

SOLAR'S MOST TRUSTED



REC N-PEAK 3 BLACK SERIES

PREMIUM FULL BLACK MONO N-TYPE SOLAR PANELS



MONO N-TYPE: THE MOST EFFICIENT C-SI TECHNOLOGY



NO LIGHT INDUCED DEGRADATION



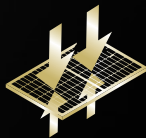
SUPER-STRONG FRAME UP TO 7000 PA SNOW LOAD



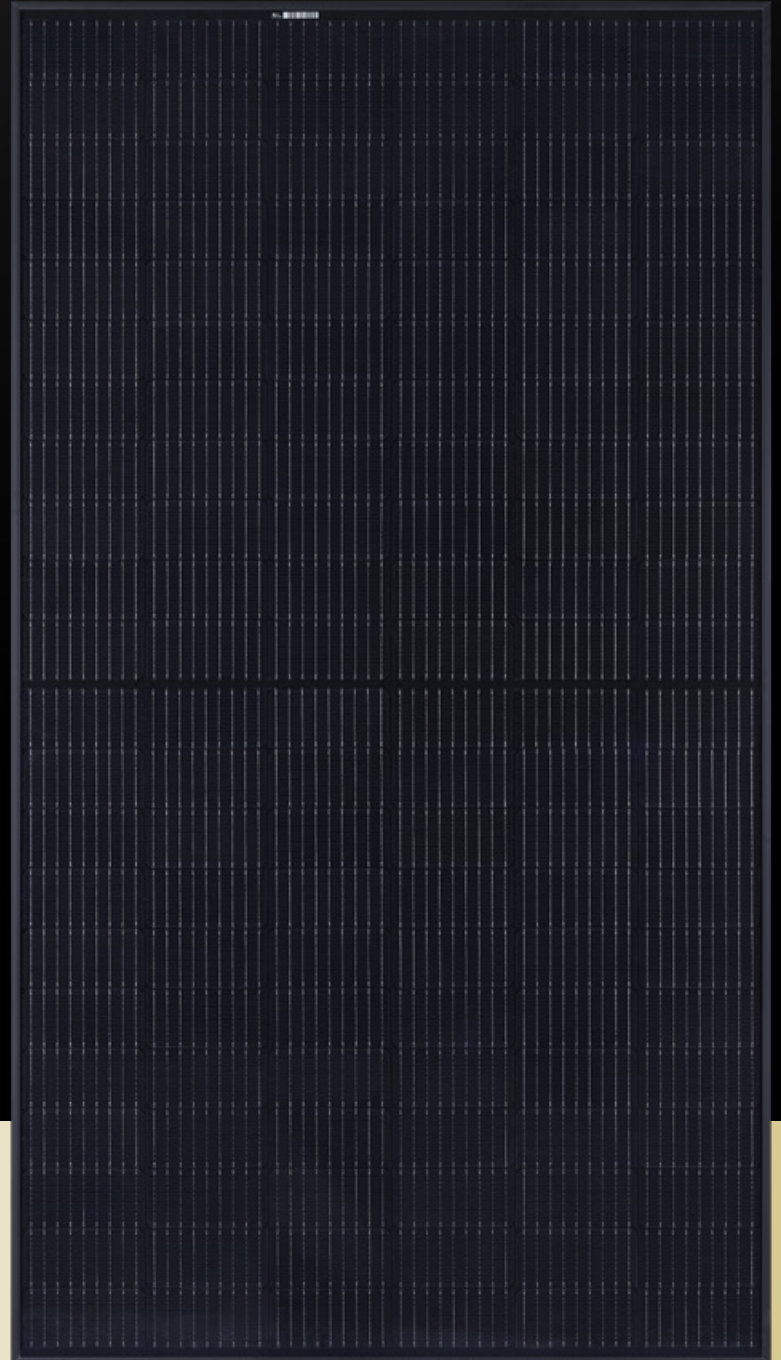
FLEXIBLE INSTALLATION OPTIONS



FEATURING REC'S PIONEERING TWIN DESIGN



BIFACIAL CELLS CAN PRODUCE ENERGY FROM BOTH SIDES



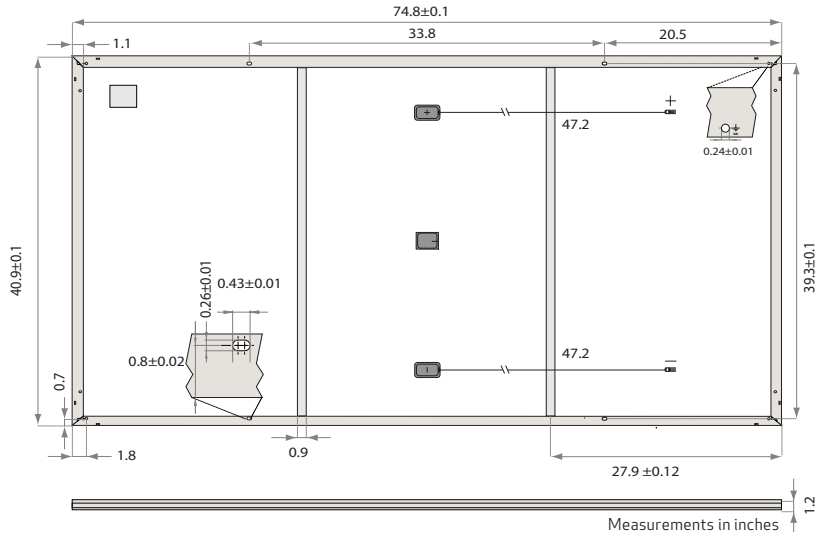
400
WP
POWER



ELIGIBLE

GENERAL DATA

Cell type:	132 half-cut mono c-Si n-type cells 6 strings of 22 cells in series
Glass:	0.13 in solar glass with anti-reflective surface treatment in accordance with EN 12150
Backsheet:	Highly resistant polymer (black)
Frame:	Anodized aluminum (black) with silver support bars
Junction box:	3-part, 3 bypass diodes, lead-free IP68 rated, in accordance with IEC 62790
Connectors:	Stäubli MC4 PV-KBT4/KST4 (12 AWG) in accordance with IEC 62852, IP68 only when connected
Cable:	12 AWG PV wire, 47.2 + 47.2 in in accordance with EN 50618
Dimensions:	74.8 x 40.9 x 1.2 in (19.7 sq-ft)
Weight:	48.0 lbs
Origin:	Made in Singapore



ELECTRICAL DATA

Product Code*: RECxxxNP3 Black

Power Output - P_{MAX} (Wp)	390	400
Watt Class Sorting - (W)	0/+10	0/+10
Nominal Power Voltage - V_{MPP} (V)	36.8	37.6
Nominal Power Current - I_{MPP} (A)	10.60	10.64
Open Circuit Voltage - V_{OC} (V)	44.8	45.0
Short Circuit Current - I_{SC} (A)	11.31	11.39
