





## SYSTEM INFORMATION

DC SYSTEM SIZE: 16800W AC SYSTEM SIZE: 16000W MODULES: (42)HANWHA Q CELLS Q.PRO L-G5.3 400W INVERTER: (1)SOLAREDGE TECHNOLOGIES SE10000H-US(240V) (1)SOLAREDGE TECHNOLOGIES SE6000H-US(240V) OPTIMIZER: (42) P400 SOLAREDGE POWER OPTIMIZER

## **ENGINEER OF RECORD**

NEC 2017
IFC 2015
IRC 2015
IBC 2015
120 MPH
30 PSF



<b>CUSTOMER INFORMATION</b>
NAME&ADDRESS:
KAREN WEINSEISS 81 TRANQUILITY DR, EASTON, CT 06612
 41°17'08.2"N 73°18'58.4"W APN:EASTM:3781B:54L:11
AHJ:CT-TOWN OF EASTON
PROJECT NUMBER:SAVK-000802
SITE PLAN-1
DESIGNER/CHECKED BY:
PR/RR

SCALE: AS NOTED

0188969.E1

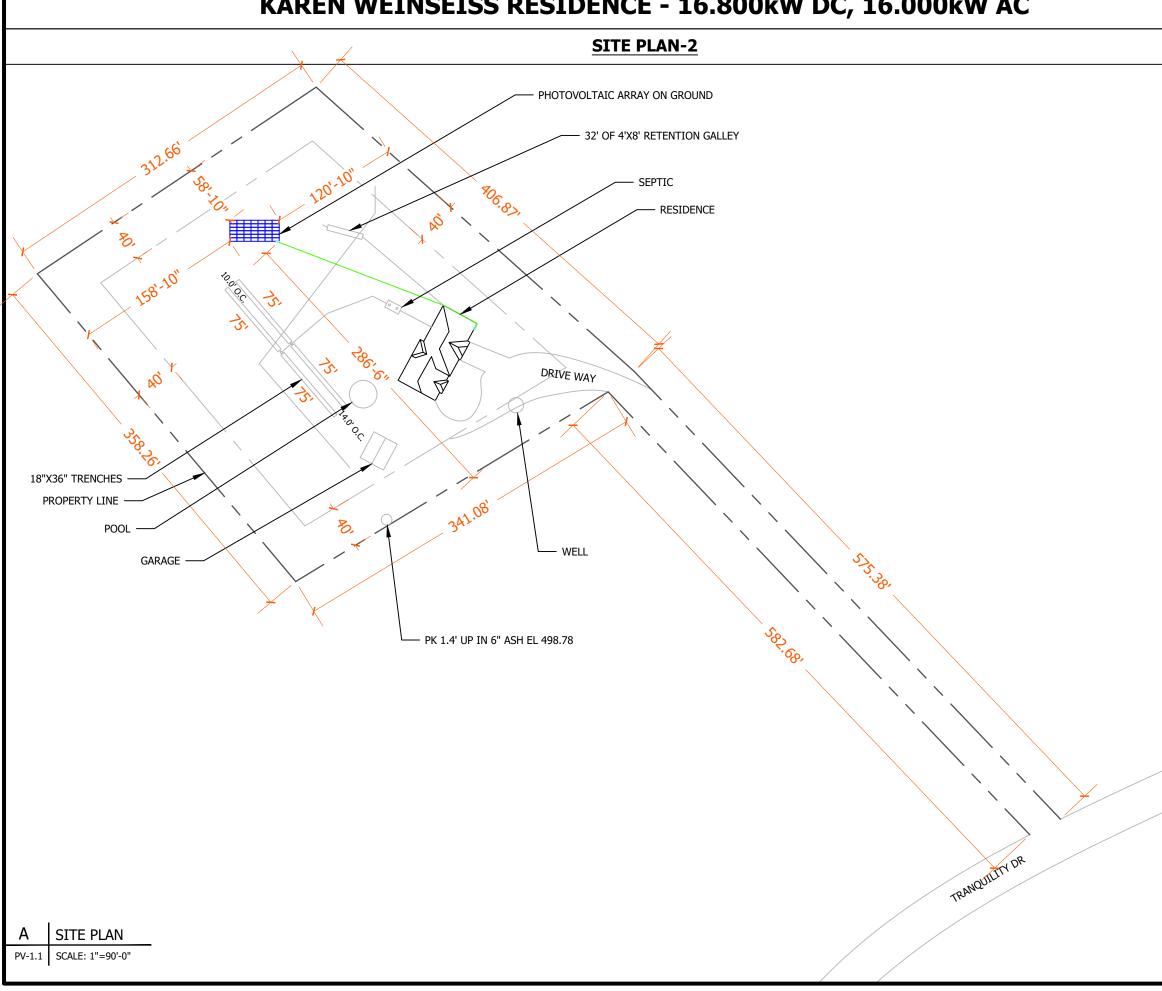
PAPER SIZE:17"x11"

PV-1.0

DATE:10/09/2020

REV:A

# KAREN WEINSEISS RESIDENCE - 16.800kW DC, 16.000kW AC







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## **ENGINEER OF RECORD**



1730 NEW BRITAIN AVE, FARMINGTON CT 06032 TEL NO : 860-288-7557 LIC :#HIC@0648178 **ELECTRICIAN INFORMATION:** MICHAEL JOSEPH

0188969.E1

## **CUSTOMER INFORMATION**

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AHJ:CT-TOWN OF EASTON

PROJECT NUMBER:SAVK-000802

## SITE PLAN-2

DESIGNER/CHECKED BY:

SCALE: AS NOTED

PR/RR

PAPER SIZE:17"x11"



DATE:10/09/2020

REV:A

## **GENERAL NOTES**

#### **GENERAL NOTES**

- MODULES ARE LISTED UNDER UL 1703 AND CONFORM TO THE STANDARDS.
- INVERTERS ARE LISTED UNDER UL 1741 AND CONFORM TO THE STANDARDS. 2.
- DRAWINGS ARE DIAGRAMMATIC, INDICATING GENERAL ARRANGEMENT OF THE PV SYSTEM AND THE ACTUAL 3. SITE CONDITION MIGHT VARY.
- WORKING CLEARANCES AROUND THE NEW PV ELECTRICAL EQUIPMENT WILL BE MAINTAINED IN ACCORDANCE WITH NEC CODE.
- ALL GROUND WIRING CONNECTED TO THE MAIN SERVICE GROUNDING IN MAIN SERVICE PANEL/ SERVICE 5. EQUIPMENT.
- ALL CONDUCTORS SHALL BE 600V, 75°C STANDARD COPPER UNLESS OTHERWISE NOTED. 6.
- THE SYSTEM WILL NOT BE INTERCONNECTED BY THE CONTRACTOR UNTIL APPROVAL FROM THE LOCAL 7. JURISDICTION AND/OR THE UTILITY.
- 8. PV ARRAY COMBINER/JUNCTION BOX PROVIDES TRANSITION FROM ARRAY WIRING TO CONDUIT WIRING

