

# ALL IN ONE ENERGY STORAGE SYSTEM

Experience the support of **CHIEF** energy

**C**EEG  
**H**OME  
**I**ntelligent  
**E**nergy  
**F**low



 **CEEG** 中电电气

FORESIGHT  
INNOVATION  
RESPONSIBILITY

04

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**NEW ENERGY INDUSTRY**

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# COMPANY INTRODUCTION

Green power, green products,  
intelligent manufacturing, smart service.

## COMPANY INTRODUCTION

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Our firm goal is to create the industry's leading brand, and we adhere to the fundamental principle of "Quality first, customer foremost." Moving forward, CEEG will focus on research and development of explosion-proof electrical products and amorphous alloy products. We are dedicated to providing safe, reliable, energy-saving, environmentally friendly, and stable equipment support to deliver excellent value services to our users.



times, adhering to the development philosophy of "walking with giants and synchronizing with the world," and has become a leading enterprise in China's power transmission and transformation industry.

With a commitment to the path of new industrialization, CEEG drives innovative development with green energy technology, intelligent environmental protection, high-tech, and high-value-added products and services, creating "Green CEEG" and "Digital CEEG" in the context of the "carbon peak" and "carbon neutrality" era.

CEEG has been a pioneer in the solar photovoltaic industry for nearly 20 years. Its Solar Energy Research Institute is a global leader in providing new energy application system services, with nearly 20 doctors and postdoctoral researchers. Led by winner of the "Global Energy Prize," CEEG has drafted nine national standards for the design, construction, inspection, and grid connection of photovoltaic power stations in China,

setting it apart from other enterprises in the photovoltaic industry. CEEG's photovoltaic products are exported worldwide, and have been applied in significant domestic and foreign projects.

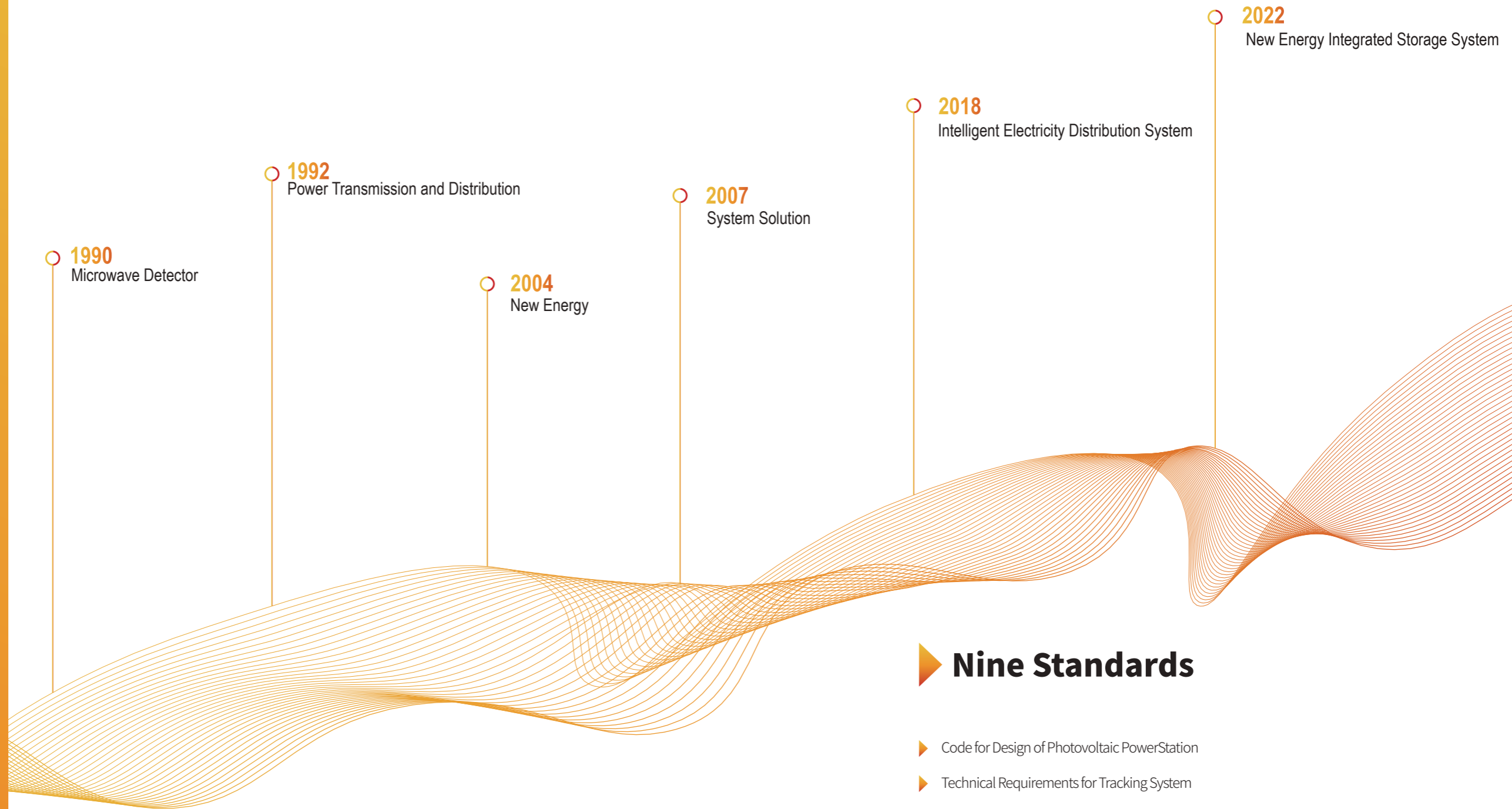
Aligned with the "dual-carbon" goal, CEEG is continuously innovating and developing its product technology based on market demand. The company has integrated its years of accumulated photovoltaic technology with energy storage to launch a "photovoltaic + energy storage" system solution. It has developed energy storage boost inverters, household photovoltaic energy storage machines, and other products. Through a comprehensive product system and high-quality market services, CEEG meets the differentiated needs of various customers, providing them with stable and effective energy storage solutions such as emergency backup power, self-use of photovoltaic power, surplus electricity access to the grid, and peak-valley arbitrage.

