Issue B

Marlec Direct 2022

Proven Marine, Land and Professional Power Solutions

About Marlec

We are incredibly proud of our heritage as the UK's oldest renewable energy company. Since being founded back in 1978 by our founder John Fawkes, we have continued to innovate and manufacture reliable off-grid power systems for various applications worldwide. Today alongside our world-renowned Rutland wind turbines that are designed, developed and manufactured at our factory in the UK we offer a wide selection of solar photovoltaic panels, enabling us to satisfy the huge variety of our customer's needs. Read on and see where you will find us...

Leisure

Imagine using the natural elements to generate the energy you need to stay connected and enjoy your leisure time in the great outdoors. Whether it's boating, caravanning, camping or your holiday home there's a Rutland Windcharger or Marlec solar solution for you.

Community

Our wind and solar powered Green Column is used widely by public authorities to illuminate footpaths, communal sports facilities and car parks all over the UK. They incorporate modern LED technology and as a self-sustaining solution to lighting they also save thousands of pounds on installation costs.

Professional

If you're a professional operating in the highways, railways, telecoms, utilities and other commercial sectors and seeking off-grid energy solutions then the Marlec team's expertise is unrivalled. You will find our off-grid solutions at locations all around the world producing reliable power generation all year round.

Solar iBoost In The Home

Our innovative Solar iBoost has already enabled over 77,000 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

Proud Members Of :

World Cruising Club Corporate Member

Northamptonshire Chamber

railalliance

British Marine Leading The Industry

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Welcome to Marlec Direct 2022

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★★★★★

Brilliant company. Great products and they couldn't be more helpful.
- Stephen Frankel

Marine Turbines - Ideal for on-board charging

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.

Latest Generation Rutland 1200 Windcharger

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

The 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.
- Turbine 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

Rutland 1200 Windcharger (packed) - 900 x 390 x 185mm
Controller (included) - 258x164x68mm
Remote Display(Optional) - 155x145x60mm

Part Nos:

Rutland 1200 (12V) CA-06/01 - £1,372.95
Rutland 1200 (24V) CA-06/02 - £1,372.00
1200 Remote Display CA-07/02 - £148.95

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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 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
- Select HRSi or HRDi Charge Regulator

Part Nos:
12V - CA-01/17 - £729.95
24V - CA-01/18 - £729.95

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
- Select HRSi or HRDi Charge Regulator

Part No: 12V - CA-05/04 - £413.95

Land Based Windchargers

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

NEW Rutland 1200 Terrain

The new MPPT terrain controller is a key component in the Rutland 1200T's holistic design providing intelligence at managing the energy, the turbine and the battery to achieve maximum Ampere hours of charge to the battery bank per day

Rutland 1200 Packed Dimensions: 900 x 390 x 185mm
Controller Net Dimensions: 168 x 147 x 52mm, 680g

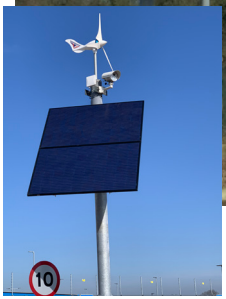
The Rutland 1200 Terrain is specially adapted for the rigours of isolated land based applications. The purpose designed wind power controller incorporates Marlec's MPPT technology to maximise power generation.

- Robust and high quality design
- Peaks up to 483W
- Produces 290W at 11m/s wind speeds
- Turbine diameter: 1200mm
- Weight: 7.8Kg
- Technologically advanced MPPT controller included

Part Nos:

Rutland 1200 X (12V) CA-06/04 - £1,372.95
Rutland 1200 X (24V) CA-06/05 - £1,372.95
Rutland 1200 X (48V) CA-06/03 - £1,534.95
1200 Remote Display CA-07/02 - £148.95

A typical site where the high degree of reliability of our products and services are delivered.



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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 - £764.95

24V CA-02/05 - £764.95

FM1803-2 Furlmatic Windcharger

Our 4th generation FM1803-2 uses rare earth magnet technology to deliver a robust and powerful turbine for remote sites.

- 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
- MPC2 Controller (shown below product) included protects batteries against overcharge and features a digital display and manual stall switch.