#### **EQUIPMENT LOCATION:**

- 9. ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS AS REQUIRED BY NEC CODE.
- 10. WIRING SYSTEMS INSTALLED IN DIRECT SUNLIGHT MUST BE RATED FOR EXPECTED OPERATING TEMPERATURE AS SPECIFIED BY NEC CODE, NEC TABLES .
- 11. JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES ACCORDING TO NEC CODE.
- 12. ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT.
- 13. ALL EOUIPMENT SHALL BE INSTALLED ACCESSIBLE TO OUALIFIED PERSONNEL ACCORDING TO NEC APPLICABLE CODES.
- 14. ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPROPRIATE

#### WIRING & CONDUIT NOTES:

- 15. ALL CONDUIT AND WIRE WILL BE LISTED AND APPROVED FOR THEIR PURPOSE. CONDUIT AND WIRE SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING. 16 CONDUCTORS SIZED ACCORDING TO NEC CODES.
- 17. DC WIRING LIMITED TO MODULE FOOTPRINT. MICRO INVERTER WIRING SYSTEMS SHALL BE LOCATED AND SECURED UNDER THE ARRAY WITH SUITABLE WIRING CLIPS.
- AC CONDUCTORS COLORED OR MARKED AS FOLLOWS: PHASE A OR L1- BLACK PHASE B OR L2- RED, OR 18. OTHER CONVENTION IF THREE PHASE PHASE C OR L3- BLUE, YELLOW, ORANGE\*\*, OR OTHER CONVENTION NEUTRAL- WHITE OR GREY IN 4-WIRE DELTA CONNECTED SYSTEMS THE PHASE WITH HIGHER VOLTAGE TO BE MARKED ORANGE [NEC CODE].

- **INTERCONNECTION NOTES:**
- 24. LOAD-SIDE INTERCONNECTION SHALL BE IN ACCORDANCE WITH [NEC CODE]
- 25. THE SUM OF THE UTILITY OCPD AND INVERTER CONTINUOUS INPUT MAY NOT EXCEED 120% OF BUSBAR RATING [NEC CODE].
- 26. WHEN SUM OF THE PV SOURCES EQUALS >100% OF BUSBAR RATING, PV DEDICATED BACKFFED BREAKERS MUST BE LOCATED OPPOSITE END OF THE BUS FROM THE UTILITY SOURCE OCPD [NEC CODE].
- 27. AT MULTIPLE PV OUTPUT COMBINER PANEL, TOTAL RATING OF ALL OVER CURRENT DEVICES SHALL NOT EXCEED AMPACITY OF BUSBAR, HOWEVER, THE COMBINED OVER CURRENT DEVICE MAY BE EXCLUDED ACCORDING TO NEC CODE.
- 28. FEEDER TAP INTER CONNECTION (LOAD SIDE) ACCORDING TO NEC CODE
- 29. SUPPLY SIDE TAP INTERCONNECTION ACCORDING TO NEC CODE WITH SERVICE ENTRANCE CONDUCTORS IN ACCORDANCE WITH NEC CODE
- 30. BACK FEEDING BREAKER FOR UTILITY-INTERACTIVE INVERTER OUTPUT IS EXEMPT FROM ADDITIONAL FASTENING [NEC CODE].

#### **GROUNDING NOTES:**

- 31. GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE, AND GROUNDING DEVISES EXPOSED TO THE ELEMENTS SHALL BE RATED FOR SUCH USE.
- 32. PV EQUIPMENT SHALL BE GROUNDED ACCORDING TO NEC CODE AND MINIMUM NEC TABLE CODE.
- 33. EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED ACCORDING TO NEC CODE AND MICRO INVERTER MANUFACTURER'S INSTRUCTIONS.
- 34. THE GROUNDING CONNECTION TO A MODULE SHALL BE ARRANGED SUCH THAT THE REMOVAL OF A MODULE DOES NOT INTERRUPT A GROUNDING CONDUCTOR TO ANOTHER MODULE.
- 35. GROUNDING AND BONDING CONDUCTORS, IF INSULATED, SHALL BE COLORED GREEN OR MARKED GREEN IF #4 AWG OR LARGER [NEC CODE]
- 36. DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING ENERGIZED ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS).
- 37. DISCONNECTS TO BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH
- 38. RAPID SHUTDOWN OF ENERGIZED CONDUCTORS BEYOND 10 FT OF PV ARRAY OR 5 FT INSIDE A BUILDING WITHIN 10 SECONDS. CONTROLLED CONDUCTORS ≤30V AND ≤240VA [NEC CODE]. LOCATION OF LABEL ACCORDING TO AHJ.
- 39. ALL OCPD RATINGS AND TYPES SPECIFIED ACCORDING TO NEC CODE.



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## **ENGINEER OF RECORD**



1730 NEW BRITAIN AVE, FARMINGTON CT 06032 TEL NO : 860-288-7557 LIC :#HIC@0648178 **ELECTRICIAN INFORMATION:** MICHAEL JOSEPH 0188969.E1

## **CUSTOMER INFORMATION**

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41°17'08.2"N 73°18'58.4"W APN:EASTM:3781B:54L:11

AHJ:CT-TOWN OF EASTON

PROJECT NUMBER: SAVK-000802

## **GENERAL NOTES**

DESIGNER/CHECKED BY:

