bp solar

180W Photovoltaic module

BP 4180T

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BP Solar has been manufacturing solar wafers, cells and modules for more than 35 years. This experience shows that the best way to optimize module life and electrical energy production is to attend to every detail in the design and manufacture of our products, our process controls and testing methods. BP Solar's latest generation of 72 cell, Monocrystalline T Series solar modules offers the following benefits:

Improved cell protection, lower degradation rates
To ensure best protection for higher energy-producing cells, as well as lower degradation over the modules' lifetime, we use only the toughest materials.

Long lasting, innovative frame design
The aluminum frame has a rounded profile for better handling comfort and is optimized for use with anti-theft bolts to increase security. It can withstand heavy snow loads (5400Pa - 540kg/m^2) even in end mounting.

Increased energy production
High transmission ARC glass and enhanced design push the laminate to the front, maximizing the energy production and reducing dirt accumulation and soiling losses.

Improved reliability with effective cooling
IntegraBus™ technology ensures reliable cable management while positioning the bypass diodes and junction box away from the cells ensuring cooler operation and greater energy production.

Enhanced warranty offer
BP Solar launches an industry leading warranty offer, with lower degradation rates on our modules manufactured beginning January 1st, 2010. Our internal testing standards that go well beyond international requirements back this innovative offer.

ISO 9001
ISO 14001

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Electrical characteristics

	(1) STC 1000W/m²	(2) NOCT 800W/m²
Maximum power (P_{max})	180W	129.6W
Voltage at P_{max} (V_{mpp})	35.8V	31.9V
Current at P_{max} (I_{mpp})	5.03A	4.02A
Short circuit current (I_{sc})	5.58A	4.52A
Open circuit voltage (V_{oc})	43.6V	39.7V
Module efficiency	14.4%	
Tolerance P_{max}	-3/+5%	
Nominal voltage	24V	
Efficiency reduction at 200W/m²	<5% reduction (efficiency 14.1%)	
Limiting reverse current	5.58A	
Temperature coefficient of I_{sc}	0.105%/ °C	
Temperature coefficient of V_{oc}	-0.360%/ °C	
Temperature coefficient of P_{max}	-0.45%/ °C	
(3) NOCT	47±2°C	
Maximum series fuse rating	20A	
Application class (according to IEC 61730:2007)	Class A	
Maximum system voltage (U.S. NEC rating)	600V (U.S. NEC) 1000V (IEC 61730:2007)	

1: Values at Standard Test Conditions (STC): 1000W/m² irradiance, AM1.5 solar spectrum and 25ºC module temperature
2: Values at 800W/m² irradiance, Nominal Operation Cell Temperature (NOCT) and AM1.5 solar spectrum
3: Nominal Operation Cell Temperature: Module operation temperature at 800W/m² irradiance, 20ºC air temperature, 1m/s wind speed

All solar modules are individually tested prior to shipment; an allowance is made within our factory measurement to account for the typical power degradation (LID effect) which occurs during the first few days of deployment.

Mechanical characteristics

Solar cells	72 monocrystalline 5" silicon cells (125x125mm) in series
Front cover	High transmission 3.2mm (1/8th in) glass
Encapsulant	EVA
Back cover	White polyester
Frame	Silver anodized aluminum (Universal II)
Diodes	IntegraBus™ with 3 Schottky diodes
Junction box	Potted (IP 67); certified to meet UL 1703 flammability test
Output cables	4mm² cable with latching MC4 connectors Asymetrical cable lengths: (-)1250mm (49.21in) / (+)800mm (31.50in) Certified as PV Wire according to UL4703 and PV1-F according to VDE EPV 01:2008-02 standards
Dimensions	1587x790x50mm / 62.5x31.1x2in
Weight	15.4kg / 33.95lbs

All dimensional tolerances within ±1% unless otherwise stated.

