

# HISTORIC AND DESIGN REVIEW COMMISSION

March 21, 2018

**HDRC CASE NO:** 2018-125  
**ADDRESS:** 407 E PARK AVE  
**LEGAL DESCRIPTION:** NCB 1752 BLK 5 LOT 3  
**ZONING:** R-6 H  
**CITY COUNCIL DIST.:** 1  
**DISTRICT:** Tobin Hill Historic District  
**APPLICANT:** Andrew Wood/Go Smart Solar  
**OWNER:** Judith Norman  
**TYPE OF WORK:** Installation of solar panels  
**APPLICATION RECEIVED:** March 02, 2018  
**60-DAY REVIEW:** May 03, 2018  
**REQUEST:**

The applicant is requesting a Certificate of Appropriateness for approval to install a 20-panel solar array on the south (front) facing side gable roof of 407 E Park Ave.

## APPLICABLE CITATIONS:

*Historic Design Guidelines, Chapter 3, Guidelines for Additions*

## C. SOLAR COLLECTORS

- i. *Location*—Locate solar collectors on side or rear roof pitch of the primary historic structure to the maximum extent feasible to minimize visibility from the public right-of-way while maximizing solar access. Alternatively, locate solar collectors on a garage or outbuilding or consider a ground-mount system where solar access to the primary structure is limited.
- ii. *Mounting (sloped roof surfaces)*—Mount solar collectors flush with the surface of a sloped roof. Select collectors that are similar in color to the roof surface to reduce visibility.
- iii. *Mounting (flat roof surfaces)*—Mount solar collectors flush with the surface of a flat roof to the maximum extent feasible. Where solar access limitations preclude a flush mount, locate panels towards the rear of the roof where visibility from the public right-of-way will be minimized.

## FINDINGS:

- a. The primary structure located at 407 E Park Ave is a 2-story single family structure constructed circa 1930 in the Colonial Revival style with Adam and Greek Revival influences. The home features a side gable configuration, two symmetrical brick chimneys, an asymmetrical 1-story porch with entablature, and a two-story wing with a porte-cochere and second story covered porch. The structure is contributing to the Tobin Hill Historic District.
- b. LOCATION – The applicant is requesting approval to install 20 solar panels on the south, front facing side of the side gable roof. All 20 panels will be visible from the public right-of-way due to their placement. According to the Historic Design Guidelines for Additions 6.C.i, solar collectors should be located on a side or rear roof pitch to the maximum extent possible. Staff does not find the proposed installation consistent with the Guidelines due to its high visibility from the public right-of-way.
- c. PITCH – The panels will be installed flush with the roof pitch. Staff finds the pitch consistent with the Guidelines.