PR/RR

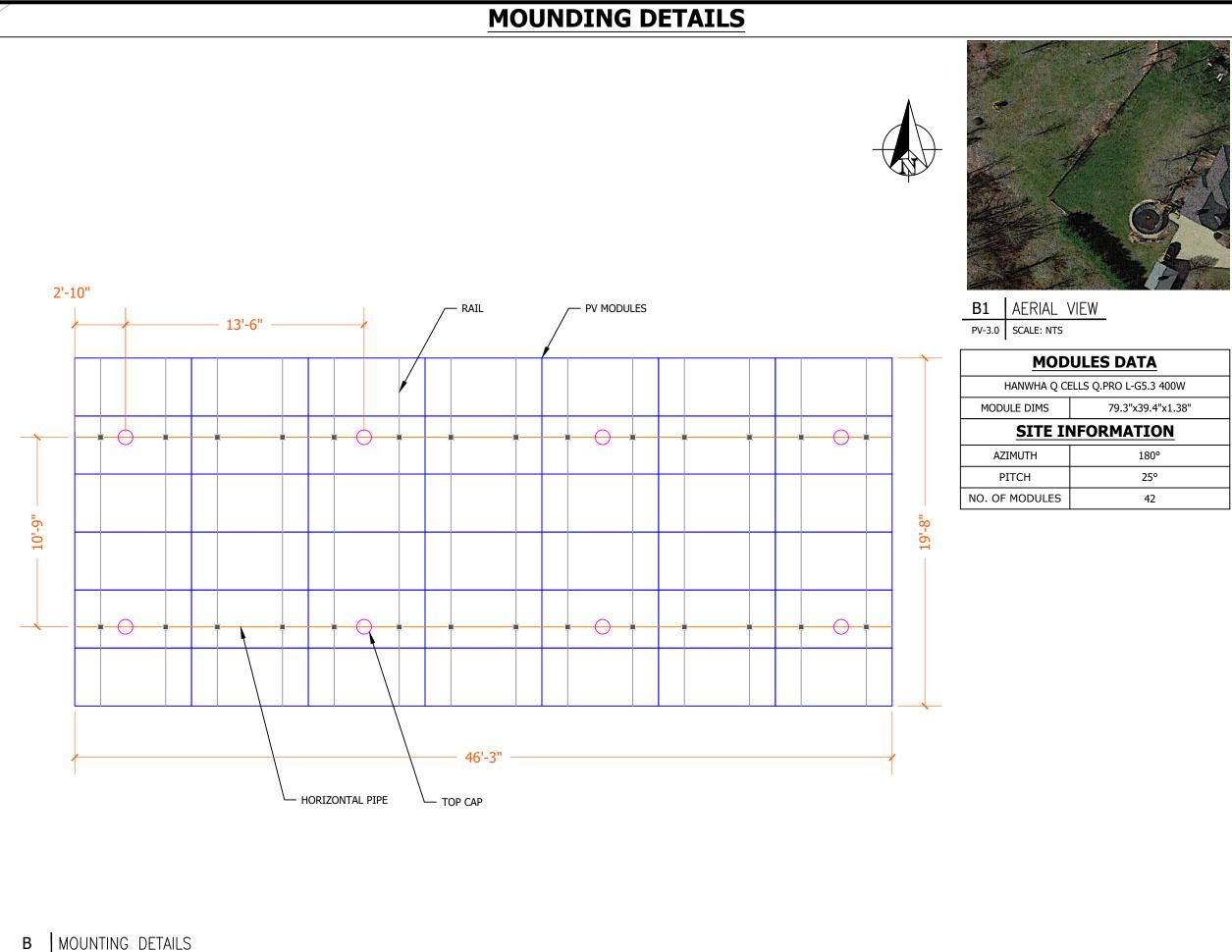
SCALE: AS NOTED

DATE:10/09/2020

PAPER SIZE:17"x11"

REV:A

PV-2.0



PV-3.0 SCALE: 3/16" = 1'-0"





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## MOUNTING DETAILS

DESIGNER/CHECKED BY:

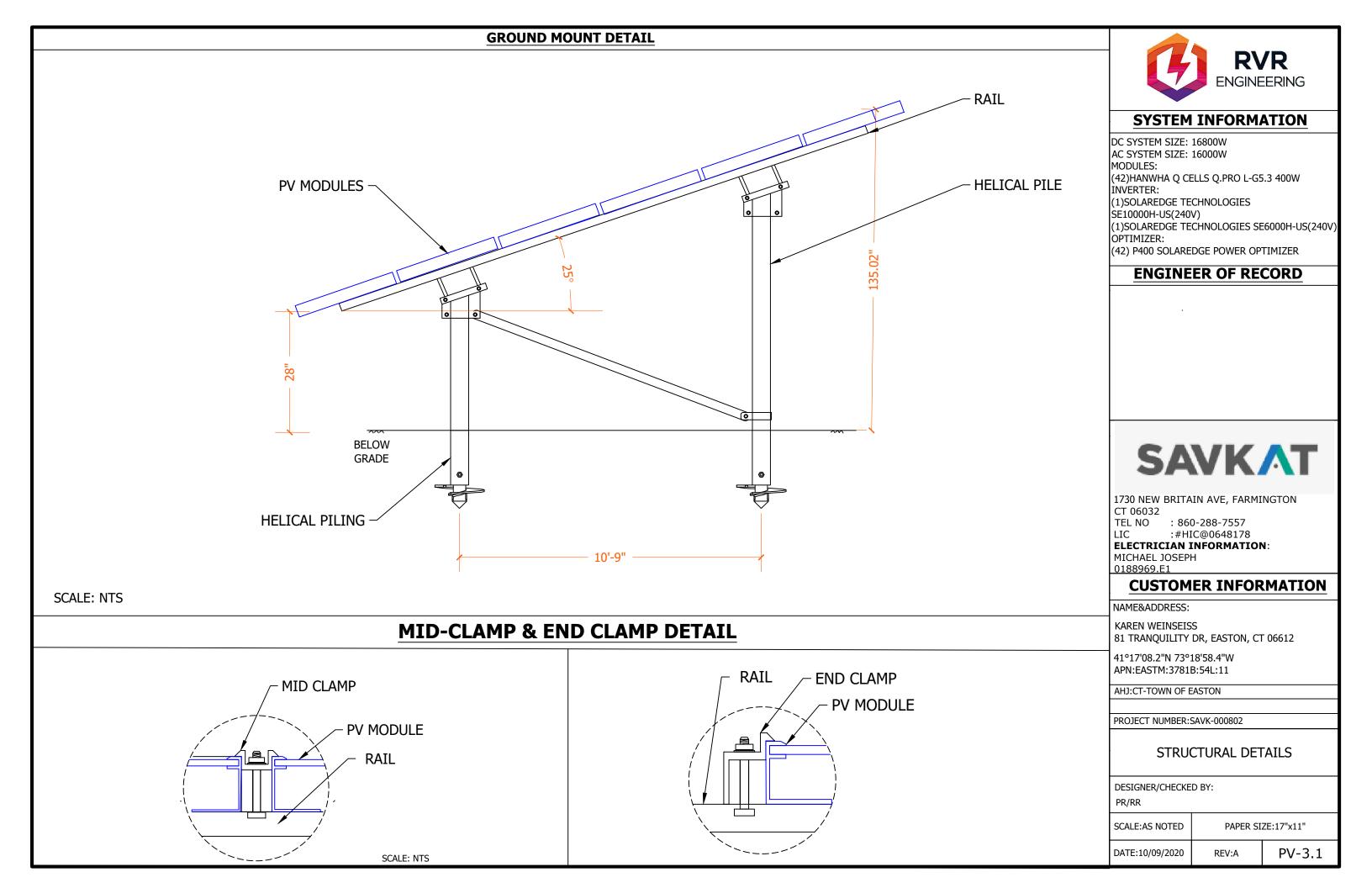
PR/RR

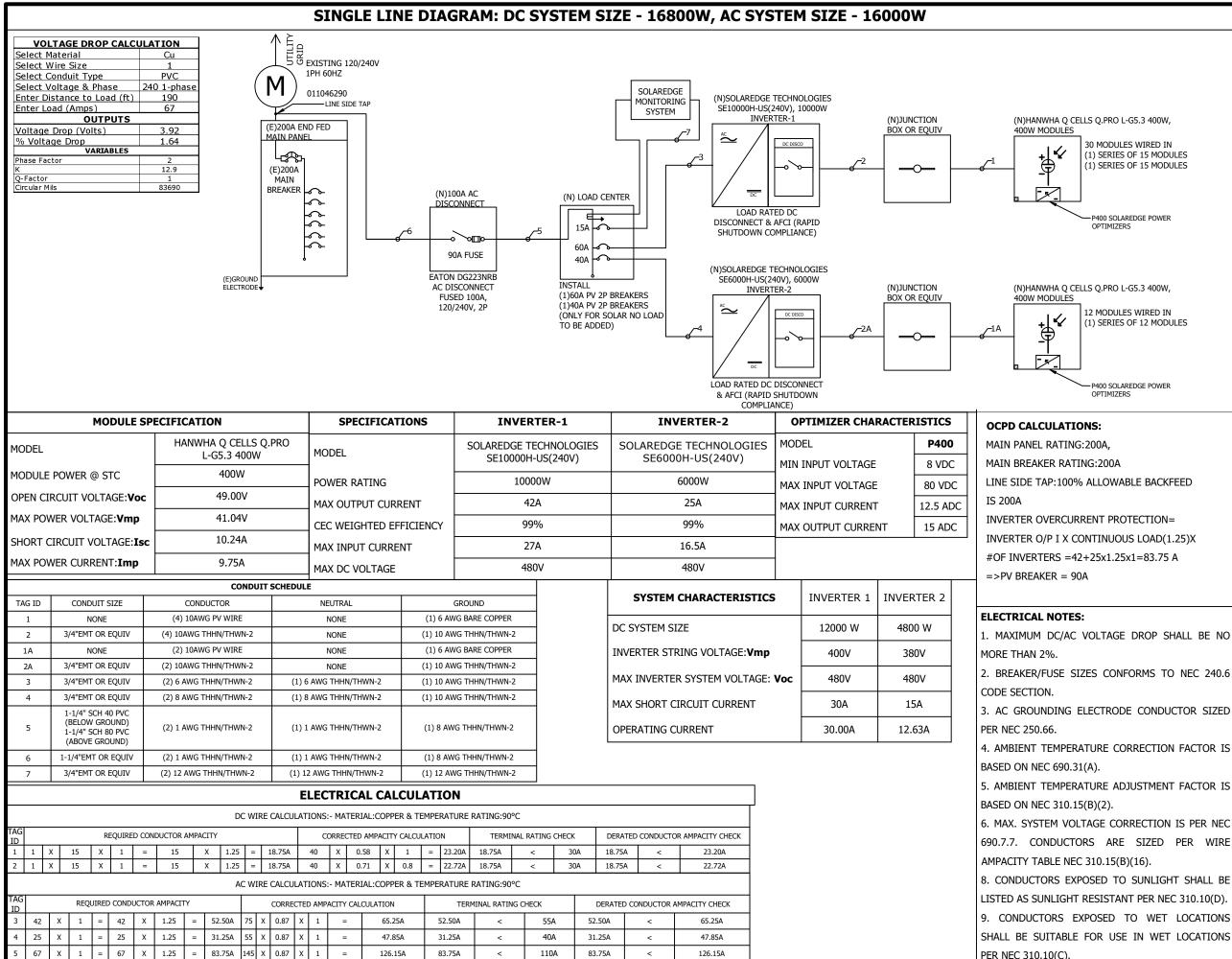
SCALE: AS NOTED

PAPER SIZE:17"x11"

PV-3.0

DATE:10/09/2020 REV:A









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## SINGLE LINE DIAGRAM

DESIGNER/CHECKED BY: PR/RR

SCALE: AS NOTED

DATE:10/09/2020

PAPER SIZE:17"x11" REV:A

PV-4.0

30 MODULES WIRED IN (1) SERIES OF 15 MODULES (1) SERIES OF 15 MODULES

P400 SOLAREDGE POWER

12 MODULES WIRED IN (1) SERIES OF 12 MODULES

P400 SOLAREDGE POWER

## WARNING PLACARDS

## WARNING

#### **ELECTRIC SHOCK HAZARD**

THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED

#### LABEL LOCATION

DC DISCONNECT, INVERTER [PER CODE: NEC 690.41)] [To be used when inverter is ungrounded]

## WARNING

## ELECTRIC SHOCK HAZARD

DO NOT TOUCH TERMINALS TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

#### LABEL LOCATION

AC DISCONNECT, POINT OF INTERCONNECTION [PER CODE: NEC 690.13(B)]

## WARNING

## **ELECTRIC SHOCK HAZARD**

DO NOT TOUCH TERMINALS TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

#### LABEL LOCATION

AC DISCONNECT, POINT OF INTERCONNECTION [PER CODE: NEC 690.13(B)]

WARNING-Electric Shock Hazard No User Serviceable Parts inside Contact authorized service provide for assistance

#### LABEL LOCATION INVERTER, JUNCTION BOXES(ROOF), AC DISCONNECT [PER CODE: NEC 690.13]

WARNING:PHOTOVOLTAIC **POWER SOURCE** 

LABEL LOCATION CONDUIT, COMBINER BOX [PER CODE: NEC690.31(G)(3)]

