



SOLON - 90 module specs

Pp = 91 WDC
 Vp = 32.3 V
 Ip = 2.82 A
 Voc = 50 V
 Isc = 4 A

System specs

Pp = 12012 WDC
 Vp = 355.3 V
 Ip = 5.46 A
 Vmax = 11*50*1.13 = 612.5 V

12 strings of 11 SOLON modules

Each String
 Pp = 1001 WDC
 Ip = 2.82 A Vp = 355.3 V
 Isc = 8 A Voc = 550 V

3 strings paralleled at Combiner box

4 parallel strings
 Pp = 3003 WDC
 Ip = 8.46 A Vp = 355.3 V
 Isc = 12 A Voc = 550 V

	<u>WIRE SCHEDULE</u>	<u>CONDUIT</u>
A	2 - #10AWG PV CABLE 1 - #10AWG BARE COPPER	NONE
B	2 - #12 AWG THWN-2 1 - #12 AWG THWN GND	1/2" EMT/PVC
C	4 - #8AWG THWN-2 1 - #8AWG THWN GRD	1" EMT/PVC

Wire Sizing

Row to row and row to combiner

Isc(#in parallel)(1.25)(1.25) = 4(1)(1.25)(1.25) = 6.25 A
 Temperature corrected to 117F, => .76 factor
 Conduit fill 7-9 CCC => .70 factor
 For THWN-2, 6.25/(.76*.7) = 11.7 A **12 AWG**

DC percent volatage drop

%Vdrop = (Imp*2*wire run*CU resistance)/Vmp
 %vVdrop = (2.82*2*.1*1.98)/355 = .31 % drop/100ft

Combiner box to Inverter

Isc(#in parallel)(1.25)(1.25) = 4(3)(1.25)(1.25) = 18.75 A
 Temperature corrected to 117F, => .76 factor
 Conduit fill 4-6 CCC => .80 factor
 For THWN-2, 18.75/(.76*.8) = 30.8 A **8 AWG**

DC percent volatage drop

%Vdrop = (Imp*2*wire run*CU resistance)/Vmp
 %vVdrop = (8.46*2*.1*.491)/355 = .23 % drop/100ft



TITLE: **1 LINE DIAGRAM - SOLON ARRAY**

FOR: BIOSPHERE 2	DRAWN BY: BMS	REV: 0
DATE: 4/2/2012	SCALE: N/A	DRAWING NUMBER: 2011102