

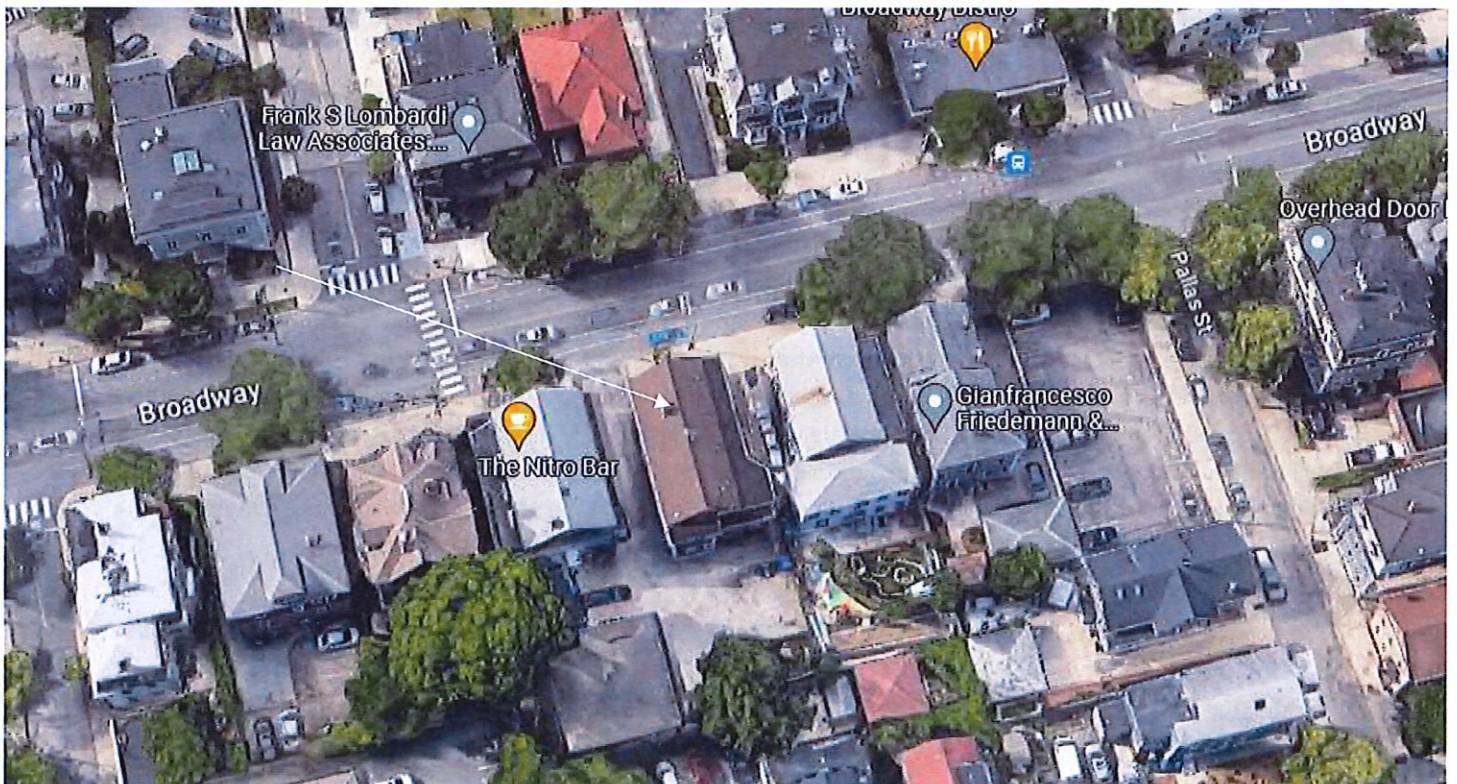
6. CASE 23.084, 222 BROADWAY, William H. House, 1854 (BROADWAY)

2½-story; pedimented end gable; clapboard house; transitional Greek Revival/Bracketed with bracketed cornice, arcaded porch with square panel posts and round arch Palladian-motif window in gable end. 2-story bracketed side addition extends front one bay. Low owned a shoe store at 131Westminster and lived at 72 Broadway.

CONTRIBUTING



Arrow indicates 222 Broadway.



Arrow indicates project location, looking north.

Applicant/Owner: Rani Vails, 222 Broadway, Providence, RI 02903

Architect: Signal Works, 11 Aleppo Street, Providence, RI 02909

Solar Contractor: Rooftop Power, LLC, Dexter Hofines, 275 W Natick Road, Ste 800, Warwick, RI 02886

Proposal: The scope of work proposed consists of Major & Minor Alterations and includes:

- Major: construction of an approx. 32' 3"-long shed dormer with four windows to the east slope of the gable-end roof;
- Minor: the installation of 37 skylights, 16 to the roof of the dormer and three on the east slope and 18 on the west slope of the roof.

Issues: The following issues are relevant to this application:

- The proposed dormer is a modest addition to the west slope and will be minimally visible from the public rights-of-way;
- The proposed solar installation will not be visible from the public rights-of-way
- The modifications as proposed meets Minor Alterations: Solar Energy Systems Guidelines, Section 2, in the following manner: Panel layout shall be sympathetic or appropriate to design and scale of building. Rectangular configurations are preferred, with ample setback from edge of roof, dormers, chimneys, etc. (2.A); Panels shall be installed parallel to the existing roof slope and matched as closely as possible to the roof plane (2.B); Panels shall be installed without destroying or replacing original or historic materials or significantly compromising or altering the building's structural integrity (2.C); Panels shall be compatible in color to existing roofing insofar as possible (2.D); Installation of panels shall be as inconspicuous as possible when viewed from public right-of-way (2.E); Installation shall be reversible. Panels shall be removed when no longer viable or functioning and roofing restored to pre-existing conditions (2.F); and,
- Plans and photos have been submitted.

Recommendations: The staff recommends the PHDC make the following findings of fact:

- a) 222 Broadway is a structure of historical and architectural significance that contribute to the significance of the Broadway local historic district, having been recognized as a contributing structure to the Broadway/Armory National Register Historic District;
- b) The application for Major & Minor Alterations is considered complete; and,
- c) The work as proposed is in accord with PHDC Standard 8 as follows: as the proposed alterations are appropriate having determined that the proposed alterations are architecturally and historically compatible with the property and district having an appropriate size, scale and form that will not have an adverse effect on the property or district, as the proposed modifications will be minimally-to-not visible form the public rights-of-way.

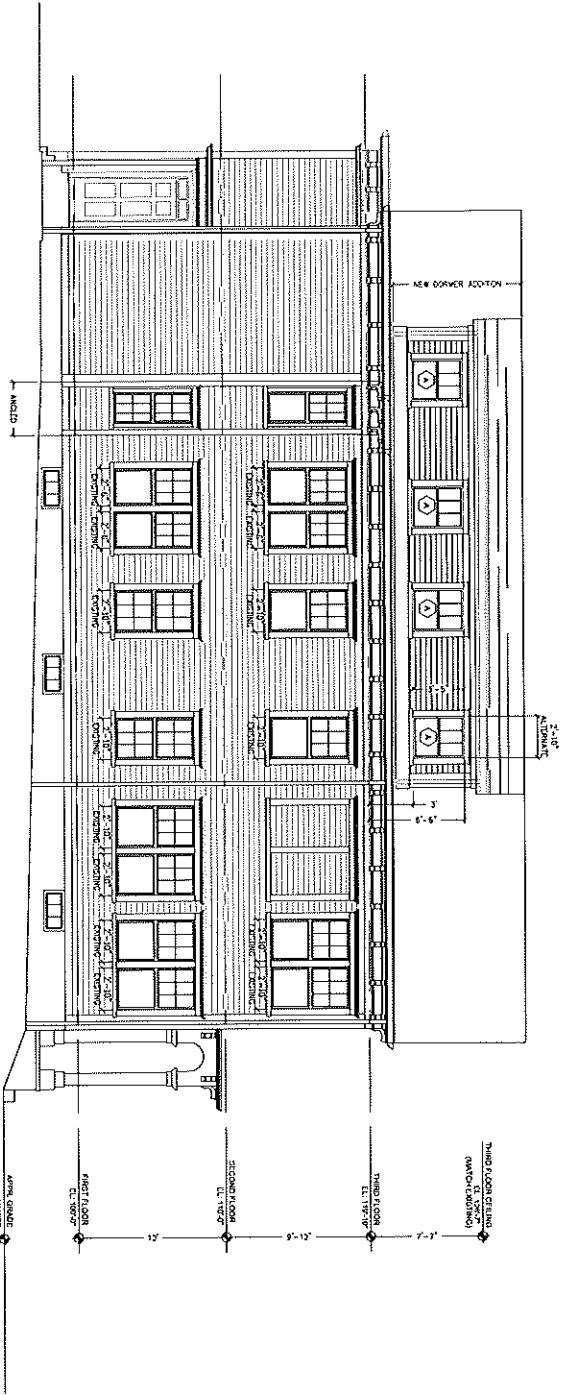
Staff recommends a motion be made stating that: The application is considered complete. 222 Broadway is a structure of historical and architectural significance that contribute to the significance of the Broadway local historic district, having been recognized as a contributing structure to the Broadway/Armory National Register Historic District. The Commission grants Final Approval of the proposal as submitted having determined that the proposed alterations are appropriate as the proposed alterations are architecturally and historically compatible with the property and district having an appropriate size, scale and form that will not have an adverse effect on the property or district as the proposed modifications will be minimally-to-not visible form the public rights-of-way, citing and agreeing to the recommendations in the staff report, with staff to review any additional required details.



