

INVERTER GUIDE



Please also refer to the SMA design tool, Sunny Design, which can be downloaded free-of-charge at www.SMA-America.com.



SUNNY BOY 700U



SUNNY BOY 3000US



SUNNY BOY 4000US



SUNNY BOY 5000US



SUNNY BOY 6000US



SUNNY BOY 7000US



SUNNY TOWER 36



SUNNY TOWER 42



SUNNY CENTRAL 250U



SUNNY CENTRAL 500U
PRELIMINARY

(Input Voltage) Output Voltage	[150 Vdc]	[200 Vdc]	[250 Vdc]	208 V	240 V	208 V	240 V	208 V	240 V	277 V	208 V	240 V	277 V	208 V	240 V	277 V	208 V	240 V	277 V	208 V	240 V	277 V	NA	NA		
DC Input Values																										
Recommended Max. PV Power (Module STC)	575 W	750 W	875 W	3750 W		4375 W	5000 W	6250 W			7500 W			8750 W			45 kW			52.5 kW			295 kW	580 kW		
DC Max. Voltage	150 V	200 V	250 V	500 V		600 V	600 V	600 V			600 V			600 V			600 V			600 V			600 V	600 V		
Peak Power Tracking Voltage	77-120 V	100-160 V	125-200 V	175-400 V	200-400 V	220-480 V	250-480 V	250-480 V			250-480 V			250-480 V			250-480 V			250-480 V			300 V-600 V	300 V-600 V		
DC Minimum Start Voltage	95 V	125 V	150 V	228 V		285 V		300 V			300 V			300 V			300 V			300 V			400 V	400 V		
DC Max. Input Current	7 A		17 A		18 A		21 A			25 A			30 A			150 A			180 A			800 A	1600 A			
Number of Fused String Inputs	2		2 (Inverter) 4 x 15 A (DC Disconnect)		2 (Inverter) 4 x 15 A (DC Disconnect)		3 (Inverter) 4 x 15 A (DC Disconnect)			3 (Inverter) 4 x 15 A (DC Disconnect)			3 (Inverter) 4 x 15 A (DC Disconnect)			24 x 15A AC/DC Disconnect			24 x 15A AC/DC Disconnect			6	9			
AC Output Values																										
AC Nominal Power	460 W	600 W	700 W	3000 W		3500 W	4000 W	5000 W			6000 W			7000 W			36.0 kW			42.0 kW			250 kW	500 kW		
AC Max. Output Power	460 W	600 W	700 W	3000 W		3500 W	4000 W	5000 W			6000 W			7000 W			36.0 kW			42.0 kW			250 kW	500 kW		
AC Max. Output Current	4.4 A	5.7 A	6.6 A	15 A	13 A	17 A	17 A	24 A	21 A	18 A	29 A	25 A	22 A	34 A	29 A	25 A	100 A	87 A	44 A	117 A	101 A	51 A	300 A (@ 480 V)	600 A (@ 480 V)		
AC Output Voltage Range	106-132 V		183-229 V	211-264 V	183-229 V	211-264 V	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	183-229 V	211-264 V	244-305 V	183-229 V	211-264 V	244-305 V	422-528 V	422-528 V			
AC Nominal Voltage/Field Configurable	120 V/NA		208 V/YES	240 V/YES	208 V/YES	240 V/YES	208 V/YES	240 V/YES	277 V/YES	208 V/YES	240 V/YES	277 V/YES	208 V/YES	240 V/YES	277 V/YES	208 V/YES	240 V/YES	277 V/YES	208 V/YES	240 V/YES	277 V/YES	480 V/NA	480 V/NA			
Total Harmonic Distortion	< 3%		< 4%		< 4%		< 4%			< 4%			< 4%			< 4%			< 4%			< 5%	< 5%			
AC Frequency: Nominal/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			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			60 Hz/59.3-60.5 Hz			60 Hz/59.3-60.5 Hz	60 Hz/59.3-60.5 Hz
Power Factor	0.99 @ Nominal Power		0.99 @ Nominal Power		0.99 @ Nominal Power		0.99 @ Nominal Power			0.99 @ Nominal Power			0.99 @ Nominal Power			0.99 @ Nominal Power			0.99 @ Nominal Power			0.99 @ Nominal Power			0.99 @ Nominal Power	0.99 @ Nominal Power
Efficiency																										
Max. Efficiency	93.6 %		96.5 %		96.8 %		96.8 %			97.0 %			97.1 %			97.0 %			97.1 %			97.5 %			97.5 %	
CEC Efficiency	91.5 %		95.0 %	95.5 %	95.5 %	96.0 %	95.5 %			95.5 %	95.5 %	96.0 %	95.5 %	96.0 %	96.0 %	95.5 %	95.5 %	96%	95.5 %	96.0 %	96.0 %	97%		97%		
Safety & Regulatory Compliance																										
EMC	FCC, Part 15, Class A & B		FCC, Part 15, Class A & B		FCC, Part 15, Class A & B		FCC, Part 15, Class A & B			FCC, Part 15, Class A & B			FCC, Part 15, Class A & B			FCC, Part 15, Class A & B			FCC, Part 15, Class A & B			FCC, Part 15, Class A & B		FCC, Part 15, Class A & B		
Certification	UL1741, UL1998 IEEE 1547		UL1741, UL1998 IEEE 1547		UL1741, UL1998 IEEE 1547		UL1741, UL1998 IEEE 1547			UL1741, UL1998 IEEE 1547			UL1741, UL1998 IEEE 1547			UL1741, UL1998 IEEE 1547			UL1741, UL1998 IEEE 1547			UL1741, UL1998 IEEE 1547		UL1741, UL1998 IEEE 1547		
