PHOTOVOLTAIC ROOF MOUNT SYSTEM

CODE AND STANDARDS

THE INSTALLATION OF SOLAR ARRAYS AND PHOTOVOLTAIC POWER SYSTEMS SHALL COMPLY WITH THE FOLLOWING CODES:

- 2020 NATIONAL ELECTRICAL CODE
- 2018 NORTH CAROLINA RESIDENTIAL CODE
- 2018 NORTH CAROLINA BUILDING CODE
- ALL OTHER ORDINANCE ADOPTED BY THE LOCAL GOVERNING AGENCIES

SITE NOTES / OSHA REGULATION

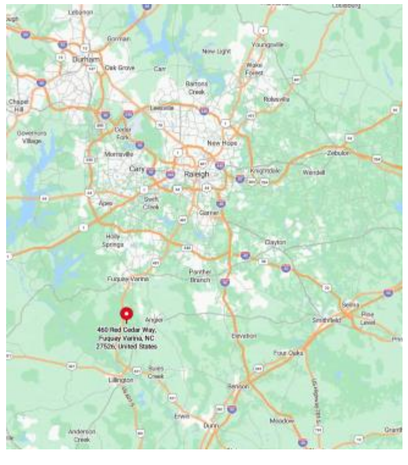
1. A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
2. THE SOLAR PV INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
3. ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED AND IDENTIFIED BY RECOGNIZED ELECTRICAL TESTING LABORATORY.
4. MODULES AND SUPPORT STRUCTURES SHALL BE GROUNDED
5. SOLAR INVERTER SHALL BE LISTED TO UL1741
6. ALL CONDUCTORS SHALL BE COPPER AND SHOULD BE 75 AND 90 DEG RATED
7. REMOVAL OF AN INTERACTIVE INVERTER OR OTHER EQUIPMENT SHALL NOT DISCONNECT THE BONDING CONNECTION BETWEEN THE GROUNDING ELECTRODE CONDUCTOR, THE PHOTOVOLTAIC SOURCE AND OUTPUT CIRCUIT GROUNDED CONDUCTORS.
8. LIVE PARTS OF PV SOURCE CIRCUITS AND PV OUTPUT CIRCUITS OVER 150V TO GROUND SHALL NOT BE ACCESSIBLE TO OTHER THAN QUALIFIED PERSONS WHILE ENERGIZED.
9. ALL PV MODULES AND ASSOCIATED EQUIPMENT AND WIRING SHALL BE PROTECTED FROM PHYSICAL DAMAGE.

SOLAR CONTRACTOR

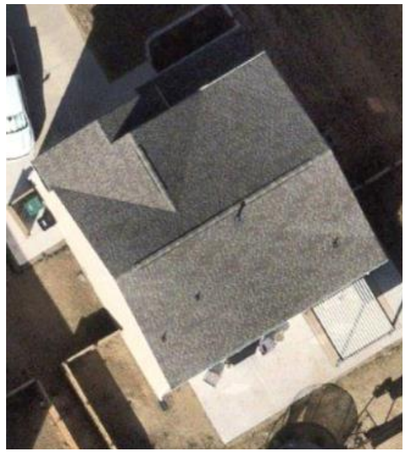
1. MODULE CERTIFICATIONS INCLUDE UL1703, IEC61646, IEC61370.
2. IF APPLICABLE, MODULE GROUNDING LUGS MUST BE INSTALLED AT THE MARKED GROUNDING LUG HOLES PER THE MANUFACTURERS INSTALLATION REQUIREMENTS.
3. AS INDICATED BY DESIGN, OTHER NRTL LISTED MODULE GROUNDING DEVICES MAY BE USED IN PLACE OF STANDARD GROUNDING LUGS AS SHOWN IN MANUFACTURER DOCUMENTATION AND APPROVED BY THE AHJ.
4. ALL MICROINVERTERS, PHOTOVOLTAIC MODULES, AC COMBINERS, DC-AC CONVERTERS AND SOURCE CIRCUIT COMBINERS INTENDED FOR USE IN A PHOTOVOLTAIC POWER SYSTEM WILL BE IDENTIFIED AND LISTED FOR THE APPLICATION PER NEC690.4(B).
5. ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH LOCAL BUILDING CODE.
6. TERMINALS AND LUGS WILL BE TIGHTENED TO MANUFACTURER TORQUE SPECIFICATIONS (WHEN PROVIDED) IN ACCORDANCE WITH NEC CODE 110.14(D) ON ALL ELECTRICAL CONNECTIONS.
7. MAX DC VOLTAGE CALCULATED USING MANUFACTURER PROVIDED TEMP COEFFICIENT FOR VOC UNLESS NOT AVAILABLE.

SR.#	PROJECT INFORMATION	
1	PV MODULES	26 x Canadian Solar CS6.1-54TM-450H
2	INVERTER + BATTERY	01 X POWERWALL3
3	ROOF TYPE	ASPHALT SHINGLES
4	RACKING	PSR-B84 RAILS (BLACK)
5	MOUNTING TYPE	INSTAFLASH2
6	DC SIZE	11.70 KW
7	AC SIZE	11.5 KVA

SR.#	PROJECT INFORMATION	
1	PV1	DRAWING INDEX
2	PV2	SITE LAYOUT
3	PV3	STRING MAPPING
4	PV4	ELECTRICAL ONE LINE DIAGRAM
5	PV5	DETAILED ELECTRICAL WIRING SCHEMATIC
6	PV6	PV LABELS
7	PV7	BILL OF MATERIALS
8	PV8	ATTACHMENT DETAILS



VICINITY MAP



TOP VIEW OF THE BUILDING

DESIGN CRITERIA
WIND SPEED: 120 MPH
GROUND SNOW LOAD: 15 PSF
WIND EXPOSURE FACTOR: B

UTILITY COMPANY:
DUKE ENERGY

PERMIT ISSUER (AHJ):
HARNETT COUNTY

SCOPE OF WORK
INSTALLATION OF UTILITY INTERACTIVE PHOTOVOLTAIC SOLAR SYSTEM.

8MSOLAR
ADVANCING ENERGY INDEPENDENCE

5112 Departure Drive,
Raleigh NC 27616
O: 919.948.6474
E: info@8msolar.com

Customer Information:

William Griffith

460 Red Cedar Way
Fuquay Varina, NC 27526

Customer Signature:

Sheet Name:

Drawing Index

JOB NUMBER:

25-167-WG

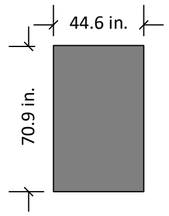
Date:	Revision:
04/16/2025	A

Sheet Size:	Sheet Number:
ANSI C 17" X 22"	PV1

NABCEP CERTIFIED
PV Installation Professional
Ali Buttar
PVIP #031310-32

ROOF DESCRIPTION			
ROOF	PITCH	AZIMUTH	NO. OF MODULES
A	27°	149°	26

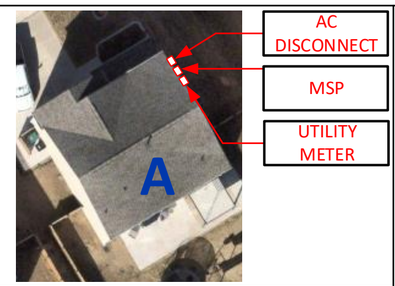
MODULE DIMENSIONS



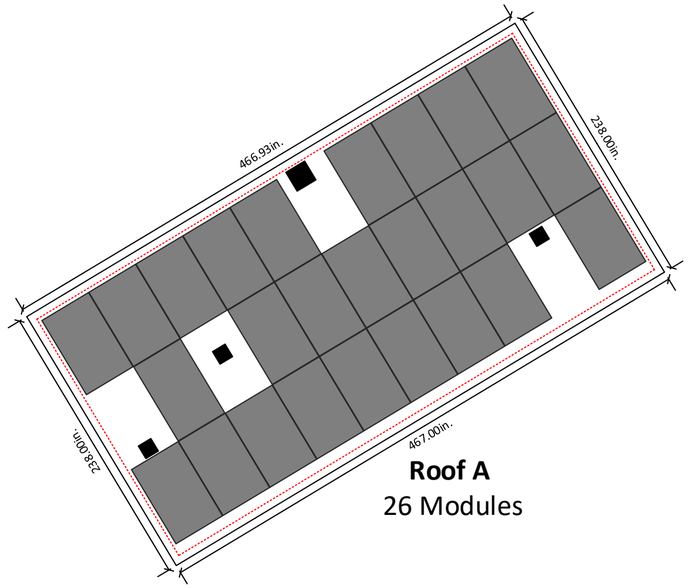
PV System Dead Load
(Panel + Racking weight) / PV System Area
(No. of panels x Weight of panel(lbs.) +Length of racking(ft.) x 1.15 lb.ft) /
(No. of panels x Height x Width) = Total psf

ROOF	A			
DEAD LOAD (PSF)	2.70			

Vent	■	No vent will be covered by PV modules during the installation.



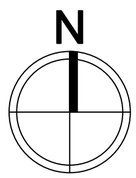
SYSTEM DETAILS
NUMBER OF PANELS : 26
PANELS MODEL : CANADIAN SOLAR CS6.1-54TM-450H450W
DC SIZE : 11.70 KW
AC SIZE : 11.5 KVA



Roof A
26 Modules

6in setback from sides of the roof

SITE LAYOUT
SCALE: 1/8" - 1'



8MSOLAR
ADVANCING ENERGY INDEPENDENCE

5112 Departure Drive,
Raleigh NC 27616
O: 919.948.6474
E: info@8msolar.com

Customer Information:

William Griffith

460 Red Cedar Way
Fuquay Varina, NC 27526

Customer Signature:

Sheet Name:
Site Layout

JOB NUMBER:
25-167-WG

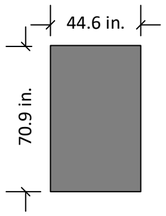
Date:	Revision:
04/16/2025	A

Sheet Size:	Sheet Number:
ANSI C 17" X 22"	PV2

NABCEP CERTIFIED
PV Installation Professional
Ali Buttar
PVIP #031310-32

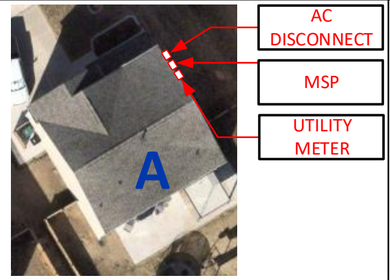
ROOF DESCRIPTION			
ROOF	PITCH	AZIMUTH	NO. OF MODULES
A	27°	149°	26
Tesla MCI (Mid Circuit Interrupter)			

MODULE DIMENSIONS

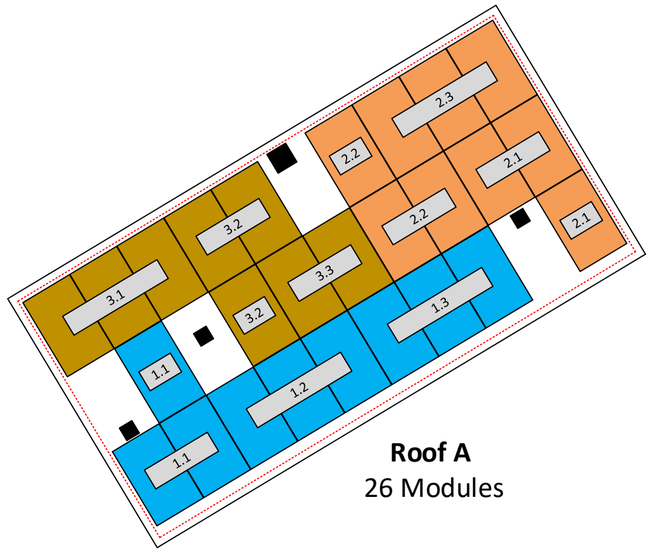


STRING LAYOUT

TESLA POWERWALL3					
Strings #	No. of Modules	Color	Strings #	No. of Modules	Color
String 1	09				
String 2	09				
String 3	08				



SYSTEM DETAILS
NUMBER OF PANELS : 26
PANELS MODEL : CANADIAN SOLAR CS6.1-54TM-450H450W
DC SIZE : 11.70 KW
AC SIZE : 11.5 KVA



Roof A
26 Modules

6in setback from sides of the roof

STRING MAPPING
SCALE: 1/8" - 1'

N

8MSOLAR
ADVANCING ENERGY INDEPENDENCE

5112 Departure Drive,
Raleigh NC 27616
O: 919.948.6474
E: info@8msolar.com

Customer Information:

