

# SUNNY BOY 3.0-US / 3.8-US / 5.0-US / 6.0-US / 7.0-US / 7.7-US



SB3.0-1 SP-US-40 / SB3.8-1 SP-US-40 / SB5.0-1 SP-US-40  
SB6.0-1 SP-US-40 / SB7.0-1 SP-US-40 / SB7.7-1 SP-US-40



**COMPLIANT TO UL 1741 SA**  
GRID SUPPORT UTILITY INTERACTIVE INVERTER



## Value-Added Improvements

- Superior integration with SMA's MLPE Power+ Solution
- World's first Secure Power Supply\* now offers up to 2,000 W
- Full grid management capabilities ensure a utility-compliant solution for any market

## Reduced Labor

- New Installation Assistant with direct access via smartphone minimizes time in the field
- Advanced communication interface with fewer components creates 50% faster setup and commissioning

## Unmatched Flexibility

- SMA's proprietary OptiTrac™ Global Peak technology mitigates shade with ease
- Multiple independent MPPTs accommodate hundreds of stringing possibilities

## Trouble-Free Servicing

- Two-part enclosure concept allows for simple, expedited servicing
- Equipped with SMA Smart Connected, a proactive service solution that is integrated into Sunny Portal

## SUNNY BOY 3.0-US / 3.8-US / 5.0-US / 6.0-US / 7.0-US / 7.7-US

Reduce costs across your entire residential business model

The residential PV market is changing rapidly. Your bottom line matters more than ever—so we've designed a superior residential solution to help you decrease costs at every stage of your business operations. The Sunny Boy 3.0-US/3.8-US/5.0-US/6.0-US/7.0-US/7.7-US join the SMA lineup of field-proven solar technology backed by the world's #1 service team, along with a wealth of improvements. Simple design, improved stocking and ordering, value-driven sales support and streamlined installation are just some of the ways that SMA helps your business operate more efficiently. And, Sunny Boy's superior integration with the innovative Power+ Solution means installers have even more flexibility in addressing their toughest challenges. Finally, SMA Smart Connected will automatically detect errors and initiate the repair and replacement process so that installers can reduce service calls and save time and money.

Technical data	Sunny Boy 3.0-US		Sunny Boy 3.8-US		Sunny Boy 5.0-US	
	208 V	240 V	208 V	240 V	208 V	240 V
<b>Input (DC)</b>						
Max. PV power	4800 W <sub>p</sub>		6080 W <sub>p</sub>		8000 W <sub>p</sub>	
Max. DC voltage			600 V			
Rated MPP voltage range	155 - 480 V		195 - 480 V		220 - 480 V	
MPPT operating voltage range			100 - 550 V			
Min. DC voltage / start voltage			100 V / 125 V			
Max. operating input current per MPPT			10 A			
Max. short circuit current per MPPT			18 A			
Number of MPPT tracker / string per MPPT tracker			2/1		3 / 1	
<b>Output (AC)</b>						
AC nominal power	3000 W	3000 W	3330 W	3800 W	5000 W	5000 W
Max. AC apparent power	3000 VA	3000 VA	3330 VA	3800 VA	5000 VA	5000 VA
Nominal 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	60 Hz / 50 Hz					
Max. output current	14.5 A	12.5 A	16.0 A	16.0 A	24.0 A	24.0 A
Power factor (cos φ)	1					
Output phases / line connections	1 / 2					
Harmonics	< 4 %					
<b>Efficiency</b>						
Max. efficiency	97.2 %	97.6 %	97.2 %	97.5 %	97.2 %	97.5 %
CEC efficiency	96 %	96.5 %	96.5 %	96.5 %	96.5 %	97 %
<b>Protection devices</b>						
DC disconnect device	●					
DC reverse polarity protection	●					
Ground fault monitoring / Grid monitoring	●					
AC short circuit protection	●					
All-pole sensitive residual current monitoring unit (RCMU)	●					
Arc fault circuit interrupter (AFCI)	●					
Protection class / overvoltage category	I / IV					
<b>General data</b>						
Dimensions (W / H / D) in mm (in)	535 x 730 x 198 (21.1 x 28.5 x 7.8)					
Packaging dimensions (W / H / D) in mm (in)	600 x 800 x 300 (23.6 x 31.5 x 11.8)					
Weight / packaging weight	26 kg (57 lb) / 30 kg (66 lb)					
Temperature range: operating / non-operating	-25 °C ...+60 °C / -40 °C ...+60 °C					
Environmental protection rating	NEMA 3R					
Noise emission (typical)	39 dB(A)					
Internal power consumption at night	< 5 W					
Topology / Cooling concept	Transformerless / Convection					
<b>Features</b>						
Ethernet ports	2					
Secure Power Supply	● *					
Display (2 x 16 characters)	●					
WLAN / Sensor module / External WLAN antenna	● / ○ / ○					
Warranty: 10 / 15 / 20 years	● / ○ / ○					
Certificates and approvals	UL 1741, UL 1741 SA incl. Rule 21 RSD, UL 1998, UL 1699B, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA V22.2 107.1-1, HECO SRD-UL-1741-SA-V1.1					
● Standard features ○ Optional features – Not available Data at nominal conditions NOTE: US inverters ship with gray lids. * Not compatible with the Power+ Solution Shutdown functionality						
Type designation	SB3.0-1SP-US-40		SB3.8-1SP-US-40		SB5.0-1SP-US-40	

