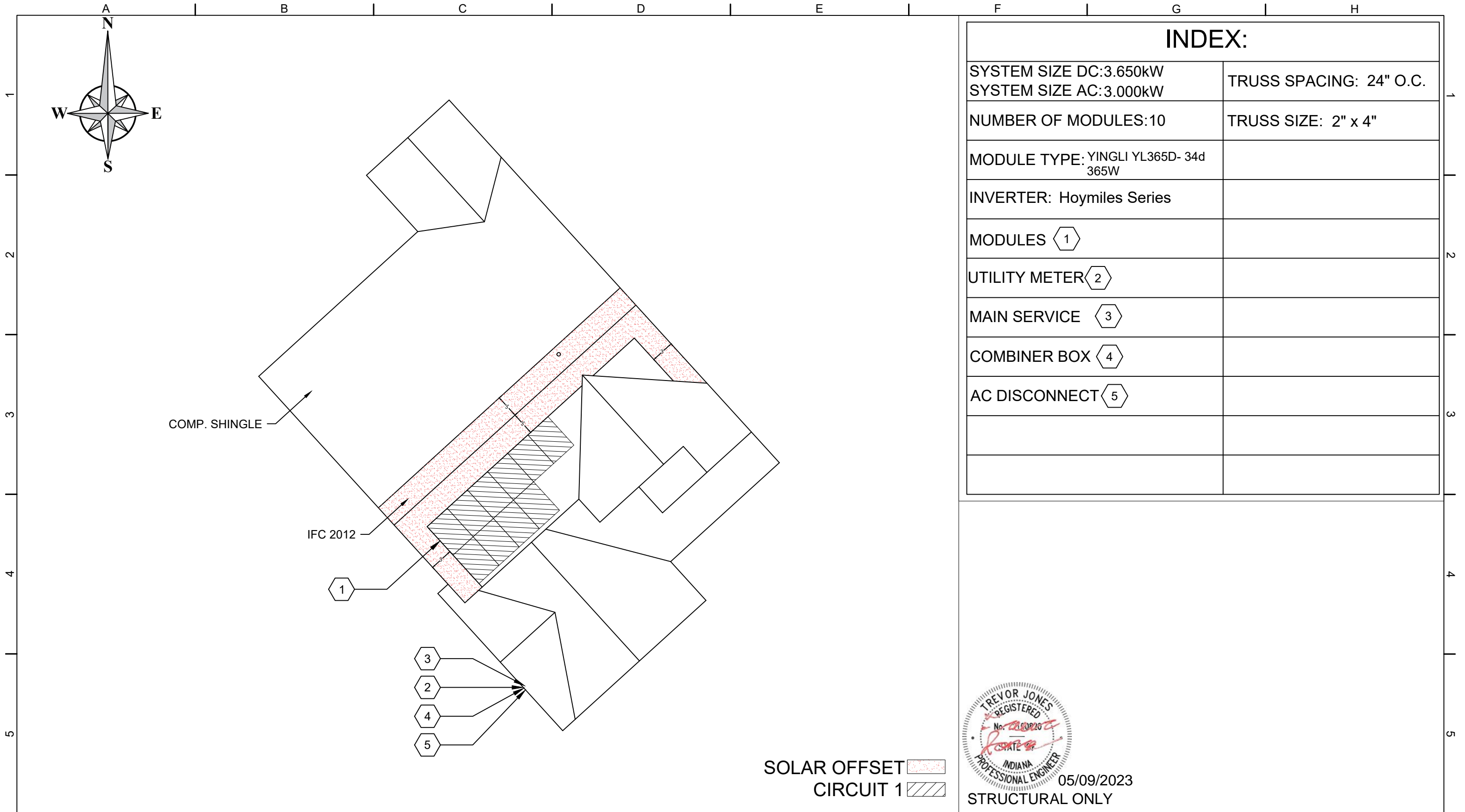



AERIAL VIEW		ELECTRICAL NOTES		GENERAL NOTES		
		<div><div>1. WHERE ALL TERMINALS OF THE DISCONNECTING MEANS MAY BE ENERGIZED IN THE OPEN POSITION, A SIGN WILL BE PROVIDED WARNING OF THE HAZARDS. (PER ART. 690.17)</div><div>2. EACH UNGROUNDED CONDUCTOR OF THE MULTIWIRE BRANCH CIRCUIT WILL BE IDENTIFIED BY PHASE AND SYSTEM. (PER ART. 210.5)</div><div>3. A NATIONALLY RECOGNIZED TESTING LABORATORY SHALL LIST ALL EQUIPMENT IN COMPLIANCE WITH ARTICLE 110.3.</div><div>4. ALL WIRES SHALL BE PROVIDED WITH STRAIN RELIEF AT ALL ENTRY POINTS INTO BOXES AS REQUIRED BY UL LISTING</div><div>5. MODULE FRAMES SHALL BE GROUNDED AT THE UL-LISTED LOCATION PROVIDED BY THE MANUFACTURER USING UL-LISTED GROUNDING HARDWARE.</div><div>6. MODULE FRAMES, RAIL, AND POSTS SHALL BE BONDED WITH EQUIPMENT GROUND CONDUCTORS AND GROUNDED AT THE MAIN ELECTRICAL PANEL.</div><div>7. THE DC GROUNDING ELECTRODE CONDUCTOR SHALL BE SIZED ACCORDING TO ARTICLE 250.166B &amp; 690.47.</div></div>		<div><div>1. PRIOR TO THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES WITH THE DESIGN IN ANY CAPACITY. ESPECIALLY RECOMMENDATIONS, CODES, OR REGULATIONS &amp; RULES OF THE AUTHORITY HAVING JURISDICTION, WHICH SUPERSEDED THE NEC.</div><div>2. ALL DIMENSIONS TO BE VERIFIED BY CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.</div><div>3. CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY PRECAUTIONS, OSHA REQUIREMENTS ETC. FOR THE SITE, INCLUDING EXISTING SITE HAZARDS.</div><div>4. SYSTEM IS GRID INTERACTIVE/INTERTIED VIA A UL LISTED POWER-CONDITIONING INVERTER.</div><div>5. SYSTEM HAS NO ENERGY STORAGE OF ANY KIND, OR UPS.</div><div>6. ALL SOLAR MOUNTING FRAMEWORK TO BE GROUNDED.</div><div>7. FOLLOW MANUFACTURERS SUGGESTED INSTALLATION PRACTICES AND WIRING SPECIFICATIONS.</div><div>8. ALL WORK TO BE IN COMPLIANCE WITH THE INTERNATIONAL BUILDING CODES. (IBC)</div><div>9. ALL ELECTRICAL WORK TO BE IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE (NEC).</div></div>		
RESIDENCE PHOTO		<div><div><div><div>TREVOR JONES</div><div>REGISTERED</div><div>No. 150826</div><div>STATE OF INDIANA</div><div>PROFESSIONAL ENGINEER</div></div><div>05/09/2023</div><div>STRUCTURAL ONLY</div></div></div>				
		SHEET INDEX				
		PV 1 COVER PAGE		PV 5 MOUNTING DIAGRAM		
		PV 2 SITE PLAN		PV 6 PLACARD		
		PV 3 ELECTRICAL DIAGRAM		CUT SHEETS ATTACHED		
		PV 4 CHIKO MOUNTING				
<div><div><div><div></div><div>SOLGEN</div><div>POWER</div></div><div><div>CONFIDENTIAL</div><div>- THE INFORMATION CONTAINED IN THIS PACKET AND SUBSEQUENT CUTSHEETS SHALL NOT BE USED FOR THE BENEFIT OF ANYONE OUTSIDE SOLGEN POWER. NEITHER SHALL IT BE DISCLOSED TO OTHERS OUTSIDE THE RECIPIENT'S ORGANIZATION, EXCEPT IN CONNECTION WITH THE SALE AND USE OF THE RESPECTIVE EQUIPMENT, WITHOUT WRITTEN CONSENT FROM SOLGEN POWER.</div></div><div><div>SOLGEN POWER</div><div>5715 BEDFORD ST,</div><div>PASCO, WA 99301</div><div>P: 509-931-1663</div></div></div></div>		Barry Gallon		<div><div>DRAWN BY:</div><div>PJV</div><div>DATE:</div><div>10/05/2023</div></div>		DESIGN
		7076 English Oak Dr, McCordsville, IN 46055		1		PAGE #
				PV 1		