In the future, CEEG will continue to explore and innovate to build a new type of power system, strengthen its efforts in the field of energy storage, and provide leading energy storage system solutions that benefit thousands of industries and households with green power.

## ▶ ABOUT CEEG

China Electric Equipment Group (referred to as "CEEG") is a renowned provider of system solutions in power and new energy fields globally. Its core business areas comprise transformers and power distribution equipment, wind and solar energy storage, and intelligent power distribution systems. Established in 1990 and headquartered in Nanjing, CEEG was originally supported by China's Ministry of Energy. Over the past three decades, the company has kept pace with the

# DEVELOPMENT PROCESS



## ► **Nine Standards**

- Code for Design of Photovoltaic PowerStation
- Technical Requirements for Tracking System
- Code for Construction of PhotovoltaicPower Station
- Technical Code of PV Lighting Devices
- Acceptance Code for Independent PVSystem
- Technical Requirements For Protection ofPV Power Station Against Lightning
- Code for Construction OrganizationDesigning of PV Power Station
- Technical Code for Protection of PV Power Station Against Lightning
- Code for Design of PV System Connecting To Distribution Network

CEEG has been devoted to  
manufacturing for more than 30 years.

# ▶ GLOBALIZATION



- ▶ 3 industrial bases
- ▶ 4 factories
- ▶ 15 oversea branches
- ▶ Products are sold to over 80 countries and regions all over the world

## OUR BUSINESS PARTNER



# HONOR & RECOGNITION



One of the largest production bases of dry type transformer in Asia



China's Largest Production Base of Explosion-proof Transformers



Co-developed The World's First Dry-type Transformer adopted Nomex<sup>®</sup> Insulation System with Dupont



Top 10 Well-known Brands in China Electrical Equipment Industry



China Well-known Trademark



Top 500 Asia Brand



Certificate of China's Energy Groups Top 500



China Top 500 Private Enterprises



National Innovative Enterprise



A company with Annual Sales Revenue over 10 Billion RMB



National Enterprise of "Keeping Promise & Honoring Contracts"



Certificate of China Quality Certification Center

# PRODUCT PRESENTATION

Green power, green products,  
intelligent manufacturing, smart service.

