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## Energy Management Service

### Modules & Central Inverter Worksheet (Includes String Sizing) Ver. 1

*You can use the [Array Sizing Worksheet](#) to determine Step 1 values.*

<b>Step 1: Enter target array size.</b>		Number of Modules that will fit array space(s)		Air Temps (Celsius)		Use link below to get extreme high & low temperatures  <a href="#">Solar ABC's</a>
Array Size in STC Watts	3,290	18	Module Count Needed for Model Chosen	Max. High	Max. Low	
<b>Step 2: Enter module specs and your local area temperatures.</b>			14	58	-10	
Module Brand	Sharp	Model #	ND-235QCJ	<b>Step 3: Enter specs for a central inverter model.</b>		
STC Max Watts	235	Short Circuit Current <b>I<sub>sc</sub></b>	8.60	Inverter Model	Fronius IG4000	
Operating Current <b>I<sub>pm</sub></b>	8.02	Neg. Power Tolerance	0	AC Watts	4000	
<i>Note: Enter negative power tolerance only (e.g. .05, 0).</i>				Input StartUp Voltage or Range LOW	150	
Power Max Voltage <b>V<sub>pm</sub></b>	29.3	Voltage (Open-Circuit) <b>V<sub>oc</sub></b>	37.2	Max Input Voltage or Range HIGH	500	
Voltage Temp Coefficient <b>V<sub>oc</sub></b>	-0.360	Power/Voltage Coefficient - <b>V<sub>mp</sub></b> or <b>P<sub>max</sub></b>	-0.485	Max Array DC Current	16.7	
<i>Use negative symbols for coefficients (e.g. -.385) and LOW temps (e.g -30) only. Enter degrees in Celsius.</i>				LOW Temp	-20	
Operating Temp LOW Celsius	-40	Operating Temp HIGH	90	HIGH Temp	50	
<i>Click the <a href="#">Resources</a> tab below to look up module/inverter specs and to verify your results with mfg. sizing tools.</i>				Max DC Watts	5000	
<b>Step 4: Review performance checks below and make adjustments if needed.</b>		<i>Place inverter out of direct sun.</i>				
Array Size (STC DC watts)	3290	Min. String Size	8	Inverter Efficiency:		
Module Temp Range	OK	Max String Size	11	95.0%	Default = 95	
Inverter Temp Range	OK	# of Strings Maximum	2	<input type="checkbox"/>	Check to Use <b>I<sub>pm</sub></b>	
Module Hot Day Volts (V <sub>min</sub> )	24.6	Derated Array Watts	2969	Start-Up Voltage Adder		
Cold Day Volts (V <sub>max</sub> )	41.9	Inverter vs. Array Watts	OK	25V	Default = 0.	