INDEX:	
SYSTEM SIZE DC:3.650kW SYSTEM SIZE AC:3.000kW	TRUSS SPACING: 24" O.C.
NUMBER OF MODULES:10	TRUSS SIZE: 2" x 4"
MODULE TYPE: YINGLI YL365D- 34d 365W	
INVERTER: Hoymiles Series	
MODULES 1	
UTILITY METER 2	
MAIN SERVICE 3	
COMBINER BOX 4	
AC DISCONNECT 5	



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Barry Gallon	DRAWN BY: PJV	DRAWING SCALE: 11/128" = 1'-0"
	DATE: 10/05/2023	DESIGN
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		PV 2



COMBINER BOX PANEL SIZE CALCS											
CIRCUIT #	NUMBER OF MODULES	NUMBER OF MICROINVERTERS		NOMINAL OUTPUT CURRENT		TOTAL		125%	TOTAL	COMBINED TOTAL	BREAKER SIZE
CIRCUIT 1 (1 of 2)	2	1	X	2.46A	=	2.46A	x	1.25	=	3.08A	20A
CIRCUIT 1 (2 of 2)	8	2	X	5.0A	=	10.00A	x	1.25	=	12.50A	

LOAD CALCS - TOTAL AMPS AVAILABLE								
BUS RATING	120%		TOTAL	MAIN BREAKER	MAX BREAKER SIZE			
200A	X	1.2	=	240	-	200A	=	40A

MAX AC OPERATING CURRENT FOR HM-1200, 600, 300					
INVERTER TYPE	NUMBER OF INVERTERS		NOMINAL OUTPUT CURRENT	TOTAL	COMBINED TOTAL
HM-1200	2	X	5.0A	=	10.00A
HM-600	1	X	2.46A	=	2.46A
HM-300	0	X	1.23A	=	0.00A

BREAKER SIZE CALCS						
MAX AC OPERATING CURRENT	125%	TOTAL	BREAKER SIZE			
12.46A	x	1.25	x	15.58A	=	20A

CONDUCTOR SCHEDULE					
TAG ID	WIRES IN CONDUIT	CONDUCTORS		GROUND	
		MINIMUM WIRE SIZE	TYPE, MATERIAL	MINIMUM WIRE SIZE	TYPE, MATERIAL
A*	3	#12 AWG	PV CABLE, CU	#6 AWG	BARE, CU
B	3	#12 AWG	THWN-2, CU	#8 AWG	THWN-2, CU
C	3	#8 AWG	THWN-2, CU	#8 AWG	THWN-2, CU
D**	4	#8 AWG	THWN-2, CU	#8 AWG	THWN-2, CU

\* TAG A CABLE WILL BE RUN THROUGH ATTIC WHERE POSSIBLE \*\* TAG D ONLY IF APPLICABLE \*

2 YINGLI YL365D- 34D 365W MODULES  
WITH HOYMILES HM-600 MICRO INVERTERS

8 YINGLI YL365D- 34D 365W MODULES  
WITH HOYMILES HM-1200 MICRO INVERTERS

**NOTES:**

- 200A UTILITY METER GLOBE ONLY. (EXISTING)
- 200A LOAD CENTER. (EXISTING)
- 30A RATED NON-FUSED LOCKABLE AC DISCONNECT. (NEW)
- 125A RATED COMBINER PANEL. (NEW)

ALL CONDUIT SIZES ARE MINIMUM SIZES  
ALL WIRE SIZES ARE FOR COPPER WIRE

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Barry Gallon

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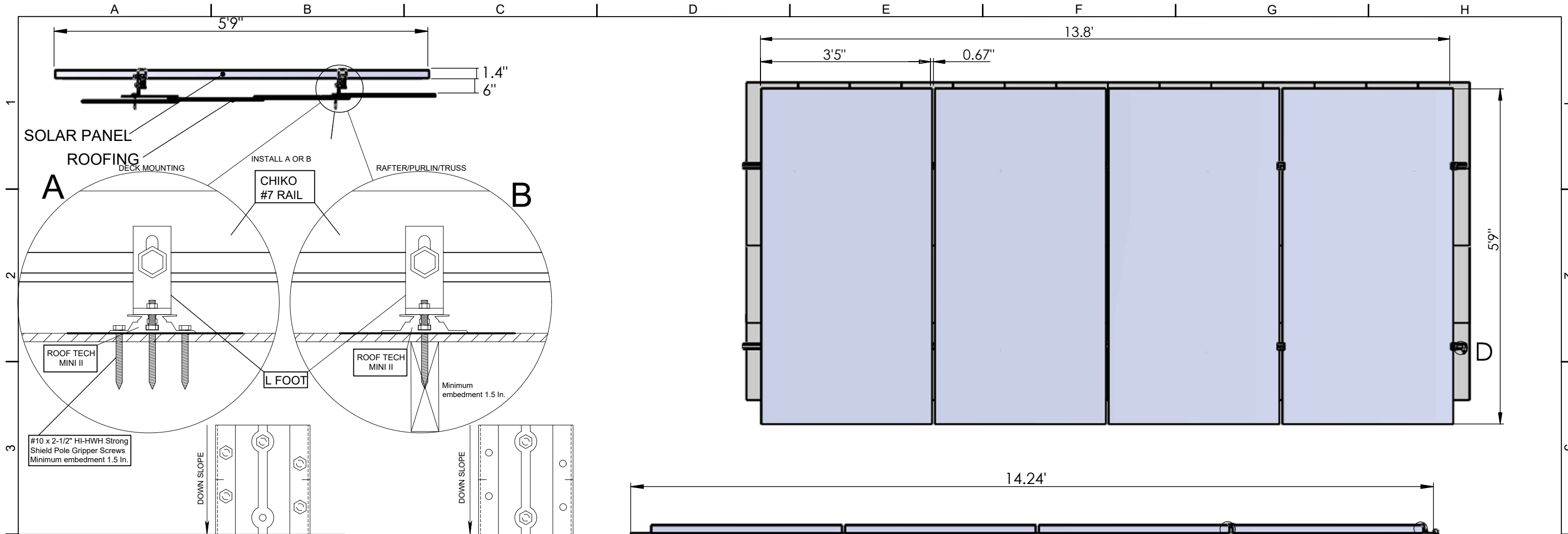
DRAWN BY:  
PJV

