Building Codes: 2017 NEC, 2018 NORTH CAROLINA RESIDENTIAL CODE, 2018 NORTH CAROLINA FIRE CODE, 2018 NORTH CAROLINA BUILDING CODE and AHJ Amendments

TURPEN, CHRISTINE PV SYSTEM
661 CAMERON HILL ROAD .
CAMERON, NC, 28326
APN: 099565 0036 03
JURISDICTION: HARNETT COUNTY (NC)

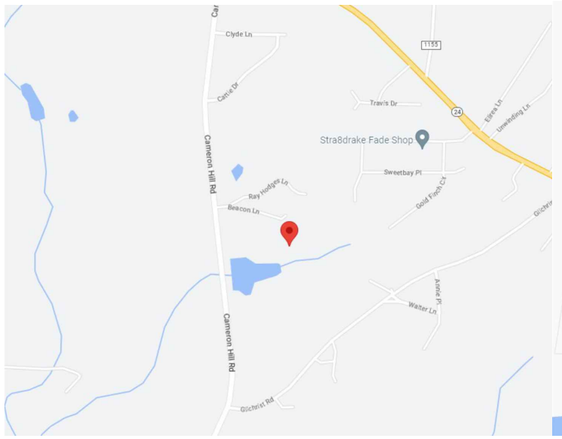
GENERAL INFORMATION

SYSTEM SIZE:	10.000 kW-DC-STC
	7.600 kW-AC
ROOF PITCHED:	25 DEGREES
INVERTER:	(1) SOLAREDGE SE7600H-US W/ P401 OPTIMIZERS
MODULES:	(25) Q PEAK DUO BLK ML G10+ 400W
STRINGS:	(1) x 14 (1) x 11 MODULE SERIES STRINGS
ELECTRICAL SERVICE RATING:	200A
PV SYSTEM OVERCURRENT RATING:	40A
PV SYSTEM DISCONNECT SWITCH:	EATON DG222URB (60A / 2P)
ROOF TYPE:	GROUND H
ROOF FRAMING:	ENGINEERED TRUSS
RACKING/RAILING:	XR1000 / XR1000 RAIL CANTILEVER
ATTACHMENT METHOD:	HELICAL PILE PACKAGE - U.S. HELICAL
ROOF ATTACHMENT :	HELICAL PILE PACKAGE - U.S. HELICAL

TABLE OF CONTENTS

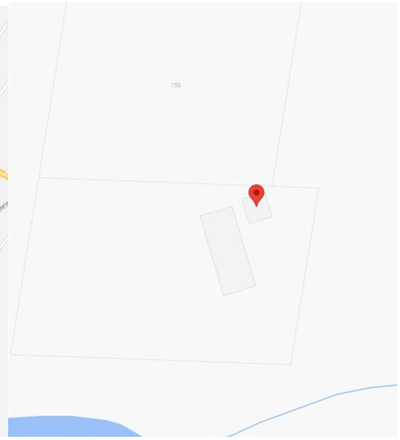
VICINITY MAP

SCALE: NTS



AERIAL MAP

SCALE: NTS



NORTH CAROLINA PROFESSIONAL SEAL 050296 ENGINEER ARASH ZANDIEH

Exp. 12/31/2022

5/11/2023

NOTES

EQUIPMENT LOCATION

1. ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS AS REQUIRED BY NEC 110.26.
2. WIRING SYSTEMS INSTALLED IN DIRECT SUNLIGHT MUST BE RATED FOR EXPECTED OPERATING TEMPERATURE AS SPECIFIED BY NEC690.31(A),(C) AND NEC TABLES 310.15(B)(2)(A) AND 310.15(B)(3)(C).
3. JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES ACCORDING TO NEC 690.34.
4. ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT.
5. ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL ACCORDING TO NEC APPLICABLE CODES.
6. ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPROPRIATE.

WIRING & CONDUIT NOTES

1. ALL CONDUITS AND WIRE WILL BE LISTED AND APPROVED FOR THEIR PURPOSE. CONDUIT AND WIRE SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING.
2. CONDUCTORS SIZED ACCORDING TO NEC 690.8, NEC 690.7.
3. DC WIRING LIMITED TO MODULE FOOTPRINT. MICRO INVERTER WIRING SYSTEMS SHALL BE LOCATED AND SECURED UNDER THE ARRAY WITH SUITABLE WIRING CLIPS.
4. AC CONDUCTORS COLORED OR MARKED AS FOLLOWS: PHASE A OR L1- BLACK, PHASE B OR L-2 RED, OR OTHER CONVENTION IF THREE PHASE, PHASE C OR L3-BLUE, YELLOW, ORANGE, OR OTHER CONVENTION NEUTRAL- WHITE OR GREY IN 4-WIRE DELTA CONNECTED SYSTEMS THE PHASE WITH THE HIGHER VOLTAGE TO BE MARKED ORANGE NEC 110.15.

GENERAL NOTES

1. MODULES ARE LISTED UNDER UL 1703 AND CONFORM TO THE STANDARDS.
2. INVERTERS ARE LISTED UNDER UL 1741 AND CONFORM TO THE STANDARDS.
3. DRAWINGS ARE DIAGRAMMATIC, INDICATING GENERAL ARRANGEMENT OF THE PV SYSTEM AND THE ACTUAL SITE CONDITION MIGHT VARY.
4. WORKING CLEARANCES AROUND THE NEW PV ELECTRICAL EQUIPMENT WILL BE MAINTAINED IN ACCORDANCE WITH NEC 110.26.
5. ALL GROUND WIRING CONNECTED TO THE MAIN SERVICE GROUNDING IN MAIN SERVICE PANEL/SERVICE COMPONENT.
6. ALL CONDUCTORS SHALL BE 600V, 75° C STANDARD COPPER UNLESS OTHERWISE NOTED.
7. WHEN REQUIRED, A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
8. THE SYSTEM WILL NOT BE INTERCONNECTED BY THE CONTRACTOR UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND/OR THE UTILITY.
9. ROOF ACCESS POINT SHALL BE LOCATED IN AREAS THAT DO NOT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREES, WIRES OR SIGNS.
10. PV ARRAY COMBINER/JUNCTION BOX PROVIDES TRANSITION FROM ARRAY WIRING TO CONDUIT WIRING.

TITAN SOLAR POWER
525 W BASELINE RD., MESA AZ, 85210
CONTRACTOR LIC# U.34445

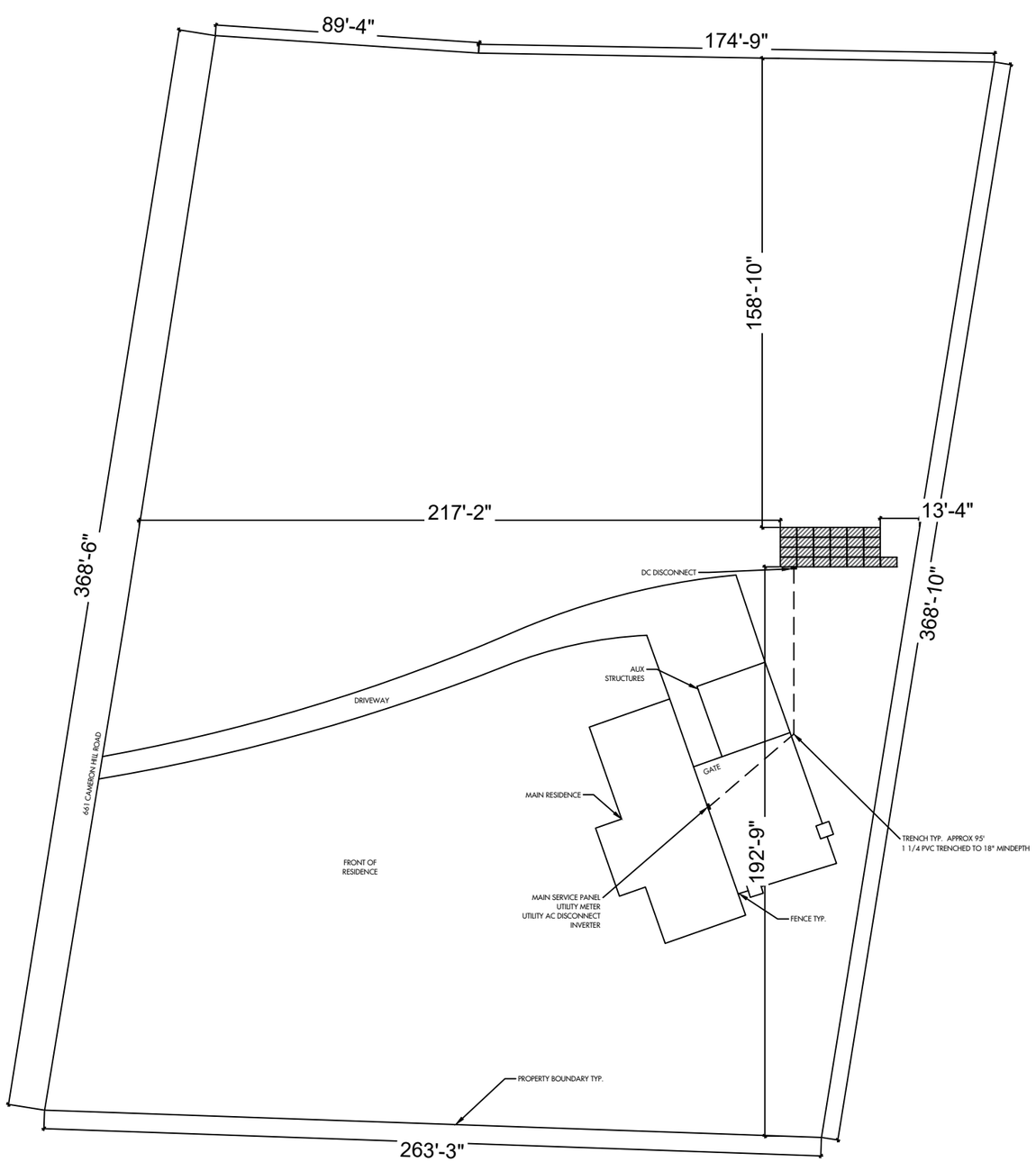
TURPEN, CHRISTINE RESIDENCE
661 CAMERON HILL ROAD , CAMERON, NC, 28326
LAT:35.271910, LON:-79.099334
TSP154773

(25) Q PEAK DUO BLK ML G10+ 400W
(1) SOLAREDGE SE7600H-US
10.000 kW DC SYSTEM SIZE
7.600 kW AC SYSTEM SIZE

DATE: 5/8/2023
REV:A
DRAWN BY: CA

SEAL:

COVER PAGE
PV 1



PROJECT NOTES

1. UTILITY SHALL HAVE 24HR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC COMPONENTS LOCATED AT SES EQUIPMENT
2. NO LOCKED GATES, DOGS, ETC SHALL IMPEDE ACCESS TO SES EQUIPMENT
3. WORKSPACE IN FRONT OF AC ELECTRICAL SYSTEM COMPONENTS SHALL BE IN ACCORDANCE WITH CENTRAL ELECTRIC MEMBERSHIP CORPORATION AND NEC REQUIREMENTS.

