Specifications for 312 West Hyman

Part 1- Core and Shell

07 Thermal and Moisture Protection

08 Windows and Doors

13 Specialties- Core and Shell

15 Mechanical- Core and Shell

16 Electrical- Core and Shell

Part 2- Finish

10 Specialties- Interior Only

11 Equipment- Appliances, Interior Only

12 Furnishings- Interior Only

15 Mechanical- Interior Only

16 Electrical- Interior Only

22 Plumbing - Interior Only

As per currently adopted IRC

Section R910 Snow shed design. Roofs shall be designed so that they do not shed ice and snow onto adjoining properties or potentially occupied areas such as a walkway, stairway, alley, deck, pedestrian and vehicular exit from buildings or areas where there is potential for personal injury or property damage and areas directly above or in front of gas utility or electric utility meters.

Section 1513 Snow shed design. Roofs shall be designed so that they do not shed ice and snow onto adjacent properties and potentially occupied areas such as a walkway, stairway, alley, deck, pedestrian and vehicular exit from buildings or areas where there is potential for personal injury or property damage and areas directly above or in front of gas utility or electric utility meters.

Complying with Chapter 7 Historic Preservation Guidelines

Gutters, Downspouts, Snowstops, and Snow Fences

Gutters and downspouts are used to divert water away from a structure. Without this drainage system, water may splash off the roof onto exterior walls and run along the foundation of the building. Snowstops and snow fences are used to protect inhabitants and the building from the sudden snow avalanches that rip off architectural details and can cause serious injury. Gutters can be seen in some 19th century photos of historic buildings and are more common on AspenModern structures. Overall, the visual impact of these functional elements should be minimized.

7.10 Design gutters so that their visibility on the structure is minimized to the extent possible.

• Downspouts should be placed in locations that are not visible from the street if possible, or

in locations that do not obscure architectural detailing on the building.

• The material used for the gutters should be in character with the style of the building.

Complying with IBC

IBC 1504.6.1Gutter securement for low-slope roofs.

Gutters that are used to secure the perimeter edge of the roof membrane on low-slope (less than 2:12 slope) built-up, modified bitumen, and single-ply roofs, shall be designed, constructed and installed to resist wind loads in accordance with Section 1609 and shall be tested in accordance with Test Methods G-1 and G-2 of SPRI GT-1.

BERRIDGE MANUFACTURING COMPANY

(800) 669-0009
www.Berridge.com

Standard Colors

Premium Colors

Premium colors require a nominal surcharge.

Metallic Colors

Metallic colors are premium finishes which require a nominal surcharge.

Natural Metal Finish

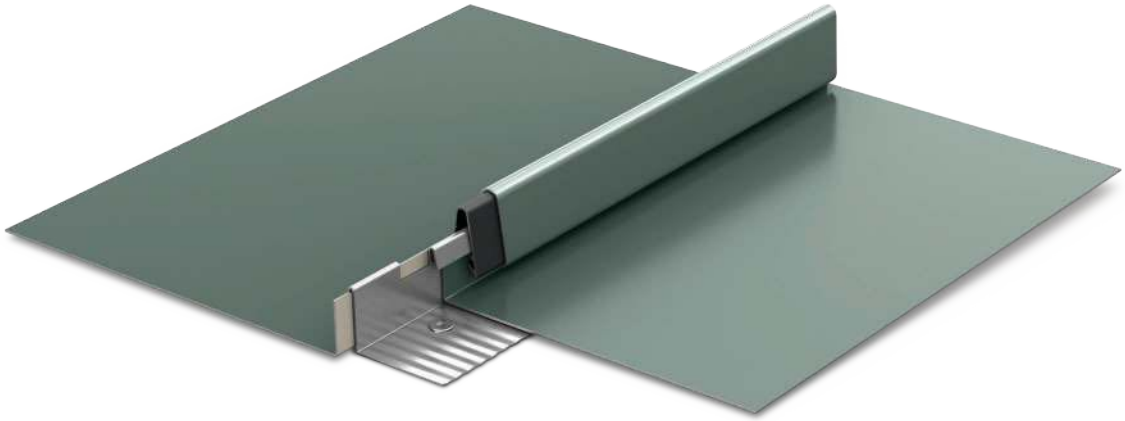
Acrylic-Coated Galvalume® is a coated sheet product that combines the corrosion resistance of Galvalume® steel sheet with a clear, organic resin applied to the top side and bottom side of Galvalume® substrate.

Print Pattern Finishes

Consult BMC on print pattern pricing and availability.

Please consult the BMC Technical department at Technical@Berridge.com for LEED compliance information.
Due to limitations in the printing process, please request actual color chips for accurate color viewing.

TEE-PANEL
INSTALLATION DETAILS



BERRIDGE
MANUFACTURING
COMPANY

Roofs of Distinction

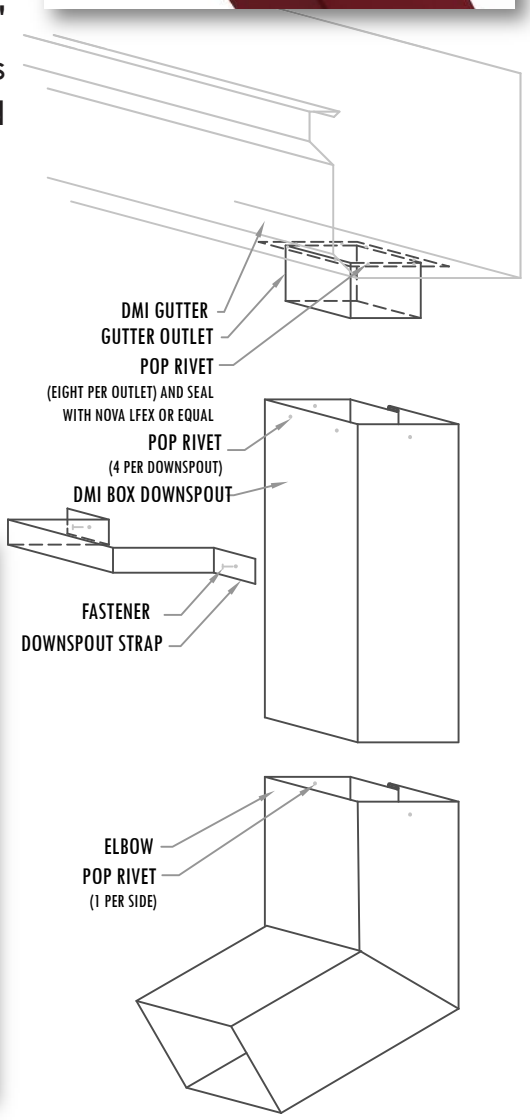
800-669-0009 • www.Berridge.com

DYNACLAD® BOX DOWNSPOUT

DMI's box downspouts are offered in sizes from 3"x4" to 11"x11" and lengths up to 32'. DMI offers a full line of accessories including, outlets, elbows, downspout straps, collector boxes and scuppers.

Offered in a large variety of materials and colors:

- Galvalume® (22 ga. & 24 ga.)
- HDG-90 (20 ga.)
- Stainless Steel (22 ga. & 24 ga.)
- Aluminum (.050, .040, & .032)
- RHEINZINK® (20 ga./1 mm, 22 ga./.8 mm, & 24 ga./.7 mm)
- Copper (20 oz. & 16 oz.)



DYNACLAD® BOX DOWNSPOUT

PROJECT NAME: _____

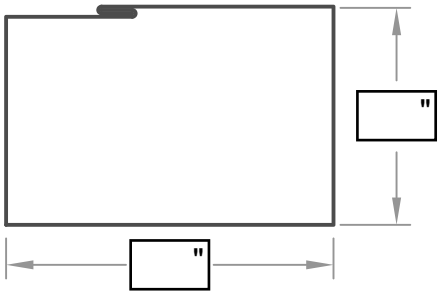
ARCHITECT: _____

INSTALLING CONTRACTOR: _____

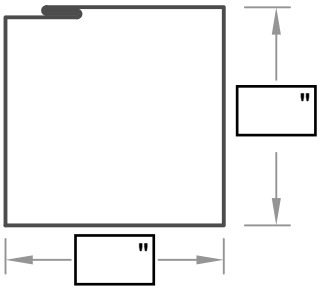
GENERAL CONTRACTOR: _____

SPECIFICATION SECTION: _____

◯ Rectangle



◯ Square



DYNACLAD® STOCKING COLOR/MATERIAL

COLOR (IN ALPHABETICAL ORDER)	24 GAGE GALVALUME KYNAR 500	22 GAGE GALVALUME KYNAR 500	.032 ALUM. 3003/3105 H14 KYNAR 500	.040 ALUM. 3003/3105 H14 KYNAR 500	.050 ALUM. 3003/3105 H14 KYNAR 500	.063 ALUM. 3003/3105 H14 KYNAR 500
AGED COPPER*	•		•			
BEIGE	•	•	•	•	•	
BRITE RED*	•		•	•		
BROWN	•		•	•		
BURGUNDY	•		•			
CHAMPAGNE*	•		•			
CHARCOAL GREY	•		•	•		
CLASSIC BRONZE	•		•	•		
COBALT BLUE	•		•			
COLONIAL RED	•		•			
DARK BRONZE	•	•	•	•	•	•
DOVE GREY	•	•	•	•		
EVERGREEN	•		•	•		
HARTFORD GREEN	•		•			
HEMLOCK GREEN	•		•			
LEAF GREEN	•		•			
MATTE BLACK	•		•	•		
METALLIC COPPER*	•		•			
METALLIC SILVER*	•		•			
MUSKET GREY	•		•	•		
PATINA COPPER	•		•	•		
PUTTY	•	•	•	•	•	
ROYAL BLUE	•		•	•		
SANDSTONE	•	•	•	•		
SEAPORT	•		•			
SLATE BLUE	•		•			
SLATE GREY	•	•	•	•	•	
SPARTAN BRONZE	•		•	•		
STONE	•		•	•		
TERRA COTTA	•		•			
WEATHERED ZINC*	•		•			
WHITE	•	•	•	•	•	•

Non-Stock colors available subject to minimum quantities, additional lead times and upcharges.

Custom Colors available.

* Denotes Premium Color - subject to additional costs.

SUBSTRATE

- ◯ 24 ga. Galvalume®
- ◯ 22 ga. Galvalume®
- ◯ 20 ga. HDG-90
- ◯ 24 ga. Stainless Steel
- ◯ 22 ga. Stainless Steel
- ◯ 16 oz. Copper
- ◯ 20 oz. Copper
- ◯ .032 Aluminum
- ◯ .040 Aluminum
- ◯ .050 Aluminum
- ◯ 24 ga. (.7mm) RHEINZINK®
- ◯ 22 ga. (.8mm) RHEINZINK®
- ◯ 20 ga. (1mm) RHEINZINK®

EMBOSSED: _____

Consult DMI for minimum quantities, upcharges, set up fees and extended lead times

STANDARD FINISHES (NA ON COPPER, STAINLESS STEEL, & MILL FINISH)

- ◯ DynaClad® PVDF: _____
- ◯ Acrylic Coated Galvalume (Acrylume®)
- ◯ RHEINZINK® Patina: _____
- ◯ Clear Anodized Aluminum

PREMIUM FINISHES*

- ◯ DynaClad® Metallic PVDF: _____
- ◯ DynaClad® Brite Red PVDF
- ◯ DynaClad® Standard Color PVDF w/ Clearcoat: _____
- ◯ DynaClad® Metallic Color PVDF w/ Clearcoat: _____
- ◯ Custom Color: _____

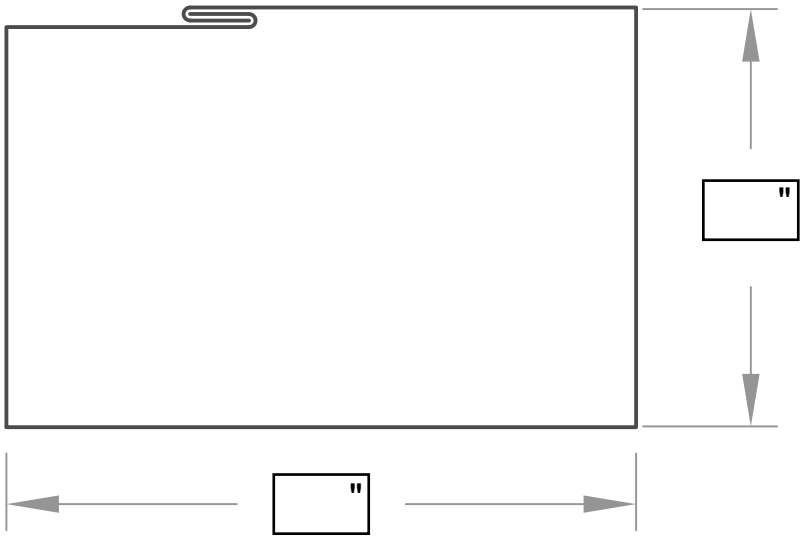
*Premium Colors subject to minimum quantities, extended lead times and upcharges. Consult DMI for details.

WARRANTY

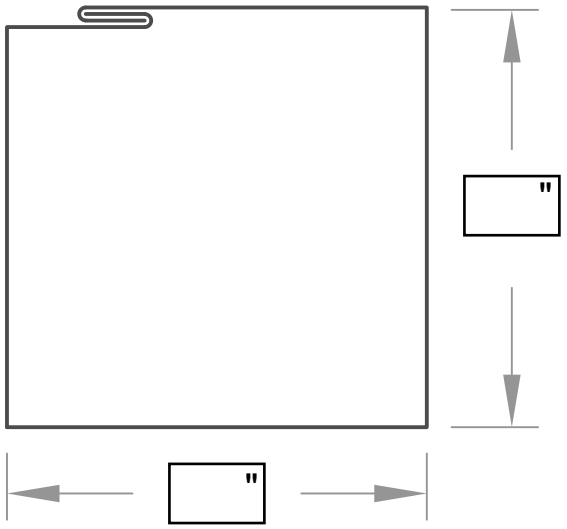
- ☐ DynaClad® Paint Finish
- ☐ Galvalume® 20 Year - 6 Month (Substrate)
- ☐ Aluminum Sheet 2 Year (Substrate)

Since 1988 Dimensional Metals, Inc. (DMI) has specialized in the manufacturing of architectural metal roof and wall panel systems as well as fabricated architectural sheet metal for the construction industry. We are backed by decades of proven metal envelope design, dependable Technical Field Services, and an Engineering Department delivering sustainable solutions. You are sure to find the product that will best enhance your design.

DynaClad® Water Control
BOX DOWNSPOUT



○ DMI BOX DOWNSPOUT RECTANGLE



○ DMI BOX DOWNSPOUT SQUARE

NOTES

Sizes are to be no less than 3"x4" and no greater than 11"x11"
3"x4" not available in .050, .040 or 20 ga.
All dimensions are to be approved by DMI
Available in up to 32'-0" lengths

QUANTITIES

_____ Total LNFT

Quantity	Length
_____	_____' _____"
_____	_____' _____"
_____	_____' _____"
_____	_____' _____"

ACCESSORIES

_____ Downspout Outlets
_____ Downspout Straps
_____ Downspout Elbow
(Specify Angle: _____ °)

**See custom order form for additional items*

MATERIAL

○ Aluminum: _____
○ Galvalume®: _____
○ HDG-90: 20 ga.
○ Stainless Steel: _____
○ Copper: _____
○ RHEINZINK®: _____

FINISH

○ DynaClad® PVDF: _____
○ DynaClad® PVDF w/ Clear Coat*: _____
○ Acrylic Coated Galvalume® (ACRYLUME®)
○ RHEINZINK® Patina: _____
○ Clear Anodized Aluminum
○ Custom Color: _____

**Premium Colors subject to minimum quantities, extended lead times and upcharges. Consult DMI for details.*

NOTES *(If staggered sizes are required please notate here)*

PROJECT NAME

P.O. NO.

CUSTOMER

CUSTOMER APPROVAL

Material is to be fabricated to dimensions as listed on this form. Responsibility of measurement accuracy and completeness is by the submitter. You are agreeing to DMI's Terms and Conditions of Sale as outlined on http://www.dmimetals.com/termsandconditions.