## RECOMMENDATION:

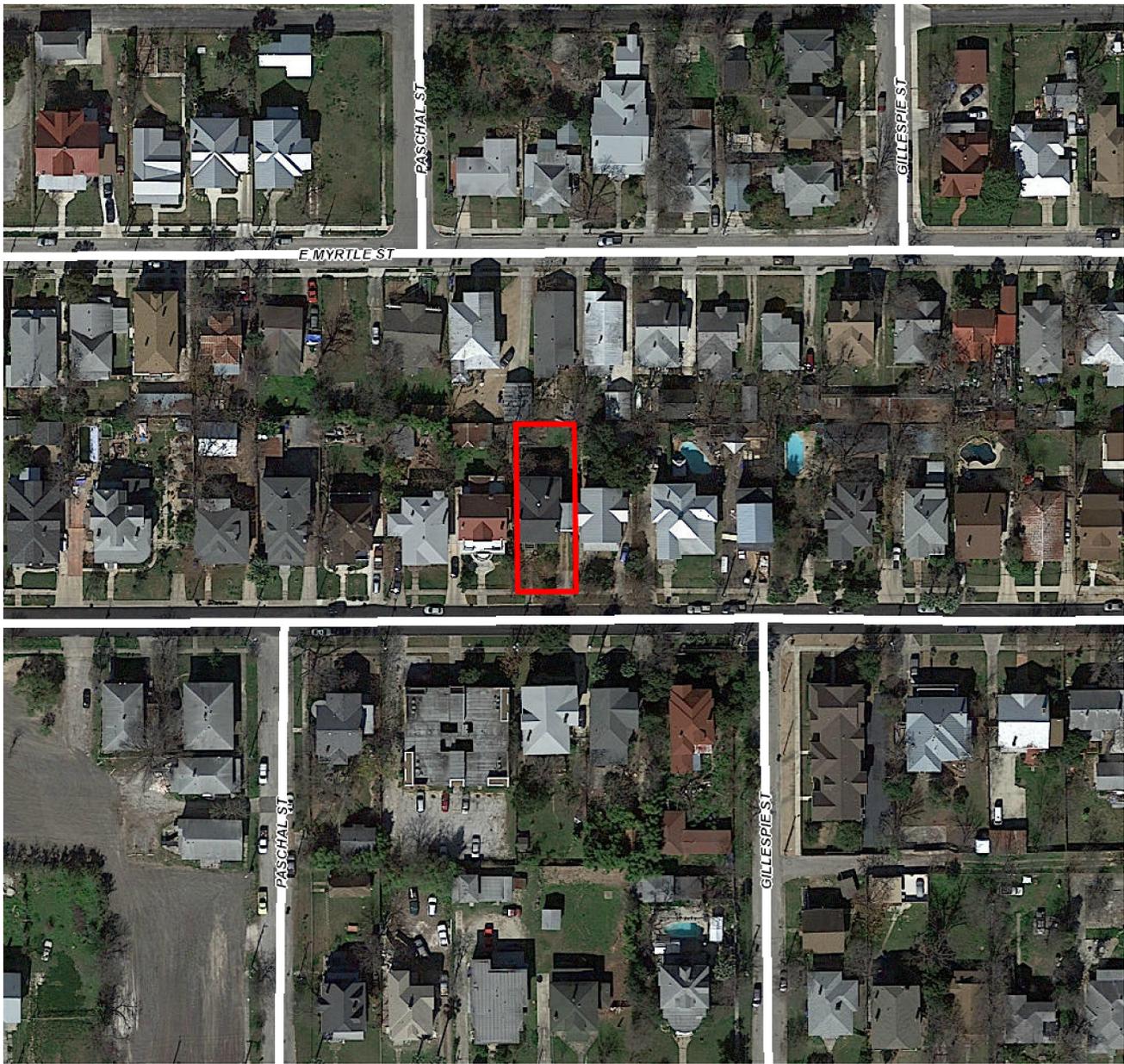
Staff does not recommend approval based on finding b. Staff recommends that the applicant relocates the panels to the rear of the structure to significantly minimize the impact from the public right-of-way. The applicant is required to submit updated drawings reflecting these changes to staff for review and approval prior to receiving a Certificate of Appropriateness.

If the HDRC approves the proposal as submitted, staff recommends that the following stipulation apply:

- i.** That the solar panels maintain at least 18” of separation from the roof eaves.