William Griffith

460 Red Cedar Way
Fuquay Varina, NC 27526

Customer Signature:

Sheet Name:
String Mapping

JOB NUMBER:
25-167-WG

Date:	Revision:
04/16/2025	A

Sheet Size:	Sheet Number:
ANSI C 17" X 22"	PV3

NABCEP CERTIFIED
PV Installation Professional
Ali Buttar
PVIP #031310-32

STRING CALCULATION

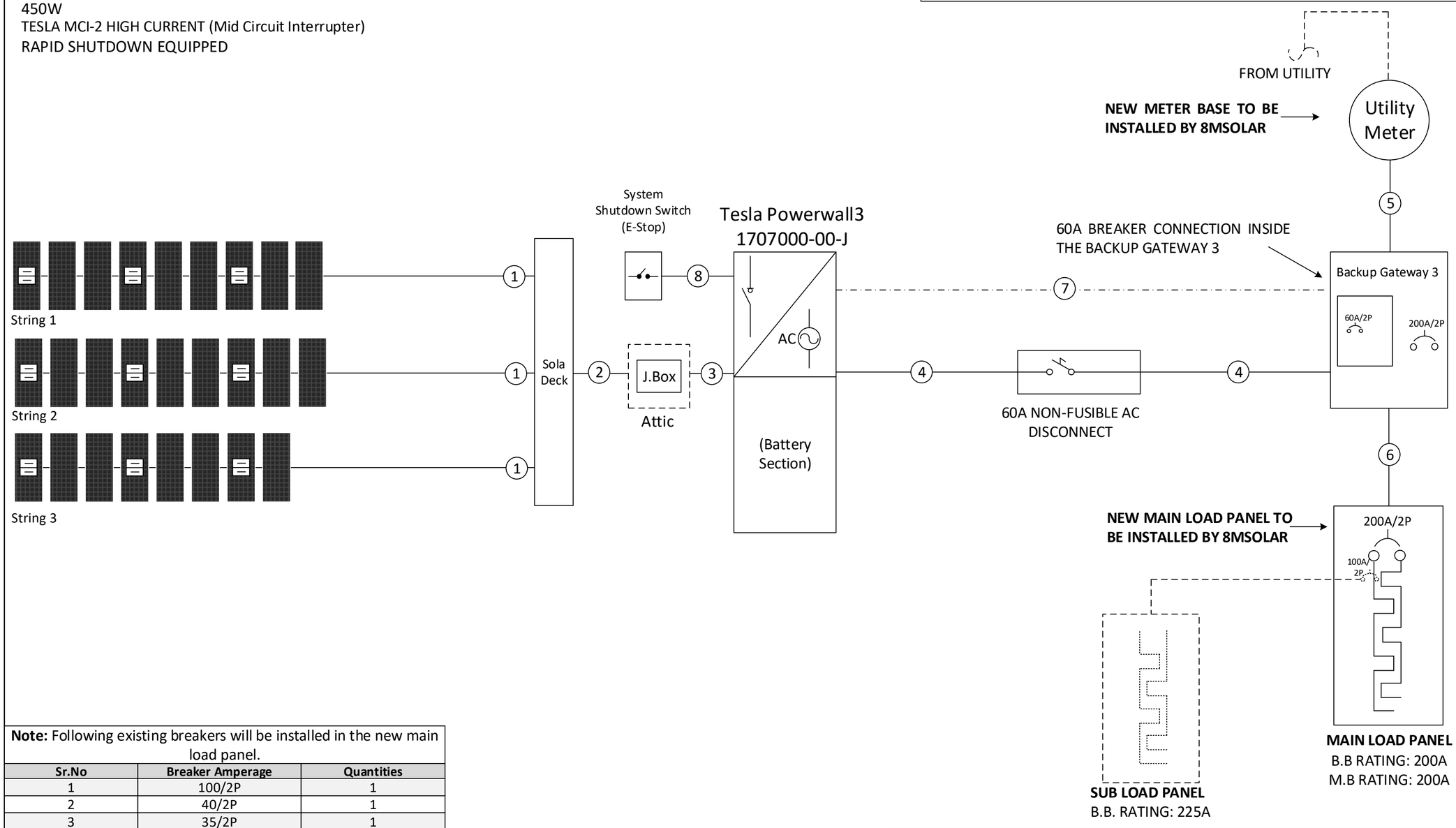
String #	No of Modules	Estimated Power	Imax	Impp	Voc	Vmpp
1,2	09	4,050 W	21.31 Adc	13.66 Adc	350.1 Vdc	550 Vdc
3	08	3,600 W	21.31 Adc	13.66 Adc	311.2 Vdc	550 Vdc

NEC Code (2020) and UL Standard Refrences

Rapid Shut Down	NEC 690.12 (A-D), UL1741	Grounding	NEC Article 250.30(A)
Disconnecting Means	NEC 690.13	Conduit Fill	NEC Table C.9, 310.15(B)(3)(a)
Feeder Sizing	NEC Table 310, 15(B)(16, 17)	Interconnection	NEC 705.12
Over current Protection	NEC 690.9		

Service Side Work: Power Drop Required

26 X CANADIAN SOLAR CS6.1-54TM-450H
450W
TESLA MCI-2 HIGH CURRENT (Mid Circuit Interrupter)
RAPID SHUTDOWN EQUIPPED



Note: Following existing breakers will be installed in the new main load panel.

Sr.No	Breaker Amperage	Quantities
1	100/2P	1
2	40/2P	1
3	35/2P	1

- System Size: 11,700W DC
- Battery Total Energy: 13.5 KWh
- (26) Canadian Solar CS6.1-54TM-450H
- (09) 1879359-15-B: Tesla MCI-2 High Current
- (01) Tesla Powerwall3 (1707000-00-J)
- Inverter Output: 48A max @ 240 VAC (each)
- 11.5 kVA AC output max

- Grounding will be done via Pegasus grounding lugs and mid-clamps to ensure the rail and panels are continuously grounded.
- Rapid Shutdown is included in the Mid Circuit Interrupter , refer to Mid Circuit Interrupter and Inverter attached datasheets.
- The load center/disconnect will be visible, lockable, accessible to utility linesmen, and properly labeled per NEC requirements. It will be located on the exterior wall next to the utility meter.
- Prepare cable in usual manner.
- Stretch tape and apply half-lapped to form void-free joint. Degree of stretch is not critical and may vary in different sections of joint to accomplish void-free application.
- Protect the joint with two half-lapped layers of any scotch vinyl plastic electrical tape.

Sr.No	#Wire	Conduit Size	Ground Wire	Amperage
1	2 x #10 PV		#10 Bare Cu	21.31
2	3 x #10 MC Cable			21.31
3	6 x #10 THHN Cu	3/4” EMT	#10 Green Cu	21.31
4	3 x #6 THHN Cu	3/4” EMT	#6 Green Cu	60
5	3 x #3/0 THHN Cu	2” PVC		200
6	3 x #3/0 THHN Cu	2” PVC	#6 Green Cu	200
7	4-conductor shielded (1 twisted pair) 16 AWG			
8	2-conductor shielded (1 twisted pair) 18 AWG	1/2” LFNC		

8MSOLAR
ADVANCING ENERGY INDEPENDENCE

5112 Departure Drive,
Raleigh NC 27616
O: 919.948.6474
E: info@8msolar.com

Customer Information:

William Griffith

460 Red Cedar Way
Fuquay Varina, NC 27526

Customer Signature:

Sheet Name:

Electrical One Line Diagram

JOB NUMBER:

25-167-WG

Date:

04/16/2025

Revision:

A

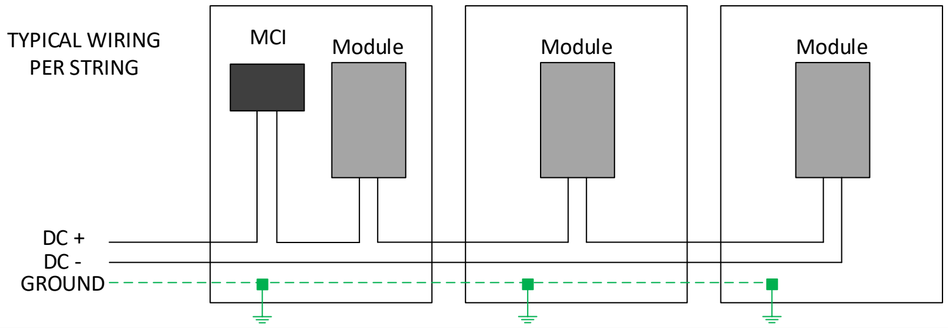
Sheet Size:

ANSI C
17" X 22"

Sheet Number:

PV4

NABCEP CERTIFIED
PV Installation Professional
Ali Buttar
PVIP #031310-32



Line 1	
Line 2	
Neutral	
Ground	

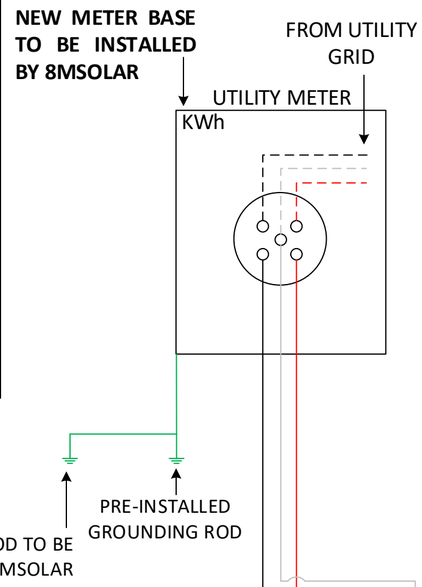
Note: Tesla MCI should be at the start or end of every string and it should be after every three panels

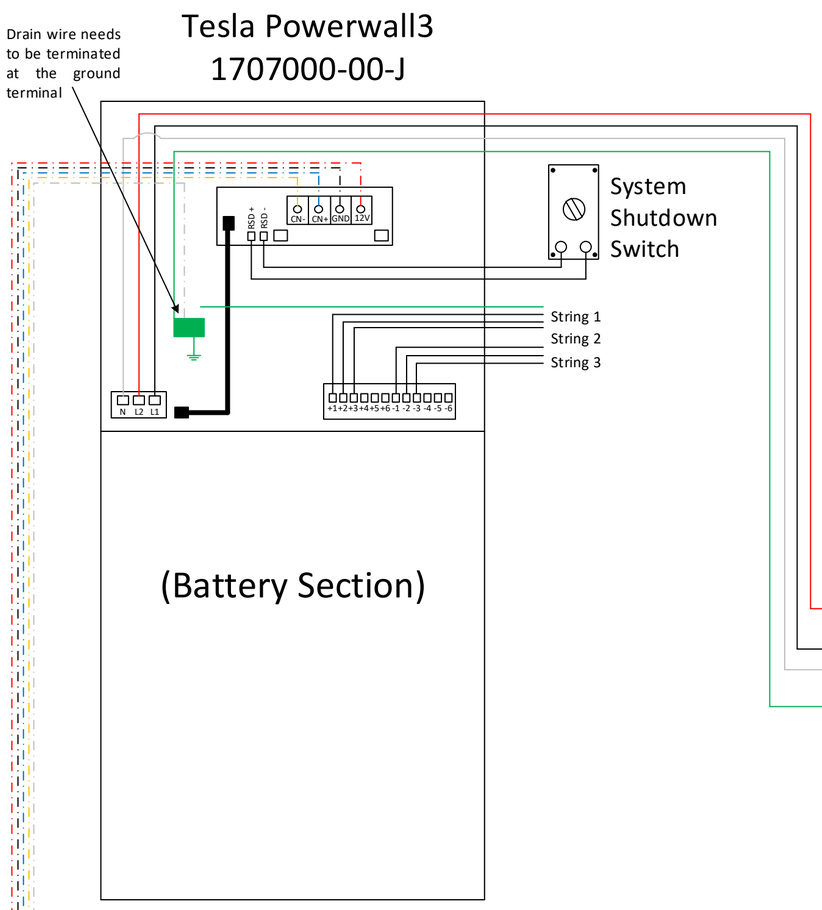
Note: Loads greater than 48A will not be backed by the battery and needs to managed manually.

