SCOPE OF WORK

SYSTEM SIZE: 4355W DC, 5000W AC
MODULES: (13) LG LG335N1C-A5
INVERTER(S): (1) SOLAREDGE SE5000H-US
RACKING: UNIRAC SOLARMOUNT
ATTACHMENT: ECOFASTEN GF1-GAL-MLL-812

WIND EXPOSURE: C
WIND SPEED: 90mph
GROUND SNOW LOAD: 30psf
OCCUPANCY: PRIMARY RESIDENCE
CONSTRUCTION TYPE: RESIDENTIAL

NEC 2011, IBC 2012, 2012 IFC, 2012 IRC

This approval is for compliance to the current adopted building codes for the proposed Solar System only. It is the owner's/applicant's responsibility to ensure that the proposed installation of solar systems and associated equipment is on legally permitted structures. If determined by inspection staff the proposed solar system is installed on non-permitted structures, any required modifications needed for code compliance will be at the owner's/applicant's expense

VICINITY MAP

GENERAL NOTES

- **LOCAL UTILITY PROVIDER SHALL BE NOTIFIED PRIOR TO USE AND ACTIVATION OF ANY SOLAR PHOTOVOLTAIC INSTALLATION**
- **THIS PROJECT SHALL COMPLY WITH LOCAL ORDINANCES**
- **PROPER ACCESS AND WORKING CLEARANCE WILL BE PROVIDED**
- **ALL ELECTRICAL WORK SHOWN ON THESE PLANS WILL BE COMPLETED BY THE UNDERSIGNED**
- **ALL APPLICABLE PV EQUIPMENT LISTED AND COMPLIANT WITH UL2703, UL1741 AND UL1703**
- **ALL ROOF PENETRATIONS TO BE SEALED WITH A HIGH PERFORMANCE ROOF SEALANT SUCH AS GeoCel 2300 CLEAR SEALANT**
- **THE SYSTEM WILL NOT BE INTERCONNECTED UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND THE UTILITY IS OBTAINED**
- **THE SOLAR PHOTOVOLTAIC INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS**
- **IF THE EXISTING MAIN PANEL DOES NOT HAVE VERIFIABLE GROUNDING ELECTRODE, IT IS THE NECESSARY TO INSTALL A SUPPLEMENTAL GROUNDING ELECTRODE**
- **EACH MODULE WILL BE GROUNDED UL 2703 OR UL 1703 APPROVED USING THE SUPPLIED CONNECTION POINTS IDENTIFIED ON THE MODULE AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS"**
- **A LADDER SHALL BE IN PLACE FOR THE INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS**
- **MAX HEIGHT OF MODULES OFF OF ROOF FACE : <6"**
- **ALL WORK SHALL COMPLY WITH 2011 NEC, 2012 IRC, IBC 2012, 2012 IFC MUNICIPAL CODE, AND ALL MANUFACTURERS' LISTINGS AND INSTALLATION INSTRUCTION.**
- **PHOTOVOLTAIC SYSTEM WILL COMPLY WITH 2011 NEC.**
- **PHOTOVOLTAIC SYSTEM INVERTER IS UNGROUNDED. NO CONDUCTORS ARE SOLIDLY GROUNDED IN THE INVERTER, AND SYSTEM COMPLIES WITH 690.35.**
- **MODULES CONFORM TO AND ARE LISTED UNDER UL 1703.**
- **INVERTER CONFORMS TO AND IS LISTED UNDER UL 1741.**
- **ELECTRICAL EQUIPMENT AND MATERIAL TO BE LISTED, LABELED, AND INSTALLED PER THE NEC, THE INSTALLATION STANDARDS/MANUFACTURER'S RECOMMENDATIONS AND IF REQUIRED A RECOGNIZED ELECTRICAL TESTING LABORATORY.**
- **CONDUITS EXPOSED TO SUNLIGHT ON ROOF SHALL BE LOCATED NOT LESS THAN 7/8" ABOVE ROOF SURFACE.**

TABLE OF CONTENTS

CONTRACTOR INSTALLED

CONTRACTOR NAME
CONTACT NAME
STREET ADDRESS
CITY, ST, ZIP
PHONE (555) 555-1212
EMAIL

HOMEOWNER

STREET ADDRESS
CITY, ST, ZIP

REV A
DATE: 2 July 2019
APN NO. : 115-23-007

COVER SHEET

PV 1.0

SITE PLAN: SCALE:- 1" = 16'

	PITCH	AZIMUTH	SOLAR AREA (SQFT)	SOLAR WEIGHT (LBS)	MODULE #
AR-01	18.5°	190°	239.72	515.84	13

NOTES:
- INVERTER LOCATIONN INSIDE GARAGE
- NO GATE OR FENCE ON THE PROPERTY

LEGEND

- M METER
- MP MAIN SERVICE PANEL
- ACD AC DISCONNECT
- JB JUNCTION BOX
- GM PV GENERATION METER
- INV INVERTER
- BAT BATTERY

NOTE: UTILITY HAS 24-HR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC SYSTEM COMPONENTS LOCATED AT SERVICE ENTRANCE.

NOTE: WORKSPACE IN FRONT OF AC ELECTRICAL SYSTEM COMPONENTS SHALL BE IN ACCORDANCE TO WITH APS AND NEC REQUIREMENTS. FOR APS REQUIREMENTS, REFERENCE SECTION 300 OF THE APS ESRM AND SECTION 8.2 OF THE APS INTERCONNECTION REQUIREMENTS.

NOTE: REFERENCE SECTION 301.15 OF THE APS ESRM FOR ELECTRIC METER SEPERATION BETWEEN WATER AND GAS.

CONTRACTOR INSTALLED

CONTRACTOR NAME
CONTACT NAME
STREET ADDRESS
CITY, ST, ZIP
PHONE (555) 555-1212
EMAIL

HOMEOWNER

STREET ADDRESS
CITY, ST, ZIP

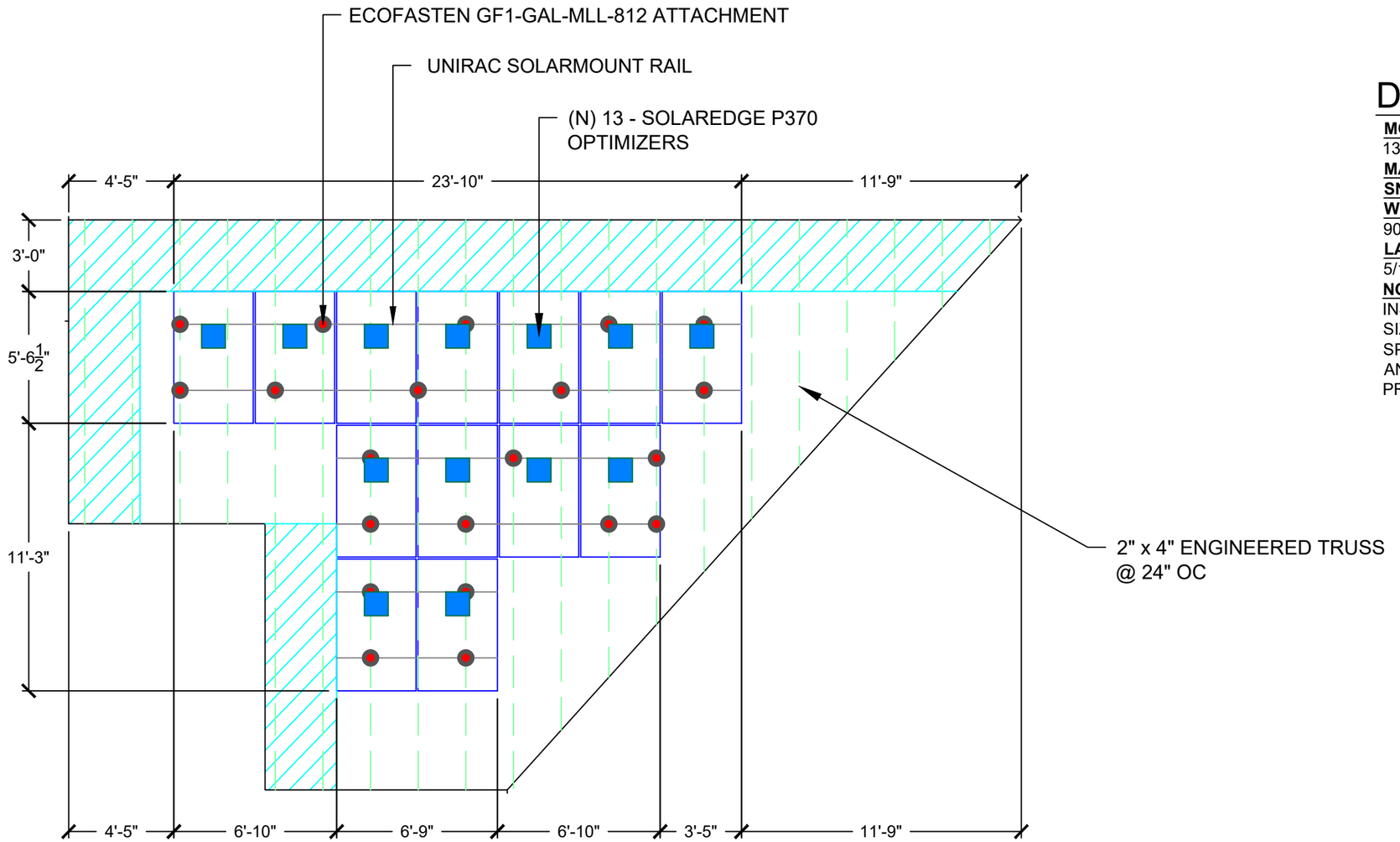
REV A
DATE: 2 July 2019
APN NO. : 115-23-007

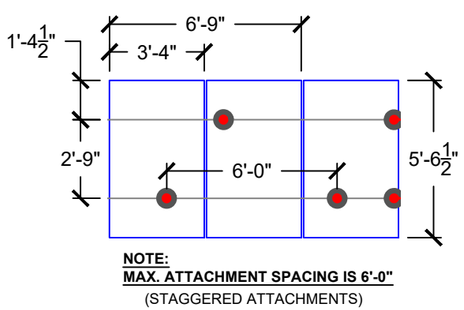
SITE PLAN

PV 2.0

	# MODULES PER ARRAY	ROOF TYPE	ATTACHMENT	ROOF HEIGHT	FRAME MATERIAL	FRAME TYPE	FRAME SIZE	OC SPACING
AR-01	13	ASPHALT SHINGLE	ECOFASTEN GF1-GAL-MLL-812	ONE STORY	WOOD	ENGINEERED TRUSS	2" x 4"	24" O.C.

