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SHEET INDEX

COVERSHEET
SITE PLAN
3-LINE ELECTRICAL DIAGRAM

G-001
C-101
E-601

NOTES

REVISION HISTORY

REV	DESC	DATE	APPR

STAMPS AND SIGNATURES



AEOS ENERGY
819 W 22ND ST,
SUITE 105-106,
TEMPE, AZ 85282

DESIGNER	STEVEN LLOYD
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DESIGNED	8/17/2018
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CHECKER

CHECKED

PROJECT NO

TITLE	SULKOWSKI RESIDENCE 10255 W 144TH ST ORLAND PARK, IL 60462
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SIZE B	DWG NO G-001	REV
SCALE N/A	SHEET 1 OF 3	

SYSTEM OVERVIEW

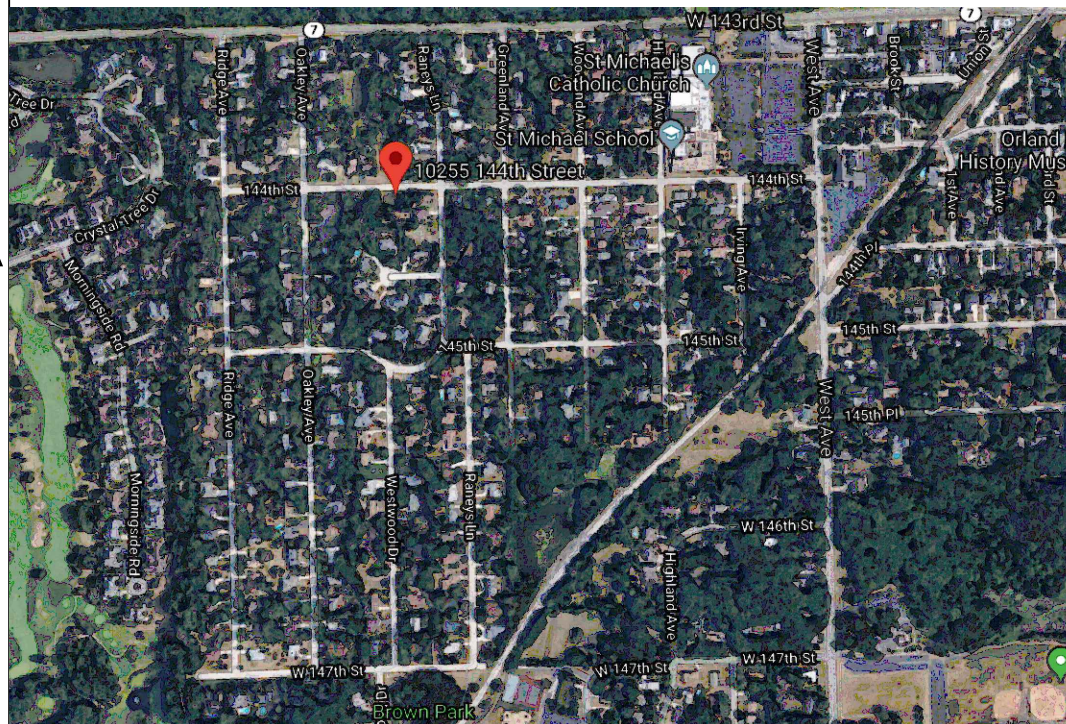
SULKOWSKI RESIDENCE
10255 W 144TH ST
ORLAND PARK, IL 60462