## PRODUCT PRESENTATION

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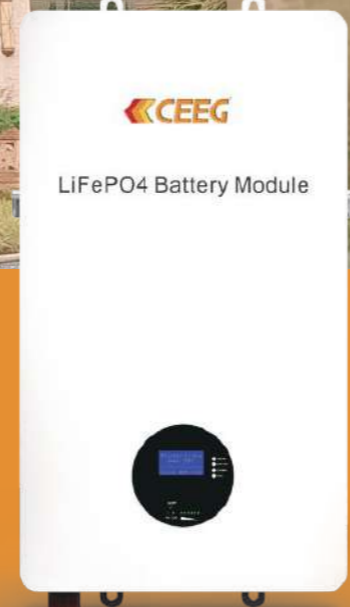
CEEG has taken a leading role among Chinese PV companies in implementing a significant project - the "Whole Set of Key Technology Research and Demonstration Production Line for the Industrialization of Low-Cost Crystal Silicon Cells with Efficiency above 20%". This project was launched by the Ministry of Science and Technology under the National 863 Program, with a focus on achieving mass production and widespread adoption of low-cost and high-efficiency solar cells.





NEW WAY  
NEW WAY  
NEW WAY

Embark on a different lifestyle



ENERGY  
STORAGE  
SYSTEM

**Product features:**

- ▼ Elegant all in one design
- ▼ Wide MPPT range
- ▼ MAX. 120% rated AC output power
- ▼ Up to 6 systems in parallel
- ▼ uninterrupted power supply
- ▼ Convenient installation
- ▼ Low noise emission
- ▼ Safest LFP battery



All In One Solar System  
**CHIEF AIO series 1-phase**  
**3.6~6kW**

Model	CHCI-3.6K	CHCI-5.0K	CHCI-6.0K
<b>PV Input</b>			
Max. PV input Voltage [V]		600	
MPPT Voltage Range [V]		100...550	
Max. DC Input Power [W]	4800	6650	8000
Start-up Voltage [V]		90	
Rated Operating Voltage [V]		360	
Max. Input Current [A]		12.5/12.5	
Isc PV[A]		18/18	
NO.of MPP Trackers		2	
NO.of Strings per MPP Tracker		1	
<b>Battery input</b>			
Battery Capacity [kWh]		LiFePO4 5.12/10.24	
Nominal Battery Voltage [V]		204.8 /409.6	
Battery Voltage Range [V]		160...227.2/320...454.4	
Max. Charge/Discharge Current [A]		25/25	
<b>AC Input/Output</b>			
Rated Output Power [W]	3600	5000	6000
Max. Apparent Power [VA]	3960	5500	6000
Max. Apparent Power from Grid [VA]	7200	10000	12000
Rated Voltage [V]		220/230/240	
Rated Frequency [Hz]		50/60	
Rated AC Current to Grid[A]	16	21.7	26.1
Rated AC Current from Grid[A]	32	43.4	52.2
Displacement Power Factor		1(-0.8...+0.8 adjustable)	
THDi		< 3%	
<b>EPS Output (With Battery)</b>			
Max. Output Power [W]	3600	5000	6000
Max. Apparent Power [VA]	4320,60s	6000,60s	7200,60s
Rated Voltage [V]		230 (±2%)	
Normal Frequency [Hz]		50/60 (±0.2%)	
Max. Output Current [A]	18.8	26.1	31.3
Switch time [ms]		<10	
<b>Efficiency</b>			
PV Max. Efficiency[%]		97.6	
PV Europe Efficiency[%]		97	
PV Max. MPPT Efficiency[%]		99.9	
Battery Charge by PV Max. Efficiency[%]		98	
Battery Discharge Efficiency [%]		96.7	
<b>Protection</b>			
Over/Under voltage protection		Yes	
DC isolation protection		Yes	
Over current protection		Yes	
DC injection monitoring		Yes	
Residual current detection		Yes	
Anti-islanding protection		Yes	
Over load protection		Yes	
Battery Input reverse polarity protection		Yes	
PV reverse polarity protection		Yes	
Surge protection		Yes	
Over heat protection		Yes	
<b>General Data</b>			
Dimension (W/D/H)[mm]	550*233*1125	550*233*1750	550*233*1750
Dimension of Packing (W/D/H)[mm]	645*302*1370	645*302*2050	645*302*2050
Net weight [kg]	68	115	115
Gross weight [kg]	78	130	130
Operation Temp [°C]		-25...+60	
Relative Humidity[%]		0~95	
Altitude [m]		<= 4000 (>3000 Derating)	
Ingress Protection		IP65	
Cooling		Natural	
Inverter Topology		Non-isolated	
Human Interface		LED/APP	
BMS Communication Interface		RS485/CAN	
Meter Communication Interface		RS485	
Noise Emission [dB]		< 25	
Standby Power Consumption [W]		< 5	

