



# 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

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

## Powerful

- 97.2% 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. The unique Secure Power Supply feature provides daytime power in the event of a grid outage. High performance, flexible design and innovative features make the Sunny Boy TL-US series the first choice among solar 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 complex roofs with multiple orientations or string lengths.

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.

## Secure Power Supply

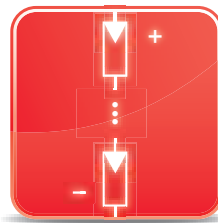
One of many unique features of the TL-US residential series is its innovative Secure Power Supply ability. With most grid-tied inverters, when the grid goes down, so does the solar-powered home. SMA's solution provides daytime energy to a dedicated power outlet during prolonged grid outages, providing homeowners with access to power as long as the sun shines.

## 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

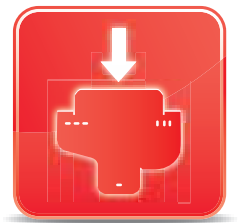
The new TL-US residential line features more than high performance and a large graphic display. The monitoring and control options provide users with an outstanding degree of flexibility. Integrated Zigbee®, a wireless communications standard often used for home energy management, and numerous wired options allows for a highly controllable inverter and one that can be monitored on Sunny Portal from anywhere on the planet via an Internet connection. Whether communicating through Zigbee®, RS485, or SMA's new wired, plug-and-play WebConnect, installers can find an optimal solution to their monitoring needs.



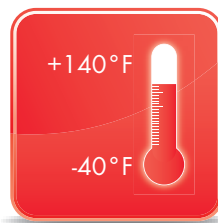
**More efficient**



**Shade management**



**Easier**



**Broad temperature range**

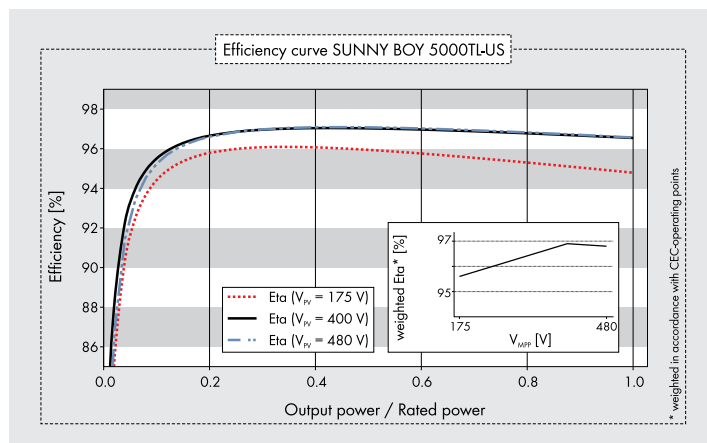


**Secure Power Supply**



**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    |
| Input (DC)   |                         |           |  |           |                        |             |
| Max. DC power (@ cos φ = 1)                                | 3200 W                  |           | 4200 W   |           | 5300 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 MPP tracker                       | 18 A / 15 A             |           | 24 A / 15 A  |           | 30 A / 15 A            |             |
| Number of MPP trackers / strings per MPP tracker           |                         |           | 2 / 2  |           |                        |             |
| Output (AC)  |                         |           |  |           |                        |             |
| 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                      |             |
| Output phases / line connections                           | 1 / 2                   |           | 1 / 2  |           | 1 / 2                  |             |
| Harmonics  | < 4%                    |           | < 4%   |           | < 4%                   |             |
| Efficiency   |                         |           |  |           |                        |             |
| Max. efficiency  | 96.8%                   | 97.1%     | 96.8%  | 97.2%     | 96.8%                  | 97.1%       |
| CEC efficiency   | 96%                     | 96.5%     | 96%  | 96.5%     | 96%                    | 96.5%       |
| Protection devices   |                         |           |  |           |                        |             |
| 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   |           |                        |             |
| General data   |                         |           |  |           |                        |             |
| 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                              |                         |           | 24 kg (53 lb) / 3.5 kg (8 lb)  |           |                        |             |
| Packing weight / DC Disconnect packing weight              |                         |           | 27 kg (60 lb) / 3.5 kg (8 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                |             |
| Features   |                         |           |  |           |                        |             |
| Secure Power Supply  | ●                       |           | ●  |           | ●                      |             |
| Display: graphic   | ●                       |           | ●  |           | ●                      |             |
| Interfaces: RS485 / Webconnect                             | ○/○                     |           | ○/○  |           | ○/○                    |             |
| Interface: ZigBee  | ○                       |           | ○  |           | ○                      |             |
| Warranty: 10 / 15 / 20 years                               | ●/○/○                   |           | ●/○/○  |           | ●/○/○                  |             |
| Certificates and permits (more available on request)       |                         |           | UL 1741, UL 1998, UL 1699B, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1 |           |                        |             |
| NOTE: US inverters ship with gray lids                     |                         |           |  |           |                        |             |
| Type designation   | SB 3000TL-US-22         |           | SB 4000TL-US-22  |           | SB 5000TL-US-22        |             |



## Accessories



Speedwire/Webconnect interface SWDM-US-10



RS485 interface DM-485CB-US-10



Fan kit FANKIT02-10

● Standard feature ○ Optional feature — Not available  
Data at nominal conditions