



/ STP 33-US-41 / STP 50-US-41 / STP 62-US-41



Sunny Tripower CORE1-US

33 / 50 / 62

It stands on its own

/ Complies with IEEE 1547-2018
and UL 1741 SB standards



Fully integrated

- No additional racking required for rooftop installation
- Integrated DC and AC disconnects and overvoltage protection
- 12 direct string inputs for reduced labor and material costs
- Up to 60% faster commercial PV system installation

Increased power, flexibility

- Six MPP trackers for flexible stringing and maximum power production
- ShadeFix, SMA's proprietary shade management solution, optimizes at the string level
- Intelligent string monitoring to pinpoint array performance issues

Enhanced safety, reliability

- Integrated SunSpec PLC signal for module-level rapid shutdown
- DC AFCI arc-fault protection certified to Standard UL 1699B Ed. 1

Smart monitoring, control, service

- I-V curve diagnostic function to visualize and document PV string electrical characteristics
- Increased ROI with SMA ennexOS cross sector energy management platform
- SMA Smart Connected proactive O&M solution reduces time spent diagnosing and servicing in the field

The Sunny Tripower CORE1 is the world's first free-standing PV inverter for commercial rooftops, carports, ground mount and repowering legacy solar projects.

From distribution to construction to operation, the Sunny Tripower CORE1 enables logistical, material, labor and service cost reductions, and is the most versatile, cost-effective commercial solution available. Integrated SunSpec PLC for rapid shutdown and enhanced DC AFCI arc-fault protection ensure compliance to the latest safety codes and standards. With Sunny Tripower CORE1 and SMA's ennexOS cross sector energy management platform, system integrators can deliver comprehensive commercial energy solutions for increased ROI.



Technical data	Sunny Tripower CORE1 33-US	Sunny Tripower CORE1 50-US	Sunny Tripower CORE1 62-US
Input (DC)			
Maximum array power	50000 Wp STC	75000 Wp STC	93750 Wp STC
Maximum system voltage		1000 V	
Rated MPP voltage range	330 V... 800 V	500 V... 800 V	550 V... 800 V
MPPT operating voltage range		150 V... 1000 V	
Minimum DC voltage / start voltage		150 V / 188 V	
MPP trackers / strings per MPP input		6 / 2	
Maximum usable operating input current / per MPP tracker		120 A / 20 A	
Maximum short circuit current per MPPT / per string input		32 A / 30 A	
Output (AC)			
Nominal output power	33300 W	50000 W	62500 W
Maximum apparent power	33300 VA	53000 VA	66000 VA
Output phases / line connections		3 / 3-(N)-PE	
Nominal AC voltage		480 V / 277 V WYE	
AC voltage range		244 V... 305 V	
Maximum output current	40 A	64 A	80 A
Rated grid frequency		60 Hz	
Grid frequency / range		50 Hz, 60 Hz / -6 Hz... +6 Hz	
Power factor at rated power / adjustable displacement		1 / 0.0 leading... 0.0 lagging	
Harmonics THD		<3 %	
Efficiency			
CEC efficiency	97.5%	97.5%	97.5%
Protection and safety features			
Load rated DC disconnect		●	
Load rated AC disconnect		●	
Ground fault monitoring: Riso / Differential current		● / ●	
DC AFCI arc-fault protection		●	
SunSpec PLC signal for rapid shutdown		●	
DC reverse polarity protection		●	
AC short circuit protection		●	
DC surge protection: Type 2 / Type 1+2		○ / ○	
AC surge protection: Type 2 / Type 1+2		○ / ○	
Protection class / overvoltage category (as per UL 840)		I / IV	
General data			
Device dimensions (W/H/D)	621 mm / 733 mm / 569 mm (24.4 in x 28.8 in x 22.4 in)		
Device weight	84 kg (185 lbs)		
Operating temperature range	-25 °C... +60 °C (-13 °F... +140 °F)		
Storage temperature range	-40 °C... +70 °C (-40 °F... +158 °F)		
Audible noise emissions (full power @ 1m and 25 °C)	65 dB(A)		
Topology	Transformerless		
Cooling concept	OptiCool (forced convection, variable speed fans)		
Enclosure protection rating	Type 4X, 3SX (as per UL 50E)		
Corrosivity classification according to IEC 61701	C3*		
Maximum permissible relative humidity (non-condensing)	100%		
Additional information			
Mounting	Free-standing with included mounting feet		
DC connection	Amphenol UTX PV or H4Plus connectors		
AC connection	Screw terminals - 4 AWG to 4/0 AWG CU/AL		
LED indicators (Status / Fault / Communication)	●		
Network interfaces: Ethernet / WLAN / RS485	● (2 ports) / ▲ / ○		
Data protocols: SMA Modbus / SunSpec IEEE 1547 Modbus / Webconnect	● / ● / ●		
ShadeFix technology for string level optimization	●		
Intelligent string performance monitoring	●		
I-V curve diagnostic function	●		
Integrated Plant Control / Q on Demand 24/7	● / ●		
SMA Smart Connected (proactive monitoring and service support)	●		
Certifications			
Certifications and approvals	UL 1741, UL 1699B Ed. 1, UL 1998, CSA 22.2 107-1, PV Rapid Shutdown System Equipment, UL 3741		
FCC compliance	FCC Part 15 Class A		
Grid interconnection standards	IEEE 1547-2018, UL 1741 SA/SB - CA Rule 21, HECO SRD V2.0		
Advanced grid support capabilities	L/HVRT, L/HVRT, Volt-VA, Volt-Watt, Frequency-Watt, Ramp Rate Control, Fixed Power Factor		
Warranty			
Standard	10 years		
Optional extensions	15 / 20 years		
Type designation	STP 33-US-41	STP 50-US-41	STP 62-US-41
○ Optional features ● Standard features - Not available ▲ Subject to availability	Data at nominal conditions - status: 08/2023 * ≥ 2 km from the coast		

 SMA Data Manager M EDMM-US-20	 SMA Sensor Module MD.SEN-US-40	 Universal Mounting System UMS_KIT-10	 AC Surge Protection Module Kit AC_SPD_KIT1-10, AC_SPD_KIT2_T1T2 DC Surge Protection Module Kit DC_SPD_KIT4-10, DC_SPD_KIT5_T1T2
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