**Product features:**

- ▶ 150% PV oversized and 110% overload output
- ▶ 3-phase unbalanced output
- ▶ 15A DC input current, supports high power PV panel
- ▶ Uninterrupted power supply
- ▶ Store the surplus energy from PV to battery
- ▶ Convenient Meter-free installation
- ▶ Low noise emission
- ▶ Safest LFP battery



All In One Solar System  
**Chief AIO series, 3-phase,  
 5-12kW**

Model	CHIEF-5.0-T-A	CHIEF-8.0-T-A	CHIEF-10.0-T-A	CHIEF-12.0-T-A
<b>PV Input</b>				
Max. PV input Voltage [V]	1000			
MPPT Voltage Range [V]	200-750			
Max. DC Input Power [W]	7500	12000	15000	18000
Start-up Voltage [V]	200			
Rated Operating Voltage [V]	400			
Max. Input Current [A]	15			
Isc PV[A]	20			
NO.of MPP Trackers	2			
NO.of Strings per MPP Tracker	1			
<b>Battery</b>				
Battery Voltage Range [V]	150-690			
Max. Charge/Discharge Current [A]	25			
Battery capacity [kWh]	3.84/7.68/11.52/15.36			
<b>AC Input/Output</b>				
Rated output Power [W]	5000	8000	10000	12000
Rated Apparent Power [VA]	5000	8000	10000	12000
Max. Apparent Power [VA]	5500	8800	11000	12000
Max. Apparent Power from Grid [VA]	10000	16000	16600	20000
Rated Voltage [V]	380/400			
Rated Frequency [Hz]	50/60 (±0.2%)			
Rated AC Current to Grid [A]	7.2	11.6	24.1	20
Rated AC Current from Grid [A]	14.4	23.2	14.4	28.8
Max. output fault current [A]	30(rms),42.42(peak)			
AC output Maximum output overcurrent protection [A]	30			
AC input power factor	[-0.8~0.8]			
AC output power factor	1[-0.8...+0.8 adjustable]			
THDi	<3%			
<b>EPS Output (With Battery)</b>				
Rated Apparent Power [VA]	5000	8000	10000	12000
Max. Output Power [W]	6000	9600	12000	14400
Max. Apparent Power [VA]	6000	9600	12000	14400
Rated Voltage [V]	380/400			
Normal Frequency [Hz]	50/60 (±0.2%)			
Rated Output Current [A]	8.7	13.9	17.4	20.9
Max. output fault current [A]	30(rms),42.42(peak)			
EPS output Maximum output overcurrent protection [A]	30			
Switch time [ms]	<10			
Power Factor	[-0.8~0.8]			
<b>Efficiency</b>				
PV Max Efficiency (%)	97.6			
PV Europe Efficiency (%)	97			
PV Max. MPPT Efficiency (%)	99.9			
Battery Charge by PV Max. Efficiency (%)	98			
Battery Discharge Efficiency (%)	96.7			
<b>Protection</b>				
Over/Under voltage protection	Yes			
DC isolation protection	Yes			
DC injection monitoring	Yes			
Residual current detection	Yes			
Anti- islanding protection	Yes			
Over load protection	Yes			
Battery Input reverse polarity protection	Yes			
PV reverse polarity protection	Yes			
Surge protection	Yes			
Over heat protection	Yes			
<b>General Data</b>				
Dimension(W/D/H)[mm]	[W:700;D:263;H=500(EPS Box)+n*300(Battery box),≤4]			
Net weight [kg]	[Inverter 30,Battery 35*n,2≤n≤4]			
Operation Temp °C	[-25~60]			
Relative Humidity (%)	0...95			
Altitude [m]	≤3000			
Ingress Protection	IP65			
Cooling	Natural			
Inverter Topology	Non-isolated			
Over voltage category	III (AC), II (DC)			
Protective class	Class I			
Active anti- islanding method	frequency shift			
Human Interface	LED/APP			
BMS Communication Interface	SPI			
Meter Communication Interface	RS485			
Noise Emission [dB]	<25			
Standby Power Consumption [W]	<5			

