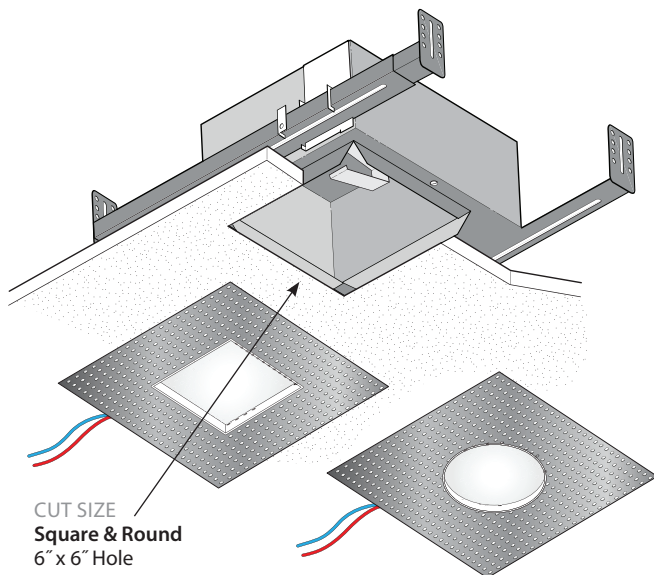
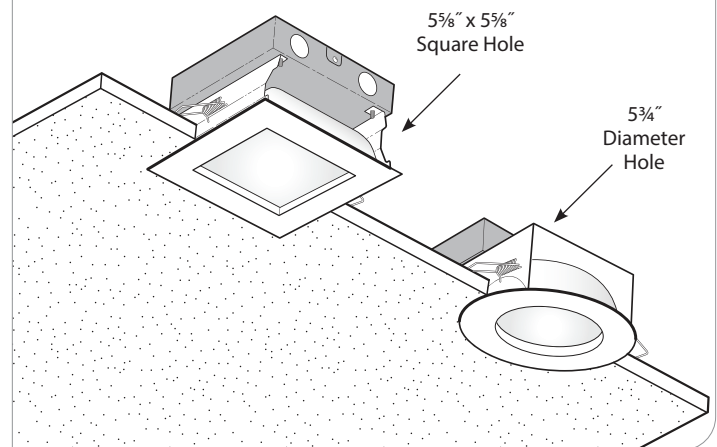
**X1:** Flanged 1 $\frac{5}{16}$ " T-Bar



**X3R:** Flanged with Rough-in Box



**X3:** Flanged without Rough-in Box





# Stream™ Dot | Recessed 4" Round 'Architectural Accent'

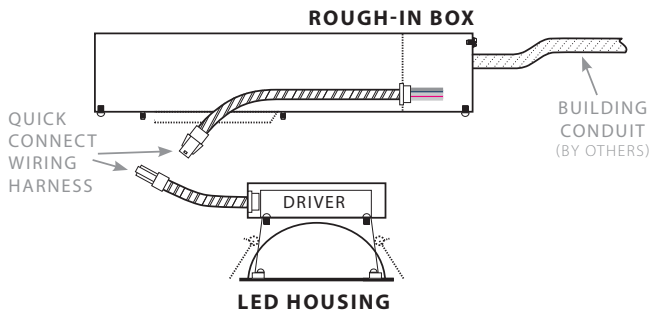


PRUDENTIAL LTG.

PRULITE.COM 213.746.0360

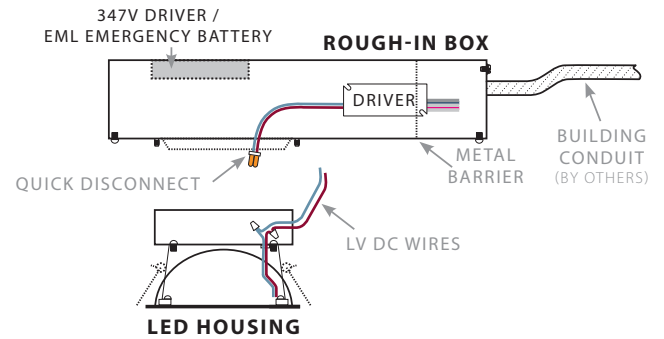
## WIRING DIAGRAMS

**X1 / X3R:** T-Bar, X3 Flanged Hard Ceiling  
(Driver in LED housing with Rough-in Box Included, optional for X3)

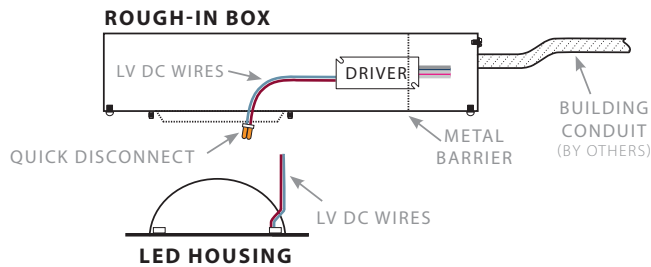


**347V OR EML EMERGENCY BATTERY FOR:**

**X1:** T-Bar, X3 Flanged Hard Ceiling  
(Driver in Rough-in Box, optional for X3)

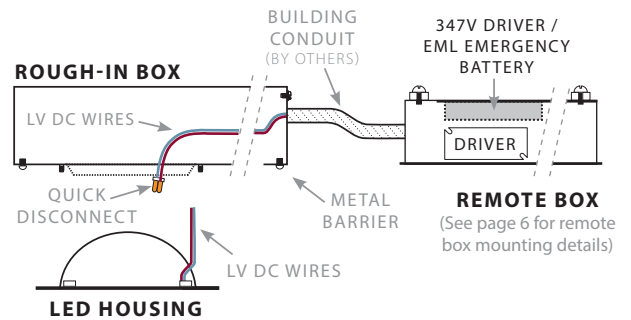


**X7:** Hard Ceiling Mud-in  
(Driver in Rough-in Box)

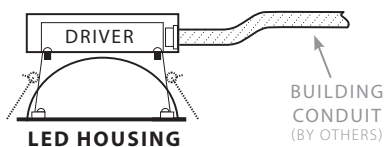


**347V OR EML EMERGENCY BATTERY FOR:**

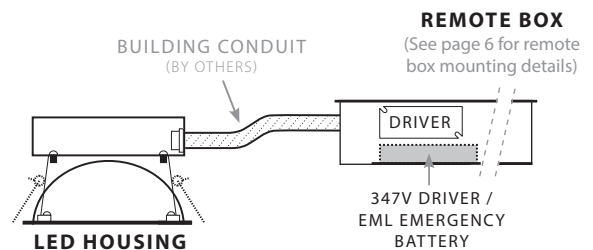
**X7:** Hard Ceiling Mud-in



**X3:** Flanged Hard Ceiling — No Rough-in Box  
(Driver in LED housing)



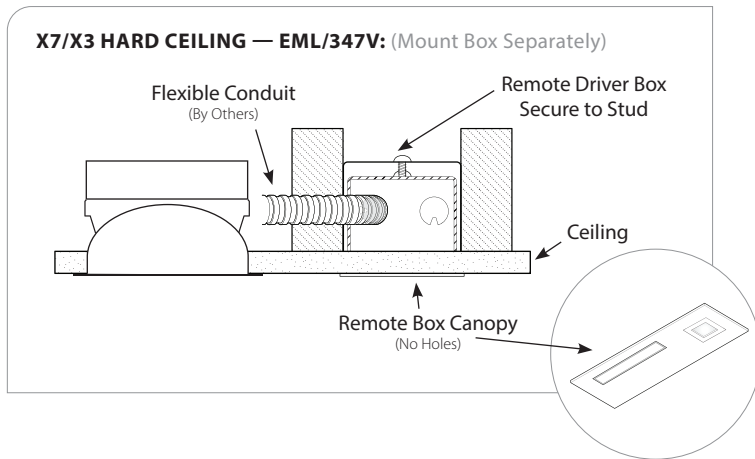
**X3:** Flanged Hard Ceiling







## REMOTE BOX MOUNTING DETAIL





## Delta BreezSlim

Perfectly quiet. Perfectly green.

### Delta BreezSlim G1 Series

<b>SLM50*</b>	50 CFM Single Speed
<b>SLM70</b>	70 CFM Single Speed
<b>SLM70D</b>	70 CFM with Humidity Sensor
<b>SLM70ELED</b>	70 CFM with Humidity Sensor
<b>SLM70H</b>	70 CFM with Humidity Sensor

\* Product is ENERGY STAR Most Efficient 2021 distinction and ENERGY STAR qualified

#### Project Pack Components

SLM-A	Fan Housing Can
SLM-AMTL	Fan Housing Can with Metal Duct
SLM50-B	50 CFM Motor/Grille
SLM70-B	70 CFM Motor/Grille

	Delta Breez	Market AC Motor
Energy Use (Watts)	6.4	45.2
Noise Level (Sones)	1.0	4.0
Annual Energy Cost per Fan (24/7) <sup>1</sup>	\$6.73	\$47.56

### Delta BreezSlim G2 Series

<b>SLM80</b>	80 CFM Single Speed
<b>SLM100</b>	100 CFM Single Speed

	Delta Breez	Market AC Motor
Energy Use (Watts)	8.5	25.7
Noise Level (Sones)	0.6	1.1
Annual Energy Cost per Fan (24/7) <sup>1</sup>	\$8.94	\$27.02

<sup>1</sup> Calculations based upon U.S. average retail electricity at and HVI testing labs. Actual results may vary

<sup>2</sup> Based upon BreezSlim SLM50 vs. market AC motor fan

<sup>3</sup> Based upon SLM 50 CFM vs. ENERGY STAR v4.0 criteria for residential ventilating fans

#### Extraordinary performance in a small package

Weighing in at less than 5 lbs., the powerful yet compact Delta BreezSlim G1 sets the bar for performance in the popular small fan size of 7 1/2" x 7 1/4" x 4". Operating at just 2 Sones or less, this quiet fan features Delta's super reliable brushless DC motor, and an LED indicator light so you know it's running. Perfect for retrofit into an existing space UL and cUL listed for ceiling mount and wall mount installation. Available in contractor packs.



#### Delta BreezSlim G2

The second generation of BreezSlim adds 80 CFM and 100 CFM fans that are suitable for both ceiling and sidewall applications. All BreezSlim fans are ENERGY STAR® qualified and fit in a 4" wall. BreezSlim G2 models include a 4" metal oval duct. An enlarged grille on G2 models helps relieve cutting errors. As with all Delta Breez fans, G2 models also feature an LED indicator light underneath the grille to assure the user that this quiet fan is running.



SLM80 and SLM100

Project Pack Components available SLM-A2 (housing) and SLM80-B (motor grille) or SLM100-B (motor grille)

Innovative brushless DC motor design for long life, low noise, and low power consumption

- Energy savings up to 85%<sup>2</sup>
- 1 Sone – quiet operation in a 7 1/2" x 7 1/4" bath fan
- 0.6 Sones – quiet operation in a 11 1/4" x 10 1/2" x 4" bath fan
- Exceeds ENERGY STAR requirement by 217% in energy efficiency<sup>3</sup>



# focus™ wall wash

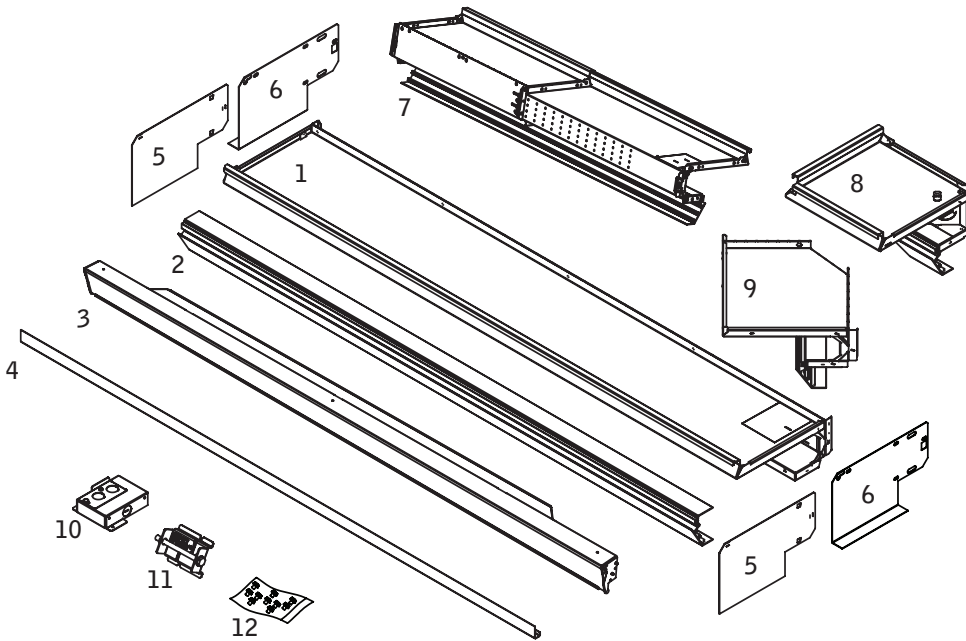
FWSL



FOCAL POINT™

**⚠ MUST BE INSTALLED PRIOR TO DRYWALL /HARD CEILING ⚠**  
**READ ALL INSTALLATION INSTRUCTIONS BEFORE BEGINNING INSTALLATION**

## FOCAL POINT PARTS



## KEY

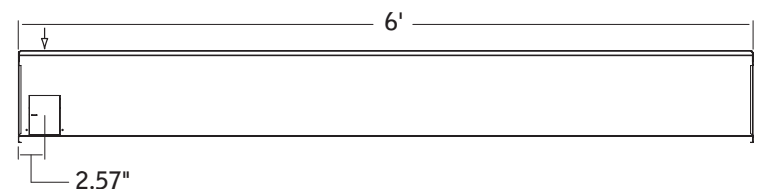
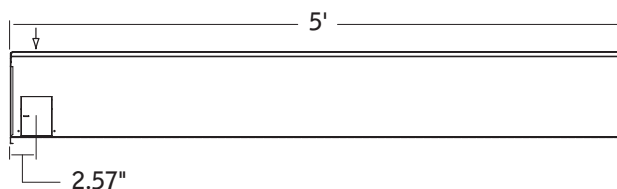
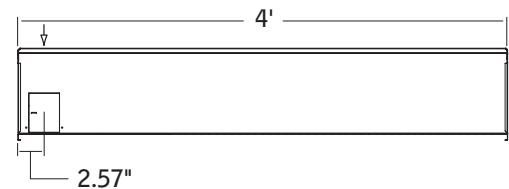
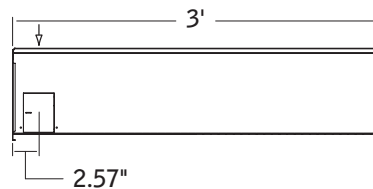
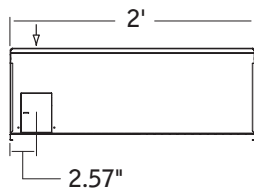


## PARTS LIST

1 HOUSING	12 HARDWARE BAG
2 SPLAY	SLIDING SLEEVE LOCK & SPLAY, ENDCAPS, J-BOX SCREW (72010)
3 LIGHT MODULE	(8-18 SCREW)
4 J-RAIL	JOINER SCREW (72066)
5 END CAP	(10-32 SCREW)
6 FLANGED END CAP (FACTORY OPTION)	JOINER TO SPLAY SCREW (72023)
7 SLIDING SLEEVE & SPLAY	(6-32 1/4 SCREW)
8 INSIDE CORNER (FACTORY OPTION)	HOUSING JOINER SCREW (700168)
9 OUTSIDE CORNER (FACTORY OPTION)	(SCR,10-32X1 PHL PAN MS FST SCREW)
10 J-BOX	HOUSING JOINER NUT (72068)
11 JOINER BRACKET	(NUT KEPS 10-32)

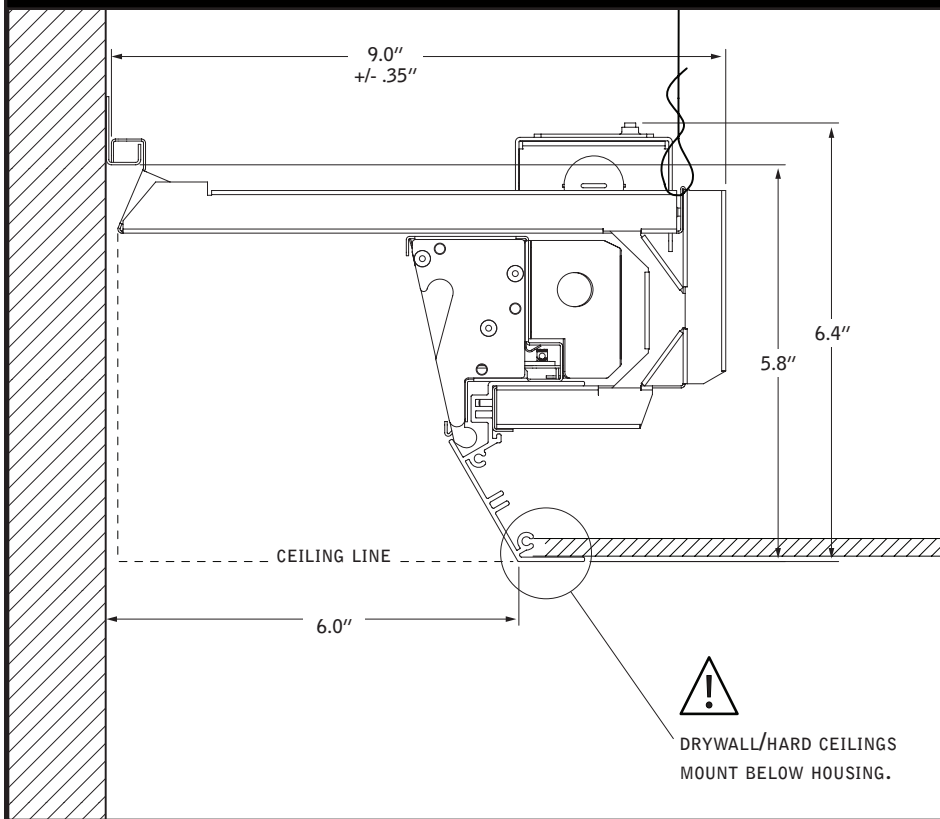
## FEED LOCATIONS

↓ INDICATES FEED LOCATION



Luminaires must be installed by a qualified electrician (check with local and national codes for proper installation).  
 To prevent electrical shock, disconnect electrical supply before installation or servicing.

## WALL/CEILING PREP



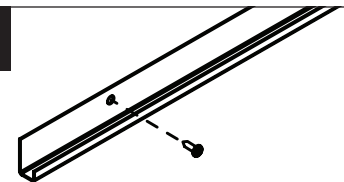
## BASIC INSTALLATION STEPS 1-11

SLIDING SLEEVES SEE PG 3  
LED MODULES SEE PG 4  
CORNERS SEE PG 5  
EMERGENCY CIRCUIT SEE PG 6



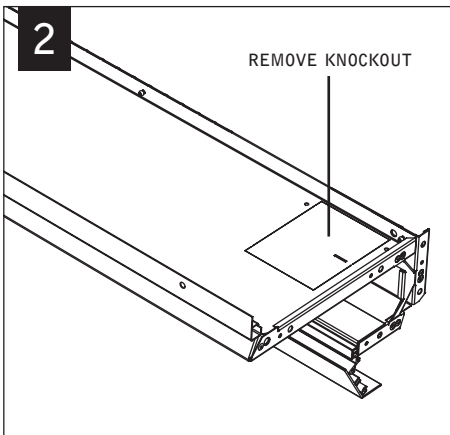
FOCAL POINT RECOMMENDS  
STARTING WITH INSIDE CORNER  
INSTALLATION IF APPLICABLE

1

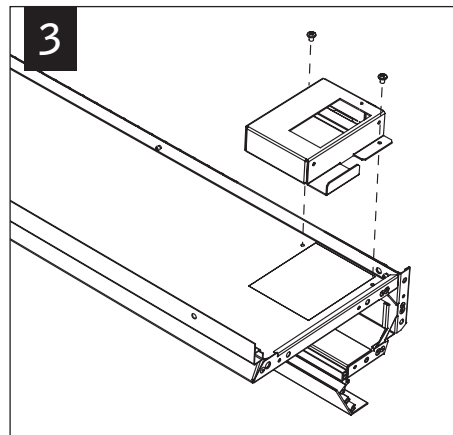


MOUNT J-RAIL TO WALL  
(HARDWARE BY OTHERS)

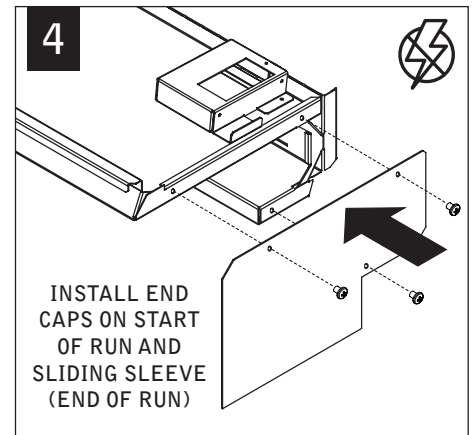
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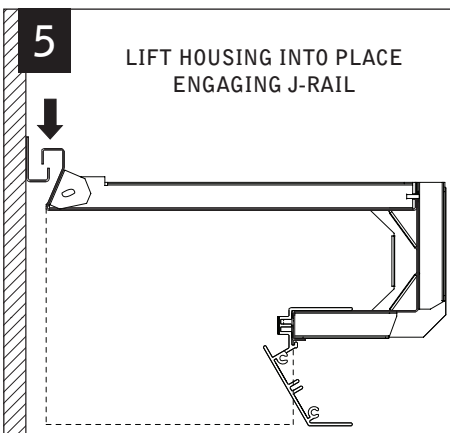
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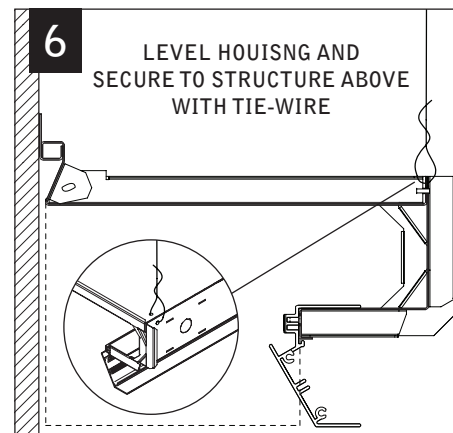
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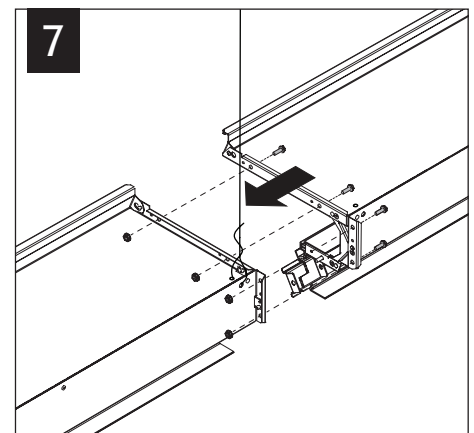
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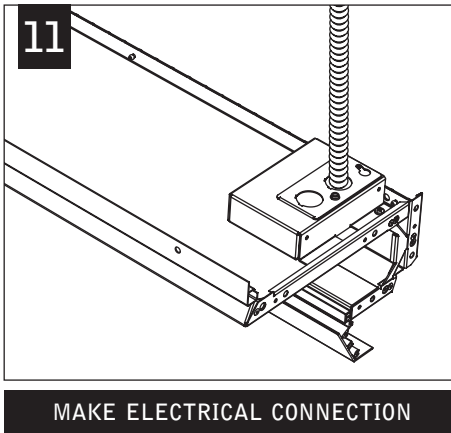
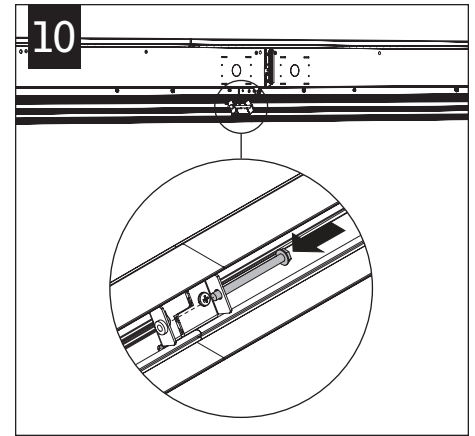
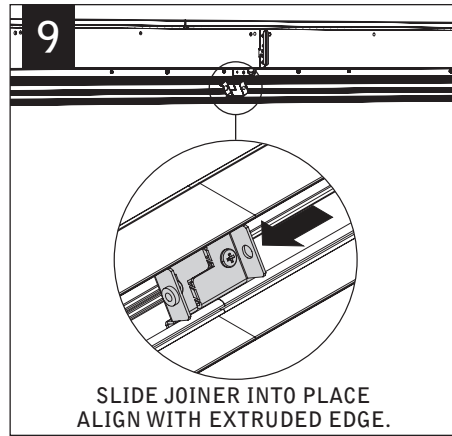
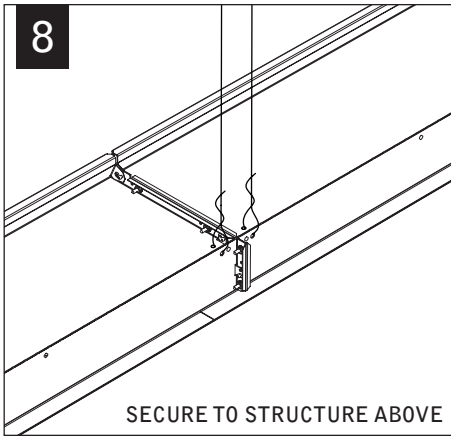
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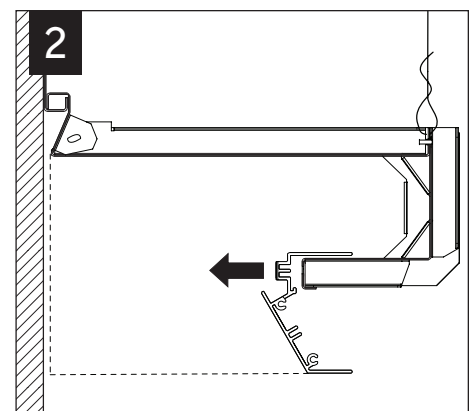
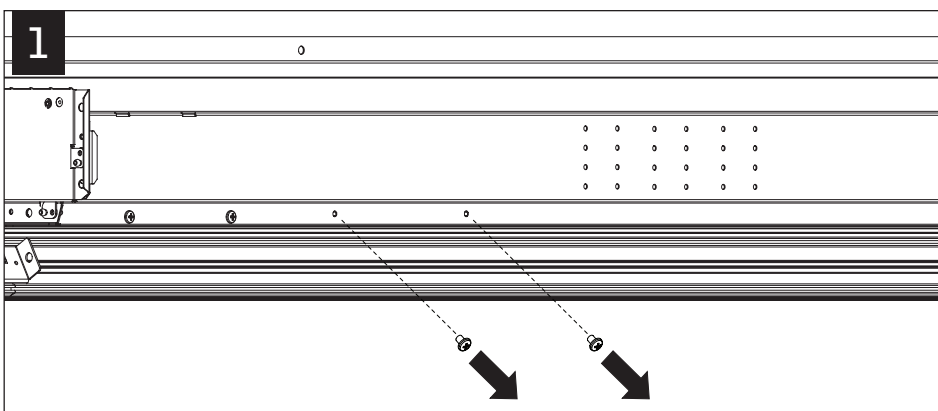
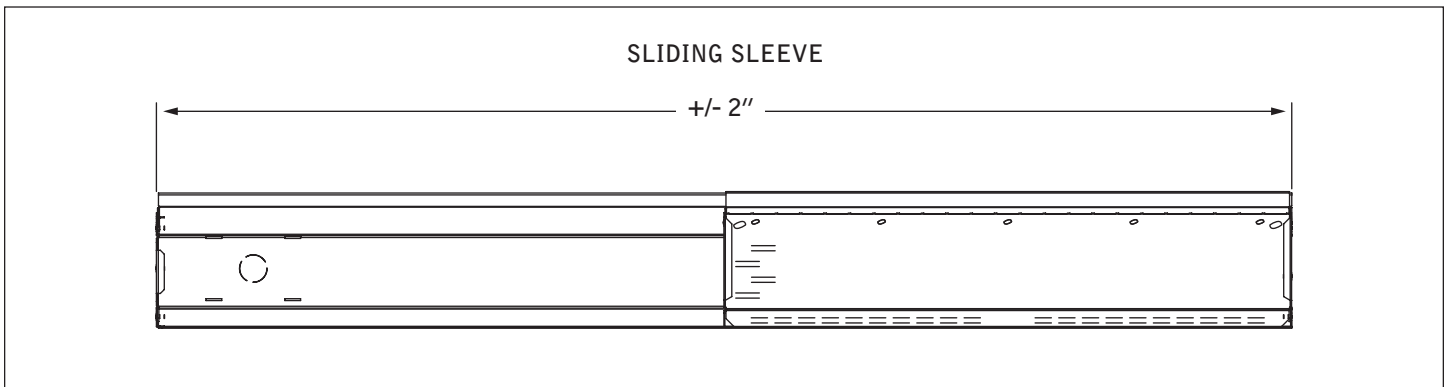
7



