

SB3000i – Easy to use, set up and packed full of features not found in other controllers.

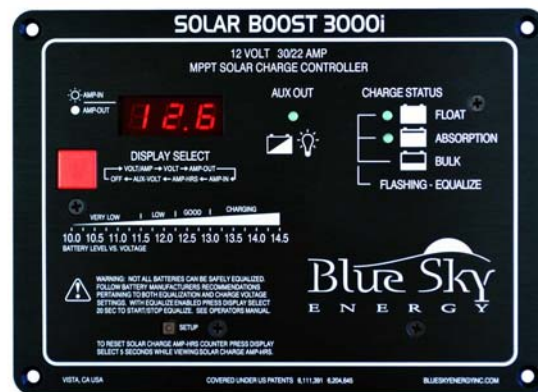
Blue Sky Energy's new Solar Boost™ 3000i solar charge controller charges 12V batteries at up to 30 amps from conventional 36 cell 12V PV modules. Patented MPPT technology operates the modules electrically in a manner that harvests all available PV power and can increase charge current up to 30% or more compared to conventional PWM type controllers.

The voltage step-down operation of the MPPT power converter also allows use of higher voltage lower cost 60 cell grid-tie PV modules at up to 22 amps of output current. The process of converting the much higher 60 cell input voltage down to battery voltage may produce a charge current increase approaching 200%.

Solar Boost 3000i's sophisticated 3-stage charge control plus auto/manual equalization optimally charges flooded, GEL and AGM lead-acid chemistry batteries. A user configurable auxiliary output is also provided which can serve as either a 20 amp LVD load controller, 20 amp lighting controller with LVD, or 2 amp auxiliary battery charger for a second battery such as the engine start battery in an RV.

The low power LED display combines excellent readability with very low power consumption, includes an automatic night time dimming feature and may be turned off completely if desired. The high accuracy display shows battery voltage, input & output current, auxiliary battery voltage, and computes total solar charge amp-hours produced. To provide optimal charge control for various battery types all digital setpoints for charge control and load control are user adjustable.

Solar Boost 3000i may also operate as an IPN Network Master controlling up to 7 remote Blue Sky Energy IPN compatible charge controllers such as the SB3024iL. Blue Sky Energy's IPN Network allows multiple charge controllers to communicate with each other and coordinate their activities to charge the battery as a single coordinated charging machine. All networked controllers display through the SB3000i's digital display and may share a battery temperature sensor, IPN-ProRemote display for high accuracy battery system monitoring, or Universal Communication Module (UCM) for remote access over the Internet.

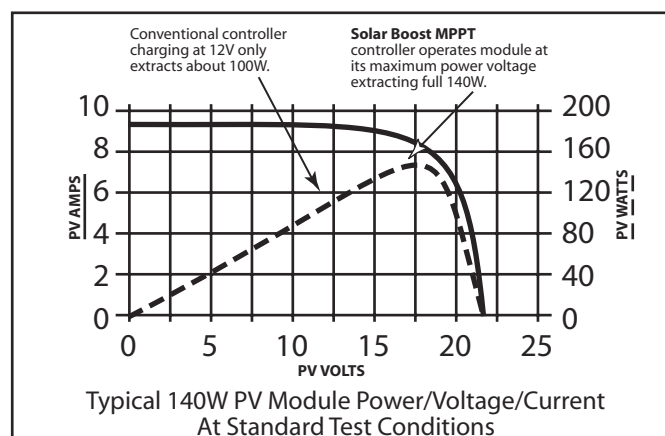


- Maximum Power Point Tracking (MPPT) increases charge current up to 30% or more compared to conventional charge controllers
- Accepts up to 400W of 36 cell PV modules or 290W of higher voltage 60 cell grid-tie PV modules
- 3-Stage charge control with auto/manual equalization optimally charges flooded, GEL and AGM batteries improving battery performance & life
- Multifunction low power LED digital display with automatic night time dimming provides excellent readability
- Auxiliary output serves as 2 amp auxiliary battery charger or 20 amp load/lighting controller
- Lighting controller provides separate PostDusk & PreDawn timers plus variable middle of the night PWM dimming
- IPN network interface coordinates multiple charge controllers & shares optional battery sensor and IPN-ProRemote display
- Optional Universal Communication Module (UCM) allows remote access over the Internet.
- Anodized face plate and conformal coated electronics resists corrosion
- 5-Year limited parts & labor warranty

How Do Solar Boost™ Controllers Increase Charge Current?

