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.

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

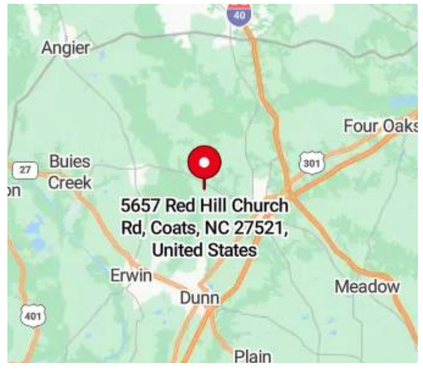
UTILITY COMPANY:
DUKE ENERGY

PERMIT ISSUER (AHJ):
HARNETT COUNTY

SCOPE OF WORK
INSTALLATION OF UTILITY INTERACTIVE PHOTOVOLTAIC SOLAR SYSTEM.

SR.#	PROJECT INFORMATION	
1	PV MODULES	30 x Q.TRON BLK M-G2+ 425W
2	INVERTER + BATTERY	01 X POWERWALL3
3	ROOF TYPE	ASPHALT SHINGLES
4	RACKING	PSR-B84 RAILS (BLACK)
5	MOUNTING TYPE	COMP MOUNT FLASHING (BLACK)
6	DC SIZE	12.75 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

8MSOLAR
ADVANCING ENERGY INDEPENDENCE

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

Customer Information:

Trevor Johnson

5657 Red Hill Church
Road Coats NC 27521

Customer Signature:

Sheet Name:

Drawing Index

JOB NUMBER:

24-365-LWTJ

Date: 07/09/2024

Revision: A

Sheet Size: ANSI C 17" X 22"

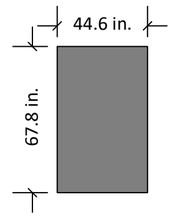
Sheet Number: PV1

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

NORTH CAROLINA PROFESSIONAL SEAL 013529 ENGINEER USMAN NOOR
07-22-2024

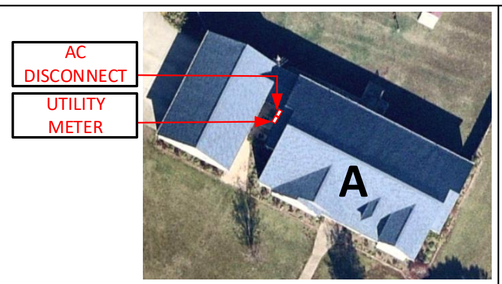
ROOF DESCRIPTION			
ROOF	PITCH	AZIMUTH	NO. OF MODULES
A	38°	207°	30

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)	2.87			

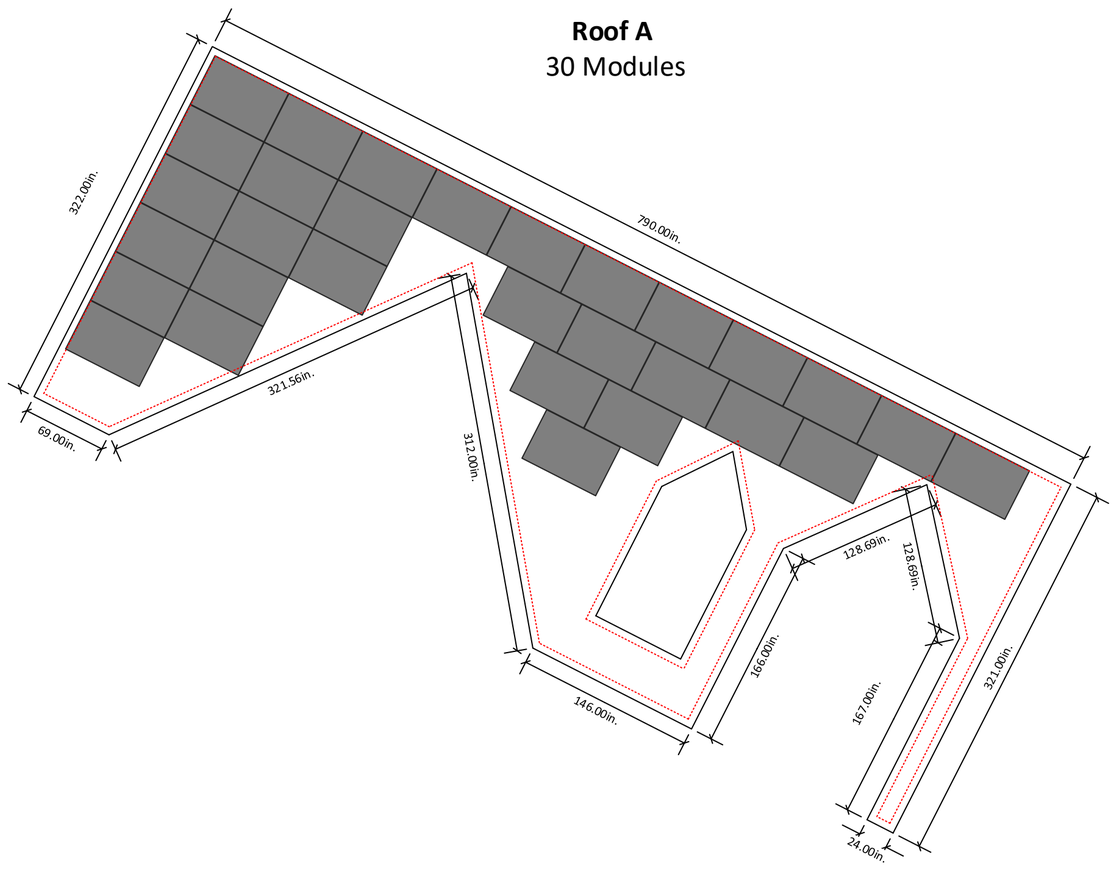


Vent	■	• Roof A has no vent. • No vents will be covered by PV modules during the installation

SYSTEM DETAILS

NUMBER OF PANELS : 30
PANELS MODEL : Q.TRON BLK M-G2+ 425W
DC SIZE : 12.75 KW
AC SIZE : 11.5 KVA

Roof A
30 Modules



6in setback from sides of the roof

SITE LAYOUT
SCALE: 1/8" - 1'

N

8MSOLAR
ADVANCING ENERGY INDEPENDENCE

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

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5657 Red Hill Church
Road Coats NC 27521

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Sheet Name:

Site Layout

JOB NUMBER:

24-365-LWTJ

Date:	Revision:
07/09/2024	A
Sheet Size:	**Sheet Number:**
ANSI C 17" X 22"	PV2

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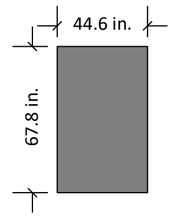
PV Installation Professional
Ali Buttar
PVIP #031310-32

NORTH CAROLINA PROFESSIONAL SEAL 013528 ENGINEER USMAN NOOR
07-22-2024

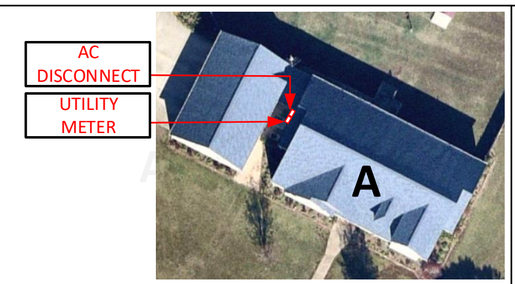
ROOF DESCRIPTION			
ROOF	PITCH	AZIMUTH	NO. OF MODULES
A	38°	207°	30
Tesla MCI (Mid Circuit Interrupter)			

MODULE DIMENSIONS



STRING LAYOUT

TESLA POWERWALL3					
Strings #	No. of Modules	Color	Strings #	No. of Modules	Color
String 1	09		**String 4**	03	
String 2	09				
String 3	09				