11 Adams Street
 Providence, RI 02909
 401.460.2724
 Signalworksarchitectur.com
 CONSULTANT:

PROJECT TITLE:
Dormer Addition

222 Broadway
 Providence, RI 02903



ISSUED FOR:
 Final SD + CD Notes
 09/20/23
 REVISIONS:

STAMP:

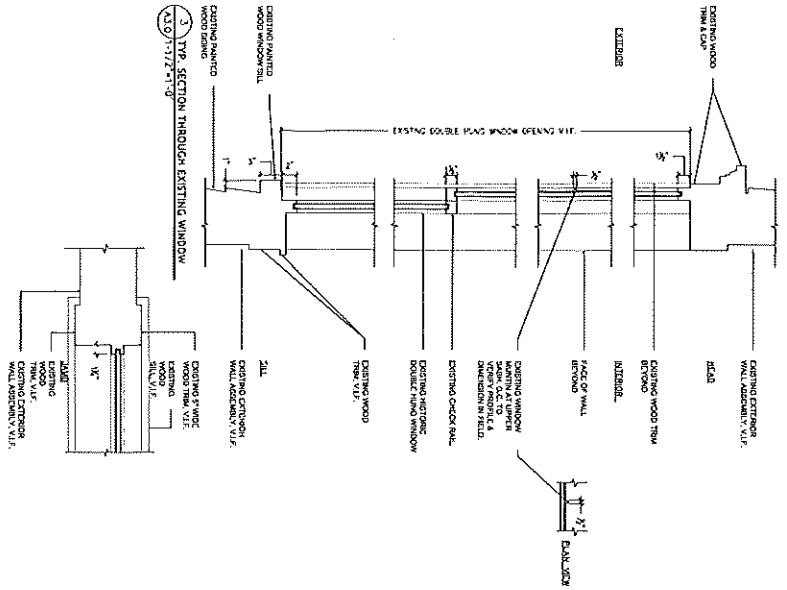
SHEET TITLE:
 PROPOSED EXTERIOR
 ELEVATION



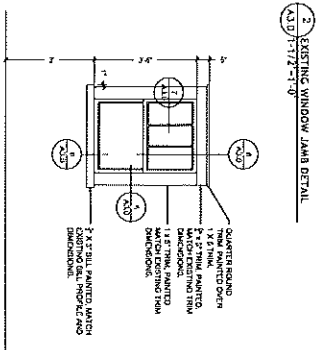
PROJECT NORTH:
 PROJECT ARCHITECT: EA
 DRAWN BY:
 PROJECT NUMBER:
 #2302
 SHEET NUMBER:
 A2.2

PROPOSED EXTERIOR LEFT SIDE ELEVATION - ALTERNATE ELEVATION OPTION (24" WIDE WINDOWS - 3 OVER 1)

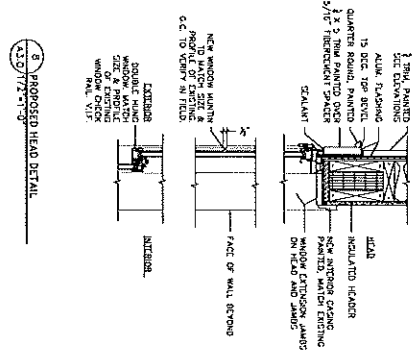
REV:



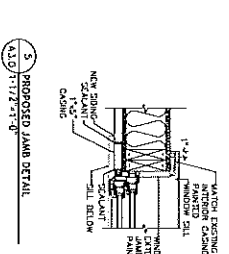
4 TYPICAL EXISTING WINDOW ELEVATION
A3.0 NOT TO SCALE



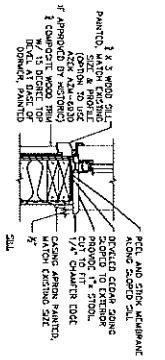
2 EXISTING WINDOW JAMB DETAIL
A3.0 1/16\"/>



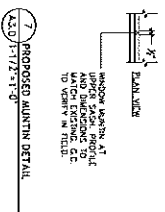
8 PROPOSED HEAD DETAIL
A3.0 1/16\"/>



5 PROPOSED JAMB DETAIL
A3.0 1/16\"/>



6 PROPOSED SILL DETAIL
A3.0 1/16\"/>



7 PROPOSED LINTEL DETAIL
A3.0 1/16\"/>

1 PROPOSED NEW DORMER WINDOW ELEVATION
A3.0 1/16\"/>

PROPOSED WINDOW WITH DORMER WINDOW. THIS DORMER WINDOW SHALL BE CONSTRUCTED TO MATCH THE EXISTING WINDOW. ALL FINISHES, MATERIALS, AND COLORS SHALL BE SELECTED BY OWNER. SEE GENERAL NOTES FOR FINISHES AND COLORS.

Signal Works
11 Angelo Street
Providence RI 02809
401.862.7724
info@signalworks.com
CONTRACT NO.:

PROJECT TITLE:
Dormer Addition
222 Broadway
Providence, RI 02803

ISSUED FOR:
Final SD + CD Notes
05/02/2023
REVISIONS:

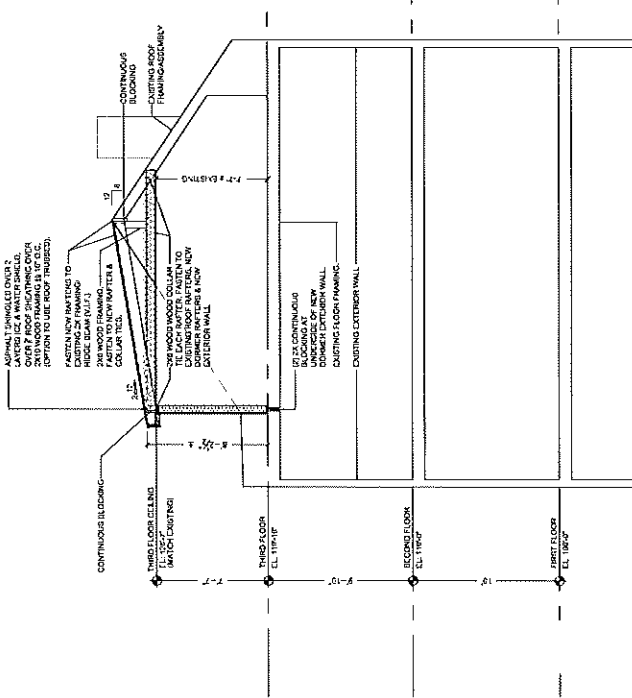
STAMP:

SHEET TITLE:
WINDOW ELEVATION & DETAILS



PROJECT NORTH:
PROJECT ARCHITECT: EA
PROJECT NUMBER:
#2302

SHEET NUMBER:
A3.0
REV:



1. PROPOSED SCHEMATIC SECTION THROUGH NEW DORMER
 23/174-21-10



My 6'3" husband on roof top at outer corner of proposed dormer with measuring tape extending to mark 8'1" approximate exterior dormer height.





