

160W Photovoltaic module

BP 3160

4067E-1 04/08

The BP 3160N is an advanced polycrystalline 160W solar module that incorporates anti-reflective coated cells and glass to generate more energy (more kWh per kWp) in your installation. This module has undergone the most rigorous testing to ensure reliable long term performance and is certified to comply with the latest safety standards (IEC 61730 & UL 1703). Three bypass diodes mounted on our IntegraBus™ circuit board and laminated in the module provide effective protection of the solar cells from overheating when shaded and ensure long term reliability. All interconnections are made using lead free soldering making these modules even friendlier with the environment.

Performance

Rated power	160W
Tolerance	-3/+5%
Module efficiency	12.7%
Nominal voltage	24V
Warranty*	90% power output over 12 years 80% power output over 25 years Free from defects in materials and workmanship for 5 years

*Refer to BP Solar's Warranty document for terms and conditions.

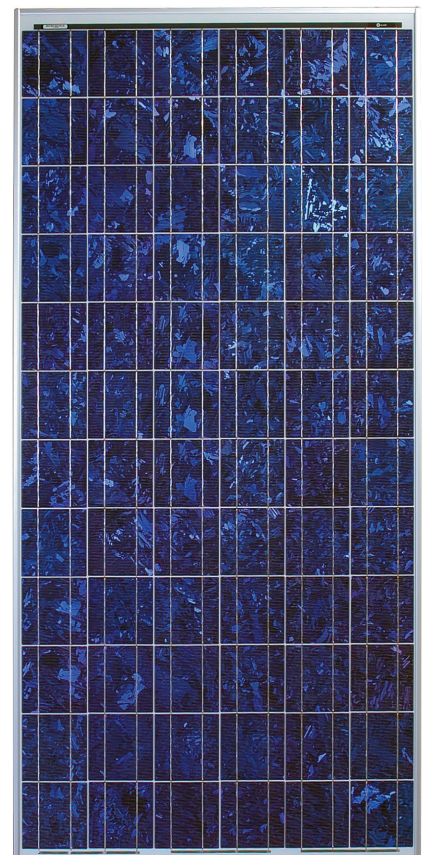
Qualification test parameters

Temperature cycling range	-40°C to +85°C for 200 cycles.
Damp heat test	85°C and 85% relative humidity for 1000h.
Front & rear load test (eg: wind)	2400Pa (equivalent to 245kg/m ² load distributed).
Front load test (eg: snow and wind)	5400Pa* (equivalent to 550kg/m ² load distributed).
Hailstone impact test	25mm hail at 23m/s from 1m distance.
Impulse voltage test	8000V waveform impulse according to high voltage test techniques IEC 60060-1 standard.
Reverse current overload test	135% of the overcurrent protection rating for two hours.

*When mounted in accordance with BP Solar's installation instructions.

Quality and safety

- Conforms to European directives.
- 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 by Underwriters Laboratories for electrical and fire safety (UL 1703 - Class C fire rating).
- Module electrical measurements are calibrated to World radiometric reference via third party international laboratories.
- Manufactured in ISO 9001 certified factories.
- This data sheet complies with the requirements of EN 50380.

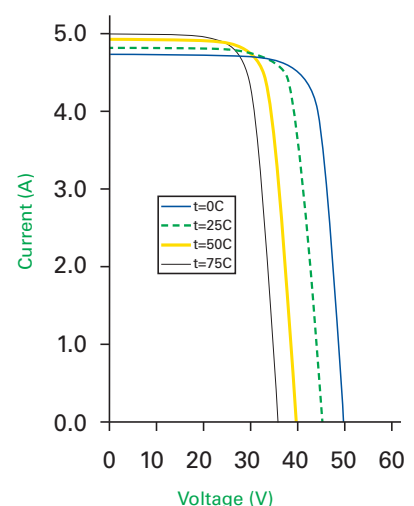


BP 3160N scale 1:14

Efficiency (%)

9 - 11	11 - 12	12 - 13	13 - 14	14 - 15
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BP 3160N I-V Curves