SYSTEM DETAILS

NUMBER OF PANELS : 30
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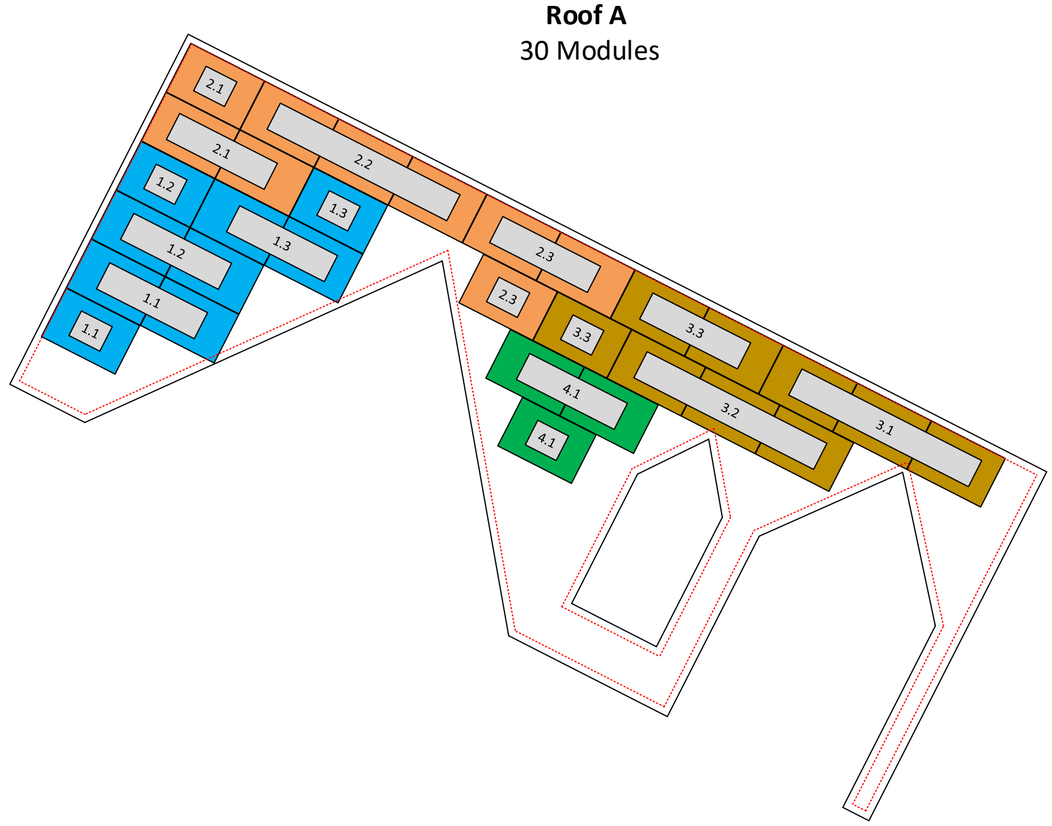
AC SIZE : 11.5 KVA

Roof A
30 Modules



6in setback from sides of the roof

STRING MAPPING
SCALE: 1/8" - 1'

N

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ADVANCING ENERGY INDEPENDENCE

5112 Departure Drive,
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5657 Red Hill Church
Road Coats NC 27521

Customer Signature:

Sheet Name:

String Mapping

JOB NUMBER:

24-365-LWTJ

Date:	Revision:
07/09/2024	A
Sheet Size:	**Sheet Number:**
ANSI C 17" X 22"	PV3

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PV Installation Professional
Ali Buttar
PVIP #031310-32

NORTH CAROLINA PROFESSIONAL SEAL 013529 ENGINEER USMAN NOOR
07-22-2024

STRING CALCULATION

String #	No of Modules	Estimated Power	Imax	Impp	Voc	Vmpp
1,2,3	09	3,825 W	20.24 Adc	12.98 Adc	351.27 Vdc	550 Vdc
4	03	1,275 W	20.24 Adc	12.98 Adc	117.09 Vdc	550 Vdc

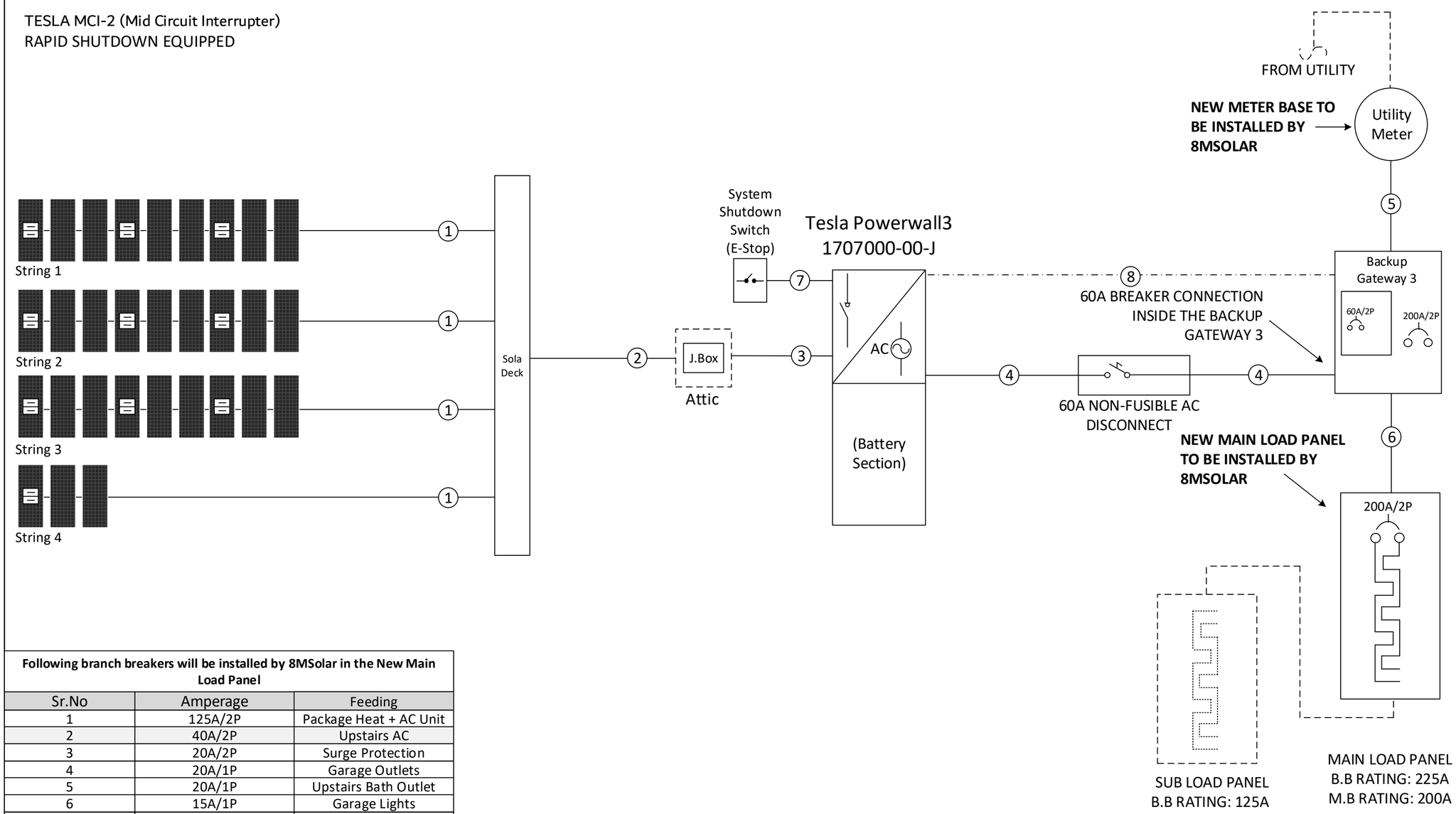
NEC Code (2020) and UL Standard Refrences

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

30 X Q.TRON BLK M-G2+ 425W
425W

TESLA MCI-2 (Mid Circuit Interrupter)
RAPID SHUTDOWN EQUIPPED



Following branch breakers will be installed by 8MSolar in the New Main Load Panel

Sr.No	Amperage	Feeding
1	125A/2P	Package Heat + AC Unit
2	40A/2P	Upstairs AC
3	20A/2P	Surge Protection
4	20A/1P	Garage Outlets
5	20A/1P	Upstairs Bath Outlet
6	15A/1P	Garage Lights
7	15A/1P	Upstairs Lights

- System Size: 12,750W DC
- Battery Total Energy: 13.5 KWh
- (30) Q.TRON BLK M-G2+ 425W
- (10) 1879359-00-X: Tesla MCI-2
- (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	20.24
2	4 x #10 MC Cable			20.24
3	8 x #10 THHN Cu	3/4" EMT	#10 Green Cu	20.24
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 x #16 THHN Cu	3/4" EMT		

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ADVANCING ENERGY INDEPENDENCE

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

Customer Information:

Trevor Johnson

5657 Red Hill Church
Road Coats NC 27521

Customer Signature:

Sheet Name:

Electrical One Line Diagram

JOB NUMBER:

24-365-LWTJ

Date: 07/09/2024

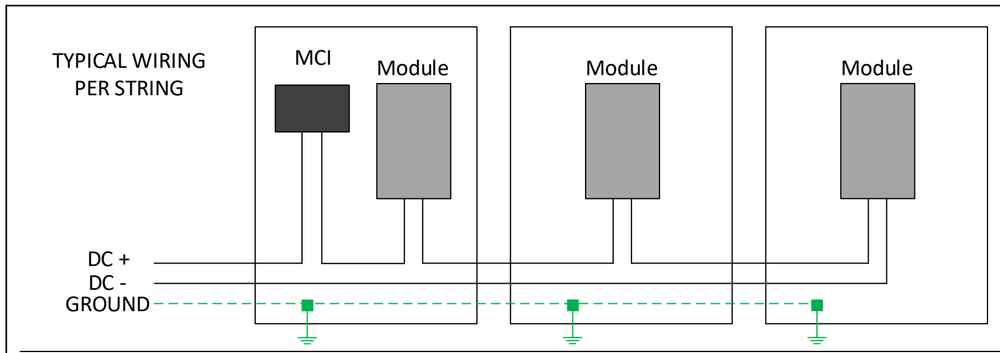
Revision: A

Sheet Size: ANSI C 17" X 22"

Sheet Number: PV4

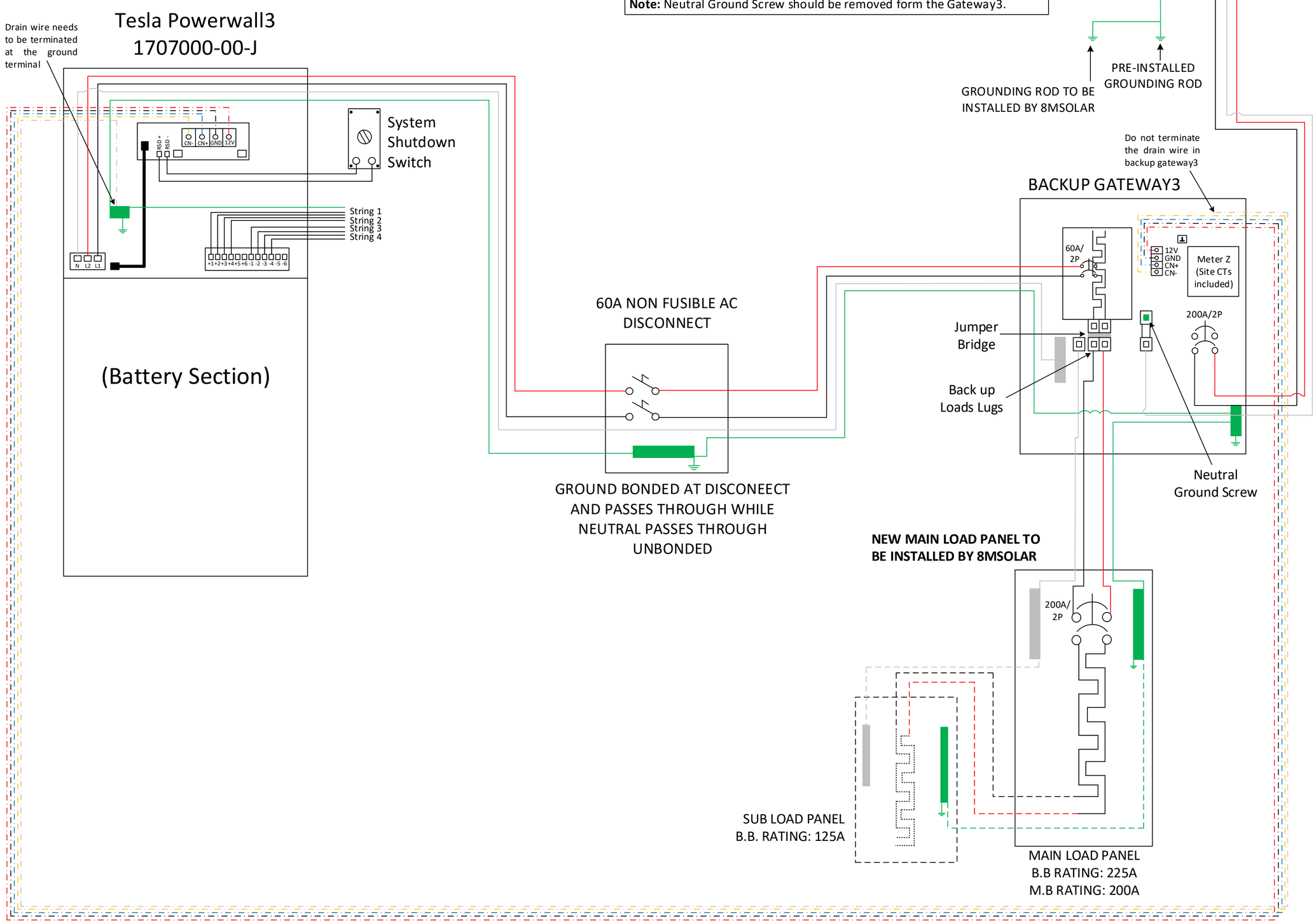
NABCEP CERTIFIED PV Installation Professional
Ali Buttar
PVIP #031310-32

NORTH CAROLINA PROFESSIONAL SEAL 039529 ENGINEER USMAN NOOR
07-22-2024



Line 1		**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 manaually. **Note:** Accepted Breakers for Gateway: Eaton CSR or BW (100-200A)
Line 2		
Neutral		
Ground		

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.
Note: Neutral Ground Screw should be removed form the Gateway3.



8MSOLAR
ADVANCING ENERGY INDEPENDENCE

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

Customer Information:

Trevor Johnson

5657 Red Hill Church
Road Coats NC 27521

Customer Signature:

Sheet Name:

Detailed Electrical Diagram

JOB NUMBER:

24-365-LWTJ

Date:	**Revision:**
07/09/2024	A
Sheet Size:	**Sheet Number:**
ANSI C 17" X 22"	PV5

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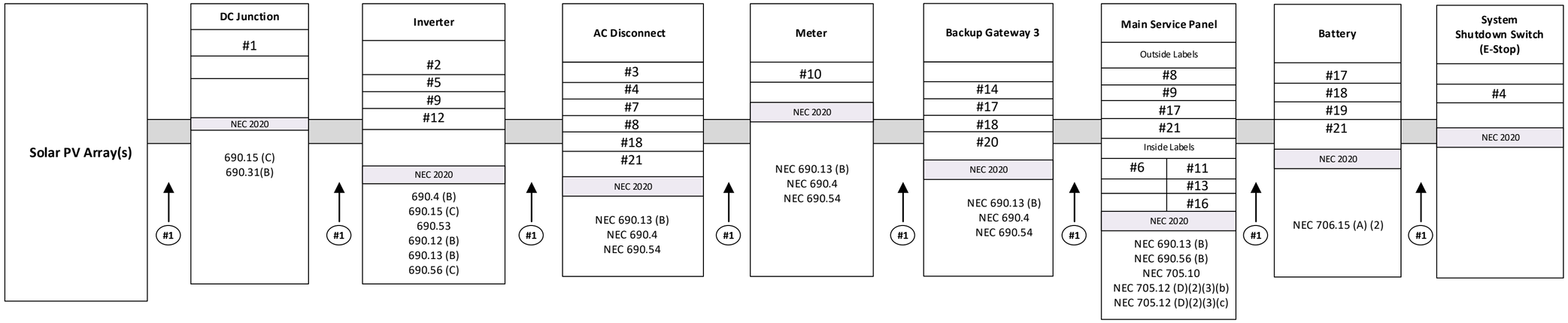
PV Installation Professional
Ali Buttar
PVIP #031310-32

NORTH CAROLINA PROFESSIONAL SEAL 045628 ENGINEER USMAN NOOR
07-22-2024



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
PHOTOVOLATIC
DC DISCONNECT

#3
PHOTOVOLATIC
AC DISCONNECT

#4
RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

#5
MAXIMUM VOLTAGE 550Vdc
MAX. RATED CIRCUIT CURRENT 12.98Adc
OF THE CHARGE CONTOLLER OR
DC-TO-DC CONVERTER (IF INSTALLED)

#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
DUAL POWER SUPPLY
SOURCES: UTILITY GRID 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

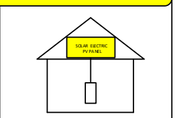
#12
WARNING
BIPOLAR PHOTOVOLTAIC ARRAY
DISCONNECT OF NEUTRAL GROUNDED CONDUCTORS MAY RESULT IN OVERVOLTAGE ON ARRAY OR INVERTER

