

Solar power  
where  
I need it



**KÖNIG  
KUNDE**  
AWARD 2019

**1. PLATZ**  
IN DER  
ZUBEHÖR-KATEGORIE  
**SOLARANLAGE**

**REISE  
MOBIL**  
INTERNATIONAL  
Europas kompetente  
Fachzeitschrift



**SOLARA –  
always  
the right  
choice!**



# SOLARA®

## THE GREAT FREEDOM

The most beautiful spots on earth have no socket. With SOLARA you can still enjoy your vacation wherever you like it. Solar power gives you the freedom you dreamed of once you bought your camper or yacht.

## FOR TECHNICAL EQUIPMENT WITHOUT POWER SUPPLY

Whether radio mast, navigation marks or a hospital at the end of the world. Electricity is needed everywhere. Professional solar systems from SOLARA can provide reliable energy.

## PROVEN QUALITY SINCE 1996

Anyone who has successfully produced solar technology for so long has probably done everything right. Our customers are satisfied because we supply long-lasting and reliable solar systems. Only the latest technologies and materials being used to make our products more productive.

## PREMIUM QUALITY - MADE IN GERMANY

All SOLARA solar panels are produced in Germany. Only then short and CO<sub>2</sub> reduced delivery are possible. Product innovations can be implemented easily and quickly. German engineering guarantees consistently high quality.

## WE LOVE PHOTOVOLTAICS

SOLARA are Engineers with long experience and great passion for solar technology. Hamburg business people, whom have the pleasure to deliver solar systems reliably and safely anywhere in the world.



## SOLAR TECHNOLOGY IN TESTED QUALITY

More and more customers are demanding a priced alternative in classic quality. SOLARA has the DCsolar solar modules produced in Asia well and cheaply.

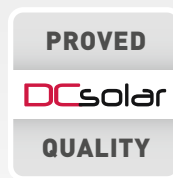
## “EVEN IN THE ECONOMY CLASS YOU CAN HAVE A GOOD AND SAFE FLIGHT”

DCsolar solar modules are developed by SOLARA in Germany. Tested and certified manufacturing facilities in Asia produce DCsolar modules according to these specifications.

## ATTRACTIVE ALL-IN-ONE KITS

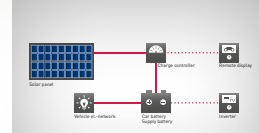
DCsolar modules can be combined with all high-quality SOLARA mounting systems and charge controllers. The DCsolar all-in-one kits in SOLARA quality are very price attractive.

You have the choice: Premium quality Made in Germany  
or the classic stuff from Asia



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# SOLARA.EU



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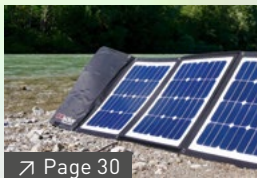
**Roof grommets**



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**Accessories**

# DCsolar solar panels & sets



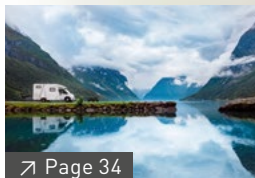
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**Strong energy on the go**



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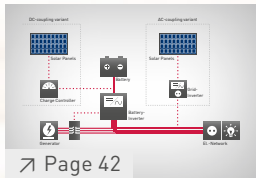
**Power Move**

# Commercial applications



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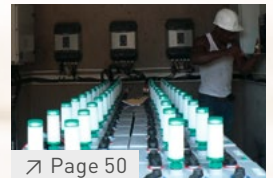
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# Independent power supply

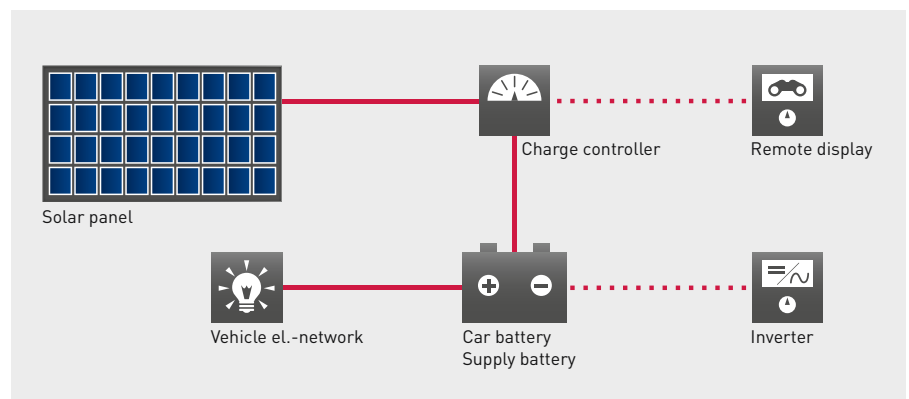
## SOLAR PANELS FOR EVERY NEED

Reliability is also a decisive criterion in the small performance range. Whether camper or boat, mountain hut or measuring station, often even a small solar system is enough to ensure a power supply, even without complicated inverters.

On the following pages you will find a variety of complete solutions for almost every requirement. The advantage of solar systems by SOLARA are their quick setup, because all parts of the system are optimally adapted and plug & play.

## MAXIMUM FLEXIBILITY

In addition, all components form a solid basis for extensions. The modular design ensures maximum flexibility, additional components can be integrated at any time, retroactively and step-by-step, in line with any growing energy demand.



## CALCULATE YOUR ENERGY REQUIREMENTS

To find out how big your solar system should be, you need to take a closer look at your consumers and their energy requirements. Depending on the number of devices, the power consumption of each device and the daily run-time. Furthermore, the number of people and the period of use during the year affect energy demand.

Now just simply sum up your consumption according to the table below - the result is your daily energy need. Depending on your consumption behaviour and the time of use over the year, then this consumption will be, more or less, covered by the solar system.



Device	Power Rating	Operation Time	Consumption
Radio	15 W	4 hours	60 Wh/day
Colour-TV	40 W	3 hours	120 Wh/day
Sat-Receiver	40 W	3 hours	120 Wh/day
Lamp	10 W	5 hours	50 Wh/day
Compressor fridge	50 W	6 hours	300 Wh/day
Mobile phone	5 W	2 hours	10 Wh/day
Tablet/Laptop	15 W	2 hours	30 Wh/day
Map plotter	15 W	6 hours	90 Wh/day
Autopilot	40 W	6 hours	240 Wh/day
Water maker	110 W	4 hours	440 Wh/day
Instrument display	10 W	6 hours	60 Wh/day
E-Bike	150 W	3 hours	450 Wh/day

# How to find the right system size

## MODULE IS NOT EQUAL A MODULE

In order to find out which panel size is the right one, it is advisable to take a closer look at the general conditions such as travel time, travel behaviour and vehicle size.

- To extend the service life, it is not always necessary to cover the entire consumption. Often, it is sufficient enough to compensate a part by the solar system.
- In the case of a main use during the summer season, a solar system delivers very good yields and can be chosen smaller.
- With only a few people on board, the energy consumption is usually lower and the solar power plant can be chosen smaller.



### Solar system up to 110 W

- Ideal for camper vans and small RV's
  - Mostly weekend tours during summer time
  - Consumers: light, pump, radio, small compressor fridge
- Product recommendation:** Modules from the S-Series or M-Series

### Solar system with 110 Wp (440 Wh/day)

- Ideal for small to medium size RV's
  - Period of use: April to September
  - Consumer: light, pump, radio, TV/SAT
- Product recommendation:** SOLARA or DCsolar complete sets, S-Series modules, Power Mobile, Power Mobile Plus

### Solar system with 110 - 220 Wp (440-880 Wh/day)

- Ideal for medium to large RV's
  - Period of use: all year round
  - Consumers: light, pump, radio, TV/SAT, small compressor fridge
- Product recommendation:** SOLARA or DCsolar complete sets, S-Series modules

### Solar system with more than 220 Wp (→ 880 Wh/day)

- Ideal for medium to large RV's
  - Period of use: all year round
  - Consumers: light, pump, radio, TV/SAT, compressor fridge, E-Bike charger
- Product recommendation:** SOLARA or DCsolar complete sets, S-Series modules



### Solar system smaller than 25 W

- All boat sizes and types
  - Trickle charge for the battery system
  - Period of use: all year round
- Product recommendation:** Solara M-Series

### Solar system with 30 - 80 W

- Sailboat, charter boat
  - High consumption coverage
  - Compressor fridge, radio, navigation, light, communication, tablet/PC
  - Summer time, long-distance voyage, short-haul cruises
- Product recommendation:** Solara M-Series, Power M-Series, Power Mobile

### Solar system with 80-150W

- Sailboat, charter boat
  - High consumption coverage
  - Compressor fridge, radio, navigation, light, communication, tablet/PC
  - Summer time, long-distance voyage, short-haul cruises
- Product recommendation:** Solara M-Series, Power M-Series, Power Mobile

### Solar systems with 150 W and more

- Large sailboat, catamaran, large charter boat
  - Almost complete consumption compensation
  - Compressor fridge, radio, navigation, light, communication, tablet/PC
  - April-September period, long-distance voyage, cruises with little to no harbour time
- Product recommendation:** Solara M-Series, Power M-Series, S-Series





Long lasting even under the harshest conditions.

## SOLARA Power M-Series

### HIGHEST DAILY YIELDS BY SUNPOWER CELLS

- Solar cells with over 23% efficiency
- Additional solar cells for efficient charging
- Highest yields in every season due to excellent low-light performance - even in diffused light
- Designed and manufactured for permanent use on water and on land
- All materials withstand extreme heat, high humidity, sea and salt water
- Cell protector with external protection diodes included
- Extremely flat module construction with aluminium sandwich support plate
- Flat, glued and screwed cable outlet with strain relief
- Fully walkable on firm ground
- Cable lead-through already prepared in the carrier plate
- Manufactured exclusively in Germany

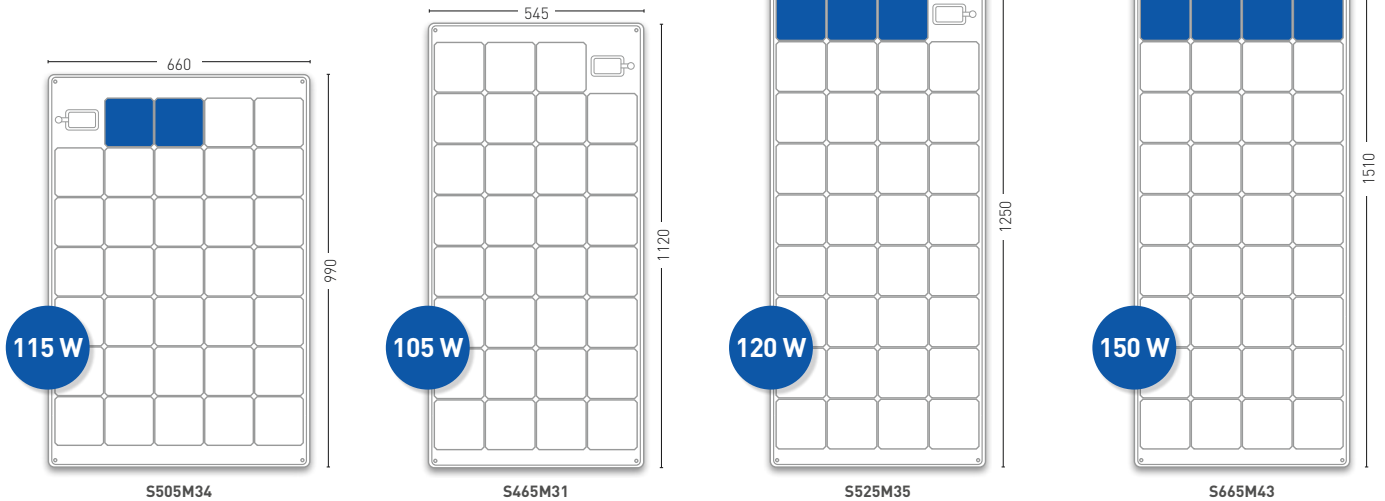




SOLARA Power M-Serie



Now even more power



PERFORMANCE

Type	S505M34	S465M31	S525M35	S665M43
Daily output in summer in Germany (Ø) Wh/d	505	465	525	665
Rated output * [Pmpp] Wp	115	105	120	150
Short-circuit current (Isc) A	6.30	6.30	6.30	6,30
Open-circuit voltage (Uoc) V	24.22	21.69	24.73	31.06
Voltage(Umpp) V	19.82	18.10	20.68	25.86
Current (Impp) A	5.80	5.80	5.80	5.80
No. of cells	34	31	35	43

