HISTORIC PRESERVATION COMMISSION

HAWP #: 1148273 at: 7102 Poplar Avenue, Takoma Park

submitted on: 2/9/2026

has been reviewed and determined that the proposal fits into the following category/categories:

☐ Repair or replacement of a masonry foundation with new masonry materials that closely match the original in appearance;

☐ Installation of vents or venting pipes in locations not visible from the public right-of-way;

☐ New gutters and downspouts;

☐ Removal of vinyl, aluminum, asbestos, or other artificial siding when the original siding is to be repaired and/or replaced in kind;

☐ Removal of accessory buildings that are not original to the site or non-historic construction;

☐ Repair or replacement of missing or deteriorated architectural details such as trim or other millwork, stairs or stoops, porch decking or ceilings, columns, railings, balusters, brackets shutters, etc., with new materials that match the old in design, texture, visual characteristics, and, where possible materials, so long as the applicant is able to provide one extant example, photographic evidence, or physical evidence that serves as the basis for the work proposed;

☐ Construction of wooden decks that are at the rear of a structure and are not visible from a public right-of-way;

☐ Roof replacement with -compatible roofing materials, or with architectural shingles replacing 3-Tab asphalt shingles;

☐ Installation of storm windows or doors that are compatible with the historic resource or district;

☐ Repair, replacement or installation of foundation-level doors, windows, window wells, and areaways, or foundation vents, venting pipes, or exterior grills that do not alter the character-defining features and/or the historic character of the resource;

☐ Construction of fences that are compatible with the historic site or district in material, height, location, and design;

☐ Fence is lower than 48" in front of rear wall plane;

☐ Construction of walkways, parking pads, patios, driveways, or other paved areas that are not visible from a public right-of-way and measure no more than 150 square feet in size;

☐ Replacement of existing walkways, parking pads, patios, driveways, or other paved areas with materials that are compatible with the visual character of the historic site and district and that are no greater than the dimensions of the existing hardscape;

☐ Construction of small accessory buildings no larger than 250 square feet in size that are not visible from the public right-of-way;

☐ Installations of skylights on the rear of a structure that will not be visible from the public right-of-way, and would not remove or alter character-defining roof materials;

☑ Installation of solar panels and arrays in locations that are not readily visible from the public right-of-way or that are designed so as to have a minimal impact on the historic resource or the historic district (e.g., systems that are ground-mounted in areas other than the front or side yard of a corner lot, located on accessory or outbuildings, on non-historic additions, or on rear facing roof planes);

☐ Installation of car charging stations in any location on a property or in the right-of-way;

Installation of satellite dishes;

☐ Removal of trees greater than 6" in diameter (d.b.h.) that are dead, dying, or present an immediate hazard.

☐ Removal of trees greater than 6" in diameter (d.b.h.) in the rear of the property that will not impact the overall tree canopy of the surrounding district or historic site;

☐ Replacement tree required as a condition; and,

☐ Other minor alterations that may be required by the Department of Permitting Services post-Commission approval that would have no material effect on the historic character of the property.

Staff finds the proposal complies with Chapter 24A, the Secretary of the Interior's Standards for Rehabilitation, and any additional requisite guidance. Under the authority of COMCOR No. 24A.04.01, this HAWP is approved by Devon Murtha on 3/3/2026. The approval memo and stamped drawings follow.

Description of Property: Please describe the building and surrounding environment. Include information on significant structures, landscape features, or other significant features of the property:

Property Built in 1951

Description of Work Proposed: Please give an overview of the work to be undertaken:

-Install (16) roof mounted solar panels on detached structure

-Micro Inverters to be placed under each panel

-Utility disconnect to be installed next to utility meter along with electrical combiner box for micro inverters

Work Item 1: _____

Description of Current Condition:	Proposed Work:

Work Item 2: _____

Description of Current Condition:	Proposed Work:

Work Item 3: _____

Description of Current Condition:	Proposed Work:

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

HISTORIC AREA WORK PERMIT
CHECKLIST OF
APPLICATION REQUIREMENTS

	Required Attachments						
Proposed Work	I. Written Description	2. Site Plan	3. Plans/ Elevations	4. Material Specifications	5. Photographs	6. Tree Survey	7. Property Owner Addresses
New Construction	*	*	*	*	*	*	*
Additions/ Alterations	*	*	*	*	*	*	*
Demolition	*	*	*		*		*
Deck/Porch	*	*	*	*	*	*	*
Fence/Wall	*	*	*	*	*	*	*
Driveway/ Parking Area	*	*		*	*	*	*
Grading/Excavation/Landscaing	*	*		*	*	*	*
Tree Removal	*	*		*	*	*	*
Siding/ Roof Changes	*	*	*	*	*		*
Window/ Door Changes	*	*	*	*	*		*
Masonry Repair/ Repoint	*	*	*	*	*		*
Signs	*	*	*	*	*		*

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

Front of Home

Back of Home

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

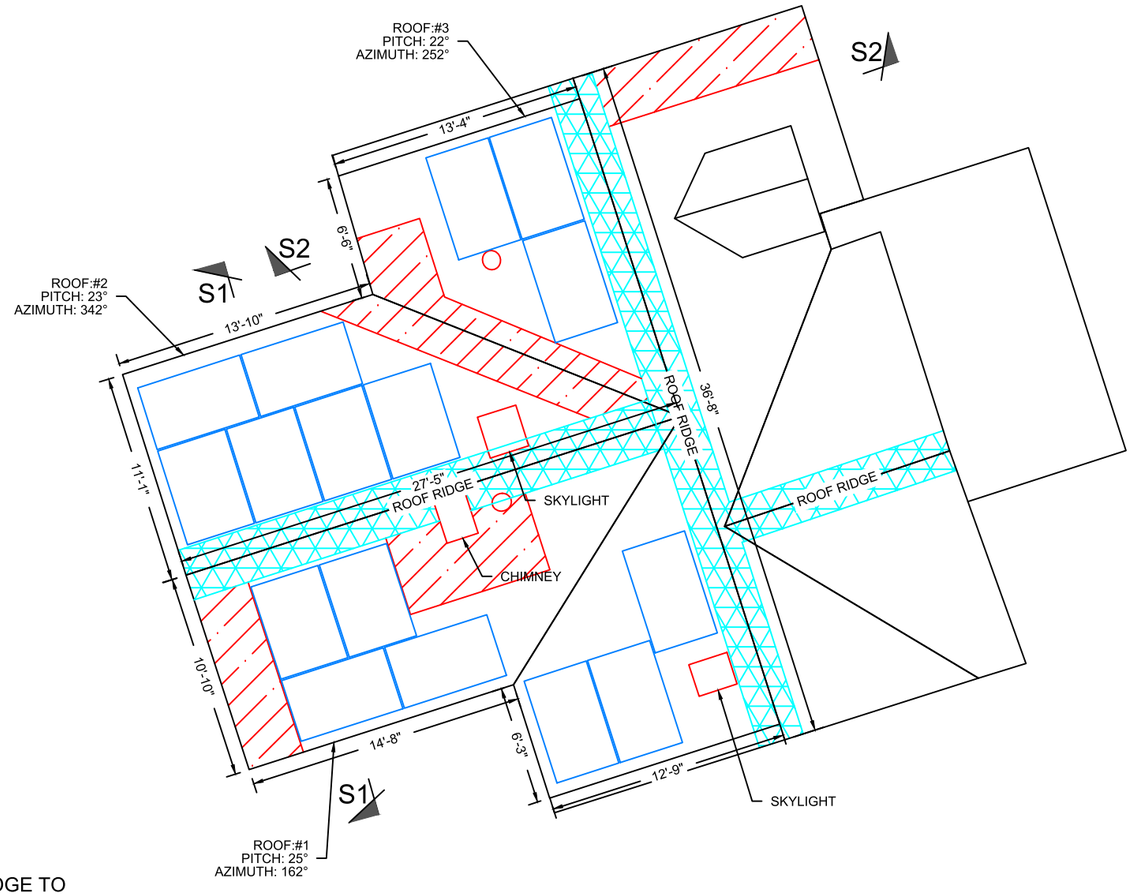
Left side of Home

Right side of Home

Utility Meter after Install

Utility Meter before Install

Critter Guard



N

S

KEY

FIRE SAFETY ZONE

3' PATHWAYS FROM LOWEST ROOF EDGE TO RIDGE PROVIDED PER R324.6.1

1'6" PATHWAYS PROVIDED ON BOTH SIDES OF RIDGE PER R324.6.2

PLAN VIEW TOTAL ROOF AREA: 1653 SQFT

SOLAR ARRAY AREA: 336.00 SQFT

THE SOLAR ARRAY IS 20.3% OF THE PLAN VIEW TOTAL ROOF AREA

NOTES:

1. THE SYSTEM SHALL INCLUDE (16) JAM54D41-440 MB.
2. SNAPNRACK TOPSPEED WILL BE INSTALLED IN ACCORDANCE WITH SNAPNRACK INSTALLATION MANUAL.
3. REFER TO STRUCTURAL DRAWING FOR SECTIONS MARKED AND ADDITIONAL NOTES.

SOLAR PANEL LAYOUT

Scale: 1/8" = 1'-0"

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

STATE OF MARYLAND
DAVID C. HERNANDEZ
49993
PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 49993 EXP 10/06/2026

David C. Hernandez, PE
Digitally signed by David C. Hernandez, PE
Date: 2026.01.07 17:11:05 -05:00

SolarEnergyWorld
Because Tomorrow Matters

Solar Energy World LLC.
14880 Sweitzer Lane
Laurel, MD 20707
(888) 497-3233

Building Code: International Residential Code (IRC) 2021

Electrical Code: National Electrical Code (NEC) 2017

Wind Speed	Snow Load
115 MPH	30 PSF

Modules: (16) JAM54D41-440 MB

Inverter(s): (16) IQ8MC-72-M-US

DC System Size	AC System Size
7.040 kW	5.120 kW

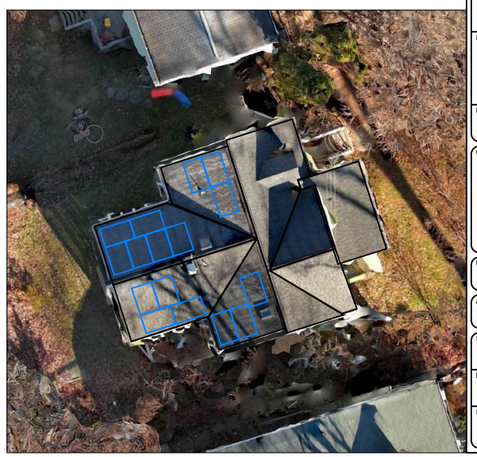
Customer Information:
William Ince
7102 Poplar Avenue,
Takoma Park, MD 20912

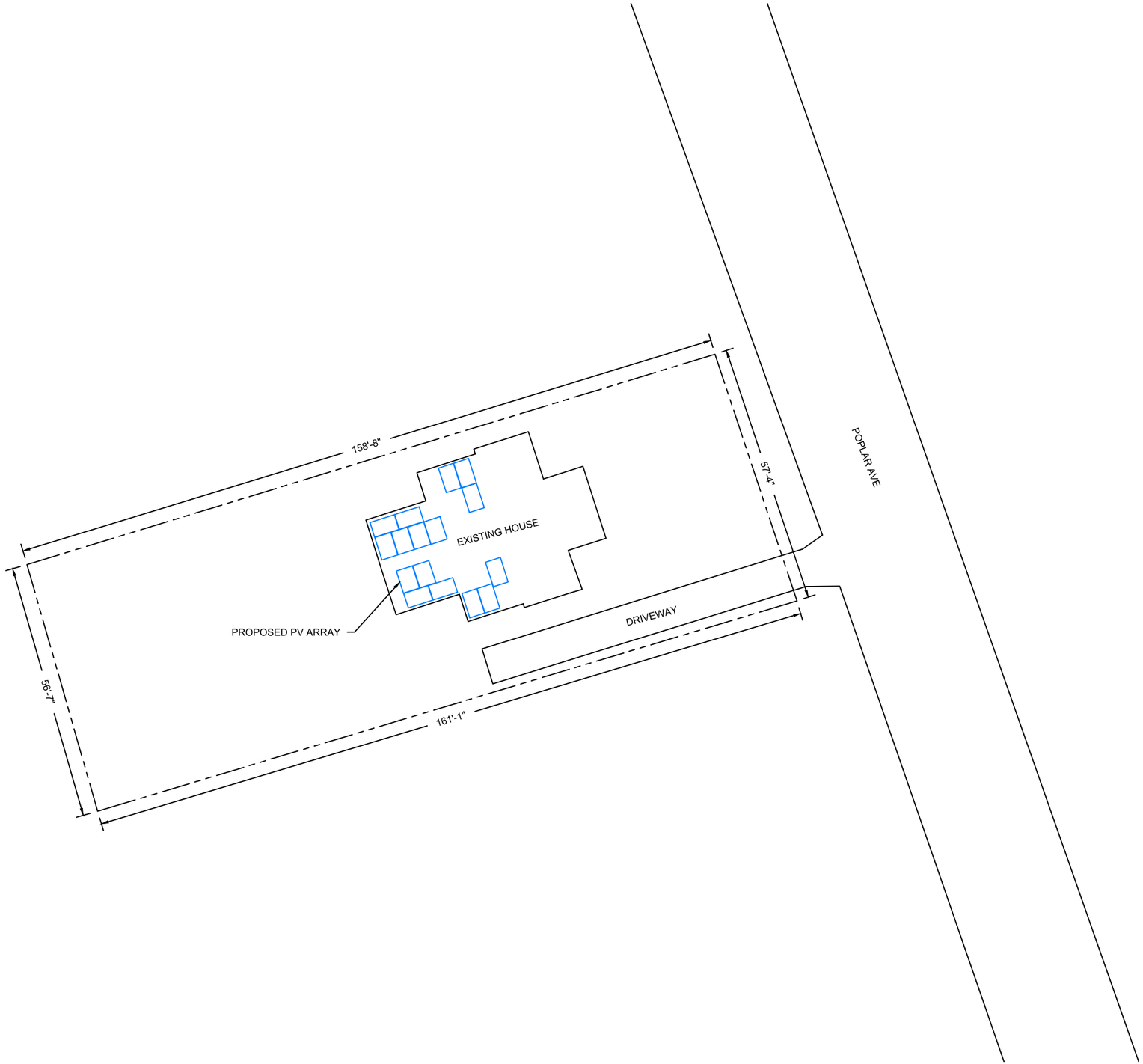
Partner/Lender: None

AHJ	Utility
Montgomery	Pepco

Sheet Name: Solar Panel Layout

Drawn By	Date	Scale	Job Number	Sheet
CB	December 29, 2025	AS NOTED	MD29750	A-1





SITE PLAN

Scale: 1" = 25'–0"

N

S

APPROVED
Montgomery County
Historical Preservation Commission

REVIEWED
By Devon.Murthy at 12:43 pm, Mar 03, 2026

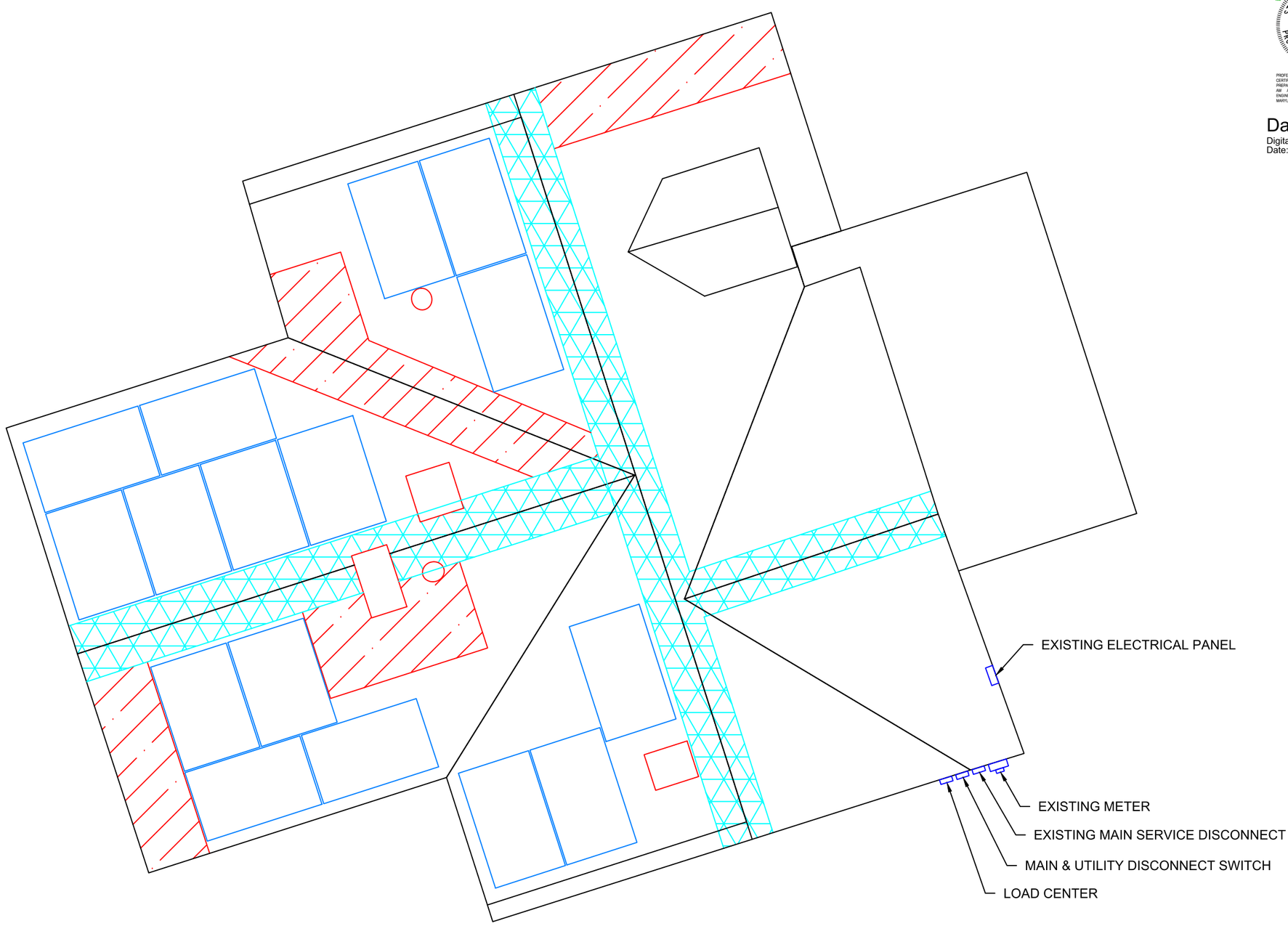
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 49993 EXP 10/06/2026

David C. Hernandez, PE
Digitally signed by David C. Hernandez, PE
Date: 2026.01.07 17:11:05 -05:00

SolarEnergyWorld
Because Tomorrow Matters

Solar Energy World LLC.
14880 Sweitzer Lane
Laurel, MD 20707
(888) 497-3233

Building Code	International Residential Code (IRC) 2021
Electrical Code	National Electrical Code (NEC) 2017
Wind Speed	115 MPH
Snow Load	30 PSF
Modules	(16) JAM54D41-440 MB
Inverter(s)	(16) IQ8MC-72-M-US
DC System Size	7.040 kW
AC System Size	5.120 kW
Customer Information	William Ince 7102 Poplar Avenue, Takoma Park, MD 20912
Partner/Lender	None
AHJ	Montgomery
Utility	Pepco
Sheet Name	Site Plan
Drawn By	CB
Date	December 29, 2025
Scale	AS NOTED
Job Number	MD29750
Sheet	A-2



EQUIPMENT LOCATION PLAN

Scale: NTS

NOTE:

EQUIPMENT LOCATION PLAN IS APPROXIMATE, EXACT LOCATION TO BE VERIFIED WITH INSTALLATION CREW AND HOME OWNER AT THE TIME OF INSTALLATION.