DC SYSTEM SIZE: 3480 W
AC SYSTEM SIZE: 3000 W

MODULE: (12) LONGI LR6-60-290M
INVERTER: (1) SOLAREEDGE SE3000H-US
MOUNTING: SNAPNRACK 100 ROOF MOUNT

INTERCONNECTION METHOD: LOAD SIDE BREAKER

DESIGNED ACCORDING TO THE FOLLOWING CODES:
IBC 2015
IFC 2015
NEC 2014



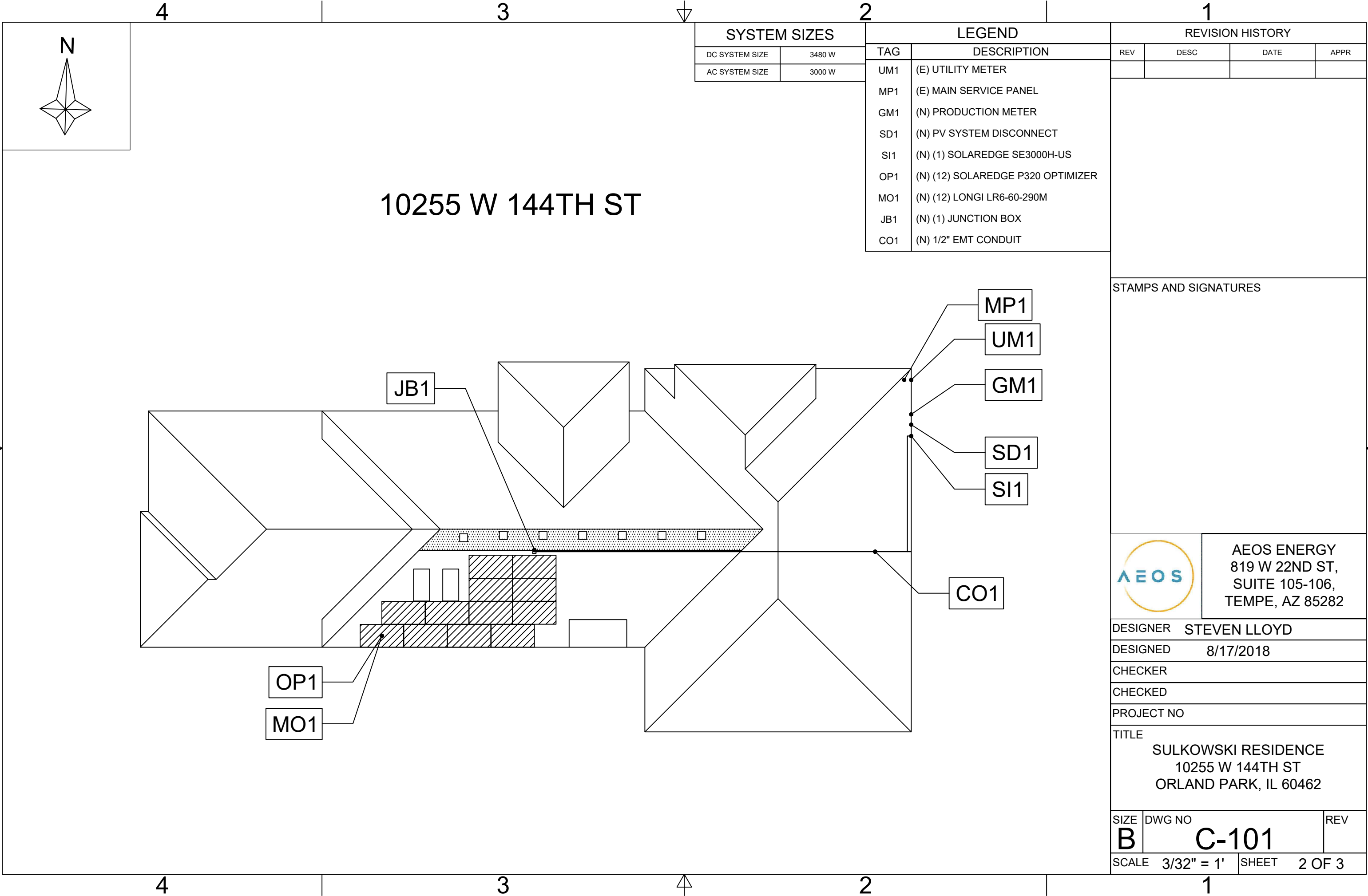
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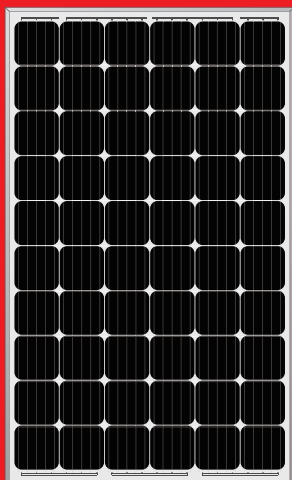
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SIZE B	DWG NO G-001	REV
SCALE N/A	SHEET 1 OF 3	

