

Marlec Direct

2011



Wind & Solar Energy since 1979



Marine Windchargers - ideal for on-board charging

Install a Rutland Windcharger and experience the convenience of fully charged batteries. Power that is readily available for lights, navigation equipment, laptops and other electrical appliances. Free and renewable energy from the gentlest breeze can be combined with solar panels for a balanced year round power supply. Used on board yachts and in some land based applications.

Rutland 914i Windcharger



- Maximum power point tracking technology can lead to up to 30% more energy produced than the Rutland 913
- Based on the successful compact Rutland 913 design
- Produces 140W at 11m/s (21 knots) wind speeds
- Ideal for cruising yachts and static caravans
- Unrivalled low wind performance
- Turbine Diameter: 910mm
- Weight 11.6kg
- HRSi or HRDi Charge Regulator recommended

Part Nos:
12V CA-01/17 **£629.95**
24V CA-01/18 **£629.95**

The latest, sleekest and more powerful addition to the successful Rutland stable.

Rutland 913 Windcharger

- Efficient performance delivers more ampere hours/day than some larger turbines
- Ideal for cruising yachts and static caravans
- Unrivalled low wind speed performance
- Generates up to 300W
- Produces 90W at 11m/s (21 knots) wind speeds
- Turbine diameter: 910mm
- Weight: 10.5Kg
- HRSi or HRDi Charge Regulator recommended

Part Nos:
12V CA-01/15 **£544.95**
24V CA-01/16 **£544.95**

Powerful, efficient, robust and one of the quietest Windchargers in operation.

See *Sailing Today* January 2009 for a review of our "flagship" Rutland 913 Windcharger.



Rutland 504 Windcharger



- Ideal for trickle charging small battery systems on board boats & touring caravans.
- Light and easy to install temporarily
- Generates up to 80W
- Produces 30W at 11m/s (21 knots) wind speeds
- Turbine diameter: 510mm
- Weight: 3.5Kg
- HRS503, HRSi or HRDi Charge Regulator recommended

Part No:
12V CA-05/04
£334.95

The latest streamlined turbine design. The Rutland 504's improved aerodynamic lines track the wind better than ever. Features a compact safety turbine, ideal on board to avoid ropes snagging.

Land-based Windchargers - powerful and robust designs

When you need power at a remote site the Furlmatic model windchargers provide a reliable and cost effective solution. Power generated can be used for off-grid homes, remote telecommunications, monitoring, electric fences etc avoiding the costly and inconvenient installation of grid power. The Furlmatic Windchargers protect themselves by reducing the rotation speed of the turbine in extremely high winds in a design that continues to stand the test of time.

Rutland 504 e-Furl Windcharger

- Peaks up to 50W pre-furling
- Electronic stall regulation provides high wind protection
- Designed for land and marine use
- Aerodynamically styled to maintain good wind flow and stability
- Low wind speed start to generation
- High grade construction for durability
- For charging 12V battery banks

Part No:
12V CA-05/05
£409.95

A small Windcharger with integral electronic over speed protection.



FM910-3 Furlmatic Windcharger



- Extremely durable construction
- Peaks up to 200W pre-furling
- Produces 90W at 11m/s (21 knots) wind speeds
- Turbine diameter: 910mm
- Weight: 15Kg
- HRSi or HRDi Charge Regulator recommended

Part Nos:

12V CA-02/01 **£645.95**

24V CA-02/02 **£645.95**

Rugged and proven, the FM910-3 Furlmatic has been used worldwide including in the extreme conditions of the Himalayas and the North and South Poles.

FM1803-2 Furlmatic Windcharger

- New robust & powerful rare earth magnet alternator
- Peaks up to 750W pre-furling
- Produces 340W at 11m/s (21 knots) wind speeds
- Manual stall facility
- Turbine diameter: 1800mm
- Tower top weight: 29.2Kg
- MPC1 Controller (shown right) included protects batteries against overcharge
- Digital display.

Part Nos:

Windcharger: CA-03/02 plus

Control Gear: CA-04/10 12V or
CA-04/11 24V

£1699.95

This is the 4th generation of our 1.8m diameter wind turbine. The latest 3 blade design with neodymium magnet generator is even more powerful and lighter in weight than earlier versions.



Rutland Charge Regulators

Connect between the Windcharger, plus solar panels where fitted, and the battery to prevent overcharge. All Marlec charge regulators are designed in house specifically to work in harmony with Rutland Windchargers. Our PWM technology slows the turbine down as the batteries become fully charged. Choose between the single bank HRS range or the dual bank HRDi.

