



BP Solar's new upgraded marine modules, the BP 550MM and BP 525MM, provide more power than competing products, enabling customers to power larger loads and generate more power on existing navaid structures. Using high-efficiency laser-grooved buried-grid monocrystalline solar cells, they provide as much as 30% more power—50 watts and 25 watts, respectively—than our previous marine modules of the same size.

Field-proven corrosion-resistant construction and freedom from maintenance make these modules the perfect power source for lighthouses, beacons, buoys and other navigation aids—any application requiring self-contained power that can effectively resist degradation from water and weather. Their long life and compatibility with lead-acid batteries give them the lowest life-cycle cost among remote marine power systems.

Field-proven materials and construction

The design and materials used in these modules are proven in more than 20 years of service for customers including the Northern Lighthouse Board, Trinity House Lighthouse Service, and the U.S. and Canadian Coast Guards. These modules differ from our prior marine modules, the MSX-20MM and -38MM, only by the use of premium solar cells.

- Laser patterning and processing minimizes cell front shading, maximizing efficiency;
- Anodized, marine-grade aluminum alloy frame is rugged and corrosion-resistant, bolts directly to buoys and other mounting structures. Open corners prevent salt and sand accumulation;
- Silicone gaskets provide a compressed seal around the laminate, protecting it from salt water and protecting the glass and framing from abrasion;
- Cells are laminated between sheets of ethylene vinyl acetate (EVA) and high-transmissivity low-iron 3mm tempered glass.

Limited warranty

- Power warranty for 10 years;
- Freedom from defects in materials and workmanship for 2 years.

See your local BP Solar representative for full terms of these warranties.

Premium Power

The new BP 550MM and BP 525MM use BP Solar's premium cells, with cell efficiency of 16.5%. Typical power for BP 550MM modules exceeds 50 watts; BP 525MM modules average 25 watts. Each



BP 550MM, 525MM

module is factory-tested, with factory measurements available through your BP Solar representative.

Battery charging in any climate

Unlike some competing products, these modules have the voltage needed to drive lead-acid batteries to full charge in any marine environment, including hot climates. With 35 cells and 36 cells in series respectively, the BP 550MM and BP 525MM, maximize battery life by preventing electrolyte stratification and sulphation.

Quality and Safety

The BP 550M and BP 525MM have been designed to the same specifications as our previous marine modules, which met the requirements of USCG Spec 40, and their test regimen meets or exceeds ISPR requirements. Testing includes:

- Repetitive cycling between -40°C and 85°C at 85% relative humidity;
- A "damp heat" test, consisting of 500 hours of exposure to 85°C and 85% relative humidity.

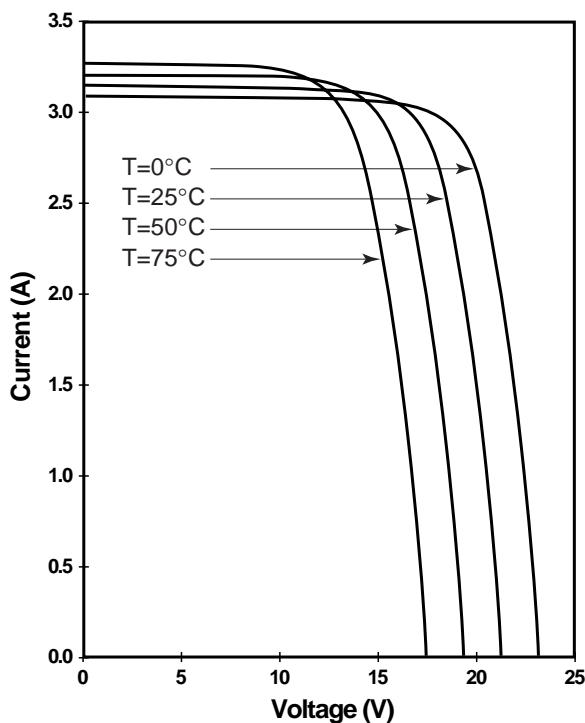
Electrical Characteristics¹

	BP 550MM	BP 525MM
Maximum power ² (P_{max})	50W	25W
Voltage at P_{max} (V_{mp})	17.5V	18.0V
Current at P_{max} (I_{mp})	2.87A	1.39A
Warranted minimum P_{max}	46W	22.5W
P_{max} tolerance	+10%, -8%	±10%
Short-circuit current (I_{SC})	3.1A	1.47A
Open-circuit voltage (V_{OC})	21.4V	22V
Maximum system voltage	600V	
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 ³	47°C	

