

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

**Performance**

|                               |          |
|-------------------------------|----------|
| Rated power ( $P_{max}$ )     | 200W     |
| Nominal voltage               | 16V      |
| Limited Warranty <sup>1</sup> | 25 years |

**Configuration**

|          |  |
|----------|--|
| <b>B</b> | Bronze frame with output cables and polarized Multicontact (MC) connectors |
|----------|--|

**Electrical Characteristics<sup>2</sup>**

|   | <b>SX 3200</b>         | <b>SX 3190</b> |
|---|------------------------|----------------|
| Maximum power ( $P_{max}$ ) <sup>3</sup>              | 200W                   | 190W           |
| Voltage at $P_{max}$ ( $V_{mp}$ )                     | 24.5V                  | 24.3V          |
| Current at $P_{max}$ ( $I_{mp}$ )                     | 8.16A                  | 7.82A          |
| Warranted minimum $P_{max}$                           | 182.0W                 | 172.9W         |
| Short-circuit current ( $I_{sc}$ )                    | 8.7A                   | 8.5A           |
| Open-circuit voltage ( $V_{oc}$ )                     | 30.8V                  | 30.6V          |
| Temperature coefficient of $I_{sc}$                   | (0.065±0.015)%/°C      |                |
| Temperature coefficient of $V_{oc}$                   | -(111±10)mV/°C         |                |
| Temperature coefficient of power                      | -(0.5±0.05)%/°C        |                |
| NOCT (Air 20°C; Sun 0.8kW/m <sup>2</sup> ; wind 1m/s) | 47±2°C                 |                |
| Maximum series fuse rating                            | 15A                    |                |
| Maximum system voltage                                | 600V (U.S. NEC rating) |                |



**Mechanical Characteristics**

|               |  |
|---------------|--|
| Dimensions    | Length: 1680mm (66.14")    Width: 837mm (32.95")    Depth: 50mm (1.97")  |
| Weight        | 15.9 kg (35.05 pounds)   |
| Solar Cells   | 50 cells (156mm x 156mm) in a 5x10 matrix connected in series  |
| Output Cables | RHW-2 AWG# 12 (4mm <sup>2</sup> ), cable with polarized weatherproof DC rated Multicontact connectors; asymmetrical lengths - 1250mm (-) and 800mm (+) |
| Diodes        | <b>IntegraBus™</b> technology includes Schottky by-pass diodes integrated into the printed circuit board bus   |
| Construction  | Front: High-transmission 3mm (1/8th in) tempered ARC glass; Back: Black polyester backsheet with superior dielectric properties; Encapsulant: EVA      |
| Frame         | Anodized aluminum alloy type 6063T6 Universal frame; Color: Bronze   |

1. Module warranty: 25-year limited warranty of 80% power output; 12-year limited warranty of 90% power output; 5-year limited warranty of materials and workmanship. See our website for full terms of these warranties.
2. This data represents the performance of typical BP Solar products, and is 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 approximately 1% from typical  $P_{max}$ .

## Quality and Safety

**ESTI**

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

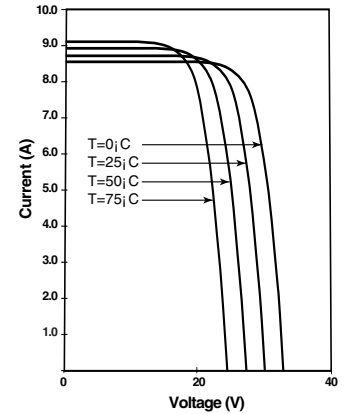


Listed by Underwriter's Laboratories for electrical and fire safety (Class C fire rating)