Part Nos:

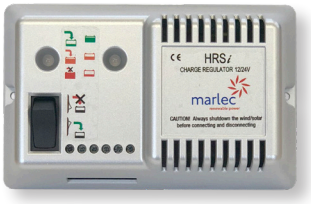
Windcharger: CA-03/02 - £2,538.95

With Control Gear: CA-04/14 (12V) or CA-04/15 (24V)

CA-04/16 (48V) supplementary cost: £259.95

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: 130 x 80 x 42mm 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) - £90.00

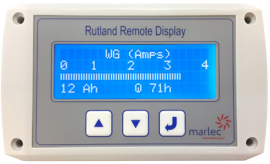
HRDi Charge Controller

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) - £199.95



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 - £105.95

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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. 914i & 1200 Mtg Kit's include new anti-vibration feet as standard.

Rutland 504 Marine Mtg Kit

Includes 2 x 1m pole sections.

Part No: CA-12/01 - £119.95

Rutland 914i Marine Mtg Kit

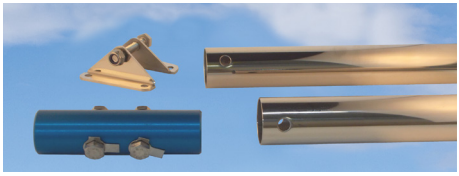
Includes 2 x 1.2m pole sections.

Part No: CA-12/02 - £220.50

Rutland 1200 Marine Mtg Kit

Includes 2 x 1.35m pole sections.

Part No: CA-12/38 - £241.50



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 - £133.50

Extra Long Stays Kit - 2 x 1.35m

Part No: CA-12/39 - £149.00

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) - £149.00

Tower Kit-910 Series

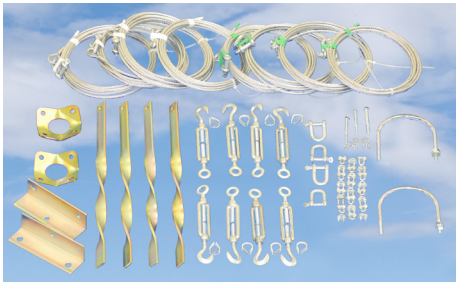
for temporary or permanent installation of Rutland 910 & 1200 series Windchargers. 6.4m (3 x 2.13m sections) of 48mm diameter galvanized steel tube with joiners. Part No: CA-12/08 - £153.95

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

Part No: CA-12/13 (not shown) - £115.50

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

Part No: CA-12/07 - £177.50



Off-Grid Solar Photovoltaic Panels

Off-Grid solar panels enable you to have power wherever you are! They efficiently convert daylight to energy for your batteries whether that's on a motorhome, yacht or professional applications such as CCTV and seismic monitoring. Choose from our range of leading brands of framed and semi-flexible panels and select a solar regulator to suit. Combine a windcharger for 24 hour charging capability. Solar panels connected in parallel require diodes visit www.marlec.co.uk for more information.

These panels use genuine SunPower manufactured products which benefit from their 5 year warranty.

SUNPOWER®

These flexible "back contact" solar panels are super efficient at keeping your batteries charged on board as well as on caravans and campervans. 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
- 2 x 450mm output cable complete with waterproof connector. Mating cables available in 5m & 10m Length.
- An in line diode plug /socket available for multiple panel connection.

T4 Plug / Socket In-line Diode 15A

MC-T4 Branch Connectors Plug/Socket (Pair)

Solar Cables 4mm T4 Plug/socket (pair)

PV Module Type	Peak Power	Dimensions	Weight	Part No	Price
SunPower 50	50W	653 x 556 x 3.2	1.1	CA-10/420	£116.95
SunPower 110	110W	1150 x 555 x 3.2	2.2	CA-10/422	£244.95
SunPower 170	170W	1153 x 810 x 2.0	2.9	CA-10/424	£455.95
Solar Cables 4mm T4 Plug & Socket 5m (pair)				SA-13/20	£28.95
Solar Cables 4mm T4 Plug & Socket 10m (pair)				SA-13/21	£39.95
T4 Plug / Socket In-line Diode 15A				901-151	£12.65
MC-T4 Branch Connectors Plug/Socket (pair)				901-152	£20.00