STATE OF MARYLAND
DAVID C. HERNANDEZ
49993
PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 49993 EXP 10/06/2026

David C. Hernandez, PE
Digitally signed by David C. Hernandez, PE
Date: 2026.01.07 17:11:05 -05:00

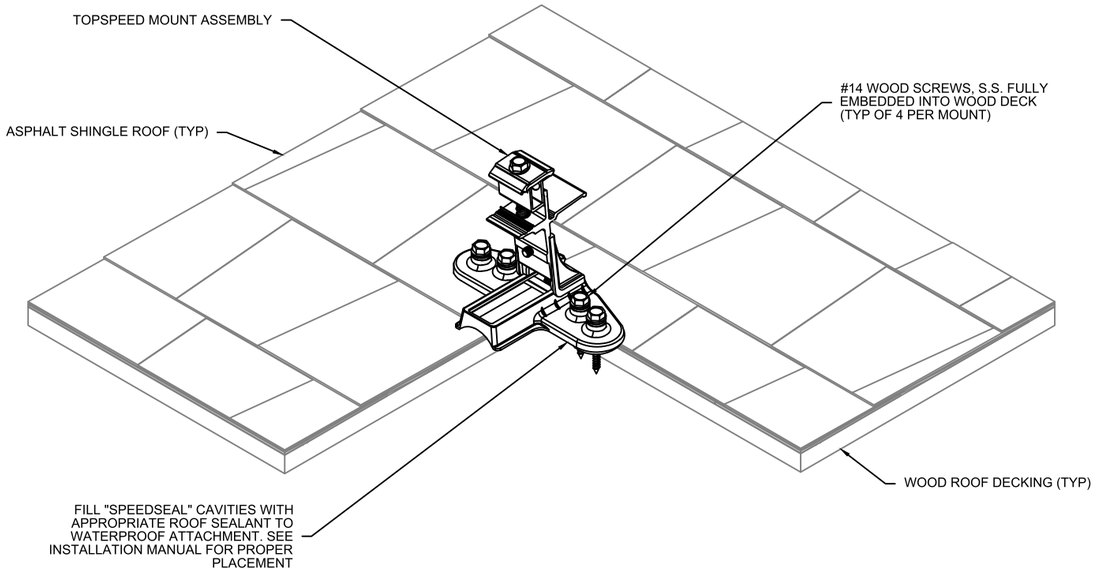
REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

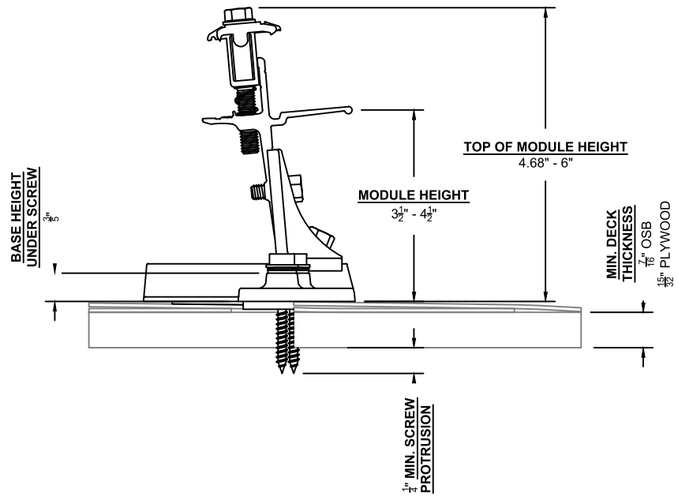
APPROVED
Montgomery County
Historic Preservation Commission

SolarEnergyWorld
Because Tomorrow Matters

Solar Energy World LLC.
14880 Sweitzer Lane
Laurel, MD 20707
(888) 497-3233

Building Code	International Residential Code (IRC) 2021
Electrical Code	National Electrical Code (NEC) 2017
Wind Speed	115 MPH
Snow Load	30 PSF
Modules	(16) JAM54D41-440 MB
Inverter(s)	(16) IQ8MC-72-M-US
DC System Size	7.040 kW
AC System Size	5.120 kW
Customer Information	William Ince 7102 Poplar Avenue, Takoma Park, MD 20912
Partner/Lender	None
AHJ	Montgomery
Utility	Pepco
Sheet Name	Equipment Location Plan
Drawn By	CB
Date	December 29, 2025
Scale	AS NOTED
Job Number	MD29750
Sheet	E-1





STRUCTURAL ATTACHMENT DETAIL

Structural Details	
Truss	2x4 O.C. 24"
Rafter	2x8 O.C. 16"

APPROVED
Montgomery County Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

NOTES:

1. ALL WORK SHALL COMPLY WITH REQUIREMENTS OF INTERNATIONAL RESIDENTIAL CODE (IRC 2021), LOADING CODE (ASCE 7-16), WOOD DESIGN CODE (NDS 2015), AND LOCAL REQUIREMENTS.
2. LOAD CRITERIA PER :
   - EXPOSURE CATEGORY "B"
   - GROUND SNOW LOAD, Pg = 30 PSF
   - LATERAL LOAD RISK CATEGORY "II"
   - ULTIMATE DESIGN WIND SPEED = 115 MPH
3. SOLAR PANELS AND RACKING SYSTEMS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION.
4. FOLLOW ALL LOCAL AND FEDERAL SAFETY REQUIREMENTS.

STATE OF MARYLAND
DAVID C. HERNANDEZ
49993
PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 49993 EXP 10/06/2026

David C. Hernandez, PE
Digitally signed by David C. Hernandez, PE
Date: 2026.01.07 17:11:05 -05:00

SolarEnergyWorld
Because Tomorrow Matters

Solar Energy World LLC.
14880 Sweitzer Lane
Laurel, MD 20707
(888) 497-3233

Building Code	International Residential Code (IRC) 2021
Electrical Code	National Electrical Code (NEC) 2017
Wind Speed: 115 MPH	Snow Load: 30 PSF
Modules	(16) JAM54D41-440 MB
Inverter(s)	(16) IQ8MC-72-M-US
DC System Size: 7.040 kW	AC System Size: 5.120 kW
Customer Information	William Ince 7102 Poplar Avenue, Takoma Park, MD 20912
Partner/Lender	None
AHJ: Montgomery	Utility: Pepco
Sheet Name	Structural Attachment Details
Drawn By: CB	Date: December 29, 2025
Scale: AS NOTED	Job Number: MD29750
Sheet: S-1	

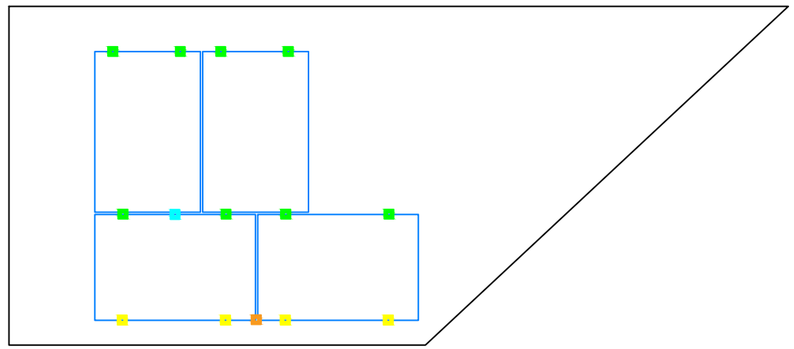
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 49993 EXP 10/06/2026

David C Hernandez, PE
Digitally signed by David C. Hernandez, PE
Date: 2026.03.03 12:41:05 -05'00'

Bill Of Materials

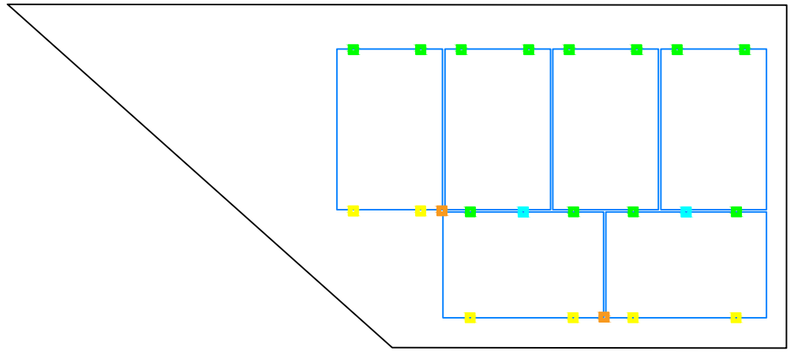
Product	Count
nts Without Spacers	32
nts With Spacers	18
Clamps Without Spacers	3
Clamps With Spacers	5

ROOF RIDGE



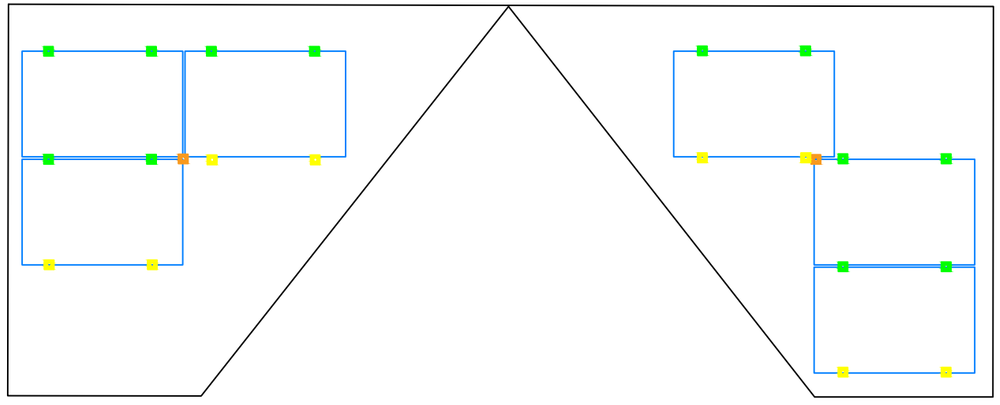
SOLAR PANEL FOOTING PLAN R1
Scale: 3/16" = 1'-0"

ROOF RIDGE



SOLAR PANEL FOOTING PLAN R2
Scale: 3/16" = 1'-0"

ROOF RIDGE



SOLAR PANEL FOOTING PLAN R3
Scale: 3/16" = 1'-0"

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

APPROVED
Montgomery County
Historic Preservation Commission

KEY

- DUNTS WITHOUT SPACERS
- DUNTS WITH SPACERS
- CLAMPS WITHOUT SPACERS
- CLAMPS WITH SPACERS

NOTES:

1. SNAPNRACK TOPSPEED SHALL BE INSTALLED IN ACCORDANCE WITH SNAPNRACK INSTALLATION MANUAL.
2. ADD TOPSPEED CLAMP IF GREATER THAN (SOLAR PANEL LENGTH / 4) FOR LANDSCAPE OR (SOLAR PANEL WIDTH /4) FOR PORTRAIT
3. NO SOLAR PANEL SHALL CANTILEVER MORE THAN 1/4 SOLAR PANEL LENGTH OR WIDTH DEPENDING ON ORIENTATION. UNLESS FOR MANUFACTURER SPECIFIED CLAMPING ZONE

SolarEnergyWorld
Because Tomorrow Matters

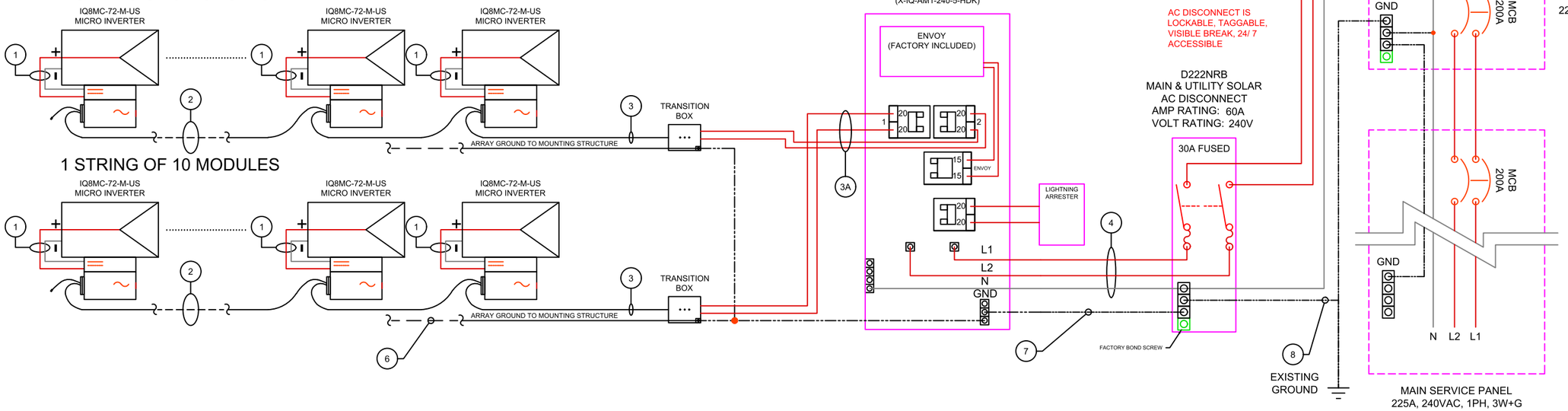
Solar Energy World LLC.
14880 Sweitzer Lane
Laurel, MD 20707
(888) 497-3233

Building Code	International Residential Code (IRC) 2021
Electrical Code	National Electrical Code (NEC) 2017
Wind Speed	115 MPH
Snow Load	30 PSF
Modules	(16) JAM54D41-440 MB
Inverter(s)	(16) IQ8MC-72-M-US
DC System Size	7.040 kW
AC System Size	5.120 kW
Customer Information	William Ince 7102 Poplar Avenue, Takoma Park, MD 20912
Partner/Lender	None
AHJ	Montgomery
Utility	Pepco
Sheet Name	Solar Panel Footing Plan
Drawn By	CB
Date	December 29, 2025
Scale	AS NOTED
Job Number	MD29750
Sheet	S-2

SMART INVERTERS

1 STRING OF 6 MODULES

1 STRING OF 10 MODULES



MODULE SPECIFICATIONS	
MODEL NUMBER	JAM54D41-440 MB
PEAK POWER	440 W
RATED VOLTAGE (Vmpp)	33.37 V
RATED CURRENT (Imp)	13.18 A
OPEN CIRCUIT VOLTAGE (Voc)	39.38 V
SHORT CIRCUIT CURRENT (Isc)	13.85 A
MAXIMUM SYSTEM VOLTAGE	1500VDC
INVERTER SPECIFICATIONS	
MODEL NUMBER	IQ8MC-72-M-US
MAXIMUM DC VOLTAGE	60 V
MAXIMUM POWER OUTPUT	320 W
NOMINAL AC VOLTAGE	240 VAC
MAXIMUM AC CURRENT	1.33 A
CEC EFFICIENCY	97.0%

ARRAY DETAILS		
NO. OF MODULES PER STRING	6	10
NO. OF STRINGS	1	1
ARRAY WATTS AT STC	2640	4400

3-LINE DIAGRAM

WIRE/CONDUIT SCHEDULE ARRAY			
TAG	DESCRIPTION	WIRE SIZE/TYPE	NOTES
1	Panel to Micro Inverter	PV Wire (Factory Made)	INTEGRATED
2	Micro Inverter to Micro Inverter	Pre-Manufactured Cable	
3	Micro Inverter to Transition Box	Pre-Manufactured Cable	
3A	Transition Box to Load Center	#10 THHN/THWN-2	
4	Load Center to AC Disconnect	#10 Cu THHN/THWN-2	
5	AC Disconnect to Interconnection Point	#6 Cu THHN/THWN-2	
6	Equipment Grounding Conductor	#8 Cu Bare Copper Wire	
7	Equipment Grounding Conductor	#8 Cu THHN/THWN-2	
8	Grounding Electrode Conductor	#6 Cu	

GENERAL ELECTRIC NOTES: NEC2017

1. EQUIPMENT USED SHALL BE NEW, UNLESS OTHERWISE NOTED.
2. EQUIPMENT USED SHALL BE UL LISTED, UNLESS OTHERWISE NOTED.
3. EQUIPMENT SHALL BE INSTALLED PROVIDING ADEQUATE PHYSICAL WORKING SPACE AROUND THE EQUIPMENT AND SHALL COMPLY WITH NEC.
4. COPPER CONDUCTORS SHALL BE USED AND SHALL HAVE AN INSULATION RATING OF 600V, 90°C, UNLESS OTHERWISE NOTED
5. CONDUCTORS SHALL BE SIZED IN ACCORDANCE TO THE NEC. CONDUCTORS AMPACITY SHALL BE DE-RATED FOR TEMPERATURE INCREASE, CONDUIT FILL AND VOLTAGE DROP.
6. ALL CONDUCTORS, EXCEPT PV WIRE SHALL BE INSTALLED IN APPROVED CONDUITS OR RACEWAY. CONDUITS SHALL BE ADEQUATELY SUPPORTED AS PER NEC.
7. AC DISCONNECT SHOWN IS REQUIRED IF THE UTILITY REQUIRES VISIBLE-BLADE SWITCH.
8. EXPOSED NON-CURRENT CARRYING METAL PARTS SHALL BE GROUNDED AS PER NEC.
9. LINE SIDE INTER-CONNECTION SHALL COMPLY WITH NEC.
10. SMS MONITORING SYSTEM AND IT'S CONNECTION SHOWN IS OPTIONAL. IF USED, REFER TO SMS INSTALLATION MANUAL FOR WIRING METHODS AND OPERATION PROCEDURE.
11. ASHRAE FUNDAMENTAL OUTDOOR DESIGN TEMPERATURES DO NOT EXCEED 47°C IN THE U.S. (PHOENIX, AZ OR PALM SPRINGS, CA)
12. FOR LESS THAN 9 CURRENT-CARRYING CONDUCTORS IN ROOF MOUNTED SUNLIGHT CONDUIT USING THE OUTDOOR TEMPERATURE OF 47°C
    12.1. 10AWG CONDUCTOR ARE GENERALLY ACCEPTABLE FOR MODULES WITH AN Isc OF 9.6 AMPS WITH A 15 AMP FUSE.

WIRE SIZING FOR OCPD
EX (Isc *(1.25)(1.25)(# OF STRINGS IN PARALLEL) = WIRE AMPACITY OR USING NEC TABLE 690.8

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

SolarEnergyWorld
Because Tomorrow Matters
Solar Energy World LLC.
14880 Sweitzer Lane
Laurel, MD 20707
(888) 497-3233

Building Code: International Residential Code (IRC) 2021

Electrical Code: National Electrical Code (NEC) 2017

Wind Speed: 115 MPH | Snow Load: 30 PSF

Modules: (16) JAM54D41-440 MB

Inverter(s): (16) IQ8MC-72-M-US

DC System Size: 7.040 kW | AC System Size: 5.120 kW

Customer Information:
William Ince
7102 Poplar Avenue,
Takoma Park, MD 20912

Partner/Lender: None

AHJ: Montgomery | Utility: Pepco

Sheet Name: Electrical 3-Line Diagram

Drawn By: CB | Date: December 29, 2025

Scale: AS NOTED | Job Number: MD29750 | Sheet: E-2

DAVID C. HERNANDEZ, PE

513-418-8812 4912 Prospect Ave., Blue Ash OH 45242 davehernandezpe@gmail.com

DATE: January 7, 2026

RE: 7102 Poplar Ave, Takoma Park, MD 20912, USA

To Whom It May Concern,

As per your request, Exactus Energy has inspected the structure and has conducted a structural assessment of the building at the above address.

PV solar panels are proposed to be installed on roof areas as shown in the submitted plans. The panels are attached to the roof decking with a rail-less mounting system The PV system (PV modules, racking, mounting hardware, etc.) shall be installed according to the manufacturer's approved installation specifications. The Engineer of Record and Exactus Energy claim no responsibility for misuse or improper installation.

It was found that the roof structures satisfactorily meet the applicable standards included in the 2021 IBC/IRC and ASCE 7-16 as well as the design criteria shown below:

Design Criteria:

Risk Category	= II
Exposure Category	= B
Wind speed	= 115 mph
Ground snow load	= 30 psf
Roof dead load	= 9 psf
Solar system dead load	= 3 psf

Overall, the roof area is structurally adequate to support the PV.

This letter was completed in accordance to recognized design standards, professional engineering experience, and judgement. Prior to installation, the on-site contractor must notify Exactus Energy if there are any discrepancies, or damages to the members, that was not addressed in the plan set.

If you have any further questions, please do not hesitate to contact me.

Acknowledged by:

David C. Hernandez, PE Digitally signed by David C. Hernandez, PE
Date: 2026.01.07 17:11:05 -05:00

ace Green Building Engineer #832

STATE OF MARYLAND
DAVID C. HERNANDEZ
49993
PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 49993, EXP 10/06/2026.
01/07/26

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

DAVID C. HERNANDEZ, PE

513-418-8812 4912 Prospect Ave., Blue Ash OH 45242 davehernandezpe@gmail.com

SEISMIC CHECK

Breakdown of Loads		
Asphalt Shingles:	4	psf
Insulation:	1.5	psf
Plywood Sheathing:	1.5	psf
Rafters:	1	psf
Misc:	1	psf
Live load:	20	psf

Existing Roof Seismic Weight			
Element	Unit Weight (psf)	Area (Sq.ft)	Weight (lbs)
Roof DL	9	1653.00	14877
Exterior Walls	8	2720.00	21760
Interior Walls	6	2720.00	16320
Existing Seismic Weight @Roof Level, We =			52957

New PV System Seismic Weight			
Element	Unit Weight (psf)	Area (Sq.ft)	Weight (lbs)
Pv System	3	336.00	1008.00
Seismic Weight of New PV System, Wpv =			1008.00

% Increase in Lateral (Seismic) Weight @Roof Level Due to PV System Addition, %-increase = Wpv / We	1.90%	< 10% - Pass

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

	COMPANY	PROJECT
WoodWorks® SOFTWARE FOR WOOD DESIGN		
	Jan. 7, 2026 15:43	7102 Poplar Ave - R1&R2.wwb

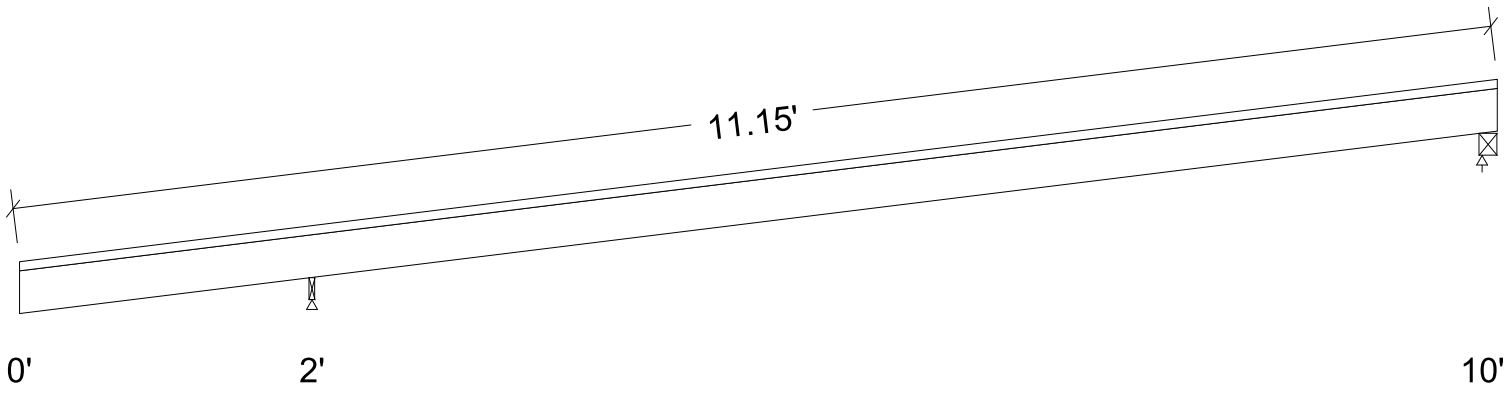
Design Check Calculation Sheet

WoodWorks Sizer 13.2.1

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start	End	Magnitude Start	End	Unit
D-ROOF	Dead	Full Area	No			9.00(24.0")		psf
S1	Snow	Partial Area	No	0.00	0.50	23.10(24.0")		psf
L1	Roof live	Partial Area	No	0.00	0.50	20.00(24.0")		psf
S-PV	Snow	Partial Area	No	0.50	8.30	17.33(24.0")		psf
D-PV	Dead	Partial Area	No	0.50	8.30	3.00(24.0")		psf
L2	Roof live	Partial Area	No	8.30	10.00	20.00(24.0")		psf
S2	Snow	Partial Area	No	8.30	10.00	23.10(24.0")		psf

Maximum Reactions (lbs), Bearing Capacities (lbs) and Bearing Lengths (in) :



Unfactored:					
Dead			159		93
Snow			224		148
Roof Live			31		57
Factored:					
Total			383		241
Bearing:					
F'theta			707		707
Capacity					
Joist			928		1591
Support			398		1195
Des ratio					
Joist			0.41		0.15
Support			0.96		0.20
Load comb			#3		#3
Length			0.50*		1.50
Min req'd			0.50*		0.50*
Cb			1.75		1.00
Cb min			1.75		1.00
Cb support			1.25		1.25
Fcp sup			425		425

*Minimum bearing length setting used: 1/2" for end supports and 1/2" for interior supports

Lumber-soft, D.Fir-L, No.2, 2x4 (1-1/2"x3-1/2")

Supports: All - Lumber-soft Beam, S-P-F No.1/No.2

Roof joist spaced at 24.0" c/c; Total length: 11.29'; Clear span(horz): 1.979', 7.958'; Volume = 0.4 cu.ft.; Pitch: 5.6/12

Lateral support: top = continuous, bottom = at supports; Repetitive factor: applied where permitted (refer to online help);

This section PASSES the design code check.