NORTH CAROLINA PROFESSIONAL SEAL 050296 ENGINEER ARASH ZANDIEH

Exp. 12/31/2022

5/11/2023

1

TITAN SOLAR POWER
525 W BASELINE RD., MESA AZ, 85210
CONTRACTOR LIC# U.34445

TURPEN, CHRISTINE RESIDENCE
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LAT:35.271910, LON:-79.099334
TSP154773

(25) Q PEAK DUO BLK ML G10+ 400W
(1) SOLAREDGE SE7600H-US
10.000 kW DC SYSTEM SIZE
7.600 kW AC SYSTEM SIZE

SCALE: 3/128" = 1'-0"
DATE: 5/8/2023
REV: A
DRAWN BY: CA

SEAL:

SITE PLAN
PV 2

ARRAY INFORMATION

AR-01

QUANTITY: 25

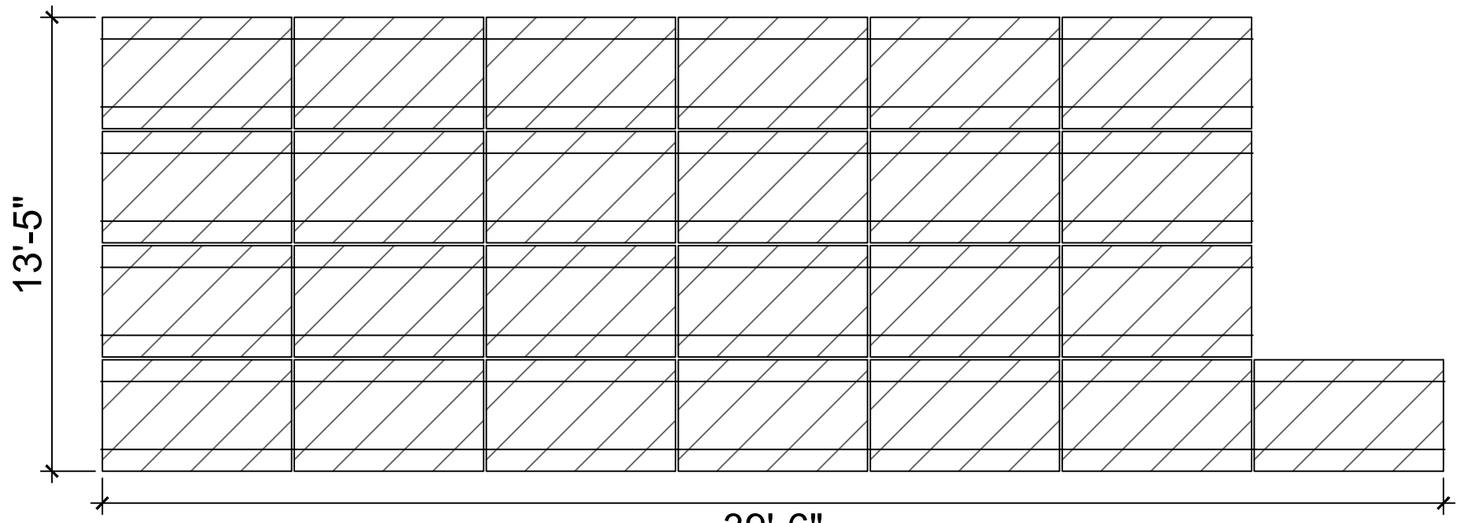
MOUNTING TYPE: FLUSH

ARRAY TILT: 25°

AZIMUTH: 180°

ATTACHMENT SPACING: 4'

ROOF TYPE: GROUND H



AR-01

NOTES

- ROOF VENTS, SKYLIGHTS, WILL NOT BE COVERED UPON PV INSTALLATION
- TOTAL ROOF AREA = 2387 SQ-FT
- TOTAL ARRAY AREA = 528.02 SQ-FT
- ARRAY COVERAGE = 22.12%
- GROUND TYPE:C
- LOCATION OF SEPTIC TANK IS UNKNOWN

NORTH CAROLINA PROFESSIONAL SEAL 050296 ENGINEER ARASH ZANDIEH

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5/11/2023

TITAN SOLAR POWER

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CONTRACTOR LIC# U.34445

TURPEN, CHRISTINE RESIDENCE

661 CAMERON HILL ROAD , CAMERON, NC, 28326

LAT:35.271910, LON:-79.099334

TSP154773

(25) Q PEAK DUO BLK ML G10+ 400W

(1) SOLAREDGE SE7600H-US

10.000 kW DC SYSTEM SIZE

7.600 kW AC SYSTEM SIZE

SCALE: 57/256" = 1'-0"

DATE: 5/8/2023

REV:A

DRAWN BY: CA

SEAL:

PV LAYOUT

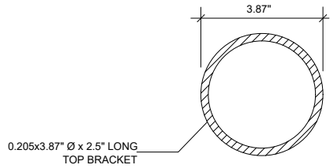
PV 3

MODULE & RACKING INFORMATION
MODULE: Q PEAK DUO BLK ML G10+ 400W
MODULE WEIGHT: 48.50 LBS
MODULE DIMENSIONS: 74''x 41.1'' x 1.5"
RACKING/RAIL: XR1000 / XR1000 RAIL CANTILEVER
ROOF ATTACHMENT : HELICAL PILE PACKAGE - U.S.

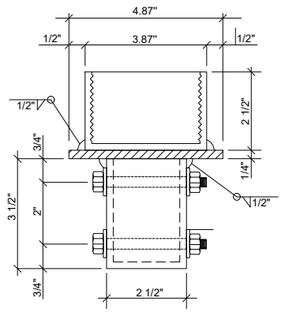
HELICAL
ROOF & FRAMING INFORMATION
MATERIAL: GROUND H
RAFTER/TRUSS SIZE: '' x ''
RAFTER/TRUSS SPACING: 2'

Sub array #1					
Rows	4	Columns	7	# Arrays	1
Area	43' 4" (EW) × 14' (NS)	Rail type	XR1000	Diagonal bracing	no
E/W spacing	14' 1"	Rail cantilever	2' 10"	Pipe cantilever	7"
Piers/array	8	Total south piers	4 (3' 11")	Total north piers	4 (7' 5")
Total cross pipes	2 (43' 4")	Total pipe length	132' 2"	Cut back modules	3
Shear	1,101 lbs	Moment	2,753 ft-lbs	Uplift	-1,349 lbs

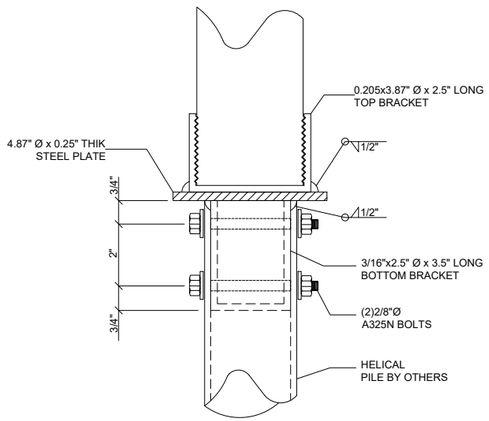
ARRAY 01: 25 MODULES
UPLIFT = 15840.63 LBS.
POINT LOAD = 0.00 LBS. PER MOUNTING POINT
PULLOUT STRENGTH = 0.00 LBS.
DISTRIBUTED LOAD = 2.46 PSF
MODULE & RACKING WEIGHT = 1300.00 LBS

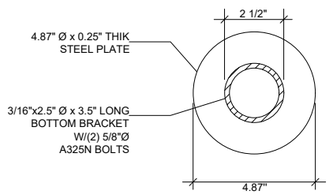


TOP BRACKET PLAN VIEW

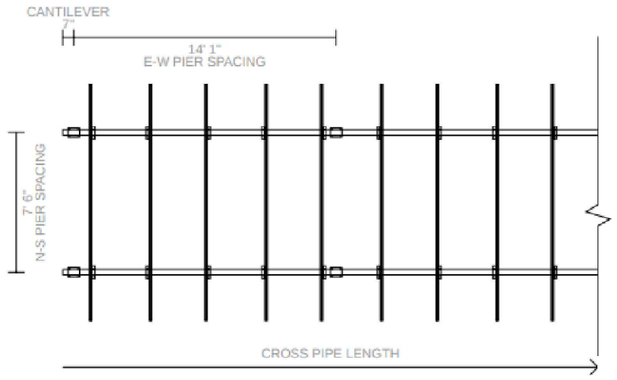


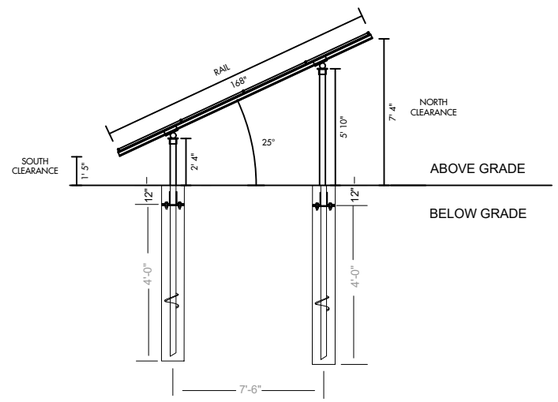
ADAPTER DETAIL





BOTTOM BRACKET PLAN VIEW





N-S PIER
SPACING

NORTH CAROLINA PROFESSIONAL SEAL 050296 ENGINEER ARASH ZANDIEH
Exp. 12/31/2022

5/11/2023

TITAN SOLAR POWER
525 W BASELINE RD., MESA AZ, 85210
CONTRACTOR LIC# U.34445

TURPEN, CHRISTINE RESIDENCE
661 CAMERON HILL ROAD , CAMERON, NC, 28326
LAT:35.271910, LON:-79.099334
TSP154773

(25) Q PEAK DUO BLK ML G10+ 400W
(1) SOLAREDGE SE7600H-US
10.000 kW DC SYSTEM SIZE
7.600 kW AC SYSTEM SIZE

DATE: 5/8/2023
REV:A
DRAWN BY: CA

SEAL:

DETAILS
PV 4

PV MODULE

Q PEAK DUO BLK ML G10+ 400W

W	=	400 W
ISC	=	11.14 ADC
VOC	=	45.30 VDC
IMP	=	10.77 ADC
VMP	=	37.13 VDC
TVOC	=	-0.270% / °C

WIRE SCHEDULE

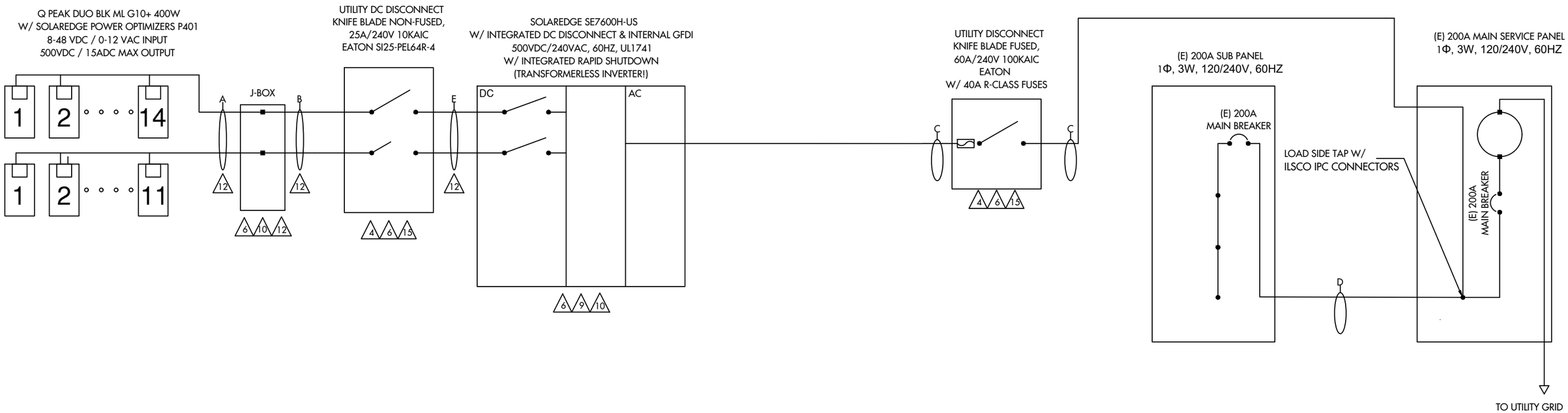
A - (4) #10 AWG-CU PV WIRE (HR)
(1) #10 AWG-CU BARE COPPER WIRE (GND)
IN FREE AIR

B - (4) #8 AWG-CU THWN-2 WIRE (HR)
(1) #8 AWG-CU THWN-2 WIRE (GND)
1 1/4 PVC TRENCHED TO 18" MINDEPTH

C - (3) #8 AWG-CU THWN-2 WIRE (HR)
(1) #8 AWG-CU THWN-2 WIRE (GND)
3/4'' EMT

D- EXISTING WIRING

E- (3) #8 AWG-CU THWN-2 WIRE (HR)
(1) #8 AWG-CU THWN-2 WIRE (GND)
1 1/4 PVC TRENCHED TO 18" MINDEPTH



WIRE SIZE CALCULATIONS

TEMP CORRECTION FACTOR: 0.87 (43° AMBIENT)
ROOFTOP TEMP CORRECTION FACTOR: 1.00 (43° ADJUSTED)
(2" ABOVE ROOFTOP / 0° TEMP ADDERS - AS OCCURS)
(TEMP DATA TAKEN FROM ASHRAE 2% AVG HIGH TEMP)

DC WIRING

CONDUIT FILL FACTOR	=	0.80
OPTIMIZER MAX. CURRENT	=	18.75A DC (15.00A X 1 X 1.25)
#10- AWG CU. AMPACITY FREE AIR	=	47.85A (55A X 0.87)
#10 - AWG CU. AMPACITY ROOFTOP CONDUIT	=	27.84A (40A X 0.87 X 0.80)

AC WIRING

CONDUIT FILL FACTOR	=	1 (3) CONDUCTORS
MAX. INVERTER CURRENT	=	32A (PER INVERTER SPECS)
MIN. INVERTER OCP	=	40A (32A X 1.25)
INVERTER OCP	=	40A
#8 - AWG CU AMPACITY	=	47.85A (55A X 1 X 0.87)

TITAN SOLAR POWER
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CONTRACTOR LIC# U.34445

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LAT:35.271910, LON:-79.099334
TSP154773

(25) Q PEAK DUO BLK ML G10+ 400W
(1) SOLAREDGE SE7600H-US
10.000 kW DC SYSTEM SIZE
7.600 kW AC SYSTEM SIZE

DATE: 5/8/2023
REV:A
DRAWN BY: CA

SEAL:

ONE LINE

PV 5

PV MODULE

Q PEAK DUO BLK ML G10+ 400W

W	=	400 W
ISC	=	11.14 ADC
VOC	=	45.30 VDC
IMP	=	10.77 ADC
VMP	=	37.13 VDC
TVOC	=	-0.270% / °C

WIRE SCHEDULE

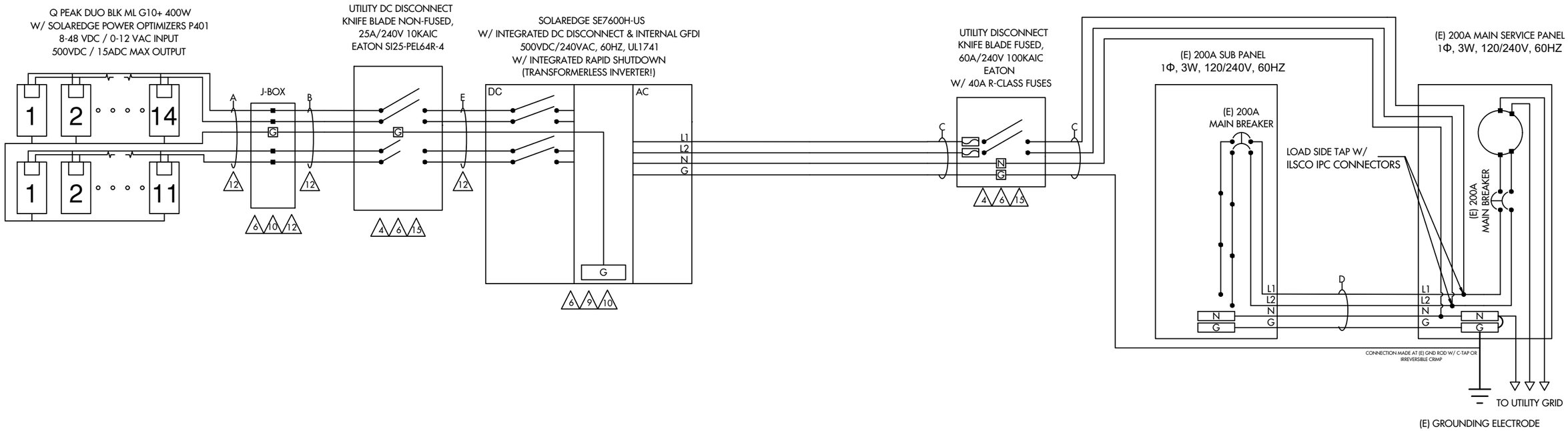
A - (4) #10 AWG-CU PV WIRE (HR)
(1) #10 AWG-CU BARE COPPER WIRE (GND)
IN FREE AIR

B - (4) #8 AWG-CU THWN-2 WIRE (HR)
(1) #8 AWG-CU THWN-2 WIRE (GND)
1 1/4 PVC TRENCHED TO 18" MINDEPTH

C - (3) #8 AWG-CU THWN-2 WIRE (HR)
(1) #8 AWG-CU THWN-2 WIRE (GND)
3/4'' EMT

D- EXISTING WIRING

E- (3) #8 AWG-CU THWN-2 WIRE (HR)
(1) #8 AWG-CU THWN-2 WIRE (GND)
1 1/4 PVC TRENCHED TO 18" MINDEPTH



WIRE SIZE CALCULATIONS

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ROOFTOP TEMP CORRECTION FACTOR: 1.00 (43° ADJUSTED)
(2" ABOVE ROOFTOP / 0° TEMP ADDERS - AS OCCURS)
(TEMP DATA TAKEN FROM ASHRAE 2% AVG HIGH TEMP)

DC WIRING

CONDUIT FILL FACTOR	=	0.80
OPTIMIZER MAX. CURRENT	=	18.75A DC (15.00A X 1 X 1.25)
#10- AWG CU. AMPACITY FREE AIR	=	47.85A (55A X 0.87)
#10 - AWG CU. AMPACITY ROOFTOP CONDUIT	=	27.84A (40A X 0.87 X 0.80)