AR-01 - SCALE:1" = 5.33333'
PITCH: 18.5°
AZIMUTH: 190°





NOTE:
MAX. ATTACHMENT SPACING IS 6'-0"
(STAGGERED ATTACHMENTS)

DESIGN CRITERIA

MODULES:
13
MAX DISTRIBUTED LOAD: 3 PSF
SNOW LOAD: 30 PSF
WIND SPEED:
90 MPH 3-SEC GUST.
LAG SCREWS:
5/16"x 2.5" MIN EMBEDMENT
NOTE:
INSTALLERS TO VERIFY RAFTER SIZE, SPACING AND SLOPED SPANS, AND NOTIFY E.O.R. OF ANY DISCREPANCIES BEFORE PROCEEDING.

POINT LOAD CALCULATION PER ARRAY			
ITEM	#OR LIN FT	WEIGHT PER (lbs)	TOTAL WEIGHT (lbs)
MODULES	13	39.68	515.84
RAILS	145.28	0.4	63.3
ATTACHMENTS	21	0.65	13.65
TILT LEGS	0	3.5	0
POWER OPTIMIZER	13	1.4	18.2
TOTAL WEIGHT			611.0 lbs
MODULE DIMENSION (LxW)	66.38" x 40"=		18.44 sq.ft
WEIGHT PER MOUNT	611.0 / 21 =		29.1 **lbs/Mount**
WEIGHT PER SQ FT	611.0 / 239.72 sq.ft.=		**2.5 lbs/sq.ft.**

CONTRACTOR INSTALLED

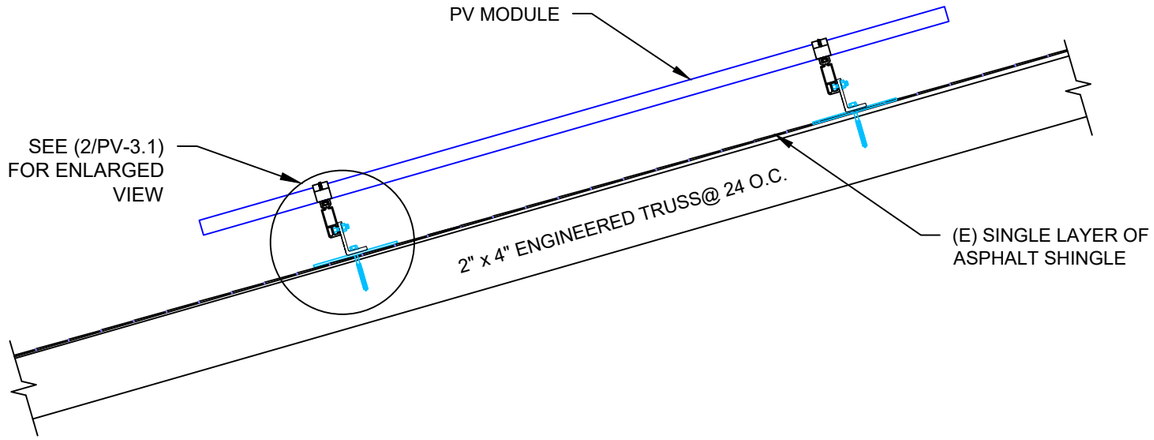
CONTRACTOR NAME
CONTACT NAME
STREET ADDRESS
CITY, ST, ZIP
PHONE (555) 555-1212
EMAIL

HOMEOWNER
STREET ADDRESS
CITY, ST, ZIP

REV A
DATE: 2 July 2019
APN NO. : 115-23-007

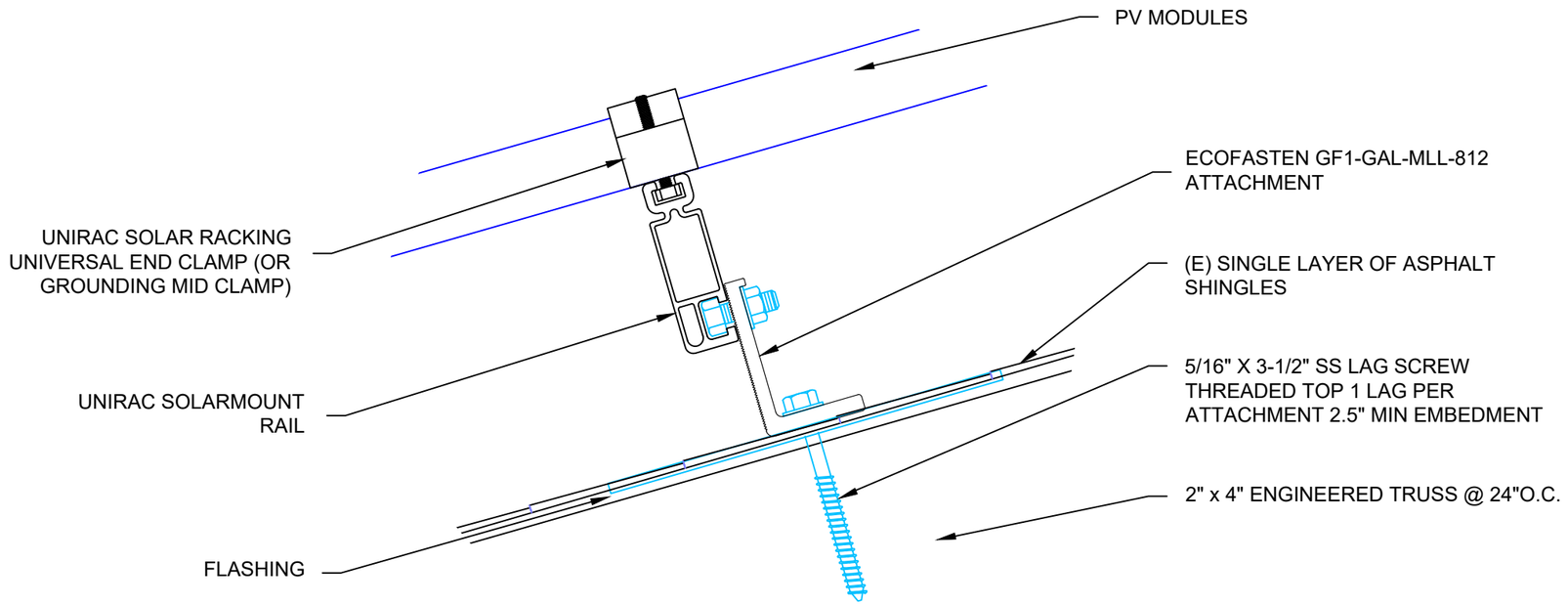
DETAIL LAYOUT

PV 3.0



1 ATTACHMENT DETAIL

PV-3.1 SCALE: 1"=1'-0"



2 ATTACHMENT DETAIL (section view)

PV-3.1 SCALE: NTS

CONTRACTOR INSTALLED

CONTRACTOR NAME
CONTACT NAME
STREET ADDRESS
CITY, ST, ZIP
PHONE (555) 555-1212
EMAIL

HOMEOWNER

STREET ADDRESS
CITY, ST, ZIP

REV A
DATE: 2 July 2019
APN NO. : 115-23-007

MOUNTING LAYOUT

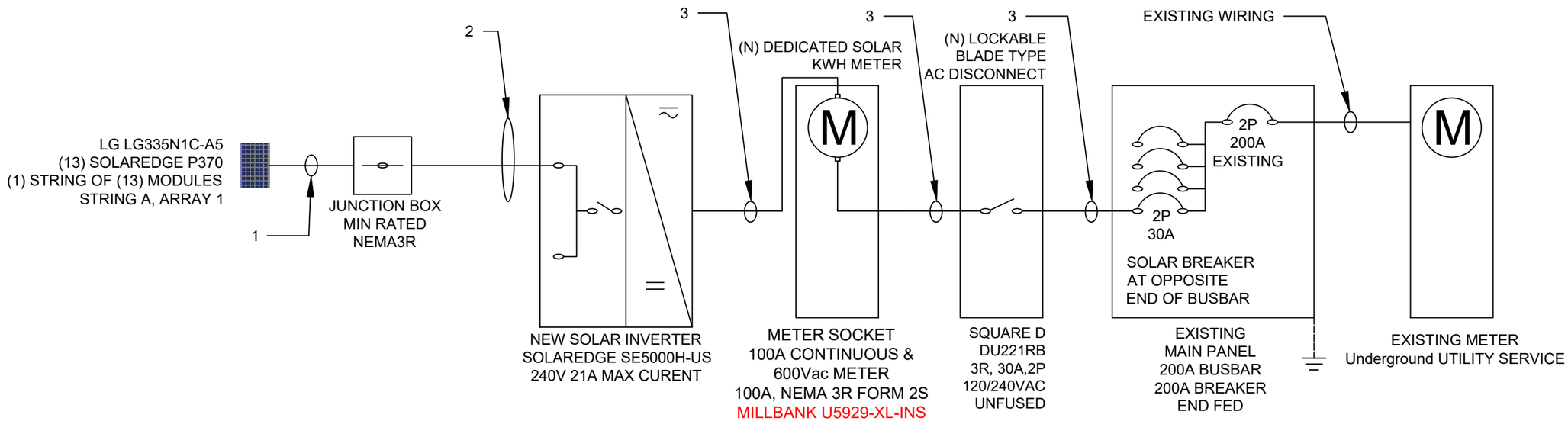
PV 3.1

CONDUIT SCHEDULE					
				GROUND	
#	CONDUIT	CONDUCTOR (RED/BLACK)	NEUTRAL (WHITE)	(GREEN)	(BARE COPPER)
1	NONE	(2) 10 AWG PV WIRE	NONE	NONE	(1) 6 AWG
2	¾" EMT	(2) 10 AWG XHHW-2	NONE	(1) 10 AWG XHHW-2	NONE
3	¾" EMT	(2) 10 AWG XHHW-2	(1) 10 AWG XHHW-2	(1) 10 AWG XHHW-2	NONE

SYSTEM SIZE: 4355W DC, 480W AC

NOTE:
GRID-TIED SYSTEM, BI-DIRECTIONAL METER TO BE INSTALLED BY UTILITY.