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

Analysis vs. Allowable Stress and Deflection using NDS 2018 :

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	fv = 63	Fv' = 207	psi	fv/Fv' = 0.31
Bending(+)	fb = 1692	Fb' = 1785	psi	fb/Fb' = 0.95
Bending(-)	fb = 496	Fb' = 1659	psi	fb/Fb' = 0.30
Deflection:				
Interior Live	0.39 = L/270	0.59 = L/180	in	0.67
Total	0.83 = L/127	0.88 = L/120	in	0.94
Cantil. Live	-0.25 = L/106	0.29 = L/90	in	0.85
Total	-0.55 = L/48	0.44 = L/60	in	1.24

Additional Data:

FACTORS:	F/E(psi)	CD	CM	Ct	CL	CF	Cfu	Cr	Cfrt	Ci	LC#
Fv'	180	1.15	1.00	1.00	-	-	-	-	1.00	1.00	3
Fb'+	900	1.15	1.00	1.00	1.000	1.500	-	1.15	1.00	1.00	3
Fb'-	900	1.15	1.00	1.00	0.929	1.500	-	1.15	1.00	1.00	3
Fcp'	625	-	1.00	1.00	-	-	-	-	1.00	1.00	-
E'	1.6 million		1.00	1.00	-	-	-	-	1.00	1.00	3
Emin'	0.58 million		1.00	1.00	-	-	-	-	1.00	1.00	3

CRITICAL LOAD COMBINATIONS:

```
Shear     : LC #3  = D + S
Bending(+): LC #3  = D + S
Bending(-): LC #3  = D + S
Deflection: LC #3  = D + S  (live)
            LC #3  = D + S  (total)
Bearing   : Support 1 - LC #3 = D + S
            Support 2 - LC #3 = D + S
Load Types: D=dead S=snow Lr=roof live
Load combinations: ASD Basic from ASCE 7-16 2.4; all LC's listed in the Analysis report
```

CALCULATIONS:

```
V max = 237, V design = 221 (NDS 3.4.3.1(a)) lbs
M(+) = 432 lbs-ft; M(-) = 127 lbs-ft
EI = 8.57e06 lb-in^2
"Live" deflection is due to all non-dead loads (live, wind, snow…)
Total deflection = 1.50 permanent + "live"
Bearing: Allowable bearing at an angle F'theta  calculated for each support
as per NDS 3.10.3
Lateral stability(-):  Lu = 8.81'  Le = 13.56'  RB = 15.9; Lu based on full span
```

Design Notes:

1. Analysis and design are in accordance with the ICC International Building Code (IBC 2021) and the National Design Specification (NDS 2018), using Allowable Stress Design (ASD). Design values are from the NDS Supplement.
2. Please verify that the default deflection limits are appropriate for your application.
3. Continuous or Cantilevered Beams: NDS Clause 4.2.5.5 requires that normal grading provisions be extended to the middle 2/3 of 2 span beams and to the full length of cantilevers and other spans.
4. Sawn lumber bending members shall be laterally supported according to the provisions of NDS Clause 4.4.1.
5. SLOPED BEAMS: level bearing is required for all sloped beams.
6. The critical deflection value has been determined using maximum back-span deflection. Cantilever deflections do not govern design.

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

	COMPANY	PROJECT
WoodWorks® SOFTWARE FOR WOOD DESIGN	Jan. 7, 2026 16:02	7102 Poplar Ave - R3.wwb

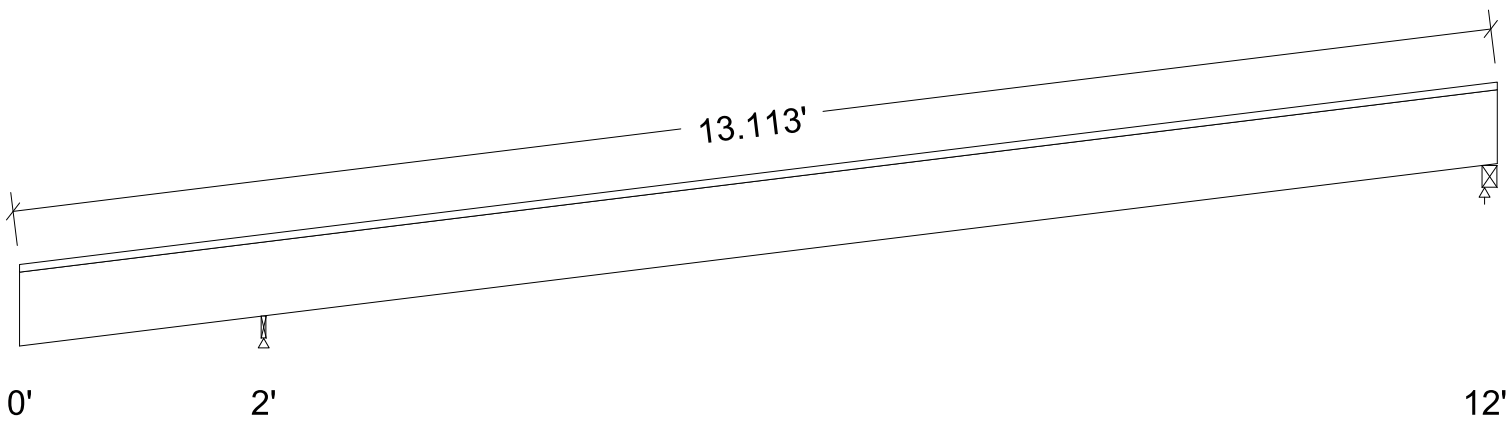
Design Check Calculation Sheet

WoodWorks Sizer 13.2.1

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start	End	Magnitude Start	End	Unit
D-ROOF	Dead	Full Area	No			9.00(16.0")		psf
S1	Snow	Partial Area	No	0.00	0.50	23.10(16.0")		psf
L1	Roof live	Partial Area	No	0.00	0.50	20.00(16.0")		psf
S-PV	Snow	Partial Area	No	0.50	10.50	18.48(16.0")		psf
D-PV	Dead	Partial Area	No	0.50	10.50	3.00(16.0")		psf
L2	Roof live	Partial Area	No	10.50	12.00	20.00(16.0")		psf
S2	Snow	Partial Area	No	10.50	12.00	23.10(16.0")		psf

Maximum Reactions (lbs), Bearing Capacities (lbs) and Bearing Lengths (in) :



Unfactored:					
Dead			121		79
Snow			181		127
Roof Live			18		35
Factored:					
Total			302		206
Bearing:					
F'theta			688		688
Capacity					
Joist			903		1547
Support			398		1195
Des ratio					
Joist			0.33		0.13
Support			0.76		0.17
Load comb			#3		#3
Length			0.50*		1.50
Min req'd			0.50*		0.50*
Cb			1.75		1.00
Cb min			1.75		1.00
Cb support			1.25		1.25
Fcp sup			425		425

*Minimum bearing length setting used: 1/2" for end supports and 1/2" for interior supports

Lumber-soft, D.Fir-L, No.2, 2x8 (1-1/2"x7-1/4")

Supports: All - Lumber-soft Beam, S-P-F No.1/No.2

Roof joist spaced at 16.0" c/c; Total length: 13.36'; Clear span(horz): 1.979', 9.958'; Volume = 1.0 cu.ft.; Pitch: 5/12

Lateral support: top = continuous, bottom = at supports; Repetitive factor: applied where permitted (refer to online help);

This section PASSES the design code check.

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

Analysis vs. Allowable Stress and Deflection using NDS 2018 :

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	fv = 25	Fv' = 207	psi	fv/Fv' = 0.12
Bending(+)	fb = 442	Fb' = 1428	psi	fb/Fb' = 0.31
Bending(-)	fb = 78	Fb' = 942	psi	fb/Fb' = 0.08
Deflection:				
Interior Live	0.08 = < L/999	0.72 = L/180	in	0.11
Total	0.16 = L/819	1.08 = L/120	in	0.15
Cantil. Live	-0.04 = L/590	0.29 = L/90	in	0.15
Total	-0.09 = L/283	0.43 = L/60	in	0.21

Additional Data:

FACTORS:	F/E(psi)	CD	CM	Ct	CL	CF	Cfu	Cr	Cfrt	Ci	LC#
Fv'	180	1.15	1.00	1.00	-	-	-	-	1.00	1.00	3
Fb'+	900	1.15	1.00	1.00	1.000	1.200	-	1.15	1.00	1.00	3
Fb'-	900	1.15	1.00	1.00	0.660	1.200	-	1.15	1.00	1.00	3
Fcp'	625	-	1.00	1.00	-	-	-	-	1.00	1.00	-
E'	1.6 million		1.00	1.00	-	-	-	-	1.00	1.00	3
Emin'	0.58 million		1.00	1.00	-	-	-	-	1.00	1.00	3

CRITICAL LOAD COMBINATIONS:

```
Shear     : LC #3  = D + S
Bending(+): LC #3  = D + S
Bending(-): LC #3  = D + S
Deflection: LC #3  = D + S  (live)
            LC #3  = D + S  (total)
Bearing   : Support 1 - LC #3 = D + S
            Support 2 - LC #3 = D + S
Load Types: D=dead S=snow Lr=roof live
Load combinations: ASD Basic from ASCE 7-16 2.4; all LC's listed in the Analysis report
```

CALCULATIONS:

```
V max = 202, V design = 179 (NDS 3.4.3.1(a)) lbs
M(+) = 484 lbs-ft; M(-) = 86 lbs-ft
EI = 76.21e06 lb-in^2
"Live" deflection is due to all non-dead loads (live, wind, snow…)
Total deflection = 1.50 permanent + "live"
Bearing: Allowable bearing at an angle F'theta  calculated for each support
as per NDS 3.10.3
Lateral stability(-):  Lu = 10.81'  Le = 17.44'  RB = 25.9; Lu based on full span
```

Design Notes:

1. Analysis and design are in accordance with the ICC International Building Code (IBC 2021) and the National Design Specification (NDS 2018), using Allowable Stress Design (ASD). Design values are from the NDS Supplement.
2. Please verify that the default deflection limits are appropriate for your application.
3. Continuous or Cantilevered Beams: NDS Clause 4.2.5.5 requires that normal grading provisions be extended to the middle 2/3 of 2 span beams and to the full length of cantilevers and other spans.
4. Sawn lumber bending members shall be laterally supported according to the provisions of NDS Clause 4.4.1.
5. SLOPED BEAMS: level bearing is required for all sloped beams.
6. The critical deflection value has been determined using maximum back-span deflection. Cantilever deflections do not govern design.

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

ASCE 7 - 16 WIND CALCULATION FOR: Roof 1

Project Address: 7102 Poplar Ave, Takoma Park, MD 20912, USA

DESIGN CRITERIA

Ultimate Wind Speed: 115 mph

Exposure Category: B

a: 3.7 ft

Velocity Pressure Exposure Coefficient, *Kz*: 0.62

Topographic Factor, *Kzt*: 1

Wind Directionality Factor, *Kd*: 0.85

Ground Elevation Factor, *Ke*: 1

Solar Array Pressure Equalization Factor, *ya*: 0.7

Array Edge Factor, γE: 1

Solar Array Dead Load: 3 psf

Mean Roof Height: 20 ft

Roof Pitch: 25°

Roof Type: Gable

Module Name, Dimensions, Area: JAM54D41-440 MB, 44.6in X 67.8in, 3023.88 sqin

CALCULATION

Velocity Pressure Due to Wind: $q_h = 0.00256(Kz)(Kzt)(Kd)(I)(V^2)$ $(Ch\ 26. Eq\ 26.10-1)$

Actual Uplift Pressure: $\mathrm{p} = 0.6D + 0.6W$ $(Ch\ 2.4.1\ LC\ \#7/a)$

Wind Uplift Pressure: $p = qh\ (GCp)(yE\ )(ya\ )$ $(Ch\ 29. Eq\ 29.4-7)$

Landscape / Portrait Panels

Roof Zone	1	2e	2n	2r	3e	3r
Mount Spacing	67.8”	67.8”	67.8”	67.8”	67.8”	67.8”
External Pressure Coefficient (GCp)	-1.5	-1.5	-2.48	-2.48	-2.48	-2.91
Actual Uplift Pressure (p)	-16 psf	-16 psf	-16.97 psf	-16.97 psf	-16.97 psf	-20.24 psf
Tributary Area (AT)	10.5 sqft	10.5 sqft	10.5 sqft	10.5 sqft	10.5 sqft	10.5 sqft
Uplift Force (P)	-167.99 lbs	-167.99 lbs	-178.18 lbs	-178.18 lbs	-178.18 lbs	-212.54 lbs

Uplift Capacity

Attachment Type = 4 #14 Wood Screw TopSpeed Mount Assembly

Embedment Depth = 0.3 in

Hardware Pullout Capacity = 260 lbs

Safety Factor = 1.5

Duration Factor = 1.6

Maximum Uplift Force = 212.539 lbs

Allowable Pullout Capacity = 260 lbs

Allowable Pullout Capacity = 260 lbs > Uplift Force per Bolt = 212.54 lbs, Therefore OK.

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

ASCE 7 - 16 WIND CALCULATION FOR: Roof 2

Project Address: 7102 Poplar Ave, Takoma Park, MD 20912, USA

DESIGN CRITERIA

Ultimate Wind Speed: 115 mph

Exposure Category: B

a: 3.7 ft

Velocity Pressure Exposure Coefficient, *Kz*: 0.62

Topographic Factor, *Kzt*: 1

Wind Directionality Factor, *Kd*: 0.85

Ground Elevation Factor, *Ke*: 1

Solar Array Pressure Equalization Factor, *γa*: 0.7

Array Edge Factor, γE: 1

Solar Array Dead Load: 3 psf

Mean Roof Height: 20 ft

Roof Pitch: 23°

Roof Type: Gable

Module Name, Dimensions, Area: JAM54D41-440 MB, 44.6in X 67.8in, 3023.88 sqin

CALCULATION

Velocity Pressure Due to Wind: $q_h = 0.00256(Kz)(Kzt)(Kd)(I)(V^2)$ $(Ch\ 26. Eq\ 26.10-1)$

Actual Uplift Pressure: $\mathrm{p} = 0.6D + 0.6W$ $(Ch\ 2.4.1\ LC\ \#7/a)$

Wind Uplift Pressure: $p = qh\ (GCp)(yE\ )(ya\ )$ $(Ch\ 29. Eq\ 29.4-7)$

Landscape / Portrait Panels

Roof Zone	1	2e	2n	2r	3e	3r
Mount Spacing	67.8”	67.8”	67.8”	67.8”	67.8”	67.8”
External Pressure Coefficient (GCp)	-1.5	-1.5	-2.48	-2.48	-2.48	-2.91
Actual Uplift Pressure (p)	-16 psf	-16 psf	-16.94 psf	-16.94 psf	-16.94 psf	-20.22 psf
Tributary Area (AT)	10.5 sqft	10.5 sqft	10.5 sqft	10.5 sqft	10.5 sqft	10.5 sqft
Uplift Force (P)	-167.99 lbs	-167.99 lbs	-177.91 lbs	-177.91 lbs	-177.91 lbs	-212.27 lbs

Uplift Capacity

Attachment Type = 4 #14 Wood Screw TopSpeed Mount Assembly

Embedment Depth = 0.3 in

Hardware Pullout Capacity = 260 lbs

Safety Factor = 1.5

Duration Factor = 1.6

Maximum Uplift Force = 212.27 lbs

Allowable Pullout Capacity = 260 lbs

Allowable Pullout Capacity = 260 lbs > Uplift Force per Bolt = 212.27 lbs, Therefore OK.

EXACTUS ENERGY

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

ASCE 7 - 16 WIND CALCULATION FOR: Roof 3

Project Address: 7102 Poplar Ave, Takoma Park, MD 20912, USA

DESIGN CRITERIA

Ultimate Wind Speed: 115 mph

Exposure Category: B

a: 3.7 ft

Velocity Pressure Exposure Coefficient, *Kz*: 0.62

Topographic Factor, *Kzt*: 1

Wind Directionality Factor, *Kd*: 0.85

Ground Elevation Factor, *Ke*: 1

Solar Array Pressure Equalization Factor, *γa*: 0.7

Array Edge Factor, γE: 1

Solar Array Dead Load: 3 psf

Mean Roof Height: 20 ft

Roof Pitch: 22°

Roof Type: Gable

Module Name, Dimensions, Area: JAM54D41-440 MB, 44.6in X 67.8in, 3023.88 sqin

CALCULATION

Velocity Pressure Due to Wind: $q_h = 0.00256(Kz)(Kzt)(Kd)(I)(V^2)$ $(Ch\ 26. Eq\ 26.10-1)$

Actual Uplift Pressure: $\mathrm{p} = 0.6D + 0.6W$ $(Ch\ 2.4.1\ LC\ \#7/a)$

Wind Uplift Pressure: $p = qh\ (GCp)(yE\ )(ya\ )$ $(Ch\ 29. Eq\ 29.4-7)$

Landscape / Portrait Panels

Roof Zone	1	2e	2n	2r	3e	3r
Mount Spacing	67.8”	67.8”	67.8”	67.8”	67.8”	67.8”
External Pressure Coefficient (GCp)	-1.5	-1.5	-2.48	-2.48	-2.48	-2.91
Actual Uplift Pressure (p)	-16 psf	-16 psf	-16.93 psf	-16.93 psf	-16.93 psf	-20.21 psf
Tributary Area (AT)	10.5 sqft	10.5 sqft	10.5 sqft	10.5 sqft	10.5 sqft	10.5 sqft
Uplift Force (P)	-167.99 lbs	-167.99 lbs	-177.79 lbs	-177.79 lbs	-177.79 lbs	-212.14 lbs

Uplift Capacity

Attachment Type = 4 #14 Wood Screw TopSpeed Mount Assembly

Embedment Depth = 0.3 in

Hardware Pullout Capacity = 260 lbs

Safety Factor = 1.5

Duration Factor = 1.6

Maximum Uplift Force = 212.144 lbs

Allowable Pullout Capacity = 260 lbs

Allowable Pullout Capacity = 260 lbs > Uplift Force per Bolt = 212.14 lbs, Therefore OK.

EXACTUS ENERGY

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

Solar Energy World
Because Tomorrow Matters

Project Roof Mounted Solar PV Installation Property Owner William Ince

Address 7102 Poplar Ave, Takoma Park, MD 20912, USA

☑ I reviewed the design of the photovoltaic (PV) system, as designed by the manufacturer, and the design criteria utilized for the mounting equipment and panel mounting assembly (rack system) for the installation of (16) panels supported by the rack system, as shown on the drawings prepared for the above referenced address. I certify that the configurations and design criteria meet the standards and requirements of the International Residential Code (IRC) in COMCOR 08.00.02.

☑ The attachment of the rack system to the building at the above address, including the location, number, and type of attachment points; the number of fasteners per attachment point; and the specific type of fasteners (size, diameter, length, minimum embedment into structural framing, etc.) meets the standards and requirements of the IRC adopted by Montgomery County in COMCOR 08.00.02.

☑ I evaluated the existing roof structure of the building at the above address and analyzed its capacity to support the additional loads imposed by the PV system. I certify that no structural modifications of the existing roof structure are required. The existing roof structure meets the standards and requirements of the IRC, adopted by Montgomery County in COMCOR 08.00.02, necessary to support the PV system.

□ I evaluated the existing roof structure of the building at the above address and analyzed its capacity to support the additional loads imposed by the PV system. Structural modifications of the existing roof structure are required. I certify that the roof structure, as modified on the drawings for this project, will support the additional loads imposed by the PV system. I further certify that design of the modified roof structure meets the standards and requirements of the IRC, adopted by Montgomery County in COMCOR 08.00.02.

☑ I prepared or approved the construction documents for the mounting equipment, rack system, roof structure for this project.

Re-installations:
□ I certify that the reinstallation of the photovoltaic system (PV) as shown on the approved drawings for permit _____ (show original permit #) does not alter the approval under the permit or make the PV system, attachment to the building, and roof framing unsafe.

49993
Maryland PE License Number

Date 01/07/2026

Seal

Signature David C. Hernandez, PE

Digitally signed by David C. Hernandez, PE
Date: 2026.01.07 17:11:05 -05:00

aee Green Building Engineer #832

STATE OF MARYLAND
DAVID C. HERNANDEZ
49993
PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 49993, EXP 10/06/2026.
01/07/26

Updated 11/14/2024

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

SolarEnergyWorld
Because Tomorrow Matters

Property Owners Name: William Ince

Property Owners Address: 7102 Poplar Avenue, Takoma Park, MD 20912

Address of Installation if different than owner's address:

I certify that:

☑ I prepared or approved the electrical drawings and related documents for the photovoltaic (PV) system at the above location.

