



NJ, Electrical Contractor business permit number 34EB01547400

NJ, HIC reg. # 13VH01244300

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Richard B. Stone
General Counsel

May 20, 2022

VIA FEDERAL EXPRESS

City of Plainfield
Historic Preservation Commission
Attn: Max Vazquez, Board Secretary
515 Watchung Ave., Room 202
Plainfield, NJ 07060

RE: Application for Certificate of Appropriateness
Homeowner: Lourdes Loradin
Address: 1208-12 Putnam Ave., Plainfield, NJ

Dear Ms. Taylor:

Enclosed please find an application to the City of Plainfield submitted for review on behalf of homeowner, Lourdes Loradin, as follows:

1. Check payable to City of Plainfield for \$70.00 application fee for COA.
2. Application consisting of 15 sets of:
 - Completed application
 - Color Photos
 - Installation Plans (2) for 16 solar panels (11 for homeowner, 5 for tenant-separate meter)
 - Survey
 - Site Plan

If you have any questions regarding this matter, please feel free to contact me or my paralegal, Donna Matulewicz, email: donna.matulewicz@trinity-solar.com or phone 732-780-3779 x9372.

Thank you for your time in regard to this matter. I remain...

Very truly yours,

Richard B. Stone
General Counsel

RBS/dm
Encs.

cc: Lourdes Loradin (via email)

Corporate Headquarters
2211 Allenwood Road
Wall, New Jersey 07719

1-877-SUN-SAVES
Ph: 732-780-3779
Fax: 732-780-6671
www.trinity-solar.com

**FOR INFORMATION ABOUT CONTRACTORS AND THE CONTRACTORS' REGISTRATION ACT,
CONTACT THE NEW JERSEY DEPARTMENT OF LAW AND PUBLIC SAFETY,
DIVISION OF CONSUMERS AFFAIRS AT 1-888-656-6225.**

M&T Bank



2211 ALLENWOOD ROAD
WALL, NJ 07719

10-4/220

PAY TO THE
ORDER OF City of Plainfield

**70.00

Seventy and 00/100*****

City of Plainfield

VOID AFTER 180 DAYS

515 WATCHUNG AVE.
ATTN: CONSTRUCTION/ZONING OFFICE

PLAINFIELD, NJ 07061



11/18/22
[Signature]

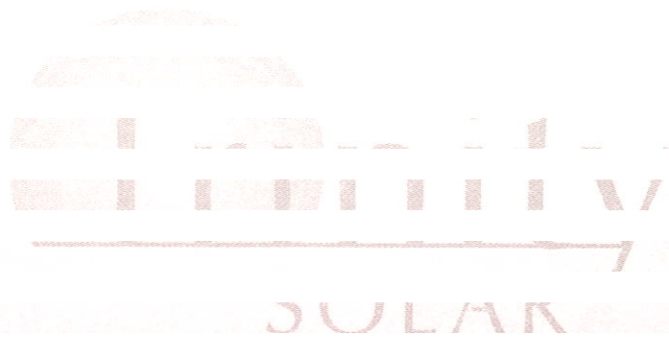
Application Fee: Lourdes Loradin variance

⑈ 178448⑈ ⑆022000046⑆ 4867262434⑈

TRINITY SOLAR INC.

City of Plainfield

4/29/2022



M&T Bank (NJ Ops)	Application Fee: Lourdes Loradin variance	70.00
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TRINITY SOLAR INC.

City of Plainfield

4/29/2022

M&T Bank (NJ Ops)	Application Fee: Lourdes Loradin variance	70.00
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CITY OF PLAINFIELD

HISTORIC PRESERVATION COMMISSION

PLAINFIELD CITY HALL

515 WATCHUNG AVENUE, ROOM 202

PLAINFIELD, NEW JERSEY 07060

(908) 753-3580 - FAX (908) 753-3070



CITY OF PLAINFIELD HISTORIC PRESERVATION COMMISSION APPLICATION FOR CERTIFICATION OF APPROPRIATENESS

DATE RECEIVED _____

APPLICATION # _____

Applicant(s):

Name: TRINITY SOLAR INC., RICHARD B. STONE, ESQ., GENERAL COUNSEL

Address: 2211 Allenwood Road, Wall, NJ 07719 email: donna.matulewicz@trinity-solar.com

Tele. #: (day) 732-780-3779 (eve) 732-780-3779 (fax) 732-358-0667

Relationship of applicant to property:

Owner(s) []

Prop Under Contract []

Lessee []

Other (specify) []

Explanation if Other Contractor

OWNER(S), IF DIFFERENT THAN APPLICANT:

Name: Lourdes Loradin

Address: 1208 Putnam Ave. email: griffin-gideon@yahoo.com

Telephone Number: (Day) 973-801-2088 (Eve) _____

Address of the property: 1208-12 Putnam Ave.

Block: 635 Lot: 1 Historic District: Van Wycks

Existing use of the property:

RESIDENTIAL PROPERTY

Describe in detail the proposed work to be done at the property:

A PV SOLAR SYSTEM IS PROPOSED ON THE REAR OF THE STRUCTURE. 17 MODULES(PANELS) ARE PROPOSED ALONG WITH THE REQUIRED

INVERTER ON THE RIGHT SIDE OF THE STRUCTURE. THE MODULES ARE VISIBLE FROM THE STREET.

Each application must be accompanied by sketches, drawings, photographs, descriptions or other information sufficient to show the proposed alterations, additions, changes or new construction. The Commission may require the subsequent submission of such additional materials as it reasonably requires to make an informed decision. A submission shall include:

- A photograph of each elevation of the structure.
- Fifteen (15) copies of drawings, photographs, material brochures, samples, specifications or information that may be necessary to assist the Commission.
- Fifteen (15) copies of a survey, or if applicable, a site plan showing the location of new and existing structures on the site and their location with respect to the building line, property lines, and the front of those buildings or structures immediately adjacent to each side of the lot to be built upon.
- Fifteen (15) copies of facade elevation(s), if applicable, of the proposed work in sufficient detail to identify the limits and location of the proposed work, and existing and proposed materials to be used.
- \$70.00 application fee (check or money order made to the City of Plainfield).

By signing this application, I hereby certify that the owner of record authorizes the proposed work and I have been authorized by the owner to make this application as his/her authorized agent. By signing this application the owner hereby grants authorization to the Commission members, and its professional and support staff to enter the property in question for inspection purposes.

	Richard B. Stone, Esq.	5/20/22
Signature of Applicant(s)	(Print Name)	Date
	James Braden	4/27/22
Signature of Owner(s) (if different than applicant)	(Print Name)	Date

Submittal of this application form- properly signed, with the indicated copies of documents and the application fee will constitute a complete application. Upon receipt of a complete application the Board Secretary will schedule the application with the Commission. The applicant delays his/her own application if all of these required items are not submitted. The Commission shall reach a decision on the application within forty-five (45) days of submission of a complete application. The applicant must appear in front of the Commission in order to present the application during the public hearing on the scheduled date.

Certificate of Appropriateness application adopted by the Historic Preservation Commission 1/22/13

2022-01-13 08:58:31 PST



George Tsiattalos

Loc: 40.6198, -74.4074

FRONT

2022-01-13 08:55:25 PST



George Tsiattalos

Loc: 40.6197, -74.4076

SIDE



George Tsiattalos

Loc: 40.6195, -74.4075

REAR

Loradin - Aerial View

Legend

-  1208 Putnam Ave
-  AVF Home Improvement



Google Earth

Image Landsat / Copernicus

INSTALLATION OF (2) NEW ROOF MOUNTED PV SYSTEMS SYSTEM #1 - 4.800kW (1 OF 2) SYSTEM #2 - 2.000kW (2 OF 2)

1208 PUTNAM AVENUE
PLAINFIELD, NJ 07060

PUTNAM AVENUE



VICINITY MAP
SCALE: NTS

SITE

GENERAL NOTES

- THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL EQUIPMENT AND FOLLOWING ALL DIRECTIONS AND INSTRUCTIONS CONTAINED IN THE DRAWING PACKAGE AND INFORMATION RECEIVED FROM TRINITY.
- RESPONSIBLE FOR INSTALLING ALL EQUIPMENT AND FOLLOWING ALL DIRECTIONS AND INSTRUCTIONS CONTAINED IN THE DRAWING PACKAGE AND INFORMATION RECEIVED FROM TRINITY.
- THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR REMOVING AND DISPOSING OF ALL EXISTING EQUIPMENT AND INVERTER MANUFACTURER'S INSTRUCTIONS.
- PRIOR TO INSTALLATION, THE INSTALLATION CONTRACTOR IS ALSO REQUIRED TO HAVE THE INSTALLATION OF ALL FUSE BEARING POSITION AND FUSES REMOVED PRIOR TO MOUNTING. THE INSTALLATION CONTRACTOR SHOULD HAVE A MINIMUM OF ONE ELECTRICIAN WHO HAS ATTENDED A PHOTOVOLTAIC INSTALLATION COURSE ON SITE.
- FOR SAFETY, IT IS RECOMMENDED THAT A MINIMUM OF TWO PERSONS WORK TOGETHER AND THAT EACH OF THE INSTALLATION CREW MEMBERS BE TRAINED IN THE NATIONAL PHOTOVOLTAIC SYSTEMS TO BE INSTALLED FOLLOWING THE CONVENTIONS OF THE NATIONAL PHOTOVOLTAIC SYSTEMS TO BE INSTALLED. THE INSTALLATION CREW WHICH MAY SUPERSEDE THE NEC SHALL GOVERN.
- ALL SYSTEM COMPONENTS TO BE INSTALLED SHALL BE LISTED TO BE USED IN THE NATIONAL PHOTOVOLTAIC SYSTEMS TO BE INSTALLED. ALL EQUIPMENT WILL BE NEMA 3R OUTDOOR RATED UNLESS INDICATED OTHERWISE.

GENERAL NOTES

IF ISSUED DRAWING IS MARKED WITH A REVISION CHARACTER OTHER THAN 'X', PLEASE BE ADVISED THAT FINAL EQUIPMENT AND/OR SYSTEM CHARACTERISTICS ARE SUBJECT TO CHANGE DUE TO AVAILABILITY OF EQUIPMENT.

GENERAL NOTES CONTINUED

- THE DC VOLTAGE FROM THE PANELS IS ALWAYS PRESENT AT THE DC TERMINALS OF THE INVERTER DURING DAYLIGHT HOURS. ALL PERSONS WORKING ON OR INVOLVED WITH THE PHOTOVOLTAIC SYSTEM SHALL BE MARKED CLEARLY IN ACCORDANCE WITH ARTICLE 690.5 OF THE NATIONAL ELECTRICAL CODE.
- PRIOR TO THE INSTALLATION OF THIS PHOTOVOLTAIC SYSTEM, THE CONTRACTOR SHALL ATTEND A PRE-INSTALLATION MEETING FOR THE REVIEW OF THE INSTALLATION PROCEDURES, SCHEDULES, SAFETY AND OTHER REQUIREMENTS.
- PRIOR TO THE SYSTEM START UP THE INSTALLATION CONTRACTOR SHALL ASSIST IN PERFORMING ALL INITIAL CONDUCTIVITY CHECKS.
- FOR THE PROPER MAINTENANCE AND SAFETY OF THE PHOTOVOLTAIC SYSTEM, THE CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO PERSONS TO THE LOCATION OF PROPOSED ELECTRIC EQUIPMENT. ALL PERSONS SHALL BE SUBJECT TO FINAL APPROVAL OF THE PHOTOVOLTAIC SYSTEMS TO BE INSTALLED. THE INSTALLATION CREW WHICH MAY SUPERSEDE THE NEC SHALL GOVERN.
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ABBREVIATIONS

- AMP AMPERE
AL ALUMINUM
AFF ABOVE FINISHED FLOOR
AFG ABOVE FINISHED GRADE
AWG AMERICAN WIRE GAUGE
C CONDUCTIVITY CHECKS
CB CURRENT BREAKER
CT CURRENT TRANSFORMER
CU COPPER
DSC DISCONNECT SWITCH
DWC DRAWING
EC ELECTRICAL SYSTEM INSTALLER
FUSE FUSE
FU FUSE
GND GROUND
H2 FREQUENCY (CYCLES PER SECOND)

