



# Kirkwood Landmarks Commission

## Application for Certificate of Appropriateness

Please submit the application with supporting documentation by the first Wednesday of the month to the Building Department. Failure to supply sufficient information may result in the application being denied or postponed. It is recommended that you or your representative be present at the Landmarks Commission meeting on the second Wednesday of the month at 7:00 p.m. in City Hall.

1. **Property Address** 348 Geyer Forest Dr, Kirkwood, MO 63122

2. **Property Status**
- Local Landmark Designation
  - National Register of Historic Places
  - Within a Historic District

3. **Name of Applicant** StraightUp Solar

Mailing Address 11696 Lilburn Park Rd

City/State St. Louis, MO Zip Code 63146

Office Phone ( 309 ) 530-5656 Cell Phone ( )

Home Phone ( ) E-Mail permits@straightupsolar.com

4. **Relationship of Applicant to Property** \_\_\_\_\_

- Owner
- Contractor
- Architect
- Attorney
- Other – Please specify \_\_\_\_\_

5. **Existing Building Use** Single family household

6. **Proposed Building Use** Addition of a personal use, grid-tied, roof mounted, 4.41 kW, solar PV array.

7. **Proposed Change to**  Primary Structure  Accessory Structure  Landscape Element

8. **Nature of Proposed Change**

- Demolition
- Addition
- Alteration to Exterior
- New Construction
- Other – Please Specify Roof mounted solar PV.
- Window Configuration
- Sign Erection or Placement
- Fence
- Landscape or Hardscape Element

9. **Description of Proposed Improvements** Addition of a personal use, grid-tied, roof mounted,

4.41 kW, solar PV array.

10. **Accompanying Documentation (8 copies each)**

- Site Plan
- Elevations
- Floor/Building Plans
- Other – Please Specify Detailed layout and electrical one line diagram.
- Structural Report for Demolitions
- Landscape Plan
- Photos

11. **Existing Materials/Construction**       Wood Frame     Brick     Stone     Block  
 Stucco       Other \_\_\_\_\_

12. **Proposed Materials/Construction**       Wood Frame     Brick     Stone     Block  
 Stucco       Other Solar PV modules, racking, conduit, and inverter.

13. **If materials differ from existing, explain reasons** \_\_\_\_\_  
\_\_\_\_\_

14. **Material samples should be available for review at Commission meeting (preferable) or on site.**

Site Location of Materials \_\_\_\_\_

I understand the work will not begin until the Landmarks Commission completes its review of this application.

Signature Conner Waters      Date 2/24/20

Please print name Conner Waters

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**COMMISSION ACTION**     **Approved**       **Approved with Conditions**       **Disapproved**


Signature \_\_\_\_\_ Date \_\_\_\_\_

Conditions \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Comments/Recommendations \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Historic Inventory

**No. 12**

1. No. <b>12</b>		4. Present Name(s) <b>Greystone Lodge, Yeats-Tutt House</b> 348 Geyer Forest	
2. County St. Louis		5. Other Name(s)	
3. Location of Negatives St. Louis County Parks Dept.			
6. Specific Location Geyer Forest, Lot 21		16. Thematic Category	28. No. of Stories: 2
			29. Basement: Yes (x) No ( ) Full
7. City or Town If Rural, Township & Vicinity Kirkwood, Missouri		17. Date(s) or Period 1827 on cornerstone	30. Foundation Material: Rubble
		18. Style or Design	31. Wall Construction: Masonry & Frame
		19. Architect or Engineer	32. Roof Type: Gable, asbestos shingle
		20. Contractor or Builder	33. No. of Bays: Front: 9 Side: 3
		21. Original Use, if apparent Residence	34. Wall Treatment: Squared stone & frame
		22. Present Use Residence	35. Plan Shape: irregular
		23. Ownership: Public ( ) Private (x)	36. Changes: Additions (x) Altered ( ) Moved ( ) (Explain in #42)
		24. Owner's Name & Address Donald Denby 348 Geyer Forest Dr. Kirkwood MO 63122	37. Condition: Interior: Excellent Exterior: Excellent
		25. Open to Public? Yes ( ) No (x)	38. Preservation Underway? Yes ( ) No (x)
9. Coordinates UTM Latitude Longitude	10. Site ( ) Structure ( ) Building (x) Object ( )		39. Endangered: Yes ( ) No (x) By What?
11. On National Register? Yes ( ) No (x)	12. Is it Eligible? Yes (x) No ( )	26. Local Contact Person or Organization	
13. Part of Estab. Yes ( ) Hist. District? No (x)	14. District Potential Yes ( ) No. ( )	27. Other Surveys in Which Included 100 Historic Buildings of St. Louis County	
15. Name of Established District		40. Visible from Public Road? Yes (x) No ( )	
42. Further Description of Important Features: The original limestone house was T shaped. The top of the T, which faces north, has two bays across with a stone chimney going up, outside of the wall, between the windows. The gabled ends of the top of the T contain one bay. The windows in this part of the house are all double-hung, six-over-six, with curved lintels and stone sills and functional shutters.		41. Distance From and Frontage on Road: 100 ft X 150 ft frontage	
The leg of the T projects to the south three bays long and one bay across. Its roof is slightly lower than that of the top of the T. The stones in this section of the house are of the same kind of limestone as in the first section, but are cut in larger blocks. The windows in this section are double-hung, six-over-six, with functional shutters, but have larger stone sills and lintels are not curved. There is a stone chimney piercing the roof on the south end of the leg.		8. Site Plan with North Arrow:	
In the west angle of the T a small, one-story, frame vestibule with a flat roof has been added. It has the front door on the west and a window on the south. A one-story screened porch with a flat roof supported by square posts projects on the west.			
On the eastern side of the north of the house a long, narrow, 1 ½-story projection has been added. Its roofline is lower than that of the rest of the house and its gable faces north. On the west side of this projection one bay is made of the large limestone blocks and four bays are board and batten, painted white. The windows are irregular. The second story window in the stone bay is a tiny casement window. In the board and batten part the windows are staggered, the two windows on the first floor are double-hung, six-over-six, the first window on the second floor is double-hung, four-over-four, and the second window on the second floor is a large casement window. The gable end that faces north contains one bay of large casement windows.			
On the east side the leg of the T has been filled in with a concrete addition, three bays long. The bay that is in the angle of the T is two stories with casement windows facing east, and on the first floor a door faces south. The next two bays to the south are open on the bottom, sheltering the door and the two bays of the original stone house. The two second-story bays are supported by large concrete posts, which are a visible detail on the side of the house to the roofline, like the piers of a skyscraper.			
Starting from the top of the T, which is in the center of this side, is the long low addition. On this side the addition is two bays in large stone blocks with a stone chimney running up the outside wall between the windows, and two bays in board and batten to the north. The farthest north bay has one story, frame, bay window with a hip roof.			

