



CONSNANT®

OUTDOOR HYBRID POWER SOLUTION

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COMPANY PROFILE

Shenzhen Consnant Technology Co., Ltd. was established in 2015 and is located in Shenzhen City, China.

Over the past years, Consnant has specialized in designing and manufacturing high-quality power solutions and cabinets for outdoor environments, to provide mobile operators, telecom tower companies and other customers with reliable, energy-saving, economical and environmentally friendly solutions to power and telecom equipment.

Our product range includes outdoor AC power solution, outdoor DC power solution, outdoor solar power solution, outdoor AC & DC power solution, and other innovative solutions tailored to outdoor power requirements. In addition to power solutions, we also specialize in manufacturing outdoor units. Our outdoor units are manufactured to industry standards and can be customized to meet specific size, safety, and environmental requirements.

Consnant has obtained a number of national authorized patents and computer software copyrights, and has passed ISO 9001, ISO 14001, OHSAS 18001. The core products have all passed China Certificate for Energy Conservation Product, TLC certification, and European CE certification. The products have been exported to Southeast Asia, Africa, the Middle East, South America, Europe and other regions. We have established long-term friendly cooperation with China Unicom, China Mobile, China Telecom, China Tower and other well-known enterprises. We are also looking forward to working with you for mutual success!



CONSNANT®

Integrated

Outdoor Online UPS 1-10KVA

CNW110 Series


GREEN
ENERGY SAVING
ENVIRONMENTAL
PROTECTION



Integrated Outdoor Online UPS 1-10KVA with Lead-acid Battery

CNW110 Series

Telecom Traffic Lights Local Area Networks CCTV



Product snapshot:

Model: 1-10KVA
Nominal voltage: 220/230/240VAC
Nominal frequency: 50/60Hz
Output power factor: 0.8/0.9



Application:

This UPS is commonly used in corners of the city, remote roads, mountains, bad environments such as high temperature (up to +50°C), low temperature (down to -40°C), severe dust, moisture, rain, mist erosion, and areas with very poor power quality (the voltage has been higher than 260V or lower than 160V for a long time, and the frequency has changed abnormally).

Reliable power supply:

CNW110 series communication edge network outdoor UPS is a high-performance integrated outdoor online uninterruptible power supply system specially designed for wireless communication system of outdoor microcellular base station, which has high technological advancement and practicability.

CNW110 SERIES



High Reliability of the UPS System

- Using microprocessor to control the UPS inverter that works on sinusoidal pulse width modulation (SPWM), simplifying the UPS control circuit, improving the stability, and achieving more real-time capability to quickly respond to changes in the external environment and ensure that the machine's control circuit is simpler and more reliable.

Robust Outdoor Structure

- Fine IP55/56 dustproof and waterproof design.
- Galvanized sheet ensures excellent corrosion resistance.
- With sun protection, heat insulation, roof ventilation.
- Special outdoor powder coating, high temperature and corrosion resistance.

Environmental Adaptability

- Wide input voltage, avoiding frequent switching to battery power supply due to excessive grid voltage, reducing the probability of battery failure, and adapting to the power environment in poor areas.
- The input frequency range is 45~55Hz, ensuring stable operation when connected to various fuel generators, and meeting the user's requirements for fuel engines.

Optional Accessories (Air-conditioner / Heat-exchanger)

We use air-conditioner / heat-exchanger to effectively reduce the temperature inside the cabinet and improve the IP protection level.

Heater and Temperature Controller

In response to low temperature climate impact on batteries and UPS, we adopt adjustable heating device to ensure lifespan of the UPS and battery in normal use.

TECHNICAL SPECIFICATIONS

Model	CNW110-1KVA	CNW110-2KVA	CNW110-3KVA	CNW110-6KVA	CNW110-10KVA
Capacity	1KVA/0.8KW	2KVA/1.6KW	3KVA/2.4KW	6KVA/4.8KW	10KVA/8KW
Nominal Voltage	220/230/240VAC				
Frequency	50Hz/60Hz				
Input					
Voltage Range	115~295VAC (±3VAC)			176~297VAC (±3VAC)	
Frequency Range	50Hz (46~54 Hz); 60Hz (56~64 Hz)				
Soft Start	0~100% 5sec				
Power factor	0.98				
Output					
Voltage Precision	220/230/240VAC x (1±2%) VAC				
Frequency Precision	50Hz/60Hz ±0.05Hz				
Power Factor	0.8/0.9 (optional), standard 0.8				
Wave Distortion	Linear load <3%, Non-linear load <6%				
Overload Capability	Overload (110~150%) for 30 seconds, automatically transfer to bypass. When the load is back to normal, it can automatically transfer to online mode.				
Crest Factor	3:1				
Transfer Time	0ms (AC to DC)				
DC Supply Voltage	36VDC	72VDC	96VDC	192VDC	240VDC
Charging Current	4A/8A (optional)	4A/8A (optional)	4A/8A (optional)	4.2A	4.2A
Internal Battery Capacity	(38/65/80/100AH) optional				
Panel Display					
LCD	Load level, Battery level, Battery indicator, Utility power, Inverter, Bypass, Overload, Fault				
Communications					
Communicate Interface	RS232, SNMP card (optional)				
Work Environment					
Temperature	-40°C~55°C				
Humidity	0~95% (Non-condensing)				
Storage Temperature	-25°C~55°C				
Elevation	<1500m				
Physical Characteristics					
Net Weight (without battery)	85KG	125KG	125KG	150KG	150KG
Dimensions: (WxDxH)mm	613*640*954	650*753*1227	650*753*1227	940*940*1770	940*940*1770

STANDARD: Conform to GB/IEC regulation: EMC: GB7260.2/IEC62040-2 -GB/17626.2 ~ 5/IEC61000-4-2 ~ 5 SAFETY:GB4943

Note: Product specifications are subject to change without further notice.




GREEN ENERGY SAVING ENVIRONMENTAL PROTECTION



Integrated Outdoor Online UPS 1-3KVA with Lithium Battery

CNW110L Series



Product snapshot:

Model: 1-3KVA
Nominal voltage: 220/230/240VAC
Nominal frequency: 50/60Hz
Output power factor: 0.8/0.9



Application:

This UPS is commonly used in corners of the city, remote roads, mountains, bad environments such as high temperature (up to +50°C), low temperature (down to -40°C), severe dust, moisture, rain, mist erosion, and areas with very poor power quality (the voltage has been higher than 260V or lower than 160V for a long time, and the frequency has changed abnormally).

Reliable power supply:

CNW110L series communication edge network outdoor UPS is a high-performance integrated outdoor online uninterruptible power supply system specially designed for wireless communication system of outdoor microcellular base station, which has high technological advancement and practicability.

CNW110L SERIES

Key Features:

- The CONSNANT Outdoor Intelligent High Frequency Online UPS provides continuous pure sine wave AC power supply for outside communication/network equipment.
- Double-conversion online design, high temperature resistance, low temperature resistance, sealing level IP55; With a wide range of input voltage and frequency input window (-45% ~ +35% rated voltage and $\pm 10\%$ rated frequency), suitable for many remote areas where the power grid is under going severe test.



High Reliability of the UPS System

- Using microprocessor to control the UPS inverter that works on sinusoidal pulse width modulation (SPWM), simplifying the UPS control circuit, improving the stability, and achieving more real-time capability to quickly respond to changes in the external environment and ensure that the machine's control circuit is simpler and more reliable.

Robust Outdoor Structure

- Fine IP55/56 dustproof and waterproof design.
- Galvanized sheet ensures excellent corrosion resistance.
- With sun protection, heat insulation, roof ventilation.
- Special outdoor powder coating, high temperature and corrosion resistance.

Environmental Adaptability

- Wide input voltage, avoiding frequent switching to battery power supply due to excessive grid voltage, reducing the probability of battery failure, and adapting to the power environment in poor areas.
- The input frequency range is 45~55Hz, ensuring stable operation when connected to various fuel generators, and meeting the user's requirements for fuel engines.

Optional Accessories (Air-conditioner / Heat-exchanger)

We use air-conditioner / heat-exchanger to effectively reduce the temperature inside the cabinet and improve the IP protection level.

Heater and Temperature Controller

In response to low temperature climate impact on batteries and UPS, we adopt adjustable heating device to ensure lifespan of the UPS and battery in normal use.

TECHNICAL SPECIFICATIONS

Model	CNW110L-1KVA	CNW110L-2KVA	CNW110L-3KVA
Capacity	1KVA/0.8KW	2KVA/1.6KW	3KVA/2.4KW
Nominal Voltage	220/230/240VAC		
Frequency	50Hz/60Hz		
Input			
Voltage Range	115-295VAC (± 3 VAC)		
Frequency Range	50Hz (46-54 Hz); 60Hz (56-64 Hz)		
Soft Start	0-100% 5sec		
Power Factor	0.98		
Output			
Voltage Precision	220/230/240VAC X ($1 \pm 2\%$)VAC		
Frequency Precision	50Hz/60Hz ± 0.05 Hz		
Power Factor	0.8/0.9 (optional), standard 0.8		
Wave Distortion	Linear load <3%, Non-linear load <6%		
Overload Capability	Overload (110% ~150%) for 30 seconds, automatically transfer to bypass. When the load is back to normal, it can automatically transfer to online mode.		
Crest Factor	3:1		
Transfer Time	0 ms (AC to DC)		
DC Supply Voltage	48VDC	48VDC	48VDC
Charging Current	4A/8A (optional)	4A/8A (optional)	4A/8A (optional)
Internal Battery Capacity	LifePo4 battery pack 48VDC 50AH or 48VDC 100AH		
Panel Display			
LCD	Load level, Battery level, Battery indicator, Utility power, Inverter, Bypass, Overload, Fault		
Communications			
Communicate Interface	RS232, SNMP card (optional)		
Work Environment			
Temperature	-40 °C~55 °C		
Humidity	0-95% (Non-condensing)		
Storage Temperature	-25 °C~55 °C		
Elevation	<1500m		
Physical Characteristics			
Net Weight (without battery)	85KG	85KG	85KG
Dimensions: (WxDxH)mm	542*332*626	542*332*626	542*332*626

CONSNANT®

OUTDOOR INDUSTRIAL UPS

CNW310 Series
6~10KVA



Danger electric shock

Outdoor Industrial UPS 6~10KVA

CNW310 Series

Application

Outdoor communication/network equipment and traffic control system are usually used in corners of city, remote roads, mountainous areas, deserts, islands and other harsh environments in which the quality of the power grid is very poor (the voltage has been lower than 160V or higher than 260V for a long time, and the frequency has changed abnormally). And the outdoor low frequency UPS CNW310 series is specially designed for these equipment. It has unique features like high temperature resistance, frost resistance, corrosion resistance, dust resistance, water resistance, lightning protection, and remote control and detection. It also has wide ranges of input voltage and frequency that make it meet the requirements of the outdoor power grid and provide stable power supply.



Features

- Double-conversion online design, providing continuous pure sine wave AC power supply.
- Input and output are equipped with dual isolation transformers, providing double protection that is more secure.
- Equipped with a bypass isolation and bypass voltage stabilizing device, enabling better compatibility with generator access.
- Wide input voltage range and frequency range (-45% to +35% rated voltage and $\pm 10\%$ rated frequency), enabling to well adapt to the power grid.
- Powerful comprehensive protection function.
- The protection level can reach IP56.
- Unattended and intelligent monitoring.
- The input and output system can be 1-phase in / 1-phase out, 3-phase in / 1-phase out, or 3-phase in / 3-phase out.

TECHNICAL SPECIFICATIONS

Model	CNW310- 6KVA	CNW310-10KVA
Capacity	4.8kw	8kw
Type	True online double conversion UPS with dual isolation transformer	
Norminal Voltage	380/400/415Vac 3phase+neutral+ground	
Frequency	50Hz/60Hz	
Built-in	Bypass isolation and bypass voltage stabilizing device	
Input		
Input Votage Range	380/400/415Vac $\pm 15\%$, 3phase+neutral+ground	
Input Frequency Range	50/60Hz $\pm 5\%$	
Maximum Input Current	27A	
Bypass Input		
Voltage Range	400V $\pm 15\%$ 3phase+ground (can be set from the control panel to $+5\% \sim +25\%$)	
Frequency Range	50/60Hz (automatic detection) $\pm 15\%$	
Inverter to Bypass	< 2ms	
Output		
Rated Output Voltage	230V $\pm 1\%$ (steady load), 230V $\pm 3\%$ (dynamic load)	
Rated Output Current	18	
Output Voltage Setting	Output voltage can be set through LCD, range: 210 - 240V	
Crest Factor	3:1	
Frequency Accuracy	50/60Hz $\pm 0.05\text{Hz}$ (battery power supply)	
Power Factor	0.8	
Adjustable Range of AC Output Voltage	± 2	
Voltage Transient Change under Dynamic Load	In a cycle of battery charging and discharging, the fluctuating of the output voltage from no-load to full-load will not exceed 5V	
Waveform Distortion	Linear load < 5%	
Steady State Response Time	<10ms	
Overload Capacity	110% (continous); 125% for 10 min; 150% for 1 min	
Battery		
Battery Type	Lead acid (standard) / lithium (optional)	
Nominal Battery Voltage	192VDC	
Battery Capacity	150Ah	
Floating Charge Voltage	216VDC	
Equalizing Charge Voltage	224VDC	
Cut-off Voltage	168VDC	
Charging Current	Maximum 30A	
DC Bus Ripple	<1% (100% load within 2H)	
Display		
LCD Touch Screen	DC voltage, DC current, charge /discharge, output voltage, output current, input voltage, frequency, system temperature ...	
Communication		
Computer Interface	MODBUS TCP / IP (optional), RJ45	
Dry Contact Function	1. Battery discharge; 2. battery low voltage; 3. remote control to bypass output	
Alarm	Battery low, mains failure, low-voltage, over-voltage, over temperature, overload	
Working Environment		
Working Temperature	$-10^{\circ}\text{C} \sim 50^{\circ}\text{C}$	
Relative Humidity	Maximum 95% (non-condensing)	
Working Altitude	<1000m (the power is derated by 1% for every 100m rise above 1000m, maximum 4000m)	
Storage Temperature	$-5 \sim 45^{\circ}\text{C}$	
Noise (1 meter)	48 ~ 54dB	
Physical Characteristics		
Cooling Mode	Air conditioner + fan	
IP Rating	IP56	
Incoming Line Way	Bottom inlet	
Maintenance	Front, rear	
Dimension: WxDxH (mm)	756 * 1200 * 1856	

CONSNANT®

OUTDOOR TELECOM POWER SYSTEM

OD-TRS-2460/OD-TRS-48100 Series



Telecom equipment, usually used in remote and rugged areas. The OD-TES-2460/OD-TRS-48100 series power supply has unique features like high temperature resistance, water resistance, corrosion resistance, dust resistance, etc. It can provide these equipment reliable power supply under harsh conditions. Besides, it has a wide input voltage range and frequency range, which makes it well adapt to the poor grid quality in these areas.