#### Accessories



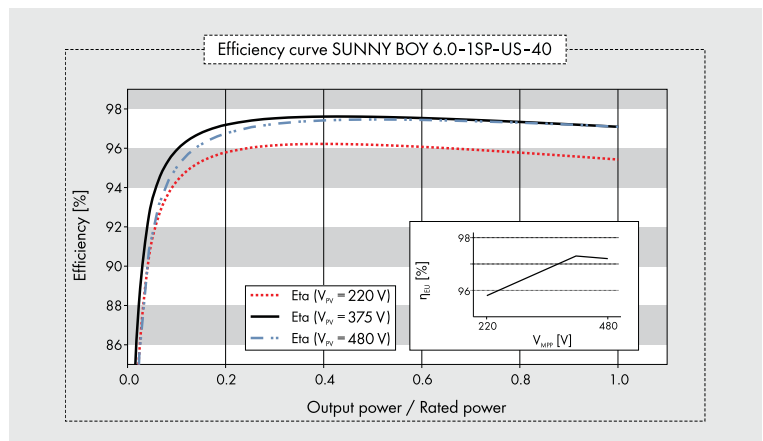
Sensor module  
MD.SEN-US-40



External WLAN antenna  
EXTANT-US-40



SMA Rooftop  
Communication Kit  
ROOFCOMMKIT-P1-US  
ROOFCOMMKIT-P2-US



Technical data	Sunny Boy 6.0-US		Sunny Boy 7.0-US		Sunny Boy 7.7-US	
	208 V	240 V	208 V	240 V	208 V	240 V
<b>Input (DC)</b>						
Max. PV power	9600 Wp		11200 Wp		12320 Wp	
Max. DC Voltage			600 V			
Rated MPP Voltage range	220 - 480 V		245 - 480 V		270 - 480 V	
MPPT operating voltage range			100 - 550 V			
Min. DC voltage / start voltage			100 V / 125 V			
Max. operating input current per MPPT			10 A			
Max. short circuit current per MPPT			18 A			
Number of MPPT tracker / string per MPPT tracker			3 / 1			
<b>Output (AC)</b>						
AC nominal power	5200 W	6000 W	6660 W	7000 W	6660 W	7680 W
Max. AC apparent power	5200 VA	6000 VA	6660 VA	7000 VA	6660 VA	7680 VA
Nominal 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	60 Hz / 50 Hz					
Max. output current	25.0 A	25.0 A	32.0 A	29.2 A	32.0 A	32.0 A
Power factor (cos φ)	1					
Output phases / line connections	1 / 2					
Harmonics	< 4 %					
<b>Efficiency</b>						
Max. efficiency	97.2 %	97.6 %	97.1 %	97.5 %	97.1 %	97.5 %
CEC efficiency	96.5 %	97 %	96.5 %	97 %	96.5 %	97 %
<b>Protection devices</b>						
DC disconnect device			●			
DC reverse polarity protection			●			
Ground fault monitoring / Grid monitoring			●			
AC short circuit protection			●			
All-pole sensitive residual current monitoring unit (RCMU)			●			
Arc fault circuit interrupter (AFCI)			●			
Protection class / overvoltage category			I / IV			
<b>General data</b>						
Dimensions (W / H / D) in mm (in)			535 x 730 x 198 (21.1 x 28.5 x 7.8)			
Packaging Dimensions (W / H / D) in mm (in)			600 x 800 x 300 (23.6 x 31.5 x 11.8)			
Weight / packaging weight			26 kg (57 lb) / 30 kg (66 lb)			
Temperature range: operating / non-operating			-25°C ...+60°C / -40°C ...+60°C			
Environmental protection rating			NEMA 3R			
Noise emission (typical)	39 dB(A)				45 dB(A)	
Internal power consumption at night			< 5 W			
Topology / Cooling concept	Transformerless / Convection				Transformerless / Fan	
<b>Features</b>						
Ethernet ports			2			
Secure Power Supply			●*			
Display (2 x 16 characters)			●			
WLAN / Sensor module / External WLAN antenna			● / ○ / ○			
Warranty: 10 / 15 / 20 years			● / ○ / ○			
Certificates and approvals	UL 1741, UL 1741 SA incl. Rule 21 RSD, UL 1998, UL 1699B, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA V22.2 107.1-1, HECC SRD-UL-1741-SA-V1.1					
● Standard features ○ Optional features – Not available	Data at nominal conditions NOTE: US inverters ship with gray lids. * Not compatible with the Power+ Solution Shutdown functionality					
Type designation	SB6.0-1SP-US-40		SB7.0-1SP-US-40		SB7.7-1SP-US-40	