○ APPROVED FOR FABRICATION
○ APPROVED AS NOTED

X

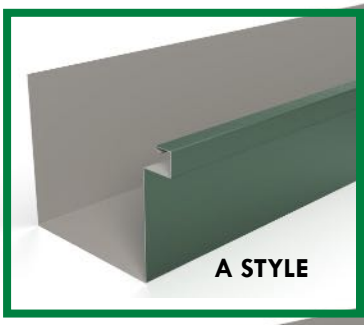
AUTHORIZED CUSTOMER SIGNATURE DATE

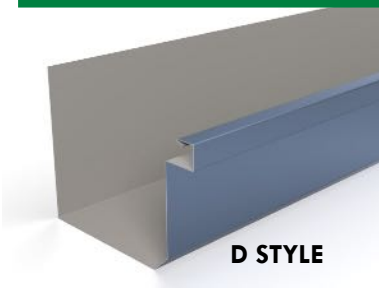
PRINT NAME PHONE

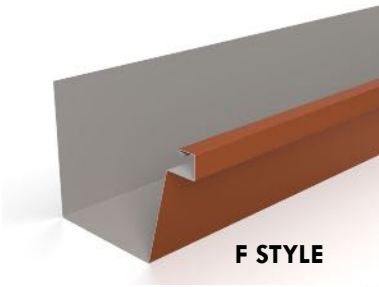
58 Klema Drive North - Reynoldsburg, OH 43068 - phone: 800.828.1510 - fax: 866.709.3235

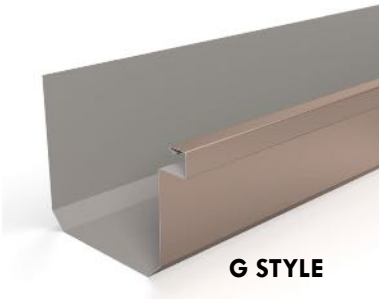
10072019

DYNACLAD® BOX GUTTER





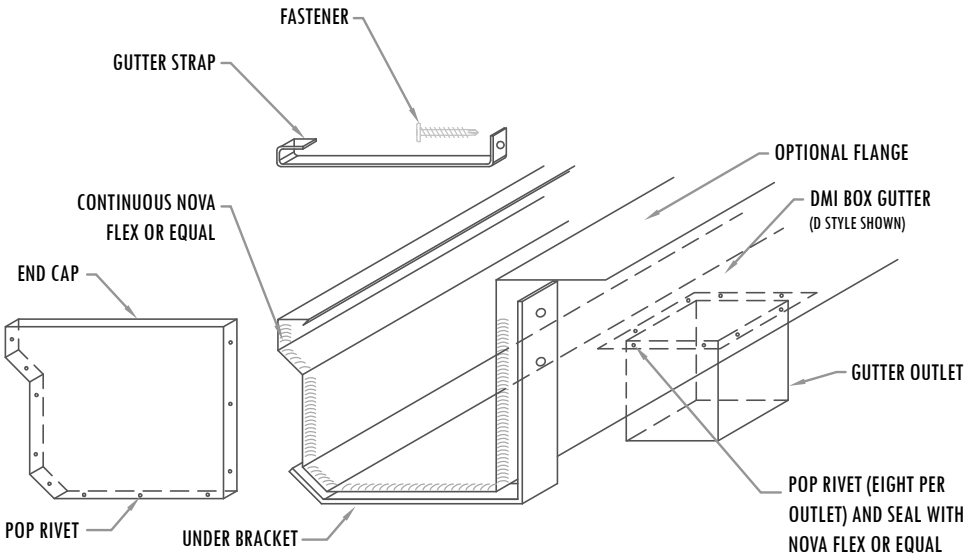




DMI's box gutters are offered in six standard SMACNA profiles. Custom profiles and lengths up to 32' are available. DMI offers a full line of accessories including, internal support brackets, custom under brackets, mitered corners, end caps, splice plates, expansion joints, outlets, downspouts, elbows, and downspout straps.

Offered in a large variety of materials and colors:

- Galvalume® (22 ga. & 24 ga.)
- HDG-90 (20 ga.)
- Stainless Steel (22 ga. & 24 ga.)
- Aluminum (.050, .040, & .032)
- RHEINZINK® (20 ga./1 mm, 22 ga./.8 mm, & 24 ga./.7 mm)
- Copper (20 oz. & 16 oz.)



DYNACLAD® BOX GUTTER

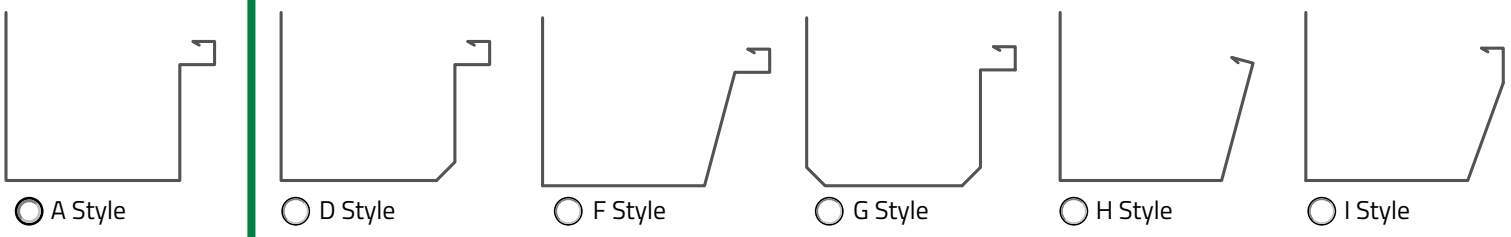
PROJECT NAME: _____

ARCHITECT: _____

INSTALLING CONTRACTOR: _____

GENERAL CONTRACTOR: _____

SPECIFICATION SECTION: _____



○ A Style ○ D Style ○ F Style ○ G Style ○ H Style ○ I Style

OPTIONAL ROOF FLANGE: (select one)

DYNACLAD® STOCKING COLOR/MATERIAL

COLOR (IN ALPHABETICAL ORDER)	24 GAGE GALVALUME KYNAR 500	22 GAGE GALVALUME KYNAR 500	.032 ALUM. 3003/3105 H14 KYNAR 500	.040 ALUM. 3003/3105 H14 KYNAR 500	.050 ALUM. 3003/3105 H14 KYNAR 500	.063 ALUM. 3003/3105 H14 KYNAR 500
AGED COPPER*	•		•			
BEIGE	•	•	•	•	•	
BRITE RED*	•		•	•		
BROWN	•		•	•		
BURGUNDY	•		•			
CHAMPAGNE*	•		•			
CHARCOAL GREY	•		•	•		
CLASSIC BRONZE	•		•	•		
COBALT BLUE	•		•			
COLONIAL RED	•		•			
DARK BRONZE	•	•	•	•	•	•
DOVE GREY	•	•	•	•		
EVERGREEN	•		•	•		
HARTFORD GREEN	•		•			
HEMLOCK GREEN	•		•			
LEAF GREEN	•		•			
MATTE BLACK	•		•	•		
METALLIC COPPER*	•		•			
METALLIC SILVER*	•		•			
MUSKET GREY	•		•	•		
PATINA COPPER	•		•	•		
PUTTY	•	•	•	•	•	
ROYAL BLUE	•		•	•		
SANDSTONE	•	•	•	•		
SEAPORT	•		•			
SLATE BLUE	•		•			
SLATE GREY	•	•	•	•	•	
SPARTAN BRONZE	•		•	•		
STONE	•		•	•		
TERRA COTTA	•		•			
WEATHERED ZINC*	•		•			
WHITE	•	•	•	•	•	•

Non-Stock colors available subject to minimum quantities, additional lead times and upcharges.

Custom Colors available.

* Denotes Premium Color - subject to additional costs.

SUBSTRATE

- ○ 24 ga. Galvalume®
- ○ 22 ga. Galvalume®
- ○ 20 ga. HDG-90
- ○ 24 ga. Stainless Steel
- ○ 22 ga. Stainless Steel
- ○ 16 oz. Copper
- ○ 20 oz. Copper
- ○ .032 Aluminum
- ○ .040 Aluminum
- ○ .050 Aluminum
- ○ 24 ga. (.7mm) RHEINZINK®
- ○ 22 ga. (.8mm) RHEINZINK®
- ○ 20 ga. (1mm) RHEINZINK®

EMBOSSED: _____

Consult DMI for minimum quantities, upcharges, set up fees and extended lead times

STANDARD FINISHES (NA ON COPPER, STAINLESS STEEL, & MILL FINISH)

- ○ DynaClad® PVDF: _____
- ○ Acrylic Coated Galvalume (Acrylume®)
- ○ RHEINZINK® Patina: _____
- ○ Clear Anodized Aluminum

PREMIUM FINISHES*

- ○ DynaClad® Metallic PVDF: _____
- ○ DynaClad® Brite Red PVDF
- ○ DynaClad® Standard Color PVDF w/ Clearcoat: _____
- ○ DynaClad® Metallic Color PVDF w/ Clearcoat: _____
- ○ Custom Color: _____

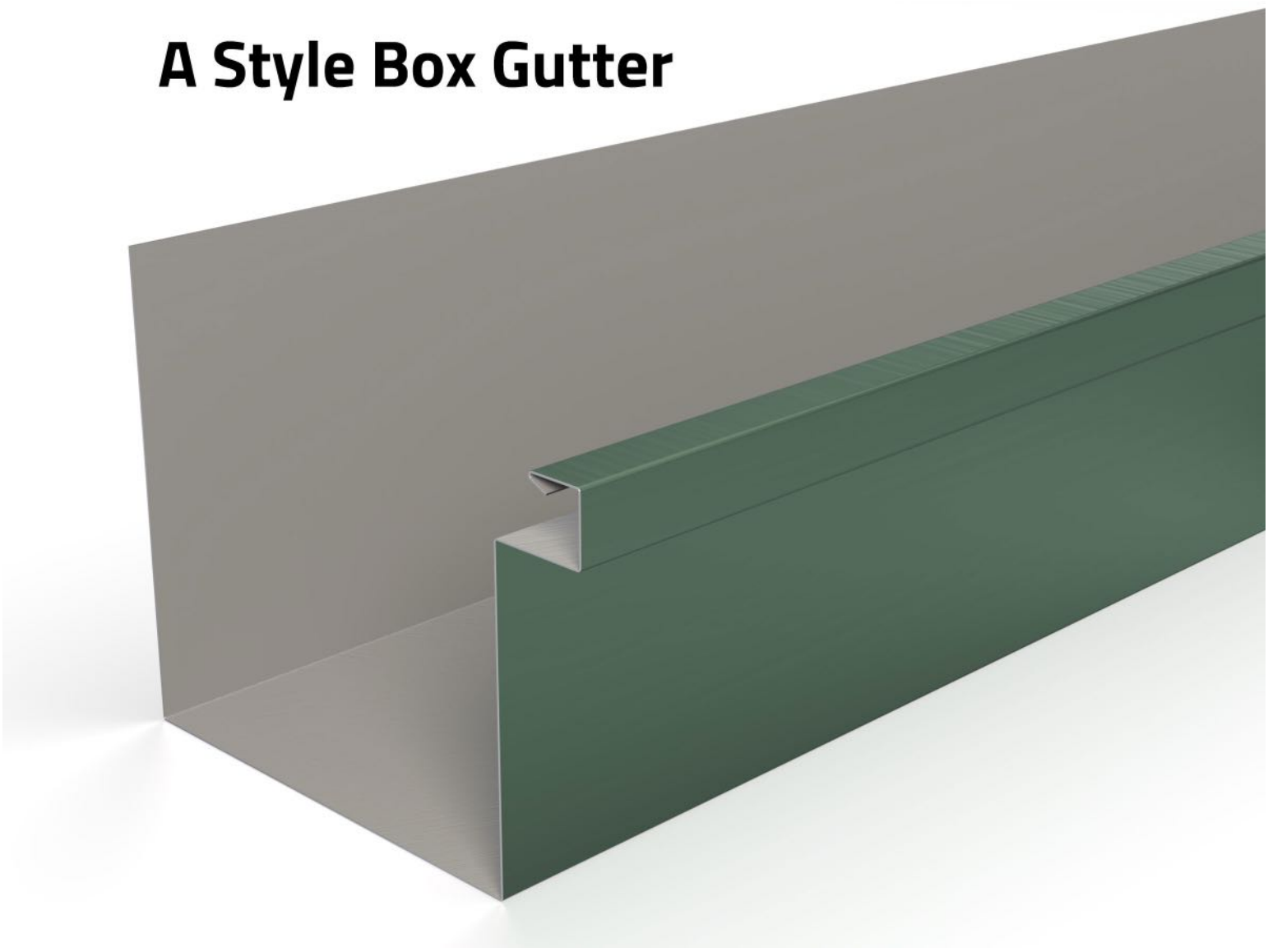
*Premium Colors subject to minimum quantities, extended lead times and upcharges. Consult DMI for details.

WARRANTY

- ☐ DynaClad® Paint Finish
- ☐ Galvalume® 20 Year - 6 Month (Substrate)
- ☐ Aluminum Sheet 2 Year (Substrate)

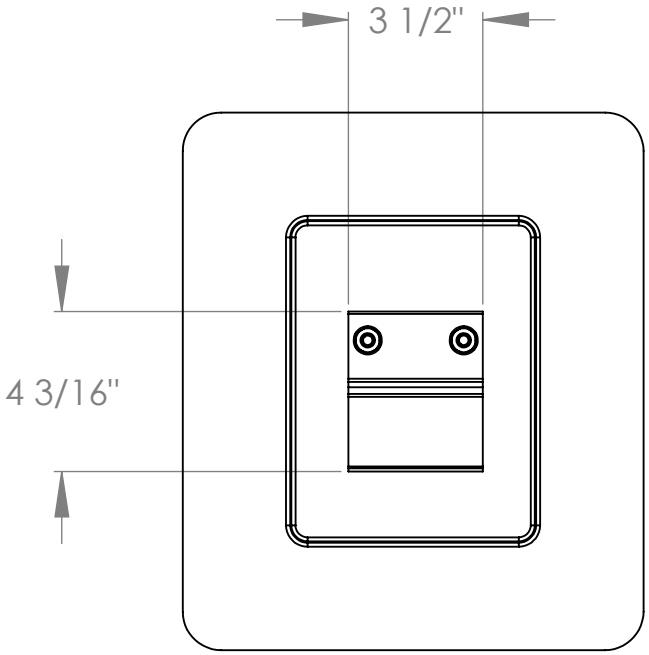
Since 1988 Dimensional Metals, Inc. (DMI) has specialized in the manufacturing of architectural metal roof and wall panel systems as well as fabricated architectural sheet metal for the construction industry. We are backed by decades of proven metal envelope design, dependable Technical Field Services, and an Engineering Department delivering sustainable solutions. You are sure to find the product that will best enhance your design.

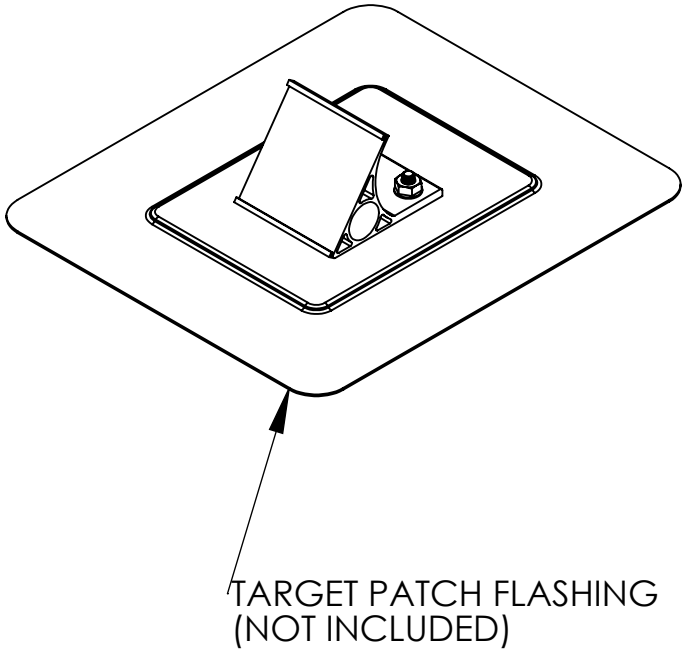
A Style Box Gutter

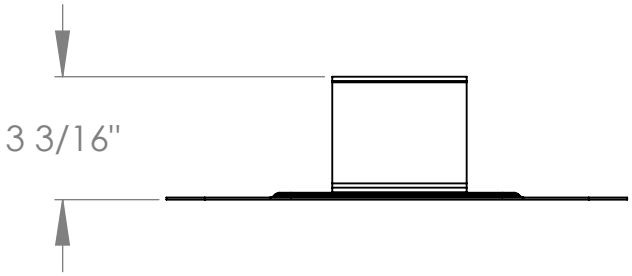


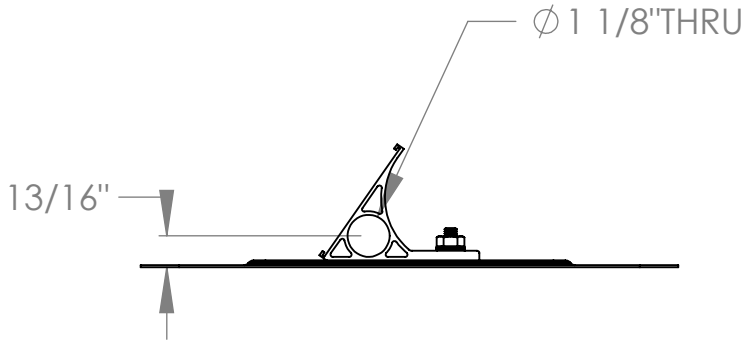
Cut Sheet - PD90-AL

1. Installation to be completed in accordance with manufacturer's written specifications and installation instructions.
2. See spec sheet or contact manufacturer for detailed material, finishes, and configuration options.
3. Contact manufacturer for detailed layout.
4. Do not scale drawings.
5. Subject to change without notice.
6. For patent information, visit our Patent Page.