Without Danny.



From the front he/ the dormer is not visible.

PHOTOVOLTAIC ROOF MOUNT SYSTEM

37 MODULES-ROOF MOUNTED - 14.80 KWDC, 10.73 KWAC
 222 BROADWAY APT 2 2LEFT, PROVIDENCE, RI 02903 USA

SYSTEM SUMMARY:

- (N) 37 - PHONO SOLAR 400 M6-108-8 (400W) MODULES
- (N) 37 - ENPHASE ENERGY IQ7ULUS-72-2-US MICRO-INVERTERS
- (N) JUNCTION BOX
- (E) 100A MAIN SERVICE PANEL WITH (E) 100A MAIN BREAKER
- (N) 60A FUSED AC DISCONNECT
- (N) 60A NON-FUSED AC DISCONNECT
- (N) ENPHASE IQ COMBINER BOX 3

DESIGN CRITERIA:

- ROOF TYPE: COMP SHINGLE
- NUMBER OF LAYERS: - 01
- ROOF FRAME - 3"x6" RAFTERS @32" O.C.
- STORY: - TWO STORY
- SNOW LOAD: - 30 PSF
- WIND SPEED: - 125 MPH
- WIND EXPOSURE: B
- EXPOSURE CATEGORY: - II
- COORDINATE: 41.820672, -71.424801

GOVERNING CODES:

- 2020 NATIONAL ELECTRICAL CODE (NEC)
- 2018 INTERNATIONAL BUILDING CODE (IBC)
- 2018 INTERNATIONAL MECHANICAL CODE (IMC)
- 2018 INTERNATIONAL RESIDENTIAL CODE (IRC)
- 2018 INTERNATIONAL PLUMBING CODE (IPC)

SHEET INDEX

- PV-0 COVER SHEET
- PV-1 SITE PLAN WITH ROOF PLAN
- PV-2 ROOF PLAN WITH MODULES
- PV-3 ATTACHMENT DETAILS
- PV-4 ELECTRICAL LINE DIAGRAM
- PV-5 PLACARDS & WARNING LABELS
- PV-6+ EQUIPMENT SPEC SHEETS

CONSTRUCTION NOTE:

- A LADDER SHALL BE IN PLACE FOR INSPECTION THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE AND THIS SYSTEM IS A UTILITY GRID INTERACTIVE SYSTEM.
- A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC 990-47 AND 250-50 THROUGH 60 250-166 SHALL BE PROVIDED PER NEC.
- GROUNDING ELECTRODE SYSTEM OF EXISTING BUILDING MAY BE USED AND BONDED TO AT THE SERVICE ENTRANCE. IF EXISTING SYSTEM IS INACCESSIBLE, OR INADEQUATE, OR IS ONLY METALLIC WATER PIPING, A SUPPLEMENTAL GROUNDING ELECTRODE WILL BE USED AT THE INVERTER LOCATION.
- GROUNDING ELECTRODE CONDUCTORS SHALL BE WITH ACORN CLAMP. GROUNDING ELECTRODE CONDUCTORS SHALL BE NO LESS THAN #8 AWG AND NO GREATER THAN #8 AWG COPPER AND BONDED TO THE EXISTING GROUNDING ELECTRODE TO PROVIDE OR A COMPLETE GROUND.
- EACH MODULE WILL BE GROUNDING USING THE SUPPLIED GROUNDING POINTS IDENTIFIED BY THE MANUFACTURER.
- EXPOSED NON-CURRENT CARRYING METAL PARTS OF MODULE FRAMES, EQUIPMENT, AND CONDUCTOR ENCLOSURES SHALL BE GROUNDING, REGARDLESS OF VOLTAGE.
- PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED.
- ALL SIGNAGE WILL BE INSTALLED AS REQUIRED BY AND 2020 NEC.
- HEIGHT OF INTEGRATED ACDC DISCONNECT SHALL NOT EXCEED 8'-7" FROM FINISH FLOOR TO TOP OF DISCONNECT.
- THE GROUNDING ELECTRODE CONDUCTOR SHALL BE PROTECTED AND FROM PHYSICAL DAMAGE BETWEEN THE GROUNDING ELECTRODE AND THE PANEL (OR INVERTER) IF SMALLER THAN #8 AWG COPPER WIRE.
- THE GROUNDING ELECTRODE CONDUCTOR WILL BE CONTINUOUS, EXCEPT FOR SPLICES OR JOINTS AT BUSBARS WITHIN LISTED EQUIPMENT.
- ALL EXTERIOR CONDUIT SHALL BE PAINTED TO MATCH ADJACENT SURFACES.
- THE P.O. CONNECTION IN THE PANEL BOARD SHALL BE POSITIONED AT THE OPPOSITE (LOAD) END FROM THE INPUT FEEDER LOCATION OR MAIN CIRCUIT LOCATION.
- THE CONDUITS SHALL PREVAL, IF NO SCALE IS GIVEN. DRAWINGS ARE NOT NECESSARY TO SCALE. ALL DIMENSIONS SHALL BE VERIFIED BY SUBCONTRACTOR UPON COMMENCEMENT OF CONSTRUCTION.

ELECTRICAL NOTES


- ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
- ALL CONDUCTORS SHALL BE COPPER, RATED FOR 90V AND 90 DEGREE C WET ENVIRONMENT.
- WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
- WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
- DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS, CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
- WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
- ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
- MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURERS INSTRUCTION.
- MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEBB LUG OR ILSCO GEL-ADBT LAY-IN LUG.
- THE POLARITY OF THE GROUNDING CONDUCTORS IS NEGATIVE



1 AERIAL PHOTO
 SCALE: NTS



2 VICINITY MAP
 SCALE: NTS

 <p>ROOF TOP POWER 275 WALKER RD PROVIDENCE, RI 02907 TEL: (888) 781-7097 LUG# 4-00027 EMAIL: info@irtproofpower.com</p>	
<p>PROJECT NAME</p> <p>DANNY VAILS 222 BROADWAY APT 2 2LEFT, PROVIDENCE, RI 02903 USA APN# N/A UTILITY: RHODE ISLAND ENERGY AHJ: CITY OF PROVIDENCE</p>	
<p>SHEET NAME</p> <p>COVER SHEET</p>	
<p>SHEET SIZE</p> <p>ANSI B 11" X 17"</p>	
<p>SHEET NUMBER</p> <p>PV-0</p>	

41.820672, -71.424801



VERSION	DATE	REV
DESCRIPTION	13/16/2022	UP
INITIAL RELEASE		

PROJECT NAME
 DANNY VAILS
 222 BROADWAY APT 2 2LEFT,
 PROVIDENCE, RI 02903 USA
 APN# N/A
 UTILITY: RHODE ISLAND ENERGY
 AHJ: CITY OF PROVIDENCE

SHEET NAME
 SITE PLAN WITH
 ROOF PLAN

SHEET SIZE
 ANSIB
 11" X 17"

