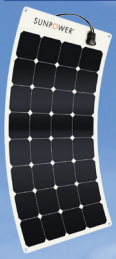
Marlec Direct 2019

Wind & Solar Energy since 1978

40 ANNIVERSARY

NEW INSIDE

SafeCurrent Battery Monitor



SUNPOWER

Semi-flexible high power solar panels

Go green with our wind & solar energy products

Welcome to Marlec Direct

Our regular customers will know our Rutland Windcharger brand from the 100,000 or more turbines we have manufactured in the UK and sold worldwide since 1978 Others for our hugely successful Solar iBoost, the world's best selling solar energy diversion product.

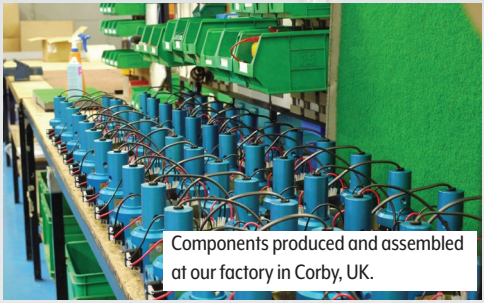
40 ANNIVERSARY

However you come to know us we hope to share our unique experience and expertise with you. We are the UK's longest established renewable energy business and our range of environmentally friendly energy products are tried and tested the world over. A great addition this year is the new range of semi-flexible solar panels from SunPower, ideal for installing where space is a premium owing to their very high efficiency rates.

Our website is a great source of valuable information and our excellent team of sales engineers and advisors based here at our factory in Corby, UK will be very happy to discuss any application you would like to explore. Call us today or visit www.marlec.co.uk to enquire further.

Sunny Regards

Teresa Auciello
Sales Director



Components produced and assembled at our factory in Corby, UK.

marlec
renewable power

BRITISH MARINE
LEADING THE INDUSTRY

World Cruising Club
Corporate Member

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username: marlecengineering

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Marine Turbines - Ideal for on-board charging

Latest Generation Rutland 1200 Windcharger

If you are looking for a silent, powerful and reliable energy supply to your battery bank the new Rutland 1200 will deliver. Whether you need power on board or on land this new high tech Rutland is the most powerful in its class with an elegant design to match. The Rutland 1200 is the culmination of 40 years of wind turbine development and manufacturing experience and is without doubt a market leading product designed with high power production and quiet operation in mind.

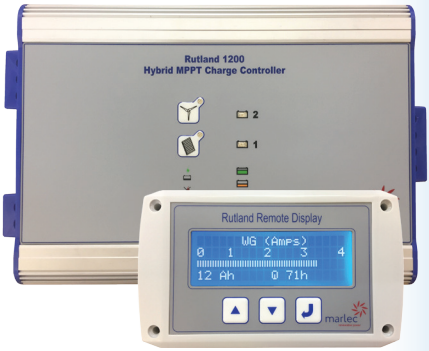
Our proprietary design super quiet Tri-namic profile turbine blade.

The new sleek Rutland 1200 fitted on board a transatlantic cruising yacht.

- Almost silent running in operation
- Unique Tri-namic profile blades
- Low wind start up of 4 Knots (2m/s)
- Generates up to 500W
- Electronic auto-stall in high winds
- Marine grade, modern and durable materials for a high quality build and finish.
- Tubine diameter 1220mm. Weight 7.8kg

MPPT Hybrid Controller included :

- Intelligently tracks the peak power available to deliver more power generation
- Controller also accepts input from 20A of solar panels (250W @ 12V, 500W @ 24V)
- Charge output to 2 battery banks
- Multi-stage battery charging ensures good battery conditioning



Controller (included) - 258x164x68mm
Remote Display(Optional) - 155x145x60mm

Part Nos:

Rutland 1200 (12V) CA-06/01 - £1,295.00
Rutland 1200 (24V) CA-06/02 - £1,295.00
1200 Remote Display CA-07/02 - £139.95

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. Choose the 504, 914 or 1200 to suit your boat.

Rutland 504 Windcharger

The Rutland 504's aerodynamic lines efficiently track the wind. Features a compact safety turbine, ideal on board to avoid ropes snagging.

- Ideal for trickle charging small battery systems on board boats & touring caravans.
- Light and easy to install temporarily
- Generates up to 80W
- Produces 29W at 11m/s (21 knots) wind speeds
- Turbine diameter: 510mm
- Weight: 3.5Kg
- Turning radius 304mm
- HRSi or HRDi Charge Regulator recommended

Part No: 12V - CA-05/04 - £379.95

Rutland 914i Windcharger

The Rutland 914I is a conveniently compact yet powerful turbine for coastal and liveaboard cruisers.

- Based on the successful compact Rutland 913 renowned for it's smooth quiet operation
- Built in Maximum Power Point Tracking technology delivers up to 30% more energy produced than the Rutland 913
- Produces 140W at 11m/s (21 knots) wind speeds
- Ideal for cruising yachts
- Unrivalled low wind performance
- Turbine Diameter: 910mm
- Weight 11.6kg
- Turning radius 557mm
- HRSi or HRDi Charge Regulator recommended

Part Nos:
12V - CA-01/17 - £679.95
24V - CA-01/18 - £679.95

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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 reducing unnecessary running. Choose between the HRSi or HRDi models.

Dims: 130x 80x42mm Weight: 0.185Kg

Dims: 193 x 127 x 40mm Weight: 0.42Kg

HRSi Regulator

for Single Battery Charging

- Simple combination of one Rutland 504, 914i or FM910-4 plus 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 detection for 12V or 24V operation

Part No: CA-11/46 (12/24V) - £79.95

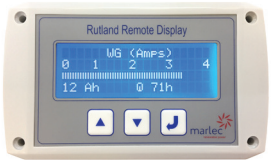
HRDi Charge Controller

for Dual Battery Charging

All the technical features and operation of the HRSi plus:

- Digital LCD displays battery Volts, charge currents and more
- Charge splitter for 2 battery banks
- Push buttons to scroll screens and amend operating parameters

Part No: CA-11/44 (12/24V) - £159.95



Dims: 125 x 60mm cut out
130 x 80mm fascia
Weight: 0.184 kg

HRDi Remote Display

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

- Recess or surface mount
- Re-programmable features
- 3m connecting cable supplied
- Can be used to stall Windcharger

Part No: CA-11/74 - £99.95

Land Based Windchargers

Our range of furling turbines provide a reliable source of energy very cost effectively for isolated locations. Combine with solar panels to achieve a balanced energy supply year round.