DATE:  
10/05/2023

DRAWING SCALE:  
NOT TO SCALE  
DESIGN

1

PAGE #  
PV 3




**STRUCTURAL NOTES:**

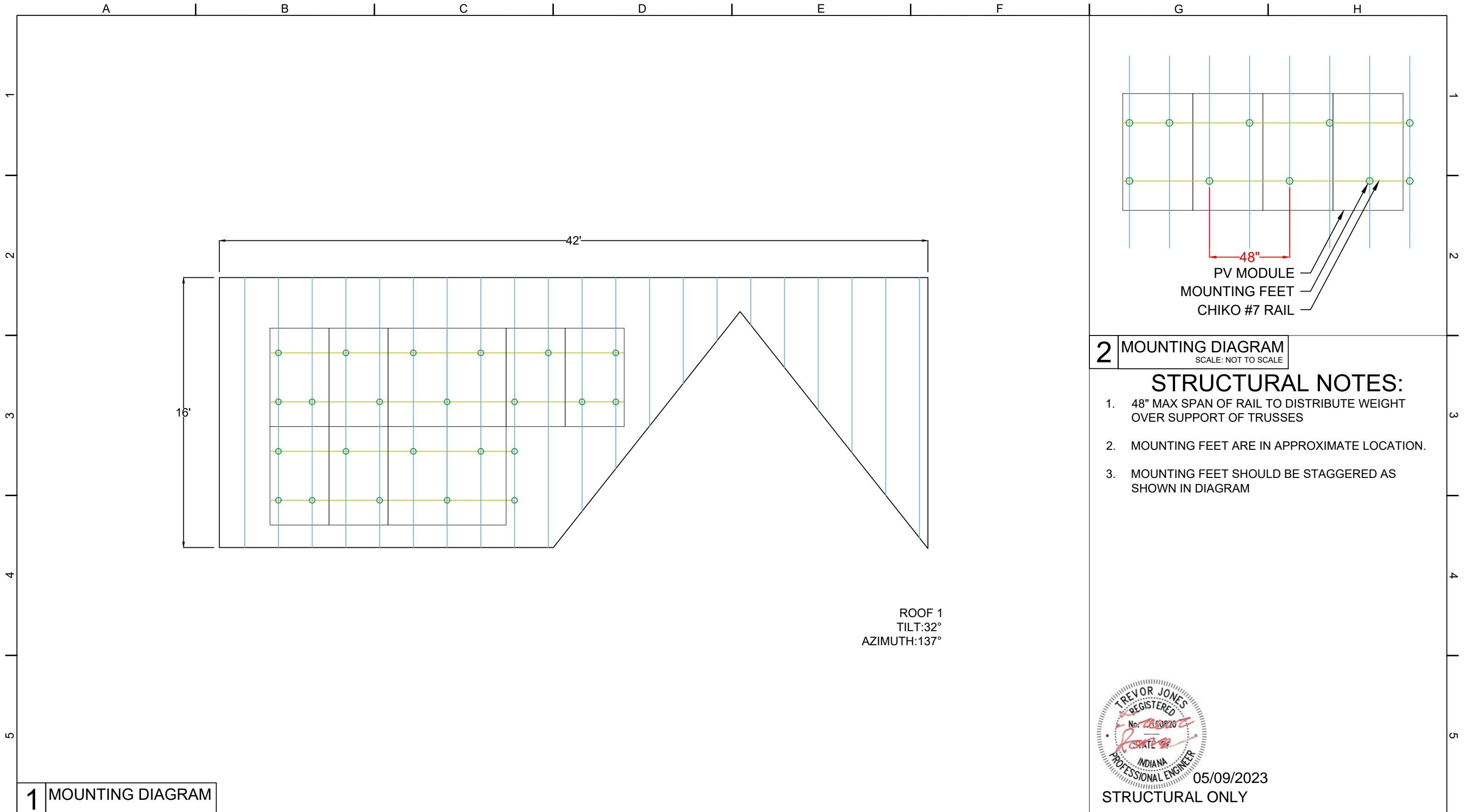
1. TOTAL WEIGHT (MODULE & RAIL): 489 LBS
2. RAIL WEIGHT: 41 LBS
3. MODULE WEIGHT: 448 LBS
4. DISTRIBUTED WEIGHT: 2.49 PSF



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			7076 English Oak Dr, McCordsville, IN 46055		DATE: 10/05/2023	





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DATE: 10/05/2023

DRAWING SCALE: 3/16" = 1'-0"  
DESIGN

PAGE # 1  
PV 5

## PV 6

# RT-MINI II

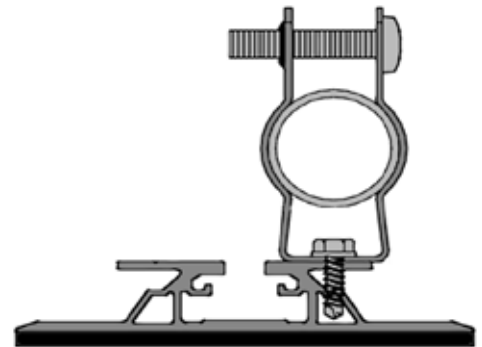
A Self-flashing PV Mount Featuring Roof Tech's AlphaSeal™ Technology



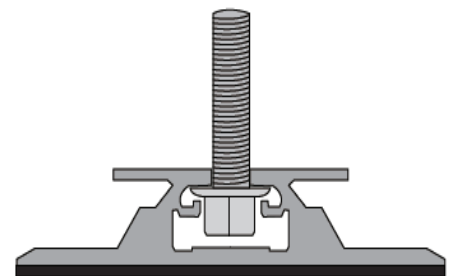
RT-MINI II is suitable for all systems with any L-Foot

- ✓ No Caulking or Pre-Drilling Required
- ✓ Universal Attachment to Any Slope
- ✓ Metal, EPDM, TPO, SBS, & Asphalt Roofs
- ✓ Wide Range of Applications & Ultimate Flexibility on the Roof
- ✓ No Need to Bend Rails  
1 5/8 North & South Adjustment

## Conduit Strap Installation



RT Serrated Hex Flange Bolt/Nut:  
5/16-18 x 1"



Installation Manual

ICC ESR 3575



**Roof Tech**  
The Standard for Waterproof Flexible Flashing Since 1994

[www.roof-tech.us](http://www.roof-tech.us)

[info@roof-tech.us](mailto:info@roof-tech.us)





# RT-MINI II

Flexible Flashing Certified by the International Code Council (ICC)

## Components

RT2-00-MINIBK2

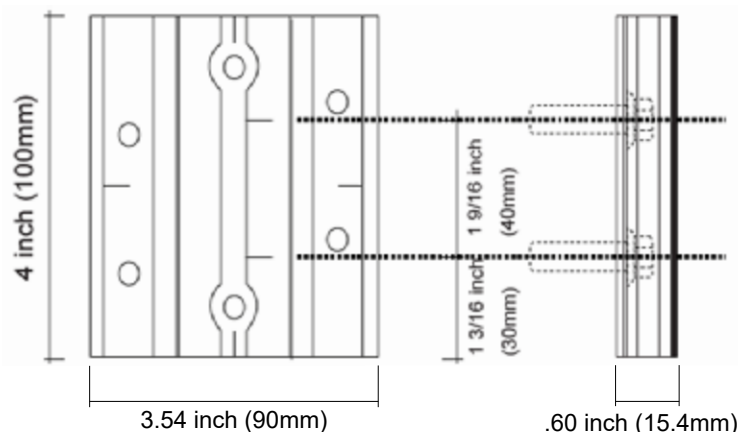


MINI II base : 20 ea.  
Screw : 40 ea.  
Extra RT-Butyl : 4 ea.

