

HYD 5K~20KTL-3PH

5 / 6 / 8 / 10 / 10 / 15 / 20 kW

THREE-PHASE ENERGY STORAGE INTEGRATED INVERTER



Product advantages

- Various operational modes for optimal performance
- Off-grid output can be connected to unbalanced load, three-phase separate output is supported
- Up to 2 MPPTs, allowing a flexible configuration
- Multiple parallel systems, more flexible system solutions
- Maximum two battery inputs
- Fully digital operation, enabling higher control accuracy



Datasheet

HYD 5KTL-3PH HYD 6KTL-3PH HYD 8KTL-3PH HYD 10KTL-3PH HYD 10KTL-3PH-A HYD 15KTL-3PH HYD 20KTL-3PH

DC input (PV)							
Recommended Max. PV input power	7500Wp (6000Wp/6000Wp)	9000Wp (6600Wp/6600Wp)	12000Wp (6600Wp/6600Wp)	15000Wp (7500Wp/7500Wp)	15000Wp (7500Wp/7500Wp)	22500Wp (11250Wp/11250Wp)	30000Wp (15000Wp/15000Wp)
Max. input voltage	1000V						
Start-up voltage	200V						
Rated input voltage	600V						
MPPT operating voltage range	180V-960V						
Number of MPPT	2						
Max inverter back feed current to array	0A						
Max. number of input strings per MPPT	1/1			2/2			
Max. input current per MPPT	12.5A/12.5A			25A/25A			
Max. short-circuit current per MPPT	15A/15A			30A/30A			

AC output (on-grid)							
Rated output power	5000W	6000W	8000W	10000W	10000W	15000W	20000W
Rated apparent power	5000VA	6000VA	8000VA	10000VA	10000VA	15000VA	20000VA
Rated output current	7.2A	8.7A	11.6A	14.5A	14.5A	21.7A	29.0A
Rated grid voltage	3/N/PE, 230/400Vac						
Rated grid frequency	50/60Hz						
Max. output apparent power	5500VA	6600VA	8800VA	11000VA	10000VA	16500VA	22000VA
Max. current output to grid	8A	10A	13A	16A	16A	24A	32A
Max. AC current from grid	15A	17A	24A	29A	29A	44A	58A
Output Inrush current	100A/1μs						
Output fault current	80A/5μs						
Output overcurrent protection (RMS)	10A	12A	15A	18A	18A	26A	34A
Output overcurrent protection (MAX)	20.4A	22.5A	33.1A	40.7A	40.7A	61.1A	81.5A
THDi	<3%						
Power factor	1 default (+/-0.8 adjustable)						

Battery parameters							
Battery type[3]	Lithium-ion & Lead-acid						
Battery voltage range	180V-800V						
Number of battery input channels	1	1	1	2	2	2	2
Max. charge/discharge power	5000W	6000W	8000W	10000W	10000W	15000W	20000W
Max. charge/discharge current	25A	25A	25A	50A(25A/25A)	50A(25A/25A)	50A(25A/25A)	50A(25A/25A)
BMS communication mode	CAN, RS485						

AC output (off-grid)							
Rated output power	5000W	6000W	8000W	10000W	10000W	15000W	20000W
Rated output current	7.2A	8.7A	11.6A	14.5A	14.5A	21.7A	29.0A
Rated output voltage	3/N/PE, 230/400Vac						
Rated output frequency	50/60Hz						
Max. output apparent power	5500VA	6600VA	8800VA	11000VA	11000VA	16500VA	22000VA
Peak output apparent power, time	10000VA, 60s	12000VA, 60s	16000VA, 60s	20000VA, 60s	20000VA, 60s	22000VA, 60s	22000VA, 60s
Max. output current	8A	10A	13A	16A	16A	24A	32A
THDv@ linear load)	<3%						
Switching time	<10ms						

Efficiency							
Max. MPPT efficiency	99.9%						
Max. efficiency	98.0%	98.0%	98.0%	98.2%	98.2%	98.2%	98.2%
European efficiency	97.5%	97.5%	97.5%	97.7%	97.7%	97.7%	97.7%
Max. efficiency of charging/discharging [1]	97.6%	97.6%	97.6%	97.8%	97.8%	97.8%	97.8%