#13
WARNING
POWER SOURCE OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

#14
WARNING
SOLAR ELECTRIC CIRCUIT BREAKER IS BACKFEED

#15
WARNING
THIS EQUIPMENT FED BY MULTIPLE SOURCES.TOTAL RARTING OF ALL OVERCURRENT DEVICES,EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE,SHALL NOT EXCEED AMPACITY OF BUSBAR

#16
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



#17
SOLAR AC DISCONNECT LOCATED AT NORTH-WEST SIDE WALL OF THE HOUSE BESIDE THE UTILITY METER

#18
SERIVCE DISCONNECT LOCATED IN THE BACKUP GATEWAY3 PANEL

#19
BATTERY

#20
MAIN BATTERY SYSTEM DISCONNECT

#21
BATTERY DISCONNECT LOCATED IN THE BACKUP GATEWAY 3 PANEL

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

Customer Information:

Trevor Johnson

5657 Red Hill Church
Road Coats NC 27521

Customer Signature:

Sheet Name:

PV Labels

JOB NUMBER:

24-365-LWTJ

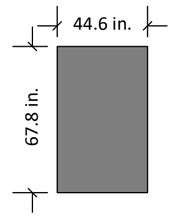
Date:	**Revision:**
07/09/2024	A
Sheet Size:	**Sheet Number:**
ANSI C 17" X 22"	PV6

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

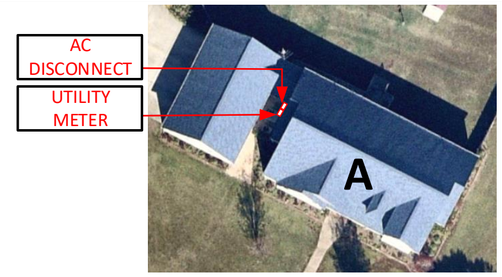
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043525 USMAN NOOR
07-22-2024

ROOF DESCRIPTION			
ROOF	PITCH	AZIMUTH	NO. OF MODULES
A	38°	207°	30

MODULE DIMENSIONS

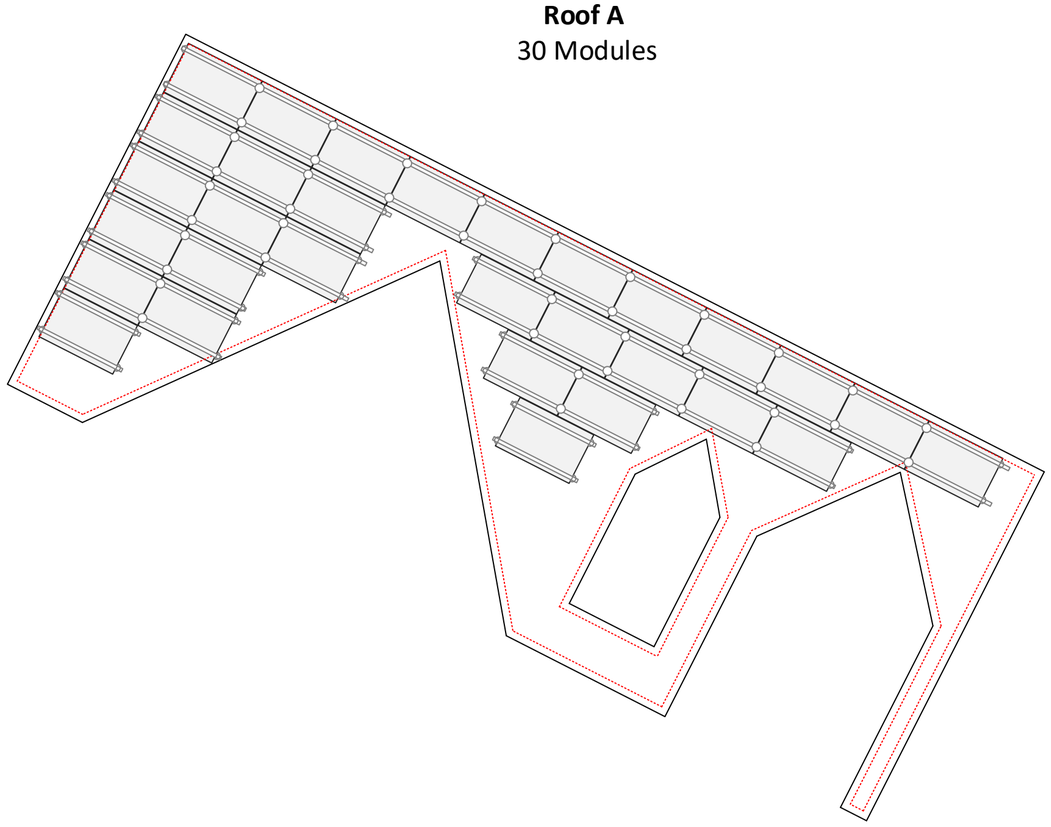


Rails and Splices : PSR-B84 (BLACK)	Roof Attachment : Pegasus Comp Mount
Rafter Spacing : 16 in	There is one layer of shingles Roofing material is asphalt shingles
Attachment Span: 4ft	The roof is located in 120mph wind zone



PV LABELS		
Sr No	Code	Qty
01	02-314	10
02	03-301	02
03	03-302	01
04	02-316	02
05	03-308	02
06	03-390	01
07	03-306	01
08	05-215	03
09	05-211	03
10	03-230	01
11	05-372	01
12	05-103	02
13	05-216	01
14	05-342	01
15	05-108	01
16	07-111	01
17	8M-001	05
18	8M-002	05
19	03-395	03
20	04-304	01
21	8M-004	05

Roof A
30 Modules



RAILS AND MOUNTING SYSTEM
- 56 x PSR-B84: Pegasus Rail, Black, 84" (7 Feet)
- 38 x PSR-SPL: Pegasus - Bonded, Structural Splice
- 42 x PSR-MCB: Pegasus - Multiclamp, Mid/End, 30 to 40 mm, Black
- 36 x PSR-HEC: Pegasus - Hidden End Clamp
- 11 x PSR-LUG: Pegasus - Grounding Lug
- 45 x PSR-WMC: Pegasus - Wire Management Clip
- 05 x PSR-CBG: Pegasus - Cable Grip
- 36 x PSR-CAP: Pegasus - End Cap
- 102 x PSCR-UBBDT: Pegasus Comp Mount - Open Slot, Black L Foot, Black Flashing, Dovetail 3/8" T-Bolt
- 60 x Heyco Wire Clips
- 03 x S6466 EdgeScreen 6'' x 100' (222ft Heyco SunScreen)
- 03 x S6438 EdgeScreen BLK - Heyco SunScreen Clips (100 Per Bag)

SOLAR MODULES
- 30 x Q.TRON BLK M-G2+ 425W

INVERTER & SUPPORTING ITEMS
- 01 x 1707000-00-J :Tesla Powerwall3
- 10 x 1879359-00-X: Tesla MCI-2
- 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 UAT417-XGF: 200amp Meter Base
- 01 x BRP18BC225R: Main Load Panel (225A) (NEMA 3R)
- 01 x BRPSF225: Eaton Sub feed Lug kit
- 01 x BW2200: Gateway Main Breaker-Eaton BW2200
- 01 x BR2125: Eaton BR 125/2
- 01 x BR260: Eaton BR 60/2
- 01 x BR240: Eaton BR 40/2
- 01 x BR220: Eaton BR 20/2
- 02 x BR120: Eaton BR 20/1
- 02 x BR115: Eaton BR 15/1
- 01 x DG222URB: 250volt/60amp/2pole non fusible disconnect (NEMA 3R)
- 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

6in setback from sides of the roof

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:

Trevor Johnson

5657 Red Hill Church
Road Coats NC 27521

Customer Signature:

Sheet Name:

Bill of Material

JOB NUMBER:

24-365-LWTJ

Date:

07/09/2024

Revision:

A

Sheet Size:

ANSI C
17" X 22"