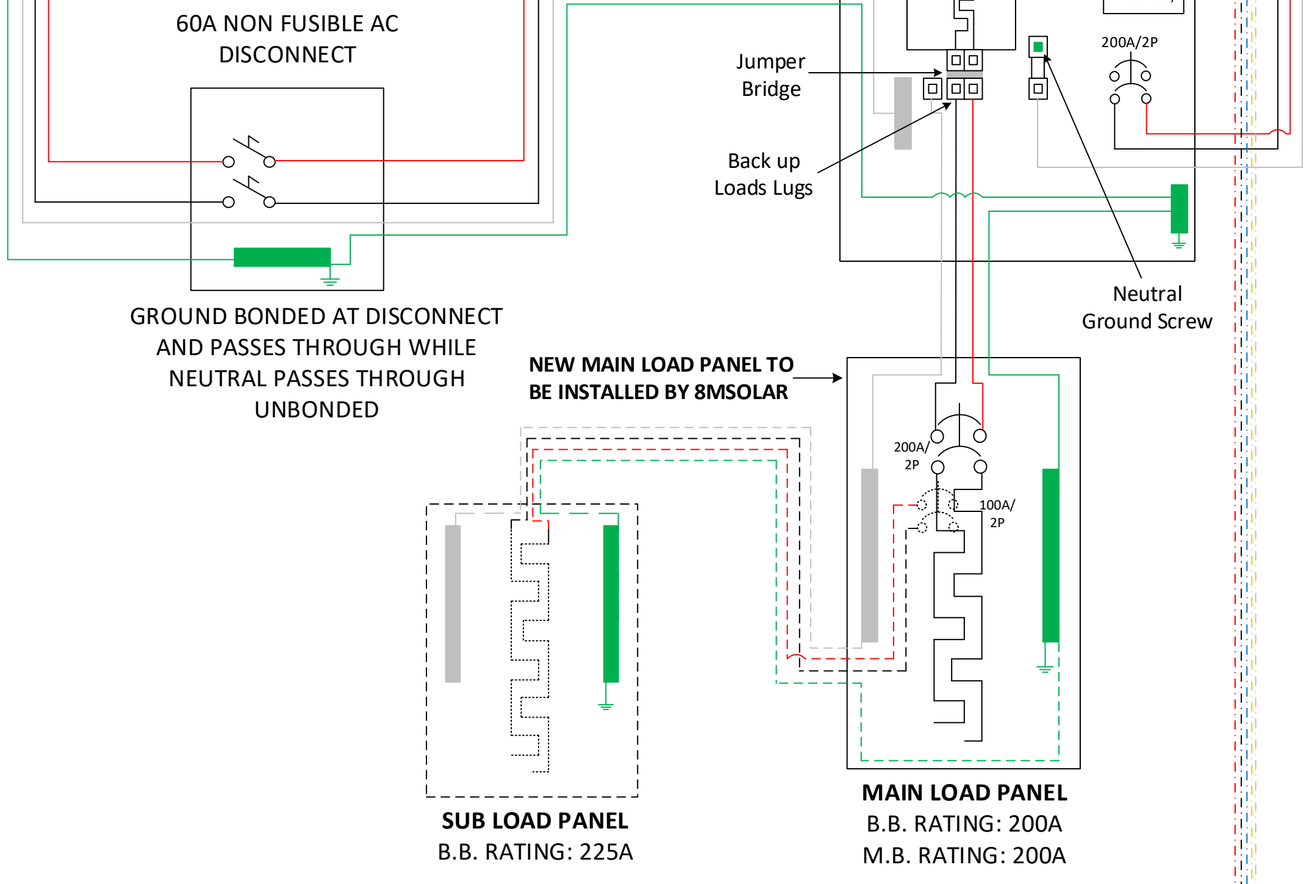
Note: Accepted Breakers for Gateway: Eaton CSR or BW (100-200A)

Note: Drain wire in the communication wire should be terminated at the Powerwall3 and it will not be terminated in the Backup Gateway3.

Note: Connect both grounding rods in a series connections with a bare copper keeping the minimum distance of 6ft between them







8MSOLAR
ADVANCING ENERGY INDEPENDENCE

5112 Departure Drive,
Raleigh NC 27616
O: 919.948.6474
E: info@8msolar.com

Customer Information:

William Griffith

460 Red Cedar Way
Fuquay Varina, NC 27526

Customer Signature:

Sheet Name:

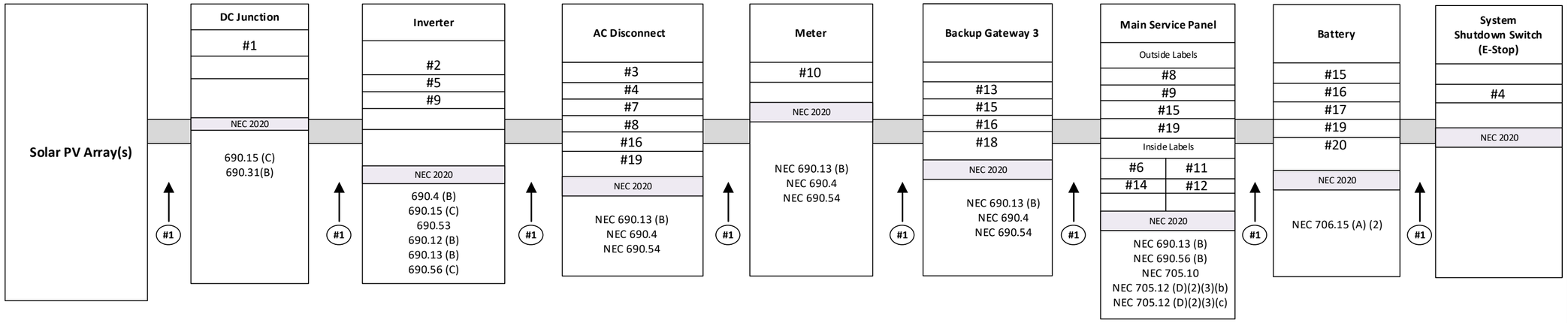
Detailed Electrical Diagram

JOB NUMBER:

25-167-WG

Date:	**Revision:**
04/16/2025	A
Sheet Size: ANSI C 17" X 22"	**Sheet Number:** PV5

NABCEP CERTIFIED
PV Installation Professional
Ali Buttar
PVIP #031310-32



LABELING AND WARNING SIGNS: NEC 2020

A. PURPOSE
PROVIDE EMERGENCY RESPONDERS WITH APPROPRIATE WARNING AND GUIDANCE WITH RESPECT TO ISOLATING THE SOLAR ELECTRIC SYSTEM. THIS CAN FACILITATE IDENTIFYING ENERGIZED ELECTRICAL LINES THAT CONNECT THE SOLAR PANELS TO THE INVERTER, AS SHOULD NOT BE CUT WHEN VENTING FOR SMOKE REMOVAL.

B. MAIN SERVICE DISCONNECT:
1. RESIDENTIAL BUILDINGS- THE MARKING MAY BE PLACED WITHIN THE MAIN SERVICE DISCONNECT. THE MARKING SHALL BE PLACED ON THE OUTSIDE COVER IF THE MAIN SERVICE DISCONNECT IS OPERABLE WITH THE SERVICE PANEL CLOSED.

2. COMMERCIAL BUILDINGS- THE MARKINGS SHALL BE PLACED ADJACENT TO THE MAIN SERVICE DISCONNECTCLEARLY VISIBLE FROM THE LOCATION WHERE THE LEVER IS OPERATED

3. MARKINGS, VERBIAGE, FORMAT AND TYPE OF MATERIAL

a. VERBIAGE: CAUTION; SOLAR ELECTRIC SYSTEM CONNECTED
b. FORMAT:

(1) WHITE LETTERING ON A RED BACKGROUND
(2) MINIMUM 3/8 INCH LETTER HEIGHT
(3) ALL LETTERS SHALL BE CAPITALIZED
(4) ARIAL OR SIMILAR FONT, NON-BOLD

c. MATERIAL:

(1) REFLECTIVE, WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT (USE UL-969) AS STANDARD FOR WEATHER RATING): DURABLE ADHESIVE MATERIALS MEET THIS REQUIREMENT.

C. MARKING REQUIREMENTS ON DC CONDUIT, RACEWAYS, ENCLOSURES, CABLE ASSEMBLIES, DC COMBINERS AND JUNCTION BOXES;
1. MARKING: PLACEMENT, VERBIAGE, FORMAT AND TYPE OF MATERIAL.

a. PLACEMENT: MARKINGS SHALL BE PLACED EVERY 10 (TEN) FEET ON ALL INTERIOR AND EXTERIOR DC CONDUITS, RACEWAYS, ENCLOSURES AND CABLE ASSEMBLIES, AT TURNS ABOVE AND/OR BELOW PENETRATIONS, ALL DC COMBINERS AND JUNCTION BOXES.
b. VERBIAGE: CAUTION SOLAR CIRCUIT
c. THE FORMAT AND TYPE OF MATERIAL SHALL ADHERE TO SECTION B-3.B & C ABOVE

D. INVERTERS ARE NOT REQUIRED TO HAVE CAUTION MARKINGS

#1
WARNING:PHOTOVOLATIC POWER SOURCE

#2
PHOTOVOLTAIC
DC DISCONNECT

#3
PHOTOVOLTAIC
AC DISCONNECT

#4
RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

#5

MAXIMUM VOLTAGE	550Vdc
MAX. RATED CIRCUIT CURRENT OF THE CHARGE CONTOLLER OR DC-TO-DC CONVERTER (IF INSTALLED)	13.66Adc

#6

PHOTOVOLTIVC POWER SOURCE		
OPERATING AC VOLTAGE	240	V
MAXIMUN OPERATING AC OUTPUT CURRENT	48	A

#7

AC DISCONNECT		
PHOTOVOLTAIC SYSTEM POWER SOURCE		
RATED AC OUTPUT CURRENT	48	AMPS
NOMINAL OPERATING AC VOLTAGE	240	VOLTS

#8
WARNING
ELECTRIC SHOCK HAZARD
TERMINAL ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

#9
WARNING
THREE POWER SOURCES
SOURCES: UTILITY GRID, BATTERY AND PV SOLAR ELECTRIC SYSTEM

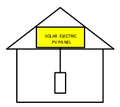
#10
WARNING
THREE POWER SOURCES
SOURCES: UTILITY GRID, BATTERY AND PV SOLAR ELECTRIC SYSTEM

#11
WARNING
TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

#12
WARNING
POWER SOURCE OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

#13
WARNING
SOLAR ELECTRIC CIRCUIT BREAKER IS BACKFEED

#14
SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN
TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY



#15
SOLAR AC DISCONNECT LOCATED AT NORTH-EAST SIDE WALL OF THE HOUSE BESIDE THE UTILITY METER

#16
SERIVCE DISCONNECT LOCATED IN THE BACKUP GATEWAY 3 PANEL

#17
BATTERY

#18
MAIN BATTERY SYSTEM DISCONNECT

#19
BATTERY DISCONNECT LOCATED IN THE BACKUP GATEWAY 3 PANEL

#20
ENERGY STORAGE SYSTEM DISCONNECT

NOMINAL ESS AC VOLTAGE	240V
NOMINAL ESS DC VOLTAGE	550V
AVAILABLE FAULT CURRENT DERIVED FROM THE ESS	160A
DATE CALCULATION PERFORMED	04/11/2025

8MSOLAR
ADVANCING ENERGY INDEPENDENCE

5112 Departure Drive,
Raleigh NC 27616
O: 919.948.6474
E: info@8msolar.com

Customer Information:

William Griffith

460 Red Cedar Way
Fuquay Varina, NC 27526

Customer Signature:

Sheet Name:

PV Labels

JOB NUMBER:

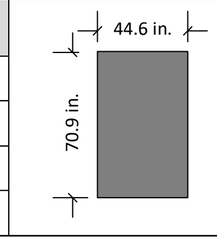
25-167-WG

Date:	Revision:
04/16/2025	A
Sheet Size: ANSI C 17" X 22"	**Sheet Number:** PV6

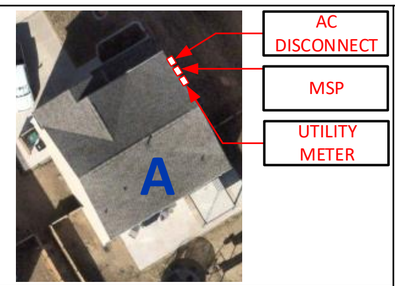
NABCEP CERTIFIED
PV Installation Professional
Ali Buttar
PVIP #031310-32

