



# SUNNY BOY 5000-US / 6000-US / 7000-US / 8000-US

SB 5000US / SB 6000US / SB 7000US / SB 8000US



**ASSEMBLED IN THE USA**



## Certifications

- For countries that require UL certification (UL 1741/IEEE 1547)
- Optional integrated AFCI functionality meets the requirements of NEC 2011 690.11

## Efficient

- 97% peak efficiency
- OptiCool™ active temperature management system

## Safe

- Galvanic isolation

## Simple

- Patented automatic grid voltage detection\*
- Integrated DC disconnect switch

## SUNNY BOY 5000-US / 6000-US / 7000-US / 8000-US

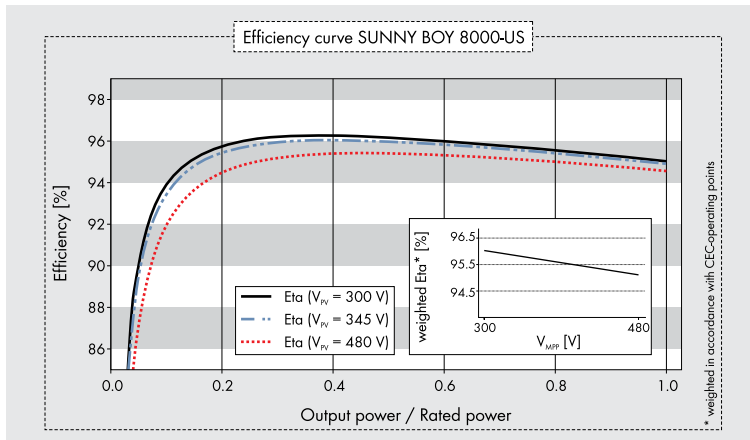
Versatile performer with UL certification

The Sunny Boy 5000-US, 6000-US, 7000-US and 8000-US inverters are UL certified and feature excellent efficiency. Graduated power classes provide flexibility in system design. Automatic grid voltage detection\* and an integrated DC disconnect switch simplify installation, ensuring safety as well as saving time. These models feature galvanic isolation and can be used with all types of modules – crystalline as well as thin-film.

