Powerful performance – high stability.
Bosch Solar Module c-Si M 48 S
EU40123

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 Europeanstandard components
- Excellent processing and long-term stability right along the valueadded chain
- Higher specific yields due to positive power sorting

Quality
Salt corrosion resistance tested, 5400 Pa superimposed load/2400 Pa suction load

Product features
Performance sorting −0/+4.99 Wp
Temperature coefficient P_{mpp} −0.44 % K

Value chain
Crystal – Wafer – Cell – Module

Components
Black anodized aluminum frame,black back sheet, 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
185 – 195 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.

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

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Length [x]	Width [y]	Frame height [z]	Weight	Junction box	Plug connector type	Cable [l]
1342.0	990.0	50.0	16	Spelsberg	MC4	–800 +1200
x, y, l in mm, ±2; z in mm, ±0.3; weight in kg ±0.5						

Crystalline solar module	
Performance classes	**185 Wp, 190 Wp, 195 Wp**
Performance sorting	–0/+4.99 Wp
Structure	**Glass-foil laminate** ▶ Black anodized aluminum frame ▶ Junction box (IP 65) with 3 bypass diodes ▶ Weather-resistant back sheet (black)
Cells	**48x 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)

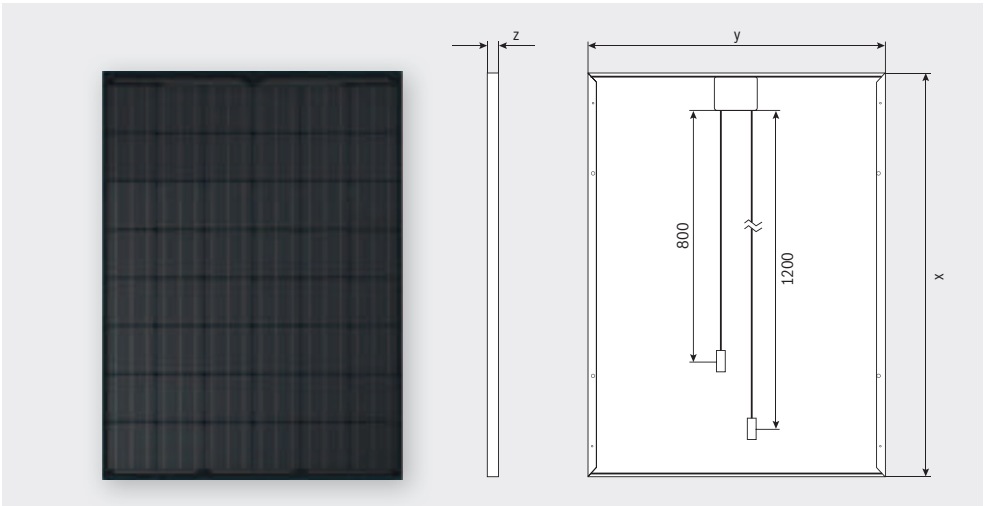
Electrical characteristics for STC[1]:

Designation	Pmpp [Wp]	Vmpp [V]	Impp [A]	Voc [V]	Isc [A]	Reverse-current load capacity Ir [A]
195	195	23.80	8.30	30.17	8.87	25
190	190	23.49	8.08	30.01	8.68	25
185	185	23.34	7.97	29.93	8.58	25
Reduction in module efficiency with decrease in irradiation level from 1000 W/m² to 200 W/m² (at 25 °C): –0.16 % (absolute); measuring tolerance Pmpp ±3 %						

Electrical characteristics for NOCT[1]:

Designation	Pmpp [W]	Vmpp [V]	Voc [V]	Isc [A]
195	142	21.49	27.72	7.15
190	138	21.21	27.57	6.99
185	134	21.07	27.50	6.91
NOCT: Normal Operation 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[2]:



[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.

[2] 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
- ▶ 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	0.0	–20
600	0.0	–40
400	0.0	–60
200	–1.6	–80
100	–4.8	–90
The electrical data applies for 25 °C and AM 1.5.		

Thermal characteristics:

Temperature coefficient	TK [%/K]
Pmpp	–0.44
Uoc	–0.31
Isc	0.031

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