ROOF DESCRIPTION			
ROOF	PITCH	AZIMUTH	NO. OF MODULES
A	27°	149°	26

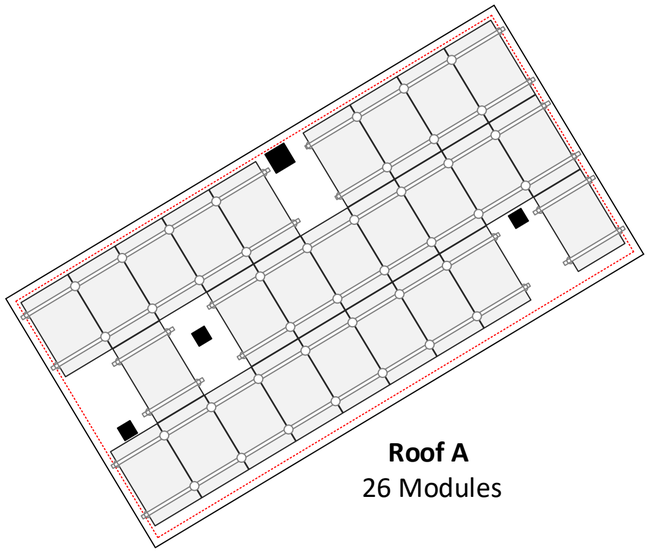
MODULE DIMENSIONS



Rails and Splices : PSR-B84 (BLACK)	Roof Attachment : Pegasus InstaFlash2
Rafter Spacing : 24 in	There is one layer of shingles Roofing material is asphalt shingles
Attachment Span: 6ft	The roof is located in 120mph wind zone



PV LABELS		
Sr. No	Code	Qty
01	02-314	12
02	03-301	01
03	03-302	01
04	02-316	02
05	03-308	01
06	03-390	01
07	03-306	01
08	05-215	02
09	05-230	02
10	03-230	01
11	05-372	01
12	05-216	01
13	05-342	01
14	07-111	01
15	8M-001	03
16	8M-002	03
17	03-395	01
18	04-304	01
19	8M-004	03
20	03-511	01



Roof A
26 Modules

6in setback from sides of the roof

RAILS AND MOUNTING SYSTEM
- 34 x PSR-B84: Pegasus Rail, Black, 84" (7 Feet)
- 22 x PSR-SPLS: Pegasus - Bonded, Structural Splice
- 40 x PSR-MCB: Pegasus - Multiclamp, Mid/End, 30 to 40 mm, Black
- 24 x PSR-HEC: Pegasus - Hidden End Clamp
- 08 x PSR-LUG: Pegasus - Grounding Lug
- 39 x PSR-WMC: Pegasus - Wire Management Clip
- 05 x PSR-CBG: Pegasus - Cable Grip
- 24 x PSR-CAP: Pegasus - End Cap
- 48 x PIF2-BDT: Pegasus InstaFlash2 – Deck or Rafter Attach – with Dovetail T-Bolt
- 288 x PF-DRW85: Pegasus Fastener - Deck-Rafter 85mm
- 52 x Heyco Wire Clips
- 05 x GEOC GC66100: SEALANT 2300 10.3OZ CLEAR (20) GEOCEL 230 TRIPOLY CLEAR
- 15 x MULTI 32.0017P0001-UR: PV MC4 MALE (10) [1000]
- 15 x MULTI 32.0016P0001-UR: PV MC4 FEMALE (10) [1000]

SOLAR MODULES
- 26 x Canadian Solar CS6.1-54TM-450H

INVERTER & SUPPORTING ITEMS
- 01 x 1707000-00-J :Tesla Powerwall3
- 09 x 1879359-15-B: Tesla MCI-2 High Current
- 01 x 1841000-01-C: Backup GateWay 3
- 01 x 1549184-00-X: 02" Conduit Hub Kit

WIRE
- 01 x WIRPV 2KVPV10STRBLK500: #10 PV WIRE BLK (Cu) 500ft

ELECTRICAL ITEMS
- 01 x BW2200: Gateway Main Breaker-Eaton BW2200
- 01 x BR260: Eaton BR 60/2
- 01 x DG222URB: 250volt/60amp/2pole non fusible disconnect (NEMA 3R)
- 01 x EATON UTRS213BE: Eaton 200A Meter Base
- 01 x HOM2040M200PRB: Homeline HOM type 200A Load Center
- 01 x EATON M22PVK01: 22.5MM PB EMG STOP W/ CONTACTOR
- 01 x Eaton M22I1PG: SFC MTG ENC Emergency Stop Enclosure
- 01 x EZSLR JB-1.2: SolaDeck

BILL OF MATERIAL
SCALE: 1/8" - 1'

N

8MSOLAR
ADVANCING ENERGY INDEPENDENCE

5112 Departure Drive,
Raleigh NC 27616
O: 919.948.6474
E: info@8msolar.com

Customer Information:

William Griffith

460 Red Cedar Way
Fuquay Varina, NC 27526

Customer Signature:

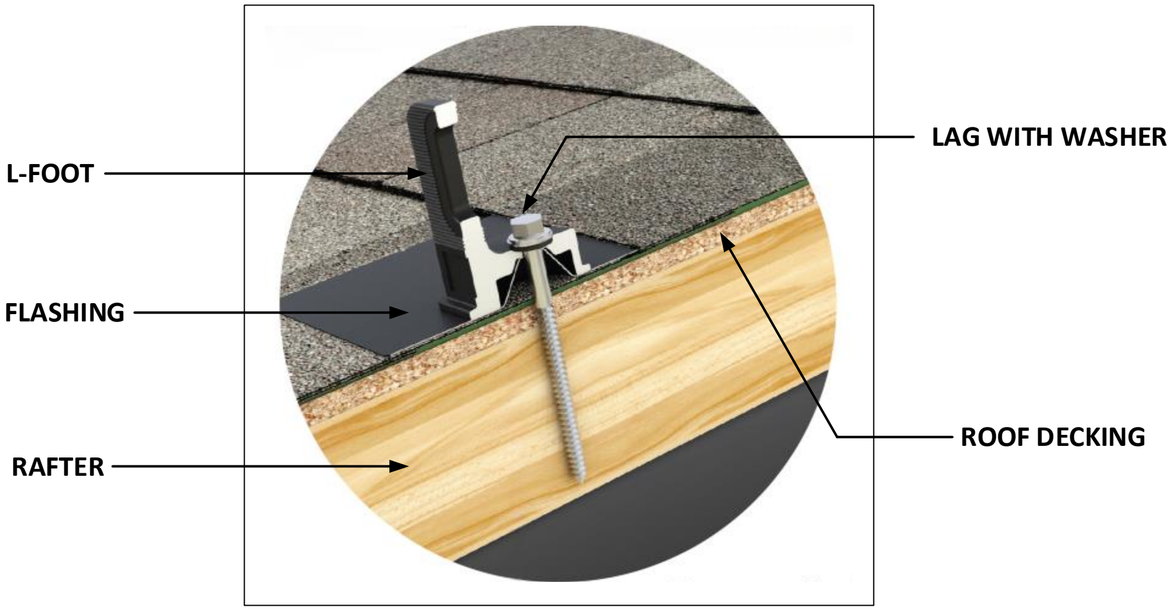
Sheet Name:
Bill of Material

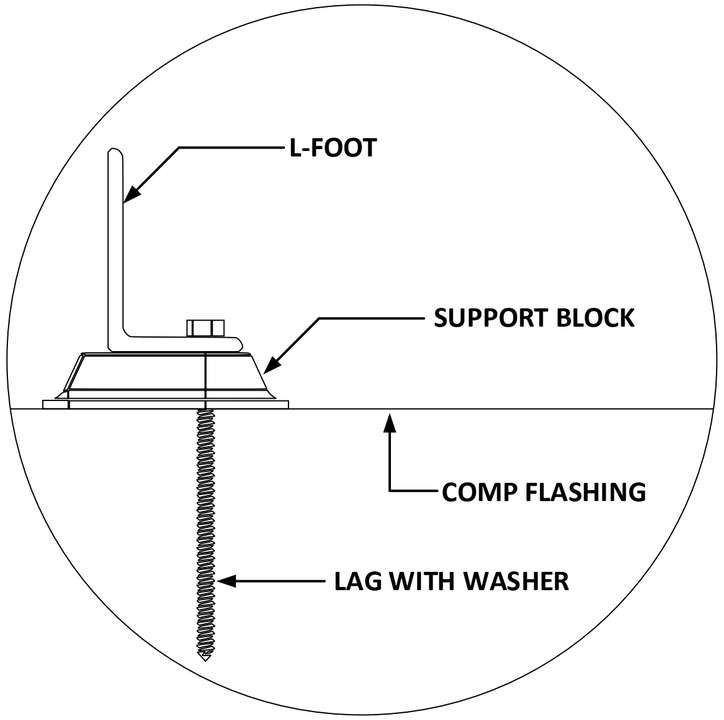
JOB NUMBER:
25-167-WG

Date:	Revision:
04/16/2025	A

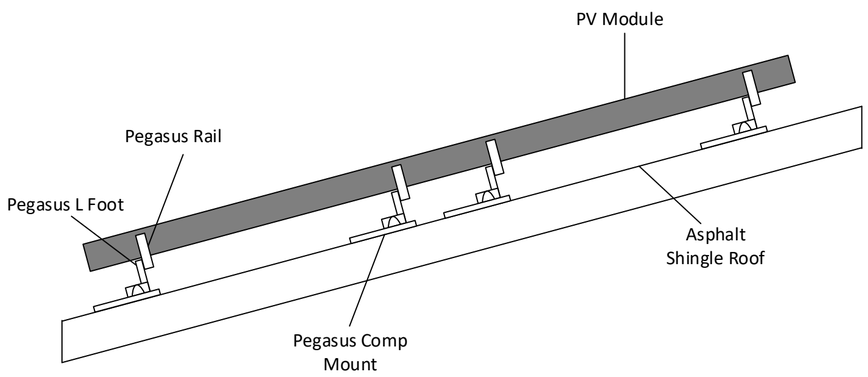
Sheet Size:	Sheet Number:
ANSI C 17" X 22"	PV7

NABCEP CERTIFIED
PV Installation Professional
Ali Buttar
PVIP #031310-32





					
Multi-Clamp	Hidden End Clamp	MLPE Mount	Dovetail T-Bolt	Ground Lug	Cable Grip
Torque Value 100 in-lbs.	Torque Value 135 in-lbs.	Torque Value 135 in-lbs.	Torque Value 300 in-lbs.	Torque Value 135 in-lbs.	Torque Value 135 in-lbs.



SIDE VIEW

PV Dead Load	
Roof A	**PV System Dead Load** **(Panel + Racking weight) / PV System Area** (26 panels x 47.2 lbs./panel + 15 ft. of racking x 1.17 lb.ft) / (26 panels x 5.65' x 3.71') = 2.70 psf

8MSOLAR
ADVANCING ENERGY INDEPENDENCE

5112 Departure Drive,
Raleigh NC 27616
O: 919.948.6474
E: info@8msolar.com

Customer Information:

William Griffith

460 Red Cedar Way
Fuquay Varina, NC 27526

Customer Signature:

Sheet Name:

Attachment Details

JOB NUMBER:

25-167-WG

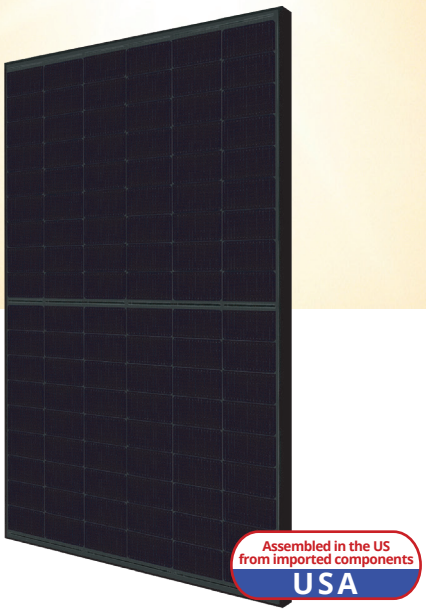
Date:	**Revision:**
04/16/2025	A

Sheet Size:	**Sheet Number:**
ANSI C 17" X 22"	PV8

NABCEP CERTIFIED
PV Installation Professional
Ali Buttar
PVIP #031310-32

NEW

CanadianSolar



TOPHiKu6 (All-Black)

N-type TOPCon Technology

445 W ~ 470 W

CS6.1-54TM-445|450|455|460|465|470H

MORE POWER

- 470 W — Module power up to 470 W
  Module efficiency up to 23.0 %
- Excellent anti-LeTID & anti-PID performance.
  Low power degradation, high energy yield
- Lower temperature coefficient (Pmax): -0.29%/°C,
  increases energy yield in hot climate
- Lower LCOE & system cost

MORE RELIABLE

- Minimizes micro-crack impacts
- *** — Heavy snow load up to 8100 Pa,
  wind load up to 6000 Pa*

25 Years **Industry Leading Product Warranty on Materials and Workmanship***

30 Years **Linear Power Performance Warranty***

1st year power degradation no more than 1%
Subsequent annual power degradation no more than 0.4%

*Subject to the terms and conditions contained in the applicable Canadian Solar Limited Warranty Statement. Also this 25-year limited product warranty is available only for products installed and operating on rooftops in certain regions.