\* Performance at STC, Standard Testing Conditions: 1000 W/m², AM 1.5, cell temperature 25° C

Dimensions and weight

Dimensions (L x W x H) mm	990 x 660 x 4	1120 x 545 x 4	1250 x 545 x 4	1510 x 545 x 4
Weight kg	4.2	3.6	4.4	5.2
Cell dimensions mm	125 x 125	125 x 125	125 x 125	125 x 125

Thermal properties

TK Pmpp %/K	-0.38
TK Uoc %/K	-0.28
TK Isc %/K	0.057
NOCT °C	46 ± 2

Used materials

Cell technology	Sunpower, monocrystalline with back contact
Front/back	ETFE front and back side foil, welded at the edge
Cable outlet	Solid, flat, seawater tight, glued and screwed
Hotspot Protector (external)	Standard for all module types

More technical data

Reverse current IR loadability	12 A
Measuring accuracy Pmpp at STC	± 5 %
Operating temperature range	-40°C to +85°C

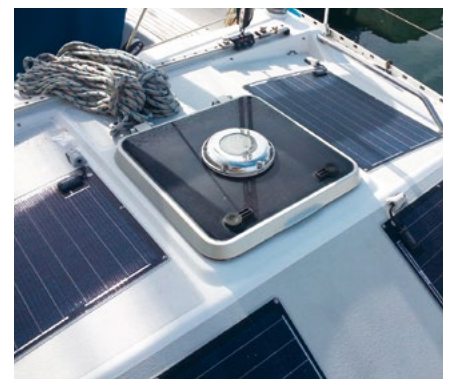




## SOLARA M-Series

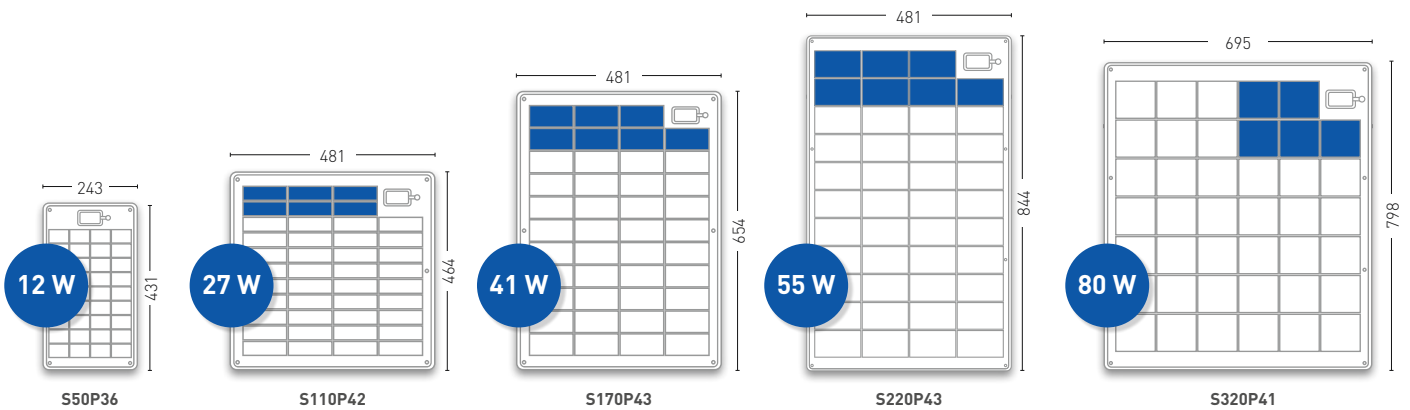
### EXTREMELY FLAT, WALKABLE AND SEMI-FLEXIBLE

- Stability and maximum heat dissipation due to innovative aluminium-sandwich support plate
- Additional solar cells for efficient charging
- Maximum daily yield due to additional single cells
- All materials withstand extreme heat, high humidity, sea and salt water
- Teflon-type extremely resistant protective film on front and back
- Flat, glued and screwed cable outlet with strain relief
- Cell protector with external protection diodes included
- Cable lead-through already prepared in the carrier plate
- Manufactured exclusively in Germany





SOLARA M-Series



PERFORMANCE

Type	S50P36	S110P42	S170P43	S220P43	S320P41
Daily output in summer in Germany (Ø) Wh/d	50	110	170	220	320
Rated output * (Pmpp) Wp	12	27	41	55	80
Short-circuit current (Isc) A	0.65	1.29	1.92	2.54	3.84
Open-circuit voltage (Uoc) V	22.72	26.50	27.13	27.13	25.87
Voltage(Umpp) V	19.15	22.34	22.88	22.88	21.81
Current (Impp) A	0.61	1.22	1.81	2.40	3.62
No. of cells	36	42	43	43	41

\* Performance at STC, Standard Testing Conditions: 1000 W/m<sup>2</sup>, AM 1.5, cell temperature 25° C

Dimensions and weight

Dimensions (L x W x H) mm	431 x 243 x 4	464 x 481 x 4	654 x 481 x 4	844 x 481 x 4	798 x 695 x 4
Weight kg	0.9	1.7	2.2	2.8	3.7
Cell dimensions mm	52 x 35	104 x 35	104 x 52	104 x 69	104 x 104

Thermal properties

TK Pmpp %/K	-0.45
TK Uoc %/K	-0.36
TK Isc %/K	0.03
NOCT °C	46 ± 2

Used materials

Cell technology	Poly (multi) crystalline cells
Front/back	ETFE front and back side foil, welded at the edge
Cable outlet	Solid, small, flat, seawater-tight, glued and screwed
Hotspot protector (external)	Enclosed with S170P43, S220P43 and S320P41

More technical data

Reverse current IR loadability	12 A
Measuring accuracy Pmpp at STC	± 5 %
Operating temperature range	-40°C to +85°C

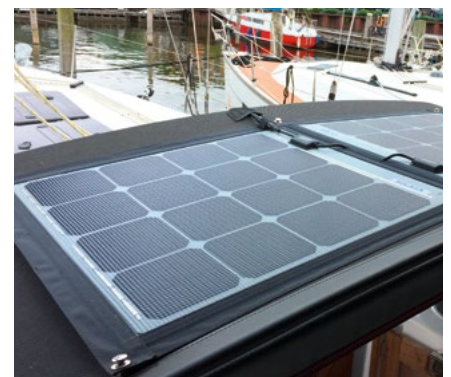
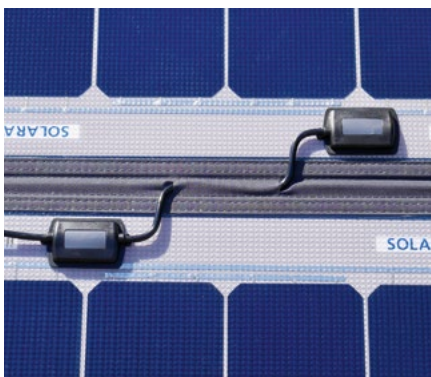




## SOLARA Power Mobile

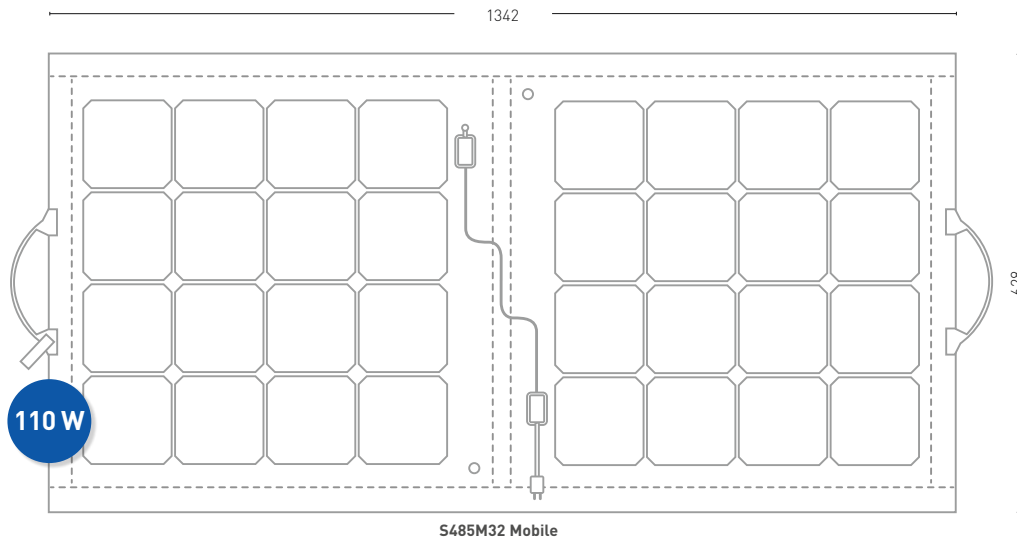
### PLUG & PLAY WITH CABLE CHARGE CONTROLLER

- Flexible use thanks to innovative, fully encircling fabric bordure
- Eyelets, Loxx buttons, velcro or zipper can be retrofitted
- Space-saving stowage due to foldable module surface
- Effective battery charging even when the vehicle is in the shade
- Extremely high output by the use of Sunpower cells with 23 % efficiency
- All materials withstand extreme heat, high humidity, sea and salt water
- Manufactured exclusively in Germany





SOLARA Power Mobile



PERFORMANCE

Type	S485M32 Mobile
Daily output in summer in Germany (Ø) Wh/d	485
Rated output * (Pmpp) Wp	110
Short-circuit current (Isc) A	6.30
Open-circuit voltage (Uoc) V	23.06
Voltage(Umpp) V	18.96
Current (Impp) A	5.80
No. of cells	32

\* Performance at STC, Standard Testing Conditions: 1000 W/m², AM 1.5, cell temperature 25° C

Dimensions and weight

Dimensions opened (L x W x H) mm	1342 x 628 x 6
Dimensions folded (L x W x H) mm	685 x 628 x 25
Weight kg	4.9
Cell dimensions mm	125 x 125

Thermal properties

TK Pmpp %/K	-0.38
TK Uoc %/K	-0.28
TK Isc %/K	0.057
NOCT °C	46 ± 2

Used materials

Cell technology	Sunpower, monocrystalline with back contact
Front/back	ETFE front and back side foil, welded at the edge
Cable outlet	Solid, small, flat, seawater-tight, glued and screwed