Luminaires must be installed by a qualified electrician (check with local and national codes for proper installation).  
To prevent electrical shock, disconnect electrical supply before installation or servicing.

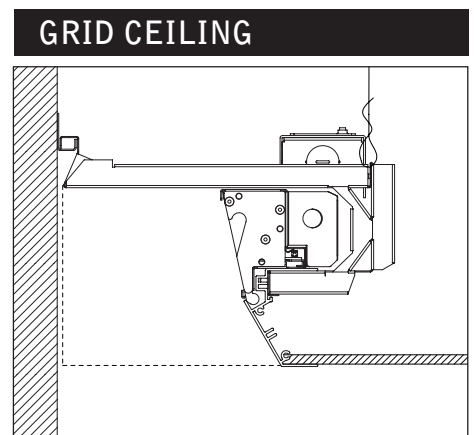
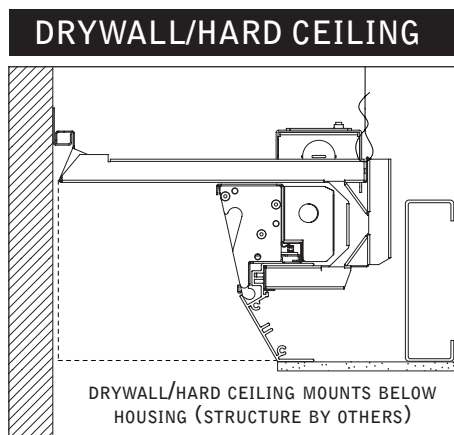
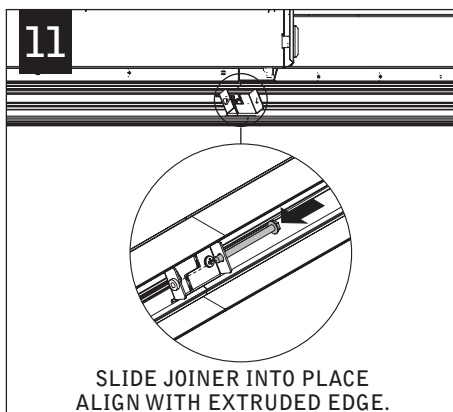
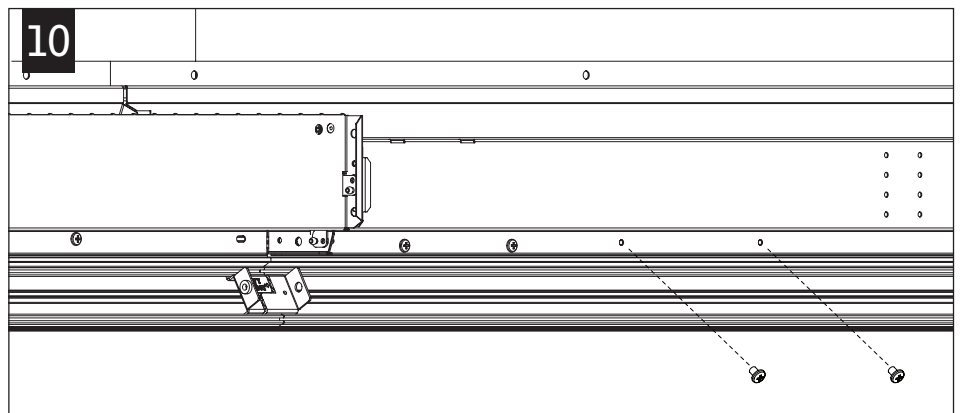
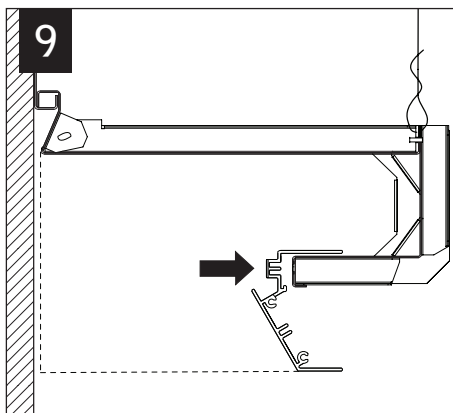
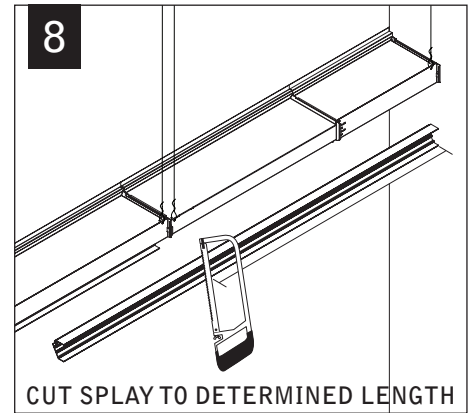
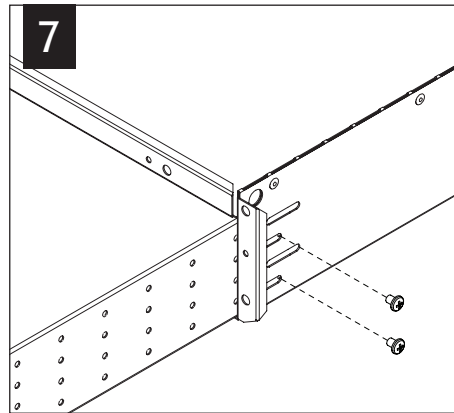
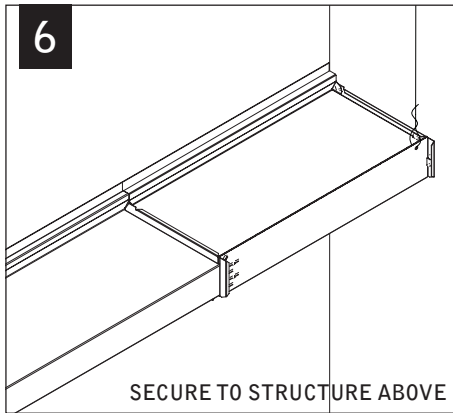
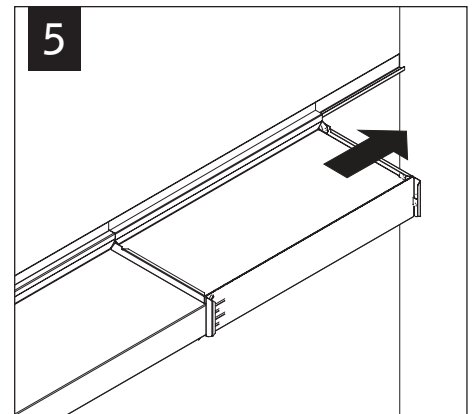
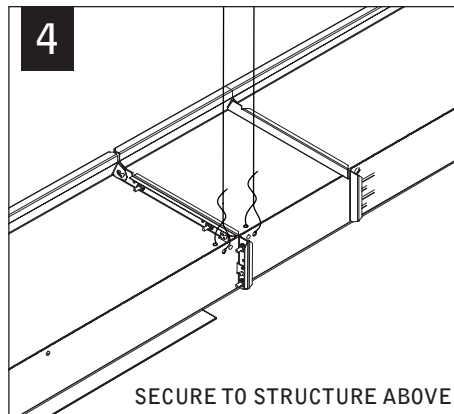
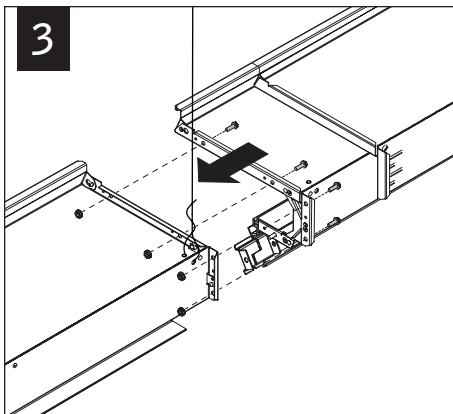


## SLIDING SLEEVES



Luminaires must be installed by a qualified electrician (check with local and national codes for proper installation).  
To prevent electrical shock, disconnect electrical supply before installation or servicing.

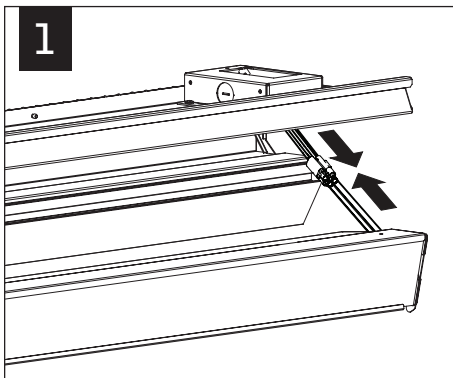




Luminaires must be installed by a qualified electrician (check with local and national codes for proper installation).  
To prevent electrical shock, disconnect electrical supply before installation or servicing.

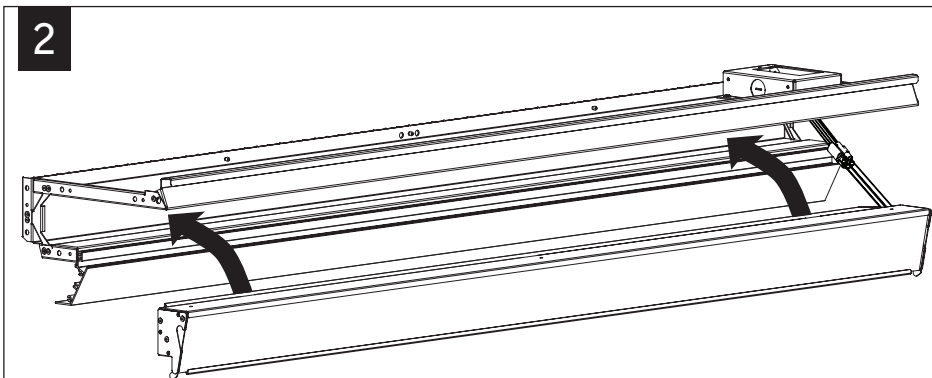
## LED MODULE

1

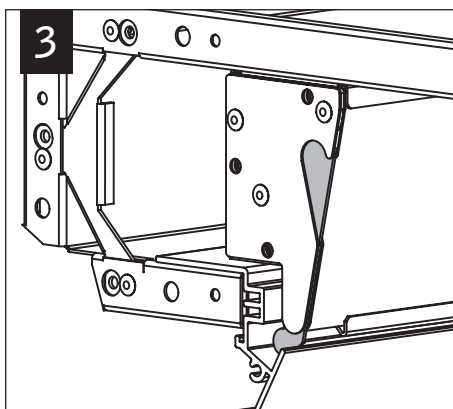


MAKE ELECTRICAL CONNECTION

2

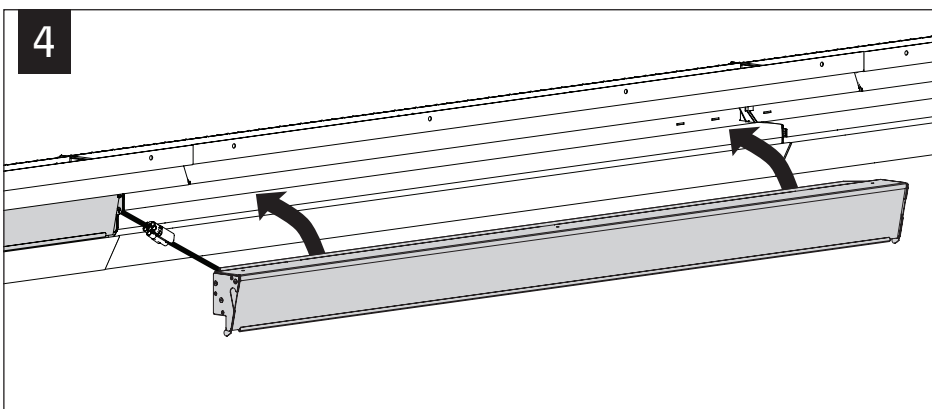


3



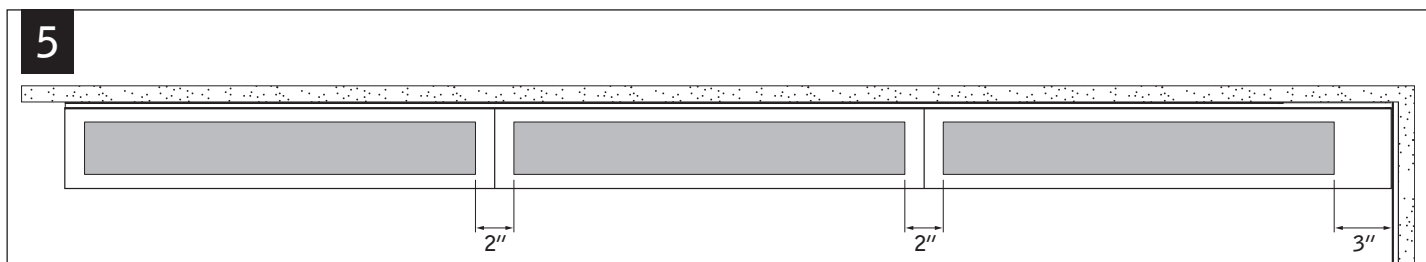
MODULE LATCH ENGAGES WITH EXTRUSION

4



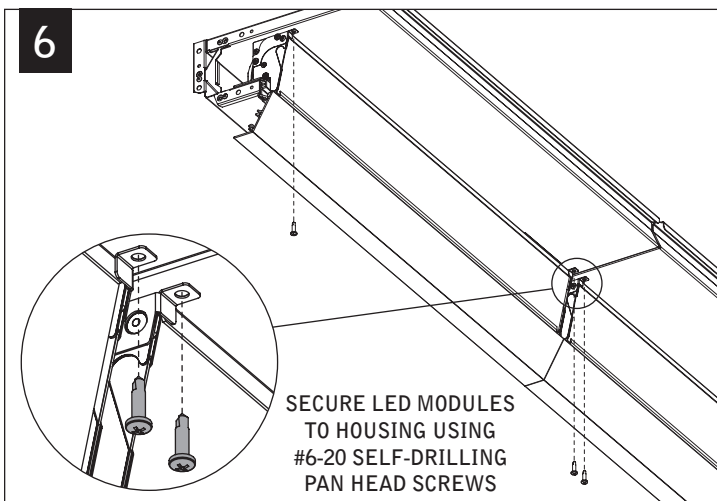
CONNECT THRU-WIRE FOR RUNS

5



POSITION LED MODULES 2" MAX FROM ONE ANOTHER AND 3" MAX FROM WALL

6

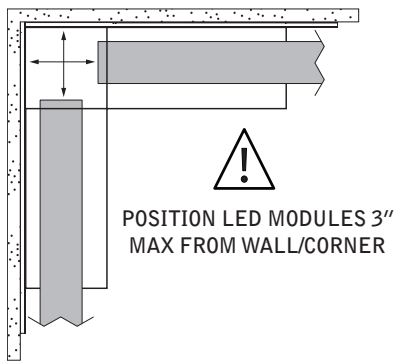


SECURE LED MODULES  
TO HOUSING USING  
#6-20 SELF-DRILLING  
PAN HEAD SCREWS

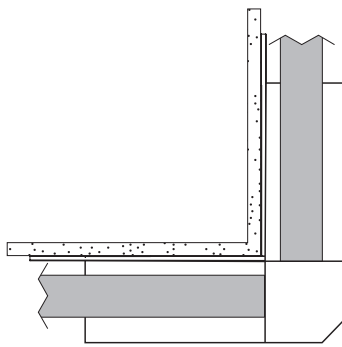
Luminaires must be installed by a qualified electrician (check with local and national codes for proper installation).  
To prevent electrical shock, disconnect electrical supply before installation or servicing.

## CORNERS

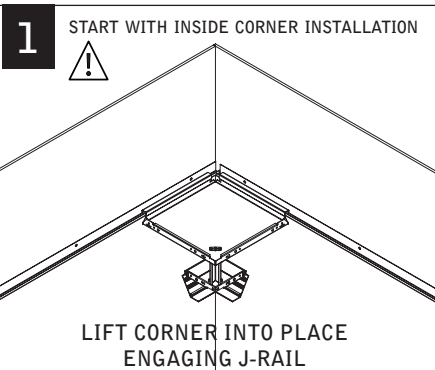
### INSIDE CORNER:



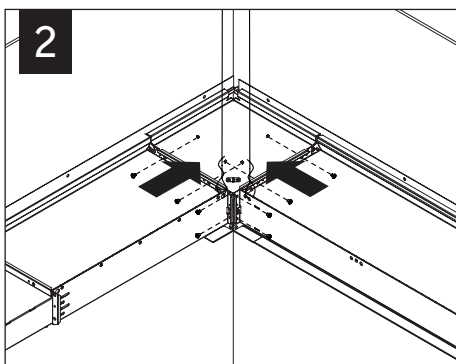
### OUTSIDE CORNER:



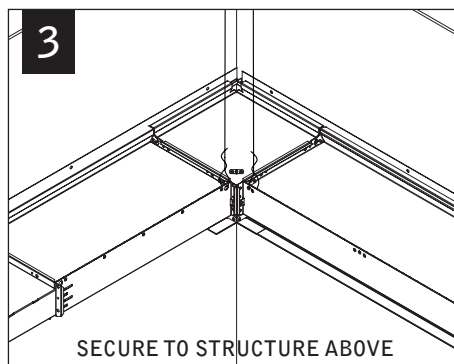
### INSIDE CORNER



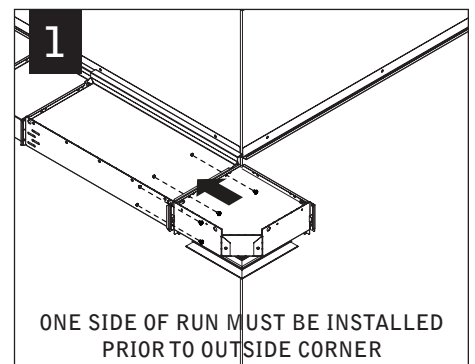
### INSIDE CORNER



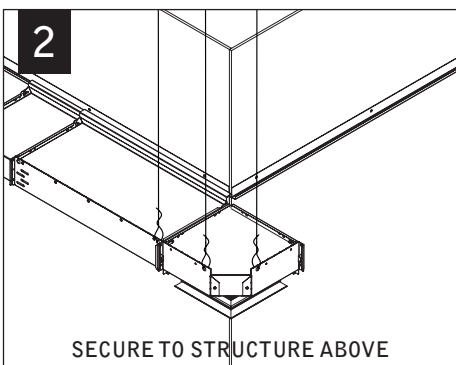
### INSIDE CORNER



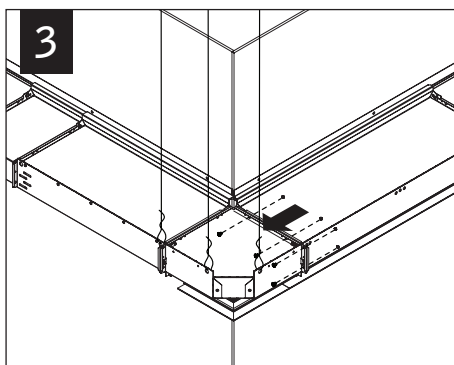
### OUTSIDE CORNER



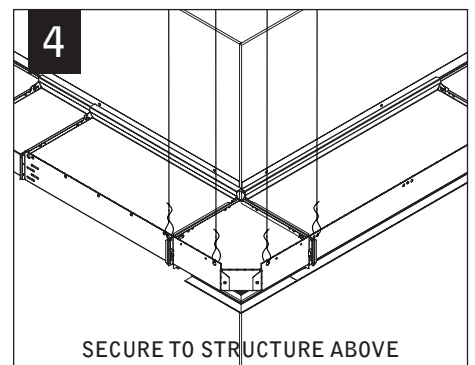
### OUTSIDE CORNER



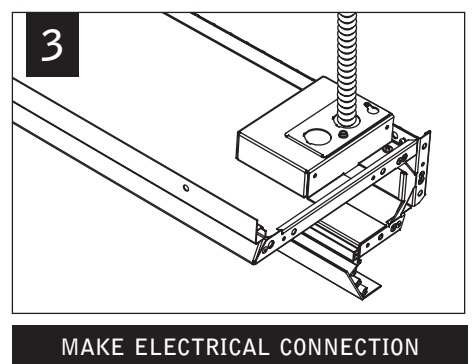
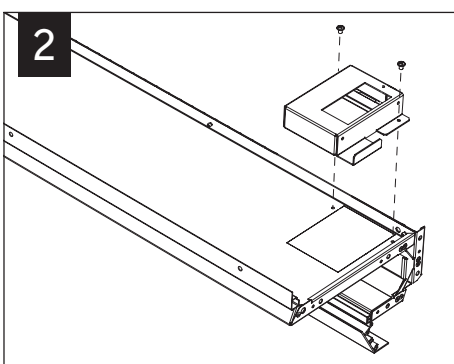
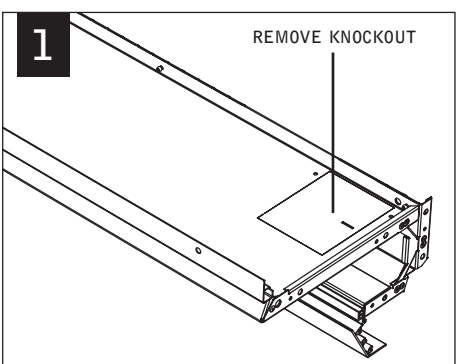
### OUTSIDE CORNER



### OUTSIDE CORNER

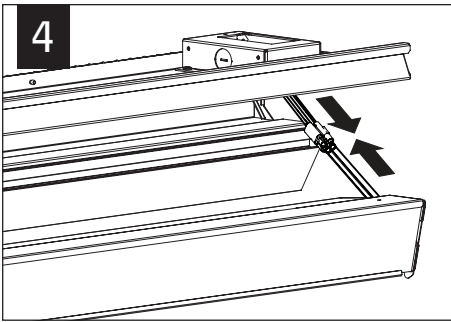


## EMERGENCY CIRCUIT



MAKE ELECTRICAL CONNECTION

Luminaires must be installed by a qualified electrician (check with local and national codes for proper installation).  
To prevent electrical shock, disconnect electrical supply before installation or servicing.