Reverse Polarity Protection	Short Circuit Diode		Short Circuit Diode		Short Circuit Diode		Short Circuit Diode			Short Circuit Diode			Short Circuit Diode			Short Circuit Diode			Short Circuit Diode			Software Controlled		Software Controlled		
Short-Circuit Protection	Current Controlled		Current Controlled		Current Controlled		Current Controlled			Current Controlled			Current Controlled			Current Controlled			Current Controlled			Current Controlled		Current Controlled		
General Information																										
Size (HxWxD) (in)	12.6 x 12.7 x 7.1 in		13.8 x 17.8 x 9.3 in 11 x 7.3 x 7.6 in		13.8 x 17.8 x 9.3 in 11 x 7.3 x 7.6 in		24.1 x 18.4 x 9.5 in 11 x 7.3 x 7.6 in			24.1 x 18.4 x 9.5 in 11 x 7.3 x 7.6 in			24.1 x 18.4 x 9.5 in 11 x 7.3 x 7.6 in			70.5 x 43.3 x 39 in			70.5 x 43.3 x 39 in			80 x 110 x 33		80 x 134 x 33		
Shipping Size (in)	9 x 15 x 15 in		19 x 15 x 23 in 22.8 x 16 x 11 in		19 x 15 x 23 in 22.8 x 16 x 11 in		31 x 15 x 23 in 22.8 x 16 x 11 in			31 x 15 x 23 in 22.8 x 16 x 11 in			31 x 15 x 23 in 22.8 x 16 x 11 in			41 x 45 x 79 in Call for Info			41 x 45 x 79 in Call for Info			88 x 74 x 40 and 88 x 48 x 40		88 x 96 x 40 and 88 x 59.5 x 40		
Shipping Size DC Disconnect (in)																										
Weight (lbs)	51 lbs		84 lbs 8 lbs		84 lbs 8 lbs		141 lbs 8 lbs			141 lbs 8 lbs			141 lbs 8 lbs			330 lbs/ 1176 lbs with 6 inverters			330 lbs/ 1176 lbs with 6 inverters			4200 lbs		6725 lbs		
Shipping Weight (lbs)	57 lbs		97 lbs 9 lbs		97 lbs 9 lbs		148 lbs 9 lbs			148 lbs 9 lbs			148 lbs 9 lbs			500 lbs/ 1388 lbs with 6 inverters Call for Info			500 lbs/ 1388 lbs with 6 inverters Call for Info			1863 lbs and 3186 lbs		2737 lbs and 4846 lbs		
Shipping Weight DC Disconnect (lbs)																										
Ambient Temperature Range	-13 to +113 °F -25 to +45 °C		-13 to +113 °F -25 to +45 °C		-13 to +113 °F -25 to +45 °C		-13 to +113 °F -25 to +45 °C			-13 to +113 °F -25 to +45 °C			-13 to +113 °F -25 to +45 °C			-13 to +113 °F -25 to +45 °C			-13 to +113 °F -25 to +45 °C			-13 to 123 °F full power output up to 122 °F at reduced power		-13 to 123 °F full power output up to 122 °F at reduced power		
Power Consumption: standby/nighttime	<4 W/0.1 W		<7 W/0.1 W		<7 W/0.1 W		<7 W/0.1 W			<7 W/0.1 W			<7 W/0.1 W			<42 W/0.6 W			<42 W/0.6 W			69 W Standby, <1000 W with fans		69 W Standby, <1500 W with fans		
Topology	Low frequency transformer True sinewave		Low frequency transformer True sinewave		Low frequency transformer True sinewave		Low frequency transformer True sinewave			Low frequency transformer True sinewave			Low frequency transformer True sinewave			Low frequency transformer True sinewave			Low frequency transformer True sinewave			Low frequency transformer, True sinewave with galvanic insulation		Low frequency transformer, True sinewave with galvanic insulation		
Cooling Concept	Convection		OptiCool Forced Active Cooling		OptiCool Forced Active Cooling		OptiCool Forced Active Cooling			OptiCool Forced Active Cooling			OptiCool Forced Active Cooling			OptiCool Forced Active Cooling			OptiCool Forced Active Cooling			Variable speed forced air		Variable speed forced air		
Mounting Location: Indoor/Outdoor (NEMA 3R)	●/● (NEMA 3X)		●/●		●/●		●/●			●/●			●/●			●/●			●/●			●/●		●/●		
Features																										
Display: LCD	●		●		●		●			●			●			●			●			●		●		
Additional Communication Boards: RS485/Wireless	○/○		○/○		○/○		○/○			○/○			○/○			○/○			○/○			○/○		○/○		
Lid Color: aluminum/red/blue/yellow	-/●/○/○		●/○/○/○		●/○/○/○		●/○/○/○			●/○/○/○			●/○/○/○			●/○/○/○			●/○/○/○			NA		NA		
Warranties	10 year		10 year		10 year		10 year			10 year			10 year			10 year			10 year			5 year		5 year		

Legend: ● Standard ○ Optional Data under nominal conditions.
Last modified: October 2008 - Technical specifications subject to change without notice.
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