

**PRELIMINARY**

**SUNNY BOY 3000TL-US / 4000TL-US / 5000TL-US**



SB 3000TL-US-22 / 4000TL-US-22 / 5000TL-US-22



**Certified**

- UL 1741 and 1699B compliant
- Integrated AFCI meets the requirements of NEC 2011 690.11

**Innovative**

- Emergency Power Supply provides daytime power in case of grid outage

**Powerful**

- 97% maximum efficiency
- Wide input voltage range
- Shade management with OptiTrac Global Peak MPP tracking

**Flexible**

- Two MPP trackers provide numerous design options
- Extended operating temperature range

## **SUNNY BOY 3000TL-US / 4000TL-US / 5000TL-US**

Setting new heights in residential inverter performance

The Sunny Boy 3000TL-US/4000TL-US/5000TL-US represents the next step in performance for UL certified inverters. Its transformerless design means high efficiency and reduced weight. Maximum power production is derived from wide input voltage and operating temperature ranges. Multiple MPP trackers and OptiTrac™ Global Peak mitigate the effect of shade and allow for installation at challenging sites. A unique Emergency Power Supply feature provides daytime power even in the event of a grid outage. High performance, flexible design and an innovative feature set make the Sunny Boy TL-US series the first choice among professionals.



## A NEW GENERATION OF INNOVATION

THE NEW SUNNY BOY TL-US RESIDENTIAL SERIES HAS YET AGAIN REDEFINED THE CATEGORY.

### Transformerless design

The Sunny Boy 3000TL-US / 4000TL-US / 5000TL-US are transformerless inverters, which means owners and installers benefit from high efficiency and lower weight. A wide input voltage range also means the inverters will produce high amounts of power under a number of conditions.

Additionally, transformerless inverters have been shown to be among the safest string inverters on the market. An industry first, the TL-US series has been tested to UL 1741 and UL1699B and is in compliance with the arc fault requirements of NEC 2011.

### Increased energy production

OptiTrac™ Global Peak, SMA's shade-tolerant MPP tracking algorithm, quickly adjusts to changes in solar irradiation, which mitigates the effects of shade and results in higher total power output. And, with two MPP trackers, the TL-US series can ably handle roofs with multiple orientations or specific shaded areas.

An extended operating temperature range of -40 °F to +140 °F ensures power is produced in all types of climates and for longer periods of time than with most traditional string inverters.

## Emergency Power Supply

One of many unique features to the TL-US residential series is its innovative Emergency Power Supply ability. With most grid-tied inverters, when the grid loses power, so does the solar-powered home. SMA's solution allows daytime energy to be isolated from the grid and be fed directly to the home via a dedicated power socket, providing residents with access to power as long as the PV system generates electricity.

## Simple installation

As a transformerless inverter, the TL-US residential series is lighter in weight than its transformer-based counterparts, which makes lifting and transporting the new inverter easier than before. A new wall mounting plate features anti-theft security and makes hanging the inverter quick and easy. A simplified DC wiring concept allows the DC Disconnect to be used as a wire raceway, saving labor and materials.

## Leading monitoring and control solutions

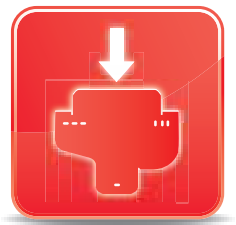
The new TL-US residential line features more than high performance and a large graphic display. The monitoring and control options provide users with an outstanding degree of flexibility. Integrated Zigbee®, a wireless communications standard often used for home energy management, and numerous wired options allows for a highly controllable inverter and one that can still be monitored on Sunny Portal from anywhere on the planet via an Internet connection. Whether communicating through Zigbee® or SMA's new wired, plug-and-play WebConnect, installers can find an optimal solution to their monitoring needs.



