Powerful performance – high stability.
Bosch Solar Module c-Si M 60+
EU56117

Iris Hellas
Technology Innovations

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

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

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.

CE TÜVRheinland CERTIFIED PV CYCLE

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 +1200	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)

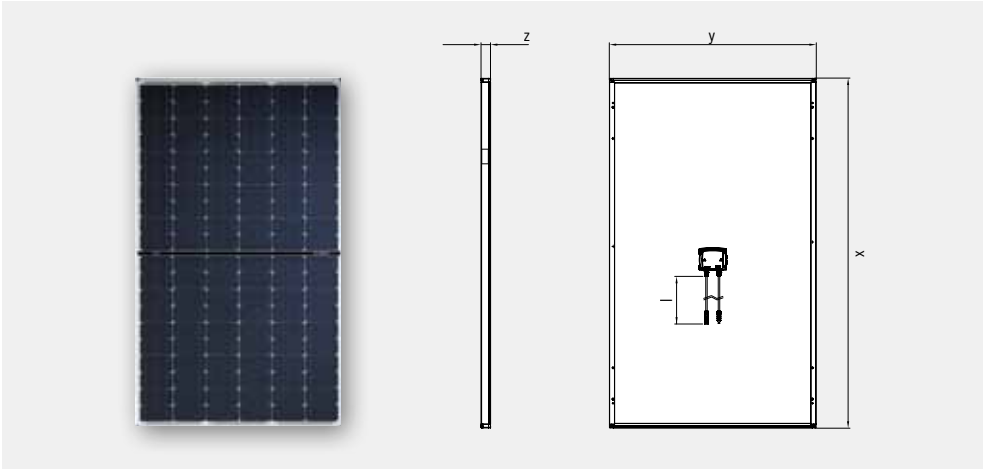
Electrical characteristics for STC:

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/m² to 200 W/m² (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/m², AM 1.5, temperature 20 °C, wind speed 1 m/s, electrical open circuit operation				

Dimensions[1]:



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/m²]	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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