More technical data

Reverse current IR loadability	12 A
Measuring accuracy Pmpp at STC	± 5 %
Operating temperature range	-40°C to +85°C

**Scope of delivery:** Cable charge controller Fox-062 6 A, Cable 5 m, SureSeal plugs pre-mounted (for connection to cable charge controller)

**Options:** Extension cable with SureSeal plugs 5 m, Eyelet set, Loxx buttons





## SOLARA Power Mobile Plus

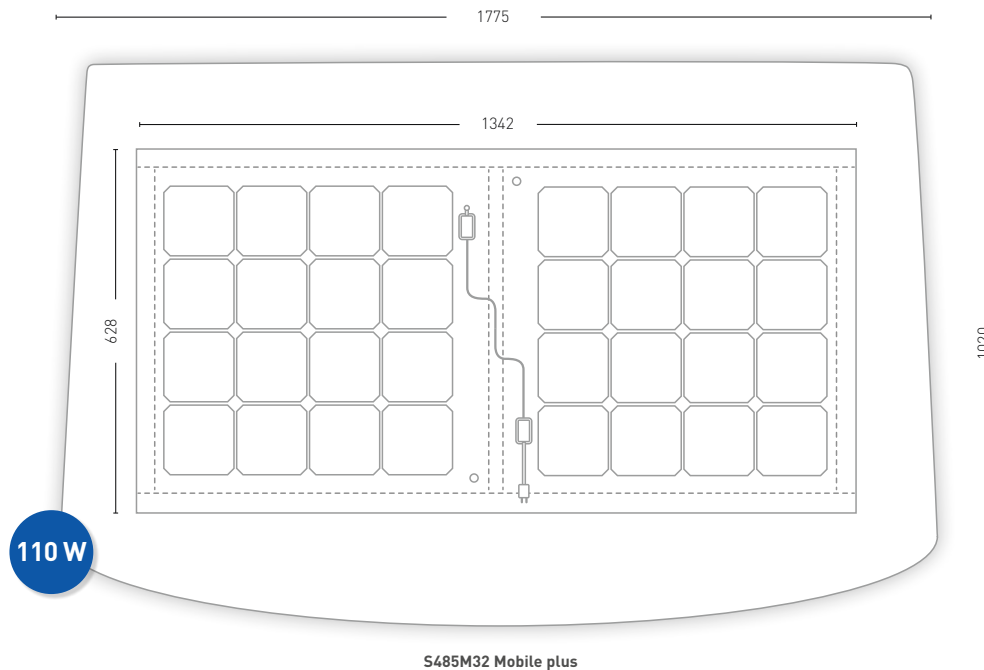
### THE CUSTOMISED SUIT FOR VW T5 / T6 / CRAFTER, MERCEDES SPRINTER / VITO / VIANO, FIAT DUCATO

- Isolation and darkening mat with integrated solar module fixation
- Highly durable surface material, spinnerets coloured, thus fully UV-resistant, opaque and darkening
- Extremely good insulation through integrated foam core
- Fast setup and removal, plug & play thanks to innovative magnetic system (protected utility model)
- Easy to clean and easy to stow, small in size
- Integrated theft protection cable lock, 2 m
- Solar module is detachable and is identical to type S485M32, see page 12/13
- Manufactured exclusively in Germany





# SOLARA Power Mobile Plus



## PERFORMANCE

Type	S485M32 Mobile
Daily output in summer in Germany (Ø) Wh/d	485
Rated output * (Pmpp) Wp	110
Short-circuit current (Isc) A	6.30
Open-circuit voltage (Uoc) V	23.06
Voltage (Ump) V	18.96
Current (Impp) A	5.80
No. of cells	32

\* Performance at STC, Standard Testing Conditions: 1000 W/m<sup>2</sup>, AM 1.5, cell temperature 25° C

## Dimensions and weight

Dimensions opened (L x W x H) mm	1342 x 628 x 6
Dimensions folded (L x W x H) mm	685 x 628 x 25
Dimensions windshield blind e.g. VW T5/T6 (L x B x H) mm	1775 x 1020 x 16
Weight kg	4.9/6.4
Cell dimensions mm	125 x 125

## Thermal properties

TK Pmpp %/K	-0.38
TK Uoc %/K	-0.28
TK Isc %/K	0.057
NOCT °C	46 ± 2

## Used materials

Cell technology	Sunpower, monocrystalline with back contact
Front/back	ETFE front and back side foil, welded at the edge
Cable outlet	Solid, small, flat, seawater-tight, glued and screwed

## More technical data

Reverse current IR loadability	12 A
Measuring accuracy Pmpp at STC	± 5 %
Operating temperature range	-40°C to +85°C

**Scope of delivery:** Cable charge controller Fox-062 6 A, Cable 5 m, SureSeal plugs pre-mounted

**Options:** Extension cable with SureSeal plugs 5 m, Eyelet set, Loxx buttons





## SOLARA Power S-Series

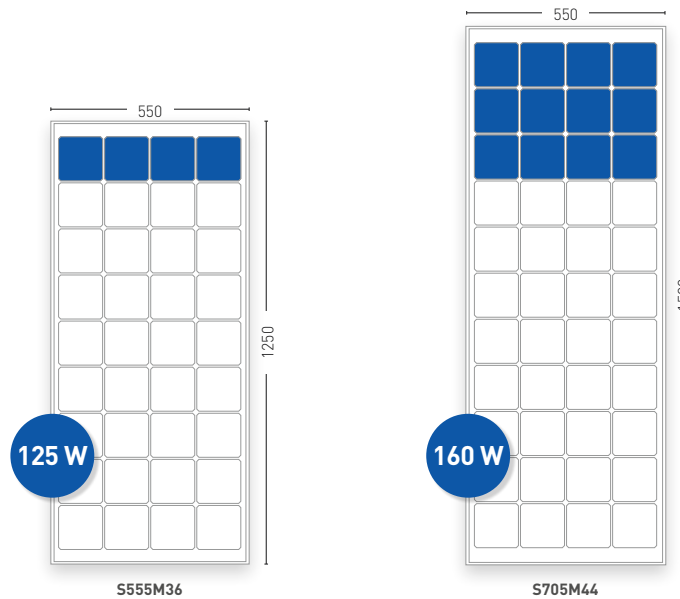
### HIGHEST DAILY SUPPLY BY SUNPOWER CELL

- Increased number of cells for maximum daily yield
- Solar cells with over 23% efficiency
- Additional solar cells for efficient charging
- Use of 2.0 mm thick, scratch-resistant, thermally tempered solar glass
- Excellent mechanical strength thanks to the torsion-resistant module frame
- Large, waterproof junction box with connection cable, MC4 compatible
- Specially designed for long-term use in extreme heat and high humidity
- Manufactured exclusively in Germany





## SOLARA Power S-Series



### PERFORMANCE

Type	S555M36	S705M44
Daily output in summer in Germany (Ø) Wh/d	555	705
Rated output * (Pmpp) Wp	125	160
Short-circuit current (Isc) A	6.87	6.42
Open-circuit voltage (Uoc) V	24.68	31.05
Voltage(Umpp) V	19.08	26.65
Current (Impp) A	6.56	6.01
No. of cells	36	44

\* Performance at STC, Standard Testing Conditions: 1000 W/m<sup>2</sup>, AM 1.5, cell temperature 25° C

### Dimensions and weight

Dimensions (L x W x H) mm	1250 x 550 x 35	1500 x 550 x 35
Weight kg	6.6	9.5
Cell dimensions mm	125 x 125	125 x 125

### Thermal properties

TK Pmpp %/K	-0.38
TK Uoc %/K	-0.28
TK Isc %/K	0.057
NOCT °C	46 ± 2

### Used materials

Cell technology	Sunpower, monocrystalline with back contact
Front/back	Tempered solar glass
Frame	Anodized aluminium hollow profile, silver
Junctionbox	IP67 with MC4 compatible connectors

### More technical data

Reverse current IR loadability	12 A
Measuring accuracy Pmpp at STC	± 5 %
Operating temperature range	-40°C to +85°C
Glass thickness	2.0 mm





Specially developed for mobile use.

## SOLARA S-Series

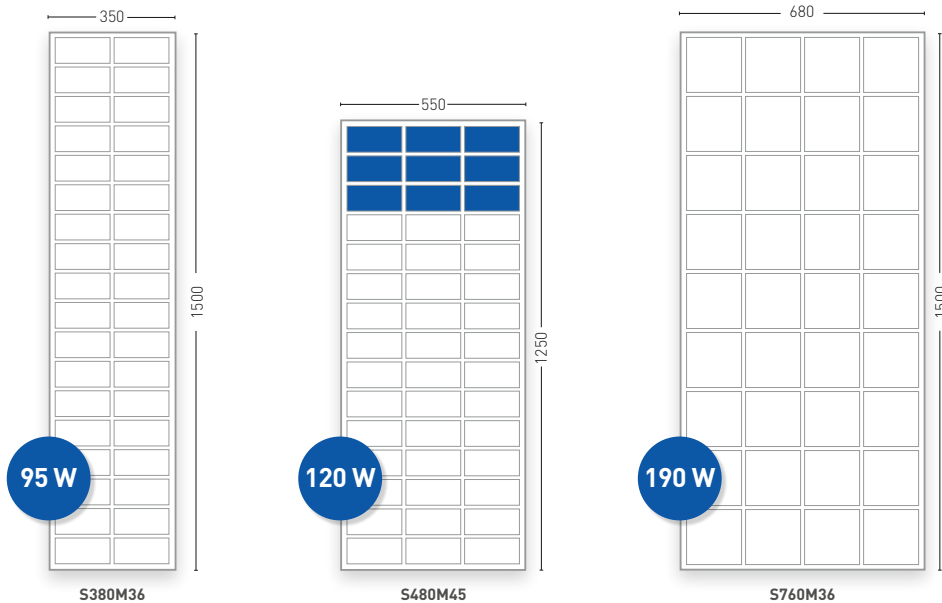
### ROBUST AND RELIABLE DEVELOPED FOR MOBILE APPLICATIONS

- Solar modules with 36/45 high-performance solar cells
- Additional solar cells for efficient charging
- Designed and manufactured for permanent use on water and on land
- Robust, seawater-resistant, torsion-resistant aluminium profile frame
- Drainage holes to prevent frost damage
- Large, waterproof junction box with connection cable, MC4 compatible
- Manufactured exclusively in Germany





## SOLARA S-Series



### PERFORMANCE

Type	S380M36	S480M45	S760M36
Daily output in summer in Germany (Ø) Wh/d	380	480	760
Rated output * (Pmpp) Wp	95	120	190
Short-circuit current (Isc) A	4.84	4.89	10.09
Open-circuit voltage (Uoc) V	23.96	29.94	24.14
Voltage (Umpp) V	20.50	25.65	20.13
Current (Impp) A	4.63	4.68	9.44
No. of cells	36	45	36

\* Performance at STC, Standard Testing Conditions: 1000 W/m<sup>2</sup>, AM 1.5, cell temperature 25° C

### Dimensions and weight

Dimensions (L x W x H) mm	1500 x 350 x 35	1250 x 550 x 35	1500 x 680 x 35
Weight kg	7.9	6.6	10.5
Cell dimensions mm	156 x 78	156 x 78	156 x 156

### Thermal properties

TK Pmpp %/K	-0.45
TK Uoc %/K	-0.36
TK Isc %/K	0.03
NOCT °C	46 ± 2

### Used materials

Cell technology	Mono crystalline cells
Front/back	Tempered solar glass
Frame	Anodized aluminium hollow profile, silver
Junctionbox	IP67 with MC4 compatible connectors