Charge Regulators For Single Battery Banks



Dims: 130x 80x42mm
Weight: 0.185Kg

Part No:

CA-11/46 12/24V **£74.50**

HRSi Regulator

- For use with Rutland 914i, 913, FM910-3 and 503/504 with up to 160W of solar panels
- Led indicators show battery and charge status
- Turbine / solar panel shutdown switch
- Bulk & float stage charging for best performance
- Temperature compensation optimises charging to all conditions
- Automatic voltage recognition for use with 12 and 24 V systems

HRS503 Regulator For Rutland 504, Rutland 504 e-furl or 503 ONLY

- For use with Rutland 503 / 504 with up to a 100W of solar panels
- Led indicators show battery and charge status
- Flying lead connection

Part No:

CA-11/45 12V **£47.95**



Charge Controllers For Dual Battery Banks

HRDi Charge Controller

- Simple combination of one Rutland 503/504, 914i/913 or FM910 plus up to 160W of solar panels
- Digital versatile LCD displays both battery volts and charge currents and much more
- Charge splitter for 2 battery banks
- Turbine/solar panel shutdown switch
- Automatic detection for 12 or 24 V operation



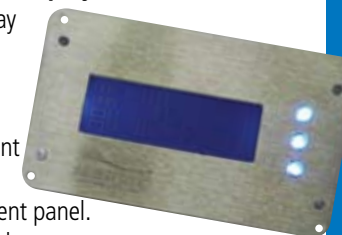
Part No:
CA-11/44 12/24V
£152.95

Dims:
93x127x40mm
Weight: 0.42Kg

HRDi Remote Display

View the display information of the HRDi controller at a more convenient location such as the instrument panel.

- Recess panel mount
- Reprogrammable features
- 3m connecting cable supplied
- Can be used to stall Windcharger



Dims: 125x60mm cut out and 130x80mm fascia
Weight: 0.184 kg

Part No: CA-11/52 £69.95

Windcharger Mounting Kits

Marine Mounting Kits These comprise of 2 polished stainless steel tubes predrilled and with a joiner, a deck fixing bracket, guy to pole attachments (guys not included) and stainless steel fasteners. The **Marine Stays Kit** is highly recommended to use with the marine mounting kits for simple installation.

Rutland 503/504 Marine Mtg Kit has 2 x 1m pole sections

Part No: CA-12/01 **£104.95**

Rutland 913 Marine Mtg Kit has 2 x 1.2m pole sections

Part No: CA-12/02 **£133.95**

Marine Stays Kit has 2 x 1.2 m polished stainless steel lengths can be cut to required length and 32 mm hinged pushpit clamps with rubber inserts to reduce to 25 mm

Part No: CA-12/32 **104.95**

Top sections of pre-drilled stainless steel tube are available for customers to adapt to own tower design as follows:

S Steel Tube (Rutland 913) 1200mm

Part No: CA-12/03 **£36.95**

S Steel Tube (Rutland 913) 600mm

Part No: CA-12/04 **£24.95**

S Steel Tube (Rutland 503/504) 1000mm

Part No: CA-12/15 **£29.95**

S Steel Tube (Rutland 503/504) 500mm

Part No: CA-12/16 **£21.95**



Deck Mounting Brackets Purpose designed stainless steel brackets for mounting your own single length pole to a flat surface. Note that poles must be supported by solid stays.

Part Nos:

(913) CA-12/09 **£19.95**

(503) CA-12/23 **£19.95**



Land Mounting Kits Tower and rigging kits are available separately. Poles must be supported by guys or use rigging kit

Tower Kit-503/504 for temporary installation. This is a 4.0m (2 x 2m sections) of polished stainless steel tube ready drilled for assembly complete with joiner and ground spike.

Part No: CA-12/12 (not shown) **£114.95**

Tower Rigging Kit-503 / 504 complete with guys ready fitted to tower attachments, shackles and ground anchors (anchors suitable for temporary installation on firm ground). For permanent installation or other ground types alternative anchors may be required. **Part No:** CA-12/13 (not shown) **£77.95**



Tower Kit-910 Series

6.4m (3 x 2.13m sections) of 48mm diameter galvanized steel tube ready drilled for assembly complete with joiners. Suitable for temporary or permanent installation of Rutland 913 or FM910-3 Windchargers

Part No: CA-12/08
£114.95

Tower Rigging Kit-910 Series



Part No: CA-12/07 **£153.95**

Complete rigging kit to support the land tower kit. Designed for permanent installation, concrete base for pole and guy anchors recommended.

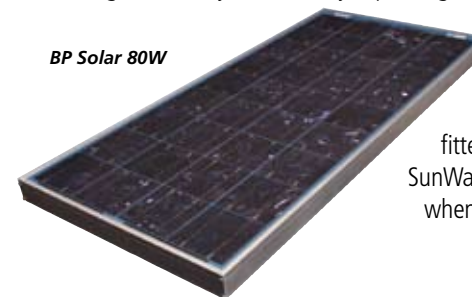
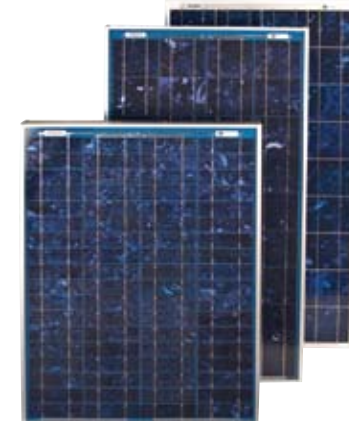
Solar Photovoltaic Panels

Solar panels enable you to have power wherever you are! Silently and efficiently they convert daylight to energy for your batteries whether that's on a motorhome, yacht or at a remote site for professional uses such as monitoring. Choose from our range of leading brands: BP Solar framed panels, SunWare & Spectra semi & fully flexible units. Combine with a windcharger for 24 hour charging capability.