Panel Efficiency (%)	19.5	20.3
Power Output - P_{MAX} (Wp)	295	302
Nominal Power Voltage - V_{MPP} (V)	34.4	35.2
Nominal Power Current - I_{MPP} (A)	8.56	8.59
Open Circuit Voltage - V_{OC} (V)	41.9	42.1
Short Circuit Current - I_{SC} (A)	9.13	9.20

Values at standard test conditions (STC: air mass AM 1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread with a tolerance of P_{MAX} , V_{OC} & I_{SC} ±3% within one watt class. Nominal module operating temperature (NMOT: air mass AM 1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s). * Where xxx indicates the nominal power class (P_{MAX}) at STC above.

MAXIMUM RATINGS

Operational temperature:	-40 ... +185°F
Maximum system voltage:	1000 V
Maximum test load (front):	+7000 Pa (146 lbs/sq-ft)*
Maximum test load (rear):	-4000 Pa (83.5 lbs/sq-ft)*
Max series fuse rating:	25 A
Max reverse current:	25 A

* See installation manual for mounting instructions.
Design load = Test load / 1.5 (safety factor)

WARRANTY

	Standard	REC ProTrust
Installed by an REC Certified Solar Professional	No	Yes
System Size	All	≤25 kW 25-500 kW
Product Warranty (yrs)	20	25
Power Warranty (yrs)	25	25
Labor Warranty (yrs)	0	25
Power in Year 1	98%	98%
Annual Degradation	0.25%	0.25%
Power in Year 25	92%	92%

The REC ProTrust Warranty is only available on panels purchased through an REC Certified Solar Professional installer. Warranty conditions apply. See www.recgroup.com for more details.