GENERAL NOTES CONTINUED

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SHEET INDEX

- PV-1 COVER SHEET W/ SITE INFO & NOTES
- PV-2 ROOF PLAN W/ MODULE LOCATIONS
- PV-3 ELECTRICAL 3 LINE DIAGRAM (SYSTEM #1)
- PV-4 ELECTRICAL 3 LINE DIAGRAM (SYSTEM #2)
- AP APPENDIX

ABBREVIATIONS CONTINUED

- JB JUNCTION BOX
KVA KILOWATT AMPERE
KW KILOWATT
KWH KILOWATT HOUR
MCB MAIN CIRCUIT BREAKER
MDP MAIN DISTRIBUTION PANEL
MTD MOUNTED ONLY
MTG MOUNTING
N NEUTRAL
NEG NEGATIVE
NIC NOT IN CONTRACT
NO # NUMBER
NTS NOT TO SCALE
PDC PULL BOX
PFC PHASE
PWR POWER
QTY QUANTITY
RND ROUNDED
SN SOLID NUT
SWBD SWITCHBOARD
TYP TYPICAL
W/ WEATHERPROOF
WP WEATHERPROOF
XTMR TRANSFORMER
+72 MOUNT 72 INCHES TO BOTTOM GRADE

Issued / Revisions			
NO.	DESCRIPTION	DATE	
A2	SYSTEM SIZE REDUCED / LAYOUT REVISION	4/25/2022	
R1	LAYOUT REVISION	5/9/2022	
R2	REVISED TO TRANSMIT FOR PERMIT	3/24/2023	

Project Title:
LORADIN, LOURDES (COMBINED)
TRINITY ACCT # 2022-01-660554

Project Address:
1208 PUTNAM AVENUE
PLAINFIELD, NJ 07060
40.619516,-74.407340

Drawing Title:
PROPOSED PV SOLAR SYSTEM

Drawing Information
DRAWING DATE: 3/24/2023
DRAWN BY: PM
REVISED BY: DMR

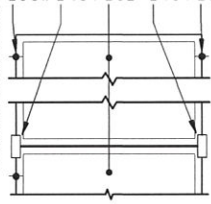
System Information:
DC SYSTEM SIZE: 6.4kW
AC SYSTEM SIZE: 5.25kW
MODULE COUNT: 16
MODULES USED: HANWHA 400
MODULE SPEC #: CPEAK 330 BLK ML G330-400
UTILITY COMPANY: PSEG
SOLAR RATER # 10000000000000000000
UTILITY METER # SEE LAYOUT
DEAL TYPE: SUNNOVA

Rev. No. Sheet
R2 PV - 1

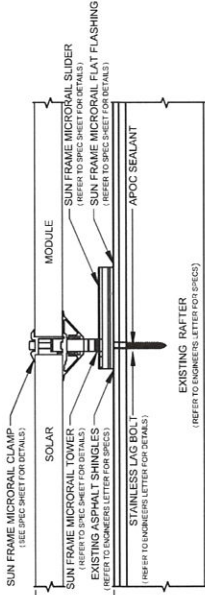


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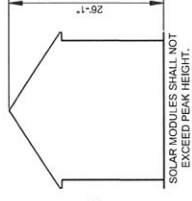
NOTES: *REFER TO MODULE SPECS FOR MODULE DIMENSIONS
*DEPICTED MODULES MAY BE PORTRAIT OR LANDSCAPE



ATTACHMENT & CLIP DETAIL
SCALE: NOT TO SCALE



PV MODULE ATTACHMENT ON ASPHALT SHINGLE ROOF
SCALE: NOT TO SCALE



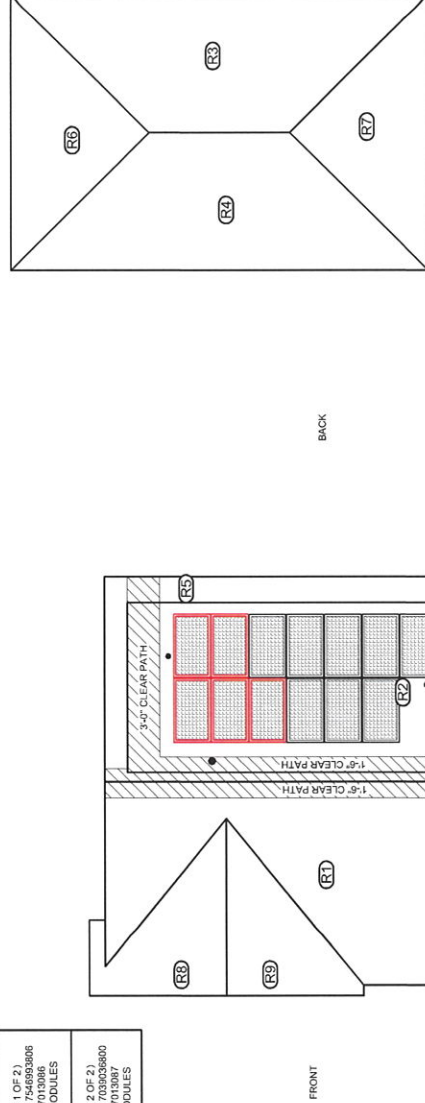
HEIGHT FROM GROUND LEVEL TO PEAK OF ROOF
SCALE: NOT TO SCALE



ARRAY SCHEDULE

LEGEND	
	SYSTEM #1 (1 OF 2) ACCOUNT # : 745693808 METER # : 127013086 4.49KW - 11 MODULES
	SYSTEM #2 (2 OF 2) ACCOUNT # : 703903880 METER # : 127013087 2.00KW - 5 MODULES

ROOF 1 MODULES: 0 PITCH: 37° ORIENTATION: 354°	ROOF 2 MODULES: 16 PITCH: 37° ORIENTATION: 174°	ROOF 3 MODULES: 0 PITCH: 37° ORIENTATION: 174°	ROOF 4 MODULES: 0 PITCH: 37° ORIENTATION: 354°	ROOF 5 MODULES: 0 PITCH: 37° ORIENTATION: 174°	ROOF 6 MODULES: 0 PITCH: 37° ORIENTATION: 84°	ROOF 7 MODULES: 0 PITCH: 37° ORIENTATION: 264°	ROOF 8 MODULES: 0 PITCH: 37° ORIENTATION: 84°	ROOF 9 MODULES: 0 PITCH: 37° ORIENTATION: 264°	ROOF 10 MODULES: 0 PITCH: 37° ORIENTATION: 84°	ROOF 11 MODULES: 0 PITCH: 37° ORIENTATION: 264°
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BACK

FRONT

NOTES:
1.) WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2.) ARRAY BONDING TO COMPLY WITH MANUFACTURER SPECIFICATION.
3.) ALL LOCATIONS ARE TO BE INSTALLED WITHIN THE EXISTING ROOF AREA.
4.) ALL OUTDOOR EQUIPMENT SHALL BE RATED WITH MINIMUM NEMA 3R RATING.
5.) ROOF TOP SOLAR INSTALLATION ONLY PV ARRAY SHALL NOT EXTEND BEYOND THE EXISTING ROOF EDGE.

SYMBOL LEGEND

SYMBOL	DESCRIPTION
	INDICATES ROOF DESIGNATION. REFER TO ARRAY SCHEDULE FOR MORE INFORMATION
	INDICATES NEW UNFUSED PV DISCONNECT TO BE INSTALLED OUTSIDE (UTILITY ACCESSIBLE)
	INDICATES NEW PV SOLAR MODULE RED MODULES TO BE INSTALLED OUTSIDE (UTILITY ACCESSIBLE). REFER TO EQUIPMENT SCHEDULE FOR SPECS.
	INDICATES EXISTING ELECTRICAL PANEL LOCATION. INSIDE
	INDICATES NEW FUSED PV DISCONNECT TO BE INSTALLED OUTSIDE (UTILITY ACCESSIBLE)
	INDICATES EXISTING TRANSFER SWITCH

PLUMBING SCHEDULE

QTY	SPEC #
16	HANWHA 420 (Q PEAK DUO BLK ML-G10+ 400)
1	SE3800H-US05HBC4
5	ENPHASE IQ7PLUS MICROINVERTERS (IQ7PLUS-72-US)
1	ENPHASE IQ COMBINER (X-IQ-M1-240-3)

OTHER OBSTRUCTIONS

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Rev. No.	R2
Sheet	PV - 2



2211 Allenwood Road
Wall, New Jersey 07719
www.TrinitySolar.com

Issued / Revisions	
NO.	DESCRIPTION
1	ISSUED
2	REVISED
3	REVISED
4	REVISED

Project Title:
LORADIN, LOURDES (COMBINED)
TRINITY ACCT # : 2022-01-560554

Project Address:
1208 PUTNAM AVENUE
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40.619516,-74.407340

Drawing Title:
PROPOSED PV SOLAR SYSTEM

Drawing Information
DRAWING DATE: 2/14/2022
DRAWN BY: PM
REVISED BY: DMR

DC SYSTEM SIZE: 6.49W	AC SYSTEM SIZE: 5.25kW
MODULE COUNT: 15	MODULES USED: HANWHA 400
MODULE SPEC #: Q-PEAK DUO BLK ML-G10+ 400	UTILITY COMPANY: PSE&G
UTILITY ACCT #: SEE LAYOUT	UTILITY METER #: SEE LAYOUT
DIAL TYPE: SUMMOVA	

ARRAY CIRCUIT WIRING NOTES:
1) THE INSTALLER SHALL BE RESPONSIBLE FOR DETERMINING ON-SITE CONDITIONS AND EXECUTING INSTALLATION IN ACCORDANCE WITH NEC 2017

2) LOWEST EXPECTED AMBIENT TEMPERATURE BASED ON ASHRAE MINIMUM MEAN EXTREME DRY BULB TEMPERATURE FOR ASHRAE LOCATION MOST SIMILAR TO INSTALLATION LOCATION. LOWEST EXPECTED AMBIENT TEMP = -38°C

3) HIGHEST CONTINUOUS AMBIENT TEMPERATURE BASED ON ASHRAE MAXIMUM MEAN WET BULB TEMPERATURE FOR ASHRAE LOCATION MOST SIMILAR TO INSTALLATION LOCATION. HIGHEST CONTINUOUS TEMP = 39°C

4) 2005 ASHRAE FUNDAMENTALS 2% DESIGN TEMPERATURES DO NOT EXCEED 47°C IN THE UNITED STATES (PALM SPRINGS, CA IS 44.1°C). FOR LESS THAN 9 SUNHOURS PER YEAR, THE DESIGN TEMPERATURE MAY BE SUNHIT CONDUIT AT LEAST 0.5" ABOVE ROOF AND USING THE OUTDOOR DESIGN TEMPERATURE OF 47°C OR LESS (ALL OF UNITED STATES)

5) PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION THAT SHALL BE INSTALLED IN ACCORDANCE WITH NEC 690.12(A) THROUGH (D)

6) PHOTOVOLTAIC POWER SYSTEMS SHALL BE PERMITTED TO BE INSTALLED IN BUILDINGS IN ACCORDANCE WITH SOURCE AND OUTPUT CIRCUIT AS PER NEC 690.41 (A)(4)

7) UNGROUNDING OF DC CIRCUIT CONDUCTORS SHALL BE IDENTIFIED WITH THE FOLLOWING OUTER FINISH:
POSITIVE CONDUCTORS = RED
NEGATIVE CONDUCTORS = BLACK
NEC 240.34(C)(4)

8) ARRAY AND SUB-ARRAY CONDUCTORS SHALL BE #10 PV WIRE PER NEC 705.12(B) OR EQUIVALENT AND SHALL BE SUNLIGHT. SUB-ARRAY CONDUIT LONGER THAN 24" SHALL CONTAIN ≤ 20 CURRENT CARRYING CONDUCTORS AND WIRE BUNDLES OF CONDUCTORS SHALL CONTAIN ≤ 50 CURRENT CARRYING CONDUCTORS.