### More technical data

Reverse current IR loadability	12 A
Measuring accuracy Pmpp at STC	± 5 %
Operating temperature range	-40°C to +85°C
Glass thickness	3.2/2.0 mm





## SOLARA S-Series Vision

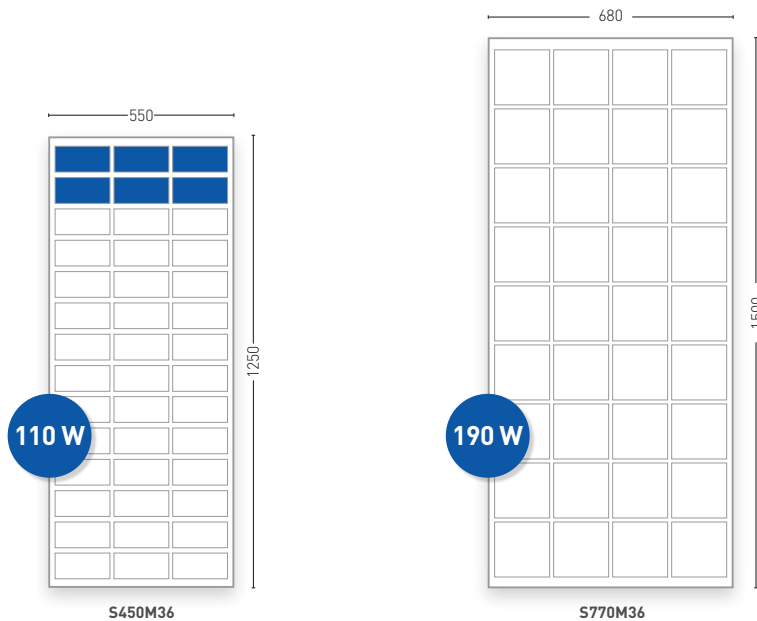
### INDESTRUCTIBLE DUE TO UNIQUE GLASS/GLASS TECHNOLOGY

- Fully walkable
- Robust, seawater-resistant aluminium profile frame
- Tropical roof capable and OFF-ROAD use suitable
- Large, waterproof junction box with connection cable, MC4 compatible
- Suitable for use even under extreme climatic conditions
- Designed and manufactured for permanent use on water and on land
- Manufactured exclusively in Germany





## SOLARA S-Series Vision



### PERFORMANCE

Type	S450M36	S770M36
Daily output in summer in Germany (Ø) Wh/d	440	760
Rated output * (Pmpp) Wp	110	190
Short-circuit current (Isc) A	4.95	10.09
Open-circuit voltage (Uoc) V	27.62	24,14
Voltage (Umpp) V	23.50	20.13
Current (Impp) A	4.68	9.44
No. of cells	42	36

\* Performance at STC, Standard Testing Conditions: 1000 W/m<sup>2</sup>, AM 1.5, cell temperature 25° C

### Dimensions and weight

Dimensions (L x W x H) mm	1250 x 550 x35	1500 x 680 x 35
Weight kg	9.4	13.5
Cell dimensions mm	156 x 78	156 x 156

### Thermal properties

TK Pmpp %/K	-0.45
TK Uoc %/K	-0.36
TK Isc %/K	0.03
NOCT °C	46 ± 2

### Used materials

Cell technology	Mono crystalline cells
Front/back	Tempered solar glass
Frame	Anodized aluminium hollow profile, silver
Junctionbox	IP67 with MC4 compatible connectors

### More technical data

Reverse current IR loadability	12 A
Measuring accuracy Pmpp at STC	± 5 %
Operating temperature range	-40°C to +85°C
Glass thickness	2 x 2 mm





SR280E



SR180\_350LCD



SR85TL - SR345TL

Suitable  
for all battery  
types.

## SOLARA charge controllers

### Your control center

We guarantee high reliability, the latest technology and easy installation at low costs. The regulated PWM characteristic guarantees optimized charging. All Solara controllers are so-called series regulators (no shunt) and thus very efficient. The load output protects your battery from deep discharge. A large and informative LCD display shows the current system status. The SR 350 DUO also offers the possibility to charge two independent battery circuits.

### The features

- Automatic detection of battery voltage
- Solar power < 90 - 350 watts
- Electronically protected against overcharging, reverse polarity, overvoltage
- Battery deep discharge protection in each regulator 5 to 20 A
- Battery type selector (except SR 340 E)
- LED indicator for battery status
- Metal housing IP65 (at SR 340 E)
- Charges two parallel battery circuits (SR 350 DUO)
- USB port for charging (at SR 180/350 LCD)
- Lithium-ready (SR XXX LCD/DUO)
- Low self-consumption < 4 mA

Type	Solar panel power (W)	Current (A)	Voltage (V)	Meter
SR 60 UL	60	4	12	LED
SR 85 TL	90/180	5	12/24	LED
SR 135 TL	140/280	8	12/24	LED
SR 175 TL	180/360	10	12/24	LED
SR 345 TL	350/700	20	12/24	LED
Remote Meter for SR85/135/175/345TL for Voltage, Current				
SR 340 E	340	20	12/24	LED
SR 180 LCD	180/360	10	12/24	LCD
SR 350 LCD	350/700	20	12/24	LCD
SR 350 DUO	350/700	20	12/24	LCD



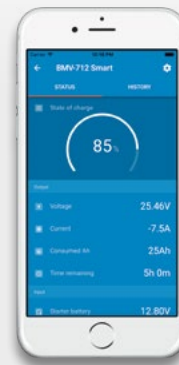




MPPT 75/15



BMV702



Smartphone App

Bluetooth  
smart  
integrated.

## Victron MPPT charge controllers

### Ultra-fast maximum power point tracking (MPPT)

In particular, when the sky is overcast, when the light intensity changes constantly, an extremely fast MPPT controller improves the energy yield by up to 30% compared to PWM charge controllers.

You can remotely control and monitor the extensive features of your SmartSolar MPPT charger by connecting it via Bluetooth with your smartphone or other device via the VictronConnect app.

### The features

- Ultrafast Maximum Power Point Tracking (MPPT)
- Advanced maximum power point detection for partial shading
- BatteryLife: intelligent battery management through load shedding
- Load output on the small models
- Automatic battery voltage detection
- Flexible charging algorithms
- Overheating protection and load reduction at high temperatures

Typ	Solar panel power (W)	Current (A)	Voltage (V)	Meter
MPPT 75/10 *	145 - 290	10	12/24	LED
MPPT 75/15 *	220 - 440	15	12/24	LED
MPPT 100/15 *	220 - 440	10	12/24	LED
MPPT 100/20 *	290 - 580	20	12/24	LED
MPPT 100/30 *	440 - 880	30	12/24	LED
MPPT 100/50 *	700 - 1400	50	12/24	LED
MPPT 150/35 *	500 - 2000	35	12/24/48	LED
MPPT 150/45 *	650 - 2600	45	12/24/48	LED
MPPT 150/60 *	860 - 3440	60	12/24/48	LED
Remote meter BMV700	for all Victron MPPT controller, incl. 500A Shunt			
Remote meter BMV702	for all Victron MPPT controller, incl. 500A Shunt, shows additional battery voltage			
Remote meter BMV712	for all Victron MPPT controller, incl. 500A Shunt and Bluetooth			
Bluetooth Dongle	for connecting MPPT controller or remote meter with Smartphone via App			

more Victron items on request

\* Bluetooth integrated





SunSaver 6-20



SunSaver Duo



EcoPulse with Display

Top-quality.

## Morningstar charge controllers

### Professional battery charging

A broad performance spectrum, innovative functions, robust design and high efficiency characterize the MorningStar solar charge controllers. ISO9001 manufacturing, quality control with 100% functional testing ensure quality, reliability and longevity in the application. Over 2 million devices are installed in over 112 countries until today.

### The features

- Epoxy resin-moulded board
- For gel-type and AGM batteries
- With temperature sensor and deep discharge protection
- Built-in or remote display available
- PWM charging characteristic, Series design
- Automatic 12/24 V detection
- All fuses electronically
- Low self-consumption < 8 mA
- Top quality with 5 years guarantee, EcoPulse 2 years

Type	Solat panel power (W)	Current (A)	Voltage (V)	Meter
SunSaver 6L	110	6	12	LED
SunSaver 10L	170	10	12	LED
SunSaver 20L	340	20	12	LED
SunSaver Duo Basic	425	25	12	LED
SunSaver Duo	425	25	12	LCD
EcoPulse 10	170 - 340	10	12/24	LED
EcoPulse 10M	170 - 340	10	12/24	LCD
EcoPulse 20	340 - 680	20	12/24	LED
EcoPulse 20M	340 - 680	20	12/24	LCD
EcoPulse 30	510 - 1020	30	12/24	LED
EcoPulse 30M	510 - 1020	30	12/24	LCD

### Accessories

Type	Function	Compatible with
RM-1	Remote LCD display for several system parameters, incl. 10 m connection wire	SunSaver Duo
RTS	Temperature sensor with 10 m connection wire	EcoPulse
DIN-1	DIN-rail holder	SunSaver







SunGuard



ProStar with Display



TriStar 45/60



### Charge controller for professional use

In case of high solar power and currents, battery voltages up to 48V, needed communication and data transfer, the professional ProStar and TriStar controllers are being used. Basically, all MorningStar controllers are designed without fans or moving parts.

### The features

- For all battery types, lithium-ready
- For large systems with up to 60 A solar current
- With temperature sensor and deep discharge protection
- PWM charging characteristic, Series design
- Automatic voltage detection
- Several network and communication options
- All fuses electronically
- Low self-consumption < 20 mA
- Top quality with 5 years guarantee

Type	Solat panel power (W)	Current (A)	Voltage (V)	Meter
SunGuard	80	4,5	12	LED
ProStar 15	250 - 500	15	12/24	LED
ProStar 15M	250 - 500	15	12/24	LCD
ProStar 30	500 - 1000	30	12/24	LED
ProStar 30M	500 - 1000	30	12/24	LCD
TriStar 45	750 - 3200	45	12/24/48	LED
TriStar 60	1000 - 4000	60	12/24/48	LED

### Accessories

Type	Function	Compatible with
RM-1	Remote LCD display for several system parameters, incl. 10 m connection wire	ProStar
TS-M-2	Buildt-in meter for system parameter	TriStar
TS-RM-2	Remote LCD display for system parameters, incl. 30m connection wire	TriStar
RTS	Temperature sensor with 10 m connection wire	ProStar, TriStar
EMC-1	Ethernet Meterbus converter	ProStar, TriStar
HUB-1	Enables multiple controllers to share one display or relay driver	ProStar, TriStar
MSC-1	Converter for RJ-11 to RS232 communication	ProStar, TriStar
RD-1	Logic module for system controll functions	ProStar, TriStar
UMC-1	Converter for RJ-11 to USB 2.0 communication	ProStar



# SOLARA – a good connection







HSXX/W



HSV/W



HSE/W

Tested,  
lightweight and  
colour-stable.

## SOLARA ABS-mounting spoiler

### The optimal fastening

ABS holding spoilers are the optimal fastening for solar modules. They are available in white colour and are perfect for RV's, camper or caravans. Simply glue instead of screw.

Due to their aerodynamic shape, they are at the same time a mounting system and wind deflector, so that no disturbing noise can occur. We only use high quality, specially coated, UV-resistant ABS plastic so that our mounting spoilers remain permanently dimensionally stable and colour-stable.