FM910-4 Furlmatic Windcharger

The Furlmatic turbine has established a strong reputation over the last 35 years. Each version's robust design has withstood the test of time at thousands of sites around the world. This latest version is sleek and aerodynamically shaped so air flows smoothly across the turbine quietly delivering power for your energy needs at off grid locations.

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

- Extremely durable construction
- Peaks up to 160W pre-furling
- Produces 95W at 11m/s (21 knots) wind speeds
- Turbine diameter: 910mm
- Weight: 13.1Kg
- HRSi or HRDi Charge Regulator recommended
- Turning radius 794mm

Part Nos:

12V CA-02/04 - £699.95

24V CA-02/05 - £699.95

Cost effective and reliable power systems designed by our sales engineers.

sales@marlec.co.uk

Tel: +44 (0)1536 201588

FM1803-2 Furlmatic Windcharger

- A robust & powerful rare earth magnet alternator
- Peaks up to 890W pre-furling
- Produces 410W at 11m/s (21 knots) wind speeds
- Turbine diameter: 1800mm
- Tower top weight: 29.2Kg
- Turning radius 1145mm
- MPC1 Controller (shown below product) included protects batteries against overcharge and features a digital display and manual stall switch.

Part Nos:

Windcharger: CA-03/02 - £1,949.95
plus Control Gear:
CA-04/10 (12V) or CA-04/11 (24V)

The 4th generation of our 1.8m diameter turbine incorporating the latest rare earth magnet generator. A powerful and robust wind turbine for remote power sites.

Rutland 1200 for Land Applications

The Rutland 1200 is quickly becoming established as a reliable power source for land based as well as marine applications. Its compact size and weight are convenient to deploy. Contact our sales team to discuss your professional system requirements.

Windcharger Mounting Kits

Marine Mounting Kits These comprise of 2 polished marine grade stainless steel tubes pre-drilled and a joiner, deck fixing bracket, pole to stays attachments and stainless steel fasteners. The Marine Stays Kit is highly recommended with the mounting kits to provide a solid mounting and simple installation.

Rutland 504 Marine Mtg Kit

Includes 2 x 1m pole sections.

Part No: CA-12/01 - £111.95

Rutland 914i Marine Mtg Kit

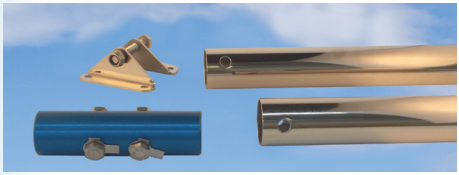
Includes 2 x 1.2m pole sections.

Part No: CA-12/02 - £138.95

Rutland 1200 Marine Mtg Kit

Includes 2 x 1.35m pole sections.

Part No: CA-12/38 - £159.95



A range of short sections of marine grade stainless steel tube for adapting to your own mounting kit are available on our website (www.marlec.co.uk). Deck mounting also available.

Marine Stays Kit - Available in 2 lengths, each stay can be cut to the required length. 32mm Hinged pushpit clamps with rubber inserts to reduce to 25mm are included.

Standard Stays Kit - 2 x 1.2m

Part No: CA-12/32 - £124.95

Extra Long Stays Kit - 2 x 1.35m

Part No: CA-12/39 - £139.95

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

Tower Kit-503/504 for temporary installation.

This is 4.0m (2 x 2m sections) of polished stainless steel. Part No: CA-12/12 (not shown) - £139.95

Tower Kit-910 Series

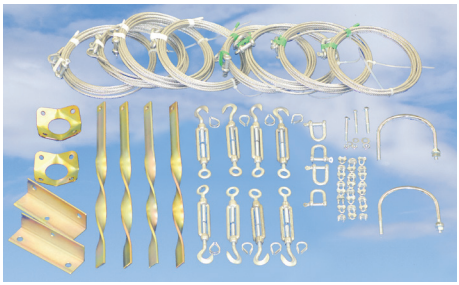
for temporary or permanent installation of Rutland 910 & 1200 series Windchargers. 6.4m (3 x 2.13m sections) of 48mm diameter galvanized steel tube with joiners. Part No: CA-12/08 - £129.95

Tower Rigging Kit-503 / 504 To Suit Tower Kit.

Part No: CA-12/13 (not shown) - £109.95

Tower Rigging Kit-910 Series complete rigging kit to support the land tower kit in permanent installations

Part No: CA-12/07 - £168.95



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Off-Grid Solar Photovoltaic Panels

Off Grid 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; Ameresco, SunWare, Spectra, SunPower & Alpex for framed, semi-flexible. Combine with a windcharger for 24 hour charging capability. Solar panels connected in parallel require diodes visit www.marlec.co.uk.

NEW SUNPOWER®

Look out for genuine SunPower manufactured products to benefit from their 5 year warranty.

We are pleased to introduce a new range of SunPower semi-flexible solar panels that are ideal for use on board as well as campers. Their unique features include SunPower's world beating back contact Maxeon solar cells delivering up to 22.7% efficiency.

- The cell's solid copper foundation are resistant to power loss from cracking and corrosion.
- Panels can be flexed up to 30° without cell damage unlike conventional panels
- Lightweight and easy to install using eyelets or suitable adhesives
- This is SunPower's first own manufactured range of semi-flexible panels and Marlec are pleased to be an appointed UK Distributor.

