How to use the Classic String Sizing Tool

CLASSIC SIZING TOOL

PV Module Data		
Power:	360	Watts
VOC (Open Circuit Voltage):	46.6	Volts
VMP (Maximum Power Point Voltage):	37.7	Volts
ISC: (Short Circuit Amperage)	10.12	Amps
IMP (Maximum Power Point Amperage):	9.56	Amps
VOC Temp Coef %:	0.3	C°
VMP Temp Coef %:	0.41	C°
Environmental Data		
Coldest Ambient Temperature:	18	C°
Hottest Ambient Temperature:	33	C°
Nominal Battery Volts:	48	Volts
PV Array		
Number Of Modules In Series:	2	
Number Of Parallel Strings:	5	
Total Modules	10	
Rated PV Array Power:	3600	Watts
Anticipated Array Power @ 33C:	3482	Watts
Rated PV Array Current:	47.8	Amps
Battery Charging Current @ 57.6 V:	62.5	Amps
VMP (Maximum Power Point Voltage) :	75.4	Volts
VOC (Open Circuit Voltage):	93.2	Volts
VMP @ 18 C°:	77.6	Volts
VOC @ 18 C°:	95.2	Volts

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Classic, Classic SL & Classic Lite Charge Controller Selection	**150**	**200**	**250**
Max Operating Voltage	150	200	250
Max Non operating VOC (HyperVOC) @ 48V Nominal Battery Voltage	198	248	298
Maximum Number Of Modules In Series	3	4	5
Max Number Of Modules In Series (Using HyperVOC)	4	5	6
Max Allowable Output Current Per Classic Based On This Current Configuration	86	70	55
Max Allowable Wattage Per Classic Based On This Current Configuration	5022	4080	3212
Present PV Array Wattage Of This Configuration	3600	3600	3600
Design Check			
Max VOC	OK	OK	OK
Temperature The Classic Will Enter HyperVOC	-178 C°	-357 C°	-536 C°
Array Power (Wattage)	OK	OK	EXCESSIVE
Classics Required	0.8	0.9	1.2

NOTE: MidNite Solar recommends a second controller be added after 1.2
NOTE: Generally speaking you'll want to use the Classic 150 or 200 as they are less expensive and will handle more power. With MPPT controllers the higher the input voltage the less efficient they are. This is not a large value but it will add up to a little more heat in the controller and a point or two less in efficiency. BUT you also have to be careful not to have the input voltage to low. Most all MPPT controllers will want to see a minimum of 130% of the actual high battery voltage. So if we have a 48v battery and it has an Equalize voltage if 62.3 volts than we would multiply that by 130% and we would need a minimum of 81 volts on the input on the hottest day of the year in order to have enough headroom for the MPPT to work.
WARNING: MidNite Solar makes no representation, warranty or assumption of liability regarding the use of the String Calculator. This tool uses data provided by other parties (such as PV module specs) and makes calculations based on assumptions which may or may not prove to be valid.

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To ensure proper start up and MPPT operation, the minimum initial PV input voltage should be at least 30% higher than the highest expected battery voltage.