4  
MAKE ELECTRICAL CONNECTION

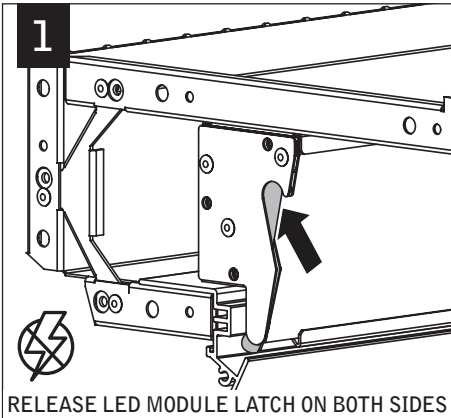
EMERGENCY



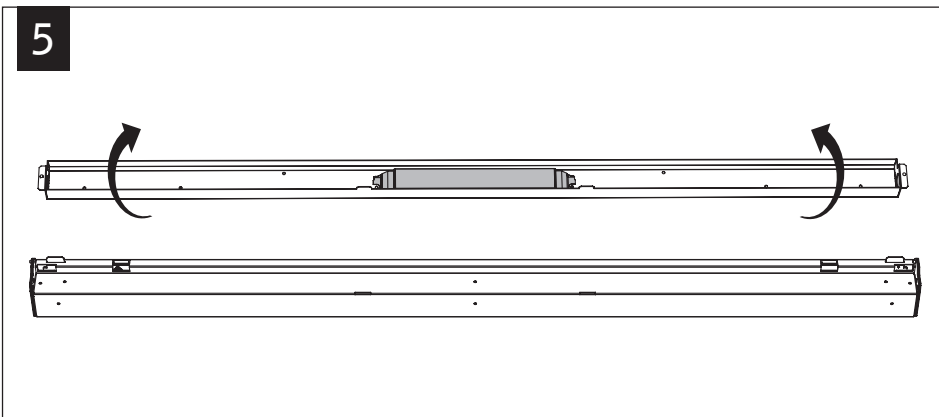
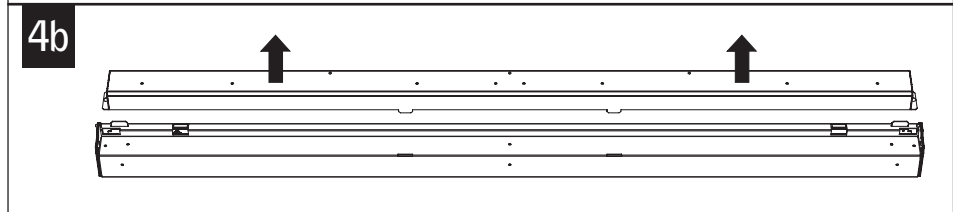
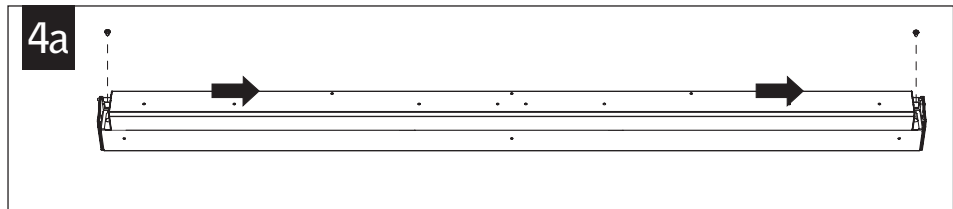
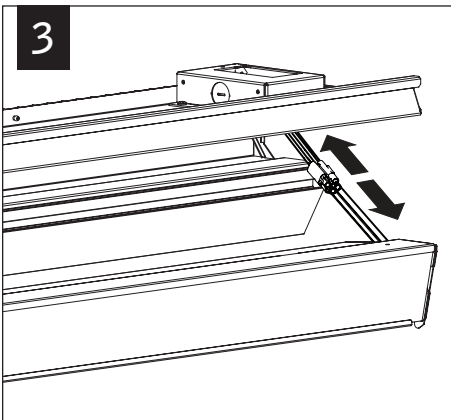
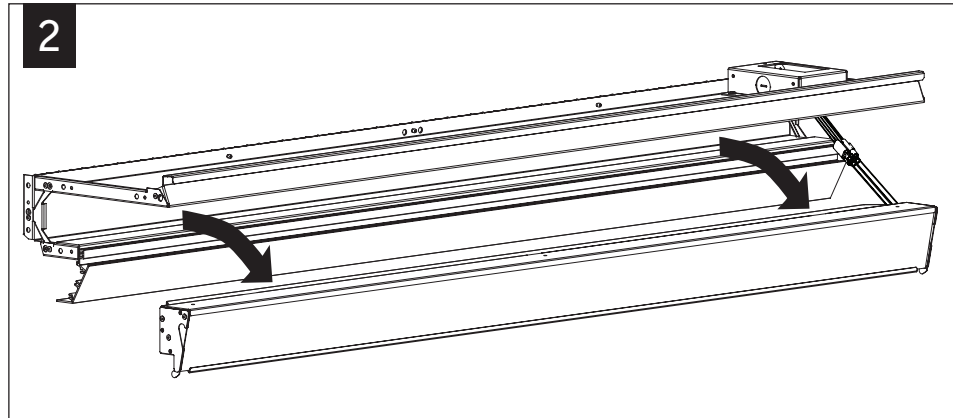
SEE BATTERY MANUFACTURER  
INSTRUCTIONS

EMERGENCY MAXIMUM MOUNTING HEIGHT:  
12.00'

DRIVER SERVICE



1  
RELEASE LED MODULE LATCH ON BOTH SIDES



Contractor is responsible for adequately reinforcing walls and/or ceilings to support luminaire weight. Focal Point, LLC accepts no responsibility for inadequately reinforced walls and/or ceilings. The information contained in this drawing is the sole property of Focal Point, LLC. Any reproduction in part or whole without the written permission of Focal Point, LLC is prohibited.

# Focus™ Wall Wash

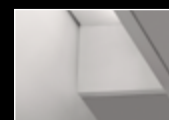
LED



inside corner

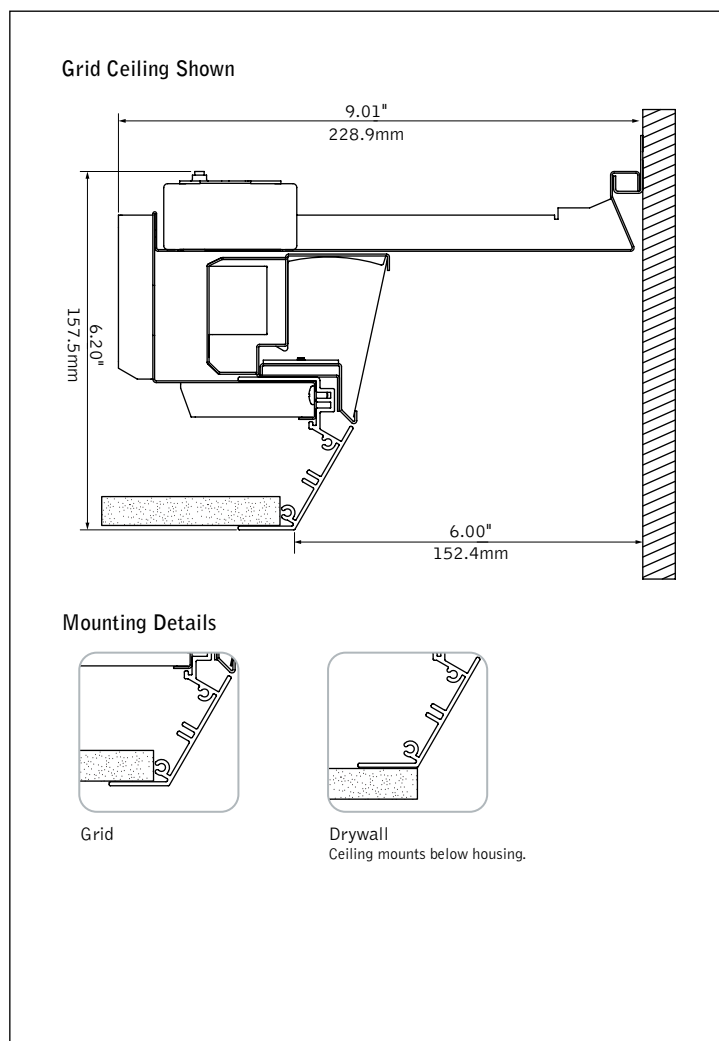


outside corner



optional flanged  
end detail

## DIMENSIONAL DATA



## FEATURES

Low profile LED wall wash provides a glowing transition between wall and ceiling and shadow-free illumination.

Housing creates 6" architectural slot with extruded splay to conceal light source from view.

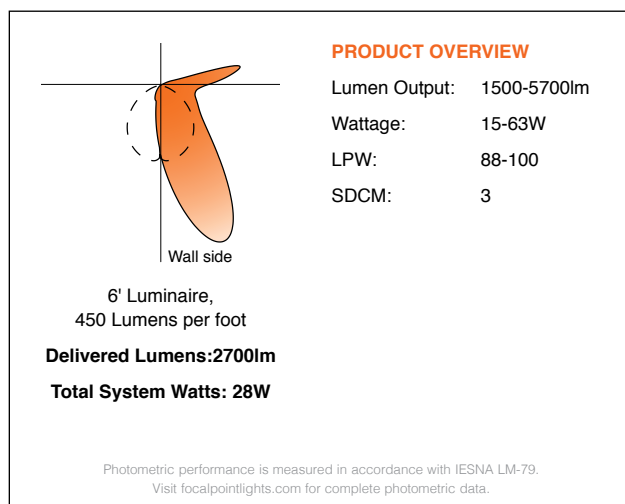
Infinite lengths with the ability for pattern creation with 90° inside and outside corners.

Ease of installation and maintenance with rough-in housing and separate snap and lock LED light module.

Integrated sliding sleeve extends to meet precise dimensions of a finished space with +/- 2" adjustment.

Preferred Light: Lighting for better color rendition and human preference.

## PERFORMANCE

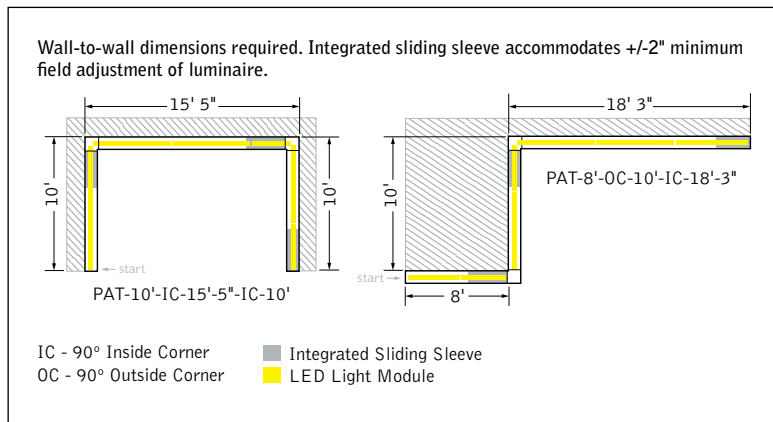




fixture:

project:

PATTERN CONFIGURATIONS (continued on page 3)



SPECIFICATIONS

LED System

Proprietary linear LED module incorporates premium LEDs on a robust platform to achieve excellent thermal management. Module is available in 2700K, 3000K, 3500K or 4000K with CRI > 80 or CRI>90. LED module and driver are replaceable from below.

Construction

One-piece, 22Ga. steel rough-in housing powder coated in matte satin white. Housing includes extruded splay in a matte satin white finish and steel alignment bracket. Light engine module constructed with 22Ga. steel and finished in matte satin white. Light engine must be installed after rough-in housing installation. Inside/outside corners and sliding sleeve fabricated with 22Ga. steel and include extruded aluminum splay.

Optic

Semi-specular aluminum optical reflector with .020" thick diffuser lens.

Electrical

Light engine module includes driver and wiring harness. Single power drop can power up to 40' or more in a single run. Galvanized feed box with access plate provided for every start of run luminaire and installed in the field. Emergency circuit feed locations are field located by positioning of feed box. Standard 120-277V driver includes 0-10V analog dimming. Power factor > .9.

Labels

UL and cUL listed. Suitable for Dry or Damp Locations, indoor use only. Suitable for wood ceiling applications.

Emergency Battery

Bodine BSL-310LP. Emergency output for 90 minutes. Maximum mounting height: 12ft.

Finish

Polyester powder coat applied over a multi-stage pre-treatment.

Lumen Maintenance

Reported: L70 > 60,000 hours      Calculated: L70 at > 95,000 hours  
(Derived from EPA TM-21 calculator. Based on typical conditions, consult factory for additional data.)

Reliability

At Focal Point, our products are designed to stand the test of time. Each luminaire is engineered using superior components, manufactured with the utmost care and rigorously tested. Contact us for reliability data.

Warranty

LED system rated for operation in ambient environments up to 25°C. 5 year limited warranty.

6' PERFORMANCE CHART

Lumens per Foot	Delivered Lumens	Tested System Watts	LPW
250LF	1500	15	100
450LF	2700	28	96
650LF	3900	42	92
800LF	4800	51	90
950LF	5700	63	88

Based on 3500K, 80 CRI, 6' lengths. Lumen Multipliers: Preferred Light = 0.65, 90+ CRI = 0.87. Lumen output may vary +/- 5%. Actual wattage may vary +/- 5%.

Focal Point LLC reserves the right to change specifications for product improvement without notification.

ORDERING

Luminaire Series	FWSL	FWSL
Focus Wall Wash	FWSL	
Shielding		FL
Frosted Lens	FL	
Lumen Output		
250 Lumens per foot	250LF	
450 Lumens per foot	450LF	
650 Lumens per foot	650LF	
800 Lumens per foot	800LF	
(Not available with DALI)		
950 Lumens per foot	950LF	
(Not available with Lutron or DALI drivers)		
Color Temperature		
2700K, 80+ CRI or 90+ CRI	27K or 927K	
3000K, 80+ CRI or 90+ CRI	30K or 930K	
3500K, 80+ CRI or 90+ CRI	35K or 935K	
4000K, 80+ CRI or 90+ CRI	40K or 940K	
3500K, Preferred Light	P35K	
(6" increments only)		
Circuits		1C
Single Circuit	1C	
Voltage		
120/277 UNV	UNV	
347 Volt	347	
(650LF & LD1 driver only)		
Driver		
0-10V - 10% Dimming	LD1	
0-10V - 1% Dimming	L11	
Lutron H-Series - 1% Dimming	LH1	
Lutron 5-Series - 5% Dimming	LU5	
DALI - 1% Dimming	D11	
Mounting		U
Universal	U	
Factory Options		
Air Return	AR	
Chicago Plenum	CP	
Emergency Circuit	EC	
Emergency Battery Pack	EM	
Flanged Ends	FL	
Finish		WH
Matte White Housing	WH	
Luminaire Length		ft in
(2' minimum. Leave blank for pattern ordering.)		
Specify luminaire/row length in 1" increments	_ft _in	
Pattern Options		
Specify patterns based on wall-to-wall dimensions	PAT-	
(See Pattern Configurations for example)		

Pattern Example: FWSL-FL-650LF-35K-1C-UNV-LD1-U-WH-PAT-10'-IC-20'-5"-IC-10'



Options in orange qualify for the Quickship program. 10-day up to 400ft total. Refer to Quickship Guide for complete details.

For more information visit focalpointlights.com/reference or consult factory.

## PATTERN CONFIGURATIONS

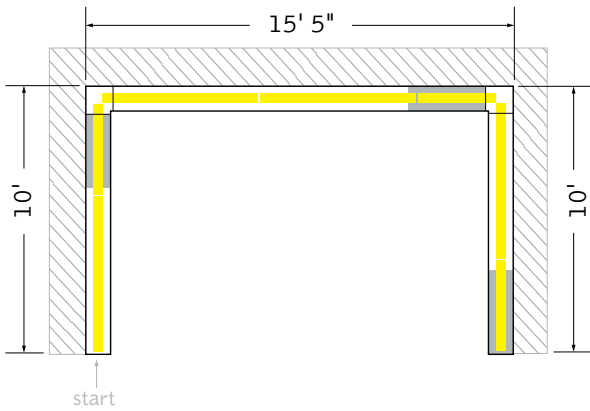
Specify wall-to-wall dimensions in feet and inches. Integrated sliding sleeve accommodates +/- 2" minimum field adjustment of luminaire at corners and end of run.



### KEY

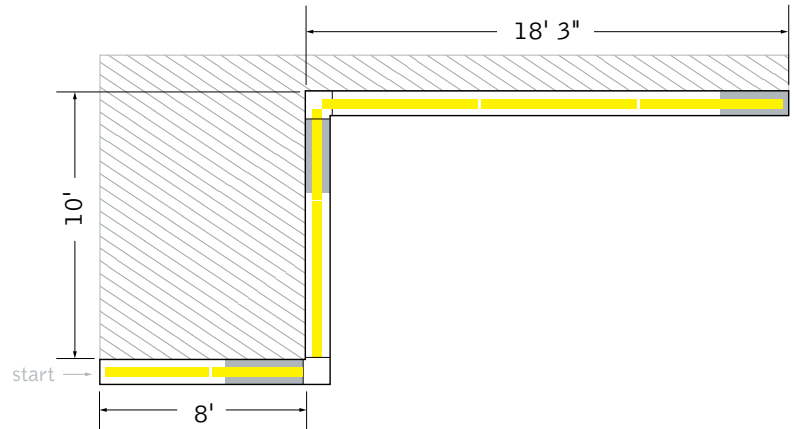
- IC - 90° Inside Corner
- OC - 90° Outside Corner
- - Integrated Sliding Sleeve
- - LED Light Module

### U-Pattern



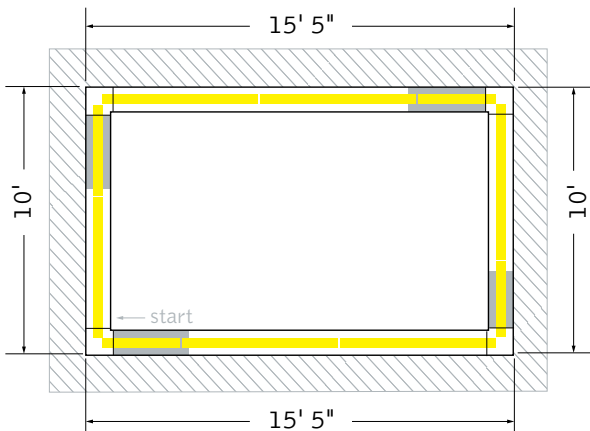
PAT-10'-IC-15'-5"-IC-10'

### Z-Pattern



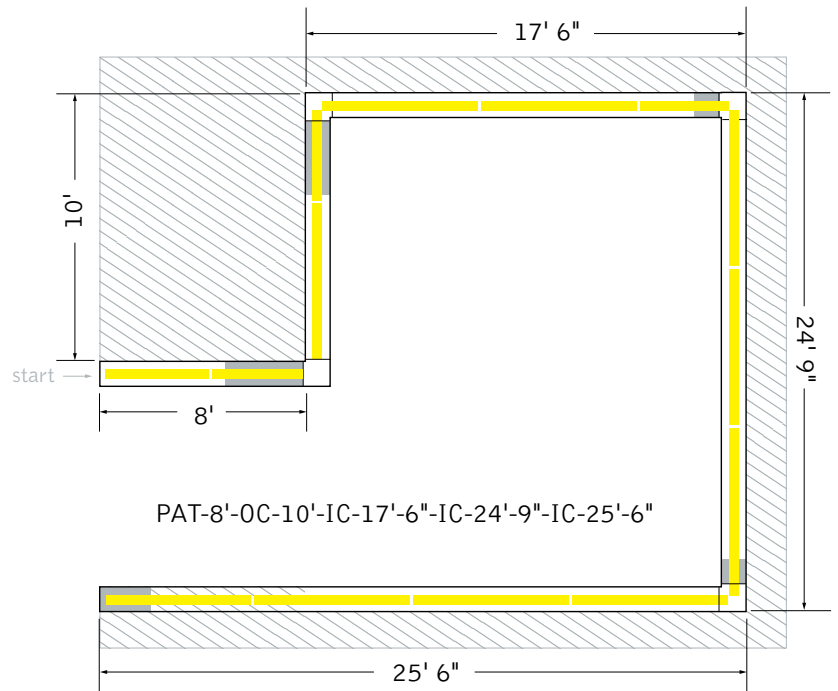
PAT-8'-OC-10'-IC-18'-3"

### Square/Rectangular Pattern



PAT-10'-IC-15'-5"-IC-10'-IC-15'-5"-IC

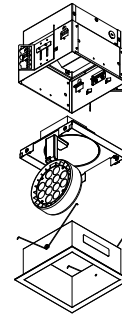
### Unique Pattern



PAT-8'-OC-10'-IC-17'-6"-IC-24'-9"-IC-25'-6"

# Next generation lighting perfected.

## LLABR-VA SPOT LED 13 W/22 W RECESSED LIGHTING



PHILIPS LIGHTOLIER, LYTESPAN, RECESSED LIGHTING,  
SPOT LED, 13 W/1000LM AND 22 W/1600LM, LLABR-VA

### Complete unit

Frame-in kit + Fixture + optional Mud-in kit or accessories

Project: \_\_\_\_\_

Location: \_\_\_\_\_

Catalog No: \_\_\_\_\_

Fixture Type: \_\_\_\_\_

Mfg: \_\_\_\_\_ Lamps: \_\_\_\_\_ Qty: \_\_\_\_\_

Notes: \_\_\_\_\_

### Frame-in kit

example: LLABR24WH030H3RSVA

Series	Length	Finish	Engine	CCT	Heads	Optics	Version
<b>LLABR</b>							
<b>LLABR</b> Spot LED recessed	<b>9</b> 9" for 1 head <b>17</b> 17" for 2 head <b>24</b> 24" for 3 head <b>32</b> 32" for 4 head	<b>WH</b> Matte White <b>BK</b> Matte Black	<b>0</b> 15.5 W - 9 LEDs <b>1</b> 26.7 W - 12 LEDs	<b>27</b> 2700K <b>30</b> 3000K <b>40</b> 4000K <sup>1</sup>	<b>H1</b> 1 head <b>H2</b> 2 head <b>H3</b> 3 head <b>H4</b> 4 head	<b>RS</b> Spot <b>RNF</b> Narrow flood <b>RF</b> Flood	<b>VA</b> Version A

### Fixture

example: LLABR24WHW

Series	Length	Finish	Flange
<b>LLABR</b>			
<b>LLABR</b> Spot LED recessed	<b>9</b> 9" for 1 head <b>17</b> 17" for 2 head <b>24</b> 24" for 3 head <b>32</b> 32" for 4 head	<b>WH</b> Matte White <b>BK</b> Matte Black	<b>W</b> With flange <b>FT</b> Flangeless trim

### Mud-in kit

example: LLABR24MK

Series	Length	Option
<b>LLABR</b>		
<b>LLABR</b> Spot LED recessed	<b>9</b> 9" for 1 head <b>17</b> 17" for 2 head <b>24</b> 24" for 3 head <b>32</b> 32" for 4 head	<b>MK</b> Mud-in kit only available with <b>FT</b> flangeless trim kit option

### Accessories<sup>2</sup>

example: 8595

Series	Finish
<b>Accessory holder<sup>3</sup></b>	
<b>8595</b> Spot LED 15.5 W	<b>WH</b> Matte white
<b>LLAB1AH</b> Spot LED 26.7 W	<b>BK</b> Matte black
<b>Snoot</b>	
<b>23SNT6</b> Compatible Snoot for Spot LED 15.5 W & 26.7 W	<b>WH</b> Matte white
	<b>BK</b> Matte black
<b>Diffusion filter</b>	
<b>AF4</b> Compatible Filter for Spot LED 15.5 W & 26.7 W	
<b>Color filter<sup>4</sup></b>	
<b>ADF4</b> Compatible Filter for Spot LED 15.5 W & 26.7 W	
<b>Hex cell louver</b>	
<b>AL4HC</b> Compatible Louver for Spot LED 15.5 W & 26.7 W	

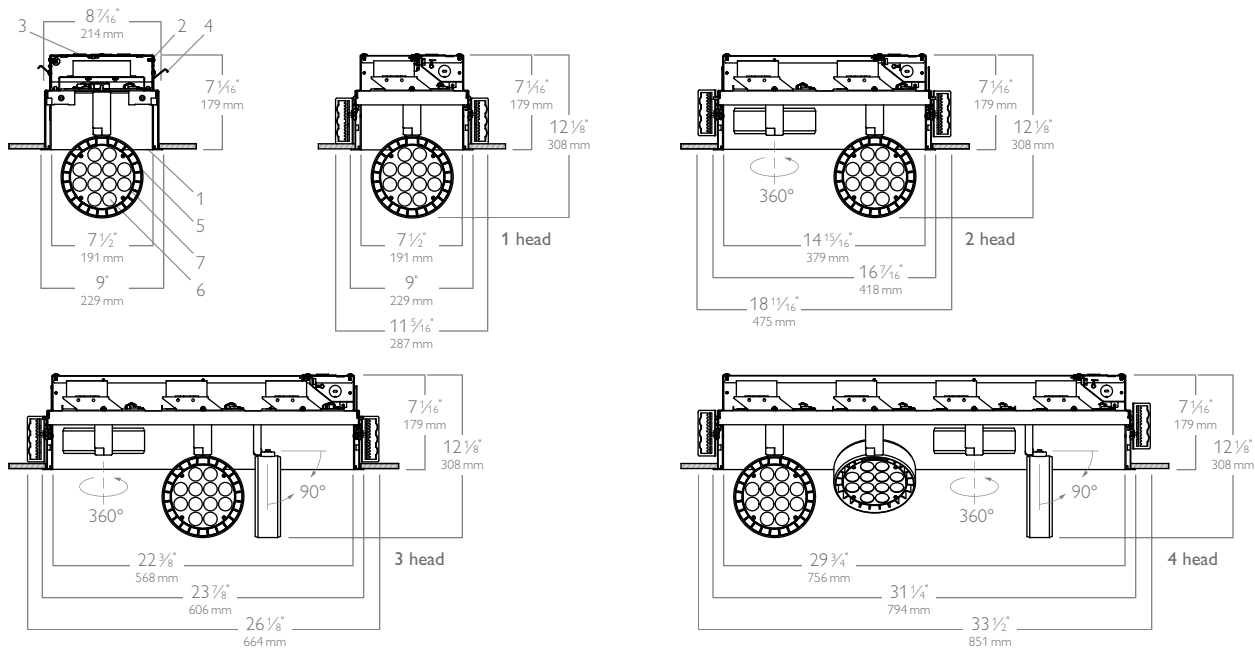
1. Consult factory for availability.
2. Accessories are not Energy Star qualified.
3. Accessory holder accept two accessories.
4. Color filters will project colored light on ceiling.