9) ALL WIRE LENGTHS SHALL BE LESS THAN 100' UNLESS OTHERWISE NOTED
10) FLEXIBLE CONDUIT SHALL NOT BE INSTALLED ON ROOFTOP AND SHALL BE LIMITED TO 12" IF USED OUTDOORS

11) OVERCURRENT PROTECTION FOR CONDUCTORS SHALL BE INSTALLED IN ACCORDANCE WITH NEC 705.12(B)(1) LOCATED WITHIN 10' OF THE POINT OF CONNECTION NEC 705.31

12) WHERE TWO SOURCES FEED A BUSBAR, ONE A UTILITY AND THE OTHER AN INVERTER, PV BACKFEED BREAKERS SHALL BE LOCATED OPPOSITE FROM UTILITY NEC 705.12(B)(3)(b)

13) ALL SOLAR SYSTEM LOAD CENTERS TO CONTAIN ONLY GENERATION CIRCUITS AND NO UNUSED POSITIONS OR LOADS

14) ALL EQUIPMENT INSTALLED OUTDOORS SHALL HAVE A NEMA 3R RATING

CALCULATIONS FOR CURRENT CARRYING CONDUCTORS REQUIRED CONDUCTOR AMPACITY PER SYSTEM

AWG #10, DERATED AMPACITY
AMBIENT TEMP: 33°C, TEMP DERATING FACTOR: .96
BACKWAY DERATING = 2 CCC: 1.00
40' - 391.1.00 = 38.0A

38.0A * 18.75% THEREFORE WIRE SIZE IS VALID
TOTAL AC REQUIRED CONDUCTOR AMPACITY
15.00A * 1.25 = 20.00A

AWG #10, DERATED AMPACITY
AMBIENT TEMP: 30°C, TEMP DERATING: 1.0
40A * 1.0 = 40A

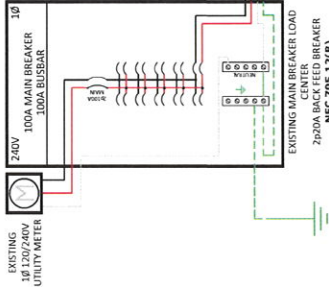
40A * 20.00A THEREFORE AC WIRE SIZE IS VALID
CALCULATION FOR PV OVERCURRENT PROTECTION REQUIRED CONDUCTOR PROTECTION
15.00A * 1.25 = 20.00A
--> 20A OVERCURRENT PROTECTION IS VALID

SOLAR MODULES MOUNTED TO ROOF ON 1 ARRAY 11 - 400W MODULES W/ 1 SOLAR EDGE P401 PER MODULE 15 ADC MAX PER STRING	
1 STRING OF 11 MODULES IN SERIES: 380 Vmax	*TERMINATED INSIDE INVERTER 1

F

8"x8" JUNCTION BOX

NOTE:
1) ALL ELECTRICAL EQUIPMENT SHALL BE CONTAINED WITHIN SOLAR EDGE INVERTER
SOLAR EDGE PN INWIND-3D-240-MB



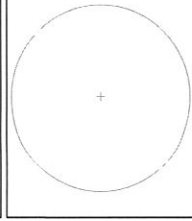
PV MODULE SPECIFICATIONS	
11 - 400W (Q PEAK DUO BULK ML G1D+ 400)	
Vmp	10.27
Vmp	37.13
Voc	45.3
Isc	11.14

INVERTER #1: SE3800-US58NHC4	
DC	AC
Vmp	110.5
Vmp	380
Voc	480
Isc	15

NOTE: CONDUIT TYPE SHALL BE CHOSEN BY THE INSTALLATION CONTRACTOR TO MEET OR EXCEED NEC AND LOCAL ADOPTED REQUIREMENTS.

A	60 THWN-2 GEC TO EXISTING GROUND ROD
B	3/4" CONDUIT W/ 2-410 THWN-2, 1-410 THWN-2 GROUND
C	3/4" CONDUIT W/ 2-410 THWN-2, 1-410 THWN-2 GROUND
D	3/4" CONDUIT W/ 2-410 THWN-2, 1-410 THWN-2 GROUND
E	3/4" CONDUIT W/ 2-410 THWN-2, 1-410 THWN-2 GROUND
F	410 PV WIRE (FREE AIR) W/ RE BARE COPPER BOND TO ARRAY

Engineer / License Holder:



Issued / Revisions	
#	DATE
1	2/14/2022
2	2/14/2022
3	2/14/2022
4	2/14/2022
5	2/14/2022
6	2/14/2022
7	2/14/2022
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61	2/14/2022
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91	2/14/2022
92	2/14/2022
93	2/14/2022
94	2/14/2022
95	2/14/2022
96	2/14/2022
97	2/14/2022
98	2/14/2022
99	2/14/2022
100	2/14/2022

Project Title:
LORADIN, LOURDES- (1 OF 2)
TRINITY ACCT #: 2022-01-660654

Project Address:
1208 PUTNAM AVENUE
PLAINFIELD, NJ 07060
40.619516, -74.407340

Drawing Title:
PROPOSED PV SOLAR SYSTEM

Drawing Information:
DRAWN BY: DM
CHECKED BY: DM
REVIEWED BY: DM

System Information:
DC SYSTEM SIZE: 4.4kW
AC SYSTEM SIZE: 3.8kW
MODULE COUNT: 11
MODULE SPEC: HANWHA 400
UTILITY COMPANY: PSEG
UTILITY ACCT #: 7546993806
UTILITY METER #: 127013086
DEAL TYPE: SUNNOVA

Rev. No. R2
Sheet PV - 3

Trinity[®]
SOLAR
2211 Allenwood Road
Vash, New Jersey 07719
877-786-7283
www.TrinitySolar.com

MATERIAL LIST

(FOR INTERNAL USE ONLY)

JOB NAME: LORADIN, LOURDES (COMBINED)

ADDRESS: 1208 Putnam Avenue
Plainfield, NJ 07060
40.619516,-74.407340



2211 Allenwood Road
Wall, New Jersey 07719

877-786-7283
www.Trinity-Solar.com

42.96 ESTIMATED PERSONNEL HOURS

1.79 DAYS

1.34 DAYS

0.9 DAYS

- 16 HANWHA 400's (6.4KW)

(CREW OF 3)

(CREW OF 4)

(CREW OF 6)

- 1 ARRAY

- 26' PEAK TO GROUND

- 16 PORTRAIT & 0 LANDSCAPED

- MICROINVERTERS

- NO TRENCH

	<u>ESTIMATED</u>	<u>SENT TO JOB</u>	<u>USED</u>
☐ HANWHA 400 (Q.PEAK DUO BLK ML-G10+ 400)	16	—	—
☐ P401 SE OPTIMIZERS	12	—	—
☐ SE3800H-US0SHBNC4	1	—	—
☐ ENPHASE IQ COMBINER (X-IQ-AM1-240-3)	1	—	—
☐ IQ7PLUS MICROINVERTERS	5	—	—
☐ MURRAY 2p20A BACKFEED BREAKER	1	—	—
☐ 2p15A BREAKER	1	—	—
☐ SOLADECK BOX(ES) & HAYCO CONNECTOR(S)	3	—	—
☐ PV LEAD WIRE	50'	—	—
☐ INSULATED BUG BITES (LINE TAPS)	2	—	—
☐ TRUNK CABLE	—	—	—
☐ END CAPS	—	—	—
☐ SEALING CAPS	—	—	—
☐ CASE(S) OF BLACK SPRAY PAINT	1	—	—
☐ CASE(S) OF TAR	1	—	—
☐ FLASHINGS	—	—	—
☐ 60A OUTDOOR FUSED DISCONNECT W/ (2) 15A FUSES	1	—	—

INSTALLATION OF (2) NEW ROOF MOUNTED PV SYSTEMS
SYSTEM #1 - 4.800kW (1 OF 2) SYSTEM #2 - 2.000kW (2 OF 2)

LORADIN, LOURDES (COMBINED)
1208 PUTNAM AVENUE
PLAINFIELD, NJ 07060
40.619516,-74.407340

APPENDIX

CONTENTS
LABELS, STICKERS, AND PLACARDS
EQUIPMENT DATA SHEETS

NOTES:

- 1.) COMPLIES WITH NEC 2017
- 2.) REFER TO SHEET PV-3 FOR SITE SPECIFIC VALUES REQUIRED BY NEC 690
- 3.) STICKERS, LABELS, AND PLACARDS SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED

To be located on all DC Junction boxes and every 10' on DC conduit



DC Junction Box



Soladeck



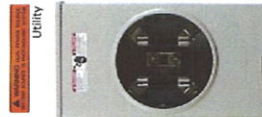
DC Conduit



Service Disconnect



Main Service Panel



Utility Meter Socket



Solar Meter Socket



Photovoltaic AC Disconnect



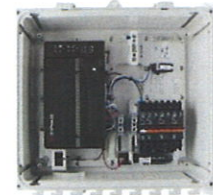
Load Center (To Combine Inverters)



Inverter(s)



DC Disconnect



Enphase Envoy Box





Q.PEAK DUO BLK ML-G10.a+

385-405

ENDURING HIGH PERFORMANCE



BEAKING THE 20% EFFICIENCY BARRIER
Q ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.9%.

THE MOST THOROUGH TESTING PROGRAMME IN THE INDUSTRY
Q CELLS is the first solar module manufacturer to pass the most comprehensive quality programme in the industry. The new "Quality Controlled PV" or the independent certification institute TÜV Rheinland.

INNOVATIVE ALL-WEATHER TECHNOLOGY
Optimal yields, whatever the weather with excellent low-light and temperature behaviour.

ENDURING HIGH PERFORMANCE
Long-term yields security with Anti-LID Technology, Anti-PID Technology*, Hot-Spot-Protected and Traceable Quality Tra.Q™.

EXTREME WEATHER RATING
High-tech aluminium alloy frame, certified for high snow (5400Pa) and wind loads (4000Pa).

A RELIABLE INVESTMENT
Inclusive 25-year product warranty and 25-year linear performance warranty*.

* IAP7 test conditions according to IEC 61215:2015, method A (-55°C/1.96h)
* See data sheet on use for further information.

THE IDEAL SOLUTION FOR:



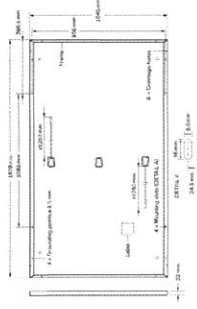
Roof-top arrays on
residential buildings

Engineered in Germany



MECHANICAL SPECIFICATION

Formal	1870mm x 1045mm x 32mm (including frame)
Weight	22.0kg
Front Cover	2.0mm tempered glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 x 72 monocrystalline Q ANTUM solar half cells
Junction box	53.101mm x 32.60mm x 15.18mm
Cable	Printed on glass PET with typical 1000mm
Connector	4mm ² Solar cable (+) x 1250mm, (-) x 2250mm
Standard	Stk. 341 MC4, IP68



ELECTRICAL CHARACTERISTICS

POWER CLASS	385	390	395	400	405
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS (STC) (POWER TOLERANCE ±0.5% / 0.5W)					
Power at MPP	P _{MPP} [W]	385	390	395	405
Short Circuit Current	I _{sc} [A]	11.04	11.07	11.10	11.14
Open Circuit Voltage	V _{oc} [V]	45.23	45.27	45.33	45.34
Current at MPP	I _{MPP} [A]	10.59	10.65	10.71	10.77
Voltage at MPP	V _{MPP} [V]	36.35	36.62	36.88	37.13
Efficiency	η [%]	21.8	21.9	22.0	22.0
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS (NOCT)					
Power at MPP	P _{MPP} [W]	286.8	287.6	289.3	300.1
Short Circuit Current	I _{sc} [A]	8.90	8.92	8.95	9.00
Open Circuit Voltage	V _{oc} [V]	42.62	42.65	42.69	42.72
Current at MPP	I _{MPP} [A]	8.35	8.41	8.46	8.51
Voltage at MPP	V _{MPP} [V]	34.59	34.61	35.00	35.46
Maximum temperatures T _{amb} = 35°C, T _{cell} = 45°C at STC 1000W/m ² , 25°C, AM 1.5 according to IEC 60904-3 = 800W/m ² NOCT spectrum AM 1.5					

Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power guaranteed for 25 years. At least 92.5% of nominal power up to 15 years. At least 87.5% of nominal power up to 25 years.