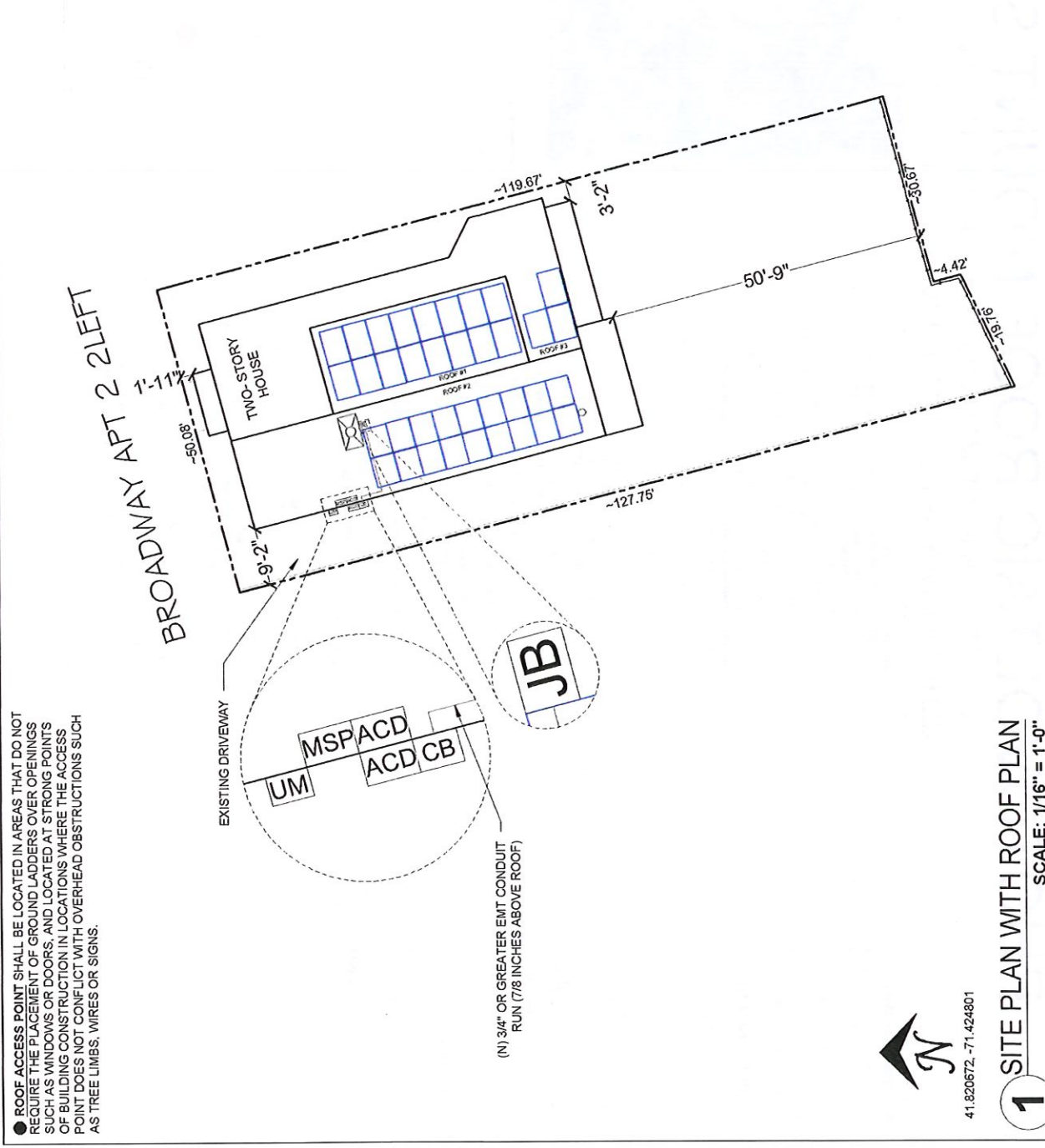
SHEET NUMBER
 PV-1

NOTE:
 A. ALL ELECTRICAL EQUIPMENT, COMBINER, DISCONNECTS, MAIN SERVICE PANELS, ETC. SHALL NOT BE INSTALLED WITHIN 3' OF THE GAS METERS SUPPLY OR DEMAND PIPING.

PHOTOVOLTAIC MODULES
 PHONO SOLAR 400
 M6-10B-B (400W)



LEGEND	
UM	UTILITY METER
MSP	MAIN SERVICE PANEL
ACD	AC DISCONNECT
CB	ENPHASE COMBINER BOX 3
JB	JUNCTION BOX
---	CONDUIT
---	PROPERTY LINE
---	FENCE
○	VENT. ATTIC FAN (ROOF OBSTRUCTION)
⊞	CHIMNEY



● **ROOF ACCESS POINT** SHALL BE LOCATED IN AREAS THAT DO NOT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS OR DOORS, AND LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION IN LOCATIONS WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREE LIMBS, WIRES OR SIGNS.



41.820672, -71.424801

1 SITE PLAN WITH ROOF PLAN
 SCALE: 1/16" = 1'-0"

MODULE TYPE, DIMENSIONS & WEIGHT

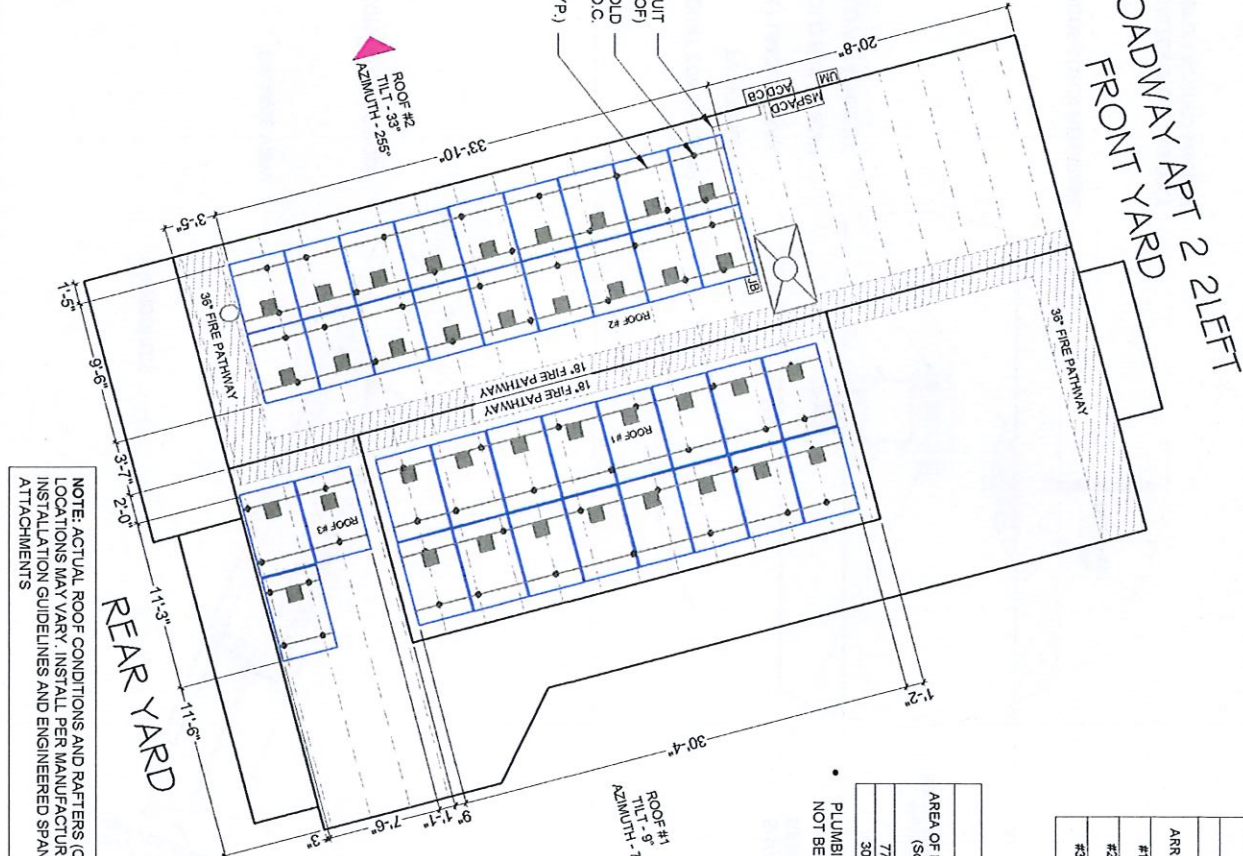
NUMBER OF MODULES = 37 MODULES
 MODULE TYPE = PHONO SOLAR 400 M6-10B-B (400W) MODULES
 MODULE WEIGHT = 45.8 LBS / 20.8 KG
 MODULE DIMENSIONS = 67.80"X 44.65" = 21.02 SF
 UNIT WEIGHT OF ARRAY = 2.18 PSF
 DISTRIBUTED DEAD LOAD = 2.42 PSF
 AVERAGE ROOF POINT DEAD LOAD = 24.12 LBS
 TOTAL SYSTEM WEIGHT*: 1881.62 LBS
 AVERAGE ROOF HEIGHT (GROUND TO EAVE) = -25 FT.