**CASE MANAGER:**

Stephanie Phillips



## Flex Viewer

Powered by ArcGIS Server

Printed: Mar 10, 2018

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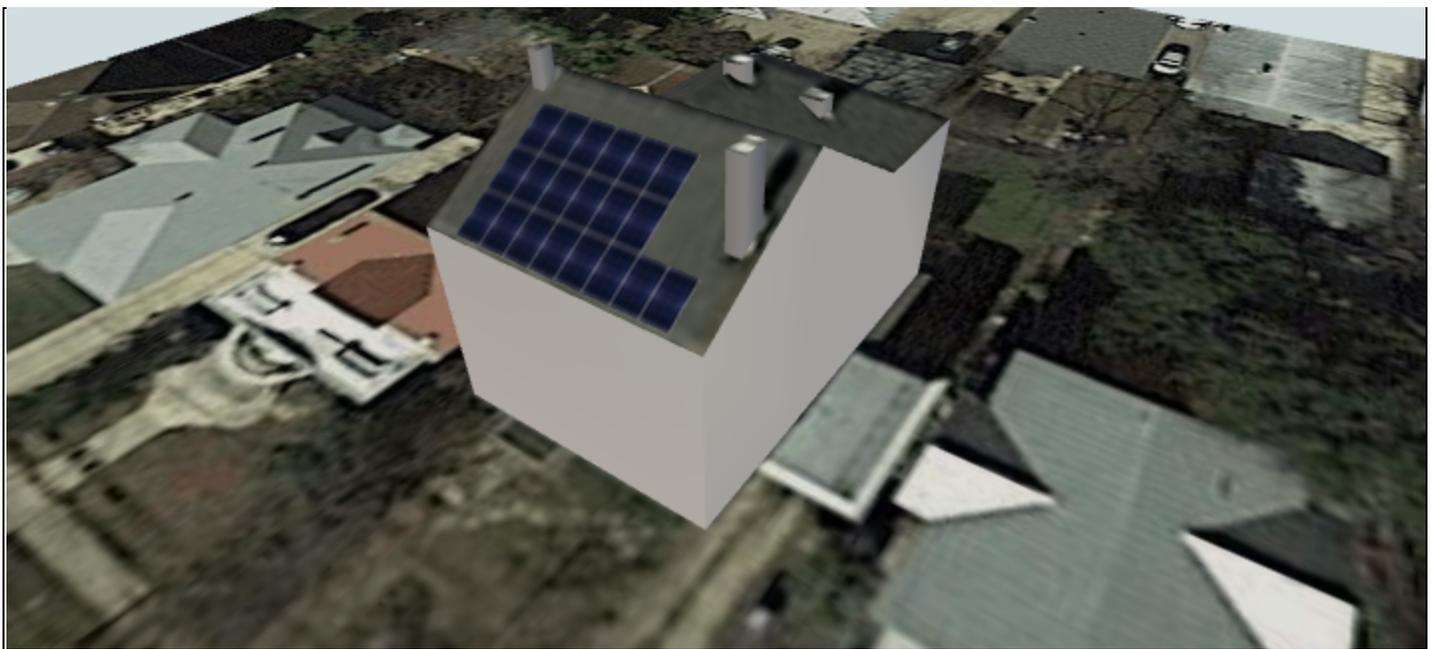
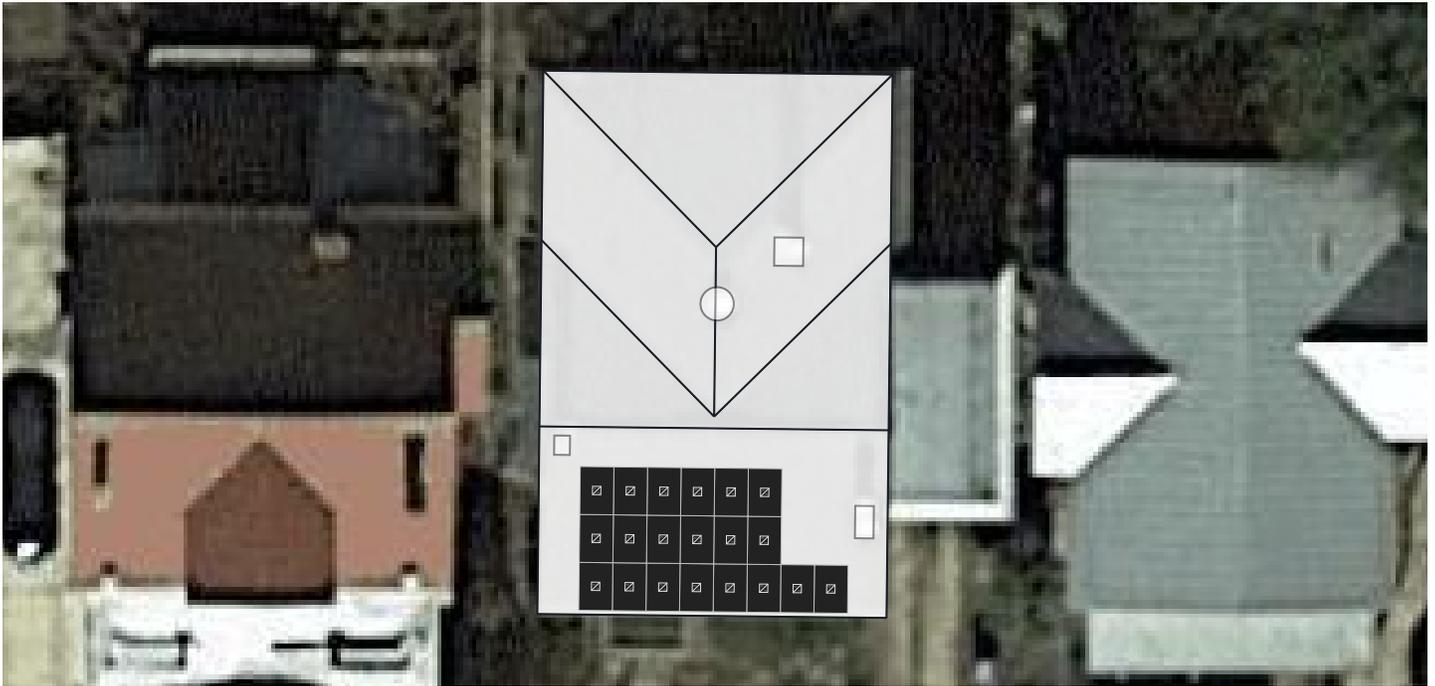






# Preliminary Layout

Judith Norman  
407 E Park Ave, San Antonio, TX 78212, USA  
Number of Modules: 20  
System Size: 5.90



This preliminary layout is based on the physical constraints of your rooftop. The next step is for Go Smart Solar to review your annual consumption data.