BP Solar Framed PV Modules

- Designed for battery charging at permanent installations on professional field equipment and homes
- Efficient BP Solar polycrystalline cells
- Available in 5 W to 125 W models
- Durable 50 mm aluminium frames with tempered glass
- BP Solar performance warranties up to 25 years (see Individual data sheets)
- Blocking diodes may be necessary depending on system



BP Solar 80W

Blocking Diodes - for PV panels

Low loss Schottky diodes minimise voltage drop.

A diode is required when there is no regulator fitted to prevent reverse current in darkness. (Built-into SunWare & Spectra modules) Diodes may also be required when installing multiple solar panels in parallel or series.

Please call to discuss.

8A Diode **Part No:** 913-012 **£3.60**

5A Diode Kit **Part No:** CA-11/01 **£4.95**

PV Module Type:	Dimensions: (mm)	Weight: (kg)	Part No:	Price:
Spectra 125W peak	1510x674x50	12	CA-10/34	£643.95
BP 380J-80W peak	1209x537x50	9.5	CA-10/42	£377.95
BP 365J-65W peak	796x674x50	7.2	CA-10/21	£299.95
BP 350J-50W peak	839x537x50	6.0	CA-10/03	£252.95
BP 340J-40W peak	655x537x50	5.8	CA-10/13	£199.95
BP SX330J-30W peak	594x502x50	3.9	CA-10/02	£157.95
BP SX320J-20W peak	424x502x50	3.0	CA-10/11	£143.95
BP SX310J-10W peak	424x273x50	1.9	CA-10/16	£ 81.95
BP SX305M-5W peak	269x245x23	0.8	CA-10/10	£ 49.95



Sunware Semi-Flexible PV Modules

Sunware PV panels have the highest power output to surface area ratio of semi-flexible panels on the market. They have a 39 or 40 cell build so they run cooler and perform better in shade thus producing more power per day than 36 cell panels.



Standard Panels with 40 cells
36W & 24W shown



Edge & Mid Mounting Clips
- Mid to join 2 panels

- Ideal for charging on board yachts, narrow boats & motor-home roofs
- Flex up to 3% of their length.
- Marine Grade V4 stainless steel base
- Structured Teflon anti-slip walk on surface.
- 3m integral cable with in line diode
- Superior performance, especially at low light levels
- Edge protection strip available factory fitted on ordering



Compact Panels with 39 cells are
available in 48W (shown front) & 69W

PV Module Type:	Dimensions: (mm)	Weight: (kg)	Part No:	Price:
SW Standard 70, 12V, 70W peak	638x891x5	6.1	CA-10/70	£679.95
SW Compact 69, 12V, 69W peak	600x890x5	5.4	CA-10/69	£679.95
SW Compact 48, 12V, 48W peak	780x460x5	3.5	CA-10/68	£544.95
SW Standard 36, 12V, 36W peak	459x638x5	4.4	CA-10/67	£419.95
SW Standard 24, 12V, 24W peak	459x467x5	3.3	CA-10/66	£348.95
Edge protection strip - fitted by Marlec upon request	N/A	N/A	CA-12/29	£9.95/m
Edge Mounting Clips (4 pieces)	N/A	N/A	CA-12/24	£12.95
Mid Mounting Clips (2 pieces)	N/A	N/A	CA-12/25	£11.95

*24V Available to order



Spectralite Semi-flexible PV Modules

Perfect for keeping batteries topped up whilst you are away to prevent deep discharge and prolong battery life.

- Lightweight and easy to use 12V solar panels, ideal for maintaining and replacing natural battery discharge in leisure applications.
- Robustly constructed with fibreglass base and Tedlar™ cover
- Sealed junction box houses blocking diode.
- 3m integral cable supplied
- Can be flexed by 1cm per 30cm for fixing to curved solid surface such as a coach roof
- Can be walked on with deck shoes



Spectralite 5W, 10W, 19W & 28.5W



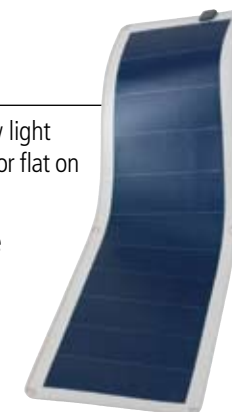
Spectraflex Flexible PV Modules

Flexible amorphous silicon technology which is highly responsive to low light levels. Deploys conveniently on board on the curved surface of a boom or flat on a roof. Easy to store rolled up.



CA-10/33

- Shadow tolerant cell structure
- Cushioned backing
- Rolls up to 30 cm diameter
- Durable construction
- Built-in diode and 3m cable



Keeping your battery topped up

Expensive batteries deserve to be cared for. A small solar panel will replace natural discharge throughout the year. A ratio of 10W of solar PV panel to every 100Ah of battery capacity is needed to achieve this in the UK. At this ratio NO solar regulator is required and the PV panel can be joined directly to the battery. Simply scale this minimum ratio according to battery capacity. When adding more solar panels for increased and more rapid charging a solar regulator is recommended.