CERTIFICATIONS

IEC 61215:2016, IEC 61730:2016, UL 61730
IEC 62804 PID
IEC 61701 Salt Mist
IEC 62716 Ammonia Resistance
UL 61730 Fire Type Class 2
UL 790 Fire Class Type C
IEC 62782 Dynamic Mechanical Load
IEC 61215-2:2016 Hailstone (1.37in)
ISO 14001, ISO 9001, IEC 45001, IEC 62941



TEMPERATURE RATINGS*

Nominal Module Operating Temperature:	44.3°C (±2°C)
Temperature coefficient of P_{MAX} :	-0.34 %/°C
Temperature coefficient of V_{OC} :	-0.26 %/°C
Temperature coefficient of I_{SC} :	0.04 %/°C

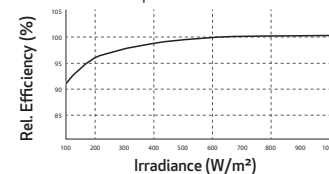
*The temperature coefficients stated are linear values

DELIVERY INFORMATION

Panels per pallet:	33
Panels per 40 ft GP/high cube container:	792 (24 pallets)
Panels per 53 ft truck:	TBD

LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:



Available from:

Founded in 1996, REC Group is an international pioneering solar energy company dedicated to empowering consumers with clean, affordable solar power. As Solar's Most Trusted, REC is committed to high quality, innovation, and a low carbon footprint in the solar materials and solar panels it manufactures. Headquartered in Norway with operational headquarters in Singapore, REC also has regional hubs in North America, Europe, and Asia-Pacific.

REC Solar PTE. LTD.
20 Tuas South Ave. 14
Singapore 637312
post@recgroup.com

Powerwall 3

Power Everything

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

Powerwall 3 achieves this by supporting up to 20 kW DC of solar and providing 11.5 kW AC of continuous power per unit. It has the ability to start heavy loads rated up to 185 LRA, meaning a single unit can support the power needs of most homes. Powerwall 3 is designed for fast and efficient installations, modular system expansion, and simple connection to any electrical service.



Powerwall 3 Technical Specifications

System Technical Specifications

Model Number	1707000-xx-y
Nominal Grid Voltage (Input & Output)	120/240 VAC
Grid Type	Split phase
Frequency	60 Hz
Overcurrent Protection Device	60 A <i>See Powerwall 3 Installation Manual for fuse requirements if using 60 A fuse for overcurrent protection</i>
Solar to Battery to Home/Grid Efficiency	89% ^{1,2}
Solar to Home/Grid Efficiency	97.5% ³
Supported Islanding Devices	Gateway 3, Backup Switch, Backup Gateway 2
Connectivity	Wi-Fi (2.4 and 5 GHz), Ethernet, Cellular (LTE/4G ⁴)
Hardware Interface	Dry contact relay, Rapid Shutdown (RSD) certified switch and 2-pin connector, RS-485 for meters
AC Metering	Revenue Grade (+/- 0.5%, ANSI C12.20)
Protections	Integrated arc fault circuit interrupter (AFCI), Isolation Monitor Interrupter (IMI), PV Rapid Shutdown (RSD) using Tesla Mid-Circuit Interrupters
Customer Interface	Tesla Mobile App
Warranty	10 years

Battery Technical Specifications

Nominal Battery Energy	13.5 kWh AC ²
Maximum Continuous Discharge Power	11.5 kW AC
Output Power Factor Rating	0 - 1 (Grid Code configurable)
Maximum Continuous Charge Current / Power	20.8 A AC / 5 kW
Maximum Output Fault Current	10 kA
Load Start Capability	185 LRA
Power Scalability	Up to 4 Powerwall 3 units supported

Solar Technical Specifications

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

¹ Typical solar shifting use case.

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

³ Tested using CEC weighted efficiency methodology.

⁴ The customer is expected to provide internet connectivity for Powerwall 3; cellular should not be used as the primary mode of connectivity. Cellular connectivity subject to network operator service coverage and signal strength.