☑ The design of the PV System, and all the electrical Installations and equipment, meets the standards and requirements of the National Electrical Code as adopted by Montgomery County in COMCOR 17.02.01

☑ I reviewed and completed the Worksheet for PV System, which was attached to the permit application for the PV system at the above location.

40780-State of MD Master Electrician License

Santos M. Andrade

Signature: _____

Date: 02/09/2026

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

City of Takoma Park

Housing and Community Development Department

Main Office 301-891-7119
Fax 301-270-4568
www.takomaparkmd.gov

7500 Maple Avenue
Takoma Park, MD 20912

MUNICIPALITY LETTER

February 09, 2026

To: William Ince
7102 Poplar Avenue, Takoma Park, MD 20912
williamince@gmail.com 919-357-2903

To: Department of Permitting Services
2425 Reedie Drive, 7th floor
Wheaton, Maryland 20902

From: Planning and Development Services Division

THIS IS NOT A PERMIT – For Informational Purposes Only

VALID FOR ONE YEAR FROM DATE OF ISSUE

The property owner is responsible for obtaining all required permits from Montgomery County and the City of Takoma Park. If this property is in the **Takoma Park Historic District,** it is subject to Montgomery County Historic Preservation requirements.

Representative Name: Tina Crouse-SEW tcrouse@solarenergyworld.com 410-570-4157
Location of Project: 7102 Poplar Avenue, Takoma Park, MD 20912
Proposed Scope of Work: Install (16) roof mounted solar panels, 704 kW

The purpose of this municipality letter is to inform you that the City of Takoma Park has regulations and city permit requirements that may apply to your project. This municipality letter serves as notification that, in addition to all Montgomery County requirements, you are required to comply with all City permitting requirements, including:

- Tree Impact Assessment/Tree Protection Plan
- Stormwater management
- City Right of Way

Failure to comply with these requirements could result in the issuance of a Stop Work Order and other administrative actions within the provisions of the law. Details of Takoma Park's permit requirements are attached on page 2.

The issuance of this letter does not indicate approval of the project nor does it authorize the property owner to proceed with the project. The City retains the right to review and comment on project plans during the Montgomery County review process.

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

City Of Takoma Park

The City of Takoma Park permits for the following issues:

Tree Impact Assessment/Tree Protection Plan/Tree Removal Application:

Construction activities that occur within 50 feet of any urban forest tree (7 and 5/8" in trunk diameter or greater), located on the project property or on an adjacent property, may require a Tree Impact Assessment and possibly a Tree Protection Plan Permit. Make sure to submit a request for a Tree Impact Assessment and schedule a site visit with the City's Urban Forest Manager if any urban forest tree is in the vicinity of proposed construction activities. See the Tree Permits section of the City website for the specific conditions in which a Tree Impact Assessment is required. Depending on the Urban Forest Manager's conclusion following the Tree Impact Assessment, you may need to prepare a full Tree Protection Plan and apply for a Tree Protection Plan Permit as well. Separately, the removal of any urban forest tree will require a Tree Removal Permit application. The tree ordinance is detailed in the City Code, section 12.12. For permit information check: https://takomaparkmd.gov/services/permits/tree-permits. The City's Urban Forest Manager can be reached at 301-891-7612 or urbanforestmanager@takomaparkmd.gov.

Stormwater Management:

If you plan to develop or redevelop property, you may be required to provide appropriate stormwater management measures to control or manage runoff, as detailed in City Code section 16.04. All commercial or institutional development in the city must apply for a Stormwater Management Permit regardless of the size of the land disturbance. Additions or modifications to existing detached single-family residential properties do not require a Stormwater Management permit if the project does not disturb more than 5,000 square feet of land area. For more information visit: https://takomaparkmd.gov/government/public-works/stormwater-management-program/. The City Engineer should be contacted to determine if a City permit is required. The City Engineer can be reached at 301-891-7620.

City Right of Way:

- To place a **construction dumpster or storage container** temporarily on a City right of way (usually an adjacent road), you will need to obtain a permit. A permit is not required if the dumpster is placed in a privately-owned driveway or parking lot.
- If you plan to install a new **driveway apron**, or enlarge or replace an existing driveway apron, you need a Driveway Apron Permit.
- If you plan to construct a **fence** in the City right of way, you need to request a Fence Agreement. If approved, the Agreement will be recorded in the Land Records of Montgomery County.

For more information and applications for City permits, see: https://takomaparkmd.gov/services/permits/ or contact the Department of Public Works at 301-891-7633.

Failure to comply with the City's permitting requirements could result in the issuance of a Stop Work Order and other administrative actions within the provisions of the law.

eSigned via GovOS.com
Tina Crouse
Key: 38bf2056622713c0bf979ea7ee94776a

Tina Crouse 02-05-2026

eSigned via GovOS.com
Takoma Park Planning Division
Key: 19fe84f123e68a3ff4576219059d5fbe

02-09-2026

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

DEPARTMENT OF PERMITTING SERVICES

Marc Elrich
County Executive

Rabbiah Sabbakhan
Director

HISTORIC AREA WORK PERMIT APPLICATION

Application Date: 2/9/2026

Application No: 1148273
AP Type: HISTORIC
Customer No: 1408761

Affidavit Acknowledgement

The Contractor is the Primary applicant authorized by the property owner
This application does not violate any covenants and deed restrictions

Primary Applicant Information

Address	7102 POPLAR AVE TAKOMA PARK, MD 20912
Othercontact	Solar Energy World (Primary)

Historic Area Work Permit Details

Work Type	ALTER
Scope of Work	INSTALLL (16) ROOF MOUNTED SOLAR PANELS, 7.04 KW

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

Harvest the Sunshine

445W

JA SOLAR

JAM54D41 MB

Black Module
n-type Double Glass Bifacial Modules

Premium Cells

n-Bycium+
16BB

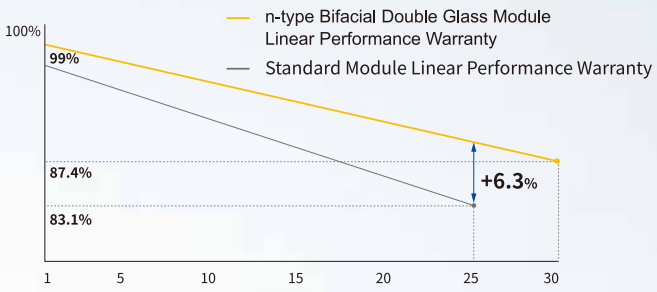
MBB Half-Cell Technology

26%
Up To

Cell Conversion Efficiency

Premium Modules

- Higher power generation better LCOE
- n-type with very Lower LID
- Better Temperature Coefficient
- Better low irradiance response



1% 1st-year Degradation

0.4% Annual Degradation Over 30 years

- 12-year product warranty
- 30-year linear power output warranty

Comprehensive Certificates

- IEC 61215, IEC 61730, UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems
- IEC 62941: 2019 Terrestrial photovoltaic (PV) modules - Quality system for PV module manufacturing

Intertek

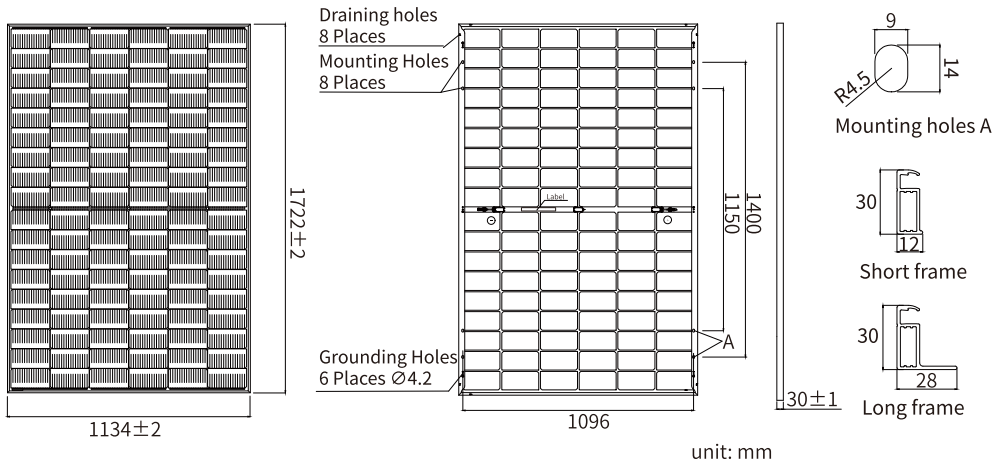
DEEP BLUE 4.0 Pro

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

JAM54D41 MB n-type Double Glass Bifacial Modules

DEEP BLUE 4.0 Pro



MECHANICAL PARAMETERS

Cell	Mono
Weight	21.5kg
Dimensions	1722±2mm×1134±2mm×30±1mm
Cable Cross Section Size	4mm²(IEC), 12 AWG(UL)
No. of cells	108(6×18)
Junction Box	IP68, 3diodes
Connector	QC 4.10-351/ MC4-EVO2A
Cable Length (Including Connector)	Portrait: 300mm(+) /400mm(-) Landscape: 1100mm(+)/1100mm(-)
Front Glass/Back Glass	1.6mm/1.6mm
Packaging Configuration	36pcs/Pallet, 936pcs/40HQ Container

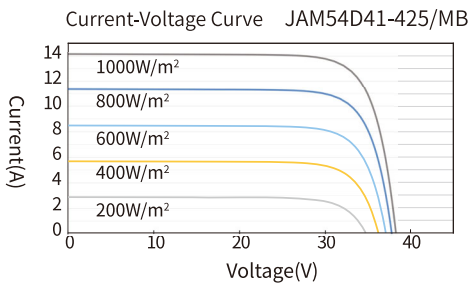
Remark: customized frame color and cable length available upon request

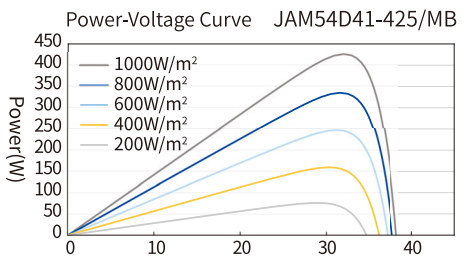
ELECTRICAL PARAMETERS AT STC

TYPE	JAM54D41 -420/MB	JAM54D41 -425/MB	JAM54D41 -430/MB	JAM54D41 -435/MB	JAM54D41 -440/MB	JAM54D41 -445/MB
Rated Maximum Power(Pmax) [W]	420	425	430	435	440	445
Open Circuit Voltage (Voc) [V]	38.28	38.56	38.84	39.11	39.38	39.65
Maximum Power Voltage(Vmp) [V]	32.38	32.64	32.88	33.13	33.37	33.64
Short Circuit Current(Isc) [A]	13.65	13.70	13.75	13.80	13.85	13.90
Maximum Power Current(Imp) [A]	12.97	13.02	13.08	13.13	13.18	13.23
Module Efficiency [%]	21.5	21.8	22.0	22.3	22.5	22.8
Power Tolerance	0~+3%					
Temperature Coefficient of Isc(α_Isc)	+0.045%/°C					
Temperature Coefficient of Voc (β_Voc)	-0.250%/°C					
Temperature Coefficient of Pmax(γ_Pmp)	-0.290%/°C					
STC	Irradiance 1000W/m², cell temperature 25°C, AM1.5G					

Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer.
They only serve for comparison among different module types.

CHARACTERISTICS





ELECTRICAL CHARACTERISTICS WITH 10% SOLAR IRRADIATION RATIO

TYPE	JAM54D41 -420/MB	JAM54D41 -425/MB	JAM54D41 -430/MB	JAM54D41 -435/MB	JAM54D41 -440/MB	JAM54D41 -445/MB
Rated Max Power(Pmax) [W]	454	459	464	470	475	481
Open Circuit Voltage(Voc) [V]	38.28	38.56	38.84	39.11	39.38	39.65
Max Power Voltage(Vmp) [V]	32.38	32.64	32.88	33.13	33.37	33.64
Short Circuit Current(Isc) [A]	14.74	14.80	14.85	14.90	14.96	15.01
Max Power Current(Imp) [A]	14.01	14.06	14.12	14.18	14.24	14.29
Irradiation Ratio (rear/front)			10%			

OPERATING CONDITIONS

Maximum System Voltage	1500V DC
Operating Temperature	-40°C~+85°C
Maximum Series Fuse Rating	30A
Maximum Static Load, Front	5400Pa(112 lb/ft²)
Maximum Static Load, Back	2400Pa(50 lb/ft²)
NOCT	45±2°C
Bifaciality	80%±10%
Safety Class	Class II
Fire Performance	UL Type 38/Class C

JA SOLAR

Headquarters No. 8 Building, Nuode Center, No.1 Courtyard, East Auto Museum Road, Fengtai District, Beijing

Tel: +86 10 6361 1888 Fax: +86 10 6361 1999

E-mail: sales@jasolar.com marketing@jasolar.com www.jasolar.com

Version No. : Global-EN-20241105A

ENPHASE

DATA SHEET

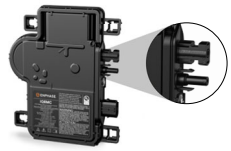
IQ8MC Microinverter

Our newest IQ8 Series Microinverters are the industry's first microgrid-forming*, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC), which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55-nm technology with high-speed digital logic and has superfast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.

Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the IQ Battery, IQ Gateway, and the Enphase App monitoring and analysis software.

Enphase 25 year limited warranty

IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



Connect PV modules quickly and easily to the IQ8 Series Microinverters that have integrated MC4 connectors.

UL CERTIFIED SAFETY

IQ8 Series Microinverters are UL Listed as PV rapid shutdown equipment and conforms with various regulations when installed according to the manufacturer's instructions.

Easy to install

- Lightweight and compact with plug-and-play connectors
- Power line communication (PLC) between components
- Faster installation with simple two-wire cabling

High productivity and reliability

- Produces power even when the grid is down*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming

- Complies with the latest advanced grid support
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) and IEEE 1547:2018 (UL 1741-SB)

NOTE:

- IQ8 Microinverters cannot be mixed together with previous generations of Enphase microinverters (IQ7 Series, IQ6 Series, and so on) in the same system.
- IQ Microinverters ship with default settings that meet North America's IEEE 1547 interconnection standard requirements. Region-specific adjustments may be requested by an Authority Having Jurisdiction (AHJ) or utility representative. An IQ Gateway is required to make these changes during installation.

*Meets UL 1741 only when installed with IQ System Controller 2 or 3.

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

IQ8MC Microinverter

INPUT DATA (DC)	UNITS	IQ8MC-72-M-US
Commonly used module pairings [1]	W	260–460
Module compatibility	—	To meet compatibility, PV modules must be within the following max. input DC voltage and max. module I_{sc}. Module compatibility can be checked at https://enphase.com/installers/microinverters/calculator.
MPPT voltage range	V	25–45
Operating range	V	18–58
Min./Max. start voltage	V	22/58
Max. input DC voltage	V	60
Max. continuous operating DC current	A	14
Max. input DC short-circuit current	A	25
Max. module I_{sc}	A	20
Overvoltage class DC port	—	II
DC port backfeed current	mA	0
PV array configuration	—	Ungrounded array; no additional DC side protection required; AC side protection requires max 20 A per branch circuit

OUTPUT DATA (AC)	UNITS	IQ8MC-72-M-US @240 VAC	IQ8MC-72-M-US @208 VAC
Peak output power	VA	330	315
Max. continuous output power	VA	320	310
Nominal grid voltage (L-L)	V	240, split-phase (L-L), 180°	208, single-phase (L-L), 120°
Min./Max. grid voltage [2]	V	211–264	183–229
Max. continuous output current	A	1.33	1.49
Nominal frequency	Hz	60	
Extended frequency range	Hz	47–68	
AC short circuit fault current over three cycles	Arms	2.70	
Max. units per 20 A (L-L) branch circuit [3]	—	12	10
Total harmonic distortion	%	<5	
Overvoltage class AC port	—	III	
AC port backfeed current	mA	18	
Power factor setting	—	1.0	
Grid-tied power factor (adjustable)	—	0.85 leading ... 0.85 lagging	
Peak efficiency	%	97.4	97.2
CEC weighted efficiency	%	97.0	96.5
Nighttime power consumption	mW	33	25

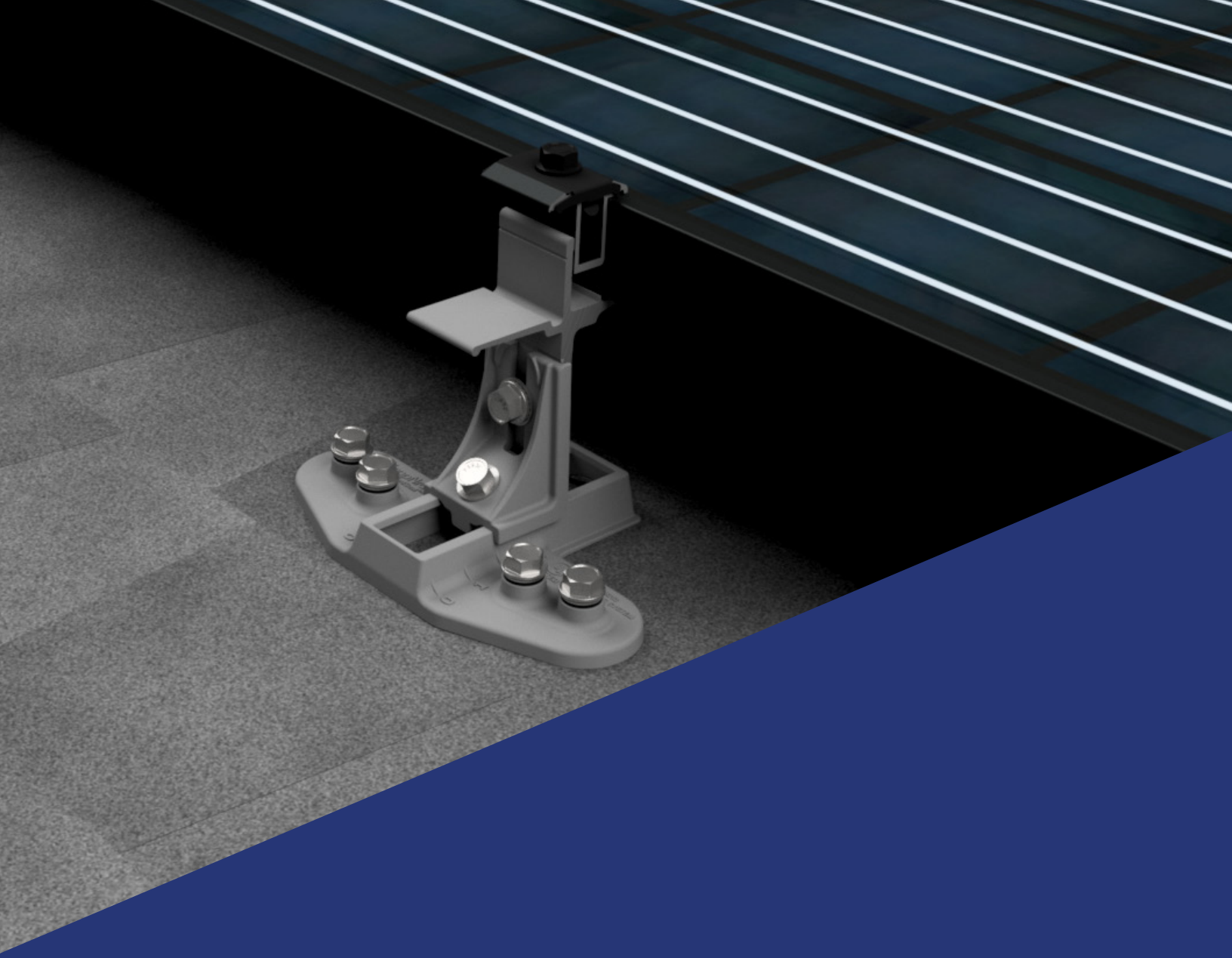
MECHANICAL DATA	UNITS
Ambient temperature range	-40°C to 65°C (-40°F to 149°F)
Relative humidity range	4% to 100% (condensing)
DC connector type	Stäubli MC4
Dimensions (H × W × D); Weight	212 mm (8.3") × 175 mm (6.9") × 30.2 mm (1.2"); 1.1 kg (2.43 lbs)
Cooling	Natural convection – no fans
Approved for wet locations; Pollution degree	Yes; PD3
Enclosure	Class II double-insulated, corrosion-resistant polymeric enclosure
Environ. category; UV exposure rating	NEMA Type 6; outdoor

COMPLIANCE	
Certifications	CA Rule 21 (UL 1741-SA), UL 62109-1, IEEE 1547:2018 (UL 1741-SB), FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01. This product is UL Listed as PV rapid shutdown equipment and conforms with NEC 2014, NEC 2017, NEC 2020, and NEC 2023 section 690[illegible] and C22.1-2018 Rule 64-218 rapid shutdown of PV systems for AC and DC conductors when installed according to the manufacturer's instruct[illegible]

(1) No enforced DC/AC ratio.
(2) Nominal voltage range can be extended beyond nominal if required by the utility.
(3) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

Revision history

REVISION	DATE	DESCRIPTION
DSH-00049-4.0	February 2024	Added information about IEEE 1547 interconnection standard requirements.
DSH-00049-3.0	October 2023	Included NEC 2023 specification in the “Compliance” section.
DSH-00049-2.0	September 2023	Updated module compatibility information.
DSH-00049-1.0	May 2023	Preliminary release.



SnapNrack™

Solar Mounting Solutions

TopSpeed® Mounting System

Installation Manual

c UL us 2703 Listed — PV Mounting System

snapnrack.com

An Intro to SnapNrack TopSpeed® with SpeedSeal™ and SpeedSeal+™ Technologies

snapnrack.com

SnapNrack's primary goal is to provide our customers with the lowest possible installed cost for mounting residential solar modules, without compromising the values the industry has come to expect: ease of use, quality, aesthetics, and safety. Designing with this goal in mind, we are proud to present the SnapNrack TopSpeed mounting system.