PV Module Type	Peak Power	Dimensions	Weight	Part No	Price
SunPower 50	50W	653 x 556 x 3.2	1.1	CA-10/420	£149.95
SunPower 100	100W	1150 x 555 x 3.2	2.2	CA-10/421	£248.95
SunPower 110	110W	1150 x 555 x 3.2	2.2	CA-10/422	£289.95
Solar Cables 4mm T4 Plug / Plain 5m				902-306	£11.95
Solar Cables 4mm T4 Socket / Plain 5m				902-307	£11.95
Solar Cables 4mm T4 Plug / Plain 10m				902-215	£17.95
Solar Cables 4mm T4 Socket / Plain 10m				902-216	£17.95

Ameresco Solar Framed PV Modules

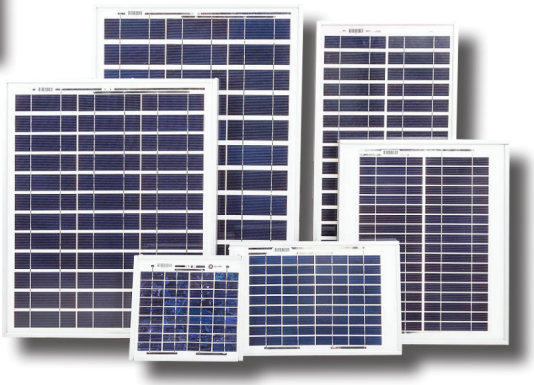
Ameresco is a unique brand in off-grid solar panels. This US based energy company manufacture their solar panels to high level standards and accreditation tests unlike any others to make them suitable for use in the most enduring applications such as offshore structures.

Roadside, trackside, oil rigs and marine navigation are some of the mission critical uses where a panel such as these are needed. Ameresco products are highly reliable, have a long service life and high wind resistance.

AMERESCO
Green • Clean • Sustainable

Ameresco 50W Panel

- 10 year product warranty
- Designed for charging batteries at permanent or mobile installations.
- Ideal for professional equipment and off grid homes.
- Durable 50mm frames keep their strength in the toughest of heavy weather conditions over many years service.
- Efficient poly and mono-crystalline cells make up the various models available.
- UL listed, many models suitable for classification CID2, contact our sales team.
- Marlec is the appointed UK Distributor for Ameresco Solar.



Visit our website for latest information and power sizes available.

PV Module Type	Peak Power	Dimensions	Weight	Part No	Price
Ameresco 10 M	10W	421 x 269 x 22.5	1.5	CA-10/91	£76.95
Ameresco 20 J	20W	425 x 502 x 50	3.0	CA-10/92	£106.95
Ameresco 30 J	30W	790 x 358 x 50	3.90	CA-10/93	£135.95
Ameresco 40 J-V	40W	650 x 537 x 50	5.75	CA-10/154	£134.95
Ameresco 50 VLS	50W	835 x 537 x 50	6	CA-10/84	£169.95
Ameresco 90 J-V	90W	1204 x 537 x 50	7.7	CA-10/157	£199.95
Ameresco 90 BSP	90W	1202 x 536 x45	6.4	CA-10/87	£219.95
Ameresco 140 J-V	140W	1504 x 674 x 50	12	CA-10/159	£284.95

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alpex
Power Forever

Alpex Solar

Alpex Solar Panels have been selected by our experienced team here at Marlec, we look for a build quality that combines a durable frame and good photovoltaic cell performance for our customers.

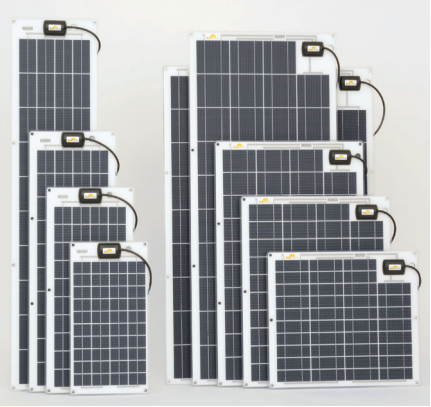
- Rugged frames constructed of a heavy duty anodised aluminium designed to withstand forces over long term installation
- Models over 30W are certified against degradation from salt mist corrosion
- Anti-refective coated high transmission glass improves performance
- 10 year product warranty
- Alpex is an ISO9002 certified manufacturing facility and their solar panels are backed up by the international standards IEC61215 and UL1703

Suitable for leisure and off grid applications such as boats and motor homes to remote power supplies.
Talk to the Marlec team to discuss your application.
Marlec is the appointed UK Distributor for Alpex Solar.

PV Module Type	Peak Power	Dimensions	Weight	Part No	Price
AL-10	10W	335 x 280 x 25	1.18	CA-10/101A	£22.95
AL-20	20W	485 x 360 x 22	2.06	CA-10/102	£36.95
AL-30A	30W	435 x 665 x 25	3.2	CA-10/103A	£49.95
AL-40	40W	435 x 665 x 30	3.42	CA-10/104	£56.95
AL-40A	40W	435 x 665 x 25	3.18	CA-10/104A	£56.95
AL-50	50W	555 x 665 x 25	3.88	CA-10/105	£69.95
AL-80	80W	796 x 665 x 35	6.1	CA-10/110	£102.95
AL-100	100W	1006 x 675 x 30	7.5	CA-10/107A	£109.95
AL-125	125W	1151 x 666 x 35	9.4	CA-10/109	£139.95
AL-200 (24V)	200W	1382 x 982 x 35	15	CA-10/111	£239.95

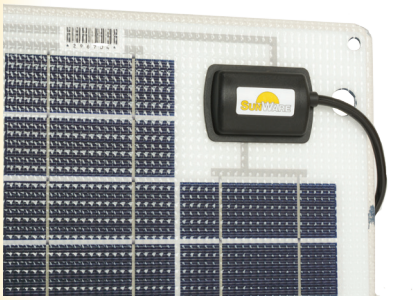
Sunware Semi-Flexible PV Modules

SunWare is a no-compromise build quality product from Germany and established since 1987. Their marine grade panels use only high performance cells and cell configurations so that they run cooler and deliver a high output to size ratio. They are a solid construction that can be walked on when fully supported underneath. Marlec is the appointed UK Distributor for SunWare.



The NEW SunWare range includes slimline models especially useful on-board.

- Salt & seawater resistant materials
- Anti-slip and anti-soil walk on surface
- Extremely flat fitting prevents trip hazard
- 3m waterproof cable with in line diode
- Flexible over 3% of their length to fit slight curves
- Superior performance from low light levels



SunWare's build quality is exceptional.