NOTE:
SOLAREDGE INVERTER IS EQUIPPED WITH RAPID SHUTDOWN AS PER NEC 690.12 .



INVERTER RATINGS	
MAKE	SOLAREDGE
MODEL	SE5000H-US
MAX INPUT CURRENT	13.5A
MAX POWER (AC)	480W
NOM. AC VOLTAGE	240V
MAX AC CURRENT	21A
CEC EFFICIENCY	99%

MODULE AND ARRAY RATINGS: (13) MODULES)			
SOLAR MODULE RATINGS (STC)			STRING A
MAKE	LG	SERIES	13
MODEL	LG335N1C-A5	PARALLEL	1
Imp	9.83A	Imp	11.5A
Vmp	34.1V	Vmp	380V
Isc	10.49A	Isc	15A
Voc	41V	Voc	480V
Pmax	335W	Pmax	4355W
%Voc/C	-0.27%		

CONDUCTOR SIZING CALULATIONS								
CIRCUIT DESCRIPTION	CURRENT	Imax (690.8(A))	Icont (690.8(B)(1) calc)	SPECIFIED CONDUCTOR	AMPACITY @ 90c	AMBIENT TEMP c	CURRENT CARRYING COND.	COND. OF USE APPLIED (690.8(B)(2) calc)
PV SOURCE CIRCUIT STRING A	15A	15A	15A Imax x 1.25=18.75A	#10 XHHW-2	40A	41-45	1-3	40A x 0.87 (am b. temp) x 1 (raceway fill) = 34.8A > Imax
INVERTER AC OUTPUT	21A	21A	21A Imax x 1.25 = 26.25A	#10 XHHW-2	40A	41-45	1-3	40A x 0.87 (am b. temp.) x1 (raceway fill) = 34.8A>Imax

TERMINAL TEMPERATURE RATING CONSIDERATIONS					
CIRCUIT DESCRIPTION	CURRENT	Icont	TERMINAL TEMP RATING	SPECIFIED CONDUCTOR	AMPACITY @ TERMNAL TEMP. RATING
PV SOURCE CIRCUIT STRING A	15A	15A x 1.25=18.75A	60C	#10	30A
INVERTER AC OUTPUT	21A	21A x 1.25 = 26.25A	60C	#10	30A

VOLTAGE DROP CALCULATIONS					
LENGTH	I	Ohms/kFt	V	CALC	Vdrop
50Ft	15A	0.9989	380V	50' x 15A x 2 x 0.9989/1000'/380V=	0.39%
30Ft	21A	0.9989	240V	30' x 21A x 2 x 0.9989/1000'/240V=	0.52%

CONTRACTOR INSTALLED

CONTRACTOR NAME
CONTACT NAME
STREET ADDRESS
CITY, ST, ZIP
PHONE (555) 555-1212
EMAIL

HOMEOWNER
STREET ADDRESS
CITY, ST, ZIP
REV A
DATE: 2 July 2019
APN NO. : 115-23-007

ELECTRICAL

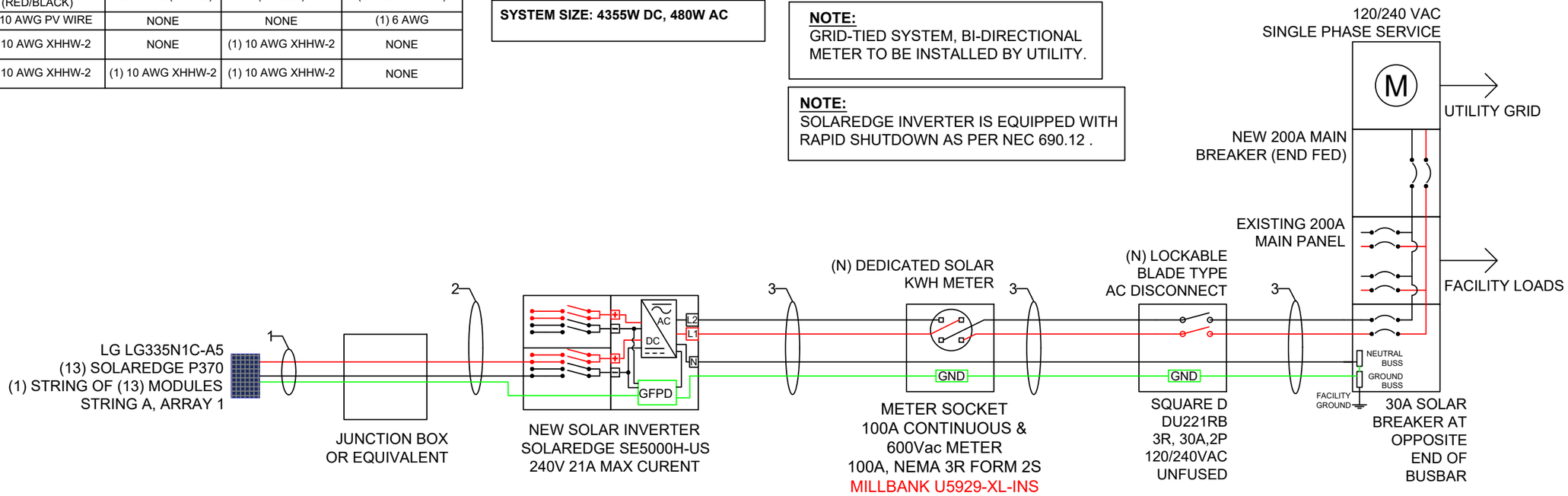
PV 4.0

CONDUIT SCHEDULE					
				GROUND	
#	CONDUIT	CONDUCTOR (RED/BLACK)	NEUTRAL (WHITE)	(GREEN)	(BARE COPPER)
1	NONE	(2) 10 AWG PV WIRE	NONE	NONE	(1) 6 AWG
2	¾" EMT	(2) 10 AWG XHHW-2	NONE	(1) 10 AWG XHHW-2	NONE
3	¾" EMT	(2) 10 AWG XHHW-2	(1) 10 AWG XHHW-2	(1) 10 AWG XHHW-2	NONE

SYSTEM SIZE: 4355W DC, 480W AC

NOTE:
GRID-TIED SYSTEM, BI-DIRECTIONAL METER TO BE INSTALLED BY UTILITY.

NOTE:
SOLAREDGE INVERTER IS EQUIPPED WITH RAPID SHUTDOWN AS PER NEC 690.12 .



INVERTER RATINGS	
MAKE	SOLAREDGE
MODEL	SE5000H-US
MAX INPUT CURRENT	13.5A
MAX POWER (AC)	480W
NOM. AC VOLTAGE	240V
MAX AC CURRENT	21A
CEC EFFICIENCY	99%

MODULE AND ARRAY RATINGS: (13) MODULES)			
SOLAR MODULE RATINGS (STC)			STRING A
MAKE	LG	SERIES	13
MODEL	LG335N1C-A5	PARALLEL	1
Imp	9.83A	Imp	11.5A
Vmp	34.1V	Vmp	380V
Isc	10.49A	Isc	15A
Voc	41V	Voc	480V
Pmax	335W	Pmax	4355W
%Voc/C	-0.27%		

CONDUCTOR SIZING CALULATIONS								
CIRCUIT DESCRIPTION	CURRENT	Imax (690.8(A))	Icont (690.8(B)(1) calc)	SPECIFIED CONDUCTOR	AMPACITY @ 90c	AMBIENT TEMP c	CURRENT CARRYING COND.	COND. OF USE APPLIED (690.8(B)(2) calc)
PV SOURCE CIRCUIT STRING A	15A	15A	15A Imax x 1.25=18.75A	#10 XHHW-2	40A	41-45	1-3	40A x 0.87 (am b. temp) x 1 (raceway fill) = 34.8A > Imax
INVERTER AC OUTPUT	21A	21A	21A Imax x 1.25 = 26.25A	#10 XHHW-2	40A	41-45	1-3	40A x 0.87 (am b. temp.) x1 (raceway fill) = 34.8A>Imax

TERMINAL TEMPERATURE RATING CONSIDERATIONS					
CIRCUIT DESCRIPTION	CURRENT	Icont	TERMINAL TEMP RATING	SPECIFIED CONDUCTOR	AMPACITY @ TERMNAL TEMP. RATING
PV SOURCE CIRCUIT STRING A	15A	15A x 1.25=18.75A	60C	#10	30A
INVERTER AC OUTPUT	21A	21A x 1.25 = 26.25A	60C	#10	30A

VOLTAGE DROP CALCULATIONS					
LENGTH	I	Ohms/kFt	V	CALC	Vdrop
50Ft	15A	0.9989	380V	50' x 15A x 2 x 0.9989/1000'/380V=	0.39%
30Ft	21A	0.9989	240V	30' x 21A x 2 x 0.9989/1000'/240V=	0.52%

CONTRACTOR INSTALLED

CONTRACTOR NAME
CONTACT NAME
STREET ADDRESS
CITY, ST, ZIP
PHONE (555) 555-1212
EMAIL

HOMEOWNER
STREET ADDRESS
CITY, ST, ZIP
REV A
DATE: 2 July 2019
APN NO. : 115-23-007

ELECTRICAL

PV 4.1

INSTALL ON THE UTILITY METER

WARNING

THIS SERVICE METER
IS ALSO SERVED BY A
PHOTOVOLTAIC SYSTEM

INSTALL ON THE MAIN BREAKER PANEL

RAPID SHUTDOWN
SWITCH FOR
SOLAR PV SYSTEM

TO BE INSTALLED IN ACCORDANCE
WITH SECTION 690.56(C):

CAUTION: SOLAR ELECTRIC
SYSTEM CONNECTED

PHOTOVOLTAIC SYSTEM
AC DISCONNECT

OPERATING VOLTAGE 240 VOLTS
OPERATING CURRENT 21 AMPS

WARNING

TURN OFF PHOTOVOLTAIC
AC DISCONNECT PRIOR TO
WORKING INSIDE PANEL

INSTALL INSIDE THE MAIN BREAKER PANEL, NEXT TO THE SOLAR BREAKER

PV SOLAR BREAKER
DO NOT RELOCATE
THIS OVERCURRENT
DEVICE

INSTALL ON THE AC DISCONNECT

PHOTOVOLTAIC SYSTEM
AC DISCONNECT

OPERATING VOLTAGE 240 VOLTS
OPERATING CURRENT 21 AMPS

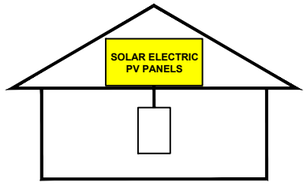
PV SYSTEM DISCONNECT FOR
UTILITY OPERATION

WARNING

ELECTRIC SHOCK HAZARD

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

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN



TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY.

