

# Solar Panel Comparison

Manufacturer	Canadian Solar		Canadian Solar Inc.	Conergy AG		Hanwha SolarOne		Mitsubishi Electric	Schott Solar	Sharp		Trina Solar		Yingli Green Energy
	CS5P-230M	CS6P-230P	CS6P-230PX	Conergy Black 230PA	Conergy P 230PA	SF220-30-M230	SF220-30-P230	PV-UJ230GA6	SCHOTT POLY 230	ND-U230C1	NU-U230F3	TSM-230DA05	TSM-230PA05	YL230P-29b
STC Rated Power Output (W)	230	230	230	230	230	230	230	230	230	230	230	230	230	230
Voltage at Rated Power (V)	47.50	29.80	29.60	29.00	30.00	30.20	30.00	30.20	30.00	30.30	30.00	30.00	29.80	29.50
Current at Rated Power (A)	4.84	7.71	7.78	7.93	7.67	7.62	7.67	7.62	7.66	7.60	7.67	7.66	7.78	7.80
Open Circuit Voltage (V)	58.80	36.80	36.80	36.90	36.80	36.90	36.80	36.60	36.90	37.00	37.00	37.00	37.00	37.00
Short Circuit Current (A)	5.25	8.34	8.34	8.49	8.34	8.31	8.34	8.35	8.33	8.24	8.40	8.18	8.26	8.40
Fill Factor	74.5%	74.9%	74.9%	73.4%	74.9%	75.0%	74.9%	75.3%	74.8%	75.4%	74.0%	76.0%	75.3%	74.0%
Panel Efficiency	13.5%	14.3%	14.3%	13.9%	13.9%	13.9%	13.9%	14.0%	13.7%	14.1%	14.1%	14.1%	14.1%	14.1%
Power Tolerance	0.00% ~ 2.10%	0.00% ~ 2.10%	0.00% ~ 2.10%	-3.00% ~ 3.00%	-3.00% ~ 3.00%	-3.00% ~ 3.00%	-3.00% ~ 3.00%	-3.00% ~ 3.00%	0.00% ~ 2.00%	-5.00% ~ 10.00%	-5.00% ~ 10.00%	0.00% ~ 3.00%	0.00% ~ 3.00%	-3.00% ~ 3.00%
Power Temperature Coefficiency (%/°C)	-0.45	-0.45	-0.43	-0.45	-0.45	-0.50	-0.45	-0.45	-0.45	-0.49	-0.49	-0.45	-0.43	-0.45
Temperature Coefficiency VOC (%/°C)	-0.35	-0.35	-0.34	-0.32	-0.32	-0.35	-0.34	-0.34	-0.33	-0.36	-0.35	-0.35	-0.32	-0.37
Temperature Coefficiency ISC (%/°C)	0.060	0.060	0.065	0.040	0.040	0.040	0.040	0.054	0.030	0.053	0.053	0.050	0.047	0.006
NOCT (°C)	45.0	45.0	45.0	45.9	46.0	45.0	45.0	47.5	47.2	47.5	47.5	47.0	46.0	46.0
Panel Height (mm)	1602	1638	1638	1652	1652	1652	1652	1658	1685	1640	1640	1650	1650	1650
Panel Width (mm)	1061	982	982	1000	1000	1000	1000	994	993	994	994	992	992	990
Panel Depth (mm)	40	40	40	50	50	50	50	46	50	58	58	46	40	50
Panel Area (M^2)	1.70	1.61	1.61	1.65	1.65	1.65	1.65	1.65	1.67	1.63	1.63	1.64	1.64	1.63
Panel Weight (kg)	20.0	20.0	22.0	22.0	22.0	22.0	22.0	20.0	23.0	20.0	20.0	19.5	19.5	19.8
Material/Output Warranty (Years)	6/10/25	6/12/25	6/12/25	5/12/25	5/12/25	5/10/25	5/10/25	5/10/25	5/10/25	5/10/25	5/10/25	5/10/25	5/12/25	5/10/25
PTC Power Output (W)	209.4	211.0	211.0	206.4	207.6	207.5	207.6	207.8	207.7	203.1	207.1	202.7	208.9	206.6
PTC/STC Ratio	91.0%	91.7%	91.7%	89.7%	90.3%	90.2%	90.3%	90.3%	90.3%	88.3%	90.0%	88.1%	90.8%	89.8%
Estimated Power At NOCT (W)	167.4	167.4	168.2	166.7	166.6	165.6	167.4	165.3	165.6	163.7	163.7	165.8	167.4	166.6

- PTC Power: The output power under PVUSA Test Conditions. 1000 W/M2 solar irradiance, 20°C ambient air temperature, and 1m/s wind speed at 10 meters above ground level.
- Estimated Power At NOCT: The estimated output power under the NOCT conditions: 800 W/M2 solar irradiance, 20°C ambient air temperature, and 1m/s wind speed.
- The report is generated from the solar panel database at [www.posharp.com](http://www.posharp.com). Contact Posharp at 888-429-7989 for special services, including solar panel supplies