HUAWEI

Digital Power

HUAWEI

25 YEARS IN FOR NEPAL

Fusionsolar

World's Largest

150KW All-Rounder Inverter in C&I

Safety
PV Ground-Fault Protection

Efficiency
98.8% Max. Efficiency

BOS
BOS Saving **5%**

Reliability
99.999% Reliability

O&M
Module Level
Riso Detection

Grid Friendly
THDi < **1%**

Fusionsolar

World's First

Smart Hybrid Cooled C&I ESS

LUNA2000-215-2S12 / 2S10

C2C Electrical and Thermal Safety
Safety design: Cell-Pack-System-Consumption

Higher Revenue
Highest RTE Efficiency of **91.3%**

One fits all
One-stop Solution, Easy Installation and O&M

Leading provider of **ICT Infrastructure** and **Smart Devices**.

VISION & MISSION

Bring Digital to every person, home and organization for **a fully connected, intelligent world**.

207K
employees

55%
employees work in R&D

170+
countries and regions

5th
in global R&D Investment

140K
active patents held globally

Huawei's 25 Years Dedications:

In Nepal, For Nepal

Serving **70%** Nepalese, **8M+** users enjoy internet through Huawei networks per day

1999

Huawei Nepal **established**

2007

Deployed **Nationwide 2G** network

2012

Introduced **3G Network**

2016

Introduced **3G in Everest**

2019

1st **Tier 3** Data center and **Nationwide 4G**

2020

Huawei **ISP & Energy** business started

2022

Huawei achieved **Best Tax Award**

2024

Continually **Enabling the ICT Industry** Ecosystem in Nepal

25 Years

Contributed Journey

Huawei Nepal

1 Huawei Office
1 Innovation Center

200+ Employees

90% Local Recruitment

Local Contribution

Best Tax Award in 2022
10K+ Jobs

Social Responsibility

Seeds for the Future ICT Academy
Earthquake Relief Activities
Himalayan Network Coverage

Huawei Digital Power Introduction

Huawei Digital Power is committed to integrating digital and power electronics technologies, developing clean power, and enabling energy digitalization to drive energy revolution for a better, greener future.

In the clean power, generation sector, we help create new power systems that primarily rely on renewable energy. In the mobility electrification sector, we enhance the consumer driving and charging experience in electric vehicles (EVs), accelerating green travelling. In the green ICT power infrastructure sector, we help build green, low-carbon, and intelligent data centers and communications networks.

Huawei Digital Power continues innovating through open collaboration with global partners to promote carbon neutrality.

Huawei Digital Power serves more than 3 Billion People across more than 170 Countries and Regions.

By the end of December 2024, Huawei Digital Power has helped customers in

1,411.3 Billion kWh
Green Power Generation

710 Million Tons
Carbon Emissions Reduction

970 Million Trees
Planting Equivalence

Huawei Digital Power: Integrating digital and power electronics technologies, developing clean power, and enabling energy digitalization to drive energy revolution for a better, greener future.

Evolving from high carbon to low carbon, and finally to net-zero carbon

Green House **Green Building** **Green Factory**
Green Campus **Green Village** **Green City**

DigiPower Management Platform

Professional PaaS & SaaS for energy

Green Power Generation

PV/Wind/ESS

Micro-grid/Mine

Energy Internet

High-voltage transmission

Smart distribution network

Mobility Electrification

EV

Charging Network

Green Power ICT Power Infrastructure

Site Power Facility

Data Center Facility

Integrated Smart Energy

Campus

Building

Energy Flow

Data Flow

New Power System

Power Electronics Technology (Watt/Heat/Battery)

Material (GaN/SiC)

Component (IGBT/MOS)

Heat Management

Energy Storage Management

Digital Technology (Bit)

Sensing (Digital/Visual)

Connection (5G/IoT)

Cloud(Data/ Algorithm)

AI(Chip/ Algorithm)

