

BP MSX-Lite™ modules are designed for applications requiring a combination of light weight, compactness, and ruggedness. They are particularly useful as 12 VDC power sources for expeditions, mobile communications, recreational vehicles and railroad signaling devices. Four models of BP MSX-Lite are available, the BP MSX-5 Lite, -10 Lite, -20 Lite and -30 Lite, delivering nominal maximum power of 4.5, 10, 20, and 30 watts respectively.

Individually Tested and Labeled

Each Lite module is tested and labeled with its actual output—voltage, current, and power at maximum power point (P_{max})—at Standard Test Conditions and Standard Operating Conditions.

Limited Warranties

- Power output for 5 years;
 - Freedom from defects in materials and workmanship for 1 year.
- See our website or your local representative for full terms of these warranties.

Proven Materials and Construction

BP Solar's quarter-century of field experience shows in every aspect of these modules' construction and materials:

- Multicrystalline silicon solar cells: efficient, attractive, stable;
- Modules are rugged and weather-proof: cell strings are laminated between sheets of ethylene vinyl acetate (EVA) with a stainless steel substrate and Tedlar™ cover;
- Proven cell interconnection technique and moisture-resistant metallization ensure electrical integrity in severe climates.



BP MSX Lite Modules

Light, Rugged, Easily Mounted

Although extremely rugged, MSX-Lite modules are compact and lightweight. The largest, the MSX-30 Lite, weighs only 3 kg (6 1/2 pounds). The modules may be mounted from front or back through four grommet-finished holes which accept fasteners up to 5mm (0.2") diameter. Total module thickness is only 16 mm, including the mounting grommets and the low-profile output termination box. The termination box is on the module's front, facilitating mounting on flat surfaces. Because Lite modules can bend without damage up to 8 cm/m (about 1 inch per foot), they can also be mounted on gently curved surfaces.

Quality and Safety

MSX-Lite modules are tested and inspected in our ISO 9001-certified factories to demanding specifications.

Options

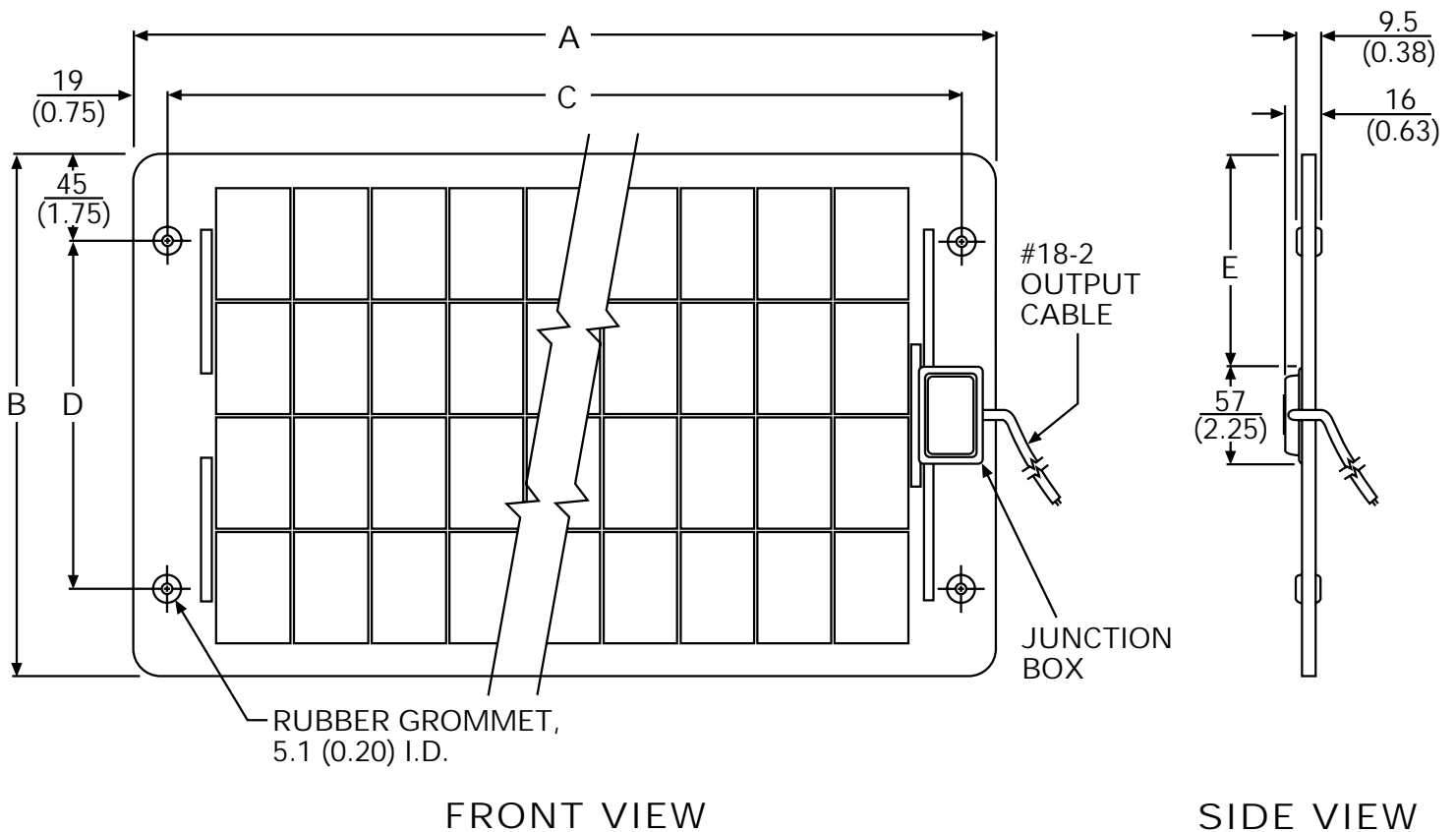
MSX-Lite modules may be ordered with an integral blocking diode, which prevents battery discharge at night or during periods of poor insolation.