All data with measurement uncertainties. Full warranty in accordance with the warranty terms of the Q CELLS Performance Warranty in your respective country.

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{sc}	α [1/K]	+0.04	Temperature Coefficient of V _{oc}	β [1/K]	-0.27
Temperature Coefficient of P _{MPP}	γ [1/K]	-0.34	Nominal Module Operating Temperature	M _{NOCT} [°C]	43±3

PROPERTIES FOR SYSTEM DESIGN

PROPERTIES FOR SYSTEM DESIGN				Case 1
Maximum System Voltage	V _{sys} [V]	1000	IPW module classification	C/T TYPE 2
Maximum Reverse Current	I _r [A]	20	Fire Rating based on ANSI/UL 81730	
Max. Design Load, Push/Pull	P _{dl} [Pa]	5600/2000	Permitted Module Temperature at Continuous Duty	-40°C ~ +85°C
Max. Test Load, Push/Pull	P _{tl} [Pa]	5400/4000		

QUALIFICATIONS AND CERTIFICATES



Quality Certificate
TUV Rheinland
IEC 61215:2015
IEC 61730:2015
The safe value concept
with the Ex 61230

PACKAGING INFORMATION

Horizontal packaging	1394mm x 1220mm	75kg	28 pallets	24 pallets	32 modules
Vertical packaging	1397mm x 1250mm	765kg	28 pallets	24 pallets	35 modules

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.

Hanau, Q CELLS GmbH
Sonnenallee 17-21, 56106 Hainfeld (Hf), Germany | TEL: +49 (0)3404 619 99 23464 | FAX: +49 (0)3404 66 99 23000 | EMAIL: qa@q-cells.com | WEB: www.q-cells.com

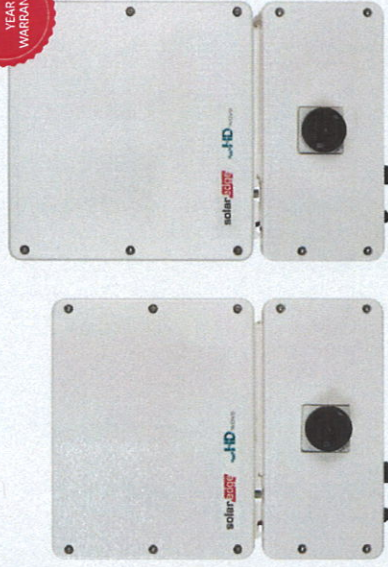
Engineered in Germany



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 99% weighted efficient
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014, NEC 2017 and NEC 2020 per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Small, lightweight, and easy to install both outdoors or indoors
- Built-in module-level monitoring
- Optional: Faster installations with built-in consumption metering (1% accuracy) and production revenue grade metering (0.5% accuracy, ANSI C12.20)

solarEdge.com

solarEdge

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

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXXXH-XXXXXXBXK4						

OUTPUT

Rated AC Power Output	3000	3500 @ 240V 3800 @ 208V	5000	6000 @ 208V 5500 @ 240V	7600	10000	11400 @ 240V 10000 @ 208V
Maximum AC Power Output	3000	3800 @ 240V 3800 @ 208V	5000	6000 @ 240V 5500 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V
AC Output Voltage Min. Nom. Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓
AC Output Voltage Min. Nom. Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓
AC Frequency (Nominal)				59.3 - 60.2			
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5
Power Factor							
GFI Threshold							
Utility Monitoring, Islanding Protection, Country Configurable Thresholds							

INPUT

Maximum DC Power @240V	4650	5000	7750	9300	11800	15500	17550
Maximum DC Power @208V	-	5000	-	7750	-	15500	17550
Transformerless, Ungrounded				Yes			
Maximum Input Voltage				480			
Nominal DC Input Voltage				300			
Maximum Input Current @240V	8.5	10.5	13.5	16.5	20	27	30.5
Maximum Input Current @208V	-	9	-	13.5	-	-	27
Max. Input Short Circuit Current				45			
Reverse-Polarity Protection				Yes			
Ground Fault Isolation Detection							
Maximum Inverter Efficiency	99			99.2			
CEC Weighted Efficiency		99					99 @ 240V 98.5 @ 208V
Nighttime Power Consumption				4.25			

ADDITIONAL FEATURES

Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)
Revenue Grade Metering, ANSI C12.20	Optional ⁽¹⁾
Consumption metering	
Inverter Commissioning	
Rapid Shutdown - NEC 2014, NEC 2017 and NEC 2020 690.12	With the SetApp mobile application using Built-in Wi-Fi Access Point for Local Connection

STANDARD COMPLIANCE

Safety	UL1741, UL1741 SA, UL60998, CSA C22.2 Canadian AFCI according to T.L.M. CP
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (H)
Emissions	FCC Part 15 Class B

INSTALLATION SPECIFICATIONS

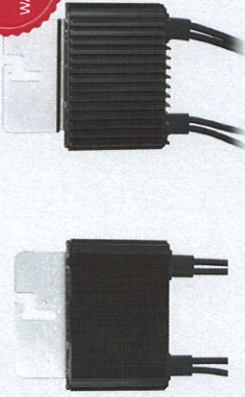
AC Output Conduit Size / AWG Range	1" Maximum / 1/4-4 AWG
For Three Conduit Size / 4 of Strings / AWG Range	1" Maximum / 1-2 strings / 1/4-6 AWG
Dimensions with Safety Switch (HxWxD)	17.7" x 14.6" x 6.8" / 450 x 370 x 185
Weight with Safety Switch	22 / 10
Weight with Safety Switch	25 / 11.4
Weight with Safety Switch	29.2 / 11.9
Weight with Safety Switch	38.8 / 17.6
Weight with Safety Switch	<50
Cooling	Natural Convection
Operating Temperature Range	-40 to +140 / -40 to +100 ⁽²⁾
Protection Rating	IP65 (Inverter with Safety Switch)

(1) For other regional settings, please contact SolarEdge for support.
(2) A higher current source may be used if the inverter will not be used at full current to the value stated.
(3) For other regional settings, please contact SolarEdge for support.
(4) Full power up to 1000W at 20°C. For power derating information refer to <http://www.solarEdge.com/resources/temperature-derating-note-143.pdf>
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Power Optimizer

For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / P505



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 (PVRS)
- Module-level voltage shutdown for installer and firefighter safety

solarEdge.com



POWER OPTIMIZER

Power Optimizer For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / P505

Optimizer model (typical module compatibility)	P320 (for 60-cell modules)	P340 (for high-power 60-cell modules)	P370 (for high-power 60 and 72-cell modules)	P400 (for high-power 96-cell modules)	P401 (for high-power 60 and 72-cell modules)	P405 (for high-voltage modules)	P485 (for high-voltage modules)	P505 (for higher current modules)
--	----------------------------	---------------------------------------	--	---------------------------------------	--	---------------------------------	---------------------------------	-----------------------------------

INPUT								
Rated Input DC Power ⁽¹⁾	320	350	370	400	405	405	485	505
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	50	125 ⁽²⁾		83 ⁽³⁾
MPPT Operating Range	8 - 48		8 - 60	8 - 80	8 - 50	12.5 - 83		12.5 - 83
Maximum Short Circuit Current (Isc)	11	11	10.1	11.75		11		14
Maximum DC Input Current	13.75		12.5	14.65		12.5		17.5
Maximum Efficiency			99.5					
Weighted Efficiency			98.3					98.6
Core Voltage Category II								

OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREGE INVERTER)								
Maximum Output Current		60		15		85		
Maximum Output Voltage								

OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREGE INVERTER OR SOLAREGE INVERTER OFF)								
Steady State Output Voltage per Power Optimizer	1 ± 0.1							

STANDARD COMPLIANCE								
EMC	FCC Part 15 Class B, IECEN5048-2, IEC61000-6-3							
Safety	IEC60950-1, IEC60950-2, IEC60950-3							
Material	UL94 V-0, UL94 V-0, UL94 V-0							
RoHS	Yes							

INSTALLATION SPECIFICATIONS								
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 28.5 (129 x 153 x 28.5) 129 x 153 x 28.5 129 x 153 x 28.5 129 x 153 x 28.5 129 x 153 x 28.5 129 x 153 x 28.5 129 x 153 x 28.5 129 x 153 x 28.5 129 x 153 x 28.5							
Weight (including cables)	630 / 1.4 750 / 1.7 655 / 1.5 845 / 1.9 1064 / 2.3 1064 / 2.3 1064 / 2.3 1064 / 2.3 1064 / 2.3							
Input Connector	MC4 ⁽⁴⁾ Single or dual MC4 ⁽⁴⁾ MC4 ⁽⁴⁾							
Input Wire Length	0.18 / 0.52 0.18 / 0.52 0.18 / 0.52 0.18 / 0.52 0.18 / 0.52 0.18 / 0.52 0.18 / 0.52 0.18 / 0.52 0.18 / 0.52							
Output Wire Type / Connector	Double Insulated MC4 ⁽⁴⁾ Double Insulated MC4 ⁽⁴⁾ Double Insulated MC4 ⁽⁴⁾ Double Insulated MC4 ⁽⁴⁾ Double Insulated MC4 ⁽⁴⁾ Double Insulated MC4 ⁽⁴⁾ Double Insulated MC4 ⁽⁴⁾ Double Insulated MC4 ⁽⁴⁾ Double Insulated MC4 ⁽⁴⁾							
Output Wire Length	0.9 / 2.35 0.9 / 2.35 0.9 / 2.35 0.9 / 2.35 0.9 / 2.35 0.9 / 2.35 0.9 / 2.35 0.9 / 2.35 0.9 / 2.35							
Operating Temperature Range ⁽⁵⁾	-40 - +85 / -40 - +85 -40 - +85 / -40 - +85 -40 - +85 / -40 - +85 -40 - +85 / -40 - +85 -40 - +85 / -40 - +85 -40 - +85 / -40 - +85 -40 - +85 / -40 - +85							
Protection Rating	IP68 / NEMA4P IP68 / NEMA4P IP68 / NEMA4P IP68 / NEMA4P IP68 / NEMA4P IP68 / NEMA4P IP68 / NEMA4P IP68 / NEMA4P IP68 / NEMA4P							
Relative Humidity	0 - 100 0 - 100 0 - 100 0 - 100 0 - 100 0 - 100 0 - 100 0 - 100 0 - 100							

P320 P340 P370 P400 P401 P405 P485 P505								
Minimum String Length (Power Optimizers)	8 8 8 8 8 8 8 8 8							
Maximum String Length (Power Optimizers)	23 23 23 23 23 23 23 23 23							
Maximum Power per String	5700 (6000 with UN) 5700 (6000 with UN) 5700 (6000 with UN) 5700 (6000 with UN) 5700 (6000 with UN) 5700 (6000 with UN) 5700 (6000 with UN) 5700 (6000 with UN) 5700 (6000 with UN)							

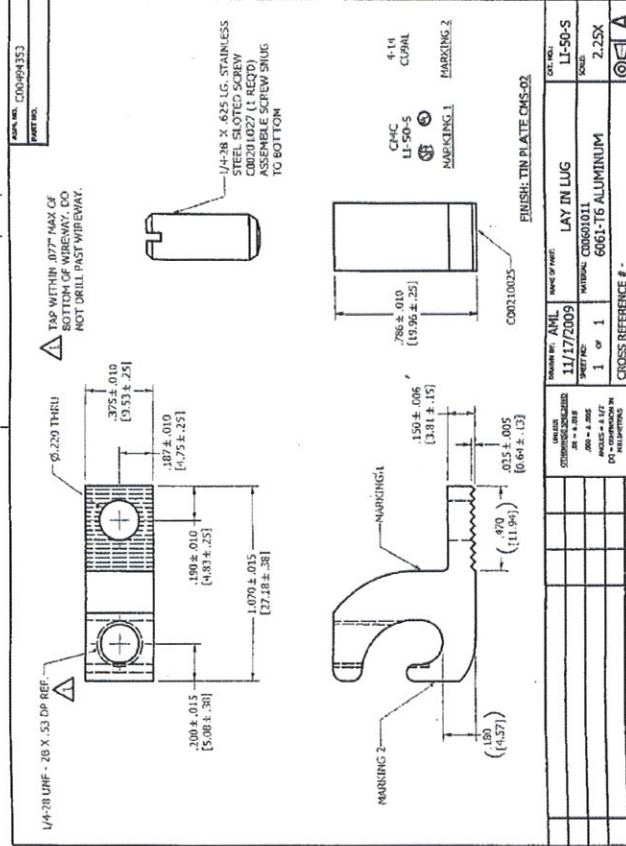
Parallel Strings of Different Lengths or Orientations								
(1) For detailed stringing information visit http://www.solaredge.com/resources/stringing .								
(2) A string should be no longer than 125Vdc (P320, P340, P370, P400, P401, P405, P485, P505) or 150Vdc (P320, P340, P370, P400, P401, P405, P485, P505) in one string. Safety voltage will be above the 150Vdc requirement.								
(3) For 277Vdc grid it is advised to install up to 6,000W per string when the maximum power difference between each string is < 500W.								
(4) For 277Vdc grid it is advised to install up to 10,000W per string when the maximum power difference between each string is < 1,000W.								
(5) For ambient temperature above +35°C / +95°F power derating is applied. Refer to Power Optimizers Temperature Derating Technical Note for more details.								