Focus on Products

Open Ecosystem

Fusionsolar

Utility Smart PV & ESS Solution for Higher Yields

Optimal Investment | Grid Supporting | Smart O&M | Safe & Reliable

Smart String Inverter
SUN2000-330KTL-H1

Smart PCS
LUNA2000-213KTL-H0

Smart String ESS
LUNA2000-4.5MWH-2H1

Smart Transformer Station
JUPITER-9000K/6000K/3000K-H1

Smart Array Controller
SmartACU2000D

Smart PVMS

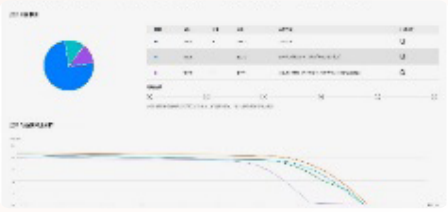
Better BOS

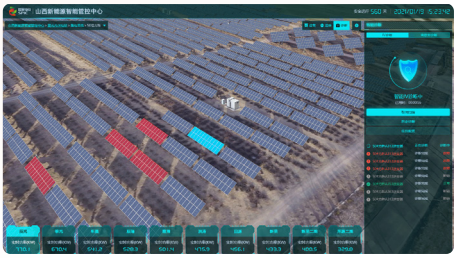
Recommended 9 MW PV array
The BOS saves 0.3¢/W

Subarray	9 MW	9 MW
Model	330 KTL	350 KTL
Quantity	30	28
AC Cable Diameter	**300 mm²**	**400 mm²**
AC/DC Cable Price (¢/W)	1.46	1.47
Transformers (¢/W)	1.45	1.45
BOS Price (¢/W)	**3.30**	**3.62**

Smart O&M

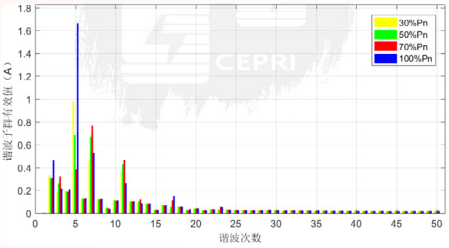
Smart I-V Curve Diagnosis identify 14 types of module faults





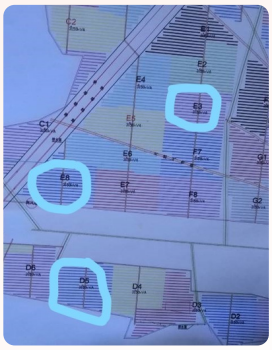
Grid Friendly

Supports full power operation at SCR~1.1
Upgrade again weak grid adaptability
THDi < 1%
Higher power quality in all scenarios



Higher Yields

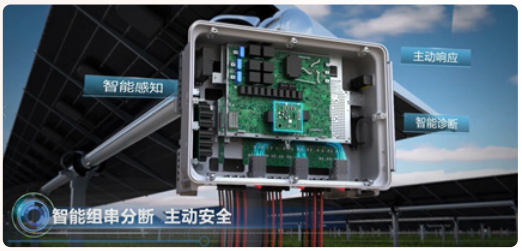
Smart PV energy yield increased by 1.98%



Comparison time	2022.1.1~2022.2.25	
Type	**HUAWEI**	**Other**
Model	196KTL	2XXkW
Array Capacity	3748.68kW	3309.02kW
Accumulated energy yield	961421.17kWh	817909.1kWh
Energy yield per kW	256.469kWh	251.492kWh
Energy yield increase	**+1.98%**	**-**

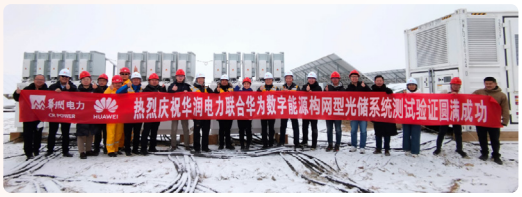
Safe & Reliable

Smart string-level disconnection ensure safety of the DC system



Grid Forming

Grid Forming/Grid-connected – Redefine Voltage Stability/ Frequency Stability/ Phase Angle Stability



Utility Success Stories

Datang's 100MW PV + 25MW/50MWh BESS Agrivoltiac Project in Hainan, China

Hainan Province's First Large-Scale Project with Smart String Inverters & String ESS

Supplies more than 174 million kWh of clean energy each year. Constructs a clean energy island and revitalizes rural areas in Hainan, helping achieve the dual-carbon goals.