INSTALL ON THE INVERTER

PHOTOVOLTAIC SYSTEM
DC DISCONNECT

OPERATING VOLTAGE	380 VDC
OPERATING CURRENT	11.46 AMPS
MAX SYSTEM VOLTAGE	480 VDC
SHORT CIRCUIT CURRENT	15 AMPS
CHARGE CONTROLLER MAX	N/A AMPS

WARNING

ELECTRIC SHOCK HAZARD

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

WARNING

ELECTRIC SHOCK HAZARD

IF GROUND FAULT IS INDICATED
ALL NORMALLY GROUNDED
CONDUCTORS MAY BE UNGROUNDED
AND ENERGIZED

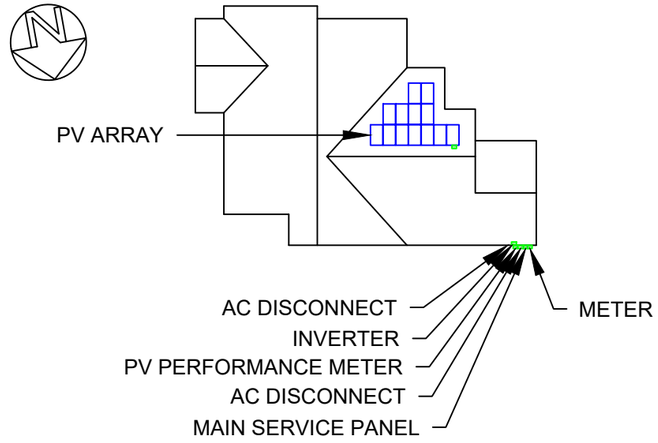
INSTALL EVERY 10 FEET ON EXTERIOR CONDUIT.

WARNING: PHOTOVOLTAIC
POWER SOURCE

INSTALL ON THE AC DISCONNECT

CAUTION:

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



STRET ADDRESS, PRESCOTT, AZ 86305

CONTRACTOR INSTALLED

CONTRACTOR NAME
CONTACT NAME
STREET ADDRESS
CITY, ST, ZIP
PHONE (555) 555-1212
EMAIL

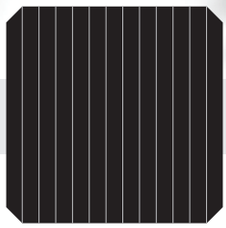
HOMEOWNER
STREET ADDRESS
CITY, ST, ZIP

REV A
DATE: 2 July 2019
APN NO. : 115-23-007

WARNING LABELS

PV 5.0

LG NeON® 2

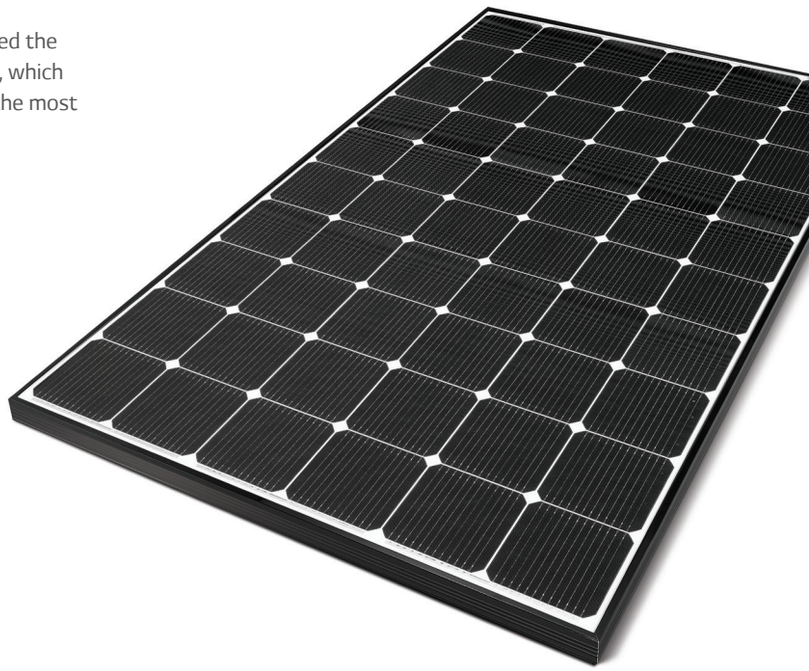


60

LG340N1C-A5 | LG335N1C-A5 | LG330N1C-A5 | LG325N1C-A5

340W | 335W | 330W | 325W

The LG NeON® 2 is LG's best-selling solar module. The NeON® 2 received the acclaimed 2015 Intersolar AWARD for featuring LG's Cello Technology, which increases power output and reliability and makes the NeON® 2 one of the most powerful and versatile modules on the market.



Feature

Enhanced Performance Warranty

LG NeON® 2 has an enhanced performance warranty. The annual degradation has fallen from -0.6 %/yr to -0.5%/yr. Even after 25 years, the cell guarantees 2.4% more output than the previous LG NeON® 2 modules.

High Power Output

Compared with previous models, the LG NeON® 2 has been designed to significantly enhance its output efficiency, thereby making it efficient even in limited space.

Roof Aesthetics

LG NeON® 2 has been designed with aesthetics in mind, using thinner wires that appear all black at a distance.

Outstanding Durability

With its newly reinforced frame design, LG has extended the warranty of the NeON® 2 from 15 years to 25 years, including labor. In addition, LG NeON® 2 can endure a front load up to 6000 Pa, and a rear load up to 5400 Pa.

Improved Performance on Sunny Days

LG NeON® 2 now performs better on sunny days, thanks to its improved temperature coefficient.

Near Zero LID (Light Induced Degradation)

The n-type cells used in LG NeON® 2 have almost no boron. This leads to less LID (Light Induced Degradation) right after installation.

About LG Electronics

LG Electronics is a global big player, committed to expanding its operations with the solar market. The company first embarked on a solar energy source research program in 1985, supported by LG Group's vast experience in the semi-conductor, LCD, chemistry and materials industries. In 2010, LG Solar successfully released its first MonoX® series to the market, which is now available in 32 countries. The NeON® (previous. MonoX® NeON), NeON®2, NeON®2 BiFacial won the "Intersolar AWARD" in 2013, 2015 and 2016, which demonstrates LG Solar's lead, innovation and commitment to the industry.

LG NeON® 2

LG340N1C-A5 | LG335N1C-A5 | LG330N1C-A5 | LG325N1C-A5

Mechanical Properties

Cells	6 x 10
Cell Vendor	LG
Cell Type	Monocrystalline / N-type
Cell Dimensions	161.7 x 161.7 mm / 6 inches
# of Busbar	12 (Multi Wire Busbar)
Dimensions (L x W x H)	1,686 x 1,016 x 40 mm
	66.38 x 40 x 1.57 in
Front Load	6,000Pa / 125 psf*
Rear Load	5,400Pa / 113 psf*
Weight	18 kg / 39.68 lb
Connector Type	MC4 (MC), PV-JM601A(JMTHY)
Junction Box	IP68 with 3 Bypass Diodes
Cables	1,000 mm x 2 ea / 39.37 in x 2 ea
Glass	Tempered Glass with AR Coating
Frame	Anodized Aluminium

* Please refer to the installation manual for the details.

Certifications and Warranty

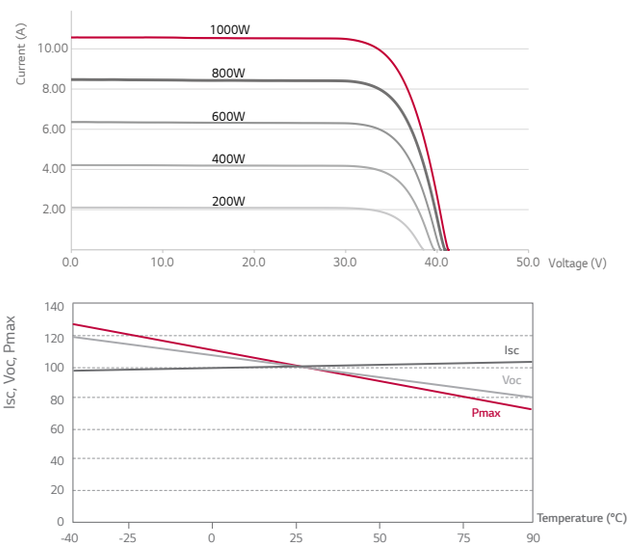
Certifications	IEC 61215, IEC 61730-1/-2
	UL 1703
	IEC 61701 (Salt mist corrosion test)
	IEC 62716 (Ammonia corrosion test)
	ISO 9001
Module Fire Performance	Type 1 (UL 1703)
Fire Rating	Class C (ULC/ORD C 1703, IEC 61730)
Product Warranty	25 Years
Output Warranty of Pmax	Linear Warranty*

* 1) 1st year: 98%, 2) After 1st year: 0.5% annual degradation 3) 86% for 25 years

Temperature Characteristics

NOCT	[°C]	45 ± 3
Pmax	[%/°C]	-0.37
Voc	[%/°C]	-0.27
Isc	[%/°C]	0.03

Characteristic Curves



Electrical Properties (STC*)

Model		LG340N1C-A5	LG335N1C-A5	LG330N1C-A5	LG325N1C-A5
Maximum Power (Pmax)	[W]	340	335	330	325
MPP Voltage (Vmpp)	[V]	34.5	34.1	33.7	33.3
MPP Current (Impp)	[A]	9.86	9.83	9.80	9.77
Open Circuit Voltage (Voc)	[V]	41.1	41.0	40.9	40.8
Short Circuit Current (Isc)	[A]	10.53	10.49	10.45	10.41
Module Efficiency	[%]	19.8	19.6	19.3	19.0
Operating Temperature	[°C]	-40 ~ +90			
Maximum System Voltage	[V]	1000 (UL / IEC)			
Maximum Series Fuse Rating	[A]	20			
Power Tolerance	[%]	0 ~ +3			

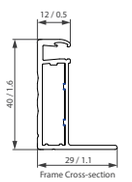
* STC (Standard Test Condition): Irradiance 1000 W/m², cell temperature 25 °C, AM 1.5
The nameplate power output is measured and determined by LG Electronics at its sole and absolute discretion.
The Typical change in module efficiency at 200 W/m² in relation to 1000 W/m² is -2.0%.

