

Environmentally friendly energy....

Modern solar power systems have a variety of uses and at Marlec we specialise in off-grid applications to provide electrical power at sites where the grid is inaccessible or too costly. There may be good environmental reasons for choosing a renewable energy option even where the grid is available. The systems are sustainable and often more cost effective owing to the avoidance of major groundworks.



A cost effective solution - Multiple 80W solar panels installed at a park to provide lighting and automatic gate opening all year round.

BP Solar have been a world leading research, developer and producer of photovoltaic modules since 1972. As a UK Distributor of BP Solar products we aim to understand your system needs and tailor a battery charging solution to suit your application whether that's a solar "stand-alone" or "hybrid" wind/solar kit incorporating one of our own Rutland Windchargers. We will recommend to you a balance of solar and/or wind power to deliver you power, day or night, summer or winter wherever you are in the world.

BP Solar 3 Series

The 3 series is an advanced photovoltaic module that incorporates polycrystalline cells using SiN coating to give superior efficiency compared with same rated modules from other manufacturers. All the solar panels have "ARC" glass, an anti-reflective coating with self-cleaning properties so that under normal conditions panels do not require cleaning. The modules are robustly constructed using BP's clear anodised Universal frame and are offered with a warranty that will give you confidence in your system for many years ahead.

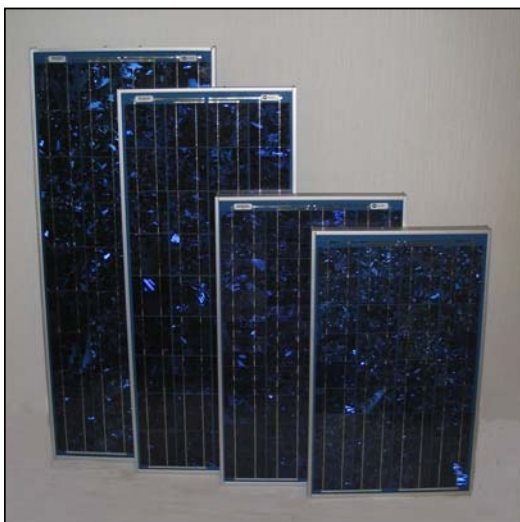
Solar panels can be connected in parallel to increase power and are modular allowing the user the flexibility to build up a system over a period of time in line with budgets and power requirements. The 3 series modules have a 12V nominal output and are primarily designed for battery charging applications such as:

- off-grid homes
- telecommunications
- telemetry sites
- navigation equipment
- motorhomes & caravans
- sailboats

.....and other sites where low power is needed.

A range of solar regulators and mounting kits manufactured by Marlec are available, we will recommend products appropriate to your system.

Product Features & Specifications – 3 Series



- 90% Power output warranty over 12 years
 - 80% Power output warranty over 25 years
 - 10 Year warranty – free from defects in materials and workmanship
 - Universal frame is manufactured from clear anodised aluminium alloy type 6063T6. Silver in colour.
 - Temperature cycling range of -40°C to $+85^{\circ}\text{C}$ for 200 cycles
 - Damp heat tested to withstand 85°C and 85% relative humidity for 1000 hours
 - Front and rear static load tested eg wind, to 2400 Pa
 - Front load tested eg snow, to 5400 Pa
 - Hailstone impact tested to 25mm hail at 23m/s from 1m distance
 - The tempered glass is highly transmissive and self cleaning from rainfall
- Rugged and weatherproof construction - the cells are laminated between sheets of ethylene vinyl acetate (EVA) and 3mm tempered glass with a blue Tedlar™ backsheet
 - 36 cell panels are configured in a 4 x 9 matrix; each 2 rows of 9 are connected in series with a Schottky by-pass diode to produce 2 x 6V strings further connected in series to produce a standard 12V nominal output panel.
 - 72 cell panels are configured in a 4 x 18 matrix, 2 parallel strings of 36 produce a standard 12V nominal output.
 - Easy to connect - an IP54 weather rated junction box at the rear of each panel provides a 6 terminal screw connection block* accepting 2.5-10mm² (8-14AWG) cable. The junction box knockouts accept PG13.5, M20, 13mm conduit or cable fittings 6-12mm diameter.
- *Except the BP3125S module which has 2 x 4mm² flying leads with Multicontact connectors (900/800mm)
- All BP Solar modules are labelled with individual performance figures
 - Each solar module is supplied with a grounding screw, instruction sheet and warranty document.

BP Solar 3 Series Product Range

Typical Electrical Characteristics	BP 340	BP 350	BP 365	BP 380	BP3125S
Maximum Power Pmax	40W	50W	65W	80W	125W
Warranted Minimum Power	36W	45W	60W	75W	119W
Voltage at Pmax	17.3V	17.3V	17.6V	17.6V	17.6V
Current at Pmax	2.31A	2.89A	3.69A	4.55A	7.1A
Current @ 13.8V charging	2.9A	3.62A	4.71A	5.8A	9.05A
Short circuit current	2.54A	3.17A	3.99A	4.8A	7.54A
Open circuit Voltage	21.8V	21.8V	22.1V	22.1V	22.1V
Maximum system voltage	600V (IEC 61215 rating) 1000V (TÜV Rheinland)				
Maximum series fuse rating	20A	20A	20A	20A	15A
Number of cells	36	72	36	36	36
Dims. mm(tolerance +/-3mm)	655x537x50	839x537x50	1111x502x50	1204x537 x50	1510x674x50
Net Weight Kg	5.75	6.0	7.2	7.7	12

Marlec have been designing renewable energy systems since 1979 and our experience is second to none so call us today for professional free advice about your system.

