

Powerful performance – high stability.

Bosch Solar Module c-Si M 60+

EU56117

High-quality – high-performance – reliable.
Solar modules from Bosch Solar Energy.



BOSCH



This solar module sets itself apart with the following qualities:

Aesthetics – aesthetically pleasing design with silver Bosch brand name displayed on the module front

Top output – thanks to the high-performance Bosch solar cells in 156 mm x 78 mm format

Convenient and time-saving installation – thanks to the ergonomically shaped aluminum frame with concealed clamping

Our certificates – quality stamped in writing

Bosch Solar Energy modules go through strict quality tests during the different stages of production according to international standards.



Quality

Salt corrosion resistance tested
Ammonia resistance tested



Product features

Performance sorting $-0/+4.99$ Wp
Temperature coefficient $P_{mpp} -0.42\%/K$



Value chain

Crystal – Wafer – Cell – Module



Components

Silver aluminum frame with drainage corner, white back sheet, LHS, MC4, Bosch Solar Cell M 3BB



Warranty

10 years product and
25 years performance guarantee
(90% up to 10 years, 80% up to 25 years)



Power classes

280 – 290 Wp

Length [x]	Width [y]	Frame height [z]	Weight	Plug connector type	Cable [l]	Front glass surface
1674.0	990.0	46.0	19.3	MC4	-800 +1 200	Structured anti-reflective glass
x, y, in mm, ±2; z in mm, ± 0.5; l in mm, +50/-0; weight in kg, +1.1/-0.6						

Crystalline solar module	
Performance classes	280 Wp, 285 Wp, 290 Wp
Performance sorting	-0/+4.99 Wp
Structure	Glass-film laminate ▶ Silver aluminum frame with drainage corner ▶ Junction box (IP65) with 3 bypass diodes ▶ Weather-resistant back sheet (white)
Cells	120 monocrystalline solar cells in 156mm x 78 mm format
Mechanical load	5400 Pa superimposed load, 2400 Pa suction load , as per IEC 61215 (extended test)

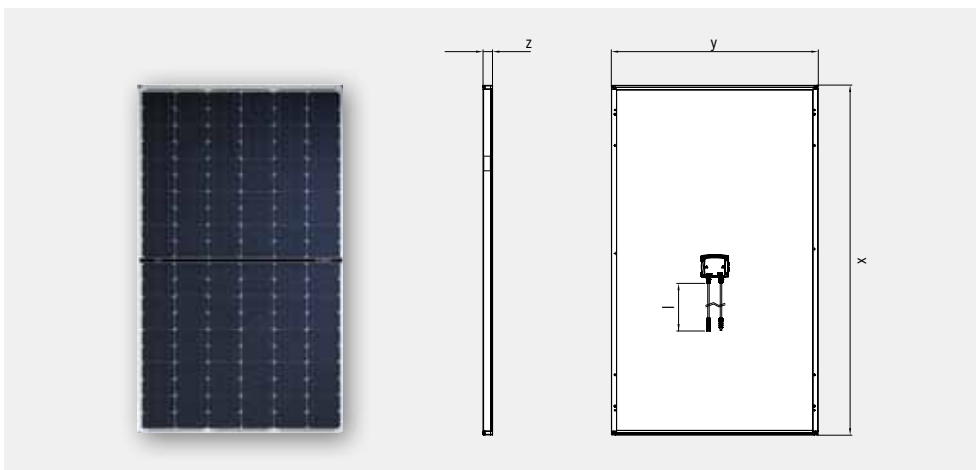
Electrical characteristics for STC:

Performance classes	Pmpp [Wp]	Vmpp [V]	Impp [A]	Voc [V]	Isc [A]	Reverse-current load capacity [A]
280	280	30.81	9.09	38.52	9.59	25
285	285	31.06	9.18	38.78	9.67	25
290	290	31.31	9.27	39.03	9.76	25
Reduction in module efficiency with decrease in irradiation level from 1000 W/m ² to 200 W/m ² (at 25 °C): -0.59% (absolute); measuring tolerance Pmpp ±3%						

Electrical characteristics for NOCT:

Performance classes	Pmpp [W]	Vmpp [V]	Voc [V]	Isc [A]
280	204.11	27.78	35.42	7.75
285	207.71	27.99	35.66	7.82
290	211.31	28.20	35.89	7.89
NOCT: Nominal Operating Cell Temperature 48.4 °C: Irradiation level 800 W/m ² , AM 1.5, temperature 20 °C, wind speed 1 m/s, electrical open circuit operation				

Dimensions¹:



Electrical parameters are typical mean values from historical production data. No guarantee is made for the accuracy of this data for future production batches. All data and figures are subject to a tolerance of ±5 %, unless specified otherwise. The measurement tolerance figures for NOCT and low light performance refers to the relative output (Pmpp).

¹ Drawings are not to scale. For detailed dimensions and tolerances, see above.

Notes on assembly:

- ▶ See installation and operating manual at: www.bosch-solarenergy.com
- ▶ Horizontal and vertical assembly possible
- ▶ System voltage max. 1000 V
- ▶ Operating temperature range -40 to 85 °C

Weak light performance:

Intensity [W/m ²]	Vmpp [%]	Impp [%]
800	-0.08	-20
600	-0.47	-40
400	-1.43	-60
200	-4.11	-80
100	-7.46	-90
The electrical data applies for 25 °C and AM 1.5.		

Thermal characteristics:

Temperature coefficient	TK [%/K]
Pmpp	-0.42
Uoc	-0.31
Isc	0.045

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