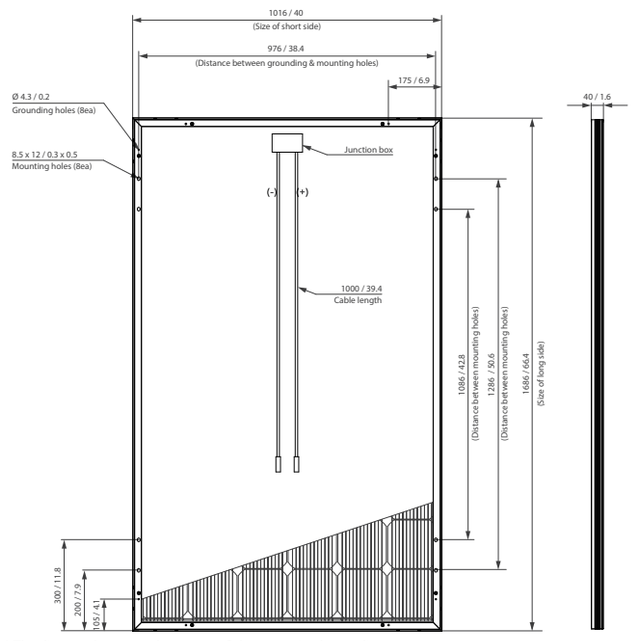
Electrical Properties (NOCT*)

Model		LG340N1C-A5	LG335N1C-A5	LG330N1C-A5	LG325N1C-A5
Maximum Power (Pmax)	[W]	251	247	243	240
MPP Voltage (Vmpp)	[V]	31.9	31.5	31.2	30.8
MPP Current (Impp)	[A]	7.86	7.83	7.81	7.78
Open Circuit Voltage (Voc)	[V]	38.3	38.2	38.1	38.0
Short Circuit Current (Isc)	[A]	8.47	8.44	8.41	8.38

* NOCT (Nominal Operating Cell Temperature): Irradiance 800 W/m², ambient temperature 20 °C, wind speed 1 m/s

Dimensions (mm / inch)





* The distance between the center of the mounting/grounding

LG Life's Good

North America Solar Business Team
LG Electronics U.S.A. Inc
1000 Sylvan Ave, Englewood Cliffs, NJ 07632

Contact: lg.solar@lge.com
www.lgsolarusa.com

Product specifications are subject to change without notice.
DS-N5-60-C-G-F-EN-80308

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

12-25 YEAR WARRANTY

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[1]							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[2]	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V[2]	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600kΩ 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[3]							
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[4] (-40˚F / -40˚C option)[5]							˚F / ˚C
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

[1] For other regional settings please contact SolarEdge support
[2] A higher current source may be used; the inverter will limit its input current to the values stated
[3] Revenue grade inverter P/N: SExxxxH-US000NNC2
[4] For power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf
[5] -40 version P/N: SExxxxH-US000NNU4

RoHS

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P405 / P505

POWER OPTIMIZER

PV power optimization at the module-level

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

solaredge

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

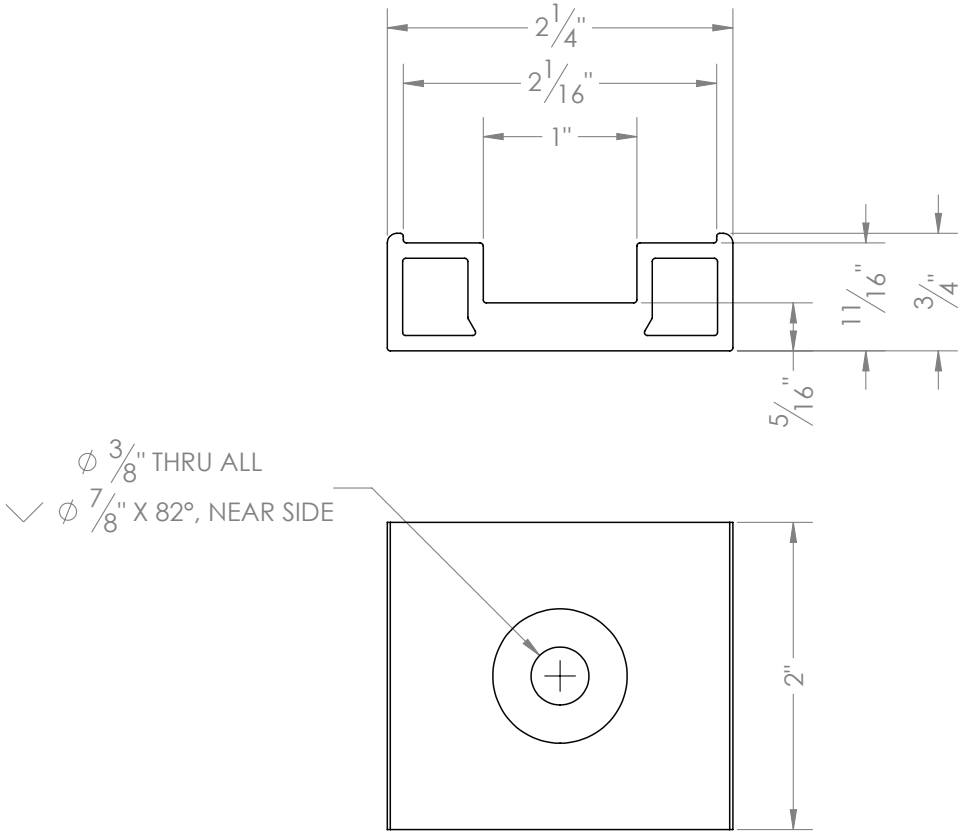
Optimizer model (typical module compatibility)	P320 (for 60-cell modules)	P340 (for high-power 60-cell modules)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P405 (for thin film modules)	P505 (for higher current modules)	
INPUT							
Rated Input DC Power[1]	320	340	370	400	405	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	125[2]	83[2]	Vdc
MPPT Operating Range	8 - 48		8 - 60	8 - 80	12.5 - 105	12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11			10.1		14	Adc
Maximum DC Input Current	13.75			12.63		17.5	Adc
Maximum Efficiency	99.5						%
Weighted Efficiency	98.8					98.6	%
Overvoltage Category	II						
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)							
Maximum Output Current	15						Adc
Maximum Output Voltage	60				85		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE 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)	129 x 153 x 27.5 / 5.1 x 6 x 1.1			129 x 153 x 33.5 / 5.1 x 6 x 1.3	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 / in
Weight (including cables)	630 / 1.4			750 / 1.7	845 / 1.9	1064 / 2.3	gr / lb
Input Connector	MC4[3]						
Output Wire Type / Connector	Double Insulated; MC4						
Output Wire Length	0.9 / 2.95		1.2 / 3.9				m / ft
Input Wire Length	0.16 / 0.52						m / ft
Operating Temperature Range	-40 - +85 / -40 - +185						˚C / ˚F
Protection Rating	IP68 / NEMA6P						
Relative Humidity	0 - 100						%

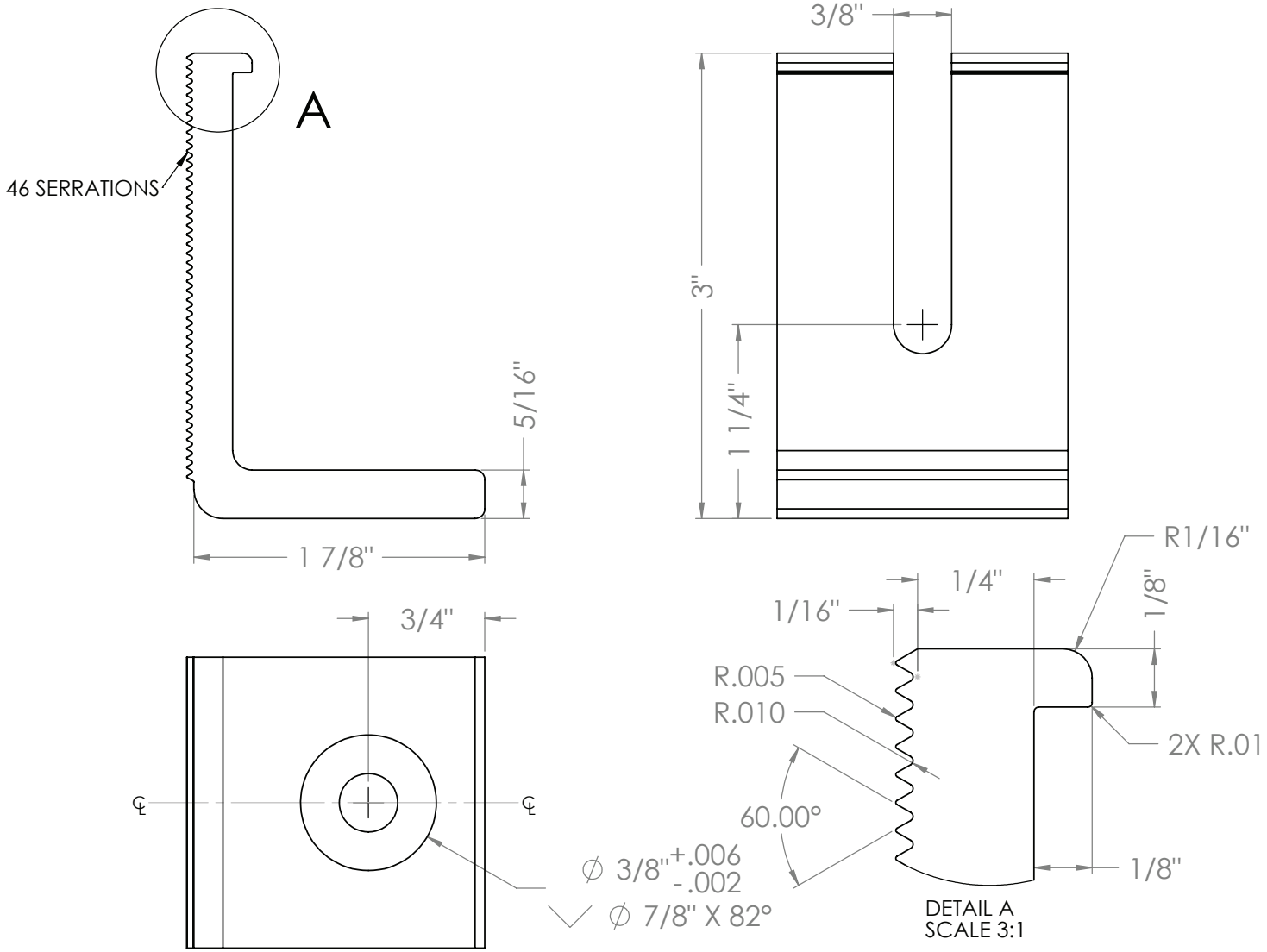
[1] Rated STC power of the module. Module of up to +5% power tolerance allowed
[2] NEC 2017 requires max input voltage be not more than 80V
[3] For other connector types please contact SolarEdge