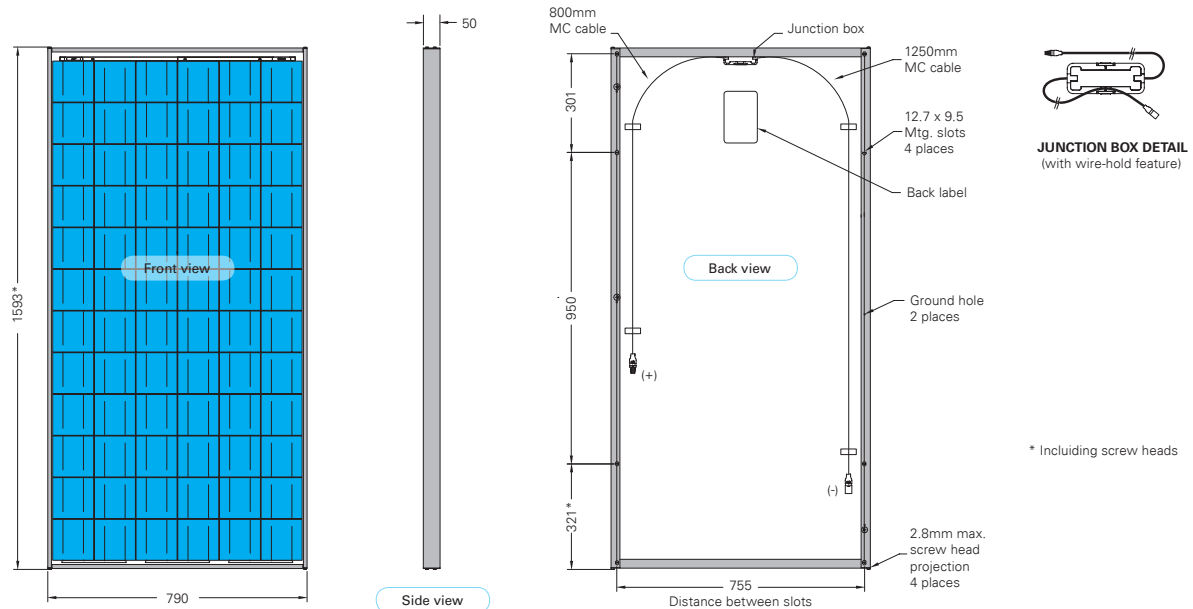


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Module diagram



Electrical characteristics

	1000W/m ² (STC ¹)	800W/m ² (NOCT ²)
Maximum power (P _{max})	160W	115W
Voltage at MPP (V _{mpp})	35.1V	31.2V
Current at MPP (I _{mpp})	4.55A	3.6A
Short circuit current (I _{sc})	4.8A	3.9A
Open circuit voltage (V _{oc})	44.2V	40.2V
Efficiency reduction at 200W/m ²	< 5% reduction (efficiency 12.1%)	
Limiting reverse current	4.8A	
Temperature coefficient of I _{sc}	(0.065±0.015)%/K	
Temperature coefficient of V _{oc}	-(0.36±0.05)%/K	
Temperature coefficient of P	-(0.5±0.05)%/K	
NOCT ³	47±2°C	
Maximum series fuse rating	15A	
Application class (According to IEC 61730:2007)	Class A (1000V)	

¹STC: Standard test conditions - irradiance of 1000W/m² at an AM1.5G solar spectrum and a temperature of 25°C.

²800W/m², NOCT, AM 1.5G solar spectrum.

³NOCT: Nominal Operation Cell Temperature Sun 800W/m²; Air 20°C; wind speed 1m/s.

Mechanical characteristics

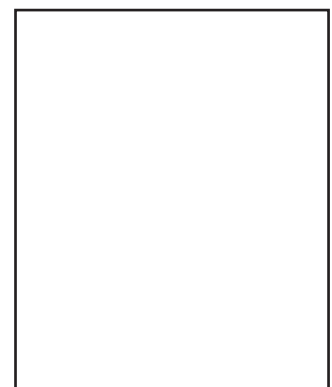
Solar cells	72 polycrystalline cells (125mm x 125mm) connected in series.
Front Cover	High transmission 3.2mm tempered anti-reflective coated glass.
Encapsulant	EVA
Back Cover	White polyester.
Frame	Silver anodised aluminium.
Diodes	IntegraBus™ technology includes 3 Schottky bypass diodes - one for every 24 cells - on a printed circuit board.
Junction Box	Dimensions (mm) 39.60 x 100.60 x 13.20. Potted (IP67); certified to meet UL1703 flammability test.
Output Cables	3.3mm ² cable with weatherproof Multi-Contact III connectors. Asymmetrical cable lengths 1250mm (-) and 800mm (+).
Dimensions (mm)	1593±3 x 790±3 x 50
Weight (kg)	15.4

All dimensional tolerances within ±1% unless otherwise stated.

This publication summarises product warranty and specifications which are subject to change without notice.

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.

Your BP Solar distributor:



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