ASTRONERGY
A CHINT COMPANY

ASTRO 5 Semi

Create Sustainable and Efficient Green Energy

CHSM72M-HC
Monofacial Series (182)

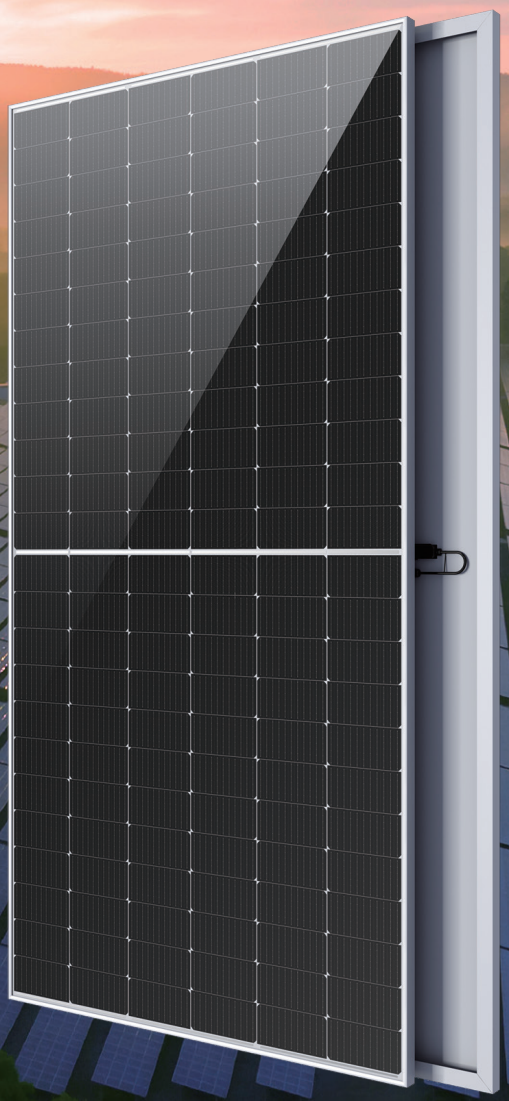
535~550W

PERC+ / Multi-busbar / Half-cut

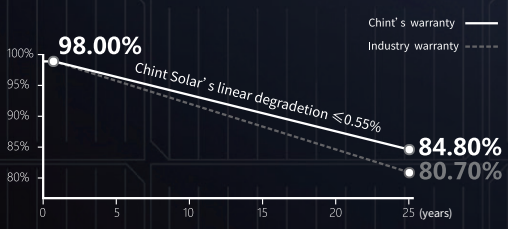
Non-destructive cutting

PID resistance

Lower BOS cost & LCOE



Assist carbon neutrality CO_2



12-year Product Warranty

25-year Linear Power Warranty

ISO 9001:2015:ISO Quality Management System
ISO 14001:2015:ISO Environment Management System
ISO 45001:Occupational Health and Safety
The first solar company which passed the Nord IEC/TS 62941 certification audit.

2021 TOP Performance PVEL

Tier 1 BloombergNEF

Underwritten by International Insurer

535~550W	0~+5W	21.3%	≤ 2.0%	≤ 0.55%
POWER RANGE	POWER TOLERANCE	MAX MODULE EFFICIENCY	FIRST YEAR POWER DEGRADETION	YEAR 2-25 POWER DEGRADETION

Electrical Specifications

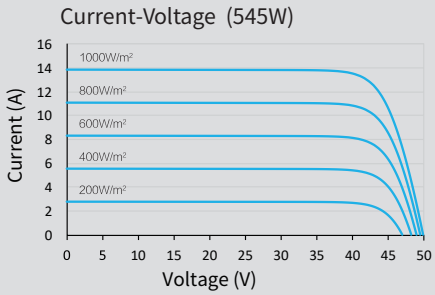
STC: Irradiance 1000W/m², Cell Temperature 25° C, AM=1.5