The ABS spoilers are matched to different solar module widths and can be used across different manufacturers.

Additionally there are mounting corners and connector profiles available, that can be used universally. The spoilers are glued with the SOLARA FIX PACK adhesive to the vehicles roof and the module itself is connected to the spoilers with the help of screws [included].

### The features

- The optimum combination of functionality and appearance
- About 50 % lighter than other conventional spoilers
- The aerodynamic shape does not produce any disturbing wind noise
- Also suitable for self-assembling
- Special coated ABS plastic
- UV-stable
- 100% recyclable
- All necessary screws included

Type	Art.-No.	Max. solar panel width	Pc/set
Mounting spoilers set	HS35/W	350 mm	2
Mounting spoilers set	HS45/W	450 mm	2
Mounting spoilers set	HS55/W	550 mm	2
Mounting spoilers set	HS68/W	680 mm	2
Edge spoilers set	HSE/W	all type of solar panels	4
Universal mounting spoilers set	HSV/W	all type of solar panels	2

### Caution:

Installation only with certified special adhesive for ABS plastics, for example, the SOLARA FIX PACK





# SOLARA ABS-roof grommet & adhesive set

## Professional aerodynamic roof grommet

The optimum combination of functionality and appearance for the cable entry into the vehicle. A wide adhesive seam and a waterproof PG screw connection facilitate secure installation. Suitable for cable diameters from 4 mm to 13.5 mm. Simply fixed with the ABS special adhesive from our SOLARA FIX PACK and a secure and permanently watertight cable entry to the interior is guaranteed.

### The features

- Lightweight
- Aerodynamic shape, there are no disturbing wind noises
- Also suitable for self-assembly
- Special coated ABS plastic
- UV-stable
- 100 % recyclable



Type	Art.-No.	No. of inlets
Roof grommet	DD1/W	1 x PG13.5 for 1 cable
Roof grommet	DD1/S	1 x PG13.5 for 1 cable
Roof grommet	DD2/W	2 x PG13.5 for 2 cables
Roof grommet	DD2/S	2 x PG13.5 for 2 cables

## SOLARA adhesive kit Fix Pack

The ABS special adhesive set is specially developed for the SOLARA ABS-mounting spoilers and roof grommets, aluminium brackets, as well as for bonding the SOLARA M and Power M-series. The single-component MS polymer adhesive is completely non-toxic, can be stored for 1 year and is suitable for self-assembly.



Type	Description
SOLARA adhesive set Fix Pack	Cartridge 290 ml, primer (Dekavator) cleaning cloth, sanding pad, colour: white
SOLARA adhesive set Fix Pack	Cartridge 290 ml, primer (Dekavator) cleaning cloth, sanding pad, colour: black







# SOLARA accessories

## Easy to handle

With the SOLARA accessories, the installation becomes a breeze. High-quality connectors, rugged cables, pre-assembled connection cables, EBL charge controllers - all professional components for quick and easy installation. Our cables are suitable for outdoor use.

Type	Description
Dc-Connect-C, 4 mm <sup>2</sup>	Connection cable module - controller with MC4 connectors, length 5 m, size 2x 4mm <sup>2</sup> , fits to all Solara and DcSolar modules
Dc-Connect-C, 2.5 mm <sup>2</sup>	Connection cable module - controller with MC4 connectors, length 5 m, size 2x 2.5 mm <sup>2</sup> , fits to all Solara and DcSolar modules
Dc-Connect-M	Connection cable for modules with MC4 connectors, length 2 m, size 2x 4 mm <sup>2</sup>
Dc-Connect-B	Connection cable charge controller - battery, assembled with fuse and cable lugs, length 1 m, size 2x 6 mm <sup>2</sup>
MC4 Y-Set	Y-adapter set for parallel connection of two modules, set with plus and minus
MC4 PV Stick	MC4 connectors, DIY, tool-free, set with plus and minus
Cable 2x 2.5	Installation cable for outside use, size 2x 2.5 mm <sup>2</sup> , by meter
Cable 1x 4	Installation cable for outside use, size 2x 4 mm <sup>2</sup> , by meter
Cable 1x 6	Installation cable for outside use, size 2x 6 mm <sup>2</sup> , by meter
Schaudt LR121	Charge controller 12 V, 18 A
EBL connection cable	Connection wire for any solar controller with Schaudt EBL
Mounting spoiler 52	Black ABS mounting spoiler, length 52 cm, fits perfectly to DCSolar modules
Mounting spoiler HS55/black	Black ABS mounting spoiler, length 55 cm, fits perfectly to SOLARA Module
Roof grommet Heavy Duty	Black Roof grommet made of ABS
HSP	Aluminium bracket for module mounting, max. module size 1300 x 560 mm, set with 4 brackets, incl. screws
HSP400	Aluminium bracket for module mounting, max. module size 1500 x 700 mm, set with 6 brackets, incl. screws
Fox-062	Cable charge controller, max. solar current 8A, system voltage 12V, adjustable to different battery types
Cellprotector	Hotspot protector for SOLARA M-Series Modules
Edge protector	Plug-on edge protector for Solara M-Series Modules, yard ware
Deck seal	Scanstrut DS H-6, cable diameter 2-6 mm, incl. several sealings
Deck seal	Scanstrut DS H-10, cable diameter 6-10 mm, incl. several sealings
Deck seal	Scanstrut DS Multi, several cables, cable diameter up to 15 mm





# DCsolar – strong power on the move!

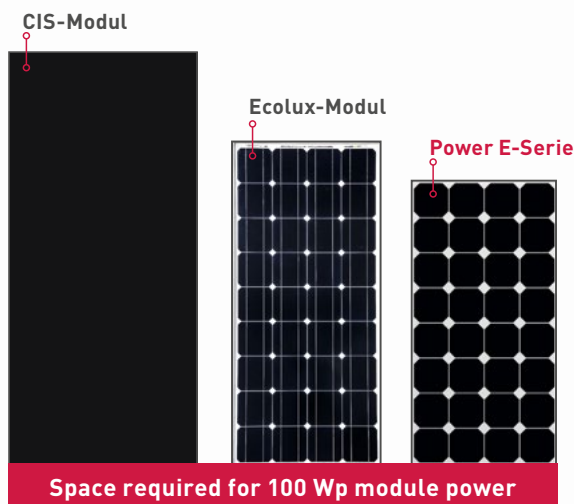


### DCsolar MODULES FOR ANY EVENTUALITY

The Power E series, with its state-of-the-art, back-contact solar cells, are specially developed for mobile use, has not only a natural, higher cell voltage, but also excellent low-light and high-temperature behaviour, so that a sufficiently high voltage is built up even at low levels of radiation to charge the on-board batteries.

If only little space is available, the Power E-Series is the perfect solution, because it requires up to 21 % less space than a standard crystalline module and even more than 45 % less than a conventional thin-film module (e.g., CIS), and at a weight of only about 8.0 kg compared to the 16.0 kg of a comparable 100 Watt CIS module.

The EcoLux series represents solar modules on a high technical level. We achieve it through the use of state-of-the-art materials and manufacturing processes as well as the continuous development and testing of our products. Whether on your camper, sailing ship or holiday home, an EcoLux module is a versatile module that can supply you with power wherever you want it, and that is completely environmentally friendly.



### DCsolar ALL-IN-ONE SOLUTIONS

Are you looking for a high-quality solar complete set for a fair price? Then DCsolar products are exactly the right choice!

SOLARA offers with the brand DCsolar optimally assembled complete sets. All necessary components are delivered in a box together with detailed installation instructions, everything plug and play!

### CERTIFICATIONS AND TESTS

- Mechanical stress tests
- Climate test of the entire module
- Degradation test
- Check for micro cracks on the cells

PROVED

DCsolar

QUALITY





Maximum performance on the smallest areas.

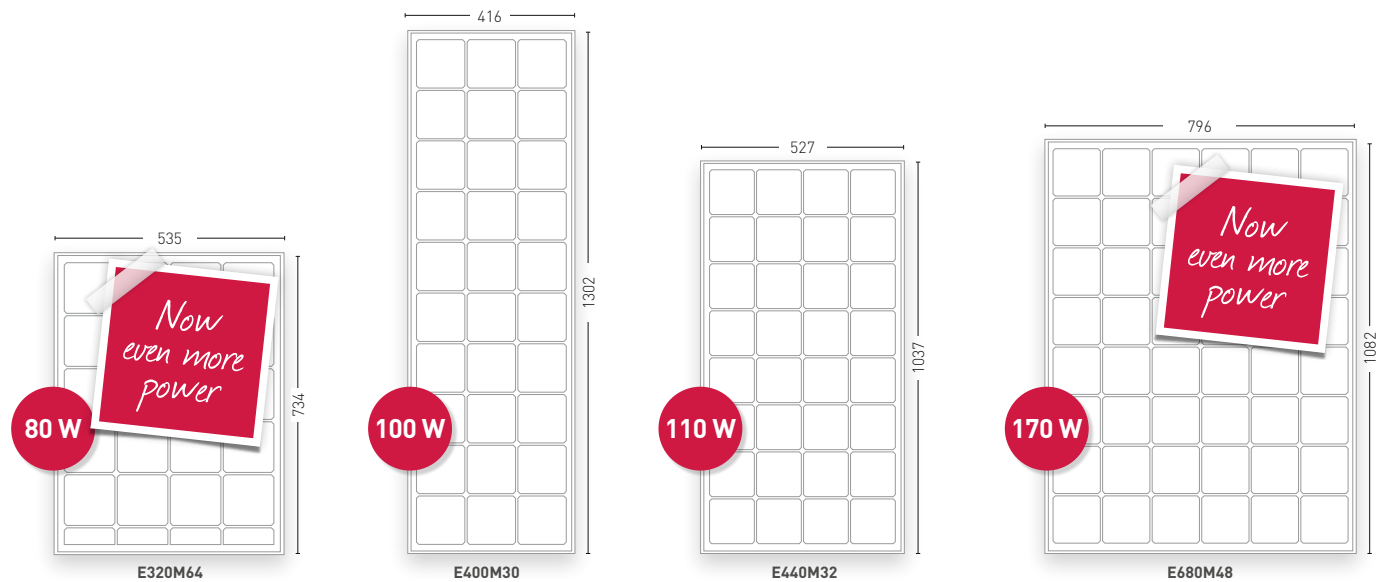
## DCsolar Power E-Series

### TOP PERFORMANCE - DEVELOPED FOR HIGH DEMANDS

- SunPower cells with up to 23 % efficiency
- Highest daily yields on a very small area
- Best low-light performance
- Temperature-stable voltage
- Stable hollow profile frame
- MC4-compatible connector



## DCsolar Power E-Series



### PERFORMANCE

Type	E320M64	E400M30	E440M32	E680M48
Daily output in summer in Germany (Ø) Wh/d	350	440	480	750
Rated output * (Pmpp) Wp	80	100	110	170
Short-circuit current (Isc) A	5.00	5.96	6.15	9.15
Open-circuit voltage (Uoc) V	21.3	22.6	23.8	24.1
Voltage (Umpp) V	17.5	18.7	19.7	19.8
Current (Impp) A	4.55	5.36	5.59	8.3
No. of cells	64	30	32	48

\* Performance at STC, Standard Testing Conditions: 1000 W/m<sup>2</sup>, AM 1.5, cell temperature 25° C

### Dimensions and weight

Dimensions L x W x H (mm)	734 x 535 x 35	1302 x 416 x 35	1037 x 527 x 35	1082 x 796 x 35
Weight kg	5.8	7.0	7.4	11.0
Frame color	black	silver or black	silver or black	black

### Thermal properties

TK Pmpp %/K	-0.32
TK Uoc %/K	-0.28
TK Isc %/K	0.057
NOCT °C	46 ± 2

### Used materials

Cell technology	Sunpower, monocrystalline with back contact
Junction box	IP65 with MC4 compatible connectors

### More technical data

Reverse current IR	12 A
Measuring accuracy Pmpp at STC	± 10 %
Operating temperature range	-40°C to +85°C







Price/  
performance  
winner!