ALPINE SNOWGUARDS®

289 Harrel Street
Morrisville, VT 05661
Phone: 1.888.766.4273
Fax: 1.888.766.9994
Email: Info@alpinesnowguards.com

Scale: 1:5 | 10/15/2020

PD90-AL Snow Guard Installation Instructions

Typical Roof Types:

- New/existing membrane

Installation – Base Plate:

1. Place the base plate on top of the finished membrane roof.
   Note: The threaded studs on the base plate are not centered. Align the base plate so the studs and the three fastener holes are on the upslope end of the base plate.
2. Fasten base plate to the substructure (usually wood blocking is used for this bracket) using the appropriate fasteners for the type and thickness of the decking. Make certain that the base plate cannot shift.
   Note: Wood blocking must measure 2” larger than the perimeter of the base plate. Thickness of the wood blocking will vary, but must match the thickness of the installed insulation.
3. Consult with an engineer, snow guard manufacturer or fastener company to determine the appropriate fastener required for attaching the base plate to the substructure.

Installation - Membrane Flashing of Base Plate:

Note: Use an acceptable piece and size of flashing material to cover the base plate in a method acceptable to the membrane manufacturer. This is commonly referred to as a Target Patch. The size will be a minimum of 12” x 12”. Each membrane manufacturer has specific requirements that must be met.

1. Cut two small holes in membrane flashing to fit tightly over threaded studs.
2. Before installing flashing, apply a generous amount of an architect-approved sealant around threaded studs.
3. Apply flashing over base plate and seal the perimeter of the flashing to the deck. The threaded studs are now the only part of the base plate exposed.
   Note: Due to the sealant applied around the studs, there may be bleed out at this opening. When the bracket is installed and tightened, this bleed out will help to create a watertight compression seal.

Installation – PD90-AL Snow Guard Bracket:

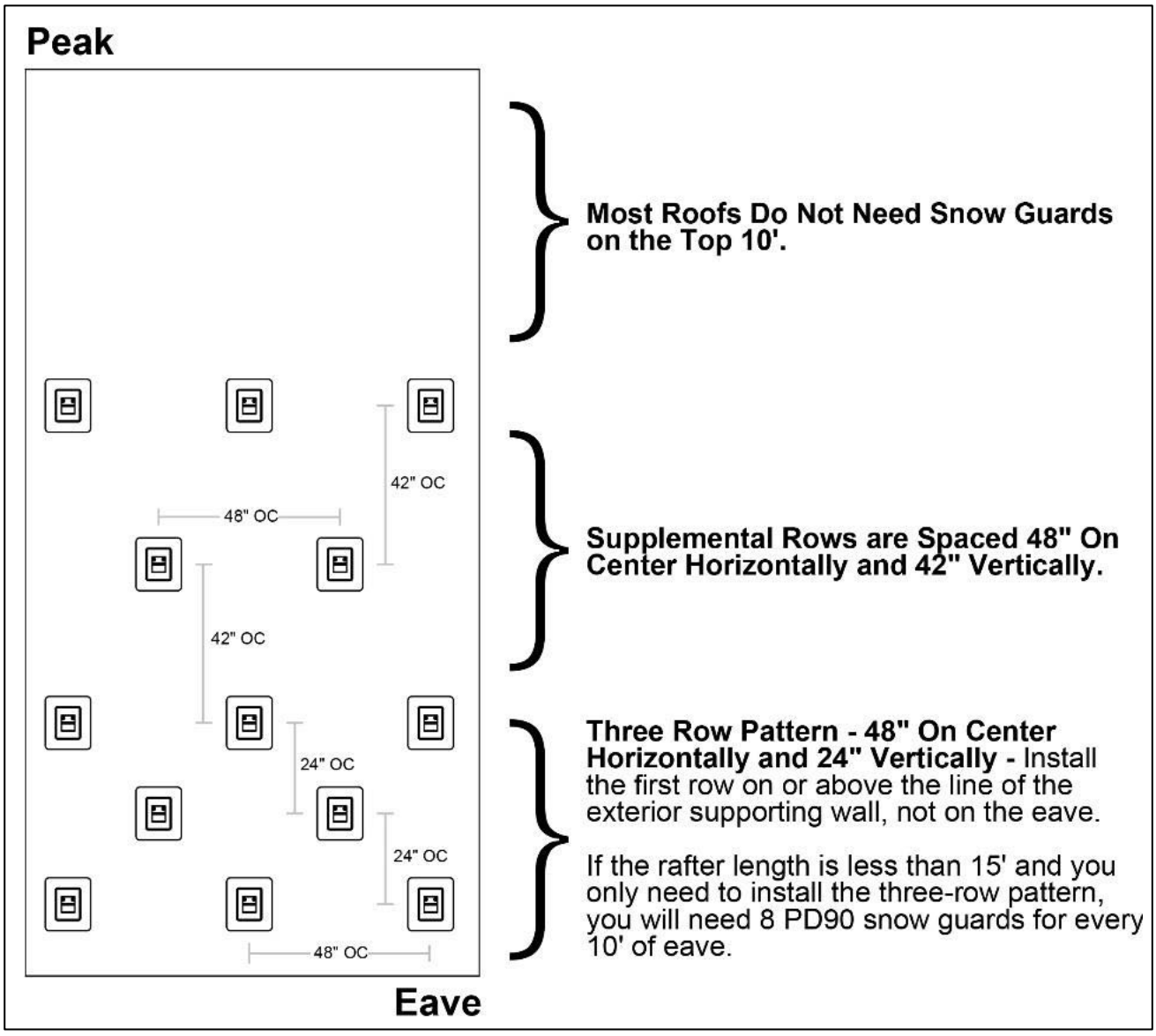
1. Install snow guard bracket over the threaded studs on the base plate. The bracket will be centered on the base plate when installed properly.
2. Place one bonded washer over each threaded stud and press them against the bracket.
3. Thread one nut down each stud and tighten.
4. Install Pipes, Couplings, End Caps, and End Collars (refer to Pipe-Style Installation Instructions).

289 Harrel Street, Morrisville, VT 05661 • Toll Free Phone 1.888.766.4273 • Toll Free Fax 1.888.766.9994 info@alpinesnowguards.com
A Division of Vermont Slate & Copper Services, Inc.

Snow guard layout for pipe style brackets:

- Contact the manufacturer for detailed layout.
- First row of snow guards is installed above outer most wall or support of the building.

The standard layout is shown below. For roofs with less than 24/12 pitch and less than 75 psf ground snow load you will need approximately six (6) PD90-AL snow guards per square. Contact manufacturer for other conditions.



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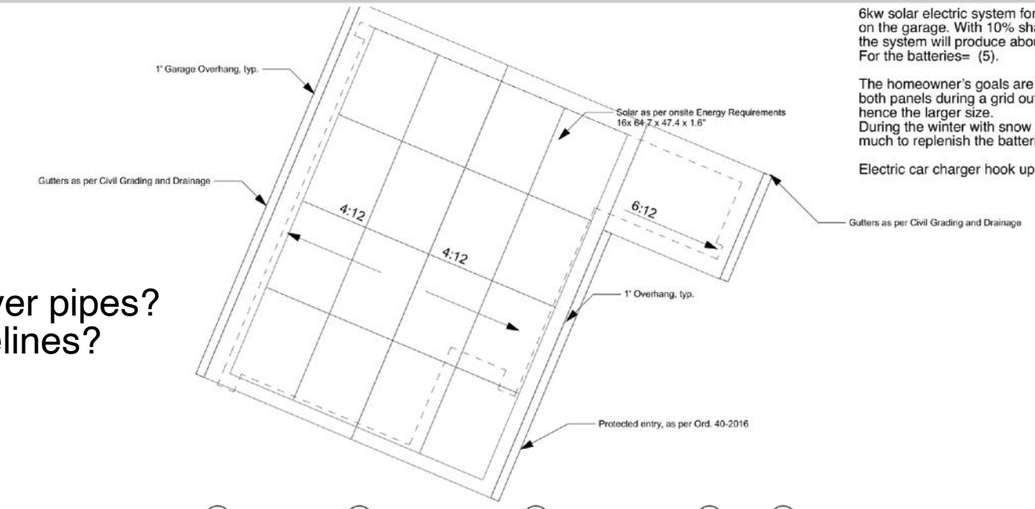
A Division of Vermont Slate & Copper Services, Inc.

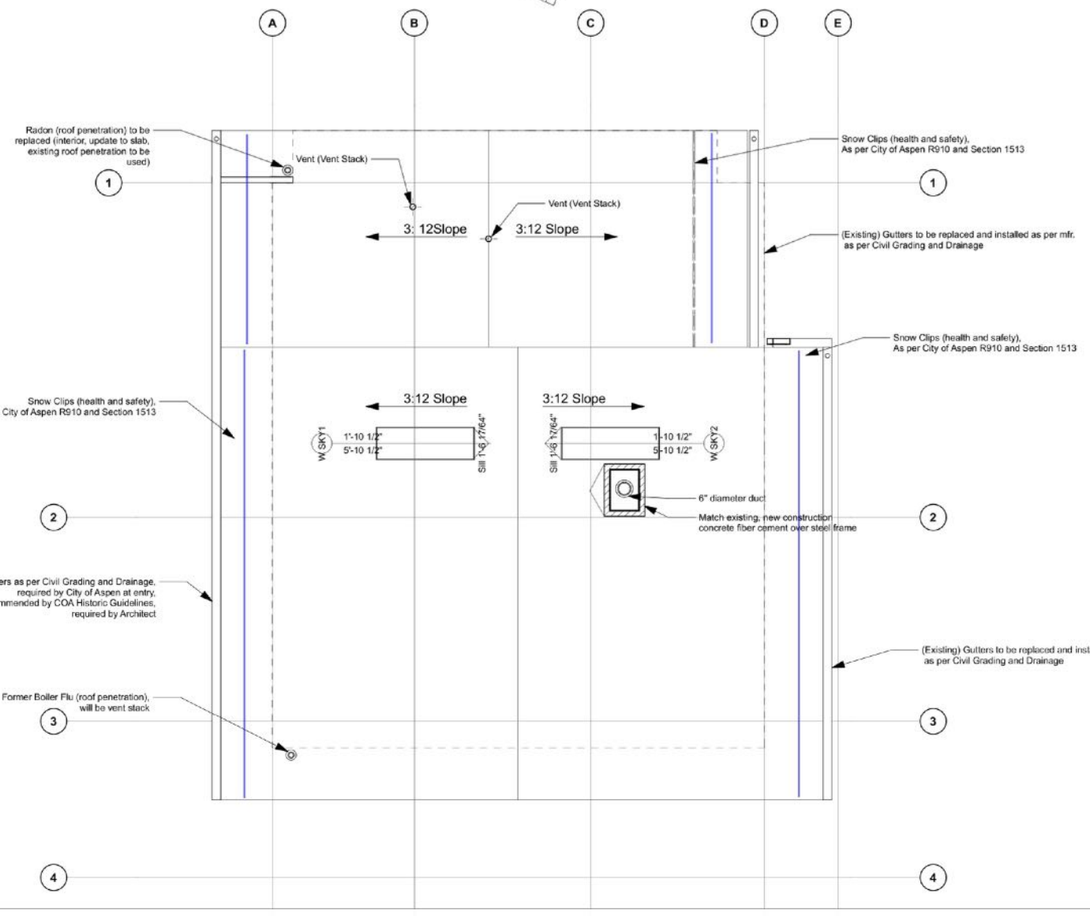
DO NOT USE?
HPC to prefer clips over pipes?
Pipes are in the guidelines?



6kw solar electric system for (2) separate meters based on 16 panels on the garage. With 10% shade loss and 15% snow loss for the year the system will produce about 14,862kWh.
For the batteries= (5).

The homeowner's goals are to have the batteries supplying power for both panels during a grid outage for hours or days during the winter, hence the larger size.
During the winter with snow coverage, the panels would not produce much to replenish the batteries once they are drained.

Electric car charger hook up as per City of Aspen.



ASG PP115 2-PIPE SYSTEM W/ BRKTS SPACED 24" OC — 75.8 FT

1 A105 Roof Plan
SCALE: 1/4" = 1'-0"

Note:

Today this is a cold roof with attic vents. The current attic vents and screens are in disrepair (upon viewing from the attic)

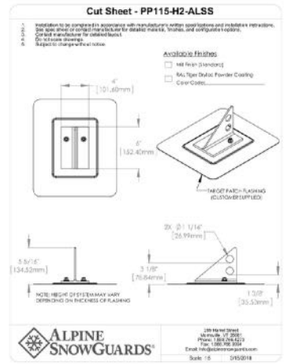
We are removing the dropped ceiling, removing the attic vents and exposing the rafters, adding insulation and updating the light and vent in a Chalet style.
The attic vents will be converted to fenestration of the same size rough opening, (a hopper for light and vent, will not interfere with the south facing Juliet balcony).

U-Value for horizontal fenestration = .50 as per IECC 2021

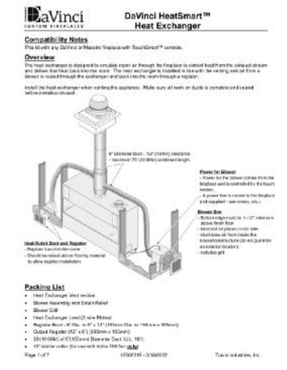
As per currently adopted IRC

Section R910 Snow shed design. Roofs shall be designed so that they do not shed ice and snow onto adjoining properties or potentially occupied areas such as a walkway, stairway, alley, deck, pedestrian and vehicular exit from buildings or areas where there is potential for personal injury or property damage and areas directly above or in front of gas utility or electric utility meters. (Ord. 40-2016)

Section 1513 Snow shed design. Roofs shall be designed so that they do not shed ice and snow onto adjacent properties and potentially occupied areas such as a walkway, stairway, alley, deck, pedestrian and vehicular exit from buildings or areas where there is potential for personal injury or property damage and areas directly above or in front of gas utility or electric utility meters.



2 A105 07 Snow Guard PP115-H2-ALSS_cutsheet



3 A105 17602218

N

cloud hill design, llc
Jeffrey H. Woodruff
AIA, LEED AP
Cloud Hill Design, LLC
Snowmass CO 81654 USA

INTEGRATED DESIGN TEAM
Landscape Architect
Jennifer M. Dolecki-Smith, RLA
Escape Garden Design, LLC

Civil Grading and Drainage
Jay Engstrom, P.E.
Crystal River Civil, LLC

Structural Engineer
Brian Rossiter, P.E.
bwr.pe

Contractor

312 W Hyman Ave

312 W Hyman Ave Lots P+Q, Block 46 Aspen CO 81611 USA/ Pitkin County UGB, City of Aspen

312 W Hyman Ave Aspen CO 81611 USA

Powder Day Skiiing, LLC, David A Tarrab Mees

Account # R000145
Parcel ID # 273512464006

08/22/21 COA- HPO Site Visit

02/26/22 COA- HPC Conceptual

04/27/22 COA- HPC Conceptual

07/27/22 COA- HPC Final

10/12/22 COA- City Council Call Up

04/12/23 COA- HPC Final

PROJECT NO: Project No. 116
MODEL FILE: 312_W_Hyman_03242023.pln
DRAWN BY: Jeffrey H Woodruff
COPYRIGHT:

SHEET TITLE
Roof Plan Proposed

A105

SHEET 38

/Users/jeffrey/Documents/Cloud Hill/312 West Hyman/312_W_Hyman_03242023.pln

AWD

Architectural **W**indows & **D**oors, Inc.

March 15, 2023

Jeffrey,
We appreciate the opportunity to bid Loewen windows and doors for the 312 W Hyman Ave. Residence project. Please reference the following for sizes, quantities, and options.