PV Module Type:	Dimensions: (mm)	Weight: (kg)	Part No:	Price:
Spectralite 30, 28.5W	559x483x3	1.2	CA-10/39	£212.95
Spectralite 20, 19W	559x381x3	1.2	CA-10/38	£172.95
Spectralite 10, 10W	356x508x3	1.06	CA-10/31	£99.95
Spectralite 5, 5W	304x254x3	0.57	CA-10/36	£70.95
Spectraflex 32, 32W	1429x424x5	2.14	CA-10/33	£332.95

Solar Regulators

Connect between solar panel & battery to prevent overcharge & provide deep discharge protection. All regulators are diode protected to prevent reverse current in darkness & allow other charge sources to same battery. To calculate the regulator needed divide the solar panel Watt rating by the system Voltage to arrive at the maximum Amps Choose a regulator of this minimum rating. eg 65W/12V = 5.4Amps

Morningstar Range

High quality, reliable solar charge regulators available in 12V or 24V models. Efficient Pulse Width Modulation shunt charge regulation. Low voltage disconnect facility on all models except Sunguard. Marine rated terminals throughout.

- Sunguard and SunSaver models for single battery banks
- SunSaver duo for dual battery banks
- Sunlight Controller for automatic solar lighting systems.
- Remote Meter option for SunSaver Duo only gives digital display of current, voltage and temperature at convenient to read location. 10m cable included.



Morningstar SunSaver 10 SSL



Morningstar SunSaver Duo



Morningstar SunGuard



Morningstar Remote Meter



Morningstar Sunlight 10A 12 V

Morningstar Model:	Operating Voltage:	Max Rated Current:	Part No:	Price:
Sungard 4.5A	12 Volts	4.5 Amps	CA-11/26	£27.95
Sunsaver SS-10	12 Volts	10 Amps	CA-11/38	£66.95
Sunsaver SS-10	24 Volts	10 Amps	CA-11/10	£70.95
Sunsaver SS-20	12 Volts	20 Amps	CA-11/11	£87.95
Sunlight SL-10	12 Volts	10 Amps	CA-11/29	£98.95
Sunsaver Duo SSD-25	12 Volts	25 Amps	CA-11/12	£96.95
Remote Meter	12 Volts	25 Amps	CA-11/13	£70.95

Steca Range

The Steca Range offers regulators with either simple LED system indicators or LCD display features. All models include:

- Efficient Pulse Width Modulation (PWM) shunt charge regulation
- Battery deep discharge protection disconnects load & auto reconnects
- Automatic selection of voltage-12/24 V
- Temperature compensated regulation
- Overvoltage protected



Steca Solsum F Range- features tricolour LED indication



Steca PR Range- features LCD screen showing charging and battery status information

PR and Tarom Range include:

- LCD displaying charge current & Voltage, state of charge and Amp hour counter
- Push button field adjustable parameters plus more - see data sheet

Model:	Operating Voltage:	Max Rated Current:	Part No:	Price:
Solsum 6.6F	12/24 Volts	6 Amps	CA-11/14	£22.95
Solsum 8.8F	12/24 Volts	8 Amps	CA-11/15	£26.95
Solsum 10.10F	12/24 Volts	10 Amps	CA-11/16	£29.95
Steca PR1010	12/24 Volts	10 Amps	CA-11/37	£88.95
Steca PR1515	12/24 Volts	15 Amps	CA-11/34	£105.95
Steca PR2020	12/24 Volts	20 Amps	CA-11/35	£123.95
Steca PR3030	12/24 Volts	30 Amps	CA-11/36	£145.95
Tarom 45A	12/24 Volts	45 Amps	CA-11/31	£274.95

Sunware Fox Range **NEW!**

Smart new solar regulators from Fox in single and dual battery models with a remote display to suit either model.

- Efficient Pulse Width Modulation (PWM) shunt charge regulation
- Battery deep discharge protection disconnects load & auto reconnects
- Automatic selection of voltage- 12/24 V
- Nightlight function
- Temperature compensated regulation
- LED indication of operations



MD-1 Remote Display



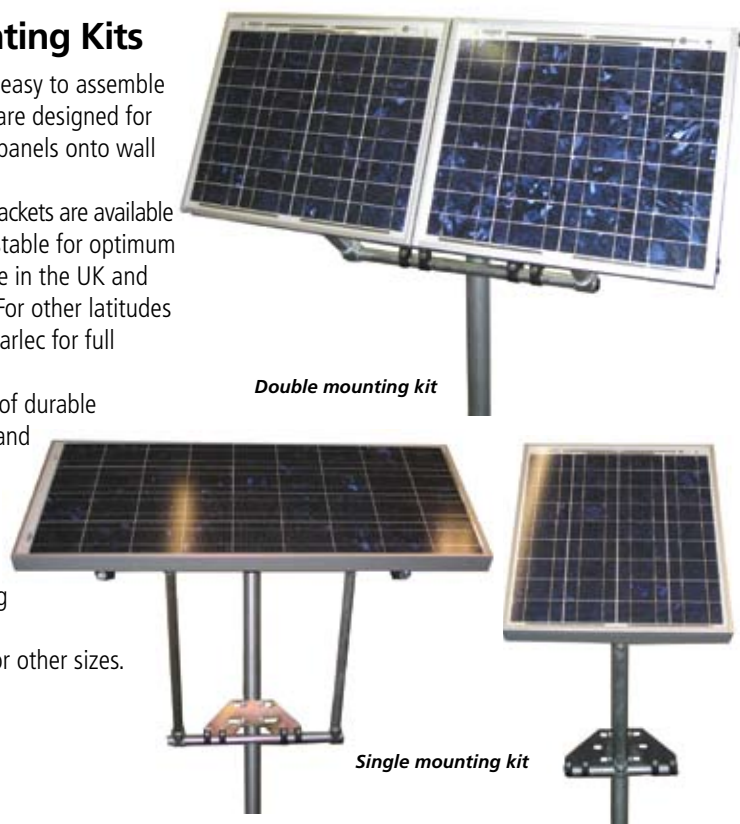
Fox 320

Model:	Operating Voltage:	Max Rated Current:	Part No:	Price:
Fox 220 (Single Battery Bank)	12/24 Volts	20 Amps	CA-11/47	£82.95
Fox 320 (Dual Battery Bank)	12/24 Volts	20 Amps	CA-11/48	£101.95
Fox MD-1 Remote Display	12/24 Volts	20 Amps	CA-11/49	£90.95