Solar Boost charge controllers cannot create power from where it doesn't exist but rather harvest power that would have been left behind by a conventional controller. When the battery is discharged a conventional controller simply connects the PV module to the battery. When the 140W module in this example is connected directly to a battery charging at 12 volts its power production is artificially limited to about 100 watts. This leaves 40 watts or nearly 30% of the available power behind.

Patented MPPT technology in the SB3000i operates in a very different fashion. The SB3000i continually computes the module's maximum power voltage, in this case 17 volts. It then operates the module at its maximum power voltage to extract maximum available power. The additional power extracted from the module is then provided to the battery in the form of increased charge current. In cool comfortable temperatures most applications see about a 10 - 20% increase, with an increase of 30% or more easily achieved in freezing temperatures with a highly discharged battery.



The high efficiency voltage step-down action of the MPPT power converter also allows the efficient use of much higher voltage 60 cell PV modules. Since the voltage delivered by 60 cell modules is much higher than battery voltage charge current increase may approach 200%.

SPECIFICATIONS	Solar Boost 3000i
Nominal Battery Voltage	12 VDC
Automatic Output Current Limit	30.0A with 36 cell PV input • 22.0A with 60 cell PV input
Maximum PV I_{SC} / Power	24.0A / 400W with 36 cell PV input • 11.8A / 290W with 60 cell PV input
Maximum Battery & PV Voltage	50.0VDC absolute maximum ^① (Recommend maximum PV V_{OC} at STC $\leq$ 40.0VDC)
Standby Power Consumption	30mA typical
Charge Algorithm	3-stage Bulk/Absorption/Float • Plus Auto/Manual Equalization
Power Conversion Efficiency	97% typical, 36 cell modules delivering 24A
Absorption / Float / EQ Voltage	14.4V / 13.2V / 15.2V ^②
Display Range & Accuracy	Bat / Aux voltage 30.0V $\pm$ 0.5% • PV voltage 55.0V $\pm$ 0.5% • Input / Output current 35.0A $\pm$ 0.5%
Auxiliary Output Functionality	Single output field configurable as either: 20A load controller –or– 2A auxiliary battery charger
• Auxiliary Battery Charge	2 amp typical, same charge voltage as primary battery
• LVD Load Control	ON @ $\geq$ 12.6V / OFF @ $\leq$ 11.5V ^② , or based on battery amp-hours from full ^③
• Lighting Control w/LVD & PWM Dimming	Separate Post-Dusk and Pre-Dawn timers (0.5 – 20.0 hours ^②) Middle Of The Night 100Hz PWM dimming (10% increments ^②)
Temperature Compensation	Optional battery temp sensor, -5.00mV/ $^{\circ}$ C/cell (-0.00 – -8.00mV/ $^{\circ}$ C/cell ^②) • sensor range -60 to +80 $^{\circ}$ C
Communication	IPN Network Master allowing control of up to 7 additional IPN based controllers. Supports IPN-Remote and IPN-ProRemote displays, and Universal Communication Module (UCM) for remote Internet access.
Dimensions	6.4" (16.3cm) W x 4.6" (11.7cm) H x 2.2" (5.6cm) D
Environmental	-40 – +45 $^{\circ}$ C, 10 – 90% RH non-condensing

As a part of our continuous improvement process specifications are subject to change without prior notice

- ① Exceeding this limit will damage the unit and void the warranty.
- ② Defaults shown, all settings user adjustable.
- ③ With IPN-ProRemote

Available From:

Part Numbers & Shipping Weight

Solar Boost 3000i.....	SB3000i.....	1.5 lbs..	.68kg
IPN-ProRemote with shunt.....	IPNPRO-S	1.8 lbs.	.82kg
IPN-ProRemote w/o shunt	IPNPRO	1 lbs ...	.45kg
500A / 50mV current shunt	506-0003-01 ...	1 lbs ...	.45kg
IPN-Remote	IPNREM.....	1 lbs ...	.45kg
Battery Temp. sensor, 20'	930-0022-20 ...	1 lbs ...	.45kg
Universal Com. Module.....	UCM.....	1 lbs ...	.45kg