<p>43. History and Significance: Built by Thomas Yeats, one of Kirkwood's earliest real estate speculators the residence served as the Yeats family home after he purchased the property from Archibald Gamble in 1827. The Yeats children Joseph, Thomas, William and Ellen inherited the land in 1852 and later sold their holdings to Dr. John L. Matthews in 1864. Samuel J. and Mary D. Tutt bought the property from Matthew in 1867. In 1870, the property went to Dr. Thomas E. Tutt and his wife Sally who sold the eastern part of the farm to Daniel S. Brown founder of the world-famous orchid collection at Shaws Garden. His house "Brownhurst" was on that site, south of Geyer Forest. Thomas Tutt was the local physician for Kirkwood. The bit of stone construction with the carved date 1830 is believed to be the oldest remaining part of a building in Kirkwood visible to a casual by-passer, but according to family legend the stone was carved by one of the Tutt brothers as a young boy.</p>	
<p>44. Description of Environment and Outbuildings: The house sits on a hill, at a curve in the road, almost like a peninsula. It has a large brick patio on the east side with brick walls topped with fancy wrought iron fencing between brick posts. There is an old well in the middle of the patio. The landscaping is simple; just a few old trees and a large tidy sloping lawn</p>	<p>46. Prepared by: Morris &amp; Schmidt</p>
<p>45. Sources of Information:  <u>Kirkwood Historical Review</u>. Volume IV, March, 1965 p. 8 &amp; 9.  June Dahl, <u>A History of Kirkwood</u>, 1965, p. 161-162.  HAB Inventory (1965) K-19.</p>	<p>47. Organization: St. Louis County Parks  48. Date: 10/80  49. Revision: 03/29/2002</p>

2/21/20 Photos



Front view of the home. The solar is located on the back south facing portion of the roof. It is not visible from the street.





14 REC315 NP BLK MODULES	4.41	KW
MODULE DIMENSIONS	65.9" x 39.25"	

<b>StraightUp</b> <small>SOLAR</small> 10330 PAGE INDUSTRIAL BLVD, ST LOUIS, MO 63132 P 314-218-2663	DESIGNERS PRANAV MODAK JOSH HILL	SHEET NO. <b>D1</b>
	DOCUMENT NAME	
DOCUMENT NAME		SITE PLAN
ISSUE DATE		1/21/2020
REVISION #		0
PROJECT NAME		William Freivogel
PROJECT ADDRESS		348 Geyer Forest Dr, Kirkwood, MO 63122, USA
SYSTEM SIZE (KW)		4.41