Please email twelve (12) months of utility bills to [support@gosmartsolar.com](mailto:support@gosmartsolar.com).

# MSE-295 PERC 60



## High Power Rooftop Module



Class Leading Output:  
300W power



Advanced Technology:  
PERC and 4 busbars drive  
>18% module efficiency



Superior Aesthetics:  
All-black design coupled with  
outstanding power output



Certified Reliability:  
3X IEC, salt mist, ammonia



### Proudly assembled in the USA

Mission Solar Energy is headquartered in San Antonio, TX with cell and module facilities onsite. Our team of more than 400 staff call Texas home and are devoted to producing high quality solar products and services. Our supply chain includes local and domestic vendors increasing our impact to the U.S. economy.



Assembled  
in the USA

### CERTIFICATIONS

IEC 61215/ IEC 61730/ IEC 61701  
UL 1703: CSA



Independently Audited by



\*As there are different certification requirements in different markets, please contact your local Mission Solar Energy sales representative for the specific certificates applicable to the products in the region in which the products are to be used.

### Superior Aesthetics

The Mercury's slick all-black design coupled with outstanding power output makes it ideal for DG installations including commercial and rooftop systems.

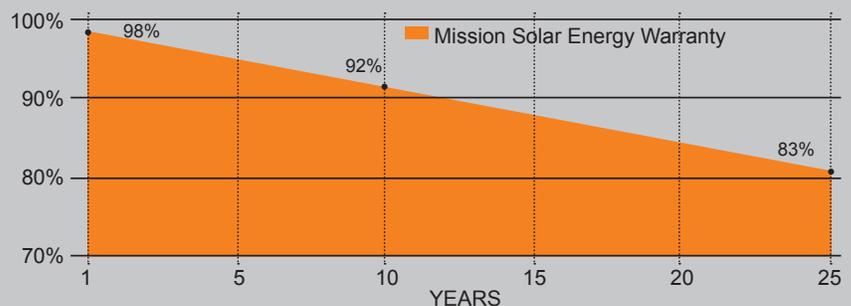
### Outstanding performance with PERC

Passivated Emitter Rear Cell (PERC) technology provides excellent power output through advanced cell architecture.

### Best in class quality

Mission Solar Energy production lines are fully automated and include multiple quality checks throughout the production process.

### 25-YEAR LINEAR WARRANTY



## ELECTRICAL SPECIFICATIONS

Electrical parameters at Standard Test Condition (STC)

Module Type			MSE280SQ5T	MSE285SQ5T	MSE290SQ5T	MSE295SQ5T	MSE300SQ5T
Power Output	Pmax	Wp	280	285	290	295	300
Tolerance						0~+3%	
Short-Circuit Current	Isc	A	9.31	9.37	9.44	9.52	9.61
Open Circuit Voltage	Voc	V	39.31	39.56	39.81	40.11	40.18
Rated Current	Imp	A	8.79	8.87	8.95	9.03	9.17
Rated Voltage	Vmp	V	32.17	32.36	32.54	32.72	32.80

## TEMPERATURE COEFFICIENTS

Normal Operating Cell Temperature (NOCT)	44°C (±2°C)
Temperature Coefficient of Pmax	-0.427%/°C
Temperature Coefficient of Voc	-0.318%/°C
Temperature Coefficient of Isc	0.042%/°C

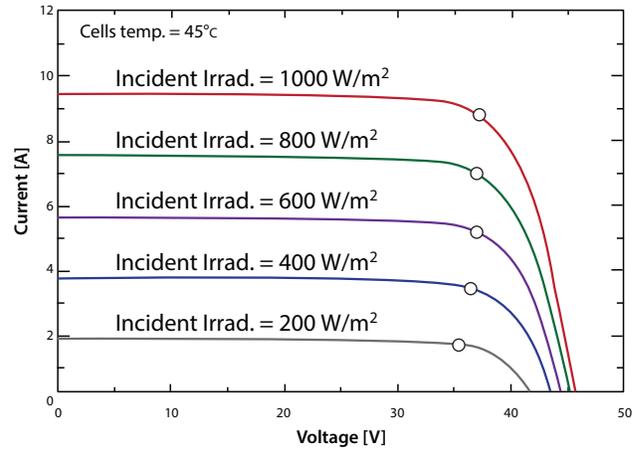
## OPERATING CONDITIONS

Maximum System Voltage	1,000VDC for UL
Operating Temperature Range	-40°C (-40°F) to +90°C (194°F)
Maximum Series Fuse Rating	15A
Fire Safety Classification	Class C
Static Load Wind/Snow	2400Pa/5400Pa
Hail Safety Impact Velocity	25mm at 23 m/s