### Optional Items:

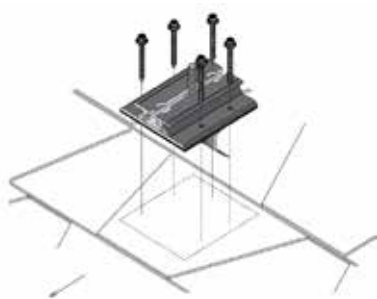
5 x 60mm Mounting Screw (RT2-04-SD5-60) : 100 ea./Bag  
5/16 X 25MM Flange Bolt & Nut (RT2-04-FBN25) : 100 ea./Bag  
RT-Butyl (RT2-04-MNBUTYL) : 10 ea./Box

## Dimensions in (mm)



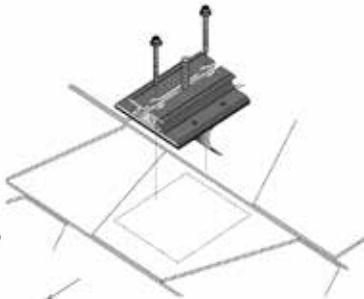
### Deck Installation

OSB & PLY

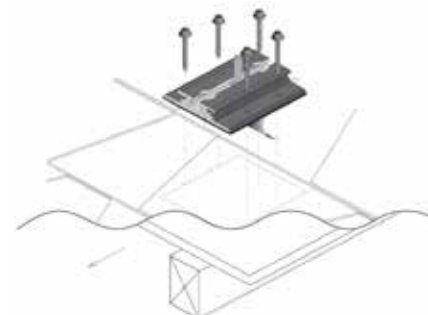


### Rafter Installation

Hybrid Mounting



### Offset Rafter Installation



Roof Tech Inc. AlphaSeal™ Technology has been used on over one million residential PV systems since 1994. It is the first PV mounting system with Flexible Flashing certified by the ICC, engineered to withstand wind speeds up to 180 mph and ground snow up to 90 psf.

Engineered to ASTM D 1761

(Standard Test Methods for Mechanical Fasteners in Wood)

ICC ESR-3575

ASTM2140 Testing

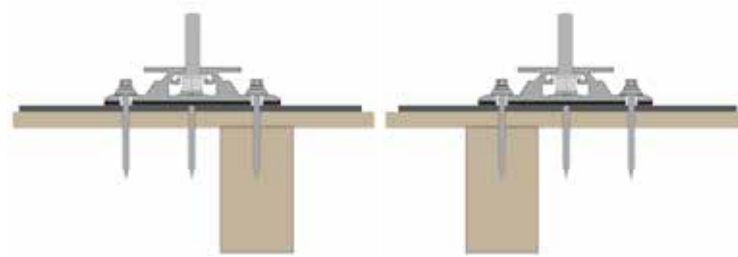
P.E. Letters



Support & Downloads



### Offset Rafter Attachment Options

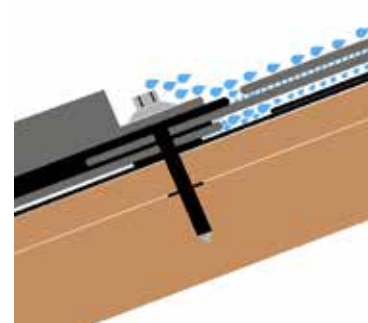


### Metal Flashing Retrofit



Shedding Water?

### Flexible Flashing



100% Waterproof

Roof Tech Inc.

[www.roof-tech.us](http://www.roof-tech.us)

[info@roof-tech.us](mailto:info@roof-tech.us)

10620 Trenea Street, Suite 230, San Diego, CA 92131

858.935.6064

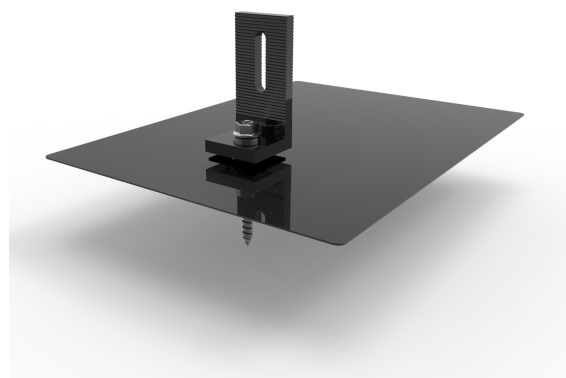
August 2022

## PRODUCT LINE

Item	Product Name
CK-FTH-211	CHIKO AL Roof Hook 211

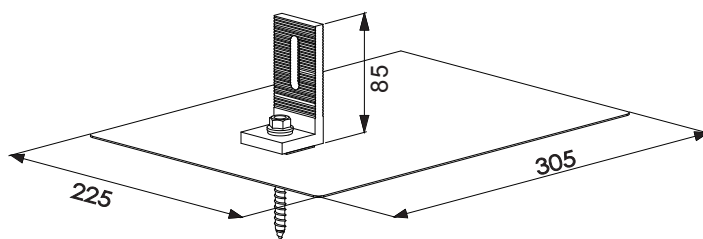
## TECHNICAL DATA

Main Material	6005-T5 & SUS304
Uplift P	N*Fv (N=3)
Wind Load	Up to 60 M/S
Snow Load	1.4 KM/M <sup>2</sup>
Hook Spacing	Up to 2000mm
Installation Site	Roman Tile Roof



## AL Roof Hook 019

CHIKO L Feet matching to the Flashing, supplying the best waterproofing solution for Asphalt Shingles Roofs.



## ADVANTAGES

- Enables simple, fast and cost-effective installation.
- High class anodized aluminium.
- Fasteners and rail nut configured to save extra parts purchasing.
- 100% water proofing.