Protection							
DC switch	Yes						
PV reverse connection protection	Yes						
Battery reverse connection protection	Yes						
Output short circuit protection	Yes						
Output overcurrent protection	Yes						
Output overvoltage protection	Yes						
Insulation impedance detection	Yes						
Residual current detection	Yes						
Anti-island protection	Yes						
Surge protection	PV:Type II , AC:Type II						

General parameters							
Operating temperature range	-30℃-60℃						
Relative humidity range	5%-95%						
Max. operating altitude	<2000m						
Standby self-consumption [2]	<20W						
Topology	Transformerless						
Installation method	Wall Mounted						
Degree of protection	IP65						
Dimensions (W*H*D)	586.6*515*261.2mm						
Cooling mode	Natural	Natural	Natural	Forced airflow	Forced airflow	Forced airflow	Forced airflow
Weight	33kg	33kg	33kg	37kg	37kg	37kg	37kg
Communication	RS485/CAN/WIFI, Optional:Ethernet/4G						
Display	LCD & Bluetooth+APP						

Standard EN61000-6-2, EN61000-6-3, EN61000-3-2, EN61000-3-3, EN61000-3-11, EN61000-3-12, IEC62109-1, IEC62109-2, EN62040-1, AS/NZS 4777, VDE V 0124-100, V0126-1-1, VDE-AR-N 4105, CEI 0-21/CEI 0-16, EN50438/EN50549, GB3/C59/C98/C99, UTE C15-712-1, UNE206 007-1

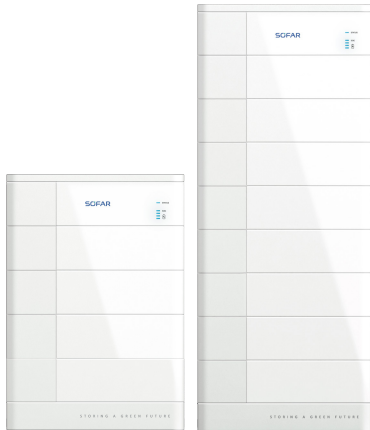
[1] Battery-AC maximum efficiency of battery charge and discharge [2] Standby loss at rated input voltage [3] Please refer to document "SOFAR inverter Model compatible battery list"
 *All specifications are subject to change without notice.

GTX3000-H4~H10

10 / 12.5 / 15 / 17.5 / 20 / 22.5 / 25 kWh



HV ENERGY STORAGE



Product advantages

- User-friendly one-button operation, automatic module ID assignment process
- Supports parallel operation (up to 4 units)
- Supports soft startup
- Remote diagnosis and real-time data monitoring
- Simple stack design, saving time and costs
- Efficient automated production line, achieving optimum production quality



Model	GTX 3000-H4	GTX 3000-H5	GTX 3000-H6	GTX 3000-H7	GTX 3000-H8	GTX 3000-H9	GTX 3000-H10
-------	-------------	-------------	-------------	-------------	-------------	-------------	--------------

System Parameters

System schematic							
Battery module	GTX3000: 51.2V, 2.56kWh						
No. of battery modules	4	5	6	7	8	9	10
Rated voltage	204.8V	256V	307.2V	358.4V	409.6V	460.8V	512V
Operating voltage range	182.4V-224.64V	228V-280.8V	273.6V-336.96V	319.2V-393.12V	364.8V-449.28V	410.4V-505.44V	456V-561.6V
Total energy	10kWh	12.5kWh	15kWh	17.5kWh	20kWh	22.5kWh	25kWh
Usable energy	9kWh	11.25kWh	13.5kWh	15.75kWh	18kWh	20.25kWh	22.5kWh
Rated charging/discharging current	25A						
Max. charging/discharging current	30A						
Rated charging/discharging power	5.12kW	6.4kW	7.68kW	8.96kW	10.24kW	11.52kW	12.8kW
Max. units in parallel	4 groups						

General Parameters

Communication	CAN/RS485/RS232						
Dimension (W*H*D)	515*770*480mm	515*895*480mm	515*1020*480mm	515*1145*480mm	515*1270*480mm	515*1395*480mm	515*1520*480mm
Weight	138kg	168kg	198kg	228kg	258kg	288kg <td 318kg	
Protection rating	IP65						
Cooling	Natural						
Operating temperature	Charge: 0°C - +55°C / Discharge: -20°C - +60°C						
Humidity	5-95%						
Installation	Floor Stand						
Max. operating altitude	2000 m						