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

Powerwall 3 Technical Specifications

Environmental Specifications

Operating Temperature	–20°C to 50°C (–4°F to 122°F) ⁶
Operating Humidity (RH)	Up to 100%, condensing
Storage Temperature	–20°C to 30°C (–4°F to 86°F), up to 95% RH, non-condensing, State of Energy (SOE): 25% initial
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Rating	NEMA 3R
Ingress Rating	IP67 (Battery & Power Electronics) IP55 (Wiring Compartment)
Pollution Rating	PD3
Operating Noise @ 1 m	< 50 db(A) typical < 62 db(A) maximum

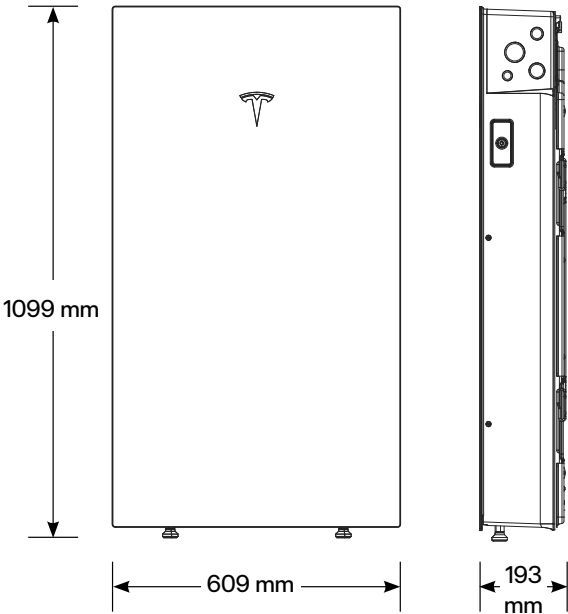
⁶ Performance may be de-rated at operating temperatures above 40°C (104°F).

Compliance Information

Certifications	UL 1741, UL 9540, UL 9540A, UL 3741, UL 1741 PCS, UL 1741 SA, UL 1741 SB, UL 1973, UL 1699B, UL 1998, CSA C22.2 No. 0.8, CSA C22.2 No. 107.1, CSA C22.2 No. 330, CSA 22.3 No. 9, IEEE 1547, IEEE 1547A, IEEE 1547.1, CA Rule No.21
Grid Connection	United States and Canada
Emissions	FCC Part 15 Class B, ICES 003
Environmental	RoHS Directive 2011/65/EU
Seismic	AC156, IEEE 693-2005 (high)
Fire Testing	Meets the unit level performance criteria of UL 9540A

Mechanical Specifications

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



Solar Shutdown Device Technical Specifications

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

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

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

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

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

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

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

UL 3741 PV Hazard Control (and PVRSA) Compatibility	See Powerwall 3 Installation Manual
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Backup Switch

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

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

Performance Specifications

Model Number	1624171-xx-y
Continuous Load Rating	200 A, 120/240 V split phase
Maximum Supply Short Circuit Current	22 kA with breaker ⁹
Communication	CAN
AC Meter	+/- 0.5%
Expected Service Life	21 years
Warranty	10 years

⁹ Breaker maximum supply short circuit current rating must be equal to or greater than the available fault current.

Environmental Specifications

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

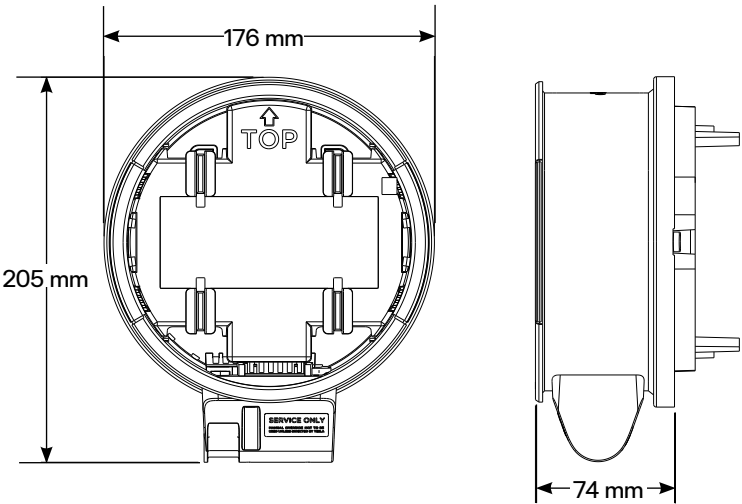
Compliance Information

Safety Standards	USA: UL 414, UL 414 SB, UL 2735, UL 916, CA Prop 65
Emissions	FCC Part 15, Class B, ICES 003