Note on Modules and other 3rd Party products used with SnapNrack: Review module and any 3rd party manufacturer's documentation for compatability and compliance with warranty terms and conditions

SnapNrack has created a ground breaking system combining great features and benefits we are known for, with our TopSpeed System and the most up to date technical innovation in the industry, thus reducing parts while driving down labor, material, and total installation costs. Designed to work with standard module frames, achieving UL 2703 Listing for Grounding/Bonding and Fire Classification, providing integrated wire management, aesthetics and our industry leading "Snap-In" features, SnapNrack is providing the simplest and most cost effective solar mounting solution on the market with TopSpeed including integrated fasteners and SpeedSeal / SpeedSeal+ Technology.

Advantages of Installing the SnapNrack TopSpeed System

Modules are installed with a minimum number of parts

This elimination of parts leads to a lower estimated system cost for both the installer and home owner.

Built in Wire Management and Aesthetics

Extensive wire management solutions have been designed specifically for the system that adapts to multiple possible mounting positions.

The system is designed to be aesthetically pleasing and sturdy with a skirt that provides considerable strength at the leading edge and an elegant look for those seeking high end looking systems.

SnapNrack TopSpeed includes SpeedSeal Technology

SpeedSeal™ Technology features integrated flashing which accepts RTV sealant. This eliminates loosening layers of composition and removing nails with a pry bar, leading to less damage to the roof, minimized potential roof leaks, and much faster installs.

SnapNrack TopSpeed also includes SpeedSeal+ Technology

SpeedSeal+ Technology features an integrated chemical flashing with pre-installed sealant. This offers the same benefits as SpeedSeal while improving the installation efficiency by eliminating the need for RTV sealants.

TopSpeed Mounts attach Directly to the Decking

TopSpeed attaches to the roof sheathing and does not require rafter attachment. Simply attaching to the roof sheathing removes the requirement for finding rafters and drilling pilot holes, creating potential rafter misses that can cause leaks.

Table of Contents

Project Plans

Installation Steps

Certification Details

SnapNrack TopSpeed® mounting system has been evaluated by Underwriters Laboratories (UL) and Listed to UL Standard 2703 for Grounding/Bonding, and Fire Classification (UL File E359313).

Grounding/Bonding

Only specific components have been evaluated for bonding, and are identified as being in the ground path. The TopSpeed components that have been evaluated for bonding are the Mount Assembly (Mount Clamp Top, Module Clamp Tower, Angle Bracket), Clamp Assembly, Universal Skirt, Ground Lugs, and Smart Clips.

Universal Skirt Spacers, Mount Channel Nut, and Mount Base are not required to be bonded to the system based on the exceptions in clause 9.1 of UL 2703 1st Ed. Wire management clips are utilized to route conductors away from these components and must be assembled according to the instructions.

This mounting system may be used to ground and/or mount a PV module complying with UL 1703 or UL 61703 only when the specific module has been evaluated for grounding and/or mounting in compliance with the included instructions. See Appendix A for the list of modules tested for use with the TopSpeed System for integrated grounding.

Ground Lugs have been evaluated to both UL 467 and UL 2703 Listing requirements. The following ground lugs have been approved for use: SnapNrack model 242-92202, and Ilsco models GBL-4DBT and SGB-4.

The following components have been evaluated for bonding as the fault current ground path: TopSpeed Mount Assembly, (Mount Clamp Top, Module Clamp Tower, Angle Bracket), Clamp Assembly, Wire Management Clips, and Ground Lugs. In order to maintain the Listing for bonding, wire management clips must be assembled to route conductors away from parts that have not been evaluated for bonding.

A Listed (QIMS) and Unlisted Component (KDER3) grounding lug, SnapNrack part no. 242-92202, is attached to the module frame flange for the normal attachment of a Grounding Electrode Conductor, which provides bonding within the system and eventual connection to a Grounding Electrode, as required by the U.S. NEC. Details of part no. 242-92202 can be found in Volume 1, Section 4, and Volume 2, Section 2. When this method is used, the grounding symbol is stamped onto the body of the ground lug to identify the grounding terminal.

An alternate method of grounding, a UL Listed (KDER and QIMS) grounding lug, Ilsco (UL Files E34440 and E354420) model SGB-4 is attached to the module frame flange. When this method is used, the grounding terminal is identified by the green colored screws of the lug.

An alternate method of grounding, a UL Listed (KDER and QIMS) grounding lug, Ilsco (UL Files E34440 and E354420) model GBL-4BDT is attached to the module frame flange through the specified hardware and torque values. When this method is used, the grounding terminal is identified by the green colored set screw of the lug.

An alternate method of grounding, Enphase R/C (QIKH2)(QIMS2) model M250, M215 & C250 is bonded to the Listed PV module frame by the Enphase R/C (QIMS2) Model EFM-XXMM anodization piercing mounting/clamping kit. The total roof-mounted PV system is bonded (modules and microinverters) together and the assembly is bonded to ground through the Enphase R/C (QIMS2) Engage Cables; Model ETXX-240, ETXX-208 or ETXX-277, when properly grounded at the service entrance.
R/C (QIMS2), Dynoraxx (UL File E357716) photovoltaic bonding device cat. no. Dynobond is an optional component that may be used with this system. The Dynobond device has been evaluated to provide module to module bonding. The Dynobond device attaches to the frame flange of adjacent modules.
Listed (QIMS), SnapNrack MLPE Frame Attachment Kit model 242-02151 has been investigated to approved MLPE device back plates to frames of modules.

Fire

SnapNrack TopSpeed® has been investigated for a Class A System Fire Classification for Steep-Sloped and low sloped roofs with Type 1, Type 2, Type 29, and Type 38 modules. Because the system was tested at 5 inches above the test roof fixture, TopSpeed can be installed without any height restrictions due to System Fire Classification. See Appendix A for potential module-specific height restrictions due to module temperature. The SkirtRail is considered an optional component with respect to Fire Classification for Type 1, Type 2 and Type 29 modules, as SnapNrack TopSpeed maintains the same Fire Classification Rating both with and without the SkirtRail.

Type 38 modules require the SkirtRail to comply with fire rating requirements for the racking system.

NOTE: Modules with an asterisk* have a fire rating that is different from Type 1, Type 2, Type 29, or Type 38. SNR systems have only been evaluated for use with Type 1, Type 2, Type 29, or Type 38 modules. Modules with a different fire type rating should be considered to not have been evaluated for use with SNR systems with respect to a system fire rating.

Inspection Practices

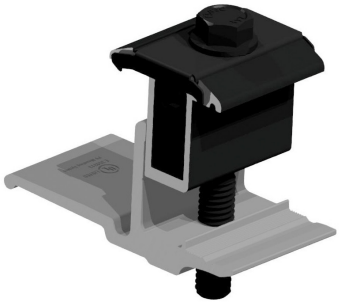
SnapNrack recommends a periodic re-inspection of the completed installation for loose components, loose fasteners, and any corrosion, such that if found, the affected components are to be immediately replaced.

Component Details

TopSpeed® Structural Components

TopSpeed Mount

SnapNrack TopSpeed Mount assembly including SpeedSeal™ or SpeedSeal+™ Base, Clamp Top, and (4) SnapNrack #14 SS Wood Screws with 1/2" Hex Head.



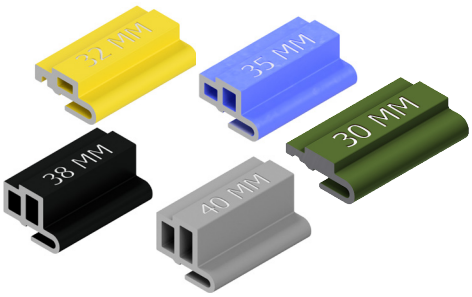
TopSpeed Clamp

SnapNrack TopSpeed Clamp assembly including including Link bottom, Link top, and springs.

Universal Skirt

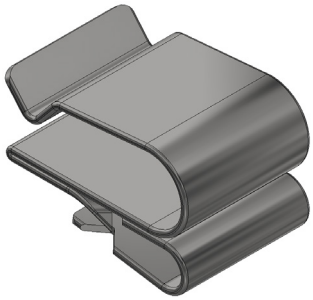
SnapNrack Universal Skirt in double portrait or single landscape lengths.

Wire Managements Components



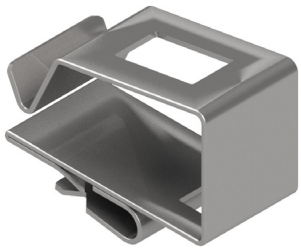
Skirt Spacers

SnapNrack Universal Skirt Spacer for 40mm, 38mm, 35mm, 32mm, and 30mm modules.



Smart Clip

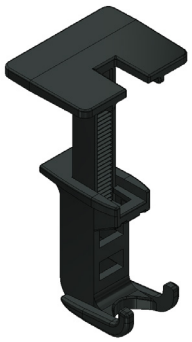
Module frame cable clip, holds two PV wires or Enphase IQ-Cables.



Smart Clip XL

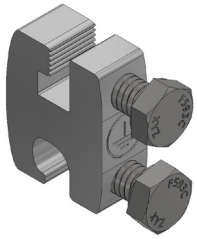
Module frame cable clip, holds six PV wires or four Enphase IQ-Cable.

Grounding/MLPE Components



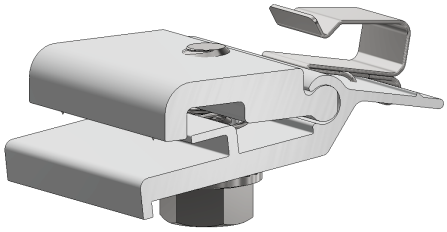
Wire Saver

Designed to secure conductors that become loose and hang below the array, holds one conductor.



Ground Lug

SnapNrack Ground Lug assembly used for attaching the Equipment Grounding Conductor on to one module or any TopSpeed Mount per array.



MLPE Frame Attachment Kit

Attaches MLPEs (Module Level Performance Enhancers) and other related equipment to the module frame.

Hardware Torque Specifications

The recommended torque to be applied to components for proper assembly and bonding are as follows:

Hardware Description	Torque Specification
All TopSpeed® ½" bolts; System Leveling Bolt, TopSpeed Mount Clamping Bolt, Clamp Bolt	16 ft-lb [21.7 N.m]
Ground Lug model 242-92202 to Module Frame or anywhere on the TopSpeed Mount (excluding the Base), and Ground Lug model 242-92202 to Grounding Electrode Conductor (6-10 Sol.)	8 ft-lb [10.8 N.m]
MLPE Frame Attachment Kit, MLPE Rail Attachment Kit	10 ft-lb [13.6 N.m]
SolarEdge Frame Mounted Microinverter Bracket to Module Frame	11 ft-lb [14.9 N.m]
Enphase Frame Mounted Microinverter Bracket to Module Frame	13 ft-lb [17.6 N.m]
Ground Lug model SGB-4 to module	75 in-lb [8.5 N.m]
Ground Lug model SGB-4 to Grounding Electrode Conductor (4-14 Sol. or Str.)	35 in-lb [4.0 N.m]
Ground Lug model GBL-4DBT to module	35 in-lb [4.0 N.m]
Ground Lug model GBL-4DBT to Grounding Electrode Conductor (10-14 Sol. or Str.)	20 in-lb [2.3 N.m]
Ground Lug model GBL-4DBT to Grounding Electrode Conductor (8 Sol. or Str.)	25 in-lb [2.8 N.m]
Ground Lug model GBL-4DBT to Grounding Electrode Conductor (4-6 Sol. or Str.)	35 in-lb [4.0 N.m]

Pre-Installation Requirements

Site Survey

- Measure the roof surfaces and develop an accurate drawing, including any obstacles such as chimneys and roof vents.
- If plans for the roof structure are available, verify that the plans match the final structure.
- Identify any roof access or setback areas as required by the local AHJ.
- Identify any construction issues that may complicate the process of locating rafters from the roof surface.
- If you find structural problems such as termite damage or cracked rafters that may compromise the structure's integrity consult a structural engineer.

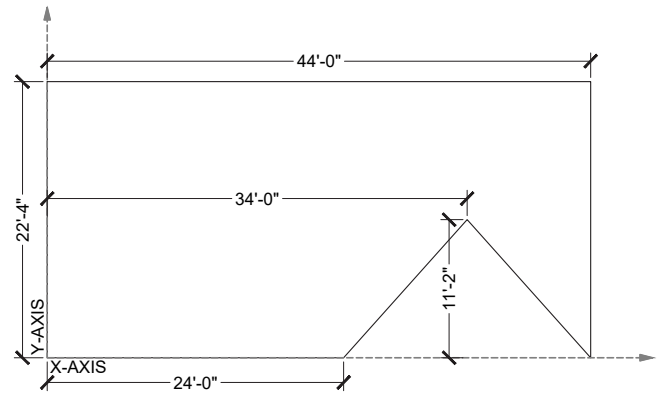
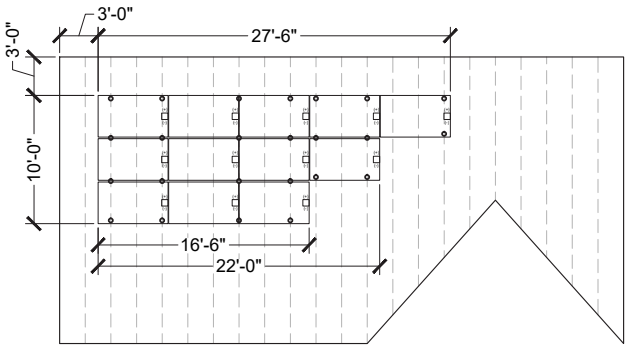


Image note: X-Axis described in this manual is cross-slope on the roof, Y-Axis is in line with the roof slope.

Design Guidance

- PV Designers should account for the 0.75 inch [19 mm] spacing between rows and columns of modules when creating the layout.
- Determine site conditions for calculating the engineering values, confirm site conditions and code versions comply with local AHJ requirements.
- Reference site conditions and system specifications in TopSpeed® Structural Engineering Report to determine the number of attachments per module side.
- Insert SnapNrack installation details into design plan set specific to the project requirements.



Best Practice:

If environmental load conditions require three TopSpeed attachments per module side, draw roof attachment locations on plan set layout based on TopSpeed Structural Engineering. This is only required when modules share attachments. Refer to SnapNrack TopSpeed Structural Engineering for details.

- Identify homerun and Junction Box locations based on rooftop wiring requirements.
- Mark distance from array edge to identifiable roof feature in x and y axes.

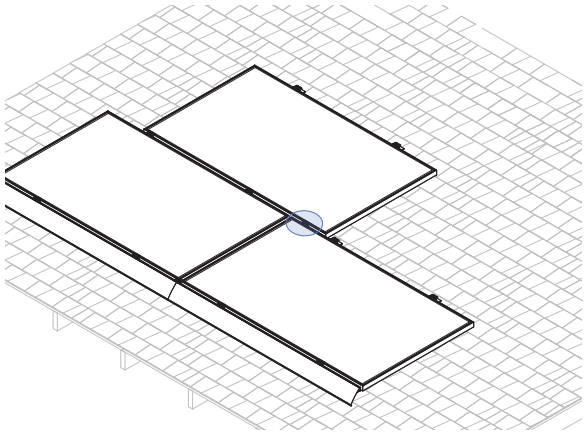


Image note: This four module array is installed in a high load configuration with three attachments per side where two modules share attachments. See highlighted area. As shown, three attachments are never required at the skirt or the top of the array.

Safety Guidance

- Always wear appropriate OSHA approved safety equipment when at active construction site.
- Appropriate fall protection or prevention gear should be used. Always use extreme caution when near the edge of a roof.
- Use appropriate ladder safety equipment when accessing the roof from ground level.

Safety Guidance Continued

- Safety equipment should be checked periodically for wear and quality issues.
- Always wear proper eye protection when required.

TopSpeed® Mount to Module Frame Installation

Required Tools

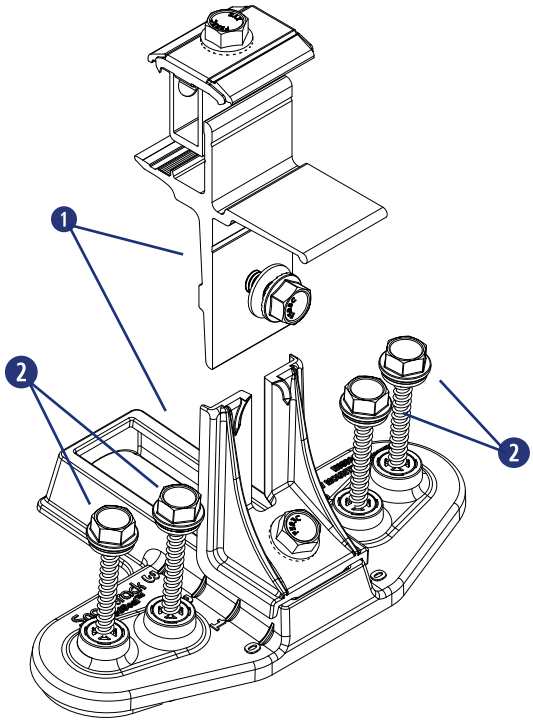
- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2” or 13 mm Socket

Materials Included - TopSpeed System with SpeedSeal™ / SpeedSeal+™ Technologies

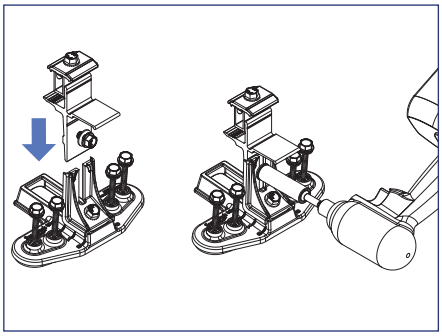
1. (1) SnapNrack TopSpeed Mount
2. (4) SnapNrack #14 Wood Screw with 1/2" Hex Head & sealing washer

Best Practice:

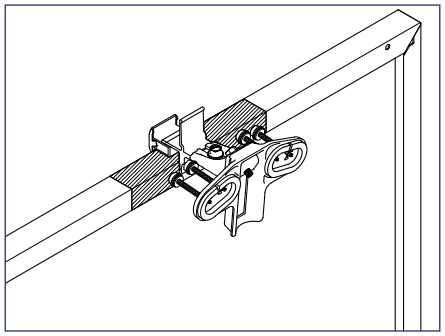
Attach all TopSpeed mounts as the modules are being prepped with MLPEs on the ground. Attach Mounts before attaching MLPEs to simplify wire management.



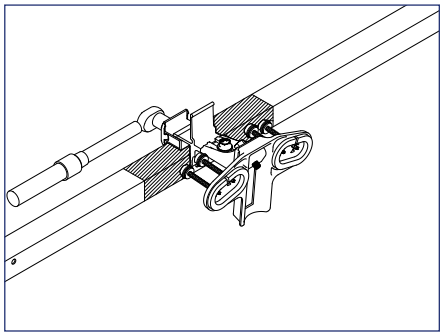
INSTALLATION INSTRUCTIONS



1) Assemble all TopSpeed Mounts required for the installation. Slide the clamp tower assembly into the angle bracket riser of the Base and tighten the leveling bolt to 16 ft-lbs [21.7 N.m].



2) Position TopSpeed Mount clamp on the module frame within the module manufacturers required clamping zone.



3) Tighten 1/2" clamping bolt to 16 ft-lb [21.7 N.m]. A minimum of 2 Mounts are required per module on one side.

Install Note:

For high load conditions, add a third attachment in the middle of the module frame. Refer to SnapNrack TopSpeed® Structural Engine[illegible] details.

TopSpeed® Universal Skirt Layout

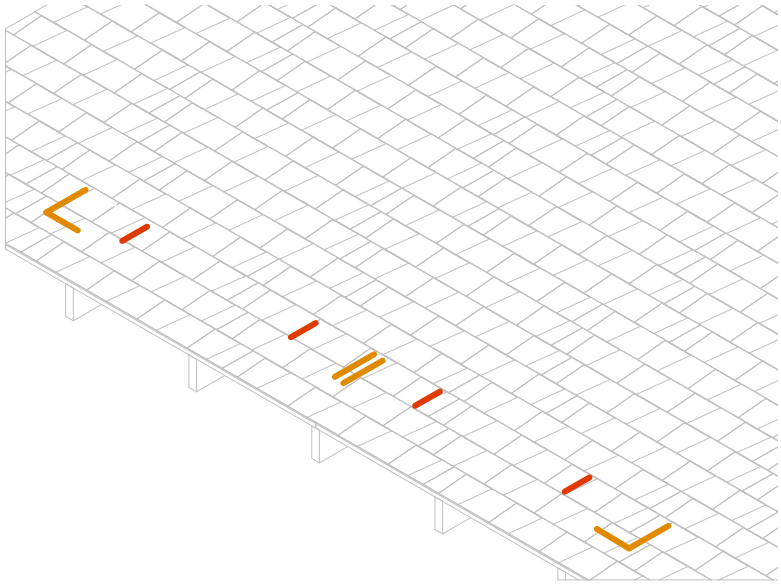
Required Tools

- Roof Marking Crayon or Chalk
- Tape Measure

LAYOUT INSTRUCTIONS

1) Use a tape measure to verify that all modules will fit properly on the roof surface.

2) On the roof, draw the layout for the skirt installation including module gaps (recommended 0.75 inch [19 mm] gap), bottom corners, and locations of the two TopSpeed® attachments per module that clamp to the skirt. Three attachments per module is never required at the skirt.



Install Note:

If environmental load conditions require three TopSpeed attachments per module side, this is only required when modules share attachments (i.e. Mounts are shared between module rows).