Base bid:

- Bid to Loewen's standard and custom sizes.
- Bid standard **Primed Wood** exterior.
- Bid **Douglas Fir** wood species
- Standard **Bronze screen** channel on windows
- Standard **Bronze "Tango" hardware** on windows.
- Standard Matte Black "Dallas" Hardware on swing doors
- Black 4x4 concealed ball bearing hinges on swing doors.
- Screen material "Better Vue". Windows
- Dual Low E272/I89 glazing.
- Interior square glazing stops.
- Black Stainless Steel Spacer Bar between glass.
- Capillary tubes on all windows and doors.
- **6 11/16" jambs.**
- **See attached for uvalues, SHGC, VT, etc…**
- **Fixed windows bid as direct sets.**
- **Sliding door exterior screens bid as Midnight Bronze - Confirm**
- **All sliding windows specified bid either as an awning or casement.**
- **Please note: did not bid flush wood exterior doors (Off Kitchen).**

Velux Skylights FCM with solar darkening Grey shades

Sincerely,

Mike Dollahan

0097 County Road 114
Glenwood Springs, Colorado 81601
(970) 928-9314 / (970) 384-0023

Glass Performance Data | Cardinal Glass Industries

Product			Visible Light			Fade Transmission		Solar	U-Factor	
Panes	Configuration	Airspace (mm)	Transmittance	Ext Reflectance	Int Reflectance	UV	Tdw-ISO	Heat Gain Coefficient	Air	Argon
2	Clear/DI89	6.5	79%	14%	14%	53%	70%	0.69	0.33	0.28
2	Clear/DI89	8.0	79%	14%	14%	53%	70%	0.70	0.30	0.26
2	E180/I89	6.5	77%	15%	14%	27%	61%	0.62	0.32	0.27
2	E180/I89	8.0	77%	15%	14%	27%	61%	0.62	0.29	0.24
2	E180ESC/I89	6.5	78%	15%	14%	24%	60%	0.64	0.32	0.27
2	E180ESC/I89	8.0	78%	15%	14%	24%	60%	0.64	0.29	0.24
2	E240/Clear	8.0	40%	14%	11%	16%	35%	0.26	0.36	0.29
2	E240/I89	6.5	39%	14%	10%	15%	34%	0.25	0.31	0.27
2	E240/I89	8.0	39%	14%	10%	15%	34%	0.25	0.28	0.24
2	E270/Clear	8.0	70%	12%	13%	14%	52%	0.37	0.36	0.29
2	E270/I89	6.5	68%	12%	13%	14%	50%	0.36	0.31	0.26
2	E270/I89	8.0	68%	12%	13%	14%	50%	0.36	0.28	0.23
2	E272/Clear	8.0	72%	11%	12%	16%	55%	0.42	0.36	0.29
2	E272/I89	6.5	70%	11%	11%	16%	53%	0.41	0.31	0.26
2	E272/I89	8.0	70%	11%	11%	16%	53%	0.41	0.28	0.23
2	E340/Clear	8.0	39%	13%	16%	2%	27%	0.19	0.35	0.28
2	E340/I89	6.5	38%	13%	15%	2%	26%	0.18	0.31	0.26
2	E340/I89	8.0	38%	13%	15%	2%	26%	0.18	0.28	0.23
2	E366/Clear	8.0	65%	11%	12%	5%	43%	0.28	0.35	0.28
2	E366/I89	6.5	63%	11%	12%	5%	42%	0.27	0.31	0.26
2	E366/I89	8.0	63%	11%	12%	5%	42%	0.27	0.28	0.23

Options to Satisfy Any Design Requirement

Our eleven advanced, automated IG facilities are equipped to provide the right IG products for your window and door designs.

LoÉ coatings for energy efficiency, aesthetics, and comfort

Tempered and laminated glazings for safety and security

Custom shapes and sizes

Decorative internal bars

Natural steel and painted black spacer options

Preserve film for glass protection through installation

LoĒ²-272 Glass

LoĒ²-272 Glass has U-Value .30
Double Glazed with air space, black spacer as per schedule
Cardinal LoĒ-272
6 mm / 13.0 mm airspace / 6 mm

Who says you can't do anything about the weather? Cardinal LoĒ²-272® glass delivers year-round comfort in all types of weather. In winter, it reflects heat back into the room. In summer, it rejects the sun's heat and damaging UV rays.

Cardinal LoĒ²-272 is very similar to our LoĒ²-270® glass, only with a little more light transmittance, while LoĒ²-270 offers slightly more solar control.

Cold or hot outside, Cardinal comfort inside.

Regardless of where your home is located, choosing windows that provide you with the highest level of comfort and energy savings year-round is extremely important. And choosing the right glass for your windows is the most important factor in that decision. Go beyond ordinary low-e glass. Let LoĒ²-272 help you handle the weather – any weather.

Frigid outside, cozy inside.

During cold weather, the insulating effect of your windows has a direct impact on how your rooms feel. Typically, 75% of the exposed surface of a window is glass, and the temperature of the room-side of the glass directly affects the air temperature in the room. The better insulated the window glass, the warmer your room will be.

In fact, the Efficient Windows Collaborative (**www.efficientwindows.org**) suggests that when glass surface temperatures fall below 52°F, there is a risk of thermal discomfort. To maintain the best comfort during the winter, select a glass product that produces surface temperatures that will stay above this point during the coldest outdoor conditions.

Inside glass and outside temperatures.

The table below compares the room-side center of glass temperatures of different glass types against two different winter conditions.

INSIDE GLASS AND OUTSIDE TEMPERATURES

PRODUCT	OUTSIDE TEMP -20°F (-30°C)	OUTSIDE TEMP +20°F (-10°C)
Single-pane clear	0°F (-19°C)	31°F (-3°C)
Double-pane clear	37°F (2°C)	51°F (9°C)
Ordinary low-e (air fill)	46°F (7°C)	57°F (13°C)
LoĒ²-272 (air fill)	49°F (9°C)	58°F (14°C)
LoĒ²-272 (argon fill)	52°F (10°C)	60°F (15°C)

The superior insulating capability of Cardinal LoĒ²-272 is a key factor in the construction of comfortable windows for cold climates. The dramatic comfort improvement from windows with warm glass surfaces also means the relative humidity of the indoor air can be controlled and maintained properly. Proper humidity levels (not too much, not too little) will improve comfort and promote a healthier living environment.

Summer Solar control for just about the **coolest windows under the sun.**

Solar control for just about the coolest windows under the sun.

When the temperature is heading to the top of the thermometer, ordinary window glass simply welcomes in the heat. Cardinal LoĒ²-272, however, has been specially formulated to reject the sun's heat and damaging rays and keep your home cool and comfortable.

The patented LoĒ²-272 coating provides the best clarity and high performance low solar control. The end result of all this engineering is that Cardinal LoĒ²-272 provides the ultimate in comfort because it reduces window heat gain by nearly 50% when compared to ordinary glass.

Glass Performance

PRODUCT	VISIBLE LIGHT TRANSMITTANCE	SOLAR HEAT GAIN COEFFICIENT	WINTER U-FACTOR (AIR / ARGON)	UV	FADING TRANSMISSION
Single-pane clear	90%	0.86	1.04/–	0.71	0.84
Double-pane clear	82%	0.78	0.48/–	0.58	0.75
Ordinary low-e (air fill)	76%	0.72	0.34/0.30	0.50	0.68
U Value .30 LoĒ²-272	72%	0.41	0.30/0.25	0.16	0.55

Definitions

Note: All values calculated using Window 6.3. (See here and here for more information on glass optical data and the Windows 6.3 program.) Emittance of ordinary (pyrolitic) low-E is 0.16.

Solar Heat Gain Coefficient – (SHGC) – The amount of solar radiation that enters a building as heat. The lower the number, the better the glazing is at preventing solar gain.

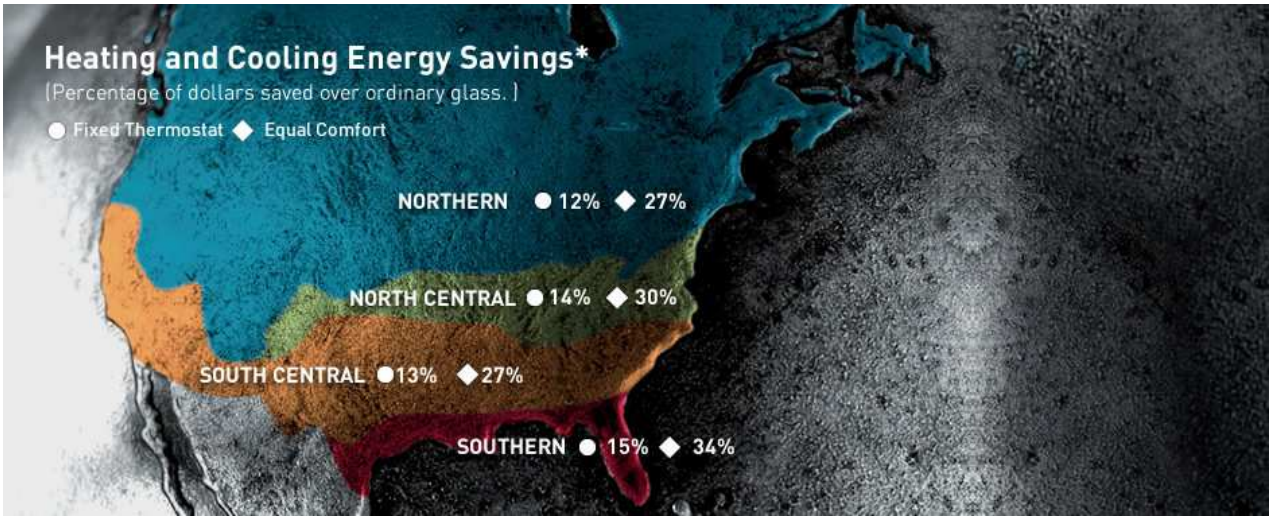
Fading Transmission – The portion of energy transmitted in a spectral region from 300 to 600 nanometers. This region includes all of the ultraviolet energy and part of the visible spectrum, and will give the best representation of relative fading rates. The lower the number, the better the glass is for reducing fading potential of carpets and interior furnishings.

U-Factor – This represents the heat flow rate through a window expressed in BTU/hr·ft²·°F, using winter night weather conditions of 0°F outside and 70°F inside. The smaller the number, the better the window system is at reducing heat loss.

Cardinal actively supports and participates in the National Fenestration Rating Council (NFRC). Windows with **LoĒ²-272** that are rated and certified by the NFRC can comply with Energy Star™ requirements for the northern and central regions of the country. Northern zone will likely require the addition of LoĒ-i89 on the 4th surface to comply with U-Factor requirements. (See https://www.energystar.gov/products/certified-products/detail/residential-windows-doors-and-skylights for more information on the Energy Star windows program.)

Save energy with glass so smart, it can control your comfort.

Although windows provide beautiful views and wonderful natural light, they can also account for up to 50% of the heating and cooling energy consumed in a home. In the winter, Cardinal LoĒ²-272 helps your home stay warm and cozy by blocking heat loss to the cold weather outside. In the summer, it keeps your home cool and comfortable by rejecting the sun's heat and damaging rays. In short, it can save energy year around.



* Thermostat settings are the largest variable in establishing the heating and cooling energy savings potential with window replacements. If you tolerate the discomfort from your current windows and don't change thermostat settings with the weather, consider the savings suggested from the "Fixed Thermostat" column. If on the other hand you frequently adjust the thermostat, add space heaters to compensate for cold rooms, or close drapes/blinds to block the sun consider the additional savings suggested in the "Equal Comfort" column.

Modeling Conditions

Heat/Cool portion of your energy bill: DOE estimates that in 2005 the average house spent $2,003 on utilities and that 43% of this total ($886) is for heating and cooling energy. (http://buildingsdatabook.eren.doe.gov/TableView.aspx?table=2.3.10).

Savings values are average of multiple locations within climate zone.

"Average" house as described in the Buildings Data Book at **http://buildingsdatabook.eren.doe.gov/TableView.aspx?table=2.2.7** The model house is described as a mid-1970's single-story dwelling with natural gas furnace, central air-conditioning, adequate insulation, and double-pane windows.

Window orientation set as uniformly distributed on all sides to represent a neighborhood average and the total window area set to 15% of the floor area.

Interior shading devices are presumed to be closed 50% of the time throughout the year.

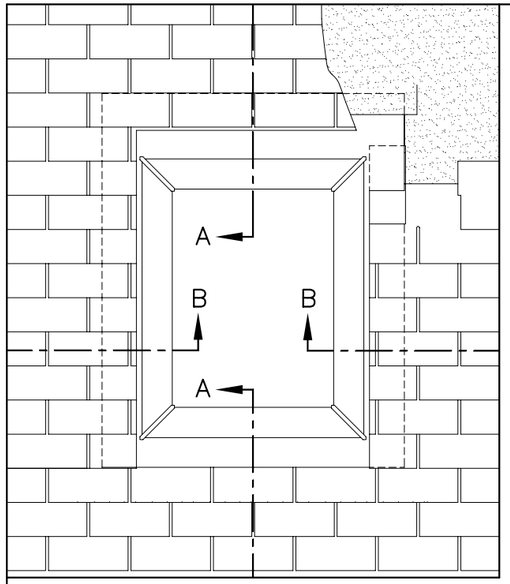
"Fixed Thermostat" conditions are 70°F for heating and 75°F for cooling.

"Equal Comfort" thermostat settings determined using window thermal comfort research from the University of California at Berkeley (**See report PDF**). The existing double-pane windows used heat/cool thermostat setpoints of 72°F/74°F to match the comfort of **LoĒ²-272** glass at 70°F/78°F.

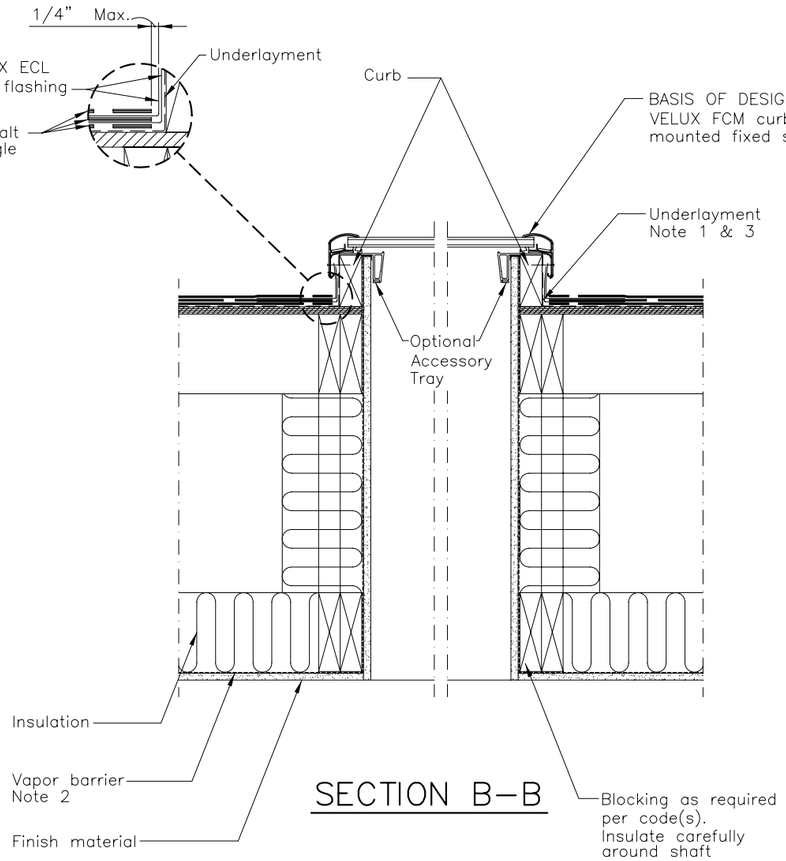
House heat/cool energy simulations used the Resfen program from Lawrence Berkeley National Lab (**See this source**).

The difference is clear.

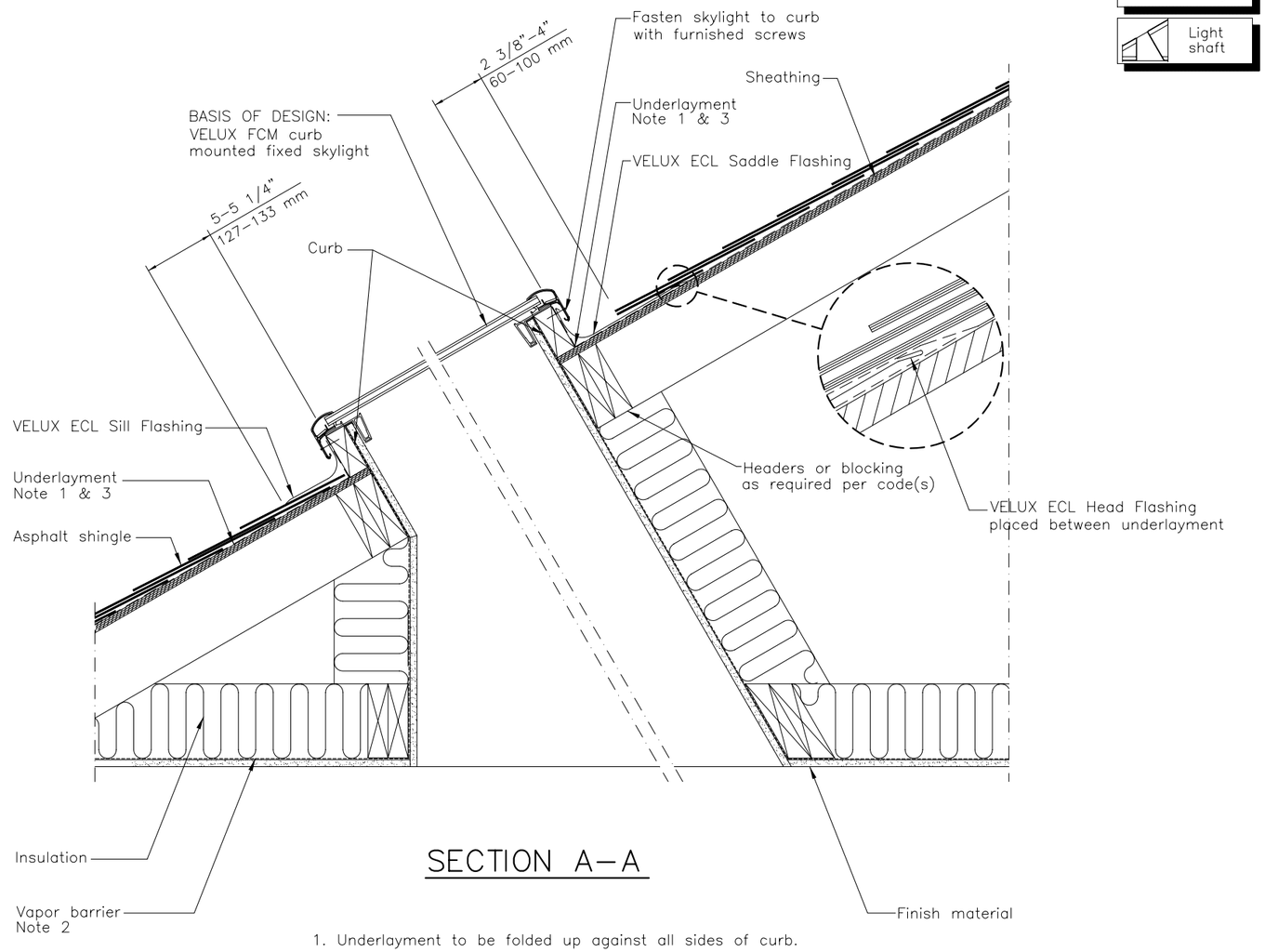
Cardinal LoĒ²-272 is ideal for all weather conditions in most climates. In winter, it reflects heat back into rooms. In summer, its patented coating blocks 84% of the sun's harmful ultraviolet rays and 59% of the sun's heat. It even outperforms the tinted glass often used in warm climates.
You can see out and the light shines in, with no heavy bronze or smoke colored tints to darken the personality of your home. LoĒ²-272 can be purchased in hurricane-resistant laminated glass in a variety of shapes and sizes.



