



PHOTOMATE **VAP and CSP Huawei**

www.photomate.eu

RENEWABLE ENERGY SUMMIT
BUCHAREST , 13TH OCTOBER 2022





FOREIGN OFFICES

SALES OFFICES EUROPE AND ASIA

- ▷ České Budějovice ▶ Czechia
- ▷ Prague ▶ Czechia
- ▷ Warsaw ▶ Poland
- ▷ Bratislava ▶ Slovakia
- ▷ Kyiv, Lviv ▶ Ukraine
- ▷ Budapest ▶ Hungary
- ▷ Sønderborg ▶ Denmark
- ▷ Stockholm ▶ Sweden
- ▷ Tallinn ▶ Estonia
- ▷ Vilnius ▶ Lithuania
- ▷ Bucharest ▶ Romania
- ▷ Plovdiv ▶ Bulgaria
- ▷ Tbilisi ▶ Georgia
- ▷ Tashkent ▶ Uzbekistan
- ▷ Almaty ▶ Kazakhstan

BASIC FACTS



Huawei VAP
from 2016

Over **99%** of
turnover made
on HUAWEI

**15 Foreign
Offices**



7.400+ MW
Huawei inverters
delivered 2016

116 MWh BESS

400+ M EUR
revenue plan in
2022



105
Employeess

29
Tech&Solution
team

1/3 belongs to
Tech & Solution



120
Trainings

3600
Trained
Installers
In 2021



FUSIONSOLAR RESIDENTIAL PRODUCTS



RESIDENTIAL INVERTER (SINGLE PHASE)

- AI Powered Active Arcing Protection
- Compatible to SUN2000-450W-P optimizer
- Battery ready by direct Plug & Play, no extra device or any retrofit required
- A 5KTL inverter allows 5KW full power AC output plus 5KW full power battery charge
- High efficiency inverter topology, Max. Efficiency 98.4%

SUN2000L-2/3/4/5KTL

SUN2000-2/3/3.6/4/4.6/5/6KTL-L1

RESIDENTIAL INVERTER (THREE PHASE)

- AI Powered Active Arcing Protection
- Compatible to SUN2000-450W-P optimizer
- Battery ready by direct Plug & Play, no extra device or any retrofit required
- A 10KTL inverter allows 10KW full power AC output plus 10KW full power battery charge
- High efficiency inverter topology, Max. Efficiency 98.6%

SUN2000-3/10KTL-M0

SUN2000-3/10KTL-M1



FUSIONSOLAR UTILITY & COMMERCIAL PRODUCTS



OUR MOST VERSATILE INVERTER YET.

- Max DC voltage: 1100 V
- Max AC apparent power: 33,000 VA/ 40,000 VA/ 44,000 VA
- 4 MPPTs for versatile adaptations to different layouts
- 8 strings intelligent monitoring and fast troubleshooting
- Max. efficiency 98.7%, European efficiency 98.4%

SUN2000-30-60KTL-M3

DIGITAL PV SOLUTION FOR UPGRADED SAFETY & BETTER EXPERIENCE

- AI Powered AFC to proactively mitigate fire risk
- Optimizers enable more modules on rooftop
- Up to 30% higher yields contributed by optimizing each panel performance
- Inverter with no quick wear parts, failure rate <0.5%

SUN2000-12-20KTL-M0

SUN2000-12-20KTL-M2



New products Residential - C&I

Energy Storage

LUNA 2000 - 5-10-15-20-25-30 kWh

6 x 5 kWh power pack
400 V, 50Hz inverter 3-10kW
Availability - NOW



LUNA2000-5/10/15-50
Technical Specification

Technical Specification	LUNA2000-5-50	LUNA2000-10-50	LUNA2000-15-50

Performance	LUNA2000-5/10/15-50		
	1	2	3
Power module	LUNA2000-50W-C3		
Number of power modules	1		
Battery module	LUNA2000-5-50		
Battery module energy	5 kWh		
Number of battery Modules	1	2	3
Battery usable energy ¹⁾	5 kWh	10 kWh	15 kWh
Max. output power	2.5 kW	5 kW	8 kW
Peak output power	3.5 kW, 10 s	7 kW, 10 s	7 kW, 10 s
Nominal voltage (single phase system)	400 V		
Operating voltage range (single phase system)	380 - 500 V		
Nominal voltage (three phase system)	400 V		
Operating voltage range (three phase system)	400 - 500 V		



Huawei EV Charger

Availability - soon



More info on www.photomate.eu

Energy Storage

LUNA 2000 - 200-400-600-800 kWh

12 x 16,35 kWh power pack
1 x 400V, 50Hz PCS100KTL, ON/OFF GRID
Availability - Q3 2023



More Energy
 Smart O&M
 Safe & Reliable

Battery Module Parameters	
Cell type	LFP 3.2V / 320 Ah
Combination mode	16 S 1 P
Rated voltage	51.2 V
Rated capacity	16.38 kWh
Charge/discharge ratio	≤ 1 C
Battery Rack Parameters	
Battery rack config	12 S
Rated voltage of the battery rack	614 V (battery side) / 645 V (DCDC side)
Working voltage of the battery rack	340 V ~ 790 V
Maximum capacity of the battery rack	196 kWh
Battery rack controller capacity	98 kW@0.5C
Charge/discharge ratio	≤ 0.5 C
Energy Storage System Parameters	
Energy storage system configuration	192 S 1 P
Rated voltage on the DC side	614 V
Maximum voltage on the DC side	1100 V
Maximum battery capacity of the energy storage system	196 kWh
Dimensions (W x H x D), excluding DC/DC	1800 x 2100 x 950 mm
Dimensions (W x H x D), including DC/DC	2150 x 2100 x 950 mm
Weight of the energy storage system	≈ 2.6 t
Operating temperature range	-30 °C ~ 55 °C
Storage temperature range	-40 °C ~ 60 °C
Operating humidity range	0 ~ 100% (non-condensing)
Maximum operating altitude	4,000 m
Battery temperature control mode	Industrial-grade air conditioner