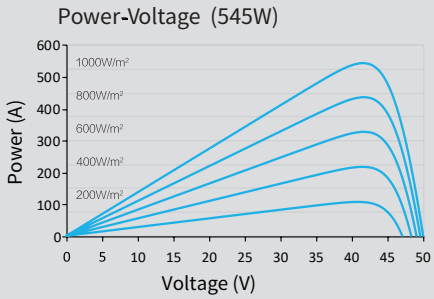
Rated output (Pmpp / Wp)	535	540	545	550
Rated voltage (Vmpp / V)	41.60	41.76	41.93	42.10
Rated current (Impp /A)	12.86	12.93	13.00	13.06
Open circuit voltage (Voc / V)	49.50	49.70	49.90	50.10
Short circuit current (Isc /A)	13.61	13.72	13.81	13.90
Module efficiency	20.7%	20.9%	21.1%	21.3%

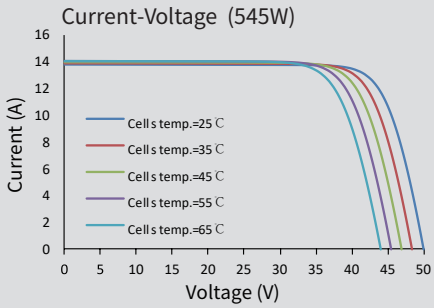
NMOT: Irradiance 800W/m², Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

Rated output (Pmpp / Wp)	399.8	403.5	407.3	411.0
Rated voltage (Vmpp / V)	38.77	38.92	39.08	39.24
Rated current (Impp /A)	10.31	10.37	10.42	10.48
Open circuit voltage (Voc / V)	46.78	46.97	47.16	47.34
Short circuit current (Isc /A)	11.04	11.13	11.20	11.27

Curve







Temperature Ratings (STC)

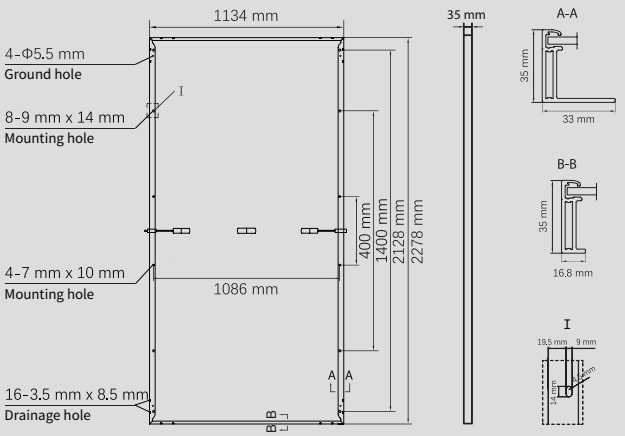
Temperature coefficient (Pmpp)	-0.35%/°C
Temperature coefficient (Isc)	+0.045%/°C
Temperature coefficient (Voc)	-0.27%/°C
Nominal module operating temperature (NMOT)	41±2°C

Operating Parameters

No. of diodes	3
Junction box IP rating	IP 68
Max. series fuse rating	25 A
Max. system voltage (IEC/UL)	1500V_{DC}

Mechanical Specifications

Outer dimensions (L x W x H)	2278 x 1134 x 35 mm
Cell Type	P type Mono-crystalline
No. of cells	144 (6*24)
Frame technology	Aluminum, silver anodized
Front glass thickness	3.2 mm
Cable length (IEC/UL)	Portrait: 300 mm；Landscape: 1400 mm
Cable diameter (IEC/UL)	4 mm² / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 / MC4-EVO2 (optional)
Module weight	26.9 kg (Tolerance +/- 1.0kg)
Packing unit	31 pcs / box (Subject to sales contract)
Weight of packing unit (for 40'HQ container)	893 kg
Modules per 40' HQ container	620 pcs



① Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

SG125CX-P2

Multi-MPPT String Inverter for 1000 Vdc System

Preliminary

HIGH YIELD

- 12 MPPTs with max. efficiency 98.5%
- DC 15A current input, compatiable with over 500W+ PV module
- Dynamic shading optimization mode

SMART O&M

- Key component diagnosis and protection
- Smart IV Curve Diagnosis
- Grid fault record function, easy for remote O&M

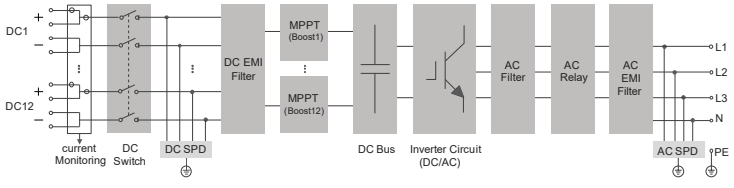
LOWER INVESTMENT

- Compatible max. 240mm² Al AC cables
- Drawer-style cable sealing plate support AC cable pre-assembly