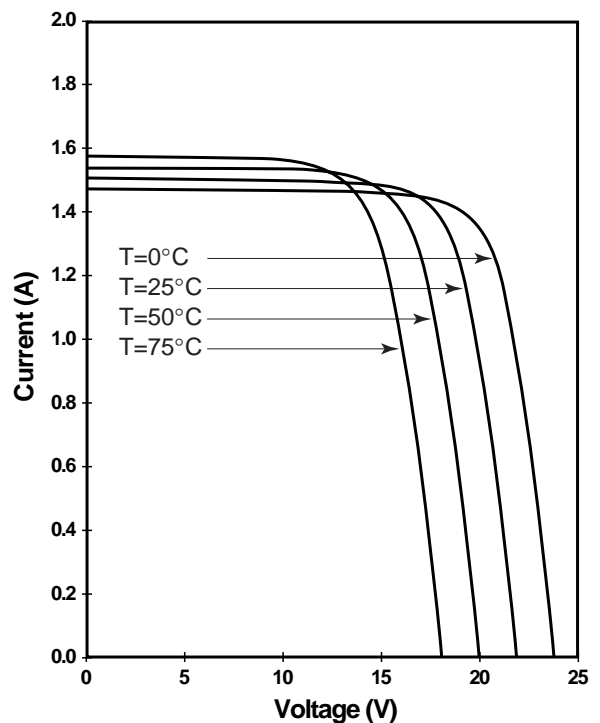
Notes

- These data represent the performance of typical BP 550MM and BP 525MM modules as measured at their output terminations. The data are based on measurements made in accordance with ASTM E1036 corrected to SRC (Standard Reporting Conditions, also known as STC or Standard Test Conditions), which are:
 - illumination of 1 kW/m² (1 sun) at spectral distribution of AM 1.5 (ASTM E892 global spectral irradiance);
 - cell temperature of 25°C.
- During the stabilization process which occurs during the first few months of deployment, module power may decrease approximately 3% from typical P_{max} .
- The cells in an illuminated module operate hotter than the ambient temperature. NOCT (Nominal Operating Cell Temperature) is an indicator of this temperature differential, and is the cell temperature under Standard Operating Conditions: ambient temperature of 20°C, solar irradiation of 0.8 kW/m², and wind speed of 1m/s.