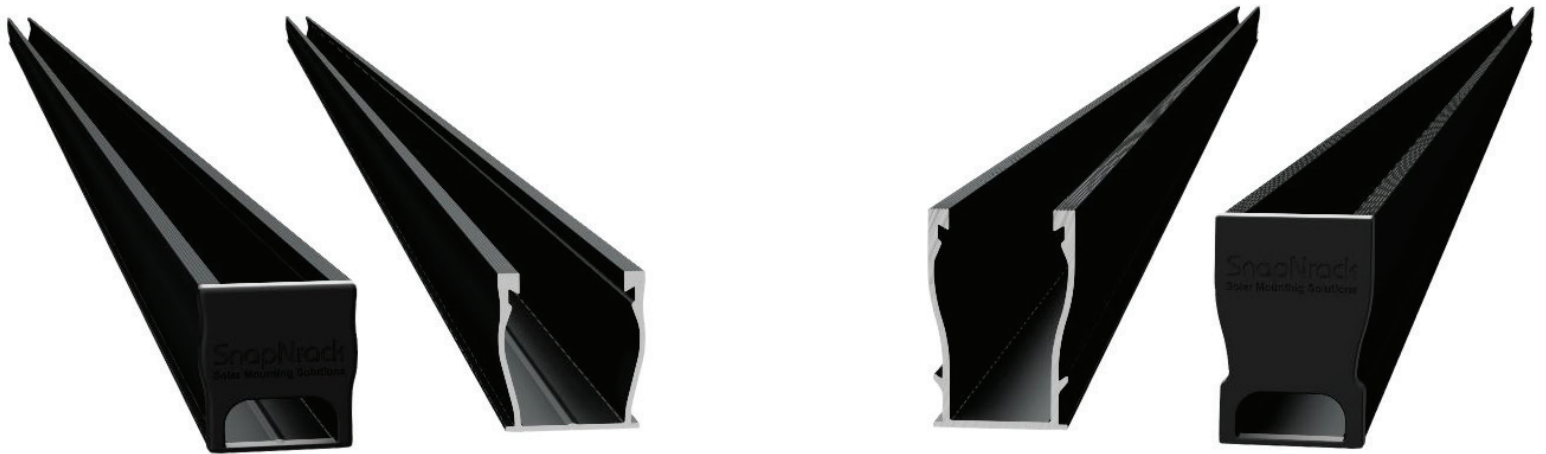
Mechanical Specifications

Dimensions	176 x 205 x 74 mm (6.9 x 8.1 x 2.9 in)
Weight	2.8 lb
Meter and Socket Compatibility	ANSI Type 2S, ringless or ring type
External Service Interface	Contactor manual override ¹⁰ Reset button
Conduit Compatibility	1/2-inch NPT

¹⁰ Manually overrides the contactor position during a service event.



Ultra Rail



The Ultimate Value in Rooftop Solar



Industry leading Wire
Management Solutions



Mounts available for all
roof types



Single Tool Installation



All SnapNrack Module
Clamps & Accessories
are compatible with
both rail profiles

Start Installing Ultra Rail Today

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DESIGN
WHERE TO BUY

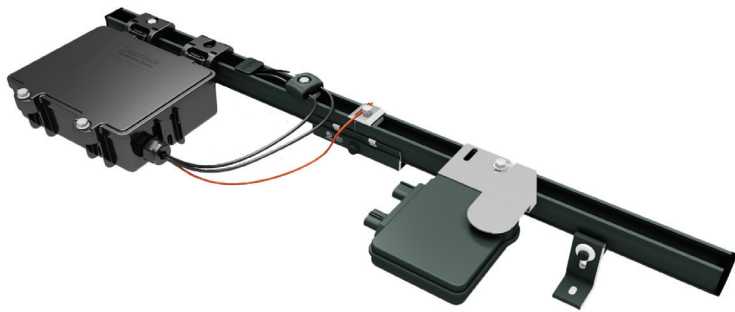
snapnrack.com/resources
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SnapNrack Ultra Rail System

A sleek, straightforward rail solution for mounting solar modules on all roof types. Ultra Rail features two rail profiles; UR-40 is a lightweight rail profile that is suitable for most geographic regions and maintains all the great features of SnapNrack rail, while UR-60 is a heavier duty rail profile that provides a larger rail channel and increased span capabilities. Both are compatible with all existing mounts, module clamps, and accessories for ease of install.