## WARNING

**DUAL POWER SOURCE SECOND** OURCE IS PHOTOVOLTAIC SYSTEM

LABEL LOCATION

POINT OF INTERCONNECTION [PER CODE: NEC705.12(D)(4)]

#### PHOTOVOLTAIC SYSTEM DC DISCONNECT

MAXIMUM VOLTAGE 480 VDC MAXIMUM CIRCUIT CURRENT 30 ADC MAX RATED OUTPUT CURRENT OF THE 15 ADC CHARGE CONTROLLER OR DC-TO-DC CONVERTER(IF INSTALLED)

LABEL LOCATION DC DISCONNECT SWITCH, INVERTER-01 [PER. CODE: CEC 690.53]

PHOTOVOLTAIC SYSTEM AC DISCONNECT SWITCH RATED AC OPERATING CURRENT **67** AMPS AC

AC NOMINAL OPERATING VOLTAGE 240 VAC

#### LABEL LOCATION

AC DISCONNECT , POINT OF INTERCONNECTION [PER CODE: NEC 690.54]

## WARNING

**NVERTER OUTPUT CONNECTION DO NOT RELOCATE THIS OVER-CURRENT DEVICE** 

#### LABEL LOCATION POINT OF INTERCONNECTION

(PER CODE: NEC 705.12(2)(b) [ Not Required if Panel board is rated not less than sum of ampere ratings of all overcurrent devices supplying it]

## **CAUTION: SOLAR CIRCUIT**

#### LABEL LOCATION

MARKINGS PLACED ON ALL INTERIOR AND EXTERIOR DC CONDUIT, RACEWAYS, ENCLOSURES AND CABLE ASSEMBLES AT LEAST EVERY 10 FT, AT TURNS AND ABOVE/BELOW PENETRATIONS AND ALL COMBINER/JUNCTION BOXES. (PER CODE: IFC605.11.1.4)

## SOLAR DISCONNECT

LABEL LOCATION

DISCONNECT, POINT OF INTERCONNECTION [PER CODE: NEC690.13(B)]

### **CAUTION: SOLAR ELECTRIC** SYSTEM CONNECTED

#### LABEL LOCATION

WEATHER RESISTANT MATERIAL, DURABLE ADHESDIVE, UL969 AS STANDARD TO WEATHER RATING (UL LISTING OF MARKINGS NOT REQUIRED), MIN 3/8" LETTER HEIGHT ARIAL OR SIMILAR FONT NON-BOLD, PLACED WITHIN THE MAIN SERVICE DISCONNECT, PLACED ON THE OUTSIDE OF THE COVER WHEN DISCONNECT IS OPERATED WITH THE SERVICE PANEL CLOSED. (PWER CODE: NEC690.15, 690.13(B))

#### **RAPID SHUTDOWN SWITCH** FOR SOLAR SYSTEM

LABEL LOCATION INVERTER, POINT OF INTERCONNECTION

[PER CODE: NEC 690.56(C)(3)]

## SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

DLAR ELECTRI

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO

SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY

LABEL LOCATION AC DISCONNECT, DC DISCONNECT, POINT OF INTERCONNECTION (PER CODE: NEC690.56(C)(1)(A))

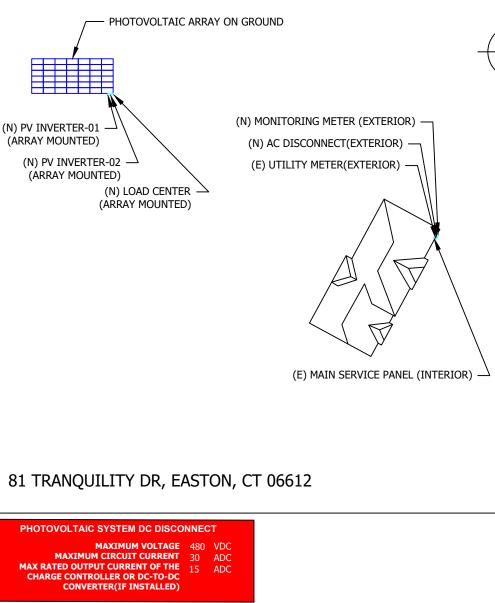
ALL PLACARDS SHALL BE OF WEATHER PROOF CONSTRUCTION, BACKGROUND ON ALL PLACARDS SHALL BE RED WITH WHITE LETTERING U.O.N.

PLACARD SHALL BE MOUNTED DIRECTLY ON THE EXISTING UTILITY ELECTRICAL SERVICE.FASTENERS APPROVED BY THE LOCAL JURISDICTION

NOTE: ALL SIGNAGE CANNOT BE HAND WRITTEN NEC 110.21



# POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN



LABEL LOCATION DC DISCONNECT SWITCH, INVERTER-02 [PER, CODE: CEC 690,53]





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<u>018896</u>9.E1

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## WARNING PLACARDS

DESIGNER/CHECKED BY:

PR/RR

SCALE: AS NOTED

PAPER SIZE:17"x11"

DATE:10/09/2020

REV:A

PV-5.0



**MECHANICAL SPECIFICATION** Format 79.3 in × 39.4 in × 1.38 in (including frame) (2015 mm × 1000 mm × 35 mm) 50.7 lbs (23 kg) Weight 0.13 in (3.2 mm) thermally pre-stressed glass with Front Cover anti-reflection technology Back Cover Composite film Frame Anodized aluminum Cell 6 × 24 monocrystalline Q.ANTUM solar half cells Junction Box 2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101mm × 32-60mm × 15-18mm), IP67, with bypass diodes Cable 4 mm² Solar cable; (+) ≥53.1 in (1350 mm), (-) ≥53.1 in (1350 mm) Stäubli MC4-Evo2, Amphenol UTX, Renhe 05-8, Connector DETAILA DETAIL B D.38" (10 mm) 0.98" (25 mm) T T 0.28" (7 mm) LO" (25.5 mm) T - 0.33" (8.5 mm) Tonglin TL-Cable01S-F; IP68 or Friends PV2e; IP67