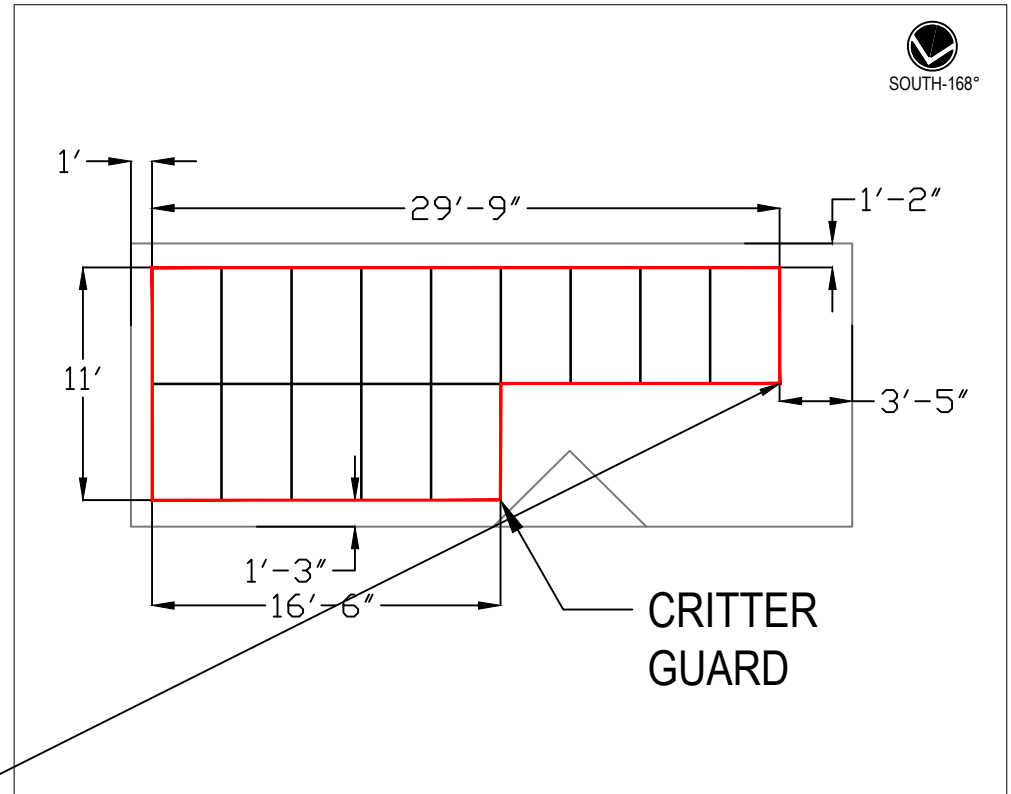
**ROOF INFORMATION:**

1 LAYER OF COMPOSITE SHINGLES ON PLYWOOD DECKING ATTACHED TO 2X 6 32" O.C TRUSSES WITH A 7/12 SLOPE (30°)

**MOUNTING SYSTEM INFORMATION:**

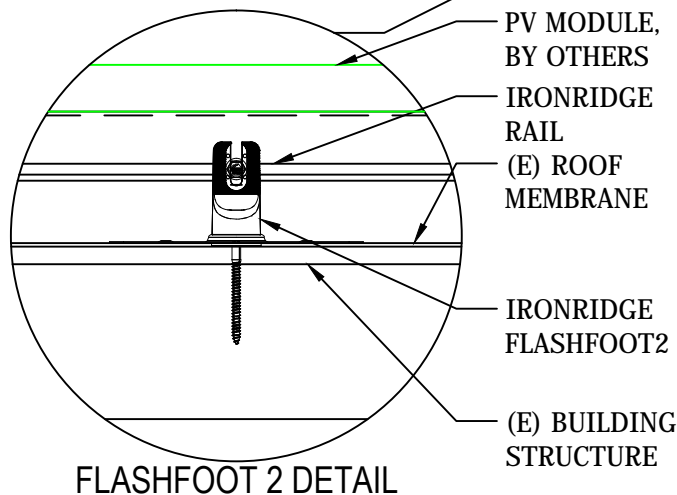
IRONRIDGE SOLARMOUNT ENGINEERED RACKING SYSTEM WITH FLASHFOOT ATTACHMENTS

<b>TOTAL WEIGHT OF PV MODULES AND RACKING HARDWARE LBS</b>	<b>658</b>
<b>MINIMUM NUMBER OF ATTACHMENT POINTS</b>	<b>20</b>
<b>WEIGHT PER ATTACHMENT POINT (LBS)</b>	<b>32.9</b>
<b>MANUFACTURER'S MAXIMUM SPACING BETWEEN ATTACHMENT POINTS ON A RAIL (FT)</b>	<b>6.5</b>
<b>PLANNED SPACING (FT)</b>	<b>6</b>
<b>TOTAL ARRAY SURFACE AREA (SQ FT)</b>	<b>255.5</b>
<b>DISTRIBUTED WEIGHT OF PV MODULE ON ROOF (LBS/SQ FT)</b>	<b>2.6</b>