- The OD-TRS-2460/OD-TRS-48100 series outdoor pole-mounted communication power system has a cost-effective, customizable rack-mounted supporting installation form.
- The system is composed of a rectifier part, a dynamic ring part, an ODF (optical distribution frame), a lithium battery part, and a power distribution part.
- At the same time the whole system can maintain high reliability and provide flexibility for future expansion.
- Based on the monitoring management function and power system monitoring function, equipped with appropriate sensors, the system can achieve environmental monitoring, provide lithium battery status information and system status information, and provide RS232, RS485, LAN communication interfaces.
- It can support Modbus RTU, Modbus ASCII, SNMP V1, V2, V3 protocols for unattended and remote monitoring.

TECHNICAL SPECIFICATIONS

Model	OD-TRS-2460	OD-TRS-48100
System Capacity	24V30A *2 (one master and one backup)	48V50A * 2 (one master and one backup)
System Parameter		
Rated Voltage	220/230/240VAC, Single phase in+Ground	
Input Voltage Range	90~280Vac	90~300Vac
Input Frequency Range	45~63Hz	45~65Hz
Rated Output Voltage	24VDC	48VDC
Stabilization Accuracy	20V ~ 29V	42V~58V
Adjustable Voltage Range	≤ ±1%	
Output Current	30A	50A
Frequency	50/60Hz	
Inverter Efficiency	90%	
Display	LCD+LED	
Alarm	Door opening alarm, temperature and humidity alarm, battery low, mains failure, over temperature	
Work Environment	-10 ~ 40°C	
Relative Humidity	Maximum 95%(Non-Condensing)	
Altitude	<1000m. When >1000m, power derates 1% for every 100m rise. Max. 4000m	
Storage Temperature	-5~45°C	
Storage Relative Humidity	0~90%	
Cooling Mode	Fan cooling	
Noise (1 meter)	53~62dB	
IP Class	IP55	
Incoming Line Mode	Bottom inlet	
Maintenance Mode	Front	
Power Distribution Part	Input with lightning protection level Class+II, level 1+2, compound type; output: 3 channels 24VDC /48VDC	
Built-in ODF	12 LC-UPC duplex adapter connections with 241.5m long, LC/UPC taps, fiber type: G655.C(optional)	
LCD Display	DC voltage, DC current, charge/discharge, output voltage, output current, Input voltage, input frequency, system temperature, etc	
Battery		
Battery Type	Lithium battery pack	
Nominal Battery Voltage	25.6VDC	51.2VDC
Battery Capacity	100AH	50AH
Floating Charge Voltage	27VDC	56VDC
Equalizing Charging Voltage	28.8VDC	58VDC
Cut Off	22VDC	42VDC
Communication		
Computer Interface	MODBUS TCP/IP, SNMP V2/V3, RJ45 Port (System and dynamic ring host monitoring)	
Physical		
Weight (without battery)	99Kg	
Dimension: W×D×H(mm)	670*720*990	
Cabinet Material	SPCC-cold rolled steel (standard), Galvanized Steel / Stainless Steel / Aluminium (optional)	

CONSNANT[®]

Integrated

Outdoor Solar Power System

3KW/5KW 2.56KWH

CNW4850L Series

GREEN
ENERGY SAVING
ENVIRONMENTAL
PROTECTION

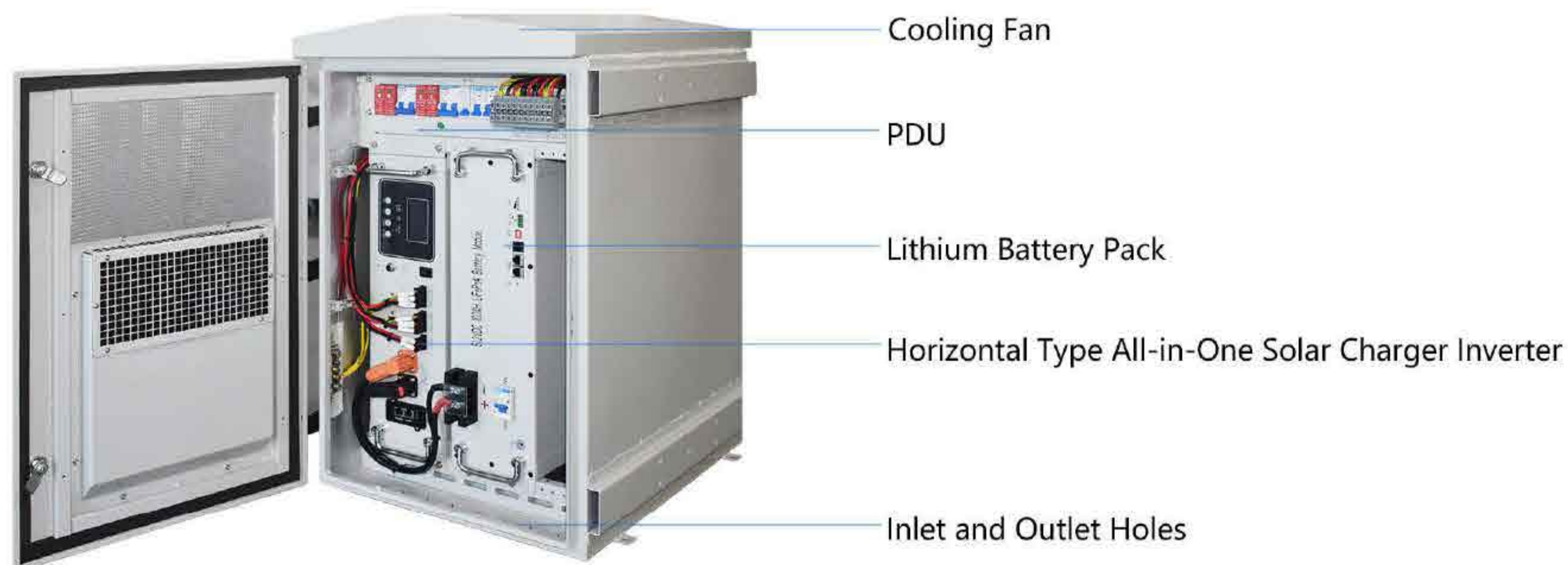
Integrated Outdoor Solar Power System

CNW4850L Series

Telecom Traffic Lights Local Area Networks CCTV



Product snapshot:
Model: CNW4850L
Nominal voltage: 120/230VAC
Nominal frequency: 50/60Hz
Output power factor: 1



Characterization

- The whole system integration includes off-grid solar inverter module, lithium iron phosphate battery pack, PDU, and outdoor cabinet.
- The system is commonly used in corners of the city, remote roads, mountains, bad environments such as dust, moisture, rain, mist-erosion, and areas with very poor power quality.
- The system provides continuous pure sine wave AC power supply for outside communications/network equipment.

Environmental Adaptability

- Wide input voltage range, avoiding frequent switching to battery power supply due to excessive power grid voltage, reducing battery failure probability, to adapt to the power environment in poor areas.
- For the environment which requires higher IP level, we use heat exchanger to effectively reduce the temperature inside the cabinet and improve IP protection level.

CNW4850L SERIES

Key Feature

- It adopts full-digital double closed-loop control combined with advanced SPWM technology to output pure sine waves.
- Two output modes: mains electricity bypass and inverter output, to offer uninterrupted power supply.
- Four charging modes: PV Only, Mains Electricity Priority, PV Priority, and PV&Mains Electricity Hybrid Charging.
- Advanced MPPT technology with 99.9% efficiency.
- Equipped with a LCD display and 3 LED indicators that can clearly indicate the status and data.
- Power saving mode, reducing no-load loss.



- Intelligent variable speed fan to efficiently dissipate heat and extend system lifespan.
- It has two lithium battery activation modes: mains and PV, and supports lithium battery access.
- All-round protection for solar panels including overload and short circuit protection, under-voltage and over-voltage protection, and reverse polarity protection.
- With sun protection, heat insulation, and roof ventilation.
- With waterproof and filtration dust inlets.
- The cabinet body is designed at the IP55 protection level. The front door of the cabinet is designed with waterproof shutters, and the back is welded to the outdoor cabinet.
- Modular design makes it easy to maintain.
- System is equipped with AC and DC lightning protection.

Remark

- Long-term storage of the battery requires a dry, clean, dark, and well-ventilated indoor environment. The suitable storage temperature range is $-20 \sim 35^{\circ}\text{C}$.
 - Batteries must be stored and transported at close to 50% SoC.
 - For long-term storage, the electricity needs to be cycled every 6 months.
- When loading and unloading the battery during transportation, please be careful
- not to drop it, do not stack over 4 layers, or place upside down, and ensure that the front is facing up.



TECHNICAL SPECIFICATIONS

Model	CNW4850L-3KW	CNW4850L-3KWL	CNW4850L-5KW
Inverter			
Output voltage waveform	Pure sine wave		
Rated output power	3000W	3000W	5000W
Rated output voltage	230Vac	120Vac	230Vac
Power factor	1		
Output frequency range	50Hz / 60Hz (Automatic adaptation)		
Rated battery input voltage	48V		
Communication interface	USB/RS232/RS485/Dry Contact WiFi (Optional)		
Surge power	7000VA	7000VA	11000VA
Peak efficiency	>93.6%		
Switch time	10ms		
Grid voltage regulation (battery mode)	±5%		
AC Charge			
Maximum AC charge current	80A		
DC Charge			
PV maximum open circuit voltage	500VDC		
PV maximum power	5000W	5000W	6000W
MPPT operating voltage range	120VDC-450VDC		
Maximum PV charge current	100A		
Battery			
Battery type	LiFePO4		
Rated capacity	50Ah		
Nominal voltage	48VDC / 51.2V		
Cycle life	3500 cycles ≥80%, 25±2°C, 1C/1C, 80% DOD		
Environment			
Humidity	5% to 95% Relative humidity (non-condensing)		
Altitude	Less the 2000m		
Operating temperature range	-10°C to 50°C		
Storage temperature range	-15°C ~ 60°C		

STANDARD: Conform to GB/IEC regulation: EMC: GB7260.2/IEC62040-2 -GB/17626.2 ~ 5/IEC61000-4-2 ~ 5 SAFETY:GB4943

Note: Product specificatons are subject to change without further notice.



HYBRID TELECOM POWER SYSTEM

OD-TRSS Series



Hybrid Telecom Power System



Product Description

OD-TRSS series telecom power system integrates solar & rectifier power system, cooling system, site monitor system to provide safe and reliable environment for telecom equipment. It can be widely used in outdoor site.

Application Field

Communication Base Station

Product Features

Multi-Energy Complementary Power Supply Solution

According to the site environment, accesses different complementary power supply systems of solar energy, mains electricity, and generator.

Modular Design

The solar modules and rectifier modules adopt a modular hot-swappable design, enabling flexible configuration, convenient expansion, and easy maintenance.

Excellent MPPT Function

Maximum power tracking accuracy is greater than 99.5%, system conversion efficiency is greater than 96% (solar mode).

Energy Saving Management Mode

Maximizes energy saving, according to the operation mode of the solar energy priority, mains (generator) supplement, and and battery backup. Makes full use of green solar energy, achieving the purposes of energy saving and emission reduction.

Intelligent Battery Management

It has battery protection function, automatic voltage regulation, current limiting, battery capacity calculation, automatic equalizing and floating charge conversion, online battery test, ect. A series of complete battery management functions ensure long service life of batteries in harsh power grid environment.

All-Round Lightning Protection

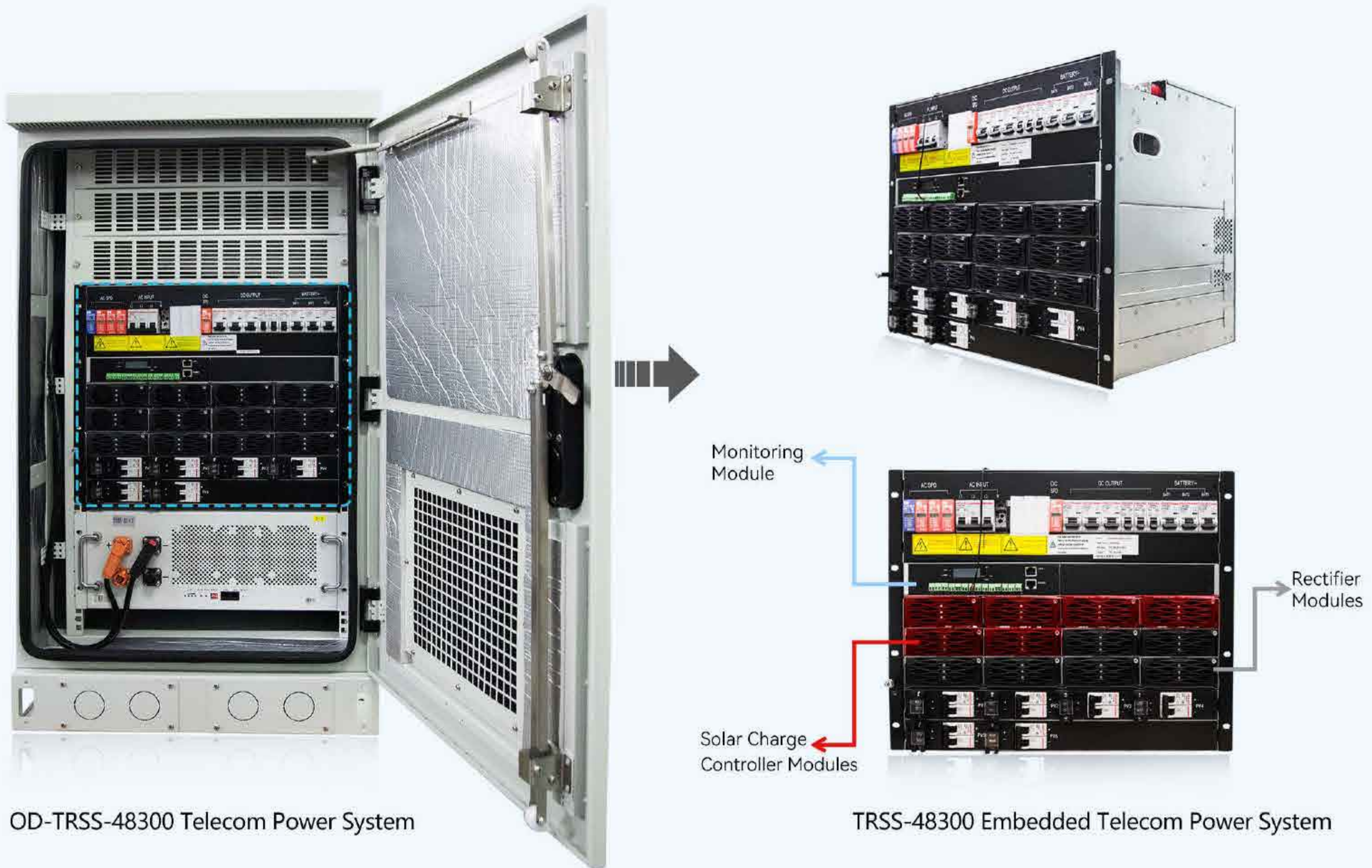
The system provides all-round lightning protection on the AC input side, solar input side, DC side, and signal side.

Protection Design

IP55 high protection grade cabinet and advanced temperature control design ensure reliable operation of the system in harsh outdoor environments.