PO	WER CLASS				380	385	390	395	40
MIN	IIMUM PERFORMANCE AT ST	ANDARD TEST	CONDITION	S, STC <sup>1</sup> (POWER	TOLERANCE +	5W/-0W)			
	Power at MPP <sup>1</sup>		P <sub>MPP</sub>	[W]	380	385	390	395	40
_	Short Circuit Current <sup>1</sup>		Isc	[A]	10.05	10.10	10.14	10.19	10.24
Minimum	Open Circuit Voltage <sup>1</sup>		Voc	[V]	47.95	48.21	48.48	48.74	49.00
	Current at MPP		IMPP	[A]	9.57	9.61	9.66	9.70	9.7
	Voltage at MPP		V <sub>MPP</sub>	[V]	39.71	40.05	40.38	40.71	41.04
	Efficiency		η	[%]	≥18.9	≥19.1	≥19.4	≥19.6	≥19.9
MIN	IMUM PERFORMANCE AT NO	RMAL OPERA	TING CONDI	TIONS, NMOT <sup>2</sup>					
	Power at MPP		P <sub>MPP</sub>	[W]	284.4	288.2	291.9	295.6	299.4
Ę	Short Circuit Current		Isc	[A]	8.10	8.14	8.17	8.21	8.2
Minimum	Open Circuit Voltage		Voc	[V]	45.21	45.46	45.71	45.96	46.2
MIL	Current at MPP		IMPP	[A]	7.53	7.57	7.60	7.64	7.6
	Voltage at MPP		V	[V]	37.77	38.08	38.40	38.71	39.0
1Mei	asurement tolerances P <sub>MPP</sub> ±3%; I <sub>SC</sub>	; V <sub>oc</sub> ±5% at ST	C: 1000 W/m <sup>2</sup> , 2	25±2°C, AM 1.5G a	iccording to IEC 6	60904-3 • <sup>2</sup> 800 W/m²,	NMOT, spectrum AN	11.5G	
QC	ELLS PERFORMANCE WARRA	NTY			PERFO	RMANCE AT LOW I	IRRADIANCE		
RELATIVE EFFICIENCY		ar warrantiles' nd warrantilea'	first year. The degradation of nominal p	of nominal power d areafter max. 0.54% per year. At least 93 ower up to 10 years. nominal power up to	.1% 00 100				
RELATIVE EFFICIENCY	Discrete la constante la consta	d wurantider 20 25 YEARS	first year. The degradation of nominal pp least 85% of 25 years. All data withi es. Full warre the warranty sales organis country.	ereafter max. 0.54% per year. At least 93 ower up to 10 years.	1% 01100 At 000 ranc- with 80 LS tive	200 400 module performance u			
RELATIVE EFFICIEN		d wurantider 20 25 YEARS	first year. The degradation of nominal pp least 85% of 25 years. All data withi es. Full warre the warranty sales organis country.	ereafter max. 0.54% per year. At least 93 ower up to 10 years. nominal power up to n measurement tolei inties in accordance terms of the Q CELI	1% 01100 At 000 ranc- with 80 LS tive	module performance u	IRRADIANCE [W/m²]		
TEN	Comparison of the second of th	d wurantider 20 25 YEARS	first year. The degradation of nominal pp least 85% of 25 years. All data withi es. Full warre the warranty sales organis country.	ereafter max. 0.54% per year. At least 93 ower up to 10 years. nominal power up to n measurement tolei inties in accordance terms of the Q CELI	1.1% At an	module performance u	IRRADIANCE [W/m²]		-0.2
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TEN Ter Ter	During marked of the optimized of the op	20 25 tor 2014	first year. The degradation of nominal pu- least 85% of 25 years. All data within es. Full warren the warranty sales organis country. α [%/k] γ [%/k] PR	areater max. 0.54 % per year, At least 93 ower up to 10 years, nominal power up to n measurement toler inities in accordance terms of the Q CELL ation of your respect +0.04 -0.36 OPERTIES FO	1% At 100 million	module performance u ison to STC conditions a Coefficient of V <sub>oc</sub> jule Operating Temp II DESIGN	IRRADIANCE [W/m <sup>-</sup> ] Inder low irradiance c a (25°C, 1000 W/m <sup>2</sup> ) ß	conditions in	109±5.4 (43±3°C
TEM Ter Ter Ma	Dear Presented of the Control of the	20 23 20 23 ter 2010	first year. The degradation of nominal pu- least 85% of 25 years. All data within es. Full warren the warranty sales organis country. α [%/k] γ [%/k] PR	areater moi: 0.54% per year. At least 93 ower up to 10 years, nominal power up to n measurement toler inties in accordance terms of the Q CELL ation of your respect +0.04 -0.36 <b>OPERTIES F(</b> 0 (EC)/1500 (UL)	1% At 200 Tranc- with 200 Typical compared to the compared to	module performance u ison to STC conditions a Coefficient of V <sub>oc</sub> jule Operating Temp II DESIGN	IRRADIANCE [W/m <sup>-</sup> ] Inder low irradiance c a (25°C, 1000 W/m <sup>2</sup> ) ß	conditions in	109±5.4 (43±3°C
TEN Ter Ma Ma	Dear Processory and the second of the s	20 25 20 25 ter 2019 [V] [A DC]	first year. The degradation of nominal p least 85% of 25 years. All data withi es. Full warre the warranty sales organis country. α [%/K] γ [%/K] PR 1500	areater moiz. 0.54 % per year, At least 93 ower up to 10 years, nominal power up to n measurement toler inties in accordance terms of the Q CELL ation of your respect +0.04 -0.36 OPERTIES F( 0 (IEC)/1500 (UL) 20	1% At 200 Type 200 Ty	module performance u rison to STC conditions a Coefficient of V <sub>oc</sub> lule Operating Temp A DESIGN	IRRADIANCE [W/m <sup>-</sup> ] Inder low irradiance c a (25°C, 1000 W/m <sup>2</sup> ) ß	[%/K]	109±5.4 (43±3°C C/TYPE
	And the second of the second o	20 23 btr 2019 [V] [A DC] [Ibs/ft <sup>2</sup> ]	first year. The degradation of nominal p least 85% of 25 years. All data withi es. Full warre the warranty sales organis country. α [%/K] γ [%/K] PR 1500 75 (3600	areater mox. 0.54 %       per year. At least 93       power up to 10 years.       nominal power up to 10       n measurement toler       nitis in accordance       terms of the Q CELL       attion of your respect       +0.04       -0.36       OPERTIES FC       (IEC)/1500 (UL)       20       Pa)/33 (1600 Pa)	1% At ano- with S stive Temperature Normal Mod DR SYSTEN Safety Class Fire Rating Permitted M	module performance u ison to STC conditions a Coefficient of V <sub>oc</sub> lule Operating Temp A DESIGN a codule Temperature	IRRADIANCE [W/m <sup>-</sup> ] Inder low irradiance c a (25°C, 1000 W/m <sup>2</sup> ) ß	(%/K)	109±5.4 (43±3°C C/TYPE : -40°F up to +185°
TEN Ter Ma Ma Ma	Dear Processory and the second of the s	20 25 20 25 ter 2019 [V] [A DC]	first year. The degradation of nominal p least 85% of 25 years. All data withi es. Full warre the warranty sales organis country. α [%/K] γ [%/K] PR 1500 75 (3600	areater moiz. 0.54 % per year, At least 93 ower up to 10 years, nominal power up to n measurement toler inties in accordance terms of the Q CELL ation of your respect +0.04 -0.36 OPERTIES F( 0 (IEC)/1500 (UL) 20	1% At 200 Type 200 Ty	module performance u ison to STC conditions a Coefficient of V <sub>oc</sub> lule Operating Temp A DESIGN a codule Temperature	IRRADIANCE [W/m <sup>-</sup> ] Inder low irradiance c a (25°C, 1000 W/m <sup>2</sup> ) ß	(%/K)	109±5.4 (43±3°C