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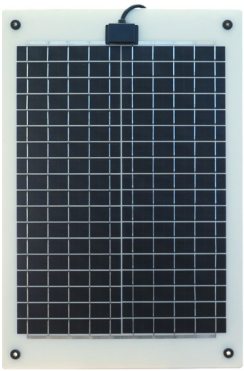
NEW Spectralite S Semi-flexible PV Modules

Our latest Spectralite S models are more compact than ever. Available in power sizes 15W, 23W and 35W they are ideal for topping up on board. They are robust enough to be walked on with clean deck shoes and even suitable in low power commercial applications where their non-glass construction makes them shatterproof and vandal resistant.

Take care of your batteries by topping up as a minimum using a ratio of 15W of Spectra solar panels to each 100Ah of battery capacity. A built-in blocking diode prevents reverse charge current. Add a solar regulator when exceeding this minimal level in the UK.



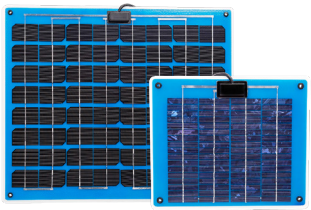
Spectralite S Features

- The sealed junction box has a built-in blocking diode and 3m output cable making them simple to install especially for battery maintenance uses.
- Can be walked on with clean deck shoes when fixed to a solid surface e.g. coachroof
- Flexible by 1cm per 30cm to enable the panels to follow a gentle deck curve.

Solar Trickle Chargers

Spectralite

Spectralite models are constructed of a high quality fiberglass and Tedlar laminate and are particularly light and yet hard-wearing enough to walk on. The 30W model benefits from a shadow resistance feature which makes them highly effective on board where shading is difficult to avoid.



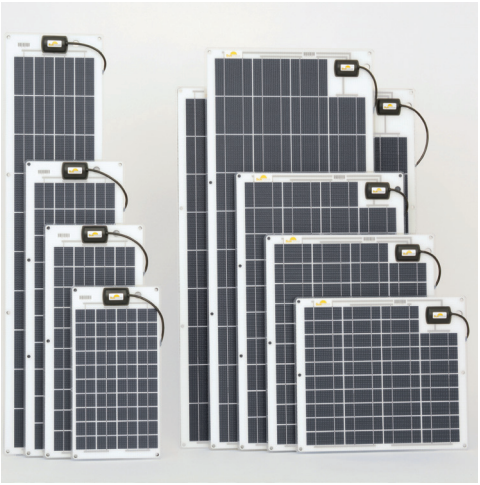
7.5W Trickle Charger

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.

PV Module Type	Peak Power	Dimensions	Weight	Part No	Price
Spectralite 5	5W	304 x 254 x 3	0.57	CA-10/36	£49.95
Spectralite 30	30W	559 x 483 x 3	1.50	CA-10/39	£149.95
Spectralite S	15W	388 x 370 x 3.5	1.30	CA-10/371	£97.95
Spectralite S	23W	559 x 381 x 3.5	2	CA-10/381	£123.95
Spectralite S	35W	693 x 414 x 3.5	2.70	CA-10/391	£169.95
A+ Life 7.5W	7.5W	335 x 335 x 16	1.56	CA-10/47	£40.95

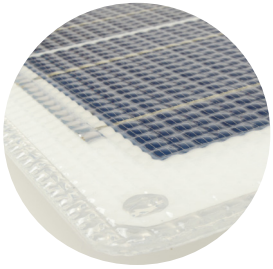
SunWare Semi-Flexible PV Modules

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 SunWare range includes slimline models especially useful on-board.

- These non-glass panels are shatterproof and lightweight
- Sea water resistant marine grade materials through out
- 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
- Surface layer is highly soil resistant, keeping the solar panels efficiently generating by reducing contamination



SunWare's build quality is extremely high quality, resulting in a robust and highly efficient panel.

SunWare solar panels have the highest power output to surface area ratio of walk on solar panels on the market. Their efficient polycrystalline cells convert sunlight to power into your battery so you can have the luxury of cool drinks and keep your essential equipment like a depth sounder running too.

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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 fixings 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.