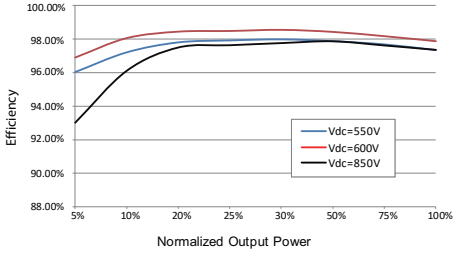
PROVEN SAFETY

- IP66 protection and C5 Anti-corrosion
- DC Type I+II SPD, AC Type II SPD
- Support AFCI 2.0 function

CIRCUIT DIAGRAM



EFFICIENCY CURVE



SUNGROW
Clean power for all

Type designation	SG125CX-P2
Input (DC)	
Recommended max. PV input power	175 kW
Max. PV input voltage	1100 V
Min. operating PV voltage / Start-up input voltage	180 V / 200 V
Rated PV input voltage	600 V
MPP voltage range	180 – 1000 V
No. of independent MPP inputs	12
No. of PV strings per MPPT	2
Max. PV input current	360 A (30 A / 30 A / 30 A / 30 A / 30 A / 30 A / 30 A / 30 A / 30 A / 30 A / 30 A / 30 A)
Max. DC short-circuit current	480 A (40 A / 40 A / 40 A / 40 A / 40 A / 40 A / 40 A / 40 A / 40 A / 40 A / 40 A / 40 A)
Output (AC)	
Max. AC Output power	125 kVA
Rated AC output apparent power	125 kVA
Max. AC output current	181.1 A
Rated AC voltage	3 / N / PE, 230 / 400 V
AC voltage range	320 – 480V
Rated grid frequency / Grid frequency range	50 Hz / 45 - 55 Hz 60 Hz / 55 - 65 Hz
Harmonic (THD)	< 3 % (at rated power)
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging
Feed-in phases / AC connection	3 / 3-PE
Efficiency	
Max. efficiency	98.50%
European efficiency	98.30%
Protection and Function	
DC reverse polarity protection	Yes
AC short-circuit protection	Yes
Leakage current protection	Yes
Grid monitoring	Yes
Ground fault monitoring	Yes
DC switch	Yes
PV string monitoring	Yes
Q at night function	Yes
PID recovery function	Yes
Arc fault circuit interrupter (AFCI)	Yes
Surge protection	DC Type I + II / AC Type II
General Data	
Dimensions (W*H*D)	1019*793*360mm
Weight	87 kg
Topology	Transformerless
Degree of protection	IP66
Night power consumption	< 4 W
Operating ambient temperature range	-30 to 60 ℃ (> 45 ℃ derating)
Allowable relative humidity range	0 – 100 %
Cooling method	Smart forced air cooling
Max. operating altitude	4000 m (> 3000 m derating)
Display	LED, Bluetooth+APP
Communication	RS485 / Optional: WLAN, Ethernet
DC connection type	Evo2 (Max. 6 mm²)
AC connection type	OT / DT terminal (Max. 240 mm²)
Compliance	IEC 62109-1, EN/IEC 61000-6-1/2/3/4, IEC 61727, IEC 62116, EN 50549-1/2, UTE C15-712-1, VDE V 0126-1-1, VFR 2019, NC RfG, G99
Grid Support	Q at night function, LVRT, HVRT,active & reactive power control and power ramp rate control
Country of manufacture	China

SG50CX-P2

Multi-MPPT String Inverter for 1000 Vdc System

Preliminary

HIGH YIELD

- DC 15A current input, compatiable with over 500W+ PV module
- Dynamic shading optimization mode
- Built-in PID recovery function

SMART O&M

- Key component diagnosis and protection
- Smart IV Curve Diagnosis
- Grid fault record function, easy for remote O&M