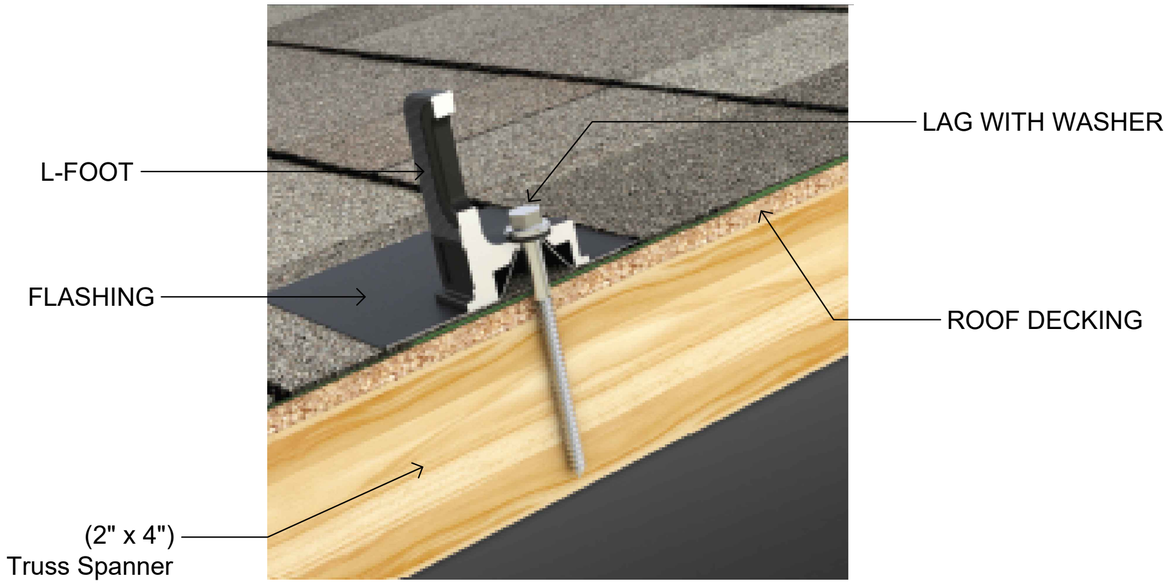
Sheet Number:

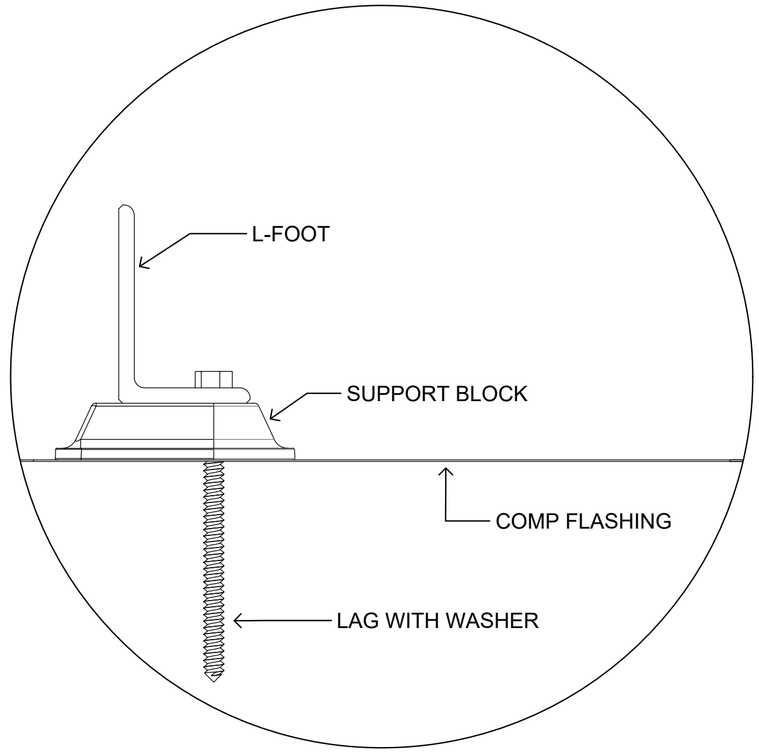
PV7

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

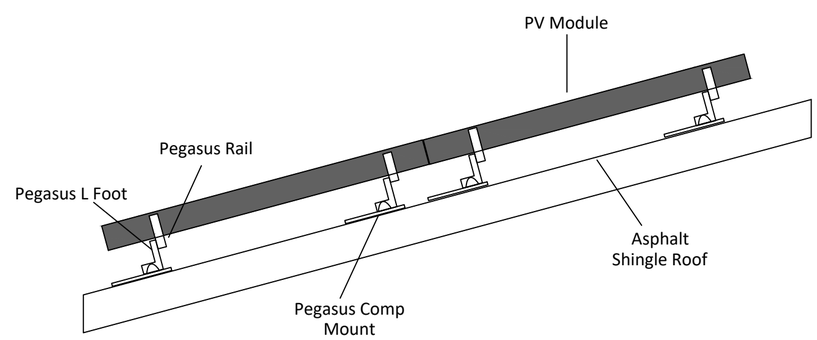
NORTH CAROLINA PROFESSIONAL SEAL 075628 ENGINEER USMAN NOOR

07-22-2024





					
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** (30 panels x 47.2 lbs./panel + 341 ft. of racking x 1.17 lb.ft) / (30 panels x 5.65' x 3.71') = 2.87 psf

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5657 Red Hill Church
Road Coats NC 27521

Customer Signature:

Sheet Name:

Attachment Details

JOB NUMBER:

24-365-LWTJ

Date:	**Revision:**
07/09/2024	A
Sheet Size:	**Sheet Number:**
ANSI C 17" X 22"	PV8

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

NORTH CAROLINA PROFESSIONAL SEAL 039529 ENGINEER USMAN NOOR

07-22-2024

Q.TRON BLK M-G2+ SERIES

405 - 430 Wp | 108 Cells
22.0 % Maximum Module Efficiency

MODEL Q.TRON BLK M-G2+

High performance Qcells N-type solar cells

Q.ANTUM NEO Technology with optimized module layout boosts module efficiency up to 22.0 %.

A reliable investment

Inclusive 25-year product warranty and 25-year linear performance warranty[1].

Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology[2], Hot-Spot Protect.

Extreme weather rating

High-tech aluminium alloy frame, certified for high snow (8100 Pa) and wind loads (3600 Pa).

Innovative all-weather technology

Optimal yields, whatever the weather with excellent low-light and temperature behaviour.

The most thorough testing programme in the industry

Qcells is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.

[1] See data sheet on rear for further information.
[2] APT test conditions according to IEC / TS 62804-1:2015, method A (–1500 V, 96 h)

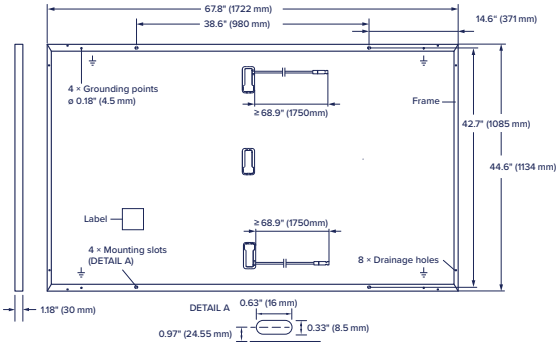
The ideal solution for:

Rooftop arrays on residential buildings

Q.TRON BLK M-G2+ SERIES

Mechanical Specification

Format	67.8 in × 44.6 in × 1.18 in (including frame) (1722 mm × 1134 mm × 30 mm)
Weight	46.7 lbs (21.2 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 18 monocrystalline Q.ANTUM NEO solar half cells
Junction box	2.09-3.98 in × 1.26-2.36 in× 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), Protection class IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥68.9 in (1750mm), (−) ≥68.9 in (1750mm)
Connector	Stäubli MC4; IP68

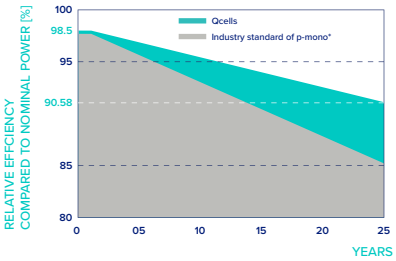


Electrical Characteristics

POWER CLASS				405	410	415	420	425	430
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / −0 W)									
Minimum	Power at MPP[1]	P_{MPP}	[W]	405	410	415	420	425	430
	Short Circuit Current[1]	I_{SC}	[A]	13.33	13.41	13.49	13.58	13.66	13.74
	Open Circuit Voltage[1]	V_{OC}	[V]	37.91	38.19	38.47	38.75	39.03	39.32
	Current at MPP	I_{MPP}	[A]	12.69	12.76	12.83	12.91	12.98	13.05
	Voltage at MPP	V_{MPP}	[V]	31.93	32.13	32.34	32.54	32.74	32.94
	Efficiency[1]	η	[%]	≥20.7	≥21.0	≥21.3	≥21.5	≥21.8	≥22.0
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT[2]									
Minimum	Power at MPP	P_{MPP}	[W]	306.1	309.9	313.7	317.5	321.2	325.0
	Short Circuit Current	I_{SC}	[A]	10.74	10.81	10.87	10.94	11.00	11.07
	Open Circuit Voltage	V_{OC}	[V]	35.96	36.23	36.50	36.77	37.04	37.31
	Current at MPP	I_{MPP}	[A]	9.98	10.04	10.10	10.15	10.21	10.27
	Voltage at MPP	V_{MPP}	[V]	30.66	30.87	31.07	31.26	31.46	31.65