AC WIRING

CONDUIT FILL FACTOR	=	1 (3) CONDUCTORS
MAX. INVERTER CURRENT	=	32A (PER INVERTER SPECS)
MIN. INVERTER OCP	=	40A (32A X 1.25)
INVERTER OCP	=	40A
#8 - AWG CU AMPACITY	=	47.85A (55A X 1 X 0.87)

TITAN SOLAR POWER
525 W BASELINE RD., MESA AZ, 85210
CONTRACTOR LIC# U.34445

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LAT:35.271910, LON:-79.099334
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(25) Q PEAK DUO BLK ML G10+ 400W
(1) SOLAREDGE SE7600H-US
10.000 kW DC SYSTEM SIZE
7.600 kW AC SYSTEM SIZE

DATE: 5/8/2023
REV:A
DRAWN BY: CA

SEAL:

THREE LINE

PV 6

1

⚠ CAUTION
PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

LOCATION: BACKFED BREAKER
CODE REF: NEC 705.12(4)

2

⚠ WARNING
INVERTER OUTPUT CONNECTION:
DO NOT RELOCATE THIS
OVERCURRENT DEVICE

LOCATION: BACKFED BREAKER
CODE REF: 2017 NEC 705.12(2)(3)(b)

3

WARNING
A GENERATION SCOURCE IS CONNECTED TO THE SUPPLY (UTILITY) SIDE OF THE MAIN SERVICE DISCONNECT. FOLLOW THE PROPER LOCK-OUT/TAG-OUT PROCEDURES TO ENSURE THE PHOTOVOLTAIC SYSTEM UTILITY DISCONNECT SWITCH IS OPENED PRIOR TO PERFORMING WORK ON THIS DEVICE

LOCATION: (IF APPLICABLE)
SUPPLY SIDE TAP
LOAD PANEL
CODE REF: UTILITY

4

PHOTOVOLTAIC AC DISCONNECT
RATED AC OPERATING CURRENT: 32A AC
NOMINAL OPERATING AC VOLTAGE: 240VAC

LOCATION: MAIN PANEL
AC DISCONNECT(S)
CODE REF: NEC 690.54

5

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LOCATION: MAIN PANEL (EXTERIOR)
PV BREAKER (INTERIOR)
CODE REF: NEC 690.56(C)(3)

6

⚠ WARNING
ELECTRICAL SHOCK HAZARD
TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LOCATION: COMBINER PANEL
AC DISCONNECT
JUNCTION BOX
INVERTER(S)
CODE REF: NEC 690.13(B)

7

PHOTOVOLTAIC
SYSTEM METER

LOCATION: DEDICATED KWH METER
CODE REF: NEC 690.4(B) UTILITY

8

⚠ WARNING
PHOTOVOLTAIC SYSTEM
COMBINER PANEL
DO NOT ADD LOADS

LOCATION: AC COMBINER PANEL
CODE REF: NEC 690.13(B)

9

PHOTOVOLTAIC SYSTEM DC DISCONNECT
MAXIMUM VOLTAGE: 480VDC
MAXIMUM CIRCUIT CURRENT: 15.0ADC
MAX. RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC- CONVERTER (IF INSTALLED) 15.0ADC

LOCATION: DC DISCONNECT
INVERTER
CODE REF: UTILITY

10

⚠ WARNING
ELECTRICAL SHOCK HAZARD
TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

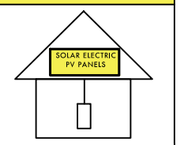
DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

LOCATION: DC DISCONNECT, COMBINE BOX
CODE REF: NEC 690.13(B)

11

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

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



LOCATION: MAIN SERVICE (OUTSIDE COVER)
CODE REF: NEC 690.12
NEC 690.56(C)(1)(a)
YELLOW STICKER

12

WARNING PHOTOVOLTAIC POWER SOURCE

LOCATION: DC CONDUIT
JUNCTION BOX
NO MORE THAN 10FT
CODE REF: NEC 690.31(G)(3)
NEC 690.31(G)(4)
REFLECTIVE AND WEATHER RESISTANT

LABEL REQUIRES CAPITALIZED LETTERS WITH A MINIMUM HEIGHT OF 3/8 INCH, WHITE LETTERS ON RED BACKGROUND
LABELS SHALL BE PLACED ON INTERIOR AND EXTERIOR DC CONDUIT, RACEWAYS, ENCLOSURES, AND CABLE ASSEMBLIES EVERY 10 FEET, WITHIN 1 FOOT OF TURNS OR BENDS AND WITHIN 1 FOOT ABOVE AND BELOW PENETRATIONS OF ROOF/CEILING ASSEMBLIES, WALLS OR BARRIERS.

13

⚠ CAUTION
DUAL POWER SOURCE
SECOND SOURCE IS
PHOTOVOLTAIC

LOCATION: SERVICE METER
MAIN PANEL

14

⚠ WARNING
INVERTER OUTPUT CONNECTION
DO NOT RELOCATE THIS
OVERCURRENT DEVICE

LOCATION: (IF APPLICABLE)
SERVICE PANEL
CODE REF: NEC 705.12(7)

15

PHOTOVOLTAIC SYSTEM
UTILITY DISCONNECT SYSTEM

LOCATION: AC DISCONNECT
CODE REF: UTILITY

16

PV SOLAR BREAKER
DO NOT RELOCATE THIS
OVERCURRENT DEVICE

LOCATION: MAIN PANEL-(EXTERIOR)
PV BREAKER: (INTERIOR)
CODE REF: NEC 705.12(B)(2)(3)(B)

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(1) SOLAREDGE SE7600H-US
10.000 kW DC SYSTEM SIZE
7.600 kW AC SYSTEM SIZE

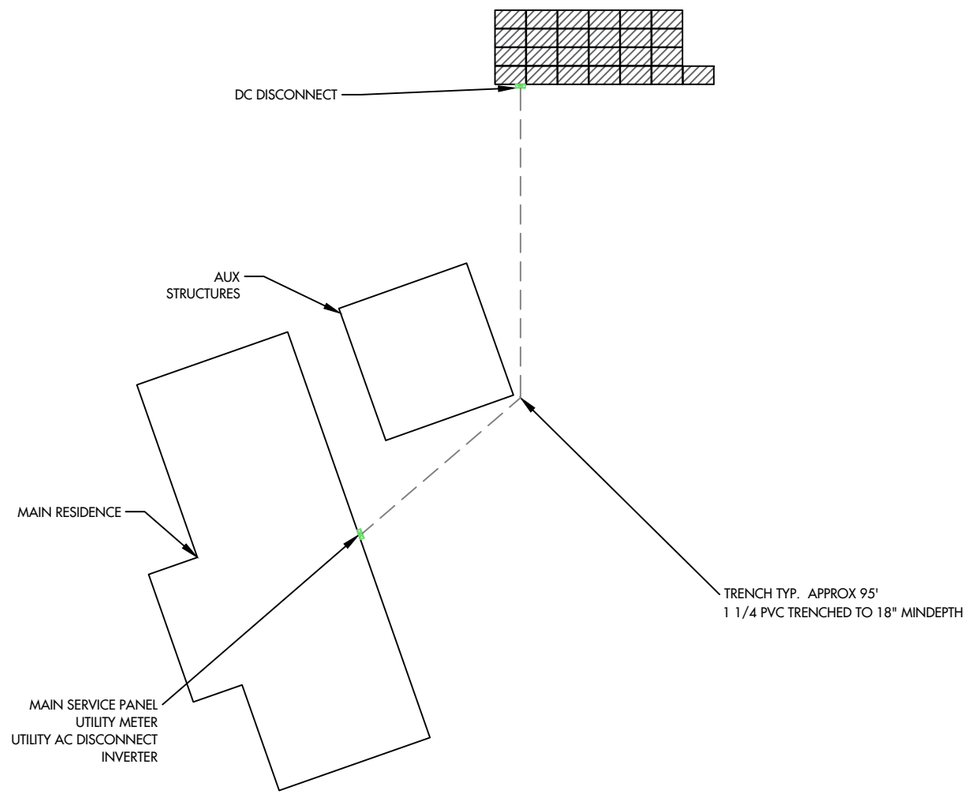
DATE: 5/8/2023
REV: A
DRAWN BY: CA

SEAL:

LABELS
PV 7

CAUTION

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



DIRECTORY PLAQUE IN ACCORDANCE WITH NEC690.56(A)(B), 705.10

TITAN SOLAR POWER
525 W BASELINE RD., MESA AZ, 85210
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(1) SOLAREDGE SE7600H-US
10.000 kW DC SYSTEM SIZE
7.600 kW AC SYSTEM SIZE

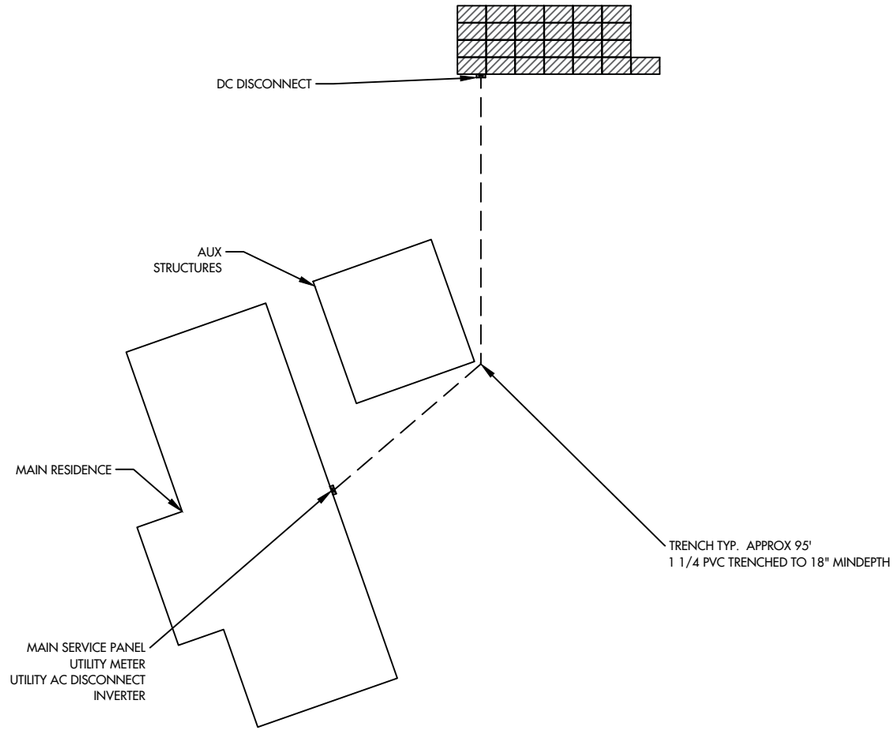
DATE: 5/8/2023
REV: A
DRAWN BY: CA

SEAL:

PLACARD

PV 8

JOB SAFETY PLAN



LOCATION OF NEAREST URGENT CARE FACILITY
NAME:
ADDRESS:
PHONE NUMBER:

NOTES:

- INSTALLER SHALL DRAW IN DESIGNATED SAFETY AREA AROUND HOME
- INSTALLER SHALL UPDATE NAME, ADDRESS, AND PHONE NUMBER OF NEAREST URGENT CARE FACILITY RELATIVE TO THE JOB SITE BEFORE STARTING WORK.

PRINT NAME	INITIAL	YES	NO

TITAN
SOLAR POWER
525 W BASELINE RD., MESA AZ, 85210
CONTRACTOR LIC# U.34445

TURPEN, CHRISTINE RESIDENCE
661 CAMERON HILL ROAD , CAMERON, NC, 28326
LAT:35.271910, LON:-79.099334
TSP154773

(25) Q PEAK DUO BLK ML G10+ 400W
(1) SOLAREDGE SE7600H-US
10.000 kW DC SYSTEM SIZE
7.600 kW AC SYSTEM SIZE

DATE: 5/8/2023
REV: A
DRAWN BY: CA

SEAL:

SAFETY PLAN
PV 9

Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US /
SE7600H-US / SE10000H-US / SE11400H-US

INVERTERS

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 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)

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Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/
SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXXXH-XXXXXBXX4							
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5[1]							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
Power Factor	1, Adjustable - 0.85 to 0.85							
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380				400			Vdc
Maximum Input Current @240V[2]	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V[2]	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600kΩ Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W

(1) For other regional settings please contact SolarEdge support
(2) A higher current source may be used; the inverter will limit its input current to the values stated

Single Phase Inverter with HD-Wave Technology

for North America

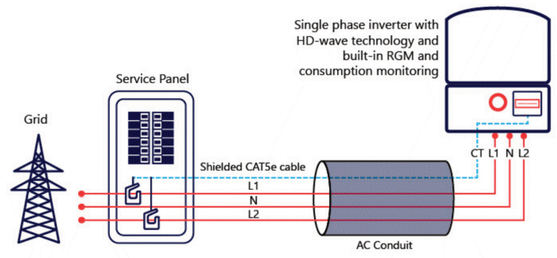
SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/
SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Metering, ANSI C12.20	Optional[3]							
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 AFCI according to T.I.L. M-07							
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)							
Emissions	FCC Part 15 Class B							
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range	1" Maximum / 14-6 AWG					1" Maximum /14-4 AWG		
DC Input Conduit Size / # of Strings / AWG Range	1" Maximum / 1-2 strings / 14-6 AWG					1" Maximum / 1-3 strings / 14-6 AWG		
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174					21.3 x 14.6 x 7.3 / 540 x 370 x 185		in / mm
Weight with Safety Switch	22 / 10		25.1 / 11.4		26.2 / 11.9	38.8 / 17.6		lb / kg
Noise	< 25					<50		dBA
Cooling	Natural Convection							
Operating Temperature Range	-40 to +140 / -40 to +60[4]							°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

(3) Inverter with Revenue Grade Meter P/N: SExxxxH-US000BNC4; Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxxH-US000BNI4 . For consumption metering, current transformers should be ordered separately: SEACT0750-200NA-20 or SEACT0750-400NA-20. 20 units per box
(4) Full power up to at least 50°C / 122°F; for power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf

How to Enable Consumption Monitoring

By simply wiring current transformers through the inverter's existing AC conduits and connecting them to the service panel, homeowners will gain full insight into their household energy usage helping them to avoid high electricity bills



RoHS

TITAN SOLAR POWER
525 W BASELINE RD., MESA AZ, 85210
CONTRACTOR LIC# U.34445

TURPEN, CHRISTINE RESIDENCE
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(1) SOLAREDGE SE7600H-US
10.000 kW DC SYSTEM SIZE
7.600 kW AC SYSTEM SIZE

DATE: 5/8/2023
REV: A
DRAWN BY: CA

SEAL:

EQUIPMENT SPECIFICATIONS
PV 10

intertek
Total Quality. Assured.

Intertek
3933 US Route 11
Cortland, NY 13045
Telephone: 607-753-7311
www.intertek.com

Subject: ETL Evaluation of SolarEdge Products to Rapid Shutdown Requirements

To, whom it may concern

This letter represents the testing results of the below listed products to the requirements contained in the following standards:

The evaluation was done on the PV Rapid Shutdown System (PVRSS), and covers installations consisting of optimizers and inverters with part numbers listed below.

The testing done has verified that controlled conductors are limited to:

- Not more than 30 volts and 240 voltamperes within 30 seconds of rapid shutdown initiation outside the array.
- Not more than 80 volts and 240 voltamperes within 30 seconds of rapid shutdown initiation inside the array.

The rapid shutdown initiation is performed by either disconnecting the AC feed to the inverter, or – if the inverter DC Safety switch is readily accessible – by turning off the DC Safety switch.

Applicable products:

(1) Power optimizers:

PB followed by 001 to 350; followed by -AOB or -TFI.
OP followed by 001 to 500; followed by -LV, -MV, -IV or -EV.
P followed by 001 to 1100.
SP followed by 001 to 350.
When optimizers are connected to 2 or more modules in series, the max input voltage may exceed 80V. Following the implementation of the NEC 2017 rapid shutdown value of 80V max inside of the array at the beginning of 2019, modules exceeding this combined input max voltage will be required to use optimizers with parallel inputs. Also meeting NEC 2020 rapid shutdown requirement.

(2) 1 -PH Inverters

SE3000A-US / SE3800A-US / SE5000A-US / SE6000A-US / SE7600A-US / SE10000A-US / SE11400A-US / SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US when the following label is labeled on the side of the inverter:

Inverter part number may be followed by a suffix.

(3) 3 -PH Inverters

intertek
Total Quality. Assured.

Intertek
3933 US Route 11
Cortland, NY 13045
Telephone: 607-753-7311
www.intertek.com

SE9KUS / SE10KUS / SE14.4KUS/ SE16.7kUS / SE17.3kUS / SE20KUS/ SE24KUS / SE30KUS / SE33.3KUS / SE40KUS / SE43.2KUS / SE50KUS / SE66.6KUS / SE80KUS / SE85KUS / SE100KUS / SE120KUS; when the following label is labeled on the side of the inverter:

Please note, this Letter Report does not represent authorization for the use of any Intertek certification marks.

Brand Name(s)	SolarEdge
Relevant Standard(s)	UL 1741, UL 1741 CRD for rapid shutdown National Electric Code, 2020, Section 690.12 requirement for rapid shutdown
Verification Issuing Office	3933 US Route 11, Cortland, NY 13045

Signature:

Name: Mukund Rana
Position: Staff Engineer
Date:5/17/2021

intertek
Total Quality. Assured.

Intertek
3933 US Route 11
Cortland, NY 13045
Telephone: 607-753-7311
www.intertek.com

Date	Engineer / Reviewer	Description
5/17/2021 G104683664CRT	Dishant Patel	Added New 3-PH Inverter model SE50KUS, SE80KUS, SE85KUS and SE120KUS.
	Mukund Rana	Updated Power optimizers from "P followed by 001 to 960" to "P followed by 001 to 1100" Updated NEC standard from "National Electric Code, 2017, Section 690.12 requirement for rapid shutdown" To "National Electric Code, 2020, Section 690.12 requirement for rapid shutdown"

Power Optimizer

For North America

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

POWER OPTIMIZER

PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

solaredge.com

solaredge

/ 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 72 & 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	340	370	400		405	485	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	60	125(2)		83(2)	Vdc
MPPT Operating Range	8 - 48		8 - 60	8 - 80	8-60	12.5 - 105		12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11			10.1	11.75	11		14	Adc
Maximum Efficiency	99.5								%
Weighted Efficiency	98.8							98.6	%
Overvoltage Category	I								
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)									
Maximum Output Current	15								Adc
Maximum Output Voltage	60					85			Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF)									
Safety Output Voltage per Power Optimizer	1 ± 0.1								Vdc
STANDARD COMPLIANCE									
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3								
Safety	IEC62109-1 (class II safety), UL1741								
Material	UL94 V-0 , UV Resistant								
RoHS	Yes								
INSTALLATION SPECIFICATIONS									
Maximum Allowed System Voltage	1000								Vdc
Compatible Inverters	All SolarEdge Single Phase and Three Phase inverters								
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1			129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 153 x 29.5 /5.1 x 6 x 1.16	129 x 159 x 49.5 / 5.1 x 6.3 x 1.9		129 x 162 x 59 / 5.1 x 6.4 x 2.3	mm / in
Weight (including cables)	630 / 1.4			750 / 1.7	655 / 1.5	845 / 1.9		1064 / 2.3	gr / lb
Input Connector	MC4(3)						Single or dual MC4(3)(4)	MC4(3)	
Input Wire Length	0.16 / 0.52								m / ft
Output Wire Type / Connector	Double Insulated / MC4								
Output Wire Length	0.9 / 2.95	1.2 / 3.9							m / ft
Operating Temperature Range(5)	-40 - +85 / -40 - +185								°C / °F
Protection Rating	IP68 / NEMA6P								
Relative Humidity	0 - 100								%

(1) Rated power of the module at STC will not exceed the optimizer "Rated Input DC Power". Modules with up to +5% power tolerance are allowed
(2) NEC 2017 requires max input voltage be not more than 80V
(3) For other connector types please contact SolarEdge
(4) For dual version for parallel connection of two modules use P485-4NMDMRM. In the case of an odd number of PV modules in one string, installing one P485 dual version power optimizer connected to one PV module. When connecting a single module seal the unused input connectors with the supplied pair of seals.
(5) For ambient temperature above +85°C / +185°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details.