## DCsolar Ecolux-Series

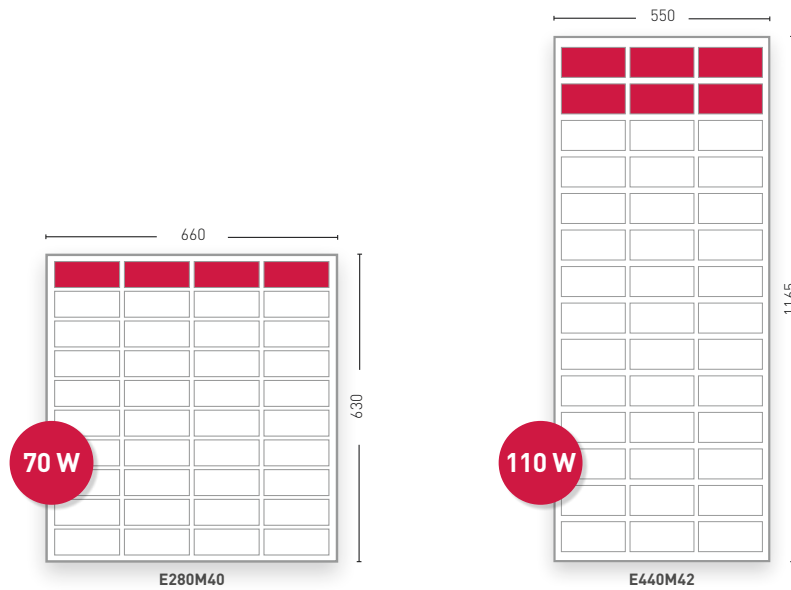
### **SUPERIOR MODULAR TECHNOLOGY - VERSATILE APPLICABLE**

- 40/42 monocrystalline high-yield solar cells
- Sturdy silver hollow profile frame
- MC4 compatible connector
- Translucent solar glass
- Hail resistant





DCsolar Ecolux-Series



PERFORMANCE

Type	E280M40	E440M42
Daily output in summer in Germany (Ø) Wh/d	280	440
Rated output * (Pmpp) Wp	70	110
Short-circuit current (Isc) A	3.24	4.88
Open-circuit voltage (Uoc) V	26.92	27.97
Voltage (Umpp) V	21.78	23.75
Current (Impp) A	3.22	4.63
No. of cells	40	42

\* Performance at STC, Standard Testing Conditions: 1000 W/m<sup>2</sup>, AM 1.5, cell temperature 25° C

Dimensions and weight

Dimensions L x W x H (mm)	630 x 660 x 35	1165 x 550 x 35
Weight kg	5	7.4
Frame color	silver	silver

Thermal properties

TK Pmpp %/K	-0,44
TK Uoc %/K	-0,36
TK Isc %/K	0,03
NOCT °C	46 ± 2

Used materials

Cell technology	Monocrystalline
Junction box	IP65 with MC4 compatible connectors

More technical data

Reverse current IR	12 A
Measuring accuracy Pmpp at STC	-5 %/+10 %
Operating temperature range	-40°C to +85°C





Lightweight, flat  
& semi-flexible.

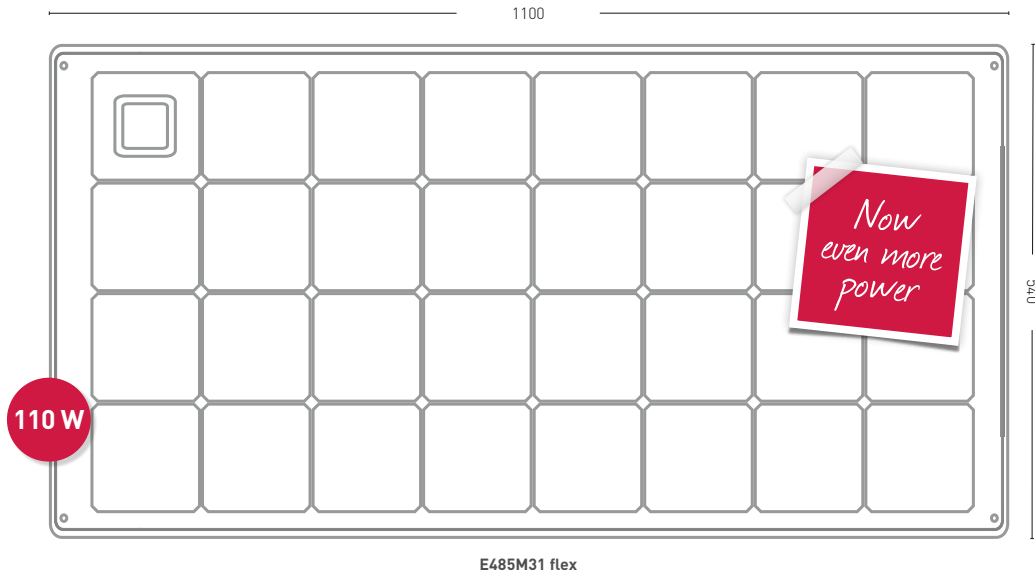
## DCsolar Power Flex

### TOP PERFORMANCE - FOR HIGHEST DEMANDS

- Semi-flexible solar module, stable due to a 1.2 mm aluminium support plate
- Lightweight and fully walkable
- Fully encapsulated cells by bonding front and back side foils
- Adapts to curved roof surface
- Monocrystalline solar cells with high efficiency
- Highest daily yields on the smallest surface even in low light conditions



## DCsolar Power Flex



### PERFORMANCE

Type	E485M31 flex
Daily output in summer in Germany (Ø) Wh/d	485
Rated output * (Pmpp) Wp	110
Short-circuit current (Isc) A	6.10
Open-circuit voltage (Uoc) V	22.3
Voltage (Umpp) V	19.2
Current (Impp) A	5.70
No. of cells	31

\* Performance at STC, Standard Testing Conditions: 1000 W/m<sup>2</sup>, AM 1.5, cell temperature 25° C

### Dimensions and weight

Dimensions L x W x H (mm)	1100 x 540 x 4
Weight kg	4.3
Cell dimensions (mm)	125 x 125

### Thermal properties

TK Pmpp %/K	-0,38
TK Uoc %/K	-0,28
TK Isc %/K	0,057
NOCT °C	46 ± 2

### Used materials

Cell technology	Sunpower, monocrystalline with back contact
Bypass diodes	Integrated in cable outlet
Connection cable	5 m, 2 x 1.5 mm <sup>2</sup>

### More technical data

Reverse current IR	12 A
Measuring accuracy Pmpp at STC	-5 %/+10 %
Operating temperature range	-40°C to +85°C







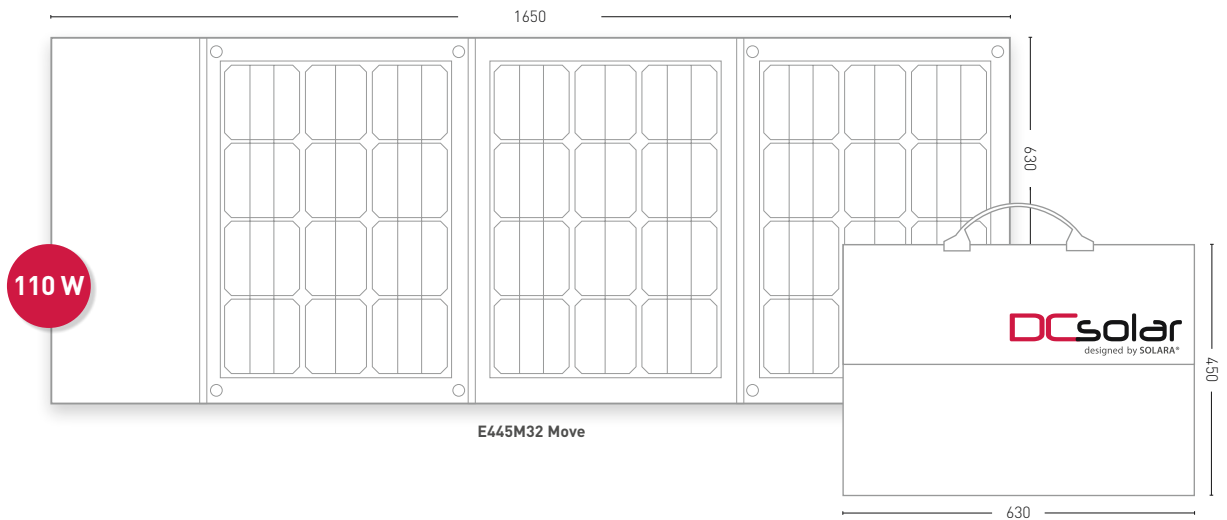
## DCsolar Power Move

### MAXIMUM PERFORMANCE AT THE HIGHEST QUALITY

- Highest daily yields by using Sunpower cells with up to 23 % efficiency
- High yield in every season due to the best low-light behaviour, even in diffused light
- Three modules in one - each with 32 cells per module field - connected in parallel - thus shadow resistant
- Low weight
- 5 m cable with mobile cable solar charging controller (gel, AGM, liquid acid adjustable) with 12 V car standard plug
- Elegant distinctive design
- Sewn in sturdy textile fabric
- Large energy output in the smallest space
- Foldable and portable, small convenient size



## DCsolar Power Move



### PERFORMANCE

Type	E445M32 Move
Daily output in summer in Germany (Ø) Wh/d	440
Rated output * (Pmpp) Wp	110
Short-circuit current (Isc) A	6.32
Open-circuit voltage (Uoc) V	21.90
Voltage (Umpp) V	18.56
Current (Impp) A	5.97
No. of cells	96 (3 x 32)

\* Performance at STC, Standard Testing Conditions: 1000 W/m<sup>2</sup>, AM 1.5, cell temperature 25° C

### Dimensions and weight

Dimensions L x W x H (mm)	1650 x 630 x 35
Weight kg	2.7

### Thermal properties

TK Pmpp %/K	-0,38
TK Uoc %/K	-0,28
TK Isc %/K	0,057
NOCT °C	46 ± 2

### Used materials

Cell technology	Sunpower, monocrystalline with back contact
Connection cable	5 m, 2 x 1.5 mm <sup>2</sup>

**Scope of delivery:** Cable charge controller Fox-062, 6 A

### More technical data

Reverse current IR	12 A
Measuring accuracy Pmpp at STC	-5%/+10 %
Operating temperature range	-40°C to +85°C







**Solutions  
for any  
application**



# SOLARA®

module. komponenten. systeme

## EVERYTHING FROM ONE SOURCE

Whether road sign, radio mast, navigation mark or a hospital at the end of the world. No matter what application, electricity is becoming increasingly important and SOLARA solar systems provide just that energy. Through many years of experience, our engineers can plan exactly the system size your application needs. With us you get everything from one source. Solar modules, electronics, batteries – everything individually planned and adapted to the needs.