BILL OF MATERIALS

EQUIPMENT	QTY	DESCRIPTION
RAIL	22	UNIRAC NXT UMOUNT RAIL 168"
SPLICE	16	NXT UMOUNT RAIL SPLICE
UNIVERSAL CLAMP	86	NXT UMOUNT COMBO CLAMP -DARK
ATTACHMENT	62	UNIRAC STRONGHOLD
ACCESSORIES	24	ACCESSORIES
MILPE & GROUNDING	43	NXT UMOUNT MILPE & LUG CLAMP

BROADWAY APT 2 2LEFT
 FRONT YARD

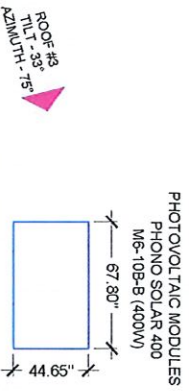
41.820672, -71.424801
1 ROOF PLAN WITH MODULES
 SCALE: 1/8" = 1'-0"



ARRAY DESCRIPTION			
ARRAY	# OF MODULES	ARRAY TILT	ARRAY AZIMUTH
#1	16	9°	75°
#2	18	33°	255°
#3	03	33°	75°

ARRAY AREA & ROOF AREA CALCS		
AREA OF NEW ARRAY (Sq. Ft.)	AREA OF ROOF/PLAN VIEW (Sq. Ft.)	TOTAL ROOF AREA COVERED BY ARRAY %
777.84	2585.87	30.31%
30.31%	ROOF AREA (ARRAY <33% OF ROOF AREA)	

PLUMBING VENTS, SKYLIGHTS AND MECHANICAL VENTS SHALL NOT BE COVERED, MOVED, RE-ROUTED OR RE-LOCATED.



NOTE: ACTUAL ROOF CONDITIONS AND RAFTERS (OR SEAM) LOCATIONS MAY VARY. INSTALL PER MANUFACTURER(S) INSTALLATION GUIDELINES AND ENGINEERED SPANS FOR ATTACHMENTS

LEGEND	
[Symbol]	UTILITY METER
[Symbol]	MAIN SERVICE PANEL
[Symbol]	AC DISCONNECT
[Symbol]	EMPHASE COMBINER BOX 3
[Symbol]	JUNCTION BOX
[Symbol]	CONDUIT
[Symbol]	3\"/>
[Symbol]	ATTACHMENTS
[Symbol]	VENT ATTIC FAN (ROOF-OBSTRUCTION)
[Symbol]	CHIMNEY

DANNY VAILS
 222 BROADWAY APT 2 2LEFT,
 PROVIDENCE, RI 02903 USA
 APN# N/A
 UTILITY: RHODE ISLAND ENERGY
 AHJ: CITY OF PROVIDENCE

PROJECT NAME
 ROOF PLAN WITH MODULES

SHEET NAME
 ROOF PLAN WITH MODULES

SHEET SIZE
 ANSI B
 11" X 17"

SHEET NUMBER
 PV-2

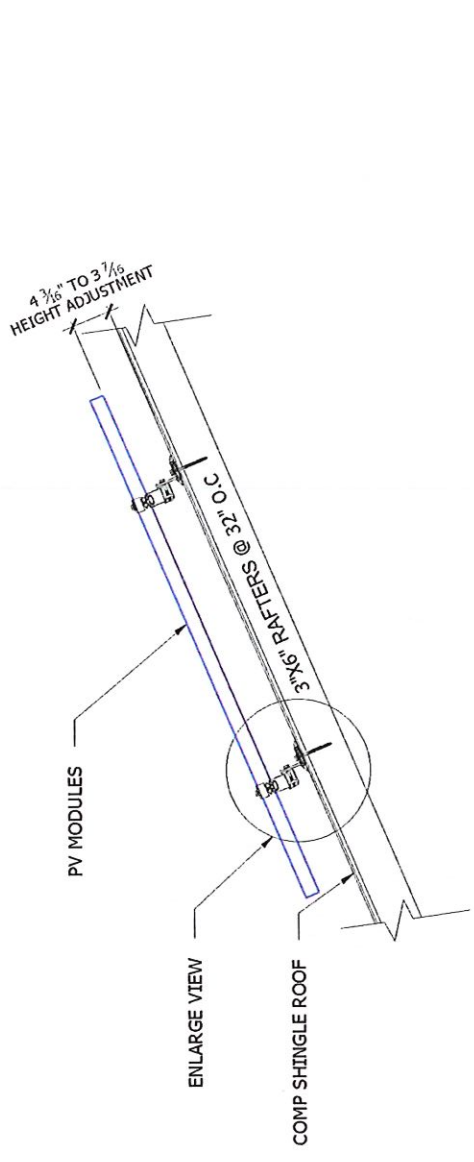
ROOF TOP POWER
 215 WASHINGTON ST
 WARRIOR POINT, RI 02881
 TEL: (401) 781-7187
 LIC# A-004027
 EMAIL: info@rooftoppower.com

VERSION	DATE	REV
DESCRIPTION		
INITIAL RELEASE	12/16/2022	UP

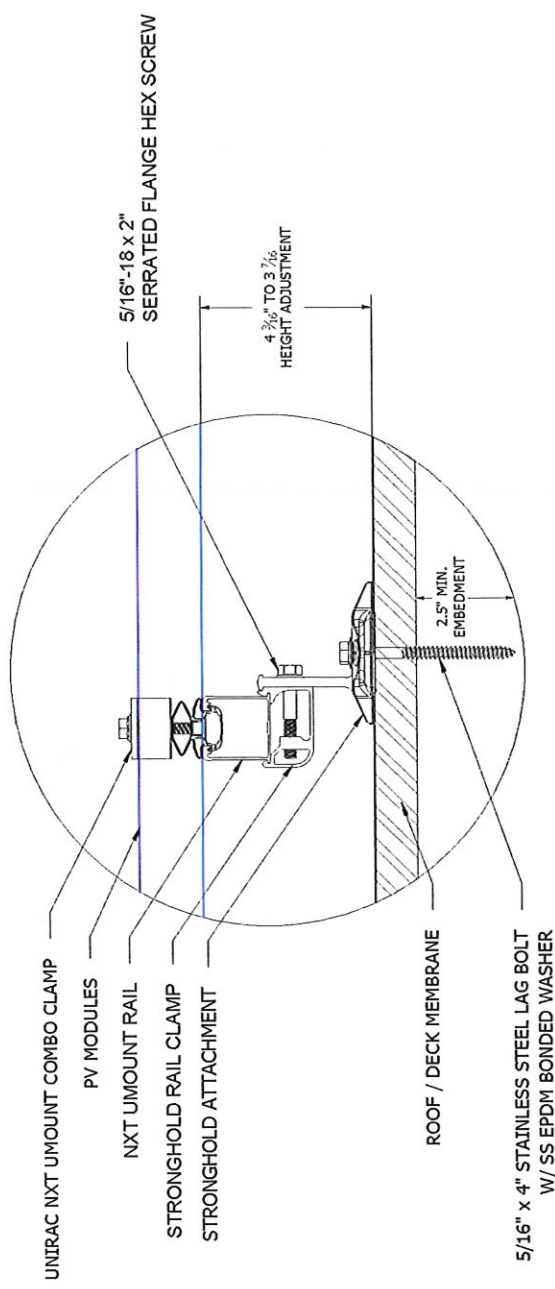
PROJECT NAME
 222 BROADWAY APT 2 2LEFT,
 PROVIDENCE, RI 02903 USA
 APN# N/A
 UTILITY: RHODE ISLAND ENERGY
 AHJ: CITY OF PROVIDENCE

SHEET NAME	ATTACHMENT DETAIL
SHEET SIZE	ANSI B 11" X 17"
SHEET NUMBER	PV-3

NOTE: ACTUAL ROOF CONDITIONS AND RAFTERS (OR SEAM) LOCATIONS MAY VARY. INSTALL PER MANUFACTURER(S) INSTALLATION GUIDELINES AND ENGINEERED SPANS FOR ATTACHMENTS