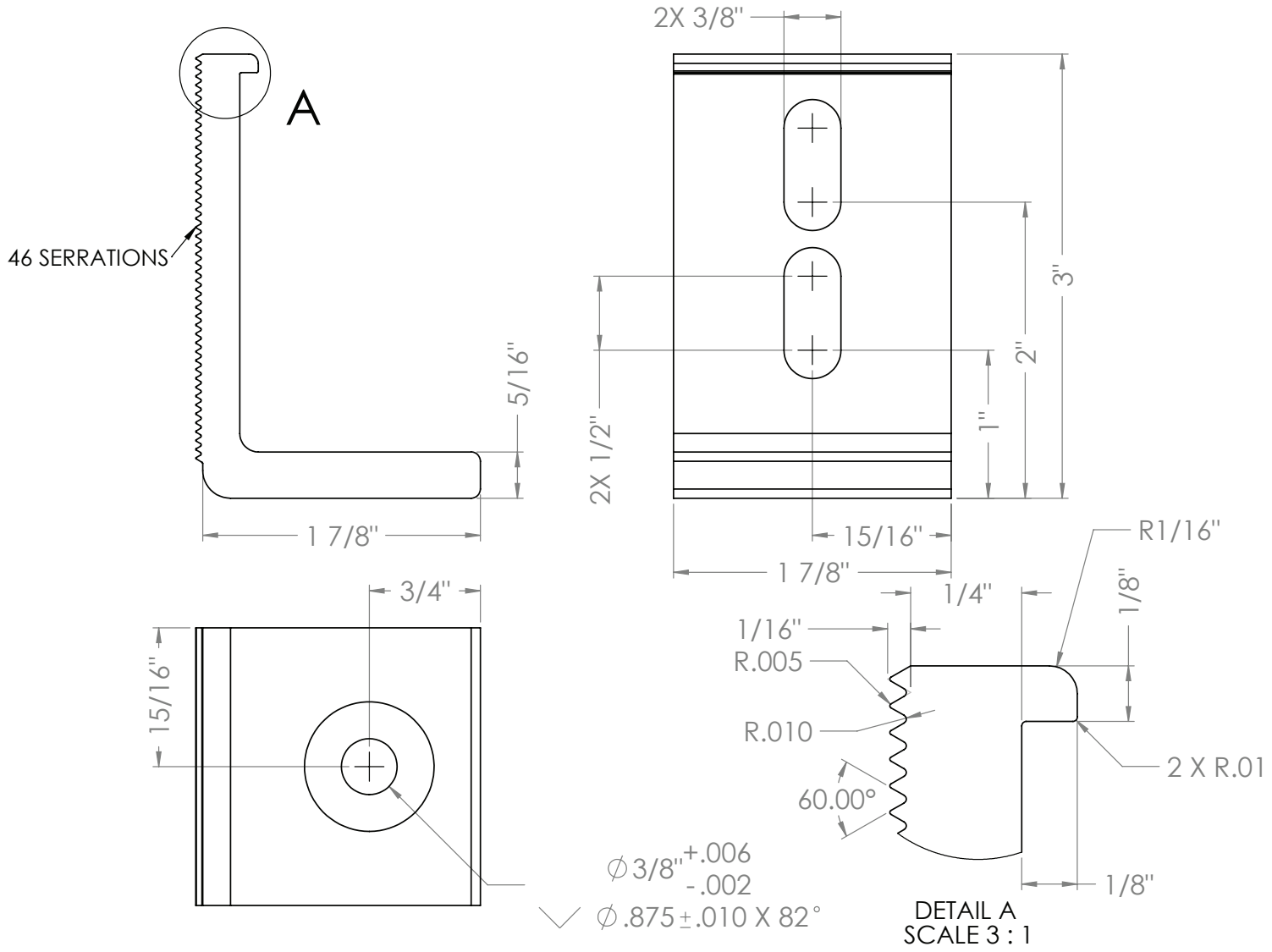
PV System Design Using a SolarEdge Inverter[4][5]		Single Phase HD-Wave	Single phase	Three Phase 208V	Three Phase 480V	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400	8		10	18	
	P405 / P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50[6]	
Maximum Power per String		5700 (6000 with SE7600-US - SE11400-US)	5250	6000[7]	12750[8]	W
Parallel Strings of Different Lengths or Orientations		Yes				

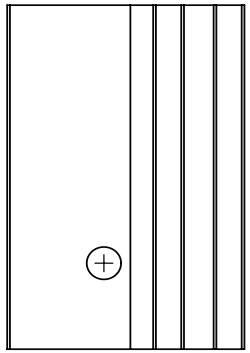
[4] For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
[5] It is not allowed to mix P405/P505 with P320/P340/P370/P400 in one string
[6] A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
[7] 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
[8] For SE30KUS/SE33.3KUS/SE66.6KUS/SE100KUS: It is allowed to install up to 15,000W 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