ELEVATION



SECTION B–B



SECTION A–A

1. Underlayment to be folded up against all sides of curb.
2. Vapor barrier should be used to avoid moisture.
3. Wrap curb in underlayment. VELUX recommends use of VELUX type ZOZ 216 adhesive underlayment.

VELUX
Sky–Product Management

VELUX
1418 Evans Pond Road
Greenwood, SC 29649
1–800–88–VELUX
www.VELUXUSA.com

	Name	Date
Drawn by	JDH	Mar 10
Checked by	WQ	Mar 10

Drawing No.

FCM–01–0310

FCM–Residential/Commercial Roof Section (Light Shaft and Asphalt Shingles)

NORDIC HOT TUBS™

CROWN XL

DIMENSIONS

Seating	6 person
Diameter	84 in (213 cm)
Depth	38.5 in (89 cm)
Weight (Dry)	400 lbs (181 kg)
Operating Capacity	330 gal (1249 L)

JETS

Total Jets	30
5″ Nordic Star™ Directional Whirlpool	2
5″ Nordic Star™ Dual Rotational	3
3″ Nordic Star™ Directional	3
3″ Nordic Star™ Dual Rotational	4
2″ Nordic Star™ Directional	17
1″ Ozone Ready Jet (Ozonator Optional)	1

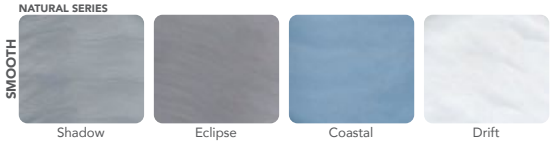
EQUIPMENT

Volts	220v
Amps	40a
Control Pad	4 button Topside w/LED Display
Insulation:	Foam (Standard) Nordic Wrap (Optional)
Heater	4kw
Light	Footwell LED (Standard) Mood Lighting Package (Optional)
Pump	(1) 3hp Continuous Duty
Bluetooth Stereo	Optional Upgrade

Shell: Eclipse

Shell: Eclipse | Cabinet: Charcoal

PERMASHELL™ COLORS



PERMAWOOD™ CABINET COLORS

MADE IN USA

Color samples are for reference only. Actual product color may vary slightly.
Nordic Products Inc. reserves the right to change any specifications without notice.


HEATPUMP
COVERS

Heatpump Covers – We Are the Heat Pump Cover Specialists

We specialise in building custom covers for outdoor units of heat pumps so that they can seamlessly integrate with the appearance and architectural features of a home.

Our product has been specifically developed for heat pumps. Our many years of development have been in close consultation with heat pump distributors and their support and knowledge ensures we can bring you a product tested and directly approved by them. We stand confident in our product so that you can continue to enjoy the efficiency heat pumps are known for.

New Zealand Made – Tailor Made

We make our covers to order here in New Zealand. From one-off residential customers, to body corporates, as well as architects and developers. We make covers to suit every project.

HEATPUMP
COVERS

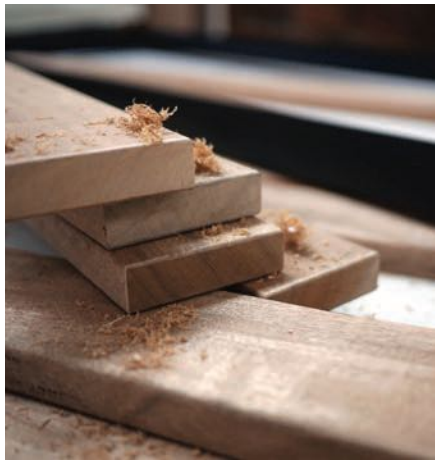
HEATPUMP
COVERS

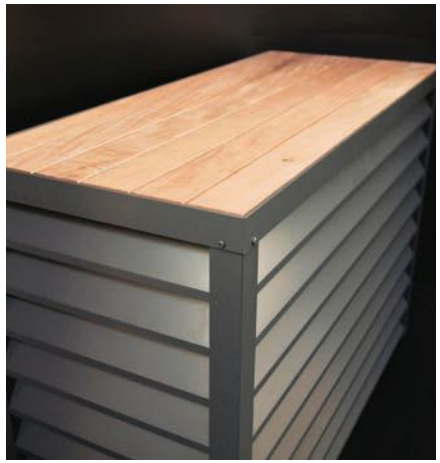
What Makes Our Covers Unrivalled

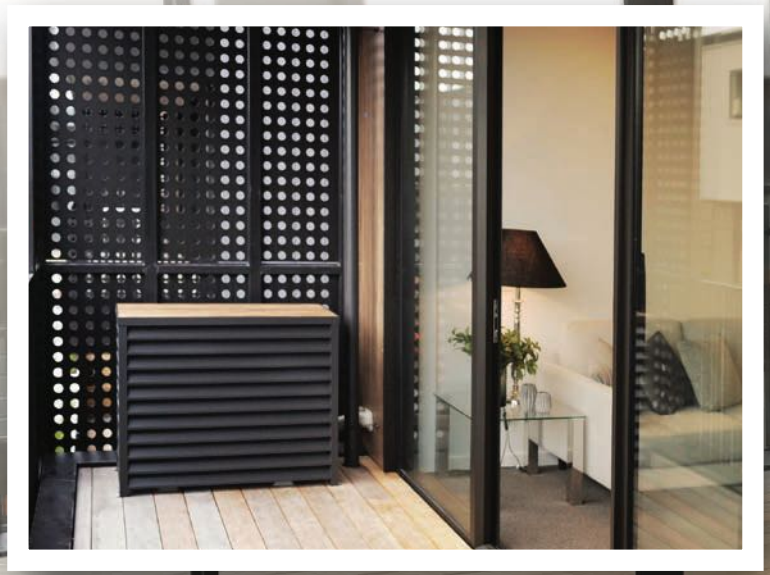
Our quality – we use sturdy aluminium with stainless steel fastenings and a quality powder coat finish. Our aluminium profiles are locally run and exclusive to us.

Our design – we offer the full colour range from all of the top brands of powder coat. Every piece gets a comprehensive pre-treatment process to ensure your cover stands up to the elements for years to come. Clean, crisp lines and nicely proportioned aluminium profiles give our covers a sleek refined look. Our bracket systems mean you can mount it straight and it stays straight. The hardwood timber top on our premium model is hand detailed and oiled to elevate it to furniture status.

Our performance – thorough testing and collected knowledge ensures we can provide you a way to hide and integrate your heat pump without hindering its performance.








10

You Choose Both Colour and Style

Our **Standard Style** cover comes with a colour matched, sturdy aluminium top. The look is clean and simple. Through colour choice, you match it to the features of your home or have it visually hidden away.

Our **Premium Style** cover offers a hardwood timber top inlaid into an aluminium frame with hand finished, detailed edges and an oiled surface to elevate it to sit alongside the finest outdoor furniture and building features.

Your home is unique – it is for that reason we offer the full powder coat range of colours from Dulux, Interpon and more. These ranges include all aluminium window joinery colours as well as the popular Colorsteel range and many more.

If your colour choice is from a different range or brand, we are happy to guide you in the colour matching process, either choosing the closest match based on your information, or providing you with information on how to colour match yourself.

HEATPUMP
COVERS

Obtaining the Perfect Result

To ensure the perfect fit, we ask for your heat pump model number and installed dimensions of your heat pump. Where possible, a photo of the heat pump in place is the easiest way to ensure accuracy. If your heat pump is not installed yet, we just need the model number and we can provide information for your installer to ensure they install the heat pump in the best location for covering.

Standard Sizings

Our standard sizes are compatible with the majority of leading heat pump brands.

All sizes are in mm.

HEATPUMP
COVERS

Small Cover 1030w x 420d x 600–750h externally.
Suitable for heat pump units with maximum dimensions of 900w x 330d x 710h.

Large Cover 1080w x 470d x 1000h externally.
Suitable for heat pump units with maximum dimensions of 950w x 360d x 980h.

Extra Large Cover 1180w x 490d x 1450h externally.
Suitable for heat pump units with maximum dimensions of 1050w x 380d x 1430h.

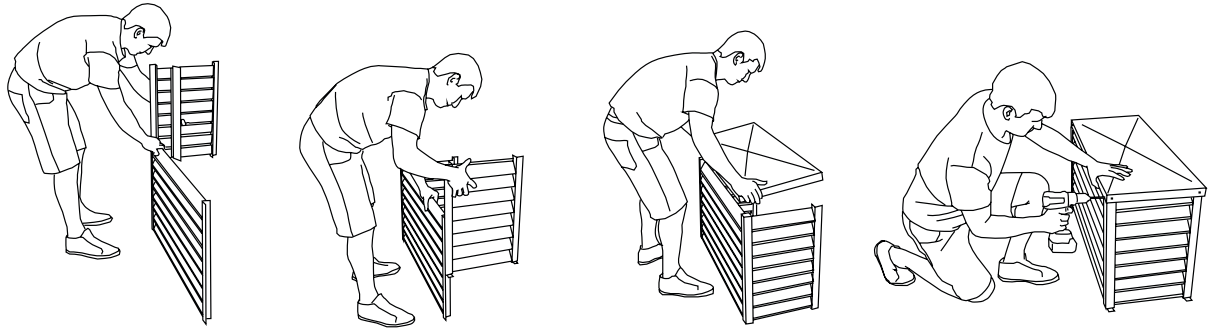
Mounting Options

Our go-to bracket provides for an anchor point at each corner down to the ground. This is clean and simple and easy to access for service. Not all ground surfaces can be affixed to – waterproof membranes and suspended tile decks create situations where it may be best to go for our wall tie option. These keep the cover the correct distance from the wall and of course, nice and straight.

Our third option is for wall hanging brackets. These are used when the heat pump is wall mounted and the cover is completely off the ground. They provide a firm hold and correct spacing back to the wall while the keyhole shaped interlock makes for easy lift-off access. These are an elected option and are an additional cost. We also custom fabricate brackets for unique situations.

Assembly and Installation

Our covers arrive flat packed and can be assembled in just a few minutes using a clever slide-together system. Instructions are included and this can be done in just a few minutes. The included installation diagrams ensure that your cover is working with your heat pump as it should.



Tools required are a square drive screwdriver for assembly and a drill and driver for the anchor fixings which can vary depending on the material you are fastening to.

Custom Builds

We also take on custom builds for multiple covers, large feature screens and provide supporting frames for double stacked heat pumps. Our system and knowledge gives us the ability to provide all sorts of solutions. We are open to consultation on any project you have in mind.

Ordering and Requests

Order forms are available on request – please email us.

Once we have your details we can get your order through our factory and have it shipped out ready to make the exterior of your home look fantastic, all to the specifications you choose.

Further resources available on request are:

- Measurement guide
- Colour charts
- Assembly and installation instructions
- Photos and details of many of our projects

Contact

Heatpump Covers Limited
www.heatpumpcovers.co.nz
info@heatpumpcovers.co.nz
We welcome your phone call on 0800 427 658

Printed August 2019

HEATPUMP
COVERS

MITSUBISHI ELECTRIC
Heating and Cooling

Submittal Data: PLA-A42EA7 & PUZ-HA42NKA1

42,000 BTU/H Ceiling-Cassette Cold Climate Heat Pump System

Job Name:	Location:	
Purchaser:	Submitted By:	
Submitted To:	Reference: ☐ Approval: ☐ Construction: ☐	
Engineer:	Date:	Application:

Optional Controller

Images provided for reference purposes only

Outdoor Standard Features:	**Description:**
Blue Fin Coating	Prolong condenser operating life
Inverter Motor	Energy efficient operation with variable speed DC motor
Built in base pan heater	Automated control to prevent premature failure of condenser coil
Auto mode	Automatically switches between heating & cooling modes
Fast Auto restart	Automatically restarts after power failure return
Auxiliary heat lock out	Prevents premature activation of aux. heat
Automated compressor cutout	Prevents inefficient operation & protects compressor
Cold climate heat pump	

Indoor Standard Features:
Built-in condensate lift mechanism
Filter change indicator signal
Washable filter

Description: (Optional Accessories)	**Model No.**
Front Windscreen ☐	CM-S-FR-NKMU (x2 required)
Front Windscreen Blocker ☐	CM-S-BLK-NKMU (x2 per box)
Rear Snow Guard ☐	SG-1-RE
Side Snow Guard ☐	SG-1-SD
Grille w/ i-see Sensor **(Required Sold Separately)** ☐	PLP-41EAEU
Flange for fresh air intake ☐	PAC-SH650F-E

Note:

1. Mitsubishi Electric Sales Canada Inc. (MESCA) supports the use of only MESCA supplied and approved components and accessories for proper functioning of the unit(s). Use of non - MESCA supported components and accessories will affect warranty coverage. MESCA recommends (A) consideration of all applicable design and application parameters and requirements specific to any project.

2. Should any person change this document in any manner whatsoever without MESCA's written permission, the document shall be of no force and effect and any change shall be deemed to be a representation and warranty made by that person and not MESCA. That person, and not MESCA, shall assume full responsibility for the consequences of such changes. MESCA assumes no responsibility for any consequences in such cases.

Specifications are subject to change without notice.