COD: Apr, 2022
Location: Hainan, China

Sembcorp's 285MWh BESS Project in Singapore*

Spinning Reserve, Frquency Regulation

Rack-level, management, longer-lasting constant-power output, and higher frequency regulation benefits

Automatic SOC calibation, slashing O&M costs

Safe and reliable; compliant with local strict standards, CoC fire protection requirements

COD: Nov, 2022
Location: Singapore

*Huawei accounts for 50%

Utility Success Stories

400MW PV + 1.3 GWh BESS Project in New City of Red Sea, Saudi Arabia

World's Largest Microgrid BESS Project

A green city powered by 100% renewable energy

Grid friendly: continuours high- and low-voltage ride through, gride-wide black start, and high PV-to-ESS ratio

Simple installation and O&M: Pre-fabricated before transportation, eliminating the need for internal installation and cable connection onsite and the need for manual SOC calibration

COD: Dec, 2023
Location: Saudi Arabia

Prime Power 53 MW Solar Project, Nepal

Nepal's First Large-Scale Utility Project with String Inverter and Smart Transformer Station

Dhalkebar - 5MW
Duhabi - 8MW
Lamahi - 10MW
Kapilbastu - 30MW

Fusionsolar

C&I Smart PV+ESS+EV Charging Station

Smart PV Controller

SUN2000-(15KLT-50KTL)-M3

SUN2000-100KTL-M2

SUN2000-150K-MG0
SUN5000-150K-MG0

Smart Module Controller

MERC-1100/1300W-P

Smart String ESS

LUNA2000-215KWH/
161kWH/107KWH

Communication Device

SmartLogger 3000A

Smart Dongle- 4G/WLAN-FE

Smart PVMS Management System

Smart PVMS

Charging Station

DS720-720LEUA2/
DS720-720LEUA3

System-Level Active Safety

Enhanced Green Power Supply

Enhanced Power Grid Support

Lifecycle Intelligence

C&I Inverter Key Features

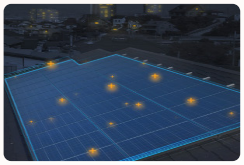
More Power

Optimal Energy Performance Ratio

Industry Inverter Maximum Efficiency: **98.8%**

Industry Dynamic MPPT Efficiency: **99.8%**

Leading PID Repair



Higher System Yield: **3%**

Repair Effect: **99%**

Higher Efficiency: **0.1%**

Sun5000-150KTL + Optimizer, Increasing Energy Yield by 30%

PV Module without Optimizer

Power Generation Capacity

PV Module with Optimizer

More Safety

Device Safety: PV Ground-Fault Protection

Industry's First

Cutting off ground faults within 15 ms during grid connection, ensuring inverter safety

Device Safety: Smart Connector Temperature Detection

DC & AC Side

Real-time Detection of Connector Temperature

Asset Safety: Active Arc Extinguishing for Fire Prevention

Industry Highest L4 AFCI

Arc protection covering the entire roof

Active arc extinguishing for fire prevention

Device Safety: Active Disconnection For Device Protection

Industry-unique Smart String-Level Disconnect

Intelligent and fast disconnection

Ensure the safety of the DC side

C&I BESS Key Features

Born Safe for Whole Life

Cell-to-Consumption Safety Architecture

Cell
100+ Tests, Thermal Insulation

Pack
Positive Pressure Oxygen Barrier

System
Directional Smoke Exhaust, Ms-Level Shutdown

Consumption
Top Explosion Venting

Unique Hybrid Cooling Highest RTE 91.3%

HUAWEI

Multi-Modes Save Temp. Control Energy Consumption

~40°C	~10°C	~-10°C
Active Liquid Cooling	Nature Air Cooling	Utilize PCS Heat

Industry

Single Liquid Cooling Mode, High Temp. Control Energy Consumption

Unique Pack Optimizer 2% More Energy

HUAWEI

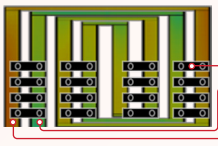
Unique pack-level optimizer eliminates cask effect