**PHILIPS**  
**LIGHTOLIER**

# LLABR-VA SPOT LED 13 W/22 W RECESSED LIGHTING

## Spot LED 26.7 W



## Features

- Trim:** Extruded aluminum, welded together on all corners, with powder coat finish.
- Housing:** Universal housing voltage (120V-277Vac). Low profile (7"). Die-formed 22 ga. steel, black finish.
- Junction box:** Integrated junction box with separate wire compartment. Dual access from inside/outside.
- Mounting:** Brackets are adjustable vertically from inside of housing. Maximum ceiling thickness is 1.625". Accepts various types of mounting bars (1/2" EMT, C channel, Philips Lightolier Mounting Bars – all ordered separately). For use in T-grid or sheet rock ceilings.
- Thermal management:** Proprietary heat sink design was developed using the latest Computational Fluid Dynamics Software. Die cast aluminum effectively cools LEDs providing a minimum 50,000 hr lifetime at 70% lumen maintenance.
- Optic assembly:** Efficient TIR (total internal reflection) optically clear thermoplastic lenses held securely by frosted translucent thermoplastic holder. Positive securement into luminaire with screws and accurately positioned on LEDs with locating pins. Prevents dust and contaminants from entering LED compartment.
- Light source:** High brightness white LED. LEDs selected for tight color consistency between luminaires. 80-85 CRI, 3 step MacAdam ellipse maximum.
- Finish:** Powder coated finish.

## Application Compatibility

Series	T-Grid	Sheet Rock
1 Head	Flange	Flange/Flangeless
2 Head	Flange	
3 Head	Flange/Flangeless*	
4 Head	Flange	

\* Additional T-Grid runners are required (supplied by others).

## Dimming

Consult factory for dimming.

## Electrical

**Electronic power supply:** RoHS compliant Class 2 power unit for use in a damp or dry location (Outdoor Type1 IP66). Class A sound rated unit tolerates sustained open circuit and short circuit output conditions without damage. Complies with FCC rules per Title 47 CFR PART 15 Non-Consumer (Class A) for EMI/RFI (conducted and radiated) at full load.

**Electronic power supply**  
**Input voltage:** 120V, 277V at 50/60Hz  
**High power factor:** >0.9  
**CRI:** 85 (typical)

**Lumen maintenance:**  
 >70% of initial lumens at 50,000 hrs.  
**Photometric performance:**  
 Tested in accordance with LM79

**Phase 2 Driver (XI025C100V036DNM1) w/o TP**  
**9 LED: 2700K**  
**Nominal input power: 13 W**

Reflector	Beam sprd	Lms	Efficacy	CBCP
RS	10°	995.8	76.6	25,835.0
RNF	20°	943.6	72.6	4,534.6
RF	34°	926.2	71.2	2,196.0

**9 LED: 3000K**  
**Nominal input power: 13 W**

Reflector	Beam sprd	Lms	Efficacy	CBCP
RS	10°	1087.0	83.6	28,201.4
RNF	20°	1030.0	79.2	4,949.9
RF	34°	1011.0	77.8	2,397.2

**12 LED: 2700K**

**Nominal input power: 22 W**

Reflector	Beam sprd	Lms	Efficacy	CBCP
RS	10°	1578.5	71.8	36,449.5
RNF	22°	1478.1	67.2	7,480.2
RF	36°	1465.0	66.6	3,225.2

**12 LED: 3000K**

**Nominal input power: 22 W**

Reflector	Beam sprd	Lms	Efficacy	CBCP
RS	10°	1682.0	76.5	38,838.4
RNF	22°	1575.0	71.6	7,970.5
RF	36°	1561.0	71.0	3,436.6

**12 LED: 4000K**

**Nominal input power: 22 W**

Reflector	Beam sprd	Lms	Efficacy	CBCP
RS	10°	1843.6	83.8	42,569.2
RNF	22°	1726.3	78.5	8,736.2
RF	36°	1711.0	77.8	3,766.3

## Labels

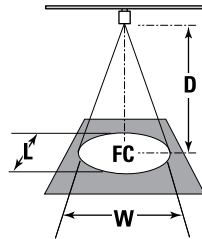
cULus listed. Suitable for damp location.  
 Energy Star certified (based on standard product).  
 Title 24 compliant  
 5 year warranty.

# LLABR-VA SPOT LED 13W/22W RECESSED LIGHTING

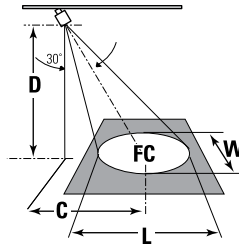
## Aiming angle

**L** and **W** are the outer points where the candle power drops to 50% of the maximum. **FC** are the initial footcandles at the center of the beam. Data shown is for 3000K, for 2700K multiply **FC** by 0.91.

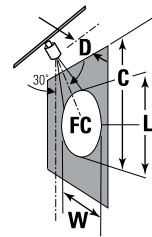
**L** = Beam length  
**W** = Beam width  
**D** = Distance  
**C** = Distance to center beam  
**A** = Aiming angle  
**FC** = Footcandles  
**CBCP** = Center Beam Candle Power



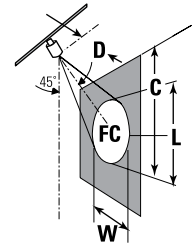
0° horizontal aiming angle



30° horizontal aiming angle



30° vertical aiming angle



45° vertical aiming angle

	Beam spread (To 50% CBCP)	CBCP	Rated Life (Hrs.)	D	C	FC	L	W	D	C	FC	L	W	D	C	FC	L	W	D	C	FC	L	W
<b>LLABR</b> 15.5W 3000K Spot		28,201	50,000	6	0.0	783	1.0	1.0	6	3.5	509	1.3	1.1	2	3.5	881	1.3	0.6	3	3.0	1108	1.0	0.7
				8	0.0	441	1.3	1.3	8	4.6	286	1.7	1.5	3	5.2	392	2.0	1.0	4	4.0	623	1.3	0.9
				10	0.0	282	1.6	1.6	10	5.8	183	2.2	1.9	4	6.9	220	2.6	1.3	5	5.0	399	1.6	1.1
				12	0.0	196	1.9	1.9	12	6.9	127	2.6	2.2	5	8.7	141	3.3	1.6	6	6.0	277	1.9	1.4
<b>LLABR</b> 15.5W 3000K Narrow Flood		4,950	50,000	6	0.0	137	2.1	2.1	6	3.5	89	2.9	2.5	2	3.5	155	3.2	1.4	3	3.0	194	2.2	1.5
				8	0.0	77	2.9	2.9	8	4.6	50	3.9	3.3	3	5.2	69	4.8	2.1	4	4.0	109	3.0	2.0
				10	0.0	49	3.6	3.6	10	5.8	32	4.8	4.1	4	6.9	39	6.3	2.9	5	5.0	70	3.7	2.5
				12	0.0	34	4.3	4.3	12	6.9	22	5.8	5.0	5	8.7	25	7.9	3.6	6	6.0	49	4.4	3.0
<b>LLABR</b> 15.5W 3000K Flood		2,397	50,000	6	0.0	67	3.5	3.5	6	3.5	43	4.8	4.1	2	3.5	75	6.4	2.4	3	2.0	94	3.9	2.5
				8	0.0	37	4.7	4.7	8	4.6	24	6.5	5.4	3	5.2	33	9.5	3.5	4	3.0	53	5.2	3.3
				10	0.0	24	5.9	5.9	10	5.8	16	8.1	6.8	4	6.9	19	12.7	4.7	5	4.0	34	6.4	4.2
				12	0.0	17	7.1	7.1	12	6.9	11	9.7	8.2	5	8.7	12	15.9	5.9	6	5.0	24	7.7	5.0
<b>LLABR</b> 26.7W 3000K Spot		38,838	50,000	6	0.0	1079	1.0	1.0	6	3.5	701	1.3	1.1	2	3.5	1214	1.3	0.7	3	3.0	1526	1.0	0.7
				8	0.0	607	1.3	1.3	8	4.6	394	1.7	1.5	3	5.2	539	2.0	1.0	4	4.0	858	1.3	0.9
				10	0.0	388	1.6	1.6	10	5.8	252	2.2	1.9	4	6.9	303	2.7	1.3	5	5.0	579	1.6	1.2
				12	0.0	270	2.0	2.0	12	6.9	175	2.6	2.3	5	8.7	194	3.3	1.6	6	6.0	381	2.0	1.4
<b>LLABR</b> 26.7W 3000K Narrow Flood		7,970	50,000	6	0.0	221	2.2	2.2	6	3.5	144	3.0	2.6	2	3.5	249	3.3	1.5	3	3.0	313	2.3	1.6
				8	0.0	125	3.0	3.0	8	4.6	81	4.0	3.4	3	5.2	111	5.0	2.2	4	4.0	176	3.1	2.1
				10	0.0	80	3.7	3.7	10	5.8	52	5.0	4.3	4	6.9	62	6.6	3.0	5	5.0	113	3.8	2.6
				12	0.0	55	4.4	4.4	12	6.9	36	6.0	5.1	5	8.7	40	8.3	3.7	6	6.0	78	4.6	3.1
<b>LLABR</b> 26.7W 3000K Flood		3,437	50,000	6	0.0	95	4.0	4.0	6	3.5	62	5.5	4.6	2	3.5	107	7.9	2.6	3	3.0	135	4.5	2.8
				8	0.0	54	5.3	5.3	8	4.6	5	7.3	6.1	3	5.2	48	11.8	4.0	4	4.0	76	5.9	3.7
				10	0.0	34	6.6	6.6	10	5.8	22	9.2	7.6	4	6.9	27	15.8	5.3	5	5.0	49	7.4	4.7
				12	0.0	24	7.9	7.9	12	6.9	16	11.0	9.2	5	8.7	17	19.7	6.6	6	6.0	34	8.9	5.6



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Specifications are subject to change without notice.  
[www.philips.com/luminaires](http://www.philips.com/luminaires)

LLABR-VA 05/14 page 3 of 3

Philips Lighting Company  
200 Franklin Square Drive  
Somerset, NJ 08873  
Phone: 855-486-2216

Philips Lighting Company  
281 Hillmount Road  
Markham ON, Canada L6C 2S3  
Phone: 800-668-9008



PRODUCT FEATURES

- Highly-contemporary wall sconce featuring a simple cube shape
- Can be installed in any direction with no effect on light output
- Available in on-trend Aged Brass or Satin Nickel
- Fully dimmable integrated LED light source
- Ideal for hallway lighting, bedroom lighting and foyer lighting
- 5 year warranty with integrated LED. Visit [techlighting.com](http://techlighting.com) About Us for more warranty details



LAMPING

LED includes 9 watt 455 delivered lumens 90 CRI 3000K. Dimmable with a low-voltage electronic dimmer. Can be mounted any direction. ADA compliant. 120v or 277v.

Satin Nickel



Aged Brass

Satin Nickel

Aged Brass

Satin Nickel

ORDERING INFORMATION

700WSMTR FINISH	LAMP
R AGED BRASS	-LED930 LED 90 CRI 3000K 120V
S SATIN NICKEL	-LED930-277 LED 90 CRI 3000K 277V

700WSMTR \_\_\_\_\_

JOB NAME \_\_\_\_\_

NOTES \_\_\_\_\_

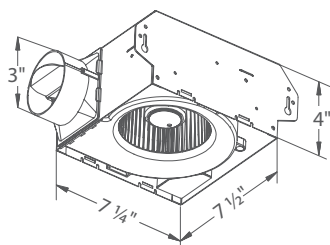
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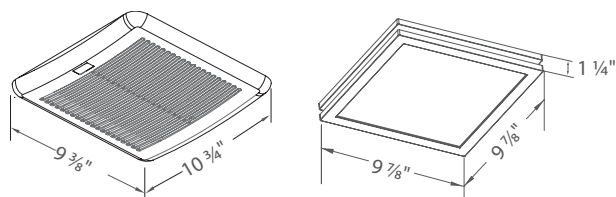
# Specifications

Delta BreezSlim  
Perfectly quiet. Perfectly green.

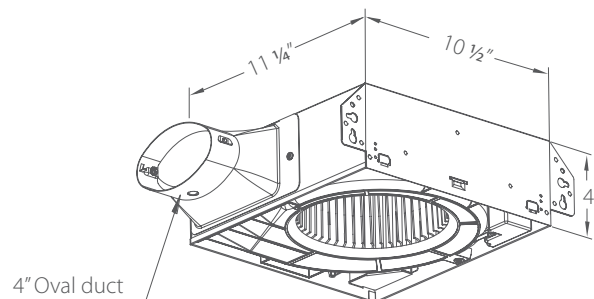
Delta BreezSlim series ventilation fans deliver extraordinary power and performance in a compact design that is especially suited for challenging space requirements. Can be either ceiling or wall mounted.



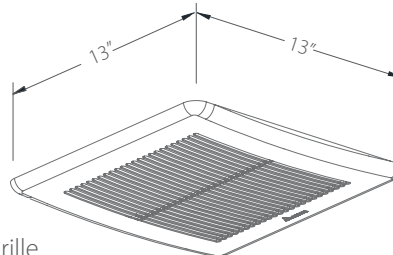
Fan Housing for SLM50 and SLM70



Fan Grille



Fan Housing for SLM80 and SLM100



Fan Grille

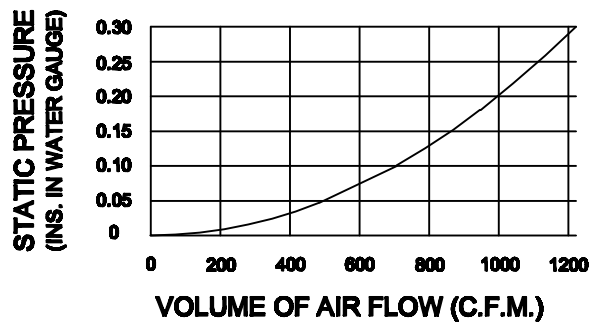
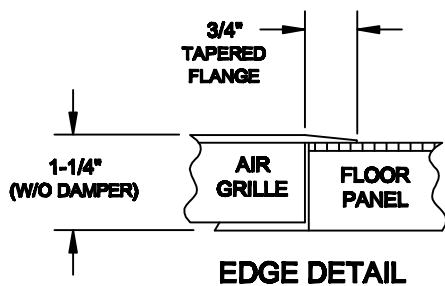
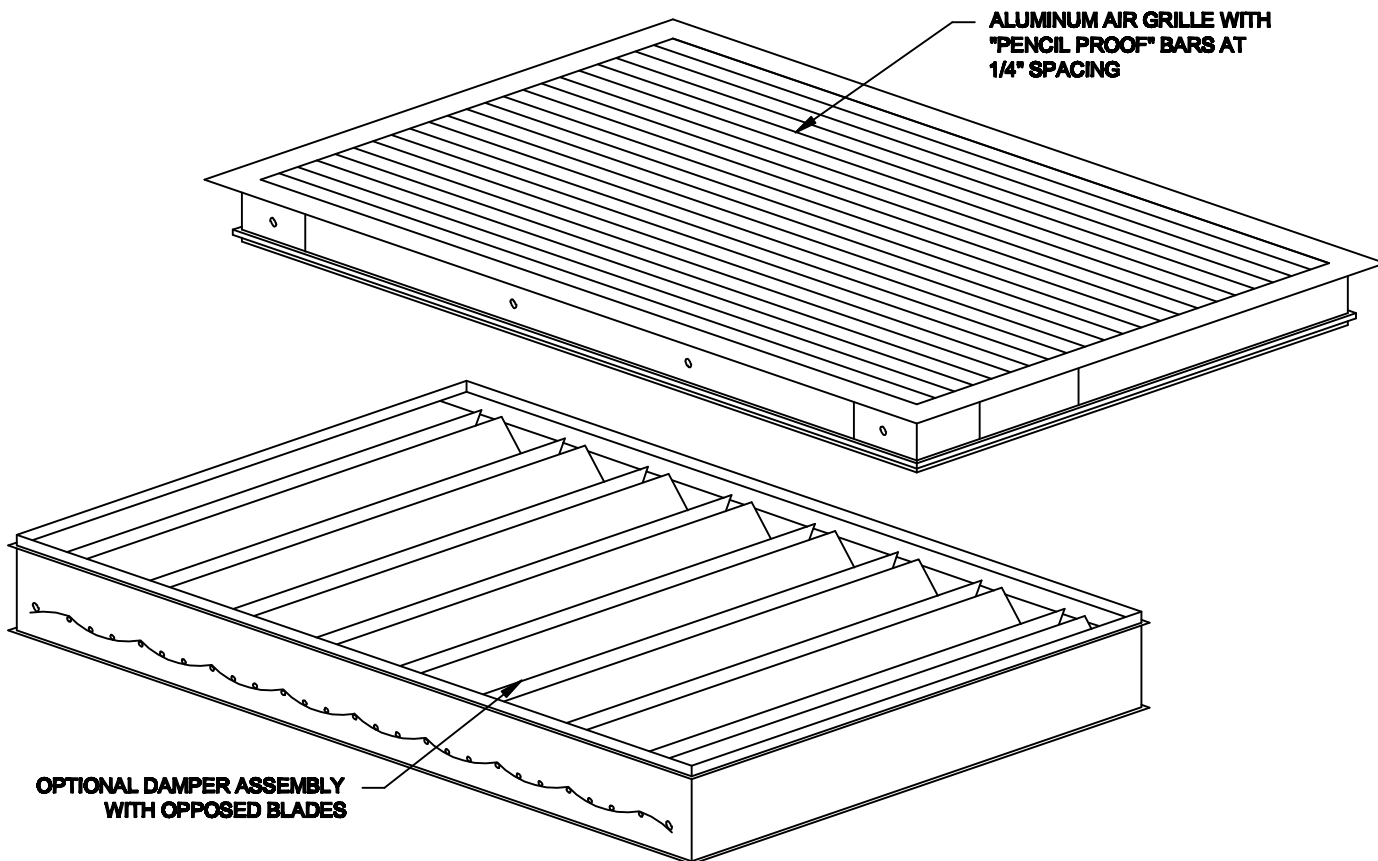
Delta BreezSlim Series	SLM50		SLM70 / SLM70H		SLM70ELED		SLM70D				SLM80		SLM100	
							Continuous Low Speed		Full Speed		4" Oval Duct		4" Oval Duct	
Fan Speed	Full Speed		Full Speed		Full Speed						Full Speed		Full Speed	
Static Pressure (Inches w.g.)	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25	0.1	0.25
Air Flow (CFM)	50	36	70	54	70	53	40	25	70	50	80	62	100	84
Sones	1.0	1.2	2.0	1.5	2.0	1.5	0.8	1.0	2.0	1.5	0.6	1.1	1.0	1.5
Power Consumption (Watts)	6.4	6.3	13.2	11.6	13.2	11.6	5.0	6.0	13.2	11.6	8.5	10.9	14.5	17.7
Energy Efficiency (CFM/Watt)	11.6	7.4	5.8	5.0	6.0	5.4	12.9	6.3	7.1	6.2	9.4	5.6	6.8	4.7
Current (Amps)	0.18 Max		0.29 Max		0.29 Max		0.29 Max				0.26 Max		0.30 Max	
Power Rating (Volts/Hz)	120/60		120/60		120/60		120/60				120/60		120/60	
LED Light (Watts)					13.0									
Duct Diameter	3"		3"		3"		3"				4" Oval		4" Oval	
Mounting Opening	7.25" x 7.5"		7.25" x 7.5"		7.25" x 7.5"		7.25" x 7.5"				11.25" x 10.5"		11.25" x 10.5"	
Automatic Operation			SLM70H Yes (humidity)											
Mounting Depth	4"		4"		4"		4"				4"		4"	
Grille Size	9.375" x 10.75"		9.375" x 10.75"		9.875" x 9.875"		9.375" x 10.75"				13"x13"		13"x13"	
Shipping Gross Weight (Lbs)	5		5		5		5				9.4		9.4	
cUL Tub/Shower Enclosure	Yes		Yes		Yes		Yes				Yes		Yes	
California Title 24 Compliant	Yes		Yes		Yes		Yes				Yes		Yes	
Mfg in ISO 9001 Certified Factory	Yes		Yes		Yes		Yes				Yes		Yes	
ENERGY STAR® Qualified	Yes		Yes		Yes		Yes				Yes		Yes	
ENERGY STAR Most Efficient 2021	Yes													
Warranty (Years) (Watts)	3		3		3		3				3		3	

Design and specifications subject to change without notice.



46101 Fremont Blvd., Fremont, CA 94538  
tel 1.888.979.9889 | www.deltabreez.com

Delta BreezSlim Series - 02/2021



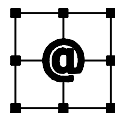
### STANDARD FEATURES

1. 12 x 18 AIR GRILLE REQUIRES A 12" x 18" CUTOUT IN FLOOR PANEL.
2. GRILLE IS MADE ENTIRELY OF ALUMINUM WITH TOP SURFACE EXTRUDED BARS AT 1/4" APART TO BE "PENCIL PROOF".
3. EXPOSED SURFACE OF GRILLE IS 6061-T8 ALUMINUM, ETCHED AND ANODIZED WITH FEATHERED FLANGE TO AVOID A TRIPPING HAZARD.

### OPTIONS

1. OPTIONAL DAMPER ASSEMBLY HAS OPPOSED BLADES AND CAN BE ADJUSTED FROM THE TOP WITH A STANDARD SCREWDRIVER.
2. OPTIONAL ELECTRICAL INSULATION BAND ALLOWS GRILLE TO BE INSULATED FROM STEEL FLOOR PANEL.
3. OTHER SIZES ARE AVAILABLE

**NOTE:** Cut-Sheet drawing and specifications are subject to change without prior notice.



**ASM Modular System Inc.®**

9500 Industrial Center Dr.  
Ladson, SC, 29466

www.asmproducts.com

Tel: 843-534-1110  
Fax: 843-534-1111

**12 x 18 SMART-GRILLE  
ALUMINUM AIR GRILLE**

7/09

CS-7260



Georgia-Pacific

## REFERENCE GUIDE: 56783A, 56784A, 56796A, 56797A, 56798, 56784AKB, 56796AKB

### Compact® Side-by-Side Tissue Dispenser

For questions regarding this dispenser or for replacement parts, please call: 1-866-HELLO GP (1-866-435-5647).