PV Module Type	Peak Power	Dimensions	Weight	Part No	Price
SW20145 12V Slim	25W	273 x 807 x 5	1.6	CA-10/201	£289.95
SW20163 12V Rect	27W	481 x 426 x 5	1.3	CA-10/202	£272.95
SW20146 12V Slim	38W	273 x 1154 x 5	2.2	CA-10/204	£324.95
SW20164 12V Rect	38W	481 x 599 x 5	1.8	CA-10/205	£339.95
SW20165 12V Rect	50W	481 x 772 x 5	2.3	CA-10/207	£449.95
SW20166 12V Rect	75W	481 x 1119 x 5	3.6	CA-10/208	£549.95
SW20185 12V Rect	100W	689 x 1012 x 5	4.7	CA-10/209	£619.95

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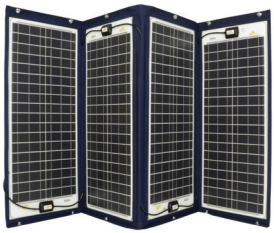
Sunware Textile Foldable PV Modules

Sunware's Textile solar panels are a great space saving way to use your sprayhood for generating solar energy on board. They can be temporarily fitted using the high quality Tenax washers and conveniently removed, folded and stored flat.
These panels are constructed using SunWare's semi-flexible base panels with a tough but soft fabric surround designed for use on board. The waterproof connector and cable included means that installation is fast and simple.

- These non-glass panels are shatterproof and lightweight
- 10m of cable and a waterproof connector included
- Sea water resistant marine grade materials throughout
- Surface layer is highly soil resistant, keeping the solar panels efficiently generating
- A convenient and high quality solution to temporary installations, worth the investment.

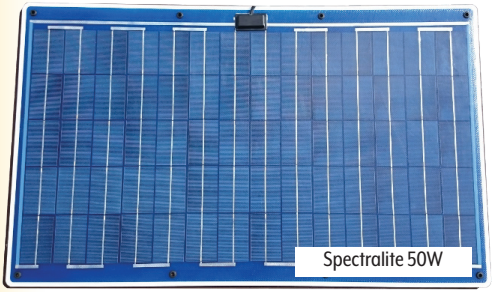


PV Module Type	Peak Power	Dimensions	Weight	Part No	Price
TX-12039 - Single	38W	873 x 431	2.2	CA-10/211	£459.95
TX-12052 - Single	50W	1108 x 431	2.6	CA-10/212	£539.95
TX-22039 - Double	76W	873 x 826	4.2	CA-10/213	£839.95
TX-22052 - Double	100W	1108 x 826	4.6	CA-10/214	£999.95
TX-42039 - Quadruple	152W	929 x 1590	8.2	CA-10/215	£1,319.95
TX-42052- Quadruple	200W	1164 x 1590	8.6	CA-10/216	£1,479.95

Spectralite
Semi-flexible PV Modules

Spectra is Marlec's own brand of solar products and these Spectralite solar panels are manufactured to a high standard with lightweight in mind. They are perfect for keeping batteries topped up whilst you are away to prevent deep discharge and prolong battery life.

- The shadow resistant feature makes them particularly effective on board where shading is difficult to avoid
- The built in blocking diode which prevents reverse charge makes them simple to install especially when used only for battery maintenance.
- Constructed of a high quality fibreglass and Tedlar laminate they can be gently flexed by 1cm per 30cm parallel to the junction box.
- Can be walked on with deck shoes when fixed to a solid surface eg coachroof
- The sealed junction box houses a blocking diode and the integral mounted 3m output cable.



Spectralites are particularly effective on board as they have some shadow resistance. They are constructed from 2 separate sets of cells so that if one half is shaded the other continues to charge the battery.

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 Spectralites 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, see our matching range of Spectra solar regulators.

PV Module Type	Peak Power	Dimensions	Weight	Part No	Price
Spectralite 5	5W	304 x 254 x 3	0.57	CA-10/36	£62.95
Spectralite 20	20W	559 x 381 x 3	1.2	CA-10/38	£144.95
SpectraLite 30	30W	559 x 483 x 3	1.50	CA-10/39	£189.95
SpectraLite 50	50W	800 x 483 x 3	2.04	CA-10/41	£249.95

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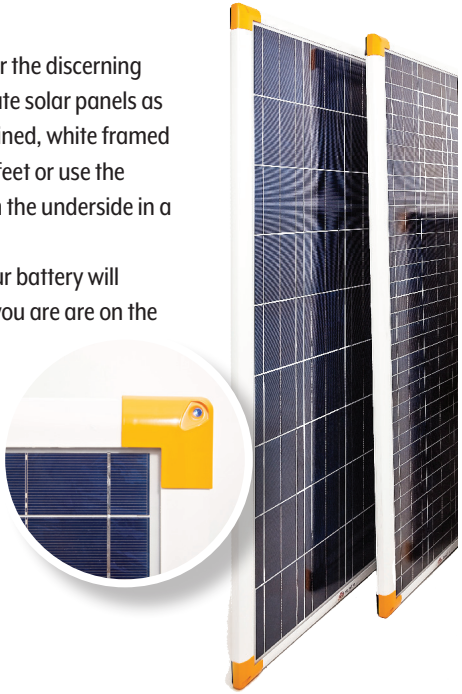
SpectraLeisure

Our Spectra Leisure solar panels are designed for the discerning boat and motorhome owners wanting to integrate solar panels as aesthetically pleasing as possible.These streamlined, white framed panels are easy to install and include mounting feet or use the channel in the rear of the frame to fit neatly from the underside in a marine arch arrangement.

Spectraleisure's powerful ratings ensure that your battery will benefit from good levels of recharging whether you are are on the move or stationary.

- Useful LED on frame flashes to indicate charging
- Each panel is supplied with 3m of cable
- Sturdy product design for long life with a hailstone resistance of 28mm
- Caravan fixing brackets are included



PV Module Type	Peak Power	Dimensions	Weight	Part No	Price
Spectra Leisure 75	75W	1054 x 556 x 32	8	CA-10/72	£175.00
Spectra Leisure 110	110W	1512 x 556 x 32	11.4	CA-10/73	£199.95
Spectra Leisure 150	150W	1512 x 716 x32	13	CA-10/74	£249.95

Solar Cells

Use these handy solar cells for experiments, driving small motors or LEDs and demonstrate solar energy.

