SUNNY BOY 6000TL-US / 7000TL-US / 8000TL-US / 9000TL-US / 10000TL-US / 11000TL-US

Approved for Historic Preservation
Certificate of Appropriateness
Date: 09/29/14

Innovative

- First transformerless SMA inverter to be certified in accordance with UL 1741
- First inverter with arc-fault circuit interrupter listed according to UL 1699B

Economical

- Maximum efficiency of 98.7%
- Class-leading CEC efficiency of 98.5%
- Superior MPP tracking with OptiTrac™
- Transformerless, with H5 topology

Reliable

- OptiCool™ active temperature management

Convenient

- Integrated DC disconnect
- SMA Power Balancer for three-phase grid connection

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Transformerless design, maximum energy production

The Sunny Boy TL-US series is UL listed for North America and features SMA's innovative H5 topology, resulting in superior efficiencies of more than 98 percent and unmatched solar power production. The transformerless design reduces weight, increases the speed of payback and provides optimum value for any residential or decentralized commercial PV system. The Sunny Boy TL-US series for North America is the ideal choice in transformerless technology.

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Technical data	Sunny Boy 6000TL-US		Su	
	208 V	240 V	208 V	
Input (DC)				
Max. recommended PV power (@ module STC)	7500 W	7500 W	8750 W	
Max. DC power (@ cos φ = 1)	6300 W	6200 W	7300 W	
Max. input voltage	600 V	600 V	600 V	
MPP voltage range / rated input voltage	300 V – 480 V / 345 V	345 V – 480 V / 379 V	300 V – 480 V	
Min. input voltage / initial input voltage	300 V / 360 V	345 V / 360 V	300 V / 36	
Max. input current	20.9 A	18.1 A	24.4 A	
Max. input current per string	20.9 A	18.1 A	24.4 A	
Number of independent MPP inputs	1	1	1	
Strings per MPP input @ Combiner Box	6	6	6	o
Output (AC)				
Rated power / max. apparent AC power	6000 W / 6000 VA	6000 W / 6000 VA	7000 W / 7000 VA	7000 W / 7000 VA
Nominal AC voltage / nominal AC voltage range	208 V / 183 V – 229 V	240 V / 211 V – 264 V	208 V / 183 V – 229 V	240 V / 211 V – 264 V
AC power frequency / range	60 Hz / 59.3 Hz ... 60.5 Hz		60 Hz / 59.3 Hz ... 60.5 Hz	
Max. output current	28.8 A	25 A	33.7 A	29.2 A
Power factor at rated power	1	1	1	1
Feed-in phases / connection phases	1 / 2	1 / 2	1 / 2	1 / 2
Efficiency				
CEC efficiency / max. efficiency	98 % / 98.6 %	98.5 % / 98.7 %	98 % / 98.6 %	98.5 % / 98.7 %
Protective devices				
DC reverse polarity protection	●	●	●	●
AC short-circuit current capability	●	●	●	●
Galvanic isolation	–	–	–	–
All-pole-sensitive residual-current monitoring unit	●	●	●	●
Arc-fault circuit interrupter (according to UL 1699B)	●	●	●	●
Protection class	I	I	I	I
Overvoltage category	IV	IV	IV	IV
General data				
Dimensions (W / H / D)	470 / 615 / 240 mm (18.4 / 24.1 / 9.5 inch)		470 / 615 / 240 mm (18.4 / 24.1 / 9.5 inch)	
Dimensions of DC Disconnect (W / H / D)	187 / 297 / 190 mm (7.28 / 11.7 / 7.5 inch)		187 / 297 / 190 mm (7.28 / 11.7 / 7.5 inch)	
Weight	35 kg / 78 lb	35 kg / 78 lb	35 kg / 78 lb	35 kg / 78 lb
Weight of DC Disconnect	3.5 kg / 8 lb	3.5 kg / 8 lb	3.5 kg / 8 lb	3.5 kg / 8 lb
Operating temperature range	-40 °C ... +60 °C / -40 °F ... +140 °F		-40 °C ... +60 °C / -40 °F ... +140 °F	
Noise emission (typical)	46 dB(A)	46 dB(A)	46 dB(A)	46 dB(A)
Self-consumption (night)	0.15 W	0.15 W	0.15 W	0.15 W
Topology	Transformerless H5	Transformerless H5	Transformerless H5	Transformerless H5
Cooling concept	OptiCool	OptiCool	OptiCool	OptiCool
Degree of protection	NEMA 3R	NEMA 3R	NEMA 3R	NEMA 3R
Degree of protection of connection area	NEMA 3R	NEMA 3R	NEMA 3R	NEMA 3R
Max. permissible value for relative humidity (non-condensing)	100 %	100 %	100 %	100 %
Features				
DC connection	Screw terminal	Screw terminal	Screw terminal	Screw terminal
AC connection	Screw terminal	Screw terminal	Screw terminal	Screw terminal
Display	Text line	Text line	Text line	Text line
Interface: RS485 / Bluetooth	○ / ○	○ / ○	○ / ○	○ / ○
Warranty: 10 / 15 / 20 years	● / ○ / ○	● / ○ / ○	● / ○ / ○	● / ○ / ○
Certificates and approvals (more available on request)	UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1, UL 1699B			
Type designation	SB 6000TLUS-12		SB 7000TLUS-12	