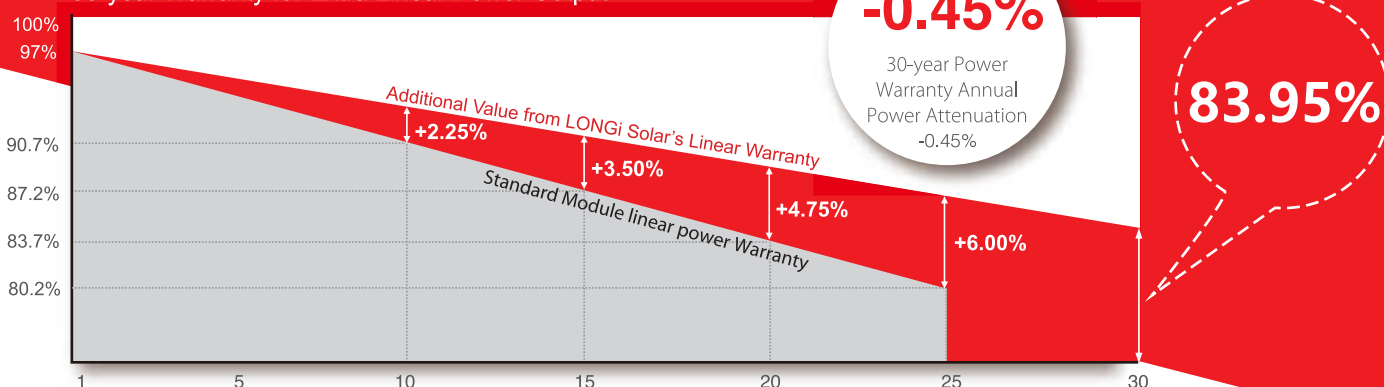




LR6-60DG 280~300M

High Efficiency Mono Technology
with advanced 5BB design to improve
power output

10-year Warranty for Materials and Processing;
30-year Warranty for Extra Linear Power Output



Complete System and Product Certifications

IEC 61215, IEC61730, UL1703
ISO 9001:2008: ISO Quality Management System
ISO 14001: 2004: ISO Environment Management System
TS62941: Guideline for module design qualification and type approval
OHSAS 18001: 2007 Occupational Health and Safety



* Specifications subject to technical changes and tests. LONGi Solar reserves the right of interpretation.

Positive power tolerance (0 ~ +5W) guaranteed

High module conversion efficiency (up to 18.1%)

Better energy yield with excellent low irradiance performance and temperature coefficient

Solid PID resistance ensured by solar cell process optimization and careful module BOM selection

Adaptable to harsh environment: passed rigorous salt mist and ammonia tests

40mm frame design enables easy installation and robust mechanical strength

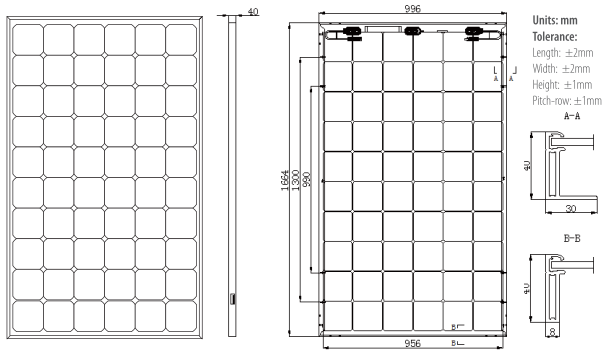
LONGi Solar

Room 201, Building 8, Sandhill Plaza, Lane 2290, Zuchongzhi Road, Pudong District, Shanghai, 201203
Tel: + 86-21-61047332 Fax: +86-21-61047377 E-mail: module@longi-silicon.com
Facebook: www.facebook.com/LONGi Solar

Note: Due to continuous technical innovation, R&D and improvement, technical data above mentioned may be of modification accordingly. LONGi Solar have the sole right to make such modification at anytime without further notice; Demanding party shall request for the latest datasheet for such as contract need, and make it a consisting and binding part of lawful documentation duly signed by both parties.