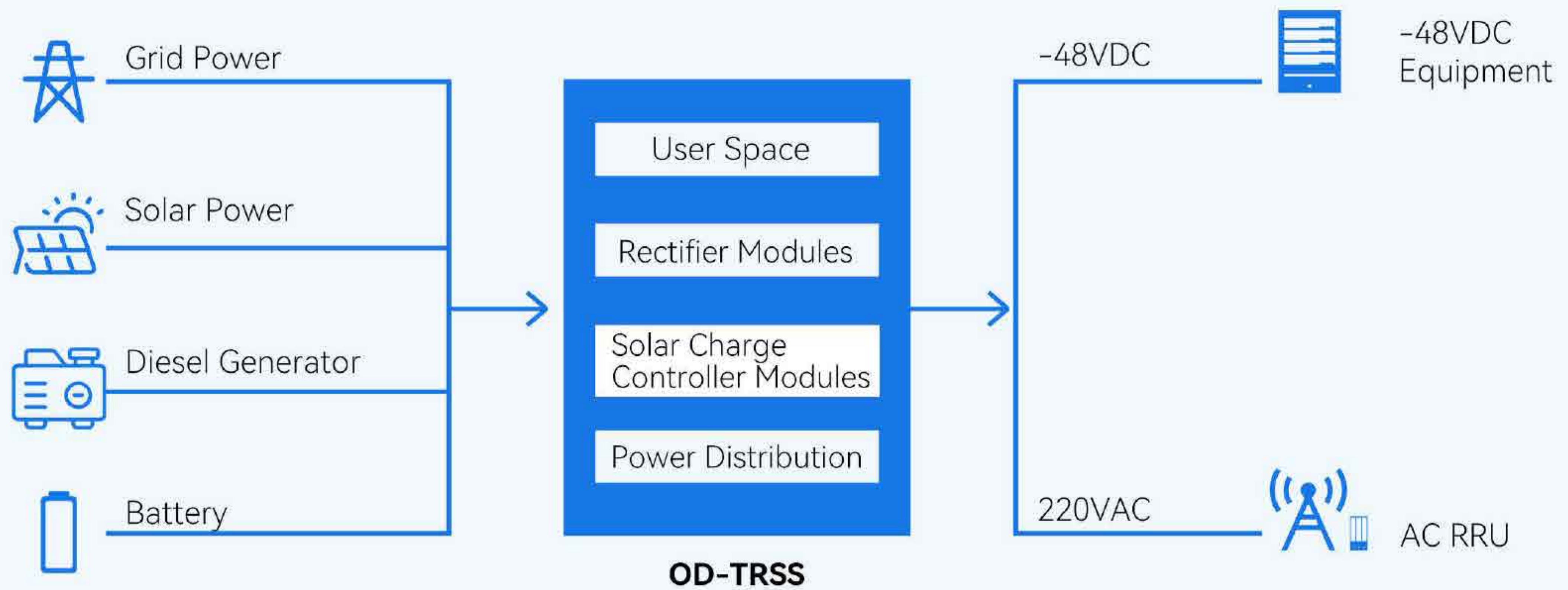
Flexible Monitoring Networking

The system can realize local monitoring and remote monitoring control, providing dry contacts, CAN communication and RS232 intelligent ports. The monitoring unit adopts centralized monitor to manage the solar module, mains power, rectifier, and generator.



Model	Configuration	Input Voltage Range	Output Voltage (Typical)	Output Current(Max)	Output Power(Max)	Modules Quantity
TRSS-48300	Solar Charge Controller Modules	120~425 VDC	-54.5VDC	300A	18KW	1~6
	Rectifier Modules	85~300 VAC	-53.5VDC	300A	18KW	1~6

Working Diagram



Working Mode

- **AC+PV+Bat Mode:**

Normally, the power system runs in a parallel floating charge state, that is, the rectifier module, solar module, load, and battery work in parallel. Solar modules and rectifier modules provide floating charge current for power communication devices and batteries. If the output power of the solar module is insufficient to feed all the loads, the rectifier module will provide supplementary power for the communication devices.

- **PV+Bat Mode:**

When the mains power is off, the rectifier module stops working. If the solar power supply is normal, the solar module will feed the communication devices and charge the battery. If the output power of the solar module is insufficient to feed all the loads, the battery will provide supplementary power for the communication devices .

- **Gen+Bat Mode:**

When the mains power is off, the rectifier module stops working. If the solar energy fails at the same time, the communication devices will be powered by batteries. When the battery discharge continues for a period of time to the point of the generator start, the monitor sends start signal to the generator. Generator provides AC input power for the rectifier module, then the rectifier can supply power to the communication devices again and charge the battery to compensate for the consumption. When reaching the stop point of the generator, the monitor unit sends out a stop signal to the generator, and the generator turns off.

Technical Specifications

Model	OD-TRSS-48300	OD-TRSS-48600
Cabinet		
Size(mm)	W*D*H = 759*693*1430 mm (without air conditioner) W*D*H = 759*817*1430 mm (with air conditioner)	
User Equipmet Space (U)	17U	13U
Weight (kg)	130/145kg (without/with air conditioner)	160/175kg (without/with air conditioner)
Rectifier Module		
Rated Power	3000W (standard) / 4000W (optional)	
Number (pcs)	1 to 6	1 to 12
Size (mm)	W*D*H=106.5*286*41.5 (±0.5mm)	
Weight (kg)	< 2kg	
Solar MPPT Module		
Rated Power	3000W	
Number (pcs)	1 to 6	1 to 12
Size (mm)	W*D*H=106.5*286*41.5 (±0.5mm)	
Weight (kg)	< 2kg	
AC Input		
AC Input Rated Voltage	Single-Phase 220Vac / Three-Phase 380Vac	
AC Input Voltage Range	85Vac~300Vac	
AC Input Maximum Current	40A (1 phase supply 2 modules maximumly)	80A (1 phase supply 4 modules maximumly)
AC Input Voltage Frequency	45~65Hz (Typical value 50 / 60Hz)	
AC Power Factor	≥0.99 (220 Vac rated Load)	
PV Input		
PV Input Ranges	120Vdc~425Vdc (Starting voltage over 160Vdc)	
PV-Rated Input Voltage	340Vdc	
MPPT Voltage Range	120Vdc to 340Vdc	
Maximum Input Current of PV	17A	
Maximum Input Voltage of PV	450Vdc (Power supply cannot be damaged)	
Photovoltaic Module Reverse Pole Protection	Error input polarity, no damage	
Photovoltaic Module Input Protection	Positive and negative fuse	
Output		
Rectifier Output Voltage Range	-43.2Vdc~-57.6Vdc (Typical value-53.5Vdc)	
Rectifier Output Maximum Power	18kW	36kW
PV Output Voltage Range	-42Vdc~-58Vdc (Typical value-54.5Vdc)	
Voltage Stabilization Accuracy	≤±1%	
Output Ripple & Noise	≤200mVp-p (Rated input voltage and load and bandwidth limit of 20 MHz)	≤100mVp-p (Rated input voltage and load and bandwidth limit of 20 MHz)
Current-Sharing Imbalance	≤±5% (Within the 50-100% load range)	≤±3% (Within the 50-100% load range)
Rectifier Module Efficiency	≥93% / ≥95% / ≥96% Optional	
PV Module Efficiency	≥96%	
Startup Time	3~10S (The rated input voltage starts to the output voltage establishes to the setting value, the starting output needs to use the pre-flow limit function)	

Technical Specifications

On/Off Overshoot Amplitude		the system output voltage fluctuates $\leq \pm 5\%$, during hot swap of any module (At this time the load current should not be greater than the total output current of the working modules).	the system output voltage fluctuates $\leq \pm 3\%$, during hot swap of any module (At this time the load current should not be greater than the total output current of the working modules).
Dynamic Response	Overshoot Amplitude	$\leq \pm 5\%$ (25%-50%-25% or 50%-75%-50% load change)	$\leq \pm 1\%$ (25%-50%-25% or 50%-75%-50% load change)
	Recovery Time	$\leq 200\mu s$ (25%-50%-25% or 50%-75%-50% load change)	$\leq 10\mu s$ (25%-50%-25% or 50%-75%-50% load change)
Temperature Coefficient		$\leq \pm 0.02\%/^{\circ}C$ (For every 10 $^{\circ}C$ change in temperature, the difference between the DC output voltage and the output voltage setting value should not exceed $\pm 0.02\%$ of the output voltage setting value.)	
Psophometrically Weighted Noise Voltage		$\leq 2mV$	
Wide-Band Noise Voltage	3.4~150KHz	$\leq 50mV$	$\leq 3mV$
	0.15~30MHz	$\leq 20mV$	$\leq 5mV$
Discrete Noise Voltage	3.4~150KHz	$\leq 5mV$	$\leq 2mV$
	150~200KHz	$\leq 3mV$	$\leq 1mV$
	200~500KHz	$\leq 2mV$	$\leq 1mV$
	0.5~30MHz	$\leq 1mV$	$\leq 1mV$
Recovery Time		$\leq 500mV$	
Protection			
AC Input Overvoltage Protection		300Vac (Can self-recovery, the return difference of not less than 10 Vac)	
Photovoltaic Input Overvoltage Protection		430Vdc (Can self-recovery, the turn difference of not less than 15 Vac)	
AC Input Undervoltage Protection		85Vac (Can self-recover with a return difference of not less than 5 Vac)	80Vac (Can self-recover with a return difference of not less than 5 Vac)
Photovoltaic Input Undervoltage Protection		110Vdc (Can self-recovery, the return difference of not less than 40 Vac)	
Recfier Output Overvoltage Protection		$-59Vdc \sim -61Vdc$ (Lock, can not recover, need to restart)	
Photovoltaic Output Overvoltage Protection		Internal: -58.5 to $-60.5Vdc$, External: 63Vdc (Lock, can not recover, need to restart)	
Output Undervoltage Protection		Battery disconnect protection (Through monitoring, the battery can be powered down, and the protection point can be set)	
Output Limit Protection		Have	
Output Short Circuit Protection		Have (Can long-term short circuit, can recover automatically)	
Overtemperature Protection		It can recover automatically at the ambient temperature of $75^{\circ}C$	
Battery Polarity is Connected to Reverse Protection		Not have (According to the user needs can have the battery polarity reverse connection protection function)	
PV Underpower Protection		Input power $< 50W$ and shutdown for 5 minutes (The module starts when the input voltage is greater than 160 Vdc for 5 minutes.)	
Temperature Control			
Cooling		Single or dual fan of 48Vdc, 100W, P44, PWM with temperature regulation.(optional)	
		5000W 1000W 1500W AC/DC air conditioner (optional)	
		500W 1000W heat exchanger (optional)	
Heating (Optional)		Heater (500W)	
Environmental			
Operating Temperature		$-40^{\circ}C \sim -50^{\circ}C$	$-15^{\circ}C \sim -45^{\circ}C$
Storage Temperature		$-45^{\circ}C \sim -70^{\circ}C$	$-40^{\circ}C \sim -70^{\circ}C$
Relative Humidity		5%-95%	
Altitude(m)		$\leq 4000m$ (3000~4000m capacity derated output)	