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Sunny Boy 8000TL-US		Sunny Boy 9000TL-	
208 V	**240 V**	**208 V**	
10000 W	10000 W	11250 W	
8400 W	8300 W	9400 W	
600 V	600 V	600 V	
300 V – 480 V / 345 V	345 V – 480 V / 379 V	300 V – 480 V / 345 V	
300 V / 360 V	345 V / 360 V	300 V / 360 V	
27.9 A	24.1 A	31.0 A	
27.9 A	24.1 A	31.0 A	
1	1	1	
6	6	6	o
8000 W/8000 VA		9000 W / 9000 VA	
208 V / 183 V – 229 V	240 V / 211 V – 264 V	208 V / 183 V – 229 V	240 V / 211 V – 264 V
60 Hz / 59.3 Hz ... 60.5 Hz	60 Hz / 59.3 Hz ... 60.5 Hz	60 Hz / 59.3 Hz ... 60.5 Hz	60 Hz / 59.3 Hz ... 60.5 Hz
38.5 A	33.4 A	43.3 A	37.5 A
1		1	
1 / 2		1 / 2	
98 % / 98.6 %	98 % / 98.6 %	98 % / 98.6 %	98 % / 98.7 %
●		●	
●		●	
–		–	
●		●	
●		●	
I		I	
IV		IV	
470 / 615 / 240 mm (18.4 / 24.1 / 9.5 inch)		470 / 615 / 240 mm (18.4 / 24.1 / 9.5 inch)	
187 / 297 / 190 mm (7.28 / 11.7 / 7.5 inch)		187 / 297 / 190 mm (7.28 / 11.7 / 7.5 inch)	
35 kg / 78 lb		35 kg / 78 lb	
3.5 kg / 8 lb		3.5 kg / 8 lb	
-40 °C ... +60 °C / -40 °F ... +140 °F		-40 °C ... +60 °C / -40 °F ... +140 °F	
46 dB(A)		46 dB(A)	
0.15 W		0.15 W	
Transformerless H5		Transformerless H5	
OptiCool		OptiCool	
NEMA 3R		NEMA 3R	
NEMA 3R		NEMA 3R	
100 %		100 %	
Screw terminal		Screw terminal	
Screw terminal		Screw terminal	
Text line		Text line	
○ / ○		○ / ○	
● / ○ / ○		● / ○ / ○	
UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1, UL 1699B			
SB 8000TLUS-12		SB 9000TLUS-12	

Accessories

Sunny Boy Combiner Box
SBCBTL6-10

Interface RS485
485USPB-NR

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

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Technical data	Sunny Boy 10000TL-US		Sunny Boy 11000TL-US
	208 V	240 V	240 V
Input (DC)			
Max. recommended PV power (@ module STC)	12500 W	12500 W	13750 W
Max. DC power (@ cos φ = 1)	10500 W	10400 W	11500 W
Max. input voltage	600 V	600 V	600 V
MPP voltage range / rated input voltage	300 V – 480 V / 345 V	345 V – 480 V / 379 V	345 V – 480 V / 379 V
Min. input voltage / initial input voltage	300 V / 360 V	345 V / 360 V	345 V / 360 V
Max. input current	35 A	30.2 A	33.3 A
Max. input current per string	35 A	30.2 A	33.3 A
Number of independent MPP inputs	1	1	1
Strings per MPP input @ Combiner Box	6	6	6
Output (AC)			
Rated power / max. apparent AC power	10000 W / 10000 VA		11000 W / 11000 VA
Nominal AC voltage / nominal AC voltage range	208 V / 183 V – 229 V	240 V / 211 V – 264 V	240 V / 211 V – 264 V
AC power frequency / range	60 Hz / 59.3 Hz ... 60.5 Hz	60 Hz / 59.3 Hz ... 60.5 Hz	60 Hz / 59.3 Hz ... 60.5 Hz
Max. output current	48.1 A	41.7 A	45.8 A
Power factor at rated power	1		1
Feed-in phases / connection phases	1 / 2		1 / 2
Efficiency			
CEC efficiency / max. efficiency	98.0 % / 98.6 %	98 % / 98.7 %	98 % / 98.7 %
Protective devices			
DC reverse polarity protection	●		●
AC short-circuit current capability	●		●
Galvanic isolation	–		–
All-pole-sensitive residual-current monitoring unit	●		●
Arc-fault circuit interrupter (according to UL 1699B)	●		●
Protection class	I		I
Overvoltage category	IV		IV
General data			
Dimensions (W / H / D)	470 / 615 / 240 mm (18.4 / 24.1 / 9.5 inch)		
Dimensions of DC Disconnect (W / H / D)	187 / 297 / 190 mm (7.28 / 11.7 / 7.5 inch)		
Weight	35 kg / 78 lb		
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Operating temperature range	-40 °C ... +60 °C / -40 °F ... +140 °F		
Noise emission (typical)	46 dB(A)		46 dB(A)
Self-consumption (night)	0.15 W		0.15 W
Topology	Transformerless H5		Transformerless H5
Cooling concept	OptiCool		OptiCool
Degree of protection	NEMA 3R		NEMA 3R
Degree of protection of connection area	NEMA 3R		NEMA 3R
Max. permissible value for relative humidity (non-condensing)	100 %		100 %
Features			
DC connection	Screw terminal		Screw terminal
AC connection	Screw terminal		Screw terminal
Display	Text line		Text line
Interface: RS485 / Bluetooth	○ / ○		○ / ○
Warranty: 10 / 15 / 20 years	● / ○ / ○		● / ○ / ○
Certificates and approvals (more available on request)	UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1, UL 1699B		
NOTE: US inverters ship with gray lids			
Type designation	SB 10000TLUS-12		SB 11000TLUS-12

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