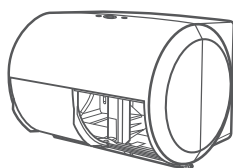
Visit [gppro.com](http://gppro.com) to learn more about all of our products and solutions.

Si tiene preguntas sobre este dispensador o desea adquirir piezas de repuesto, llame al número: 1-866-HELLO GP (1-866-435-5647).

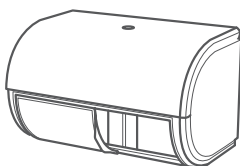
Visite el sitio web [gppro.com](http://gppro.com) para conocer más sobre nuestros productos y soluciones.

Pour toutes questions concernant ce distributeur ou pour des pièces de rechange, veuillez composer le 1-866-HELLO GP (1-866-435-5647).

Visitez [gppro.com](http://gppro.com) pour en savoir plus sur l'ensemble de nos produits et de nos solutions.

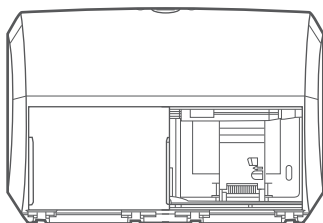


56783A, 56784A,  
56796A, 56797A

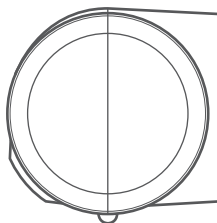


56798

10.75 in



7.15 in

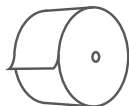


7.15 in

### Replacement Parts | Piezas de repuesto | Pièces de rechange

1-866-435-5647

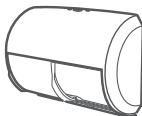
[www.gppro.com](http://www.gppro.com)



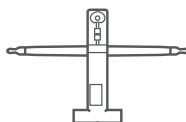
**Refill**  
Repuesto  
Recharge



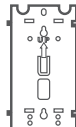
**Key**  
Llave  
Clé  
**SKU: 50504**



**Cover**  
Cubierta  
Couvercle  
BLACK SKU: 56751  
WHITE SKU: 56754  
GREY/BLUE SKU: 56752  
FAUX SS SKU: 56753  
SS SKU: ?????



**Spindle Assembly**  
Conjunto de eje  
Ensemble tige  
**SKU: xxxx**



**Mounting Bracket**  
Soporte de montaje  
Support de montage  
**SKU: 54019**

**!** The steps below describe using a mounting bracket (#54019 sold separately) to fasten the dispenser to a wall.

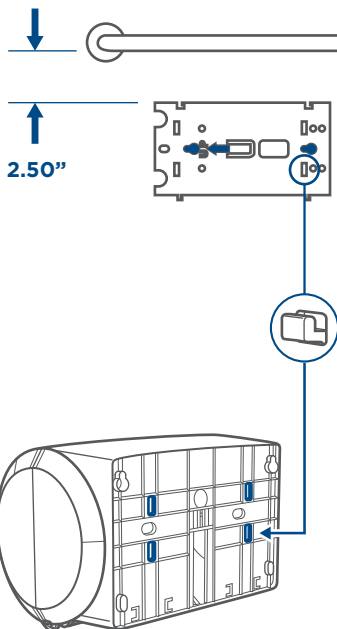
Las siguientes instrucciones describen cómo utilizar un soporte de montaje (n.º 54019 que se vende por separado) para asegurar el dispensador a la pared.

Les étapes ci-dessous décrivent l'utilisation d'un support de montage (no 54019; vendus séparément) pour fixer le distributeur au mur.

- 1** Position bracket as shown with the arrow facing left. With the top level, secure bracket to wall with two anchored screws using the keyhole slots indicated. **NOTE:** Top of the bracket should be at least 2.50" below any grab bars or other objects to ensure clearance for unlocking the unit with the key.

Coloque el soporte como se muestra y con la flecha señalando hacia la izquierda. Con la parte superior, asegure el soporte a la pared con dos tornillos fijados en las ranuras perforadas indicadas. **NOTA:** La parte superior del soporte debe estar al menos 2,50" por debajo de cualquier barra de agarre u otros objetos para asegurar que queda el espacio necesario para destrabar la unidad con la llave.

Placez le support comme montré, avec la flèche pointant vers la gauche. Avec le dessus du support de niveau, fixez le support au mur avec deux vis ancrées, dans les fentes indiquées. Remarque : Le dessus du support devrait être à au moins 2,50" (6,25 cm) sous toute barre d'appui ou autre élément afin qu'il soit possible de déverrouiller le distributeur avec la clé.



- 2** Fit dispenser on bracket engaging all clips as indicated. Lock into place by gently sliding dispenser to the right until it clicks into place.

Ajuste el dispensador sobre el soporte fijando todas las trabas como se indica. Asegure el dispensador en su lugar deslizándolo suavemente hacia la derecha hasta escuchar un "clic".

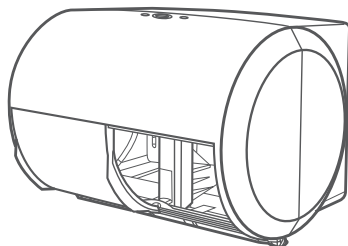
Installez le distributeur sur le support en engageant toutes les attaches, comme indiqué. Fixez-le en place en le glissant doucement vers la droite jusqu'à ce qu'il se mette en place avec un clic.



- 3** Installation is complete. For instructions on how to load tissue, proceed to the last page.

Terminó la instalación. Para obtener instrucciones sobre cómo colocar pañuelos de papel, consulte la última página.

L'installation est terminée. Pour obtenir des instructions sur la manière de charger le papier, reportez-vous à la dernière page.







# Betello® Comfort Height®

Two-piece elongated 1.28 gpf chair height toilet

## K-20198

### Features

- Two-piece design.
- Elongated bowl offers added room and comfort.
- Skirted trapway simplifies cleaning.
- ContinuousClean system automatically dispenses cleaning solution with every flush.
- Works with any white toilet bowl cleaner tablet. Tablets last for more than one year in ContinuousClean system.
- Revolution 360® flushing technology generates a forceful swirling motion to keep the bowl clean longer.
- Comfort Height® feature offers chair-height seating that makes sitting down and standing up easier for most adults.
- 1.28 gpf (4.8 lpf).
- 2-1/8" (54 mm) fully glazed trapway.
- CleanCoat® surface treatment inhibits the growth of water scale and mineral stains for improved ease of cleaning.
- Patented ReadyLock™ installation system, a simple solution for skirted toilets, saves time, hassle, and eliminates the need to drill into the floor for standard 12" (305 mm) rough-in.

### Technology

- Adjustment dial lets you set how much cleaning solution is dispensed with every flush.
- Optional: uses two AAA batteries (included) to power the LED system indicator light. System indicator light will notify user when system is working properly and when to replace cleaning agent or batteries.
- Single-flush gravity uses the force of gravity and a precision-engineered tank, bowl, and trapway to create a strong siphon during flushing.
- AquaPiston® canister allows water to flow out of the tank from all sides (360°), increasing the power and effectiveness of the flush.
- Flush valve's 3:2 ratio harnesses the natural force of gravity and optimizes flush performance.

### Installation

- Standard 12" (305 mm) rough-in.
- 10" and 14" (254 mm and 356 mm) rough-in kits also available.
- Seat and supply line sold separately.

### Recommended Products/Accessories

K-4008 Reveal® Quiet-Close™ Elongated Toilet Seat  
K-4108 C³®-230 Elongated cleansing toilet seat  
K-5383 10" Rough-in Full Skirt Trap and Attachment System  
K-5381 14" Rough-in Full Skirt Trap and Attachment System  
K-23726 Drain treatment

### Included Components

Product consists of:

1-800-4KOHLER (1-800-456-4537)

Kohler Co. reserves the right to make revisions without notice to product specifications.

For the most current Specification Sheet, go to [www.kohler.com](http://www.kohler.com).



ADA

CSA B651

OBC

### Codes/Standards







ASME A112.19.2/CSA B45.1  
DOE - Energy Policy Act 1992  
EPA WaterSense®  
California Energy Commission (CEC)  
ADA  
ICC/ANSI A117.1  
CSA B651  
OBC

### KOHLER® Toilets and Seats Limited Warranty

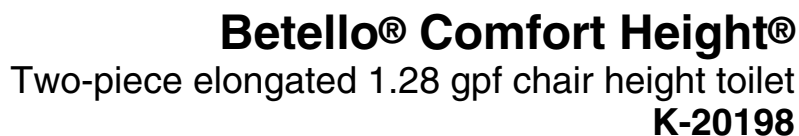
See website for detailed warranty information.

### Available Colors/Finishes

*Color tiles intended for reference only.*

Color	Code	Description
	0	White
	96	Biscuit
	NY	Dune
	95	Ice™ Grey
	G9	Sandbar
	7	Black Black™

THE BOLD LOOK  
OF **KOHLER®**



# HPE IoT Transformation Workshop

## Deliver business outcomes with IoT

### Driving business and technical alignment

#### Take the next step on your IoT journey

The HPE IoT Transformation Workshop connects HPE IoT experts and consultants with your key business and technology stakeholders to help you:

- Define strategic objectives to exploit the potential of IoT
- Unify your IoT vision
- Align key stakeholders
- Expand collaboration
- Identify quick wins

An interactive, facilitated exploration of the path forward that includes value before, during, and post workshop.

- Identify and engage appropriate stakeholders prior to workshop
- Build your unique strategy that includes business and technical alignment during the workshop
- Share outcomes and next steps to execute an aligned strategy post workshop

The **Internet of Things (IoT)** continues to beckon with the promise of leverage data from an abundance of connected things to improve insights for better decision making, gain operational efficiencies and uncover new revenue streams and creating new customer experiences. However, today's challenges require a holistic approach to IoT as these solutions often mandate a bridge between the IT, operational technology (OT), and lines of business (LoB) worlds. Successful IoT implementations require significant integration effort across a wide range of technologies, processes, and partners. For most companies there is still a large gap between the hype of what could be and the realities of creating and implementing an actionable IoT strategy.

### Connecting IT and OT for exceptional IoT results

At its core, IoT is about the connections between devices, sensors, data sources, technologies, solutions, organizations, people, and processes. What many enterprises miss is that successful IoT adoption also depends on considering the convergence of IT and OT. A key advantage

of the HPE IoT Transformation Workshop is that it integrates IT and OT data to produce an IoT strategy that improves results.

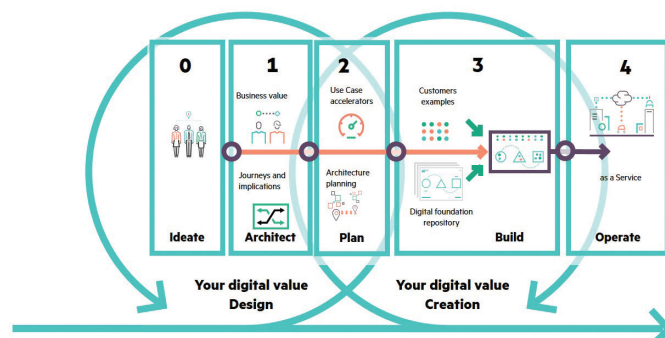
#### A flexible engagement journey

HPE Pointnext has developed an engagement journey for IoT with multiple entry points. Experts from HPE Pointnext can help you integrate IoT point solutions and build a framework to help accelerate the integration of future IoT solutions and advanced business intelligence capabilities. The HPE IoT Transformation Workshop is an ideal entry point to help you achieve superior business outcomes.

The HPE IoT Transformation Workshop is a one day session focused on your company objectives, priorities, challenges, and aspirations. This highly interactive, visual, six-phase workshop will help you expedite the strategic adoption of IoT and identify key business outcomes. It does so by leveraging field-proven experience, new IT and OT technologies to achieve a highly aligned business and IT/OT strategy, including short-and long-term "end state" results.

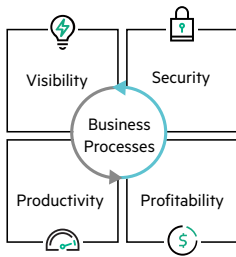
Most importantly, it will help create **business and technical alignment** so that you can harness the value of IoT data and use it to create disruptive competitive advantages, business models, and transformation results.

### Holistic approach to IoT

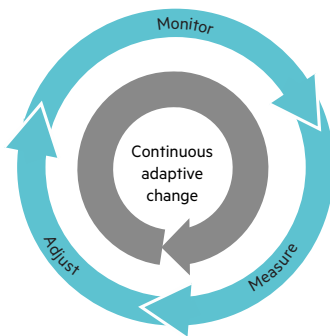


## Solution brief

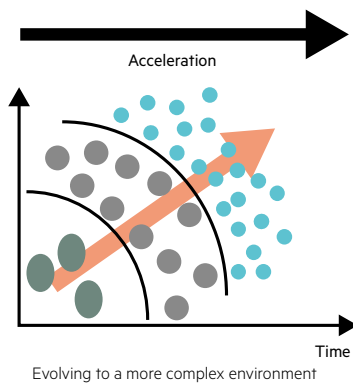
**Focus: Converting data to action to drive superior business outcomes**




**Topic: Understanding the digital value chain journey**



**Topic: Requirements for transforming to a sustainable IoT architecture**



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**Hewlett Packard  
Enterprise**

## Empowering your organization

The workshop empowers your organization to:

- Provide the **connectivity** needed to build a robust IoT platform for fixed and mobile applications, for security analytics, and for context-relevant business intelligence
- Deepen **security** across devices, users, applications, data, and networks with end-to-end, proactive defenses
- Accelerate the **speed to insights** gained through adaptive edge-to-the-cloud compute power
- Leverage **data** to empower data-driven insights and decisions to move the business from being reactive to proactive across its operations
- Take advantage of **open technologies** and an extensive **partner ecosystem** to expand the breadth and value of available solutions
- Harness the breadth and depth of IoT services and solutions delivered and integrated by **HPE Pointnext** to achieve your business goals

### IoT from a unique perspective yours:

The HPE IoT Transformation Workshop is uniquely yours. Our expert IoT consultants spend time with you before the session to understand your specific questions, concerns, and requirements, so that we tailor the discussion to your stakeholders' core business objectives during the

workshop. The discussion itself covers the multi-faceted lenses of the transformation journey: business, data and security, the need for an adaptive framework, and the journey itself. The session maintains a business focus while actively involving technical stakeholders. It is intended to help align IT, OT, and business managers with a common, long-term strategic vision. It is a rapid, intensive experience that lasts approximately 6 to 8 hours.

## HPE Pointnext for IoT

After you've explored your options through the HPE IoT Transformation Workshop, you can continue on your journey by implementing a priority use case using a minimal viable solution approach for early adoption. When ready, you can expand the solution and explore having the solution managed in an as a Service model.

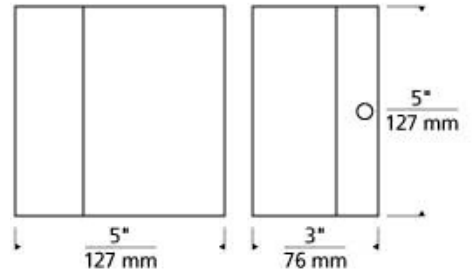
Leverage the global HPE IoT Innovation Centers of Excellence to accelerate your IoT initiatives and realize better ROI from your deployments. Tap into an experienced team of solution architects, technologists, and consultants who develop and deliver advisory and professional services in partnership with Hewlett Packard Labs, HPE product teams, and HPE IoT Connect partners.

Learn more at  
**[hpe.com/pointnext](https://hpe.com/pointnext)**

# MORTAR WALL

## SPECIFICATIONS

HARDWARE MATERIAL	Metal
SHADE MATERIAL	Acrylic
NET WEIGHT	2.5 lbs
HEIGHT	5in
WIDTH	3in
LENGTH	5in
MIN. EXTENSION FROM WALL	3in
UP LIGHT / DOWN LIGHT / BOTH?	
WET LISTED	
DAMP LISTED	Yes
DRY LISTED	
UP / DOWN	
HORIZONTAL / VERTICAL	
WALL / CEILING MOUNT	
GENERAL LISTING	ETL Listed
ADA COMPLIANT	
INCLUDES	



## LAMPING SPECIFICATIONS

	LED LAMP	INTEGRATED LED	NON LED	NO LAMP
DELIVERED LUMENS		455		
WATTS		9		
MAX WATTAGE PER BULB		9W		
INPUT VOLTAGE		120V 277V		
DIMMING TYPE*		ELV		
CCT		3000K		
CRI		90 CRI		
LED LIFETIME				
L70				
AVERAGE BULB HOURS		35000		
FIELD SERVICEABLE LED				
LAMP BASE		Integrated LED		
LAMP SHAPE		Integrated LED		
LAMP INCLUDED?		Y		
WARRANTY**		5 Years		

\* Dimming information available at [www.techlighting.com/Downloads#dimming](http://www.techlighting.com/Downloads#dimming)

\*\* Visit [techlighting.com](http://techlighting.com) for specific warranty limitations and details.

## T20 / T24 INFORMATION

	Integrated LED	Replacement LED Lamp	No Lamp *
This product can be used to comply with California Building Energy Efficiency Standards 2016 <b>Title 24</b> Part 6.	Yes		
This product can be used to comply with California Appliance Efficiency Standards 2016 <b>Title 20</b> and may be shipped to and sold in California.	N/A		

\* If a light fixture or component does not include a lamp or light source, it is the responsibility of the customer to select a lamp that meets the T24 and T20 requirements.





# JODIE

## RECESSED BARN DOOR PULL

SKU: 950691



### FEATURES

The Jodie Recessed Pull makes it easy to open and close a sliding barn door while maintaining a low-profile look. Made of heavy-duty metal, it complements any decor style from traditional to modern. It comes in your choice of finish for a personalized look

### CONTENTS

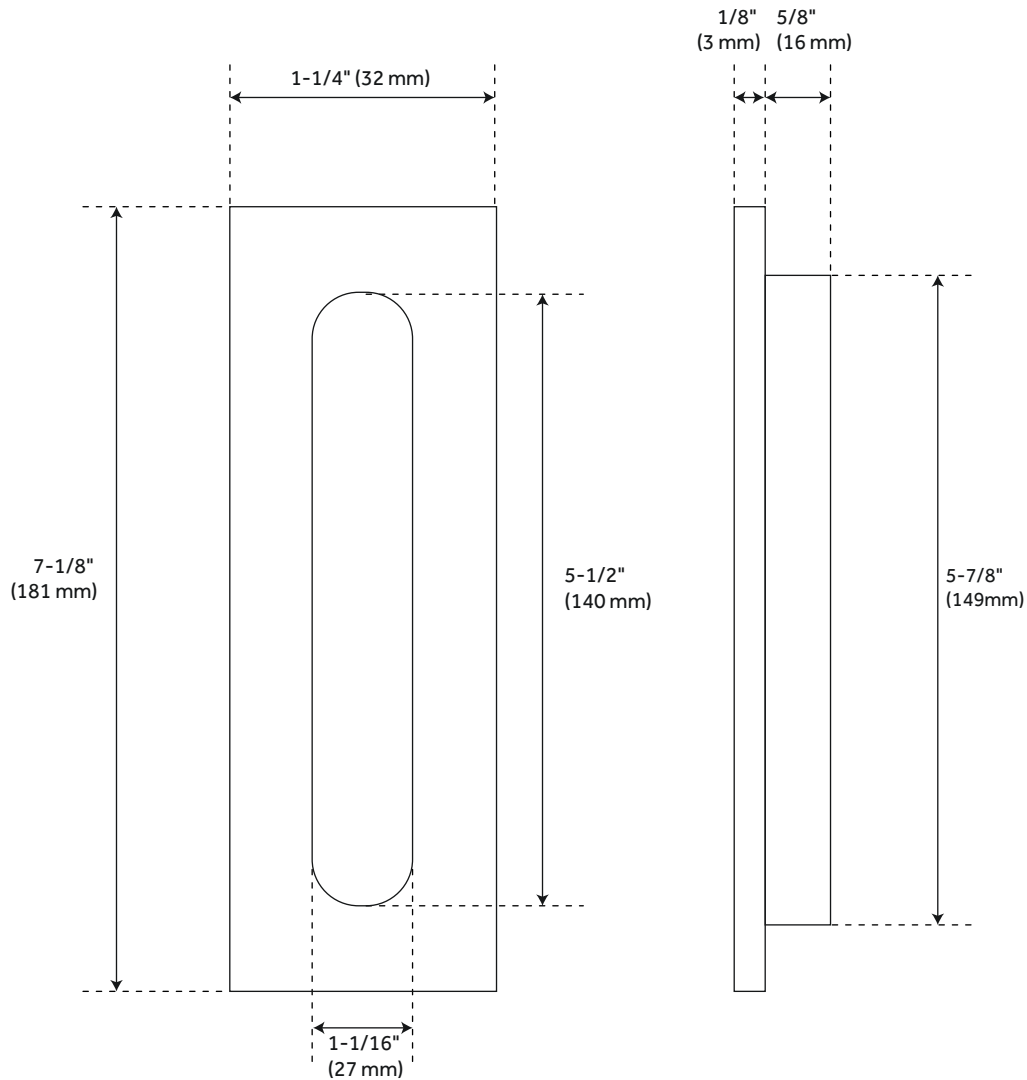
PULL ..... PAGE 2

REVISED 09/24/2020

# JODIE

## RECESSED BARN DOOR PULL

SKU: 950691



### FEATURES

Material: Steel  
Design: Traditional  
Width:  $1\frac{1}{4}"$   
Height: 7"  
Depth:  $\frac{1}{8}"$   
Mounting Hardware Included: Yes

### PRODUCT IMAGE



# ADLEIGH

## SLIDING BARN DOOR HANDLE AND PULL SET

SKU: 950690



### FEATURES

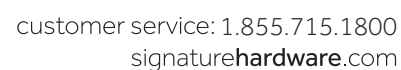
- Material: Steel
- Mounting Hardware Included: Yes
- Mounting Hardware Concealed: No

### CONTENTS

PULL SET ..... PAGE 2

REVISED 09/24/2020

## SKU: 950690



# 78" ANDO

## BARN DOOR HARDWARE KIT

SKU: 950672



### FEATURES

For doors up to 36" wide.

Wheel: 4-3/4" diameter.

Steel 1-1/4" diameter roller bearings.

Track Size: 1/4" Steel, 1-1/2" x 78-3/4".

Strap Size: 1/4" steel, 13-1/2" x 1-1/2".

Optional Soft Close Adapter:

For use with flat rails.

Steel construction for long lasting durability.

Keeps door from slamming when opening and closing.

Installs concealed behind the rail.

Soft close kit includes:

Low profile soft close adapter left hand (1).

Low profile soft close adapter right hand (1).

Low profile soft close trigger (2).

Trigger screws (6).

Cone-point set screws (8).

Allen wrench for set screws (1).

Width: 12-11/16".

Depth: 1-1/4".

Height: 1-1/8".