MITSUBISHI ELECTRIC
Heating and Cooling

Submittal Data: PLA-A42EA7 & PUZ-HA42NKA1

Performance:

Cooling at 95°F[1]	Rated Capacity	Btu/h	42,000
	Capacity Range	Btu/h	18,800 - 42,000
	Rated Power Input	W	3,920
	Power Input Range	W	1,470 - 3,920
	Moisture Removal	pints/h	4.5
	Sensible Heat Factor		0.88
Heating at 47°F[2]	Rated Capacity	Btu/h	48,000
	Capacity Range	Btu/h	17,000 - 54,000
	Rated Power Input	W	4,210
	Power Input Range	W	1,240 - 5,050
Heating at 17°F[3]	Maximum Capacity	Btu/h	48,000
	Rated Capacity	Btu/h	40,500
	Capacity Range	Btu/h	NA - 48,000
	Maximum Power Input	W	6,385
	Rated Power Input	W	5,385
	Power Input Range	W	NA - 6,385
Heating at 5°F[4]	Maximum Capacity	Btu/h	48,000
	Maximum Power Input	W	7,338
Heating at -13°F[5]	Maximum Capacity	Btu/h	38,400
	Maximum Power Input	W	7,496

Efficiency:

SEER		16.3
EER[1]		10.7
HSPF (IV)		9.80
COP at 47°F[2]	Rated Capacity	3.34
COP at 17°F[3]	Maximum Capacity	2.20
COP at 5°F[4]	Maximum Capacity	1.91

Electrical:

Power Supply		208/230V, 1Ph, 60Hz
Voltage: Indoor - Outdoor, S1-S2	V AC	AC 208/230V
Voltage: Indoor - Outdoor, S2-S3	V DC	DC 24V
Short-circuit Current Rating (SCCR)	kA	5
Recommended Fuse/Breaker Size (Outdoor)	A	40
Recommended Wire Size (Indoor - Outdoor)	AWG	14

Outdoor Operating Temperature Range:

Cooling Operation Air Temp (Maximum / Minimum)*	°F (°C)	* 0 to 115 (-18 to 46)
Cooling Operation Thermal Lock-out / Re-start Temperatures	°F (°C)	-1 / 3 (-18 / -16)
Heating Operation Air Temp (Maximum / Minimum)	°F (°C)	-13 to 75 (-25 to 24)
Heating Operation Thermal Lock-out / Re-start Temperatures	°F (°C)	-22 / -13 (-30 / -25)

AHRI Rated Conditions (Rated data is determined at a fixed compressor speed) (* Windscreens required for cooling operations below 23°F (-5°C))

[1]Cooling (Indoor // Outdoor) 80°F (26.6°C) DB, 67°F (19.4°C) WB // 95°F (35°C) DB, 75°F (23.9°C) WB

[2]Heating at 47°F (8.3°C) (Indoor // Outdoor) 70°F (21.1°C) DB, 60°F (15.6°C) WB // 47°F (8.3°C) DB, 43°F (6.1°C) WB

[3]Heating at 17°F (-8.3°C) (Indoor // Outdoor) 70°F (21.1°C) DB, 60°F (15.6°C) WB // 17°F (-8.3°C) DB, 15°F (-9.4°C) WB

Rated conditions:

[4]Heating at 5°F (-15°C) (Indoor // Outdoor) 70°F (21.1°C) DB, 60°F (15.6°C) WB // 5°F (-15°C) DB, 4°F (-15.6°C) WB

[5]Heating at -13°F (25°C) (Indoor // Outdoor) 70°F (21.1°C) DB, 60°F (15.6°C) WB // -13°F (-25°C) DB, -15°F (-26.1°C) WB

Notes:

Submittal Data: PLA-A42EA7 & PUZ-HA42NKA1

MITSUBISHI ELECTRIC
Heating and Cooling

Indoor Unit Specifications:

MCA		A	2.00
Blower Motor Full Load Amperage		A	1.05
Blower Motor Output		W	120
Airflow Rate at Cooling, Dry		CFM	740 - 920 - 1,060 - 1,200
Airflow Rate at Cooling, Wet		CFM	700 - 880 - 1,020 - 1,160
Airflow Rate at Heating, Dry		CFM	740 - 920 - 1,060 - 1,200
Sound Pressure Level (Cooling)		dB(A)	34 - 38 - 42 - 45
Sound Pressure Level (Heating)		dB(A)	34 - 38 - 42 - 45
Drain Pipe Size		In. (mm)	1-1/4 (32)
External Finish Color **[Panel]**			Munsell 1.0Y 9.2/0.2
Dimensions		**Main Unit**	**Panel**
	W: In. (mm)	33-1/16 (840)	37-13/32 (950)
	D: In. (mm)	33-1/16 (840)	37-13/32 (950)
	H: In. (mm)	11-3/4 (298)	1-9/16 (40)
Unit Weight	Lbs. (kg)	56 (25)	11 (5)

Outdoor Unit Specifications:

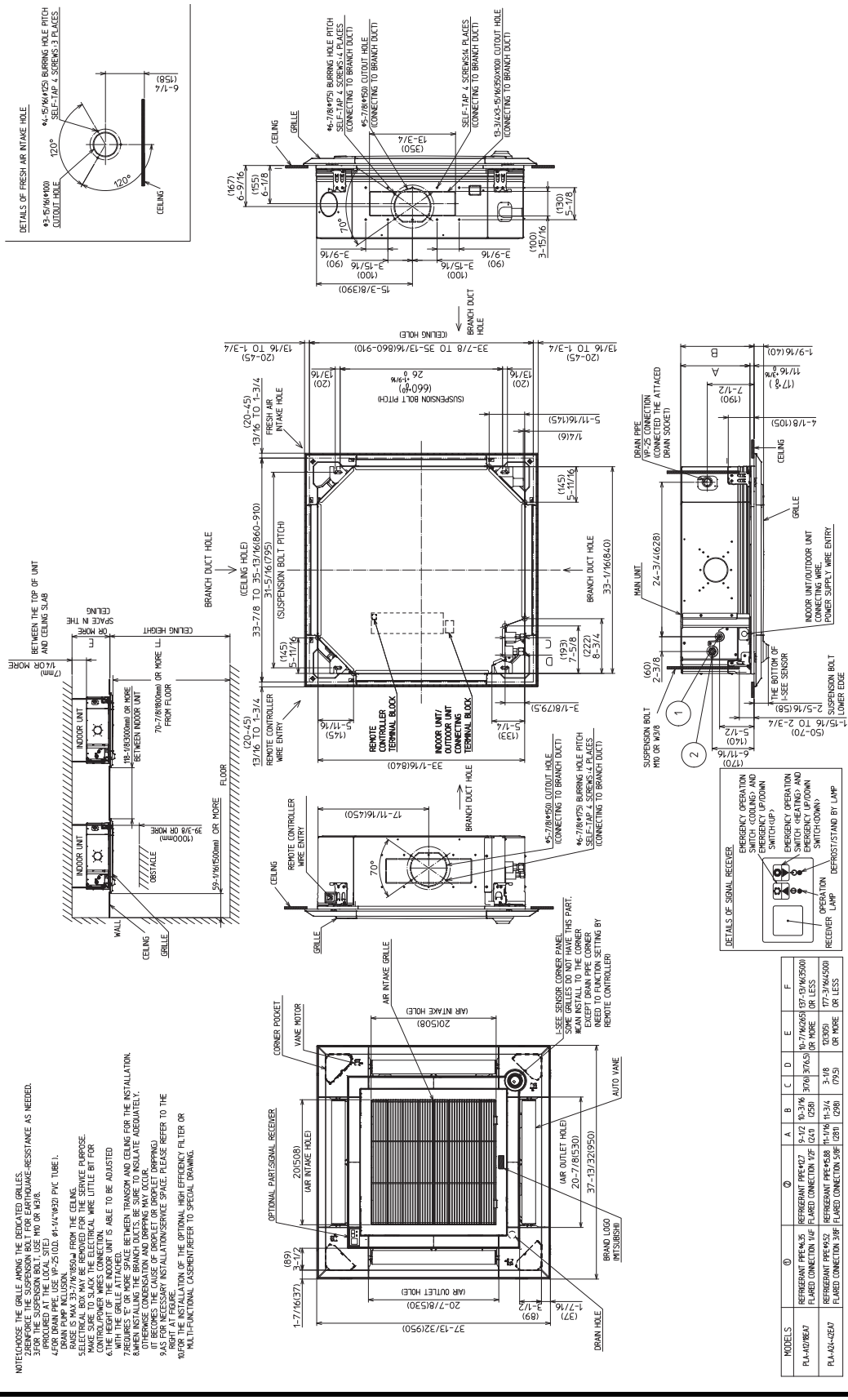
MCA	A	36
MOCP	A	44
Fan Motor Output	W	74 + 74
Airflow Rate (Cooling/Heating)	CFM	3,319/ 3,319
Sound Pressure Level, Cooling1	dB(A)	49
Sound Pressure Level, Heating2	dB(A)	51
Refrigerant Control		LEV
Compressor Oil Type / Charge	oz.	FVC68D / 57 oz
External Finish Color		Ivory Munsell No.3Y 7.8/1.1
Unit Weight	Lbs. (kg)	283 (128)
Unit Dimensions	W: In. (mm)	41-11/32 (1,050)
	D: In. (mm)	12-63/64 + 63/64 (330 +25)
	H: In. (mm)	52-43/64 (1,338)
Gas Pipe Size O.D. (Flared)	In. (mm)	5/8 (15.88)
Liquid Pipe Size O.D. (Flared)	In. (mm)	3/8 (9.52)
Maximum Piping Length	Ft. (m)	245 (75)
Maximum Height Difference	Ft. (m)	100 (30)

Description: (Optional Controls)		**Model No.**
Building automated system DDC Interface	☐	MELCO-RETAIL-MINI
Building automated system BacNet Interface	☐	MELCO-BEMS-MINI
Wireless MA Remote Controller	☐	PAR-FL32MA-E
Operation/error display adapter	☐	PAC-SA88HA-EP
Remote ON/OFF control	☐	PAC-SE55RA-E
Remote Compressor ON/OFF control	☐	PAC-SC36NA-E
Remote Controller Infrared Receiver	☐	PAR-SR4LU-E
Wireless remote receiver	☐	PAR-SL100A-E
Wired wall mounted remote control	☐	PAR-40MAA
Wireless wall mounted remote control	☐	MHK1
Touch screen wired wall mounted control	☐	PAR-CT01MAU-SB
Remote Operation Adapter	☐	PAC-SF40RM-E
Basic wired wall mounted control	☐	PAC-YT53CRAU-J
Auxiliary Heat (CN24) Cable	☐	PAC-SE56RA-E
Heater control relay	☐	PAM-4
Deluxe thermostat interface	☐	RMF-CA100-V1
MNet adapter (BacNet/LonWorks BAS sub interface)	☐	PAC-SJ95MA-E

Submittal Data: PLA-A42EA7 & PUZ-HA42NKA1

Indoor Unit Outline and Dimensions:

Unit: inch (mm)



NOTE1.CHOOSE THE GRILLE AMONG THE DEDICATED GRILLES.
2.REINFORCE THE SUSPENSION BOLT FOR EARTHQUAKE-RESISTANCE AS NEEDED.
3.FOR THE SUSPENSION BOLT, USE M10 OR W3/8.
(PROCURED AT THE LOCAL SITE)
4.FOR DRAIN PIPE, USE VP-25 (O.D. ø1-1/4"(ø32) PVC TUBE).
5.ELECTRICAL BOX MAY BE REMOVED FOR THE SERVICE PURPOSE.
MAKE SURE TO SLACK THE ELECTRICAL WIRE LITTLE BIT FOR CONTROL(POWER WIRES) CONNECTION.
6.THE HEIGHT OF THE INDOOR UNIT IS ABLE TO BE ADJUSTED WITH THE GRILLE ATTACHED.
7.REQUIRES "E" OR MORE SPACE BETWEEN TRANSOM AND CEILING FOR THE INSTALLATION.
8.WHEN INSTALLING THE BRANCH DUCTS, BE SURE TO INSULATE ADEQUATELY.
OTHERWISE, CONDENSATION MAY FORM AND DRIP, CAUSING THE CEILING TO BECOME DAMP. (IN CASE OF DROPLET OR DROPLET DRIPPING)
9.AS FOR NECESSARY INSTALLATION/SERVICE SPACE, PLEASE REFER TO THE RIGHT AT FIGURE.
10.FOR THE INSTALLATION OF THE OPTIONAL HIGH EFFICIENCY FILTER OR MULTI-FUNCTIONAL CASE(HEF), REFER TO SPECIAL DRAWING.

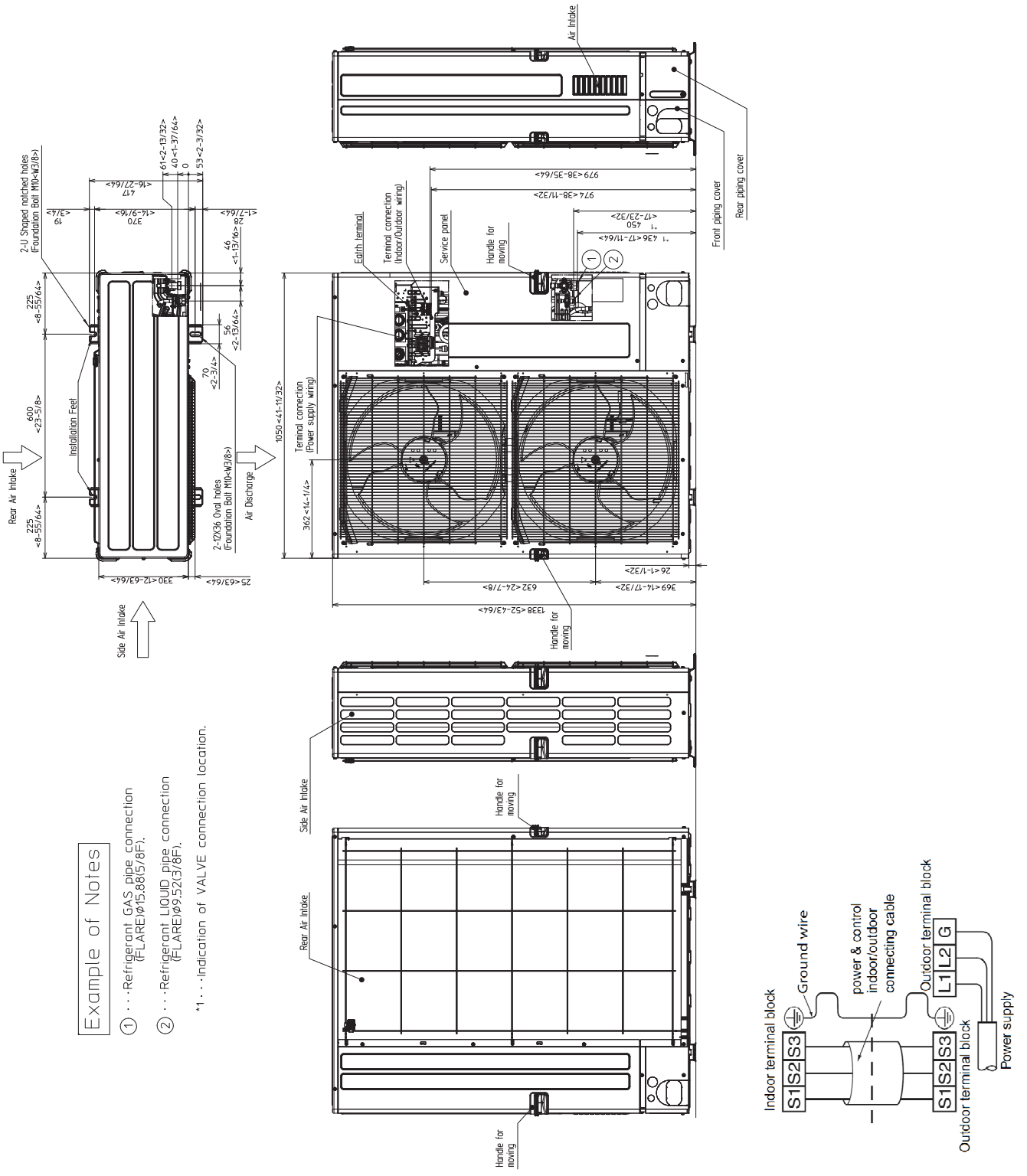
MODELS	Ⓐ	Ⓑ	A	B	C	D	E	F
PLA-A12/18EA7	REFRIGERANT PIPE*Ø6.35 FLARED CONNECTION 1/4"	REFRIGERANT PIPE*Ø12.7 FLARED CONNECTION 1/2"	9-1/2 (224)	10-3/16 (258)	3/16 (5)	3/16 (5)	10-7/16 (265) OR MORE	137-13/16 (3500) OR LESS
PLA-A24/42EA7	REFRIGERANT PIPE*Ø9.52 FLARED CONNECTION 3/8"	REFRIGERANT PIPE*Ø15.88 FLARED CONNECTION 5/8"	11-1/16 (281)	11-3/4 (298)	3-1/8 (79.5)	3/16 (5)	12 (305) OR MORE	177-3/16 (4500) OR LESS

Specifications are subject to change without notice.

Submittal Data: PLA-A42EA7 & PUZ-HA42NKA1

Outdoor Unit Outline and Dimensions:

Unit: mm<in>



AHRI CERTIFIED® www.ahridirectory.org Unitary Small HP AHRI Standard 210/240

Intertek

MITSUBISHI ELECTRIC Changes for the Better

Specifications are subject to change without notice.

A SERIES

SUNPOWER®

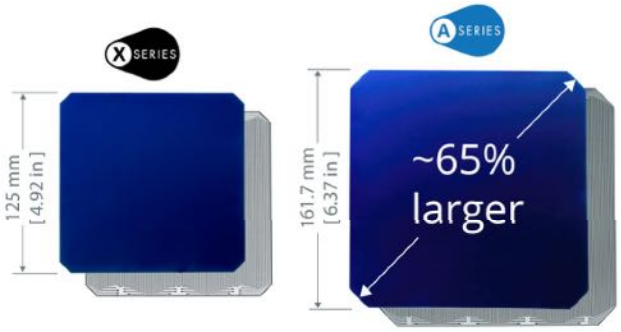
390–400 W Residential A-Series Panels

SunPower® Maxeon® Technology

SunPower® Maxeon® cell-based panels maximize energy production and savings by combining industry-leading power, efficiency, and durability with the most comprehensive power, product, and service warranty in the industry.[1,2]

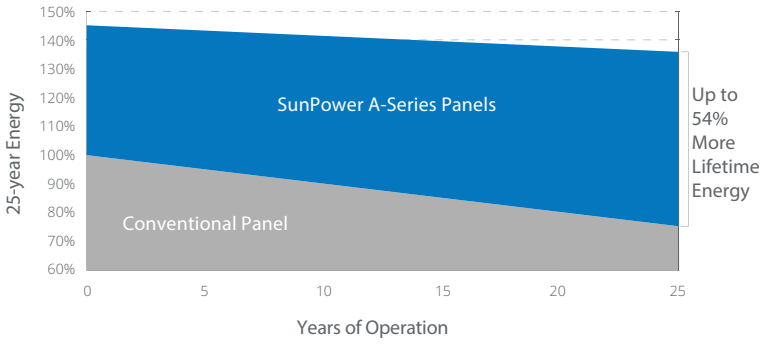
Highest Power Density Available

SunPower's new Maxeon Gen 5 cell is 65% larger than prior generations, delivering the most powerful cell and highest efficiency panel in residential solar.[2] The result is more power per square meter than any commercially available solar.[1]



Maximum Lifetime Energy and Savings

Designed to deliver up to 54% more energy from the same space over the first 25 years in real-world conditions like partial shade and high temperatures.[1]



Best Reliability, Best Warranty

SunPower technology is proven to last and we stand behind our panels with the industry's most comprehensive 25-year Combined Power, Product and Service Warranty.

