



PV Field Performance Verification

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Site address _____

Date _____

Inverter number _____

| Reading # | Plane-of-Array Irradiance | Inverter Output Power |
|----------------|---------------------------|-----------------------|
| 1 | | |
| 2 | | |
| 3 | | |
| Average | | |

1. Allow inverter to operate for at least 15 minutes.
2. Measure average module cell temperature (circle closest value in table).
3. Perform three sets of readings, alternating between plane-of-array irradiance and inverter power.
4. Calculate the average plane-of-array irradiance and average inverter power.
5. Circle the average irradiance value (closest) on the table.
6. Using the table, circle the expected performance fraction.
7. Multiply the expected performance fraction by the STC rating of the array: _____ x _____ = _____ Watts
8. Divide the average inverter output power by the expected performance power and multiply by 100: (average inverter output power) _____ ÷ (result from Step 7) _____ x 100 = _____ %
9. The result is the percentage of expected power that the array is producing. It should be close to 100%:

| W/m ² | Module Cell Temperature (in degrees Fahrenheit) | | | | | | | | | | | | | | | | |
|------------------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 400 | 0.41 | 0.40 | 0.39 | 0.38 | 0.37 | 0.37 | 0.36 | 0.35 | 0.34 | 0.33 | 0.33 | 0.32 | 0.31 | 0.30 | 0.29 | 0.29 | 0.28 |
| 425 | 0.43 | 0.42 | 0.41 | 0.41 | 0.40 | 0.39 | 0.38 | 0.37 | 0.36 | 0.35 | 0.35 | 0.34 | 0.33 | 0.32 | 0.31 | 0.30 | 0.29 |
| 450 | 0.46 | 0.45 | 0.44 | 0.43 | 0.42 | 0.41 | 0.40 | 0.39 | 0.38 | 0.38 | 0.37 | 0.36 | 0.35 | 0.34 | 0.33 | 0.32 | 0.31 |
| 475 | 0.48 | 0.47 | 0.46 | 0.45 | 0.44 | 0.43 | 0.42 | 0.42 | 0.41 | 0.40 | 0.39 | 0.38 | 0.37 | 0.36 | 0.35 | 0.34 | 0.33 |
| 500 | 0.51 | 0.50 | 0.49 | 0.48 | 0.47 | 0.46 | 0.45 | 0.44 | 0.43 | 0.42 | 0.41 | 0.40 | 0.39 | 0.38 | 0.37 | 0.36 | 0.35 |
| 525 | 0.53 | 0.52 | 0.51 | 0.50 | 0.49 | 0.48 | 0.47 | 0.46 | 0.45 | 0.44 | 0.43 | 0.42 | 0.41 | 0.40 | 0.39 | 0.37 | 0.36 |
| 550 | 0.56 | 0.55 | 0.54 | 0.52 | 0.51 | 0.50 | 0.49 | 0.48 | 0.47 | 0.46 | 0.45 | 0.44 | 0.43 | 0.41 | 0.40 | 0.39 | 0.38 |
| 575 | 0.58 | 0.57 | 0.56 | 0.55 | 0.54 | 0.53 | 0.51 | 0.50 | 0.49 | 0.48 | 0.47 | 0.46 | 0.45 | 0.43 | 0.42 | 0.41 | 0.40 |
| 600 | 0.61 | 0.60 | 0.58 | 0.57 | 0.56 | 0.55 | 0.54 | 0.52 | 0.51 | 0.50 | 0.49 | 0.48 | 0.46 | 0.45 | 0.44 | 0.43 | 0.42 |
| 625 | 0.63 | 0.62 | 0.61 | 0.60 | 0.58 | 0.57 | 0.56 | 0.55 | 0.53 | 0.52 | 0.51 | 0.50 | 0.48 | 0.47 | 0.46 | 0.45 | 0.43 |
| 650 | 0.66 | 0.65 | 0.63 | 0.62 | 0.61 | 0.59 | 0.58 | 0.57 | 0.56 | 0.54 | 0.53 | 0.52 | 0.50 | 0.49 | 0.48 | 0.46 | 0.45 |
| 675 | 0.68 | 0.67 | 0.66 | 0.64 | 0.63 | 0.62 | 0.60 | 0.59 | 0.58 | 0.56 | 0.55 | 0.54 | 0.52 | 0.51 | 0.50 | 0.48 | 0.47 |
