SX 320

20 Watt Photovoltaic Module

High-efficiency photovoltaic module using silicon nitride multicrystalline silicon cells.

Performance

Rated power (P_{max})	20W
Power tolerance	± 10%
Nominal voltage	12V
Limited Warranty[1]	12 years

Configuration

M Multimount frame with lo-pro J-Box and output cable
J Clear universal frame and standard J-Box

Electrical Characteristics[2]

	SX320
Maximum power (P_{max})[3]	20W
Voltage at Pmax (V_{mp})	16.8V
Current at Pmax (I_{mp})	1.19A
Warranted minimum P_{max}	18W
Short-circuit current (I_{sc})	1.29A
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 power	-(0.5±0.05)%/ °C
NOCT (Air 20°C; Sun 0.8kW/m^2 ; wind 1m/s)	47±2°C
Maximum series fuse rating	3A
Maximum system voltage	50V (US NEC rating) 50V (IEC 61215 rating)

Mechanical Characteristics

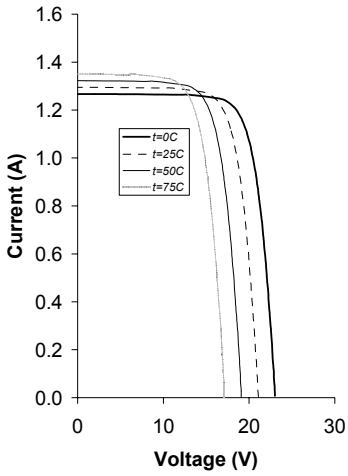
Dimensions	**M**	Length: 421mm (16.6”)	Width: 501mm (19.7”)	Depth: 23mm (0.9”)
	J	Length: 425mm (16.7”)	Width: 502mm (19.7”)	Depth: 50mm (1.97”)
Weight	**M**	2.5 kg (5.5 pounds)		
	J	3.0 kg (6.6 pounds)		
Solar Cells		36 cells (38mm x 114mm) in a 4x9 matrix connected in series		
Junction Box	**J**	J-Version junction box with 4-terminal connection block; IP 65, accepts PG 13.5, M20, ½ inch conduit, or cable fittings accepting 6-12mm diameter cable. Terminals accept 2.5 to 10mm^2 (8 to 14 AWG) wire		
Output Cables	**M**	AWG# 18 (0.75mm^2) 2 core ITC/PLTC; length - 4572mm		
Construction		Front: High-transmission 3mm (1/8th inch) tempered glass; Back: Polyester; Encapsulant: EVA		
Frame	**M**	Clear anodized aluminum alloy type 6063T6 Multimount frame; Color: silver		
	J	Clear anodized aluminum alloy type 6063T6 Universal frame; Color: silver		

1. Module Warranty: 12-year limited warranty of 90% power output; 2-year limited warranty of materials and workmanship. See your local representative for full terms of these warranties.
2. These data represent the performance of typical BP modules, and are based on measurements made in accordance with ASTM E1036 corrected to SRC (STC.)
3. During the stabilization process that occurs during the first few months of deployment, module power may decrease by approx. 1% from typical P_{max}.

Quality and Safety

CE	Manufactured in ISO 9001-certified factories; conforms to European Community Directives; certified to IEC 61215
ESTI	Module power measurements calibrated to World Radiometric Reference through ESTI (European Solar Test Installation at Ispra, Italy)
UL	Listed by Underwriter's Laboratories for electrical and fire safety (Class C fire rating)
FM APPROVED	Approved by Factory Mutual Research in NEC Class 1, Division 2, Groups C & D hazardous locations.

SX320 I-V Curves

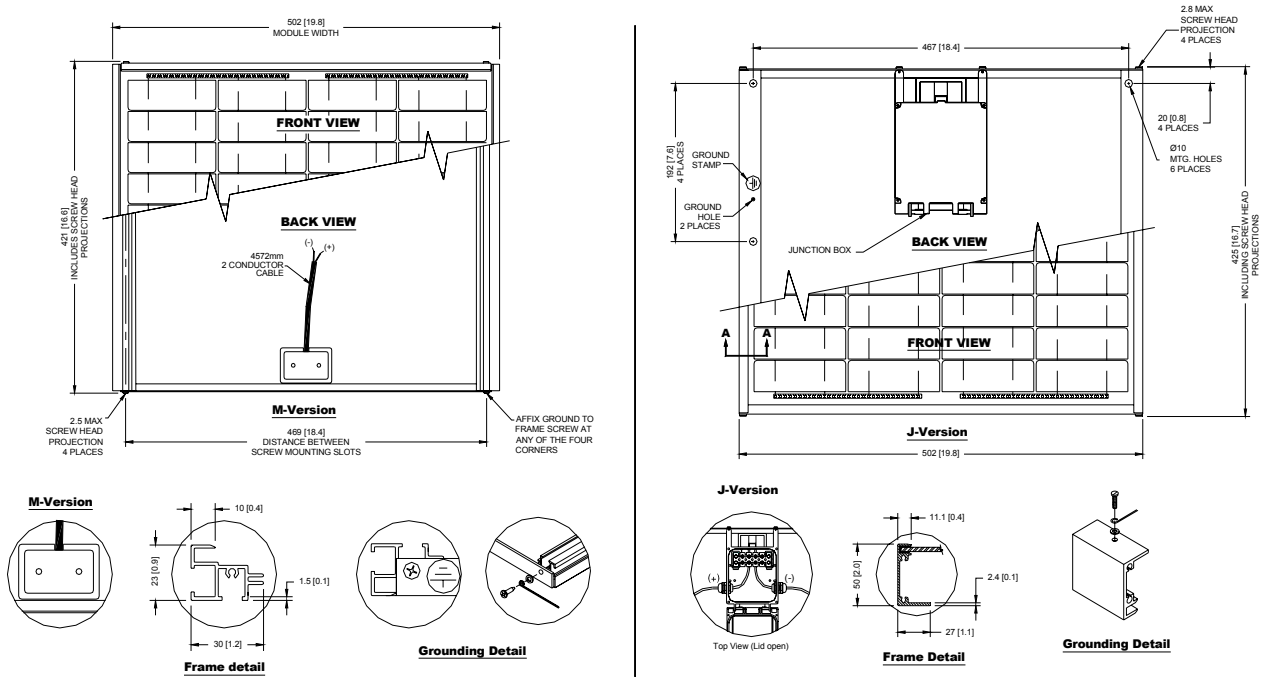


Qualification Test Parameters

Temperature cycling range	-40°C to +85°C (-40°F to 185°F)
Humidity freeze, damp heat	85% RH
Static load front and back (e.g. wind)	2,400 pa (50psf)
Front loading (e.g. snow)	5,400 pa (113psf)
Hailstone impact	25mm Ø (1 inch) at 23 m/s (52mph)

Module Diagram

Dimensions in brackets are in inches. Un-bracketed dimensions are in millimeters. Overall tolerances ±3mm (1/8")



Included with each module: self-tapping grounding screw (J-Version), instruction sheet, and warranty document.

Note: This publication summarizes product warranty and specifications, which are subject to change without notice. Additional information may be found on our web site: **www.bpsolar.com**