### CONTENTS

FLAT RAIL	.....	PAGE 2
STANDARD WHEEL	.....	PAGE 3
BENT STRAP HANGER	.....	PAGE 3
MORTISE FLOOR GUIDE	.....	PAGE 3
NON-MORTISE FLOOR GUIDE	.....	PAGE 3
TRACK LAG BOLT	.....	PAGE 4
FLAT RAIL SPACER	.....	PAGE 4
FLAT RAIL STOP	.....	PAGE 4
ANTI JUMP DISK	.....	PAGE 4

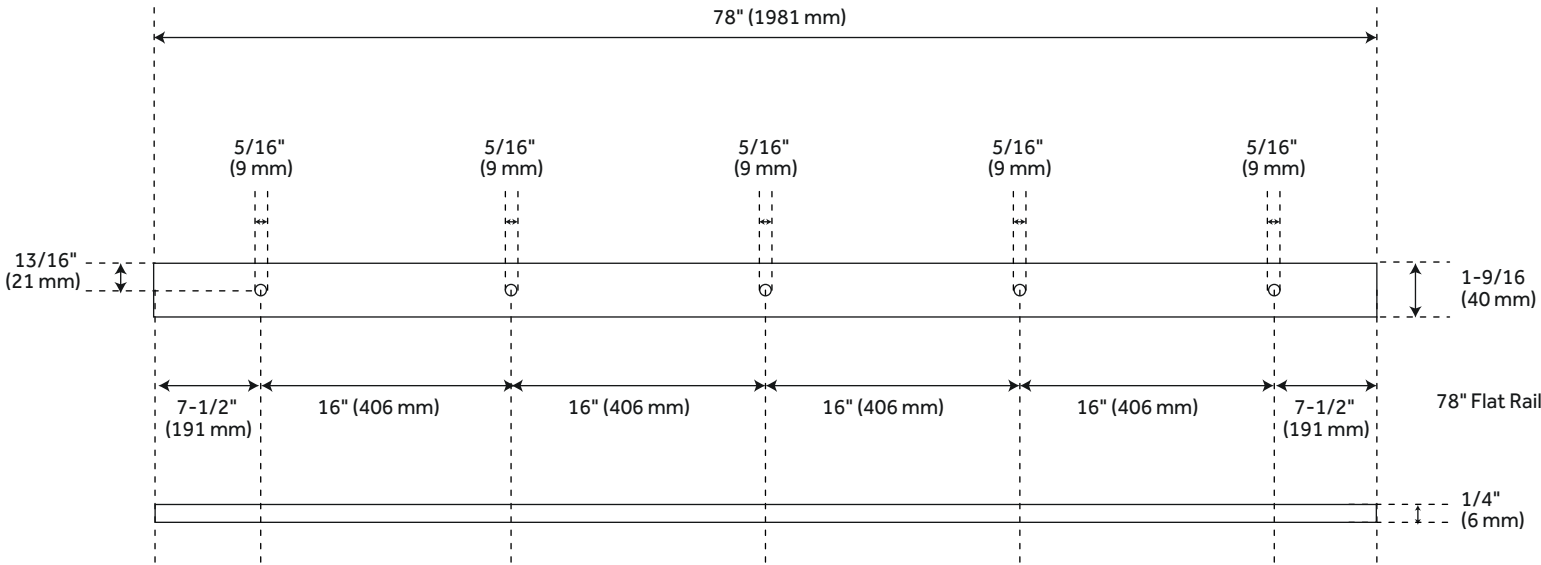
REVISED 10/09/2020



# 78" ANDO

## BARN DOOR HARDWARE KIT

SKU: 950672



### FEATURES

- Material: Stainless Steel
- Design: Modern
- Length: 78"
- Height: 14"
- Depth: 2"
- Mounting Hardware Included: Yes
- Mounting Hardware Concealed: No
- Weight Limit (Lbs): 220

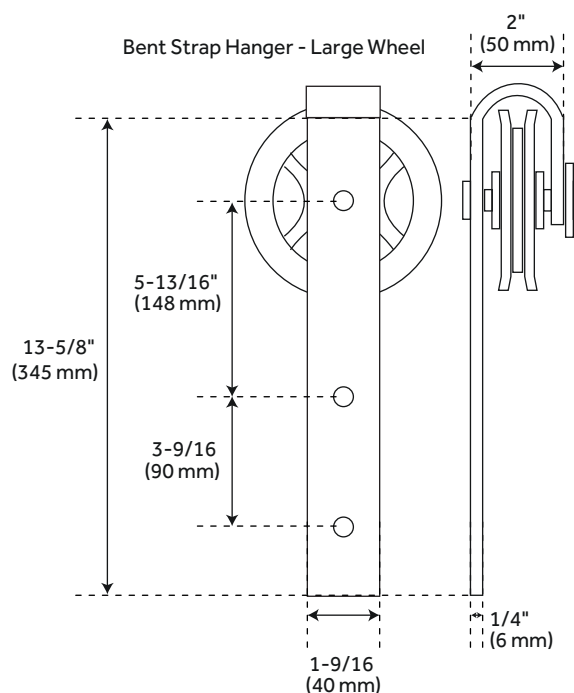
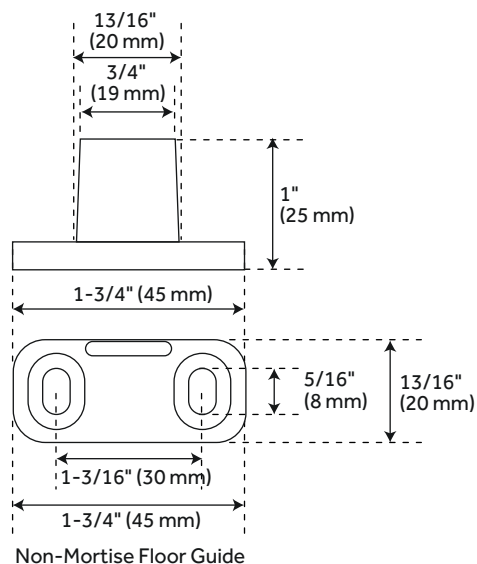
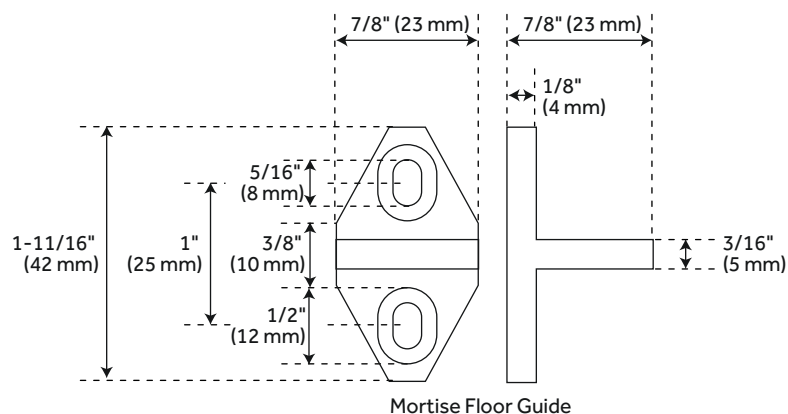
### PRODUCT IMAGE



# 78" ANDO

## BARN DOOR HARDWARE KIT

SKU: 950672



### FEATURES

Material: Stainless Steel  
Design: Modern  
Length: 78"  
Height: 14"  
Depth: 2"  
Mounting Hardware Included: Yes  
Mounting Hardware Concealed: No  
Weight Limit (Lbs): 220

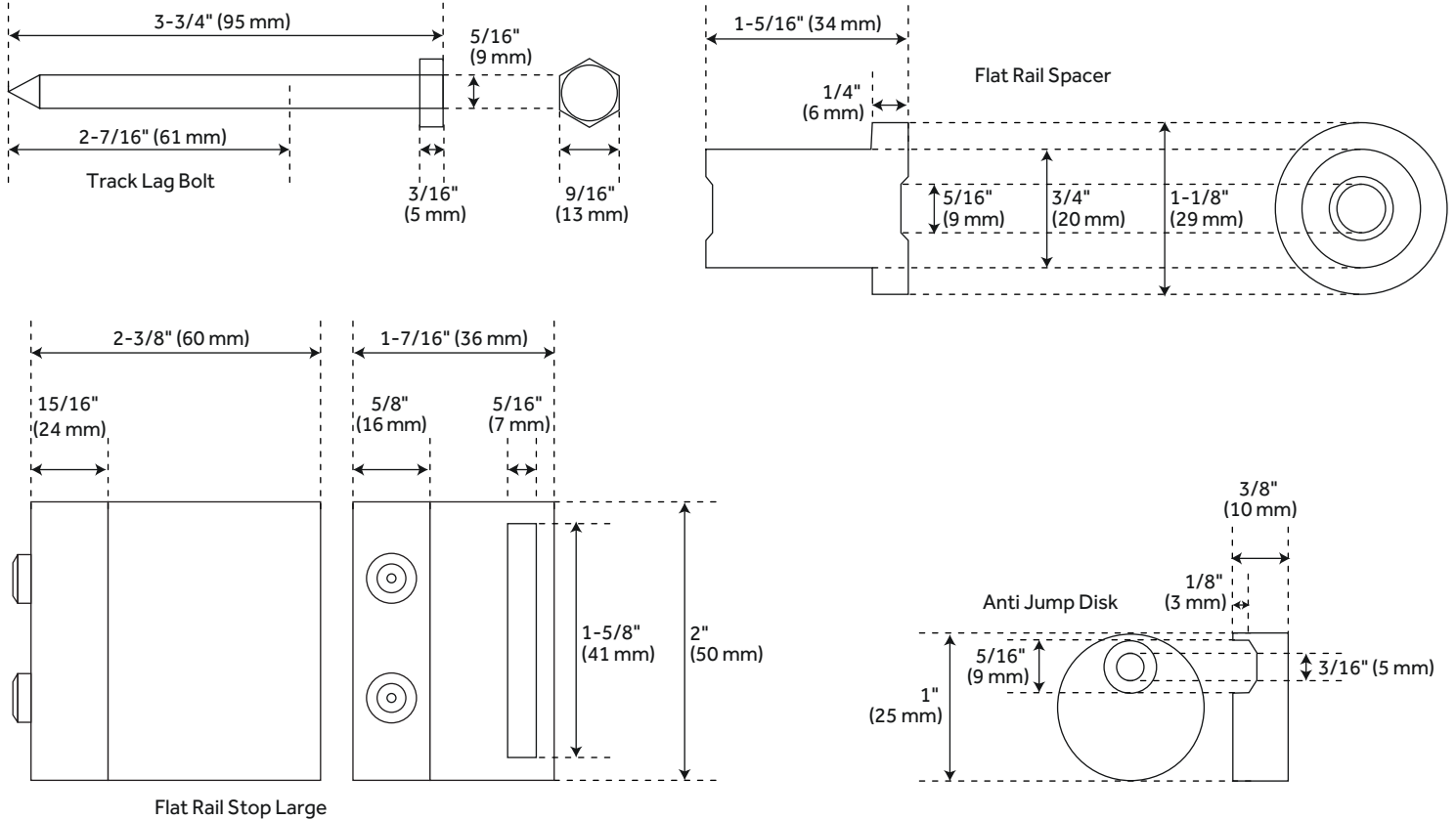
### PRODUCT IMAGE



# 78" ANDO

## BARN DOOR HARDWARE KIT

SKU: 950672



### FEATURES

Material: Stainless Steel  
Design: Modern  
Length: 78"  
Height: 14"  
Depth: 2"  
Mounting Hardware Included: Yes  
Mounting Hardware Concealed: No  
Weight Limit (Lbs): 220

### PRODUCT IMAGE





USG DUROCK  
Cement Board

**USG DUROCK® BRAND**  
CEMENT BOARD SYSTEMS

[usg.com](http://usg.com)



# USG DUROCK® BRAND CEMENT BOARD SYSTEMS

## USG DUROCK® BRAND CEMENT BOARD

USG Durock® Brand Cement Board offers architects, builders and tile contractors a strong, water-durable tile base for tub and shower areas. Also an ideal underlayment for tile on floors and countertops in new construction and remodeling. Board is readily applied over wood or steel framing spaced 16" o.c. with corrosion-resistant wood or steel screws or hot-dipped galvanized roofing nails. After joints are treated, ceramic wall or floor tile is applied using latex-fortified mortar or Type I organic adhesive.

USG Durock® cement board is preferred by many applicators as a base for directly applied finishes, tile, stone and thin brick used in building exteriors.

## USG DUROCK™ BRAND TILE BACKER SCREWS

Corrosion-resistant; 8-gauge; wafer heads with countersinking ribs to prevent strip-out; self-drilling points. USG Durock™ Brand Tile Backer Screws for wood framing come in three lengths: 1-1/4", 1-5/8" and 2-1/4". USG Durock™ tile backer screws for steel framing can be used with steel framing where steel thickness is from 14- to 20-gauge; they come in two lengths: 1-1/4" and 1-5/8". Both wood and steel screws have heads a minimum of 0.40" in diameter; their driving recess is a No. 2 "Phillips" design.

## USG DUROCK™ BRAND TILE BACKER TAPE

Alkali-resistant glass-fiber tape reinforces joints to provide a strong, continuous surface. Each roll 2" x 50', 2" x 250' or 4" x 150'.

## FEATURES AND BENEFITS OF USG DUROCK® BRAND CEMENT BOARD

### DUAL SURFACE

Although both sides of USG Durock® cement board are suitable for either mastic or thin-set mortar applications, the following is offered as a guide:

- Smooth side for mastic applications; increases adhesive coverage
- Textured surface enhances bonding, reduces tile slip with mortar applications

### DIMENSIONAL STABILITY

- Low thermal and hygrometric expansion helps prevent cracking
- Will not swell, soften, decay, delaminate or disintegrate in water

### FIRE RESISTANCE

- Noncombustible panel
- Assemblies with 1/2" USG Durock® cement board have achieved one- and two-hour fire-resistance ratings

### CONVENIENT SIZES

- May be ordered in sizes to meet job requirements (see table of sizes and packaging)

### VERSATILITY

- Provides a smooth, sound base for glass and ceramic mosaics; ceramic and quarry tile; lugged tile; thin stone tile; and thin brick
- Adaptable for fences, mobile home skirting, agricultural buildings, garage wainscoting and various exterior synthetic stucco systems

## LIMITATIONS

1. Designed for positive or negative uniform loads up to 60 psf. For complete information on the use of USG Durock® Brand panels in exterior systems, consult uniform load table on Page 3 for applicable positive or negative uniform loads on wall systems.
2. Wall applications: Maximum stud spacing: 16" o.c. (24" o.c. for cavity shaft wall assembly). Framing shall be designed (based on stud properties alone) not to exceed L/360 deflection for tile and thin brick, L/240 for direct-applied exterior finish systems. Maximum fastener spacing: 8" o.c. for wood and steel framing; 6" o.c. for ceiling applications.
3. Floor applications: Maximum joist spacing 24" o.c. The subfloor system should be designed with a minimum deflection limit of L/360 for the span. Some finish materials may require a more rigid subassembly (such as large format tile and natural stone products). In these cases, follow the manufacturer's minimum requirements. The subfloor should be APA Span-Rated Plywood or OSB with an Exposure 1 classification or better with tongue and groove or back blocked at the unsupported edges.
4. In exterior applications, USG Durock® cement board should not be left uncovered for a period of time exceeding 90 days. Discoloration or staining may occur due to exposure to the elements and will not affect performance of the panel.
5. Brittle coatings, such as epoxy coatings, are not recommended for use with USG Durock® cement board. USG Durock® cement board is intended for use with tile, thin brick and exterior stucco coatings only.
6. Maximum dead load for ceiling system is 7.5 psf.
7. Steel framing must be 20-gauge equivalent or heavier.



## LIMITATIONS CONT.

8. Do not use drywall screws or drywall nails. Do not use drywall joint tape.
9. Do not use 1/4" USG Durock® cement board for wall or ceiling applications.
10. Do not use USG Durock® cement board with vinyl flooring.
11. USG Durock® cement board is not designed for use as a structural panel.
12. Maximum installed weight of the finish system should not exceed 15 psf.
13. USG Durock® cement board panels should not be used in areas where they are exposed to temperatures that exceed 200°F.
14. In locations close to salt water or other challenging environments, design professionals should consider the use of stainless steel fasteners.
15. Do not use lightweight setting-type joint compounds or ready-mix joint compounds directly over USG Durock® cement board.

## PRODUCT DATA

**Material:** Formed in a continuous process of aggregated Portland cement slurry with polymer-coated, glass-fiber mesh completely encompassing edges and back and front surfaces

**Edges:** Formed smooth

**Ends:** Square cut

## SIZES AND PACKAGING

Type	Size (thickness x width x length) <sup>a</sup>	Units (pcs) <sup>b</sup>
USG Durock® Brand Cement Board	1/4" x 3' x 5'	60
	1/2" x 32" x 5'	50
	1/2" x 3' x 5'	50
	1/2" x 32" x 8'	30
	1/2" x 4' x 8'	40
	5/8" x 3' x 5'	40
	5/8" x 4' x 8'	32

**Note:** (a) Other lengths available. Contact your USG Representative. (b) Shipped in packaging units as shown.

## TECHNICAL DATA

Property	Unit of Measure	ASTM Test Method	5/8" USG Durock® Brand Cement Board	1/2" Cement Board	1/4" Underlayment
<b>Flexural strength</b>	psi	C947	> 480	> 750	> 1000
<b>Indentation strength</b>	psi	D2394	> 1250	> 1250	> 1250
<b>Shear bond strength</b>	psi	ANSI A118.4	> 50	> 50	> 50
<b>Water absorption</b>	<20% by wt. 24 hrs.	C473	15	15	15
<b>Nail-pull resistance</b>	lb. (0.4" head diameter, wet or dry)	C473	> 90	> 90	—
<b>Weight</b>	psf	C473	3	2.4	< 1.9
<b>Freeze/thaw resistance</b>	procedure B, number of cycles with no deterioration	C666	100	100	100
<b>Mold resistance</b>	—	G21	Rating 0, No growth	Rating 0, No growth	Rating 0, No growth
		D3273	10/10	10/10	10/10
<b>Noncombustibility</b>	Pass/Fail	E136	Pass	Pass	Pass
<b>Surface-burning characteristics</b>	flame/smoke	E84	0/0	0/0	0/0
<b>Thermal</b>	"R"/k value	C518	.49/1.27	0.39/1.27	—
<b>Standard method for evaluating ceramic floor tile installation systems</b>	Passes cycles 1-6	C627	Light commercial	Light commercial	Light commercial
<b>Minimum bending radius</b>	ft. (requires special framing details available upon request)	—	6	6	—

## UNIFORM LOAD —1/2" USG DUROCK® BRAND CEMENT BOARD

Stud Spacing	Fastener Spacing	Design Wind Load (1/240)	Design Wind Load (1/360)
12" o.c.	8" o.c.	45 psf	45 psf
	6" o.c.	60 psf	60 psf
16" o.c.	8" o.c.	33 psf	30 psf
	6" o.c.	45 psf	30 psf
24" o.c. (for shaft wall assemblies only)	8" o.c.	13 psf	9 psf
	6" o.c.	13 psf	9 psf

## STANDARDS

USG Durock® cement board exceeds ANSI standards for cementitious backer units (CBU). See ANSI A118.9 for test methods and specifications for CBU and ANSI A108.11 for interior installation of CBU. Exceeds industry standards as an exterior substrate for exterior finishes. Exceeds ASTM C1325 standards for nonasbestos fiber-mat reinforced cementitious backer units.



## PARTITIONS

One-Hour Fire-Rated Construction		Non-Load-Bearing, Steel Framed		Acoustical Performance	
Construction Detail	Description	Test Number	STC	Test Number	
	<ul style="list-style-type: none"> <li>1/2" USG Durock® Brand cement board</li> <li>3-1/2" 20-gauge steel studs 16" o.c.</li> <li>3" ROXUL mineral wool AFB</li> <li>5/8" USG Sheetrock® Brand Firecode® Gypsum Panels, one side</li> </ul>	U433			

Two-Hour Fire-Rated Construction		Non-Load-Bearing, Steel Framed		Acoustical Performance	
Construction Detail	Description	Test Number	STC	Test Number	
	<ul style="list-style-type: none"> <li>1/2" USG Durock® Brand cement board and 1/4" ceramic tile</li> <li>Base layer 1/2" USG Sheetrock® Brand Firecode® C Gypsum Panels</li> <li>3-5/8" 20-gauge steel studs 16" o.c.</li> <li>3" Thermafiber® SAFB™</li> <li>Face layer joints taped</li> <li>Alternate design two layers 1/2" USG Sheetrock® Brand Firecode® C gypsum panels, one side</li> </ul>	U443	56	SA-851016 Based on alternate design	
			58	SA-851028	

One-Hour Fire-Rated Construction		Chase Walls, Steel Framed		Acoustical Performance	
Construction Detail	Description	Test Number	STC	Test Number	
	<ul style="list-style-type: none"> <li>Face layer 1/2" USG Durock® Brand cement board</li> <li>Base layer 5/8" USG Sheetrock® Brand Firecode® gypsum panels or sheathing, or USG Fiberock® panels</li> <li>3-1/2" 20-gauge structural studs 16" o.c.</li> <li>3" mineral wool batt</li> <li>5/8" USG Sheetrock® Brand Firecode® Gypsum Panels opposite side</li> </ul>	UL Des U473			

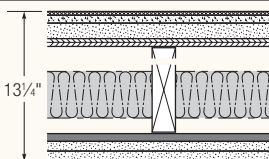
One-Hour Fire-Rated Construction		Load-Bearing, Wood Framed		Acoustical Performance	
Construction Detail	Description	Test Number	STC	Test Number	
	<ul style="list-style-type: none"> <li>1/2" USG Durock® Brand cement board and 1/4" ceramic tile</li> <li>2 x 4 wood studs 16" o.c.</li> <li>3-1/2" Thermafiber® SAFB™</li> <li>Joints taped</li> <li>Alternate design 5/8" USG Sheetrock® Brand Firecode® gypsum panels, one side</li> </ul>	UL Des U329	37	USG-840404	
			40	USG-830314	
	<ul style="list-style-type: none"> <li>1/2" USG Durock® Brand cement board</li> <li>Base layer 15/32" plywood</li> <li>2 x 4 wood studs 16" o.c.</li> <li>3" Thermafiber® SAFB™</li> <li>Joints taped and treated</li> <li>5/8" USG Sheetrock® Brand Firecode® gypsum panels, other side</li> </ul>	U303			

Two-Hour Fire-Rated Construction		Chase Walls, Steel Framed		Acoustical Performance	
Construction Detail	Description	Test Number	STC	Test Number	
	<ul style="list-style-type: none"> <li>1/2" USG Durock® Brand cement board and 1/4" ceramic tile</li> <li>Two rows 2 x 4 wood studs 16" o.c. on 2 x 8 common plate</li> <li>3-1/2" Thermafiber® SAFB™ both cavities</li> <li>Joints taped</li> <li>Load-bearing up to 50% allowable design load</li> </ul>	WHI-495-0505 0508	50	SA-840523	

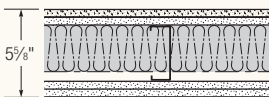
## ROOF/CEILINGS

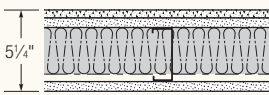
One-Hour Fire-Rated Construction		Steel Truss		Acoustical Performance	
Construction Detail	Description	Test Number	STC	Test Number	
	<ul style="list-style-type: none"> <li>5/8" USG Sheetrock® Brand Firecode® gypsum panels</li> <li>RC-1 channels or equivalent</li> <li>Joints finished</li> <li>Steel roof deck</li> <li>Steel truss 48" o.c.</li> <li>Roof covering and roof insulation over 1/2" USG Durock® Brand cement board or 1/2" USG Sheetrock® Brand gypsum panels</li> </ul>	UL Des P521, P525, 527, 529			

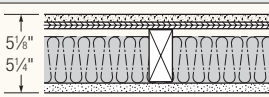
## FLOOR/CEILINGS

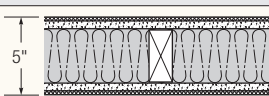
Two-Hour Fire-Rated Construction	Dimensional Lumber, Wood Framed		Acoustical Performance		
Construction Detail	Description	Test Number	STC	ITC	Test Number
	<ul style="list-style-type: none"> <li>Two layers 5/8" USG Sheetrock® Brand Firecode® C gypsum panels</li> <li>– 8" x 8" ceramic tile</li> <li>• 1/2" USG Durock® Brand cement board</li> <li>• 1" USG Sheetrock® Brand gypsum liner panels</li> <li>– 1/2" plywood</li> <li>– 2 x 10 wood joist 16" o.c.</li> <li>– 3" mineral wool batt</li> <li>– RC-1 channel or equivalent</li> </ul>	UL Des L541		52	RAL-IN-89-5
			58		RAL-TL-89-145
				51	RAL-IN-89-7
			59		RAL-TL-89-146 Based on carpet/pad over oriented strand board in place of ceramic tile and cement board
			60		RAL-TL-89-141
			62		RAL-IN-89-8

## EXTERIOR WALLS

Two-Hour Fire-Rated Construction	Steel Framed, Non-Load-Bearing		Acoustical Performance		
Construction Detail	Description	Test Number	STC	ITC	Test Number
	<ul style="list-style-type: none"> <li>1/2" USG Durock® Brand cement board</li> <li>• Base layer 1/2" USG Sheetrock® Brand Mold Tough® Firecode® C gypsum panels, both sides</li> <li>– 3-5/8" 20-gauge minimum steel studs 16" o.c.</li> <li>– 3" Thermafiber® SAFB™</li> <li>• Alternate design, double-layer 1/2" USG Sheetrock® Brand Firecode® C gypsum panels, interior</li> </ul>	UL Des U474			

One-Hour Fire-Rated Construction	Steel Framed, Non-Load-Bearing		Acoustical Performance		
Construction Detail	Description	Test Number	STC	ITC	Test Number
	<ul style="list-style-type: none"> <li>1/2" USG Durock® Brand cement board</li> <li>• Base layer 5/8" USG Sheetrock® Brand Mold Tough® Firecode® C gypsum panels</li> <li>– 3-1/2" 20-gauge steel load-bearing studs 16" o.c.</li> <li>– 3" Thermafiber® SAFB™</li> <li>• 5/8" USG Sheetrock® Brand Mold Tough® Firecode® C gypsum panels, interior side</li> </ul>	UL Des U473			

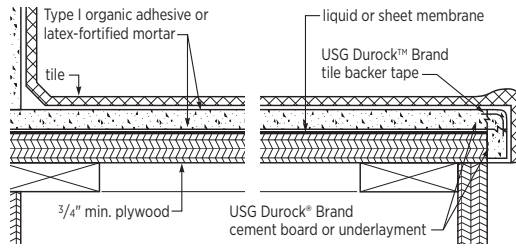
One-Hour Fire-Rated Construction	Wood Framed, Load-Bearing		Acoustical Performance		
Construction Detail	Description	Test Number	STC	ITC	Test Number
	<ul style="list-style-type: none"> <li>1/2" USG Durock® Brand cement board, interior side</li> <li>– 15/32" plywood</li> <li>– 2 x 4 wood studs 16" o.c.</li> <li>– 3" Thermafiber® SAFB™</li> <li>– Joints finished</li> <li>• 5/8" USG Sheetrock® Brand Firecode® gypsum panels or USG Securock® Brand glass-mat sheathing panels, other side</li> </ul>	UL Des U303			

One-Hour Fire-Rated Construction	Wood Framed, Load-Bearing		Acoustical Performance		
Construction Detail	Description	Test Number	STC	ITC	Test Number
	<ul style="list-style-type: none"> <li>1/2" USG Durock® Brand cement board and 1/4" ceramic tile exterior</li> <li>– 2 x 4 wood studs 16" o.c.</li> <li>– 3-1/2" Thermafiber® SAFB™</li> <li>• 5/8" USG Sheetrock® Brand Firecode® gypsum panels</li> <li>– Optional veneer plaster</li> </ul>	UL Des U329			

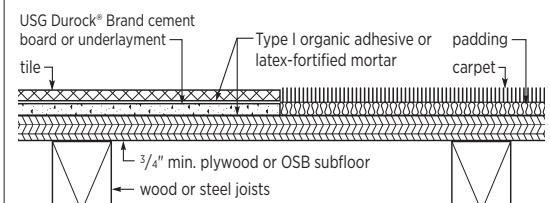
**Notes:** USG Durock® Brand cement board, 5/8" thick, may be substituted for 1/2" cement board panels in all assemblies listed above. USG Fiberock® 5/8" thick or USG Durock™ Brand Glass-Mat Tile Backerboard 5/8" thick, may be substituted for 1/2" USG Sheetrock® Brand Firecode® C gypsum panels, or 5/8" USG Sheetrock® Brand Firecode® gypsum panels, in all assemblies listed above. Where thermal insulation is shown in assembly drawing, the specific product is required in the assembly to achieve the stated fire rating. Fiberglass insulation cannot be substituted for Thermafiber® insulation. Where the wall is exposed to moisture, use a moisture-resistant barrier behind the cement board.