PV System Design Using a SolarEdge Inverter(6)(7)		Single Phase HD-Wave	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400, P401	8		10	18	
	P405, P485, P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50(8)	
Maximum Power per String		5700 (6000 with SE7600-US - SE11400-US)	5250	6000(9)	12750(10)	W
Parallel Strings of Different Lengths or Orientations		Yes				

(6) For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
(7) It is not allowed to mix P405/P485/P505 with P320/P340/P370/P400/P401 in one string
(8) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
(9) For 208V grid: it is allowed to install up to 7,200W per string when the maximum power difference between each string is 1,000W
(10) For 277/480V grid: it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W

Intertek RoHS

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SEAL:

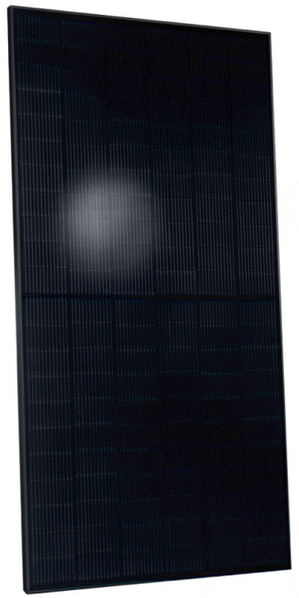
EQUIPMENT SPECIFICATIONS
PV 12

TITAN SOLAR PANEL

25 YR Warranty Product & Performance

EUPD RESEARCH TOP BRAND PV MODULES EUROPE 2021

Q CELLS Yield Security



BREAKING THE 20% EFFICIENCY BARRIER

Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.9 %.

INDUSTRY'S MOST THOROUGH TESTING

Q CELLS is the first solar module manufacturer to pass the most comprehensive quality programme in the industry:
The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.

ENDURING HIGH PERFORMANCE

Long-term yield security with Anti LID Technology, Anti PID Technology1, Hot-Spot Protect and Traceable Quality Tra.Q™.

EXTREME WEATHER RATING

High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).

A RELIABLE INVESTMENT

Inclusive 25-year product warranty and 25-year linear performance warranty2.

INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.

1 APT test conditions according to IEC / TS 62804-1:2015, method A (−1500 V, 96 h)
2 See data sheet on rear for further information.

Q CELLS

Q PEAK DUO BLK ML-G10+

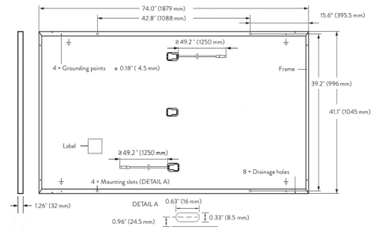
395-400 *ENDURING HIGH PERFORMANCE*

THE IDEAL SOLUTION FOR:

Rooftop arrays on residential buildings

MECHANICAL SPECIFICATION

FORMAT	74.0 in × 41.1 in × 1.26 in (including frame) (1879 mm × 1045 mm × 32 mm)
WEIGHT	48.5 lbs (22.0 kg)
FRONT COVER	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
BACK COVER	Composite film
FRAME	Black anodized aluminum
CELL	6 × 22 monocrystalline Q.ANTUM solar half cells
JUNCTION BOX	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), IP67, with bypass diodes
CABLE	4 mm² Solar cable; (+) ≥ 49.2 in (1250 mm), (−) ≥ 49.2 in (1250 mm)
CONNECTOR	Stäubli MC4; IP68

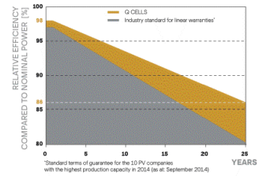


ELECTRICAL CHARACTERISTICS

POWER CLASS				385	390	395	400	405
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC [1] (POWER TOLERANCE +5 W / −0 W)								
MINIMUM	POWER AT MPP	P_{MPP}	[W]	385	390	395	400	405
MINIMUM	SHORT CIRCUIT CURRENT	I_{SC}	[A]	11.04	11.07	11.10	11.14	11.17
MINIMUM	OPEN CIRCUIT VOLTAGE	V_{OC}	[V]	45.19	45.23	45.27	45.30	45.34
MINIMUM	CURRENT AT MPP	I_{MPP}	[A]	10.59	10.65	10.71	10.77	10.83
MINIMUM	VOLTAGE AT MPP	V_{MPP}	[V]	36.36	36.62	36.88	37.13	37.39
	EFFICIENCY	η	[%]	≥19.6	≥19.9	≥20.1	≥20.4	≥20.6
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT [2]								
MINIMUM	POWER AT MPP	P_{MPP}	[W]	288.8	292.6	296.3	300.1	303.8
MINIMUM	SHORT CIRCUIT CURRENT	I_{SC}	[A]	8.90	8.92	8.95	8.97	9.00
MINIMUM	OPEN CIRCUIT VOLTAGE	V_{OC}	[V]	42.62	42.65	42.69	42.72	42.76
MINIMUM	CURRENT AT MPP	I_{MPP}	[A]	8.35	8.41	8.46	8.51	8.57
MINIMUM	VOLTAGE AT MPP	V_{MPP}	[V]	34.59	34.81	35.03	35.25	35.46

[1] Measurement tolerances P_{MPP} ±3%; I_{SC}; V_{OC} ±5% at STC: 1000 W/m², 25±2 °C, AM 1.5 according to IEC 60904-3 • [2] 800 W/m², NMOT, spectrum AM 1.5

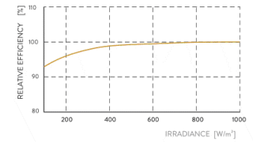
Q CELLS PERFORMANCE WARRANTY



At least 98 % of nominal power during first year. Thereafter max. 0.5% degradation per year. At least 93.5% of nominal power up to 10 years. At least 86 % of nominal power up to 25 years.

All data within measurement tolerances Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.

PERFORMANCE AT LOW IRRADIANCE



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	NMOT	[°F]	109±5.4 (43±3 °C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V	SYS	[V]	1000 (IEC) / 1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating		[A DC]	20	Fire Rating based on ANSI / UL 61730	TYPE 2
Max. Design Load, Push / Pull [3]		[lbs/ft²]	75 (3600 Pa) / 55 (2660 Pa)	Permitted Module Temperature on Continuous Duty	−40 °F up to +185 °F (−40 °C up to +85 °C)
Max. Test Load, Push / Pull [3]		[lbs/ft²]	113 (5400 Pa) / 84 (4000 Pa)		

[3] See Installation Manual

QUALIFICATIONS AND CERTIFICATES

UL 61730, CE-compliant,
Quality Controlled PV - TÜV Rheinland,
IEC 61215:2016, IEC 61730:2016,
U.S. Patent No. 9,893,215 (solar cells),
QCPV Certification ongoing.

PACKAGING INFORMATION

Horizontal packaging	76.4 in 1940 mm	43.3 in 1100 mm	48.0 in 1220 mm	1656 lbs 751 kg	24 pallets	24 pallets	32 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.

Q CELLS
400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA
TEL: +1 949 748 5996
EMAIL: sales@q-cells.com.

TITAN SOLAR PANEL
525 W Baseline Rd., Mesa, AZ, 85210
TEL: 855.SAY.SOLAR
EMAIL: info@titansolarpower.com

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7.600 kW AC SYSTEM SIZE

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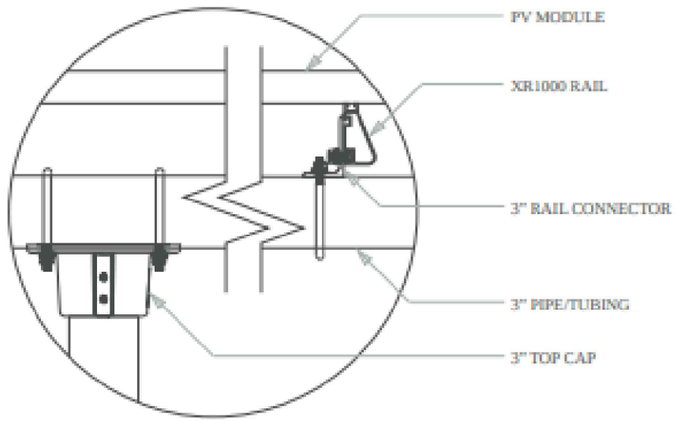
SEAL:

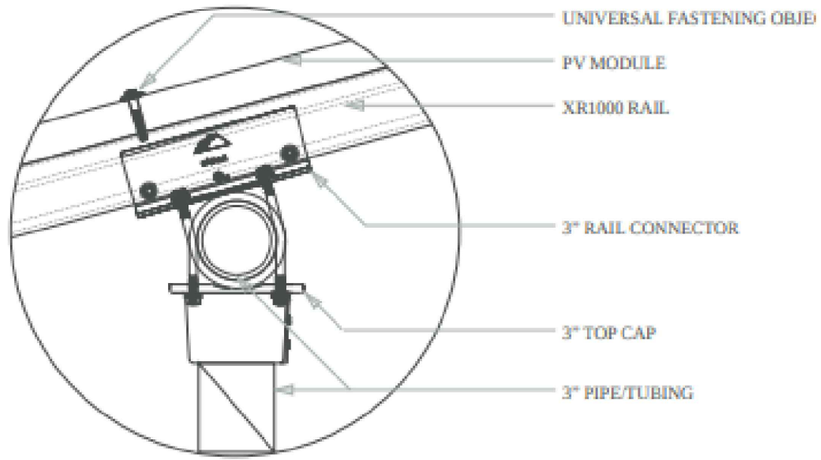
EQUIPMENT SPECIFICATIONS
PV 13

Pipe Fitting Detail

XR1000 Rail

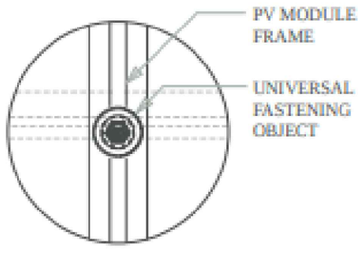


Front View

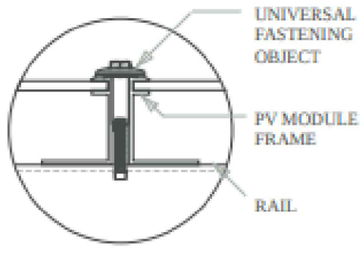


Side View

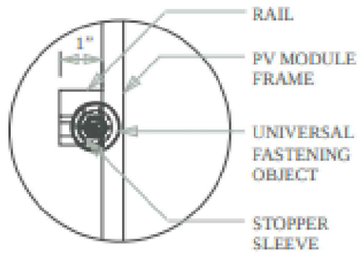
Clamp Detail



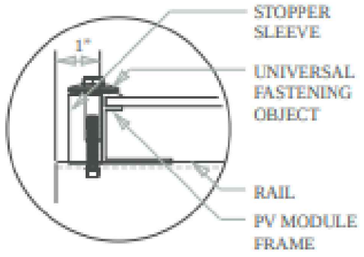
Mid Clamp, Plan



Mid Clamp, Front



End Clamp, Plan



End Clamp, Front

TITAN SOLAR POWER
525 W BASELINE RD., MESA AZ, 85210
CONTRACTOR LIC# U.34445

TURPEN, CHRISTINE RESIDENCE
661 CAMERON HILL ROAD , CAMERON, NC, 28326
LAT:35.271910, LON:-79.099334
TSP154773

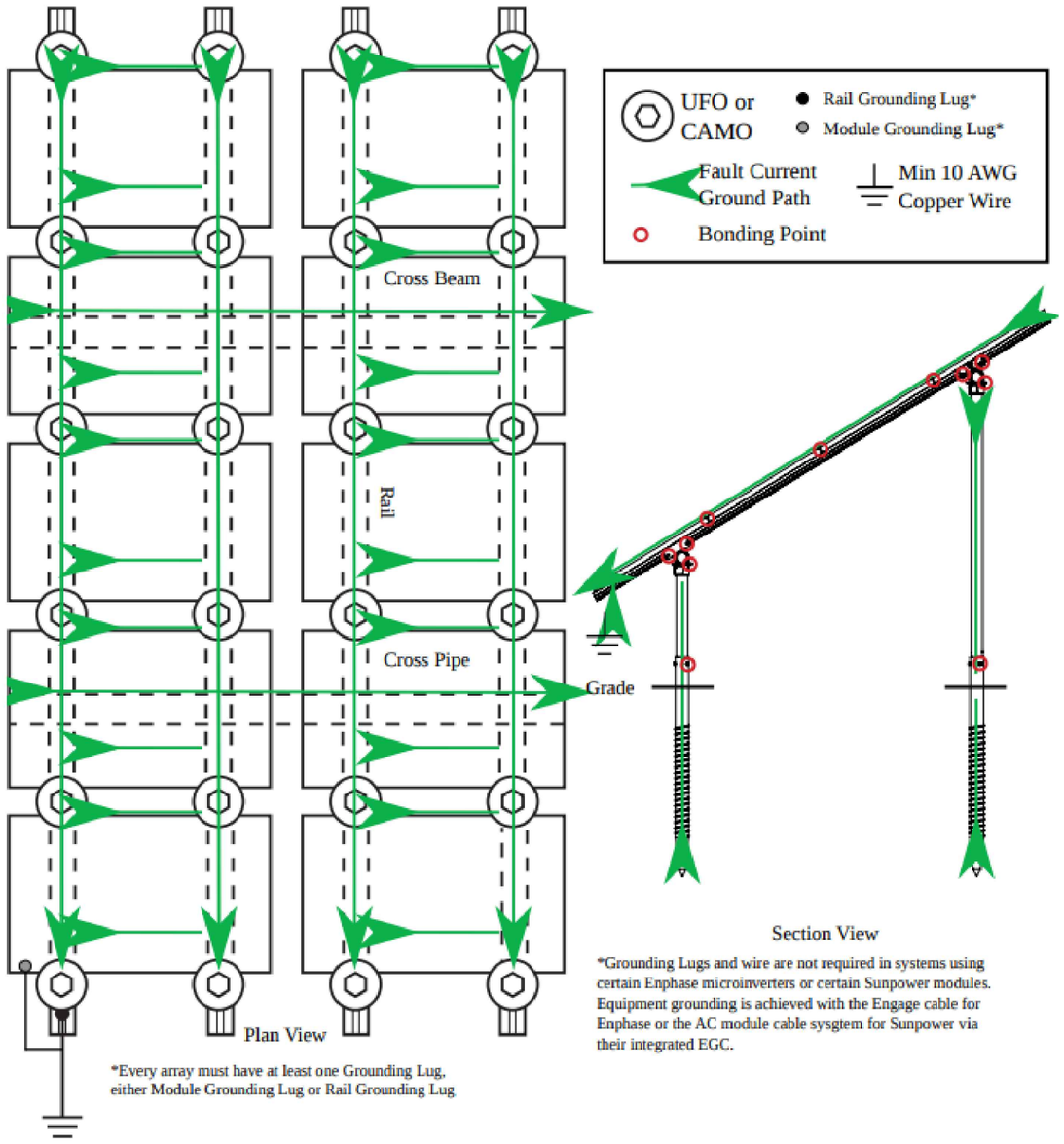
(25) Q PEAK DUO BLK ML G10+ 400W
(1) SOLAREDGE SE7600H-US
10.000 kW DC SYSTEM SIZE
7.600 kW AC SYSTEM SIZE

DATE: 5/8/2023
REV: A
DRAWN BY: CA

SEAL:

EQUIPMENT SPECIFICATIONS
PV 14

Grounding Diagram



*Every array must have at least one Grounding Lug, either Module Grounding Lug or Rail Grounding Lug

*Grounding Lugs and wire are not required in systems using certain Enphase microinverters or certain Sunpower modules. Equipment grounding is achieved with the Engage cable for Enphase or the AC module cable sysgtem for Sunpower via their integrated EGC.

Bill of Materials

Part	Spares	Total Qty
Rails		
XR-1000-168A XR1000, Rail 168" (14 Feet) Clear	0	14
Clamps & Grounding		
UFO-CL-01-A1 Universal Module Clamp, Clear	0	64
UFO-STP-32MM-M1 Stopper Sleeve, 32MM, Mill	0	28
XR-LUG-03-A1 Grounding Lug, Low Profile	0	1
Substructure		
70-0300-SGA SGA Top Cap at 3"	0	8
GM-BRC-003 Ground Mount Bonded Rail Connector - 3"	0	28
GM-HSHW-01-M1 Hex Head Set Screw	0	32

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CONTRACTOR LIC# U.34445

TURPEN, CHRISTINE RESIDENCE
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LAT:35.271910, LON:-79.099334
TSP154773

(25) Q PEAK DUO BLK ML G10+ 400W
(1) SOLAREDGE SE7600H-US
10.000 kW DC SYSTEM SIZE
7.600 kW AC SYSTEM SIZE

DATE: 5/8/2023
REV: A
DRAWN BY: CA

SEAL:

EQUIPMENT SPECIFICATIONS
PV 15

Recommended OCPD Size per Grid

Inverter	Maximum Output Current (A)	Minimum Fuse Rating (A)	Maximum Fuse Rating (A)
SE3000H-US	12.5	20	50
SE3800H-US	16	20	50
SE5000H-US	24 @ 208V 21 @ 240V	30	50
SE6000H-US	24 @ 208V 25 @ 240V	30 @ 208V 35 @ 240V	50
SE7600H-US	32	40	50
SE10000H-US	42	60	80
SE11400H-US	48.5 @ 208V 47.5 @ 240V	70 @ 208V 60 @ 240V	80

TITAN SOLAR POWER
525 W BASELINE RD., MESA AZ, 85210
CONTRACTOR LIC# U.34445

TURPEN, CHRISTINE RESIDENCE
661 CAMERON HILL ROAD , CAMERON, NC, 28326
LAT:35.271910, LON:-79.099334
TSP154773

(25) Q PEAK DUO BLK ML G10+ 400W
(1) SOLAREDGE SE7600H-US
10.000 kW DC SYSTEM SIZE
7.600 kW AC SYSTEM SIZE

DATE: 5/8/2023
REV: A
DRAWN BY: CA

SEAL:

EQUIPMENT SPECIFICATIONS
PV 16

Rotary Actuator Switch - Lockable Off in Plastic Enclosure

- Rotary Actuator Switch
- Lockable Off - Safe-Lock
- Self-Extinguishing Plastic Enclosure
- M25 Cable Gland Entry Option
- NEMA Type 3R
- IP66