The Entire System is a Snap to Install

- New Ultra Rail Mounts include snap-in brackets for attaching rail
- Compatible with all the SnapNrack Mid Clamps and End Clamps customers love
- Universal End Clamps and snap-in End Caps provide a clean look to the array edge



Unparalleled Wire Management

- Open rail channel provides room for running wires resulting in a long-lasting quality install
- Industry best wire management offering includes Junction Boxes, Universal Wire Clamps, MLPE Attachment Kits, and Conduit Clamps
- System is fully bonded and listed to UL 2703 Standard

Heavy Duty UR-60 Rail

- UR-60 rail profile provides increased span capabilities for high wind speeds and snow loads
- Taller, stronger rail profile includes profile-specific rail splice and end cap
- All existing mounts, module clamps, and accessories are retained for the same great install experience



Quality. Innovative. Superior.


SnapNrack Solar Mounting Solutions are engineered to optimize material use and labor resources and improve overall installation quality and safety.

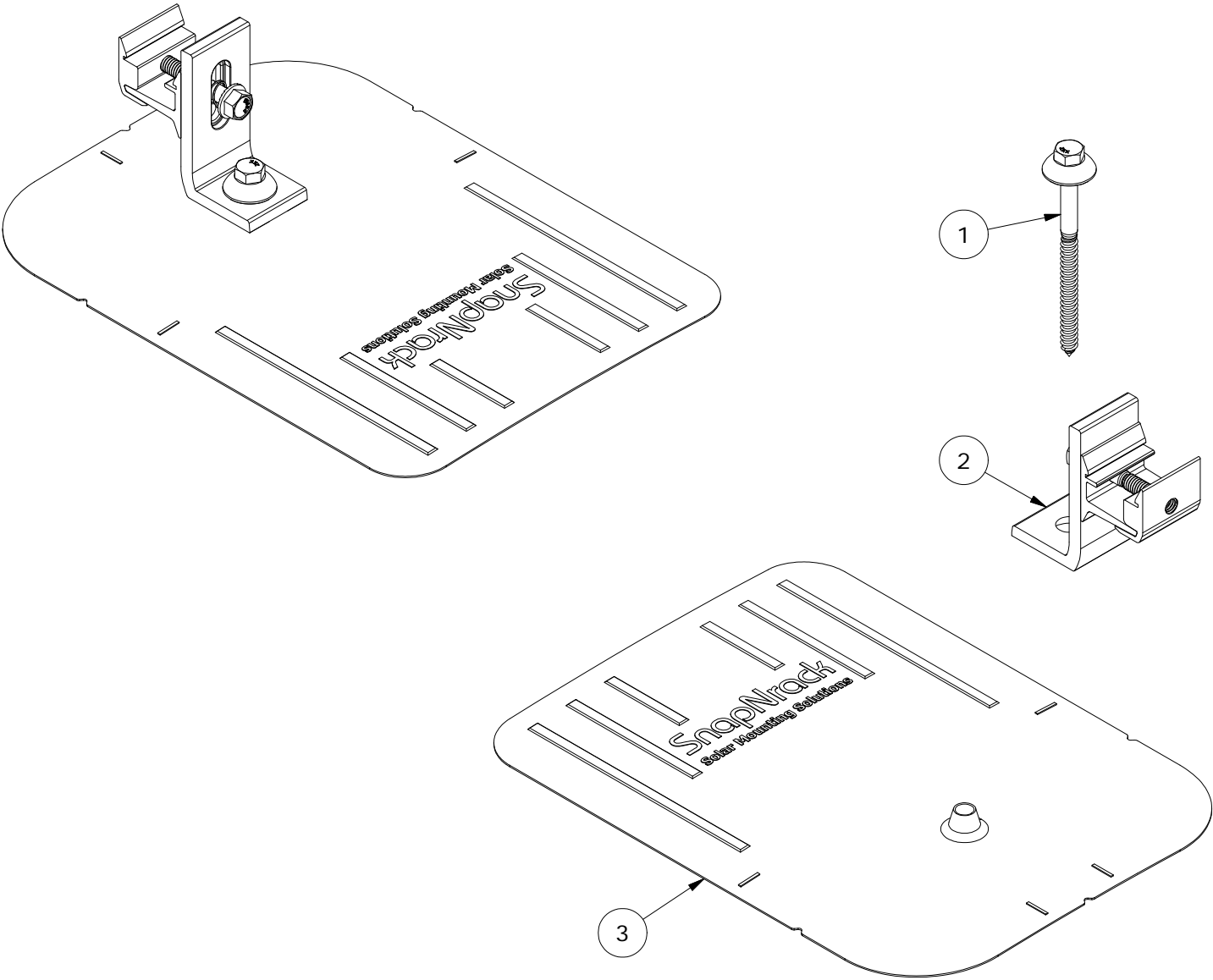
877-732-2860

www.snapnrack.com