| 700 | 0.71 | 0.70 | 0.68 | 0.67 | 0.65 | 0.64 | 0.63 | 0.61 | 0.60 | 0.58 | 0.57 | 0.56 | 0.54 | 0.53 | 0.51 | 0.50 | 0.49 |
| 725 | 0.74 | 0.72 | 0.71 | 0.69 | 0.68 | 0.66 | 0.65 | 0.63 | 0.62 | 0.60 | 0.59 | 0.58 | 0.56 | 0.55 | 0.53 | 0.52 | 0.50 |
| 750 | 0.76 | 0.75 | 0.73 | 0.72 | 0.70 | 0.69 | 0.67 | 0.66 | 0.64 | 0.63 | 0.61 | 0.60 | 0.58 | 0.57 | 0.55 | 0.54 | 0.52 |
| 775 | 0.79 | 0.77 | 0.75 | 0.74 | 0.72 | 0.71 | 0.69 | 0.68 | 0.66 | 0.65 | 0.63 | 0.62 | 0.60 | 0.58 | 0.57 | 0.55 | 0.54 |
| 800 | 0.81 | 0.80 | 0.78 | 0.76 | 0.75 | 0.73 | 0.72 | 0.70 | 0.68 | 0.67 | 0.65 | 0.64 | 0.62 | 0.60 | 0.59 | 0.57 | 0.56 |
| 825 | 0.84 | 0.82 | 0.80 | 0.79 | 0.77 | 0.75 | 0.74 | 0.72 | 0.70 | 0.69 | 0.67 | 0.66 | 0.64 | 0.62 | 0.61 | 0.59 | 0.57 |
| 850 | 0.86 | 0.84 | 0.83 | 0.81 | 0.79 | 0.78 | 0.76 | 0.74 | 0.73 | 0.71 | 0.69 | 0.67 | 0.66 | 0.64 | 0.62 | 0.61 | 0.59 |
| 875 | 0.89 | 0.87 | 0.85 | 0.83 | 0.82 | 0.80 | 0.78 | 0.76 | 0.75 | 0.73 | 0.71 | 0.69 | 0.68 | 0.66 | 0.64 | 0.62 | 0.61 |
| 900 | 0.91 | 0.89 | 0.88 | 0.86 | 0.84 | 0.82 | 0.80 | 0.79 | 0.77 | 0.75 | 0.73 | 0.71 | 0.70 | 0.68 | 0.66 | 0.64 | 0.62 |
| 925 | 0.94 | 0.92 | 0.90 | 0.88 | 0.86 | 0.85 | 0.83 | 0.81 | 0.79 | 0.77 | 0.75 | 0.73 | 0.72 | 0.70 | 0.68 | 0.66 | 0.64 |
| 950 | 0.96 | 0.94 | 0.93 | 0.91 | 0.89 | 0.87 | 0.85 | 0.83 | 0.81 | 0.79 | 0.77 | 0.75 | 0.74 | 0.72 | 0.70 | 0.68 | 0.66 |
| 975 | 0.99 | 0.97 | 0.95 | 0.93 | 0.91 | 0.89 | 0.87 | 0.85 | 0.83 | 0.81 | 0.79 | 0.77 | 0.75 | 0.74 | 0.72 | 0.70 | 0.68 |
| 1000 | 1.01 | 0.99 | 0.97 | 0.95 | 0.93 | 0.91 | 0.89 | 0.87 | 0.85 | 0.83 | 0.81 | 0.79 | 0.77 | 0.75 | 0.73 | 0.71 | 0.69 |
| 1025 | 1.04 | 1.02 | 1.00 | 0.98 | 0.96 | 0.94 | 0.92 | 0.90 | 0.88 | 0.85 | 0.83 | 0.81 | 0.79 | 0.77 | 0.75 | 0.73 | 0.71 |
| 1050 | 1.06 | 1.04 | 1.02 | 1.00 | 0.98 | 0.96 | 0.94 | 0.92 | 0.90 | 0.88 | 0.85 | 0.83 | 0.81 | 0.79 | 0.77 | 0.75 | 0.73 |
| 1075 | 1.09 | 1.07 | 1.05 | 1.03 | 1.00 | 0.98 | 0.96 | 0.94 | 0.92 | 0.90 | 0.88 | 0.85 | 0.83 | 0.81 | 0.79 | 0.77 | 0.75 |
| 1100 | 1.12 | 1.09 | 1.07 | 1.05 | 1.03 | 1.01 | 0.98 | 0.96 | 0.94 | 0.92 | 0.90 | 0.87 | 0.85 | 0.83 | 0.81 | 0.79 | 0.76 |
| 1125 | 1.14 | 1.12 | 1.10 | 1.07 | 1.05 | 1.03 | 1.01 | 0.98 | 0.96 | 0.94 | 0.92 | 0.89 | 0.87 | 0.85 | 0.83 | 0.80 | 0.78 |
| 1150 | 1.17 | 1.14 | 1.12 | 1.10 | 1.07 | 1.05 | 1.03 | 1.01 | 0.98 | 0.96 | 0.94 | 0.91 | 0.89 | 0.87 | 0.84 | 0.82 | 0.80 |
| 1175 | 1.19 | 1.17 | 1.14 | 1.12 | 1.10 | 1.07 | 1.05 | 1.03 | 1.00 | 0.98 | 0.96 | 0.93 | 0.91 | 0.89 | 0.86 | 0.84 | 0.82 |
| 1200 | 1.22 | 1.19 | 1.17 | 1.14 | 1.12 | 1.10 | 1.07 | 1.05 | 1.02 | 1.00 | 0.98 | 0.95 | 0.93 | 0.90 | 0.88 | 0.86 | 0.83 |

Assumptions: system derating factor = 0.90; no shading, new installation, high-tolerance modules, high-efficiency inverters; temperature coefficient of power = 0.4%/°C