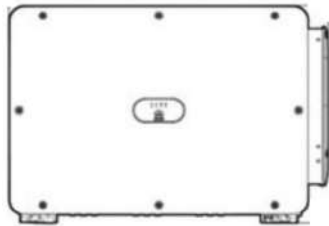
Large scale utility

SUN2000 – 330KTL-H1

800V string inverter

Nominal power – 300kW

Availability - Q2 2023



Energy Storage LUNA 2000-2MWh

6 x 21 x 16,35 kWh power pack

1-10 x 800V, 50Hz PCS 200KTL, ON GRID

Availability - NOW



More Energy



Optimal Design



Simple O&M



Safe & Reliable

Efficiency		
Max. Efficiency		≥99.0%
European Efficiency		≥98.8%
Input		
Max. Input Voltage		1,500 V
Number of MPP Trackers		6
Max. Current per MPPT		65 A
Max. Short Circuit Current per MPPT		115 A
Max. PV Inputs per MPPT		4/5/5/4/5/5
Start Voltage		550 V
MPPT Operating Voltage Range		500 V – 1,500 V
Nominal Input Voltage		1,080 V
Output		
Nominal AC Active Power		300,000 W
Max. AC Apparent Power		330,000 VA
Max. AC Active Power (cosφ=1)		330,000 W
Nominal Output Voltage		800 V, 3W + PE
Rated AC Grid Frequency		50 Hz / 60 Hz
Nominal Output Current		216.6 A
Max. Output Current		238.2 A
Adjustable Power Factor Range		0.8 LG ... 0.8 LD
Total Harmonic Distortion		< 1%

Battery Container		
DC Rated Voltage		1,200 V
DC Max. Voltage		1,500 V
Nominal Energy Capacity		2,064 kWh
Rated Power (0.5C)		344 kW * 3
Rated Power (1C)		344 kW * 6
Container Configuration (W x H x D)		6,058 x 2,896 x 2,438 mm
Container Weight		≤ 30 t
Operation Temperature Range		-30°C – 55°C
Storage Temperature Range		-40°C – 60°C
Operation Humidity Range		0 – 100% (Without Condensation)
Max. Operating Altitude		4,000 m
Cooling Method		Smart Air Cooling
Fire Extinguishing		FM-200 / Nowec 1230
Communication Interface		Ethernet / SFP
Communication Protocol		Modbus TCP
Protection Degree		IP55
Certificates (more available upon request)		
Environment		RoHS6
Safety & Electrical		IEC62477-1, IEC62040-1, IEC61000-6-2, EN55011, UL9540A, UN3536, etc.





SERVICE SUPPORT

CHALLENGES & SOLUTION

CUSTOMER CARE – SOLUTION AND SERVICE

SOLUTION – Team of Solution managers available to clients

3 - STEP SUPPORT

- ▶ **Support within sale** – optimal energetic solution based on client requirement, support with products choice and correct feature of PV system and BESS
- ▶ **Solution Study** – measurement and evaluation of the client consumption, visualisation of statistic data and proposal for optimise solution with the target to save input costs or energy independence from the grid
- ▶ **Design Support** – technical support for strategic partners with correct design based on Huawei products

SERVICE – Team of Support Engineers available to the clients

4 - LEVEL SUPPORT

- ▶ **Level 1 – INSTALLERS** - training of installers together with Tier 2 partners
- ▶ **Level 2 – TIER 2 PARTNERS** - constant training by Photomate and Huawei Team
- ▶ **Level 3 – PHOTOMATE Zendesk TAC (Technical Assistance Center)** – direct support of customers via hotline 8/5
- ▶ **Level 4 – HUAWEI TAC** – support of Huawei with special cases

HOW TO HANDLE INCREASE OF SERVICE CASE?

A: PROFESSIONAL TICKETING SYSTEM

ZENDESK - ticketing system

- ▶ Hotline for 21 countries with 9 phone numbers
- ▶ Redirection of calls based on requirement
- ▶ Automatic redirection of emails to country tech. support engineers
- ▶ Record of every call or email and communication history
- ▶ Support for social media communication
- ▶ General statistics of service task data
- ▶ Sort of information based on technical or commercial requirement
- ▶ Available statistics based on interest of evaluation
- ▶ Region / personal quality / quantity / products / reaction time / satisfaction rate etc.



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COMMUNICATION PORTAL & KNOWLEDGE DATABASE FOR INSTALLERS



PROFFESIONAL INSTALLERS HELP CENTER WEB DATABASE



photomate.zendesk.com



**CSP PROGRAM:
WAY TO INCREASE QUALITY
OF SUPPORT TO HUAWEI
CUSTOMER**



PHOTOMATE VAP certified as first 3*CSP In the region of east Europe and Euroasia

- ▶ Totally 16 countries certified
- ▶ Certification applied from 10/2021
- ▶ Grow support of quality and more professional services to the clients
- ▶ CSP program allows return of investment back into HR and technical tools of VAP for service
- ▶ VAPs certified as Huawei's CSPs covers basic services required by lower-level partners, installers, or end customers, including on-site or remote training, installation and commissioning support
- ▶ It proactively maintains good customer satisfaction, and ensure a win-win situation between Huawei and VAPs



THANK YOU

FOR YOUR ATTENTION

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