



MODULES										
REF.	QTY.	MAKE AND MODEL	P _{MAX}	P _{TC}	I _{SC}	I _{MP}	V _{OC}	V _{MP}	TEMP. COEFF. OF V _{OC}	FUSE RATING
PM1-48	48	LG LG310N1C-G4	310W	289W	9.96A	9.45A	40.4V	32.8V	-0.113V/°C (-0.28%/°C)	20A

INVERTERS										
REF.	QTY.	MAKE AND MODEL	AC VOLTAGE	GROUND	MAX OCPD RATING	RATED POWER	MAX OUTPUT CURRENT	MAX INPUT CURRENT	MAX INPUT VOLTAGE	CEC WEIGHTED EFFICIENCY
I1	1	SOLAR EDGE SE11400A-US (240V)	240V	FLOATING	60A	11,400W	48A	34A	500V	97.5%

POWER OPTIMIZERS							
REF.	QTY.	MODEL	RATED INPUT POWER	MAX OUTPUT CURRENT	MAX INPUT ISC	MAX DC VOLTAGE	WEIGHTED EFFICIENCY
PO1-48	48	SOLAR EDGE P320	320W	15A	11.0A	48V	98.8%

DISCONNECTS				
REF.	QTY.	MAKE AND MODEL	RATED CURRENT	MAX RATED VOLTAGE
SW1	1	SQUARE D DU222RB OR EQUIV.	60A	240VAC
SW2	1	SQUARE D D222NRB OR EQUIV.	60A	240VAC

OCPDS			
REF.	QTY.	RATED CURRENT	MAX VOLTAGE
F1-2	2	60A	240VAC

SYSTEM SUMMARY			
	STRING #1	STRING #2	STRING #3
POWERBOX MAX OUTPUT CURRENT	15A	15A	15A
OPTIMIZERS IN SERIES	16	16	16
NOMINAL STRING VOLTAGE	350V	350V	350V
ARRAY OPERATING CURRENT	14.2A	14.2A	14.2A
ARRAY STC POWER		14,880W	
ARRAY PTC POWER		13,877W	
MAX AC CURRENT		48A	
MAX AC POWER		11,400W	
DERATED (CEC) AC POWER		11,400W	

- ### NOTES
- ⚠ THE OUTPUT VOLTAGE OF THE POWER OPTIMIZERS ARE REGULATED BY THE INVERTER. THEY ARE NOT IMPACTED BY THE NUMBER OF MODULES IN THE STRING. THE CONTINUOUS CURRENT OF A SINGLE STRING IS EQUAL TO THE MAXIMUM OUTPUT CURRENT OF THE OPTIMIZER.
 - ⚠ THE SOLAR EDGE INVERTER IS EQUIPPED WITH A RAPID SHUTDOWN FEATURE WHICH CONFORMS TO NEC 690.12 (2014), WHICH REQUIRES THAT A RAPID SHUTDOWN FEATURE EXISTS TO DE-ENERGIZE PV SOURCE CIRCUITS FROM ALL SOURCES TO LESS THAN 30 VOLTS WITHIN 10 SECONDS.
 - ⚠ UNGROUNDED SYSTEM DC CONDUCTORS SHALL BE COLOR-CODED AS FOLLOWS. DC POSITIVE SHALL BE RED (OR MARKED RED) AND DC NEGATIVE SHALL BE BLACK (OR MARKED BLACK)
 - ⚠ DC VOLTAGE RANGE OF THE ARRAY IS REGULATED BY INVERTER AND WILL BE CONSTANT AT 350V. MAX DC VOLTAGE OF THE PV MODULE IS EXPECTED TO BE 45.0V AT -16°C (-16°C - 25°C) X -0.113V/C + 40.4V = 45.0V).
 - ⚠ THE SOLAR EDGE INVERTER IS NON-ISOLATED. NEITHER THE NEGATIVE NOR POSITIVE CONDUCTOR IS GROUNDED AND THEREFORE NO DC GEC IS REQUIRED.
 - ⚠ INTEGRATED DC DISCONNECT IS PROVIDED WITH INVERTER. DISCONNECT IS LISTED FOR USE WITH SOLAR EDGE UL 1741 LISTED STRING INVERTERS.
 - ⚠ OUTPUT OF INVERTER IS CONNECTED TO UTILITY ON LINE SIDE OF SERVICE DISCONNECT.