- Seawater resistent marine grade fabric
- 10m of cable and a waterproof connector included
- A convenient and high quality solution to temporary installations, worth the investment.

SunWare Standard Range

PV Module Type	Peak Power	Dimensions	Weight	Part No	Price
SW20145 12V Slim	30W	273 x 807 x 5	1.6	CA-10/201	£292.95
SW20163 12V Rect	30W	481 x 426 x 5	1.3	CA-10/202	£309.95
SW20146 12V Slim	42W	273 x 1154 x 5	2.2	CA-10/204	£343.95
SW20164 12V Rect	42W	481 x 599 x 5	1.8	CA-10/205	£366.95
SW20165 12V Rect	60W	481 x 772 x 5	2.3	CA-10/207	£479.95
SW20166 12V Rect	80W	481 x 1119 x 5	3.6	CA-10/208	£579.95
SW20185 12V Rect	110W	689 x 1012 x 5	4.7	CA-10/209	£656.95

SunWare Textile Range

PV Module Type	Peak Power	Dimensions	Weight	Part No	Price
TX-12039 - Single	38W	873 x 431	2.2	CA-10/211	£494.95
TX-12052 - Single	50W	1108 x 431	2.6	CA-10/212	£579.95
TX-22039 - Double	76W	873 x 826	4.2	CA-10/213	£892.95
TX-22052 - Double	100W	1108 x 826	4.6	CA-10/214	£1,069.95
TX-42039 - Quadruple	152W	929 x 1590	8.2	CA-10/215	£1,394.95
TX-42052- Quadruple	200W	1164 x 1590	8.6	CA-10/216	£1,569.95

Ameresco Solar Framed PV Modules

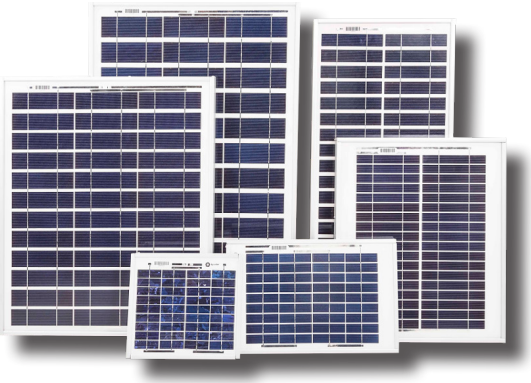
Ameresco is a unique brand in off-grid solar panels. This US based energy company manufacture their solar panels to high standards and their extensive accreditation tests make them suitable for use in the most enduring applications such as offshore structures.

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 weather conditions over many years of 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 for more information.
- 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	£71.95
Ameresco 20 J-V	20W	425 x 502 x 50	3.0	CA-10/152	£98.45
Ameresco 30 J-V	30W	790 x 358 x 50	3.90	CA-10/153	£132.45
Ameresco 40 J-V	40W	650 x 537 x 50	5.75	CA-10/154	£149.95
Ameresco 50 J-V	50W	835 x 537 x 50	6	CA-10/155	£166.45
Ameresco 90 J-V	90W	1204 x 537 x 50	7.7	CA-10/157	£233.00
Ameresco 140 J-V	140W	1504 x 674 x 50	12	CA-10/159	£317.95

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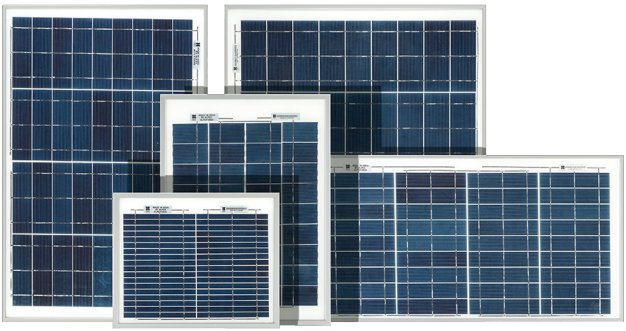
alpex
Power Forever



Alpex Solar

Alpex Solar Panels have been selected by our experienced team here at Marlec. They have a build quality that combines a durable frame and good photovoltaic cell performance giving reliable results all year round.