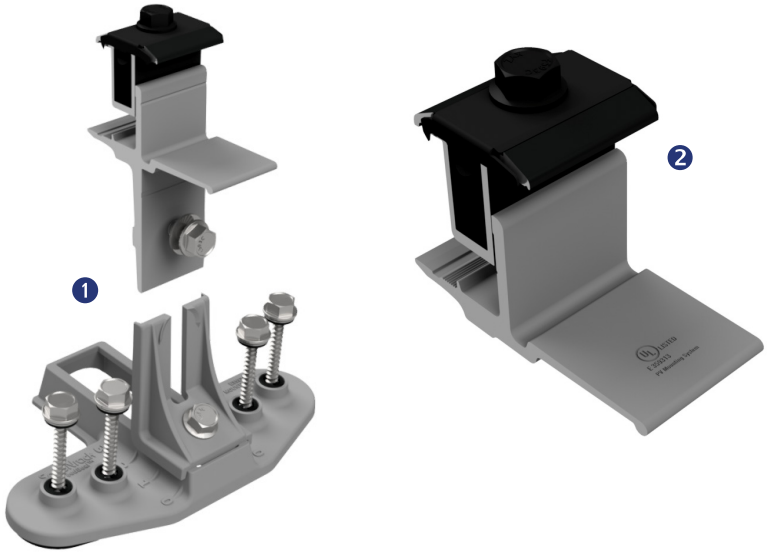
TopSpeed® Mount: Skirt Installation

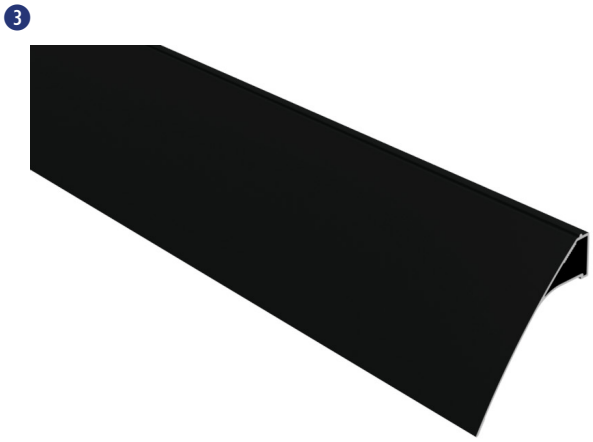
Required Tools

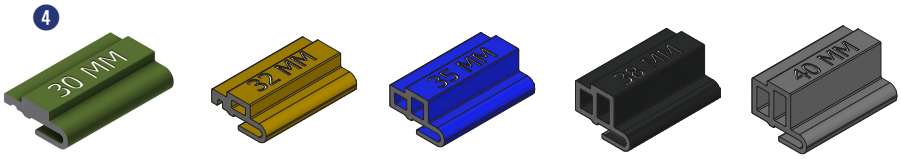
- Socket Wrench/Impact Driver
- Torque Wrench
- 1/2” or 13 mm Socket
- Roofing sealant

Materials Included - TopSpeed Mount (SpeedSeal™ or SpeedSeal+™)

1. (1) TopSpeed Mount
2. (1) TopSpeed Clamp
3. (1) Universal Skirt
4. (1) Universal Skirt Spacers
5. (1) *OPTIONAL* - Universal Link







Application Note:

SpeedSeal+ Mount:

Compatible roofing substrates and minimum roof pitches: Asphalt shingle- 9.5°

Low slope roofs including metal, rolled composition, EPDM, TPO, PVC, PolyPropylene, and SMS modified bitumen. Ensure positive drainage with no chance of standing water.

Ensure roof construction and pitch meet minimum building code requirements.

Temperature Range:

Installation: 0°F - 150°F (-18°C - 66°C)

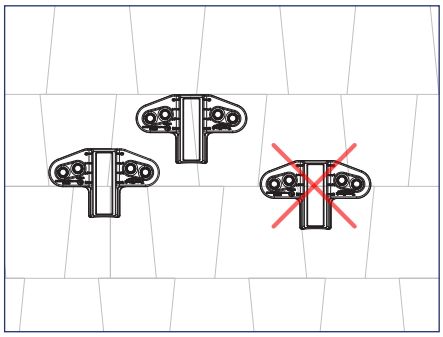
Service: -40°F - 200°F (-40°C - 93°C)

For installation temperatures below 32°F (0°C) it is recommended that the butyl is warmed to more easily conform to the roof texture.

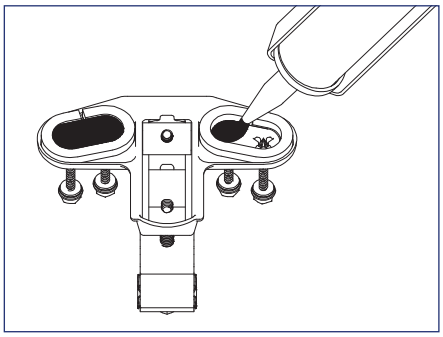
TopSpeed® Mount Skirt Installation

snapnrack.com

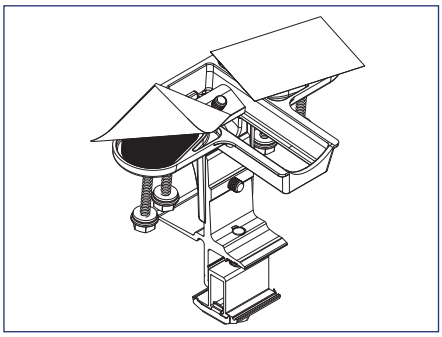
INSTALLATION INSTRUCTIONS



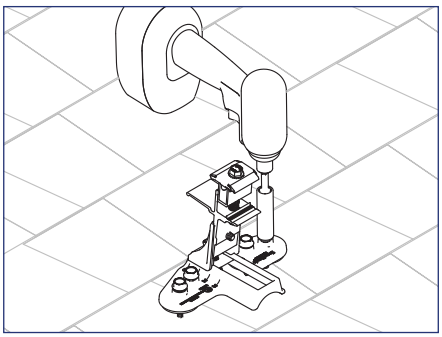
1) Install TopSpeed Mounts at locations drawn during the skirt layout. Mounts must be installed entirely on one course of composition.



2a) For the SpeedSeal™ Base, fill both cavities on bottom of TopSpeed™ Mount created by SpeedSeal™ gasket with roof sealant to ensure a watertight seal.



2b) For the SpeedSeal+™ Base, remove the protective backing from the butyl pads on the bottom of the mount before installation to ensure a watertight seal.



3) Attach TopSpeed Mount to roof using the (4) SnapNrack #14 Wood Screws with 1/2" hex head that are captured in the Mount.

Install Note:

SpeedSeal Mount: Roof sealant should be expelled from both vents of the TopSpeed Mount as it is installed to assure the proper amount of roof sealant has been applied. If sealant is not expelled from all four vents, remove TopSpeed Mount, add more sealant to the cavity, then reinstall.

Best Practice:

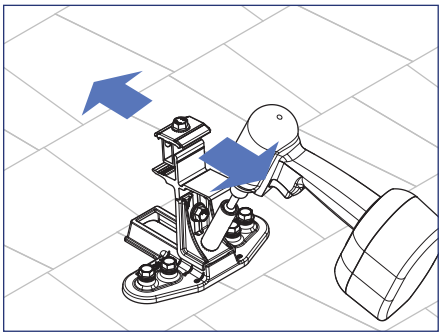
SpeedSeal+ Mount: For best results, install on dry, clean surfaces. Remove any moisture, ice, dirt, or debris from the roof surface before installation.

Install Note:

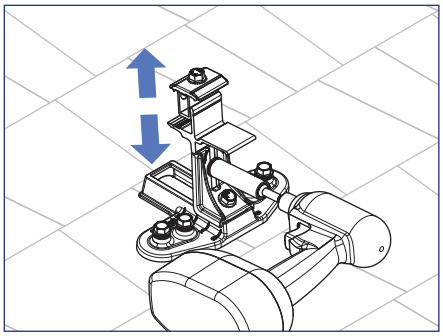
SpeedSeal+ Mount: If possible, avoid installation directly over shingle joints/ seams. Otherwise, fill the seam with sealant prior to installation.

IMPORTANT: Do not install over shingle steps greater than 1/8" [3mm] tall.

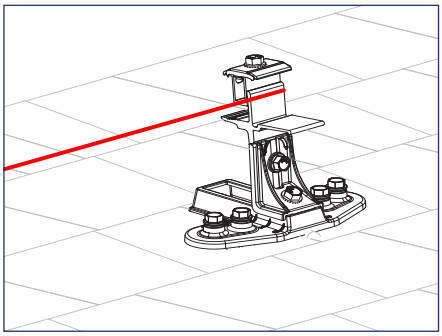
Double check attachment positions before installing screws, butyl is difficult to move once tightened.



4) Loosen Course Adjustment bolt and adjust end Mounts up or down until aligned with bottom edge of array as marked on the roof, then tighten the Course Adjustment bolt.



5) To set the TopSpeed Mount level loosen the Leveling bolt and move the clamp up or down, then tighten the Leveling bolt and torque to 16 ft-lb [21.7 N.m].



6) Pull string line tight from one corner mount to opposite corner mount to align and level all TopSpeed Mounts between the end mounts.

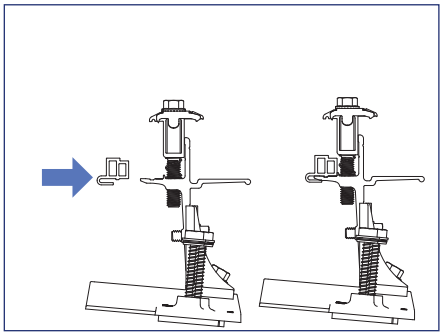
Install Note:

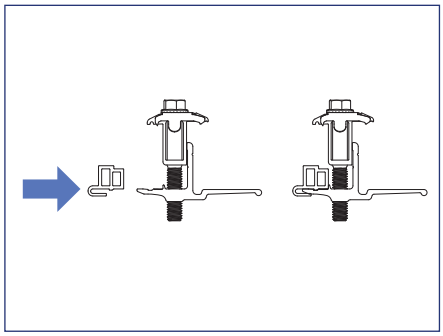
Use the string line alignment f on Mounts to level and align th Mounts.

APPROVED
Montgomery County
Historic Preservation Commission

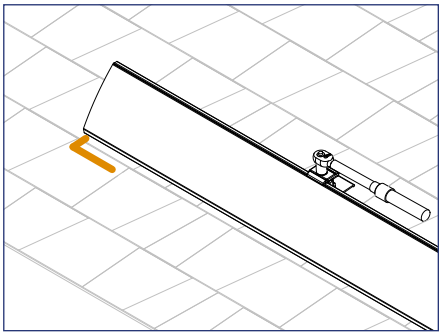
REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

INSTALLATION INSTRUCTIONS

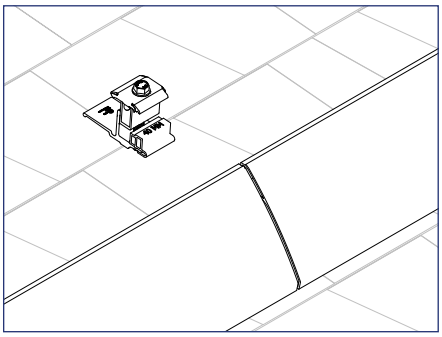


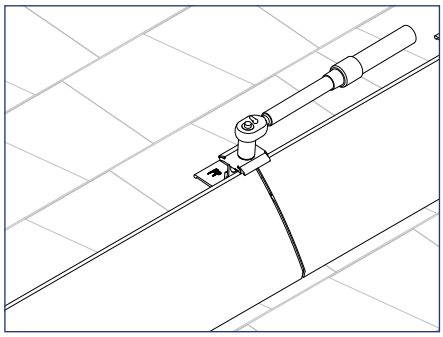


7) Universal Spacers will need to be added to Mounts and Clamps where Skirt will be installed.



8) Install Universal Skirt by holding the skirt in Mount, sliding Skirt to align with array layout marks, and clamping skirt into mount.





9) Use TopSpeed Clamps to connect multiple lengths of Array Skirt.

Install Note:
Optionally use Universal Links to connect lengths of Array Skirt.

Wire Management

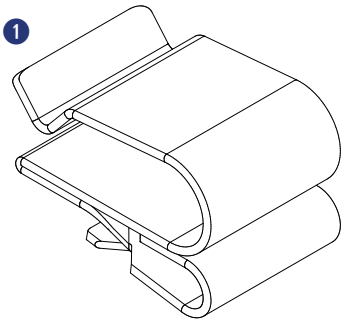
Required Tools

- Socket Wrench
- Torque Wrench
- 1/2” or 13 mm Socket
- Electrician Tools

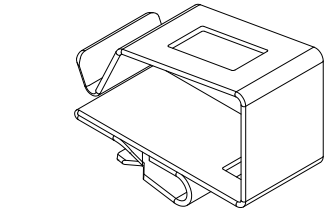
Materials Included

Wire Management

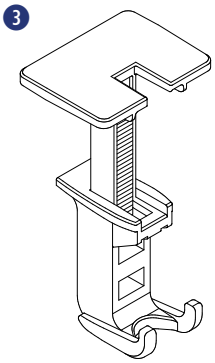
1. (1) Smart Clip [(2) PV Wire, (1) Enphase IQ Cable]
2. (1) Smart Clip XL [(6) PV Wire, (4) Enphase IQ]
3. (1) Wire Saver [(1) PV Wire]



Smart Clip



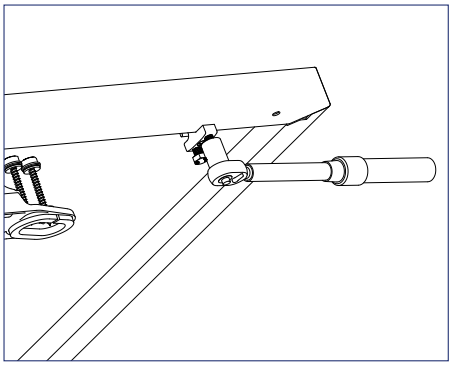
Smart Clip XL



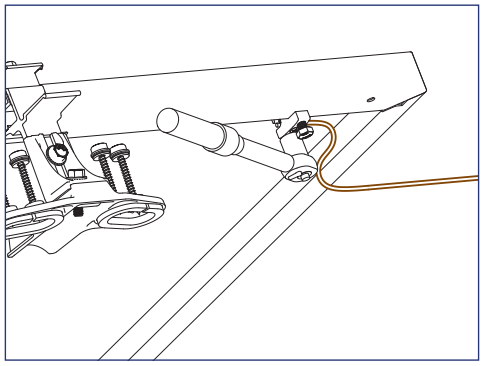
Wire Saver

INSTALLATION INSTRUCTIONS - GROUND LUG

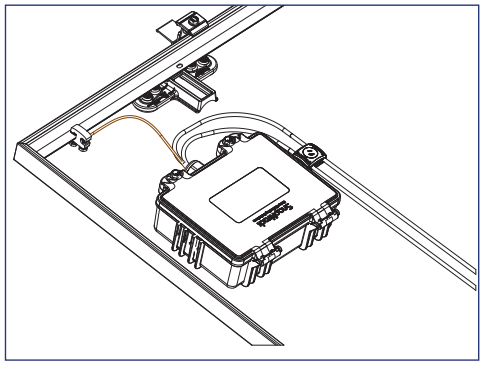
The SnapNrack Ground Lug to be used in accordance with the National Electric Code, ANSI/NFPA 70.



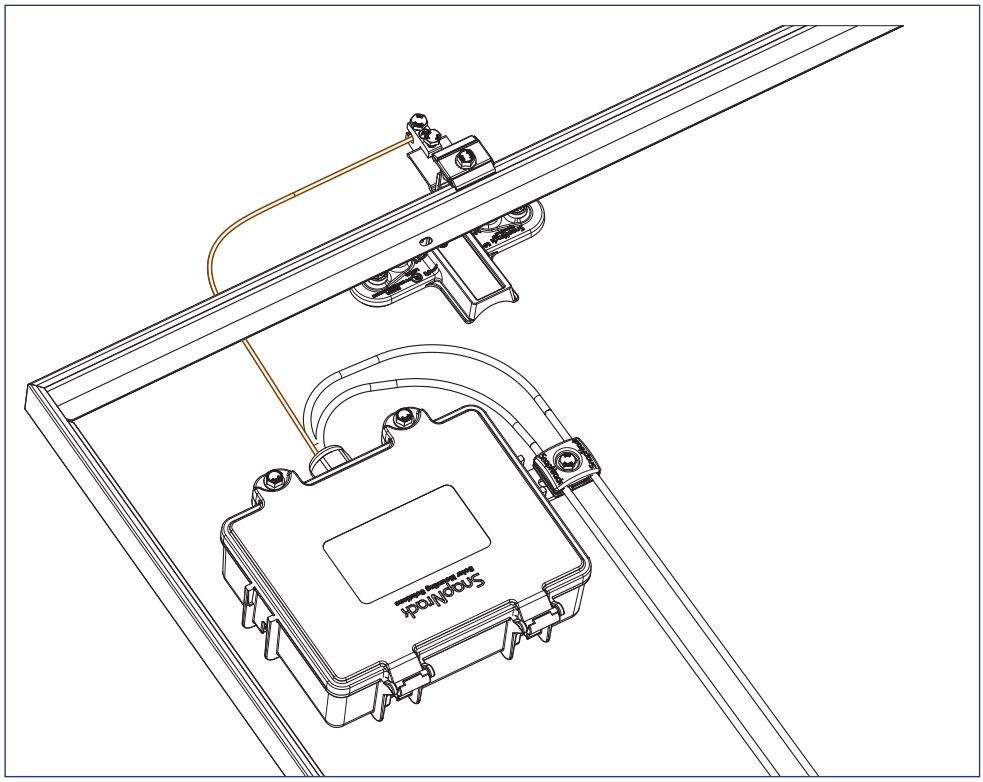
1) Ground Lug (242-92202) can be attached anywhere along the module frame or any TopSpeed® Mount near the Junction Box. Torque module clamping bolt to 8 ft-lb [10.8 N.m].



2) Run 10 – 6 AWG, solid, bare copper GEC into Ground Lug channel, torque wire clamping bolt to 8 ft-lb [10.8 N.m].



3) Run bare, solid EGC from Ground Lug R to Junction Box, bond bare EGC to stranded EGC in Junction Box. For details on installing the Junction Box reference the **Junction Box Installation Manual.**



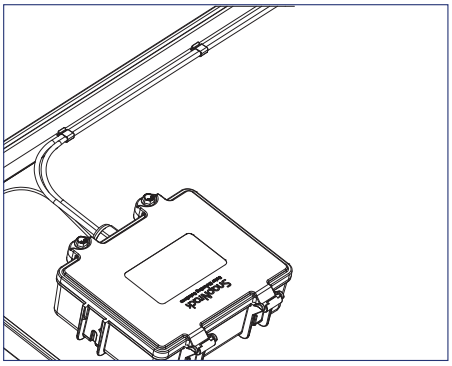
4) Optionally; Install Ground Lug on the Mount Landing Pad at the top of the array. Run bare copper between ground lug and Junction Box.

APPROVED
Montgomery County
Historic Preservation Commission

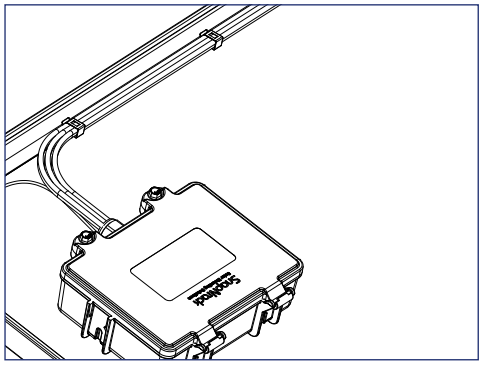
REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

INSTALLATION INSTRUCTIONS - SMART CLIPS

SmartClip and SmartClip XL should be used to route conductors in a neat and workmanlike manner away from all non-bonded components and support the conductors adequately to eliminate potential damage.



1) Use SnapNrack Smart Clip II to manage up two PV wires inside the module frame while prepping out the modules on the ground or installing modules on the roof.



2) Use SnapNrack Smart Clip XL to manage larger bundles of PV wire; up to 6 PV wires per clip

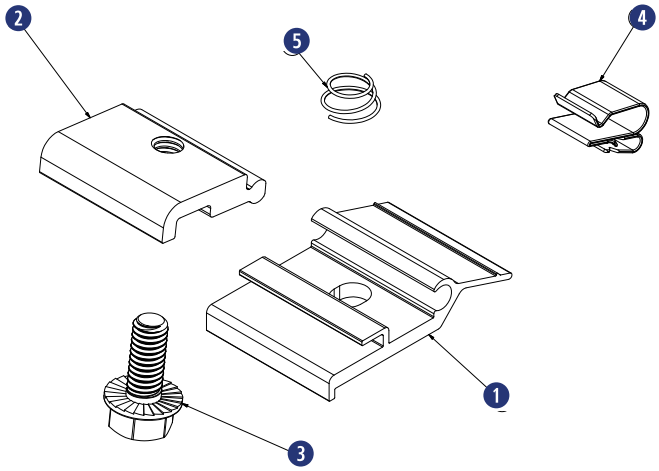
MLPE & RSD Installation

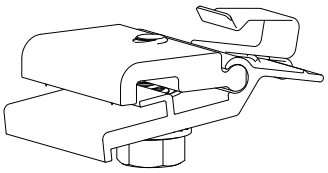
Required Tools

- Socket Wrench
- Torque Wrench
- 1/2” or 13 mm Socket

Materials Included - MLPE Rail Attachment Kit

1. (1) SnapNrack MLPE Frame Attachment Top
2. (1) SnapNrack MLPE Frame Attachment Bottom
3. (1) 5/16”-18 X 3/4” Serrated Flange Bolt SS
4. (1) SnapNrack Smart Clip
5. (1) SnapNrack MLPE Frame Attachment Coil Spring SS

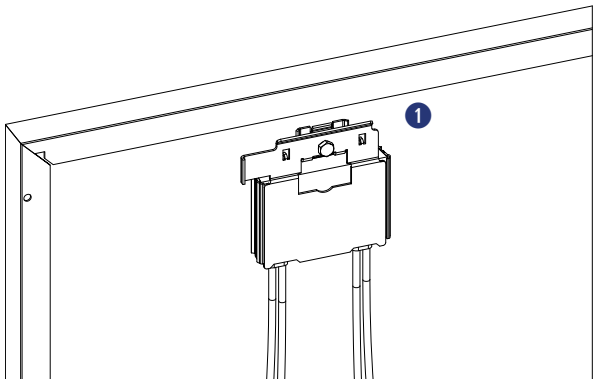




Materials Included

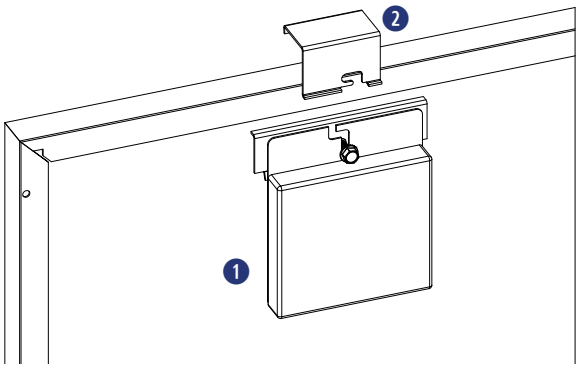
SolarEdge Frame Mount

1. (1) SolarEdge Optimizer w/ Frame-Mounted Module Add-On



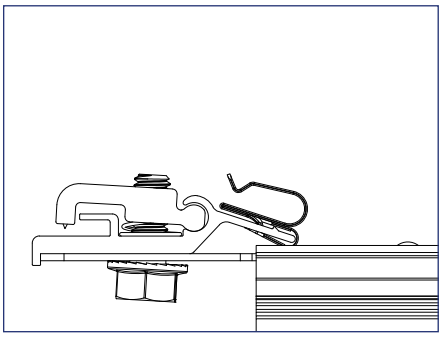
Enphase Frame Mount

1. (1) Enphase Microinverter
2. (1) Enphase Frame Mount

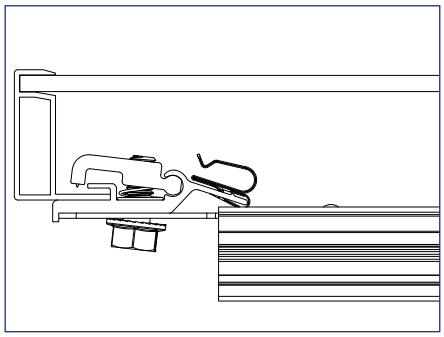


INSTALLATION INSTRUCTIONS - SNAPNRACK MLPE FRAME ATTACHMENT KIT

SnapNrack MLPE Frame Attachment kit are used to attach module level performance enhancing devices, and other devices such an SRD (rapid shutdown device), directly to module frames, and provide integrated grounding/bonding for Devices grounded through metal back plate. (Refer to the list of tested MLPE devices on page 29 of this manual).