MANAGEMENT SYSTEM CERTIFICATES*

ISO 9001:2015 / Quality management system
ISO 14001:2015 / Standards for environmental management system
ISO 45001: 2018 / International standards for occupational health & safety
IEC62941: 2019 / Photovoltaic module manufacturing quality system

PRODUCT CERTIFICATES*

IEC 61215 / IEC 61730
IEC 61701 / IEC 62716 / IEC 60068-2-68
Take-e-way

* The specific certificates applicable to different module types and markets will vary, and therefore not all of the certifications listed herein will simultaneously apply to the products you order or use. Please contact your local Canadian Solar sales representative to confirm the specific certificates available for your Product and applicable in the regions in which the products will be used.

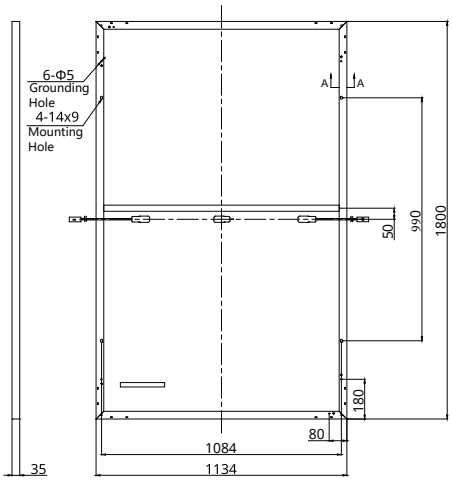
CSI Solar Co., Ltd. is committed to providing high quality solar photovoltaic modules, solar energy and battery storage solutions to customers. The company was recognized as the No. 1 module supplier for quality and performance/price ratio in the IHS Module Customer Insight Survey. Over the past 22 years, it has successfully delivered over 100 GW of premium-quality solar modules across the world.

* For detailed information, please refer to the Installation Manual.

Canadian Solar (USA) Inc.
1350 Treat Blvd. Suite 500, Walnut Creek, CA 94597 | www.csisolar.com/na | service.ca@csisolar.com

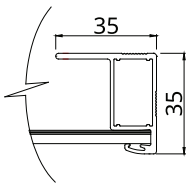
ENGINEERING DRAWING (mm)

Rear View

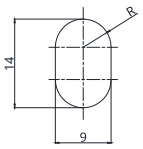


Frame Cross Section

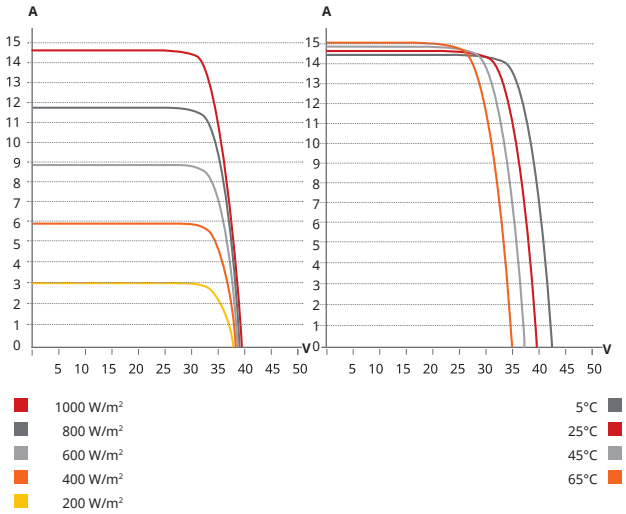
A - A



Mounting Hole



CS6.1-54TM-455H / I-V CURVES



ELECTRICAL DATA | STC*

CS6.1-54TM	445H	450H	455H	460H	465H	470H
Nominal Max. Power (Pmax)	445 W	450 W	455 W	460 W	465 W	470 W
Opt. Operating Voltage (Vmp)	32.8 V	33.0 V	33.2 V	33.4 V	33.6 V	33.8 V
Opt. Operating Current (Imp)	13.59 A	13.66 A	13.72 A	13.78 A	13.85 A	13.91 A
Open Circuit Voltage (Voc)	38.7 V	38.9 V	39.1 V	39.3 V	39.5 V	39.7 V
Short Circuit Current (Isc)	14.48 A	14.55 A	14.61 A	14.69 A	14.77 A	14.86 A
Module Efficiency	21.8%	22.0%	22.3%	22.5%	22.8%	23.0%
Operating Temperature	-40°C ~ +85°C					
Max. System Voltage	1500V (IEC/UL) or 1000V (IEC/UL)					
Module Fire Performance	TYPE 1 (UL 61730 1500V) or TYPE 2 (UL 61730 1000V) or CLASS C (IEC 61730)					
Max. Series Fuse Rating	25 A					
Application Classification	Class A					
Power Tolerance	0 ~ + 10 W					

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m2, spectrum AM 1.5 and cell temperature of 25°C.

ELECTRICAL DATA | NMOT*

CS6.1-54TM	445H	450H	455H	460H	465H	470H
Nominal Max. Power (Pmax)	335 W	339 W	343 W	347 W	351 W	354 W
Opt. Operating Voltage (Vmp)	30.9 V	31.1 V	31.3 V	31.5 V	31.7 V	31.9 V
Opt. Operating Current (Imp)	10.85 A	10.91 A	10.96 A	11.02 A	11.07 A	11.12 A
Open Circuit Voltage (Voc)	36.5 V	36.7 V	36.9 V	37.1 V	37.3 V	37.5 V
Short Circuit Current (Isc)	11.68 A	11.74 A	11.79 A	11.85 A	11.92 A	11.99 A

* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m² spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

MECHANICAL DATA

Specification	Data
Cell Type	TOPCon cells
Cell Arrangement	108 [2 X (9 X 6)]
Dimensions	1800 × 1134 × 35 mm (70.9 × 44.6 × 1.38 in)
Weight	23 kg (50.7 lbs)
Front Cover	3.2 mm tempered glass with anti-reflective coating
Frame	Anodized aluminium alloy
J-Box	IP68, 3 bypass diodes
Cable	4 mm² (IEC), 12 AWG (UL)
Connector	T6, MC4, MC4-EVO2 or MC4- EVO2A
Cable Length (Including Connector)	1550 mm (61.0 in) (+) / 1100 mm (43.3 in) (-)
Per Pallet	30 pieces
Per Container (40' HQ)	720 pieces

TEMPERATURE CHARACTERISTICS

Specification	Data
Temperature Coefficient (Pmax)	-0.29 % / °C
Temperature Coefficient (Voc)	-0.25 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	42 ± 3°C

PARTNER SECTION

* The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. CSI Solar Co., Ltd. reserves the right to make necessary adjustment to the information described herein at any time without further notice. Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.

Powerwall 3

Power Everything

—

Powerwall 3 is a fully integrated solar and battery system, designed to accelerate the transition to sustainable energy. Customers can receive whole home backup, cost savings, and energy independence by producing and consuming their own energy while participating in grid services. Once installed, customers can manage their system using the Tesla App to customize system behavior to meet their energy goals.

Powerwall 3 achieves this by supporting up to 20 kW DC of solar and providing 11.5 kW AC of continuous power per unit. It has the ability to start heavy loads up to 150 A LRA, meaning a single unit can support the power needs of most homes. Powerwall 3 is designed for mass production, fast and efficient installations, easy system expansion, and simple connection to any electrical service.

2023

Powerwall 3 Technical Specifications

System Technical Specifications

Model Number	1707000-xx-y
Nominal Grid Voltage (Input & Output)	120/240 VAC
Grid Type	Split phase
Frequency	60 Hz
Overcurrent Protection Device	Configurable up to 60 A
Solar to Battery to Grid Round Trip Efficiency	89% [1,2]
Solar to Grid Efficiency	97% [3]
Supported Islanding Devices	Backup Gateway 2, Backup Switch
Connectivity	Wi-Fi (2.4 and 5 GHz), Dual-port switched Ethernet, Cellular (LTE/4G [4])
Hardware Interface	Dry contact relay, Rapid Shutdown (RSD) certified switch and 2-pin connector, RS-485 for meters
AC Metering	Revenue Grade (+/- 0.5%)
Protections	Integrated arc fault circuit interrupter (AFCI), Isolation Monitor Interrupter (IMI), PV Rapid Shutdown (RSD) using Tesla Mid-Circuit Interrupters
Customer Interface	Tesla Mobile App
Warranty	10 years

Solar Technical Specifications

Maximum Solar STC Input	20 kW
Withstand Voltage	600 V DC
PV DC Input Voltage Range	60 — 550 V DC
PV DC MPPT Voltage Range	150 — 480 V DC
MPPTs	6
Maximum Current per MPPT (I_{mp})	13 A [5]
Maximum Short Circuit Current per MPPT (I_{sc})	15 A [5]

Battery Technical Specifications

Nominal Battery Energy	13.5 kWh AC [2]
Maximum Continuous Discharge Power	11.5 kW AC
Maximum Continuous Charge Power	5 kW AC
Output Power Factor Rating	0 - 1 (Grid Code configurable)
Maximum Continuous Current	48 A
Maximum Output Fault Current	10 kA
Load Start Capability (1 s)	150 A LRA
Power Scalability	Up to 4 Powerwall 3 units supported

[1] Typical solar shifting use case.

[2] Values provided for 25°C (77°F), at beginning of life. 3.3 kW charge/discharge power.

[3] Tested using CEC weighted efficiency methodology.

[4] Cellular connectivity subject to network service coverage and signal strength.

[5] Where the DC input current exceeds the MPPT rating, a jumper can be used to combine two MPPTs into a single input to intake DC current up to 26 A I_{MP} / 30 A I_{SC}.

Powerwall 3 Technical Specifications

Environmental Specifications

Operating Temperature	–20°C to 50°C (–4°F to 122°F) [6]
Operating Humidity (RH)	Up to 100%, condensing
Storage Temperature	–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 Rating	NEMA 3R
Ingress Rating	IPX7 (Battery & Power Electronics) IPX5 (Wiring Compartment)
Pollution Rating	PD3
Operating Noise @ 1 m	< 50 db(A) typical <62 db(A) maximum

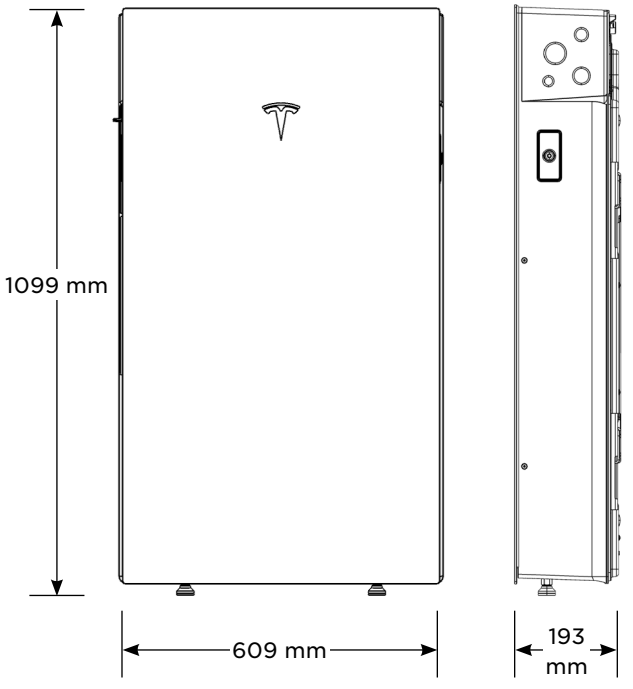
[6] Performance may be de-rated at operating temperatures above 40°C (104°F).