LR6-60DG 280~300M

Design (mm)



Mechanical Parameters

Cell Orientation: 60 (6×10)
 Junction Box: IP67, three diodes
 Output Cable: 4mm², 300mm in length,
 length can be customized
 Weight: 22.5kg
 Dimension: 1664×996×40mm
 Packaging: 26pcs per pallet

Operating Parameters

Operational Temperature: -40 °C ~ +85 °C
 Power Output Tolerance: 0 ~ +5 W
 Voc and Isc Tolerance: ±3%
 Maximum System Voltage: DC1500V (IEC)
 Maximum Series Fuse Rating: 20A
 Nominal Operating Cell Temperature: 45±2 °C
 Application Class: Class II

Electrical Characteristics

Test uncertainty for Pmax: ±3%

Model Number	LR6-60DG-280M		LR6-60DG-285M		LR6-60DG-290M		LR6-60DG-295M		LR6-60DG-300M	
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	280	202.4	285	206.1	290	209.7	295	213.3	300	216.9
Open Circuit Voltage (Voc/V)	38.9	35.8	39.2	36.0	39.4	36.2	39.6	36.5	39.9	36.7
Short Circuit Current (Isc/A)	9.08	7.32	9.18	7.40	9.29	7.49	9.39	7.57	9.50	7.66
Voltage at Maximum Power (Vmp/V)	32.5	29.3	32.7	29.5	32.9	29.7	33.2	30.0	33.4	30.2
Current at Maximum Power (Imp/A)	8.62	6.89	8.71	6.97	8.80	7.04	8.89	7.11	8.98	7.18
Module Efficiency(%)	16.9		17.2		17.5		17.8		18.1	

STC (Standard Testing Conditions): Irradiance 1000W/m², Cell Temperature 25 °C, Spectra at AM1.5

NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m², Ambient Temperature 20 °C, Spectra at AM1.5, Wind at 1m/s

Temperature Ratings (STC)

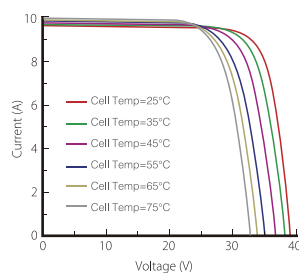
Temperature Coefficient of Isc: +0.059%/°C
 Temperature Coefficient of Voc: -0.330%/°C
 Temperature Coefficient of Pmax: -0.410%/°C

Mechanical Loading

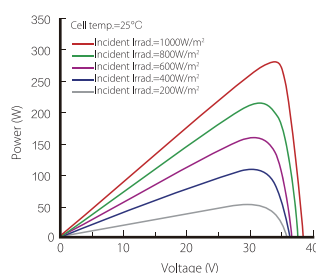
Front Side Maximum Static Loading: 5400Pa
 Rear Side Maximum Static Loading: 2400Pa
 Hailstone Test: 25mm Hailstone at the speed of 23m/s

I-V Curve

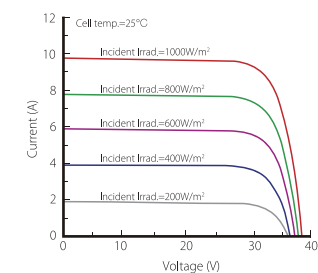
Current-Voltage Curve (LR6-60DG-290M)



Power-Voltage Curve (LR6-60DG-290M)



Current-Voltage Curve (LR6-60DG-290M)



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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
- High reliability without any electrolytic capacitors
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)