3.3V/150mA Solar Cell

Dimensions:
80 x 148 x 10mm

Part No: CA-10/81
£19.95

7.5V/150mA Solar Cell

Dimensions:
162 x 140 x 10mm

Part No: CA-10/82
£25.95

7.5W Trickle Charger

This new solar panel uses amorphous technology which is highly responsive in low light levels. Use it for maintaining the natural discharge on batteries up to 100Ah whilst unattended. Built in diode prevents reverse discharge.

Dimensions:
335 x 335 x 16mm

Part No: CA-10/47
£41.95

Solar Regulators

Solar regulators provide battery overcharge protection and some models include a deep discharge protection feature. All include diodes to prevent reverse current in darkness. 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

Steca Range

Solsum 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 once recovered.
- Automatic detection of operating voltage - 12/24 V
- Temperature compensated regulation

Steca Solsum F Range- features tricolour LED indication

PR Range includes additional features:

- LCD for charge & discharge currents, Volts and more
- Push button field adjustable parameters plus more - see data sheet
- External temperature sensor available

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

Steca Solarix Maximum Power Point Tracking Regulators - 10A & 20A

These Solarix MPPT1010 and 2010 models track the peak power available to deliver up to 20% more power from the solar panel. They are especially effective at enabling the use of a higher voltage grid type panel to charge 12V or 24V batteries.

- Voltage and Current Regulation with PWM control
- LED display of operating status
- Designed to work with all solar module technologies

Marlec is the appointed UK Distributor for Steca solar regulators.

Model	Operating Voltage	Max Rated Current	Part No	Price
Solsum 6.6F	12V / 24V	6 Amps	CA-11/14	£22.50
Solsum 8.8F	12V / 24V	8 Amps	CA-11/15	£29.95
Solsum 10.10	12V / 24V	10 Amps	CA-11/16	£39.95
Steca PR1010	12V / 24V	10 Amps	CA-11/37	£87.95
Steca PR1515	12V / 24V	15 Amps	CA-11/34	£103.95
Steca PR2020	12V / 24V	20 Amps	CA-11/35	£134.95
Steca PR3030	12V / 24V	30 Amps	CA-11/36	£142.95
Steca Solarix MPPT 1010	12V / 24V	10 Amps	CA-11/82	£207.95
Steca Solarix MPPT 2010	12V / 24V	20 Amps	CA-11/18	£253.95

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Spectra Regulator Range

Spectra is Marlec's range of solar charge controllers for PV systems up to to 30A, (375W @ 12V and 750W @ 24V). These intelligent regulators use Pulse Width Modulation to deliver bulk, absorption, float and equalised charging regimes ensuring batteries get fully charged and are maintained in good condition.

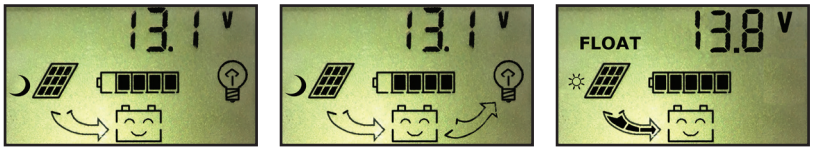
All models include an easy to view LCD display with simple to operate push buttons for scrolling and settings where needed. The 10A and 20A models include 2 USB charge points, 5V 1A rated, making these Spectra models excellent value for the user.

30 Amp Regulator

Standard features include:

- User adjustable voltage setting
- Automatic system voltage setting
- Low voltage disconnect feature
- Temperature compensation
- Over current and reverse discharge protection
- Push button operation
- Dusk to dawn switching feature

10 & 20 Amp models include USB charging points



Spectra Regulators' display screens provide useful system information.

Model	Max Solar Panel Rating 12V	24V	Dimensions	Part No	Price
Spectra Regulator 10A	125W	250W	160 x 88 x 42.5	CA-11/110	£26.95
Spectra Regulator 20A	250W	500W	178 x 101.5 x 45.5	CA-11/111	£32.95
Spectra Regulator 30A	375W	750W	196 x 111 x 54	CA-11/112	£64.95

MORNINGSTAR
World's Leading Solar Controllers & Inverters

Morningstar is the world's leading brand of solar regulators and in our experience offers the most robust products in the market. Every product they offer is of a high quality build and will last in the toughest of applications. We are proud to be an appointed UK distributor.

Morningstar PWM Regulators 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
- Remote Meter option for Duo model, 10m cable included.

Morningstar SunSaver Duo

Morningstar SunGuard

Morningstar SunSaver SS & SL

Tristar PWM Regulators

Morningstar's Tristar PWM regulators control charge, the load and a diversion regulator. Flexible operation from 12-48V with power handling capacities up to 45 & 60A. High efficiency Pulse Width Modulation charging control ensures batteries are fully replenished and battery capacity is maximised.

- LED indicators
- RS232 communications socket for connection to PC.
- Reverse polarity and other protections make this a very rugged product for use in professional systems.

Model	Operating Voltage	Max Rated Current	Dimensions	Part No	Price
SunGard 4.5A	12V	4.5 Amps	64 x 51 x 38	CA-11/26	£33.95
SunSaver SS-10 L	12V	10 Amps	152 x 55 x 34	CA-11/38	£71.95
SunSaver SS-10 L	24V	10 Amps	152 x 55 x 34	CA-11/10	£77.95
SunSaver SS20L	12V	20 Amps	152 x 55 x 34	CA-11/11	£98.95
SunSaver SunLight SL-10	12V	10 Amps	169 x 55 x 34	CA-11/29	£97.95
SunSaver Duo SSD-25	12V	25 Amps	170 x 56 x 41	CA-11/12	£96.95
Remote Meter (MPPT & Duo)			114 x 114 x 35	CA-11/13	£96.95
TriStar 45A PWM Controller	12V / 24V / 48V	45 Amps	260 x 127 x 71	CA-11/66	£184.95
TriStar 60A PWM Controller	12V / 24V / 48V	60 Amps	260 x 127 x 71	CA-11/58	£242.95

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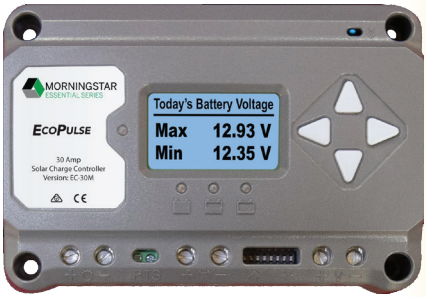
NEW

EcoPulse Solar Controllers from Morningstar

Morningstar's reputation for exceptional quality and reliability in professional systems can be found in their new Essentials range designed for leisure and less complex applications. At Marlec we offer the range with built in display as standard in models suitable for 12V or 24V charging in 10A, 20A and 30A PV systems. High levels of electronic and environmental protections make them equally suitable for light professional uses.