Mechanical Characteristics

	MSX-30 Lite	MSX-20 Lite	MSX-10 Lite	MSX-5 Lite
Weight in kg (pounds)	3.0 (6.5)	2.1 (4.5)	1.1 (2.5)	0.7 (1.6)
Dimensions (see dwg)	millimeters (inches)			
A	616 (24.3)	445 (17.5)	445 (17.5)	273 (10.8)
B	495 (19.5)	495 (19.5)	267 (10.5)	267 (10.5)
C	578 (22.8)	406 (16.0)	406 (16.0)	235 (9.3)
D	406 (16.0)	406 (16.0)	178 (7.0)	178 (7.0)
E	219 (8.6)	219 (8.6)	105 (4.1)	105 (4.1)

Dimensions in brackets are in inches.
 Unbracketed dimensions are in millimeters
 Overall tolerances $\pm 3\text{mm}$ ($1/8''$)

Output cable
 3 meters long, 1mm^2 (AWG #18-2)



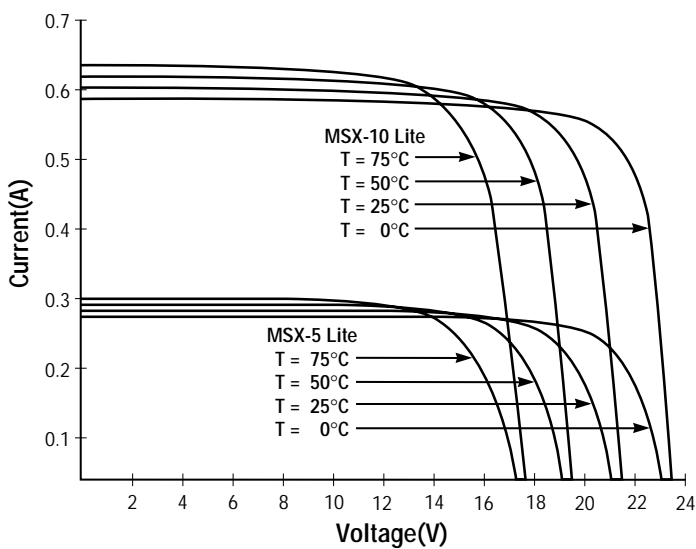
Electrical Characteristics¹

	MSX 30 Lite	MSX 20 Lite	MSX 10 Lite	MSX 5 Lite
Maximum power (P_{max}) ²	30W	20W	10W	4.5W
Voltage at P_{max} (V_{mp})	16.8V	16.8V	16.8V	16.5V
Current at P_{max} (I_{mp})	1.78A	1.19A	0.59A	0.27A
Warranted minimum P_{max}	27W	18W	9W	4W
Short-circuit current (I_{sc})	1.94A	1.29A	0.65A	0.3A
Open-circuit voltage (V_{oc})	21V	21V	21V	20.5V
Temperature coefficient of I_{sc}	(0.065±0.015)%/°C			
Temperature coefficient of V_{oc}	-(80±10)mV/°C			
Approximate effect of temperature on power	-(0.5±0.05)%/°C			

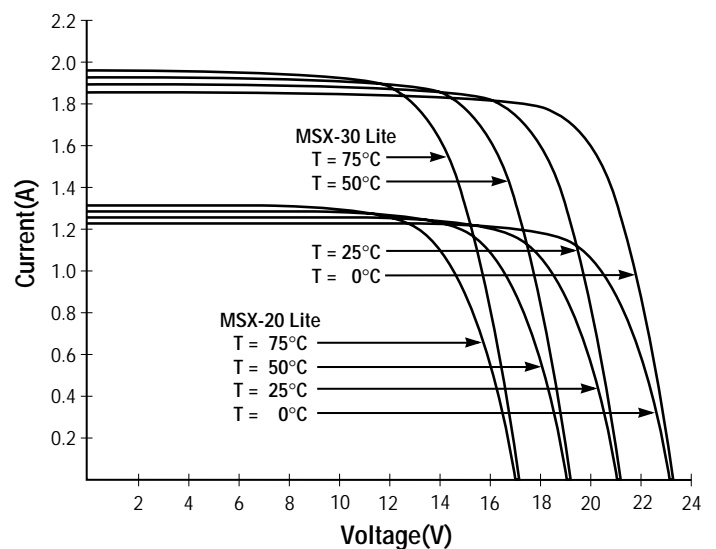
Notes

- These data represent the performance of typical BP MSX Lite modules as measured at their output cable terminations, and do not include the effect of such additional equipment as diodes. 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} .

MSX 5 and 10 Lite I-V Curves



MSX 20 and 30 Lite I-V Curves





bp solar

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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