Solar Mounting Kits

These versatile and easy to assemble mounting brackets are designed for mounting BP Solar panels onto wall surfaces or poles.

- Single and dual brackets are available
- Tilt angle is adjustable for optimum solar performance in the UK and other locations. For other latitudes please contact Marlec for full information
- Each kit is made of durable galvanised steel and stainless steel fasteners
- U-bolts are required for pole mounting. See below list or contact Marlec for other sizes.



Double mounting kit

Single mounting kit

Description:	Part No:	Price:
Single Solar Mtg Kit for BP SX 5/10	CA-12/50	£26.95
Single Solar Mtg Kit for BP SX 320J	CA-12/52	£59.95
Single Solar Mtg Kit for BP SX 330J	CA-12/54	£60.95
Single Solar Mtg Kit for BP 340J	CA-12/56	£59.95
Single Solar Mtg Kit for BP 350J	CA-12/58	£62.95
Single Solar Mtg Kit for BP 365J	CA-12/60	£64.95
Single Solar Mtg Kit for BP 380J	CA-12/62	£69.95
Double Solar Mtg Kit for 2 x BP SX 5/10	CA-12/51	£32.95
Double Solar Mtg Kit for 2 x BP SX 320J	CA-12/53	£83.95
Double Solar Mtg Kit for 2 x BP SX 330J	CA-12/55	£87.95
Double Solar Mtg Kit for 2 x BP 340J	CA-12/57	£84.95
Double Solar Mtg Kit for 2 x BP 350J	CA-12/59	£92.95
Double Solar Mtg Kit for 2 x BP 365J	CA-12/61	£93.95
Double Solar Mtg Kit for 2 x BP 380J	CA-12/63	£95.95
M8 U-bolt 50 mm (x 4 required)	808-017	£3.50
M8 U-bolt 65 mm (x 4 required)	808-027	£3.50
M12 U-bolt 90 mm (x 4 required)	812-007	£7.20
M12 U-bolt 116 mm (x 4 required)	812-006	£7.95

12 Volt Deep Cycle Sealed Batteries

AGM and Gel deep cycle batteries are both sealed and maintenance free. They are designed to suit different application and system requirements. Call our technical team to discuss.

Batteries can be connected
2 or more in parallel to
increase capacity in
Amperehours or in series to
increase voltage to 24V.

The battery capacity selected
depends on charge input and
electrical equipment loads.

Typically we recommend a
reserve capacity of between
3-10 days of energy.

Call us to discuss your
requirements.



Absorbed Glass Mat (AGM) batteries

are a quality alternative to the traditional "wet" lead-acid ranges. They are very robust and so able to deep cycle more than wet batteries. The electrolyte is contained in a glass mat which will not leak, even if the casing is broken so are ideal for leisure applications. 3-5 year expected life.

Ah Rating:	Part No:	Price:	Ah Rating:	Part No:	Price:
33	CA-17/21	£76.95	33	CA-17/36	£82.95
55	CA-17/20	£121.95	55	CA-17/32	£150.95
70	CA-17/23	£149.95	70	CA-17/01	£155.95
80	CA-17/19	£171.95	80	CA-17/37	£199.95
100	CA-17/24	£212.95	100	CA-17/33	£226.95
120	CA-17/26	£239.95	120	CA-17/38	£241.95
135	CA-17/25	£281.95	135	CA-17/35	£309.95
160	CA-17/28	£324.95	160	CA-17/39	£359.95
200	CA-17/29	£377.95	200	CA-17/40	£429.95

Gel batteries

are designed for professional or system critical installations. They are able to withstand a higher number of deep cycles and are a good choice for standby in professional applications. 5 year expected life.

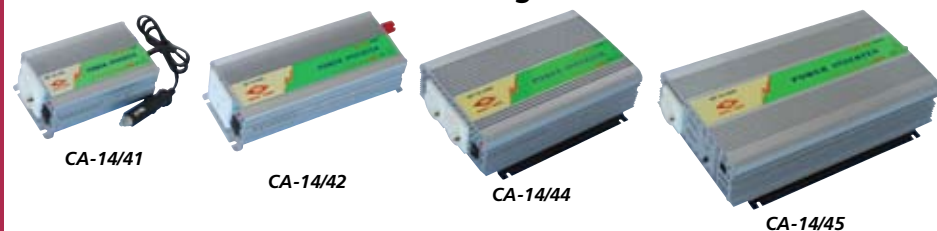
Many more sizes and battery specifications are available upon request.