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ALCO
4781 MADISON BLVD
CHICAGO, IL 60629
312-625-6250
312-279-5729

SUNFRAME MICRORAIL UNIRAC

SUNFRAME MICRORAIL™ (SFM) is a hybrid racking system including a structural front Trimrail™ for fastest array alignment and superior aesthetics. Minimize total labor with pre-assembled parts, integrated bonding hardware and one tool installation. Compact packaging with few SKUs lowers logistics costs from the warehouse to the roof. Patented mounting components provide post-install height adjustment and allow for removal of individual panels for maintenance.

INNOVATION

- INDUSTRY LEADING FEATURES**
- STRUCTURAL FRONT TRIMRAIL**
FASTEST ARRAY ALIGNMENT & SUPERIOR AESTHETICS
- POSTINSTALL HEIGHT ADJUSTMENT**
LEVEL MODULES ANYTIME DURING INSTALLATION
- SINGLE MODULE ACCESS**
REMOVE SINGLE PANELS FOR ARRAY MAINTENANCE
- SINGLE TOOL INSTALLATION**
- QUICK & EASY ARRAY ALIGNMENT**
- TRIMRAIL WITH SEAMLESS MODULE MOUNTING**
- MIXED ARRAYS - PORTRAIT & LANDSCAPE ORIENTATION**
- AVAILABLE MLPE MOUNT WITH CABLE MANAGEMENT**
- LOGISTICS OPTIMIZED - COMPACT PACKAGING**
- FEW SKUS SIMPLIFIES INSTALLATION**
- ENHANCED U-BUILDER DESIGN / LAYOUT TOOL**
- ON-SITE PRODUCT TRAINING**

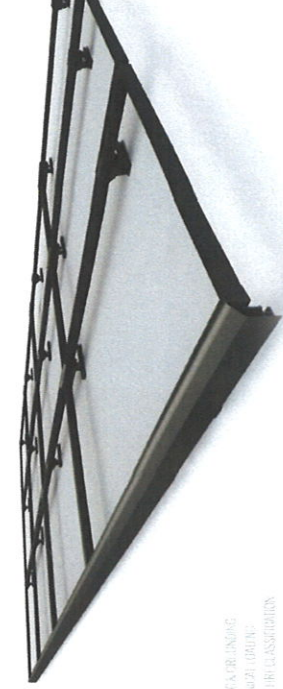
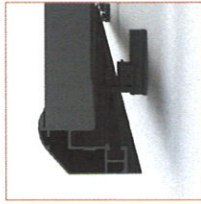
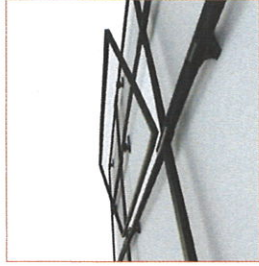


LESS RAIL, MORE PERFORMANCE

SUNFRAME MICRORAIL UNIRAC

**LESS RAIL, MORE PERFORMANCE
SOLAR SHOULD BE SIMPLE**

- No unique module type or frame required for installation
- Accommodates the most common frame heights: 32mm, 35mm, 40mm & 45mm
- Design around the roof, not the racking. Portrait, Landscape or Mixed module orientation
- Maximize power on the roof. Install up to 25% more with modules in landscape orientation
- UL2703 Listed. Accommodate the most stringent AHJ requirements
- Stagger roof attachments & use attached splice for extra strength and flexibility
- Leave All the Copper and Lugs. Bonding and grounding thru Enphase M215 & M250 Microconverters
- Full wire management solution allows pre-management of wires before module installation
- Enphase Wire Management Clip, M1 F1 Mount & Hayes Dual PV wire trunk cable clips
- Small components. Compact packaging & Pre-assembled parts
- A third less volume than traditional racking. Fit several jobs' worth of racking on a single truck



LISTED
UL2703
UL2703 - see installation manual for specific module approvals
UL2703 - Tested to standard module capacities, see installation module list and design load ratings

COLLABORATION WITH INDUSTRY LEADING INSTALLERS - FIELD TESTED & VERIFIED

Technical Specifications	
Materials	All extruded components: 6005A-T61 or 6061-T6 Aluminum
Hardware	Passivated Stainless Steel
Adjustability	1" vertical post-install height adjustment 6" north-south adjustability mount anywhere along east-west edges of modules
Spans and Cantilevers	See Design and Installation guide for span and cantilever tables
Flashing	Uses industry standard flashing technologies and tested to UL441 Rain Test
Certifications	
Grounding/Bonding	UL2703 - see installation manual for specific module approvals
Mechanical Load	UL2703 - Tested to standard module capacities, see installation module list and design load ratings
Fire Resistance	UL2703 - Class A, B and C Type 1 and Type 2 modules Landscape and Portrait Orientations

UNIRAC CUSTOMER SERVICE MEANS THE HIGHEST LEVEL OF PRODUCT SUPPORT IN THE RACKING INDUSTRY

INSTALLATION OF NEW ROOF MOUNTED PV SOLAR SYSTEM

1208 PUTNAM AVENUE PLAINFIELD, NJ 07060

PUTNAM AVENUE



VICINITY MAP
SCALE: NTS

SITE

GENERAL NOTES

1. THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL EQUIPMENT AND FOLLOWING ALL DIRECTIONS IN THE DRAWING PACKAGE AND INFORMATION RECEIVED FROM TRINITY.
2. THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL EQUIPMENT AND FOLLOWING ALL DIRECTIONS IN THE DRAWING PACKAGE AND INFORMATION RECEIVED FROM TRINITY.
3. THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO INSTALLATION.
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7. THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO INSTALLATION.

GENERAL NOTES CONTINUED

8. THE DC VOLTAGE FROM THE PANELS IS ALWAYS PRESENT AT THE DC TERMINALS OF THE INVERTER DURING DAYLIGHT HOURS. ALL PERSONS WORKING ON OR INVOLVED WITH THE SYSTEM MUST BE AWARE OF THIS AND TAKE APPROPRIATE SAFETY PRECAUTIONS.
9. THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO INSTALLATION.
10. THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO INSTALLATION.
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14. THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO INSTALLATION.

GENERAL NOTES CONTINUED

14. B. CURRENT PREVAILING UTILITY COMPANY SPECIFICATIONS SHALL BE USED FOR THE INSTALLATION OF THIS SYSTEM.
15. THIS SET OF PLANS HAVE BEEN PREPARED FOR THE PURPOSE OF OBTAINING PERMITS AND AGENCY REVIEW AND FOR THE INSTALLATION CONTRACTOR'S USE. THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL EQUIPMENT AND FOLLOWING ALL DIRECTIONS IN THE DRAWING PACKAGE AND INFORMATION RECEIVED FROM TRINITY.
16. ALL INFORMATION SHOWN MUST BE CERTIFIED PRIOR TO USE FOR CONSTRUCTION ACTIVITIES.

ABBREVIATIONS CONTINUED

- JB JUNCTION BOX
KVA KILOVOLT AMPERE
KWH KILOWATT HOUR
MIB MAIN CIRCUIT BREAKER
MDP MAIN DISTRIBUTION PANEL
MTG MOUNTING
N NEUTRAL
NEC NATIONAL ELECTRICAL CODE
NITS NOT IN CONTRACT
NO # NUMBER
P PULL BOX
PWR POWER
QTY QUANTITY
SN SOLID NUTURAL
TYP TYPICAL
WV WEATHERPROOF
XFMR TRANSFORMER
+72 MOUNT 72 INCHES TO BOTTOM GRADE

SHEET INDEX

- PV-1 COVER SHEET W/ SITE INFO & NOTES
PV-2 ROOF PLAN W/ MODULE LOCATIONS
PV-3 ELECTRICAL 3 LINE DIAGRAM
AP APPENDIX

Drawing Information

DRAWING DATE: 2/14/2022
DRAWN BY: PM
REVISED BY: DMR

System Information:

DC SYSTEM SIZE: 4.4kW
AC SYSTEM SIZE: 3.8kW
MODULE COUNT: 11
MODULES USED: HANWHA 500
UTILITY COMPANY: PSE&C
UTILITY ACCT # 132031806
UTILITY METER # 132031806
REAL TYPE: SUNSIVA

Project Title:

1208 PUTNAM AVENUE
PLAINFIELD, NJ 07060
40.619516, -74.407340

Project Address:

1208 PUTNAM AVENUE
PLAINFIELD, NJ 07060
40.619516, -74.407340

Drawing Title:

PROPOSED PV SOLAR SYSTEM

Issued / Revisions

NO.	DESCRIPTION	DATE
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R1	LAYOUT REGION	4/19/2022
R1	CHANGED TO TRANSDUCER FOR METER	2/14/2022

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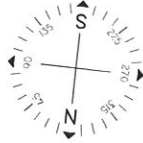
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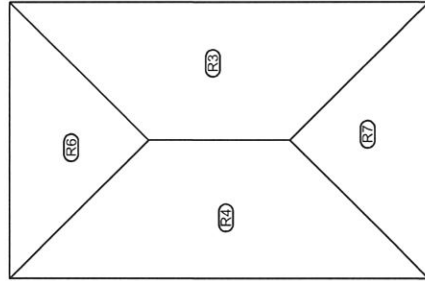
PROPOSED PV SOLAR SYSTEM

Issued / Revisions



HEIGHT FROM GROUND LEVEL TO PEAK OF ROOF
SCALE: NOT TO SCALE

ARRAY SCHEDULE



NOTES:

- 1) ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- 2) ARRAY BONDING TO COMPLY WITH MANUFACTURER SPECIFICATION.
- 3) ALL LOCATIONS ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION.
- 4) AN AC DISCONNECT SHALL BE GROUPED WITH INVERTER (S) NEC 690.13 (E).
- 5) ALL OUTDOOR EQUIPMENT SHALL BE RAIN TIGHT WITH MINIMUM NEMA 3R RATING.
- 6) ROOFTOP SOLAR INSTALLATION ONLY PV ARRAY SHALL NOT EXTEND BEYOND THE EXISTING ROOF EDGE.