1 ATTACHMENT DETAIL
 SCALE: NTS



2 ENLARGE VIEW PV-3(B)
 SCALE: NTS

PhonoSolar

TWINPLUS MODULE SERIES

HIGH EFFICIENCY MONO-PERC M6-10B-B

390-410W



OUTSTANDING PRODUCT PERFORMANCE

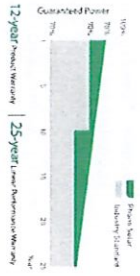
- Competition high temperature performance with unencased temperature coefficient
- Minimized power loss in cell connection
- Better performance under shading effect
- Decreased thermal expanding cell temperature to 45 °C
- Higher power generation with multi-junction and half cell technology

TRUSTWORTHY QUALITY AND RELIABILITY

- Outperformed 0-5W positive tolerance secure, reliable power output
- 4000h maximum snow load, 2400h maximum wind load
- Optimized electrical design lowers hot spot risk and operating current

PID RESISTANT

- Induces potential cell processing technology and electrical design ensure solid PID resistance



MANAGEMENT SYSTEM CERTIFICATES

- IEC 61215, IEC 61720, UL 61730
- ISO 9001:2015 / Quality management system
- ISO 14001:2015 / Standard for environmental management system
- ISO 45001:2018 / International standard for occupational health & safety



www.phonosolar.com info@photosolar.com



ELECTRICAL VALUES		P5379M6-18V/W		P5379M4-18V/W		P5379M4-18V/W		P5400M6-18V/W		P5400M4-18V/W		P5410M6-18V/W		P5410M4-18V/W	
Model	150W	P5379M6-18V/W	P5379M4-18V/W	P5379M4-18V/W	P5400M6-18V/W	P5400M4-18V/W	P5400M4-18V/W	P5410M6-18V/W	P5410M4-18V/W	P5410M6-18V/W	P5410M4-18V/W	P5410M6-18V/W	P5410M4-18V/W	P5410M6-18V/W	P5410M4-18V/W
Typical Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC
Rated Power (Pmp)	390	290	395	294	410	299	410	301	410	305	410	305	410	305	410
Rated Current (Imp)	13.29	10.33	12.88	10.41	12.57	10.48	13.06	10.55	13.15	10.63	12.67	10.71	13.22	10.78	12.71
Rated Voltage (Vmp)	30.53	28.88	30.17	28.32	30.95	29.60	31.02	29.55	31.18	28.71	30.92	29.60	31.02	29.55	31.18
Short Circuit Current (Isc)	13.32	10.75	13.42	10.84	13.52	10.92	13.62	11.00	13.72	11.09	13.82	11.17	13.92	11.25	11.35
Open Circuit Voltage (Voc)	36.49	34.46	34.47	34.47	36.67	34.61	34.62	34.99	37.23	35.15	36.87	34.81	34.82	34.83	34.84
Module Efficiency (%)	19.97		20.23		20.48		20.75		20.97		21.00		21.00		21.00

MECHANICAL CHARACTERISTICS

Cell Type: Monocrystalline, Hetero-junction
 Dimensions (L x W x H): Length: 1722mm (67.81 inch), Width: 1134mm (44.65 inch), Height: 30mm (1.18 inch)
 Weight: 22.0kg (48.50 lbs)
 Front Glass: 3.2mm Toughened Glass
 Frame: Anodized Aluminum Alloy
 Cable: 4mm² JTEC
 Junction Box: IP 68 Rated

TEMPERATURE RATINGS

Voltage Temperature Coefficient: -0.28%/°C
 Current Temperature Coefficient: -0.05%/°C
 Power Temperature Coefficient: 0.35%/°C
 Tolerance: 0-±5%
 NOCT: 45±2°C

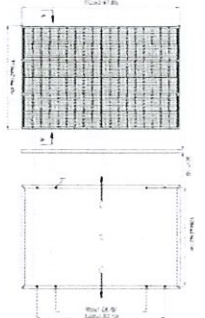
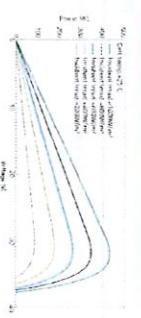
ABSOLUTE MAXIMUM RATINGS

Operating temperature: From -40 to +85°C
 Heat Dissipation at 25°C: Up to 20W
 Front Side Maximum Static Loading: 5420Pa
 Rear Side Maximum Static Loading: 2420Pa
 Maximum Snow Load Rating: 2.5kPa
 PV Module Classification: Type I
 Module Fire Performance: UL 1010
 Maximum System Voltage: DC 1000V/1500V

PACKING CONFIGURATION

Container: 20 GP, 40 HQ
 Pieces/Container: 216, 936

ELECTRICAL CHARACTERISTICS



PhonoSolar

PHONOSOLAR TECHNOLOGY CO., LTD. reserves the right to make necessary adjustments to the information described herein at any time without further notice. The specifications and certificates contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. Please be sure to use the most recent version of this.

RTP
 RHODE ISLAND TOP POWER
 275 WAWTACK RD
 WARRIOR, RI 02891
 TEL: (401) 707-7897
 LIC# A040027
 EMAIL: info@rtpri.com

VERSION	DATE	REV
INITIAL RELEASE	12/17/2022	UR

PROJECT NAME
 DANNY VAILS
 222 BROADWAY APT 2 2LEFT,
 PROVIDENCE, RI 02903 USA
 APN# N/A
 UTILITY: RHODE ISLAND ENERGY
 AHJ: CITY OF PROVIDENCE

SHEET NAME
 SHEET SIZE
 ANSI B
 11" X 17"
SHEET NUMBER
 PV-6



Enphase IQ 7 and IQ 7+ Microinverters

Input Data (DC)

