

165, 170, 175, 180 and 185W photovoltaic modules

## BP 4 Series

11 3072E-1 03/11

# BP Solar

Discover our energy

Find more information in: [www.bpsolar.com](http://www.bpsolar.com)

**Contact:**

Your BP Solar partner



## Designed to capture more of the sun

Our products incorporate a number of unique features to ensure highest production yields and make solar your brightest investment ever.



**High Transmission Glass**  
Anti-reflective coated glass delivers up to 4% more energy than standard glass.



**Reliable electrical connections**  
IntegraBus™ technology for cooler diode operation and optimal performance.



**Enhanced cell protection**  
Better cell protection thanks to robust frame and durable materials.



**Verified power output**  
Our energy ratings factor the initial degradation (LID effect) to maximize your investment.

Also available in black.  
Module appearance may vary.  
Cells have rounded corners with either 165 or 150mm diameter.

**Enhanced warranty**

BP Solar provides an industry leading warranty, guaranteeing lower degradation rates on modules manufactured beginning January 1st, 2010. Our superior long-term performance is proven by internal testing standards that go well beyond international requirements.

165, 170, 175, 180 and 185W photovoltaic modules  
**BP 4 Series**



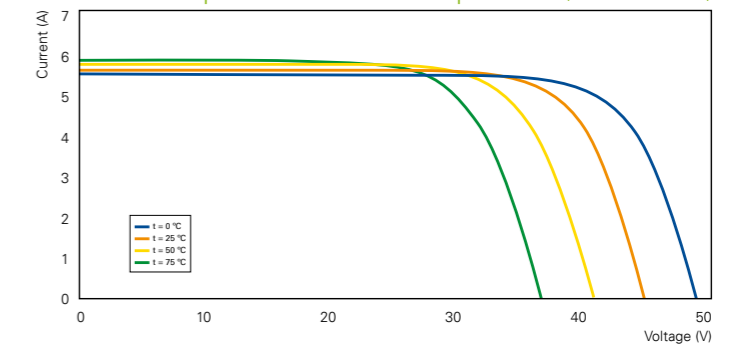
**Electrical characteristics**

	165W		170W		175W		180W		185W	
	(1) STC 1000W/m <sup>2</sup>	(2) NOCT 800W/m <sup>2</sup>	(1) STC 1000W/m <sup>2</sup>	(2) NOCT 800W/m <sup>2</sup>	(1) STC 1000W/m <sup>2</sup>	(2) NOCT 800W/m <sup>2</sup>	(1) STC 1000W/m <sup>2</sup>	(2) NOCT 800W/m <sup>2</sup>	(1) STC 1000W/m <sup>2</sup>	(2) NOCT 800W/m <sup>2</sup>
Maximum power (P <sub>max</sub> )	165W	118.8W	170W	122.4W	175W	126W	180W	129.6W	185W	133.2W
Voltage at P <sub>max</sub> (V <sub>mpp</sub> )	34.8V	31.0V	35.6V	31.6V	35.4V	31.5V	35.8V	31.9V	36.2V	32.1V
Current at P <sub>max</sub> (I <sub>mp</sub> )	4.74A	3.79A	4.80A	3.82A	4.94A	3.95A	5.03A	4.02A	5.11A	4.09A
Short circuit current (I <sub>sc</sub> )	5.30A	4.29A	5.35A	4.33A	5.45A	4.41A	5.58A	4.52A	5.58A	4.52A
Open circuit voltage (V <sub>oc</sub> )	43.6V	39.7V	43.6V	39.6V	43.6V	39.7V	43.6V	39.7V	44.7V	40.6V
Module efficiency	13.2%		13.6%		14.0%		14.4%		14.8%	
Tolerance P <sub>max</sub>	150 dia. cell 165 dia. cell	-3/+5% (J-Version: ±5%)	-3/+5%		-3/+5% (J-Version: ±5%)		-3/+5%		-0/+5%	
Nominal voltage	24V		24V		24V		24V		24V	
Efficiency reduction at 200W/m <sup>2</sup>	<5% reduction (efficiency 12.5%)		<5% reduction (efficiency 12.9%)		<5% reduction (efficiency 13.3%)		<5% reduction (efficiency 13.6%)		<5% reduction (efficiency 14.0%)	
Limiting reverse current	5.30A		5.35A		5.45A		5.58A		5.58A	
Temperature coefficient of I <sub>sc</sub>					0.105%/°C					
Temperature coefficient of V <sub>oc</sub>					-0.360%/°C					
Temperature coefficient of P <sub>max</sub>					-0.45%/°C					
NOCT					47±2°C					
Maximum series fuse rating					20A					
Application class (according to IEC 61730:2007)					Class A					
Maximum system voltage					600V (U.S. NEC) 1000V (IEC 61730:2007)					

