

CHARGE ONE BATTERY TO CAPACITY

SOLARA®
by Phocos

SOLARA® by Phocos Charge Controllers

Quality "Engineered in Germany"

SOLARA controllers charge your battery according to its type and voltage, with a target charge value that is optimised continually.

Our products provide excellent reliability, state-of-the-art technology and easy installation at a low cost. An optional load output can be used to protect your battery against deep discharging (all models except SR60UL).

Prod. no.	Panel output up to	Display		
SR60UL	60 Wp, 4 A	LED	Surge protection System voltage 12 V	\$27
SR135TL*	135 Wp, 8 A	LED	Surge protection Low voltage disconnection System voltage 12/24 V Battery type selector	\$48
SR170CX*	170 Wp, 10 A	LCD**	Surge protection Low voltage disconnection System voltage 12/24 V Battery type selector	\$62
SR340CX*	340 Wp, 20 A	LCD**	Surge protection Low voltage disconnection System voltage 12/24 V Battery type selector Data logger over 1 year	\$86

* Automatic system voltage detection

** with battery status icon

Genasun MPPT Controllers.

GV-5	Up to 5 amps, 65 watts	\$75
GV-10	Up to 8 amps, 140 watts	\$170
GV-Boost	Up to 8 amps, boost to 24v, 36v, or 48v.	From \$125



SR60UL



SR135TL



SR170CX / SR340CX

SOLARA® Remote Displays

The control panels for your PV system

Remote displays can be connected to SOLARA® SR135TL, SR170CX and SR340CX controllers and ship with a two-metre connection cable.

For many users the display of the solar panel current is of interest. This shows how much the solar panels are able to charge at a given moment - in contrast to the charging current, i.e. the currently possible charging current which depends on the charge condition of the battery.

Prod. no.	Display of	for controller types	
SR/CMM	Voltage 0-35 V, current 0-25 A	SR135 TL	N/A
SR/CXM	Voltage, current, last 7 days of data logger entries	SR170/340CX	\$62

Deck Glands

DD1/W - For one cable	\$12
DD2/W - For two cables	\$15
DD4/PG - For three cables	\$32



SR/CMM



SR/CXM



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What's Watt - Solar FAQ's

Q: How much solar power do I need for my boat?

A: That depends on what you need solar power for. If it is just to keep a battery topped up while you are absent from your boat, with nothing running except the occasional bilge pump operation, then you can get by with a single, small panel and an inexpensive controller. But if you want to be as energy independent as possible, and are running things like lighting, refrigeration, and instruments, then you will need to install as much solar power as your budget and available space will allow.

Q: How are solar panels rated?

A: Most, but not all, solar panels are tested and rated at Standard Test Conditions (STC). These conditions are; 1,000 watts/sq meter solar energy, 25 deg C (77 deg F) temperature, and an air quality level. It is very doubtful if any panel will see this combination of conditions often in the real world, but because it is theoretically possible, then cabling and other components must be sized accordingly to be able to safely handle the maximum possible power output.

Q: How do I know that a 100 watt panel from Brand X will give the same output as a 100 watt panel from Brand Y?

A: Only if both panel manufacturers publish performance figures obtained at Standard Test Conditions (STC) can you be confident that both panels are capable of similar performance.

Q: As watts = volts x amps, then a 100 watt 12v solar panel should produce over 8 amps at 12v, but the specifications show only 5.5 amps. How is this?

A: Solar panels produce a higher voltage output than 12v, typically at least 17v, and often considerably higher. That is why a controller is necessary to reduce the voltage to a safe level that will not damage batteries and equipment. The specifications show the current and voltage at the maximum or peak power that was recorded under STC conditions.

Q: What type of controller should I use?

A: There are two types of controller: simple voltage-dropping models with PWM (Pulse Width Modulation), and those using Maximum Power Point Tracking (MPPT) technology. The voltage dropping models are inexpensive but give lower power output than MPPT models, especially under partially shaded or low-light conditions. MPPT technology basically looks for the best mix of voltage and current to give the highest possible power output.

Q: How will shading affect the output of my solar panel?

A: A typical solar panel comprises of a number of cells, usually 32 or more, connected electrically in a series string, and if the output of one cell is compromised then it will affect the output of the complete panel. MPPT controllers give much higher power outputs than voltage-dropping models under partially shaded conditions, typically 30% to 35% higher.