DC21A IEC60947-3 600V	800V	1000V	1500V	UL Ratings UL508I 350V	500V	600V	1000V	Poles in series	No. of Strings	Weight Kg/pcs.	Part Number	Contact Configuration
16A	16A	9A	3A	16A	16A	16A	-	2	1	0.43	SI16 PEL64R2	
25A	20A	11A	4A	20A	20A	20A	-	2	1	0.43	SI25 PEL64R2	
32A	23A	13A	5A	25A	25A	25A	-	2	1	0.43	SI32 PEL64R2	
40A	30A	20A	6A	40A	40A	40A	16A	2	1	1.59	SI40 PEL64R2	
55A	45A	36A*	8A	55A	55A	55A	20A	2	1	1.59	SI55 PEL64R2	
29A	16A	9A	3A	29A	29A	21A	-	2	1	0.49	SI16 PEL64R2H	
45A	20A	11A	4A	45A	38A	23A	-	2	1	0.49	SI25 PEL64R2H	
50A	23A	13A	5A	58A	40A	25A	-	2	1	0.49	SI32 PEL64R2H	
64A	30A	20A	6A	72A	53A	42A	22A	2	1	1.74	SI40 PEL64R2H	
80A	45A	25A	8A	85A	66A	55A	25A	2	1	1.74	SI55 PEL64R2H	
16A	16A	9A	3A	16A	16A	16A	-	2	2	0.46	SI16 PEL64R4	
25A	20A	11A	4A	20A	20A	20A	-	2	2	0.46	SI25 PEL64R4	
32A	23A	13A	5A	25A	25A	25A	-	2	2	0.46	SI32 PEL64R4	
40A	30A	20A	6A	40A	40A	40A	16A	2	2	1.67	SI40 PEL64R4	
55A	45A	36A*	8A	55A	55A	55A	20A	2	2	1.67	SI55 PEL64R4	
16A	16A	16A	16A	16A	16A	16A	-	4	1	0.47	SI16 PEL64R4S	
25A	25A	25A	20A	25A	25A	25A	-	4	1	0.47	SI25 PEL64R4S	
32A	32A	32A	23A	32A	32A	32A	-	4	1	0.47	SI32 PEL64R4S	
40A	40A	40A	30A	40A	40A	40A	40A	4	1	1.70	SI40 PEL64R4S	
55A	55A	55A	40A	55A	55A	55A	55A	4	1	1.70	SI55 PEL64R4S	
16A	16A	9A	3A	16A	16A	16A	-	2	3	1.53	SI16 PEL64R6	
25A	20A	11A	4A	20A	20A	20A	-	2	3	1.53	SI25 PEL64R6	
32A	23A	13A	5A	25A	25A	25A	-	2	3	1.53	SI32 PEL64R6	
16A	16A	9A	3A	16A	16A	16A	-	2	4	1.58	SI16 PEL64R8	
25A	20A	11A	4A	20A	20A	20A	-	2	4	1.58	SI25 PEL64R8	
32A	23A	13A	5A	25A	25A	25A	-	2	4	1.58	SI32 PEL64R8	
29A	29A	29A	16A	29A	29A	29A	-	4	1	1.63	SI16 PEL64R4H	
45A	45A	45A*	20A	45A	45A	45A	-	4	1	1.63	SI25 PEL64R4H	
58A	58A*	58A*	23A	58A	58A	50A	-	4	1	1.63	SI32 PEL64R4H	

4T / 4B configuration also available. For ratings refer to 4S configuration. (See page 17)
* DC21B

Technical Data

Data according to IEC 60947-3, VDE 0660, GB14048.3

Main Contacts			Type	SI16	SI25	SI32	SI40	SI55
Rated thermal current I_{the}			A	16	25	32	40	55
Rated insulation voltage U_i 1)			V	1000	1000	1000	1500	1500
Rated insulation voltage U_i 2)			V	1500	1500	1500	-	-
Distance of contacts (per pole)			mm	8	8	8		
Rated operational current I_e		300V	A	16	23	27	40	55
DC21A & DC21B	1 pole	400V	A	12	14	16	30	40
	1	500V	A	9	11	13	19	25
		600V	A	6	8	10	15	20
L/R = 1ms		700V	A	4.5	6	7.5	10	15
		800V	A	3	4	5	8	10
DC21B		900V	A	2.5	3	4	6	8
		1000V	A	1.5	2	2.5	4	6
	2 poles in series	500V	A	16	25	32	40	55
	2	600V	A	16	25	32	40	55
		700V	A	16	23	27	35	55
		800V	A	16	20	23	30	45
		850V	A	-	-	25	-	-
		900V	A	13	16	20	25	35
		1000V	A	9	11	13	20	36
		1200V	A	6	8	10	10	15
		1500V	A	3	4	5	6	8
	2 poles in series	500V	A	29	45	58	72	85
	+ 2 poles parallel	600V	A	29	45	50	64	80
	2H	700V	A	16	23	27	35	55
		800V	A	16	20	23	30	45
		900V	A	13	16	20	25	35
		1000V	A	9	11	13	20	25
		1200V	A	6	8	10	10	15
		1500V	A	3	4	5	6	8
	3 poles in series	500V	A	29	45	58	-	-
	+ 2 poles parallel	600V	A	29	45	50	-	-
	3H	700V	A	29	38	45	-	-
		800V	A	29	38	45	-	-
		900V	A	29	38	45	-	-
		1000V	A	29	38	45	-	-
		1200V	A	12	14	16	-	-
		1500V	A	9	11	13	-	-
	4 poles in series	500V	A	16	25	32	40	55
	4S	600V	A	16	25	32	40	55
		700V	A	16	25	32	40	55
		800V	A	16	25	32	40	55
		900V	A	16	25	32	40	55
		1000V	A	16	25	32	40	55
		1200V	A	16	20	23	30	40
	4 poles in series	500V	A	29	45	58	-	-
	+ 2 poles parallel	600V	A	29	45	58	-	-
	4H	700V	A	29	45	58	-	-
		800V	A	29	45	58	-	-
		900V	A	29	45	58	-	-
		1000V	A	29	45	58	-	-
		1200V	A	29	45	50	-	-
		1500V	A	16	20	23	-	-
Rated operational current I_e								
AC21B	2, 4	U_e max. 440V	A	16	25	32	40	55
	2H	U_e max. 440V	A	29	45	58	72	85

1) Suitable at overvoltage category I to III, pollution degree 3 (standard-industry): Uimp = 8kV.
2) Suitable at overvoltage category I to III, pollution degree 2 (min.IP55): Uimp = 8kV.

Technical Data continued

Data according to IEC 60947-3, VDE 0660, GB14048.3

Main Contacts			Type	SI16	SI25	SI32	SI40	SI55
Rated operational current I_e		500V	A	1	1.25	1.5	x	2.5
DC22B	1 pole	600V	A	0.5	0.75	1	x	2
	1	800V	A	0.3	0.4	0.5	x	1.5
L/R = 2.5ms		1000V	A	0.15	0.2	0.25	x	1
		1200V	A	-	-	-	x	x
		1500V	A	-	-	-	x	x
	2 poles in series	500V	A	7	8	9	x	x
	2	600V	A	5.5	6	6.5	x	x
		800V	A	2	2.5	3	x	x
		1000V	A	1	1.5	2	x	x
		1200V	A	-	-	-	x	x
		1500V	A	-	-	-	x	x
	4 poles in series	500V	A	16	25	32	x	x
	4S	600V	A	16	25	27.5	x	x
		800V	A	11.5	12	12.5	x	x
		1000V	A	8	9	10	x	x
		1200V	A	-	-	-	x	x
		1500V	A	-	-	-	x	x
Rated conditional short-circuit current			kA_{eff}	5	5	5	10	10
Max. fuse size			gl. (gG) A	40	63	80	125	160
Mechanical Life			$x10^3$	10	10	10	10	10
Rated short-time withstand current (1s)	I_{cw}	2, 4, 6, 8	A	800	900	1000	A2, A4: 1200	A2, A4: 1400
		2H, 3H, 4H	A	1300	1500	1700	A2+2: 2000	A2+2:2400
Short circuit making capacity	I_{cw}	2, 4, 6, 8	A	800	900	1000	A2, A4: 1200	A2, A4: 1400
		2H, 3H, 4H	A	1300	1500	1700	A2+2: 2000	A2+2:2400
Maximum cable cross sections		(including jumper LSV-B1)						
solid or stranded			mm^2	4 - 16	4 - 16	4 - 16	2.5 - 25	2.5 - 25
flexible			mm^2	4 - 10	4 - 10	4 - 10	4 - 16	4 - 16
flexible (+ multicore cable end)			mm^2	4 - 10	4 - 10	4 - 10	2.5 - 16	2.5 - 16
Size of terminal screw				M4 Pz2	M4 Pz2	M4 Pz2	M5 Pz2	M5 Pz2
Tightening torque			Nm	1.2 - 1.8	1.2 - 1.8	1.2 - 1.8	2.5 - 2.8	2.5 - 2.8
2 cables per clamp without jumper LSV-B1 / LSV-B2								
	solid or stranded		mm^2	16+(1.5-2.5)/10+(1.5-6)/6+(1.5-10)/4+(1.5-10)			16+(1.5-2.5)/10+(1.5-10)/6+(1.5-10)/4+(1.5-10)	
	flexible & flexible + multicore cable end		mm^2	16+(1.5-2.5)/10+(1.5-4)/6+(1.5-6)			16+(1.5-6)/10+(1.5-10)/6+(1.5-16)/4+(1.5-16)	
	stranded		AWG	8+(16-12)/10+(16-10)/12+(16-8)/14+(16-8)			3+(18-10)/4+(18-10)/6+(18-8)/8+(18-8)	
	solid		AWG	10+(16-12)/12+(16-10)/14+(16-10)			10+(16-10)/12+(16-10)/14+(16-10)/12+(16-10)/14+(16-10)	
Maximum ambient temperature								
Operation	All types except PEL64R		°C	-40 to +65				
	PEL64R type		°C	-40 to +45				
Storage			°C	-50 to +70				
Power loss per switch at $I_{e\,max.}$ DC21B								
2			W	0.8	2	3	4	6
4			W	1.6	4	6	8	12
6			W	2.4	6	9	12	18
8			W	3.2	8	12	16	24
2H			W	0.4	1	1.5	2	3
3H			W	0.6	1.5	2.25	3	4.5
4H			W	0.8	2	3	4	6

x - In Test