CONDUCTOR AND CONDUIT SCHEDULE W/ELECTRICAL CALCULATIONS																
ID	TYPICAL	CONDUCTOR	CONDUIT	CURRENT-CARRYING CONDUCTORS IN CONDUIT	OCPD	EGC	TEMP. CORR. FACTOR	CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT (125%)	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	AMP. @ TERMINAL	LENGTH	VOLTAGE DROP
1	3	10 AWG PV WIRE, COPPER	FREE AIR	N/A	N/A	6 AWG BARE, COPPER	0.76 (55°C)	1.0	15A	18.75A	55A	41.8A	75°C	50A	10FT	0.11%
2	3	10 AWG THWN-2, COPPER	0.5" DIA. FLEXIBLE STEEL	2	N/A	10 AWG THWN-2, COPPER	0.76 (53°C)	1.0	15A	18.75A	40A	30.4A	75°C	35A	50FT	0.53%
3	1	4 AWG THWN-2, COPPER	1" DIA. EMT	2	N/A	10 AWG THWN-2, COPPER	0.96 (33°C)	1.0	47.5A	59.37A	95A	91.2A	60°C	70A	10FT	0.12%
4	1	4 AWG THWN-2, COPPER	1" DIA. EMT	2	N/A	10 AWG THWN-2, COPPER	0.96 (33°C)	1.0	47.5A	59.37A	95A	91.2A	60°C	70A	36IN	0.04%
5	1	6 AWG THWN-2, COPPER	0.75" DIA. EMT	2	60A X 2	10 AWG THWN-2, COPPER	0.96 (33°C)	1.0	47.5A	59.37A	75A	72A	75°C	65A	10FT	0.19%

- ### GROUNDING NOTES
- 1 ALL EQUIPMENT SHALL BE PROPERLY GROUNDED PER THE REQUIREMENTS OF NEC ARTICLES 250 & 690
 - 2 PV MODULES SHALL BE GROUNDED TO MOUNTING RAILS USING MODULE LUGS OR RACKING INTEGRATED GROUNDING CLAMPS AS ALLOWED BY LOCAL JURISDICTION. ALL OTHER EXPOSED METAL PARTS SHALL BE GROUNDED USING UL-LISTED LAY-IN LUGS.
 - 3 GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE
 - 4 IF THE EXISTING MAIN SERVICE PANEL DOES NOT HAVE A VERIFIABLE GROUNDING ELECTRODE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL A SUPPLEMENTAL GROUNDING ELECTRODE.
 - 5 AC SYSTEM GROUNDING ELECTRODE CONDUCTOR (GEC) SHALL BE A MINIMUM SIZE #8AWG WHEN INSULATED, #6AWG IF BARE WIRE.
 - 6 EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED ACCORDING TO NEC ARTICLE 690.45, AND BE A MINIMUM OF #10AWG WHEN NOT EXPOSED TO DAMAGE, AND #6AWG SHALL BE USED WHEN EXPOSED TO DAMAGE
 - 7 GROUNDING AND BONDING CONDUCTORS, IF INSULATED, SHALL BE COLOR CODED GREEN, OR MARKED GREEN IF #4AWG OR LARGER

P-57256

YOUR LOGO HERE

GRID-TIED SOLAR POWER SYSTEM

**DOE RESIDENCE
383 ROQUETTE AVE
SOUTH FLORAL PARK, NY 11001**

SINGLE-LINE DIAGRAM

PROJECT ID: 57256
DATE: 04/04/17
CREATED BY: E. MISKA
CHECKED BY:

REVISIONS	

PV-1

1 SINGLE-LINE DIAGRAM
PV-1 SCALE: NTS

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