[1]Measurement tolerances P_{MPP} ±3 %; I_{SC}; V_{OC} ±5 % at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • [2]800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY

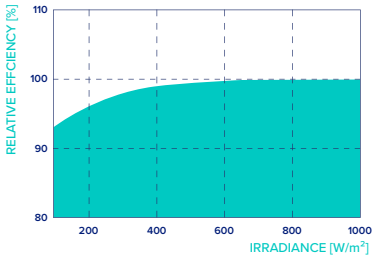


At least 98.5 % of nominal power during first year. Thereafter max. 0.33 % degradation per year. At least 95.53 % of nominal power up to 10 years. At least 90.58 % of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

*Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	−0.24
Temperature Coefficient of P_{MPP}	γ	[%/K]	−0.30	Nominal Module Operating Temperature	NMOT	[°F]	109 ± 5.4 (43 ± 3 °C)

Properties for System Design

Maximum System Voltage	V_{SYS}	[V]	1000 (IEC) / 1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating		[A DC]	25	Fire Rating based on ANSI / UL 61730	C / TYPE 2
Max. Design Load, Push / Pull[3]		[lbs / ft²]	113 (5400 Pa) / 50 (2400 Pa)	Permitted Module Temperature on Continuous Duty	−40 °F up to +185 °F (−40 °C up to +85 °C)
Max. Test Load, Push / Pull[3]		[lbs / ft²]	169 (8100 Pa) / 75 (3600 Pa)		

[3] See Installation Manual

Qualifications and Certificates

UL61730-1 & UL61730-2, CE-compliant,
Quality Controlled PV - TÜV Rheinland,
IEC 61215:2016, IEC 61730:2016,
U.S. Patent No. 9,893,215 (solar cells).

www.tuv.com
ID 1111220277

*Contact your Qcells Sales Representative for details regarding the module's eligibility to be Buy American Act (BAA) compliant.

Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.

Hanwha Q CELLS America Inc. 400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL hqc-inquiry@qcells.com | WEB www.qcells.com

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

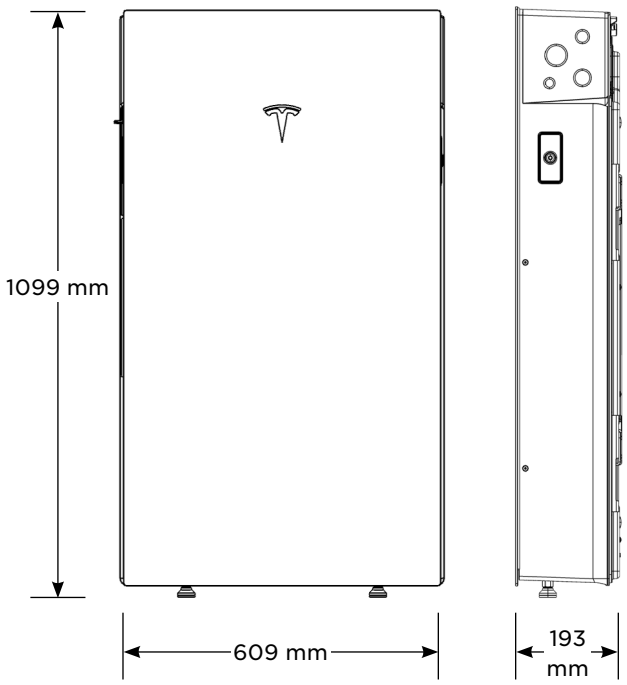
[6] Performance may be de-rated at operating temperatures above 40°C (104°F).

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 Gateway 2

—

Backup Gateway 2 controls connection to the grid when paired with Powerwall 3, automatically detecting outages and providing seamless transition to backup power. Backup Gateway 2 also provides energy metering for solar self-consumption, time-based control, and backup operation.

In this system configuration, Powerwall 3 acts as the Site Controller, with the Backup Gateway 2 Site Controller disabled.

Performance Specifications

Model Number	1232100-xx-y
AC Voltage (Nominal)	120/240 V
Feed-in Type	Split phase
Grid Frequency	60 Hz
Current Rating	200 A
Maximum Supply Short Circuit Current	10 kA [8]
Overcurrent Protection Device	100 - 200 A, Service entrance rated [8]
Overvoltage Category	Category IV
Internal Primary AC Meter	Revenue accurate (+/- 0.2%)
Internal Auxiliary AC Meter	Revenue accurate (+/- 2%)
Primary Connectivity	Ethernet, Wi-Fi
Secondary Connectivity	Cellular (3G, LTE/4G) [9]

User Interface	Tesla App
Operating Modes	Support for solar self-consumption, time-based control, and backup
Backup Transition	Automatic disconnect for seamless backup
Modularity	Supports up to 10 AC-coupled Powerwalls
Optional Internal Panelboard	200 A 6-space / 12 circuit breakers Siemens QP or Square D HOM breakers rated 10 - 80A or Eaton BR breakers rated 10 - 125A
Warranty	10 years

[8] When protected by Class J fuses, Backup Gateway 2 is suitable for use in circuits capable of delivering not more than 22kA symmetrical amperes.

[9] The customer is expected to provide internet connectivity for Backup Gateway 2; cellular should not be used as the primary mode of connectivity. Cellular connectivity subject to network operator service coverage and signal strength.

Environmental Specifications

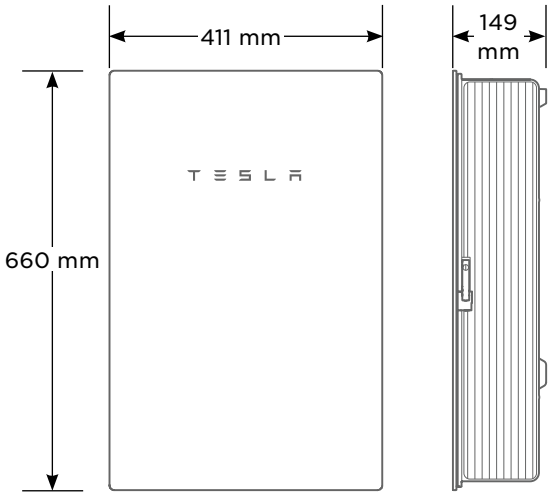
Operating Temperature	–20°C to 50°C (–4°F to 122°F)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R

Compliance Information

Certifications	UL 67, UL 869A, UL 916, UL 1741 PCS, CSA 22.2 0.19, CSA 22.2 205
Emmissions	FCC Part 15, ICES 003

Mechanical Specifications

Dimensions	660 x 411 x 149 mm (26 x 16 x 6 in)
Weight	20.4 kg (45 lb)
Mounting options	Wall mount, Semi-flush mount