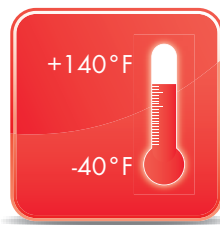
More efficient



Shade management



Easier



Broad temperature range



Emergency Power Supply



Flexible communications

Technical data	Sunny Boy 3000TL-US		Sunny Boy 4000TL-US		Sunny Boy 5000TL-US	
	208 V AC	240 V AC	208 V AC	240 V AC	208 V AC	240 V AC
<b>Input (DC)</b>						
Max. DC power (@ cos φ = 1)	3200 W		4200 W		5250 W	
Max. DC voltage	600 V		600 V		600 V	
MPP voltage range	175 - 480 V		175 - 480 V		175 - 480 V	
Min. DC voltage / start voltage	125 / 150 V		125 / 150 V		125 / 150 V	
Max. input current / per string	15 A / 15 A		15 A / 15 A		15 A / 15 A	
Number of MPP trackers / strings per MPP tracker			2 / 2			
<b>Output (AC)</b>						
AC nominal power	3000 W		4000 W		4550 W 5000 W	
Max. AC apparent power	3000 VA		4000 VA		4550 VA 5000 VA	
Nominal AC voltage / adjustable	208 V / ●	240 V / ●	208 V / ●	240 V / ●	208 V / ●	240 V / ●
AC voltage range	183 - 229 V 211 - 264 V		183 - 229 V 211 - 264 V		183 - 229 V 211 - 264 V	
AC grid frequency; range	60 Hz / 59.3 - 60.5 Hz		60 Hz / 59.3 - 60.5 Hz		60 Hz / 59.3 - 60.5 Hz	
Max. output current	15 A		20 A		22 A	
Power factor (cos φ)	1		1		1	
Phase conductors / connection phases	1 / 2		1 / 2		1 / 2	
Harmonics	< 4%		< 4%		< 4%	
<b>Efficiency</b>						
Max. efficiency	97.0%		97.0%		97.0%	
CEC efficiency	96.5%		96.5%		96.5%	
<b>Protection devices</b>						
DC disconnection device			●			
DC reverse-polarity protection			●			
Ground fault monitoring / Grid monitoring			● / ●			
AC short circuit protection			●			
All-pole sensitive residual current monitoring unit			●			
Arc fault circuit interrupter (AFCI) compliant to UL 1699B			●			
Protection class / overvoltage category			I / IV			
<b>General data</b>						
Dimensions (W / H / D) in mm (in)			490 / 519 / 185 (19.3 / 20.5 / 7.3)			
DC Disconnect dimensions (W / H / D) in mm (in)			187 / 297 / 190 (7.4 / 11.7 / 7.5)			
Packing dimensions (W / H / D) in mm (in)			617 / 597 / 266 (24.3 / 23.5 / 10.5)			
DC Disconnect packing dimensions (W / H / D) in mm (in)			370 / 240 / 280 (14.6 / 9.4 / 11.0)			
Weight / DC Disconnect weight			26 kg (57 lb) / 3.5 kg (8 lb)			
Packing weight / DC Disconnect packing weight			29 kg (64 lb) / 4 kg (9 lb)			
Operating temperature range			-40 °C ... +60 °C (-40 °F ... +140 °F)			
Noise emission (typical)	≤ 25 dB(A)		< 25 dB(A)		< 29 dB(A)	
Internal consumption at night	< 1 W		< 1 W		< 1 W	
Topology	Transformerless		Transformerless		Transformerless	
Cooling concept	Convection		Convection		Convection	
Electronics protection rating	NEMA 3R		NEMA 3R		NEMA 3R	
<b>Features</b>						
Emergency Power Supply	○		○		○	
Multi-function relay	○		○		○	
Display: graphic	●		●		●	
Interfaces: ZigBee / RS485 / Webconnect	●/○/○		●/○/○		●/○/○	
Warranty: 10 / 15 / 20 years	●/○/○		●/○/○		●/○/○	
Certificates and permits (more available on request)			www.SMA-Solar.com			
Preliminary information - last updated: August 2012						
● Standard features ○ Optional features – Not available						
Data at nominal conditions						
Type designation	SB 3000TL-US-22		SB 4000TL-US-22		SB 5000TL-US-22	

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### Accessories



Webconnect interface with WEBCONDM-10 speedwire function



RS485 interface DM-485CB-10



Multi-function relay MFR01-10