- Pulse Width Modulation type regulation
- 4-stage charging keeps batteries in top condition
- Built-in dusk to dawn lighting controller
- Adjustable charge settings
- Adjustable load controls
- Accept loads to same ratings as charge currents
- Marine rated terminals up to 16mm²
- LED fault indicators alert short circuit, over current and voltage and other conditions
- Dimensions 150 x 110 x 60mm 0.4kg
- Battery reverse polarity protected



Morningstar's new controller includes a built-in clear LCD display for easy system performance viewing. Scroll through using the push buttons and amend parameters for charge and load controls.

Model	Max Solar Panel Rating 12V	24V	Part No	Price
EcoPulse with Meter 10A	125W	250W	CA-11/96	£86.95
EcoPulse with Meter 20A	250W	500W	CA-11/97	£109.95
EcoPulse with Meter 30A	375W	750W	CA-11/98	£129.95

TriStar Meter -2

Use these meters with the Tristar PWM or MPPT solar controllers. Digital Meter fits directly onto the controller. Remote Meter flush mounts up to 30m distance via cable supplied. Multi-lingual display.

Model	Dimensions	Part No	Price
TriStar Remote Meter -2	116 x 116	CA-11/64	£136.95
TriStar Digital Meter-2	116 x 116	CA-11/63	£109.95

Morningstar MPPT Solar Regulators

"Maximum Power Point Tracking" is a smart tracking algorithm that maximizes energy harvest from solar panels. It improves output performance in low light levels to start charging sooner and can smooth out any voltage difference between a solar panel and battery, eg using a 24V PV panel to charge a 12V battery.

Morningstar TriStar MPPT

The Tristar MPPT models feature a wide operating voltage range making them ideal for larger and typically professional PV systems up to 3kWp. eg telecommunications. Designed for tough environments, the Tristars incorporate a number of electronic overload protection features.

- Suitable for 12V, 24V, 36V and 48V battery systems
- Industry leading 99% peak efficiency for off-grid charge controllers
- Environmental protective features, eg marine rated terminals
- Extensive networking & communications capability for system monitoring, data logging and adjustability.

NEW Prostar MPPT

The new Prostar MPPT 25A regulator maximise energy harvest in solar panels up to 350W when charging a 12V battery or 700W for 24V. They are suitable for lead acid, ni-cad and the latest Lithium batteries. This model is particularly recommended when using a grid type 24V solar panel to charge a 12V battery.

- Marine rated terminals
- 4 stage charging
- Lighting controller feature
- Low voltage disconnect built-in
- Electronic protections to avoid damage

SunSaver MPPT

The Sunsaver MPPT improves performance of small PV systems and also enables the use of larger, high voltage solar panels in 12V or 24V battery charging applications. 4 stage charging promotes longer battery lifetime. Suitable for professional and leisure systems up to 15A.

	Max Solar Panel Rating					
Model	12V	24V	48V	Dimensions	Part No	Price
ProStar MPPT 25A	350W	700W		187 x 153 x 68	CA-11/99	£339.95
TriStar MPPT 30A	400W	800W	1600W	291 x 130 x 142	CA-11/87	£399.95
TriStar MPPT 45A	600W	1200W	2400W	291 x 130 x 142	CA-11/62	£499.95
TriStar MPPT 60A	800W	1600W	3200W	291 x 130 x 142	CA-11/65	£639.95
SunSaver MPPT 15A	200W	400W		169 x 64 x 73	CA-11/56	£309.95

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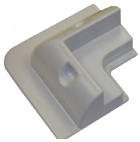
Solar Panel Corner Fixing Kit for Caravan Roof Mounting

Use these strong moulded brackets to achieve a smart fixing for framed solar panels to coach roofs. Use adhesive (not supplied) to fix each corner into place and screw through the bracket to the solar panel frame to secure the panel. No need to drill through the roof to fix the solar panel. UV resistant heavy duty material.



Pack of 4 corner brackets
Part No: CA-12/34 - £29.95

Pair of Side Mounts:
Part No: CA-12/35 - £18.95

Waterproof cable entry
Fix this gland using adhesive to cover the entry of the cable to a coach roof.
Part No: CA-12/36 - £8.95

Solar Mounting Kits

These versatile and easy to assemble mounting kits are designed and manufactured at our factory in Corby for mounting our ranges of glass framed solar panels onto wall surfaces or poles.

- Single and dual brackets are available
- Tilt angle is adjustable for optimum solar performance.
- Each kit is made of durable galvanised steel and stainless steel fasteners
- U-bolts are required for pole mounting
- Models available for Ameresco and Alpex solar panels
- Visit www.marlec.co.uk to see full range available or contact our sales team

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Schottky Diodes

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.

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

8A Diode
Part No: 913-012 - £3.60

12A Diode
Part No: 913-017 - £6.95

Spectra Inverter Range

When you are travelling and off grid an inverter enables you to operate mains appliances using the energy stored in your batteries. The appliances you can use depend on the amount of power, Watts, they consume and how long they will run for on the battery capacity you have stored. It is important to consider what type of appliances you will run as this determines the technology of the inverter you choose, Pure Sinewave or Modified Sinewave. All our inverters are supplied with UK sockets.

Spectra Modi-Sine Inverters

These high frequency modified sinewave inverters are designed for operating simple electrical devices such as lights (non-fluorescent), kettle or heater, essentially items without motors or inductive loads. They also operate electronic devices when they include an external or built-in adaptor as this smoothes the sinewave, eg tv's and laptops. A USB charging point (5V 2.1A) is built in for easy mobile charging

- High power surge capacities
- Electrical protections e.g. over voltage, short circuit, reverse polarity etc.
- Low voltage alarm and cut off
- Additional new models now available with remote switch and cable

All Modi-Sine models include USB charging point

Features:	MS 600	MS1000	MS1600
Rated Voltage & Power	12V, 600W	12V, 1000W	12V, 1600W
Peak Power Rating for 3 seconds	1200W	2000W	3200W
Surge Power Delivery	120-150% Rating for 3minutes		
Low Battery Alarm / Shutdown	10V / 10.5V	10V / 10.5V	10V / 10.5V
Number of UK Sockets	1	2	2
Efficiency	89-94%		
No Load Current Draw	≤0.5A	≤0.8A	≤0.8A

600W model supplied with in-car power outlet plug for when you are on the move.