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

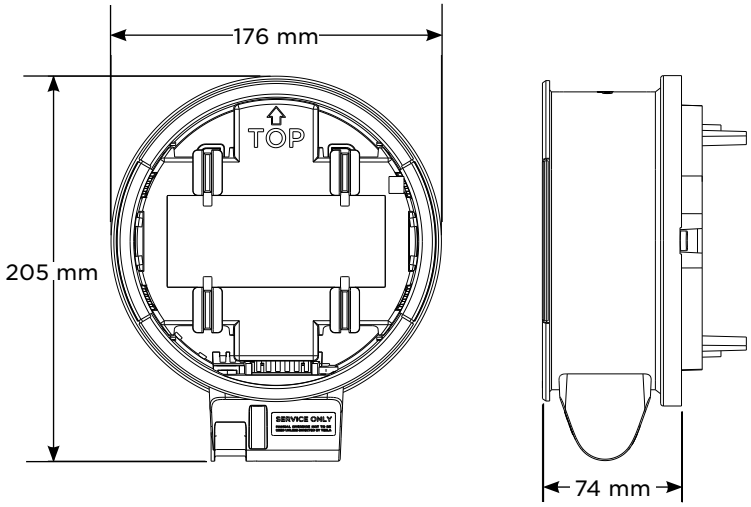
Compliance Information

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

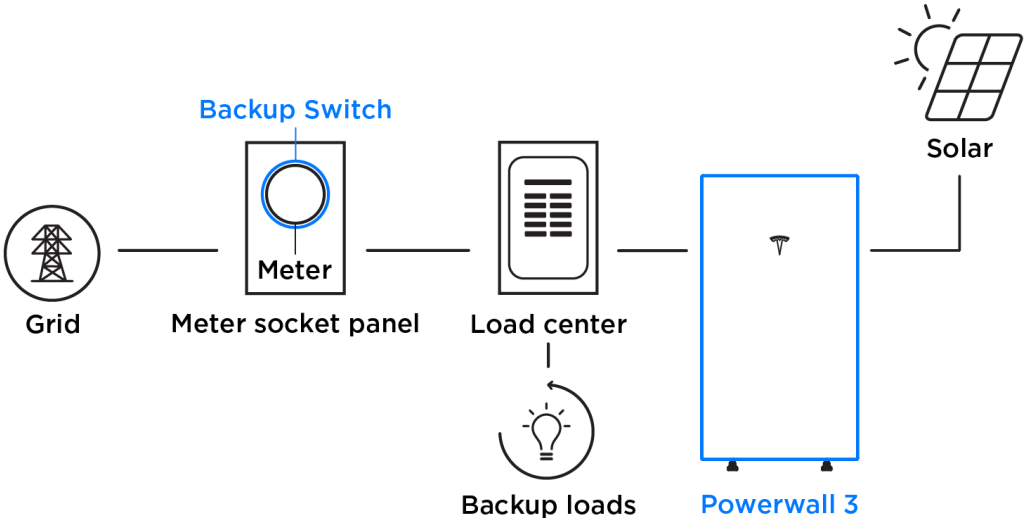
[11] Manually overrides the contactor position during a service event.



Powerwall 3 Example System Configurations

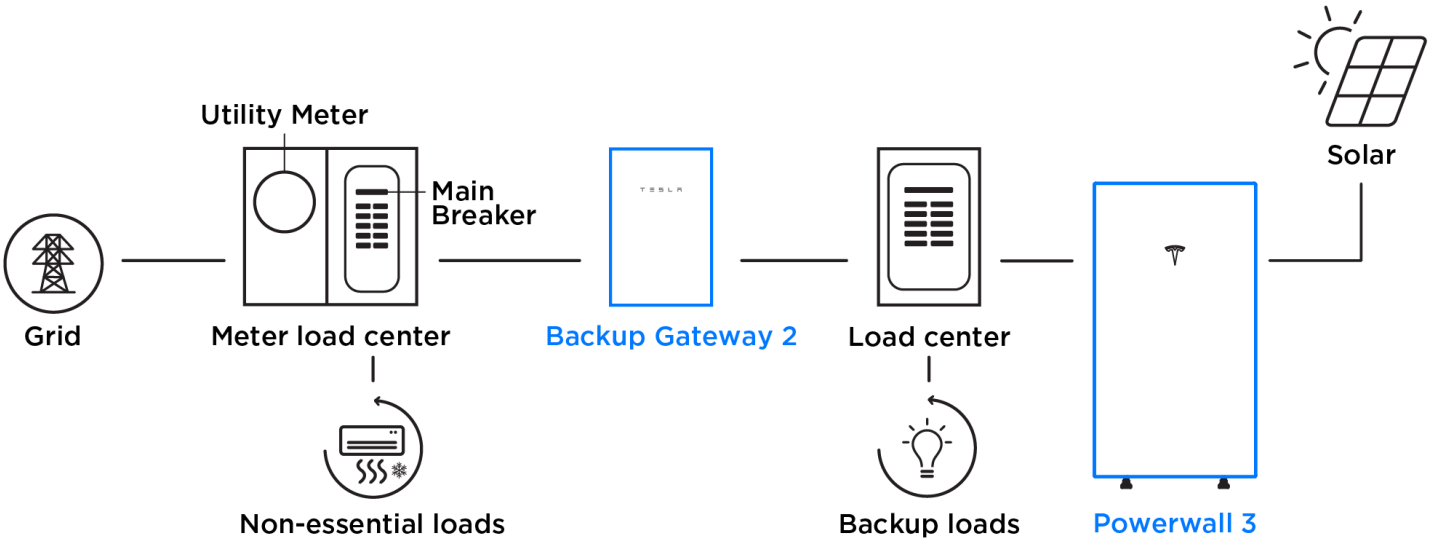
Powerwall 3 with Backup Switch

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

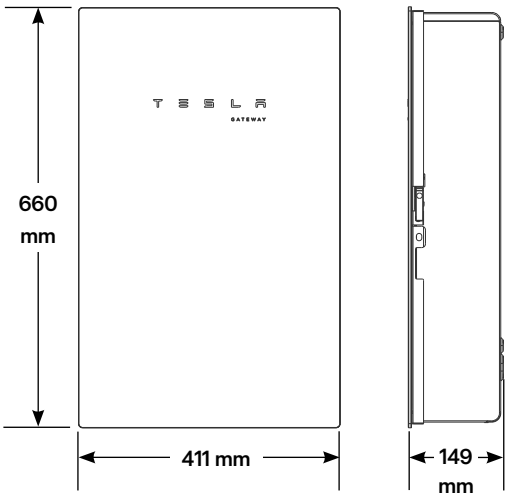
Operating Temperature	–20°C to 50°C (–4°F to 122°F)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R

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

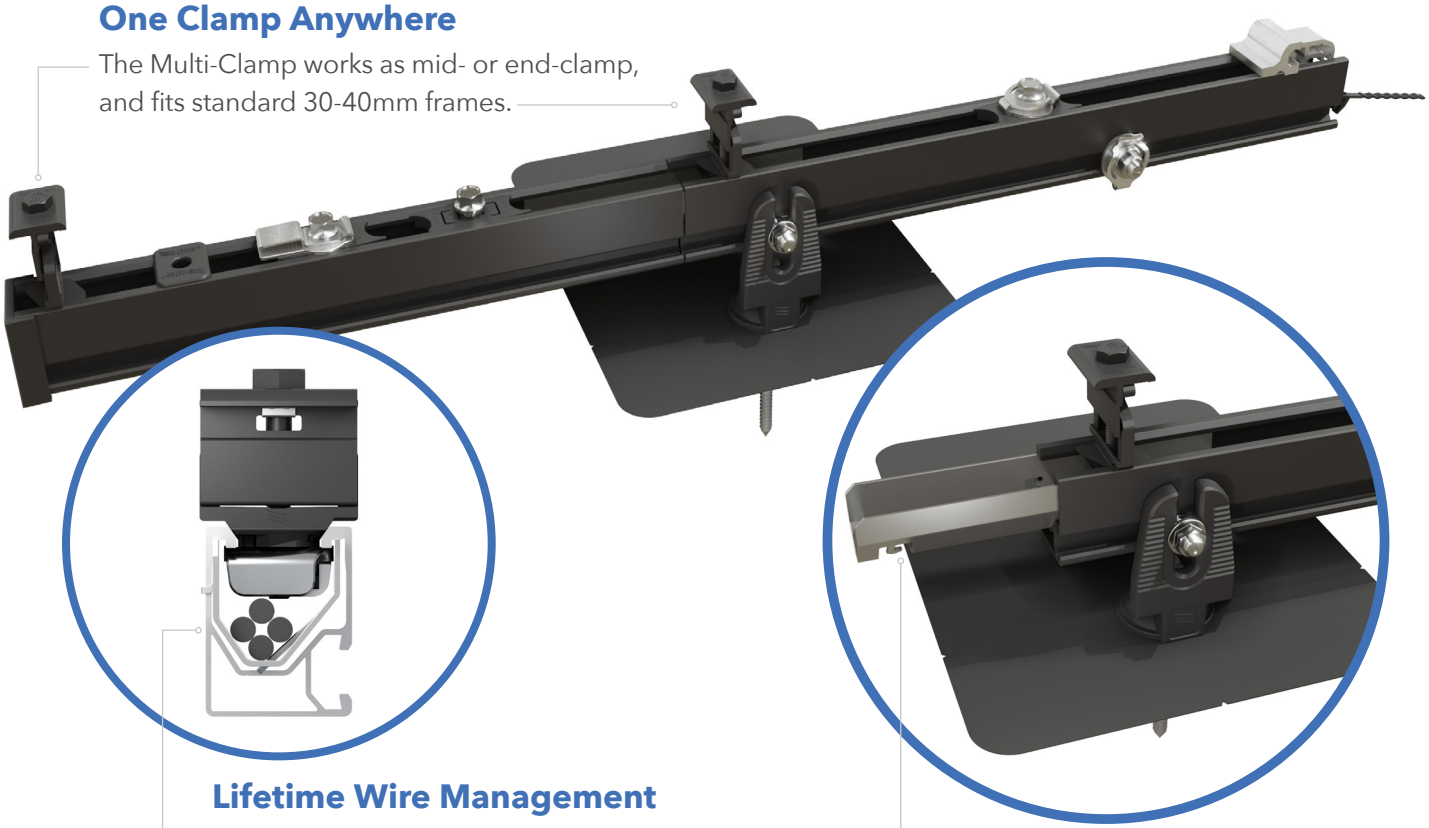
Mechanical Specifications

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.