OUTDOOR UNIT

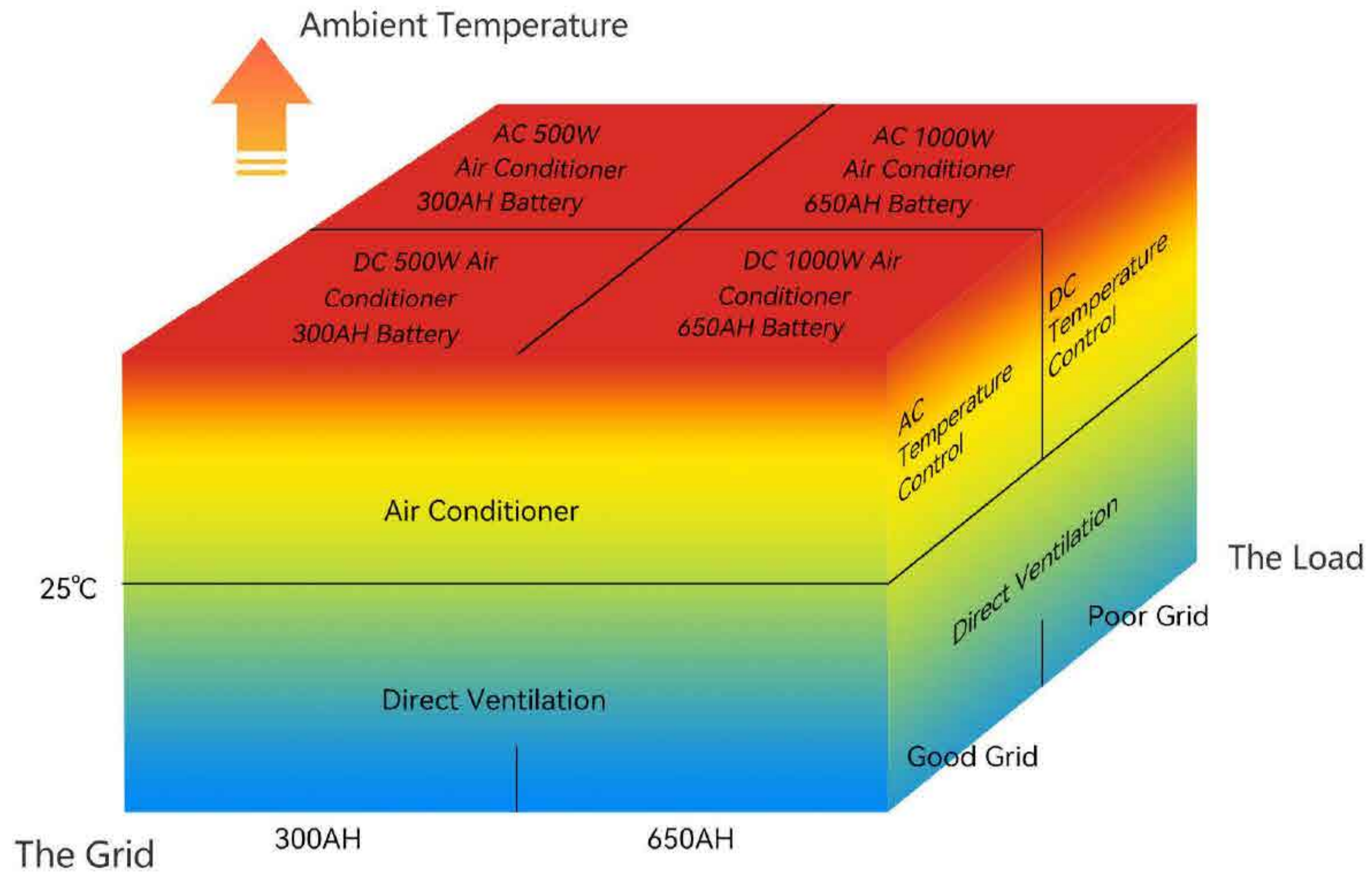




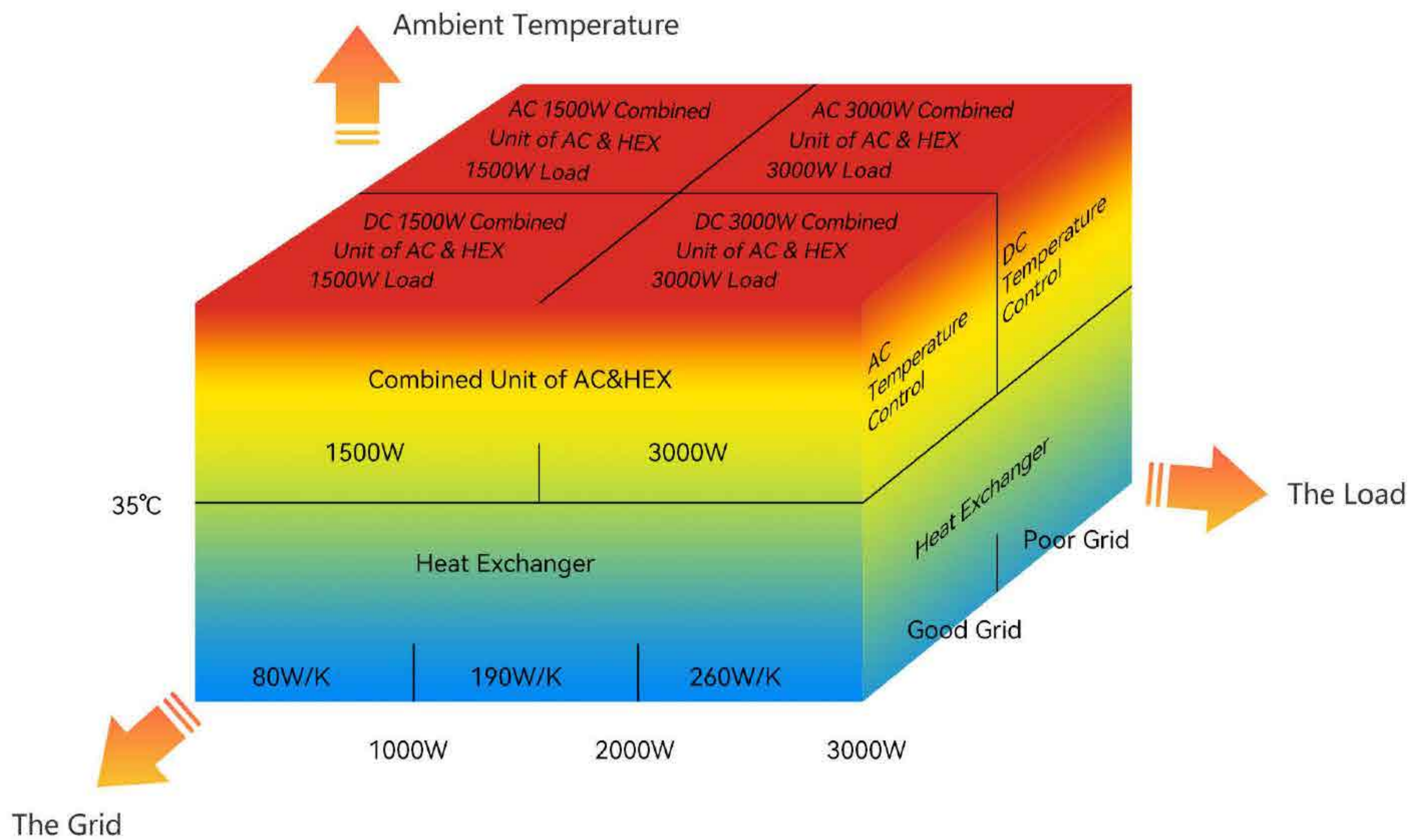
PANORAMA OF TEMPERATURE CONTROL

Subdivided temperature control based on ambient temperature, the grid, and the load.

- Temperature Control in Battery Compartment



- Temperature Control in Equipment Compartment



PANORAMA OF TEMPERATURE CONTROL

	Temperature control scheme	Power	Refrigeration capacity	Heat dissipation capacity	COP	Environment temperature	Cabinet temperature	MTBF(h)
Active temperature control	TEC (IP55)	300W	200W	/	0.7	<40°C	<30°C	2,500,000
	PC500 (IP55)	200W	500W	/	2.5	<55°C	<30°C	1,300,000
	PC500D (IP55)	250W	500W	/	2	<55°C	<30°C	1,300,000
Passive temperature control	IP34 direct ventilation (RRU Cabin)	50W	2500W	250W/K	50	<40°C	Ta+3°C	2,920,000
	IP55 direct ventilation (Equipment compartment)	50W	1500W	150W/K	30	<40°C	Ta+3°C	2,920,000
	HX08 (IP55)	50W	1000W	80W/K	7	<40°C	Ta+10°C	2,920,000
	HX20 (IP55)	130W	2000W	200W/K	12	<40°C	Ta+10°C	2,920,000
	HX26 (IP55)	260W	3000W	260W/K	12	<40°C	Ta+10°C	2,190,000
Intelligent temperature control	AH1500 (IP55)	620W	1500W	75W/K	2 ~ 15	<55°C	<40°C	1,300,000
	AH3000 (IP55)	850W	3000W	120W/K	2 ~ 15	<55°C	<40°C	1,300,000
	AH1500D (IP55)	560W	1500W	80W/K	2 ~ 15	<55°C	<40°C	1,300,000
	AH3000D (IP55)	1050W	3000W	120W/K	2 ~ 15	<55°C	<40°C	1,300,000



Heat Exchanger



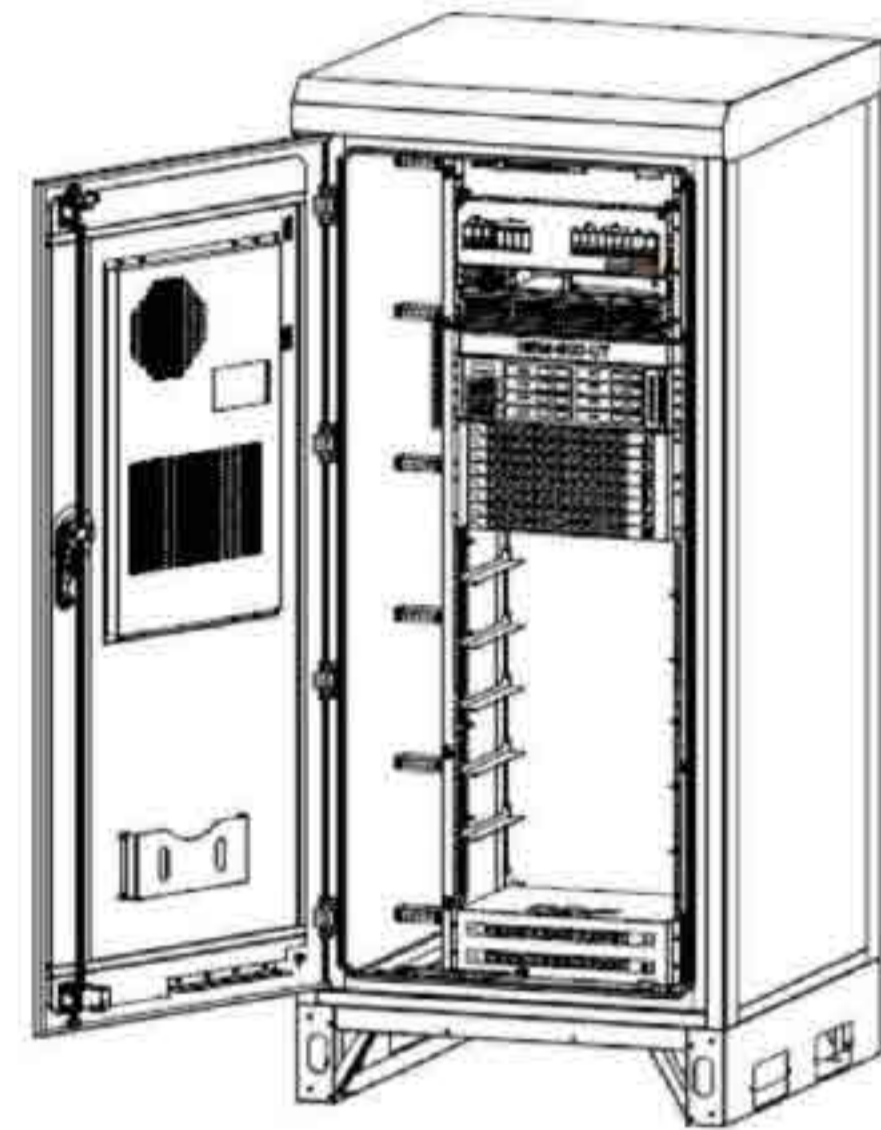
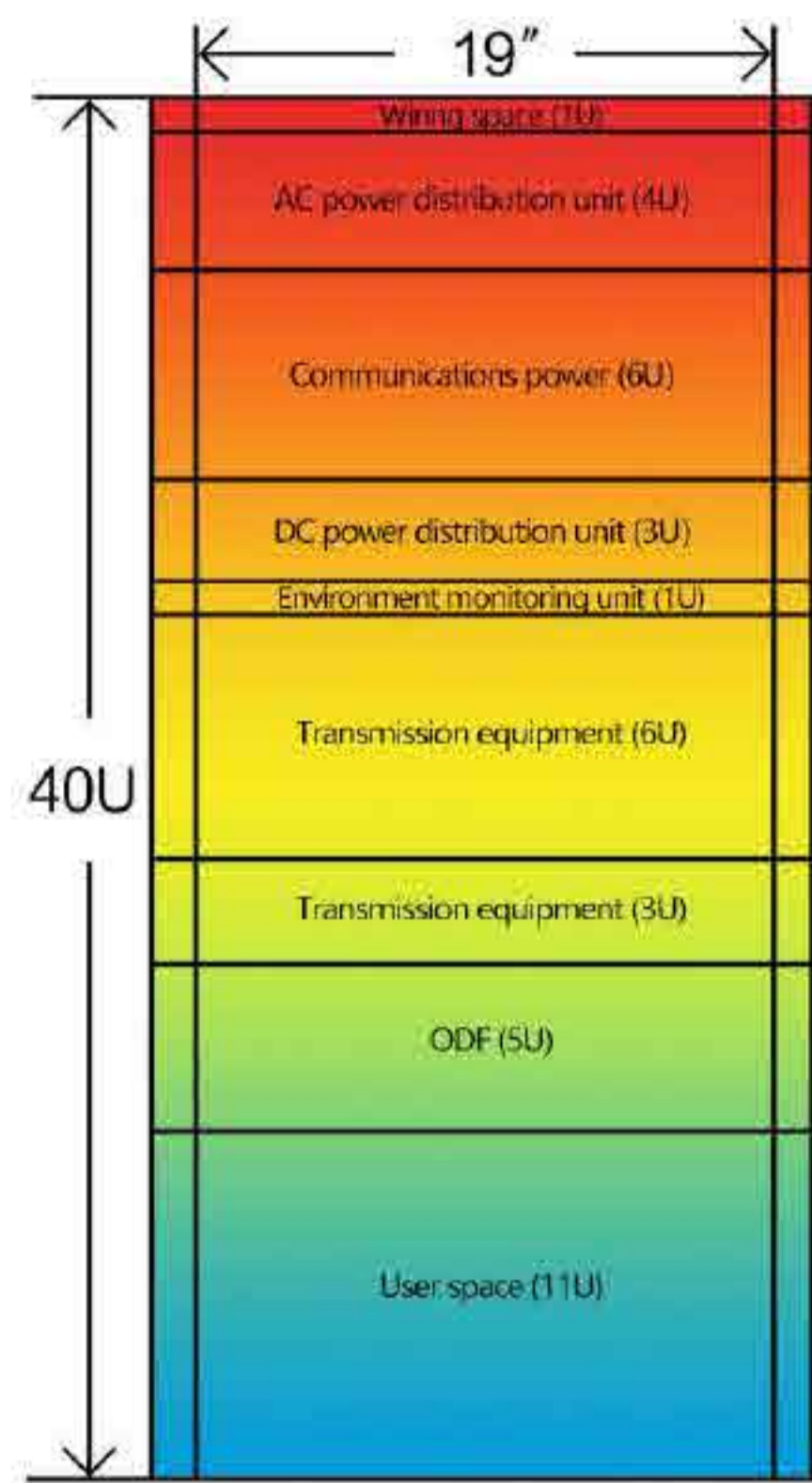
Air Conditioner