14 REC315 NP BLK MODULES	4.41	KW
MODULE DIMENSIONS	65.9" x 39.25"	

CUSTOMER CONTACT INFO: William Freivogel - 314-322-0396



<b>StraightUp</b> <small>SOLAR</small> 10330 PAGE INDUSTRIAL BLVD, ST LOUIS, MO 63132 P 314-218-2663	DESIGNERS PRANAV MODAK JOSH HILL	SHEET NO.
		D3
DOCUMENT NAME	DETAILED LAYOUT	
ISSUE DATE	1/21/2020	
REVISION #	0	
PROJECT NAME	William Freivogel	
PROJECT ADDRESS	348 Geyer Forest Dr, Kirkwood, MO 63122, USA	
SYSTEM SIZE (KW)	4.41	

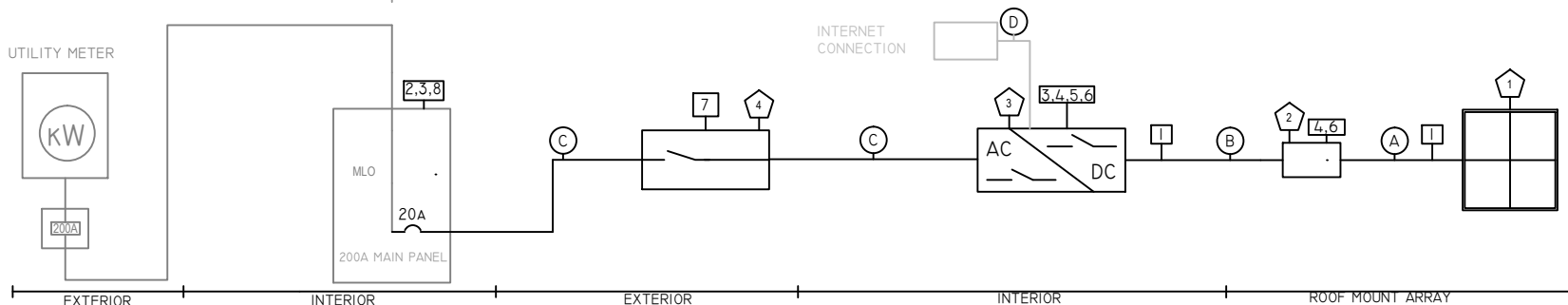
**POINT OF INTERCONNECTION**

PV & UTILITY INTERCONNECTION VIA LOAD-SIDE CONNECTION WITH A CIRCUIT BREAKER FOR SOLAR. NON FUSED DISCONNECT MUST BE LOCATED WITHIN 10' AND WITHIN SIGHT OF UTILITY METER.

**GENERAL NOTES**

SPECIAL CONSIDERATIONS FOR TRANSFORMER-LESS SYSTEM WHILE NEITHER CURRENT -CARRYING CONDUCTOR IS GROUNDED .EQUIPMENT GROUNDING IS STILL REQUIRED DC CONDUCTORS CANNOT BE WHITE AS THEY ARE NOT GROUNDED .RED OR BLACK ARE PERMITTED ROOFTOP EXPOSED CONDUCTORS MUST BE PV WIRE WITH CORRESPONDING CONNECTORS,NOT USE 2 PLACARDING WILL COMPLY WITH NEC AND UTILITY REQUIREMENTS INCLUDING NEC 690.35F EXISTING EQUIPMENT INDICATED BY GRAY LINES PLACARDING WILL COMPLY WITH NEC AND UTILITY REQUIREMENTS ALL EQUIPMENT MUST BE RATED FOR AVAILABLE FAULT CURRENT AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS. GROUND MODULE FRAME AND ARRAY RACKING PER MANUFACTURERS' SPECIFICATIONS THIS DESIGN COMPLIES WITH 2014 NEC. ALL EQUIPMENT SHALL BE LISTED BY UL OR EQUIVALENT.ALL EQUIPMENTS SHALL BE INSTALLED PER 2014 NEC REQUIREMENTS

DC POWER SOURCE		
Operational Current	12.60	A
Operational Voltage	350.0	V
Maximum Current	15	A
Maximum Voltage	500.0	V



MPPT	# OF PANELS PER STRING
A	14
B	
C	

LABELS		
#	LABEL TYPE	LABEL TEXT
1	PHOTOVOLTAIC POWER SOURCE (MAX 10' SPACING ON EXPOSED RACEWAY)	PHOTOVOLTAIC POWER SOURCE
2	INVERTER OUTPUT CONNECTION	WARNING: DUAL POWER SOURCE. SECOND SOURCE IS PHOTOVOLTAIC SYSTEM .
3	PV SYSTEM DISCONNECT	PHOTOVOLTAIC SYSTEM DISCONNECT
4	ELECTRIC SHOCK HAZARD	WARNING ELECTRIC SHOCK HAZARD.DO NOT TOUCH TERMINALS.TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION
5	DC POWER SOURCE	SEE DC POWER SOURCE TABLE
6	UNGROUND CONDUCTOR WARNING	WARNING: ELECTRIC SHOCK HAZARD.THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED
7	PV POWER SOURCE	PHOTOVOLTAIC AC DISCONNECT MAX AC OUTPUT CURRENT: 16 AAC NOM AC OPERATING VOLTAGE: 240 VAC
8	INVERTER OUTPUT CONNECTION	WARNING: INVERTER OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE

EQUIPMENT LIST						
#	CATEGORY	BRAND	SIZE	UNIT	MANUFACTURE #	QUANTITY
1	MODULES	REC	315	WATTS	REC315 NP BLK	14
2	OPTIMIZERS	SOLAREEDGE	320	WATTS	P320	14
3	JUNCTION BOX	SOLADECK	N/A	N/A	0786-3RT	1
4	INVERTER	SOLAREEDGE	3800	WATTS	SE-3800H-US	1
5	AC DISCONNECT, 120/240V SINGLE PHASE, NON FUSED, NEMA 3R	GE	30	AMPS	TGN3221R	1

CONDUCTOR #	CONDUCTOR	CU/AL	LOCATION	% CONDUIT FILL (MINIMUM)	TOTAL APPROX DISTANCE (FEET)	WIRE TYPE
A	2 #10, 1 #6G BUNDLED IN FREE AIR	CU	ARRAY	N/A	70	PV WIRE
B	2 #10, 1 #10G IN 3/4" CONDUIT	CU	EXTERIOR/INTERIOR	12%	50	THWN 2
C	3 #10, 1 #8G IN 3/4" CONDUIT	CU	INTERIOR/EXTERIOR	19%	15	THWN 2
D	CAT 5 ETHERNET CABLE					

<b>StraightUp</b> SOLAR 10330 PAGE INDUSTRIAL BLVD, ST LOUIS, MO 63132 P 314-218-2663	DESIGNERS PRANAV MODAK JOSH HILL	SHEET NO. D2
	DOCUMENT NAME	ONE LINE
	ISSUE DATE	1/21/2020
REVISION #	0	
PROJECT NAME	William Freivogel	
PROJECT ADDRESS	348 Geyer Forest Dr, Kirkwood, MO 63122, USA	
SYSTEM SIZE (KW)	4.41	



SOLAR'S MOST TRUSTED



# REC N-PEAK SERIES

PREMIUM MONO N-TYPE  
SOLAR PANELS WITH  
WORLD-CLASS PERFORMANCE



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



IMPROVED  
PERFORMANCE IN  
SHADED CONDITIONS



GUARANTEED HIGH  
POWER OVER LIFETIME



330 W<sub>P</sub>

POWER

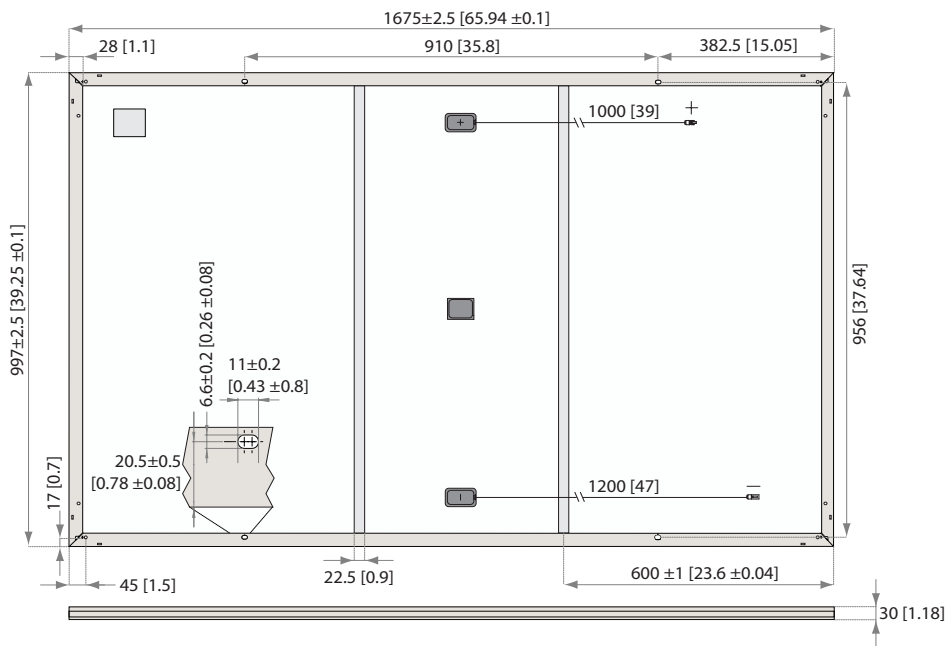
20

YEAR PRODUCT  
WARRANTY

0.5%

ANNUAL DEGRADATION OVER  
25-YEAR POWER WARRANTY

# REC N-PEAK SERIES



Measurements in mm [in]