## POWER+ SOLUTION

The SMA Power+ Solution combines legendary SMA inverter performance and intelligent DC module-level electronics in one cost-effective, comprehensive package. This means that you can achieve maximum solar power production for your customers while also realizing significant installation savings.

**NEW!** Advanced communication interface allows for 50% faster setup and commissioning thanks to reduced components and a simplified process.

Visit [www.SMA-America.com](http://www.SMA-America.com) for more information.





### SIMPLE, FLEXIBLE DESIGN

Speed the completion of customer proposals and maximize the efficiency of your design team with the Sunny Boy-US series, which provides a new level of flexibility in system design by offering:

- » Hundreds of stringing configurations and multiple independent MPPTs
- » SMA's proprietary OptiTrac™ Global Peak shade mitigation technology
- » Diverse application options including on- and off-grid compatibility



### VALUE-DRIVEN SALES ENABLEMENT

SMA wants to enable your sales team by arming them with an abundance of feature/benefit support. Show your customers the value of the Sunny Boy-US series by utilizing:

- » Secure Power Supply, now with 2,000 W of opportunity power in the event of a grid outage, as an increased value-add or upsell opportunity
- » SMA's 35 year history and status as the #1 global inverter manufacturer instills homeowners with peace of mind and the long-term security they demand from a PV investment
- » An economical solution for shade mitigation and the challenges of complex roofs



### IMPROVED STOCKING AND ORDERING

Ensure that your back office business operations run smoothly and succinctly while mitigating potential errors. The Sunny Boy-US series can help achieve cost savings in these areas by providing:

- » An integrated DC disconnect that simplifies equipment stocking and allows for a single inverter part number
- » All communications integrated into the inverter, eliminating the need to order additional equipment



### STREAMLINED INSTALLATION AND COMMISSIONING

Expedite your operations in the field by taking advantage of the new Sunny Boy's installer-friendly feature set including:

- » Direct access via smartphone and utilization of SMA's Installation Assistant, which minimizes time/labor spent in the field and speeds the path to commissioning
- » Simple commissioning and monitoring setup in a single online portal
- » New! Advanced communication interface with fewer components allows for 50% faster commissioning



### SUPERIOR SERVICE

SMA understands the factors that contribute to lifetime PV ownership cost, that's why the Sunny Boy-US series was designed for maximum reliability and backstopped by an unmatched service offering. Benefit from:

- » SMA Smart Connected, a proactive service solution integrated into Sunny Portal that automatically detects errors and initiates the repair and replacement process
- » The #1 service team in the PV industry, as recognized by IMS research, with experience servicing an installed base of more than 55 GW