BP Solar Authorised Distributor

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Low Energy Remote Power Solutions....

Modern solar power systems have a variety of uses and at Marlec we specialise in off-grid applications to provide electrical power at sites where the grid is inaccessible or too costly. There may be good environmental reasons for choosing a renewable energy option even where the grid is available. The systems are sustainable and often more cost effective owing to the avoidance of major groundworks.



BP Solar have been a world leading researcher, developer and producer of photovoltaic modules since 1972. As a UK Distributor of BP Solar products we aim to understand your system needs and tailor a battery charging solution to suit your application whether that's a solar "stand-alone" or "hybrid" wind/solar kit incorporating one of our own Rutland Windchargers. We will recommend to you a balance of solar and/or wind power to deliver you power, day or night, summer or winter wherever you are in the world.

*A cost effective solution-
Solar panels used in conjunction with a micro
wind turbine to power a traffic sign.*

BP Solar SX Series

BP Solar's SX range is based on one of their best established product ranges used worldwide in thousands upon thousands of sites in single and multiple use. The multi-crystalline cells are designed to efficiently charge 12v batteries in virtually any climate for low power DC loads.

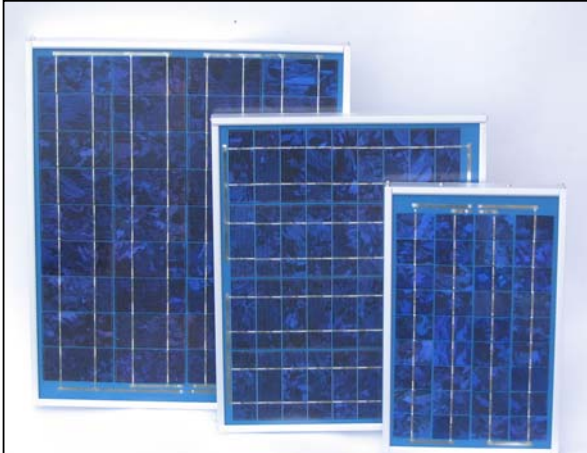
They provide a cost effective solution for maintaining the charge in batteries at off grid locations for low power telemetry, telecommunications, signals, navigation aids, security sensors, instrumentation and are also ideal for trickle charging leisure batteries on motorhomes and holiday cottages.

The range benefits from BP's standard durable frames and tempered glass and is offered with a 10 year power performance warranty and 5 year materials and workmanship warranty.

SX10, 20 & 30U Modules - these models can be reconfigured by the user for 6V charging and solar panels of the same power rating can be connected together efficiently for 24V use or parallel connected for increased power. All these units are supplied with a Universal frame.

SX5M - is supplied with a lower profile frame and a 3m output cable from a sealed junction box.

Product Features & Specifications – SX Series



- 90% Power output warranty over 10 years
 - 5 Year warranty – free from defects in materials and workmanship
 - Universal frame is manufactured from clear anodised aluminium alloy type 6063T6. Silver in colour.
 - Rugged and weatherproof construction - the cells are laminated between sheets of ethylene vinyl acetate (EVA) and 3mm tempered glass with a blue tedlar rear
 - The tempered glass is highly transmissive and self cleaning from rainfall
 - Each solar module is supplied with a grounding screw, instruction sheet and warranty document.
- All BP Solar modules are labelled with individual performance figures
 - 36 cell panels are configured in a 4 x 9 matrix, each 2 rows of 9 are connected in series with a Schottky by-pass diode to produce 2 x 6V strings. These 2 x 6V strings are connected in series to produce a standard 12V nominal output panel.
 - Easy to connect SX10, 20 & 30Umodules - an IP54 weather rated junction box at the rear of each panel provides a 6 terminal screw connection block. The terminals accept up to 6mm² (AWG#10) cable. The junction box has knock outs to accept PG13.5 or ½” nominal conduit or cable fittings accepting 6-12mm diameter cable.
 - All the models are compliant with the IEC61215 regulation requirements:
 - Temperature cycling range of –40°C to +85°C
 - Damp heat tested to withstand 85°C and 85% relative humidity for 1000 hours
 - Front and rear static load tested eg wind, to 2400 Pa
 - Front load tested eg snow, to 5400 Pa
 - Hailstone impact tested to 25mm hail at 23m/s from 1m distance
 - “Hot Spot” tested, this determines a module’s ability to tolerate localised shadowing

SX Series Product Range

Typical Electrical Characteristics	SX5M	SX10U	SX20U	SX30U
Maximum Power Pmax	4.5W	10W	20W	30W
Warranted Minimum Power	4	9W	18W	27W
Voltage at Pmax	16.5V	16.8V	16.8V	16.8V
Current at Pmax	.27A	.59A	1.19A	1.78A
Current @ 13.8V charging	.32A	.72A	1.45A	2.17A
Short circuit current	.3A	.65A	1.29A	1.94A
Open circuit Voltage	20.5V	21V	21V	21V
Frame Type	Multi-Mount	Universal	Universal	Universal
Dims. mm (tolerance +/- 3mm)	269x250x23	273x424x50	502x424x50	502x594x50
Weight Kg	0.8	1.9	6.0	7.2

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