## ELECTRICAL DATA @ STC

Product code\*: RECxxxNP

	310	315	320	325	330
Nominal Power - $P_{MPP}$ (Wp)	310	315	320	325	330
Watt Class Sorting - (W)	-0/+5	-0/+5	-0/+5	-0/+5	-0/+5
Nominal Power Voltage - $V_{MPP}$ (V)	33.6	33.9	34.2	34.4	34.6
Nominal Power Current - $I_{MPP}$ (A)	9.24	9.31	9.37	9.46	9.55
Open Circuit Voltage - $V_{OC}$ (V)	40.2	40.5	40.8	41.0	41.3
Short Circuit Current - $I_{SC}$ (A)	10.01	10.09	10.18	10.27	10.36
Panel Efficiency (%)	18.6	18.9	19.2	19.5	19.8

Values at standard test conditions (STC: air mass AM1.5, irradiance 1000 W/m<sup>2</sup>, temperature 25°C), based on a production spread with a tolerance of  $V_{OC}$  &  $I_{SC}$  ±3% within one watt class. \*Where xxx indicates the nominal power class ( $P_{MPP}$ ) at STC above.

## ELECTRICAL DATA @ NMOT

Product code\*: RECxxxNP

	234	238	241	245	249
Nominal Power - $P_{MPP}$ (Wp)	234	238	241	245	249
Nominal Power Voltage - $V_{MPP}$ (V)	31.1	31.4	31.7	31.9	32.1
Nominal Power Current - $I_{MPP}$ (A)	7.51	7.56	7.62	7.69	7.76
Open Circuit Voltage - $V_{OC}$ (V)	37.3	37.5	37.8	38.0	38.3
Short Circuit Current - $I_{SC}$ (A)	8.01	8.07	8.14	8.22	8.29

Nominal module operating temperature (NMOT: air mass AM1.5, irradiance 800 W/m<sup>2</sup>, temperature 20°C, windspeed 1 m/s). \*Where xxx indicates the nominal power class ( $P_{MPP}$ ) at STC above.

## CERTIFICATIONS



IEC 61215, IEC 61730 & UL 1703; MCS 005, IEC 62804, IEC 61701, IEC 62716, IEC 62782 ISO 9001: 2015, ISO 14001: 2004, OHSAS 18001: 2007

**takeaway** take-e-way WEEE-compliant recycling scheme

## WARRANTY

20 year product warranty  
25 year linear power output warranty, maximum degradation in performance of 0.5% p.a., giving 86% at end of year 25.  
See warranty conditions for further details.

## GENERAL DATA

Cell type:	120 half-cut mono c-Si n-type cells 6 strings of 20 cells in series
Glass:	3.2 mm solar glass with anti-reflection surface treatment
Backsheet:	Highly resistant polymeric construction
Frame:	Anodized aluminum (black)
Junction box:	3-part, 3 bypass diodes, IP67 rated in accordance with IEC 62790
Cable:	4 mm <sup>2</sup> solar cable, 1.0 m + 1.2 m in accordance with EN 50618
Connectors:	Stäubli MC4 PV-KBT4/KST4 (4 mm <sup>2</sup> ) in accordance with IEC 62852 IP68 only when connected
Origin:	Made in Singapore

## MECHANICAL DATA

Dimensions:	1675 x 997 x 30 mm
Area:	1.67 m <sup>2</sup>
Weight:	18 kg

## MAXIMUM RATINGS

Operational temperature:	-40 ... +85°C
Maximum system voltage:	1000 V
Design load (+): snow	4666 Pa (475 kg/m <sup>2</sup> )*
Maximum test load (+):	7000 Pa (713 kg/m <sup>2</sup> )*
Design load (-): wind	1600 Pa (163 kg/m <sup>2</sup> )*
Maximum test load (-):	2400 Pa (245 kg/m <sup>2</sup> )*
Max series fuse rating:	25 A
Max reverse current:	25 A

\* Calculated using a safety factor of 1.5

\* See installation manual for mounting instructions

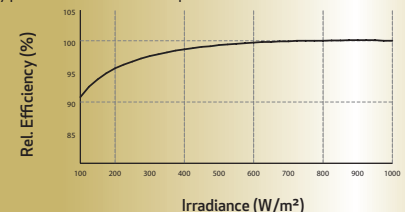
## TEMPERATURE RATINGS \*

Nominal Module Operating Temperature:	44°C (±2°C)
Temperature coefficient of $P_{MPP}$ :	-0.35 %/°C
Temperature coefficient of $V_{OC}$ :	-0.27 %/°C
Temperature coefficient of $I_{SC}$ :	0.04 %/°C