DC - AC Inverters - Can be used for euro or UK plug types

Conveniently converts your 12/24V DC battery power to 230V AC for lights, TV, radio, DVD, etc. Select inverter according to maximum rated power of appliances to be operated simultaneously.

- **Modified sinewave** types are ideal for a majority of appliances such as power tools and non-digital hardware, non-fluorescent lamps.
- **Pure sinewave** types are designed for sensitive equipment including fluorescent lamps, LCD's, appliances with motors and other devices.

Modified Sinewave Inverters Range



Model	Voltage	Power Output	Surge Output	Part No	Price
GP-12-150	12 V	150 W	450 W	CA-14/41	£33.95
GP-12-300	12 V	300 W	1000 W	CA-14/42	£39.95
GP-24-300	24 V	300 W	1000 W	CA-14/42X	£45.95
GP-12-600	12 V	600 W	1500 W	CA-14/43	£66.95
GP-24-600	24 V	600 W	1500 W	CA-14/43X	£73.95
GP-12-1000	12 V	1000 W	2500 W	CA-14/44	£137.95
GP-24-1000	24 V	1000 W	2500 W	CA-14/44X	£145.95
GP-12-1500	12 V	1500 W	2500 W	CA-14/45	£264.95
GP-24-1500	24 V	1500 W	3500 W	CA-14/45X	£271.95

Pure Sinewave Inverters Range

Model	Voltage	Power Output	Surge Output	Part No	Price
S-600-212	12 V	600 W	800 W	CA-14/51	£334.95
S-1500-212	12 V	1500 W	2000 W	CA-14/52	£571.95
S-1500-224	24 V	1500 W	3000 W	CA-14/52X	£571.95
S-3000-212	12 V	3000 W	6000 W	CA-14/53	£1229.95
S-3000-224	24 V	3000 W	6000 W	CA-14/53X	£1229.95



Please check the power output of appliances to be operated from your inverter to ensure the correct type is used, eg modern TV's require pure sinewave to operate. Inverters consume a standby power even when devices are switched off so where possible the inverter should be switched off to avoid rapid battery discharge.

12 Volt Accessories

Cable and Connectors

Cable for up to 20m run for Rutland 914i, 504, 913, FM910-3 & PV Panels
2 core Red/Black x 2.5mm²

Part No: 902-015

£1.65/metre



Clip-on Battery Terminals colour-coded pair
Red & Blue

Part No: 901-030

£13.95



Plug & Socket cable connector, latching with strain relief, 6A. **2 Way** Plug & Socket Kit

Part No: CA-11/02 **£8.10**



Plug & Socket cable connector, latching with strain relief, 6A. **3 Way** Plug & Socket Kit

Part No: CA-11/03 **£9.20**

10A Low Voltage Disconnect Module

Protects expensive batteries from deep discharge by disconnecting load and auto reconnecting when battery recharges.

- Auto detection of 12 V or 24 V
- Over current protection
- Temperature compensation
- Manual load switch
- LED voltage & status indication and audible warnings

Dims: 130 x 42mm Weight: 0.185 kg

Part No: CA-11/53 **£47.95**



12V Dusk to Dawn Sensor

Ideal for use with outdoor security lighting, this adjustable photosensitive cell will switch any 12V DC load up to 5A for night time use. A built in sensor disconnects the load in the event of low battery volts. The housing is IP66 rated for all weather installation.

Dims: 92x120x55mm

Part No: CA-20/02 **£91.95**



12V LCD Digital Timer Unit

A useful 12V programmable digital timer for the convenience of on/off switching in DC systems. Minimises energy consumption to conserve battery power. Simple to install and use. Up to 8 on/8 off settings per day. Can be used in daily, 7 day week, 5 day week and weekend modes. 500 hour built in back-up.

Incorporates 10A change over relay for load switching. Can be surface or DIN rail mounted.

Dims: 36x85x50mm

Part No: 933-013 12V

£71.95

Part No: 933-013A 24V

£71.95



Passive Infra-Red Switch Unit

Adjustable outdoor 12V PIR with control switch unit. IP55 rated and with a range of 8 to 35 metres, the PIR detects motion and activates a switch within the separately supplied control unit which can be connected to 12V 5A maximum load eg. lighting

Part No: CA-20/01 **£122.95**



Green Column - Marlec's Wind & Solar Powered Independent Lighting System



Our environmentally friendly alternative amenity lamp needs no grid supply, it simply uses the free power available in the wind and sun. It is ideal for foot/cycle paths, car parks, countryside roads or signs etc.

- Now with new long lasting 20W LED lamp
- Complete system includes everything needed to get up and running
- Rutland Windcharger and solar panel models to suit site locations, contact Marlec to discuss
- Purpose designed controller automatically switches on/off at dusk & dawn and includes a fully programmable timer for operation to suit application
- Ground-works are minimal as trenching is not required
- 8 Metre column raise & lowers for safe working at ground level.
- Installation Service available please call for a quotation
- Anti-Climb Bracket available to order.



A specially manufactured Green Column installed at the successful British Olympic Bid site.