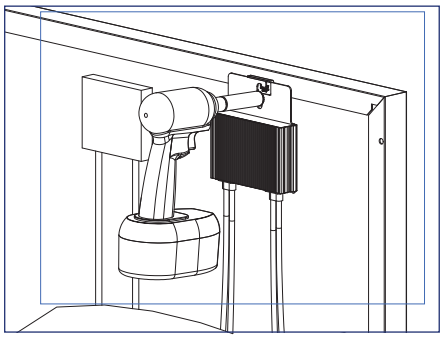
1) Slide the backplate channel of the MLPE device under the MLPE Frame Attachment Kit bolt. The MLPE mounting plate should rest against the MLPE mounting plate backstop on the MLPE Frame Attachment Kit.



2) Position the MLPE Frame Attachment Kit on the module frame flange in a location that will not interfere with mounting system components. The module frame flange should rest against the module flange backstop on the MLPE Frame Attachment Kit.

Install Note:

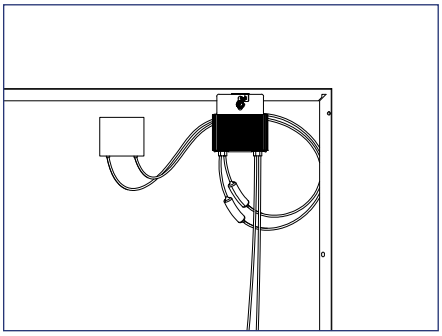
Avoid blocking module frame drainage holes when installing the MLPE Frame Attachment Kit.



3) Tighten the mounting bolt on the MLPE Frame Attachment Kit to 12 ft-lb [16.3 N.m].

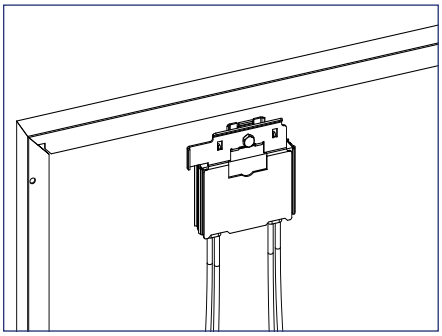
Install Note:

The MLPE Frame Attachment Kit bonds the following components: Module Frame, MLPE backplate and Smart Clip.

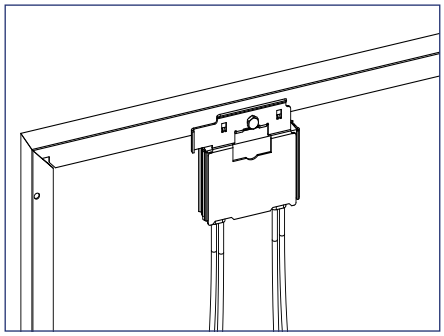


4) Connect the module leads to the input connectors on the MLPE device and manage conductors with the integrated Smart Clip.

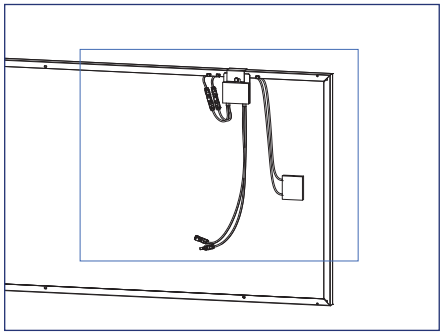
INSTALLATION INSTRUCTIONS - SOLAREDGE FRAME MOUNT



1) Locate the SolarEdge optimizer with Frame-Mounted Module Add-On at a location on the module frame that will not interfere with the TopSpeed® Mounts.



2) Install the optimizer mounting plate onto the module frame and tighten hardware to 11 ft-lbs [14.9 N.m].

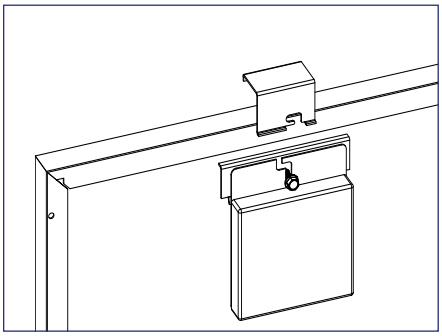


3) Connect the module leads to the input connectors on the optimizer and manage conductors with SnapNrack Smart Clips.

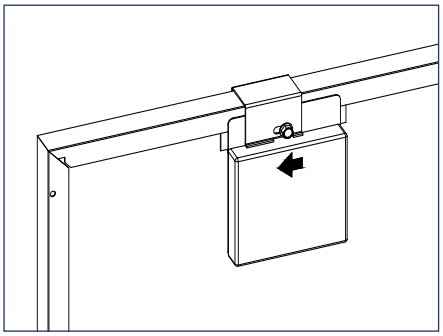
Install Note:

If module is mounted in portrait, install MLPE on long side, short side for landscape.

INSTALLATION INSTRUCTIONS - ENPHASE FRAME MOUNT



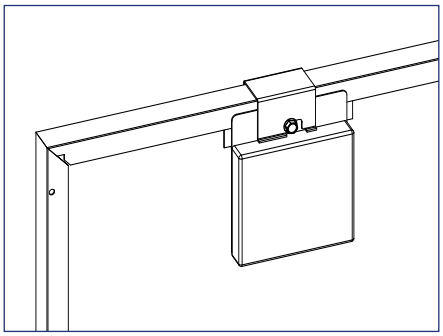
1) Locate the Enphase Frame Mount bracket clamp at a location on the module frame that will not interfere with the TopSpeed Mounts.



2) Slide the microinverter unit onto the bracket clamp, then move it slightly to the left.

Install Note:

The microinverter mounting flange should be on the outside of the module frame.



3) Tighten the hardware to 13 ft-lbs [17.6 N.m].

4) Connect module leads to microinverter DC connectors.

Install Note:

Refer to the Enphase Frame Mount installation guide for additional instructions.

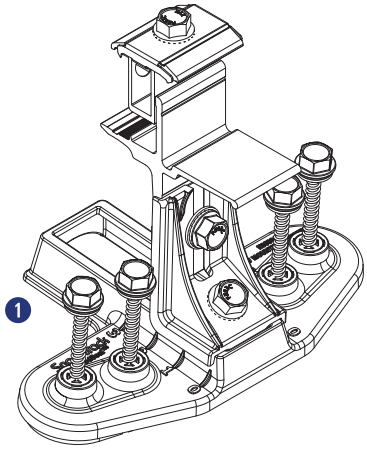
Module Installation

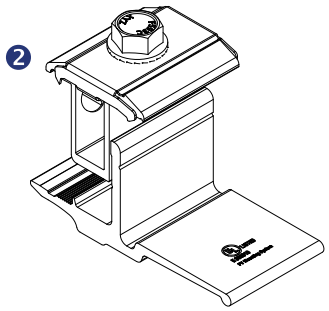
Required Tools

- Socket Wrench
- Torque Wrench
- 1/2” or 13 mm Socket
- Roofing Sealant

Materials Included

1. SnapNrack TopSpeed® Mount (SpeedSeal™ or SpeedSeal+™)
2. SnapNrack TopSpeed® Clamp

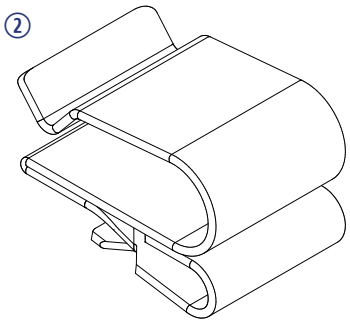


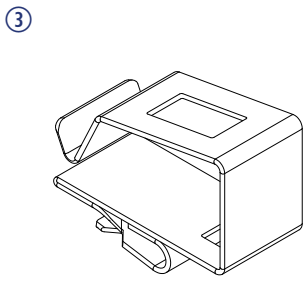


Other Materials Required

② SnapNrack Smart Clip (2-5 per module)
See Wire Management section for details

③ SnapNrack Smart Clip XL (10-20 per array)
See Wire Management section for details





APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

INSTALLATION INSTRUCTIONS - BOTTOM ROW

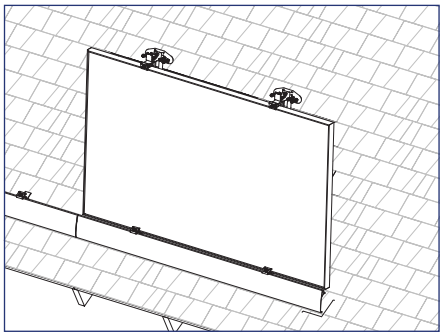
Recommended Best Practice:

Attach all TopSpeed® mounts as the modules are being prepped with MLPEs on the ground. Attach Mounts before attaching MLPEs to simplify wire management.

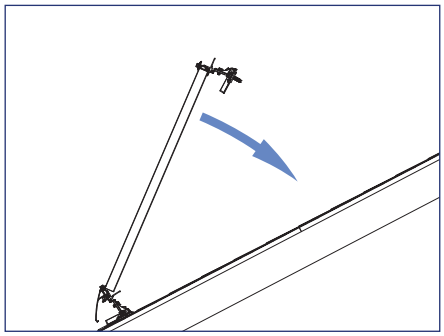
Install Note:

It is recommended that module leads and connectors are prepared for installation using SnapNrack Smart Clips before being brought to the rooftop.

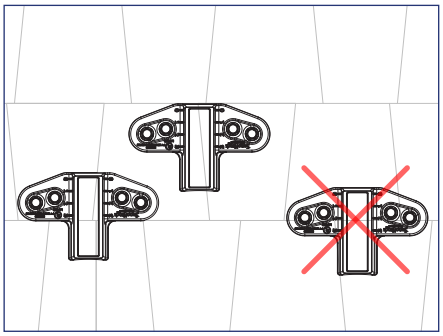
- With no MLPE, secure module leads to module frame to allow access to connectors while modules are installed
- Secure MLPE device to module frame with SnapNrack MLPE Frame Attachment Kit and connect module leads to MLPE, and manage leads by positioning connectors to allow access during installation



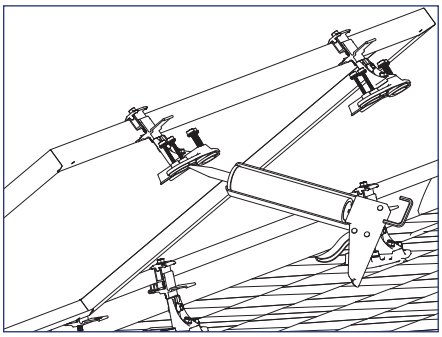
1) Rest downslope edge of module on the Mounts and/or Clamps position module so side edge is flush with marked edge of array layout or Skirt.



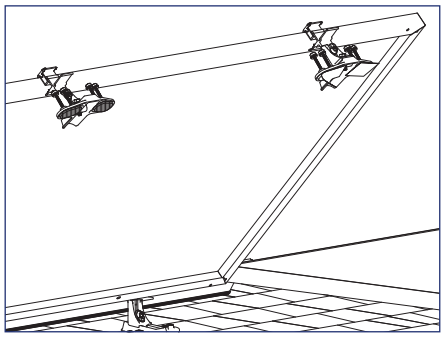
2) Lower upslope edge of module while simultaneously applying slight pressure to seat module into Mounts and/or Clamps.



3) When module is level with roof verify the Speedseal™ portion of the TopSpeed Mounts are positioned entirely on one course of composition. If required loosen the 1/2" nut and adjust the base as needed then tighten the bolt.



4a) SpeedSeal Base: Lift the upslope edge of the module and fill the SpeedSeal reservoir with roofing sealant.

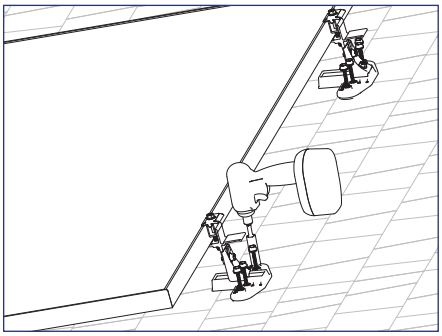


4b) SpeedSeal+™ Base: Lift the upslope edge of the module and ensure the backing is removed from each butyl pad. Seal any vertical shingle gaps within 4" from the edge of the base with roofing sealant.

Install Note:

Roof sealant should be expelled from both vents of the TopSpeed Mount as it is installed to assure the proper amount of roof sealant has been applied. If sealant is not expelled from all four vents, remove TopSpeed Mount, add more sealant to the cavity, then reinstall.

INSTALLATION INSTRUCTIONS - BOTTOM ROW

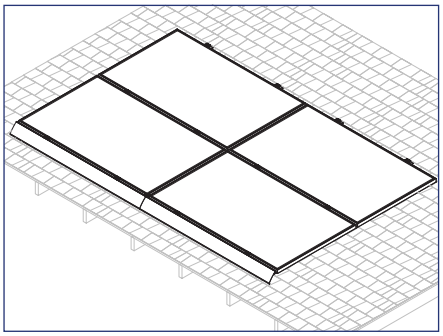


5) Lower the module to the roof and drive the (4) pre installed Snapnrack #14 Wood Screws with 1/2" hex head into the roof sheathing.

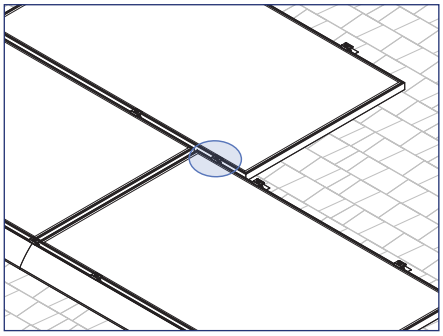
Install Note:

For the SpeedSeal™ Base, roof sealant should be expelled from both vents of the TopSpeed Mount as it is installed to assure the proper amount of roof sealant has been applied. If sealant is not expelled from both vents, remove TopSpeed Mount, add more sealant to the cavity, then reinstall.

For the SpeedSeal+™ Base, tighten the screws untl the butyl fully conforms to the roof surface.



6) Repeat steps 1 through 5 for additional modules in the array.



7) For staggered arrays and arrays with mixed orientation, use the TopSpeed® Clamp as needed to support the modules.

When installing a TopSpeed Clamp for support of an over cantilevered module, the clamp shall be installed 2-6" from the edge of the upslope (cantilevered) module.

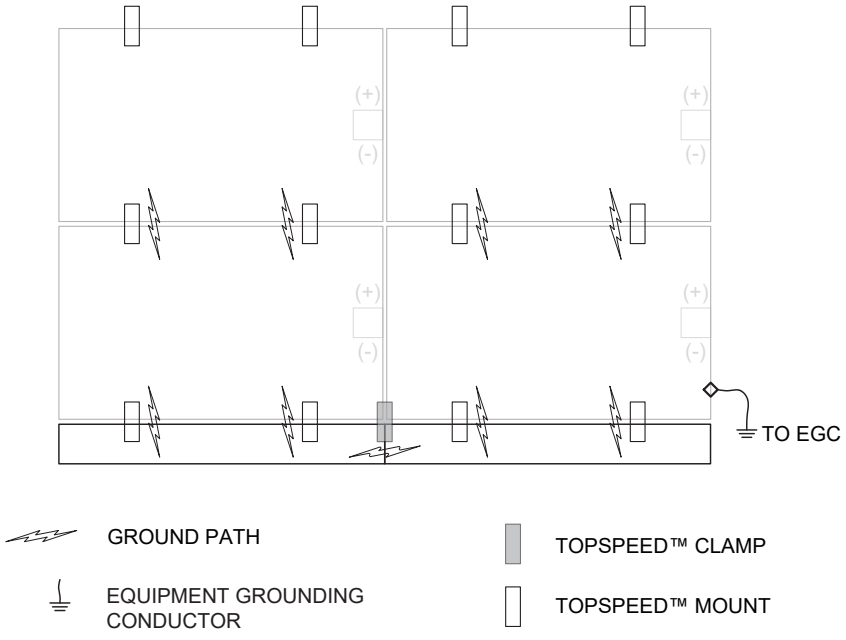
Grounding Specifications

GROUND PATH DETAILS

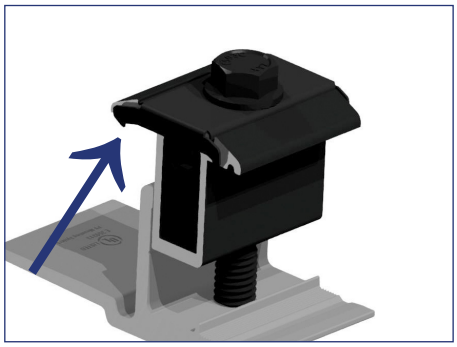
All TopSpeed® components in the fault current ground path have been Certified to be used multiple times for grounding/bonding. The UL 2703 Listing does not specify a maximum number of uses for the Mount, Link, or Ground Lug. Review the requirements of the National Electrical Code (NEC) Article 250 to select the appropriate Equipment Grounding Conductor size based on the short-circuit current of the PV system.

When using Ground Lug R the following components are part of the fault current ground path:

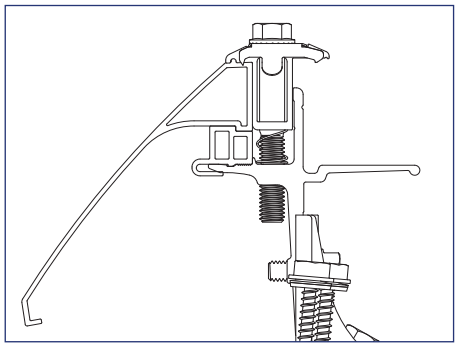
- SnapNrack, TopSpeed Mount
- SnapNrack, TopSpeed Clamp



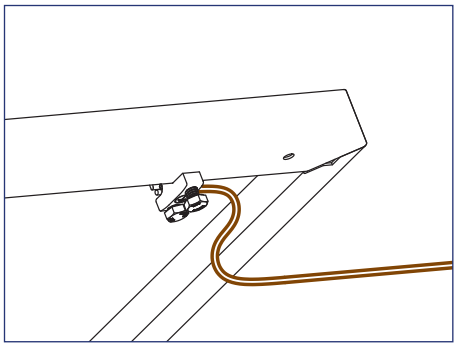
GROUNDING METHOD DETAILS

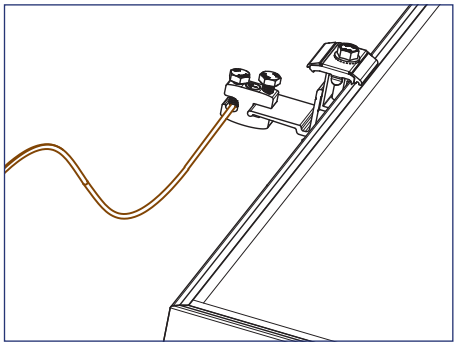


1) Row to row module bonding provided by bonding clips in Mount assembly and Clamp assembly.



2) Column to column bonding provided by Universal Skirt and bonding clips in the Clamp assembly and/or the RL Universal Link assembly.
Module heights evaluated for bonding with Link Bonding Clamps: 40mm, 38mm, 35mm, 32mm, 30mm



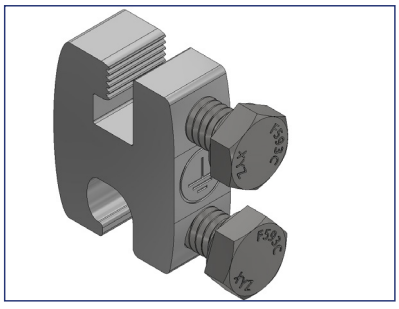


3) Each continuous array is connected to Equipment Grounding Conductor through Ground Lug (242-92202) installed on one module per array.

Optionally; Install Ground Lug Mount Landing Pad at the top array.

GROUND MARKING DETAILS

The Ground Lug is marked with the ground symbol.



INSTRUCTION FOR MAINTAINING THE GROUNDING BONDING WHEN REMOVING A MODULE FOR SERVICING

CAUTION: Module removal may disrupt the bonding path and could introduce the risk of electric shock. Additional steps may be required to maintain the bonding path. Modules should only be removed by qualified persons in compliance with the instructions in this manual.

Module removal is not presented as a frequently expected occurrence and will not be required as part of routine maintenance.