Modi-Sine Inverters	Peak Power	Dimensions	Weight	Part No	Price
Spectra MS600 Inverter (12V)	600W	310 x 310 x 160	1.5	CA-14/110	£49.95
Spectra MS1000 Inverter (12V)	1000W	330 x 240 x 140	2.6	CA-14/111	£89.95
Spectra MS1000 Inverter with remote	1000W	330 x 240 x 140	2.6	CA-14/111R	£104.95
Spectra MS1600 Inverter (12V)	1600W	380 x 240 x 140	3.42	CA-14/112	£119.95
Spectra MS1600 Inverter with remote	1600W	380 x 240 x 140	3.42	CA-14/112R	£134.95

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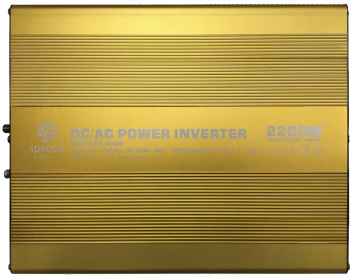
Spectra Pure Sine Inverters

These high frequency pure sinewave inverters closely emulate grid power so are suitable for all types of electric appliances and in particular products that might include a motor which must be operated using pure sinewaves. This range is a must for sensitive electrical and electronic items such as audio equipment, laser printers and fluorescent lights. The built-in USB charging point (5V 2.1A) makes an easy connection to mobiles, tablets etc.

- Soft starting
- High power surge capacities
- Electrical protections e.g. over voltage, short circuit, reverse polarity etc.
- Low voltage alarm and cut off
- Additional new models now available with remote switch and cable

PS2200 features two UK sockets and a USB output



Additional new models available with remote switch included.

Features:	PS 700	PS1200	PS2200
Rated Voltage & Power	12V, 700W	12V, 1200W	12V, 2200W
Peak Power Rating for 3 seconds	1400W	2400W	4000W
Surge Power Delivery	120-150% Rating for 3minutes		
Low Battery Alarm / Shutdown	10V / 10.5V	10V / 10.5V	10V / 10.5V
Number of UK Sockets	1	1	2
Efficiency	89-93%		
No Load Current Draw	≤0.6A	≤0.8A	≤1.1A

Spectra Pure-Sine Inverters	Peak Power	Dimensions	Weight	Part No	Price
Spectra PS700 Inverters (12V)	700W	310 x 310 x 110	2.5	CA-14/100	£119.95
Spectra PS700 Inverter with remote	700W	310 x 310 x 110	2.5	CA-14/100R	£134.95
Spectra PS1200 Inverter (12V)	1200W	360 x 200 x 150	3	CA-14/101	£149.95
Spectra PS1200 Inverter with remote	1200W	360 x 200 x 150	3	CA-14/101R	£164.95
Spectra PS2200 Inverter (12V)	2200W	380 x 320 x 200	5.46	CA-14/102	£284.95
Spectra PS2200 Inverter with remote	2200W	380 x 320 x 200	5.46	CA-14/102R	£299.95

12 Volt Deep Cycle Sealed Batteries

Our AGM and Gel batteries are both sealed and maintenance free. They are designed to suit a variety of leisure and professional system requirements, please call our technical team to discuss.

Batteries can be connected 2 or more in parallel to increase capacity in Ampere hours 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.

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 power in professional applications. 5 year expected life.

Snap on Battery Terminals

Colour coded battery post terminals, snap on types for a secure fixing.

High quality OJOP brand

Part No: 901-030 - £13.95

Battery clips

Part No: 901-039 - £6.95

AGM Batteries

Ah Rating

@ C20	Part No:	Price
34	CA-17/21	£106.95
61	CA-17/20	£169.95
87	CA-17/23	£226.95
92	CA-17/19	£244.95
108	CA-17/24	£269.95
128	CA-17/26	£327.95
166	CA-17/25	£384.95
181	CA-17/28	£454.95
226	CA-17/29	£546.95

GEL Batteries

Ah Rating

@ C20	Part No:	Price
12	CA-17/04	£47.95
18	CA-17/30	£69.95
36	CA-17/36	£118.95
45	CA-17/31	£154.95
60	CA-17/32	£201.95
75	CA-17/05	£239.95
88	CA-17/37	£289.95
105	CA-17/33	£299.95
122	CA-17/38	£343.95
161	CA-17/35	£434.95
191	CA-17/39	£491.95
246	CA-17/40	£599.95

Many more sizes and battery specifications are available upon request.

sales@marlec.co.uk

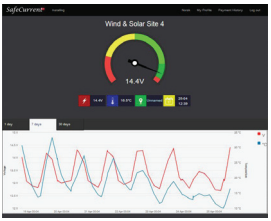
Tel: +44 (0)1536 201588

SafeCurrent

Dimensions: 100 x 73 x 22

Connect the new SafeCurrent to your battery and you'll always have advance knowledge of any low battery condition as well as their approximate location wherever you are.

- Enables you to take the necessary actions to prevent loss of power.
- An excellent way to avoid deep discharge of expensive batteries
- Location is derived from cell network tower triangulation so this is a useful security tool for mobile vehicles and boats.
- Simple on line activation of built in SIM
- App for mobile, tablet or PC
- Set up email or SMS alerts for Voltage and temperature
- Monthly cost of approximately £3 per month on registration
- Ideal for boats & other valuable leisure vehicles, isolated field equipment, etc.
- For use in Europe



Remotely monitor online using the web portal.

SafeCurrent Battery Monitor :
Part No: 915-070 - £99.95

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12 Volt Accessories

Cable and Connectors

Getting the right size cable is essential to safety and efficient operating of your wind turbine system. Select cable diameters related directly to the length to be used. More info can be found on our website and product manuals. The below cables are round and tinned for marine use.