## Qualification Test Parameters

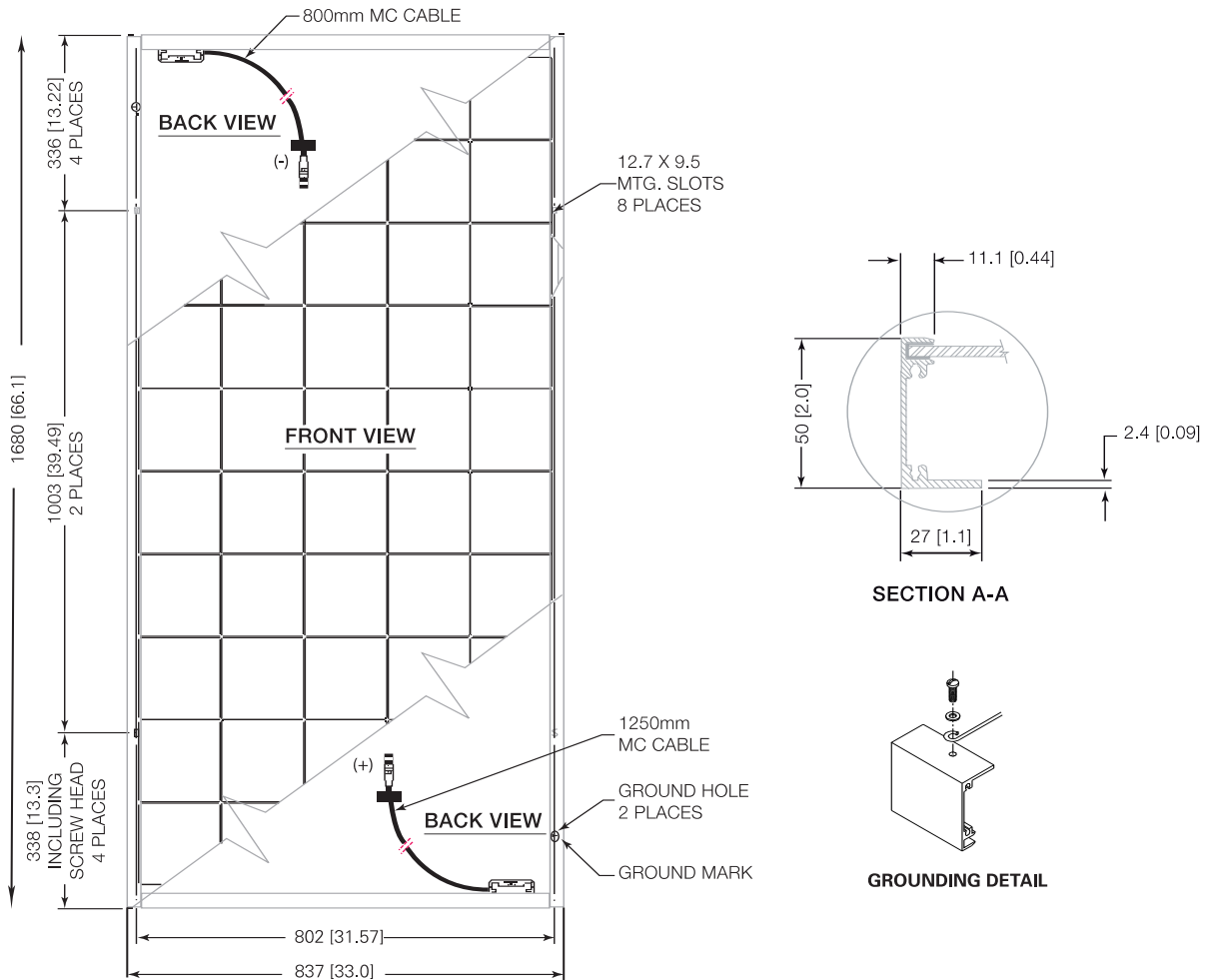
|  |                                   |
|--|-----------------------------------|
| Temperature cycling range              | -40°C to +85°C (-40°F to 185°F)   |
| Humidity freeze, damp heat             | 85% RH                            |
| Static load front and back (e.g. wind) | 2,400 pa (50psf) 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

## SX 3200 I-V Curves



## Module Diagram

Dimensions in brackets are in inches. Un-bracketed dimensions are in millimeters. Overall tolerances  $\pm 3\text{mm}$  (1/8").



Included with each module: self-tapping grounding screw, instruction sheet and warranty documents.

**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.us](http://www.bpsolar.us)