- 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	£27.00
AL-20	20W	485 x 360 x 22	2.06	CA-10/102	£42.95
AL-30A	30W	435 x 665 x 25	3.2	CA-10/103A	£59.00
AL-40A	40W	435 x 665 x 25	3.18	CA-10/104A	£62.95
AL-50	50W	555 x 665 x 25	3.88	CA-10/105	£86.95
AL-80B	80W	796 x 665 x 35	6.1	CA-10/110B	£109.95
AL-100	100W	1006 x 675 x 30	7.5	CA-10/107A	£124.95
AL-135	135W	see website		CA-10/114A	£153.95
AL-200 (24V)	200W	1382 x 982 x 35	15	CA-10/111	£200.00
AL-270	270W	1640 x 990 x 35	18.2	CA-10/115	£204.95

NEW PERC Framed PV Modules

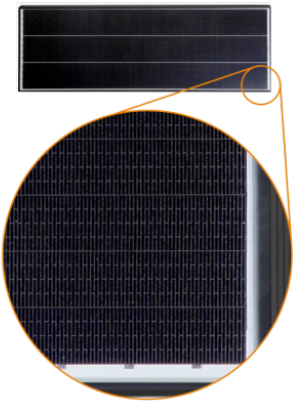
A new range of "back contact" high efficiency solar panels exclusively imported by Marlec.
These solar panels have the distinct advantage of delivering additional charging power over less surface area compared with conventional cell panels. They combine PERC technology (Passivated Emiter Rear Cell) with a "Shingle" cell layout which results in highly reliable internal electrical connections whilst also creating an attractive black finish.

- PERC (Passivated Emiter Rear Cell) Technology.
- Shingled Cell Module Design.
- High light absorbency especially in low light.
- Highly reliable internal electrical connections.
- Reduced ohmic resistance.
- No reflective metal lines on the cells.
- Increased efficiency.
- By-pass diode configuration to avoid 'hot spots' occurring in partial shade.
- 2°C lower operation temperature resulting in longer panel life and better power yield.
- Identical frame lengths for combining different ratings to accommodate available space.

Unlike conventional panels these use intelligent PERC (Passivated Emiter Rear Cell) technology and has a Shingled Cell Module Design to achieve 15% higher energy efficiency.

PERC (Passivated Emiter Rear Cell) Technology allows the cell to absorb more light than conventional cells and improves module performance under low light conditions.

Shingled Cell Module Design is the way the sliced cells of the panel are connected. The range uses conductive glue to connect each slices of cell. The two bypass diodes on both sides of the module and the cell connection being in both parallel and in series limit the Hot Spot risks under partially shield exposure conditions .



We highly recommend these space saving panels for use on board and other areas that are subject to periods of partial shade.

PV Module Type	Peak Power	Dimensions	Weight	Part No	Price
GALIX Solar Panel	75W	1031 x 405 x 35	4 kg	CA-10/75	£142.95
GALIX Solar Panel	100W	1031 x 530 x 35	5.8 kg	CA-10/76	£189.95
GALIX Solar Panel	150W	1031 x 785 x 35	9.2 kg	CA-10/77	£229.95

Wider range coming in 2022

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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. E.g. 65W/12V = 5.4Amps

Steca Range

The Steca Range offers regulators with either simple LED system indicators or LCD display features. Solsum and PR Ranges feature:

- Efficient Pulse Width Modulation (PWM) 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

Marlec is the appointed UK Distributor for Steca solar regulators.

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

Model	Operating Voltage	Max Rated Current	Part No	Price
Solsum 6.6F	12V / 24V	6 Amps	CA-11/14	£24.45
Solsum 8.8F	12V / 24V	8 Amps	CA-11/15	£32.95
Solsum 10.10	12V / 24V	10 Amps	CA-11/16	£44.95
Steca PR1010	12V / 24V	10 Amps	CA-11/37	£95.45
Steca PR1515	12V / 24V	15 Amps	CA-11/34	£116.45
Steca PR2020	12V / 24V	20 Amps	CA-11/35	£131.45
Steca PR3030	12V / 24V	30 Amps	CA-11/36	£152.95

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 Spectra and most SunWare panels) Diodes may also be required when installing multiple solar panels in parallel or series. Please call our sales team to discuss.