Industry

Can't Fully Charge and Discharge

Unique Heat Dissipation 2%+ Higher SOH

HUAWEI Dual-Loop Flow Path



<2.2°C Cell temp. difference

Battery Cell

Coolant Inlet

Coolant Outlet

Industry: U-Shaped Flow Path

>3°C Cell temp. difference

Battery Cell

Coolant Inlet

Coolant Outlet

Smart O&M 10% Higher Revenue

Smart Multi-Mode Management

10% Revenue

Automatic SOC Calibration

2 Times/Year Site Visit

10 Years Coolant Lifespan

5 years Lifespan of Coolant

One Fits All

Integration Design, Prefabricated Installation

On/Off-Grid Application

No Need of Transformer
PCS: 3 Phase 4 Wire

High Quality Power Supply

Huawei≤1.5% vs **Industry≥3%**

*THDi: total harmonic distortion (current), some industries require low THDi

C&I Use Cases

200kWh

ESS Program of Charging Station in Zhejiang, China

System Configuration
LUNA2000-200KWH

COD: Oct, 2022

11.6MWp

Shera Rooftop Program Saraburi, Thailand

System Configuration
SUN2000-60KTL

COD: Mar, 2020

C&I Use Cases

670kWp

Yeti Brewery, Chitwan

System Configuration
SUN 2000-100KTL M2

COD: 2024, Simple Energy

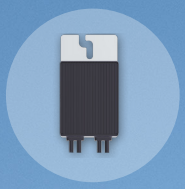
528KWp

Triveni Rice Mill, Hetauda

System Configuration
SUN 2000-100KTL M2

COD: 2024 by Gham Power

Residential Smart PV Solution



Smart Module Controller

SUN2000-450W-P2 /
SUN2000-600W-P

Smart Energy Controller

SUN2000-2-6KTL-L1/SUN2000-8K/10K-LC0
SUN2000-3-10KTL-M1/SUN2000-12-25K-MB0
SUN2000-12-25K-M5/SUN2000-5-12K-MAP0

Smart String ESS

LUNA2000-7/14/21-S1

Smart Charger

SCharger-7KS/22KT-S0

EMMA

EMMA-A02

SmartGuard

SmartGuard-63A-S0
SmartGuard-63A-T0/AUT0

Smart PVMS

FusionSolar Web&App
SmartDesign 2.0

Efficient & Stable Power

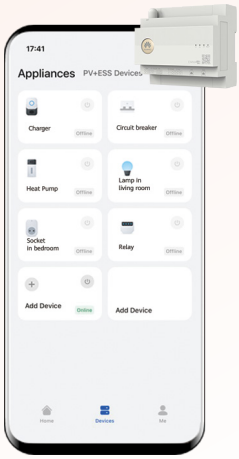
Daily Safety Protection

Green Energy Use Experience

Attractive Design

Installation with Ease

Green Energy Use Experience



PV Preferred Mode,
for more self-consumption

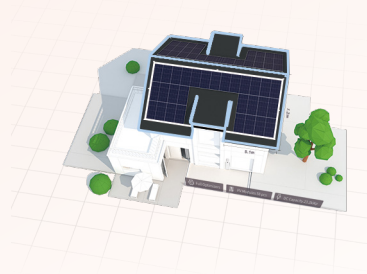
Scheduled Mode,
customized consumption plan

Load Balancing,
avoiding overloading

Always preparing the best working mode in advance to achieve optimal system performance

Unified management for home appliances

Installation with Ease



Efficient

Free of site survey with satellite view

Automatic module layout & electrical connection

Professional

Smart ESS capacity reformation

Multi-scheme comparison to achieve optimal design

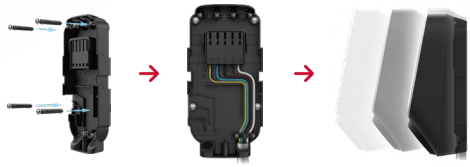
Satisfied

Vivid 3D site report for more satisfaction

On-demand presentation of report

Click-in design, allowing for fast installation in 16 minutes

Separate design and easy connection through prongs



Efficient & Stable Power

Module optimization, 5~30% higher yields

Optimizing energy generation by each module

High throughput and Industry-leading 15-year limited warranty

Energy Optimizer

Module+ architecture and pack level independent optimization

40%+
More Usable Energy[1]