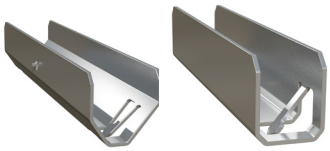
Black and Mill finish

Pegasus Max Rail

Maximum-strength design.

Meets specifications for high snow-load and hurricane zones.

Black and Mill finish

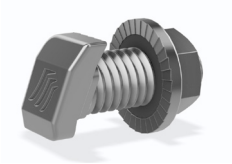


Splice and Max Splice

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.

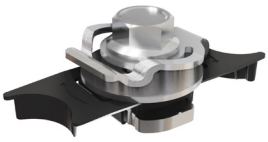
Bonds modules to rail; UL2703 listed as reusable

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.

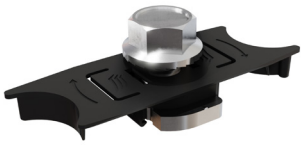
Assembled on MLPE Mount.

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.

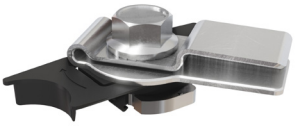


MLPE Mount

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

C US

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.

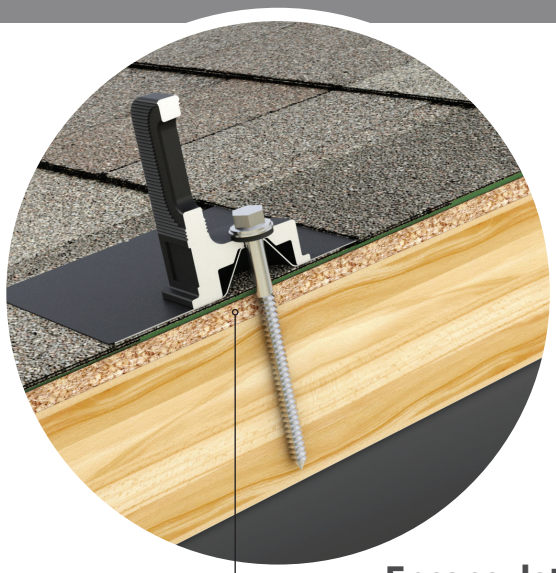
FREE
PEGASUS SOLAR
Design Tool

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 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

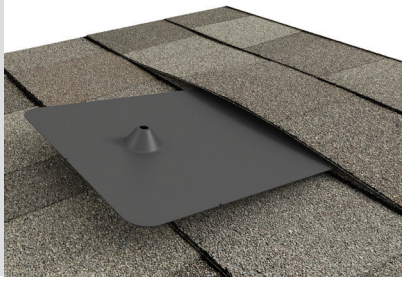
Flashings, L-Feet and SS lags with bonded EPDM washers are included in each 24-pack

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

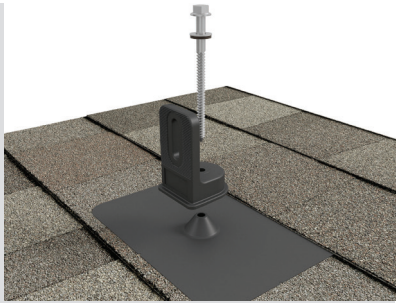
COMP MOUNT

1
Drill pilot hole in the center of the rafter.

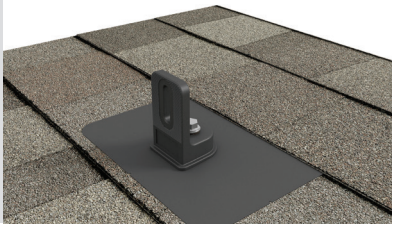
2
Optional: Apply a "u-shape" of sealant to the underside of the flashing and position under 2nd shingle course, cone over pilot hole.

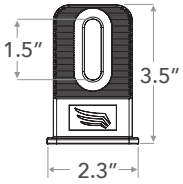


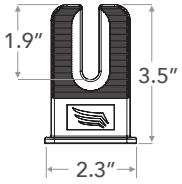
3
Place L-Foot over cone and install lag with washer through L-Foot.

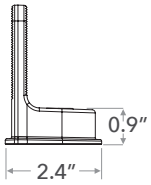


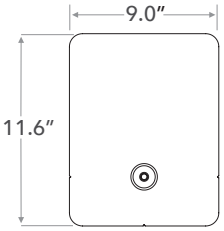
4
Drive lag to required depth. Attach rail per rail manufacturer's instructions.

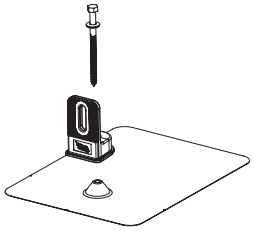












SPECIFICATIONS	COMP MOUNT INSTALL KITS				
SKU	PSCR-CBB0	PSCR-UBB0	SPCR-CBBH	PSCR-CMM0	PSCR-UMM0
Finish	Black L-Foot And Black Flashing			Mill	
L-Foot Type	Closed Slot	Open Slot	Closed Slot	Closed Slot	Open Slot
Kit Contents	L-Foot, Flashing, 5/16" x 4 1/2" SS Lag with metalized EPDM washer	L-Foot, Flashing, 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 1 8 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 BRP18BC225R

Catalog Number: BRP18BC225R

Eaton BR main breaker loadcenter,225A,X5,Copper,Cover included,NEMA 3R,Metallic,25 kAIC,BR,36 circuits,Single pole,18 spaces,Three-wire,Single-phase

Photo is representative

General specifications

Product Name Eaton BR main breaker loadcenter	Catalog Number BRP18BC225R
UPC 786689365585	Product Length/Depth 29.12 in
Product Height 5.25 in	Product Width 14.31 in
Product Weight 30.3 lb	Certifications UL 67 UL 50

Powering Business Worldwide

defaultTaxonomyAttributeLabel

Type

Plug-on neutral main circuit breaker loadcenter

Amperage Rating

225 A

Bus material

Copper

Cover

Cover included

Main circuit breaker

CSR2200

Number of circuits

36

Number Of Poles

Single-pole

Number of spaces

18

Phase

Single-phase

Accessories

copper bus

Bus Rating

225 A

Enclosure color

Gray

Mounting

Surface

Used with

Type BR 1-inch breakers

Voltage rating

120/240 V

Box size

X5

Enclosure

NEMA 3R

Enclosure material

Resources

Specifications and datasheets

Eaton Specification Sheet - BRP18BC225R

Warranty guides

Eaton type BR circuit breaker limited warranty June 2024

Metallic

Interrupt rating

25 kAIC

Number of wires

3

NEMA rating

NEMA 3R

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

Eaton.com/socialmedia

Product specifications

Eaton BRPSF225

Catalog Number: BRPSF225

Eaton Field Installation Kits and Parts,Sub feed lug kit Compatible with all BR and BR PON loadcenters and meter breakers,225 A,Black

General specifications

Product Name Eaton BR field installation kit and part	Catalog Number BRPSF225
UPC 786689056599	Product Length/Depth 4 in
Product Height 0.5 in	Product Width 3.7 in
Product Weight 0.05 lb	Warranty 10 year
Certifications UL Listed	

Powering Business Worldwide

defaultTaxonomyAttributeLabel

Type

Field installation kit and part

Used with

BR PON Loadcenters

Color

Black

Resources

Brochures

Loadcenters and Circuit Breakers

Specifications and datasheets

Eaton Specification Sheet - BRPSF225

Warranty guides

Eaton type BR circuit breaker limited warranty June 2024

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

Eaton.com/socialmedia

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

SIEMENS

Data sheet US2:UAT417-XGF

200A 4J RGLS 1POS NO BPS MS OH/UG SSHASP

General technical data	
cable entry type	OH/UG
fastening method	Surface Mount
suitability for operation	Residential
Electricity	
ampacity	200 A
voltage between phase and phase rated value	600 V
Model	
product brand name	Talon
product type designation	UAT4
special product feature	No Bypass / Cover Plate Installed / Ground Lug
Mechanical Design	
depth [in]	4.5 in
design of the terminal strip	4
height [in]	11 in
width [in]	14.8 in
General product approval	
certificate of suitability	UL

last modified: 6/26/2022