INVERTERS



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	VA
Max. AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400	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 ⁽¹⁾				Hz
Maximum Continuous Output Current 208V	-	16	-	24	-	-	-	A
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	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	-	-	-	
Transformer-less, Ungrounded				Yes				
Maximum Input Voltage				480				Vdc
Nominal DC Input Voltage		380				400		Vdc
Maximum Input Current 208V	-	9	-	13.5	-	-	-	
Maximum Input Current @240V	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Max. Input Short Circuit Current				45				Adc
Reverse-Polarity Protection				Yes				
Ground-Fault Isolation Detection				600k Ω Sensitivity				
Maximum Inverter Efficiency	99			99.2				%
CEC Weighted Efficiency				99				%
Nighttime Power Consumption				< 2.5				W
ADDITIONAL FEATURES								
Supported Communication Interfaces				RS485, Ethernet, ZigBee (optional), Cellular (optional)				
Revenue Grade Data, ANSI C12.20				Optional ⁽²⁾				
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 AFCl according to T.I.L. M-07				
Grid Connection Standards				IEEE1547, Rule 21, Rule 14 (H1)				
Emissions				FCC Part 15 Class B				
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range		3/4" minimum / 14-6 AWG				3/4" minimum / 14-4 AWG		
DC Input Conduit Size / # of Strings / AWG Range		3/4" minimum / 1-2 strings / 14-6 AWG				3/4" minimum / 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				Natural convection		
Operating Temperature Range		-13 to +140 / -25 to +60 ⁽³⁾ (-40°F / -40°C option) ⁽⁴⁾						°F / °C
Protection Rating				NEMA 3R (Inverter with Safety Switch)				

⁽¹⁾ For other regional settings please contact SolarEdge support

⁽²⁾ Revenue grade inverter P/N: SExxxxH-US000NCC2

⁽³⁾ For power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>

⁽⁴⁾ -40 version P/N: SExxxxH-US000NNU4





SolarEdge Power Optimizer

Frame-Mounted Module Add-On
for North America P320

POWER OPTIMIZER



Fast mount power optimizers with module-level optimization

- Specifically designed to work with SolarEdge inverters
- Quicker installation - Power optimizers can be mounted in advance saving installation time
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of modules mismatch-loss, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Next generation maintenance with module level monitoring
- Compliant with arc fault protection and rapid shutdown NEC requirements (when installed as part of the SolarEdge system)
- Module-level voltage shutdown for installer and firefighter safety



SolarEdge Power Optimizer Frame-Mounted Module Add-On for North America P320

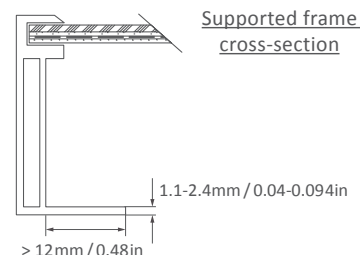
Optimizer model (typical module compatibility)	P320 (for high-power 60-cell modules)	
INPUT		
Rated Input DC Power ⁽¹⁾	300	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48	Vdc
MPPT Operating Range	8 - 48	Vdc
Maximum Short Circuit Current (Isc)	11	Adc
Maximum DC Input Current	13.75	Adc
Maximum Efficiency	99.5	%
Weighted Efficiency	98.8	%
Overvoltage Category	II	
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)		
Maximum Output Current	15	Adc
Maximum Output Voltage	60	Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF)		
Safety Output Voltage per Power Optimizer	1 ± 0.1	Vdc
STANDARD COMPLIANCE		
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3	
Safety	IEC62109-1 (class II safety), UL1741	
RoHS	Yes	
INSTALLATION SPECIFICATIONS		
Maximum Allowed System Voltage	1000	Vdc
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters	
Dimensions (W x L x H)	128 x 152 x 28 / 5 x 5.97 x 1.1	mm / in
Weight (including cables)	630 / 1.4	gr / lb
Input Connector	MC4 Compatible	
Output Wire Type / Connector	Double Insulated; MC4 Compatible	
Output Wire Length	0.95 / 3.0	m / ft
Operating Temperature Range	-40 - +85 / -40 - +185	°C / °F
Protection Rating	IP68 / NEMA6P	
Relative Humidity	0 - 100	%

⁽¹⁾ Rated STC power of the module. Module of up to +5% power tolerance allowed.

PV SYSTEM DESIGN USING A SOLAREEDGE INVERTER ⁽²⁾	SINGLE PHASE HD-WAVE	SINGLE PHASE	THREE PHASE 208V	THREE PHASE 480V	
Minimum String Length (Power Optimizers)	8		10	18	
Maximum String Length (Power Optimizers)	25		25	50 ⁽³⁾	
Maximum Power per String	5700 (6000 with SE7600H-US)	5250	6000	12750	W
Parallel Strings of Different Lengths or Orientations	Yes				

⁽²⁾ For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf.

⁽³⁾ A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement



REVISION:		
F	11/30/2013	UPDATES
G	11/28/2017	DR
		ECF