## COMPONENT LIST

MATERIAL	QTY
AL Flashing	01
AL L Feet	01
O50 Nut	01
SUS Bolt M8*25	01
SUS M8 Wahser	02
Wooden Screw M8*90	01
Silicon Rubber	01

## WARRANTY



## UL LISTED



## ORDERING SPECIFICS

Standard Packaging	16PCS/CTN
Dimensions	34X25X7CM
Weight	6KG



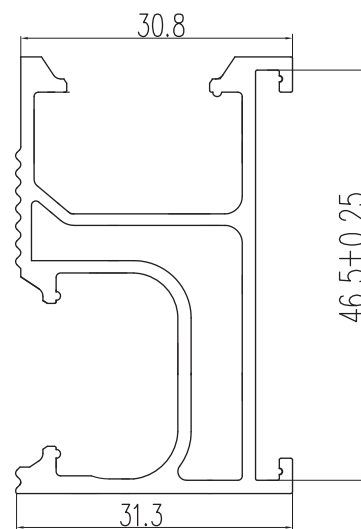
## PRODUCT LINE

Item	Product Name
CK-7R-2100	CHIKO 7 RAIL 2100MM
CK-7R-3200	CHIKO 7 RAIL 3200MM
CK-7R-4200	CHIKO 7 RAIL 4200MM

## TECHNICAL DATA

Main Material	AL 6005-T5
Wind Velocity	Up to 60 M/S

Xi=31918.082 mm<sup>4</sup>  
Yi=81501.592 mm<sup>4</sup>



## 7 RAIL

CHIKO 7R aluminium rail is designed for roof mounting system, it could applied on all roof mount system.

## ADVANTAGES

- Easy installation
- Highclass anodized
- Tilt- in nut
- Universal on roof mount system

## COMPONENT LIST

MATERIAL	QTY
Aluminium Rail	01

## WARRANTY



## UL LISTED



## ORDERING SPECIFICS

Standard Packaging	8 PCS/PKG
Dimensions	2100/3200/4200mm
Weight	15/22.8/30KG





## PRODUCT LINE

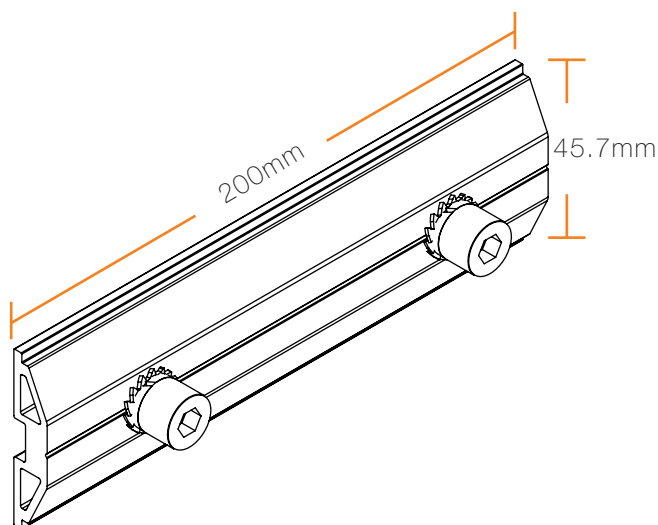
Item	Product Name
CK-FT-SKA	CHIKO 7 Rail Splice Kit

## TECHNICAL DATA

Main Material	AL 6005-T5
Wind Load	Up to 60 M/S
Snow Load	1.4 KM/M <sup>2</sup>

## 7 RAIL SPLICE KIT

CHIKO 7R aluminium rail splice kit is designed for 7R rail connection from back to position. The most simple and handy installation way.



## ADVANTAGES

- Easy installation
- Highclass anodized

## COMPONENT LIST

MATERIAL	QTY
Aluminium Rail Splice Kit	01
SUS304 Bolt M8*25	02
Star Washer	02

## WARRANTY



## UL LISTED



## ORDERING SPECIFICS

Standard Packaging	200 PCS/PKG
Dimensions	51X38X22CM
Weight	30KG

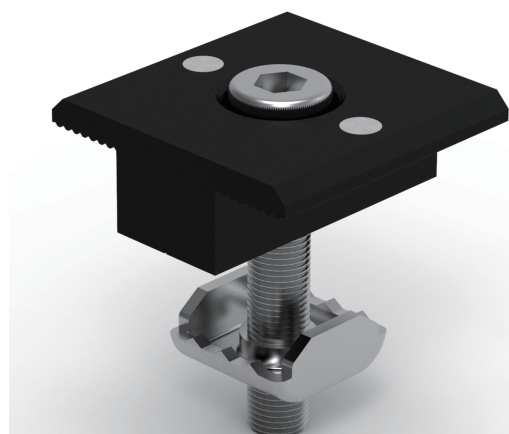
## PRODUCT LINE

Item	Product Name
CK-FTM-K30	CHIKO Intergrated Grounding Mid Clamp 30mm
CK-FTM-K33	CHIKO Intergrated Grounding Mid Clamp 33mm
CK-FTM-K35	CHIKO Intergrated Grounding Mid Clamp 35mm
CK-FTM-K38	CHIKO Intergrated Grounding Mid Clamp 38mm
CK-FTM-K40	CHIKO Intergrated Grounding Mid Clamp 40mm

...

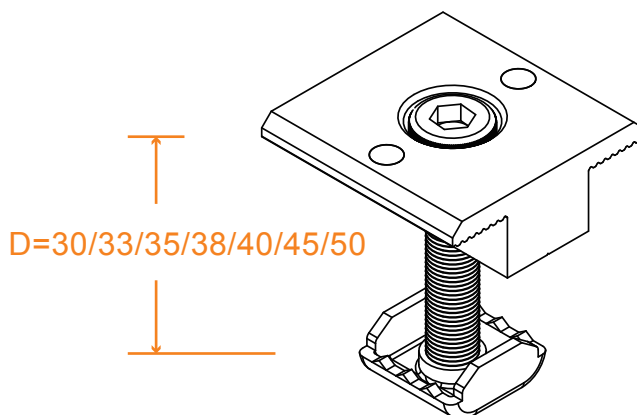
## TECHNICAL DATA

Main Material	AL 6005-T5
---------------	------------



## Intergrated Grounding Mid Clamp

CHIKO end clamps is designed base on 7R rail to fix module on the end of rail, have founction of intergrated grounding, 30mm to 50 mm thickness module are available.



## ADVANTAGES

- Intergrated Grounding
- Easy installation
- High class anodized
- Tilt- in nut

## COMPONENT LIST

MATERIAL	QTY
Mid Clamp	01
SUS304 Bolt M8	01
050 SUS304 Nut	01
Rivet	02

## WARRANTY



## UL LISTED



## ORDERING SPECIFICS

Standard Packaging	100 PCS/BOX 400PCS/CTN
Dimensions	50X38X20CM
Weight	26.8/27.5/28/28.6KG

## PRODUCT LINE

Item	Product Name
CK-FTE-K30	CHIKO Intergrated Grounding End Clamp 30mm
CK-FTE-K33	CHIKO Intergrated Grounding End Clamp 33mm
CK-FTE-K35	CHIKO Intergrated Grounding End Clamp 35mm
CK-FTE-K38	CHIKO Intergrated Grounding End Clamp 38mm
CK-FTE-K40	CHIKO Intergrated Grounding End Clamp 40mm

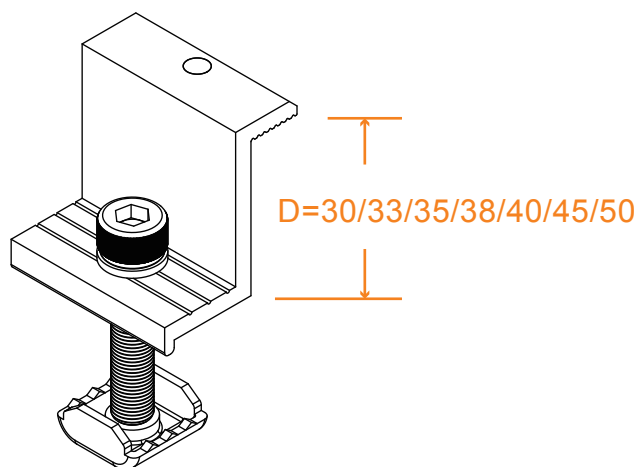
...