OUTDOOR EQUIPMENT CABINET

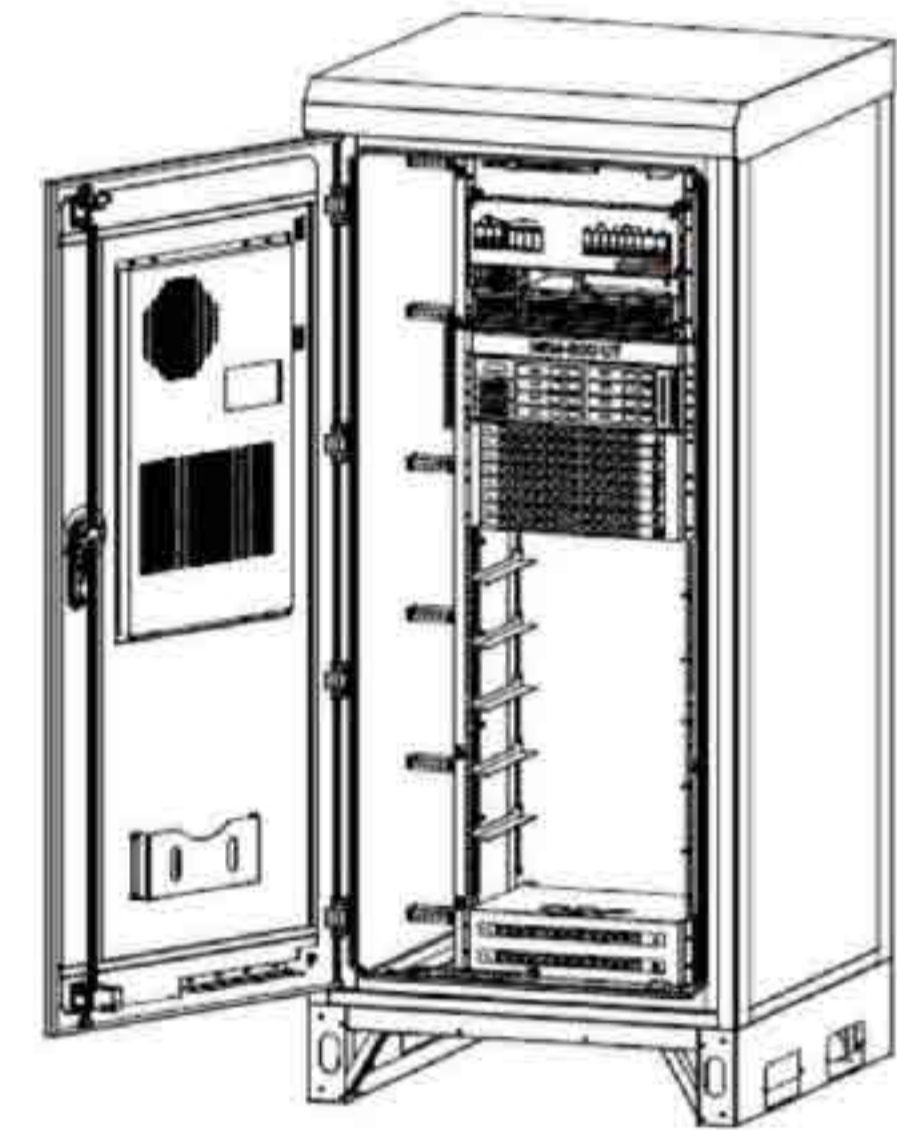
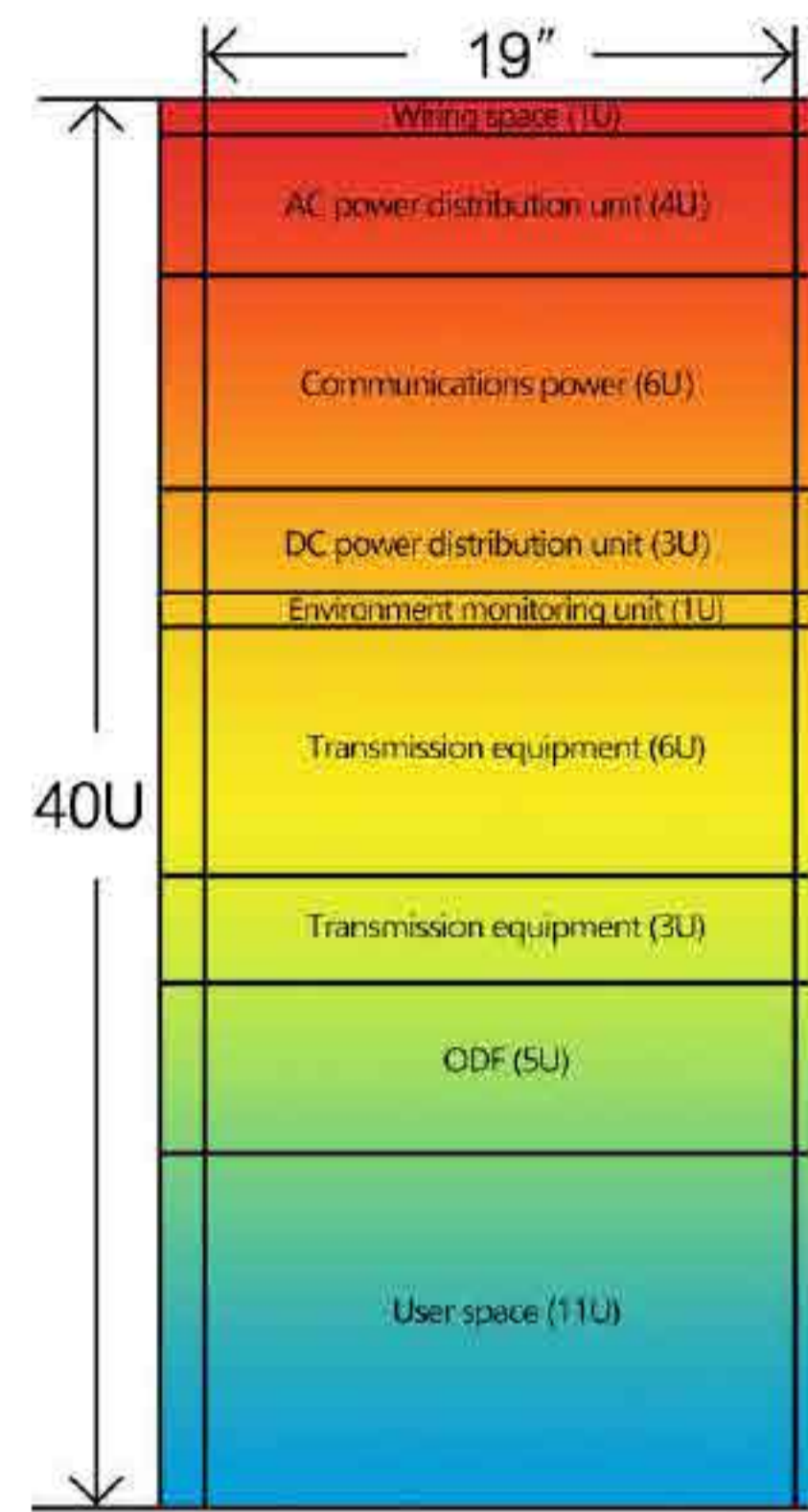
Product Parameters

Model	ODC - E18AC15A01	ODC - E18HX08A01	ODC- E18HX12A01	ODC - E18HX19A01
Basic Information				
Inner dimensions of the cabinet	800mm (W) * 800mm (D) * 1800mm (H)			
Outer dimensions of the cabinet	905mm (W) * 1080mm (D) * 2105mm (H)			
Floor area	905mm (L) * 905mm (W)			
Base height	200mm			
Weight	120kg (Without equipment and battery)	108kg (Without equipment and battery)		
User space	40U			
Frame material	Galvanized steel			
Wall plate material	Color steel sandwich panel (standard), SPCC cold rolled steel / galvanized steel / stainless steel / aluminium (optional)			
Wall plate thickness	45mm			
Door lock	Heaven and earth 3-point anti-theft lock with replaceable Euro cylinder. Allows for additional padlock.			
Protection rating	IP55/IP56			
Specification of bottom cable routing hole	8 * ϕ 50mm			
Cabinet storage temperature	-40°C ~ +70°C			
Relative humidity outside the cabinet	5% ~ 100%			
Temperature Control Information				
Temperature control in equipment compartment	PC1500	HX08	HX12	HX19
Power consumption	600W @L35/L35	70W	190W	190W
Refrigeration capacity	1500W @L35/L35	/	/	/
Heat exchange coefficient	/	80W/K	120W/K	190W/K
Heater power consumption (optional)	1000W	400W	1000W	1000W
Other Information				
Lighting (optional)	DC-48V LED lamp			
Certification & Standards				
Certification	TLC certification			
Standards	YD/T 1537-2015			

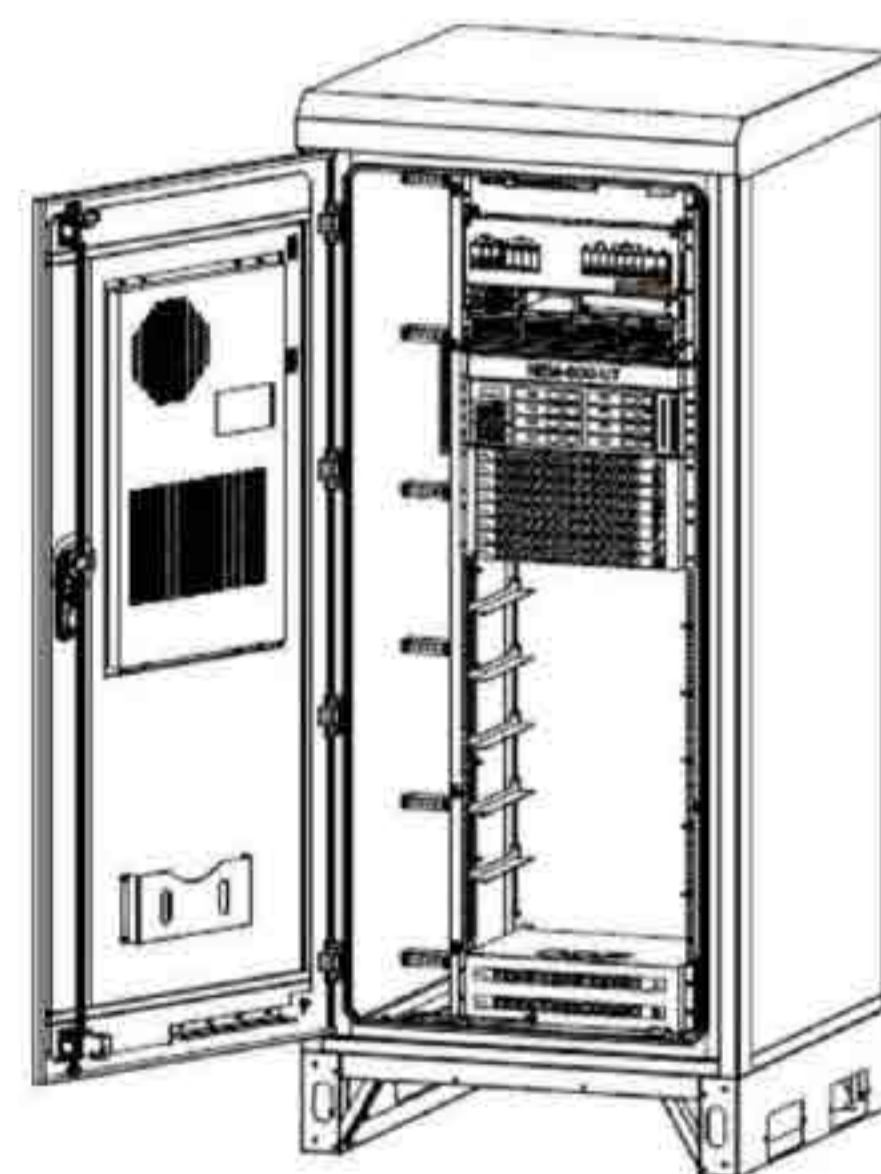
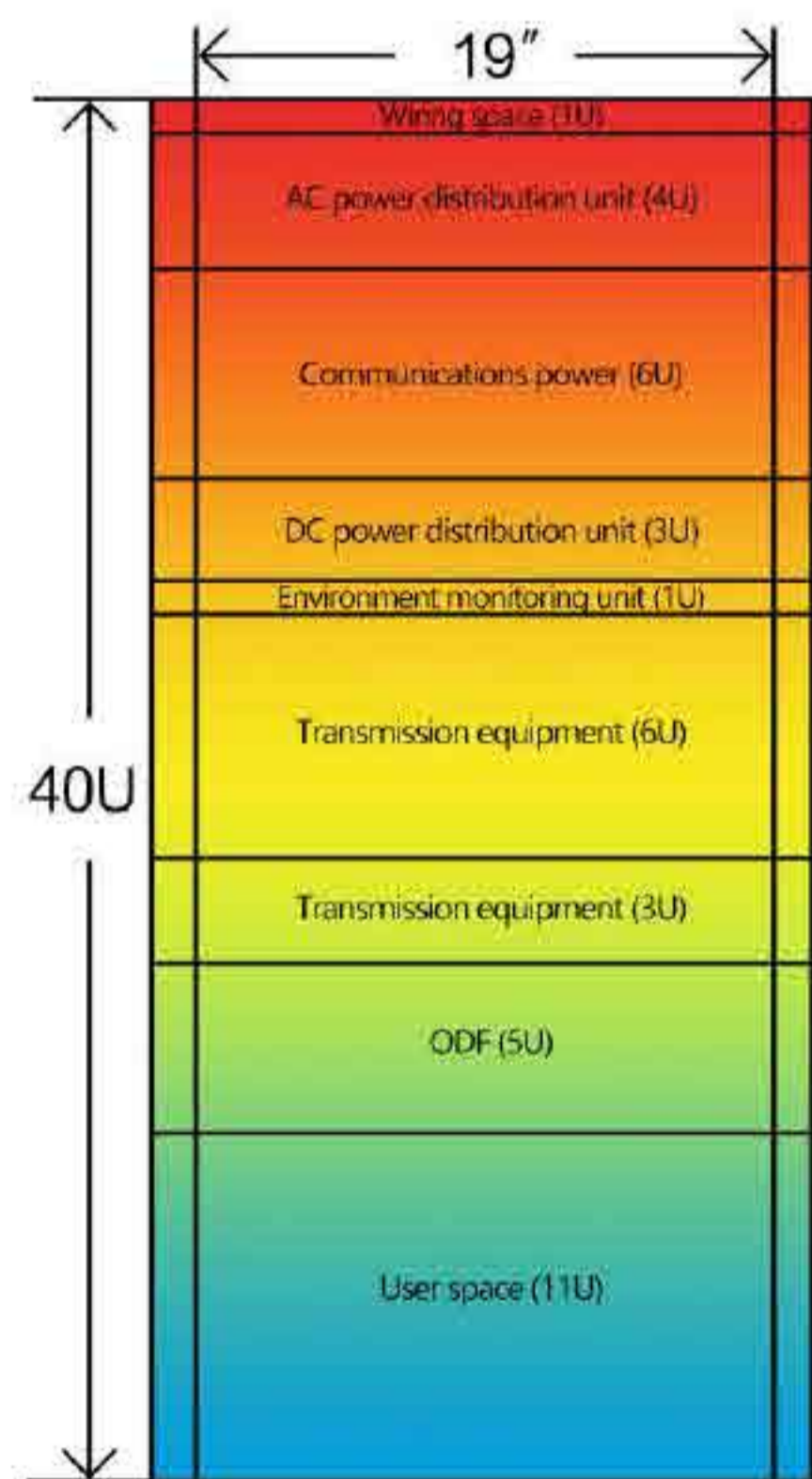
OUTDOOR EQUIPMENT CABINET