Compliance Information

Certifications	UL 1642, UL 1699B, UL 1741, UL 1741 SA, UL 1741 SB, UL 3741, UL 1973, UL 1998, UL 9540, IEEE 1547-2018, IEEE 1547.1, UN 38.3
Grid Connection	United States
Emissions	FCC Part 15 Class B
Environmental	RoHS Directive 2011/65/EU
Seismic	AC156, IEEE 693-2005 (high)
Fire Testing	Meets the unit level performance criteria of UL 9540A

Mechanical Specifications

Dimensions	1099 x 609 x 193 mm (43.25 x 24 x 7.6 in)
Weight	130 kg (287 lb)
Mounting Options	Floor or wall mount



Solar Shutdown Device Technical Specifications

—

The Solar Shutdown Device is a Mid-Circuit Interrupter (MCI) and is part of the PV system rapid shutdown (RSD) function in accordance with Article 690 of the applicable NEC. When paired with Powerwall 3, solar array shutdown is initiated by any loss of AC power.

Electrical Specifications

Model	MCI-1	MCI-2
Nominal Input DC Current Rating (I_{MP})	12 A	13 A
Maximum Input Short Circuit Current (I_{SC})	19 A	17 A
Maximum System Voltage (PVHCS)	600 V DC	1000 V DC [7]

[7] Maximum System Voltage is limited by Powerwall to 600 V DC.

RSD Module Performance

Maximum Number of Devices per String	5	5
Control	Power Line Excitation	Power Line Excitation
Passive State	Normally Open	Normally Open
Maximum Power Consumption	7 W	7 W
Warranty	25 years	25 years

Environmental Specifications

Operating Temperature	-40°C to 50°C (-40°F to 122°F)	-45°C to 70°C (-49°F to 158°F)
Storage Temperature	–30°C to 70°C (–22°F to 158°F)	–30°C to 70°C (–22°F to 158°F)
Enclosure Rating	NEMA 4X / IP65	NEMA 4X / IP65

Mechanical Specifications

Electrical Connections	MC4 Connector	MC4 Connector
Housing	Plastic	Plastic
Dimensions	125 x 150 x 22 mm (5 x 6 x 1 in)	173 x 45 x 22 mm (6.8 x 1.8 x 1 in)
Weight	350 g (0.77 lb)	120 g (0.26 lb)
Mounting Options	ZEP Home Run Clip M4 Screw (#10) M8 Bolt (5/16") Nail / Wood screw	Wire Clip

Compliance Information

Certifications	UL 1741 PVRSE, UL 3741, PVRSA (Photovoltaic Rapid Shutdown Array)
RSD Initiation Method	External System Shutdown Switch or Powerwall 3 Enable Switch

UL 3741 PV Hazard Control (and PVRSA) Compatibility

The following categories of solar module meet the UL 3741 PVHCS listing when installed with Powerwall 3 and Solar Shutdown Devices.

Tesla Solar Roof	PV Hazard Control System: BIPV compliance document
Tesla or Hanwha (Q.Peak Duo BLK or BLK-G6+) Modules certified for use with ZEP racking	PV Hazard Control System: ZS PVHCS compliance document
Other module and racking combinations	PV Hazard Control System: Generic PV Array compliance document

Backup Switch

The Tesla Backup Switch controls connection to the grid in a Powerwall system, and can be easily installed behind the utility meter or in a standalone meter panel downstream of the utility meter.

The Backup Switch automatically detects grid outages, providing a seamless transition to backup power. It communicates directly with Powerwall, allowing home energy usage monitoring from any mobile device with the Tesla app.

Performance Specifications

Model Number	1624171-xx-y
Continuous Load Rating	200 A, 120/240 V split phase
Maximum Supply Short Circuit Current	22 kA with breaker [10]
Communication	CAN
AC Meter	Revenue accurate (+/- 0.5%)
Expected Service Life	21 years
Warranty	10 years

[10] Breaker maximum supply short circuit current rating must be equal to or greater than the available fault current.

Environmental Specifications

Operating Temperature	–40°C to 50°C (–40°F to 122°F)
Storage Temperature	–40°C to 85°C (–40°F to 185°F)
Enclosure Rating	NEMA 3R
Pollution Rating	PD3

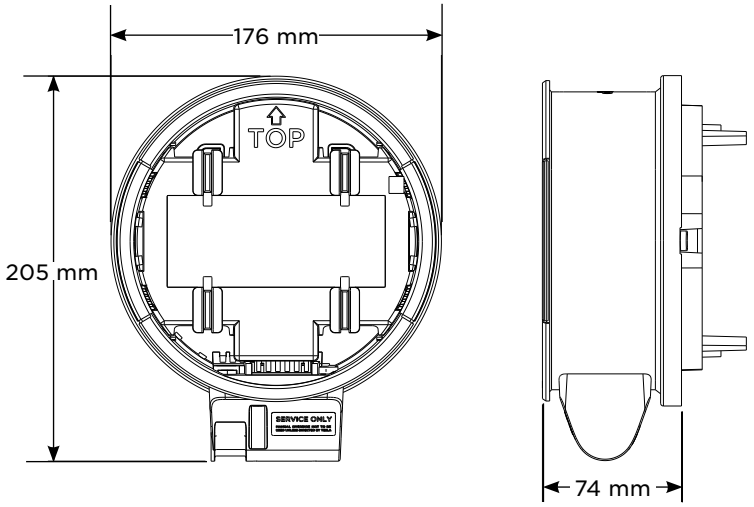
Compliance Information

Safety Standards	USA: UL 414, UL 2735, UL 916, CA Prop 65
Emmissions	FCC, ICES

Mechanical Specifications

Dimensions	176 x 205 x 74 mm (6.9 x 8.1 x 2.9 in)
Weight	2.8 lb
Meter and Socket Compatibility	ANSI Type 2S, ringless or ring type
External Service Interface	Contactor manual override [11]
	Reset button
Conduit Compatibility	1/2-inch NPT

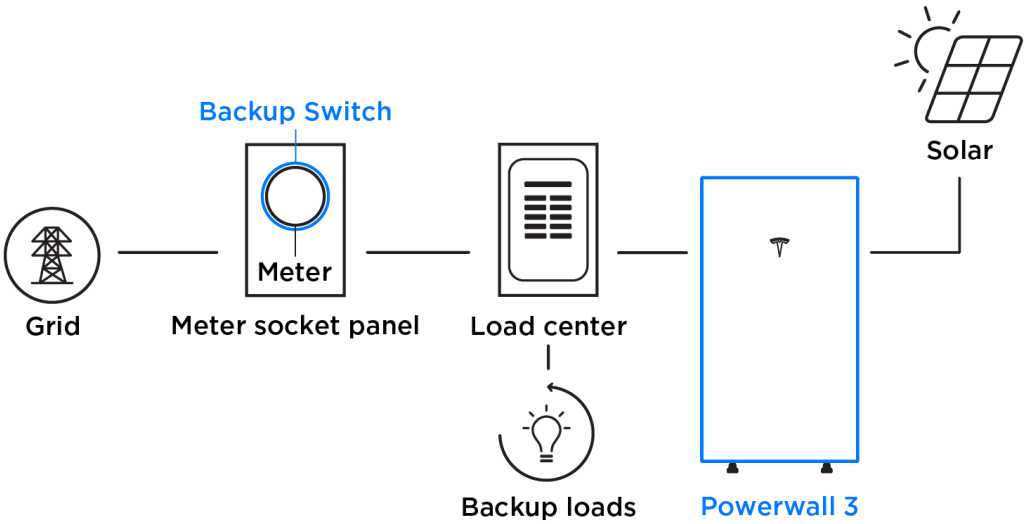
[11] Manually overrides the contactor position during a service event.



Powerwall 3 Example System Configurations

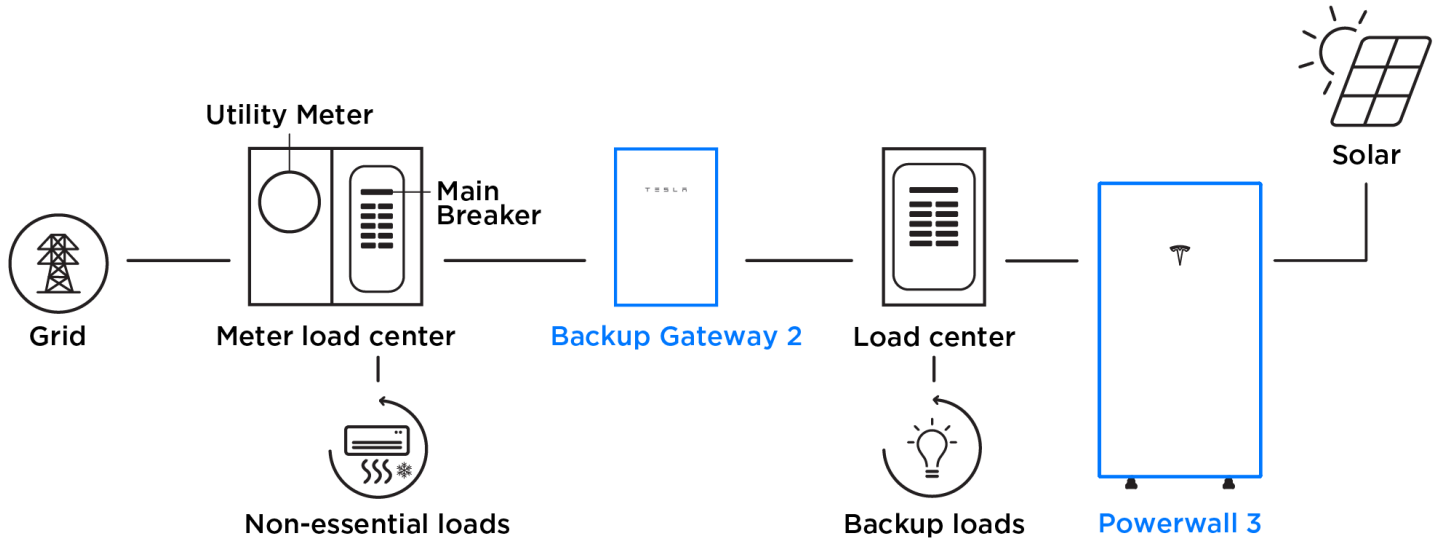
Powerwall 3 with Backup Switch

Whole Home Backup



Powerwall 3 with Backup Gateway 2

Partial Home Backup



Gateway 3

—

Tesla Gateway 3 controls connection to the grid in a Powerwall system, automatically detecting outages and providing seamless transition to backup power. It provides energy monitoring that is used by Powerwall for solar self-consumption, time-based control, and backup operation.

Performance Specifications

Model Number	1841000-01-y
Nominal Grid Voltage	120/240 V AC
Grid Configuration	Split phase
Grid Frequency	60 Hz
Continuous Current Rating	200 A
Maximum Supply Short Circuit Current	22 kA with Square D or Eaton main breaker 25 kA with Eaton main breaker[1]
IEC Protective Class	Class I
Overvoltage Category	Category IV

[1]Only Eaton CSR or BWH main breakers are 25 kA rated

AC Meter	Revenue accurate (+/- 0.5%)
Communication	CAN
User Interface	Tesla App
Backup Transition	Automatic disconnect for seamless backup
Overcurrent Protection Device	100–200 A Service entrance rated Eaton CSR, BWH, or BW, or Square D QOM breakers
Internal Panelboard	200 A 8-space/16 circuit breakers Eaton BR, Siemens QP, or Square D HOM breakers rated to 10–125A
Warranty	10 years

Environmental Specifications

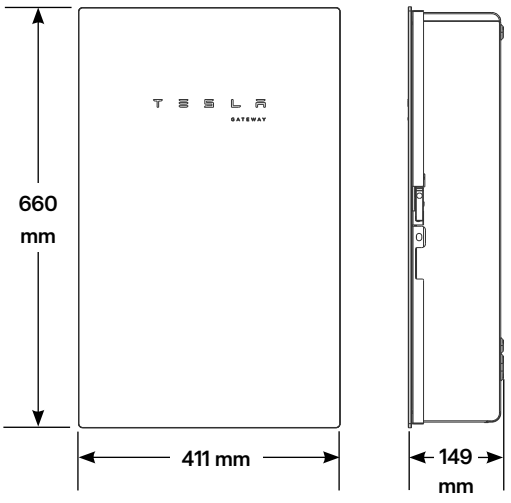
Operating Temperature	–20°C to 50°C (–4°F to 122°F)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R

Compliance Information

Certifications	UL 67, UL 869A, UL 916, UL 1741 PCS, CSA 22.2 107.1, CSA 22.2 29
Emmissions	FCC Part 15, ICES 003