## TECHNICAL DATA

Main Material	AL 6005-T5
---------------	------------

## Intergrated Grounding End Clamp

CHIKO end clamps is designed base on 7R rail to fix module on the end of rail, have founction of intergrated grounding, 30mm to 50mm thickness module are available.



## ADVANTAGES

- Intergrated Grounding
- Easy installation
- High class anodized
- Tilt- in nut

## UL LISTED



## COMPONENT LIST

MATERIAL	QTY
End Clamp	01
SUS304 Bolt M8*25	01
SUS304 Washer M8	01
050 SUS304 Nut	01
Rivet	01

## WARRANTY

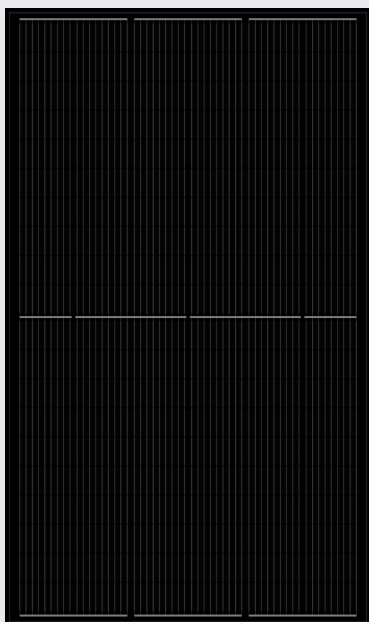


## ORDERING SPECIFICS

Standard Packaging	100 PCS/BOX 400PCS/CTN
Dimensions	50X38X20CM
Weight	22/24.5/25.5/26KG



# YLM 120 CELL BLACK BLACK

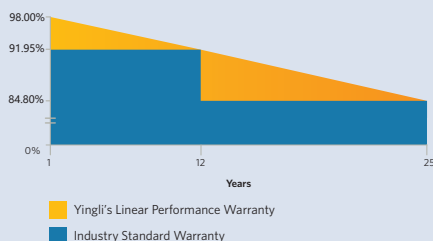


**22.3%**  
CELL EFFICIENCY

**12 YEAR**  
PRODUCT WARRANTY

**0-5W**  
POWER TOLERANCE

## 25 Years Linear Warranty



## IMPROVED POWER NEVER SETTLE FOR LESS

Choosing the best P-type monocrystalline cells, YLM series modules are making the best out of your system. Trust in the expertise of Yingli and well proven technology.



### Higher Durability

The multi-busbar design can decrease the risk of the cell micro-cracks and fingers broken.



### High Power Density

High conversion efficiency and more power output per square meter, by lower series resistance and improved light harvesting.



### Half-cell Design

Less energy loss caused by shading due to new cell string layout and split J-box, and lower cell connection power loss due to half-cell design.



### Bigger Cells with better performance

A slight increase of the size of our cells, Boosts the performance of the newest modules by six percent on average.

### Yingli Solar

Yingli Energy (China) Company Limited, known as "Yingli Solar", is one of the world's leading solar panel manufacturers with the mission to provide affordable green energy for all. Yingli Solar makes solar power possible for communities everywhere by using our global manufacturing and logistics expertise to address unique local challenges.

# YLM 120 CELL BLACK BLACK

## ELECTRICAL PERFORMANCE

Electrical parameters at Standard Test Conditions (STC)

Module type			YLxxxD-34d 1/2(XXX=Pmax) YLxxxD-34d 1500V 1/2(XXX=Pmax)			
Power output	$P_{max}$	W	360	365	370	375
Power output tolerances	$\Delta P_{max}$	W	0 / +5			
Module efficiency	$\eta_m$	%	19.8	20.0	20.3	20.6
Voltage at $P_{max}$	$V_{mpp}$	V	33.65	33.85	34.05	34.25
Current at $P_{max}$	$I_{mpp}$	A	10.70	10.79	10.87	10.95
Open-circuit voltage	$V_{oc}$	V	40.85	41.05	41.25	41.45
Short-circuit current	$I_{sc}$	A	11.19	11.27	11.35	11.43

STC: 1000W/m<sup>2</sup> irradiance, 25°C cell temperature, AM1.5g spectrum according to EN 60904-3.  
Average relative efficiency reduction of 3.3% at 200W/m<sup>2</sup> according to EN 60904-1.

Electrical parameters at Nominal Operating Cell Temperature (NOCT)

Power output	$P_{max}$	W	266.7	270.4	274.1	277.8
Voltage at $P_{max}$	$V_{mpp}$	V	31.2	31.3	31.5	31.7
Current at $P_{max}$	$I_{mpp}$	A	8.56	8.63	8.70	8.76
Open-circuit voltage	$V_{oc}$	V	38.1	38.3	38.5	38.7
Short-circuit current	$I_{sc}$	A	9.06	9.12	9.19	9.25

NOCT: open-circuit module operation temperature at 800W/m<sup>2</sup> irradiance, 20°C ambient temperature, 1m/s wind speed.

## THERMAL CHARACTERISTICS

Nominal operating cell temperature	NOCT	°C	45±2
Temperature coefficient of $P_{max}$	$\gamma$	%/°C	-0.37
Temperature coefficient of $V_{oc}$	$\beta_{Voc}$	%/°C	-0.29
Temperature coefficient of $I_{sc}$	$\alpha_{Isc}$	%/°C	0.06

## OPERATING CONDITIONS

Max. system voltage	1000V <sub>DC</sub> /1500V <sub>DC</sub>
Max. series fuse rating *	20A
Operating temperature range	-40°C to 85°C
Max. static load, front (e.g., snow)	5400Pa
Max. static load, back (e.g., wind)	2400Pa
Max. hailstone impact (diameter / velocity)	25mm / 23m/s

\*DO NOT CONNECT FUSE IN COMBINER BOX WITH TWO OR MORE STRINGS IN PARALLEL CONNECTION

## CONSTRUCTION MATERIALS

Front cover (material / thickness)	low-iron tempered glass / 3.2mm
Cell (quantity / material)	120 / monocrystalline silicon
Frame (material)	anodized aluminum alloy
Junction box (protection degree)	≥ IP67
Cable (length / cross-sectional area)	1700mm/ 4mm <sup>2</sup>

- Due to continuous innovation, research and product improvement, the specifications in this product information sheet are subject to change without prior notice. The specifications may deviate slightly and are not guaranteed.
- The data do not refer to a single module and they are not part of the offer, they only serve for comparison to different module types.