**Product features:**

- ▼ Moduler design, convenient for capacity expansion
- ▼ Multiple charging ways, adaptable to different applications
- ▼ Uninterrupted power supply function
- ▼ Up to 9 systems in parallel
- ▼ Active equilibrium to optimize battery performance and extend life cycle
- ▼ MAX. 200% rated output power to support impact load
- ▼ Intelligent adjustable speed fan, efficient heat dissipation



All In One Solar System  
**CHIEF AIO series off grid**  
**3.5~5.5kW**

Model	CHIEF-3.5-OG	CHIEF-5.5-OG
Rated Power	3500VA/3500W	5500VA/5500W
<b>Input</b>		
Voltage [V]	230	
Selectable Voltage Range [V]	90-280	
Frequency Range [Hz]	50/60(Auto sensing)	
<b>Output</b>		
ACVoltage Regulation(Batt.Mode)	230±5%	
Surge Power [VA]	7000	11000
Efficiency(Peak)	up to 93.5%	
Transfer Time [ms]	20	
Waveform	Pure sine wave	
<b>Battery</b>		
Batter Voltage [V]	24	48
Floating Charge Voltage [V]	27	54
Overcharge Protection [V]	33	63
<b>Solar Charger &amp; AC Charger</b>		
Maximum PV Array Open Circuit Voltage [V]	500	500
Maximum PV Array Power [W]	5500	5500
MPPT Range @ Operating Voltage [V]	120~450	120~450
Maximum Solar Charge Current [A]	80	80
Maximum AC Charge Current [A]	80	80
Maximum Charge Current [A]	100	100
<b>Physical</b>		
Dimension,DxWxH(mm)	588x195x310	
Net Weight(kg)	9	10
Communication Interface	RS485/RS232	
<b>Environment</b>		
Humidity	15% to 95% Relative Humidity(Non-condensing)	
Operating Temperature	-10 C to50 C	
Storage Temperature	-15 C to 60 C	

Model	CUBE-5.12-A
<b>Battery</b>	
Batteries materials	Lithium iron phosphate
Series parallel mode (S series, P parallel)	16S1P
Nominal voltage [V]	51.2
Nominal capacity	100Ah
Size (mm)	588*195*430
Weight(kg)	65
Charging way	CP/VP
Charging current [A]	50
Maximum charging current [A]	100
Charge cut-off voltage [V]	58.4
Discharge way	CP/VP
Discharging current [A]	50
Maximum discharging current [A]	100
Discharge cut-off voltage [V]	44.8
Display	LCD
Communication interface	RS485/RS232/CAN
Charging operating temperature	charging:0~+50 C
Discharge operating temperature	discharge:-20~+55 C
The quality assurance period	60 months



# CUBE-5.12-R

LiFePO4 Rack mount series

Model	CUBE-5.12-R
<b>Electrical</b>	
Rated voltage [V]	51.2
Rated capacity [Ah]	100
Energy storage [kWh]	5.12
Monthly self discharge	≤2%
<b>Standard Charge</b>	
Charge voltage [V]	58.4
Charge current [A]	50
Max. charge current [A]	100
Charge cut-off voltage [V]	58.4
<b>Standard Discharge</b>	
Discharge current [A]	50
Max. discharge current [A]	100
Discharge cut-off voltage [V]	44.8
<b>Environmental</b>	
Charge temperature	0 C to 50 C (32F to122F) @60±25% Relative Humidity
Discharge temperature	-20 C to 55 C (-4F to131F) @60±25% Relative Humidity
Storage temperature	0 C to 40 C (32F to104F) @60±25% Relative Humidity
<b>Mechanical</b>	
IP class	IP20
Material system	LiFePO4
Case material	Metal
Case Type	Rack
Dimensions W*D*H [mm]	440*490*170
Weight [kg]	47
Terminal	M8
Protocol(Optional)	CANBus/RS485/RS232
Display(Optional)	LED/LCD