5A Diode Kit
Part No: CA-11/01 - £5.50

8A Diode
Part No: 913-012 - £3.95

12A Diode
Part No: 913-017 - £7.50

T4 Plug / Socket with 15A Diode
Part No: 901-151 - £12.65

Buy online at www.marlec.co.uk

Spectra Regulator Range

Spectra is Marlec's range of solar charge controllers for PV systems up 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.

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 MPPT Solar Regulators

These new MPPT solar controllers use full digital technology to efficiently track the Max Power Point at 99.9% to boost the energy yield of your solar panels. Multi-stage charging ensures good battery conditioning to improve the lifetime of batteries too.

MPPT Model	10A	20A	40A
System Voltage	12V	12/24V	12/24V
Max PV Input V Open Circuit	40V	90V	90V
Battery Types	Liquid, GEL, AGM	Liquid, GEL, AGM, Lithium	Liquid, GEL, AGM, Lithium
Communication	RS485 (RJ11 Interface)		

Regulator Model	Max Solar Panel Rating 12V	24V	Dimensions(mm)	Part No	Price
Spectra PWM 10A	125W	250W	160 x 88 x 43	CA-11/110	£31.95
Spectra PWM 20A	250W	500W	178 x 102 x 46	CA-11/111	£38.50
Spectra PWM 30A	375W	750W	196 x 111 x 54	CA-11/112	£72.95
Spectra MPPT 10A	130W		189 x 96 x 53	CA-11/130	£65.45
Spectra MPPT 20A	260W	520W	137 x 137x 68	CA-11/135	£125.95
Spectra MPPT 40A	520W	1040W	197 x 137 x 98	CA-11/136	£158.95

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MORNINGSTAR
World's Leading Solar Controllers & Inverters

Morningstar is the world's leading brand of solar regulators and in our experience offers one of the most robust products in the market. Every product in the range is built to the highest standards and will last in the toughest of applications. Marlec 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 act as 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
SunGuard 4.5A	12V	4.5 Amps	64 x 51 x 38	CA-11/26	£37.95
SunSaver SS-10 L	12V	10 Amps	152 x 55 x 34	CA-11/38	£78.95
SunSaver SS-10 L	24V	10 Amps	152 x 55 x 34	CA-11/10	£87.95
SunSaver SS20L	12V	20 Amps	152 x 55 x 34	CA-11/11	£109.95
SunSaver SunLight SL-10	12V	10 Amps	169 x 55 x 34	CA-11/29	£105.95
SunSaver Duo SSD-25	12V	25 Amps	170 x 56 x 41	CA-11/12	£105.95
Remote Meter (MPPT & Duo)			114 x 114 x 35	CA-11/13	£101.95
TriStar 45A PWM Controller	12V / 24V / 48V	45 Amps	260 x 127 x 71	CA-11/66	£202.95
TriStar 60A PWM Controller	12V / 24V / 48V	60 Amps	260 x 127 x 71	CA-11/58	£254.95

Morningstar EcoPulse and EcoBoost Solar Controllers

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. High levels of electronic and environmental protections make them equally suitable for light professional use.

A built-in micro USB enables field firmware updates. Available in 20A & 40A models.
Dims: 200 x 170 x 70mm 1.4kg

NEW Eco Boost – MPPT Controller

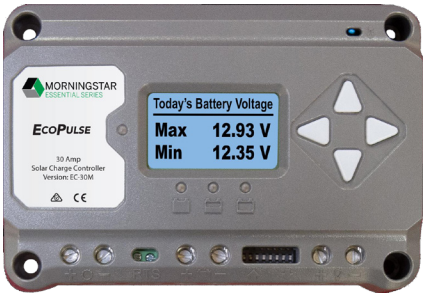
Eco Boost additional features

- Gain up to 20% more from your solar panels using Morningstar's Trakstar MPPT technology EcoBoost.
- MPPT enables the use of higher voltage panels for 12/24V charging
- Includes 2 x USB charger points and mobile phone holder

Both models feature:

- 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 to same charge current ratings
- Marine rated terminals up to 16mm²
- LED fault indicators
- Battery reverse polarity protected