15 Years
Maximum Warranty[2]

Attractive Design

LUNA2000 Smart Energy Storage System

SCharger-7KS/22KT-S0

FusionSolar App

Daily Safety Protection

Safety on the Roof

Rapid shutdown, safe voltage

30V
Voltage

30s
Shutdown Time

AFCI, active arc protection

Safety under the Roof

5-layer energy storage system safety protection

Structural Protection

Emergency Protection

Electrical Protection

Cell-level Protection

Active Protection

1. The values are theoretical values from Huawei's internal laboratories under the specific test environments.
2. Warranty conditions vary by region and temperature. Please refer to the warranty letter for details.

Residential Use Case

Residential PV systems in Gnesta, Sweden

Capacity: 5 MWp

System Configuration

SUN2000-450W-P2/600W-P
SUN2000-10KTL-M1
LUNA2000-5/10/15-S0
SCharger-22KT-S0

Scan the code to learn more

Residential PV systems in Villa Argentino, Italy

Capacity: 6 kWp

System Configuration

SUN2000-6KTL-M1
LUNA2000-10-S0

Scan the code to learn more

Residential Use Case

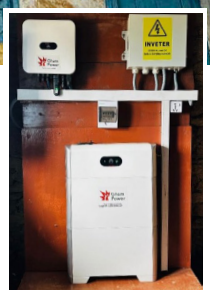
Residential PV systems in Xanten, Germany