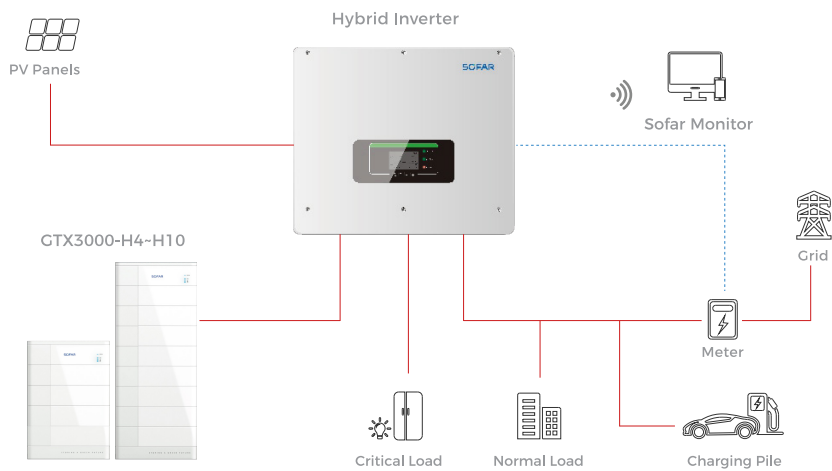
Battery Module

Battery type	LFP
Rated voltage	51.2V
Rated capacity	50Ah
Weight	30kg
Dimension (W*H*D)	515*125*478.8mm
Protection rating	IP65

Standard	UN38.3, IEC62619, IEC62040-1, etc.
----------	------------------------------------

*All specifications are subject to change without notice.

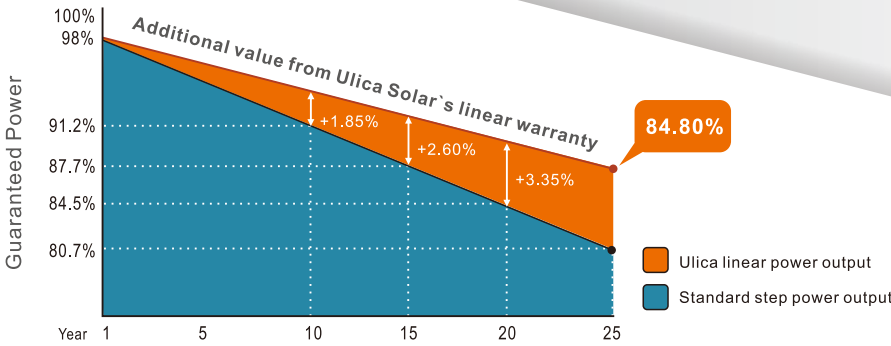
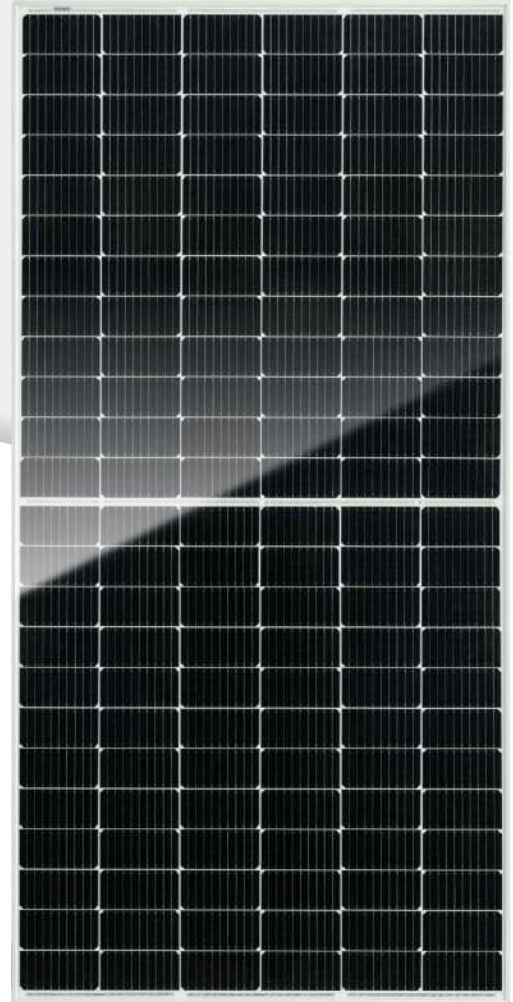
Hybrid Solar System