	INDICATES ROOF DESIGNATION - REFER TO ARRAY SCHEDULE FOR MORE INFORMATION
	INDICATES EXISTING METER LOCATION
	INDICATES EXISTING ELECTRICAL PANEL LOCATION - INSIDE
	INDICATES NEW FUSED PV DISCONNECT TO BE INSTALLED OUTSIDE (UTILITY ACCESSIBLE)

INDICATES NEW PV DISCONNECT TO BE INSTALLED OUTSIDE. (VOLTAGE ACCESSIBLE)	SP	INDICATES NEW PV ONLY SUBPANEL TO BE INSTALLED
INDICATES NEW PV SOLAR MODULE. RED MODULES INDICATE NEW PV SOLAR MODULES THAT USE TRANSFORMERS TO EQUIPMENT SCHEDULE FOR SPICES.	DC	INDICATES NEW DC DISCONNECT
INDICATES NEW PRODUCTION METER TO BE INSTALLED OUTSIDE.	SD	INDICATES EXISTING SERVICE DISCONNECT
INDICATES NEW INVERTER TO BE INSTALLED OUTSIDE.	TS	INDICATES EXISTING TRANSFER SWITCH

OTHER OBSTRUCTIONS

QTY	SPEC #
11	HANWHA 400 (Q PEAK DUO BLK ML-G10+ 400)
1	SE3800H-US55HBNC4

DC SYSTEM SIZE:	4.4kW
AC SYSTEM SIZE:	3.3kW
MODULE COUNT:	11
MODULES USED:	HANVHVA 400
MODULE SPEC #:	Q-PEAK DUO BLK MLG1D+400
UTILITY COMPANY:	PSE&G
UTILITY ACCT #:	75460993806
UTILITY METER #:	127013086
DEAL TYPE:	SUNMOVA

Rev. No.	Sheet
R2	PV - 2



2211 Allenwood Road
Wall New Jersey 07719
877-786-7283
www.TrinitySolar.com

MATERIAL LIST

(FOR INTERNAL USE ONLY)

JOB NAME: LORADIN, LOURDES- (1 OF 2)

ADDRESS: 1208 Putnam Avenue

Plainfield, NJ 07060

40.619516,-74.407340



2211 Allenwood Road
Wall, New Jersey 07719

877-786-7283
www.Trinity-Solar.com

30.16 ESTIMATED PERSONNEL HOURS

1.26 DAYS

0.94 DAYS

0.63 DAYS

- 11 HANWHA 400's (4.4KW)

(CREW OF 3)

(CREW OF 4)

(CREW OF 6)

- 1 ARRAY

- 26' PEAK TO GROUND

- 11 PORTRAIT & 0 LANDSCAPED

- 1 INVERTERS INSTALLED OUTSIDE

- NO TRENCH

	<u>ESTIMATED</u>	<u>SENT TO JOB</u>	<u>USED</u>
☐ HANWHA 400 (Q.PEAK DUO BLK ML-G10+ 400)	11	—	—
☐ P401 SE OPTIMIZERS	11	—	—
☐ SE3800H-US0SHBNC4	1	—	—
☐ MURRAY 2p20A BACKFEED BREAKER	1	—	—
☐ SOLADECK BOX(ES) & HAYCO CONNECTOR(S)	1	—	—
☐ PV LEAD WIRE	50'	—	—
☐ CASE(S) OF BLACK SPRAY PAINT	1	—	—
☐ CASE(S) OF TAR	1	—	—
☐ FLASHINGS		—	—



INSTALLATION OF NEW
ROOF MOUNTED PV SOLAR SYSTEM

LORADIN, LOURDES- (1 OF 2)
1208 PUTNAM AVENUE
PLAINFIELD, NJ 07060
40.619516,-74.407340

APPENDIX

CONTENTS
LABELS, STICKERS, AND PLACARDS
EQUIPMENT DATA SHEETS

NOTES:

- 1.) COMPLIES WITH NEC 2017
- 2.) REFER TO SHEET PV-3 FOR SITE SPECIFIC VALUES REQUIRED BY NEC 690
- 3.) STICKERS, LABELS, AND PLACKARDS SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED

To be located on all DC junction boxes and every 10' on DC conduit

WARNING: PHOTOVOLTAIC POWER SOURCE
NEC 690.31(G)



DC Junction Box



Solarleak



DC Conduit



NEC 690.56(C)(1)(A)



Service Disconnect



NEC 690.56(C)(1)(A)

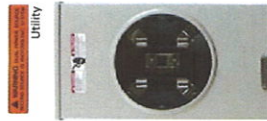
If System is Backfed Breaker



NEC 705.12(B)(2)



Main Service Panel



Utility Meter Socket



NEC 690.13(B)



Solar Meter Socket



690.56(C)(3)



NEC 690.13(B)



NEC 690.54



Photovoltaic AC Disconnect



NEC 690.54



Load Center
(To Combine Inverters)



690.56(C)(3)



NEC 690.13(B)



NEC 690.4(B)



NEC 690.53



Inverter(s)



NEC 690.4(B)



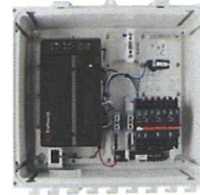
NEC 690.53



DC Disconnect



NEC 690.13(B)



Enphase Envoy Box



Q.PEAK DUO BLK ML-G10.a+

385-405

ENDURING HIGH
PERFORMANCE



BREAKING THE 20% EFFICIENCY BARRIER
Q ANTUM DUO Z technology with zero gap cell layout
boosts module efficiency up to 20.9%.

THE MOST THOROUGH TESTING PROGRAMME IN THE INDUSTRY
Q CELLS is the first solar module manufacturer to pass the most comprehen-
sive quality programme in the industry. The new 'Quality Controlled PV' G10
independent certification institute TÜV Rheinland

INNOVATIVE ALL-WEATHER TECHNOLOGY
Optimal yields, whatever the weather with excellent
low-light and temperature behaviour.

ENDURING HIGH PERFORMANCE
Long-term yield security with Anti-LID Technology, Anti PID
'Technology', Hot-Spot Protect and Traceable Quality Tra.Q™.

EXTREME WEATHER RATING
High-tech aluminium alloy frame, certified for
high snow (5400Pa) and wind loads (4000 Pa).

A RELIABLE INVESTMENT
Inclusive 25-year product warranty and 25-year
linear performance warranty*.

* APT test conditions according to ECU TS 62854-1:2015, method A (-500V, 90h)
* See data sheet on file for further information.



THE IDEAL SOLUTION FOR:

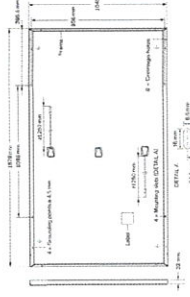


Engineered in Germany



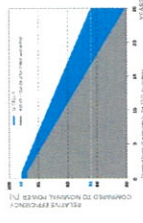
MECHANICAL SPECIFICATION

Frontal	1875mm × 1045mm × 32mm (including frame)
Weight	22.0kg
Front Cover	3.2mm thermally processed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminium
Cell	6 × 22 monocrystalline Q ANTUM solar half cells
Junction box	63.101 mm × 22.60 mm × 15 mm Protect enclosure (IP67) with bypass diodes
Cable	4mm² Solar cable (+) 1250mm, (-) 2250mm
Connector	Standard MC4 - IP68

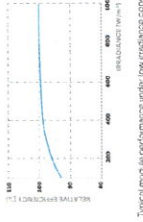


ELECTRICAL CHARACTERISTICS

POWER CLASS	385	390	395	400	405
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS (STC) (POWER TOLERANCE ±5 W / 0 W)					
Power at MPP	P _{MPP} [W]	385	390	395	400
Short Circuit Current	I _{sc} [A]	11.04	11.07	11.10	11.14
Open Circuit Voltage	V _{oc} [V]	45.29	45.29	45.29	45.34
Current at MPP	I _{MPP} [A]	10.59	10.65	10.71	10.77
Voltage at MPP	V _{MPP} [V]	36.36	36.62	36.88	37.13
Efficiency ¹	η [%]	21.96	22.01	22.04	22.06
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS (NOCT) ²					
Power at MPP	P _{MPP} [W]	298.8	299.6	300.3	301.8
Short Circuit Current	I _{sc} [A]	8.80	8.82	8.85	8.92
Open Circuit Voltage	V _{oc} [V]	42.62	42.65	42.69	42.76
Current at MPP	I _{MPP} [A]	8.35	8.41	8.46	8.51
Voltage at MPP	V _{MPP} [V]	34.59	34.81	35.03	35.25
Measurement tolerance P _{MPP} ± 3%, V _{MPP} ± 5% at STC 1000W/m², 25 ± 2°C, AM 1.5 according to IEC 60904-3 • 800W/m² spectrum AM 1.5					
Q CELLS PERFORMANCE WARRANTY					
PERFORMANCE AT LOW IRRADIANCE					



At standard test conditions, the degradation rate of the first year is 0.5% per year. At least 92.5% of the original power is guaranteed after 25 years. All data within measurement tolerance. Full warranty in accordance with the Q CELLS warranty policy. Q CELLS is a registered trademark of the respective country.



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{sc}	α [%/K]	+0.04	Temperature Coefficient of V _{oc}	β [%/K]	-0.27
Temperature Coefficient of P _{MPP}	γ [%/K]	-0.34	Nominal Module Operating Temperature	NOCT [°C]	43 ± 3

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V _{sys} [V]	1000	PV module classification	Class II
Maximum Reverse Current	I _r [A]	20	Fire Rating based on ANSI/UL 61730	C-TYPE 2
Max. Design Load, Push/Pull	[Pa]	5600/2800	Permitted Module Temperature	-40°C - +85°C
Max. Test Load, Push/Pull	[Pa]	5400/4000	on Continuous Duty	

QUALIFICATIONS AND CERTIFICATES



PACKAGING INFORMATION

Quantity	Quantity	Quantity	Quantity	Quantity	Quantity
Horizontal	1340mm	1000mm	1200mm	751kg	28 pallets
Vertical	1340mm	1500mm	1200mm	765kg	28 pallets
Weight	1340mm	1500mm	1200mm	765kg	28 pallets

Note: Installation instructions must be followed. See the installation and operating manual for complete technical specifications and further information on approved installation and use of this product.

Heinrich Q CELLS GmbH
Sonnenallee 17-21, 53566 Hirschfeld (Germany)
www.q-cells.com



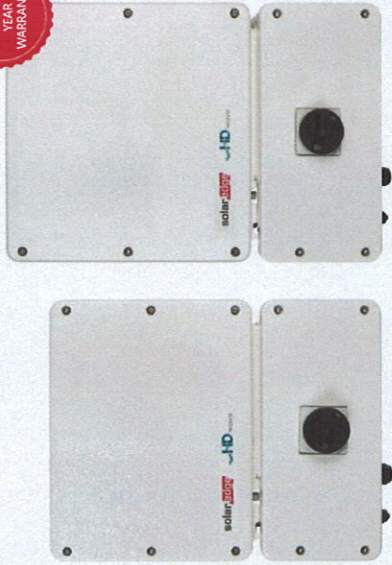
Engineered in Germany

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 99% weighted efficiency
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014, NEC 2017 and NEC 2020 per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliant
- Small, lightweight, and easy to install both outdoors or indoors
- Built-in module-level monitoring
- Optional: Faster installations with built-in consumption metering (1% accuracy) and production revenue grade metering (0.5% accuracy, ANSI C12.20)

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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

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US
APPLICABLE TO INVERTERS WITH PART NUMBER							
OUTPUT							

SEXXXXH-XXXXXBXX4

Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V
AC Output Voltage Min.-Nom. Max. (211-240-264)	✓	✓	✓	✓	✓	✓	✓
AC Output Voltage Min.-Nom. Max. (115-230-253)	-	✓	-	✓	-	-	✓
AC Frequency (Nominal)				59.3-60.6/55			
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5
Power Factor				1, Adjustable - 0.85 to 0.85			
GFI Threshold				1			
Utility Monitoring, Islanding Protection, Country Configuration Thresholds				Yes			

INPUT							
Maximum DC Power @240V	4650	5000	7750	9300	11800	15500	17550
Maximum DC Power @208V	-	5100	-	7750	-	15500	-
Transformerless, Ungrounded				Yes			
Maximum Input Voltage			380	480			
Nominal DC Input Voltage			380	480			
Maximum Input Current @240V	8.5	10.5	13.5	16.5	20	27	30.5
Maximum Input Current @208V	-	9	-	13.5	-	-	27
Main Input Short Circuit Current				45			
Reverse-Polarity Protection				Yes			
Ground Fault Isolation Detection				6000s Sensitivity			
Maximum Inverter Efficiency	99			99.2			
CEC Weighted Efficiency				99			
Nighttime Power Consumption				< 2.5			