Commonly used module pairings ¹	IQ7-60-24US	IQ7-60-24US
Module compatibility	225 W, 330 W, 400 W, 475 W, 550 W, 625 W, 700 W, 775 W, 850 W, 925 W, 1000 W, 1075 W, 1150 W, 1225 W, 1300 W, 1375 W, 1450 W, 1525 W, 1600 W, 1675 W, 1750 W, 1825 W, 1900 W, 1975 W, 2050 W, 2125 W, 2200 W, 2275 W, 2350 W, 2425 W, 2500 W, 2575 W, 2650 W, 2725 W, 2800 W, 2875 W, 2950 W, 3025 W, 3100 W, 3175 W, 3250 W, 3325 W, 3400 W, 3475 W, 3550 W, 3625 W, 3700 W, 3775 W, 3850 W, 3925 W, 4000 W, 4075 W, 4150 W, 4225 W, 4300 W, 4375 W, 4450 W, 4525 W, 4600 W, 4675 W, 4750 W, 4825 W, 4900 W, 4975 W, 5050 W, 5125 W, 5200 W, 5275 W, 5350 W, 5425 W, 5500 W, 5575 W, 5650 W, 5725 W, 5800 W, 5875 W, 5950 W, 6025 W, 6100 W, 6175 W, 6250 W, 6325 W, 6400 W, 6475 W, 6550 W, 6625 W, 6700 W, 6775 W, 6850 W, 6925 W, 7000 W, 7075 W, 7150 W, 7225 W, 7300 W, 7375 W, 7450 W, 7525 W, 7600 W, 7675 W, 7750 W, 7825 W, 7900 W, 7975 W, 8050 W, 8125 W, 8200 W, 8275 W, 8350 W, 8425 W, 8500 W, 8575 W, 8650 W, 8725 W, 8800 W, 8875 W, 8950 W, 9025 W, 9100 W, 9175 W, 9250 W, 9325 W, 9400 W, 9475 W, 9550 W, 9625 W, 9700 W, 9775 W, 9850 W, 9925 W, 10000 W	60-cell and 72-cell PV modules
Maximum input DC voltage	48 V, 37 V, 48 V, 60 V, 72 V, 84 V, 96 V, 108 V, 120 V, 132 V, 144 V, 156 V, 168 V, 180 V, 192 V, 204 V, 216 V, 228 V, 240 V, 252 V, 264 V, 276 V, 288 V, 300 V, 312 V, 324 V, 336 V, 348 V, 360 V, 372 V, 384 V, 396 V, 408 V, 420 V, 432 V, 444 V, 456 V, 468 V, 480 V, 492 V, 504 V, 516 V, 528 V, 540 V, 552 V, 564 V, 576 V, 588 V, 600 V, 612 V, 624 V, 636 V, 648 V, 660 V, 672 V, 684 V, 696 V, 708 V, 720 V, 732 V, 744 V, 756 V, 768 V, 780 V, 792 V, 804 V, 816 V, 828 V, 840 V, 852 V, 864 V, 876 V, 888 V, 900 V, 912 V, 924 V, 936 V, 948 V, 960 V, 972 V, 984 V, 996 V, 1008 V, 1020 V, 1032 V, 1044 V, 1056 V, 1068 V, 1080 V, 1092 V, 1104 V, 1116 V, 1128 V, 1140 V, 1152 V, 1164 V, 1176 V, 1188 V, 1200 V, 1212 V, 1224 V, 1236 V, 1248 V, 1260 V, 1272 V, 1284 V, 1296 V, 1308 V, 1320 V, 1332 V, 1344 V, 1356 V, 1368 V, 1380 V, 1392 V, 1404 V, 1416 V, 1428 V, 1440 V, 1452 V, 1464 V, 1476 V, 1488 V, 1500 V, 1512 V, 1524 V, 1536 V, 1548 V, 1560 V, 1572 V, 1584 V, 1596 V, 1608 V, 1620 V, 1632 V, 1644 V, 1656 V, 1668 V, 1680 V, 1692 V, 1704 V, 1716 V, 1728 V, 1740 V, 1752 V, 1764 V, 1776 V, 1788 V, 1800 V, 1812 V, 1824 V, 1836 V, 1848 V, 1860 V, 1872 V, 1884 V, 1896 V, 1908 V, 1920 V, 1932 V, 1944 V, 1956 V, 1968 V, 1980 V, 1992 V, 2004 V, 2016 V, 2028 V, 2040 V, 2052 V, 2064 V, 2076 V, 2088 V, 2100 V, 2112 V, 2124 V, 2136 V, 2148 V, 2160 V, 2172 V, 2184 V, 2196 V, 2208 V, 2220 V, 2232 V, 2244 V, 2256 V, 2268 V, 2280 V, 2292 V, 2304 V, 2316 V, 2328 V, 2340 V, 2352 V, 2364 V, 2376 V, 2388 V, 2400 V, 2412 V, 2424 V, 2436 V, 2448 V, 2460 V, 2472 V, 2484 V, 2496 V, 2508 V, 2520 V, 2532 V, 2544 V, 2556 V, 2568 V, 2580 V, 2592 V, 2604 V, 2616 V, 2628 V, 2640 V, 2652 V, 2664 V, 2676 V, 2688 V, 2700 V, 2712 V, 2724 V, 2736 V, 2748 V, 2760 V, 2772 V, 2784 V, 2796 V, 2808 V, 2820 V, 2832 V, 2844 V, 2856 V, 2868 V, 2880 V, 2892 V, 2904 V, 2916 V, 2928 V, 2940 V, 2952 V, 2964 V, 2976 V, 2988 V, 3000 V, 3012 V, 3024 V, 3036 V, 3048 V, 3060 V, 3072 V, 3084 V, 3096 V, 3108 V, 3120 V, 3132 V, 3144 V, 3156 V, 3168 V, 3180 V, 3192 V, 3204 V, 3216 V, 3228 V, 3240 V, 3252 V, 3264 V, 3276 V, 3288 V, 3300 V, 3312 V, 3324 V, 3336 V, 3348 V, 3360 V, 3372 V, 3384 V, 3396 V, 3408 V, 3420 V, 3432 V, 3444 V, 3456 V, 3468 V, 3480 V, 3492 V, 3504 V, 3516 V, 3528 V, 3540 V, 3552 V, 3564 V, 3576 V, 3588 V, 3600 V, 3612 V, 3624 V, 3636 V, 3648 V, 3660 V, 3672 V, 3684 V, 3696 V, 3708 V, 3720 V, 3732 V, 3744 V, 3756 V, 3768 V, 3780 V, 3792 V, 3804 V, 3816 V, 3828 V, 3840 V, 3852 V, 3864 V, 3876 V, 3888 V, 3900 V, 3912 V, 3924 V, 3936 V, 3948 V, 3960 V, 3972 V, 3984 V, 3996 V, 4008 V, 4020 V, 4032 V, 4044 V, 4056 V, 4068 V, 4080 V, 4092 V, 4104 V, 4116 V, 4128 V, 4140 V, 4152 V, 4164 V, 4176 V, 4188 V, 4200 V, 4212 V, 4224 V, 4236 V, 4248 V, 4260 V, 4272 V, 4284 V, 4296 V, 4308 V, 4320 V, 4332 V, 4344 V, 4356 V, 4368 V, 4380 V, 4392 V, 4404 V, 4416 V, 4428 V, 4440 V, 4452 V, 4464 V, 4476 V, 4488 V, 4500 V, 4512 V, 4524 V, 4536 V, 4548 V, 4560 V, 4572 V, 4584 V, 4596 V, 4608 V, 4620 V, 4632 V, 4644 V, 4656 V, 4668 V, 4680 V, 4692 V, 4704 V, 4716 V, 4728 V, 4740 V, 4752 V, 4764 V, 4776 V, 4788 V, 4800 V, 4812 V, 4824 V, 4836 V, 4848 V, 4860 V, 4872 V, 4884 V, 4896 V, 4908 V, 4920 V, 4932 V, 4944 V, 4956 V, 4968 V, 4980 V, 4992 V, 5004 V, 5016 V, 5028 V, 5040 V, 5052 V, 5064 V, 5076 V, 5088 V, 5100 V, 5112 V, 5124 V, 5136 V, 5148 V, 5160 V, 5172 V, 5184 V, 5196 V, 5208 V, 5220 V, 5232 V, 5244 V, 5256 V, 5268 V, 5280 V, 5292 V, 5304 V, 5316 V, 5328 V, 5340 V, 5352 V, 5364 V, 5376 V, 5388 V, 5400 V, 5412 V, 5424 V, 5436 V, 5448 V, 5460 V, 5472 V, 5484 V, 5496 V, 5508 V, 5520 V, 5532 V, 5544 V, 5556 V, 5568 V, 5580 V, 5592 V, 5604 V, 5616 V, 5628 V, 5640 V, 5652 V, 5664 V, 5676 V, 5688 V, 5700 V, 5712 V, 5724 V, 5736 V, 5748 V, 5760 V, 5772 V, 5784 V, 5796 V, 5808 V, 5820 V, 5832 V, 5844 V, 5856 V, 5868 V, 5880 V, 5892 V, 5904 V, 5916 V, 5928 V, 5940 V, 5952 V, 5964 V, 5976 V, 5988 V, 6000 V, 6012 V, 6024 V, 6036 V, 6048 V, 6060 V, 6072 V, 6084 V, 6096 V, 6108 V, 6120 V, 6132 V, 6144 V, 6156 V, 6168 V, 6180 V, 6192 V, 6204 V, 6216 V, 6228 V, 6240 V, 6252 V, 6264 V, 6276 V, 6288 V, 6300 V, 6312 V, 6324 V, 6336 V, 6348 V, 6360 V, 6372 V, 6384 V, 6396 V, 6408 V, 6420 V, 6432 V, 6444 V, 6456 V, 6468 V, 6480 V, 6492 V, 6504 V, 6516 V, 6528 V, 6540 V, 6552 V, 6564 V, 6576 V, 6588 V, 6600 V, 6612 V, 6624 V, 6636 V, 6648 V, 6660 V, 6672 V, 6684 V, 6696 V, 6708 V, 6720 V, 6732 V, 6744 V, 6756 V, 6768 V, 6780 V, 6792 V, 6804 V, 6816 V, 6828 V, 6840 V, 6852 V, 6864 V, 6876 V, 6888 V, 6900 V, 6912 V, 6924 V, 6936 V, 6948 V, 6960 V, 6972 V, 6984 V, 6996 V, 7008 V, 7020 V, 7032 V, 7044 V, 7056 V, 7068 V, 7080 V, 7092 V, 7104 V, 7116 V, 7128 V, 7140 V, 7152 V, 7164 V, 7176 V, 7188 V, 7200 V, 7212 V, 7224 V, 7236 V, 7248 V, 7260 V, 7272 V, 7284 V, 7296 V, 7308 V, 7320 V, 7332 V, 7344 V, 7356 V, 7368 V, 7380 V, 7392 V, 7404 V, 7416 V, 7428 V, 7440 V, 7452 V, 7464 V, 7476 V, 7488 V, 7500 V, 7512 V, 7524 V, 7536 V, 7548 V, 7560 V, 7572 V, 7584 V, 7596 V, 7608 V, 7620 V, 7632 V, 7644 V, 7656 V, 7668 V, 7680 V, 7692 V, 7704 V, 7716 V, 7728 V, 7740 V, 7752 V, 7764 V, 7776 V, 7788 V, 7800 V, 7812 V, 7824 V, 7836 V, 7848 V, 7860 V, 7872 V, 7884 V, 7896 V, 7908 V, 7920 V, 7932 V, 7944 V, 7956 V, 7968 V, 7980 V, 7992 V, 8004 V, 8016 V, 8028 V, 8040 V, 8052 V, 8064 V, 8076 V, 8088 V, 8100 V, 8112 V, 8124 V, 8136 V, 8148 V, 8160 V, 8172 V, 8184 V, 8196 V, 8208 V, 8220 V, 8232 V, 8244 V, 8256 V, 8268 V, 8280 V, 8292 V, 8304 V, 8316 V, 8328 V, 8340 V, 8352 V, 8364 V, 8376 V, 8388 V, 8400 V, 8412 V, 8424 V, 8436 V, 8448 V, 8460 V, 8472 V, 8484 V, 8496 V, 8508 V, 8520 V, 8532 V, 8544 V, 8556 V, 8568 V, 8580 V, 8592 V, 8604 V, 8616 V, 8628 V, 8640 V, 8652 V, 8664 V, 8676 V, 8688 V, 8700 V, 8712 V, 8724 V, 8736 V, 8748 V, 8760 V, 8772 V, 8784 V, 8796 V, 8808 V, 8820 V, 8832 V, 8844 V, 8856 V, 8868 V, 8880 V, 8892 V, 8904 V, 8916 V, 8928 V, 8940 V, 8952 V, 8964 V, 8976 V, 8988 V, 9000 V, 9012 V, 9024 V, 9036 V, 9048 V, 9060 V, 9072 V, 9084 V, 9096 V, 9108 V, 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OUTPUT DATA (AC)