# CUBE-5.12-W

LiFePO4 Wall mount series

Model	CUBE-5.12-W
<b>Electrical</b>	
Rated voltage [V]	51.2
Rated capacity [Ah]	100
Energy storage [kWh]	5.12
Monthly self discharge	≤2%
<b>Standard Charge</b>	
Charge voltage [V]	58.4
Charge current [A]	50
Max. charge current [A]	100
Charge cut-off voltage [V]	58.4
<b>Standard Discharge</b>	
Discharge current [A]	50
Max. discharge current [A]	100
Discharge cut-off voltage [V]	44.8
<b>Environmental</b>	
Charge temperature	0 C to 50 C (32F to122F) @60±25% Relative Humidity
Discharge temperature	-20 C to 55 C (-4F to131F) @60±25% Relative Humidity
Storage temperature	0 C to 40 C (32F to104F) @60±25% Relative Humidity
<b>Mechanical</b>	
IP class	IP20
Material system	LiFePO4
Case material	Metal
Case Type	Wall Mounted
Dimensions W*D*H [mm]	410*155*590
Weight [kg]	48
Terminal	M8
Protocol(Optional)	CANBus/RS485/RS232
Display(Optional)	LED/LCD



# CUBE-9.6-R

LiFePO4 Rack mount series



# CUBE-10.24-W

LiFePO4 Wall mount series

Model	CUBE-9.6-R
<b>Electrical</b>	
Rated voltage [V]	48
Rated capacity [Ah]	200
Energy storage [kWh]	9.6
Monthly self discharge	≤2%
<b>Standard Charge</b>	
Charge voltage [V]	58.4
Charge current [A]	100
Max. charge current [A]	200
Charge cut-off voltage [V]	58.4
<b>Standard Discharge</b>	
Discharge current [A]	100
Max. discharge current [A]	200
Discharge cut-off voltage [V]	44.8
<b>Environmental</b>	
Charge temperature	0 °C to 50 °C (32F to 122F) @60±25% Relative Humidity
Discharge temperature	-20 °C to 55 °C (-4F to 131F) @60±25% Relative Humidity
Storage temperature	0 °C to 40 °C (32F to 104F) @60±25% Relative Humidity
<b>Mechanical</b>	
IP class	IP20
Material system	LiFePO4
Case material	Metal
Case Type	Rack
Dimensions W*D*H [mm]	550*440*250
Weight [kg]	80
Terminal	M8
Protocol(Optional)	CANBus/RS485/RS232
Display(Optional)	LED/LCD

Model	CUBE-10.24-W
<b>Electrical</b>	
Rated voltage [V]	51.2
Rated capacity [Ah]	200
Energy storage [kWh]	10.24
Monthly self discharge	≤2%
<b>Standard Charge</b>	
Charge voltage [V]	58.4
Charge current [A]	100
Max. charge current [A]	200
Charge cut-off voltage [V]	58.4
<b>Standard Discharge</b>	
Discharge current [A]	100
Max. discharge current [A]	200
Discharge cut-off voltage [V]	44.8
<b>Environmental</b>	
Charge temperature	0 °C to 50 °C (32F to 122F) @60±25% Relative Humidity
Discharge temperature	-20 °C to 55 °C (-4F to 131F) @60±25% Relative Humidity
Storage temperature	0 °C to 40 °C (32F to 104F) @60±25% Relative Humidity
<b>Mechanical</b>	
IP class	IP20
Material system	LiFePO4
Case material	Metal
Case Type	Wall Mounted
Dimensions W*D*H [mm]	485*155*860
Weight [kg]	94
Terminal	M8
Protocol(Optional)	CANBus/RS485/RS232
Display(Optional)	LED/LCD

# SCOPE OF APPLICATION

Green power, green products,  
intelligent manufacturing, smart service.

## SCOPE OF APPLICATION

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White design in household appliances  
Modular design, convenient for maintenance and expansion  
Selection of long-life cells, produced by reputed manufacturers  
Intelligent management, handy and pretty  
Multiple safety design