#### UL 1703, CE-compliant, IEC 61215:2016, IEC 61730:2016, Application Class II, U.S. Patent No. 9 893 215 (solar cells)

CE

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Number of Modules per Pallet Number of Pallets per 53' Trailer Number of Pallets per 40' HC-Container Pallet Dimensions (L×W×H) 81.9 × 45.3 × 46.9 in (2080 × 1150 × 1190 mm) Pallet Weight

Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

#### Hanwha Q CELLS America Inc

<u>مرکم</u>

400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748-5996 | EMAIL inquiry@us.q-cells.com | WEB www.q-cells.com/na





## SYSTEM INFORMATION

DC SYSTEM SIZE: 16800W AC SYSTEM SIZE: 16000W MODULES: (42)HANWHA Q CELLS Q.PRO L-G5.3 400W INVERTER: (1)SOLAREDGE TECHNOLOGIES SE10000H-US(240V) (1)SOLAREDGE TECHNOLOGIES SE6000H-US(240V) OPTIMIZER: (42) P400 SOLAREDGE POWER OPTIMIZER

## **ENGINEER OF RECORD**



1730 NEW BRITAIN AVE, FARMINGTON CT 06032 TEL NO : 860-288-7557 LIC :#HIC@0648178 **ELECTRICIAN INFORMATION:** 

MICHAEL JOSEPH 0188969.E1

## **CUSTOMER INFORMATION**

NAME&ADDRESS:

29

27

22

1603 lbs (727 kg)

KAREN WEINSEISS 81 TRANQUILITY DR, EASTON, CT 06612

41°17'08.2"N 73°18'58.4"W APN:EASTM:3781B:54L:11

AHJ:CT-TOWN OF EASTON

PROJECT NUMBER:SAVK-000802

## MODULE SPECSHEET

DESIGNER/CHECKED BY:

PR/RR

SCALE: AS NOTED

PAPER SIZE:17"x11"

DATE:10/09/2020

REV:A

# 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

- I Specifically designed to work with power optimizers

- Record-breaking efficiency
- Fixed voltage inverter for longer strings
- / Integrated arc fault protection and rapid shutdown for / Optional: Revenue grade data, ANSI C12.20 NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance

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- Extremely small
- J Built-in module-level monitoring
- Øutdoor and indoor installation
- 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

		02000011 00	0200011 00	SE6000H-US	02/00011 00	SETCOCOLL		
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000		
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000		
AC Output Voltage MinNomMax. (211 - 240 - 264)	~	~	~	~	✓	~		
AC Output Voltage MinNomMax. (183 - 208 - 229)	-	~	-	~	-	-		
AC Frequency (Nominal)				59.3 - 60 - 60.5(1)				
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42		
Maximum Continuous Output Current @208V	-	16	-	24	-	-		
GFDI Threshold				1				
Utility Monitoring, Islanding Protection, Country Configurable Thresholds				Yes				
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500		
Maximum DC Power @208V	-	5100	-	7750	-	-		
Transformer-less, Ungrounded				Yes				
Maximum Input Voltage				480				
Nominal DC Input Voltage		3	80			400		
Maximum Input Current @240V <sup>(2)</sup>	8.5	10.5	13.5	16.5	20	27		
Maximum Input Current @208V <sup>(2)</sup>	-	9	-	13.5	-	-		
Max. Input Short Circuit Current				45				
Reverse-Polarity Protection				Yes				
Ground-Fault Isolation Detection				600ko Sensitivity				
Maximum Inverter Efficiency	99			99	9.2			
CEC Weighted Efficiency			ç	99				
Nighttime Power Consumption				< 2.5				
ADDITIONAL FEATURES								
Supported Communication Interfaces			RS485, Etherne	t, ZigBee (optional), C	ellular (optional)			
Revenue Grade Data, ANSI C12.20				Optional <sup>(3)</sup>				
Rapid Shutdown - NEC 2014 and 2017 690.12			Automatic Rapi	d 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 SPECIFICATIO	ONS							
AC Output Conduit Size / AWG Range								
DC Input Conduit Size / # of Strings / AWG Range			1" Maximum ,					
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174 2							
Weight with Safety Switch	22.	/ 11.9						
Noise	22 / 10 25.1 / 11.4 26.2 / 11.9 <							
Cooling	Natural Convection							
Operating Temperature Range	-13 to +140 / -25 to +60 <sup>(4)</sup> (-40°F / -40°C option) <sup>(5)</sup>							
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

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## SYSTEM INFORMATION

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1730 NEW BRITAIN AVE, FARMINGTON CT 06032 TEL NO : 860-288-7557 :#HIC@0648178 LIC **ELECTRICIAN INFORMATION:** 

MICHAEL JOSEPH 0188969.E1

**CUSTOMER INFORMATION** 

NAME&ADDRESS:

KAREN WEINSEISS 81 TRANQUILITY DR, EASTON, CT 06612

41°17'08.2"N 73°18'58.4"W APN:EASTM:3781B:54L:11

AHJ:CT-TOWN OF EASTON

PROJECT NUMBER:SAVK-000802

## **INVERTER SPECSHEET**

RoHS

DESIGNER/CHECKED BY:

PR/RR

SCALE: AS NOTED

DATE:10/09/2020

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PV-6.1

-US SE11400H-US

	400 @ 240V 0000 @ 208V	VA
	400 @ 240V 1000 @ 208V	VA
	~	Vac
	~	Vac
		Hz
	47.5	A
	48.5	A
		A
	17650	W
	15500	W
		101
		Vdc Vdc
	30.5	Adc
	27	Adc
	21	Adc
		Auc
		%
	99 @ 240V 8.5 @ 208V	%
	0.5 @ 2004	W
ximum /14-	4 AWG	
ı / 1-3 string	s / 14-6 AWG	
x 7.3 / 540	x 370 x 185	in / mm
38.8 / 17.6		lb / kg
		dBA
		°F / °C

# **Power Optimizer**

For North America P320 / P340 / P370 / P400 / P405 / P505



# POWER PTIMIZ フ

## PV power optimization at the module-level

- I Specifically designed to work with SolarEdge inverters
- / Up to 25% more energy
- Superior efficiency (99.5%)
- / Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- **/** Flexible system design for maximum space utilization

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- Fast installation with a single bolt
- I Next generation maintenance with modulelevel monitoring
- / Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- / Module-level voltage shutdown for installer and firefighter safety



## / Power Optimizer For North America

P320 / P340 / P370 / P400 / P405 / P505

Optimizer model (typical module compatibility)	P320 (for 60-cell modules)	P340 (for high- power 60-cell modules)	P370 (for higher- power 60 and 72-cell modules)	P400 (for 72 & 96- cell modules)	P405 (for thin film modules)	P505 (for higher current modules)		
INPUT								
Rated Input DC Power®	320	340	370	400	405	505	W	
Absolute Maximum Input Voltage (Voc at lowest temperature)	48 60 80 125 <sup>62</sup> 83 <sup>(2)</sup>						Vdc	
MPPT Operating Range	8 -	- 48	8 - 60	8 - 80	12.5 - 105	12.5 - 83	Vdc	
Maximum Short Circuit Current (Isc)		11		10	0.1	14	Adc	
Maximum DC Input Current		13.75		12	.63	17.5	Adc	
Maximum Efficiency			99	9.5			%	
Weighted Efficiency			98.8			98.6	%	
Overvoltage Category				I				
OUTPUT DURING OPER	ATION (POWE	R OPTIMIZER C	ONNECTED TO	OPERATING SO	LAREDGE INVER	RTER)		
Maximum Output Current			1	5			Adc	
Maximum Output Voltage		6	60		8	5	Vdc	
INVERTER OFF) Safety Output Voltage per Power Optimizer			1±	0.1			Vdc	
STANDARD COMPLIAN	CE							
EMC		FC	C Part15 Class B, IEC6	51000-6-2, IEC61000-6	5-3			
Safety			IEC62109-1 (class	s II safety), UL1741				
RoHS			Y	es				
INSTALLATION SPECIFI	CATIONS							
Maximum Allowed System Voltage		1000						
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters							
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1 129 x 153 x 27.5 / 5.1 x 6 x 1.1				129 x 159 x 49.5 / 5.1 x 6.3 x 1.9	129 x 162 x 59 / 5.1 x 6.4 x 2.3	mm / îr	
Weight (including cables)	630 / 1.4 750 / 1.7 845 / 1.9 1064 / 2.3						gr / lb	
Input Connector	MC4 <sup>(3)</sup>							
Output Wire Type / Connector	Double Insulated; MC4							
Output Wire Length	0.9 /	/ 2.95		1.2 ,	/ 3.9		m / ft	
nput Wire Length			0.16 ,	/ 0.52			m / ft	
Operating Temperature Range			-40 - +85 /	′ -40 - +185			°C / °F	
Protection Rating			IP68 / N	IEMA6P			%	
Relative Humidity	0 - 100							

Active of the module in the module in the module of the stap power of the module of the stap power of the module of the module of the stap power of the module of the modul

PV System Design Using a SolarEdge Inverter <sup>(4)(5)</sup>		Single Phase HD-Wave	Single phase	Three Phase 208V	Three Phase 480V
Minimum String Length	P320, P340, P370, P400	8		10	18
(Power Optimizers)	P405 / P505	6		8	14
Maximum String Length (Power Optimizers)		25		25	50%
Maximum Power per String		5700 (6000 with SE7600-US - SE11400- US)	5250	6000(7)	12750 <sup>(8)</sup>
Parallel Strings of Differen	t Lengths		Ŷ	és	

or Orientations

(For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string\_sizing\_na.pdf
(It is not allowed to mix P405/P505 with P320/P340/P370/P400 in one string
A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
For SE14.4KUS/SE43.2KUS: It is allowed to install up to 6,500W per string when 3 strings are connected to the inverter (3 strings per unit for SE43.2KUS) and when
the maximum power difference between the strings is up to 1,000W
For SE10KS/SE33.3KUS/SE66.6KUS/SE10KUS): It is allowed to install up to 5,000W per string when 3 strings are connected to the inverter (3 strings per unit for SE66.6KUS/SE100KUS)
and when the maximum power difference between the strings is up to 2,000W

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**CUSTOMER INFORMATION** 

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APN:EASTM:3781B:54L:11

AHJ:CT-TOWN OF EASTON

PROJECT NUMBER:SAVK-000802

## **OPTIMIZER SPECSHEET**

DESIGNER/CHECKED BY:

SCALE: AS NOTED

PR/RR

PAPER SIZE:17"x11"

DATE:10/09/2020

REV:A

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CE RoHS

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# SunPower Monitoring System for Your Home

#### Mobile Device Apps

Keep track of your solar system performance anytime, anywhere with a free app for your iPhone®, iPad®, or Android™ mobile device.



#### From Our Customers

"The monitoring system is a great way to see how much electricity our solar panels produce and enables us to optimize our energy savings."

"A great app for monitoring your use and production of kWh with excellent graphic support!"

<sup>4</sup>A consumption monitoring kit (installed by your dealer or builder) allows you to monitor your home energy usage and provides additional monitoring features including Energy Mix and Bill Savings. Ask your dealer or builder for additional details reparting the consumption monitoring kit

#### Document #507282 Rev

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#### See Your Energy Information

The SunPower Monitoring System provides detailed visibility into how much energy your system produces each day, month, or year—enabling you to optimize your solar investment.



#### https://monitor.us.sunpower.com

#### Bill Savings Estimate

The SunPower consumption monitoring kit\* provides an estimate of savings achieved by using your solar system. The savings are calculated based on the solar energy produced by your system and the energy used by your household.

#### **Environmental Savings**

The environmental savings feature provides an estimate of reduced emissions achieved by using your solar system.

# SUNPOWER





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