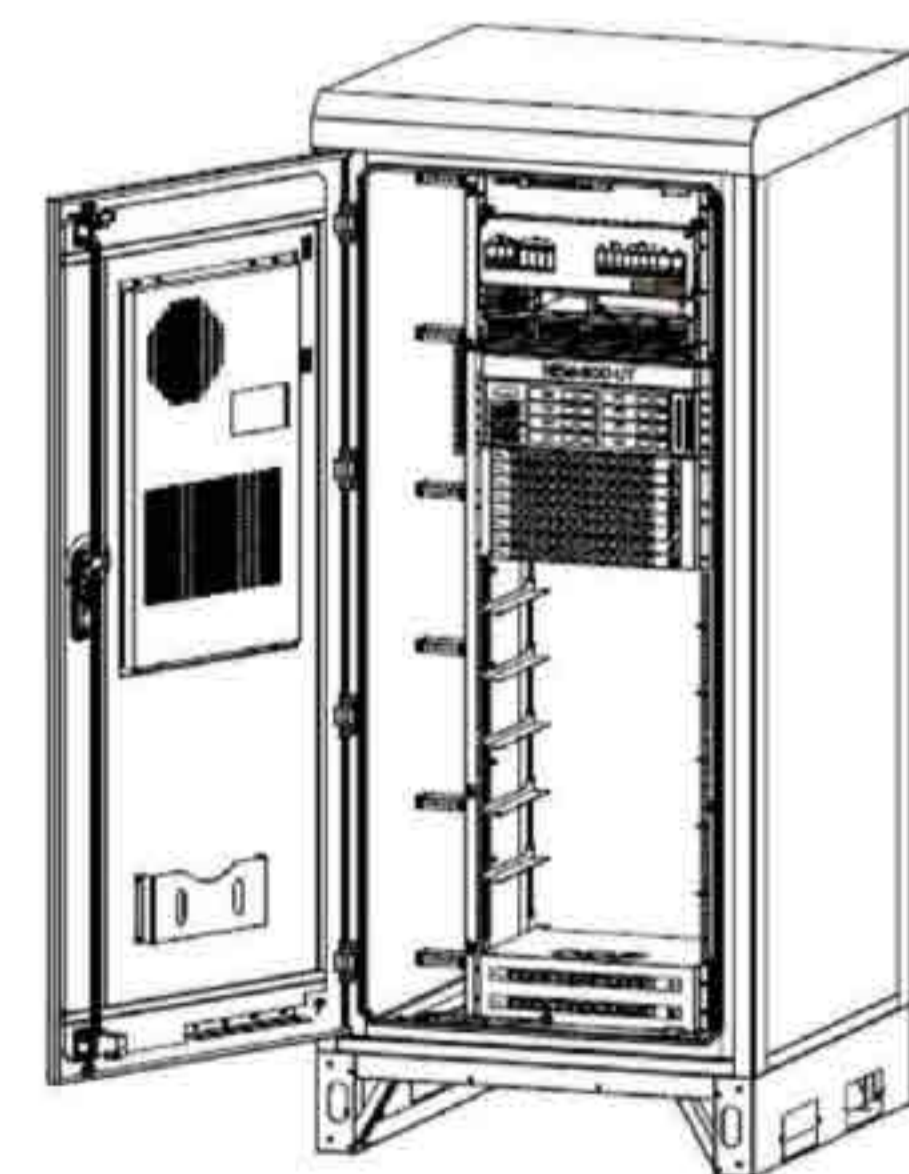
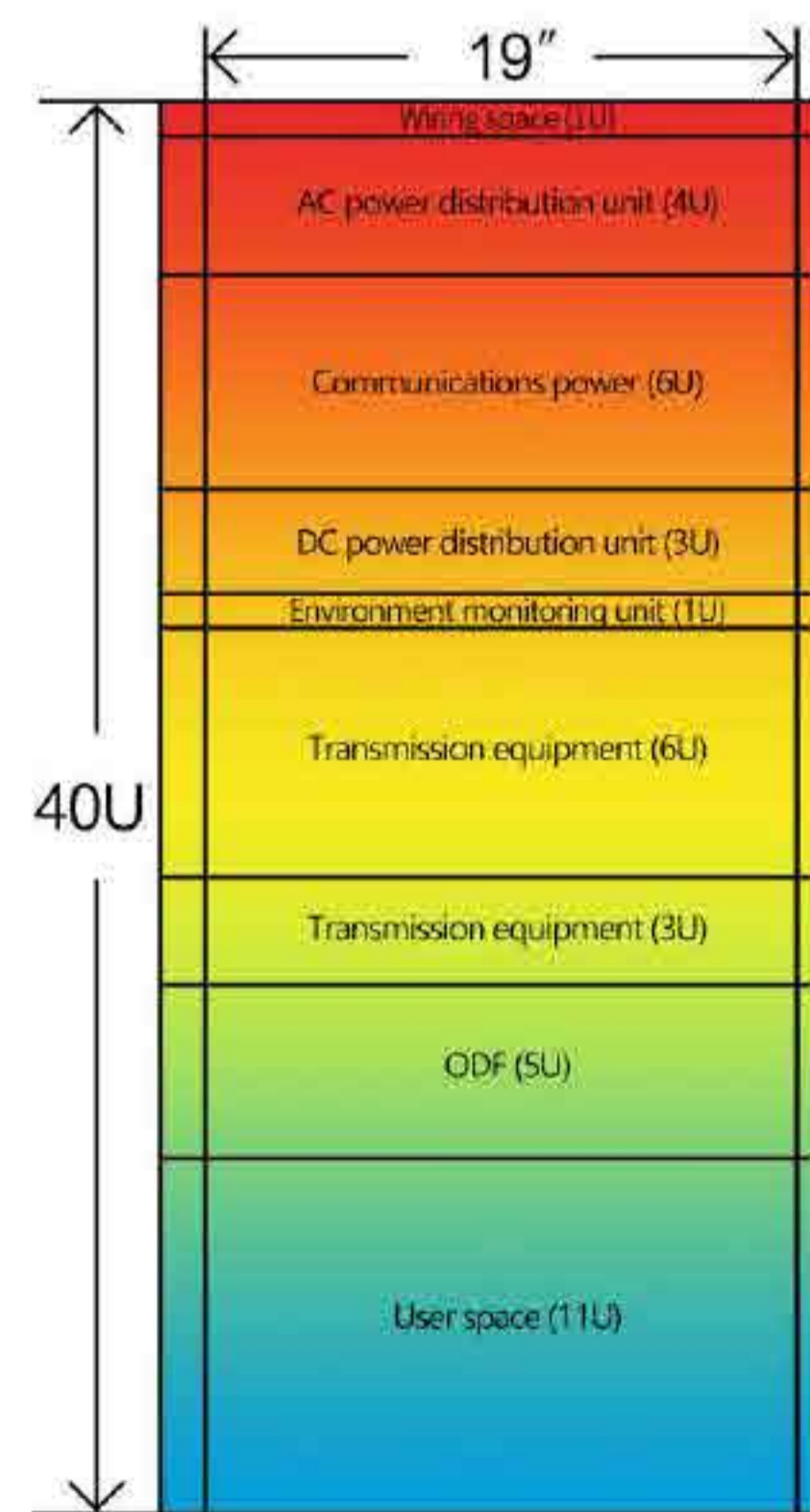
ODC -E18AC15A01



ODC -E18HX08A01



ODC- E18HX12A01

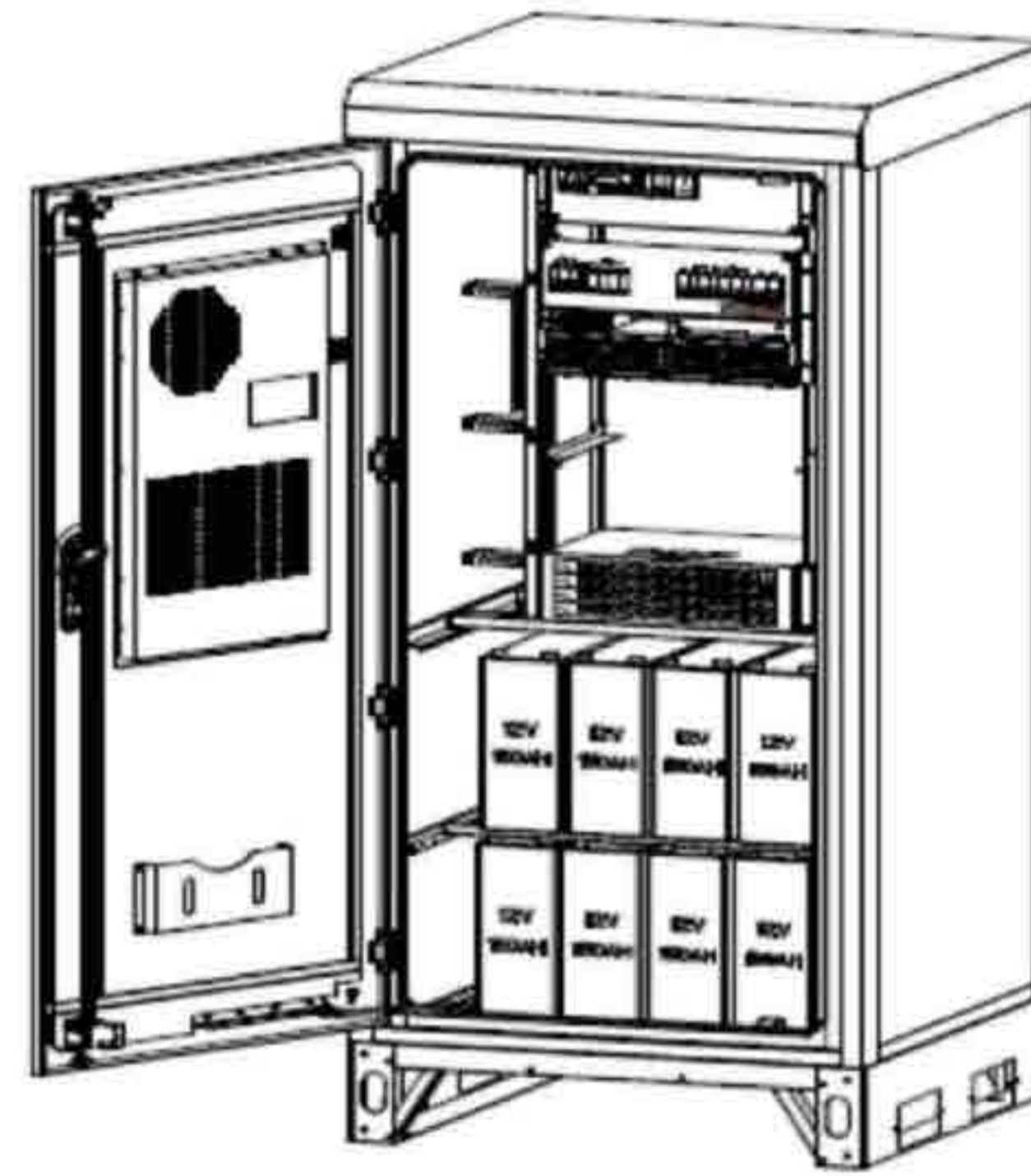
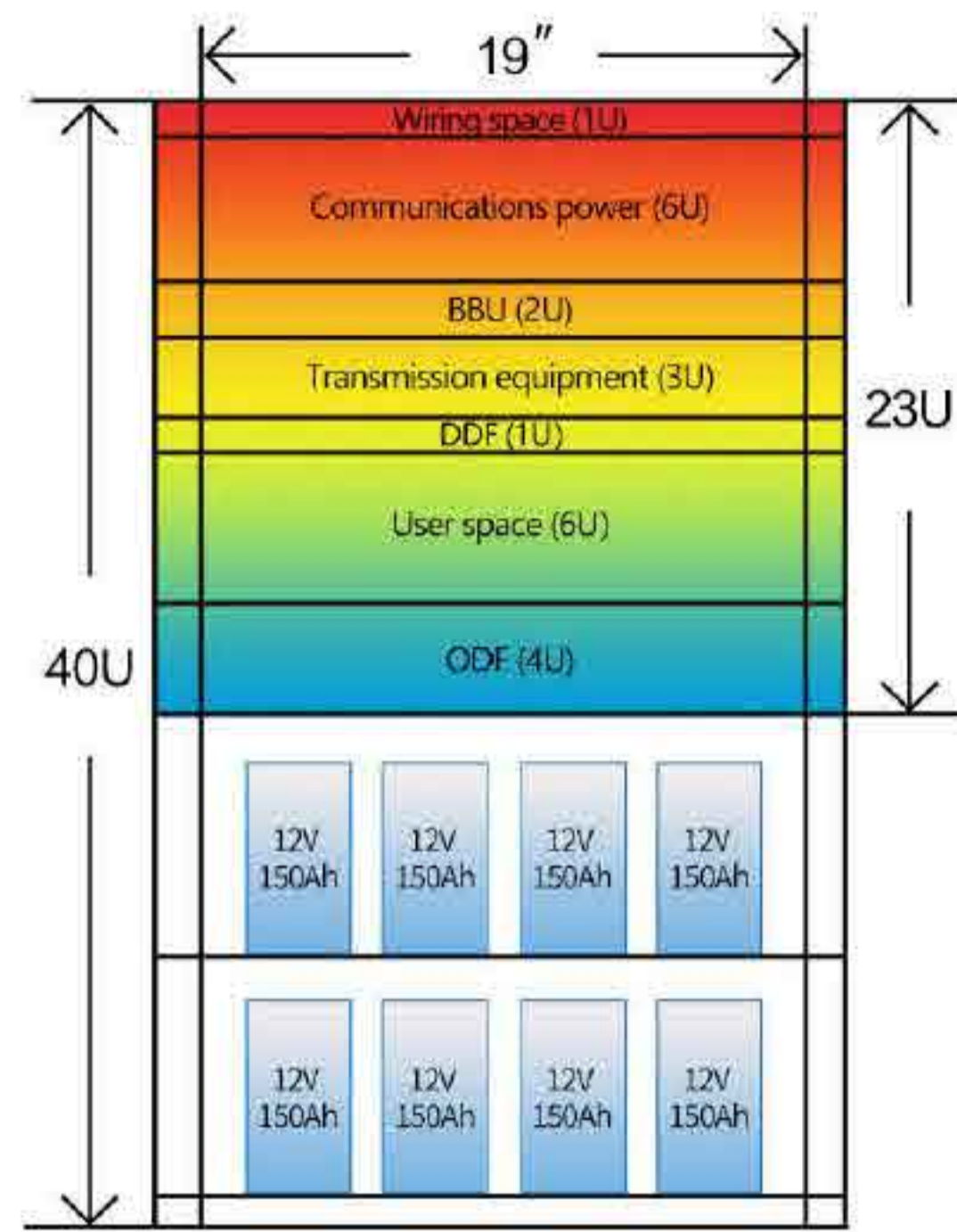