## QUALIFICATIONS & CERTIFICATES

IEC 61215, IEC 61730, CE, ISO 9001:2015, ISO 14001:2015, BS  
OHSAS 18001:2007, SA 8000



[PHOTOVOLTAIC MODULE  
OVER 600 VOLTS]  
4WF1

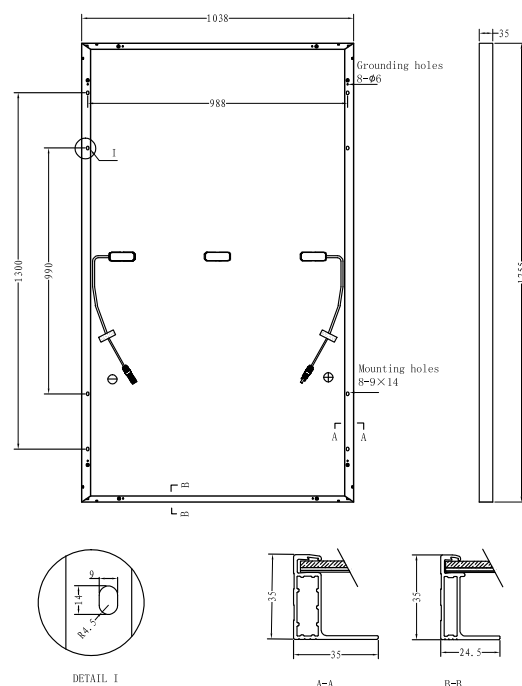
## GENERAL CHARACTERISTICS

Dimensions (L / W / H)	1755mm / 1038mm / 35mm
Weight	19.5kg

## PACKAGING SPECIFICATIONS

Number of modules per pallet	30
Number of pallets per 40' container	26
Packaging box dimensions (L / W / H)	1795mm / 1110mm / 1185mm
Box weight	620kg

Unit: mm



**Warning:** Read the Installation and User Manual in its entirety before handling, installing and operating Yingli Solar modules.

Yingli Partners:

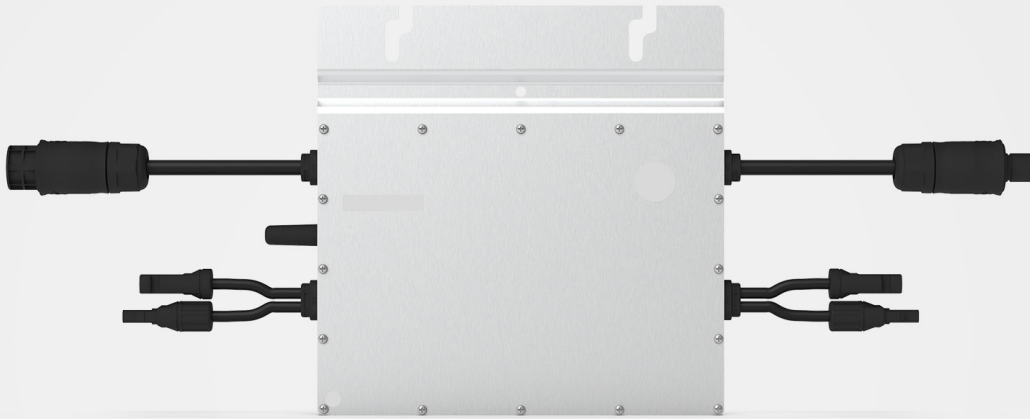
**Yingli Energy (China) Co., Ltd.**

service@yingli.com

Tel: +86-312-2188055

**YINGLISOLAR.COM**





## Microinverter Datasheet

**HM-600N**  
**HM-700N**  
**HM-800N**

### Description

Hoymiles 2-in-1 microinverter can connect up to 2 panels at once and maximize the PV production of your installation. With the maximum DC voltage of 60 V, Hoymiles microinverter is a PV Rapid Shutdown Equipment and conforms with NEC-2017 and NEC-2020 Article 690.12 and CEC-2021 Sec 64-218.

All of the three models listed are equipped with reactive power control and are compliant with IEEE 1547, UL 1741 and CA Rule21.

### Features

01

Easy installation, just plug and play

02

With Reactive Power Control, compliant with CA Rule 21

03

Compliant with U.S. NEC-2017&amp;NEC-2020 690.12 rapid shutdown

04

External antenna for stronger communication with DTU

05

High reliability, NEMA 6 (IP67) enclosure, 6000 V surge protection



## Technical Specifications

Model	HM-600N		HM-700N		HM-800N	
Input Data (DC)						
Commonly used module power (W)	240 to 405+		280 to 470+		320 to 540+	
Maximum input voltage (V)			60			
MPPT voltage range (V)			16-60			
Start-up voltage (V)			22			
Maximum input current (A)	2 × 11.5		2 × 11.5		2 × 12.5	
Output Data (AC)						
Peak output power (VA)	600		700		800	
Maximum continuous output power (VA)	590		696		766	
Maximum continuous output current (A)	2.46	2.84	2.90	3.35	3.19	3.68
Nominal output voltage/range (V) <sup>1</sup>	240/211-264	208/183-228	240/211-264	208/183-228	240/211-264	208/183-228
Nominal frequency/range (Hz) <sup>1</sup>			60/55-65			
Power factor (adjustable)			>0.99 default 0.8 leading...0.8 lagging			
Total harmonic distortion			<3%			
Maximum units per branch <sup>2</sup>	6	5	5	4	5	4
Efficiency						
CEC peak efficiency			96.7%			
CEC weighted efficiency			96.5%			
Nominal MPPT efficiency			99.8%			
Nighttime power consumption (mW)			<50			
Mechanical Data						
Ambient temperature range (°C)			-40 to +65			
Dimensions (W × H × D mm)			250 × 170 × 28			
Weight (kg)			3			
Enclosure rating			Outdoor-NEMA 6 (IP67)			
Cooling			Natural convection – No fans			
Features						
Communication			2.4GHz Proprietary RF (Nordic)			
Monitoring			S-Miles Cloud <sup>3</sup>			
Warranty			Up to 25 years			
Compliance			UL 1741, IEEE 1547, UL 1741 SA (240 Vac), CA Rule 21 (240 Vac), CSA C22.2 No. 107.1-16, FCC Part 15B, FCC Part 15C			
PV Rapid Shutdown			Conforms with NEC-2017 and NEC-2020 Article 690.12 and CEC-2021 Sec 64-218 Rapid Shutdown of PV Systems			

\*1 Nominal voltage/frequency range can vary depending on local requirements.

\*2 Refer to local requirements for exact number of microinverters per branch.

\*3 Hoymiles Monitoring System.



# Certificate of Compliance

**Certificate:** 80035475

**Master Contract:** 261002

**Project:** 80035475

**Date Issued:** 2020-04-03

**Issued to:** Hoymiles Converter Technology Co., Ltd.  
No.18 Kangjing Road,  
Hangzhou, Zhejiang 310015  
China  
Attention: Xingyao Zhang

*The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only*



**Issued by:** Yang (Jason) Lei  
Yang (Jason) Lei

## **PRODUCTS**

CLASS – C531109 - POWER SUPPLIES - Distributed Generation Power Systems Equipment

CLASS – C531189 - POWER SUPPLIES - Distributed Generation-Power Systems Equipment - Certified to U.S. Standards

Grid Support Utility Interactive Inverter, Model HM-500, HM-500T, HM-600, HM-600T, HM-700, HM-700T, HM-800, HM-800T, HM-500N, HM-500NT, **HM-600N**, HM-600NT, HM-700N, HM-700NT, HM-800N, HM-800NT, rack mounted.