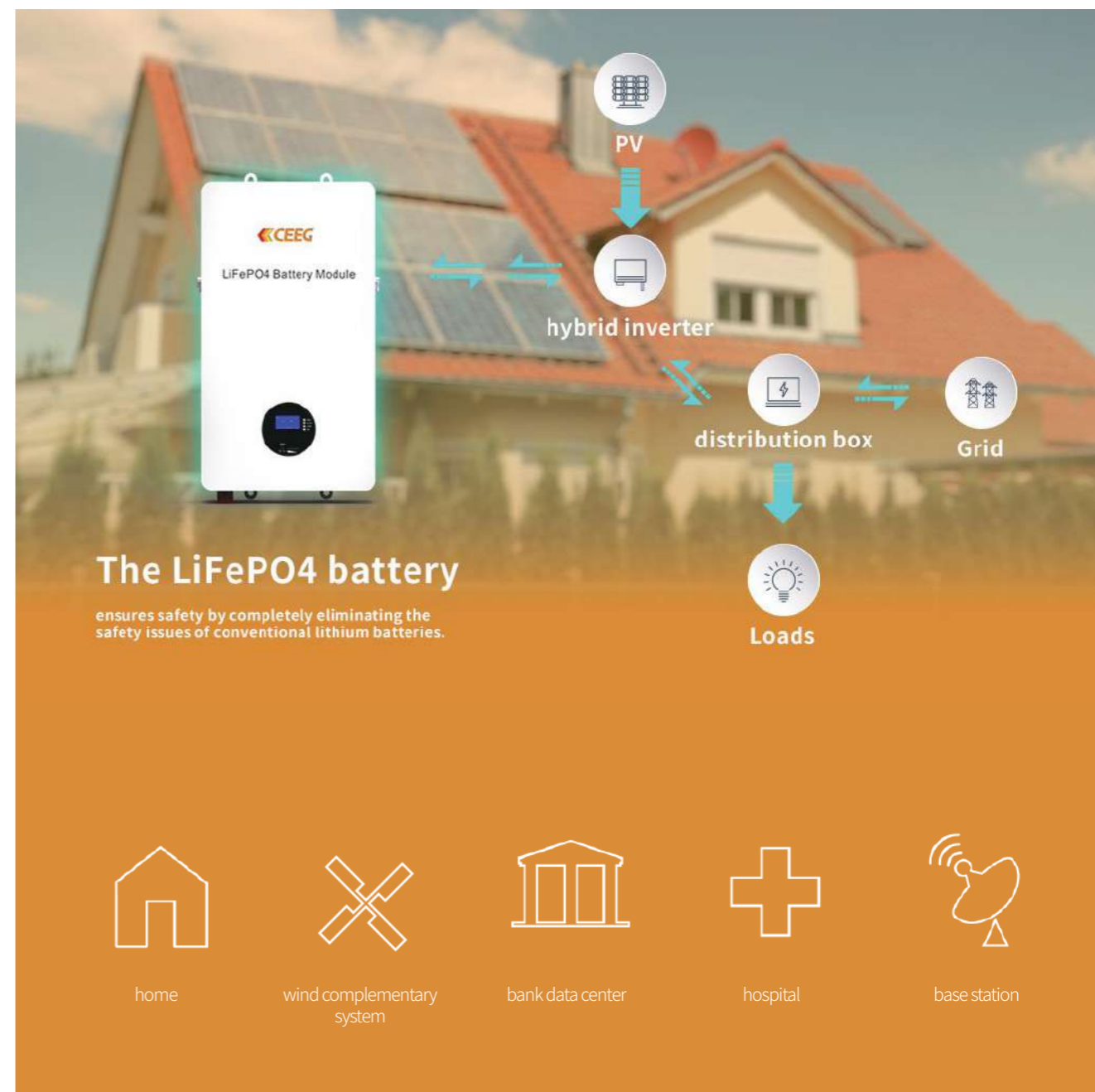
# ▶ SCOPE OF APPLICATION





# SOLAR ENERGY STORAGE SYSTEM

Generate and store clean energy for home



# CONSTRUCTION PROJECT CASE

Green power, green products,  
intelligent manufacturing, smart service.