Mechanical Specifications

Dimensions	660 x 411 x 149 mm (26 x 16 x 6 in)
Weight	16.3 kg (36 lb)
Mounting options	Wall mount

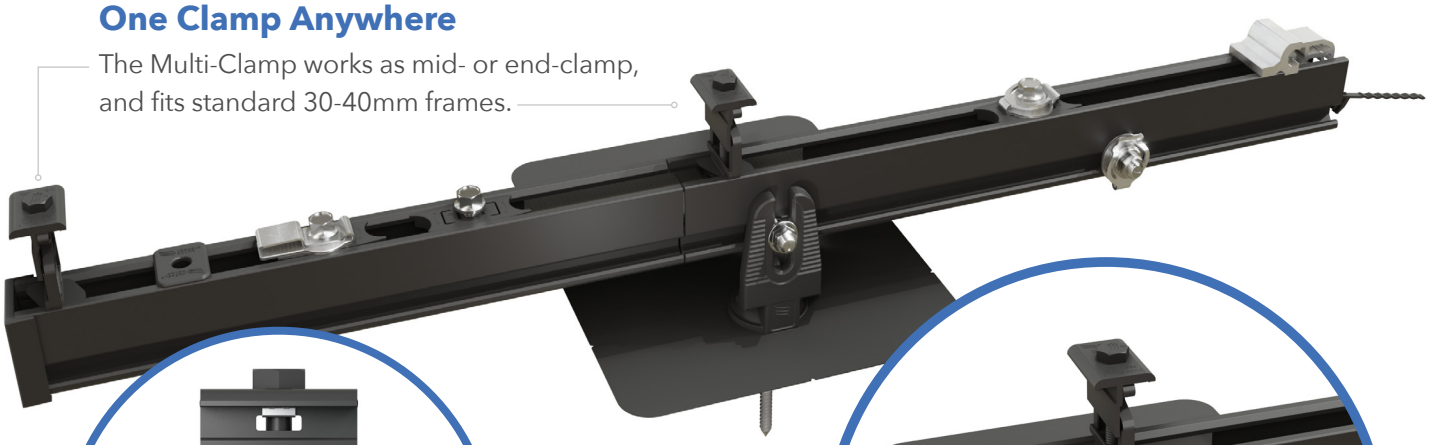


PEGASUS SOLAR™
A Better Day on the Job

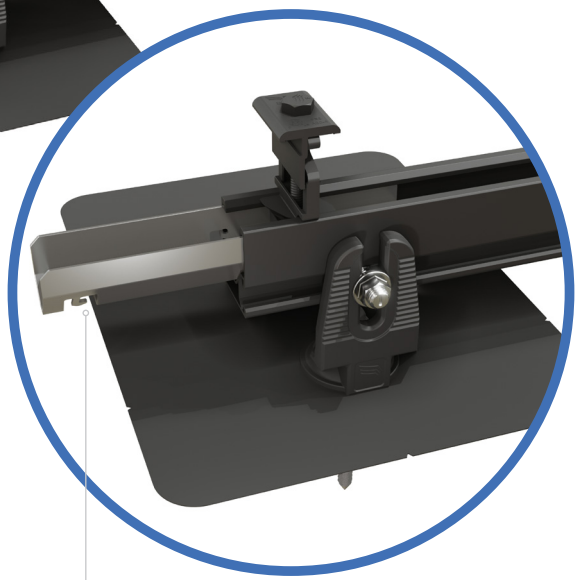
RAIL SYSTEM

Instant Bonding
The N-S Bonding Jumper bonds row to row with no tools.

One Clamp Anywhere
The Multi-Clamp works as mid- or end-clamp, and fits standard 30-40mm frames.



Lifetime Wire Management
Open rail channel holds and protects wires. Clamps won't pinch wires after tightening.



Bonding Structural Splice
Connect rails instantly, without tools, interference or limitations.

Next-Level Solar Mounting

A complete system for hassle-free rooftop installation, from watertight mounts to lifetime wire management.

Simplicity

1/2"socket for everything.
One clamp for mid or end.
No tool splicing and bonding.
Easy wire management.

Code Compliant

UL 2703 listed
LTR-AE-001-2012 listed
Class A fire rating for any slope
ASCE 7-16 PE Certified

Premium Aesthetics

The narrowest panel gap available. Optional Hidden End Clamps and End Caps provide a flush look on the edge of the array.

Watertight for Life

Secured on industry-leading Pegasus Mounts, for composite shingle and tile roofs.
Backed by a 25-year warranty.

Pegasus Solar Inc | 506 West Ohio Avenue, Richmond, CA 94804 | T: 510.210.3797 | **www.pegasussolar.com**

RAIL SYSTEM

Pegasus Rail

Available in 14′ and 7′ lengths for easy layout and shipping.

Open-channel design holds MC4 connectors, PV wire and trunk cables.

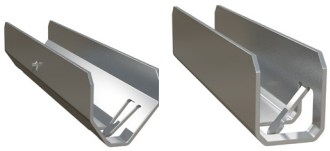
Black and Mill finish

Pegasus Max Rail

Maximum-strength design.

Meets specifications for high snow-load and hurricane zones.

Black and Mill finish

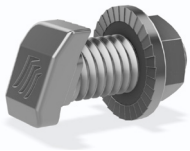


Splice and Max Splice

Installs by hand.

Works over mounts.

Structurally connects and bonds rails automatically; UL2703 listed as reusable.



Dovetail T-bolt

Dovetail shape for extra strength.

Uses ½″ socket.

Multi-Clamp

Fits 30-40mm PV frames, as mid- or end-clamp.

Twist-locks into position; doesn't pinch wires in rail.

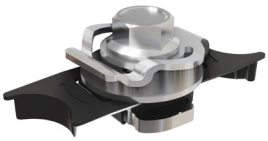
Bonds modules to rail; UL2703 listed as reusable

Hidden End Clamp

Offers premium edge appearance.

Preinstalled pull-tab grips rail edge, allowing easy, one-hand installation.

Tucks away for reuse.



Ground Lug

Holds 6 or 8 AWG wire.

Mounts on top or side of rail.

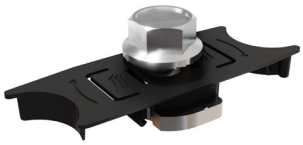
Assembled on MLPE Mount.

UL2703 listed as reusable.

N-S Bonding Jumper

Installs by hand, eliminates row-to-row copper wire.

UL2703 listed as reusable only with Pegasus Rail.

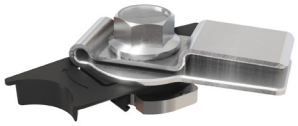


MLPE Mount

Secures and bonds most micro-inverters and optimizers to rail.

Connectors and wires easily route underneath after installation.

UL2703 listed as reusable.



Cable Grip

Secures four PV wires or two trunk cables.

Stainless-steel backing provides durable grip.

Eliminates sagging wires.

Wire Clip

Hand operable.

Holds wires in channel.

Won't slip.

End Cap and Max End Cap

Fits flush to PV module and hides raw or angled cuts.

Hidden drain quickly clears water from rail.

Certifications:

- UL 2703, Edition 1
- LTR-AE-001-2012
- ASCE 7-16 PE certified
- Class A fire rating for any slope roof

LOAD		SPAN			
SNOW (PSF)	WIND (MPH)	32″	4′	6′	8′
0	120				
	160				
	190				
15	140				
	160				
	190				
30	160				
	190				
45	190				
70	190				
110	190				

PEGASUS RAIL PEGASUS MAX RAIL

For reference only. Spans above are calculated using ASCE 7-16 for a Gable Roof, Exposure Category B, 7-20deg roof angle, 30ft mean roof height with non-exposed modules. For PE certified span tables, visit www.pegasussolar.com/spans.

FREE
PEGASUS SOLAR
Design Tool

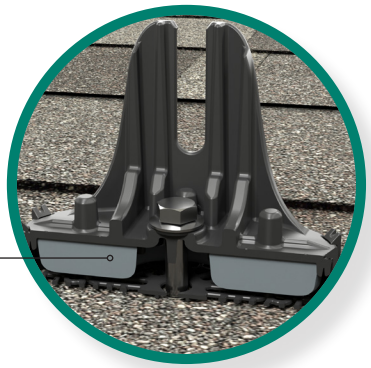
Quickly calculate the most efficient layout, spans and materials needed to suit your job. Visit the Pegasus Customer Portal. **pegasussolar.com/portal**

Pegasus Solar Inc | 506 West Ohio Avenue, Richmond, CA 94804 | T: 510.210.3797 | **www.pegasussolar.com**

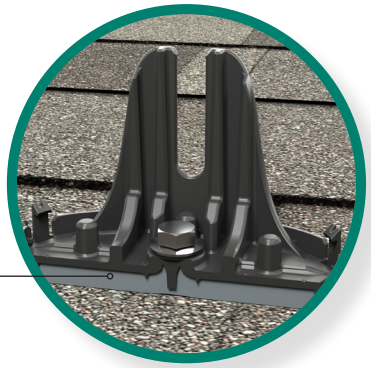
PEGASUS

INSTAFLASH™

Never Deal With Caulking Again!
Factory-installed, non-hardening sealant



Before **InstaFlash Installed:**
Sealant is contained above roof surface by a protective cage.



After **InstaFlash Installed:**
Sealant is compressed to fill all holes and voids.

Protective Cage
Prevents sealant from getting on hands or roof.
Collapses upon lag installation.

Effortless Lifetime Roof Protection

The non-hardening sealant completely fills any missed pilot holes, shingle rips, voids, or other potential water ingress points under the entire footprint of the 4.6" wide base.

25-Year Warranty

Manufactured with advanced materials and coatings to outlast the roof itself

Code Compliant

Fully IBC/CBC Code Compliant
Exceeds ASCE 7-16 Standards
FL Cert of Approval FL41396
UL2703 Certified

Self-Healing

The proprietary non-hardening sealant will flex and reseal over years of thermal expansion and contraction

Larger Spans

The extra-large L-foot and proprietary lag screw result in larger spans between mounts

Pegasus Solar Inc | 506 West Ohio Avenue, Richmond, CA 94804 | **www.pegasussolar.com**

PEGASUS

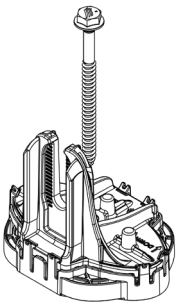
INSTAFLASH™

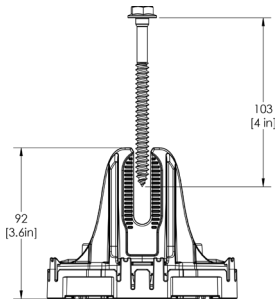
1
Drill pilot hole in the center of the rafter using a 7/32" bit.

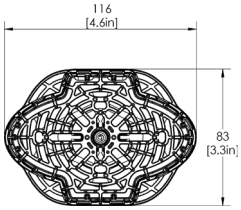
2
Place the InstaFlash over the pilot hole.
Note: the direction of the InstaFlash Down arrows should point down the roof.