For details related to rating, size, configuration, etc., reference should be made to the CSA Certification Record, Certificate of Compliance Annex A, or the Descriptive Report.

**\*Note:** This product is PV Rapid Shut Down Equipment and conforms with NEC-2014 and NEC-2017 Article 690.12 and CEC-2018 Sec 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer's instructions.



**Certificate:** 80035475

**Master Contract:** 261002

**Project:** 80035475

**Date Issued:** 2020-04-03

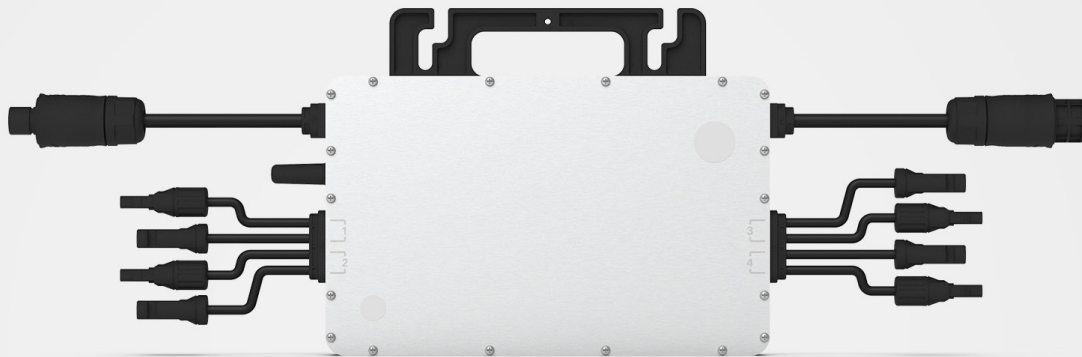
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**APPLICABLE REQUIREMENTS**

CSA-C22.2 No. 107.1-16 - Power Conversion Equipment

\*UL Std. No. 1741 - Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources (Second Edition, Revision dated February 15, 2018).

\*Note: Conformity to UL 1741-Second Edition (February 15, 2018) includes compliance with applicable requirements of IEEE 1547-2003(R2008) and IEEE 1547.1-2005 (R2011) and California Rule 21 and Supplement SA.



# Microinverter Datasheet

**HM-1200N**  
**HM-1500N**

## Description

Hoymiles 4-in-1 microinverter is one of the most cost-effective module-level solar solutions, as it can support up to 4 panels at once and maximize the PV production of your installation. With the maximum DC voltage of 60 V, Hoymiles microinverter is a PV Rapid Shutdown Equipment and conforms with NEC-2017 and NEC-2020 Article 690.12 and CEC-2021 Sec 64-218.

All of the three models listed are equipped with reactive power control and are compliant with IEEE 1547, UL 1741 and CA Rule21.

## Features

01

Easy installation, just plug and play

02

With Reactive Power Control, compliant with CA Rule 21

03

Compliant with U.S. NEC-2017&amp;NEC-2020 690.12 rapid shutdown

04

External antenna for stronger communication with DTU

05

High reliability, NEMA 6 (IP67) enclosure, 6000 V surge protection



## Technical Specifications

Model	HM-1200N		HM-1500N	
Input Data (DC)				
Commonly used module power (W)	240 to 405+		300 to 505+	
Maximum input voltage (V)	60			
MPPT voltage range (V)	16-60			
Start-up voltage (V)	22			
Maximum input current (A)	4 × 11.5		4 × 11.5	
Output Data (AC)				
Peak output power (VA)	1260	1200	1500	1350
Maximum continuous output power (VA)	1200	1109	1438	1246
Maximum continuous output current (A)	5	5.33	5.99	5.99
Nominal output voltage/range (V) <sup>1</sup>	240/211-264	208/183-228	240/211-264	208/183-228
Nominal frequency/range (Hz) <sup>1</sup>	60/55-65			
Power factor (adjustable)	>0.99 default 0.8 leading..0.8 lagging			
Total harmonic distortion	<3%			
Maximum units per branch <sup>2</sup>	3	3	2	2
Efficiency				
CEC peak efficiency	96.7%			
CEC weighted efficiency	96.5%			
Nominal MPPT efficiency	99.8%			
Nighttime power consumption (mW)	<50			
Mechanical Data				
Ambient temperature range (°C)	-40 to +65			
Dimensions (W × H × D mm)	280 × 176 × 33			
Weight (kg)	3.75			
Enclosure rating	Outdoor-NEMA 6 (IP67)			
Cooling	Natural convection – No fans			
Features				
Communication	2.4GHz Proprietary RF (Nordic)			
Monitoring	S-Miles Cloud <sup>3</sup>			
Warranty	Up to 25 years			
Compliance	UL 1741, IEEE 1547, UL 1741 SA (240 Vac), CA Rule 21 (240 Vac), CSA C22.2 No. 107.1-16, FCC Part 15B, FCC Part 15C			
PV Rapid Shutdown	Conforms with NEC-2017 and NEC-2020 Article 690.12 and CEC-2021 Sec 64-218 Rapid Shutdown of PV Systems			

\*1 Nominal voltage/frequency range can vary depending on local requirements.

\*2 Refer to local requirements for exact number of microinverters per branch.

\*3 Hoymiles Monitoring System.



# Certificate of Compliance

**Certificate:** 80017010

**Master Contract:** 261002

**Project:** 80036969

**Date Issued:** 2020-03-12

**Issued to:** Hoymiles Converter Technology Co., Ltd.  
No.18 Kangjing Road,  
Hangzhou, Zhejiang 310015  
CHINA  
Attention: Xingyao Zhang

*The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.*



**Issued by:** Yang (Jason) Lei  
Yang (Jason) Lei

## **PRODUCTS**

CLASS - C531109 - POWER SUPPLIES-Distributed Generation Power Systems Equipment

CLASS - C531189 - POWER SUPPLIES - Distributed Generation-Power Systems Equipment - Certified to U.S. Standards

Grid Support Utility Interactive Inverter, Model HM-1500, HM-1500T, HM-1200, HM-1200T, HM-1000 and HM-1000T, THM-1500, HM-1500N, HM-1500NT, **HM-1200N**, HM-1200NT, HM-1000N and HM-1000NT, rack mounted.

For details related to rating, size, configuration, etc., reference should be made to the CSA Certification Record, Certificate of Compliance Annex A, or the Descriptive Report.

**\*Note:** This product is PV Rapid Shut Down Equipment and conforms with NEC-2014 and NEC-2017 Article 690.12 and CEC-2018 Sec 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according manufacturer's instructions.



**Certificate:** 80017010

**Project:** 80036969

**Master Contract:** 261002

**Date Issued:** 2020-03-12

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**APPLICABLE REQUIREMENTS**

CSA-C22.2 No. 107.1-16 - Power Conversion Equipment

\*UL Std. No. 1741 - Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources (Second Edition, Revision dated February 15, 2018)

\*Note: Conformity to UL 1741-Second Edition (February 15, 2018) includes compliance with applicable requirements of IEEE 1547-2003(R2008) , IEEE 1547.1-2005 (R2011) and California Rule 21 and Supplement SA.