BETTER PRODUCT · BETTER WARRANTY
25-yr SunPower Complete Confidence

SunPower Maxeon Solar Cell Technology

Fundamentally Different. And Better.

- Cell efficiencies of over 25%
- Delivers leading reliability[3]
- Patented solid metal foundation prevents breakage and corrosion

As sustainable as the energy it produces.

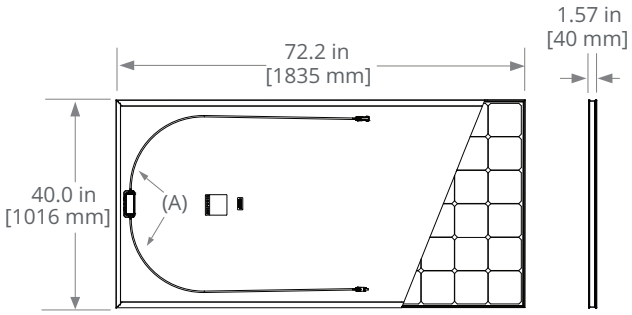
- Achieved the #1 ranking on the Silicon Valley Toxics Coalition's Solar Scorecard for 3 years running
- SunPower modules can contribute to your business's LEED certification[4]

390–400 W Residential A-Series Panels

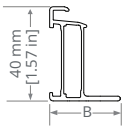
Electrical Data		
	SPR-A400-BLK	SPR-A390-BLK
Nominal Power (Pnom)[5]	400 W	390 W
Power Tolerance	+5/–0%	+5/–0%
Panel Efficiency	21.4%	20.9%
Rated Voltage (Vmpp)	39.5 V	39.0 V
Rated Current (Impp)	10.1 A	9.99 A
Open-Circuit Voltage (Voc)	48.1 V	48.0 V
Short-Circuit Current (Isc)	10.9 A	10.8 A
Max. System Voltage	1000 V UL	
Maximum Series Fuse	20 A	
Power Temp Coef.	–0.29% / ° C	
Voltage Temp Coef.	–136 mV / ° C	
Current Temp Coef.	4.1 mA / ° C	

Operating Condition And Mechanical Data	
Temperature	–40° F to +185° F (–40° C to +85° C)
Impact Resistance	1 inch (25 mm) diameter hail at 52 mph (23 m/s)
Appearance	Class A+
Solar Cells	66 Monocrystalline Maxeon Gen 5
Tempered Glass	High-transmission tempered anti-reflective
Junction Box	IP-68, TE (PV4S)
Weight	44 lbs (20 kg)
Max. Test Load[6]	Wind: 125 psf, 6000 Pa, 611 kg/m² back Snow: 187 psf, 9000 Pa, 917 kg/m² front
Design Load	Wind: 75 psf, 3600 Pa, 367 kg/m² back Snow: 125 psf, 6000 Pa, 611 kg/m² front
Frame	Class 1 black anodized (highest AAMA rating)

Tests And Certifications	
Standard Tests	UL1703 (Type 2 fire rated)
Quality Management Certs	ISO 9001:2015, ISO 14001:2015
EHS Compliance	RoHS, OHSAS 18001:2007, lead free, Recycle Scheme, REACH SVHC-163
Available Listings	UL



FRAME PROFILE



(A) Cable Length: 52 in +/-0.4 in [1320 mm +/-10 mm]
(B) Long Side: 1.3 in [32 mm]
Short Side: 0.9 in [24 mm]

1 SunPower 400 W, 21.4% efficient, compared to a Conventional Panel on same-sized arrays (280 W p-multi, 17% efficient, approx. 1.64 m²), 8% more energy per watt (based on PVSyst pan files for avg US climate), 0.5%/yr slower degradation rate (Jordan, et. al. "Robust PV Degradation Methodology and Application." PVSC 2018).
2 Based on search of datasheet values from websites of top 20 manufacturers per IHS, as of December 2019.
3 Jordan, et. al. Robust PV Degradation Methodology and Application. PVSC 2018.
4 Maxeon panels can contribute to LEED Materials and Resources credit categories.
5 Standard Test Conditions (1000 W/m² irradiance, AM 1.5, 25° C). NREL calibration Standard: SOMS current, LACCS FF and Voltage.
6 Please read the safety and installation guide for more information regarding load ratings and mounting configurations.

See www.sunpower.com/company for more reference information.
For more details, see extended datasheet: www.sunpower.com/solar-resources.
Specifications included in this datasheet are subject to change without notice.

SUNPOWER®

c UL US LISTED
PHOTOVOLTAIC MODULE
OVER 600 VOLTS
E331841
Module Fire Performance: Type 2
1000 V max. system voltage

538614 Rev A / LTR_US
Publication Date: February 2021

1-800-SUNPOWER

POWERWALL

Tesla Powerwall is a fully-integrated AC battery system for residential or light commercial use. Its rechargeable lithium-ion battery pack provides energy storage for solar self-consumption, time-based control, and backup.

Powerwall's electrical interface provides a simple connection to any home or building. Its revolutionary compact design achieves market-leading energy density and is easy to install, enabling owners to quickly realize the benefits of reliable, clean power.

PERFORMANCE SPECIFICATIONS

AC Voltage (Nominal)	120/240 V
Feed-In Type	Split Phase
Grid Frequency	60 Hz
Total Energy	14 kWh
Usable Energy	13.5 kWh
Real Power, max continuous	5 kW (charge and discharge)
Real Power, peak (10 s, off-grid/backup)	7 kW (charge and discharge)
Apparent Power, max continuous	5.8 kVA (charge and discharge)
Apparent Power, peak (10 s, off-grid/backup)	7.2 kVA (charge and discharge)
Maximum Supply Fault Current	10 kA
Maximum Output Fault Current	32 A
Overcurrent Protection Device	30 A
Imbalance for Split-Phase Loads	100%
Power Factor Output Range	+/– 1.0 adjustable
Power Factor Range (full-rated power)	+/– 0.85
Internal Battery DC Voltage	50 V
Round Trip Efficiency[1,3]	90%
Warranty	10 years

[1]Values provided for 25°C (77°F), 3.3 kW charge/discharge power.
[2]In Backup mode, grid charge power is limited to 3.3 kW.
[3]AC to battery to AC, at beginning of life.

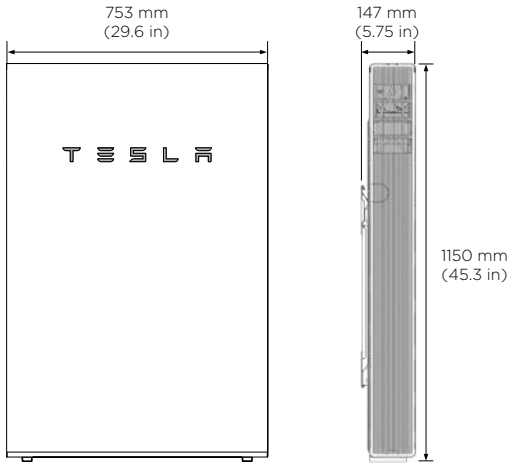
COMPLIANCE INFORMATION

Certifications	UL 1642, UL 1741, UL 1973, UL 9540, IEEE 1547, UN 38.3
Grid Connection	Worldwide Compatibility
Emissions	FCC Part 15 Class B, ICES 003
Environmental	RoHS Directive 2011/65/EU
Seismic	AC156, IEEE 693-2005 (high)

MECHANICAL SPECIFICATIONS

Dimensions[1]	1150 mm x 755 mm x 147 mm (45.3 in x 29.6 in x 5.75 in)
Weight[1]	114 kg (251.3 lbs)
Mounting options	Floor or wall mount

[1]Dimensions and weight differ slightly if manufactured before March 2019. Contact Tesla for additional information.

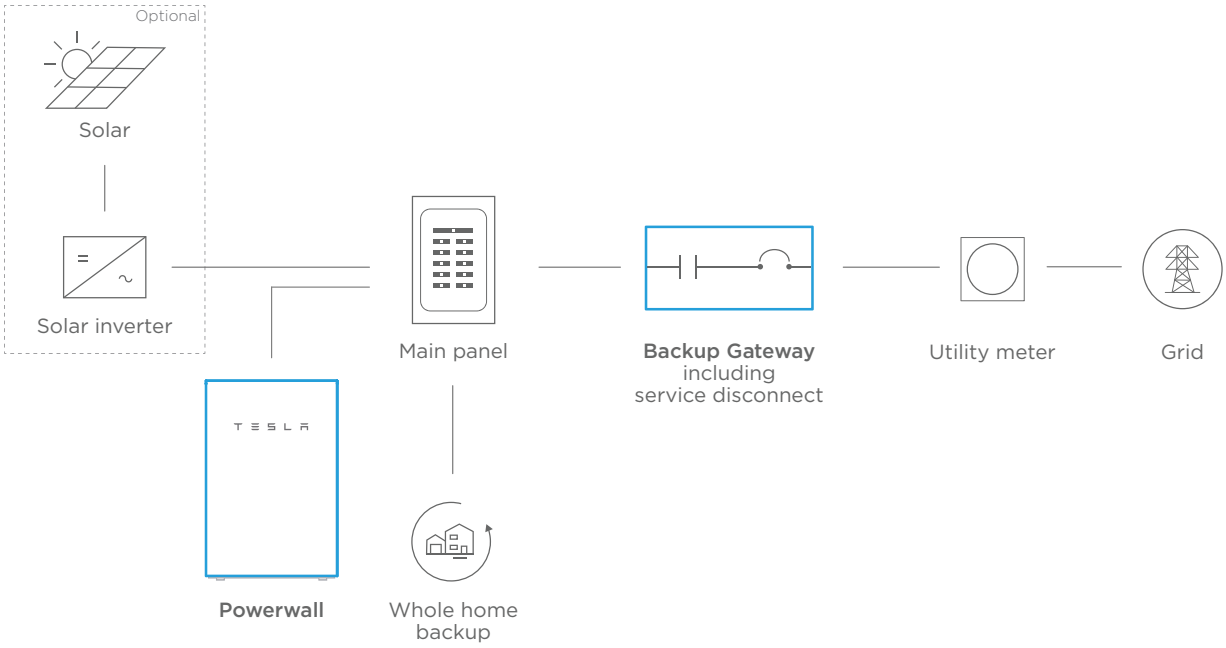


ENVIRONMENTAL SPECIFICATIONS

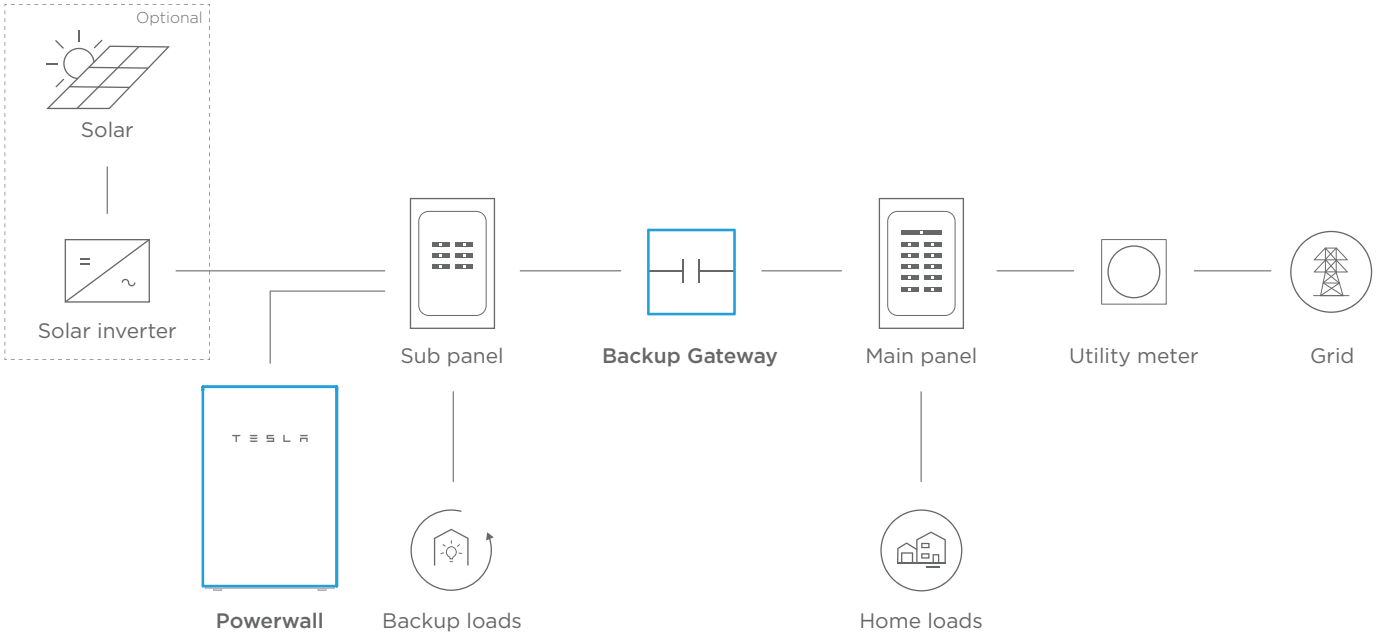
Operating Temperature	–20°C to 50°C (–4°F to 122°F)
Recommended Temperature	0°C to 30°C (32°F to 86°F)
Operating Humidity (RH)	Up to 100%, condensing
Storage Conditions	–20°C to 30°C (–4°F to 86°F) Up to 95% RH, non-condensing State of Energy (SoE): 25% initial
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R
Ingress Rating	IP67 (Battery & Power Electronics) IP56 (Wiring Compartment)
Wet Location Rating	Yes
Noise Level @ 1m	< 40 dBA at 30°C (86°F)

TYPICAL SYSTEM LAYOUTS

WHOLE HOME BACKUP



PARTIAL HOME BACKUP



ENERGY STAR CERTIFIED

Electric Vehicle Chargers

ChargePoint - CPH50 : CPH50

Specifications

Brand Name:	ChargePoint
Model Name:	CPH50
Model Number:	CPH50
ENERGY STAR Unique ID:	2341067
ENERGY STAR Partner:	ChargePoint, Inc.
Product Type:	Level 2
Input Voltage (V):	240
Max Nameplate Output Current (A):	50
Maximum Output Power (kW):	12.0
Number of Outputs:	1
Maximum Output Cord Length (ft.):	23
Output Cord Gauge (AWG):	9
Network Protocol with Wake Capability:	Wi-Fi or Gigabit Ethernet
Automatic Brightness Control (ABC) Capable?:	No
15 A Operation Mode Test: Total Loss (watts):	16.42
30 A Operation Mode Test: Total Loss (watts):	57.16
4 A Operation Mode Test: Total Loss (watts):	4.23
Full Current Operation Mode Test: Total Loss (watts):	158.11
Idle Mode Input Power (watts):	3.53
Idle Mode Power Factor:	0.4
Idle Mode Total Allowance (watts):	23.6
No Vehicle Mode Input Power (watts):	0.8
No Vehicle Mode Power Factor:	0.22
No Vehicle Mode Total Allowance (watts):	3.6
Partial On Mode Input Power (watts):	1.36
Partial On Mode Power Factor:	0.29
Partial On Mode Total Allowance (watts):	3.6
Date Certified:	2019-06-25
Date Available on Market:	2019-06-25
Markets:	United States, Canada

ENERGY STAR Certified:	Yes

Additional Model Information

Fleet,CPF50,; Fleet,CPF50-L18,; Fleet,CPF50-L18- PEDMNT-Dual,; Fleet,CPF50-L18-CMK6-PEDMNT-Dual,; Fleet,CPF50-L18-PEDMNT,; Fleet,CPF50-L18-PEDMNT-CMK6,; Fleet,CPF50-L18-WALLMNT-CMK6,; Fleet,CPF50-L23,; Fleet,CPF50-L23-CMK6-PEDMNT-Dual,; Fleet,CPF50-L23-PEDMNT,; Fleet,CPF50-L23-PEDMNT-CMK6,; Fleet,CPF50-L23-PEDMNT-Dual,; Fleet,CPF50-L23-WALLMNT-CMK6,; Home Flex,CPH50-NEMA14-50-L23,; Home Flex,CPH50-NEMA6-50-L23,