Capacity: 11 kWp

System Configuration

SUN2000-5KTL-M1
SUN2000-6KTL-M1
LUNA2000-10-S0

Scan the code to learn more



Residential PV systems in Khotang Hope School, Nepal

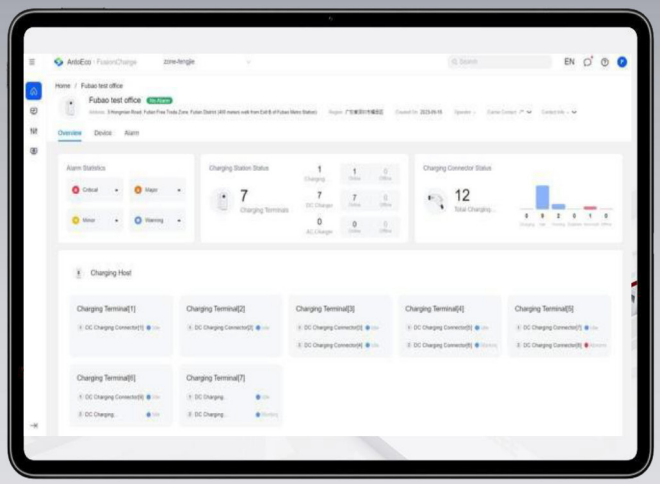
Capacity: 5.4 kWp

COD: 2024 by Gham Power

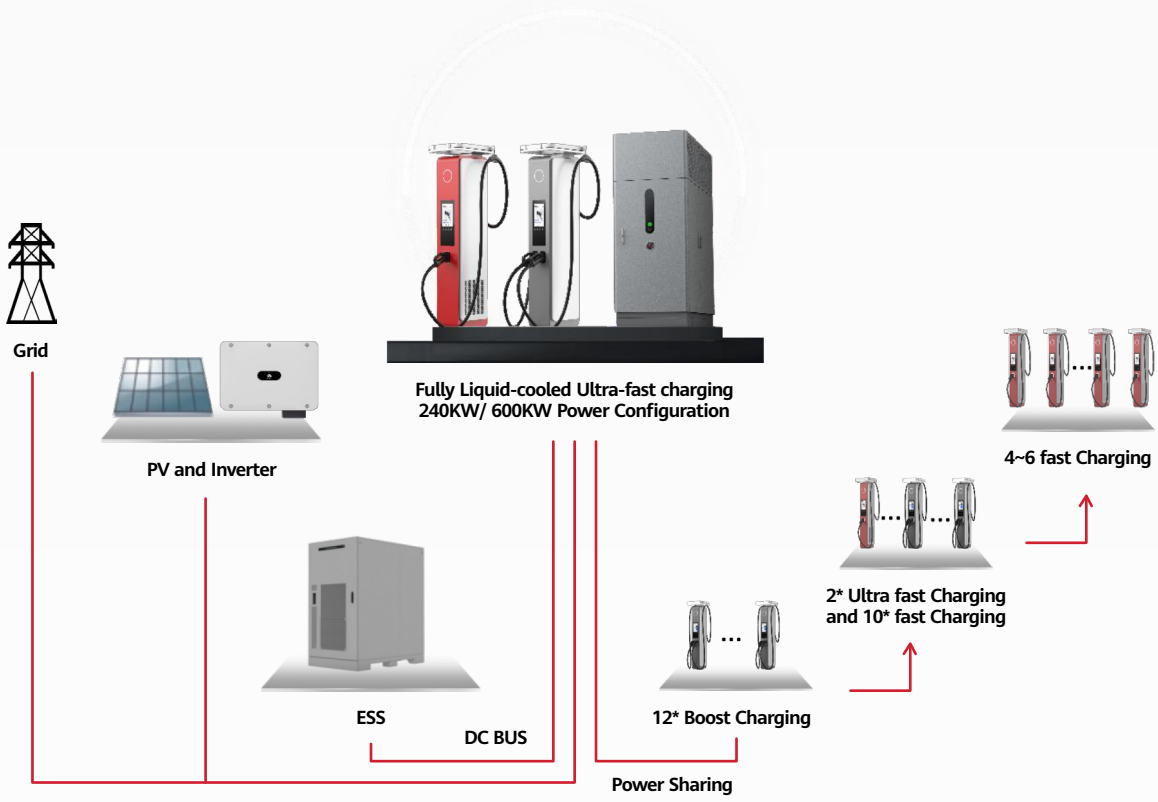
System Configuration

SUN2000-4KTL-L1
LUNA2000-S0-10kWh

Huawei Full Liquid-Cooled Ultra-Fast Charging Solution



Liquid-Cooled Ultra-Fast Charging Architecture



Better Experience

Faster: Max 500A, 5min @ 200km
Quieter: ≤55db @ 25°C

Optimal ROI

Grid Capacity Saving: Power sharing matrix
High efficiency: 95.5% @ 600kW

Superior Quality

Service life ≥ 10 years: Liquid-cooled design
Less maintenance: Module failure rate < 0.5%

Long-Term Evolution

DC ESS coupling: DC bus reserved
Multi-configuration: Ultra-fast & Fast scalable

City of Superchargers

Huawei cooperates with local governments and CPOs in order to build the City of Superchargers based on the full liquid- cooled and ultra-fast charging technology and build a secure, reliable, and high-quality charging infrastructure.

Shenzhen Lianhuashan Park

Shenzhen Lianhuashan Park

Shenzhen Lianhuashan Park

Remarkable Achievements in the Construction of the City of Superchargers, Driving the Development of Urban Science and Technology:

Shenzhen
The penetration rate of EV has reached 67.9%, and the sales of EV have led to the rise of related industries.

Chongqing
From January to May, the automobile output jumped to the first place in the country, and the proportion of new energy vehicles exceeded 21.6%, grasping the development opportunity.

Configuration

Huawei Ultra-Fast Solution supports phased deployment and support 8 to 12 charging points at the same time.

Full Ultra-Fast Charging Solution

Host Type	Module Configuration	Liquid-Cooled Dispenser
DS720-720LCNA1	ACDC*5+DCDC*12	6
	ACDC*4+DCDC*10	4

Ultra-Fast and Fast Charging Solution

Host Type	Module Configuration	Liquid-Cooled Dispenser	Natural-Cooled Dispenser
DS720-720LCNA1	ACDC*5+DCDC*12	2	5
	ACDC*4+DCDC*10	2	3

Full Ultra-Fast Charging Solution

Host Type	Module Configuration	Liquid-Cooled Dispenser
DS720-720LCNA1	ACDC*5+DCDC*12	6
	ACDC*4+DCDC*10	4
DS480-480LCNA1	ACDC*4+DCDC*8	4
	ACDC*2+DCDC*6	3

www.huawei.com | 01-5550679 | nepal@huawei.com