Warranty

- Free from defects in materials and workmanship for 5 years
- 93% min. power output over 12 years
- 85% min. power output over 25 years

Certification

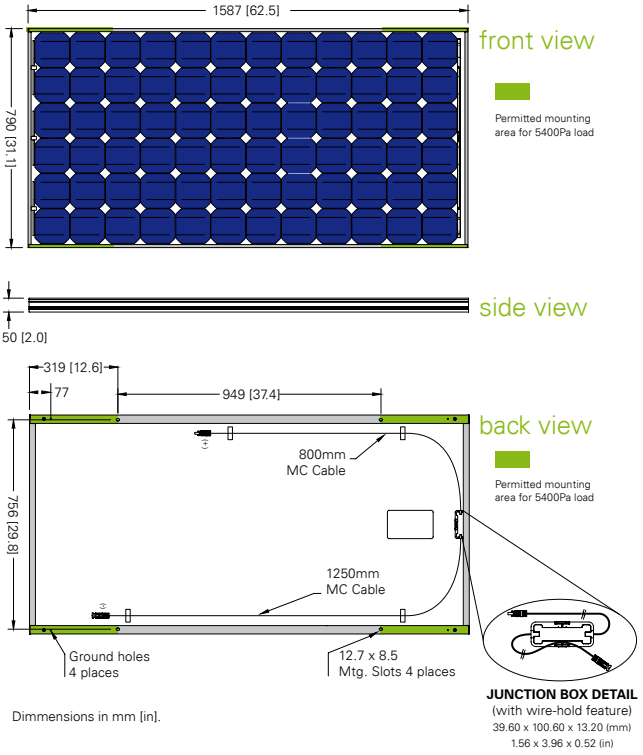
Certified according to the extended version of the IEC 61215:2005 (Crystalline silicon terrestrial photovoltaic modules - Design qualification and type approval)

Certified according to IEC 61730-1 and IEC 61730-2. (Photovoltaic module safety qualification, requirements for construction and testing)

Listed to UL 1703 and ULC ORD-C1703 Standard for Safety by Intertek ETL

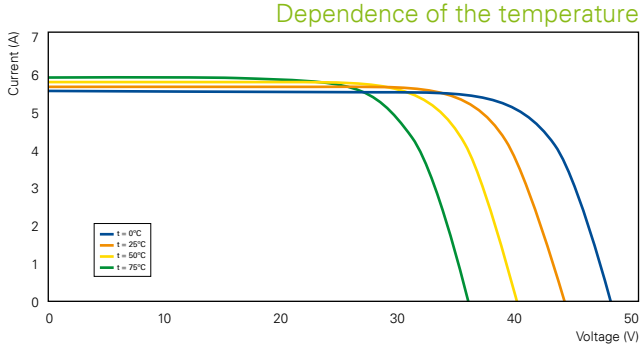
Manufactured in ISO 9001 and ISO 14001 certified factories

Module electrical measurements are calibrated to World radiometric reference via third party international laboratories

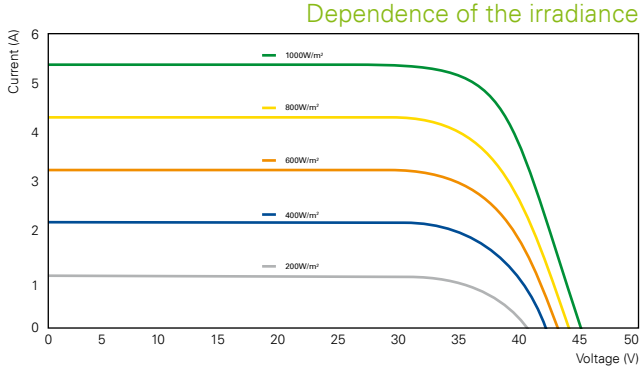


Dimmensions in mm [in].

Dependence of the temperature



Dependence of the irradiance



Contact:

Your BP Solar partner

This data sheet complies with the EN 50380 requirements.