3
Insert the lag screw through the center hole into the pilot hole.

4
Drive the lag until the InstaFlash is fully seated to the roof.







SPECIFICATIONS	INSTAFLASH KITS				
	PIF-RB0	PIF-RBDT	PIF-RBSH	PIF-RM0	PIF-RMDT
Finish	Black			Mill	
Kit Contents	Black InstaFlash, 5/16" x 4.0" SS Lag	Black InstaFlash, 5/16" x 4.0" SS Lag, Dovetail T-bolt w/ Nut	Black InstaFlash, 5/16" x 4.0" SS Lag, M10 Hex Bolt w/ Nut	Mill Insta-Flash, 5/16" x 4.0" SS Lag	Mill InstaFlash, 5/16" x 4.0" SS Lag, Dovetail T-bolt w/ Nut
Attachment Type	Rafter Attached				
Roof Type	Sloped Roof: Composition Shingle, Rolled Asphalt | Flat roof: Modified Bitumen Roof, Built-Up Roof				
Sealant Application	Factory Installed				
Installation Temperature	0°F to 170° F				
Cure Time	Instantly Waterproof; Non-hardening				
Service Temperature	-40°F to 195° F				
Certifications	IBC, ASCE/SEI 7-16, FL Cert of Approval FL41396, TAS 100(A), UL2703				
Install Application	Most Railed Systems, Pegasus Tilt Leg Kit				
Kit Quantity	24				
Boxes per Pallet	36				

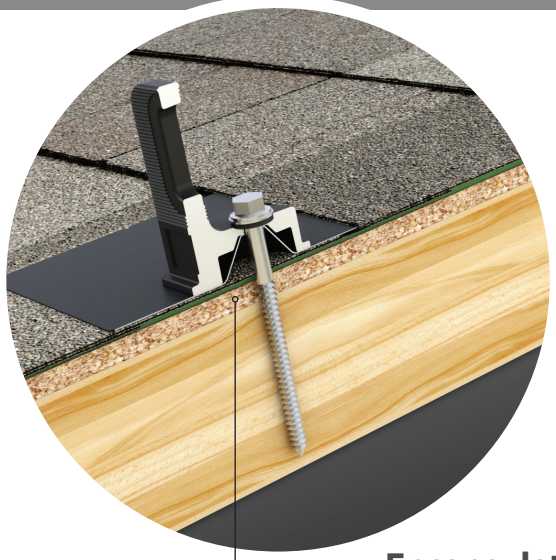
SCAN FOR INSTALLATION VIDEO

SCAN FOR FREE TRIAL

PEGASUS SOLAR™
A Better Day on the Job

COMP MOUNT

One-Piece Flashing with Elevated Cone
No press-fits or deck-level EPDM washers to fail



Encapsulating Design
Raises the water seal 0.9" Above roof deck

Simple 3-Piece Design Watertight For Life

Pegasus solar's comp mounts are a cost effective, high-quality option for rail installations on composition shingle roofs. Designed to last decades, the one-piece flashing with elevated cone means there is simply nothing to fail.

25-Year Warranty
Manufactured with advanced materials and coatings to outlast the roof itself

Code Compliant
Fully IBC/CBC Code Compliant
Exceeds ASCE 7-16 Standards

Superior Waterproofing
Tested to AC286 without sealant
Water seal elevated 0.9" above

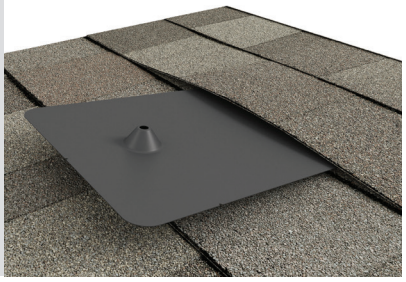
All-In-One Kit Packaging
Flashings, L-Feet and SS lags with bonded EPDM washers are included in each 24-pack

Pegasus Solar Inc | 506 West Ohio Avenue, Richmond, CA 94804 | T: 510.210.3797 | **www.pegasussolar.com**

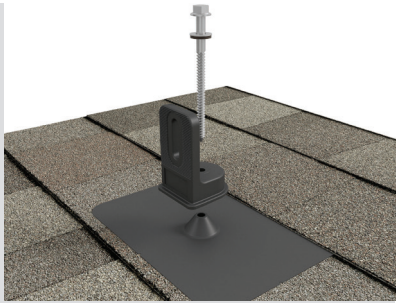
COMP MOUNT

1
Drill pilot hole in the center of the rafter.

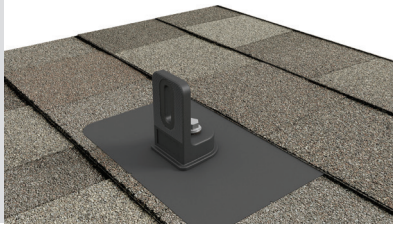
2
Optional: Apply a "u-shape" of sealant to the underside of the flashing and position under 2nd shingle course, cone over pilot hole.

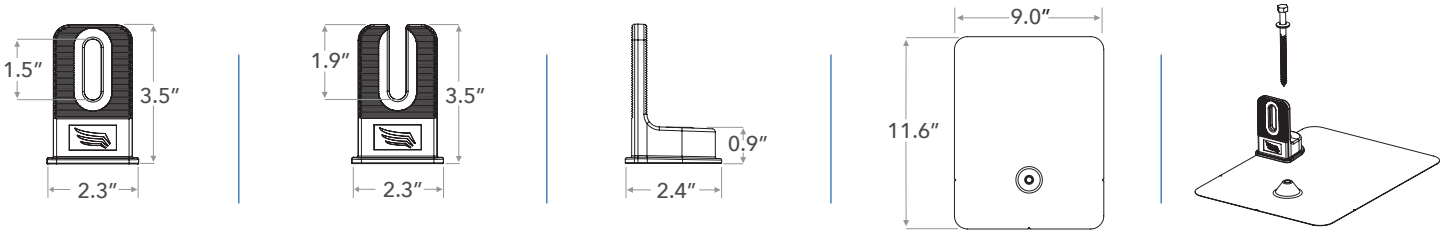


3
Place L-Foot over cone and install lag with washer through L-Foot.



4
Drive lag to required depth. Attach rail per rail manufacturer's instructions.





SPECIFICATIONS	COMP MOUNT INSTALL KITS				
SKU	PSCR-CBB0	PSCR-UBB0	SPCR-CBBH	PSCR-CMM0	PSCR-UMM0
Finish	Black L-Foot And Black Flashing			Mill	
L-Foot Type	Closed Slot	Open Slot	Closed Slot	Closed Slot	Open Slot
Kit Contents	L-Foot, Flashing, 5/16″ x 4 1/2″ SS Lag with metalized EPDM washer	L-Foot, Flashing, 5/16″ x 4 1/2″ SS Lag with metalized EPDM washer and M10 Hex Bolt	L-Foot, Flashing, 5/16″ x 4 1/2″ SS Lag with metalized EPDM washer	L-Foot, Flashing, 5/16″ x 4 1/2″ SS Lag with metalized EPDM washer	L-Foot, Flashing, 5/16″ x 4 1/2″ SS Lag with metalized EPDM washer
Roof Type	Composition Shingle				
Certifications	IBC, ASCE/SEI 7-16, AC286				
Install Application	Railed Systems				
Compatible Rail	Most				
Kit Quantity	24				
Boxes per Pallet	72				

SolaDeck

PV ROOF-MOUNT ENCLOSURE

UL50 Type 3R Enclosure• Stamped 18 gauge gal. steel • Powder coated finish • Weather tight

INTRODUCED AT

SOLAR POWER 2007

PV Roof-Mount Combiner/Enclosure

Enclosure Includes:

- Dual ground lug
- Universal DIN rail
- 1/2", 3/4" & 1" knockouts
- Wire strain relief clip
- Complete hardware package

Benefits

- The ability to prep the building is now possible
- Replaces several parts used today
- Provides professional looking install
- Saves time on install
- Allows for easy access
- Guaranteed seal to roof
- Low profile design

For product information contact us at

(866) 367-7782

www.commdeck.com

R.S.T.C. ENTERPRISES Incorporated

RSTC Enterprises, Inc
2219 Heimstead Road
Eau Claire, WI 54703
1 (866) 367 - 7782

SolaDeck Part # 780

Specifications:

18 Gauge Steel Base (1) and Cover (2)
Pre Punched 7 holes in base (1) for roof deck
Pre Punched 4 holes in base (1) and cover (2) for match
Draw Process both parts
Powder Coated to withstand 1000 hours Salt Spray (Primer Gray)
High UV resistance
15" x 15" flashing dimension
Cavity dimension 8"W x 9" L x 2.5"D
Approx. 162 Cubic inch equipment cavity
Norloked steel base plate (3) to drawn base (2)
Three knockout locations .5", .75" and 1"
3" DIN rail installed
Grounding Lug- Installed (In Equipment Cavity)
Wire Strain Relief Clip –Installed (In Equipment Cavity)
Hardware pack withstands 500 hours Salt Spray
- **7 - 2" Trusshead Screws**
- **4 - .5" 8-32 thread cutting screws**
- **4 - #10 Bonded Seal washers**
- **1 – Foam closed Cell Seal**

ETL Listed UL50 Type 3R

Total Weight 6.9 pounds each

Packaging:
Individually bagged and boxed
Box dimension 15.5"w x 16" L x 3" D
White Carton labeled with Cut out template
Print One Color - Black

Master Cartons of 6 Units each
Master Carton dimension 18.75"x16"x16.375"
Master Carton Weight – 42 pounds
18 Master Cartons per skid Approx 800 pounds with skid

2219 Heimstead Road, Eau Claire, WI 54703
Phone: 715/830-9997 Fax: 715/830-9976 866/FOR-RSTC (367-7782)

Product specifications

Eaton DG222URB

Catalog Number: DG222URB

Eaton General duty non-fusible safety switch, single-throw, 60 A, NEMA 3R, Rainproof, Painted galvanized steel, Two-pole, Two-wire, 240 V

Photo is representative

General specifications

Product Name
Eaton general duty non-fusible safety switch

Catalog Number
DG222URB

UPC
782113144238

Product Length/Depth
7.38 in

Product Height
14.38 in

Product Width
8.69 in

Product Weight
9 lb

Warranty
Eaton Selling Policy 25-000, one (1) year from the date of installation of the Product or eighteen (18) months from the date of shipment of the Product, whichever occurs first.

Compliances
NEC 230.62 (C) Compliant Barrier

Certifications
UL Listed

Catalog Notes
WARNING! Switch is not approved for service entrance unless a neutral kit is installed.

defaultTaxonomyAttributeLabel

Type

Non-fusible, single-throw

Amperage Rating

60A

Number Of Poles

Two-pole

Product Category

General duty safety switch

Voltage rating

240V

Enclosure

NEMA 3R

Enclosure material

Painted galvanized steel

Fuse configuration

Non-fusible

Number of wires

2

Resources

Catalogs

Eaton's Volume 2—Commercial Distribution

Multimedia

Double Up on Safety

Switching Devices Flex Center

Specifications and datasheets

Eaton Specification Sheet - DG222URB

Warranty guides

Selling Policy 25-000 - Distribution and Control Products and Services

Eaton Corporation plc
Eaton House
30 Pembroke Road
Dublin 4, Ireland
Eaton.com

Eaton.com/socialmedia

Product data sheet

Specifications

Load center, Homeline, 1 phase, 20 spaces, 40 circuits, 200A convertible main breaker, PoN, NEMA3R

HOM2040M200PRB

Product availability: Stock - Normally stocked in distribution facility

Main

Product Type	Load Center
Marketing Trade Name	Homeline
Load Center Type	PoN Convertible Mains (breaker)
Rated Current	200 A
Number of Spaces	20
Maximum Number of Single Pole Circuits	40
Enclosure Rating	NEMA 3R weatherproof enclosure
Cover Type	Surface cover
Electrical Connection	Lugs
Provided Equipment	Circuit-breaker 1) 2P 200 A 120/240 V AC main supply ready assembled

Complementary

Max Short Circuit Current Rating	22 kA
Maximum Number of Tandem Breakers	20
Number of Phases	1 phase 3 wires
Voltage Rating	120/240 V AC
Wire Size	AWG 4...250 kcmil aluminium/copper
Ground Bar	Grounding bar (ordered separately)
Busbar Material	Tin plated aluminium: busbar
Enclosure Material	Welded galvannealed steel
Surface Finish	Baked enamel Gray
Box Number	6R
Bus Rated Current	225.0 A
Height	29.8 in (758 mm)
Width	14.8 in (375 mm)
Depth	4.5 in (115 mm)

Environment

Ambient Air Temperature for Operation	23 °F (-5 °C) 104 °F (40 °C)
Product Certifications	UL listed file E-6294

Price is “List Price” and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Ordering and shipping details

Category	US1DE3C00145
Discount Schedule	DE3C
GTIN	785901977186
Returnability	Yes
Country of origin	US

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	4.90 in (12.446 cm)
Package 1 Width	15.50 in (39.370 cm)
Package 1 Length	31.70 in (80.518 cm)
Package 1 Weight	32.829 lb(US) (14.891 kg)
Unit Type of Package 2	PAL
Number of Units in Package 2	24
Package 2 Height	44.30 in (112.522 cm)
Package 2 Width	40.00 in (101.600 cm)
Package 2 Length	48.00 in (121.920 cm)
Package 2 Weight	817.999 lb(US) (371.038 kg)

Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

Environmental Data explained >

How we assess product sustainability >

Environmental footprint

Carbon footprint (kg CO2 eq, Total Life cycle)	78
Environmental Disclosure	Product Environmental Profile

Use Better

Materials and Substances

Packaging made with recycled cardboard	No
Packaging without single use plastic	No
EU RoHS Directive	Compliant
California proposition 65	"WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov"

Use Again

Repack and remanufacture

Circularity Profile	No need of specific recycling operations
Take-back	No