Eco Pulse – PWM Controller



Simply scroll through the display to amend parameters.
Available in 10A, 20A & 30A models.
Dims: 150 x 110 x 60mm 0.4kg

Model	Max Solar Panel Rating 12V	24V	Part No	Price
EcoPulse with Meter 10A	125W	250W	CA-11/96	£95.95
EcoPulse with Meter 20A	250W	500W	CA-11/97	£122.95
EcoPulse with Meter 30A	375W	750W	CA-11/98	£147.95
EcoBoost MPPT 20A	300W	600W	CA-11/121	£211.95
EcoBoost MPPT 40A	560W	1120W	CA-11/122	£349.95

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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, e.g. 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. E.g. 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, e.g. marine rated terminals
- Extensive networking & communications capability for system monitoring, data logging and adjustability.

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.

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.

	Max Solar Panel Rating					
Model	12V	24V	48V	Dimensions	Part No	Price
TriStar MPPT 30A	400W	800W	1600W	291 x 130 x 142	CA-11/87	£442.95
TriStar MPPT 45A	600W	1200W	2400W	291 x 130 x 142	CA-11/62	£541.95
TriStar MPPT 60A	800W	1600W	3200W	291 x 130 x 142	CA-11/65	£666.95
SunSaver MPPT 15A	200W	400W		169 x 64 x 73	CA-11/56	£288.95
TriStar Remote Meter -2				116 x 116	CA-11/64	£142.95
TriStar Digital Meter-2				116 x 116	CA-11/63	£115.95

Spectra Inverter Range

When you are travelling, an off grid 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, e.g. 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:	MS600	MSI000	MSI600
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 3 minutes		
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	600W	230 x 102 x 57.5	1	CA-14/110	£49.95
Spectra MSI000 Inverter with remote	1000W	265 x 200 x 97	2.4	CA-14/111R	£106.95
Spectra MSI600 Inverter with remote	1600W	320 x 200 x 97	3	CA-14/112R	£137.95

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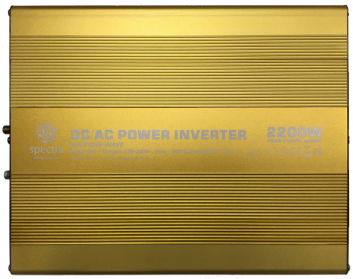
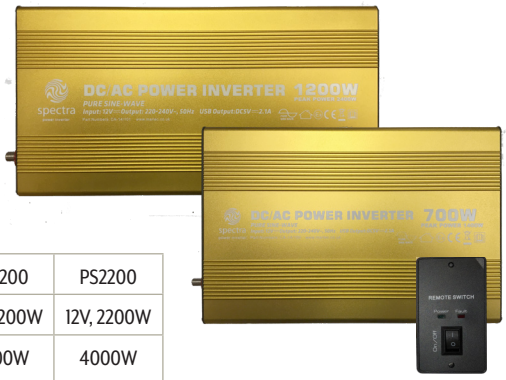
Spectra Pure Sine Inverters

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:	PS700	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 3 minutes		
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

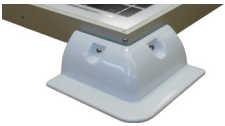
Spectra Pure-Sine Inverters	Peak Power	Dimensions	Weight	Part No	Price
Spectra PS700 Inverter with remote	700W	50 x 168 x 96	1.8	CA-14/100R	£139.95
Spectra PS700 Inverter with remote (24V)	700W	50 x 168 x 96	1.8	CA-14/100RX	£144.95
Spectra PS1200 Inverter with remote	1200W	311 x 168 x 96	2.6	CA-14/101R	£169.95
Spectra PS2200 Inverter with remote	2200W	325 x 252 x 101	5	CA-14/102R	£329.95

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 - £24.95



Pair of Side Mounts:

Part No: CA-12/35 - £16.95

Waterproof cable entry

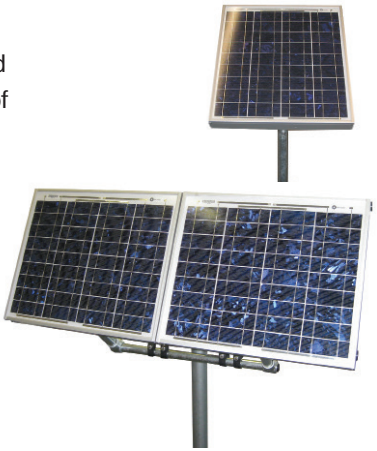
Fix this gland using adhesive to cover the entry of the cable to a coach roof.

