



Solar Charging with a Difference



Freedom, independence and boating belong together. Solar power is truly what enables freedom and independence at sea. A properly designed solar power system will balance part of your electricity consumption or make you completely self-sufficient if you like. A boat's solar power system supports the operation of vital navigation and communication instruments as well as other electronic equipment.

Reliable Power from the Sun

Since the early days of solar power, the technology has developed very favourably. Efficiency has increased while prices have gone down. Solar electricity is today a reliable and natural source of electricity where grid connection is not available.

Many of the most well known manufacturers of marine electronics (fridges, water makers etc.) recommend solar electricity for powering their range of low power consuming equipment. Whereas the best electronics manufacturers develop their products to minimise electricity consumption, Naps is developing products that maximise the charging power available from the sun.

With a Naps solar power system, the quality of boating can be greatly improved.

Combination of the NP-RSS solar modules and Naps MaxPower will maximize power production (A) per area (m²).



A solar electricity system on your boat guarantees the function of your equipment and appliances. Throw your anchor in any port and enjoy life!

High Performance Marine Grade Solar Modules

The Naps marine grade solar module is designed especially for mounting on boats. Our NP-RSS series modules withstand the harshest environments and continue to perform efficiently due to the fully sealed laminate and their stainless steel construction.

The quality of these modules incorporates the latest developments in module construction. The low profile and integral mounting holes make them particularly suitable for mounting on boat decks, even when slightly curved (max 2cm/m). Cells are protected from dirt, moisture and impact by a tough fluoropolymer front film.

The steel covered junction box provides sealed cable protection and also includes wired-in bypass diodes that minimise the risk of module damage from partial module shading which is typical on board.

The NP-RSS modules convert both direct and diffuse light efficiently. The cells are chemically coated for reduced reflection.

The Naps NP33GK and various standard modules are suitable for purposes other than deck mounting, using separate mounting structures.

Optimal Solar Charging with Naps MaxPower

To get the full benefit of your solar module, you should connect it to the battery via the Naps MaxPower charge controller. Naps MaxPower has three charging modes; maximum power point tracking (MPPT), float and boost charging.

When the battery is not fully charged, Naps MaxPower operates in MPPT mode and makes sure that the power generated by the panel is fully used to charge the battery. Compared to standard charge controllers, the benefit in charging current is + 45% when the battery charge level is low, and + 8% when the battery is nearly full. Briefly, Naps MaxPower acts as an electrical “gear-box”, helping to get the highest possible power from your solar module at all times.

When the battery is full, Naps MaxPower operates in float mode to maintain the battery charge level and prevent normal battery self-draining.

If the battery has been deeply discharged, Naps MaxPower boost charges the battery to restore its full capacity so that it continues to perform well.

In addition to the advanced charging features, Naps MaxPower prevents the battery from overcharging as well as nighttime leakage from the battery to the module.

The features of Naps MaxPower will give you the full benefit of your solar module and provide for long battery lifetime.

Naps NC5 and NC15 for Standard Charging

If your charging need is less than the full capacity of your solar module, a standard charge controller will meet your need. Naps NC5 and NC15 is designed for small mobile 12-volt systems such as boats and caravans. Like Naps MaxPower, Naps NC series controllers feature additional boost charging to restore deeply discharged batteries for continued good performance. Both controllers prevent the battery from overcharging as well as nighttime leakage from the battery to the solar module. NC15 controller has additionally an illustrative display.



Naps MaxPower acts as an electrical “gear-box”, and utilises the highest possible power from your solar panel to charge your batteries.



Naps NC5 and NC15 controllers are a good and reliable choice for standard charging. NC15 has additionally an illustrative display.



Power Specifications of Solar Modules

	NP22RSS	NP33RSS	NP44RSS	NP33GK
Maximum power (+ / - 5%) Wp	22	33	44	33
Current A (normal)	1.3	1.9	2.5	1.9
Current A to battery with Naps MaxPower*	1.7	2.6	3.4	2.6
Voltage V (at maximum power)	17.5	17.2	17.5	17.2
Short Circuit Current A	1.4	2.0	2.7	2.0
Open Circuit Voltage V	21.5	21.5	21.5	21.5
Dimensions (LxWxD) mm	596x357x4	832x357x4	670x596x4	772x341x34
Weight kg	3.15	4.40	5.80	3.80

*At a battery charge level of 12 V the benefit is approx. 25% and varies between 8% and 45% depending on the battery charge level. The above values refer to standard test conditions of 1000W/m2 solar irradiance, 25°C cell temperature, Air Mass 1.5.

Many Ways of Installation

The installation procedure is easy and there are almost as many ways to install the system as there are boats. The most usual ways are to screw or glue the module (NP-RSS modules) to the deck or to use a special structure for mounting anywhere above the deck (standard modules). From a power generation viewpoint, the module's maximum exposure to sunlight is the most essential thing to keep in mind.

Quality Products from an Established Supplier

Naps has over 20 years of experience in designing reliable, high-quality solar power systems for demanding circumstances. Since its first delivery in 1981, the Company has delivered over 200,000 solar power systems to more than fifty countries all over the world.

Our commitment is strong and international. Our operations focus on customer service, advanced technology, careful design, quality of work and the best of raw materials, proven by the ISO-9001:2000 quality certificate acquired.

Power Specifications of Charge Controllers

	Naps MaxPower	Naps NC5	Naps NC15
Nominal System Voltage V	12	12	12/24
Maximum Input Power W	130	85	180/360
Maximum Input Voltage V (Panel Open Circuit Voltage)	45	25	25/50
Maximum Input Current A (Panel Short Circuit Current)	7	5	15
Maximum Output Current A	10	5	15
Maximum Float Charge V Voltage at +25°C	14.1	13.9	13.9
Maximum Boost Charge V Voltage at -25°C	15.4	15.3	15.3
Dimensions (LxWxD) mm	145x110x50	146x90x33	187x96x44
Weight kg	0.7	0.16	0.35

Please visit us at www.napssystem.com for more information.