ADDITIONAL FEATURES							
Supported Communication Interfaces				RS485, Ethernet, ZigBee (optional, Cellular optional)			
Revenue Grade Metering, ANSI C12.20				Optional ⁽¹⁾			
Consumption metering							
Inverter Commissioning				With the SetApp mobile application using Built-in Wi-Fi Access Point for Local Connection			
Rapid Shutdown - NEC 2014, NEC 2017 and NEC 2020 690.12				Automatic Rapid Shutdown upon AC Grid Disconnect			

STANDARD COMPLIANCE							
Safety				UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AECI according to T.I.L. M-07			
Grid Connection Standards				IEEE1547, Rule 21, Rule 14 (H)			
Emissions				FCC Part 15 Class B			

INSTALLATION SPECIFICATIONS							
AC Output Conduit Size / AWG Range				1" Maximum / 14-6 AWG			
DC Input Conduit Size / # of Strands / AWG Range				1" Maximum / 1-3 strands / 14-6 AWG			
Dimensions with Safety Switch (inches)				17.7 x 14.6 x 6.8 / 4.50 x 3.70 x 1.74			
Weight with Safety Switch				25.1 / 11.4			
Noise				< 25			
Cooling				Natural air convection			
Operating Temperature Range				-40 to +140 / -40 to +100 ⁽²⁾			
Protection Rating				NEMA 3X (Inverter with Safety Switch)			

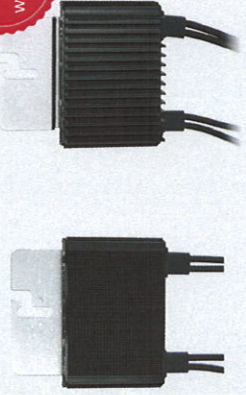
(1) For other regional settings, please contact SolarEdge support.
(2) Inverter with Revenue Grade Metering (RGM) and Rapid Shutdown (RS) is not applicable for the following countries: Australia, Canada, China, Denmark, Germany, Greece, India, Italy, Japan, Korea, Mexico, New Zealand, Norway, Singapore, South Africa, South Korea, Sweden, Switzerland, Taiwan, Thailand, United Kingdom, United States, and Vietnam.
(3) For other regional settings, please contact SolarEdge support.
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POWER OPTIMIZER

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / P505



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 (PVRSR)
- Module-level voltage shutdown for installer and firefighter safety

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/ Power Optimizer For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / 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 high-power 96-cell modules)	P401 (for high-power 60 and 72-cell modules)	P405 (for high-voltage modules)	P485 (for high-voltage modules)	P505 (for higher current modules)
INPUT								
Rated Input DC Power ⁽¹⁾	320	350	370	400	405	405	485	505
Absolute Maximum Input Voltage (V _{oc} at lowest temperature)	48	48	60	60	50	125 ⁽²⁾	125 ⁽²⁾	83 ⁽³⁾
MPPT Operating Range	8 - 48	8 - 48	8 - 60	8 - 60	8 - 60	12.5 - 83	12.5 - 83	12.5 - 83
Maximum Short-Circuit Current (I _{sc})	11	11	10.1	10.1	11.75	11	11	14
Maximum DC Input Current	13.75	13.75	12.5	12.5	14.65	12.5	12.5	17.5
Maximum Efficiency	99.5							
Weighted Efficiency	98.8							
Overvoltage Category	II							
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)								
Maximum Output Current	60			15		85		
Maximum Output Voltage	15							
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF)								
Safety Output Voltage per Power Optimizer	1 ± 0.1							
STANDARD COMPLIANCE								
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3							
Safety	UL 94 V-0, UL 1741							
Material	UL 94 V-0, UV Resistant							
RoHS	Yes							
INSTALLATION SPECIFICATIONS								
Maximum Allowed System Voltage	1000							
Compatible Inverters	All SolarEdge Single Phase and Three Phase Inverters							
Dimensions (W x L x H)	3.9 x 5.9 x 2.5 / 5.1 x 8 x 1.1		3.9 x 5.9 x 2.5 / 5.1 x 8 x 1.1		3.9 x 5.9 x 2.5 / 5.1 x 8 x 1.1		3.9 x 5.9 x 2.5 / 5.1 x 8 x 1.1	
Weight (including cables)	630 / 114		630 / 117		630 / 117		845 / 119	
Input Connector	MC4 ⁽⁴⁾							
Input Wire Length	0.16 / 0.52							
Output Wire Type / Connector	Double Insulated / MC4							
Output Wire Length	0.3 / 2.95							
Operating Temperature Range ⁽⁵⁾	-40 ~ +85 / -40 ~ +85							
Protection Rating	IP68 / NEMA6P							
Relative Humidity	0 ~ 100							

⁽¹⁾ The maximum module V_{oc} at 15°C will not exceed the maximum allowed input DC voltage. Maximum system voltage is shown.

⁽²⁾ V_{oc} at 15°C. Maximum system voltage is not more than 1500V.

⁽³⁾ V_{oc} at 15°C. Maximum system voltage is not more than 1500V.

⁽⁴⁾ For other connector types please contact a SolarEdge representative for details.

⁽⁵⁾ The operating temperature range is -40°C to +85°C. The operating temperature range is not more than 1500V.

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⁽¹⁰⁰⁾ The operating temperature range is -40°C to +85°C. The operating temperature range is not more than 1500V.

(1) Rated power of this module at 100°C will not exceed the optimum "Rated Input DC Power" Module with 100°C max. temperature rise allowed.
(2) V_{oc} (V_{oc}) requires max. input voltage per module not more than 150V.
(3) V_{oc} (V_{oc}) requires max. input voltage per module not more than 150V.
(4) For dual version for parallel connection of two modules use P485-485V. In the case of an odd number of the modules in one string, installing one P485-485V module is required.
(5) For module temperature above +85°C / +185°F, power derating is required. Refer to Power Optimizers Temperature Derating Technical Note for more details.

PV System Design Using a SolarEdge Inverter ⁽¹⁾	Single Phase HP-Wave	Single Phase 208V grid	Three Phase for 277/480V grid
Minimum String Length (Power Optimizers)	P320, P340, P370, P400, P485, P505	8	10
Maximum String Length (Power Optimizers)	P320, P340, P370, P400, P485, P505	6	5
Maximum Power per String	5700 (9200 with SE1000-1000) W	5700 (9200 with SE1000-1000) W	5700 (9200 with SE1000-1000) W

(1) For more detailed information, please refer to the SolarEdge Inverter Manual.
(2) It is not allowed to mix different power optimizers in one string.
(3) A string with more than 10 optimizers is not allowed for the 208V grid. For the 277/480V grid, a string with more than 10 optimizers is not allowed.
(4) For the 277/480V grid, it is allowed to mix up to 10 optimizers in one string with the maximum power difference between optimizers being 0.5%.



KUP-L-TAP® (IPC) Insulation Piercing (Dual Rated)



- KUP-L-TAP® (IPC) Insulation Piercing Connector.
- Body is molded from tough, resilient glass-filled nylon.
- UL 486A/B 90°C Listed and is CSA Certified.
- For use with stranded conductor Class B or C.
- Compact design.
- The Plated copper contact teeth and pre-filled with silicone lubricant.
- Removable end tabs.
- Dual Rated for Copper and Aluminum Conductor.
- UL File E10207

Item ID	Figure Number	Conductor Range Min	Conductor Range Trip	Voltage	Hex Size	Standard Package Quantity	NALDUPIC Number
IPC-4046	2	4/0-4 AWG	6-14 AWG	600	1/2	12	0703099520992

ILSCO
1770 WILSON AVENUE
CHICAGO, ILL. 60640
(312) 470-1200
(312) 776-1070

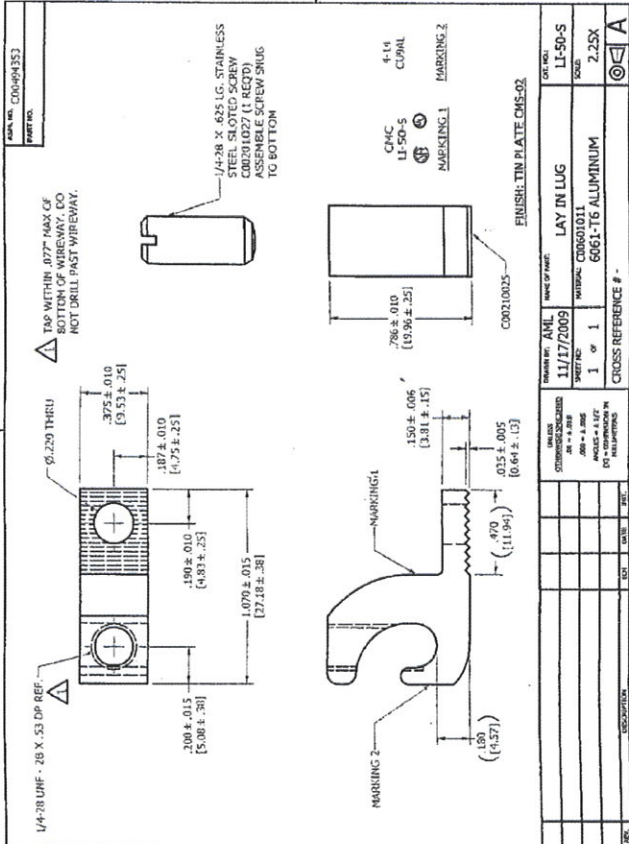
Grounding Connectors
TYPE: LI Lay-In Connector



CMC® LI-S ground connectors are manufactured from high strength 6061-T6 aluminum alloy to insure both maximum strength and conductivity. They are dual rated for both copper and aluminum conductors and are electro tin plated to provide low contact resistance and protection against corrosion. They are designed for use on conduit grounding bushings. The open-faced design allows the installer to quickly lay-in the grounding conductor as a jumper to multiple conduits with no break in the ground conductor.

90°C RATING (4868 LISTED)

Catalog Number	Fig. No.	Cond. Range AWG	Stud Size*	Dimensions, Inches		
				H	W	L
LI-50S	1	4 - 14	0.22	0.78	0.38	1.07
LI-112S	1	1/0 - 14	0.27	1.17	0.6	1.5
LI-200S	2	3/0 - 6	0.33	1.56	0.8	2
LI-252S	2	250 - 6	0.33	1.79	0.8	2.2



SUNFRAME MICRORAIL UNIRAC

SUNFRAME MICRORAIL™ (SFM) is a hybrid racking system including a structural front Trimrail™ for fastest array alignment and superior aesthetics. Minimize total labor with pre-assembled parts, integrated bonding hardware and one tool installation. Compact packaging with few SKUs lowers logistics costs from the warehouse to the roof. Patented mounting components provide post-install height adjustment and allow for removal of individual panels for maintenance.