BP 550MM I-V Curves



BP 525MM I-V Curves



Mechanical Characteristics

Weight

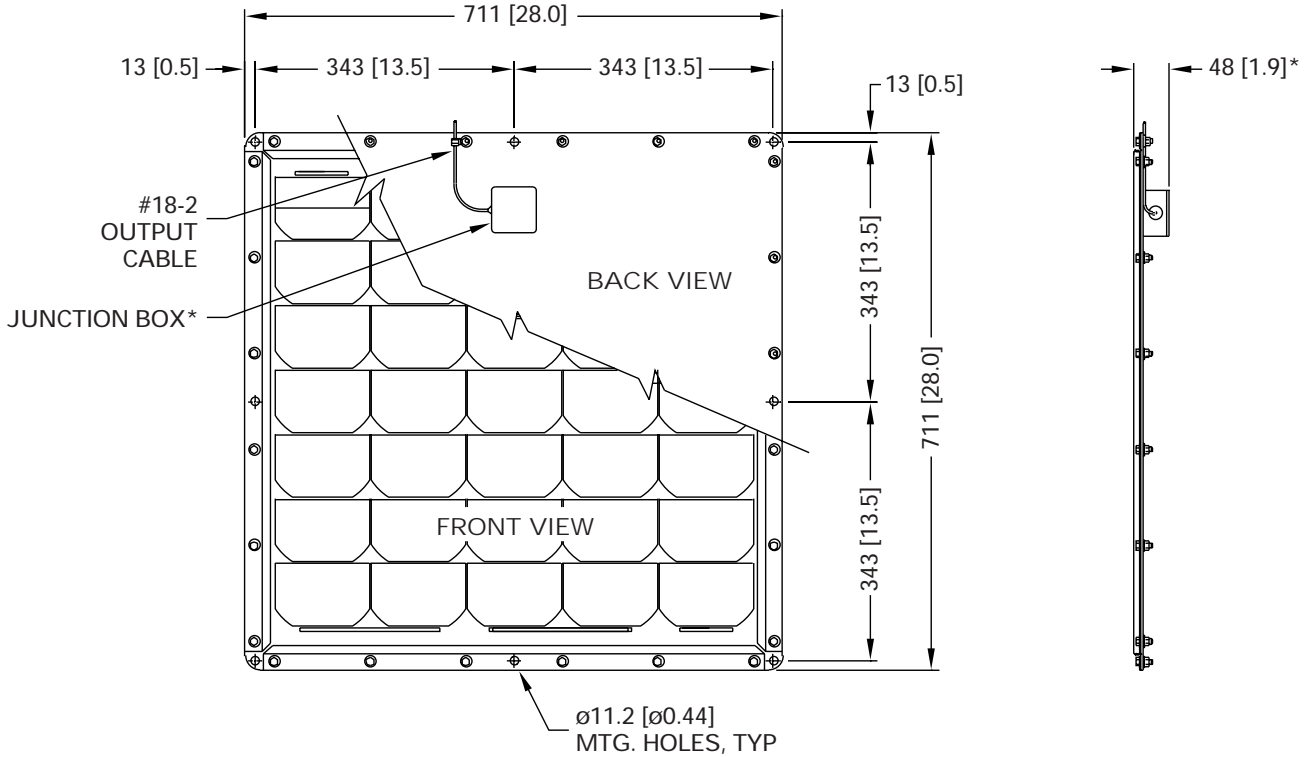
BP 550MM	10.1 kg (22.3 pounds)
BP 525MM	5.0 kg (11.0 pounds)

Dimensions

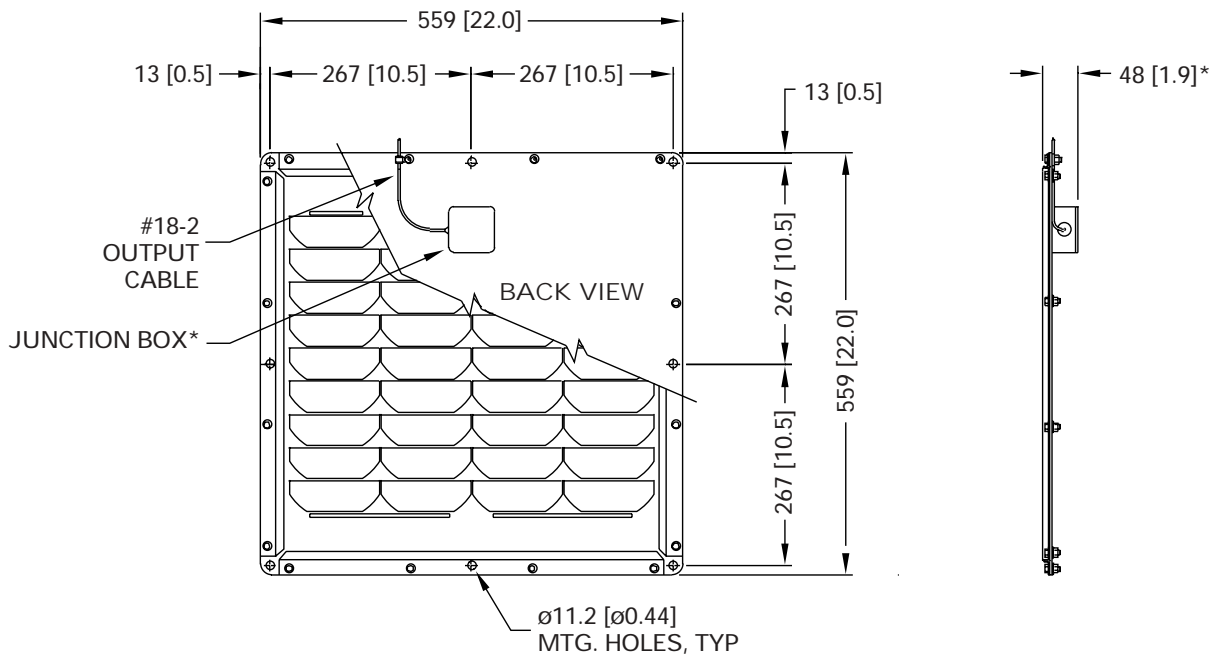
Unbracketed dimensions are in millimeters.
Dimensions in brackets are in inches.

