

Powerful performance – high stability.

Bosch Solar Module c-Si M 60

EU 30117

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



BOSCH



Our crystalline solar modules offer impressive features including:

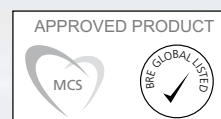
- ▶ Excellent quality assured through use of the best European-standard components
- ▶ Excellent processing and long-term stability right along the value-added chain
- ▶ Higher specific yields due to positive power sorting
- ▶ Professional customer service with unbureaucratic order and complaint processing carried out by designated contact persons
- ▶ Simple and secure installation with dovetailed Bosch Solar Rack products

Warranty conditions:

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



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



| Manufacturer | Length [x] | Width [y] | Height [z] | Weight | Junction box | Plug connector type | Cable [l] | Front glass surface |
|--|------------|-----------|------------|--------|--------------|---------------------|---------------------|---------------------|
| 17 | 1660.0 | 990.0 | 50.0 | 21 | Spelsberg | MC4 | Minus 800 Plus 1200 | Structured |
| x, y, z, l in mm, ±2 mm; weight in kg ±0.5 | | | | | | | | |

| Crystalline solar module | |
|----------------------------|--|
| Performance classes | 230 Wp, 235 Wp, 240 Wp, 245 Wp |
| Performance sorting | -0/+4.99 Wp |
| Structure | Glass-foil laminate ▶ Anodized aluminum frame ▶ Junction box (IP 65) with 3 bypass diodes ▶ Weather-resistant back sheet (white) |
| Cells | 60x monocrystalline solar cells in 156 mm x 156 mm format |
| Mechanical load | 5400 Pa superimposed load, 2400 Pa suction load, in accordance with IEC 61215 (extended test) |

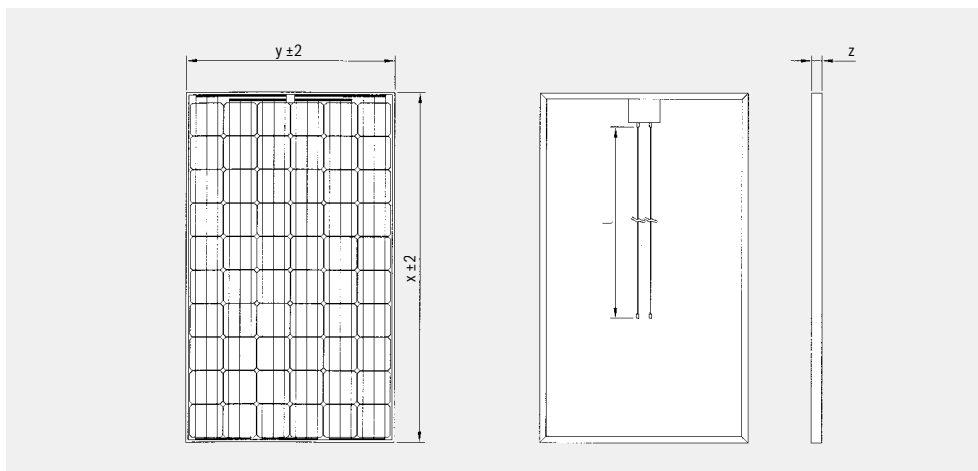
Electrical characteristics for STC*:

| Designation | Pmpp [Wp] | Vmpp [V] | Imp [A] | Voc [V] | Isc [A] | Reverse-current load capacity [A] |
|--|-----------|----------|---------|---------|---------|-----------------------------------|
| M245 3BB | 245 | 30.10 | 8.20 | 37.70 | 8.70 | 17 |
| M240 3BB | 240 | 30.00 | 8.10 | 37.40 | 8.60 | 17 |
| M235 3BB | 235 | 29.90 | 8.00 | 37.10 | 8.50 | 17 |
| M230 3BB | 230 | 29.70 | 7.90 | 37.00 | 8.40 | 17 |
| M225 3BB | 225 | 29.40 | 7.80 | 36.90 | 8.30 | 17 |
| Reduction in module efficiency with decrease in irradiation level from 1000 W/m ² to 200 W/m ² (at 25 °C): -0.65% (absolute); measuring tolerance P ±3% | | | | | | |

Electrical characteristics for NOCT*:

| Designation | Pmpp [W] | Vmpp [V] | Voc [V] | Isc [A] |
|--|----------|----------|---------|---------|
| M245 3BB | 177 | 27.07 | 34.09 | 6.92 |
| M240 3BB | 173 | 26.98 | 34.00 | 6.84 |
| M235 3BB | 169 | 26.87 | 33.89 | 6.76 |
| M230 3BB | 166 | 26.76 | 33.79 | 6.68 |
| M225 3BB | 162 | 26.55 | 33.49 | 6.60 |
| NOCT: Normal Operation 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 | | | | |

Dimensions:**



* Electrical parameters are typical mean values from historical production data. Bosch Solar Energy AG 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.

Notes on assembly:

- ▶ See installation and operating manual at: www.bosch-solarenergy.com.au/products/
- ▶ Horizontal and vertical assembly possible
- ▶ System voltage max. 1 000 V

Weak light performance:

| Intensity [W/m ²] | Vmpp [%] | Imp [%] |
|---|----------|---------|
| 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. | | |

Thermal characteristics:

| | |
|------------------------------|--------------|
| Operating temperature range | -40 to 85 °C |
| Temperature coefficient Pmpp | -0.46%/K |
| Temperature coefficient Voc | -0.32%/K |
| Temperature coefficient Isc | 0.032%/K |

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