ODC - E18HX19A01

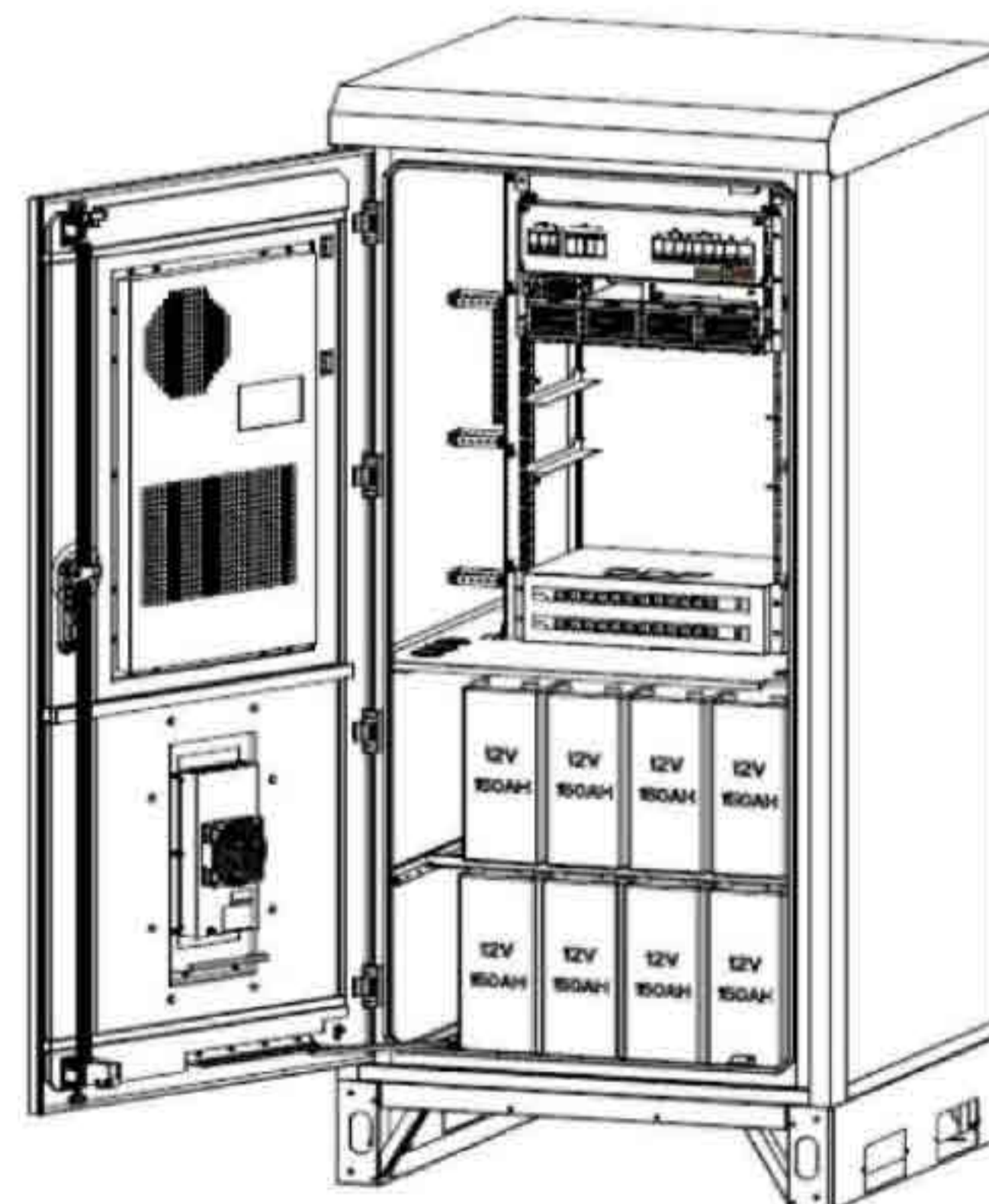
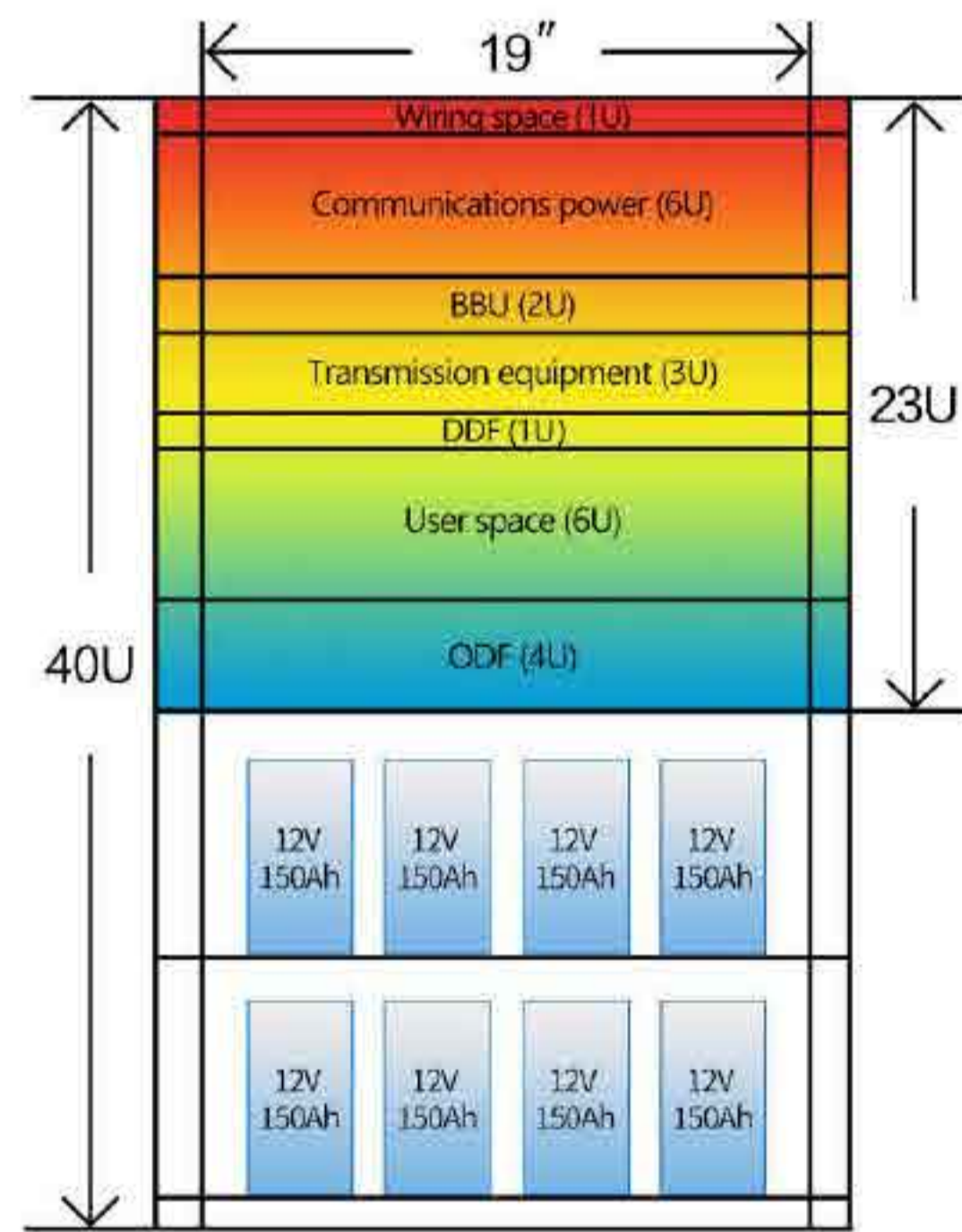
OUTDOOR POWER SUPPLY CABINET

Model	ODC-P18AC15A01	ODC-P18MX01A01
Basic Information		
Inner dimensions of the cabinet	800mm(W)*800mm(D)*1800mm(H)	
Outer dimensions of the cabinet	905mm(W)*1080mm(D)*2105mm(H)	
Floor area	905mm(L)*905mm(W)	
Base height	200mm	
Weight	125kg (Without equipment and battery)	130kg (Without equipment and battery)
User space	40U	
Frame material	Galvanized steel	
Wall plate material	Color steel sandwich panel (standard), SPCC cold rolled steel / galvanized steel / stainless steel / aluminium (optional)	
Wall plate thickness	45mm	
Door lock	Heaven and earth 3-point anti-theft lock with replaceable Euro cylinder. Allows for additional padlock.	
Protection rating	IP55/IP56	
Specification of bottom cable routing hole	8 * ϕ 50mm	
Cabinet storage temperature	-40°C ~ +70°C	
Temperature Control Information		
Temperature control in equipment compartment	PC1500	HX08
Power consumption	600W	70W
Refrigeration capacity	1500W @L35/L35	/
Heat exchange coefficient	/	80W/K
Heater power consumption (optional)	1000W	400W
Temperature control in battery compartment	PC300	TC02
Power consumption	230W @L35/L35	Typical: 300W; maximum: 380W
Refrigeration capacity	400W @L35/L35	200W
Heater power consumption (optional)	400W	400W
Battery Information (optional)		
Battery specification	150Ah 12V AGM battery	
Battery capacity	300Ah	
Battery group number	2 groups	
Other Information		
Lighting (optional)	DC-48V LED lamp	
Certification & Standards		
Certification	TLC certification	
Standards	YD/T 1537-2015	

OUTDOOR POWER SUPPLY CABINET



ODC-P18AC15A01



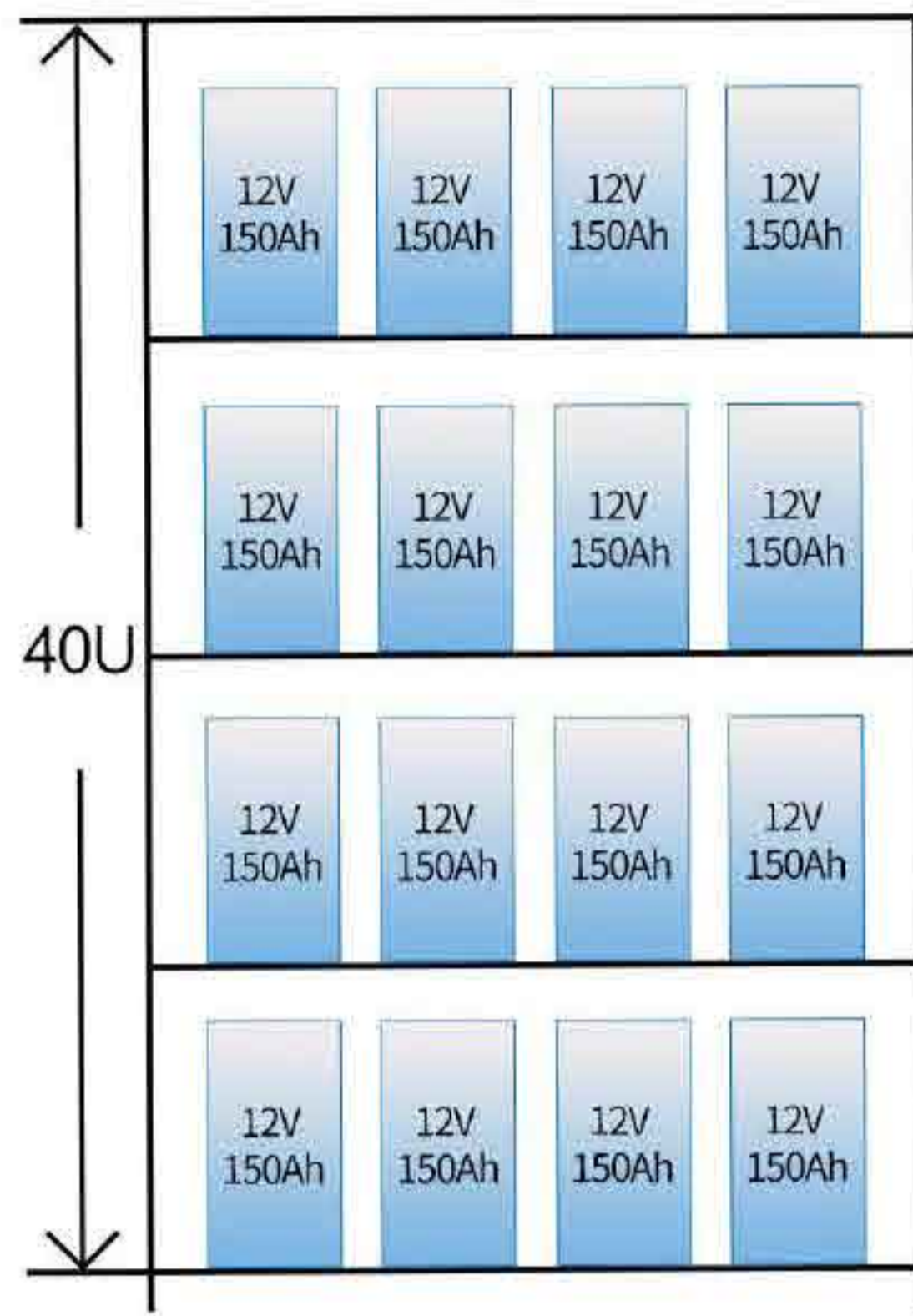
ODC-P18MX01A01

OUTDOOR BATTERY CABINET

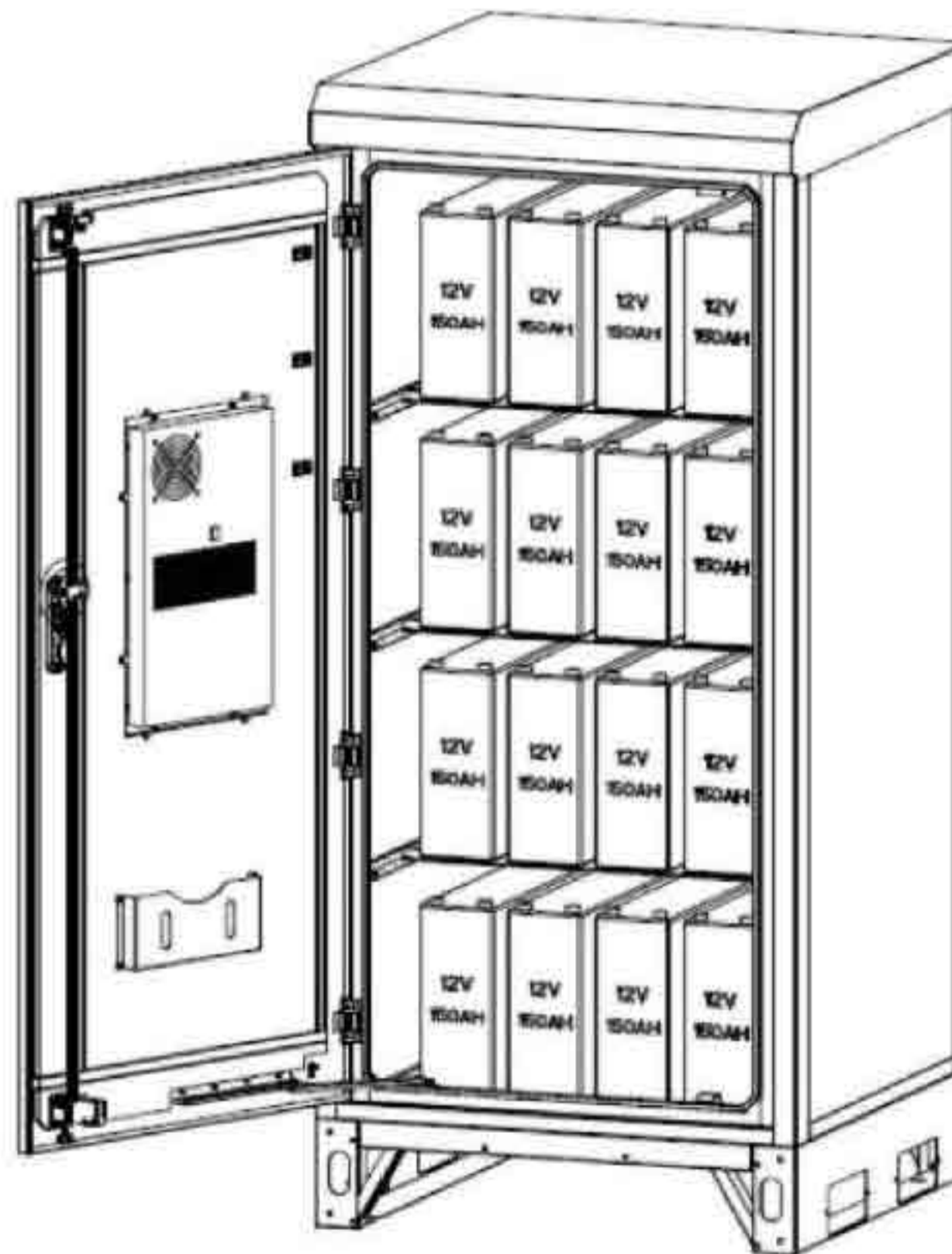
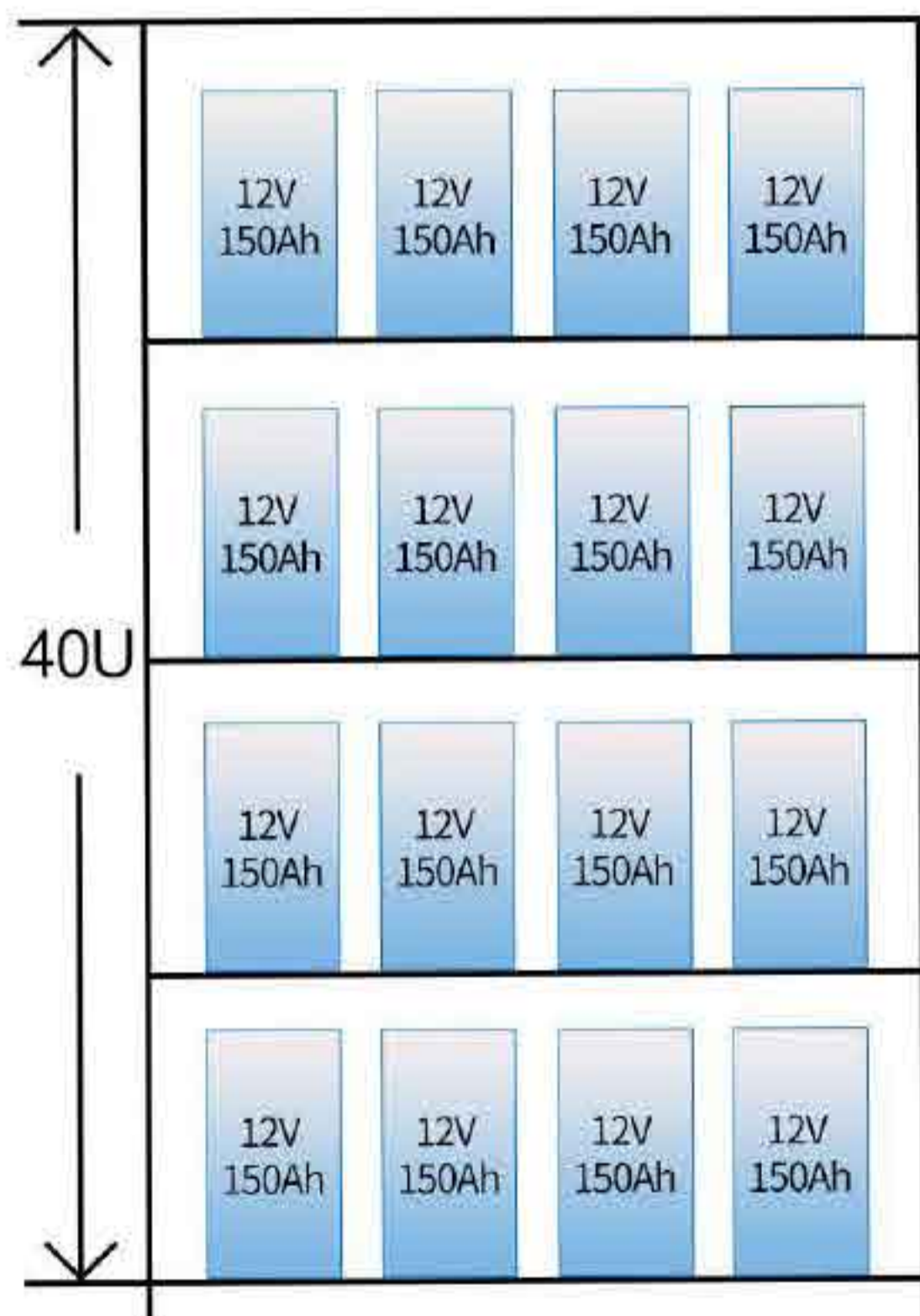
Product Parameters