1. Steel framing must be 20-gauge or heavier.
2. Estimate based on 25-gauge steel studs.

### Countertops

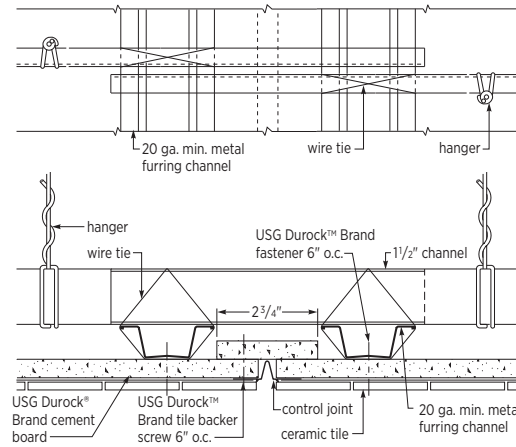


### Floors, interior—wood or steel joists

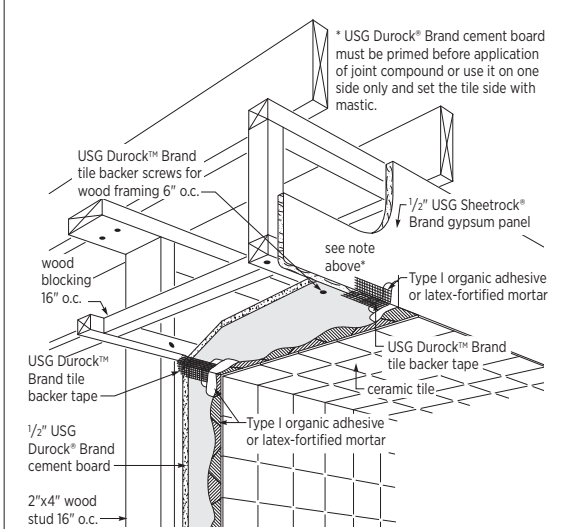


**Note:** For bonding cement backerboard to plywood subfloor, use Type I organic adhesive or latex-fortified mortar that is suitable for this kind of application. For application of various types of tiles to cement backerboard on floors or countertops, contact the tile manufacturer for the appropriate type of tile-setting mortar.

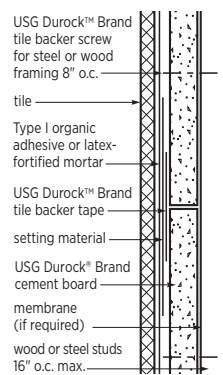
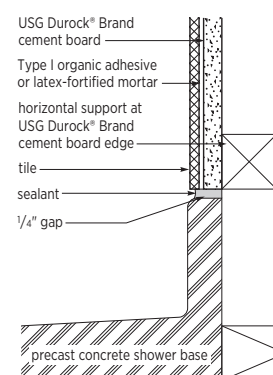
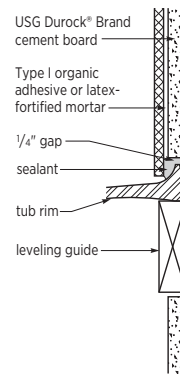
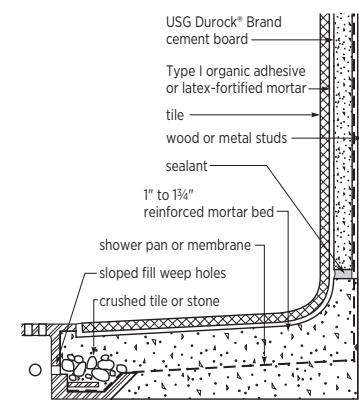
### Suspended ceiling detail



### Wood soffit framing

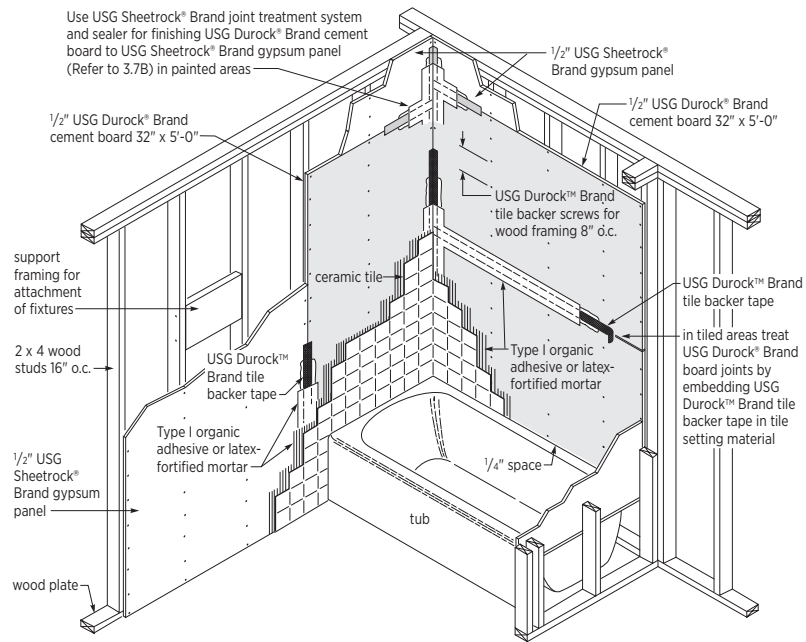


### Tub and shower—single layer board

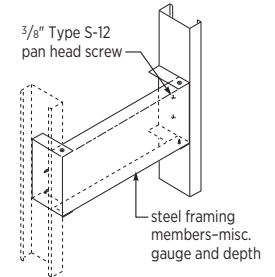
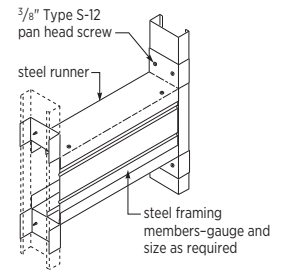


### Walls, interior and exterior—wood or steel studs

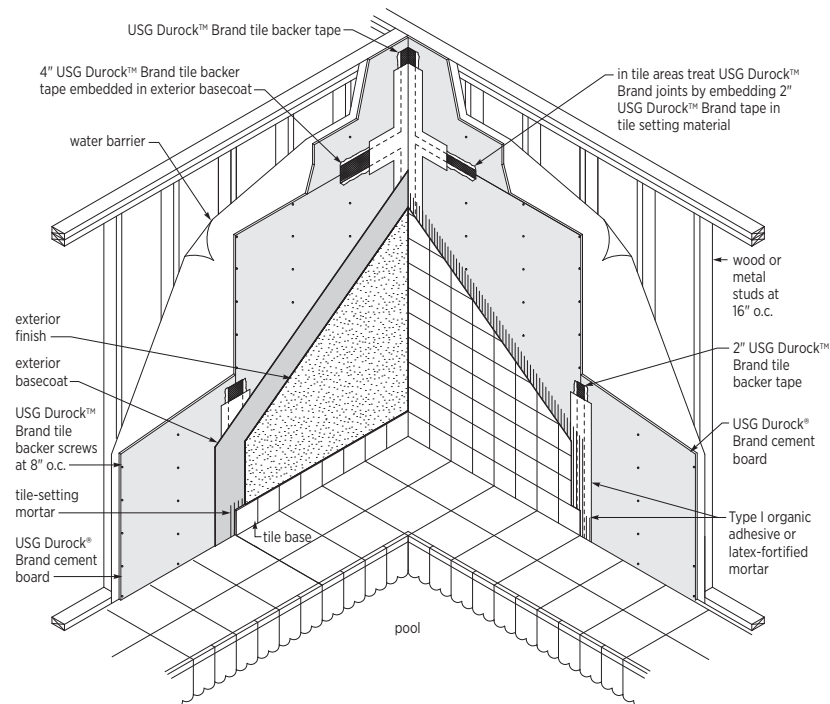
### Typical bathtub installation



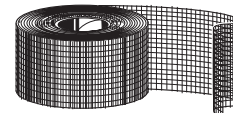
### Fixture attachment—steel framing



### Typical swimming pool installation (tile or exterior finish)



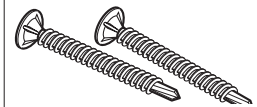
### USG Durock™ Brand alkali-resistant tape



### USG Durock™ Brand tile backer screws for wood framing



### USG Durock™ Brand tile backer screws for steel framing



### Hot-dipped galvanized roofing nails





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## **1. System Performance**

Systems covered herein have been tested and evaluated for use as described. For other system applications, consult your local representative.

All details, specifications and data contained in this literature are intended as a general guide for using USG Durock® cement board systems. These products must not be used in a design or construction of any given structure without complete and detailed evaluation by a qualified structural engineer or architect to verify suitability of a particular product for use in the structure.

Information in this publication should be used only for USG Durock® cement board systems, as physical properties of competitive products may vary. USG assumes no liability for failure resulting from the use of alternative materials or improper application or installation of USG Durock® cement board systems as specified herein.

USG will provide building officials and design professionals upon written request with test certification for published fire, sound and structural data covering systems constructed with Company products and assembled to meet performance requirements of established test procedures specified by various agencies.

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## **2. Expansion and Contraction**

Wall surfaces should be isolated with surface control joints (sometimes referred to by the industry as expansion joints) or other means where:

- (a) A wall abuts a structural element or dissimilar wall or ceiling.
- (b) Construction changes within the plane of the wall.
- (c) Tile and thin-brick surfaces exceed 16'. Surface control joint width should comply with architectural practices.

Location of building control joints is the responsibility of the design professional/architect. Steel framing at building control joints that extend through the wall (with top and bottom runner tracks broken) should have 1-1/2" cold-rolled channel alignment stabilizers spaced a maximum of 5' o.c. vertically. Channels should be placed through holes in the stud web of the first two adjacent studs on both sides of the joint and securely attached to the first adjacent stud on either side of the joint.

USG Durock® cement board should be separated at all surface and building control joints. Where vertical and horizontal joints intersect, the vertical joint should be continuous and the horizontal joint should abut it. Splices, terminals and intersections should be caulked with a sealant complying with architectural practices and sealant manufacturer recommendations. Do not apply tile or finishes over caulked sealed expansion joints.

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## **3. Water Management**

USG Durock® cement board is vapor permeable and does not deteriorate in the presence of water. For interior applications, if a vapor retarder or waterproof construction is specified, a separate barrier must be applied over or behind the USG Durock® cement board. If waterproofing is desired, use USG Durock™ Brand Tile Membrane or USG Durock™ Waterproofing Membrane. See USG literature piece CB492 for USG Durock™ tile membrane product information. See USG literature piece CB595 for USG Durock™ waterproofing membrane product information.

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## **4. Swimming Pool Enclosures**

USG Durock® cement board systems may be used for the walls and ceilings around indoor swimming pools. Consideration shall be given to adequate ventilation in plenums and corrosion protection of metal hangers and framing members.

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## **5. Soffits and Ceilings**

USG Durock® cement board systems finished with ceramic tile, thin brick and textured finish may be used on properly vented soffits and ceilings with USG Durock™ Brand tile backer screws spaced 6" o.c. max. A qualified structural engineer should evaluate design including uplift bracing.

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## **6. Steam Rooms and Saunas**

For steam rooms and saunas where temperatures exceed 120°F for extended periods, use latex-fortified Portland cement mortar; do not use organic adhesive.

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## **7. Abuse-Resistant Partitions**

USG Imperial® finish plaster and USG Diamond® interior finish plaster can be applied over USG Durock® cement board to provide a high-impact-resistant wall. See USG publication SA920 for specifications.

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## **8. Window and Door Openings**

All windows, door openings and termination points must be properly flashed and caulked.

## SPECIFICATIONS

### PART 1: GENERAL

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#### 9. Smooth Side/Rough Side

USG Durock® cement board has a smooth side and a rough side. Although both sides of USG Durock® cement board are suitable for either mastic or thin-set mortar applications, as a general guide, use the smooth side for mastic applications and the rough side for mortar applications.

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#### 10. Shadowing and Spotting

When the outside temperature differs considerably from the building's interior temperature, airborne dirt can accumulate on the colder regions of walls, causing "shadowing" or "spotting," particularly over fasteners and framing. This is a natural phenomenon that occurs through no fault in the products.

Where temperature, humidity and soiling conditions are expected to cause objectionable blemishes, provide a thermal separation between the interior and exterior faces.

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#### 11. Leaching and Efflorescence

Latex leaching and efflorescence are natural phenomena that occur with the use of latex-modified mortars and grouts through no fault in the products. To help protect against their occurrence, follow current industry guidelines and recommendations. If efflorescence is present, use a stiff nylon brush to remove any loose material prior to installation of finishing system. Discoloration will not affect performance.

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#### 12. Panel Microcracking

USG Durock® cement board is formulated to develop fine microcracking (also called multiple cracking) in the panel. The microcracking process helps to evenly relieve the stored strain energy in the product due to handling and installation, external loads, and/or panel restrained movement. The presence of microcracks in the panel should not be considered a product defect.

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#### 13. Vapor Retarders

Humidity and temperature conditions may require a vapor retarder. Its location should be determined by a qualified mechanical engineer or architect to prevent moisture condensation within the wall.

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#### 14. Corrosion Protection

All architectural components, such as anodized-aluminum window frames, trims, flashings and casings, shall be protected from alkaline building materials such as cement board, Portland cement basecoats, mortars and grouts.

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#### 1.1 Scope

Specify to meet project requirements.

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#### 1.2 Qualifications

All materials, unless otherwise indicated, shall be manufactured by USG and shall be installed in accordance with its current printed directions.

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#### 1.3 Delivery and Storage of Materials

All materials should be delivered and stored in their original unopened package and stored in an enclosed shelter providing protection from damage and exposure to the elements. Even though the stability and durability of USG Durock® cement board is unaffected by the elements, moisture and temperature variations may have an effect on the bonding effectiveness of basecoats and adhesives. Store all USG Durock® cement board panels flat.

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#### 1.4 Environmental Conditions

In cold weather and during USG Durock® cement board panel and tile installation, temperatures within the building shall be maintained within the range of 40 to 100°F. Adequate ventilation shall be provided to carry off excess moisture.

**Interior Applications** The building shall be enclosed and the HVAC system operating so that wood framing shall reach the moisture content it will reach in service. Do not install board when the board is wet.

**Exterior Applications** In exterior applications, USG Durock® cement board should not be left uncovered for a period of time exceeding 90 days. Discoloration or staining may occur due to exposure to the elements which will not affect performance of the panel. Finishes, leveling/skim coats and basecoats shall not be applied to a USG Durock® cement board panel that is wet or frozen or that contains frost. After application, and for at least 24 hours, finishes, leveling/skim coats and basecoats shall be effectively protected from rain and excessive moisture.

In cold weather and during finish applications, USG Durock® cement board panel, skim or basecoat, mortar, finish material and air temperature must be at least 40°F, and must remain at this temperature or higher for at least 24 hours after application. Hot and dry weather may affect working time of leveling/skim or basecoat and finish materials. Under rapid drying conditions, dampening or light fogging of board, leveling/skim or basecoat surface may be required to improve workability.

### 1.5 Framing

Steel or wood wall framing to receive USG Durock® cement board panels shall be structurally sound, free from bow and in general compliance with local building code requirements. Damaged and excessively bowed studs shall be replaced before installation of USG Durock® cement board panels. Framing shall be designed (based on stud properties alone) not to exceed L/360 deflection for tile and thin brick, L/240 for Direct-Applied Exterior Finish Systems. Steel framing must be 20-gauge equivalent or heavier with corrosion-resistant metal coating equivalent to G60 hot-dipped galvanized. Exterior steel framing should be laterally braced.

### 1.6 Installation Practices

USG Durock® cement board panel should be cut to size with utility knife and straightedge. Power saw should be used only if equipped with a dust-collection device and a NIOSH/MSHA-approved respirator is worn. Contractors installing tile and tile-setting materials should always follow current ANSI specifications and TCNA guidelines.

### 2.1 Materials

#### A Cement Board

- USG Durock® cement board, 1/2" or 5/8" thickness, 32", 36" or 48" width x lengths of 4' to 10'; exceeds ANSI A118.9 and ASTM C1325 for cementitious backer units.
- USG Durock® cement board underlayment, 1/4" thickness, 3' width x 5' length, other sizes available.

#### B Joint Reinforcement—USG Durock™ tile backer tape (alkali-resistant), 2" x 50', 2" x 150', 2" x 250' or 4" x 150'.

#### C Fasteners

- USG Durock™ tile backer screws for steel framing (No. 8), 1-1/4" and 1-5/8" for 14- to 20-gauge steel framing; USG Durock™ tile backer screws for wood framing (No. 8), 1-1/4", 1-5/8" and 2-1/4" for wood framing.
- Nails (1-1/2" hot-dipped galvanized roofing nails).

#### D Subfloor—5/8" or 3/4" plywood or oriented strand board (OSB), 4' x 8' sheets, APA Span-Rated Plywood or OSB with an Exposure 1 classification or better.

#### E Adhesives/Mortars

Products compatible with alkaline or Portland cement-based USG Durock® cement board include, but are not limited to the following:

- Meeting ANSI A136.1 Type 1.
- Meeting ANSI A118.1: dry-set mortar mixed with acrylic latex additive.
- Meeting ANSI A118.4: latex Portland cement mortar.

#### F Grout

Products compatible with high pH-based USG Durock® cement board:

- Meeting ANSI A118.6 or ANSI A118.7 or ANSI A118.8.

#### G Tile—Tile shall meet ANSI A137.1.

#### H Membrane—USG Durock™ tile membrane, USG Durock™ waterproofing membrane, 15-lb. felt or 4-mil polyethylene membrane, if required, in accordance with local building codes.

### 3.1 Floors

- A Panel Application**—Laminate USG Durock® cement board to subfloor using Type 1 organic adhesive, latex-fortified mortar or dry-set mortar mixed with acrylic latex additive that is suitable for bonding cement backerboard to plywood subfloor, with 1/4" square-notched trowel for mortar, 5/32" V-notched trowel for adhesive. Place cement board with joints staggered from subfloor joints. Fit ends and edges closely but not forced together. Fasten to subfloor with 1-1/4" USG Durock™ tile backer screws for wood framing or 1-1/2" hot-dipped galvanized roofing nails spaced 8" o.c. in both directions with perimeter fasteners at least 3/8" and less than 5/8" from ends and edges. Drive nails and screws so bottoms of heads are flush with panel surface to ensure firm panel contact with subfloor. Do not overdrive fasteners. Prefill joints with tile-setting mortar or adhesive and then immediately embed USG Durock™ tile backer tape and level joints.

### 3.2 Walls

- A Framing**—Space wood and steel framing a maximum of 16" o.c. (24" o.c. for UL Design U459 or U415). The studs of freestanding furred walls must be secured to the exterior wall with wall furring brackets or laterally braced with horizontal studs or runners spaced 4' o.c. max. Laterally brace all steel-framed walls prior to the application of joint treatment.
- B Panel Application**—After tub, shower pan or receptor is installed, place temporary 1/4" spacer strips around lip of fixture. Precut board to required sizes and make necessary cutouts. Fit ends and edges closely but not forced together, leaving a 1/8" gap. Install board abutting top of spacer strip. Stagger end joints in successive courses. Fasten panels to framing with specified fasteners. Drive fasteners into field of panels first, working toward ends and edges. Hold panels in firm contact with framing while driving fasteners. Space fasteners maximum 8" o.c., with perimeter fasteners at least 3/8" and less than 5/8" from ends and edges. Drive nails and screws so bottoms of heads are flush with panel surface to ensure firm panel contact with framing. Do not overdrive fasteners. Approved fasteners include: USG Durock™ tile backer screws for steel framing (or equivalent), 1-1/4" and 1-5/8" for 14- to 20-gauge steel framing; USG Durock™ tile backer screws for wood framing (or equivalent), 1-1/4", 1-5/8" and 2-1/4" for wood framing. Nails (1-1/2" hot-dipped galvanized roofing nails). In double-layer walls where cement boards are installed over base-layer gypsum boards, apply a vapor-permeable water barrier over gypsum boards.

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- C** Shaft Wall—Attach USG Durock® cement board over base layer of gypsum panels with 1-5/8" USG Durock™ tile backer screws for steel framing at 8" o.c. to studs. Since studs are at 24" o.c., laminate cement board to base layer of gypsum panels with a 4" wide strip of construction adhesive between studs. Apply adhesive with a 1/4" square-notched trowel.
  - D** Exterior Walls—Attach USG Durock® cement board with corrosion-resistant screws spaced a maximum of 8" o.c. over framing spaced a maximum of 16" o.c. Apply a weather-resistive barrier and flashing behind the panels as required. Follow the exterior finish manufacturer's recommendations for application over USG Durock® cement board.
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### 3.3 Countertops

- A** Base—Install minimum 3/4" APA Span-Rated Plywood or OSB with an Exposure 1 classification or better base across wood cabinet supports spaced maximum 16" o.c. Position ends and edges over supports.
  - B** Membrane—Staple-attach USG Durock™ tile membrane, USG Durock™ waterproofing membrane, 15-lb. felt or 4-mil polyethylene film using 1/4" galvanized staples over plywood base.
  - C** Panel Application—Secure USG Durock® cement board to plywood. Fasten to plywood with 1-1/4" USG Durock™ tile backer screws for wood framing or 1-1/2" hot-dipped galvanized roofing nails spaced 8" in both directions and around edges; fit ends and edges closely but not forced together, leaving a 1/8" gap.
  - D** Joint Finishing—Prefill joints with latex-fortified mortar or Type 1 organic adhesive; completely embed USG Durock™ tile backer tape; and level all joints and outside corners.
- 

### 3.4 Ceilings

- A** Framing—Ceiling joists, furring channels or strips must be spaced max. 16" o.c. Framing must be capable of supporting the total ceiling system dead load, including insulation, ceramic tile, bonding materials and cement board, with deflection not exceeding L/360 of the span. When steel framing is used, min. 20 ga. is required.
  - B** Panel Application—Apply 1/2" USG Durock® cement board to framing with long dimension across framing. Center end or edge joints on framing and stagger joints in adjacent rows. Fit ends and edges closely, but not forced together, leaving a 1/8" gap. Fasten boards to steel framing with 1-1/4" USG Durock™ tile backer screws for steel framing spaced 6" o.c. and to wood framing with 1-5/8" USG Durock™ tile backer screws for wood framing spaced 6" o.c. with perimeter fasteners at least 3/8" and less than 5/8" from ends and edges. If necessary, provide additional blocking to permit proper attachment. Edges or ends parallel to framing shall be continuously supported.
- 

### 3.5 Joint Treatment Application

- A** For Tile and Thin Brick—Prefill all USG Durock® cement board joints, and joints where USG Durock® cement boards abut other panels or surfaces such as gypsum board, with tile-setting mortar or adhesive, and then immediately embed tape and level the joints.
  - B** For Dry Untiled Areas—For small areas where the USG Durock® cement board will not be tiled, such as a board extending beyond the tiled area and abutting another surface, treat joints as follows. Seal USG Durock® cement board with Type 1 ceramic tile adhesive. (Mix four parts adhesive with one part water.) Embed USG Sheetrock® Brand joint tape over joints and treat fasteners with USG Sheetrock® Brand Durabond® setting-type joint compound (45 or 90) applied in conventional manner. Flat trowel USG Sheetrock® Brand setting-type joint compound over board to cover fasteners and fill voids to a smooth surface. Finish joints with at least two coats USG Sheetrock® Brand ready-mixed joint compound. Do not apply ready-mixed or setting-type joint compound over unsealed board.
- 

### 3.6 Interior Ceramic Tile Application

- A** Tile Application—Plan tile layout, then spread latex-modified thin-set mortar or Type 1 adhesive with trowel recommended by tile manufacturer held at 45° angle. Apply no more adhesive than can be covered in 20 to 30 minutes. Open time will vary according to temperature and humidity. NOTE: When applying over old ceramic tile, allow adhesive to set 10 to 15 minutes before applying new tile. Wall tiles may be set top down or bottom up. Press, do not slide, tiles and sheets of tile into adhesive. Maintain accurate joint alignment and spacing as tiles are positioned. Use wooden or rubber-faced beating block, tapped lightly with a mallet to level and ensure solid tile positioning. Check occasionally to ensure at least 95% adhesive transfer to back of tile. Avoid adhesive squeeze-up between tiles. It may be necessary to butter adhesive on backs of large pavers and quarry tile.  
**Note:** Contractors installing ceramic tile should always follow ANSI Specifications and TCNA Guidelines.
  - B** Drying Time—Do not walk on floors for at least 48 hours unless walking boards or plywood sheets are used. To finish job, wait 24 hours after tile has been installed for walls and countertops, 48 to 72 hours for floors, before grouting.
  - C** Grouting—Select, prepare and install grout in accordance with recommendations provided by grout manufacturers.
- 

### 3.7 Exterior Applications

- A** Follow the exterior finish manufacturer's recommendations for finishes applied to USG Durock® cement board.
- B** It is recommended that a weather-resistive barrier and flashing be installed behind USG Durock® cement board in direct-applied finish applications to provide a means for draining any intruding moisture safely from the exterior of the building.
- C** Follow the manufacturer's recommendation, design professional or contract documents for proper sealants and flashings at openings such as windows and doors.