Model:	Part No:	Price:
Green Column – 913 & 30W PV	CA-16/01	£3119.95
Green Column – FM910-3 & 30W PV	CA-16/02	£3199.95
Green Column – 913 & 65W PV	CA-16/03	£3349.95
Green Column – FM910-3 & 65W PV	CA-16/04	£3449.95

Educational Kits

- Educational renewable energy kits.
- Ideal for science, mathematics, environmental and technology activities.
- Simple and safe to install and use
- Range of systems to suit education levels and budgets.
- Compatible with National Curriculum attainment targets and statutory requirements in Science at Key Stages 1- 5
- Compatible with National Curriculum opportunities to use ICT, particularly data logging (only Graduate PowerEd enables continuous computer generated logging)



Junior Kit includes:-

- Rutland 504 Windcharger
- 30W Solar Panel & Mounting Kit
- Junior Power Monitor
- 70Ah 12V Deep Cycle Sealed Battery
- 50m Cable, Connectors & Battery Clips



Senior Kit includes:-

- Rutland 913 Windcharger
- 65W Solar Panel & Mounting Kit
- Senior Power Monitor
- 2 x 70Ah 12V Deep Cycle Sealed Batteries
- 50m Cable, Connectors & Battery Clips



Graduate Kit includes:-

- All the Senior Kit plus:-
- Graduate Power Monitor
 - Weather sensors with fixing bracket & cables
 - Software for digital display of all parameters & data logger
 - Data Logger
 - Cable & connections for data & USB computer links included
 - Optional wind direction vane kit.



Graduate Software Capability:

- Enables continuous on screen reading of measured data.
- Enables data to be converted to on screen graphs and tables.
- Enables calculated parameters to be logged
- Adaptable for data logging activities from Key Stage 2 to Key Stage 5.



Model:	Part No:	Price:
Junior Green PowerEd	CA-19/01	£ 1046.95
Senior Green PowerEd	CA-19/02	£1449.95
Graduate Green PowerEd	CA-19/03	£2272.95
Wind Direction Vane Kit (Graduate Kit Only)	CA-19/15	£ 247.95



Marlec PV Home Energiser

Our PV Home Energisers mean that you can cut your bills by generating your own independent energy on the roof of your home or property. "Feed In Tariffs" introduced on April 1st 2010 pay you, the electricity generator a fee of around 41.3p for each kilowatt hour of energy produced, whether you consume it or feed it back to the grid.

How it works

A BP Solar rooftop photovoltaic system generates electricity using the natural resource of the sun all year round. This seamlessly feeds into the grid through an inverter and a meter measures the energy generated.

How long will it last?

Marlec PV Home Energisers are designed to last over 25 years. BP Solar panels are supported by unrivalled warranties guaranteeing power performance of 85% up to 25 years, ensuring you maximise the value of the FIT.

How much does it cost?

One of our Marlec Renewable Power Partners will survey your property by arrangement to establish with you what type and size of system suits your property and budget. They explain the initial outlay costs, the expected income from the FIT, and the benefits of offset electrical costs as well as the payback period you can expect.



How do I find out more?

Contact us here at Marlec and we will connect you with one of our Renewable Power Partners who are all professionally qualified Microgeneration Certification Scheme PV Installers.

Great reasons to go green with PV!

- See your electricity bills fall
- Get paid for generating power on your roof
- Only 5% VAT on the complete installation



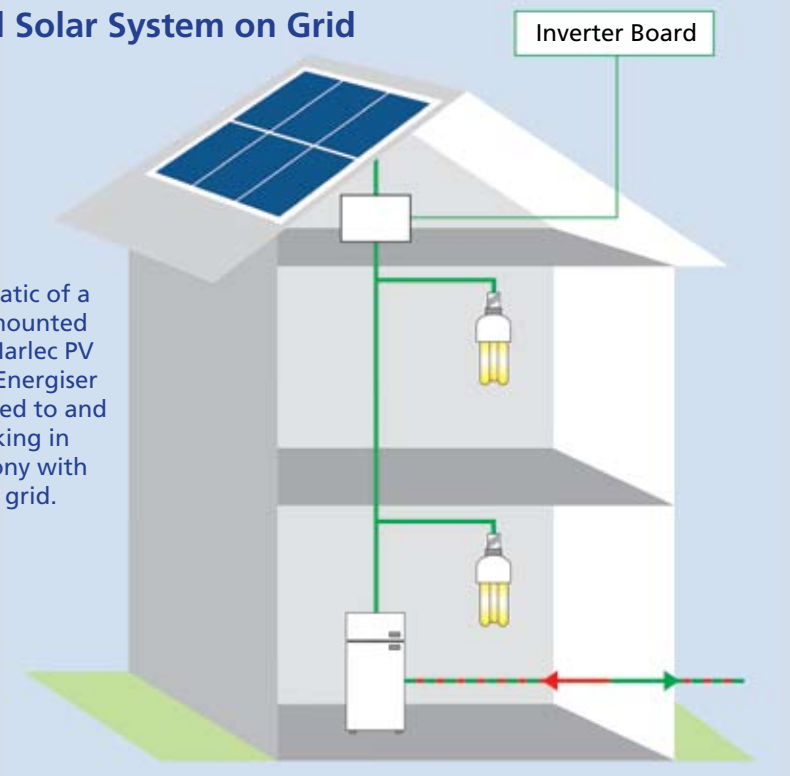
The Marlec PV Home Energisers are complete systems prepared and quality checked here at Marlec



An engineer installs solar panels on a flat roof at a school.

Typical Solar System on Grid

Schematic of a roof mounted 1kW Marlec PV Home Energiser connected to and working in harmony with the grid.



