

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

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



**BOSCH**



**USA & Canada-  
version**

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

- ▶ Excellent quality assured through use of the best US and German-standard components
- ▶ Excellent processing and long-term stability right along the value-added chain
- ▶ Professional customer service with unbureaucratic order and complaint processing carried out by designated contact persons
- ▶ Simple, safe installation thanks to standardized clamp mechanisms

**Warranty conditions:**

- ▶ 10 year product warranty
- ▶ 25 year performance guarantee (90% up to 10 years, 80% up to 25 years)
- ▶ Product certification to UL 1703
- ▶ CEC registered
- ▶ Product certification to IEC 61215 (ed. 2)
- ▶ Protection class II / IEC 61730
- ▶ CE conformity

Manufacturer	Length [x]	Width [y]	Height [z]	Weight	Junction box	Plug connector	Cable [l]	Front glass surface
16	64.57 in 1640.0	39.37 in 1000.0	1.65 in 42.0	51.81 lb 23.5	Tyco	Tyco Solarlok	39.37 in 1000.0	Structured
If not stated differently, x, y, z, l in mm, ±2 mm; weight in kg ±0.5								

**Notes on assembly:**

- ▶ See installation and operating manual at [www.bosch-solarenergy.de/en/products/crystallinepvmodules](http://www.bosch-solarenergy.de/en/products/crystallinepvmodules)
- ▶ Horizontal and vertical assembly possible
- ▶ System voltage max. 600 V

Crystalline solar module	
<b>Performance classes</b>	<b>225 Wp, 230 Wp, 235 Wp, 240 Wp</b>
<b>Performance sorting</b>	±2.5 Wp
<b>Structure</b>	<b>Glass-foil laminate</b> <ul style="list-style-type: none"> <li>▶ Anodized aluminum frame</li> <li>▶ Junction box (IP 65) with 3 bypass diodes</li> <li>▶ Weather-resistant back sheet (white)</li> <li>▶ Cable 12 AWG (4mm<sup>2</sup>)</li> </ul>
<b>Cells</b>	<b>60x monocrystalline solar cells</b> in 156 mm x 156 mm format

**Weak light performance:**

Intensity [W/m <sup>2</sup> ]	V <sub>mpp</sub> [%]	I <sub>mpp</sub> [%]
800	0.0	-20
600	-0.9	-40
400	-2.1	-60
200	-5.1	-80
100	-8.7	-90
The electrical data applies for 25 °C and AM 1.5.		

**Electrical characteristics for STC\*:**

Designation	P <sub>mpp</sub> [Wp]	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]
M240 3BB	240	29.62	8.11	36.75	8.56	17
M235 3BB	235	29.41	7.99	36.48	8.47	17
M230 3BB	230	29.20	7.88	36.22	8.38	17
M225 3BB	225	29.00	7.76	35.96	8.29	17
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): -0.65 % (absolute); measuring tolerance P ±3 %						

**Thermal characteristics:**

Operating temperature range	-40 to 85 °C
Temperature coefficient P <sub>mpp</sub>	-0,51%/K
Temperature coefficient V <sub>oc</sub>	-0.37%/K
Temperature coefficient I <sub>sc</sub>	0.03%/K

**Electrical characteristics for NOCT\*:**

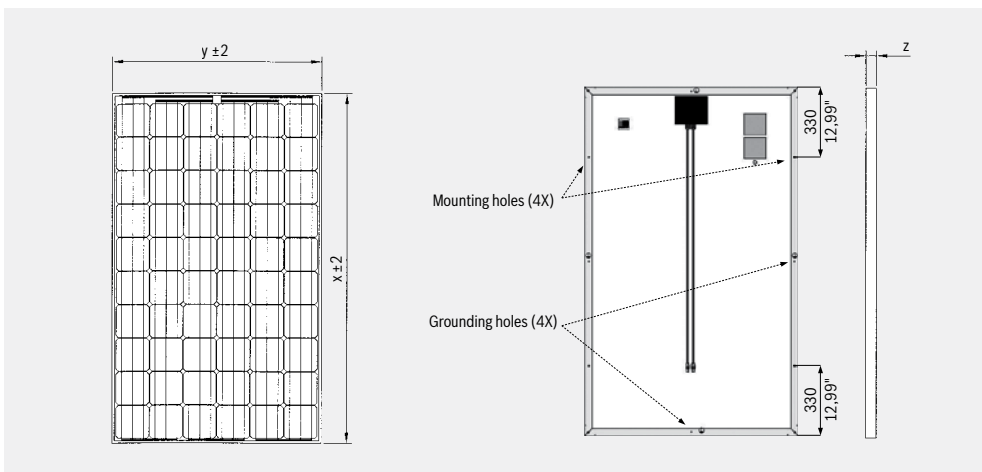
Designation	P <sub>mpp</sub> [W]	V <sub>mpp</sub> [V]	V <sub>oc</sub> [V]	I <sub>sc</sub> [A]
M240 3BB	173	27.44	34.09	6.84
M235 3BB	169	27.24	33.89	6.76
M230 3BB	166	27.04	33.69	6.68
M225 3BB	162	26.83	33.49	6.60
NOCT: Normal Operation Cell Temperature 48.4 °C; Irradiation level 800 W/m <sup>2</sup> , AM 1.5, temperature 20 °C, wind speed 1 m/s, electrical open circuit operation				



\* Electrical parameters are typical mean values from historical production data. Bosch Solar Energy assumes no liability for the accuracy of this data for future production batches.

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

**Dimensions\*\*:**



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