

# Powerful performance – high stability.

## Bosch Solar Module c-Si M 60

EU30117 | EU30123

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



**BOSCH**



### Our crystalline solar modules offer impressive features including:

- ▶ Excellent quality assured through use of the best European-standard components
- ▶ Excellent processing and long-term stability right along the value-added chain
- ▶ Higher specific yields due to positive power sorting
- ▶ Simple and secure installation with dovetailed Bosch Solar Rack products

### 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.



- Qualified IEC 61215
- Safety tested IEC 61730
- Salt corrosion resistance tested
- Ammonia resistance tested
- Periodic inspection



#### Quality

Salt corrosion resistance tested  
Ammonia resistance tested



#### Product features

Performance sorting  $-0/+4.99$  Wp  
Temperature coefficient  $P_{mpp} -0.46\%$  K



#### Value chain

Crystal – Wafer – Cell – Module



#### Components

Structured frontglass, 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

235 – 250 Wp

Length [x]	Width [y]	Frame height [z]	Weight	Junction box	Plug connector type	Cable [l]	Front glass surface
1660.0	990.0	50.0	21	Spelsberg	MC4	-800 +1200	Structured
x, y, l in mm, ±2; z in mm, ±0.3; weight in kg ±0.5							

Crystalline solar module	
<b>Performance classes</b>	<b>235 Wp, 240 Wp, 245 Wp, 250 Wp</b>
<b>Performance sorting</b>	-0/+4.99 Wp
<b>Structure</b>	<b>Glass-foil laminate</b> ▶ Anodized aluminum frame ▶ Junction box (IP 65) with 3 bypass diodes ▶ Weather-resistant back sheet (white)
<b>Cells</b>	<b>60x monocrystalline solar cells</b> in 156 mm x 156 mm format
<b>Mechanical load</b>	<b>5400 Pa superimposed load, 2400 Pa suction load,</b> in accordance with IEC 61215 (extended test)

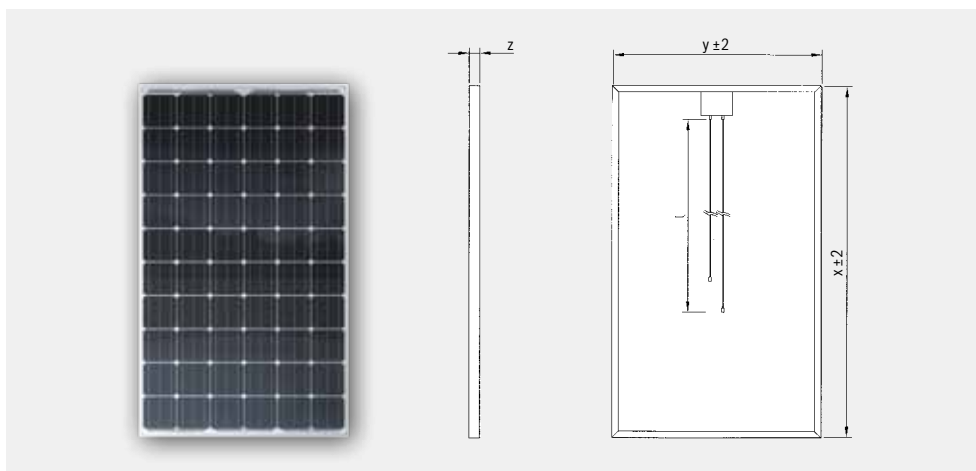
**Electrical characteristics for STC<sup>1</sup>:**

Designation	P <sub>mpp</sub> [W <sub>p</sub> ]	V <sub>mpp</sub> [V]	I <sub>mpp</sub> [A]	V <sub>oc</sub> [V]	I <sub>sc</sub> [A]	Reverse-current load capacity [A]
250	250	30.31	8.25	37.90	8.82	25
245	245	30.10	8.20	37.70	8.70	25
240	240	30.00	8.10	37.40	8.60	25
235	235	29.90	8.00	37.10	8.50	25
Reduction in module efficiency with decrease in irradiation level from 1000 W/m <sup>2</sup> to 200 W/m <sup>2</sup> (at 25 °C): -0.33% (absolute); measuring tolerance P <sub>mpp</sub> ±3%						

**Electrical characteristics for NOCT<sup>1</sup>:**

Designation	P <sub>mpp</sub> [W]	V <sub>mpp</sub> [V]	V <sub>oc</sub> [V]	I <sub>sc</sub> [A]
250	182	27.36	34.82	7.11
245	177	27.07	34.09	6.92
240	173	26.98	34.00	6.84
235	169	26.87	33.89	6.76
NOCT: Normal Operation Cell Temperature 48.4 °C: Irradiation level 800 W/m <sup>2</sup> , AM 1.5, temperature 20 °C, wind speed 1 m/s, electrical open circuit operation				

**Dimensions<sup>2</sup>:**



<sup>1</sup> Electrical parameters are typical mean values from historical production data. No guarantee is made for the accuracy of this data for future production batches.

<sup>2</sup> 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/products](http://www.bosch-solarenergy.com/products)
- ▶ Horizontal and vertical assembly possible
- ▶ System voltage max. 1000 V
- ▶ Operating temperature range -40 to 85 °C

**Weak light performance:**

Intensity [W/m <sup>2</sup> ]	V <sub>mpp</sub> [%]	I <sub>mpp</sub> [%]
800	0.0	-20
600	0.0	-40
400	-0.4	-60
200	-3.2	-80
100	-6.0	-90
The electrical data applies for 25 °C and AM 1.5.		

**Thermal characteristics:**

Temperature coefficient	TK [%/K]
P <sub>mpp</sub>	-0.46
U <sub>oc</sub>	-0.32
I <sub>sc</sub>	0.032

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