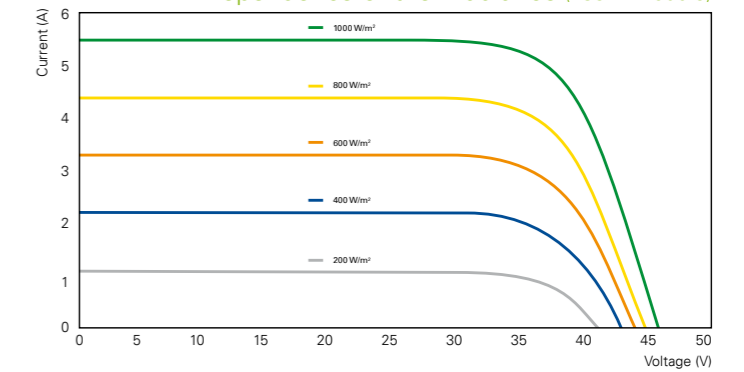
1: Values at Standard Test Conditions (STC): 1000W/m<sup>2</sup> irradiance, AM1.5 solar spectrum and 25°C module temperature  
 2: Values at 800W/m<sup>2</sup> irradiance, Nominal Operation Cell Temperature (NOCT) and AM1.5 solar spectrum  
 3: Nominal Operation Cell Temperature: Module operation temperature at 800W/m<sup>2</sup> irradiance, 20°C 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.

Dependence of the temperature (185W module)



Dependence of the irradiance (185W module)



**Mechanical characteristics**

Solar cells	72 monocrystalline 5" silicon cells (125x125mm) in series (pseudo-square cells of 165 or 150mm diameter may be used)
Front cover	High transmission 3.2mm (1/8th in) glass
Encapsulant	EVA
Back cover	White or black polyester
Frame	Silver or black anodized aluminum (Universal II)
Diodes	IntegraBus™ with 3 Schottky diodes
Junction box	Potted (IP 67); certified to meet UL 1703 flammability test
Junction box (J-type only)	IP65 with 4 terminal screw connection block; accepts PG 13.5, M20 13mm conduit, or cable fittings accepting 6-12mm diameter cable. Terminals accept 2.5-10mm <sup>2</sup> (8-14 AWG) wire
Output cables (except J-type)	4mm <sup>2</sup> cable with latching MC4 connectors. Asymmetrical 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.