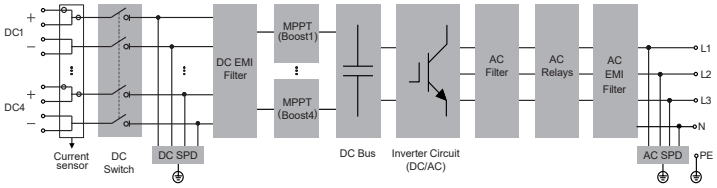
LOWER INVESTMENT

- Easy to handle thanks to 34% weight reduced
- Plug and Play with Buckle Design

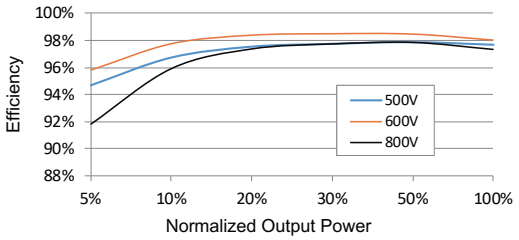
PROVEN SAFETY

- IP66 protection and C5 Anti-corrosion
- DC Type I+II SPD, AC Type II SPD
- Support AFCI 2.0 function

CIRCUIT DIAGRAM



EFFICIENCY CURVE (SG50CX-P2)



SUNGROW
Clean power for all

Type designation	SG50CX-P2		
Input (DC)			
Recommended max. PV input power	70 kWp		
Max. PV input voltage	1100 V		
Min. PV input voltage / Startup input voltage	160 V / 200 V		
Rated PV input voltage	600 V		
MPP voltage range	160 V - 1000 V		
No. of independent MPP inputs	4		
No. of PV strings per MPPT	2		
Max. PV input current	120 A (30 A * 4)		
Max. DC short-circuit current	160 A (40 A * 4)		
Max. current for DC connector	20A		
Output (AC)			
Rated AC output power	50 kVA		
Max. AC output apparent power	55 kVA		
Max. AC output current	83.6 A		
Rated AC output current(at 230V)	72.5 A		
Rated AC voltage	3 / N / PE, 220 / 380 V, 230 / 400 V		
AC voltage range	312 - 480 V		
Rated grid frequency	50 Hz / 60 Hz		
Grid frequency range	45 – 55 Hz / 55 – 65 Hz		
Harmonic (THD)	< 3 % (at rated power)		
Power factor at rated power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging		
Feed-in phases / connection phases	3 / 3-N-PE		
Efficiency			
Max. efficiency / European efficiencyEuro. Efficiency	98.5% / 98.3%		
Protection			
Grid monitoring	Yes		
DC reverse connection protection	Yes		
AC short-circuit protection	Yes		
Leakage current protection	Yes		
Surge protection	DC Type I+II / AC Type II		
Ground fault monitoring	Yes		
DC switch	Yes		
PV String current monitoring	Yes		
Arc fault circuit interrupter (AFCI)	Yes		
PID recovery function	Yes		
General Data			
Dimensions (W*H*D)	645*575*245 mm		
Mounting Method	Wall-mounting bracket		
Weight	40 kg	40 kg	41 kg
Topology	Transformerless		
Degree of protection	IP66		
Corrosion	C5		
Night power consumption	< 5W		
Operating ambient temperature range	-30 to 60 ℃		
Allowable relative humidity range (non-condensing)	0 – 100 %		
Cooling method	Smart forced air cooling		
Max. operating altitude	4000 m		
Display	LED, Bluetooth+APP		
Communication	RS485 / Optional: WLAN, Ethernet		
DC connection type	EVO2 (Max. 6 mm²)		
AC connection type	OT terminal (16~35 mm²)		OT or DT terminal (35~50 mm²)
AC Cable specification	Outside diameter 18~38mm		
Grid Compliance	IEC 62109, IEC 61727, IEC 62116, VDE-AR-N 4105:2018, IEC 61000-6-3, EN 50549-1, CEI 0-21 2019,CEI0-16 2019, VDE 0126-1-1/A1 VFR 2019, UTE C15-712-1:2013, UNE 206007-1/RD 1699, UNE 217002, G99		
Grid Support	Q at night function, LVRT, HVRT,active & reactive power control and power ramp rate control		

SH5.0/6.0/8.0/10RT

Residential Hybrid Three Phase Inverter

FLEXIBLE APPLICATION

- 150–600V wide battery voltage range
- Supports parallel connection with master-slave controlling
- Provides 100% power to unbalance loads in backup mode