HOW TO ORDER

Our expertise in small-scale renewable energy systems since 1979 is second to none and we hope we can be of service to you, offering the best quality products and good value for money.

Technical Advice

Full colour technical brochures are available for most of our products or visit our website for more information. Our technical sales team will be pleased to discuss the details of your system requirements and confirm availability of your order. To contact us you can email: sales@marlec.co.uk or call 01536 201588.

Placing your Order

Telephone: 01536 201588 or email: sales@marlec.co.uk For Web Sales log on to www.marlec.co.uk

Payment

We accept most bank debit & credit cards, VISA and MASTERCARD, or bank transfer to our account. Cheques must be cleared in advance of goods being dispatched.

Prices

Pounds Sterling. Prices include VAT @ 20%. Prices are correct at the time of publication and are held for 2010 wherever possible, but may be subject to change without notice.

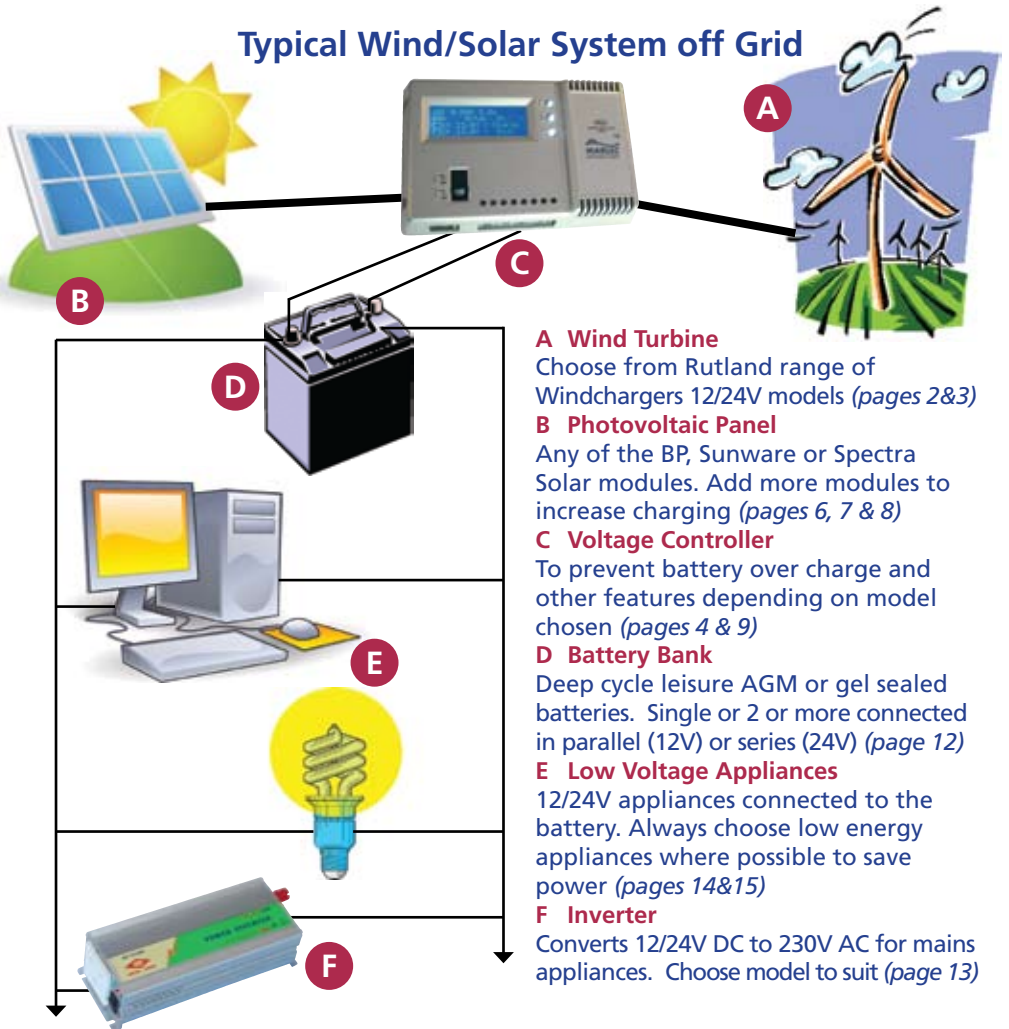
Carriage

Charges at cost according to weight, location & service. Please call for quotation.

Terms of Business

All business is transacted under Marlec's Conditions of Sale available on request. Owing to continuous product improvement specifications may be subject to change without notice.

Typical Wind/Solar System off Grid



A Wind Turbine

Choose from Rutland range of Windchargers 12/24V models (*pages 2&3*)

B Photovoltaic Panel

Any of the BP, Sunware or Spectra Solar modules. Add more modules to increase charging (*pages 6, 7 & 8*)

C Voltage Controller

To prevent battery over charge and other features depending on model chosen (*pages 4 & 9*)

D Battery Bank

Deep cycle leisure AGM or gel sealed batteries. Single or 2 or more connected in parallel (12V) or series (24V) (*page 12*)

E Low Voltage Appliances

12/24V appliances connected to the battery. Always choose low energy appliances where possible to save power (*pages 14&15*)

F Inverter

Converts 12/24V DC to 230V AC for mains appliances. Choose model to suit (*page 13*)



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