\* The temperature coefficients stated are linear values

## LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:



Founded in Norway in 1996, REC is a leading vertically integrated solar energy company. Through integrated manufacturing from silicon to wafers, cells, high-quality panels and extending to solar solutions, REC provides the world with a reliable source of clean energy. REC's renowned product quality is supported by the lowest warranty claims rate in the industry. REC is a Bluestar Elkem company with headquarters in Norway and operational headquarters in Singapore. REC employs more than 2,000 people worldwide, producing 1.5 GW of solar panels annually.



www.recgroup.com

# Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US /  
SE7600H-US / SE10000H-US / SE11400H-US



## Optimized installation with HD-Wave technology

- / Specifically designed to work with power optimizers
- / Record-breaking efficiency
- / Fixed voltage inverter for longer strings
- / Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- / UL1741 SA certified, for CPUC Rule 21 grid compliance
- / Extremely small
- / Built-in module-level monitoring
- / Outdoor and indoor installation
- / Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)

# / Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/  
SE7600H-US / SE10000H-US / SE11400H-US

SE3000H-US SE3800H-US SE5000H-US SE6000H-US SE7600H-US SE10000H-US SE11400H-US

OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5 <sup>(1)</sup>							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380				400			Vdc
Maximum Input Current @240V <sup>(2)</sup>	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V <sup>(2)</sup>	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600k $\Omega$ Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Data, ANSI C12.20	Optional <sup>(3)</sup>							
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect							
STANDARD COMPLIANCE								
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07							
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)							
Emissions	FCC Part 15 Class B							
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range	1" Maximum / 14-6 AWG				1" Maximum /14-4 AWG			
DC Input Conduit Size / # of Strings / AWG Range	1" Maximum / 1-2 strings / 14-6 AWG				1" Maximum / 1-3 strings / 14-6 AWG			
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174				21.3 x 14.6 x 7.3 / 540 x 370 x 185			in / mm
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9	38.8 / 17.6			lb / kg	
Noise	< 25				< 50			dBA
Cooling	Natural Convection							
Operating Temperature Range	-13 to +140 / -25 to +60 <sup>(4)</sup> (-40°F / -40°C option) <sup>(5)</sup>							°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

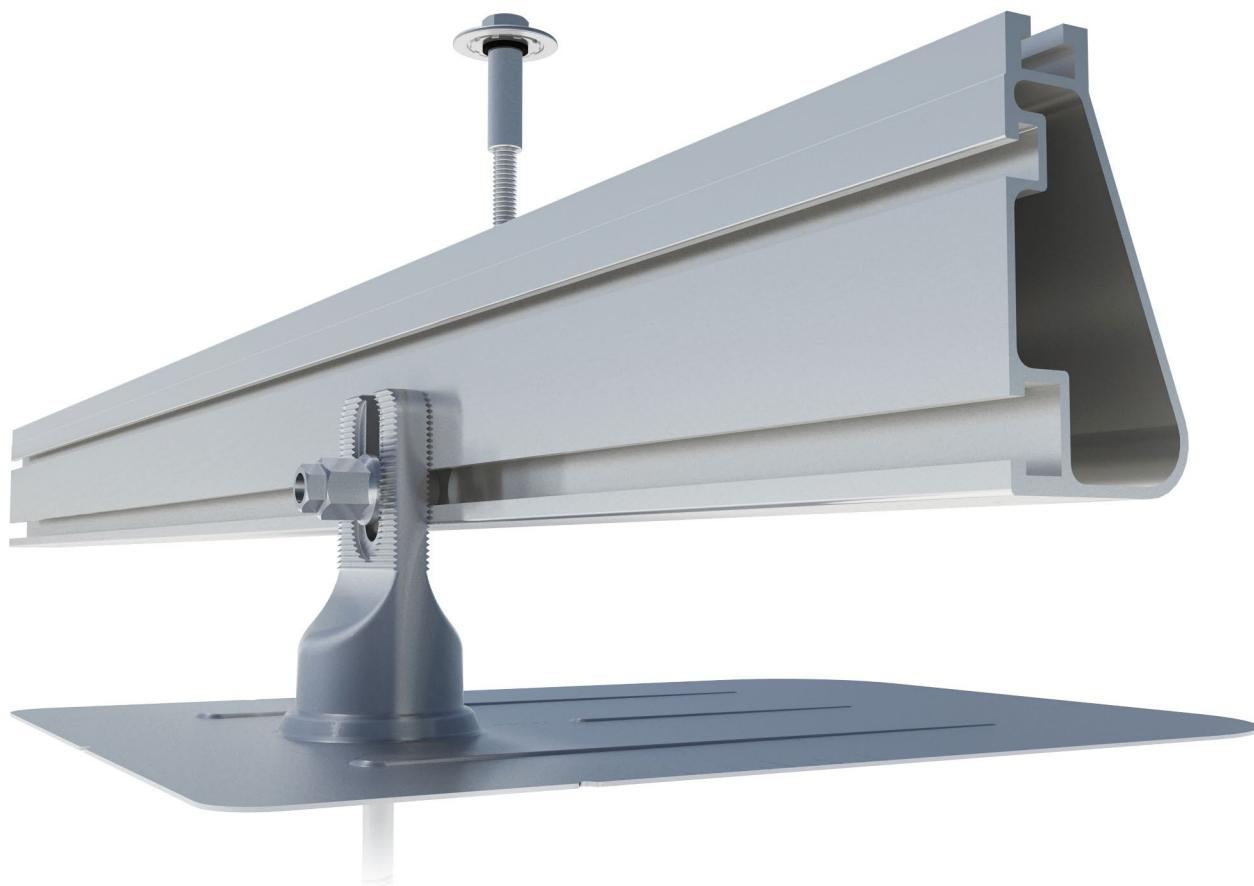
<sup>(1)</sup> For other regional settings please contact SolarEdge support

