



/ STP 50-US-80 / STP 62-US-80 / STP 70-US-80 / STP 31-US-80 (208V)

preliminary

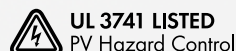


Sunny Tripower X-US

50 / 62 / 70
31 (208V)

/ Integrated intelligence for
future-proof system design.

powered by
ennexOS



Integrated System Manager

- Monitoring and control for up to 5 inverters
- Remote access with Sunny Portal powered by ennexOS
- SMA Dynamic Power Control

Enhanced safety

- Integrated AC and DC disconnects
- Integrated AC type 2 and DC type 1 + 2 surge protection
- Integrated SunSpec PLC signal for module-level shutdown
- Advanced DC AFCI arc-fault protection

Maximum yields

- Five MPP trackers for flexible array design and maximum power production
- SMA ShadeFix string level optimization
- Integrated I-V curve diagnostics

Smart monitoring, control and service

- SMA Smart Connected proactive monitoring and service solution
- SMA ennexOS cross-sector energy management platform

Sunny Tripower X-US is the new innovative inverter solution for commercial PV systems.

Providing five MPP trackers with SMA ShadeFix string optimization technology for optimal PV array design flexibility and maximum energy yields, the German-engineered Sunny Tripower X-US delivers top-tier performance. SMA's proven integrated rapid shutdown support and reliable DC AFCI arc-fault protection ensure enhanced system safety. And now with the new integrated System Manager, powered by SMA's ennexOS cross-sector energy management platform, Sunny Tripower X-US becomes the centerpiece of the SMA Commercial Energy Solution for comprehensive commercial energy systems now and in the future.

Technical data	Sunny Tripower X 50-US	Sunny Tripower X 62-US	Sunny Tripower X 70-US
Input (DC)			
Maximum array power	75000 Wp STC	93750 Wp STC	105000 Wp STC
Maximum system voltage	1000 V		
Rated MPP voltage range	500 V ... 850 V		
MPPT operating voltage range	200 V ... 1000 V		
Minimum DC voltage / start voltage	200 V / 250 V		
MPP trackers / strings per MPP input	5 / 2		
Maximum usable operating input current / Maximum short circuit current per MPPT	40 A / 50 A		
Output (AC)			
Nominal output power	50000 W	62500 W	70000 W
Maximum apparent power	53000 VA	66000 VA	75000 VA
Output phases / line connection	3 / 3-(N)-PE		
Nominal AC voltage	480 V / 277 V WYE		
AC voltage range	244 V ... 305 V		
Maximum output current	64 A	80 A	95.3 A
Rated grid frequency / range	60 Hz / 54 Hz ... 66 Hz		
Power factor at rated power / adjustable displacement	1 / 0.8 leading ... 0.8 lagging		
Harmonics (THD)	< 3 %		
Efficiency			
CEC efficiency	TBD	TBD	TBD
Protection and safety features			
Load rated AC disconnect / Load rated DC disconnect	● / ●		
Ground fault monitoring / grid monitoring	● / ●		
DC reverse polarity protection / AC short-circuit protection	● / ●		
All-pole sensitive residual-current monitoring unit	●		
DC AFCI arc-fault protection / I-V curve diagnostic function	● / ●		
SunSpec PLC signal for rapid shutdown	●		
Surge protection	DC: Type I + II AC: Type II		
Protection class / overvoltage category	I / DC: II AC: III		
General data			
Device dimensions (W/H/D)	670 mm / 640 mm / 270 mm (26.4 in / 25.2 in / 10.6 in)		
Device weight	43 kg (95 lbs)		
Operating temperature range	-25 °C to +60 °C (-13 °F to +140 °F)		
Audible noise emission (full power @ 1m and 25 °C)	55 db(A)		
Topology / cooling concept	Transformerless / OptiCool (forced convection, variable speed fans)		
Enclosure protection rating	Type 4X (as per UL 50E)		
Corrosive classification	C5		
Maximum permissible relative humidity (non-condensing)	100%		
Additional information			
Mounting	Vertical rack / wall mount to 15° from horizontal		
DC connection / AC connection	Staubli MC4 / TBD		
LED indicators (status / fault / communication)	●		
Network interfaces: Ethernet / WLAN	● (2 ports) / ●		
Data protocols: SMA Modbus / SunSpec Modbus / Speedwire	● / ● / ●		
Multi-function relay	●		
Digital Inputs / Fast Stop	4 / 2		
ShadeFix technology for string level optimization	●		
Integrated Plant Control / Q on Demand 24/7	● / ●		
SMA Smart Connected (proactive monitoring and service support)	●		
Standard warranty	10 years		
Optional warranty extensions (total warranty coverage cannot exceed 20 years)	+5 years, +10 years		
Certificates and approvals			
Certificates and approvals	UL 1741, UL 62109-1, UL 1699B Ed.1, PV Rapid Shutdown System Equipment in accordance with UL 1741:2021, UL 3741, UL 1998		
FCC compliance	FCC Part 15 Class A		
Grid interconnection standards	UL 1741 SB, IEEE 1547:2018, CA Rule 21, HECO SRD V2.0		
Integrated System Manager			
Maximum number of supported inverters / energy meters	5 / 1		
Maximum system power PV inverters (nominal AC power)	TBD		
Centralized commissioning of all devices in the system	●		
Remote parameterization of SMA devices	via Sunny Portal powered by ennexOS		
SMA Dynamic Power Control (e.g. zero export / Volt-VAR)	●		
Type designation	STP 50-US-80	STP 62-US-80	STP 70-US-80