**Certification**

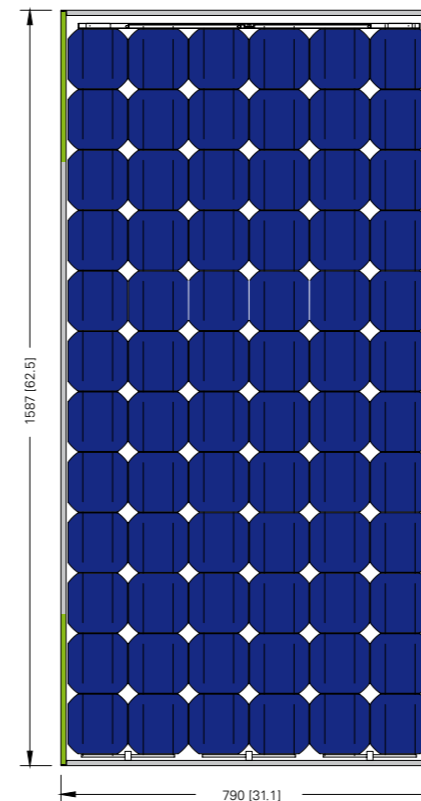
- Certified according to the extended version of the IEC 61215 (ed.2), EN 61215:2005-08 (Crystalline silicon terrestrial photovoltaic modules - Design qualification and type approval)
- Certified according to IEC 61730-1 and IEC 61730-2 (ed.1), EN 61730-1:2007-05 and EN 61730-2:2007-05. (Photovoltaic module safety qualification, requirements for construction and testing)
- Listed to UL 1703 and ULC ORD-C1703 Standard for Safety by Intertek ETL (Class C fire rating)
- Module electrical measurements are calibrated to World radiometric reference via third party international laboratories

**Warranty**

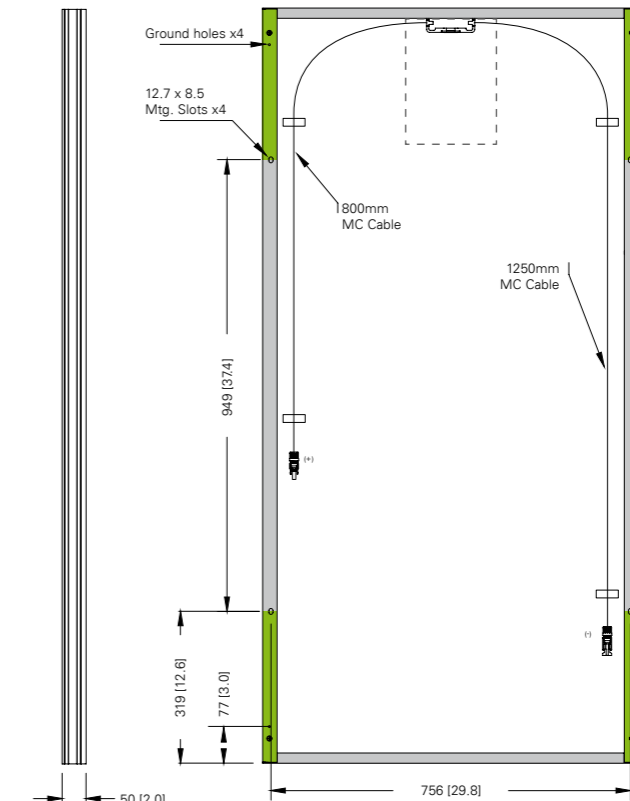
- Free from defects in materials and workmanship for 5 years
- 93% min. power output over 12 years
- 85% min. power output over 25 years

This data sheet complies with the EN 50380 requirements.  
 This publication summarises product warranty and specifications which are subject to change without notice.

front view



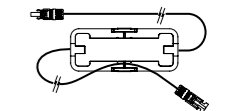
side view



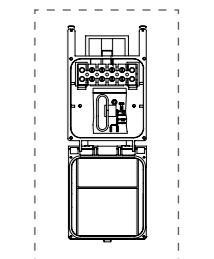
back view

Dimensions in mm [in].  
 J-Type only: Module length including screw heads 1590 [62.6]  
 Module appearance may vary.  
 Cells have rounded corners with either 165 or 150mm diameter.

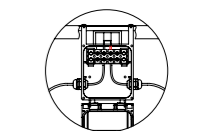
Permitted mounting area for 5400Pa load [112 psf]



**JUNCTION BOX DETAIL**  
 (with wire-hold feature)  
 39.60 x 100.60 x 13.20 (mm)  
 1.56 x 3.96 x 0.52 (in)



**JUNCTION BOX DETAIL**  
**J-TYPE ONLY**  
 163.50 x 112.50 x 37.50 (mm)  
 6.43 x 4.43 x 1.48 (in)



**CABLE CONNECTION DETAIL**  
**J-TYPE ONLY**  
 (Cables not supplied)