Peak output power	240 VA	240 VA
Maximum continuous output power	240 VA	240 VA
Nominal (L-L) voltage range	208 V / 240 V / 276 V	208 V / 240 V / 276 V
Maximum continuous output current	1.0 A (240 V) / 1.15 A (208 V)	1.21 A (240 V) / 1.39 A (208 V)
Nominal frequency	60 Hz	60 Hz
Extended frequency range	47 - 68 Hz	47 - 68 Hz
AC short circuit fault current over 3 cycles	5.8 Arms	5.8 Arms
Maximum units per 20 A (L-L) branch circuit ²	16 (240 VAC)	13 (208 VAC)
Overvoltage class AC port	III	III
AC port backfeed current	18 mA	18 mA
Power factor setting	1.0	1.0
Power factor (adjustable)	0.95 leading - 0.92 lagging	0.95 leading - 0.95 lagging

EFFICIENCY

0-240 V	97.6 %	97.6 %
240-276 V	97.5 %	97.5 %
276-300 V	97.0 %	97.0 %
300-324 V	97.0 %	97.0 %
324-348 V	97.0 %	97.0 %
348-372 V	97.0 %	97.0 %
372-396 V	97.0 %	97.0 %
396-420 V	97.0 %	97.0 %
420-444 V	97.0 %	97.0 %
444-468 V	97.0 %	97.0 %
468-492 V	97.0 %	97.0 %
492-516 V	97.0 %	97.0 %
516-540 V	97.0 %	97.0 %
540-564 V	97.0 %	97.0 %
564-588 V	97.0 %	97.0 %
588-612 V	97.0 %	97.0 %
612-636 V	97.0 %	97.0 %
636-660 V	97.0 %	97.0 %
660-684 V	97.0 %	97.0 %
684-708 V	97.0 %	97.0 %
708-732 V	97.0 %	97.0 %
732-756 V	97.0 %	97.0 %
756-780 V	97.0 %	97.0 %
780-804 V	97.0 %	97.0 %
804-828 V	97.0 %	97.0 %
828-852 V	97.0 %	97.0 %
852-876 V	97.0 %	97.0 %
876-900 V	97.0 %	97.0 %
900-924 V	97.0 %	97.0 %
924-948 V	97.0 %	97.0 %
948-972 V	97.0 %	97.0 %
972-996 V	97.0 %	97.0 %
996-1020 V	97.0 %	97.0 %

MECHANICAL DATA

Temperature range	-40°C to +40°C
Relative humidity range	5% to 100% (condensation)
Connector type	MC4 for Amphenol H4-UTX with additional Q-DCC's (add'l)
Dimensions (HxWxD)	217 mm x 175 mm x 30.2 mm (without bracket)
Weight	1.08 kg (2.38 lbs)
Coating	Neutral convection. No tape
Approved for wet locations	Yes
Pollution degree	PO3
Environmental category	Class II double-insulated, corrosion resistant polymeric enclosure
Environmental category	IP66, type IV, surge

FEATURES

Power Line Communication (PLC)	Enlighten Manager and Enlighten monitoring systems
Both options require installation of an Enlighten IQ Envoy	The AC and DC connections have been evaluated and approved by UL for use as the load-break
Communication	UL 20109-1, UL 1741 (IEEE 1547, FCC Part 15 Class B, ICES-003 Class B, CAN/CSA C22.2, NO. 137.1-01)
Disconnecting means	UL 20109-1, UL 1741 (IEEE 1547, FCC Part 15 Class B, ICES-003 Class B, CAN/CSA C22.2, NO. 137.1-01)
Compliance	The product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC-2014 and NEC-2017 section 690.12 and 690.13 Rapid Shutdown on PV Systems, for AC and DC connections, which includes access to the manufacturer's instructions.

ENVIRONMENTAL DATA

Temperature range	-40°C to +40°C
Relative humidity range	5% to 100% (condensation)
Connector type	MC4 for Amphenol H4-UTX with additional Q-DCC's (add'l)
Dimensions (HxWxD)	217 mm x 175 mm x 30.2 mm (without bracket)
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The high-powered smart grid-ready **Enphase IQ 7 Micro™** and **Enphase IQ 7+ Micro™** dramatically simplify the installation process while achieving the highest system efficiency.

Part of the Enphase IQ System, the IQ 7 and IQ 7+ Microinverters integrate with the Enphase IQ Envoy™, Enphase IQ Battery™, and the Enphase Enlighten™ monitoring and analysis software.

IQ Series Microinverters extend the reliability standards set forth by previous generations and undergo over a million hours of power-on testing, enabling Enphase to provide an industry-leading warranty of up to 25 years.

Easy to Install

- Lightweight and simple
- Faster installation with improved, lighter weight cabling
- Built-in rapid shutdown compliant (NEC-2014 & 2017)

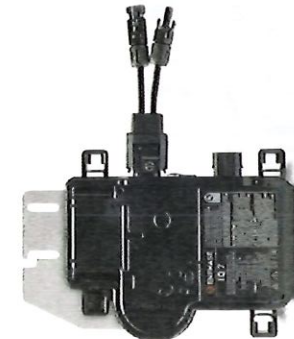
Productive and Reliable

- Optimized for high-powered 60-cell and 72-cell modules
- More than a million hours of testing
- Class II double-insulated enclosure
- UL listed

Smart Grid Ready

- Complies with advanced grid support, voltage and frequency ride-through requirements
- Remotely updatable to respond to changing grid requirements
- Configurable for varying grid profiles
- Meets CA Rule 21 (UL 1741-5A)

- The IQ 7+ Micro is required to support 72-cell modules.



To learn more about Enphase offerings, visit