## WEBSITES

[usg.com/tileandflooring](http://usg.com/tileandflooring)  
[usgdesignstudio.com](http://usgdesignstudio.com)

## TECHNICAL SERVICE

800 USG.4YOU (874-4968)  
[usg4you@usg.com](mailto:usg4you@usg.com)

## SAMPLES/LITERATURE

[samplit@usg.com](mailto:samplit@usg.com)

## CUSTOMER SERVICE

800 621-9523

### METRIC SPECIFICATIONS

USG Corporation, through its operating subsidiaries, will provide metric conversions on its products and systems to help specifiers match metric design sizes. In addition, some products are available in metric dimensions from selected manufacturing plants. Refer to SA100 *Construction Selector* for additional information and a Table of Metric Equivalents.

### NOTICE

We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.

### NOTE

All products described here may not be available in all geographic markets. Consult your local sales office or representative for information.

### SAFETY FIRST!

Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment. Read SDS and literature before specification and installation.

### DANGER

Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause respiratory irritation. May cause cancer by inhalation of respirable crystalline silica. Do not handle until all safety precautions have been read and understood. Avoid breathing dust. Use only in a well-ventilated area, wear a NIOSH/MSHA-approved respirator. Wear protective gloves/protective clothing/eye protection. If swallowed, inhaled or skin irritation occurs, get medical attention. If on skin: Wash with plenty of water. If on eyes: Rinse cautiously with water for several minutes. Remove contact lenses and continue rinsing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Dispose of in accordance with local, state and federal regulations.

For more information call Product Safety: 800 507-8899 or see the SDS at [usg.com](http://usg.com).

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### IPHONE APP

USG Tile & Flooring

SA932/rev. 6-18

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## SECTION 26 09 40

### AUTOMATED WINDOW SHADE CONTROL SYSTEM

#### PART 1 – GENERAL

##### 1.1 SECTION INCLUDES

- A. Provide an automatic window shade control system, including the following:
  - 1. Energy control unit, which automatically adjust window shades based on solar and weather conditions
- B. Basis-of-Design: SolarTrac™ Window Management System by MechoSystems, Inc.
- C. Related Sections:
  - 1. Division 09 - Gypsum Board Assemblies: Coordination with gypsum board assemblies for blocking, installation of shade pockets, closures and related accessories.
  - 2. Division 09 - Acoustical Ceilings: Coordination with acoustical ceiling systems for blocking, installation of shade pockets, closures and related accessories.
  - 3. Division 12 – Electrically-operated sunscreen roller shades.
  - 4. Division 16 - Electrical: Electric service for motors, motor controls, internal communication, low voltage wiring and data transfer, and connection to the Internet.

##### 1.2 SYSTEM DESCRIPTION

- A. Automated Shade Control System: Provide control system to control sunscreen roller shades in multiple buildings with an automated computer-server, based solar tracking control system.
  - 1. Include automated solar shade system to control shades by tracking the sun and the position of and intensity of the solar rays.
  - 2. Include system programming for solar data for every window from sunrise to sunset, each day of the year, providing data for establishing the appropriate shade position on the window with aligned intermediate stop positions.
  - 3. Include interface to communicate with the Building Management system (BMS) over the building RS 232 or RS 485 network.
  - 4. Include master centralized override capability from server.
  - 5. Include calendar event scheduling from server.

##### 1.3 SUBMITTALS

- A. Information Required with Submittal of Bid: In order to evaluate proposals for automated window shade control systems, the Architect & MEP require the following information be submitted prior to the award of the system.
  - 1. Bid proposal shall be accompanied with a document that notes all deviations from these specifications on a line-by-line basis.

### AUTOMATED WINDOW SHADE CONTROL SYSTEM

2. Bid shall include separate line items listing the control/interface components required for building automation systems and building management systems (BAS/BMS), audiovisual, and/or central integration systems.
3. Roller shade controls manufacturer shall list all components included in their bid.
4. Bid shall include a sample solar tracking report. Manufacturer shall provide a complete clear-day solar analysis and report for the 21st day of each month for one calendar year. The solar report shall be run for each solar orientation and window configuration (defined by glazing, height of glazing, overhang or shade fins) for every hour of the solar day from sunrise to sunset and shall include:
  - a. Analysis of solar heat gain factor (SHGF) for each solar orientation by glass type.
  - b. Provide solar ray altitude, surface and solar surface azimuth, incidence angles, profile angles, solar heat gain factor on the glass, inside the glass, and inside the shade.
  - c. Report shall provide window brightness inside of the glass in foot-candles not including the orb of the sun for every hour of the solar day, for every solar zone.
  - d. Report shall provide up to 6 appropriate shade positions, which compliment the angle and intensity of the solar ray; up / down plus 4 intermediate stop positions.
  - e. Allowable Solar Penetration: Provide shade positions that shall not allow any solar penetration more than 5 feet into the building.  
Bid shall include pricing for options listed in Paragraph 2.4D for the following system options:
5. Option 1: Provide Brightness Override™.
6. Option 2: Provide Shadow Module™.
7. Option 3: Provide touch screen manual override panels.
8. Option 4: Provide VirtualSwitch™ override.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  1. Preparation instructions and recommendations.
  2. Styles, material descriptions, dimensions of individual components, profiles, features, finishes and operating instructions.
  3. Storage and handling requirements and recommendations.
  4. Mounting details and installation methods.
  5. Typical wiring diagrams including integration of motor controllers with building management system, audiovisual and lighting control systems as applicable.
  6. Manufacturer's description of the science and logic employed for all automated systems.
  7. Manufacturer's description of the integration of the solar control system and the human factors required to assure thermal and visual comfort in the environment for the occupants, in conjunction with daylighting as an energy conserving subsystem.
- C. Shop Drawings: Plans, elevations, sections, product details, installation details, operational clearances, power and control wiring diagrams, and relationship to adjacent work.
  1. Prepare shop drawings on AutoCAD or Microstation format using base sheets provided electronically by the Architect.
  2. Prepare control wiring diagrams based on zones, switching and operational requirements provided by the Architect in electronic format.
  3. Include one-line diagrams, wire counts, coverage patterns, and physical dimensions of each item.
- D. Maintenance Data: Methods for maintaining control equipment and server / pc, precautions regarding cleaning materials and methods, instructions for related controls.
- E. Solar and Sky Monitoring Systems: Functionality of the solar monitoring and sky monitoring systems. Provide non-proprietary detailed description of the science and logic employed in

the bidders automated solar tracking control system and a schedule of the solar data provided.

- F. Warranty: Provide manufacturer's warranty documents as specified in this Section.

#### 1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Obtain automated window shade control system from a manufacturer, which will assume responsibility for all system components.
1. Manufacturer of roller shades shall have a minimum of ten years experience and minimum of five projects of similar scope and size in manufacturing products comparable to those specified in this section.
  2. Manufacturer of automated solar tracking shall have a minimum of five current operating projects of similar scope, functionality and size in Automated Solar-Ray tracking, motor controls; and microclimatic Sky analysis capability, comparable to those specified in this section.
- B. Installer Qualifications: Engage an installer, which will assume responsibility for installation of all system components, with the following qualifications.
1. Installer for automatic solar shade control system shall be a certified electrical engineer or controls specialist to set up the automated control system and coordinate with the commissioning agent, by others, to assure communication continuity and operational functionality between the central control system and the individual operating motors and groups of motors. Installer shall have a minimum of 5 years experience in installing similar systems.
- C. Electrical Components: NFPA Article 100 listed and labeled by either UL or ETL or other testing agency acceptable to authorities having jurisdiction, marked for intended use, and tested as a system. Individual testing of components will not be acceptable in lieu of system testing. Where applicable, system components shall be FCC compliant.
- D. Internal Communications: The back bone or Communication riser, Fiber optics or Copper and appropriate switches for communication at each floor or defined area shall be included in this bid as a turn-key installed solution, and be responsible for the design of the riser and the communication switches for the automatic solar tracking subcontractor.
- E. Internet Connection: A connection to the WWW Internet shall be provided by others, an IP Interface shall be provided by the Automatic Solar Tracking systems subcontractor. Full 24/7 access to the Internet is required for the set up and operation of the system. In the event of non-access to the Internet all onsite costs for engineering staff, travel and per diem will be incurred. Lack of IP access will substantially delay or totally inhibit implementation. Lack of IP access and connection shall negate all service warranties on the system.
- F. Requirements for Controls, and Tracking System, Switches:
1. Required in Division 12, Roller Shade Hardware, shade fabric, motor, and all related controls shall be furnished and installed as a complete two-way communicating system and assembly.
  2. Electrical and electronic motor controls and accessories required for a complete Automated solar tracking motorized shade control system including a two way appropriate interface to communicate with a stand alone Automated Solar Tracking and sky modeling system; which in turn shall have two way communication with the buildings BMS; and or Day Lighting, AV, systems.
  3. Automated solar tracking system shall maintain a historical data base for one complete year, plus 3 months for conversion or a total of 15 months of historical data on each full days solar condition, from sunrise to sunset and shall log all shade moves i.e. Automatic; Manual Switch; Shadow Mode; Reflectance Mode.

4. Local switches shall be wired back to and integrated with the Solar Tracking system. Shade movements by a local switch shall be recorded by the Solar Tracking system and integrated into the database.
  5. Automated solar tracking system shall provide standard reports on shade movement, solar condition at the time of each shade movement, and the control or switching system that moved the shades.
  6. Roller Shade Automated Controls Contractor shall list all components and systems included in their bid, including but not limited to, the prime manufacturer of the motor control and automated equipment and shall be financially responsible for any change orders and/or back charges required by the BMS, AV, or Lighting Control Systems contractors to interface with the automatic solar tracking system and the motorized roller shade system.
- G. Turn-Key Single-Source Responsibility for Automated Solar Tracking Control System (Riser) to control the Motorized Interior Roller Shades: To control the responsibility for performance of the automated solar tracking control systems, assign the design, engineering, and installation of the solar tracking head end system, the riser and related controls for the shade riser / backbone wiring specified in this Section to a single manufacturer of the automated solar tracking control system (Shade Control System). Coordinate the following with the General Contractor...
1. The General contractor shall provide IT risers, of sufficient size, with appropriate fire rating necessary at each floor level. Containment provided within the IT risers by the General contractor is for future use by others, including the automated shade control network
  2. The General Contractor shall provide sufficient space within the IT riser for the automated shade control communications cabling.
  3. The General Contractor shall provide an access point to connect the riser shade control cable to the shade control network.
  4. The General Contractor shall be responsible for all related fire proofing from the IT Riser closet to the shade control network.
  5. The Shade Control System supplier (SCS) shall make connections to the floor controllers via a modular connection at each floor riser where floor controllers are located.
  6. The Shade Control System supplier (SCS) shall coordinate and install IQ Communication Gateways, analog modules, Ethernet switches, within the same closet as the electrical IT riser.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components in factory-labeled packages, marked with manufacturer and product name, fire-test-response characteristics, and location of installation using same room designations indicated on Drawings and in the Window Treatment Schedule.

#### 1.6 PROJECT CONDITIONS

- A. Power and control wiring shall be complete and certified, fully operational with uninterrupted communication on the lines and minimal noise certified by a commissioning agent (by others).
1. 485, Mechonet, and Dry Contract Network: Noise on the line not to exceed shade manufacturer's limits.

#### 1.7 WARRANTY

- A. Warranty: Provide manufacturer's standard warranties, including the following:
1. Roller Shade Motor Control Systems: Manufacturer's standard non-depreciating five-year warranty.

2. Roller Shade Control Systems Installation: One year from date of Substantial Completion, not including scaffolding, lifts or other means to reach inaccessible areas, which are deemed owners responsibility.
3. Automated Systems Warrantee: To meet the environmental, functional and operating requirements as specified herein for one year, fully monitored by the manufacturer / supplier of the system including but not limited to the PC controller, the operating system, and the solar tracking program shall be warranted for one year.
4. Electronics Warranty: including but not limited to total solar measuring sensors; radiometers; IP interface connections and peripheral electronics to assure full operability and communication to the motor control network for one year.
5. Automated Systems Maintenance Program: Provide an optional agreement for a 5-year Automated Systems Maintenance program to the Architect and Owner's Representative.

## PART 2 – PRODUCTS

### 2.1 MANUFACTURER

- A. Acceptable Manufacturer for Window Shade Control System: SolarTrac™ MechoSystems Inc; 42-03 35th Street, Long Island City, NY 11101. Tel: (718) 729-2020 ext 1901; Mr. Glen Berman. Email: glenb@MechoSystems.com.

### 2.2 AUTOMATED DAYLIGHTING SOLAR TRACKING SHADE CONTROL SYSTEM

- A. Solar Tracking Control System: Automated Computer Shade Control System.
- B. Solar Evaluation and Sky Modeling System shall utilize approved scientific solar algorithms, which shall provide the following for every window under considerations in the building from sunrise to sunset, 365-1/4 days per year, as follows:
1. Solar heat gain in real time reported in BTU's / (W/M2) multiple times each minute 24/7.
  2. Incident angle on every window.
  3. Profile angle on every window.
  4. Direct radiation on every window.
  5. Diffuse radiation on every window.
  6. Surface azimuth.
  7. Solar surface azimuth.
  8. Window geometry / profile.
  9. Geometry of the solar ray and window geometry to determine solar penetration.
  10. Adjustment by solar penetration.
  11. Geometry of the solar ray, window geometry, and allowable solar penetration calculated to determine incremental shade position.
    - a. An algorithm integrated with the Solar Radiometers to provide in real time, a microclimatic sky condition for the project, 7/24/365, which shall be the basis of determining a clear, cloudy or overcast sky condition.
    - b. The system will then adjust the shades incrementally on the window to provide protection from direct solar radiation while maximizing view and daylighting for the project.
  12. Adjustment by BTU / W-M 2 solar load on every window in the building 7/24/365.
  13. Sky modeling and evaluation for clear, cloudy, bright, overcast sky condition – utilizing total solar measuring devices.
  14. Sky modeling algorithms utilizing the instantaneous, real time total solar data to determine sky condition.
    - a. Control System shall adjust the shade position to maximize energy management, view and personal comfort based on micro-climactic conditions.
    - b. The goal is to maximize view without Thermal or Visual discomfort through: Thermal Comfort as assured by Solar Tracking

### AUTOMATED WINDOW SHADE CONTROL SYSTEM



- Visual Comfort as assured by managing (on the window wall):
- (a) Brightness and glare via a brightness module
  - (b) Shadow Module
- Control Modules: Control system shall be capable of optimizing the position of the shades (incrementally), to continuously deploy the shades in response to changes in Proactive and Reactive requirements:
- Solar Tracking Module – Base Control System, Thermal Comfort:
- (c) Proactive Algorithms (Primary):
    - (1) Sun angle.
    - (2) Solar intensity – Total Light Spectrum.
    - (3) BTU Load.
  - (d) Reactive Algorithms: Real-time sky conditions via roof mounted radiometers.
- Shadow Module –Visual Comfort:
- (e) Proactive Algorithms:
    - (1) Urban Landscape Model – Pleijel Images.
    - (2) Timing Parameters (User Defined).
- Brightness Module –Visual Comfort (Secondary):
- (f) Reactive Algorithms for Brightness / Glare:
    - (1) Interior Photo Sensors.
    - (2) Exterior Photo Sensors.
    - (3) Various algorithms for return from Brightness Override (software based).
- c. Incremental Positioning:

Shades shall be capable of being aligned at up to 104 positions based on serial command.

The Control System shall be capable of staggering the operation of shade motors to assure balanced loading of the electrical system.
  - d. Continuous Operation:

24 hours per day, 7 days per week, 365-1/4 days per year.

Shade positioning resolution shall be calculated every 60 seconds.
- C. Graphic User Interface (GUI): Configure screen as follows:
- 1. PC-GUI shall provide access to all adjustable parameters displaying current values including but not limited to:
    - a. Radiation.
    - b. Shade position.
    - c. User defined requirements.
  - 2. Displays Real-Time Microclimatic Sky Conditions.
  - 3. Key-Zone / Sensor Monitoring:
    - a. On main screen: able to display current operation of “Key-Zones” or “Sensors” anywhere in the building
  - 4. Alarms – On Main Screen: able to display overrides due to but not limited to:
    - a. Touch Screen.
    - b. Main Control System.
    - c. Remote (3rd Party Interface (BMS, AV etc.)).
  - 5. Internal Diagnostic Function
    - a. Network-based system diagnostic module which monitors and verifies the operating status of the various nodes on the system. In case a problem is detected the issue is noted in the “Alert” section on the main application screen and logged within the system event log. If Internet access is available then email alert notification can be configured to be issued to a predefined set of email addresses. When the alert is cleared, this event will also be logged within the system event log.
  - 6. Manual / Master Override:
    - a. Interactive Floor Plan: PC shall provide a map of each floor showing the shade motor groups, control zones and sensor locations with their real time position of each control zone.

- b. Universal Command View: From the main screen the Universal Command View shall provide Whole Floor and Whole Building emergency control.
- 7. Reports / Analysis:
  - a. Data Storage / Event Log: Continual record of each day's activities including shade position and shade mode changes.  
Stored on a change of state basis.  
Archived based on user defined file size.
  - b. Sensor Data: Daily Record of sensor's data stored into a history file on a 60 second basis, stored on a repetitive basis:  
Roof mounted radiometers.  
Interior / exterior photo sensors.
  - c. Control Zone Timeline Visual Record of Current Day's Activity by Zone:  
Reporting by Zone of current day operation by intermediate stop locations.
  - d. Trending Reports:  
Daily Report: Sky, Sensors, Event Log, and Timeline.  
Shade Position Report: Percentage of time shade at each position.  
Override Report: Reason for override, percentage of day overridden up / down.
  - e. Interface with Other Report Writers:  
Event log and sensor data available in native MBD format.  
Available in SQL format.
- D. Override: Control Software shall incorporate an Override Event Scheduler such that the building Owner may customize position of shades by motor, group, zone or whole building for any event, night or weekend requirements
  - 1. Manual Local Override:
    - a. Wall Switches.
    - b. Touch Screens.
    - c. Virtual Shade Control Switch (via IP).
  - 2. Master Override:
    - a. Solar Tracking System shall have capability of whole building control for master override by zone or by motor.
    - b. Touch Screen shall have capability of whole floor control for master override by zone or by motor.
  - 3. Remote Off-Site-Monitoring:
    - a. IP Interface for monitoring, maintenance and software upgrades.
    - b. Provide Maintenance, Support and licensing contract with bid.
- E. System Options:
  - 1. Option 1: Provide Brightness Module: As an optional feature to Solar Tracking System, in the event of excessive sky glare through the fenestration and exceeds a user defined allowable ratio of brightness such as a 1:10 ratio, when the sky is overcast and bright, interior photo sensors recognize and communicate the brightness level to the Solar Tracking System. The shades shall then be brought to a midpoint position until the brightness default is met and shall continue to monitor and process base on a performance...
    - a. Visual Comfort: (Secondary)  
Reactive Algorithms for brightness / glare  
Interior Photo Sensors  
Exterior Photo Sensors  
Various algorithms for return from Brightness Override (software based)
  - 2. Option 2: Provide Shadow Module The system shall identify each window and shade-motor zone – during certain times of the year – when the window is in shadow for a user defined time such as 20 minutes. The shades in the shadow zones will be raised to maximize daylighting and view to achieve...
    - a. Visual Comfort:  
Proactive Algorithms as a predictive model:

- (a) Urban Landscape Module – Pleijel Images
  - (b) Timing Parameters (User defined)
- 3. Option 3: Provide touch screen manual override panels. Provide two Color LCD Touch Screen panels per floor of designated motorized shades at locations to be determined by the Architect. Touch Screen shall provide following functionality:
  - a. Floor Override:
    - (a) The touch screen shall be enabled by the touch of a finger.
    - (b) A map of the shades by the shade motor for the local area on that floor shall be brought up onto the screen.
    - (c) Each shade motor when touched shall provide a drop down menu showing preset positions.
    - (d) When a preset is selected, that shade motor shall move that shade to the manually selected preset position.
  - b. Reporting:
    - (a) Store and provide information on local overrides performed in the past month.
  - c. Event Scheduler:
    - (a) Provide ability to create and adjust override schedule based on local user requirements.
- 4. Option 4: Provide *virtual shade control switch* a virtual shade override control system for the Solar Tracking System:
  - a. Provide software for IP based optional override switch over tenant network.
  - b. Architect shall provide schedule of user permissions for overrides by office and area or zone.
  - c. Each manual override in the open plan and in the perimeter offices shall be reported as an override event where data can be trended for future analysis.
  - d. Each shade motor, group or zone, when selected shall provide a menu showing preset positions. When a preset is selected, that shade motor, group or zone shall move that shade to the manually selected preset position.  
There shall be an administrative capability to set up users for which shades they have access to and shall only see the shades they have access to.
- 5. Option 6: Provide wall switches:
  - a. Conference Center: Shades shall be operated by, 5 and 10-button low voltage standard switches, or programmable intelligent switches [IS]. Standard switch shall be wired to a motor splitter.
  - b. Intelligent switches may be installed anywhere on the bus line. Each IS shall be capable of storing one control level address to be broadcast along the bus line.
  - c. An address that is transmitted by either a switch or central controller shall be responded to by those motors with the same address in their control table.
  - d. IS shall provide for interface with other low voltage input devices via a set of dry contact terminals located on the switch.
  - e. Standard switch or IS may control an individual, sub-group or group of motors in accordance with the address in each motor.

## PART 3 – EXECUTION

### 3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### 3.3 DEMONSTRATION

- A. Shade Controls System Supplier shall train Owner's maintenance personnel to adjust, operate and maintain systems. A minimum 20 hours of one-on-one training shall be provided to the System Operator and a separate 20 hours training shall be provided one-on-one to the System Administrator.
- B. All building occupants shall receive an electronic-based educational guide in .pdf format on the general workings of the shade control system and specific instructions on how to use the manual override feature.

### 3.4 COMMISSIONING

- A. Automated SolarTrac System: Provide factory-certified field service engineer to ensure proper system installation and operation under following parameters.
  - 1. Minimum experience of 2 years training in the electrical/electronic field.
  - 2. Certified by the equipment manufacturer on the system installed.
- B. The automated shade control system will be commissioned on a floor-by-floor basis and then finally as an entire system. Final commissioning shall be successfully completed prior to the first move-in date for client's occupants.
  - 1. Verify programming of user, defined attributes of system to owner.
  - 2. Final Acceptance shall be upon successful demonstration of all commissioning requirements described in section 3.3.C of these specifications.
- C. During commissioning the following will be measured to determine system performance:
  - 1. Response of system (demonstrated by deployment of shade) if average illumination of window wall at sensor exceeds 2,000 cd/m<sup>2</sup> or other value established by Owner.
  - 2. Sunlight penetration distance shall not exceed the Owner specified distance for each shade control zone.
  - 3. Response to variable external conditions including, but not limited to: partially sunny days; shading from other buildings in the neighboring urban landscape; and, reflections from other buildings in the neighboring urban landscape
  - 4. Proper consistent action of all shade groups on each façade for a 30 day period
  - 5. The shade log shall be plotted for each shade motor group for the 30-day period. The log shall be used to demonstrate to the Owner that the automated shade movement meets the specified criteria in these specifications.
  - 6. Return from manual override to automatic mode shall be demonstrated to be in accordance with these specifications using the log and also through direct observation under partly cloudy conditions.
  - 7. All aspects of rezoning, control monitoring, logging, fault diagnostics and reporting shall be demonstrated to the Owner.
- D. Final Acceptance shall be upon successful demonstration of all commissioning requirements described in these specifications.

### 3.5 PROTECTION

- A. Protect installed products until completion of project.

- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION