

# CWORTH ENERGY®

Walk with the sun Live with the light



## CWORTH ENERGY®

Expert Manufacturer Of One-Stop Off-Grid Solar System Solutions



SOLAR  
BATTERY  
MODULE  
INVERTER  
STREET LIGHT



② WEB: <https://cworth.en.alibaba.com> & [www.cworth-energy.com](http://www.cworth-energy.com)  
① ADD: 206, building 2, Yufeng Plaza, Baiyun District, Guangzhou





# About Us >>>

Guangdong Cworth Energy Technology Co., Ltd. is the professional manufacturer that specialized in providing one-stop solar energy off-grid system solutions for over 10 years in China.



Our main service markets include more than 50 countries and districts, such as Africa, the Middle East, and Southeast Asia. We have established overseas offices and After-sales service centers in Nigeria, Cameroon, Chad, Ghana, Lebanon, Guinea, Uganda, Mali, Democratic Republic of Congo and Tanzania .  
At Cworth Energy, we offer a wide range of hot-selling products that include Solar Panels, Lithium Batteries, MPPT Solar Charge Controller, High Frequency Solar Inverter, Transformer Based Inverter, Gel Batteries, All-In-One Solar Street Lights, Solar Flood Lights, Portable Solar Power Systems, Off-Grid Solar Systems, and more.

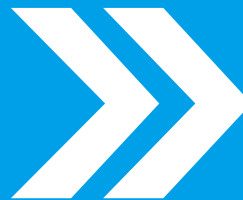


# Team Style

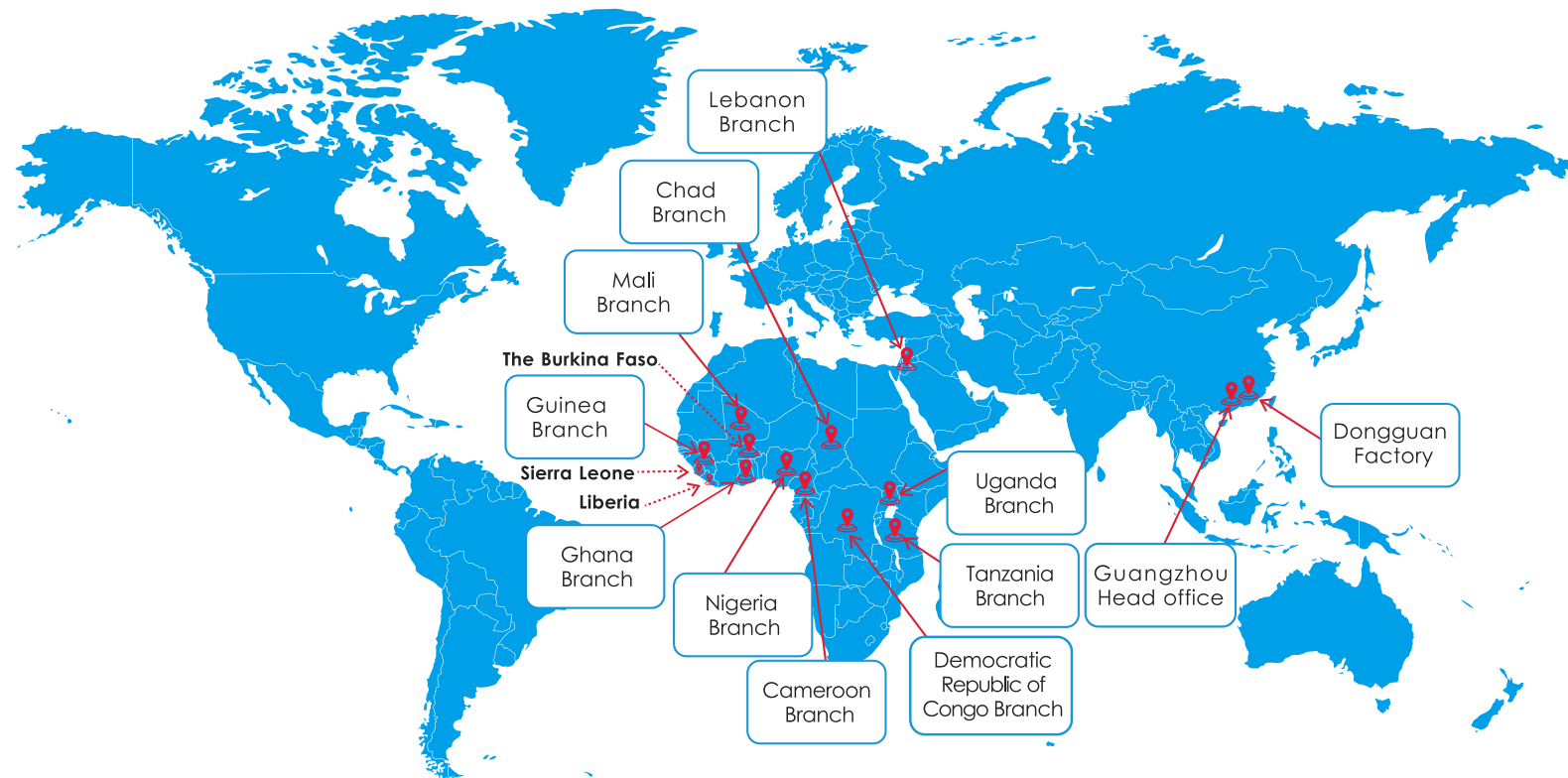


## Our Qualifications

We strictly implement 6S quality management , the company`s products has passed CE, MSDS, UN 38.3 and other related certificates.  
Cworth Energy will be your wise choice for solar system solutions supplier.







» Cworth Vision:

To be a global company  
that continues to create value

» Cworth Mission:

Continuous innovation to meet  
users' new energy power  
needs

» Cworth Values:

- Refuse speculation  
Remember the original intention
- Solve problems  
To improve self by experience things
- Team work cooperation  
Set up high standard and requirement

» Cworth Market Development  
Guiding Ideology:

Product is the root, Enterprise  
is the tree, Brand is the shadow

Walk with the sun

Live with the light

# CATALOGUE

01

## SOLAR PANEL

200W / 320W / 350W / 400W  
420W / 500W / 550W / 600W

02

## MPPT CONTROLLER

CE-M4048 / CE-M8048 / CE-M12048

03

## INVERTER

CE-H1.8K / CE-H4K / CE-H6K / CE-H12K  
CE-L10K

04

## LiFePO4 BATTERY

LBD Series / LBF Series / LBC Series  
LBW Series / LBT Series / GCL Series

05

## GEL BATTERY SERIES

G12V 100AH / G12V 200AH

06

## STREET LIGHT

CE-C2-C60W / CE-C2-C100W / CE-C1-100W  
CE-TK-60W / CE-TK-80W

07

## OFF-GRID SYSTEM

1.5KW~12KW

# Solar Panel

## CE-200W/320W/350W

### Mono Half-Cut Solar Panel



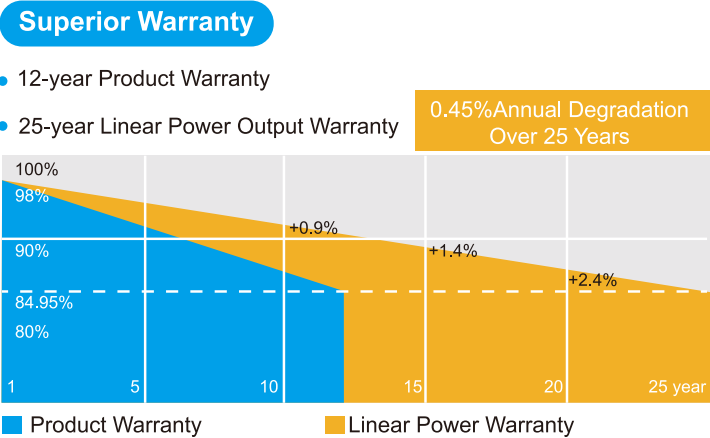
**N-Type**  
Positive power tolerance of 0~+3%

IEC61215(2025), IEC61730(2025)

ISO9001:2025: Quality Management System

ISO14001:2025: Environment Management System

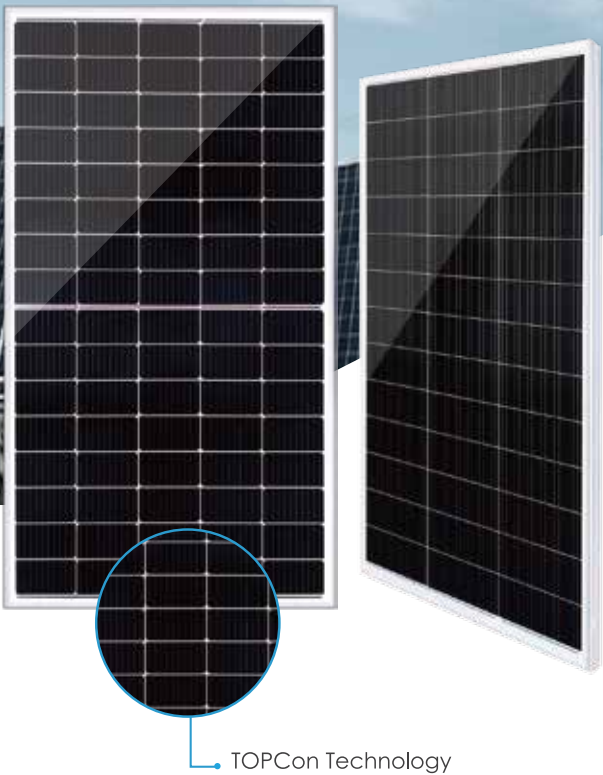
ISO45001:2025  
Occupational health and safety management systems



**Multi Busbar Technology**  
Better light trapping and current collection to improve module power output and reliability.

**PID Resistance**  
Excellent Anti-PID performance guarantee via optimized mass-production process and materials control.

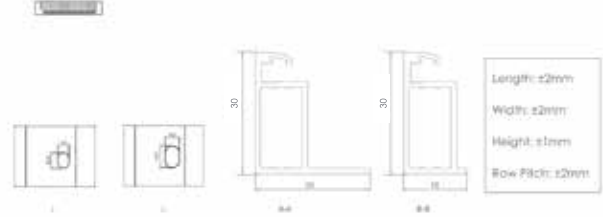
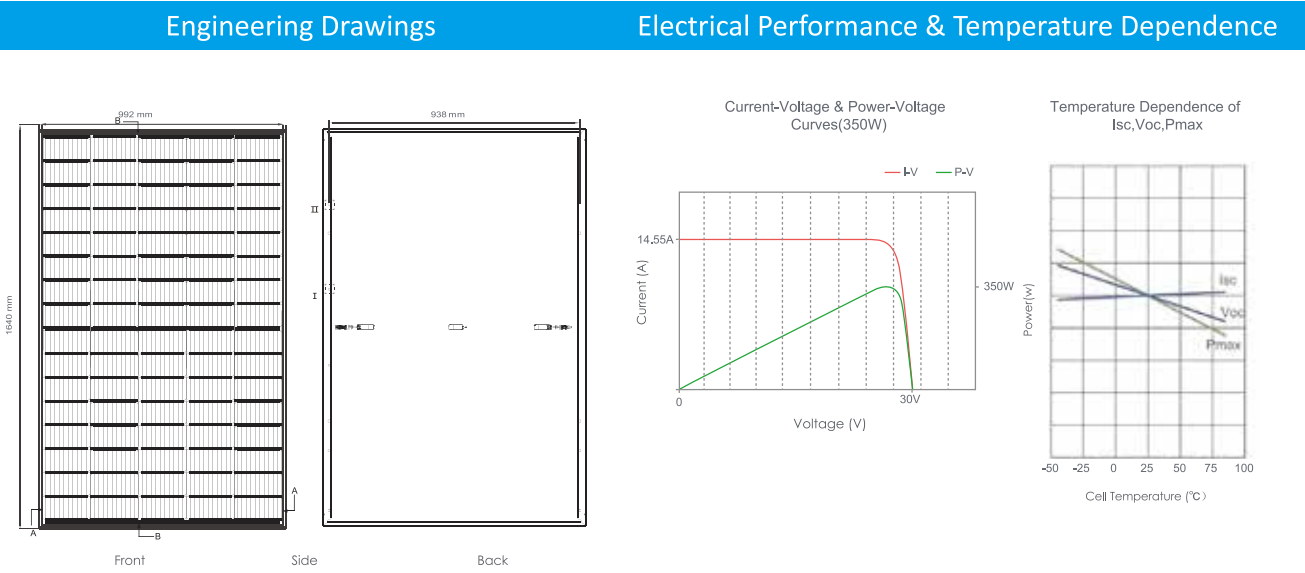
**Durability Against Extreme Environmental Conditions**  
High salt mist and ammonia resistance



TOPCon Technology

**Reduced Hot Spot Loss**  
Optimized electrical design and lower operating current for reduced hot spot loss and better temperature coefficient.

**Enhanced Mechanical Load**  
Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal).



Mechanical Characteristics	
Cell Type	MONO TOPCon 182×182mm
No. of cells	80 (8×10)
Dimensions	1640×992×30mm
Weight	16.2kg
Front Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68 Rated
Output Cables	PV 1×4.0mm <sup>2</sup> (+): 500mm, (-): 500mm or Customized Length

### Specifications

Model	CE-200W	CE-320W	CE-350W
Maximum Power(Pmax)	200W (0~±5W)	320W (0~±5W)	350W (0~±5W)
Maximum Power Voltage(Vmp)	22.8V	25.5V	25.5V
Maximum Power Current (Imp)	8.88A	13.1A	13.73A
Open-circuit Voltage(Voc)	27.1V	30V	30V
Short-circuit Current (Isc)	9.02A	13.9A	14.55A
Module Efficiency STC (%)	≥23%	≥23%	≥23%
Operating Temperature(°C)	-40°C~+85°C	-40°C~+85°C	
Maximum System Voltage	1000V	1500V	
Maximum Series Fuse Rating	15A	30A	
Power Tolerance	0~+3%	0~+3%	
Temperature Coefficients of Pmax	-0.35%/°C	-0.35%/°C	
Product Dimension	1480x680x25mm	1640x992x30mm	1640x992x30mm
Weight	9.2kg	16.2kg	16.2kg

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, AM=1.5

\*STC: Irradiance 1000W/m<sup>2</sup> Cell Temperature 25°C AM=1.5  
NOCT: Irradiance 800W/m<sup>2</sup> Ambient Temperature 20°C AM=1.5 Wind Speed 1m/s



# Solar Panel

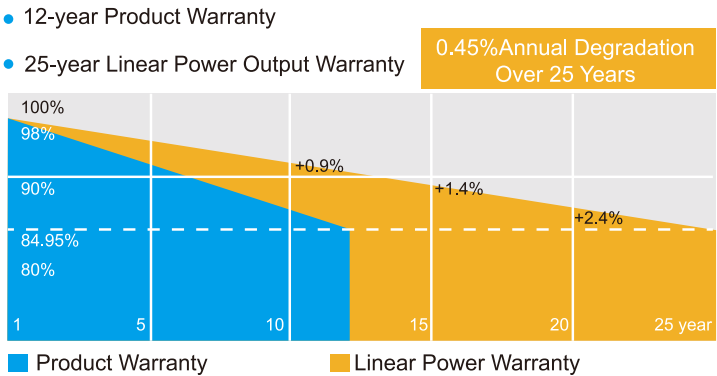
## CE-400W/420W

### Mono Half-Cut Solar Panel

**N-Type**  
Positive power tolerance of 0~+3%

IEC61215(2025), IEC61730(2025)  
ISO9001:2025: Quality Management System  
ISO14001:2025: Environment Management System  
ISO45001:2025  
Occupational health and safety management systems

#### Superior Warranty



**Multi Busbar Technology**  
Better light trapping and current collection to improve module power output and reliability.



**PID Resistance**  
Excellent Anti-PID performance guarantee via optimized mass-production process and materials control.



**Durability Against Extreme Environmental Conditions**  
High salt mist and ammonia resistance



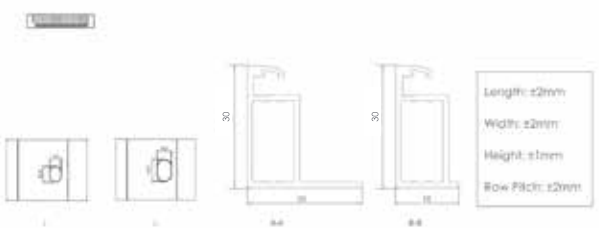
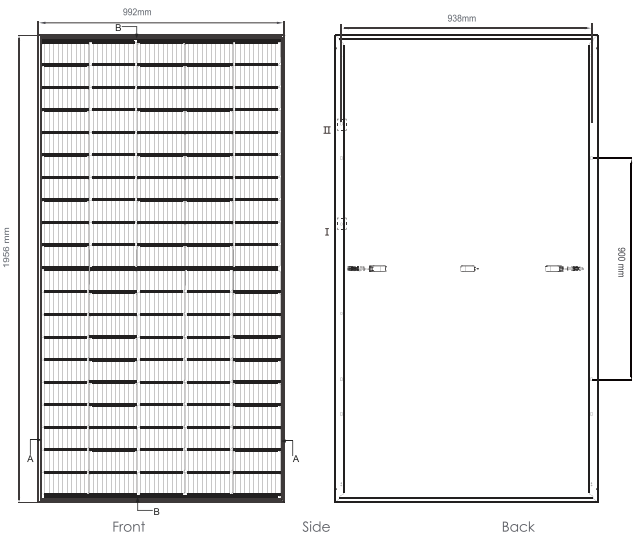
**Reduced Hot Spot Loss**  
Optimized electrical design and lower operating current for reduced hot spot loss and better temperature coefficient.



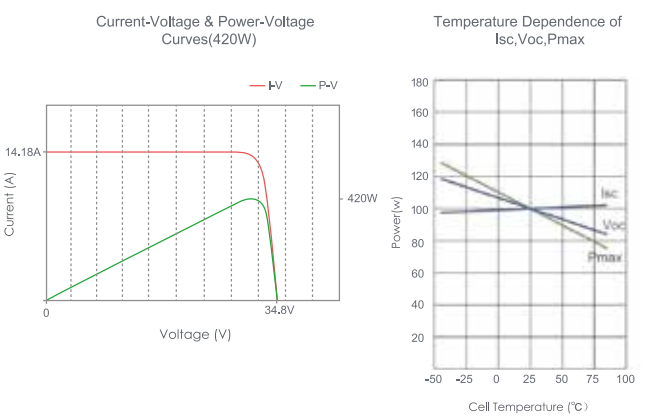
**Enhanced Mechanical Load**  
Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal).



#### Engineering Drawings



#### Electrical Performance & Temperature Dependence



#### Mechanical Characteristics

Cell Type	MONO TOPCon 182×182mm
No. of cells	100 (10×10)
Dimensions	1956×992×30mm
Weight	19kg~20kg
Front Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68 Rated
Output Cables	PV 1×4.0mm <sup>2</sup> (+): 500mm, (-): 500mm or Customized Length

#### Specifications

Model	CE-400W	CE-420W
Maximum Power(Pmax)	400W (0~±5W)	420W (0~±5W)
Maximum Power Voltage(Vmp)	31.4V	31.4V
Maximum Power Current (Imp)	12.7A	13.38A
Open-circuit Voltage(Voc)	34.8V	34.8V
Short-circuit Current (Isc)	13.5A	14.18A
Module Efficiency STC (%)	≥23%	≥23%
Operating Temperature(°C)	-40°C~+85°C	
Maximum System Voltage	1000/1500VDC(IEC)	
Maximum Series Fuse Rating	30A	
Power Tolerance	0~+3%	
Temperature Coefficients of Pmax	-0.35%/°C	
Product Dimension	1956×992×30mm	
Weight	19kg~20kg	
STC: Irradiance 1000W/m², Cell Temperature 25°C, AM=1.5		

\*STC: Irradiance 1000W/m<sup>2</sup> Cell Temperature 25°C AM=1.5  
NOCT: Irradiance 800W/m<sup>2</sup> Ambient Temperature 20°C AM=1.5 Wind Speed 1m/s



# Solar Panel

## CE-500W/550W/600W

### Mono Half-Cut Solar Panel

#### N-Type

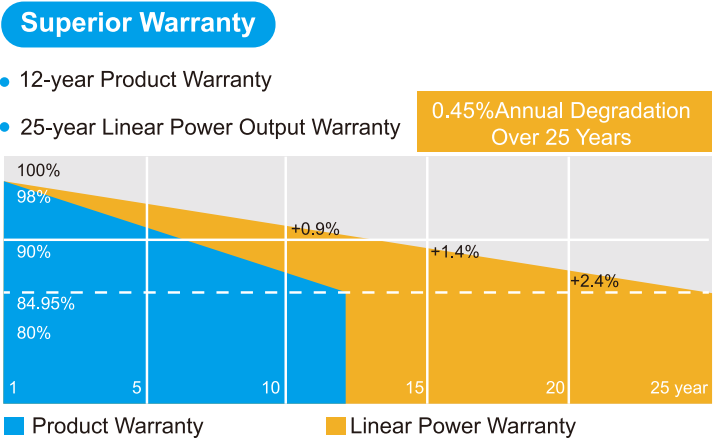
Positive power tolerance of 0~+3%

IEC61215(2025), IEC61730(2025)

ISO9001:2025: Quality Management System

ISO14001:2025: Environment Management System

ISO45001:2025 Occupational health and safety management systems



#### Multi Busbar Technology

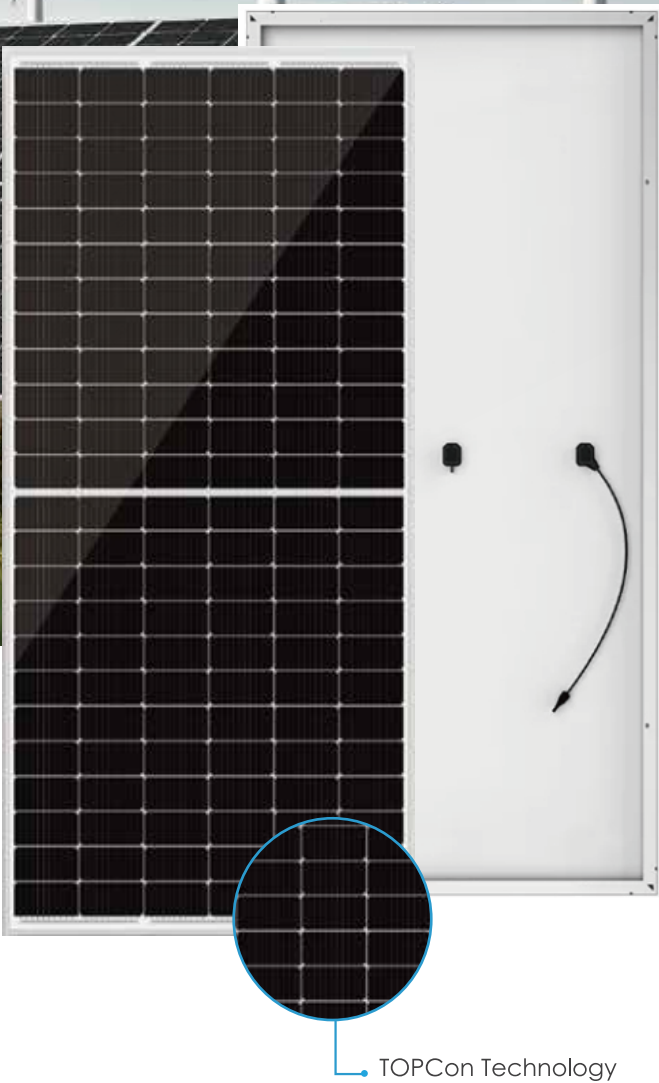
Better light trapping and current collection to improve module power output and reliability.

#### PID Resistance

Excellent Anti-PID performance guarantee via optimized mass-production process and materials control.

#### Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance



TOPCon Technology

#### Reduced Hot Spot Loss

Optimized electrical design and lower operating current for reduced hot spot loss and better temperature coefficient.

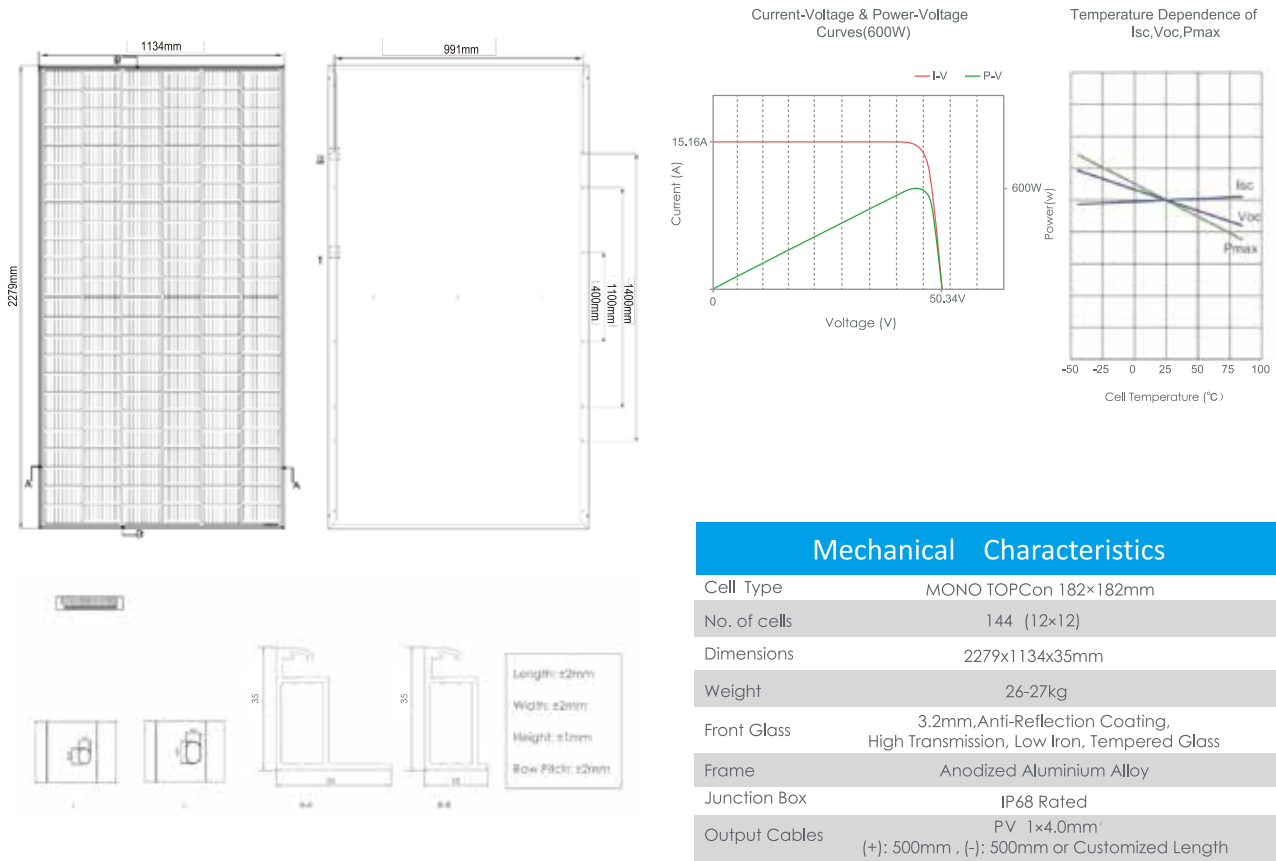
#### Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal).



Engineering Drawings

Electrical Performance & Temperature Dependence



### Specifications

Model	CE-500W	CE-550W	CE-600W
Maximum Power(Pmax)	500W(0~±5W)	550W(0~±5W)	600W(0~±5W)
Maximum Power Voltage(Vmp)	40.65V	41.95V	41.95V
Maximum Power Current (Imp)	12.3A	13.12A	14.3A
Open-circuit Voltage(Voc)	48.2V	50.34V	50.34V
Short-circuit Current (Isc)	13.01A	13.91A	15.16A
Module Efficiency STC (%)	≥23%		
Operating Temperature(°C)	-40°C~+85°C		
Maximum System Voltage	1000/1500VDC(IEC)		
Maximum Series Fuse Rating	30A		
Power Tolerance	0~+3%		
Temperature Coefficients of Pmax	-0.35%/°C		
Nominal Operating Cell Temperature (NOCT)	45±2°C		
Product Dimension	1908x1134x30mm	2279x1134x35mm	
Weight	22.5kg	27.5kg	

\*STC: Irradiance 1000W/m<sup>2</sup> Cell Temperature 25°C AM=1.5

NOCT: Irradiance 800W/m<sup>2</sup> Ambient Temperature 20°C AM=1.5 Wind Speed 1m/s



# MPPT SERIES

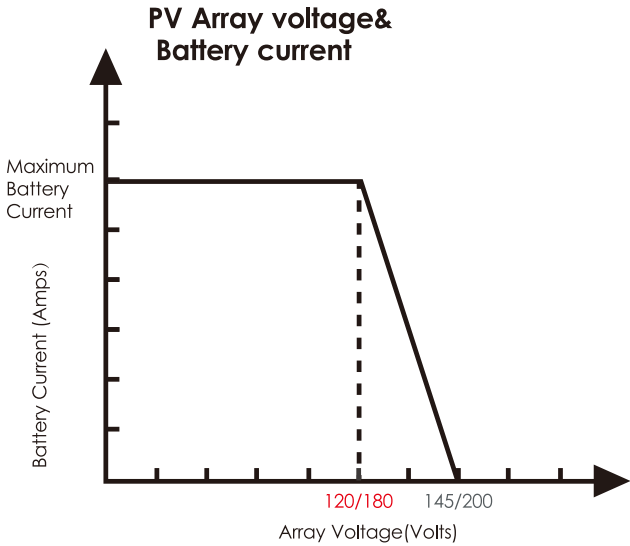
## MPPT Solar Charge Controller



CE-M4048(40A) / CE-M8048(80A) / CE-M12048(120A)

### DESCRIPTION

This solar charge controller is an advanced solar charger with maximum power point tracking. The MPPT battery charging process has been optimized for long battery life and improved system Performance. Self-diagnostics and electronic error protections prevent damage when installation errors or system faults occur.



**Suitable for a wide range of battery types**  
Multiple battery types are supported (Use-Defined/AGM/FLD/LiB) .



**Multi-stage charging optimizes battery performance**  
Multiple charging control modes are adopted(MPPT , Fast-charging , Equalized charging, Floating charging, Balanced charging ,Constant voltage charging).



**High Efficiency**  
Low energy consumption,Maximum efficiency >98%.



**Maximum power point tracking technology**  
Intelligent maximum power point tracking technology increases 20%-35% efficiency .



**Heavy Current**  
Maximum charging current 120A (Current adjustable) .

### Specifications

Model	CE-M4048	CE-M8048	CE-M12048
Maximum Battery Current	40A	80A	120A
Battery Type	Use-Defined/AGM/FLD/LiB		
System Voltage	12V/24V/48V DC(Auto detection)		
PV Start-up Voltage	25V		
Maximum Solar input Voltage	145V	200V	
PV Array MPPT Voltage Range	25/30/60V-120VDC	25/30/60V-180VDC(For 12V/24V/48V-system)	
Maximum Solar panel input Power	12V-570W	12V-1130W	12V-1700W
	24V-1130W	24V-2260W	24V-3400W
	48V-2270W	48V-4520W	48V-6800W
Charging Algorithm	3-Step		
Charging stages	Bulk, Absorption, Float		
Operation Temperature Range	-25°C-60°C		
Humidity	0%-90%		
Maximum Efficiency	> 98%		
Net Weight	1.6kg	4.2kg	6.8kg
Product Dimension	205x133x76mm	280x178x122mm	340x215x125mm



# INVERTER SERIES

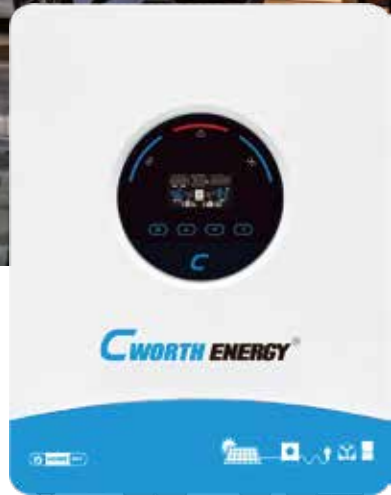
## High Frequency Solar Inverter

1.8KVA/4KVA/6KVA/12KVA

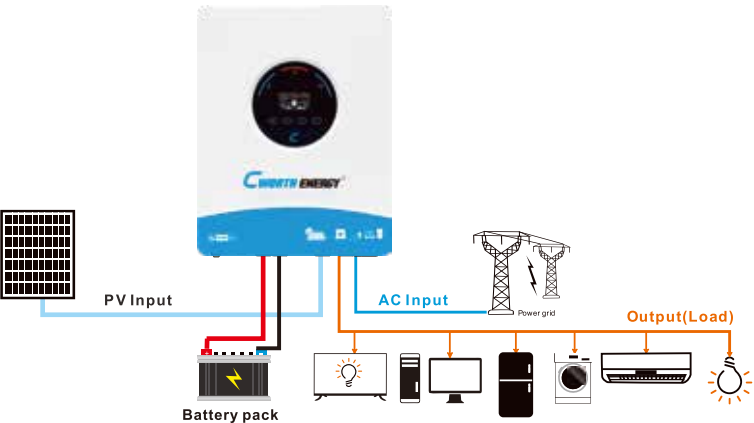
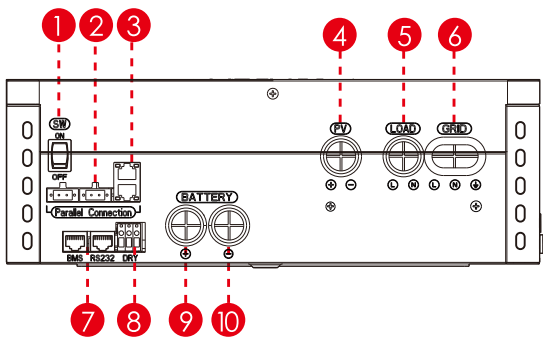


CWORTH ENERGY®

- Pure sine wave inverter
- Built-in MPPT solar charge controller
- Configurable input voltage range for home appliances and personal
- Configurable battery charging current based on applications via LCD setting
- Configurable AC/Solar Charger priority via LCD setting.
- Compatible to mains voltage or generator power.
- Auto restart while AC is recovering.
- Overload /Over temperature/ short circuit protection.
- Inverter running without battery.
- Lithium battery activation function.
- Cold start function.
- Parallel connection quantity up to 12units for 6KVA model (Battery must be connected).
- Intelligent fan control greatly reduces fan noise.



CE-H1.8K / CE-H4K / CE-H6K / CE-H12K



- 1.Switch
- 2.Reserved port
- 3.Parallel connection-CAN port
- 4.PV input connection port
- 5.AC output port
- 6.AC input port
- 7.Communication connection port
- 8.Dry contact port
- 9.Battery+ connection port
- 10.Battery- connection port

### Specifications

Model	CE-H1.8K	CE-H4K	CE-H6K	CE-H12K
Rated Output Power(W)	1500W	4000W	6000W	12000W
Nominal DC input Voltage	12V	24V	48V	48V
Input Voltage Waveform	Sinusoidal(Utility or generator)			
Nominal input voltage	230Vac			
Low Line Disconnect	90Vac±3V(For Home Appliances) 170Vac±3V(For Computers)			
High Line Voltage Disconnect	280Vac±3V			
Nominal Input Frequency	50Hz / 60Hz (Auto detection)			
Efficiency (Line Mode)	>92%	>95% (Rated R load, battery full charged)		
Transfer Time (Single unit)	10ms typical (UPS);20ms typical (Appliances)			
Pass Through Without Battery	Yes			
Max,Inverter/Rectifier Current	18.2A/4000W	18.2A/4000W	27.3A/6000W	54.5A/12000W
Max. Grid Charge Current	60A	100A	120A	210A
Charge Current Regulation	10A-Max. Grid Charge Curent (Adjustable unit is 1A)			
Over Charge Protection	Yes			
Max. pv Open Circuit Voltage	500V			
PV voltage range	85V-450V			
Max. Input Power	650W	4000W	6000W	12000W
Max. Solar Charging Current	45A	120A	120A	210A
Max. Input Current	20A	15A	27A	27A+27A
Algorithm	Three stage: Boost CC(Constant current stage)-> Boost CV(Constant voltage stage)-> Float FV(Constant voltage stage)			
Battery Type Setting	Battery Type	Battery Type	Boost CC/CV	Float
	AGM	AGM	28.2V/56.4V	27V/54V
	Flooded	Flooded	29.2V/58.4V	27V/54V
	Self Defined	Self Defined	Adjustable, up to 30V/60V	
	Lithiumn	Lithiumn		
Dc Max. charging/Discharging current	105A/150A	120A/160A	120A/125A	210A/230A
Output Voltage Waveform	Pure sine wave			
Nominal Output Voltage	230Vac±5%			
Nominal Output Frequency(Hz)	50±0.3Hz/60Hz±0.3Hz (Adjustable)			
Parallel capability	No		Yes,up to 12 units	
Peak Efficiency	93%			
Output Short Circuit Protection	Yes			
High Dc Input Alarm & Fault	15.5V±0.2V	31V±0.2V	62V±0.4V	
High Dc Input Recovery	14.5V±0.2V	29V±0.2V	60V±0.4V	
Operating Temperature	-10°C~55°C			
Range Storage Temperature	-15°C~60°C			
Net Weight(kg)	5.5kg	9.2kg	13kg	27kg
Product Dimension(D*W*H)	350x290x108mm	347x445x120mm	347x445x120mm	525x630x125mm



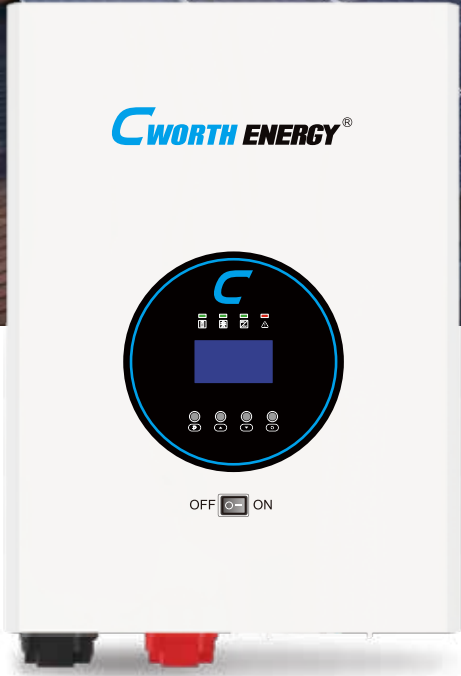
# INVERTER SERIES

## Transformer Based Inverter

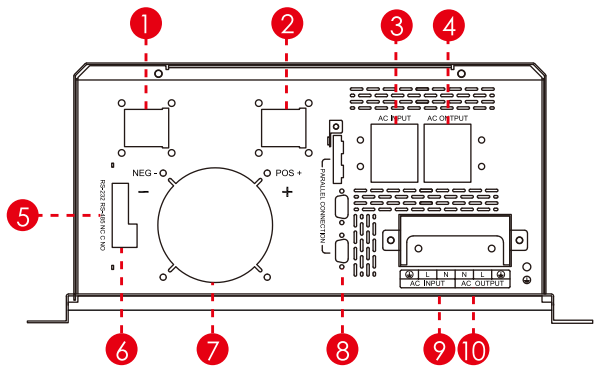
10KVA



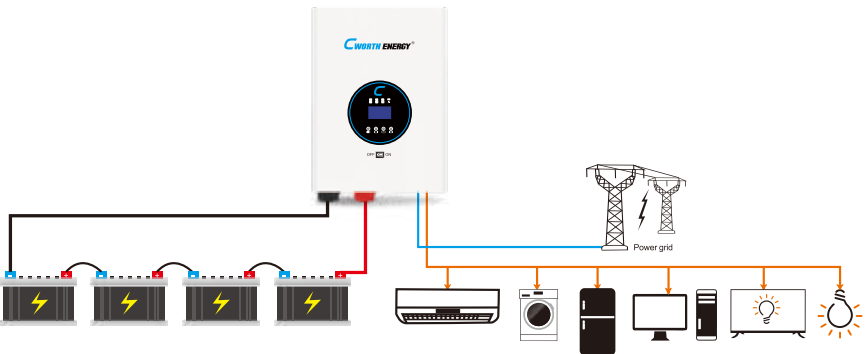
- 90-280V Wide range of AC input voltage
- Compatible with 50/60HZ
- Charging and discharge priorities are optional
- Comprehensively upgraded safety protection design
- High Charging Current
- Bypass charging function
- Communicate with MPPT
- Supports multiple types of batteries
- Battery self-defined
- Stable performance
- Multistage charging, improve the battery life



CE-L10K (10KVA)



- 1.Battery- connection port
- 2.Battery+ connection port
- 3.AC Input breaker
- 4.AC Output breaker
- 5.Communication port
- 6.Dry contact port
- 7.DC Fan
- 8.Parallel connection terminal
- 9.AC Input terminal
- 10.AC Output terminal



### Specifications

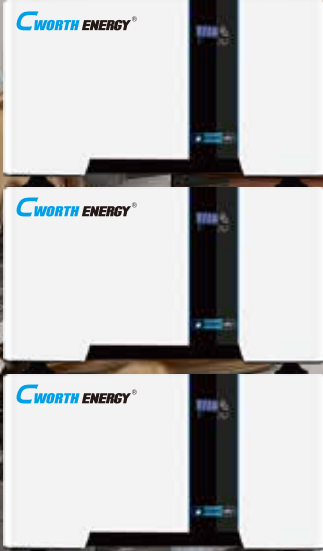
Model	CE-L10K		
Rated Output Power(VA)	10000VA		
Rated Output Power(W)	8000W		
Nominal DC input Voltage	48V		
Input Voltage Waveform	Sinusoidal(Utility or generator)		
Nominal input voltage	220Vac		
Low Line Disconnect	170±7Vac(UPS)90±7VaC(APL)		
Low Line Re-connect AC input Range	180±7Vac(UPS) 100±7VaC(APL)		
High Line Disconnect	280±7Vac		
High Line Re-connect	270±7Vac		
Nominal input Frequency	50Hz/60HZ		
Over-Load Protection(SMPS load)	Air switch protection		
Output Short Circuit Protection	Air switch protection		
Efficiency(Line mode)	≥95% (Rated R load, and battery is fully charged)		
Transfer Time (AC to DC)	15ms (typical)		
Transfer Time (DC to AC)	15ms (typical)		
Max Bypass Overload Current	AC 63A		
Nominal input voltage	220Vac		
Input Voltage Range	90~280Vac		
Max Charge Current	80A		
Charger Short Circuit	AC 63A		
Over Charge Protection	Yes		
Charging Way	Three phases: Boost CC (constant current level)→ boost CV (constant voltage level) →Float (constant pressure level)		
Battery Type Setting	Battery Type	Boost CC, CV	Float
		48V	48V
	AGM	57.6V	54.4V
	Flooded	58.4V	55.2V
	Self Defined	Adjustable, up to 61.0V	
Output Voltage Waveform	Pure sine wave		
Nominal Output Voltage	220Vac±5%		
Nominal Output Frequency(Hz)	50±0.3Hz/60Hz±0.3Hz (Adjustable)		
Peak Efficiency	90%		
Over-Load Protection (SMPS load)	5s@≥150% load; 10s@105%~150% load		
Surge rating	2*rated power for 5 seconds		
Output Short Circuit Protection	Yes		
Cold Start Voltage	46V		
Operating temperature	0°C~40 °C		
Storage temperature	-15°C~60°C		
Net Weight	55kg		
Product Dimension	582x446x204mm		



# LiFePO4 BATTERY

## LBD SERIES

### Lithium Battery Pack



## LiFePO4 BATTERY



**Safe And Long Life Cycle**  
The cell belongs to lithium iron phosphate power cell which can be recycled about 6000 times.



**Intelligent BMS**  
Intelligent battery protection system make the battery more stable and safer.



**Hidden Connection Design**  
Child and pet friendly with no exposed wires or hot vents for all cables and terminals are hidden inside by a cover.



**Comprehensive compatibility**  
It is better suited for off-grid inverters and on / off hybrid inverters



CE -LBD -24200C(5KWH) / CE -LBD -48150C(7.5KWH)



LED Screen



Cover



Switch



Terminal

## Specifications

Model	CE-LBD-24200C	CE-LBD-48150C
Capacity	5KWH	7.5KWH
Normal Voltage	25.6V	51.2V
Normal Voltage Range	24-28.8V	48-57.6V
Charge Cut-off Voltage	28.8V	57.6V
Discharge Cut-off Voltage	24V	48V
Max. Charge & Discharge Current	150A	150A
Recommend Charge & Discharge Current	≤100A	≤100A
Normal Output Power	2560W	5120W
Max. Output Power	3840W	7680W
Parallel Connection Amount	1-6	1-6
Ingress Protection	IP21	IP21
Cycle Times	≥6000@80% DOD, 25°C, 0.5C	≥6000@80% DOD, 25°C, 0.5C
Working Temperature	-10°C~60°C	-10°C~60°C
Net Weight	43kg	83.5kg
Product Dimension	520x360x370mm	680x450x420mm



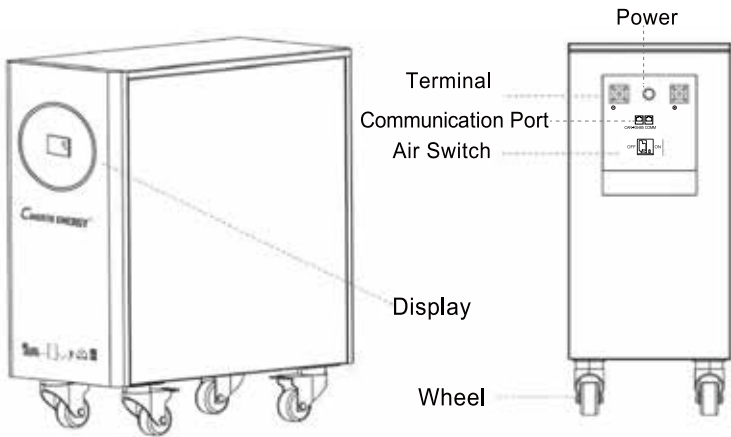
# LiFePO4 BATTERY

## LBF SERIES

### Lithium Battery Pack



CE-LBF-48300C (15KWH)/CE-LBF-48400C (20KWH)



## LiFePO4 BATTERY

- Safe And Long Life Cycle**  
The cell belongs to lithium iron phosphate power cell which can be recycled about 6000 times.
- High Energy**  
The whole series can store up to 20KWH of energy.
- Professional Application Design**  
Special improvement for solar off-grid power generation system.
- Easy Installation**  
With casters, easy to move, make sure the batteries are neatly placed.

## Specifications

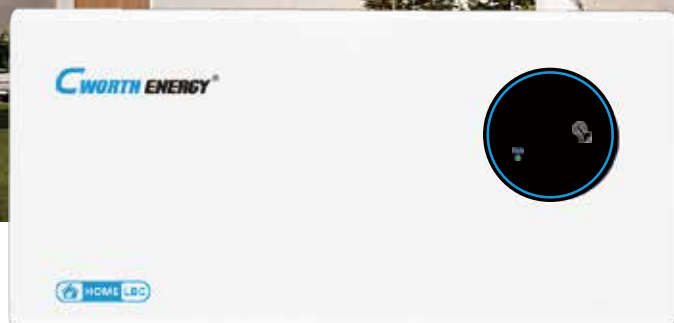
Model	CE-LBF-48300C	CE-LBF-48400C
Capacity	15KWH	20KWH
Normal Voltage	51.2V	
Normal Voltage Range	48-57.6V	
Charge Cut-off Voltage	57.6V	
Discharge Cut-off Voltage	48V	
Max. Charge & Discharge Current	200A	
Recommend Charge & Discharge Current	≤100A	
Normal Output Power	5120W	
Max. Output Power	10240W	
Parallel Connection Amount	1-6	
Ingress Protection	IP21	
Cycle Times	≥6000@80% DOD, 25°C, 0.5C	
Working Temperature	-10~60 °C	
Net Weight	129.5kg	135kg
Product Dimension	650x350x725mm	700x380x725mm



# LiFePO4 BATTERY

## LBC SERIES

### Lithium Battery Pack



CE-LBC -48200C (10KWH)



CE-LBC -48400C (20KWH)



LED Screen



Switch



Terminal



Communication Port



Wheels

#### DESCRIPTION

The LBC series batteries are specially designed for energy storage applications for home photovoltaic power generation users. This series of batteries has flexible usage scenarios, supports wall mounting and has movable wheels. Large-capacity batteries can effectively reduce the cost of energy storage systems. The BMS system monitors the battery safety performance in real time, effectively extending the service life of batteries.



**Safe And Long Life Cycle**  
The cell belongs to lithium iron phosphate power cell which can be recycled about 6000 times.



**Comprehensive compatibility**  
It is better suited for off-grid inverters and on / off hybrid inverters.



**Professional Application Design**  
Special improvement for solar off-grid power generation system.



**Easy Installation**  
Installation can be floor or wall mounting, make sure the batteries are neatly placed and keep appropriate distance from the floor or wall.

#### Specifications

Model	CE-LBC-48200C	CE-LBC-48400C
Capacity	10KWH	20KWH
Normal Voltage	51.2V	
Normal Voltage Range	48~57.6V	
Charge Cut-off Voltage	57.6V	
Discharge Cut-off Voltage	48V	
Max. Charge & Discharge Current	200A	
Recommend Charge & Discharge Current	≤100A	
Normal Output Power	5120W	
Max. Output Power	10240W	
Parallel Connection Amount	1-6	
Ingress Protection	IP21	
Cycle Times	≥6000@80% DOD, 25°C, 0.5C	
Working Temperature	-10°C~60°C	
Net Weight	74.5kg	150kg
Product Dimension	800x400x200mm	550x380x900mm



LiFePO4 BATTERY  
LBW SERIES  
Lithium Battery Pack



CE -LBW -24100C(2.5KWH)



CE -LBW -48100C(5KWH)



DESCRIPTION

The LBW series batteries are specially designed for energy storage applications for home photovoltaic power generation users. This series of batteries has flexible usage scenarios, supports wall mounting. The BMS system monitors the battery safety performance in real time, effectively extending the service life of batteries.



LED Screen



Cover



Switch



Terminal

LiFePO4 BATTERY



**Safe And Long Life Cycle**  
The cell belongs to lithium iron phosphate power cell which can be recycled about 6000 times.



**Intelligent BMS**  
Intelligent battery protection system make the battery more stable and safer.



**Comprehensive compatibility**  
It is better suited for off-grid inverters and on / off hybrid inverters



**Easy Installation**  
Installation can be floor or wall mounting, make sure the batteries are neatly placed and keep appropriate distance from the floor or wall.

Specifications

Model	CE-LBW-24100C	CE-LBW-48100C
Capacity	2.5KWH	5KWH
Normal Voltage	25.6V	51.2V
Normal Voltage Range	24-28.8V	48-57.6V
Charge Cut-off Voltage	28.8V	57.6V
Discharge Cut-off Voltage	24V	48V
Max.Charge & Discharge current	100A	100A
Recommend Charge & Discharge Current	≤60A	≤60A
Nomal Output Power	1536W	3072W
Max. Output Power	2560W	5120W
Communication Port	/	RS485,CAN
Parallel Connection Amount	1-6	
Ingress Protection	IP21	
Cycle Times	≥6000@80% DOD, 25°C, 0.5C	
Working Temperature	-10°C~60°C	
Net Weight	35.5kg	63kg
Product Dimension	550x360x230mm	600x490x230mm



# LiFePO4 BATTERY



CE -LBT -48100C(5KWH)



# LBT SERIES Lithium Battery Pack



CE -LBT -24100C(2.5KWH)



LED Screen



Switch



Terminal



Communication Port



Handle



Restart

**Safe And Long Life Cycle**  
The cell belongs to lithium iron phosphate power cell which can be recycled about 6000 times.

**BMS Intelligent BMS**  
Intelligent battery protection system make the battery more stable and safer.

**Modular Design**  
The quality of industrial design is more reliable and more standardized, and it's suitable for industrial and civil use.

**Comprehensive compatibility**  
It is better suited for off-grid inverters and on / off hybrid inverters

## Specifications

Model	CE-LBT-48100C	CE-LBT-24100C
Capacity	5KWH	2.5KWH
Normal Voltage	51.2V	25.6V
Normal Voltage Range	48~57.6V	24~28.8V
Charge Cut-off Voltage	57.6V	28.8V
Discharge Cut-off Voltage	48V	24V
Max. Charge & Discharge Current	100A	100A
Recommend Charge & Discharge Current	≤60A	≤60A
Normal Output Power	3072W	1536W
Max. Output Power	5120W	2560W
Communication Port	RS485, CAN	/
Parallel Connection Amount	1-6	1-6
Ingress Protection	IP21	IP21
Cycle Times	≥6000@80% DOD, 25°C, 0.5C	≥6000@80% DOD, 25°C, 0.5C
Working Temperature	-10°C~60°C	-10°C~60°C
Net Weight	45kg	31.2kg
Product Dimension	490x440x185mm	480x320x195mm



# LiFePO4 BATTERY

## GCL SERIES

### Lithium Battery Pack



**Safe And Long Life Cycle**  
The cell belongs to lithium iron phosphate power cell which can be recycled about 3200 times.



**Intelligent BMS**  
Intelligent battery protection system make the battery more stable and safer.



**Modular Design**  
The quality of industrial design is more reliable and more standardized, and it's suitable for industrial and civil use.



**Comprehensive compatibility**  
It is better suited for off-grid inverters and on / off hybrid inverters



CE -GCL -12100(1.28KWH)/ CE -GCL -12150(1.92KWH)



CE -GCL -12300(3.84KWH)



LED Screen



Terminal



Handle

### Specifications

Model	CE-GCL-12100	CE-GCL-12150	CE-GCL-12200	CE-GCL-12250	CE-GCL-12300
Capacity	1.28KWH	1.92KWH	2.56KWH	3.2KWH	3.84KWH
Normal Voltage	12.8V		12.8V		
Charge Cut-off Voltage	14.4V		14.4V		
Normal Voltage Range	12~14.4V		12~14.4V		
Discharge Cut-off Voltage	12V		12V		
Recommend Charge & Discharge Current	≤50A		≤100A		
Max.Charge & Discharge Current	100A		150A		
Normal Output Power	640W		1280W		
Max. Output Power	1280W		1920W		
Serial Use	Up to 2		Up to 2		
Parallel Connection Amount	Up to 4		Up to 4		
Ingress Protection	IP21		IP21		
Cycle Times	≥3200@25°C		≥3200@25°C		
Working Temperature	-10°C~60°C		-10°C~60°C		
Net Weight	17.2kg	17.4kg	17.6kg	23kg	29kg
Product Dimension	320x205x247mm	380x240x260mm	380x240x277mm	380x240x277mm	380x240x277mm



GEL BATTERY  
GEL SERIES  
G12V100AH/G12V200AH



**Safe And Long Life Cycle**  
The silica gel electrolyte lead-acid batteries can be deep discharge, thus greatly extending the cycle life of the battery.



**Solve Electrolyte Stratification, Sulfuric Acid Evenly Distributed**  
The sulfuric acid electrolyte exists in the colloid, it is solid, not easy to tilt, not easy to precipitate, and the battery can be placed vertically or horizontally.



**Comprehensive Design of Floating Charging**  
The battery float current is small (about 1/3 AGM battery), the floating charge lower energy consumption, less warming, reduce battery thermal runaway risk.



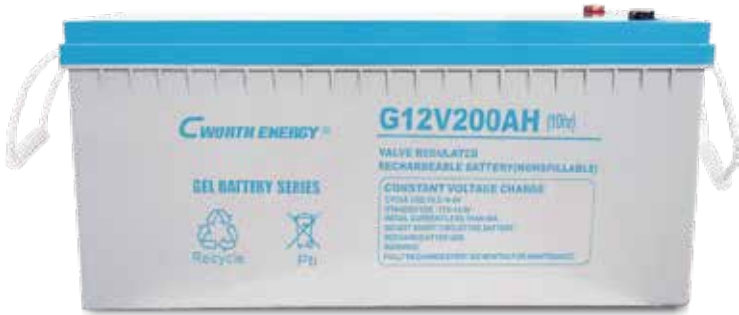
**Low Self-discharge Rate of The Battery**  
It can hinder the water diffusion during cathode reduction, inhibit the spontaneous reduction reaction of PbO<sub>2</sub>, which is beneficial to long-term storage.



**Environmentally Friendly and Economical**  
No acid mist gas precipitation, electrolyte overflow, no combustion, no explosion, no pollution during use.



**More Stable Performance Under Extremely Temperature**  
The gel battery can be used normally within the range of temperature difference from -40°C to 65°C, which effectively solves the problem of difficult starting in cold and high temperature areas.



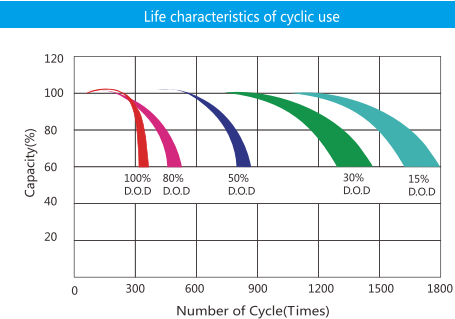
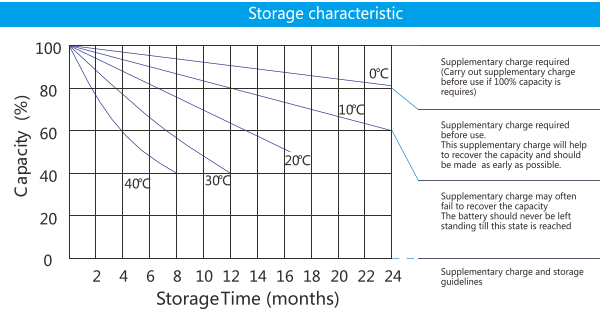
G12V 200AH



G12V 100AH

Specifications

Model	G-12V 100AH	G-12V 200AH
Cells Per Unit	6	
Voltage Per Unit	12	
Capacity	100Ah@10hr-rate to 1.80V per cell @25°C	200Ah@10hr-rate to 1.80V per cell @25°C
Max. Discharge Current	1000A(5 sec)	2000A(5 sec)
Internal Resistance	Approx. 5.0 mΩ	Approx. 4.0 mΩ
Recommended Maximum Charging Current Limit	30A	60A
Operating Temperature Range	Discharge:-20°C-60°C Charge:0°C-50°C Storage:-20°C-60°C	
Normal Operating Temperature Range	25°C ± 5°C	
Float Charging Voltage	13.6 to 13.8V DC/unit Average at 25°C	
Equalization and Cycle Service	14.4 to 14.6V DC/unit Average at 25°C	
Self Discharge	GEL batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using.	
Weight	27.8kg	56.0kg
Size	330x171x218mm	522x220x240mm





# STREET LIGHT

## C1 / C2 SERIES

CE-C2-C60W/ CE-C2-C100W/ CE-C1-100W



### Product Description

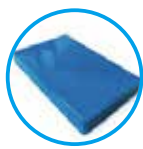
1. Integrated design and source, high capacity LiFePO4 lithium battery, high energy, and long life, light weights, green and environmental protection, do not produce any harmful substances.
2. Philips LED chip with high light efficiency which can reach 180LM/W, and whole lamp light efficiency can reach 160LM/W at least
3. All series use high efficiency controller which can increase 15%-30% charge efficiency
4. Design with high efficiency solar cell (>23%)
5. Convenient installation and maintenance, no need of cable installation or special light pole, functional components modular design, installation and maintenance, convenient and quick replacement



C2-C60W

C2-C100W

C1-100W



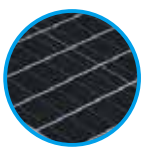
LiFePO4 Battery



Philips LED Chip



Efficient Intelligent  
Controller



High Efficient  
Solar Cell (>23%)

### Specifications

Model	CE-C2-C60W	CE-C2 -C100W	CE-C1-100W
Solar Panel(MONO)	65W	105W	145W
High Capacity Lithium Battery (Built-in)	340WH	560WH	920WH
Luminous Flux (All light Pattern)	14400lm	21600lm	30200m
Recommend Installation Height	4-5m	4-7m	6-9m
Solar Panel Charge Time (with strong sunlight)	8 hours by bright sunlight	8 hours by bright sunlight	8 hours by bright sunlight
Rainy Days Support	>5 days with full charging	>5 days with full charging	3-5 days with full charging
Working Time (Per day)	≥12 hours	≥12 hours	≥12 hours
Color Temperature	6500K	6500K	6500K
Light Pole Diameter	84mm	84mm	114mm
Storage Temperature	0-55°C	0-55°C	0-55°C
Operating Humidity	≤90%RH	≤90%RH	≤90%RH
Waterproof Level	IP65	IP65	IP65
Product Dimensions	1159x394x65mm	1489x394x65mm	1600x489x69mm



# STREET LIGHT TK SERIES

CE-TK-60W/ CE-TK-80W



Cworth ENERGY®

## Product Description

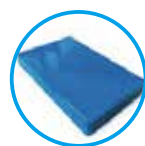
1. High Brightness Support ground fixation, wall fixation lamp, pole fixation.
2. High capacity LiFePO4 lithium battery, high energy, and long life, green and environmental protection, do not produce any harmful substances.
3. Philips LED chip with high light efficiency which can reach 180LM/W, and whole lamp light efficiency can reach 160LM/w at least
4. All series use high efficiency controller which can increase 15%-30% charge efficiency
5. Design with high efficiency solar cell (>23%)



CE-TK-80W



CE-TK-60W



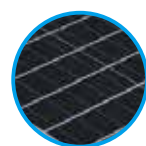
LiFePO4 Battery



Philips LED Chip



Efficient Intelligent  
Controller



High Efficient  
Solar Cell (>23%)

## Specifications

Model	CE-TK-60W	CE-TK-80W
Solar Panel(MONO)	60W	80W
High Capacity Lithium Battery (Built-in)	256WH	320WH
Luminous Flux (All light Pattern)	7584lm	11376lm
Recommend Installation Height	3-6m	3-6m
Solar Panel Charge Time (with strong sunlight)	8 hours by bright sunlight	8 hours by bright sunlight
Rainy Days Support	>5 days with full charging	>5 days with full charging
Working Time (Per day)	≥12 hours	≥12 hours
Color Temperature	3000-7000K	3000-7000K
Light Pole Diameter	76mm	76mm
Storage Temperature	0-55°C	0-55°C
Operating Humidity	≤90%RH	≤90%RH
Waterproof Level	IP65	IP65
Net Weight	6.75kg	7.8kg
Product Dimensions	310x310x110mm	430x320x95mm



# PORTABLE SOLAR POWER SYSTEM

## 25.6V 1.5KWH

### Advantages:

- Portable design
- Built in MPPT controller
- Support for mains and solar panel charging
- Integrating lithium batteries, inverters
- LCD screen, with LED lights

# Distribution Box

## E-BOX



- Current and voltage visualization.
- Prevent damage to MPPT controller and inverter caused by lightning strikes.
- Prevent the inverter damage due to excessive input voltage fluctuation of the power grid.
- Prevent inverter output short circuit or excessive load from causing damage to the inverter and controlling the customer's usage overload.

### Specifications

Model	CE-PLB1200
Battery	25.6V 1.5KWH
Inverter Power (Default)	1200W 230VAC 50Hz
LED	3W
DC5521	12V 10A
USB 1	18W*2 5V/9V/12V
USB 2	12W*2 5V
Type-C1	PD100W 5V/9V/12V/15V/20V
Type-C2	PD45W 5V/9V/12V/15V/20V
Max PV Input (MPPT)	500W 60V 12A
AC Input Voltage Range	185-275V
Utility+PV Charge Power	1050W
Expand Capacity	Cworth Energy 24V battery
Working Temperature	-10°C~45 °C
Net Weight	18kg
Product Dimension	385x230x280mm

### Specifications

Model	E-BOX
AC Working Voltage Rated	AC 220V
AC Operation Voltage Range	AC 80V~300V
AC Rated Current	63A
AC Electric Current (>U) Setting Range	1~63A
Display Reset/Start Delay	1s~600s
Voltage Measurement Accuracy	1%
AC rated Frequency	50/60Hz
Levels of Protection	IP30
Working Temperature	-15°C~60°C
DC input Voltage and Current	<500V/63A
Net Weight	2.82kg
Product Dimension	360x210x90mm



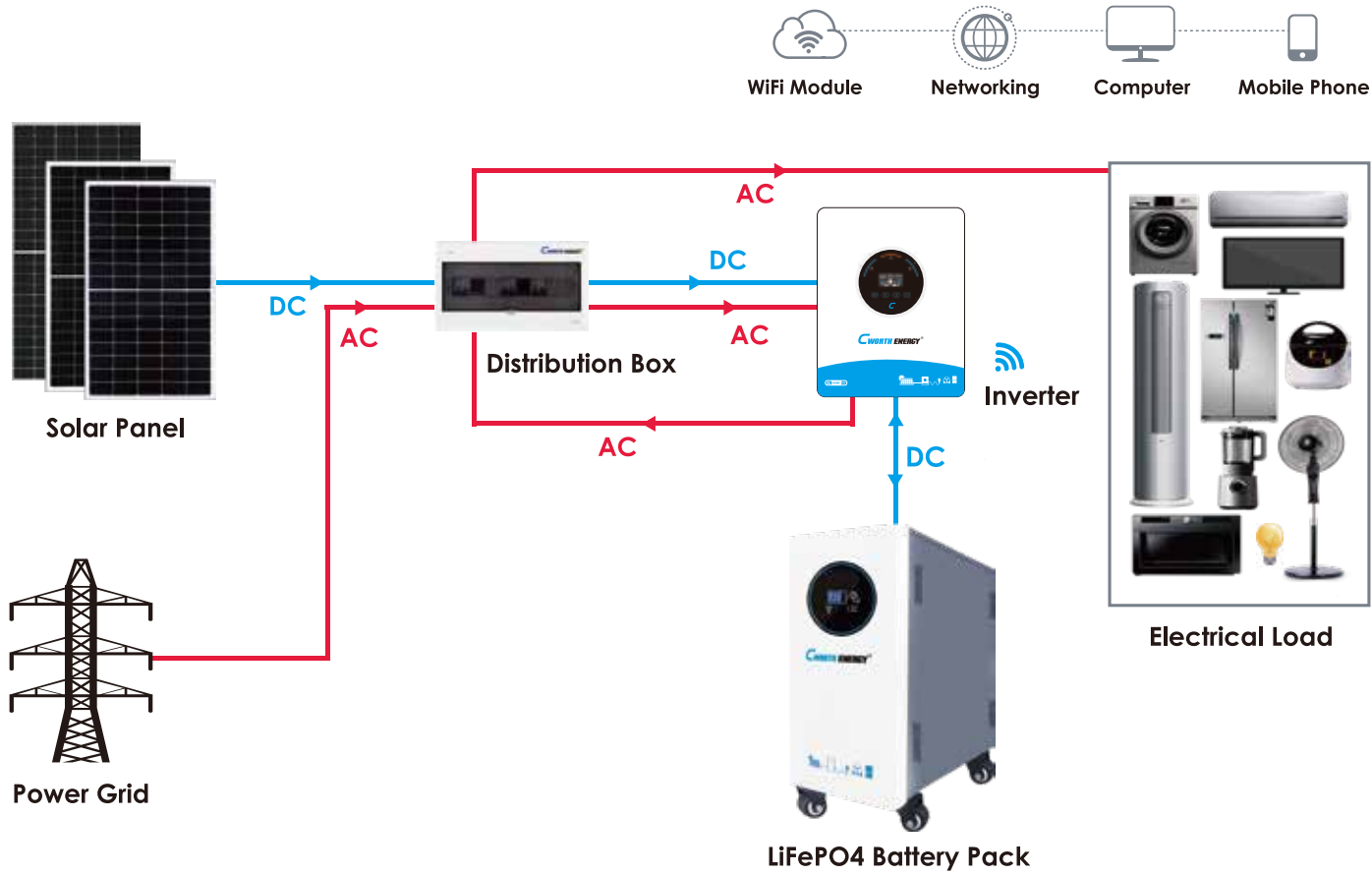
# Solar Energy System

## 1.5KW~12KW



### Off-Grid Solar Energy System

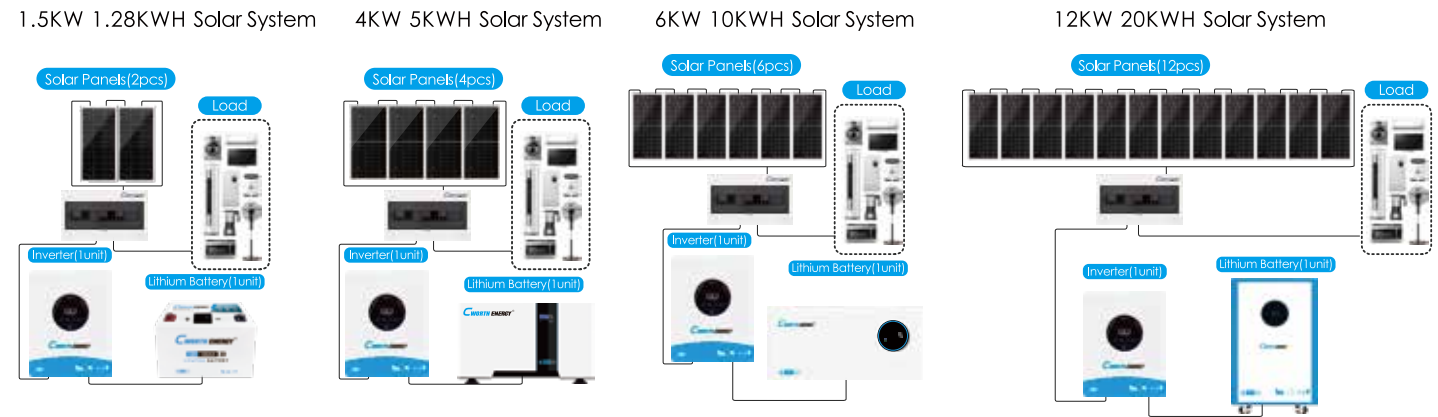
AC Alternating Current  
DC Direct Current



### Solar Energy System:

Solar energy system is a renewable environmental protection system with a wide range of applications, such as residential, industrial, agricultural, animal husbandry, etc. It is mainly used to supply power for various household appliances and office equipment, and efficiently solve energy problems like power shortages, people's daily electricity consumption, work electricity consumption.

### Off-Grid System Configuration:



### Specifications

Model	1.5KW	4KW	6KW	6KW	12KW
Solar Panel	2 Pieces * 200W 27.1V	4 Pieces * 400W 34.8V	6 Pieces * 500W 48.2V	8 Pieces * 500W 48.2V	12 Pieces * 500W 48.2V
Inverter	1.5KW DC 12V AC 230V 50Hz/60Hz MPPT 45A * 1 unit	4KW DC 24V AC 230V 50Hz/60Hz MPPT 120A * 1 unit	6KW DC 48V AC 230V 50Hz/60Hz MPPT 120A * 1 unit	6KW DC 48V AC 230V 50Hz/60Hz MPPT 120A * 1 unit	12KW DC 48V AC 230V 50Hz/60Hz MPPT 210A * 1 unit
Lithium Battery	CE-GCL-12100 1.28KWH * 1 unit	CE-LBD-24200C 5KWH * 1 unit	CE-LBC-48200C 10KWH * 1 unit	CE-LBF-48300C 15KWH * 1 unit	CE-LBC-48400C 20KWH * 1 unit
E-BOX	1 pc	1 pc	1 pc	1 pc	1 pc
PV Frame	1 * set	1 * set	1 * set	1 * set	1 * set
PV Cable	red 4mm <sup>2</sup> * 20m	red 4mm <sup>2</sup> * 20m	red 4mm <sup>2</sup> * 20m	red 4mm <sup>2</sup> * 20m	red 4mm <sup>2</sup> * 40m
	black 4mm <sup>2</sup> * 20m	black 4mm <sup>2</sup> * 20m	black 4mm <sup>2</sup> * 20m	black 4mm <sup>2</sup> * 20m	black 4mm <sup>2</sup> * 40m
Warm tips: According to the actual application needs, customized solutions can be provided.					



# PROJECT CASE

## Solar Panel / Lithium Battery Series Installation



- 36KW Off-Grid System
- Solar Panels
- Nigeria



- 24KW Energy Storage System
- Inverters, Gel Battery
- Nigeria



- 60KWH Energy Storage System
- Inverters, Lithium Batteries
- Cameroon

## Nigeria, Cameroon, Lebanon, Chad, Ghana, Guinea, Uganda, Congo, Mali Installation Case