Part No: CA-12/36 - £7. 95

Solar Mounting Kits

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

- Single and dual brackets are available
- U-bolts are required for pole mounting
- Models available for Ameresco and Alpex solar panels
- Optional bird spikes also available
- Visit www.marlec.co.uk to see full range available or contact our sales team



Snap on Battery Terminals

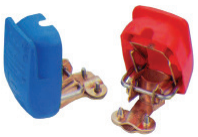
Colour coded battery post terminals, snap on types for a secure fixing.

High quality OJOP brand

Part No: 901-030 - £14.95

Battery clips

Part No: 901-039 - £7. 95



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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 our sales team to discuss your requirements.

Absorbed Glass Mat (AGM) Batteries

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 they are ideal for leisure applications. 3-5 year expected life.

Gel Batteries

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.

Lithium Batteries

Modern lightweight batteries available on request, contact the sales team to discuss your requirements

Here is just a selection of our ranges, visit our website for more models.

AGM Batteries

Ah Rating @ C20	Part No:	Price
12	CA-17/17	£34.50
38	CA-17/21	£109.95
61	CA-17/20	£179.95
87	CA-17/23	£229.95
92	CA-17/19	£249.95
108	CA-17/24	£278.95
135	CA-17/26	£334.95
166	CA-17/25	£392.95
181	CA-17/28	£444.95
226	CA-17/29	£539.95

GEL Batteries

Ah Rating @ C20	Part No:	Price
12	CA-17/04	£49.50
18	CA-17/30	£71.95
36	CA-17/36	£122.50
45	CA-17/31	£158.95
60	CA-17/32	£206.95
75	CA-17/05	£245.95
88	CA-17/37	£294.95
105	CA-17/33	£307.95
122	CA-17/38	£349.95
161	CA-17/35	£439.95
191	CA-17/39	£504.95
246	CA-17/40	£616.95

SafeCurrent

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.

Dimensions: 100 x 73 x 22

- 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

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 - £2.60

4mm² for up to 30m lengths in 12 / 24V
Part No: 902-021 - £4.50

Rutland 1200 3 core tinned copper cables:

4mm² for up to 10m lengths in 12V or 40m in 24V
Part No: 902-042 - £6.84

6mm² for up to 20m lengths in 12V or 75m in 24V
Part No: 902-043 - £9.50

Plug & Socket Kits

500 & 910 Series

Plug and socket cable connectors with latch and strain relief for 500 & 910 series turbines or PV panels. Rated 16A.
Part No: CA-11/02 - £8.50

FM1803-2

3 Pole Plug and Socket cable connectors with latch and strain relief for FM1803-2. Rated 16A
Part No: CA-11/03 - £9.60

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Professional Systems

Typical Components of a Wind /Solar Off Grid System

Photovoltaic Solar Panel

Any of the Ameresco, SunWare, SunPower 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, e.g. LED lamps

Important Note: The above is for illustration purposes only
Contact our sales team for bespoke solutions

HOW TO ORDER FROM MARLEC

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

Visit 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 published at www.marlec.co.uk supercede this catalogue.

Carriage

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

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

Buy online 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 to your immersion heater that would otherwise be exported.
- Cuts the cost of your water heating bills
- Wireless communication between 2 devices
- Clear display of energy saving figures
- Adjustable parameters for compatibility with battery storage

iBOOST+ BUDDY

Simply link the iBoost+ Buddy wirelessly to your Solar iBoost+ to view the display elsewhere in the home and also monitor home energy usage. The eco-gauge and intuitive "traffic light" indicator let you know when unused energy is available and you can even remotely activate the Boost function.

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

Solar iBoost must be fitted by a qualified electrician.

Over 77,000 Solar iBoosts already installed in UK homes.

Marlec Engineering Company Ltd
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Corby, Northants, NN17 5XY
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www.marlec.co.uk

marlec
renewable power