\* US Patent US7352549B1

| Technical data   | Sunny Boy 5000-US  |             |             | Sunny Boy 6000-US        |             |             | Sunny Boy 7000-US        |             |             | Sunny Boy 8000-US              |             |
|--|--|-------------|-------------|--------------------------|-------------|-------------|--------------------------|-------------|-------------|--------------------------------|-------------|
|  | 208 V AC   | 240 V AC    | 277 V AC    | 208 V AC                 | 240 V AC    | 277 V AC    | 208 V AC                 | 240 V AC    | 277 V AC    | 240 V AC                       | 277 V AC    |
| <b>Input (DC)</b>  |  |             |             |                          |             |             |                          |             |             |                                |             |
| Max. recommended PV power (@ module STC)   | 6250 W   |             |             | 7500 W                   |             |             | 8750 W                   |             |             | 10000 W                        |             |
| Max. DC power (@ $\cos \phi = 1$ )   | 5300 W   |             |             | 6350 W                   |             |             | 7400 W                   |             |             | 8600 W                         |             |
| Max. DC voltage  | 600 V  |             |             | 600 V                    |             |             | 600 V                    |             |             | 600 V                          |             |
| DC nominal voltage   | 310 V  |             |             | 310 V                    |             |             | 310 V                    |             |             | 345 V                          |             |
| MPP voltage range  | 250 V - 480 V  |             |             | 250 V - 480 V            |             |             | 250 V - 480 V            |             |             | 300 V - 480 V                  |             |
| Min. DC voltage / start voltage  | 250 V / 300 V  |             |             | 250 V / 300 V            |             |             | 250 V / 300 V            |             |             | 300 V / 365 V                  |             |
| Max. input current / per string (at DC disconnect)   | 21 A / 20 A  |             |             | 25 A / 20 A              |             |             | 30 A / 20 A              |             |             | 30 A / 20 A                    |             |
|  | 36 A @ combined terminal   |             |             | 36 A @ combined terminal |             |             | 36 A @ combined terminal |             |             | 36 A @ combined terminal       |             |
| Number of MPP trackers / fused strings per MPP tracker   | 1 / 4 (DC disconnect)  |             |             |                          |             |             |                          |             |             |                                |             |
| <b>Output (AC)</b>   |  |             |             |                          |             |             |                          |             |             |                                |             |
| AC nominal power   | 5000 W   |             |             | 6000 W                   |             |             | 7000 W                   |             |             | 7680 W 8000 W                  |             |
| Max. AC apparent power   | 5000 VA  |             |             | 6000 VA                  |             |             | 7000 VA                  |             |             | 7680 VA 8000 VA                |             |
| Nominal AC voltage / adjustable  | 208 V / ●  | 240 V / ●   | 277 V / ●   | 208 V / ●                | 240 V / ●   | 277 V / ●   | 208 V / ●                | 240 V / ●   | 277 V / ●   | 240 V / ●                      | 277 V / ●   |
| AC voltage range   | 183 - 229 V  | 211 - 264 V | 244 - 305 V | 183 - 229 V              | 211 - 264 V | 244 - 305 V | 183 - 229 V              | 211 - 264 V | 244 - 305 V | 211 - 264 V                    | 244 - 305 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    |             |             | 60 Hz; 59.3 - 60.5 Hz          |             |
| Max. output current  | 24 A   | 21 A        | 18 A        | 29 A                     | 25 A        | 22 A        | 34 A                     | 29 A        | 25 A        | 32 A                           | 29 A        |
| Power factor (cos $\phi$ )   | 1  |             |             | 1                        |             |             | 1                        |             |             | 1                              |             |
| Phase conductors / connection phases   | 1 / 2  | 1 / 2       | 1 / 1       | 1 / 2                    | 1 / 2       | 1 / 1       | 1 / 2                    | 1 / 2       | 1 / 1       | 1 / 2                          | 1 / 1       |
| Harmonics  | < 4%   |             |             | < 4%                     |             |             | < 4%                     |             |             | < 4%                           |             |
| <b>Efficiency</b>  |  |             |             |                          |             |             |                          |             |             |                                |             |
| Max. efficiency  | 96.7%  | 96.8%       | 96.8%       | 96.9%                    | 96.8%       | 97.0%       | 97.1%                    | 96.9%       | 97.0%       | 96.3%                          | 96.5%       |
| CEC efficiency   | 95.5%  | 95.5%       | 95.5%       | 95.5%                    | 95.5%       | 96.0%       | 95.5%                    | 96.0%       | 96.0%       | 96.0%                          | 96.0%       |
| <b>Protection devices</b>  |  |             |             |                          |             |             |                          |             |             |                                |             |
| DC reverse-polarity protection   | ●  |             |             | ●                        |             |             | ●                        |             |             | ●                              |             |
| Integrated AFCI*   | ○  |             |             | ○                        |             |             | ○                        |             |             | ○                              |             |
| AC short circuit protection  | ●  |             |             | ●                        |             |             | ●                        |             |             | ●                              |             |