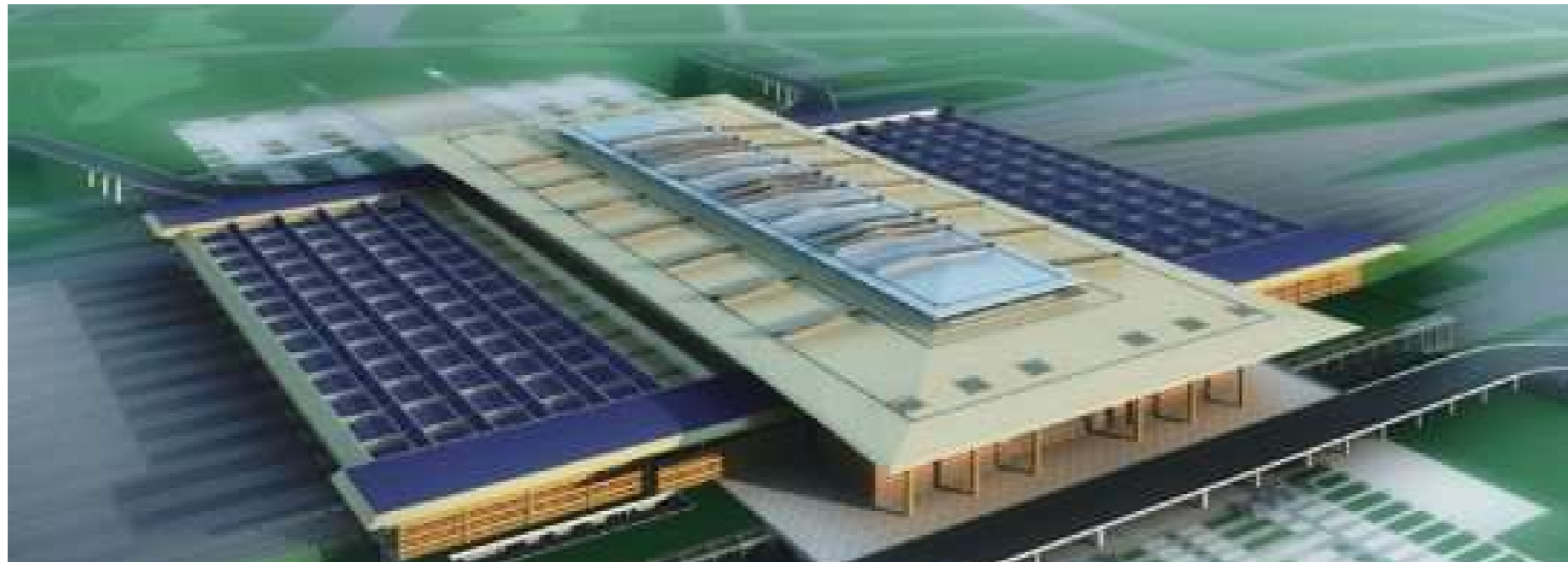
# 04

**CONSTRUCTION PROJECT CASE**

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CEEG Solar Energy Research Institute is a global leading new energy applications service provider with nearly 20 doctors and post doctors. Under the leading of “Global Energy Award” winners Professor Liu Zhizhang, CEEG led the drafting of nine national solar PV standards, including PV power plants design, construction organizing, inspection and grid connection, etc. CEEG is the only company with three certificates which include construction consulting, construction design and general power construction contract. Meanwhile, it is the only International PV System Application Technology Training Base in developing countries, which is authorized by the Ministry of Science.

# ▶ CASES



The World's Largest Single BIPV Project Nanjing South Railway Station of China



PV Rooftop Projects



Energy Storage Container Application Projects



Energy Storage Project



Korea Solar PV Industrial base



4.3 MW PV Power Station in Puglia Italy

# ▶ PRODUCTS FAMILY



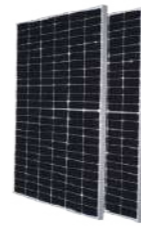
ESS All in one



LiFePO4 Wall mount series



LiFePO4 Rack mount series



Sola Module All series



Auto transformer



SRN high-temperature-resistant oil-immersed transformer



S13 oil-immersed transformer



Harmonic-resistant dry-type transformer



Energy Storage Cabinet



Energy Storage Container



Integrated PV Step-up Transformer



New Energy Substation



Photovoltaic split transformer



European-style prefabricated substation



YBF series wind power substation



American-style substation



SC(B) epoxy resin dry-type transformer



220kV Traction Transformer



110kV oil-immersed traction transformer



110kV Traction Transformer



Water-cooled transformer



Offshore platform transformer



Marine transformer



Buried box transformer



110kV Mobile Transformer



35kV oil-immersed power transformer



Non-crystalline alloy oil-immersed transformer



Oil-immersed converter transformer



SRN-M.D high-temperature-resistant liquid-immersed underground transformer



KYN28A indoor metal armored withdrawable switchgear



Ship distribution board



Busbar

OUTPUT HIGH-QUALITY POWER  
FOR THE WORLD

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