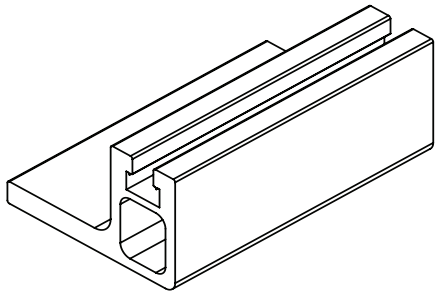
CE RoHS

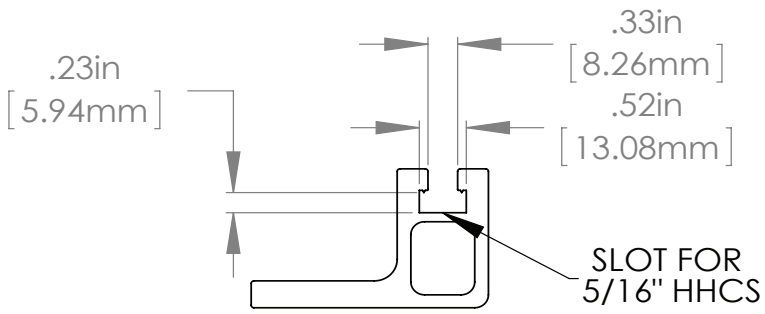


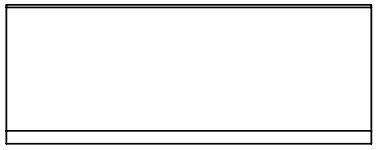


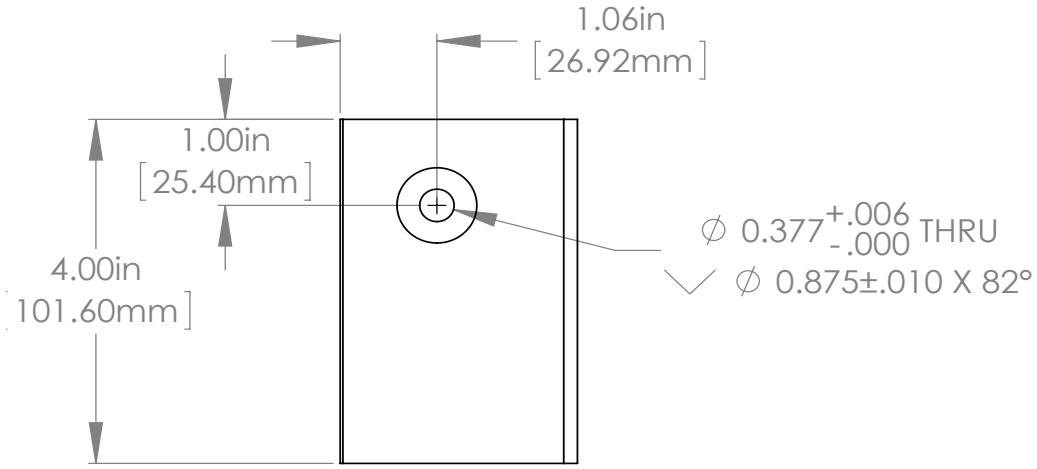


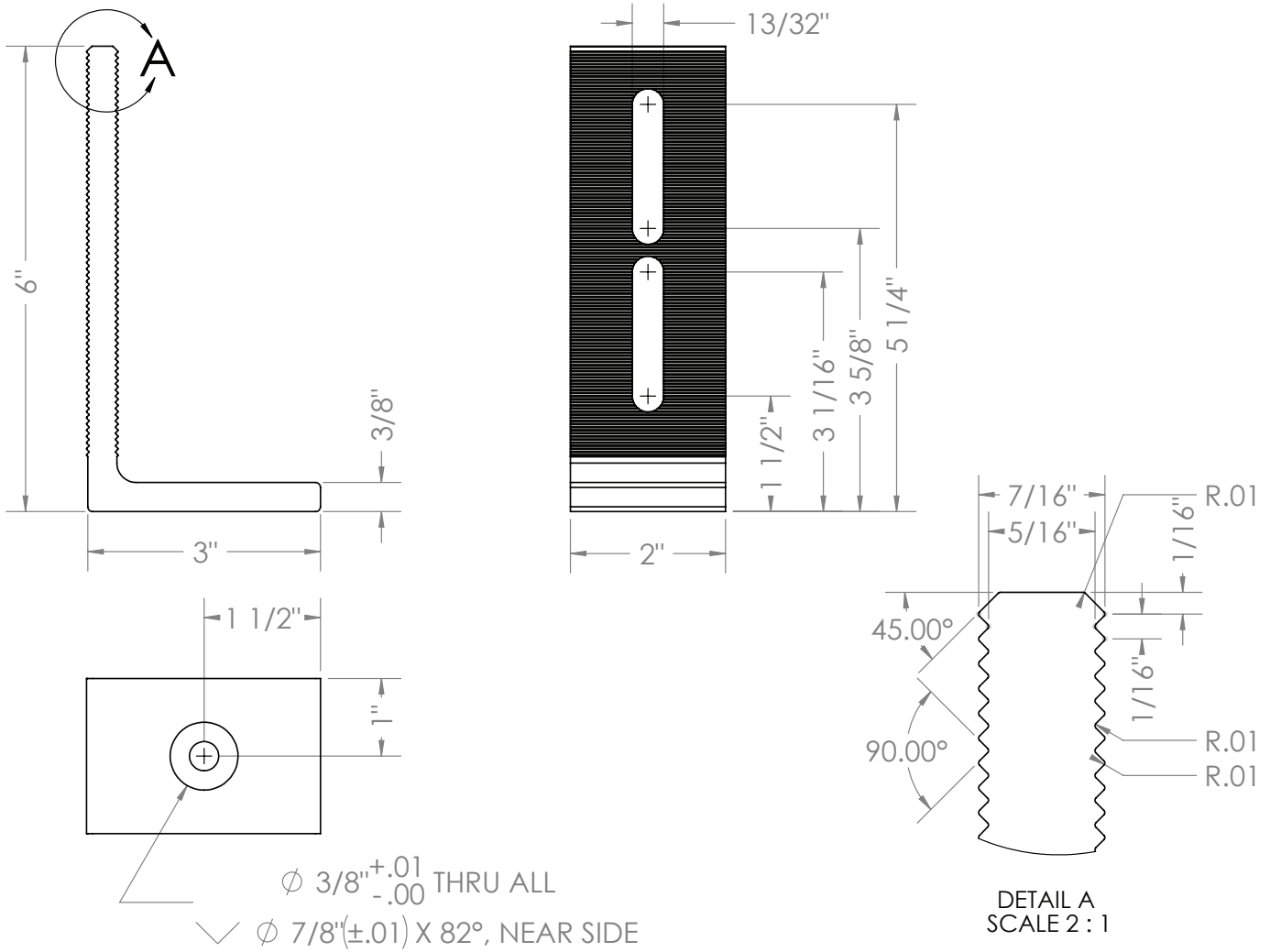












August 14, 2016

Rillito River Solar, LLC
289 Harrel Street
Morrisville, VT 05661
TEL: (877) 479-9765

Attn.: Engineering Department,

Re: Engineering Certification for GreenFasten-1-812_IAPMO UES Evaluation Report

The GreenFasten-1-812 has been evaluated by IAPMO as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provision of the code, as noted in the report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with IBC 104.11.

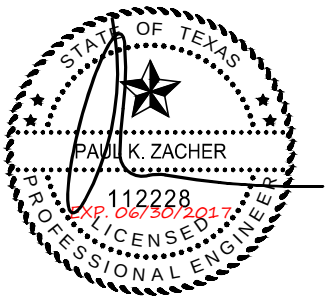
PZSE, Inc.-Structural Engineers has reviewed the GreenFasten-1-812_IAPMO UES Evaluation Report Number 216. All information, data, evaluation, and analysis contained within the Evaluation Report Number 216 are based on, and comply with the following Reference Documents:

Codes:

1. 2006 and 2009 International Building Code, by International Code Council, Inc.
2. 2006 and 2009 International Residential Code, by International Code Council, Inc.

This letter certifies that GreenFasten-1-812_IAPMO UES Evaluation Report Number 216 is in compliance with the above codes.

If you have any questions on the above, do not hesitate to call.



Prepared by:
PZSE, Inc. - Structural Engineers
Roseville, CA

UNIRAC®

THE STANDARD IN PV MOUNTING STRUCTURES™

PV's Most Versatile Mounting System

SOLARMOUNT®

Flush Mount

Low Profile

High Profile

www.unirac.com

SolarMount is much more than a product.

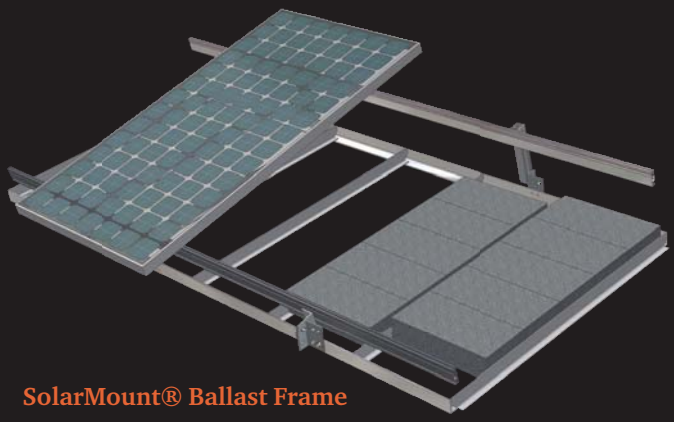
It's a system of engineered components that can be assembled into a wide variety of PV mounting structures. With SolarMount you'll be able to solve virtually any PV module mounting challenge.

It's also a system of technical support: complete installation and code compliance documentation, an on-line SolarMount Estimator, person-to-person customer service, and design assistance to help you solve the toughest challenges.

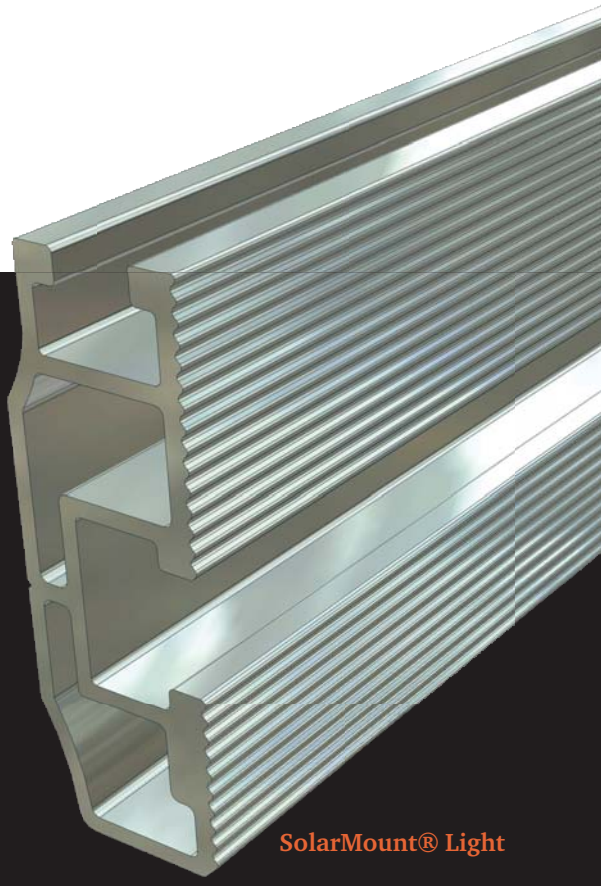
Which is why SolarMount is PV's most widely used mounting system.

U.S. Des. Patent Nos. D496,248S, D496,249S. Other patents pending.

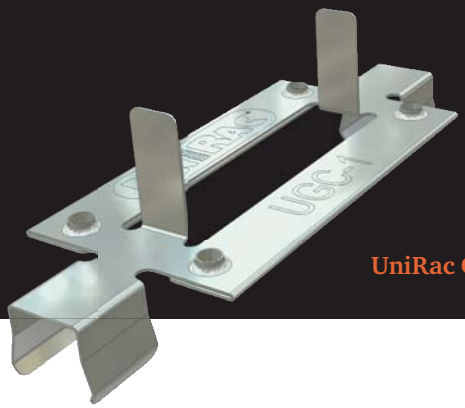
Three great innovations make PV's most versatile mounting system better than ever



SolarMount® Ballast Frame



SolarMount® Light



UniRac Grounding Clip

UniRac Grounding Clip

Save time and materials by eliminating the need to tediously install a grounding lug on each module and bare copper wire between all modules. Instead, simply press one of these clips into the top slot of the SolarMount rail at the end of the row and between each pair of modules as they are installed. Align and fasten the modules with SolarMount top mounting clamps in the usual manner. The nibs of the UniRac Grounding Clip pierce the anodizing as the mounting nuts are tightened, thus creating a ground path through the SolarMount rail. Complete the installation by installing one grounding lug at the end of the SolarMount rail. Connect the lugs with a bare copper wire to ground the entire array.

SolarMount® Light

Lower-cost SolarMount Light rail employs 38 percent less aluminum than standard rail, yet it's more than strong enough for flush applications. Use the same installer-friendly top mounting clamps and footing components that work with SolarMount standard rail.

SolarMount® Ballast Frame

The SolarMount system is more flexible than ever with the introduction of a ballast frame, in most cases requiring no penetrations whatsoever. Learn more from our data sheet ***SolarMount Modular PV Ballast Frame***, which you can download at www.unirac.com.