ENERGY INDEPENDENCE

- Seamless transition to backup mode for protection against power outages
- Fast charging / discharging to meet the demand of higher consumption

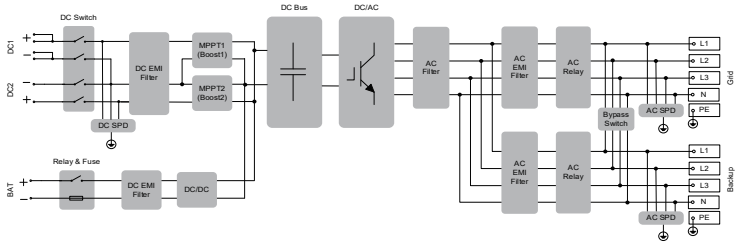
SMART MANAGEMENT

- High self-consumption with optimised built-in EMS
- Free online monitoring to enhance energy management for end user, installer and retailer
- Remote firmware update and customisable settings

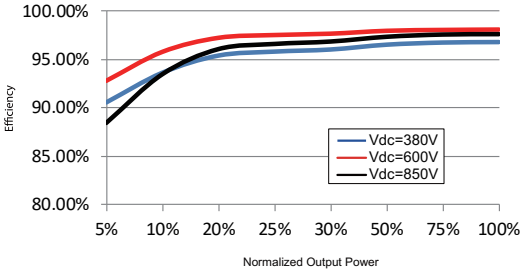
EASY INSTALLATION

- Unique push-in connectors for time-saving installation
- Touch free commissioning with smartphone
- Lightweight and compact

CIRCUIT DIAGRAM



EFFICIENCY CURVE (SH5.0RT)



SUNGROW
Clean power for all

Type designation	SH5.0RT	SH6.0RT	SH8.0RT	SH10RT
PV Input				
Recommended max. PV input power	7500 W	9000 W	12000 W	15000 W
Max. PV input voltage	1000 V			
Startup voltage	180 V	250 V	250 V	250 V
Rated input voltage	600 V			
MPP voltage range	150 V – 950 V	200 V – 950 V	200 V – 950 V	200 V – 950 V
MPP voltage range for nominal power	210 V – 850 V	250 V – 850 V	330 V – 850 V	280 V – 850 V
No. of MPPTs	2			
Max. number of PV strings per MPPT	1 / 1	1 / 1	1 / 1	1 / 2
Max. PV input current	25A (12.5A / 12.5A)	25A (12.5A / 12.5A)	25A (12.5A / 12.5A)	37.5A (12.5A / 25A)
Max. current for input connector	30 A			
Short-circuit current of PV input	32 A (16 A / 16 A)	32 A (16 A / 16 A)	32 A (16 A / 16 A)	48 A (16 A / 32 A)
AC Input and Output				
Max. AC input power from grid	12500 W	15000 W	18600 W	20600 W
Rated AC output power	5000 W	6000 W	8000 W	10000 W
Max. AC output power	5000 VA	6000 VA	8000 VA	10000 VA
Rated AC output apparent power	5000 VA	6000 VA	8000 VA	10000 VA
Rated AC ouput current	7.3 A	8.7 A	11.6 A	14.5 A
Max. AC output current	7.6 A	9.1 A	12.1 A	15.2A
Rated AC voltage	3 / N / PE, 220 / 380 V; 230 / 400 V; 240 / 415 V			
AC voltage range	270 - 480V			
Rated grid frequency / Grid frequency range	50Hz / 45 - 55Hz			
THD	<3% (of rated power)			
DC current injection	<0.5% In			
Power factor	>0.99 / 0.8 leading to 0.8 lagging			
Protection & Function				
LVRT	Yes			
Anti-islanding protection	Yes			
AC short circuit protection	Yes			
Leakage current protection	Yes			
DC switch (solar)	Optional			
DC fuse (battery)	Yes			
Overvoltage category	III [MAINS], II [PV] [BATTERY]			
SPD	DC Type II / AC Type II			
Battery input reverse polarity protection	Yes			
Parallel operation on grid port / Max. No. of inverters	Master-slave mode / 5 * (need same inverters type)			
Battery Data				
Battery type	Li-ion battery			
Battery voltage	150-600V			
Max charge / discharge current	30A ** / 30A **			
Max charge / discharge power	7500W / 6000W	9000 W / 7200 W	10600 W / 10600 W	10600 W / 10600 W
System Data				
Max. efficiency	98.0 %	98.2 %	98.4 %	98.4 %
European efficiency	97.2 %	97.5 %	97.9 %	97.9 %
Isolation method (solar / battery)	Transformerless / Transformerless			
Degree of protection	IP65			
Operating ambient temperature range	-25 ℃ – 60 ℃			
Allowable relative humidity range (non-condensing)	0% - 100%			
Cooling method	Natural convection			
Max. operating altitude	4000 m (>3000 m Derating)			
Noise (Typical)	30dB (A)			
Display	LED			
Communication	RS485, WLAN, Ethernet, CAN, 4×DI, 1×DO			
DC connection type	MC4 (PV) / Sunclix (Battery)			
AC connection type	Plug and play connector			
Compliance	IEC / EN 62109, IEC / EN 61000-6, EN 62477-1, IEC 61727, IEC 62116, IEC 61683, VDE-AR-N-4105, AS/NZS 4777.2:2020, EN50549-1, NRS 097-2-1, TOR Generator Type A			
Country of manufacture	China			
Mechanical Data				
Dimensions (W * H * D)	460 * 540 * 170 mm			
Mounting method	Wall-mounting bracket			
Weight	27 kg			
Backup Data				
Rated voltage	3 / N / PE, 220Vac / 230Vac / 240Vac			
Frequency range	50Hz / 60Hz			
Total hamonic factor output voltage (Linear load)	2%			
Switch time to emergency mode	<20ms			
Rated output power	5000 W / 5000 VA	6000 W / 6000 VA	8000 W / 8000 VA	10000 W / 10000 VA
Peak output power ***	6000 W / 6000 VA, 5min 10000 W / 10000 VA, 10s	7200 W / 7200 VA, 5min 10000 W / 10000 VA, 10s	12000 W / 12000 VA, 5min	12000 W / 12000 VA, 5min
Rated output current for backup load during on grid mode	3 * 18.5 A			