UPC Codes	

Captured On:
01/16/2023

ChargePoint Home Flex

Specifications and Ordering Information

Ordering Information

Description		Model Number
Station and Cable Model	16A-50A, NEMA 6-50 plug, 7010.4 mm (23') Charging Cable	CPH50-NEMA6-50-L23
	16A-50A, NEMA 14-50 plug, 7010.4 mm (23') Charging Cable	CPH50-NEMA14-50-L23
Replacement Cable	7010.4 mm (23') Charging Cable	CPH50Cable-T1-50A-L23-F

ChargePoint® Home Flex

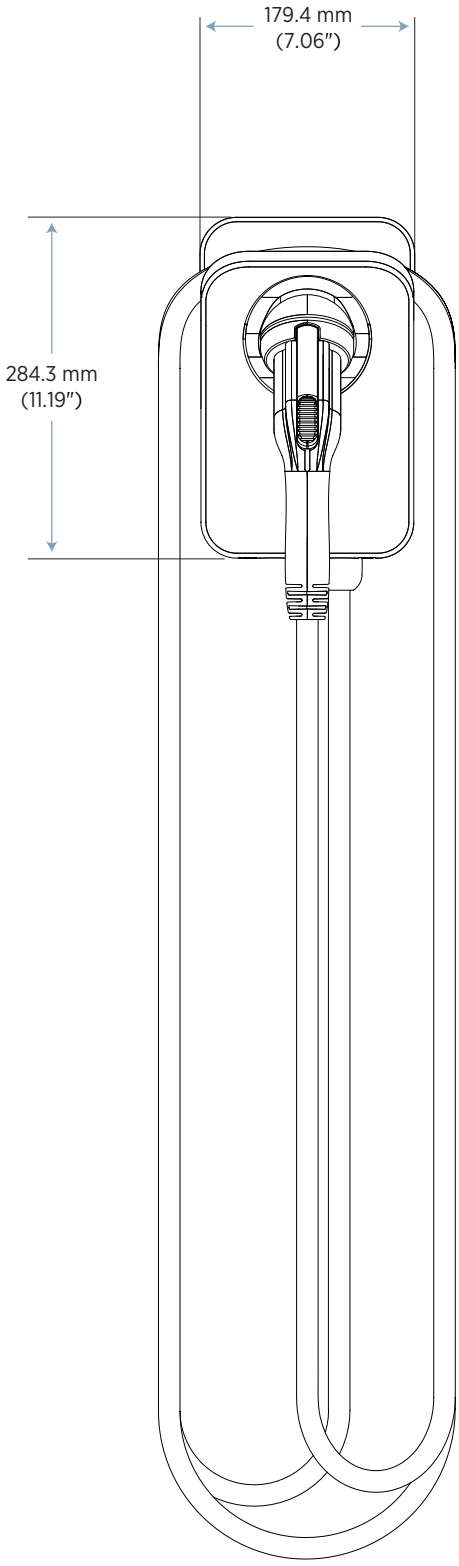
c UL us LISTED

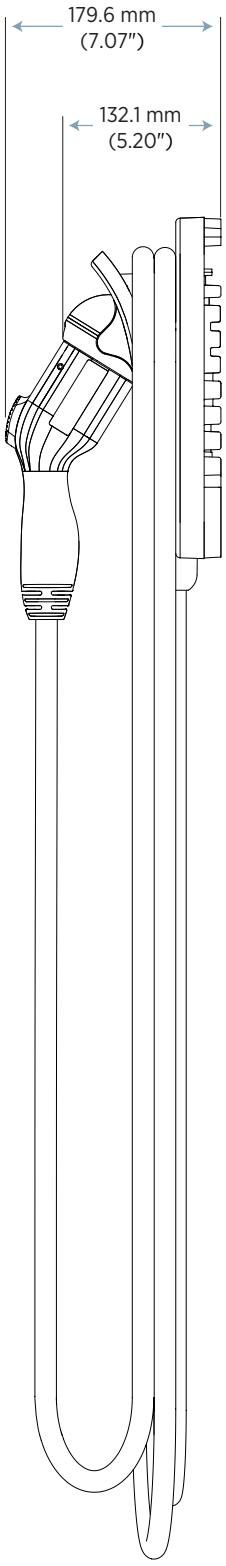
ENERGY STAR

WORKS WITH amazon alexa

Dimensions

Weight: 6.26kg (13.8lbs)





Specifications

Connector and Electrical

Input Cord	NEMA 6-50 or NEMA 14-50
AC Power Output Rating	Maximum 12 kW (240V AC * 50A). Output amperage adjustable via mobile app to 16A, 24A, 32A, 40A, 48A, 50A.
AC Power Input Rating	208/240V AC 60Hz single phase @ 16A, 24A, 32A, 40A, 48A, 50A
Required Service Panel Breaker	Dedicated Dual Pole rated for 125% of maximum load (ex: 50A breaker for 40A output)
Service Panel GFCI	External GFCI may conflict with internal GFCI (CCID). For hardwired installations, use a non-GFCI circuit breaker.
Power Wiring	3 Wire – L1, L2 plus Earth (no neutral)
Charging Cable Length	7010.4 mm (23′)
Connector Type	SAE J1772™
Power Measurement Accuracy	+/- 2.0% from 2% to full scale
Power Report/Store Interval	15 minute aligned to hour

Safety and Connectivity Features

Ground Fault Detection	20 mA CCID with auto retry
Open Safety Ground Detection	Continuously monitors presence of safety (green wire) ground connection
Plug-Out Detection	Power terminated per SAE J1772 specifications
Local Area Network	2.4/5 GHz Wi-Fi (802.11 a/b/g/n)
Device storage	Local data storage with capacity of up to 90 days of charging session data (100 sessions) in case of interrupted network connection
Software Updates	Firmware updated over-the-air (OTA)

Safety and Operational Ratings

Enclosure Ratings	Type 3R per UL 50E
Safety and Compliance	UL and cUL listed product per UL2594, UL2231-1, UL2231-2. NEC Article 625 compliant For Canada CSA C22.2, No. 280, 281.1, 281.2, CEC
EMI Compliance	FCC Part 15 Class B
Storage Temperature	-40°C to 60°C (-40°F to 140°F) ambient
Operating Temperature	-30°C to 50°C (-22°F to 122°F) ambient
Operating Humidity	Up to 95% at 50°C (122°F) non-condensing
Non-Operating Humidity	Up to 95% at 50°C (122°F) non-condensing
ENERGY STAR® Certification	Yes

Indicators

WiFi LED	Yes
Fault Indicator per UL	Yes
Status LED	Yes

Installation

Install Software	Mobile App (iOS & Android)
Outdoor Installation	Hardwired installation or weatherproof NEMA receptacle Note: Required by code to install an outdoor rated GFCI breaker upstream for outdoor plug-in installation

ChargePoint, Inc. reserves the right to alter product offerings and specifications at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.

Contact Us

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Email sales@chargepoint.com

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+1.877.370.3802 US and Canada toll-free

chargepoint.com

Listed by Underwriters Laboratories Inc.

ACCESSORIES

Optional

GLASS ENCLOSURE

- Glass is available in clear (-CG), frosted (-FG) or opal (-OG) [1]
- See fixture pages for availability

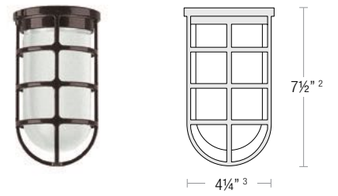
-CG	(Clear Glass Enclosure)
-FG	(Frosted Glass Enclosure)
-OG	(Opal Glass Enclosure) [1]

1. Heavy Metal and RDX only
2. Heavy Metal and RDX glasses are 7½" in height
3. Heavy Metal and RDX glasses are 4" in diameter

CAST GUARD WITH GLASS ENCLOSURE

- Cast guard can be specified in all standard and specialized finishes, and will match shade finish unless otherwise specified (Note: For galvanized shade finishes, cast guard is unfinished Raw Aluminum)
- Glass is available in clear (-CGG), frosted (-FGG) or opal (-OGG) [1]
- See fixture pages for availability

-CGG	(Clear Glass w/ Cast Guard)
-FGG	(Frosted Glass w/ Cast Guard)
-OGG	(Opal Glass w/ Cast Guard) [1]

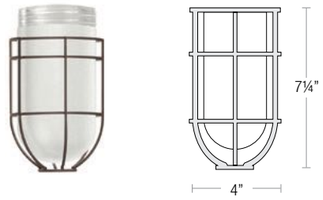


1. Heavy Metal and RDX only
2. Heavy Metal and RDX cast guards are 8" in height
3. Heavy Metal and RDX cast guards are 5½" in diameter

WIRE CAGE WITH GLASS ENCLOSURE

- Wire cage can be specified in all standard and specialized finishes, and will match shade finish unless otherwise specified (Note: For galvanized shade finishes, wire cage is finished in Painted Natural Aluminum)
- Glass is available in clear (-CGWC) or frosted (-FGWC)
- See fixture pages for availability

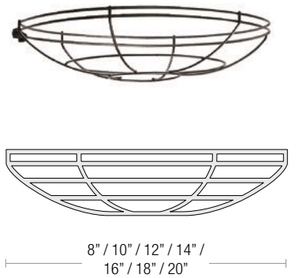
-CGWC	(Clear Glass w/ Wire Cage)
-FGWC	(Frosted Glass w/ Wire Cage)



WIRE GUARD

- Wire guard can be specified in all standard and specialized finishes, and will match shade finish unless otherwise specified (Note: For galvanized shade finishes, wire guard is finished in Painted Natural Aluminum)
- See fixture pages for availability

-WG	(Wire Guard)



LED garden and pathway bollard

Option 1 for pathway lighting

Type:
BEGA Product:
Project:
Voltage:
Color:
Options:
Modified:

Housing: One-piece die-cast housing. Die castings are marine grade and copper free (≤0.3% copper content) A360.0 aluminum alloy.

Enclosure: Matte safety glass lens. Fully gasketed using a one piece molded silicone gasket.

Electrical: 2.1W LED luminaire, 3.4W total system watts, -30°C start temperature. Integral 12V AC driver provided must be operated using remote magnetic transformer. Standard LED color temperature is 3000K with a >90 CRI.

Note: LEDs supplied with luminaire. Due to the dynamic nature of LED technology, LED luminaire data on this sheet is subject to change at the discretion of BEGA-US. For the most current technical data, please refer to www.bega-us.com.

Anchor base: Bollard base made of aluminum, made for bolting attachment to galvanized steel direct burial anchorage. Bollards are secured to anchorage using stainless steel set screws.

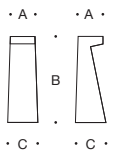
Finish: Available in four standard BEGA colors: Black (BLK); Bronze (BRZ). To specify, add appropriate suffix to catalog number.

Please note: BEGA's approach to product design is to innovate, not follow. With a steadfast commitment to quality, each product is conceived to satisfy a general or specific lighting task as defined by its architectural or exterior surroundings. The Home and Garden Collection is designed specifically for use in Residential and Light Commercial applications. Please reference our standard BEGA portfolio when mounting provisions for the rigorous demands of high-use commercial and/or vandal prone settings are required.

CSA certified to U.S. and Canadian standards, suitable for wet locations. Protection class IP65

Weight: 4.4 lbs

1st Choice for Pathway lighting



		Lamp	A	B	C
77 276	with direct burial anchorage	2.1W LED	2 3/4	9 7/8	3 1/2

BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 FAX (805) 566-9474 www.bega-us.com

LED garden and pathway bollard

Option 2 for Pathway Lighting

Post construction: One piece extruded aluminum. All aluminum in the construction is marine grade and copper free.

Lamp Enclosure: One piece die cast aluminum housing attached to post using two (2) captive stainless steel screws threaded into stainless steel inserts. Matte safety glass lens. Fully gasketed using a one piece molded silicone gasket.

Electrical: 2.1W LED luminaire, 3.5 total system watts, -30°C start temperature. Integral 12V AC driver provided must be operated using remote magnetic transformer. Standard LED color temperature is 3000K with a >90 CRI.

Note: LEDs supplied with luminaire. Due to the dynamic nature of LED technology, LED luminaire data on this sheet is subject to change at the discretion of BEGA-US. For the most current technical data, please refer to www.bega-us.com.

Anchor base: Anchor base made of galvanized steel, made for bolting into foundation or other paved surface. Bollards are secured to anchor base using two (2) stainless steel set screws.

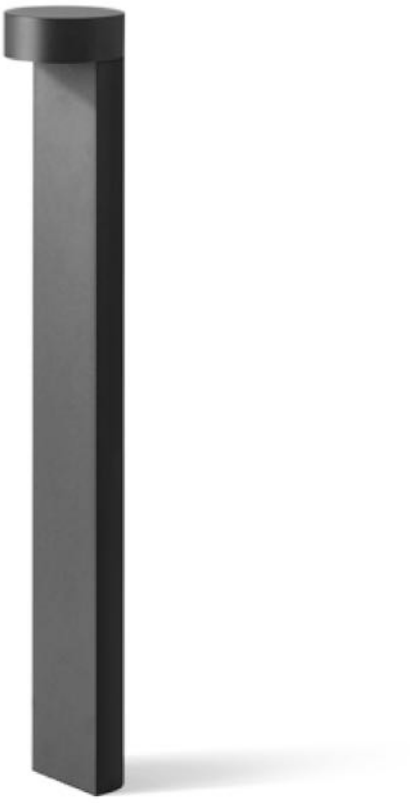
Finish: Available in four standard BEGA colors: Black (BLK); White (WHT); Bronze (BRZ); Silver (SLV). To specify, add appropriate suffix to catalog number. Custom colors supplied on special order.

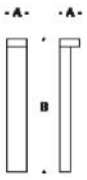
Please note: BEGA's approach to product design is to innovate, not follow. With a steadfast commitment to quality, each product is conceived to satisfy a general or specific lighting task as defined by its architectural or exterior surroundings. The Home and Garden Collection is designed specifically for use in Residential and Light Commercial applications. Please reference our standard BEGA portfolio when mounting provisions for the rigorous demands of high-use commercial and/or vandal prone settings are required.

CSA certified to U.S. and Canadian standards, suitable for wet locations. Protection class IP65

Weight: 6.3 lbs.

Type:	Direct Burrial
BEGA Product:	77 263
Project:	312 W. Hyman
Voltage:	12V
Color:	2700 K
Options:	
Modified:	BLK or BRZ to match house Sconces





		Lamp	A	B
77 263	with direct burial anchorage	2.1W LED	4⅜	27½

BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 FAX (805) 566-9474 www.bega-us.com

Option 3 for Pathway Lighting

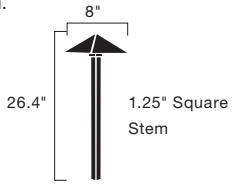
KICHLER

PROJECT:	
TYPE:	
ORDERING # :	
COMMENTS:	

LED Pyramid

FEATURES

- A style to fit a wide variety of tastes, the subtle look of this design will find a home in a wide variety of landscapes.
- Cast Aluminum Housing
- 4 W / 5.8 VA Light Output, Integrated LEDs and Driver, 2950K (-150/+175), High CRI
- 9V - 15V AC/DC
- 30" of useable #18-2, SPT-1W leads. Cable connector supplied.
- 8" In-ground stake



ORDERING INFORMATION

EXAMPLE: 15802TZT (Product # & Finish)

PRODUCT	FINISH	WATTAGE	LIGHT SOURCE	WIRING	MOUNTING ACCESSORIES (INCLUDED)	OPTIONS & ACCESSORIES
15802 Dimensions: 8" W x 26.4" L with 1.25" Square Stem	**Cast Aluminum** **TZT** - Textured Tannery Bronze™	4 W / 5.8 VA **Note:** Not for use with electronic transformers.	Integrated LEDs and Driver 2950K (-150 / +175) High CRI	30" of usable #18-2, SPT-1-W leads. Cable connector supplied.	8" In-ground stake	**15601AZT** - Cast Aluminum Surface Mounting Flange w/ Bronze Finish, Neoprene Gasket For Watertight Seal **15601BKT** - Cast Aluminum Surface Mounting Flange w/ Black Finish, Neoprene Gasket For Watertight Seal **15601BBR** - Cast Brass Surface Mounting Flange, Neoprene Gasket For Watertight Seal **Flange For Tree / Surface Mounting** **15607AZT** - Textured Bronze Finish **15607BKT** - Textured Black Finish **15607BBR** - Bronzed Brass Finish

Fixture Photometric (fc)

Distance from Light	0'	1'	2'	3'	4'	5'	6'	7'	8'
Footcandles	8.01	5.4	2.23	.85	.37	.19	0.09	–	–

Intertek

NOTES

For Warranty Information, please visit www.landscapelighting.com

We reserve the right to revise the design or components of any product due to parts availability or change in UL standards, without assuming any obligation or liability to modify any products previously manufactured, and without notice.

7711 E. Pleasant Valley Road, Cleveland, OH 44131 ph:(216) 573-1000 fax:(216) 573-2270 email:sales@kichler.com web:landscapelighting.com