



**ASE - 300 module specs**

Pp = 300 WDC  
 Vp = 51 V  
 Ip = 5.9 A  
 Voc = 60 V  
 Vsc = 6.5 A

**System specs**

Pp = 28800 WDC  
 Vp = 408 V  
 Ip = 23.6 A  
 Vmax = 8\*60\*1.13 = 542.4 V

**12 strings of 8 ASE modules**

Each String  
 Pp = 2400 WDC  
 Ip = 5.9 A Vp = 408 V  
 Isc = 6.5 A Voc = 480 V

**4 strings paralleled at Combiner box**

3 parallel strings  
 Pp = 9600 WDC  
 Ip = 23.6 A Vp = 408 V  
 Isc = 26 A Voc = 480 V

	WIRE SCHEDULE	CONDUIT
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	2 - #6AWG THWN-2 1 - #6AWG THWN GRD	1" EMT/PVC

**Wire Sizing**

Row to row and row to combiner

Isc(#in parallel)(1.25)(1.25) = 6.5(1)(1.25)(1.25) = 10.2 A  
 Teperature corrected to 117F, => .76 factor  
 Conduit fill 7-9 CCC => .70 factor  
 For THWN-2, 10.2/(.76\*.7) = 19.2 A **12 AWG**

DC percent volatage drop

%Vdrop = (Imp\*2\*wire run\*CU resistance)/Vmp  
 %vVdrop = (5.9\*2\*.1\*1.98)/408 = .57 % drop/100ft

Combiner box to Inverter

Isc(#in parallel)(1.25)(1.25) = 6.5(4)(1.25)(1.25) = 40.6 A  
 Teperature corrected to 117F, => .76 factor  
 For THWN-2, 40.6/.76 = 53.4 A **6 AWG**

DC percent volatage drop

%Vdrop = (Imp\*2\*wire run\*CU resistance)/Vmp  
 %vVdrop = (23.6\*2\*.1\*.491)/408 = .57 % drop/100ft



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

FOR: BIOSPHERE 2	DRAWN BY: BMS	REV: 0
DATE: 10/30/11	SCALE: N/A	DRAWING NUMBER: 2011101