*: Germany is available for 2 inverters parallel in maximum if no ripple control is used in system **: Depending on the connected battery
***: Can be reached only if PV and battery power is sufficient.

COM100E

Smart Communication Box

FLEXIBLE NETWORKING

- Support of RS485, Ethernet and WLAN communication
- Support of energy meter, meteo station, sensors and other equipment

CONVENIENT O&M

- Inverter batch parameter settings and firmware updates
- PV Plant maintenance via remote Web access for optimized OPEX
- Active and reactive power control Local monitoring

EASY OPERATION

- Night light for maintenance
- Robust enclosure, easy to install

EUROPE

SUNGROW
Clean power for all

Type designation	COM100E
Communication	
Max. number of devices	30
RS485 interface	3
Ethernet	1×RJ45, 10/100/1000 Mbps
Digital input	5, Max. 24 VDC
Analog input	4, support 4 – 20 mA or 0 – 10 VDC
Wireless communication	
WLAN communication	802.11 b/g/n/ac HT20/40/80 MHz 2.4GHz / 5GHz
Power supply	
AC input	100 Vac – 300 Vac, 50 / 60 Hz
Power consumption	Typ. 20 W, Max. 30 W
Night light for maintenance	<1 W
Ambient conditions	
Operating Temperature	-30 °C to 60 °C
Storage Temperature	-40 °C to 80 °C
Relative air humidity	≤95 % (non-condensing)
Elevation	≤4000 m
Protection class	IP66
Mechanical parameters	
Dimensions (W * H * D)	460 * 315 * 126 mm
Weight	6 kg
Mounting type	Wall mounted, outdoor and indoor
Box material	PC
Cable specification	AC cable: outdoor UV protection cable of 1 – 1.5 mm², outside diameter 13 – 18mm RS485 cable: outdoor UV protection shielded twisted pair (STP) of 0.75 – 1.5 mm², outside diameter 6 – 18mm Ethernet: CAT5 cable, outdoor UV protection shielded, outside diameter 6 – 18mm AI, DI: outdoor UV protection cable of 1 – 1.5 mm², outside diameter 4.5 – 6mm
Ordering information	
COM100E	The COM100E includes Logger1000B, AC adapter, SPD, Air switch, Night light Support of WLAN wireless communication Apply to Global