contact@snapnrack.com

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DESCRIPTION:	DRAWN BY:	
SNAPNRACK, ULTRA RAIL COMP KIT	mwatkins	
PART NUMBER(S):	REVISION:	
SEE BELOW	C	595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA PHONE (415) 580-6900 • FAX (415) 580-6902 <small>THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY. ANY REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF SUNRUN SOUTH LLC.</small>



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	242-92266	SNAPNRACK, UMBRELLA LAG, TYPE 3, 4IN, SS
2	1	242-01219, 242-01220	SNAPNRACK, ULTRA RAIL UMBRELLA L FOOT, SILVER / BLACK
3	1	232-01375, 232-01376, 232-01377	SNAPNRACK, COMP FLASHING, 9IN X 12IN, SILVER / BLACK

MATERIALS:	6000 SERIES ALUMINUM, STAINLESS STEEL, RUBBER
DESIGN LOAD (LBS):	802 UP, 1333 DOWN, 356 SIDE
ULTIMATE LOAD (LBS):	2005 UP, 4000 DOWN, 1070 SIDE
TORQUE SPECIFICATION:	12 LB-FT
CERTIFICATION:	UL 2703, FILE E359313; WIND-DRIVEN RAIN TEST FROM UL SUBJECT 2582
WEIGHT (LBS):	0.79 - 1.03

DESCRIPTION:

SNAPNRACK, ULTRA RAIL COMP KIT

DRAWN BY:

mwatkins

REVISION:

C

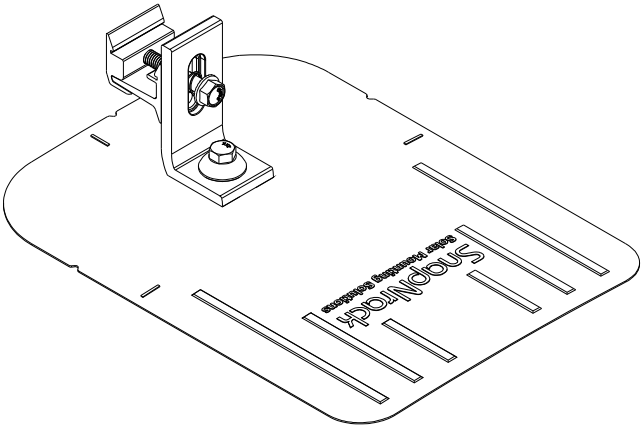
SnapNrack®

PART NUMBER(S):

