Effect of Operating Temperature on Output Power of Crystalline PV modules

Module	Power /Temperature coefficient	% output @ 50˚ operating temp	% output @ 60˚ operating temp	% output @ 70˚ operating temp	% output @ 80˚ operating temp
CEEG SST170-72M	- 0.52% / K	87.00%	81.80%	76.60%	71.40%
Suntech STP175S 24ab-1	- 0.48% / K	88.00%	83.20%	78.40%	73.60%
Kyocera KD series modules	- 0.46% / K	88.50%	83.90%	79.30%	74.70%
Trina TSM175-DC01	- 0.45% / K	88.75%	84.25%	79.75%	75.25%
Silex SLX175	- 0.45% / K	88.75%	84.25%	79.75%	75.25%
Hyundai SiF-S215SF	- 0.44% / K	89.00%	84.60%	80.20%	75.80%

Notes

- All Photovoltaic cells are rated for maximum power at standard test conditions (i.e. irradiance of 1000W / m2; Air Mass Density of 1.5; cell temperature of 25 degrees C).
- When any crystalline PV cell heats up above standard test conditions (above 25 degrees C), it loses power at a rate according to its temperature Power coefficient (e.g. CEEG loses 0.52% per degree Kelvin above 25 degrees C).
- The above data was compiled from manufacturers data obtained Sep 2009.
- Hot Sunny Days in Australia mean that most of the time panels will operate at around 50 deg C with temperatures of up to 80 deg C being reached occasionally.
- Selecting a PV module with a low power loss coefficient (such as Hyundai) will increase power yield slightly at nominal operating temperatures and will increase power yield more greatly during higher operating temperatures compared with other modules having a higher power loss coefficient.
- When comparing the Power / Temperature coefficient, be sure that you do not confuse the Power / Temperature coefficient with the Voltage / Temperature coefficient, the Voltage Temperature coefficient is usually around 20% lower than the Power temperature coefficient.

www.voltmaster.com.au email info@voltmaster.com.au mob 0422 167 455