| Galvanically isolated / all-pole sensitive monitoring unit   | ●/-  |             |             | ●/-                      |             |             | ●/-                      |             |             | ●/-                            |             |
| Protection class / overvoltage category  | I / III  |             |             | I / III                  |             |             | I / III                  |             |             | I / III                        |             |
| <b>General data</b>  |  |             |             |                          |             |             |                          |             |             |                                |             |
| Dimensions (W / H / D) in mm (in)  | 470 / 615 / 240 (18.5 / 24 / 9)  |             |             |                          |             |             |                          |             |             |                                |             |
| DC Disconnect dimensions (W / H / D) in mm (in)  | 187 / 297 / 190 (7 / 12 / 7.5)   |             |             |                          |             |             |                          |             |             |                                |             |
| Packing dimensions (W / H / D) in mm (in)  | 390 / 580 / 800 (16 / 23 / 31.5)   |             |             |                          |             |             |                          |             |             |                                |             |
| DC Disconnect packing dimensions (W / H / D) in mm (in)  | 370 / 240 / 280 (15 / 9 / 11)  |             |             |                          |             |             |                          |             |             |                                |             |
| Weight / DC Disconnect weight  | 64 kg (141 lb) / 3.5 kg (8 lb)   |             |             |                          |             |             |                          |             |             | 66 kg (145 lb) / 3.5 kg (8 lb) |             |
| Packing weight / DC Disconnect packing weight  | 67 kg (147 lb) / 4 kg (9 lb)   |             |             |                          |             |             |                          |             |             | 69 kg (152 lb) / 4 kg (9 lb)   |             |
| Operating temperature range (full power)**   | -25 °C ... +45 °C (-13 °F ... +113 °F)   |             |             |                          |             |             |                          |             |             |                                |             |
| Noise emission (typical)   | 44 dB(A)   |             |             | 45 dB(A)                 |             |             | 46 dB(A)                 |             |             | 49 dB(A)                       |             |
| Internal consumption at night  | 0.1 W  |             |             | 0.1 W                    |             |             | 0.1 W                    |             |             | 0.1 W                          |             |
| Topology   | LF transformer   |             |             | LF transformer           |             |             | LF transformer           |             |             | LF transformer                 |             |
| Cooling concept  | OptiCool   |             |             | OptiCool                 |             |             | OptiCool                 |             |             | OptiCool                       |             |
| Electronics protection rating / connection area  | NEMA 3R / NEMA 3R  |             |             | NEMA 3R / NEMA 3R        |             |             | NEMA 3R / NEMA 3R        |             |             | NEMA 3R / NEMA 3R              |             |
| <b>Features</b>  |  |             |             |                          |             |             |                          |             |             |                                |             |
| Display: text line / graphic   | ●/-  |             |             | ●/-                      |             |             | ●/-                      |             |             | ●/-                            |             |
| Interfaces: RS485 / Bluetooth®   | ○/○  |             |             | ○/○                      |             |             | ○/○                      |             |             | ○/○                            |             |
| Warranty: 10 / 15 / 20 years   | ●/○/○  |             |             | ●/○/○                    |             |             | ●/○/○                    |             |             | ●/○/○                          |             |
| Certificates and permits (more available on request)   | UL1741 (Second Ed.), UL1998, UL1699B, IEEE 1547, FCC Part 15 (Class A & B), CSA C22.2 No. 107.1-2001 |             |             |                          |             |             |                          |             |             |                                |             |
| * For AFCI functionality specify SBXXXXUS-12 when ordering.  |  |             |             |                          |             |             |                          |             |             |                                |             |
| ** For extended operating temperature range to -40 °C (-40 °F), specify SBXXXXUS-11 or SBXXXXUS-12 when ordering.          |  |             |             |                          |             |             |                          |             |             |                                |             |
| ● Standard features ○ Optional features - Not available Data at nominal conditions NOTE: US inverters ship with gray lids. |  |             |             |                          |             |             |                          |             |             |                                |             |
| Type designation   | SB 5000US  |             |             | SB 6000US                |             |             | SB 7000US                |             |             | SB 8000US                      |             |

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## Accessories



RS485 interface  
485USPB-NR



Bluetooth Piggy-Back  
BTPBINV-NR  
with External Antenna  
BTPB-EXTANT-NR



Combi-Switch  
DC disconnect and PV  
array combiner box  
COMBO-SWITCH



Combiner Box  
Simplify wiring for added  
convenience and safety  
SBCB-6-3R or SBCB-6-4



SMA Power Balancer Set  
PBL-SBUS-10-NR