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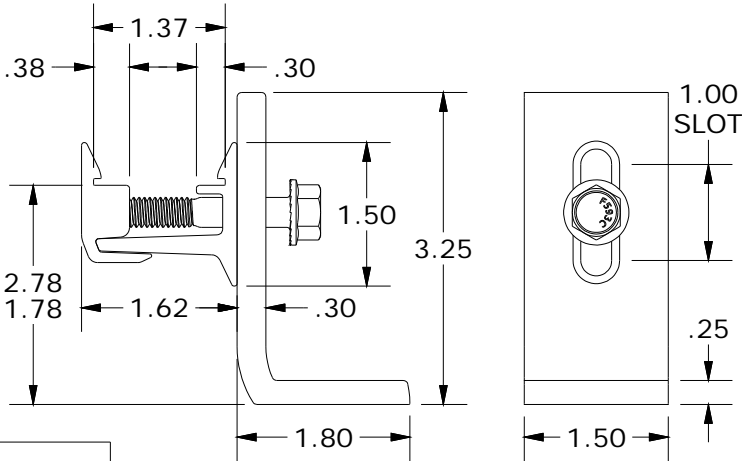
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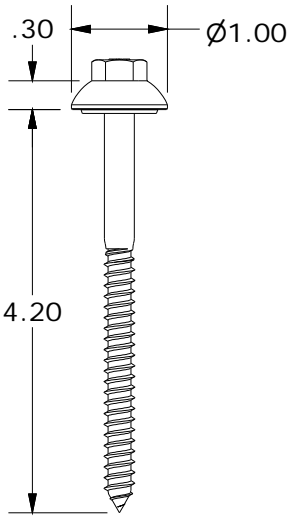
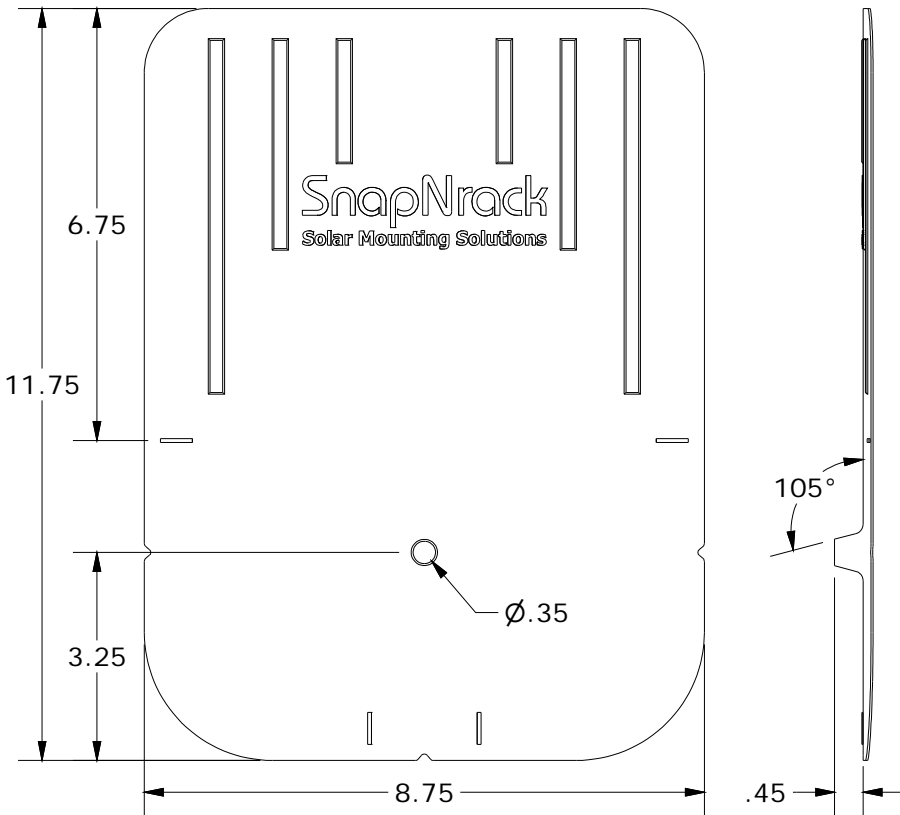
UMBRELLA L FOOT PROPERTIES

SKU	DESCRIPTION
242-01219	ULTRA RAIL UMBRELLA L FOOT, SILVER
242-01220	ULTRA RAIL UMBRELLA L FOOT, BLACK



COMP FLASHING PROPERTIES

SKU	DESCRIPTION
232-01375	COMP FLASHING, 9" X 12", BLACK ALUM
232-01376	COMP FLASHING, 9" X 12", SILVER ALUM
232-01377	COMP FLASHING, 9" X 12", BLACK GALVALUME



ALL DIMENSIONS IN INCHES