## PROVEN QUALITY FOR OVER 20 YEARS

Our customers are satisfied because we deliver long-lasting and reliable solar systems. Our systems always use the latest technologies and materials to make our systems better and more powerful.

## STRONG BRANDS

In order to meet professional demands professional products are required. Our suppliers are not only leaders in their respective field, also our partners since many years.

Behind our strong brands is always plenty of experience, short communication channels, quick help and fast availability - usually directly from stock.



**MORNINGSTAR**  
corporation



**SONNENSTROM**  
FABRIK



**HOPPECKE**  
POWER FROM INNOVATION



**victron energy**  
BLUE POWER



**phocos**



**STUDER**



**HIS**  
we connect solar energy



**Renusol**  
Europe GmbH



**Rolls**

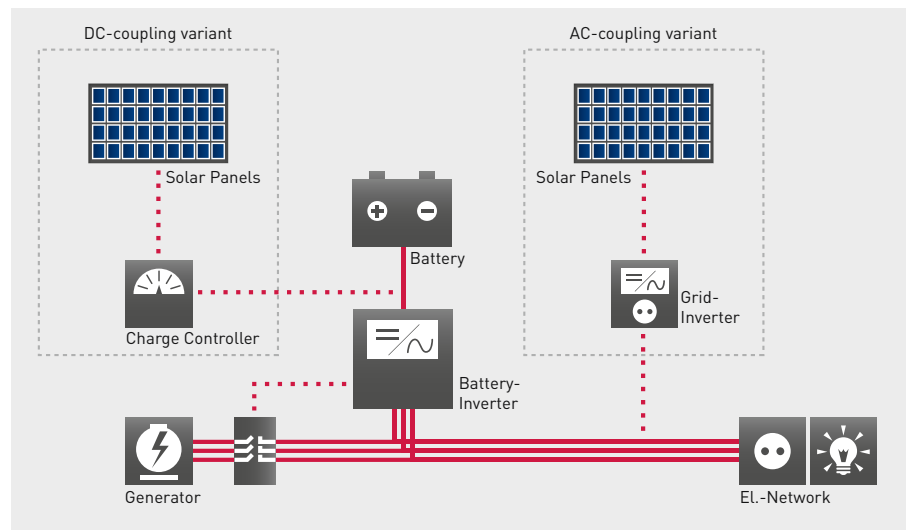
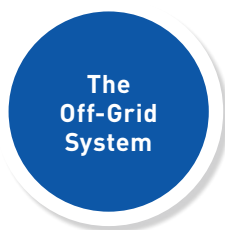
# Independent energy supply

## INDEPENDENCY

A functioning power grid is not always available, even if it seems quite natural. Bad or inadequate infrastructure is the most common cause. It looks even more difficult if there is no power grid at all, but you still need a reliable power supply: Here, solar technology is often the only solution. **SOLARA offers such solutions:** individually planned, adapted to the needs, a properly functioning system with solar power where it is needed.

## DEVELOPMENT

Around two billion people on earth have no access to reliable energy supply. However, especially in remote regions, the availability of electricity is one of the most important keys to sustainable development. Solara photovoltaic power plants and components are specifically designed for use in these areas: **reliable and very powerful.**



## PLANNING A SYSTEM – THE SOLARA PLANNING SHEET

To be able to serve a purpose reliably, they have to be planned precisely and adapted to the specific needs, the site and the consumer's behaviour.

Such systems include on the one hand energy sources, such as a generator, a solar array, a wind turbine or a combination of different sources to generate the required energy locally and on the other hand, the devices (battery charger and inverter) to store the energy locally in batteries and to supply the consumers with AC voltage.

Use our detailed planning sheet for your system enquiry. It is made to retrieve all relevant information and maps the future system, its components and properties clearly. So we can create you an optimal offer.

Also available as a download at [www.solara.eu](http://www.solara.eu)



# Projects with SOLARA



**Power supply of a measuring station for speed control**

PV-system size	3 kW
Products	Sonnenstromfabrik glass/glass modules, Studer, BAE batteries
Location	Drammetal, Germany



**Power supply of a mobile chicken shed**

PV-system size	2,2 kW
Products	Sonnenstromfabrik glass/glass modules, Studer, Hoppecke AGM batteries
Location	Lower Saxony, Germany



**Back-up power supply**

PV-system size	5,7 kW
Products	Centrosolar Excellent modules, SMA Sunny Backup, Hoppecke batteries
Location	German Embassy, Vientiane, Laos



**Power supply to a hospital**

PV-system size	9,1 kW
Products	Centrosolar Professional modules, SMA Sunny Island, Rolls batteries
Location	Irrawaddy Delta, Myanmar



**LED road sign**

PV-system size	640 W
Products	Solara S-Series modules, power electronics, network connectivity
Location	Motorway, Germany



**Tsunami early warning system**

PV-system size	500 W + 600 W
Products	Solara M-Series, S-Series modules
Location	Indian Ocean, Indonesia





# Powerful solar modules

## Quality from the Sonnenstromfabrik

The Sonnenstromfabrik is the most modern and qualitatively leading manufacturer of solar modules in Europe. The module factory has established itself as a quality leader over the past 25 years. The particular strength of the Sonnenstromfabrik are their, compared to conventional solar modules, much more durable glass/glass modules of the series „Excellent Glass/Glass“.

## The Features

- Anti-reflection glass ensures high yields
- Positive power classification
- 100 % PID-safe
- Ballast up to 18,000 Pa (for glass/glass modules)
- Large, waterproof junction box
- Salt-spray-resistant
- Ammonia-resistant
- Hail-resistant

## Glass/glass modules, 70/60/42 cells

Type	Modul power (W)	No. of cells	Dimensions (L x W x H in mm)	Weight (Kg)
Excellent	280 - 325	60	1700 x 1000 x 35	22.0
Solara S-Serie Vision	110	36	1250 x 550 x 35	9.4
Solara S-Serie Vision	190	42	1500 x 680 x 35	15.0

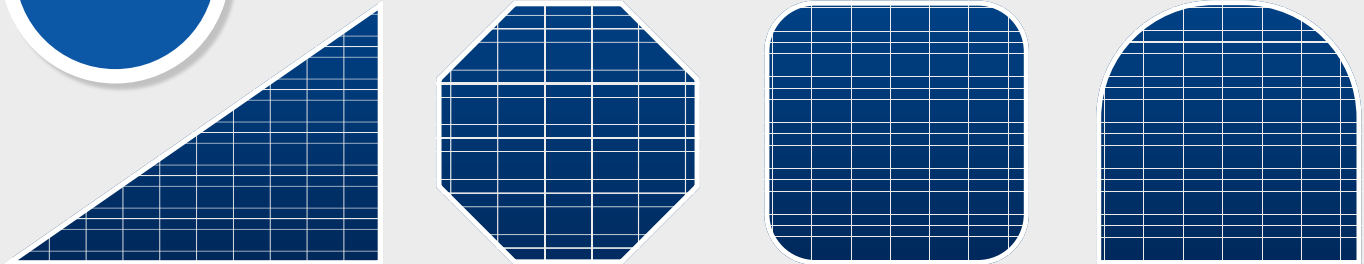
## Glass/foil modules, 72/60/36 cells

Type	Modul power (W)	No. of cells	Dimensions (L x W x H in mm)	Weight (Kg)
Excellent	335 - 370	72	2000 x 1000 x 35	22.5
Excellent	280 - 325	60	1700 x 1000 x 35	19.0
Solara S-Serie	80	36	1500 x 350 x 35	7.9
Solara S-Serie	120	45	1250 x 550 x 35	6.6
Solara S-Serie	190	36	1500 x 680 x 35	10.5





Everything  
is possible.



## Individual solutions

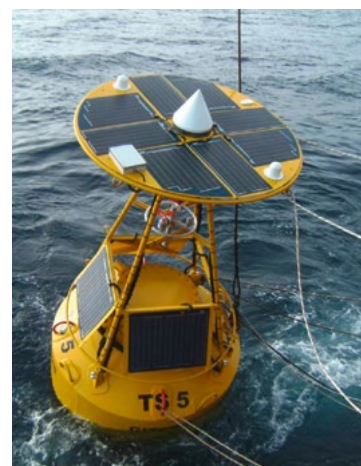
A variety of applications such as e.g. parking ticket machines, measuring stations, emergency telephones, street lighting, telecommunications and much more, often need to be supplied with autonomous power. Either there is no electricity available or the connection to the power grid is too expensive or complicated. Depending on the product a perfectly suitable solar module for this application is required so that it can be easily integrated into the existing application without further modification.

This is the strength of Solara, because we can manufacture any solar module exactly to your specifications. Whether square, triangular or round, small or large, all module outputs from 1 Watt for cigarette vending machines to 300 Watts for telecommunication systems are possible here and that even in smaller quantities.

You give us the desired dimensions and power, we design the optimal module and make you an appropriate offer based on the requested quantities. After your approval, the solar module can be produced and delivered promptly.

### What is possible?

- Any shape
- Power ranges from 1 watt to 370 watts
- Use of polycrystalline, monocrystalline and as well as back contact cells
- Module construction glass/foils, glass/glass, foil/metal or foil/plastic
- Semiflexible modules
- Covered cell connectors
- Transparent, white or black backsheet
- Frame colour silver or black
- Frameless as a laminate
- Junction box or direct cable outlet





For the  
highest  
demands.



SunSaver MPPT



ProStar MPPT with Display



TriStar MPPT 30/45/60



EcoBoost with Display

## MorningStar charging controllers

### For professionals who wants more

Highest efficiency and high yields with MorningStar MPPT TrackStar technology. Solar voltages of 150 V or 600 V allow the use of large high-performance solar modules. In off-grid, telecommunication, oil, gas, lighting, monitoring and traffic systems, MPPT controllers are mainly used. The various network and communication options make them versatile.

### The features

- Max. solar open circuit voltage 150 V and 600 V
- Very good yields thanks to TrakStar MPPT technology
- For all battery types, lithium-ready
- Automatic 12/24/48 V detection
- For large systems with up to 60 A solar current
- With temperature sensor and depth discharge protection
- Many network and communication options
- MODBUS protocol
- 200-day data logger
- Programmable via MS-View software
- All fuses electronically
- Robust design without fan
- Top quality with 5 years guarantee

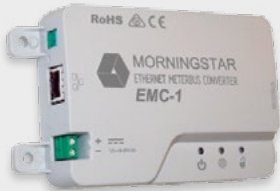
Type	Modull power (W)	Current (A)	System voltage (V)	Meter
SunSaver MPPT 15L	200 - 400	15	12/24	LED
ProStar MPPT 25	350 - 700	25	12/24	LED
ProStar MPPT 25M	350 - 700	25	12/24	LCD
ProStar MPPT 40	550 - 1100	40	12/24	LED
ProStar MPPT 40M	550 - 1100	40	12/24	LCD
TriStar MPPT 30	400 - 1600	30	12/24/48	LED
TriStar MPPT 45	600 - 2400	45	12/24/48	LED
TriStar MPPT 60	800 - 3200	60	12/24/48	LED
TriStar MPPT 60M	800 - 3200	60	12/24/48	LCD

Type	Modull power (W)	Current (A)	System voltage (V)	Meter
EcoBoost MPPT 20	300 - 600	20	12/24	LED
EcoBoost MPPT 20M	300 - 600	20	12/24	LCD
EcoBoost MPPT 30	400 - 800	30	12/24	LED
EcoBoost MPPT 30M	400 - 800	30	12/24	LCD
EcoBoost MPPT 40	560 - 1120	40	12/24	LED
EcoBoost MPPT 40M	560 - 1120	40	12/24	LCD

**PROVED**  
**SOLARA®**  
**QUALITY**

**5 year  
product  
guarantee\***





EMC-1



MeterHub



TS-M-2



RD-1

# MorningStar accessories

The various accessories from Morningstar provides professional extension of the solar system. Communication adapters enable data transfer, even over the Internet. Displays and hubs, visualize many devices in one place, a relay driver to control external devices and other accessories just a good and clean installation.