SolarMount®

PV's most versatile mounting system

SolarMount® Rail Options

SolarMount® HD

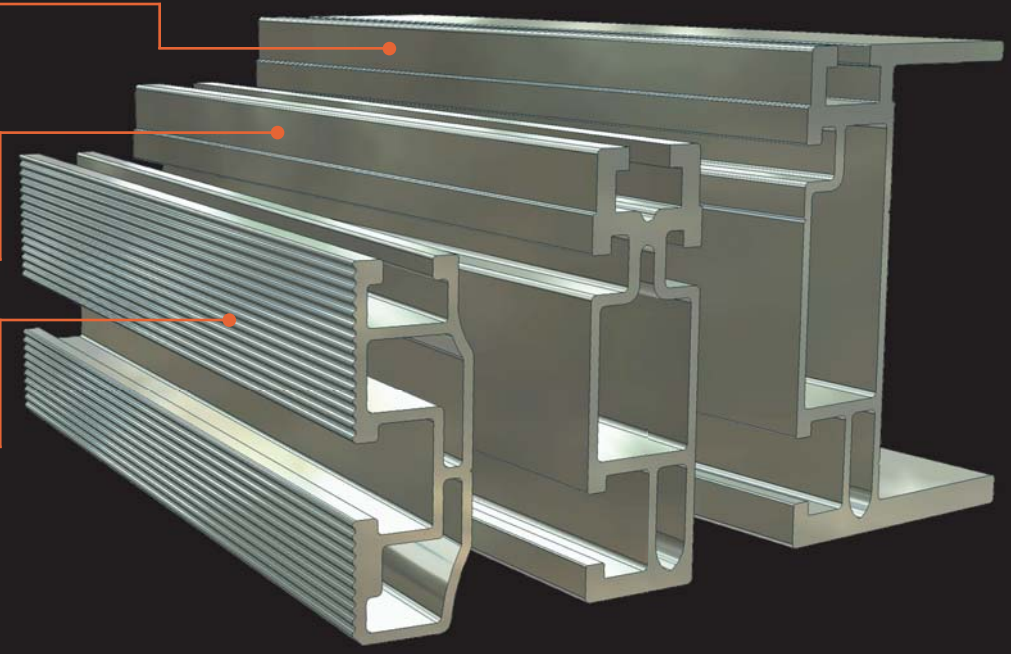
HD (heavy duty) rail adds the SolarMount advantage to PV PoleTops®, U-LAs (see separate data sheets), and custom applications that require long spans.

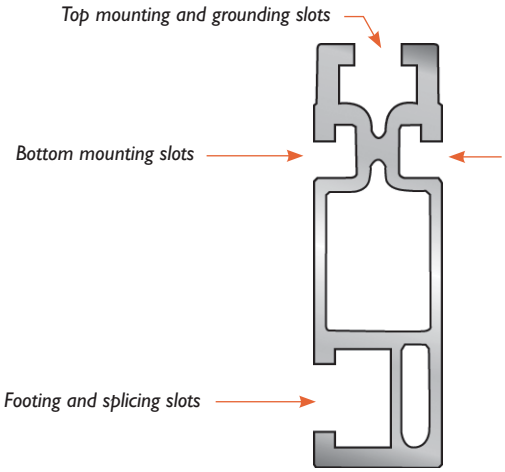
Standard SolarMount®

Standard rail gives you ultimate flexibility, including bottom mounting and tilt-up options.

SolarMount® Light

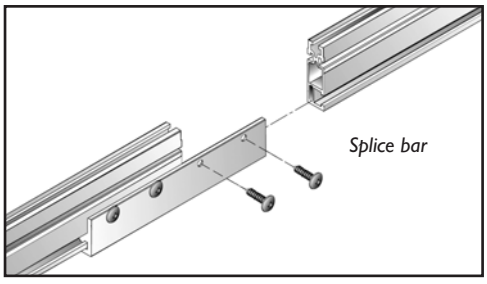
In flush mounted arrays, **easy handling SolarMount®** Light rail saves aluminum and expense without compromising structural integrity.





Splice Bars

In flush and low profile installations, securely join **SolarMount®** rail sections using rail footing slots.



Module Mounting

Assembly Sequence Is Your Choice

Top mounting: Attach modules one-by-one to installed rails.

Bottom mounting: Preassemble full rows before final installation (standard and HD rail only).

Top Mounting Clamps

SolarMount T-bolts quickly mount your modules to any SolarMount rail from the top. This is ideal for flush mount applications, such as residential rooftops, where it is most convenient to secure footings and rails before installing modules. Clamps securely grip any point of the module frame, freeing you from the constraints of module mounting holes.

T-bolt

Bottom Mounting Clips

Use bottom mounting clips (standard and HD rail only) whenever you prefer to attach rails directly to the module mounting holes. Simply fit the clip into its rail slot over the mounting bolt for a secure connection. Adjust the clip position anywhere along the rail slot. Alignment of rails to module mounting holes is always easy and convenient.

Junction Plates

In shared-rail configurations (standard and HD rail only), attach modules with four-slot junction plates. North-south slots secure the rail to the plates. East-west slots secure a module on each side of the rail.

System Footing

Flexible Components Speed Installation

Secure footings bolt quickly and easily to footing bolt slots in any SolarMount® rail.

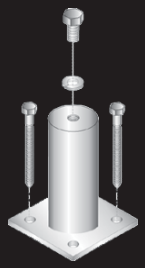
Standoffs

Use standoffs whenever flashed installations are required, on tile roofs, for example. Two-piece aluminum standoff allow precise placement of a flashing over a secured base prior to the installation of the standoff itself.

All standoff types come in four standard heights: 3, 4, 6, and 7 inches. Appropriate flashings are available.

Two-piece aluminum flat top

Steel raised flange



Steel flat top

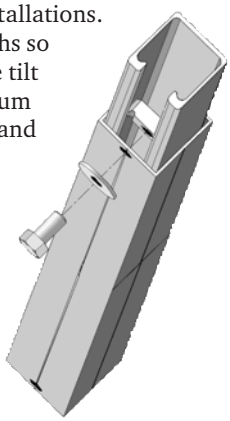
L-feet

L-foot

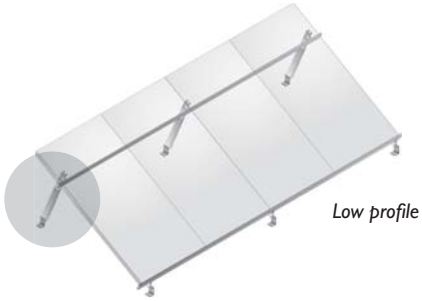
Standard for ground mount installations, L-feet mount rails to residential and commercial rooftops as well. Use them alone above asphalt composition shingles or in conjunction with flat top standoffs. Rail mounting holes are at two heights. In flush mounts, use the upper hole to raise the modules and promote air flow for cooling. Where aesthetics are the greater concern, use the lower hole to keep the modules close to the roof.

Strut-in-Tube Style Legs

Quickly set the precise tilt angle required. Styles are available for **high profile** (1 or 2 legs per rail) and **low profile** installations. Each series offers three leg lengths so that you can adjust to exactly the tilt angle you want — up to a maximum of 60 degrees — without cutting and drilling at the job site.



Strut-in-tube leg



Low profile

High profile

Start at www.unirac.com

Download our ***SolarMount® Master Price List with Sizing Charts*** and installation manuals. Generate quick price estimates with our on-line ***SolarMount® Estimator***.

Full compatibility

Mount any framed PV module:

- AEE
- BP Solar
- Evergreen
- GE Energy
- Isofoton
- Kaneka
- Kyocera
- Mitsubishi
- Photowatt
- Sanyo
- Schott Solar
- Sharp
- SolarWorld (Shell)
- SunPower
- SunTech
- SunWize
- Uni-Solar
- Yingli

Code Compliant

The SolarMount® system is PE certified. Call UniRac for documentation applicable to your building code.

Component Specifications

6061-T6 and 6063-T5

- SolarMount ballast frame

6105-T5 aluminum extrusion

- SolarMount® rails
- Mounting clips and clamps
- Tilt legs and L-feet
- two-piece standoffs

Severe Condition 4 (very severe) zinc-plated welded steel

- One-piece standoffs

18-8 stainless steel

- Fasteners

Warranty

SolarMount® is covered by a 10-year limited product warranty and a 5-year limited finish warranty. For complete warranties, download any SolarMount® installation manual from our web site.

UNIRAC®

THE STANDARD IN PV MOUNTING STRUCTURES™

1411 Broadway NE, Albuquerque NM 87102-1545 USA

Pub 060901-1ds • October 2006

TÜV Rheinland PTL

Business Stream Products
Renewable and Solar Technology

Attn: John Nagyvary
Unirac Inc.
1411 Broadway Blvd
Albuquerque, NM 87102
Phone: +505 242 6411
Email: john.nagyvary@unirac.com

Email:
MWitt@us.tuv.com

December 19, 2014

UL SU 2703 Fire Testing Completed

Type of Equipment: PV Mounting System
Model Designation: Unirac Roof Mount
Test Requirement: UL Subject 2703, Issue 2

TÜV Rheinland File Number:
L1-URC140731-RM
TÜV Rheinland Project Number:
URC140731

Dear Mr. Nagyvary,

This letter is confirmation that the **Unirac Roof Mount (RM) PV Mounting System** has successfully completed fire testing according to the UL Subject 2703 with references from UL1703 rev. May 2014 standard.

Congratulations on this achievement.

The Unirac Roof Mount (RM) PV Mounting System has demonstrated compliance with a Class A Fire Rating when installed with the following Fire Types:

- Type 1
- Type 2
- Type 3

Complete test results, including any necessary mitigation measures for the fire rating, can be found in report R1-URC140731-RM.

This correspondence may be used as a Letter of Compliance (LOC) indicating the **Unirac Roof Mount (RM) PV Mounting System** has met the relevant system fire requirements.

Sincerely,

Mark Witt
Engineering Manager
TÜV Rheinland PTL, LLC

TÜV Rheinland PTL
Photovoltaic Testing Laboratory
2210 South Roosevelt Street
Tempe, Arizona 85282
Main Phone: 480-966-1700
Main Fax; 775-314-6458
Email: info@tuvptl.com

TÜV Rheinland
North America Holding, Inc.
1 Federal Street
Boston, MA 02110
Main Phone: 617-426-4888
Main Fax: 617-426-6888

Member of
TÜV Rheinland Group