● Standard features ○ Optional – Not available Data in nominal conditions Last revision: 08/2025

Accessories



SMA Data Manager M
EDMM-US-20



DC terminal cover



Roof Mount Kit

Technical data	Sunny Tripower X 31-US (208V)
Input (DC)	
Maximum array power	46500 W _p STC
Maximum system voltage	1000 V
Rated MPP voltage range	500 V ... 850 V
MPPT operating voltage range	200 V ... 1000 V
Minimum DC voltage / start voltage	200 V / 250 V
MPP trackers / strings per MPP input	5 / 2
Maximum usable operating input current / Maximum short circuit current per MPPT	40 A / 50 A
Output (AC)	
Nominal output power	31000 W
Maximum apparent power	33000 VA
Output phases / line connection	3 / 3-(N)-PE
Nominal AC voltage	208 V / 120 V WYE
AC voltage range	108 V ... 132 V
Maximum output current	95.3 A
Rated grid frequency / range	60 Hz / 54 Hz ... 66 Hz
Power factor at rated power / adjustable displacement	1 / 0.8 leading ... 0.8 lagging
Harmonics (THD)	< 3 %
Efficiency	
CEC efficiency	TBD
Protection and safety features	
Load rated AC disconnect / Load rated DC disconnect	● / ●
Ground fault monitoring / grid monitoring	● / ●
DC reverse polarity protection / AC short-circuit protection	● / ●
All-pole sensitive residual-current monitoring unit	●
DC AFCI arc-fault protection / I-V curve diagnostic function	● / ●
SunSpec PLC signal for rapid shutdown	●
Surge protection	DC: Type I + II AC: Type II
Protection class / overvoltage category	I / DC: II AC: III
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Mounting	Vertical rack / wall mount to 15° from horizontal
DC connection / AC connection	Staubli MC4 / TBD
LED indicators (status / fault / communication)	●
Network interfaces: Ethernet / WLAN	● (2 ports) / ●
Data protocols: SMA Modbus / SunSpec Modbus / Speedwire	● / ● / ●
Multi-function relay	●
Digital Inputs / Fast Stop	4 / 2
ShadeFix technology for string level optimization	●
Integrated Plant Control / Q on Demand 24/7	● / ●
SMA Smart Connected (proactive monitoring and service support)	●
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Accessories



SMA Data
Manager M
EDMM-US-20



DC terminal cover



Roof Mount Kit