## MECHANICAL DATA

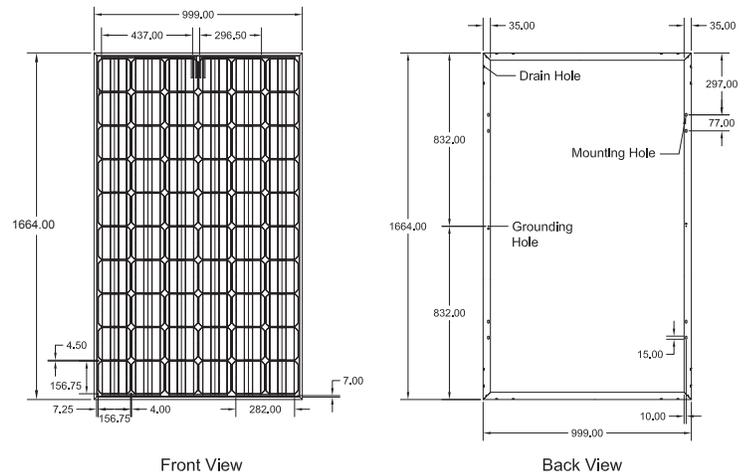
Solar Cells	P-type Mono-crystalline Silicon (6 in.)
Cell orientation	60 cells (6x10), 4 busbar
Module dimension	1664mm x 999mm x 40mm (65.51 in. x 39.33 in. x 1.57 in.)
Weight	18.2 kg (40.1 lb)
Front Glass	3.2mm (0.126 in.) tempered, Low-iron, Anti-reflective coating
Frame	Anodized aluminum alloy
Encapsulant	Ethylene vinyl acetate (EVA)
J-Box	Protection class IP67 with bypass-diode
Cables	PV wire, 1.2m (47.2 in.), 4mm <sup>2</sup> / 12 AWG
Connector	MC4 or MC4 compatible

## MSE295SQ5T: 295WP, 60CELL SOLAR MODULE CURRENT-VOLTAGE CURVE



Current-voltage characteristics with dependence on irradiance and module temperature

## BASIC DESIGN (UNITS: MM)





## SolarEdge Single Phase Inverters

for North America

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



INVERTERS

### 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 and easy to install outdoors or indoors
- High reliability without any electrolytic capacitors
- Built-in module-level monitoring
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)





# Single Phase Inverters for North America

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

	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	
<b>OUTPUT</b>						
Rated AC Power Output	3000	3800	5000	6000	7600	VA
Max. AC Power Output	3000	3800	5000	6000	7600	VA
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	-	✓	-	-	Vac
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5 <sup>(1)</sup>					Hz
Maximum Continuous Output Current 208V	-	-	24	-	-	A
Maximum Continuous Output Current 240V	12.5	16	21	25	32	A
GFDI Threshold	1					A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes					
<b>INPUT</b>						
Maximum DC Power	4650	5900	7750	9300	11800	W
Transformer-less, Ungrounded	Yes					
Maximum Input Voltage	480					Vdc
Nominal DC Input Voltage	380				400	Vdc
Maximum Input Current 208V <sup>(2)</sup>	-	-	13.5	-	-	Adc
Maximum Input Current 240V <sup>(2)</sup>	8.5	10.5	13.5	16.5	20	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					%
Nighttime Power Consumption	< 2.5					W
<b>ADDITIONAL FEATURES</b>						
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					
<b>STANDARD COMPLIANCE</b>						
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCL according to T.I.L. M-07					
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)					
Emissions	FCC Part 15 Class B					
<b>INSTALLATION SPECIFICATIONS</b>						
AC Output Conduit Size / AWG Range	0.75-1" Conduit / 14-6 AWG					
DC Input Conduit Size / # of Strings / AWG Range	0.75-1" Conduit / 1-2 strings / 14-6 AWG					
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174					in / mm
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9			lb / kg
Noise	< 25				< 50	dBA
Cooling	Natural Convection				Natural convection and internal fan (user replaceable)	
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 3R (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> Power de-rating from 50°C

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