Overall tolerances $\pm 3\text{mm}$ (1/8")

* Junction boxes are installed by third parties; dimensions may vary from drawing.

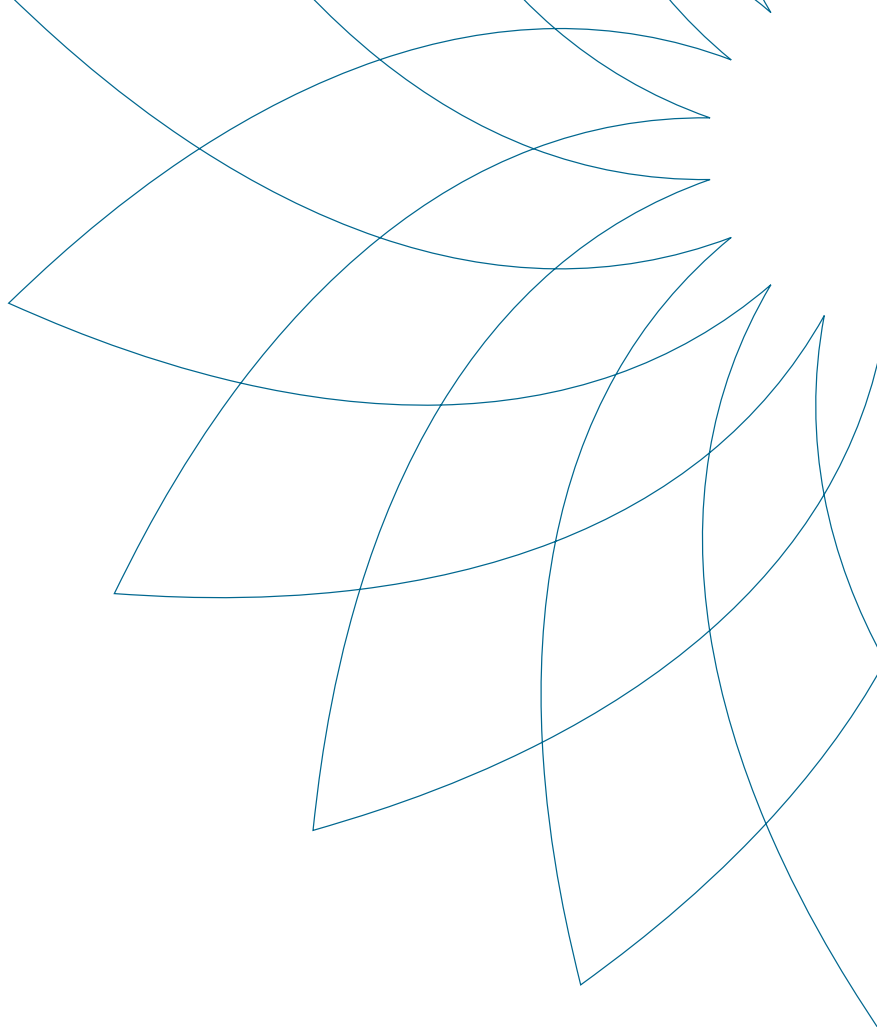


BP 550MM



BP 525MM

Note: The shape of BP 525MM cells may vary from drawing; electrical specifications are unchanged.



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This publication summarizes product warranty and specifications, which are subject to change without notice and should not be used as the definitive source of information for final system design. Additional warranty and technical information may be found on our website www.bpsolar.com or may be obtained from your local representative.



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