Model	ODC-B18TC02A01	ODC-B18AC03A01
Basic Information		
Inner dimensions of the cabinet	800mm(W)*800mm(D)*1800mm(H)	
Outer dimensions of the cabinet	905mm(W)*1080mm(D)*2105mm(H)	
Floor area	905mm(L)*905mm(W)	
Base height	200mm	
Weight	108kg (Without equipment and battery)	110kg (Without equipment and battery)
User space	40U	
Frame material	Galvanized steel	
Wall plate material	Color steel sandwich panel (standard), SPCC cold rolled steel / galvanized steel / stainless steel / aluminium (optional)	
Wall plate thickness	45mm	
Door lock	Heaven and earth 3-point anti-theft lock with replaceable Euro cylinder. Allows for additional padlock.	
Protection rating	IP55/IP56	
Specification of bottom cable routing hole	8 * φ50mm	
Shipping form	Assembled shipment	
Cabinet storage temperature	-40°C ~ +70°C	
Relative humidity outside the cabinet	5% ~ 100%	
Temperature Control Information		
Temperature control	TC02	PC300
Power consumption	Typical: 300W; maximum: 380W	230W @L35/L35
Refrigeration capacity	200W	400W @L35/L35
Heater power consumption (optional)	400W	400W
Battery Information (optional)		
Battery specification	650Ah 2V / 150Ah 12V AGM battery	
Battery capacity	650Ah/600Ah	
Battery group number	1 group / 4 groups	
Other Information		
Lighting (optional)	DC-48V LED lamp	
Certification & Standards		
Certification	TLC certification	
Standards	YD/T 1537-2015	

OUTDOOR BATTERY CABINET

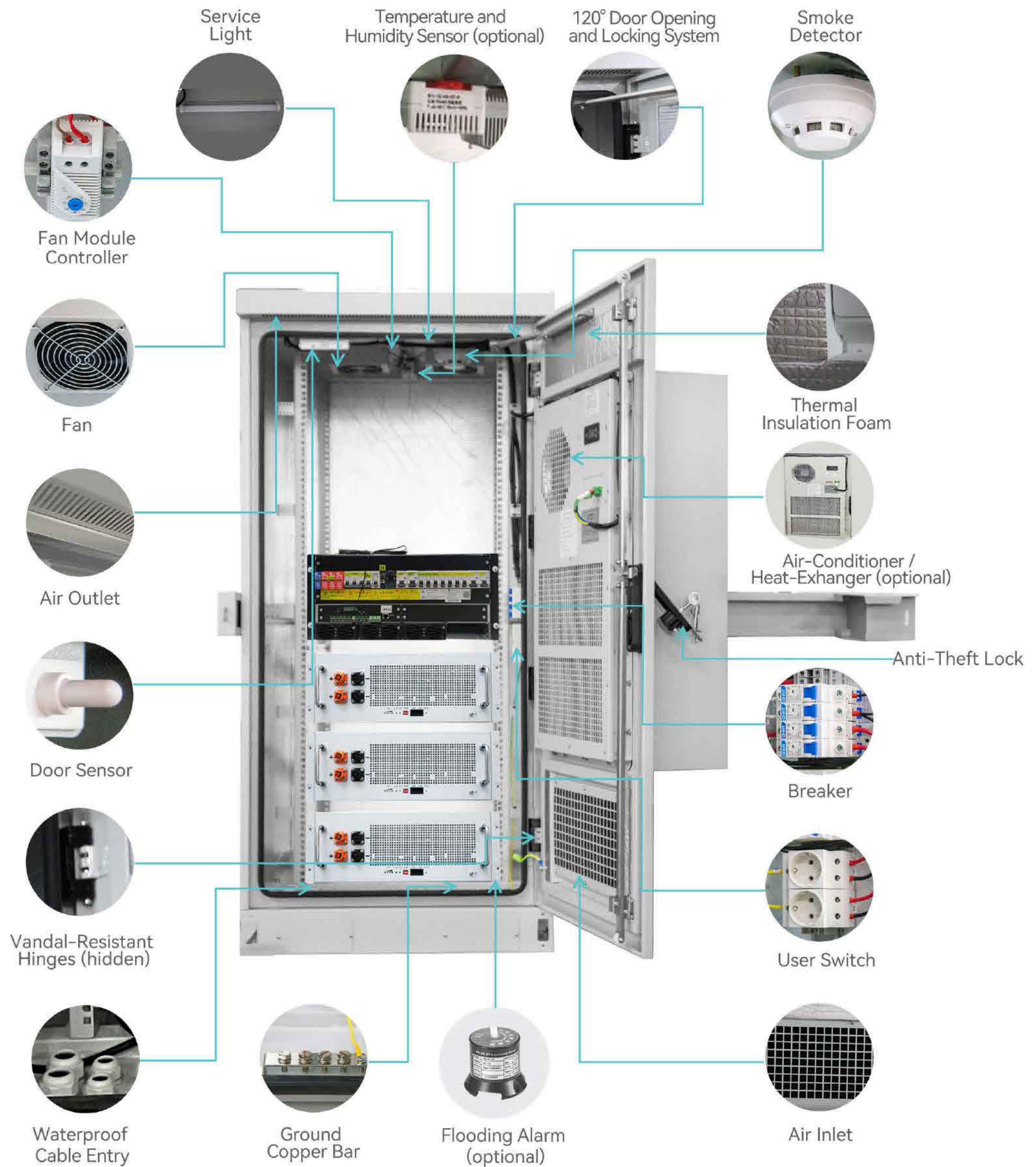


ODC-B18TC02A01

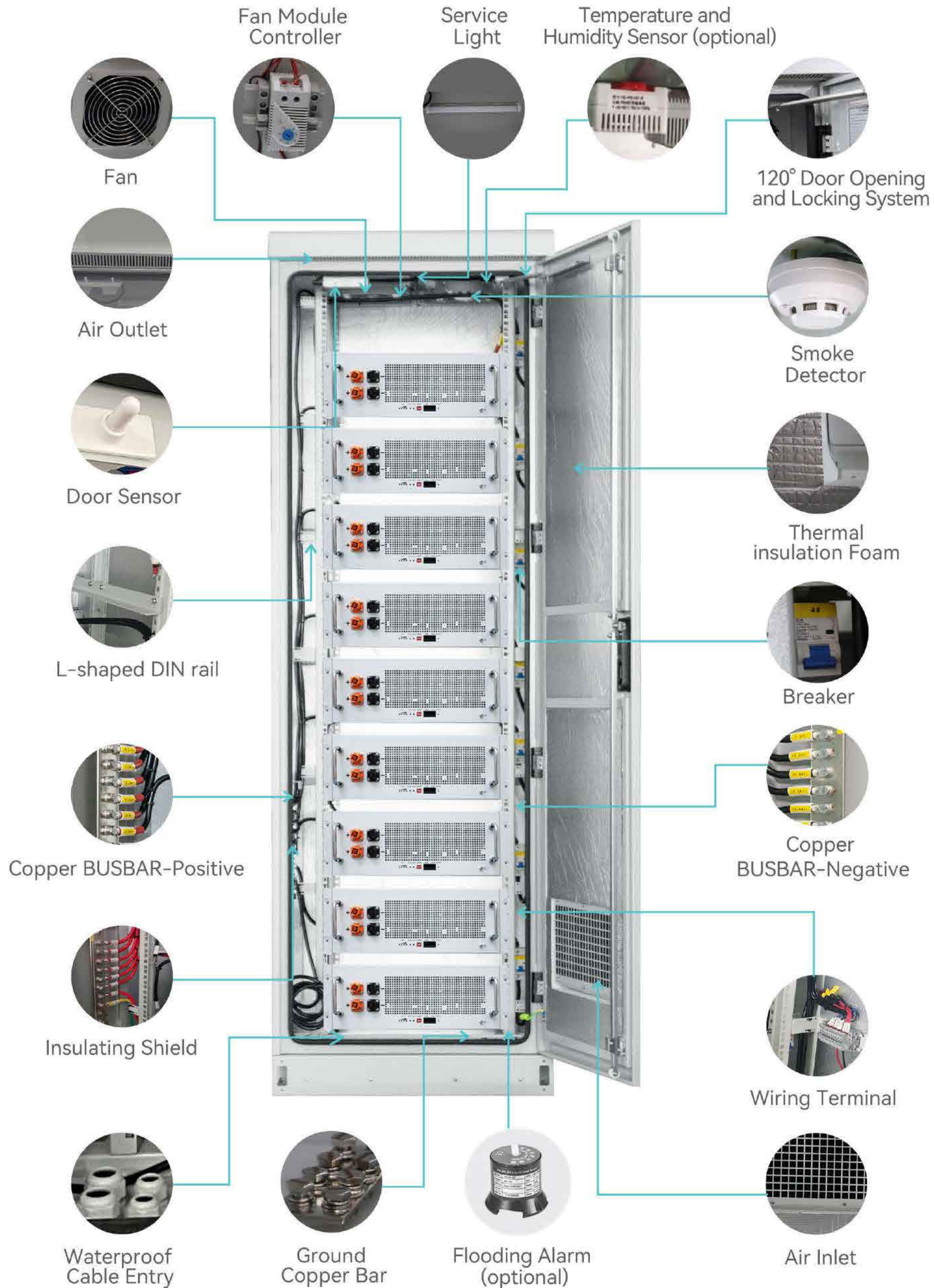


ODC-B18AC03A01

OUTDOOR EQUIPMENT CABINET



OUTDOOR BATTERY CABINET



OUR PROJCT CASE



Location: Kuwait

Capacity:

Outdoor UPS 1KVA with built-in battery 12VDC 9AH x 3pcs, applicable for traffic lights and CCTV camera.



Location: Yongzhou City, China

Capacity:

Outdoor UPS 2KVA with built-in 2 pcs x 51.2VDC 50Ah lithium battery pack, and outdoor UPS 1KVA with built-in battery 1 pc x 51.2VDC 50Ah; project for China Mobile.



Location: Bahrain

Capacity:

Outdoor UPS 2KVA with built-in 51.2VDC 100Ah lithium battery.



Location: China

Capacity:

Outdoor UPS with built-in lead-acid batteries for China Mobile.



Location: Yueyang City, China

Capacity:

Outdoor UPS with built-in lead-acid batteries for China Unicom.



Location: Lianyungang City, China

Capacity:

Outdoor UPS for traffic control, Lianyungang Civil Projects.



Location: Yanbian Korean Autonomous Prefecture, Jilin Province, China

Capacity:

Outdoor UPS 1KVA with 150W heater and built-in 3pcs x 12V 17Ah lead-acid batteries.



Location: Australia

Capacity:

Outdoor industrial UPS 6KVA with lead-acid battery 16pcs *12VDC 150AH.

OUR PROJET CASE

Outdoor DC Power



Location: Indonesia

Capacity:
Outdoor Rectifier Power Supply
48VDC 60A with built-in battery 51.2VDC/100Ah.

Outdoor Solar Power



Location: Dubai, UAE

Capacity:
Outdoor Solar Inverter 3.5KW with built-in lithium battery
pack 25.6VDC 50Ah, applicable for road camera.

Outdoor Battery Cabinet



Location: Africa

Capacity:
Outdoor Battery Cabinet built-in lithium
battery 51.2VDC 100AH x 8pcs.



Location: Africa

Capacity:
Outdoor Battery Cabinet with built-in lithium battery 48VDC
200AH x 7pcs.

Outdoor Integrated Solar & Rectifier Power System



Location: Lesotho

Capacity:
Outdoor Integrated Solar & Rectifier Power System 48V 200A.



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