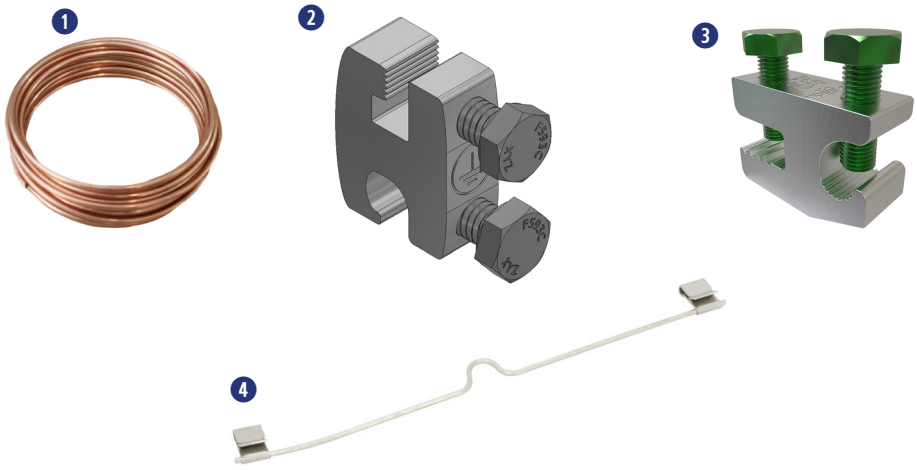
Scenarios that could result in a disruption of the bonding path are described, for example irregularly-shaped arrays, arrays consisting of individual rows, and any other scenario where module removal could disrupt the bonding path. In most cases, the removal of a module for servicing will not disturb or break grounding continuity. If a module is to be removed that will break continuity, these are the steps that must be taken to maintain a continuously bonded SnapNrack TopSpeed® System.

Required Tools

- Socket Wrench
- Torque Wrench
- 1/2” or 13 mm Socket
- 7/16” Socket

Required Materials

1. #10 Or Larger Bare Copper Conductor
2. SnapNrack Ground Lug part no. 242-92202
3. Ilsco Part No. SGB-4
4. DynoRaxx Dynobond™

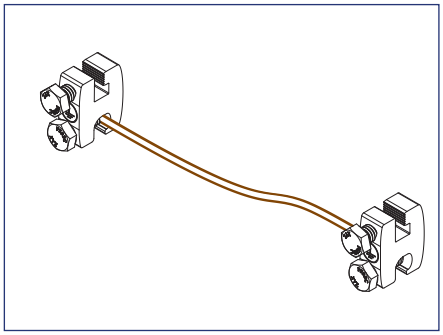


Maintaining the Grounding Bonding When Removing a Module

JUMPER ASSEMBLY INSTRUCTION & INSTALLATION

CAUTION: Do Not Remove the Module until the Jumper is installed

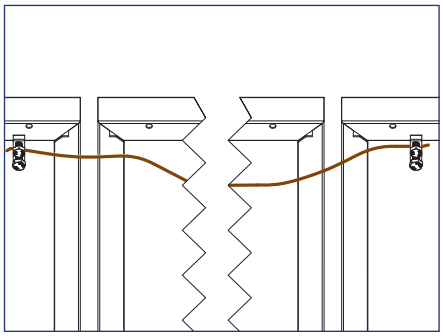
1) Identify the existing ground path at the location of module removal and choose an appropriate length of #10 bare copper to bridge the soon to be broken ground path.



Example of assembled bonding jumper using (2) SnapNrack Ground Lugs

2) Attach one ground lug to each end of #10 bare copper wire. See recommended options below:

1. (2) SnapNrack Ground Lug part no. 242-922022
2. (2) Ilsco part no. SGB-4
3. (1) DroRaxx DynoBond™



3) Before the module is removed, attach the assembled bonding jumper. Depending on where the module will be removed and choice of ground lug, jumper attachment locations will vary.

- SnapNrack Ground Lug part no. 242-92202 or Ilsco SGB-4 lugs can be attached to module frames or anywhere on the TopSpeed™ Mount.
- DynoRaxx DynoBond™ is approved and appropriate when a short bonding jumper is needed from module to module.

4) Service the array. With the bonding jumper installed, it is now safe to remove the module for service or maintenance.

5) After Servicing the array reinstall the module and original ground path. Only then Remove the bonding jumper.

Caution: Do not remove the bonding jumper until original ground path is established.

List of Approved Modules

snapnrack.com

APPROVED MODULE INFORMATION

SnapNrack TopSpeed Universal has been tested with the following UL Listed module series: The SnapNrack TopSpeed Universal system employs top-down clamps and links which have been evaluated for frame-to-system bonding, at specific mounting torques and with the specific module series listed below. All wattage values are covered.

Module manufacturer approval letters can be found at www.snapnrack.com.

Manufacturer	Model		
Aptos Solar	DNA-120-MF23-XXX	DNA-120-MF26-XXXW	DNA-108-BF10-xxxW
	DNA-120-BF23-XXX	DNA-144-MF26-XXXW	DNA-120-BF10-xxxW
	DNA-144-MF23-XXX	DNA-120-BF26-XXXW	DNA-108-MF10-xxxW
	DNA-144-BF23-XXX	DNA-144-BF26-XXXW	
Bluesun	BSMXXXM-72HBD		
Boviet Solar	BVM7612M-XXX-H-HC-BF-DG		
Canadian Solar	CS6K-XXX-M	CS3U-XXX-MS	CS1Y-XXX-MS
	CS6K-XXX-M-SD	CS3U-XXX-P	CS3W-MB-AG
	CS6K-XXX-P	CS1K-XXX-MS	CS3Y-MB-AG
	CS6K-XXX-P-SD	CS1H-XXX-MS	CS6W-XXXMB-AG
	CS6K-XXX-MS	CS1H-XXX-MS-AB	CS6R-XXXMS-HL
	CS3K-XXX-P	CS3W-XXX-P	CS3W-XXX-MS
	CS3K-XXX-MS	CS3N-XXX-MS	CS6.1-54TM-XXX-H
CertainTeed	CTXXXHC11-06	CTXXXHC11-9	CTTCXXXHC12-08
Chint Solar	CHSM6612M-XXX	CHSM6612M/HV-XXX	CHSM72M-HC-XXX* (Astro 5)
	CHSM6612M(BL)-XXX	CHSM72M-HC-XXX* (Astro 4)	
Crossroads Solar	Crossroads Solar XXX		
Dehui Solar	DH-M760B-XXXW	DH-M772W-XXXW	DH-M772F-XXXW
	DH-M760W-XXXW	DH-M760F-XXXW	
Freedom Forever	FF-MP-BBB-XXX		
Hansol	HAXXXAA-NNEA0	HAXXXAA-DGEA0	HAXXXAB-DGEA0
Hanwha Q Cells	Q.PEAK DUO-G5-XXX	Q.PEAK DUO XL-G9.2-XXX	Q.TRON-G1+ XXX
	Q.PEAK DUO-BLK-G5-XXX	Q.PEAK DUO XL-G9.3-XXX	Q.TRON BLK-G1+ XXX
	Q.PLUS DUO-G5-XXX	Q.PEAK DUO XL-G9.3/BFG-XXX	Q.PEAK DUO XL-G10.c-XXX
	Q.PEAK DUO-G7-XXX	Q.PEAK DUO-ML-G9-XXX	Q.PEAK DUO XL-G10.d-XXX
	Q.PEAK DUO-BLK-G7-XXX	Q.PEAK DUO-BLK-ML-G9-XXX	Q.PEAK DUO BLK G10+/AC XXX
	Q.PEAK DUO-G7.2-XXX	Q.PEAK DUO-BLK-G9-XXX	Q.PEAK DUO BLK G10+/HL XXX
	Q.PEAK DUO-G6+-XXX	Q.PEAK DUO G10-XXX	Q.PEAK DUO ML-G10-XXX
	Q.PEAK DUO-BLK-G6+-XXX	Q.PEAK DUO BLK G10-XXX	Q.PEAK DUO BLK ML-G10+-XXX
	Q.PEAK DUO-G6-XXX	Q.PEAK DUO G10+-XXX	Q.PEAK DUO BLK ML-G10.B+
	Q.PEAK DUO-BLK-G6-XXX	Q.PEAK DUO BLK G10+-XXX	Q.PEAK DUO XL-G11.3 XXX
	Q.PEAK DUO BLK-G6+/AC-XXX	Q.PEAK DUO XL-G10.3-XXX	Q.PEAK DUO XL-G11.3 BFG XXX
	Q.PEAK DUO-BLK-G8-XXX	Q.PEAK DUO BLK ML-G10-XXX	Q.PEAK DUO ML-G12S.3/BFG
	Q.PEAK DUO-G8+-XXX	Q.PEAK DUO ML-G10.a+-XXX	Q.TRON M-G2+ XXX
	Q.PEAK DUO L-G8.3/BFG-XXX	Q.PEAK DUO BLK ML-G10.a+-XXX	Q.TRON BLK M-G2+
	Q.PEAK DUO L-G8.3/BGT-XXX	Q.PEAK DUO ML-G10.a-XXX	Q.TRON XL-G2.3/BFG
	Q.PEAK DUO-BLK-G8+-XXX	Q.PEAK DUO BLK ML-G10.a-XXX	Q.TRON BLK M-G2+
	Q.PEAK DUO-G8-XXX	Q.PEAK DUO XL-G10.2-XXX	Q.PEAK DUO G10.C+

List of Approved Modules

snapnrack.com

Manufacturer	Model		
Hanwha Q Cells	Q.PEAK DUO-BLK-ML-G9+-XXX	Q.PEAK DUO XL-G10.3/BFG-XXX	Q.TRON BLK M-G2.H+
	Q.PEAK DUO-ML-G9+-XXX	Q.PEAK DUO ML-G10+-XXX	Q.TRON BLK M-G2.H1+_AC
	Q.PEAK DUO-BLK-ML-G9+-XXX	Q.PEAK DUO BLK ML-G10+/t-XXX	
HT-SAAE	HT60-166M-XXX	HT60-182M-XXX	
Heliene	60M-XXX	72M-XXX	108HC M10 SL-XXX
	60P-XXX	72P-XXX	
Hyundai	HiA-SXXXMS	HiS-SXXXYI	HiN-TXXXNJ
	HiS-SXXXXY	HiS-SXXXYH(BK)	HiS-TXXXNJ
	HiN-SXXXXG(BK)	HiN-TXXXNF(BK)	HiS-TXXXNJ(BK)
Hyperion / Runergy	HY-DH108P8-XXX(Y)	HY-DH144P8-XXX	HY-DH144N8-XXX
	HY-DH108N8-XXX		
JA Solar	JAM60S09-XXX/PR	JAM72S10-XXX/MR	JAM54S30-XXX/MR
	JAM60S10-XXX/MR	JAM72D10-XXX/MB	JAM54S31-XXX/MR
	JAM60S10-XXX/PR	JAM72S10-XXX/PR	JAM72D30-XXX/MB
	JAM60S12-XXX/PR	JAM72S12-XXX/PR	JAM54D41-XXX/MB
	JAM72S09-XXX/PR	JAM60S17-XXX/MR	
Jinko Solar	JKMXXXM-60	JKMXXXM-72	JKMXXXM-6TL3-B
	JKMXXXM-60L	JKMXXXM-72L-V	JKMXXXM-6RL3-B
	JKMXXXM-60HL	JKMXXXP-72	JKMXXXM-7RL3-V
	JKMXXXM-60HBL	JKMXXXP-72-V	JKMXXXM-7RL3-TV
	JKMXXXP-60	JKMXXXPP-72	JKMXXXM-72HL4-V
	JKMXXXP-60-J4	JKMXXXPP-72-V	JKMXXXM-72HL4-TV
	JKMXXXP-60-V	JKMSXXXP-72	JKMXXXN-72HL4-BDV
	JKMXXXP-60B-J4	JKMXXXM-72HL-V	JKMXXXN-72HL4-BDX*
	JKMXXXPP-60	JKMXXXM-72HL-TV	JKMXXXP-60-V
	JKMXXXPP-60-V	JKMXXXM-72HBL	
KB Solar	MODULE-KBS-375-MONO	MODULE-KBS-375-MONO-BF	MODULE-KBS-450-MONO
	MODULE-KBS-450-MONO-BF		
LG	LGXXXN1C-A5	LGXXXS2W-G4	LGXXXQ1C-A6
	LGXXXN1K-A5	LGXXXN1C-V5	LGXXXQ1K-A6
	LGXXXQ1C-A5	LGXXXN1W-V5	LGXXXM1K-A6
	LGXXXQ1K-A5	LGXXXN2T-V5	LGXXXM1C-A6
	LGXXXS1C-A5	LGXXXN2T-J5	LGXXXA1C-A6
	LGXXXN2C-B3	LGXXXN1T-V5	LGXXXQAC-A6
	LGXXXN2W-B3	LGXXXA1C-V5	LGXXXQAK-A6
	LGXXXN1C-G4	LGXXXM1C-L5	LGXXXN1K-B6
	LGXXXN1K-G4	LGXXXM1K-L5	LGXXXN2W-E6
	LGXXXS1C-G4	LGXXXN1C-N5	LGXXXN2T-E6
	LGXXXN2C-G4	LGXXXN1K-L5	LGXXXN1K-E6
	LGXXXN2K-G4	LGXXXN1K-A6	LGXXXN3K-V6
	LGXXXN2W-G4	LGXXXN1C-A6	
	LGXXXS2C-G4	LGXXXN1W-A6	

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

List of Approved Modules

snapnrack.com

Manufacturer	Model		
Longi	LR6-60-XXXM	LR6-60HPB-XXXM	LR6-60HIH-XXXM
	LR6-60BK-XXXM	LR6-60HPH-XXXM	LR6-60HIB-XXXM
	LR6-60HV-XXXM	LR4-60HPB-XXXM	LR4-72HPH-XXXM
	LR6-60PB-XXXM	LR4-60HIB-XXXM	LR5-72HPB-XXXM
	LR6-60PE-XXXM	LR4-60HPH-XXXM	LR5-54HABB-XXXM
	LR6-60PH-XXXM	LR4-60HIH-XXXM	
Maxeon	SPR-MAX3-XXX-BLK-R		
Meyer Burger	Meyer Burger Black*	Meyer Burger White*	
mSolar	TXI6-XXX120BB	TXI10-XXX108BB	
Mitrex	MXXX-I3H		
Mission Solar	MSEXXXSO5T	MSEXXXSO4J	MSE60AXXX
	MSEXXXSO5K	MSEXXXSO6J	MSEXXXSX5K
	MSEXXXSQ5T	MSEXXXSQ6S	MSEXXXSX5T
	MSEXXXSQ5K	MSEXXXSQ4S	MSEXXXSX6S
	MSEXXXMM4J	MSEXXXSR8K	MSEXXXSX6W
	MSEXXXMM6J	MSEXXXSR8T	MSEXXXSX5R
	MSEXXXSO6W	MSEXXXSR9S	MSE410HT0B
Next Energy Alliance	USNEA-XXXM3-60	USNEA-XXXM3-72	
	USNEA-XXXM3B-60	USNEA-XXXM3B-72	
Panasonic	VBHNXXXKA03	VBHN325SA17E	EVPVXXXH
	VBHNXXXKA04	VBHXXXRA18N	EVPVXXXPK
	VBHNXXXSA17	VBHXXXRA03K	EVPVXXXHK
	VBHNXXXSA18	EVPVXXX(K)	EVPVXXXHK2
Philadelphia Solar	PS-M144(HCBF)-XXXW	PS-M108(HCBF)-XXXW	PS-M108(HC)-XXXW
Phono Solar	PSXXXM-20/U	PSxxxM8GFH-24/TH	PSxxxM6-24/TH
	PSXXXMH-20/U	PSxxxM8GF-18/VH	
	PSxxxM8GF-24/TH	PSxxxM8GFH-18/VH	
REC (All may be followed by “BLK” or “BLACK”)	RECXXXTP2	RECXXXTP2M 72 BLK2	RECXXXTP4
	RECXXXTP2-BLK	RECXXXTP2SM 72	RECXXXAA Pure
	RECXXXNP	RECXXXTP2SM 72 BLK	RECXXXAA Pure-R
	RECXXXTP2M	RECXXXTP2SM 72 BLK2	RECXXXNP2
	RECXXXTP2M 72	RECXXXAA	RECXXXNP3
	RECXXXTP2M 72 BLK	RECXXXTP3M	
SEG Solar	SEG-400-BMB-HV	SEG-xxx-BMD-HV	
	SEG-400-BMB-TB	SEG-xxx-BMD-TB	
Silfab	SLAXXX-M	SLGXXX-P	SILXXXNX
	SLAXXX-P	SSGXXX-M	SILXXXHN
	SSAXXX-M	SSGXXX-P	SILXXXBG
	SSAXXX-P	SILXXXNT	SILXXXHM
	SILXXXBL	SILXXXHL	SIL-XXXHC+
	SILXXXML	SILXXXBK	SILXXXQD
	SILXXXNL	SILXXXHC	SIL-XXXHM
	SLGXXX-M	SILXXXNU	SILXXXQM

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED
By Devon.Murtha at 12:43 pm, Mar 03, 2026

List of Approved Modules

snapnrack.com

Manufacturer	Model		
Solar4America	S4AXXX60H5BB	S4AXXX72H5BB	S4AXXX-108MH10
	S4AXXX60H5BW	S4AXXX72H5BW	S4AXXX-144MH10
	S4AXXX60M5BB	S4AXXX72M5BB	
	S4AXXX60M5BW	S4AXXX72M5BW	
Solaria	Solaria PowerXT-XXXR-PX	Solaria PowerXT-XXXR-AC	Solaria PowerXT-XXXR-PM-AC
	Solaria PowerXT-XXXR-BX	Solaria PowerXT-XXXR-PM	
Sunpower	SPR-AXXX-G-AC	SPR-AXXX-BLK	SPR-MXXX-BLK-H-AC
	SPR-AXXX	SPR-MXXX-H-AC	SPR-MXXX-BLK
	SPR-AXXX-BLK-G-AC	SPR-MXXX	SPR-MAX3-XXX-BLK-R
SunSpark	SST-XXXM3-60	SST-XXXM3-72	
	SST-XXXM3B-60	SST-XXXM3B-72	
Talesun	TP660M-XXX	TP672M-XXX	TP7G54M(H)-XXX
	TP660P-XXX	TP672P-XXX	
Thornova	TS-BB54(XXX)	TS-BG54(XXX)	TS-BG72(XXX)
	TS-BB60(XXX)	TS-BG60(XXX)	
Trina	TSM-XXXDD05(II)	TSM-XXXPD05.08	TSM-XXXDEG15VC.20(II)
	TSM-XXXDD05A.05(II)	TSM-XXXPD05.082	TSM-XXXDEG18MC.20(II)
	TSM-XXXDD05A.08(II)	TSM-XXXPD05.08D	TSM-XXXDEG19C.20
	TSM-XXXDD05A.082(II)	TSM-XXXPD05.08S	TSM-XXXDEG21C.20
	TSM-XXXPA05	TSMXXXDD05H.05(II)	TSM-XXXDE09C.05
	TSM-XXXPA05.05	TSM-XXXDD06M.05(II)	TSM-XXXDE09C.07
	TSM-XXXPA05.08	TSM-XXXDE15H(II)	TSM-XXXNE09RC.05
	TSM-XXXPD05	TSM-XXXDE15M(II)	TSM-XXXNE09RH.05
	TSM-XXXPD05.002	TSMXXXDE06X.05(II)	TSM-XXXNE19RC
	TSM-XXXPD05.05	TSMXXXDE09.05	
	TSM-XXXPD05.05S	TSM-XXXDE15V(II)	
Ureco	FBMxxxMFG-BB	FAMxxxE7G-BB	
Vikram Solar	SOMERA VSMHBB.60.XXX.05	PREXOS VSMDHT.60.XXX.05	
	SOMERA VSMH.72.XXX.05	PREXOS VSMDHT.72.XXX.05	
VSUN	VSUNXXX-144BMH-DG	VSUNXXX-108BMH	
	VSUNXXX-120BMH	VSUNXXX-132BMH	
ZNShine	ZXM6-60-XXX/M	ZXM6-NH144-XXXM	ZXM7-SHLDD144-XXXM
	ZXM6-NH120-XXXM	ZXM7-SH108-XXXM	

List of Approved MLPE Devices

SnapNrack TopSpeed Universal has been tested with the following Module Level Power Electronic (MLPE) devices:

SnapNrack TopSpeed Universal mounting systems has been tested with the following UL/NRTL Listed Module Level Power Electronic (MLPE) Devices. The back plates of the MLPEs have been evaluated for bonding to TopSpeed Universal through the SnapNrack MLPE Frame Attachment Kit, model 242-02151.

MLPE Manufacturer	Model	
AP Smart	RSD-S-PLC	
Celestica International	DG-006-F001201x	DG-006-F001401x
Delta Electronics	GPI00010105	
Enphase	C250	IQ8PLUS-72
	M215	IQ8A-72
	M250	IQ8H-208-72
	IQ6-60-2-US	IQ8H-240-72
	IQ6PLUS-72-2-US	IQ8HC-72-M-US
	IQ7-60-2-US	IQ8HC-72-M-DOM-US
	IQ7-60-B-US	IQ8MC-72-M-US
	IQ7PLUS-72-2-US	IQ8X-80-M-US
	IQ7PLUS-72-B-US	IQ8X-80-M-DOM-US
	IQ8-60	
Generec	S2502	
Ginlong Technologies	Solis-RSD-1G	
	Solis-MLRSD-R1-1G	Solis-MLRSD-R2-1G
SolarEdge	P300-5NC4ARS	P320-5NC4ARS
	P370-5NC4AFS	P400-5NC4AFS
	P320	P340
	P370	P400
	P401	P405
	P485	P505
	P730	P800p
	P850	P860
	P950	P1100
	P1101	S440
	S500	
SMA	RSB-2S-US-10	
Tigo	TS4-R-F	TS4-R-M
	TS4-R-O	TS4-R-S
	TS4-R-M-DUO	TS4-R-O-DUO
	TS4-R-S-DUO	TS4-A-F
	TS4-A-2F	TS4-A-O
	TS4-A-S	