Rutland 504, 914 & FM910-4 2 core copper cables:

OceanFlex 2.5mm² for 0-20m lengths in 12 / 24V
Part No: 902-036 - £2.20

4mm² for up to 30m lengths in 12 / 24V
Part No: 902-021 - £3.30

Rutland 1200 3 core tinned copper cables:

4mm² for up to 10m lengths in 12V or 40m in 24V
Part No: 902-042 - £5.95

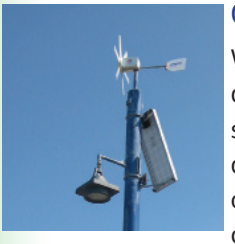
6mm² for up to 20m lengths in 12V or 75m in 24V
Part No: 902-043 - £6.95

Plug & Socket Kit

Plug and socket cable connectors with latch and strain relief for secure connection. Rated 16A.
Part No: 2 Way CA-11/02 - £7.95

About Marlec and our Services

You may not know our name but you will have certainly seen our products and solutions operating quietly and effectively while going about your everyday life. Our expertise in wind and solar energy goes back to our first Rutland Windcharger developed in 1978. Now you can find us in all four corners of the globe with our products being used by sailors, explorers, farmers, telecommunications engineers, aid agencies, homeowners, caravanners and many others who enjoy the freedom of generating their own free power.



Community

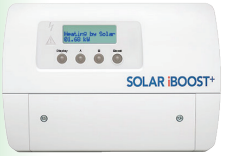
We are proud that our Green Columns are widely used in the community as well as commercial applications. We have enabled installation of street lights in remote locations, lighting for communal sports facilities and car parks all over the UK. Our renewable energy solutions are the optimal environmental choice whilst saving thousands of pounds of grid connection costs.

Leisure

Using our wind and solar energy solutions whilst you enjoy the great outdoors is hugely satisfying. Rutland Windchargers and solar panels use the natural elements to enable our customers to stay connected and safe as well as enjoy home comforts on the move. Speak to our expert sales team to help you find the right combination or single technology solution for you.

Professional

We work with many other businesses to help deliver products and services in off grid locations by providing a cost-effective and reliable power solution for equipment on the road, railways and coastlines. We design systems that are widely used in the expansion of broadband networks and essential telecommunications in both our developed and developing world.



Solar iBoost

Our innovative Solar iBoost has enabled over 57,000 homeowners with solar PV installed to also get free hot water. It is the world's best selling energy diversion device used to maximise the home's self consumption of energy generated. Find out more at www.solariboost.co.uk

Find out more about what we do at www.marlec.co.uk

sales@marlec.co.uk

Tel: +44 (0)1536 201588

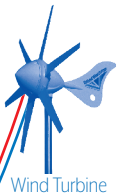
Typical Wind/Solar System off Grid

Photovoltaic Solar Panel

Any of the Ameresco, Sunware or Spectra Solar modules. Add more modules to increase charging

Voltage Controller

To prevent battery over charge and other features depending on model chosen



Wind Turbine

Choose from Rutland range of Windchargers 12/24V models

Battery Bank

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

Inverter

Converts 12/24V DC to 230V AC for mains appliances. Choose model to suit

AC Power

Mains appliances – always choose low energy devices where possible to save power

DC Power

12/24V appliances connected to the battery, eg LED lamps

HOW TO ORDER

Our expertise in small-scale renewable energy systems since 1978 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

Visit our website for brochure downloads, further information and latest specifications. Our technical sales team will be pleased to discuss your system requirements. Please call or email us.

Placing Your Order

Log onto www.marlec.co.uk call 01536 201588 or email us sales@marlec.co.uk

Payment

We accept most bank debit & credit cards, Paypal online and bank transfer to our account.

Prices

Pounds Sterling. Prices include VAT @ 20%. Please note prices can change, up to date prices are published at www.marlec.co.uk

Carriage

Shipping charges are calculated on-line or call for a quotation.

Terms of Business

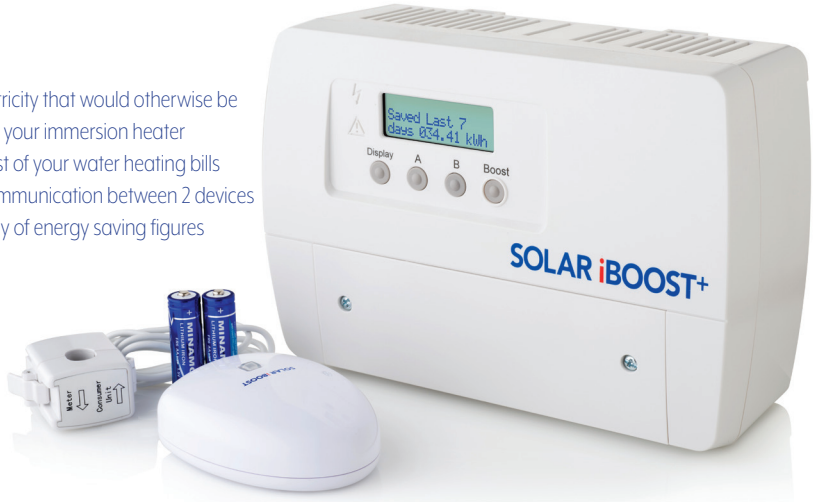
All business is transacted under Marlec's Conditions of Sale available on request.
Latest product specifications are available at www.marlec.co.uk

SOLAR iBOOST+

Do you have solar PV on your home?

Use any spare PV energy to heat the water in your hot water cylinder for free with our Solar iBoost .

- Diverts electricity that would otherwise be exported to your immersion heater
- Cuts the cost of your water heating bills
- Wireless communication between 2 devices
- Clear display of energy saving figures



iBOOST+ BUDDY

Monitor home energy usage with iBoost Buddy. The eco-gauge lets you know when unused energy is available so you can switch on appliances.
View the Solar iBoost+ display and remotely activate the Boost function.
Keep the Buddy handy so you can check the intuitive "traffic light" energy indicator.

Visit www.solariboost.co.uk to find your nearest installer.

Solar iBoost must be fitted by a qualified electrician.

Over 57,000 Solar iBoosts already installed in UK homes.

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Corby, Northants, NN17 5XY
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www.marlec.co.uk

marlec
renewable power