INDUSTRY LEADING FEATURES

STRUCTURAL FRONT TRIMRAIL

FASTEST ARRAY ALIGNMENT & SUPERIOR AESTHETICS

POST-INSTALL HEIGHT ADJUSTMENT

LEVEL MODULES ANYTIME DURING INSTALLATION

SINGLE MODULE ACCESS

REMOVE SINGLE PANELS FOR ARRAY MAINTENANCE

SINGLE TOOL INSTALLATION

QUICK & EASY ARRAY ALIGNMENT

TRIMRAIL WITH SEAMLESS MODULE MOUNTING

MIXED ARRAYS - PORTRAIT & LANDSCAPE ORIENTATION

AVAILABLE MLEPE MOUNT WITH CABLE MANAGEMENT

LOGISTICS OPTIMIZED - COMPACT PACKAGING

FEW SKUS SIMPLIFIES INSTALLATION

ENHANCED U-BUILDER DESIGN / LAYOUT TOOL

ON-SITE PRODUCT TRAINING



LESS RAIL, MORE PERFORMANCE

SUNFRAME MICRORAIL UNIRAC

LESS RAIL, MORE PERFORMANCE

SOLAR SHOULD BE SIMPLE

No unique module type or frame required for installation
Accommodates the most common frame heights: 32mm, 35mm, 40mm & 46mm

Design around the roof, not the racking. Portrait, Landscape or Mixed module orientation
Maximize power on the roof - install up to 25% more with modules in landscape orientation

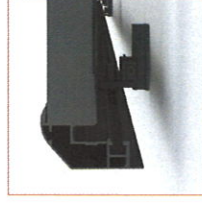
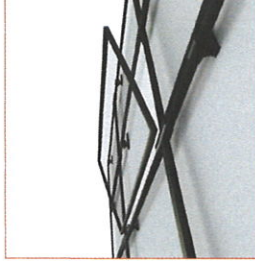
UL2703 Listed. Accommodate the most stringent AHJ requirements

Stagger roof attachments & use attached splice for extra strength and flexibility
Meet All the Copper and Lugs, Bonding and Grounding (UL486 & UL259) Requirements

Full wire management solution allows pre-management of wires before module installation
Engage Wire Management (Cup, Mt, Pk, Mount & Hoped) Dual PV wire trunk cable clips

Small components. Compact packaging & Pre-assembled parts

A third less volume than traditional racking. Fit several jobs worth of racking on a single truck



UL2703 LISTED
UL2703 - LISTED
UL2703 - LISTED

COLLABORATION WITH INDUSTRY LEADING INSTALLERS - FIELD TESTED & VERIFIED

Technical Specifications	
Materials	All extruded components: 6005A-T61 or 6061-T6 Aluminum
Hardware	Passivated Stainless Steel
Adjustability	1" vertical post-install height adjustment 6" north-south adjustability mount anywhere along east-west edges of modules
Spans and Cantilevers	See Design and Installation guide for span and cantilever tables Uses industry standard flashing technologies and tested to UL441 Rain Test
Flashing	See Design and Installation guide for span and cantilever tables Uses industry standard flashing technologies and tested to UL441 Rain Test
Certifications	
Grounding/Bonding	UL2703 - see installation manual for specific module approvals
Mechanical Load	UL2703 - Tested to standard module capacities, see installation module list and design load ratings
Fire Resistance	UL2703 - Class A, B and C Type 1 and Type 2 modules Landscape and Portrait Orientations

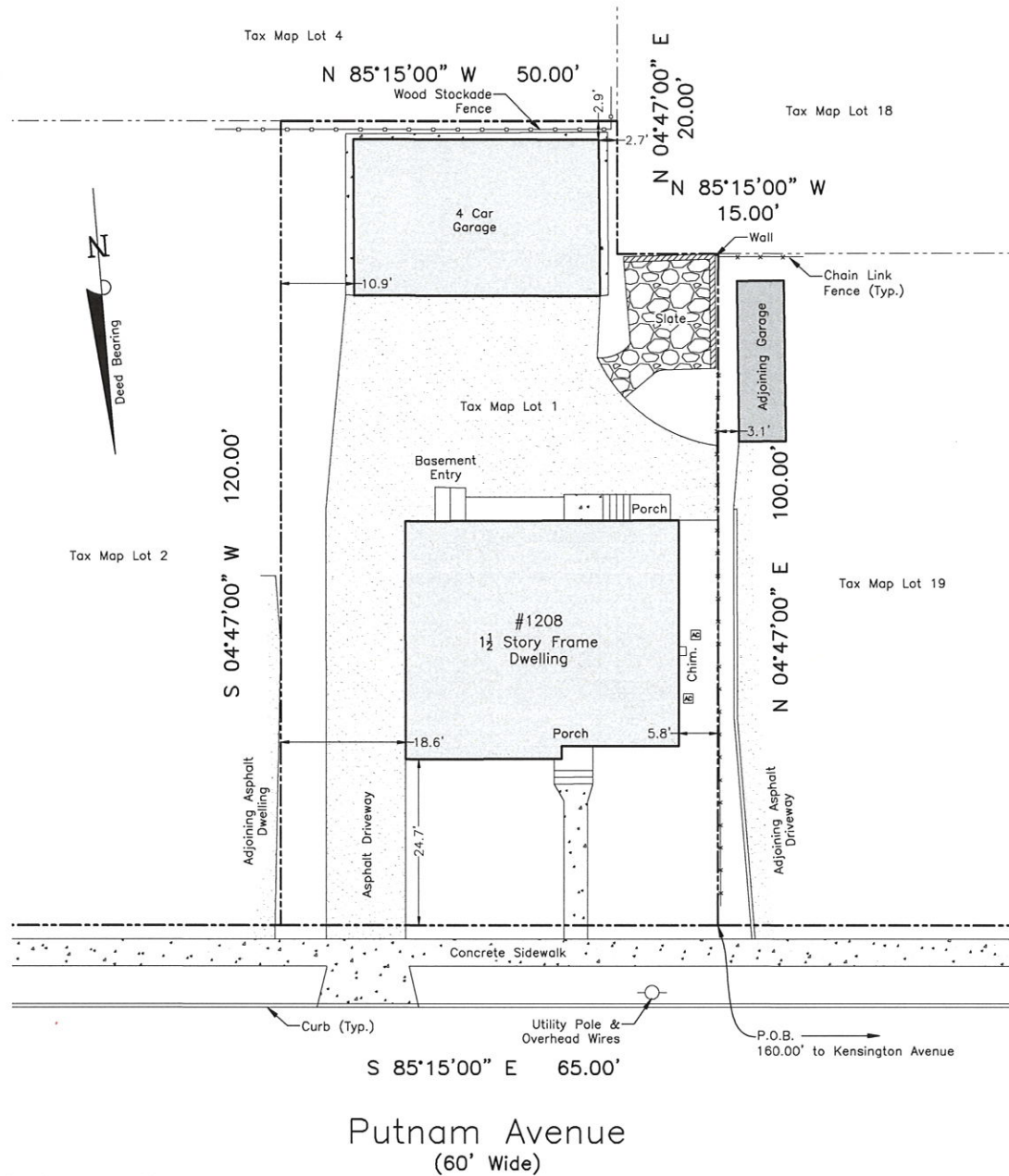
UNIRAC CUSTOMER SERVICE MEANS THE HIGHEST LEVEL OF PRODUCT SUPPORT IN THE RACKING INDUSTRY

References:

1. KNOWN AND DESIGNATED as Lot 1 Block 635 as shown on the current Tax Assessment Map, City of Plainfield, Union County, New Jersey.
2. Deed Book 5634 Page 249

Notes:

1. This survey is for title purpose only.
2. Only surface conditions are shown on this map. The surveyor takes no responsibility for buried pipes, wires, wells, and other utilities.
3. Property subject to easements and restrictions of record and findings of a current title report.
4. Property corners have not been set pursuant to N.J.A.C. 13:40-5.2.



This Survey is certified to:

Fidelity National Title Insurance Company
Sunnyside Title Agency LLC (20ST1554)
Sierra Pacific Mortgage Company Inc.
it's successors and/or assigns
Lourdes Loradin
Law Office of Susana Gutierrez Manna, LLC



66 Hunting Drive, Dumont, NJ 07628
Phone: (201) 403-5801
Fax: (201) 244-6163
www.schmidtsurveying.weebly.com

Certificate of Authorization No. 24GA28182800

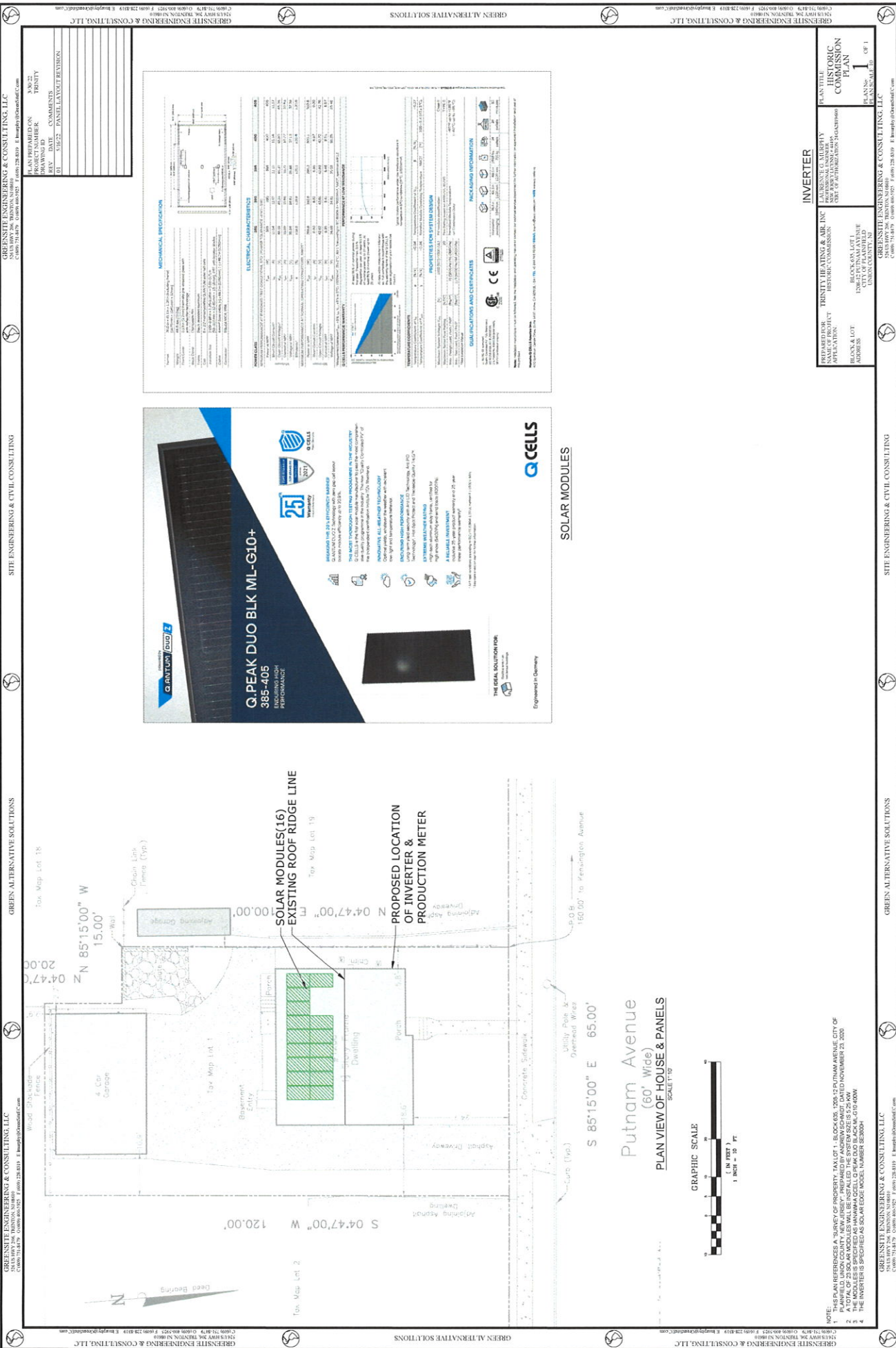
Andrew A. Schmidt

Andrew A. Schmidt

NJ Professional
Land Surveyor
No. 24GS04330100

Survey of Property
Tax Lot 1 - Block 635
1208-12 Putnam Avenue
City of Plainfield
Union County, New Jersey

Drawn:	Checked:	Date:	Scale:
JT	AS	11-23-20	1" = 20'



GREENSHIRE ENGINEERING & CONSULTING, LLC
10000 N. 100th Ave., Suite 100, Eden Prairie, MN 55324
Phone: 952.461.1234 Fax: 952.461.1235 Email: info@gsenr.com

PROJECT NUMBER: 2020-001
PROJECT NAME: Putnam Avenue Solar Installation
DATE: 11/23/2020
REV: 1.0
COMMENTS: Final Plan

DESIGNED BY: J. Smith
CHECKED BY: M. Jones
APPROVED BY: K. Brown

PLAN TITLE: INVERTER
PROJECT: Putnam Avenue Solar Installation
SHEET: 1 OF 1

PREPARED FOR: TRINITY HEATING & AIR, INC.
PROJECT: Putnam Avenue Solar Installation
SHEET: 1 OF 1

BLACK & LOT 1
13200 PUTNAM AVENUE
CITY OF PLAINFIELD
UNION, NJ 07068

GREENSHIRE ENGINEERING & CONSULTING, LLC
10000 N. 100th Ave., Suite 100, Eden Prairie, MN 55324
Phone: 952.461.1234 Fax: 952.461.1235 Email: info@gsenr.com

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