MONO HALF-CUT MODULE

UL-450 | 455 | 460M-144HV

450W~460W 1500V **MBB 166mm cell**



Global Tier 1 brand as announced by Bloomberg NEF



Lower LCOE
Lower shading and resistive loss
Lower temperature coefficient



Outstanding mechanical load resistance
3800 Pa wind load, 5400 Pa snow load



Anti-PID (potential induced degradation)
Passed anti-PID test under 85% damp heat,
85% relative humidity for 96 hours



Great Durability against extreme conditions
Passed salt mist corrosion test, ammonia corrosion test,
dust & sand test, fire test, all certified by TUV



About Ulica Solar: As member of Shanshan Group (stock code: 600884) which is TOP500 Enterprise in China, Ulica Solar is the leading manufacturer of solar cells and solar panels in China since 2005, and has been continuously listed as the Tier 1 PV Module Manufacturer from Q1 2020 by Bloomberg NEF, with the annual capacity of 3GW, and own investment projects of 300MW.

ELECTRICAL PERFORMANCE

Electrical Parameters Standard Test Conditions

Module Type	UL-450M-144HV		UL-455M-144HV		UL-460M-144HV	
Power Output	P _{max}	W	450	455	460	
Power Tolerance	ΔP _{max}	W	0/+5W			
Module Efficiency	η _m	%	20.70	20.93	21.16	
Voltage at P _{max}	V _m	V	41.0	41.1	41.2	
Current at P _{max}	I _m	A	10.98	11.07	11.17	
Open-Circuit Voltage	V _{oc}	V	49.8	49.9	50.0	
Short-Circuit Current	I _{sc}	A	11.55	11.64	11.74	

STC:1000w/m² irradiance,25C module temperature,AM1.5

THERMAL CHARACTERISTICS

Nominal Operating Cell Temperature	NOCT	°C	43±2
Temperature Coefficient of P _{max}	γ	%/°C	-0.340
Temperature Coefficient of V _{oc}	β _{voc}	%/°C	-0.290
Temperature Coefficient of I _{sc}	α _{isc}	%/°C	+0.049

OPERATING CONDITIONS

Max.System Voltage	DC1500V
Max.Series Fuse Rating	20A
Operating Temperature Range	-40°C~85°C
Max static snow load	5400Pa
Max static wind load	3800Pa
Application Class	A

CONSTRUCTION MATERIALS

Front Cover(material/type/thickness)	low-iron tempered glass/3.2mm
Cell(quantity/material/type/dimension)	144/monocrystalline/166X83mm
Encapsulant(material)	ethylene vinyl acetate(EVA)
Frame(material/anodization color)	anodized aluminum alloy/silver or black
Junction Box(protection degree)	IP68
Cable(length/cross-sectional area)	4mm ² Landscape: (+) 1300mm/(-) 1300 mm Portrait: (+) 400 mm/(-) 200mm
Plug Connector	MC4 compatible

GENERAL CHARACTERISTICS

Dimension(L/W/H)	2094/1038/35mm
Weight	23.3kg

PACKING CONFIGURATION

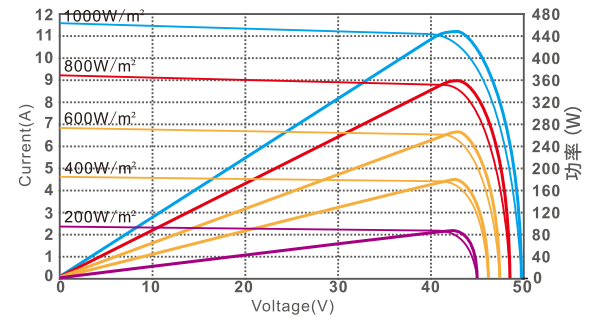
Pallet Size(L/W/H)	2134/1130/2350mm
Pallet Weight	1526kg
Pieces per Pallet	62pcs
Pieces per Container	682pcs

INTERNATIONAL CERTIFICATES

- IEC 61215, IEC 61730
- ISO 9001: 2015(Quality management systems)
- ISO 14001: 2015 (Environmental management systems)
- ISO 45001: 2018 (Occupational health and safety)
- UNI 9177 la CLASSE DI REAZIONE AL FUOCO:1

I-V CURVE

I-V characteristics at different irradiances



I-V characteristics at different temperature

