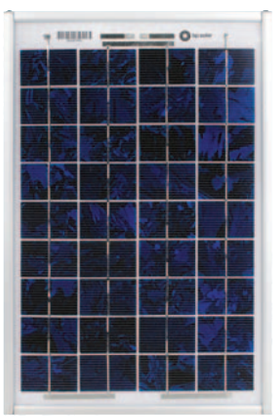
10 watt photovoltaic module

SX 310

The SX 310 is a 10W module that uses standard polycrystalline cells and charges batteries efficiently in any climate. It has been especially designed for use in off grid applications such as telecommunications, telemetry, instrumentation systems and signals. BP Solar's SX range of solar modules offer cost effective power for small or moderate energy requirements, with a wide range of module power and size options available for stand alone installations.



SX 310

Performance

Rated power	10W
Nominal voltage	12V
Warranty	90% power output over 12 years. Free from defects in materials and workmanship for 2 years.

Configuration

SX 310J	Clear universal frame and robust junction box.
SX 310M	Multimount frame with lo-pro junction box and output cables.

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 static load test (eg: wind)	2400 Pa
Front load test (eg: snow)	5400 Pa
Hailstone impact test	25mm hail at 23m/s from 1m distance

Quality and safety

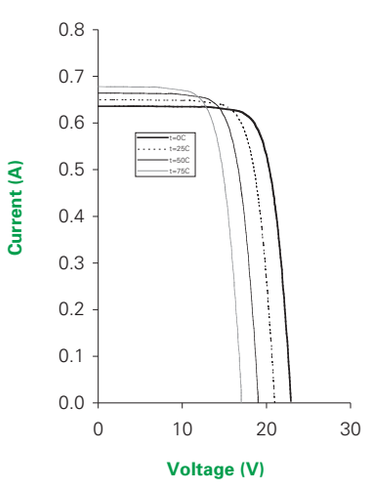
- Manufactured in ISO 9001 and ISO 14003 certified factories
- Conforms to European Community Directive 89/33/EEC, 73/23/EEC, 93/68/EEC
- Certified to IEC 61215

Module power measurements calibrated to World Radiometric Reference through ESTI (European Solar Test Installation at Ispra, Italy)

Framed modules listed by Underwriter's Laboratories for electrical and fire safety (Class C fire rating)

Approved by Factory Mutual Research in NEC Class 1, Division 2, Groups C & D hazardous locations

SX 310 I-V Curves



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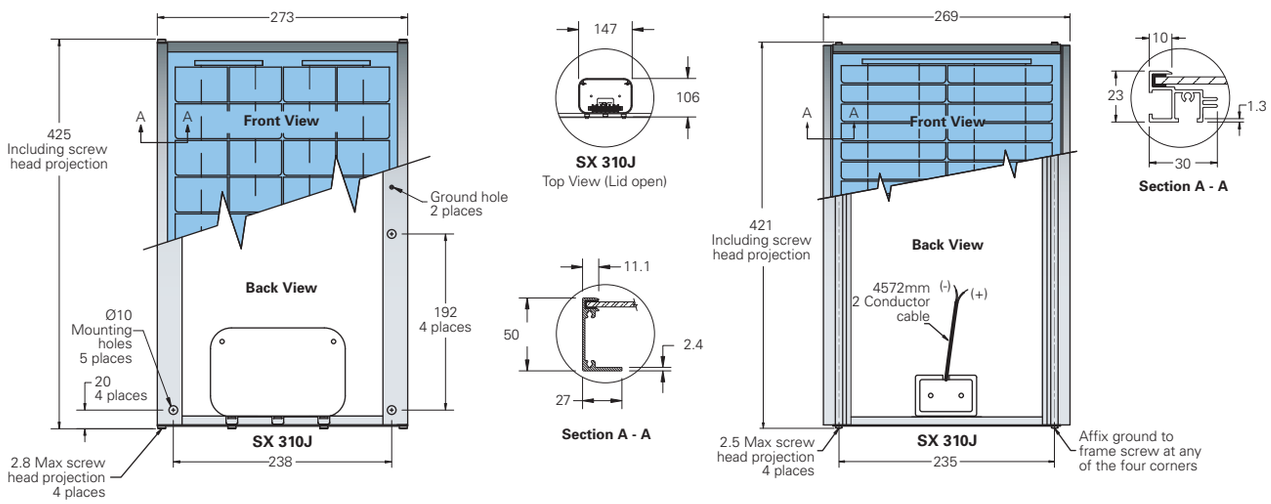
SX 310

Module diagram



Self-tapping grounding screw, instruction sheet and warranty document included with each module.

Typical electrical characteristics	SX 310
Maximum power (P_{max})	10W
Warranted minimum power	9W
Voltage at P_{max} (V_{mp})	16.8V
Current at P_{max} (I_{mp})	0.59A
Short circuit current (I_{sc})	0.69A
Open circuit voltage (V_{oc})	21.0V
Temperature coefficient of I_{sc}	(0.065±0.015)%/°C
Temperature coefficient of V_{oc}	-(80±10)mV/°C
Temperature coefficient of P_{max}	-(0.5±0.05)%/°C
NOCT (Air 20°C; Sun 0.8kW/m²; wind speed 1m/s)	47±2°C
Maximum series fuse rating	1A
Maximum system voltage	50V (IEC 61215 rating)

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

Mechanical characteristics	SX 310J	SX 310M
Dimensions (mm) (Overall tolerances +/-3mm)	425 x 273 x 50	421 x 269 x 23
Weight (kg)	1.9	1.5
Frame	Clear anodised aluminium alloy type 6063T6. Silver universal frame.	Clear anodised aluminium alloy type 6063T6. Silver multimount frame.
Solar cells	36 cells (57mm x 38 mm) configured geometrically for a 4 x 9 matrix connected in series.	
Junction box (SX 310J)	IP54 junction box with 6 terminal screw connection block, accepts PG 13.5, 13mm conduit or cable fitting. Terminal accepts up to 6mm² (10 AWG) wire.	
Output cables (SX 310M)	RHW AWG# 18 (0.75mm²) 2 core PLTC cable. Lengths 457mm ("-" black) and 457mm ("+" red).	
Construction	Front: High-transmission 3mm tempered glass. Rear: White polyester; encapsulant: EVA.	

Your BP Solar representative:

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This publication summarises product warranty and specifications which are subject to change without notice. For full terms and conditions of warranty, see BP Solar's warranty document. All solar modules are individually tested prior to shipment.

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