## Accessories

Type	Function	Compatible to
RM-1	Remote LCD display for several system parameters, incl. 10 m connection wire	SunSaver MPPT, ProStar MPPT
TS-M-2	Build-in meter for system parameter	TriStar MPPT
TS-RM-2	Remote LCD display for system parameters, incl. 30 m connection wire	TriStar MPPT
RTS	Temperature sensor with 10 m connection wire	ProStar MPPT, TriStar MPPT, EcoBoost
EMC-1	Ethernet Meterbus converter	ProStar MPPT, TriStar MPPT,
HUB-1	Enables multiple controllers to share one display or relay driver	ProStar MPPT, TriStar MPPT,
MSC-1	Converter for RJ-11 to RS232 communication	SunSaver MPPT, ProStar MPPT
RD-1	Logic module for system controll functions	ProStar MPPT, TriStar MPPT
UMC-1	Converter for RJ-11 to USB 2.0 communication	SunSaver MPPT, ProStar MPPT
DIN-1	DIN-rail holder	SunSaver MPPT
WireBox	Enclosure accessory for ProStar MPPT	ProStar MPPT





XTM 1500-12



VarioTrack



AJ 2100-12



RCC-02

# Studer

## Professional charging controller and inverter

The Swiss company is one of the world's leading manufacturers of sine wave inverters and battery chargers for photovoltaic systems. The remotely controllable combi devices of the Xtender series are extremely versatile. They combine i.a. inverter, battery charger, switching mechanism and the support of external AC sources in just one device.

### The features

- Parallel and three-phase interconnection of up to nine Xtenders
- High performance and exceptional overload capacity
- Support of AC power sources with Smart Boost
- Suitable for backup systems
- Fast switching times (up to 15ms max.)
- Battery charger with programmable charging strategies and charging voltages
- Remote access via LAN, GMS and SMS possible
- Independently programmable auxiliary contacts
- Real-time clock for storing events and for programming the auxiliary contacts

## Sine-wave inverter and battery charger

Type	Power (VA)	Charging current (A)	System voltage (V)	Specialty
Xtender XTS Inverter/Charger	900 - 1400	12 - 35	12/24/48	IP54 housing
Xtender XTM Inverter/Charger	1500 - 4000	30 - 100	12/24/48	-
Xtender XTH Inverter/Charger	2500 - 8000	100 - 160	12/24/48	-
AJ	275 - 2500	-	12/24	Inverter only

Several accessories available such as control panels, remote monitoring (GSM, LAN, SMS), external fans and much more. For more information and details, please contact us.

## Solar-charge controller

Type	Solar power (W)	Solar power (Voc)	Charging current (A)	System voltage (V)	Specialty
VarioTrack	1000 - 4000	80 - 150	65	12/24/48	IP54 housing
VarioTrack	1250 - 5000	80 - 150	80	12/24/48	IP54 housing
VarioString	4200	600	70	48	IP54 housing
VarioString	7000	900	120	48	2 MPPTs

Several accessories available such as control panels, remote monitoring (GSM, LAN, SMS), external fans and much more. For more information and details please contact us.

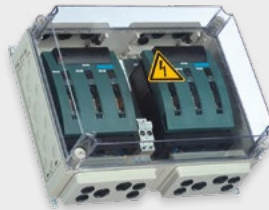




Quattro



MultiPlus



BatFuse x.2



BatFuse x.1

Kabel 16/35/70 mm<sup>2</sup>

# Victron

## Best price and power performance

With over 43 years of experience, Victron Energy enjoys an unrivalled reputation for technical innovation, reliability and quality. Victron is one of the world leaders in the field of independent power supply. The wide product range includes i.a. sine inverter and inverter/charger combinations, battery chargers, DC/DC converters, transfer switches, batteries, solar charge controllers and many more innovative solutions.

Type	Power (VA)	Charging current (A)	System voltage (V)	Specialty
Quattro	3000 - 15000	70 - 200	12/24/48	-
MultiPlus Inverter/Charger	800 - 5000	16 - 120	12/24/48	-
MultiPlus Inverter/Charger	500 - 1200	6 - 50	12/24/48	-
Phoenix Inverter	250 - 800	-	12/24/48	Inverter only

Several accessories available such as control panels, battery monitors, remote monitoring and much more.

For more information and details, please contact us.

## Accessories

These accessories are needed in almost every system. High quality fuses, rugged cables - all professional components for a clean and safe installation.

Type	Function
MC4 PV Stick	MC4 connectors, DIY, tool-free, set with plus and minus
Cable 1x4	Installation cable for outside use, Typ H1Z2Z2-K, size 1x 4 mm <sup>2</sup> , by meter
Cable 1x6	Installation cable for outside use, Typ H1Z2Z2-K, size 1x 6 mm <sup>2</sup> , by meter
Cable 16 mm <sup>2</sup>	Connection cable with cable lug, length 4 m
Cable 35mm <sup>2</sup>	Connection cable with cable lug, length 2 m or 4 m
Cable 70 mm <sup>2</sup>	Connection cable with cable lug, length 3 m or 6 m
Batfuse 1.1	NH00-Fuse up to 2x 80 - 160 A, for 1 Inverter, 3 DC Inputs, IP65
Batfuse 1.2	NH00-Fuse up to 6x 80 - 160 A, for 3 Inverter, 6 DC Inputs, IP65
Batfuse 2.1	NH01-Fuse up to 2x 125 - 250 A, for 1 Inverter, 3 DC Inputs, IP65
Batfuse 2.2	NH01-Fuse up to 6x 125 - 250 A, for 3 Inverter, 6 DC Inputs, IP65

PROVED

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QUALITY





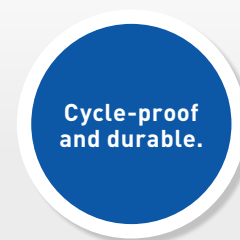
OPzV



OPzS



Battery rack



Cycle-proof  
and durable.



Aqua Gen

## Hoppecke gel and liquid batteries

### OPzS/OPzV batteries

Since 1927 the company develops and produces "Made in Germany". Longevity due to high number of cycles (up to 3,000 cycles at DoD 50%) are one of the characteristics of these stationary batteries.

### The features

- Maximum cycle life and longevity
- Standards IEC 61427, DIN 40742
- Up to 3,000 cycles at DoD 50%
- M8 thread for cable connections
- Highest resistance to mechanical stresses by reinforced, impact-resistant polypropylene housing

### sun|power VR L (OPzV)

Description	Dimensions	Capacity c100
12 V bloc, W x H 205 x 383 mm	Lenght: 272, 380 mm	70, 130, 200 Ah
6 V bloc, W x H 205 x 383mm	Lenght: 272, 380 mm	270, 330, 400 Ah
2 V cell, width 208 mm	L x H: 105 x 420, 126 x 420, 147 x 420, 126 x 535, 147 x 535, 168 x 535, 147 x 710 mm	287, 359, 430, 478, 574, 670, 847 Ah
2 V cell, width 193 mm	L x H: 215 x 710 mm	990, 1130 Ah
2 V cell, width 235 mm	L x H: 215 x 710 mm	1271, 1412 Ah
2 V cell, width 277 mm	L x H: 215 x 710, 215 x 710, 215 x 855 mm	1553, 1695, 1955 Ah
2 V cell, width 400 mm	L x H: 215 x 815 mm	2281, 2607 Ah
2 V cell, width 490 mm	L x H: 215 x 815 mm	2933, 3258 Ah
2 V cell, width 580 mm	L x H: 215 x 815 mm	3584, 3910 Ah
1-step or 2-step racks available on request		

### sun|power V L (OPzS)

Description	Dimensions	Capacity c100
12 V bloc, W x H 205 x 383 mm	Lenght: 272, 380 mm	70, 130, 200 Ah
6 V bloc, W x H 205 x 383mm	Lenght: 272, 380 mm	270, 330, 400 Ah
2 V cell, width 208 mm	L x H: 105 x 420, 126 x 420, 147 x 420, 126 x 535, 147 x 535, 168 x 535, 147 x 710 mm	280, 350, 420, 520, 620, 730, 910 Ah
2 V cell, width 193 mm	L x H: 215 x 710 mm	1070, 1220 Ah
2 V cell, width 235 mm	L x H: 215 x 710 mm	1370, 1520 Ah
2 V cell, width 277 mm	L x H: 215 x 710, 215 x 710, 215 x 855 mm	1670, 1820, 2170 Ah
2 V cell, width 400 mm	L x H: 215 x 815 mm	2540, 2900 Ah
2 V cell, width 490 mm	L x H: 215 x 815 mm	3250, 3610 Ah
2 V cell, width 580 mm	L x H: 215 x 815 mm	3980, 4340, 4700 Ah
1-step or 2-step racks, re-combination tool, acid trays available on request		



AGM



TR-92



TR-25

Efficiency and durability.

## Hoppecke AGM batteries

### Compact and powerful

Sealed lead-acid battery, almost maintenance-free due to Absorbent-Glass-Mat technology. The ideal battery for small and medium-sized cyclic applications.

### The features

- Maintenance-free due to AGM technology
- 3,000 cycles at 50% DoD
- Ideal for street lighting or small technical installations

### sun|power VR M (AGM)

Description	Dimensions	Capacity c100
12 V bloc, W x H 177 x 190 mm	Length: 232, 267, 303 mm	56, 69, 76, 88 Ah
12 V bloc, W x H 177 x 230 mm	Length: 344, 498 mm	101, 146 Ah
12 V bloc, W x H 170 x 275 mm	Length: 344, 242, 308 mm	125, 186, 247 Ah
6 V bloc, W x H 170 x 275 mm	Length: 242, 308 mm	186, 247 Ah
2 V bloc, L x H 183 x 310 mm	Width: 155, 226 mm	430, 620 Ah
2 V bloc, L x H 182 x 310 mm	Width: 304, 391 mm	890, 1120 Ah

## Trojan lithium battery

The Trillium Lithium-Ion batteries can be used stationary or in mobile applications up to 48V system voltage. Trillium batteries differ in performance and size a lot compared with other products in the market. With the already integrated and state-of-the-art safety and regulation electronics, these batteries have a much longer life span and higher cycle rate, compared with standard batteries.

### The features

- Extended battery life
- Plug-and-play solution
- Comprehensive protection features
- Regulation, cell balancing and temperature monitoring integrated
- For retrofit and extension use

### Lithium expansion battery

Type	Capacity (Ah)	System voltage (V)	Dimensions (mm)	Weight (Kg)
TR 12.8-92 Li-Ion	92	12	258 x 168 x 216	12
TR 12.8-110 Li-Ion	110	12	307 x 167 x 219	14
TR 12.8-92 Li-Ion	25	12	197 x 132 x 171	5

Your specialized dealer



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