<sup>(2)</sup> A higher current source may be used; the inverter will limit its input current to the values stated

<sup>(3)</sup> Revenue grade inverter P/N: SExxxH-US000NNC2

<sup>(4)</sup> For power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>

<sup>(5)</sup> -40 version P/N: SExxxH-US000NNU4



### Built for solar's toughest roofs.

IronRidge builds the strongest mounting system for pitched roofs in solar. Our components have been tested to the limit and proven in extreme environments, including Florida's high-velocity hurricane zones.

Our rigorous approach has led to unique structural features, such as curved rails and reinforced flashings, and is also why our products are fully certified, code compliant and backed by a 25-year warranty.



#### Strength Tested

All components evaluated for superior structural performance.



#### PE Certified

Pre-stamped engineering letters available in most states.



#### Class A Fire Rating

Certified to maintain the fire resistance rating of the existing roof.



#### Design Assistant

Online software makes it simple to create, share, and price projects.



#### UL 2703 Listed System

Entire system and components meet newest effective UL 2703 standard.



#### 25-Year Warranty

Products guaranteed to be free of impairing defects.

## XR Rails ☺

### XR10 Rail



A low-profile mounting rail for regions with light snow.

- 6' spanning capability
- Moderate load capability
- Clear and black finish

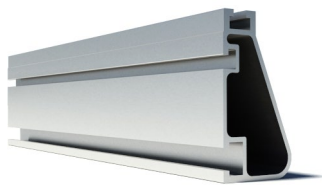
### XR100 Rail



The ultimate residential solar mounting rail.

- 8' spanning capability
- Heavy load capability
- Clear and black finish

### XR1000 Rail



A heavyweight mounting rail for commercial projects.

- 12' spanning capability
- Extreme load capability
- Clear anodized finish

### Bonded Splices



All rails use internal splices for seamless connections.

- Self-drilling screws
- Varying versions for rails
- Forms secure bonding

## Clamps & Grounding ☺

### UFOs



Universal Fastening Objects bond modules to rails.

- Fully assembled & lubed
- Single, universal size
- Clear and black finish

### Stopper Sleeves



Snap onto the UFO to turn into a bonded end clamp.

- Bonds modules to rails
- Sized to match modules
- Clear and black finish

### CAMO



Bond modules to rails while staying completely hidden.

- Universal end-cam clamp
- Tool-less installation
- Fully assembled

### Bonding Hardware



Bond and attach XR Rails to roof attachments.

- T & Square Bolt options
- Nut uses 7/16" socket
- Assembled and lubricated

## Attachments ☺

### FlashFoot2



Flash and mount XR Rails with superior waterproofing.

- Twist-on Cap eases install
- Wind-driven rain tested
- Mill and black finish

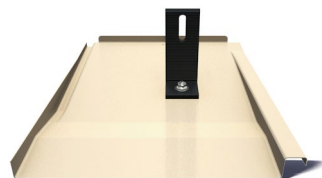
### Conduit Mount



Flash and mount conduit, strut, or junction boxes.

- Twist-on Cap eases install
- Wind-driven rain tested
- Secures 3/4" or 1" conduit

### Knockout Tile



Replace tiles and ensure superior waterproofing.

- Flat, S, & W tile profiles
- Form-fit compression seal
- Single-lag universal base

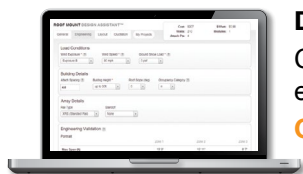
### All Tile Hook



Mount on tile roofs with a simple, adjustable hook.

- Works on flat, S, & W tiles
- Single-socket installation
- Optional deck flashing

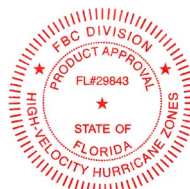
## Resources



### Design Assistant

Go from rough layout to fully engineered system. For free.

[Go to IronRidge.com/design](http://IronRidge.com/design)



### Endorsed by FL Building Commission

Flush Mount is the first mounting system to receive Florida Product approval for 2017 Florida Building Code compliance.

[Learn More at bit.ly/floridacert](http://bit.ly/floridacert)