

MOD 3~10KTL3-XH(BP)

- Battery ready, future proof
- Dual MPP Trackers
- Type II SPD on DC and AC side
- Active Arcing Protection
- 24h self-consumption monitoring



GROWATT

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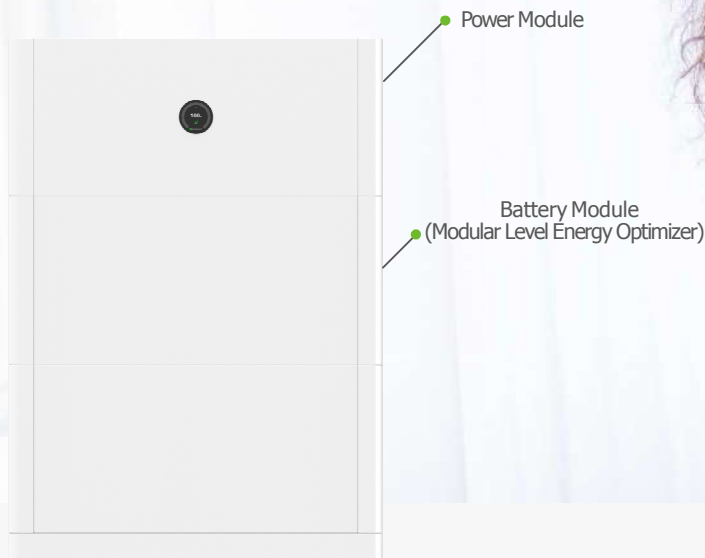
Datasheet	MOD 3000TL3-XH	MOD 4000TL3-XH	MOD 5000TL3-XH	MOD 6000TL3-XH	MOD 7000TL3-XH	MOD 8000TL3-XH	MOD 9000TL3-XH	MOD 10KTL3-XH
Input data (DC)								
Max. recommended PV power (for module STC)	6000W	8000W	10000W	12000W	14000W	16000W	18000W	20000W
Max. DC voltage	1100V							
Start voltage	160V							
Nominal voltage	600V							
MPPT voltage range	140V-1000V							
No. of MPP trackers/strings per MPP tracker	2/1							
Max. input current per MPP tracker	16A							
Max. short-circuit current per MPP tracker	20A							
Input data (DC battery)								
Compatible battery	APX HV Battery System (5kWh-30kWh)							
Operating voltage range	600 V-950 V							
Max.operating current	11A				18.5A			
Max.charge power	6000W				10000W			
Max.dlscharge power	3300W	4400W	5500W	6600W	7700W	8800W	9900W	11000W
Output data (AC)								
AC nominal power	3000W	4000W	5000W	6000W	7000W	8000W	9000W	10000W
Max. AC apparent power	3300VA	4400VA	5500VA	6600VA	7700VA	8800VA	9900VA	11000VA
Nominal AC voltage (range*1)	220V/380V, 230V/400V (340-440V)							
AC grid frequency (range*1)	50/60 Hz (45-55Hz/55-65 Hz)							
Max. output current	5.0A	6.7A	8.3A	10.0A	11.7A	13.3A	15.0A	16.7A
Adjustable power factor	0.8leading...0.8lagging							
THDi	<3%							
AC grid connection type	3W+N+PE							
Output data (Backup*2)								
Max. apparent power	3000VA	4000VA	5000VA	6000VA	7000VA	8000VA	9000VA	10000VA
Nominal AC voltage	230V/400V							
AC grid frequency	50/60Hz							
Efficiency								
MAX. efficiency	98.3%	98.3%	98.3%	98.3%	98.6%	98.6%	98.6%	98.6%
European efficiency	97.5%	97.5%	97.5%	97.5%	98.1%	98.1%	98.1%	98.1%
MPPT efficiency	99.9%							
Protection devices								
DC reverse polarity protection	Yes							
DC Switch	Yes							
AC/DC surge protection	Type II / Type II							
Insulation resistance monitoring	Yes							
AC short-circuit protection	Yes							
Ground fault monitoring	Yes							
Grid monitoring	Yes							
Anti-islanding protection	Yes							
Residual-current monitoring unit	Yes							
String fault monitoring	Yes							
AFCI protection	Optional							
General data								
Dimensions (W / H / D)	425/387/147mm	425/387/147mm	425/387/147mm	425/387/147mm	425/387/178mm	425/387/178mm	425/387/178mm	425/387/178mm
Weight	12.5kg	12.5kg	12.5kg	12.5kg	14kg	14kg	14kg	14kg
Operating temperature range	- 25°C ... +60°C							
Nighttime power consumption	< 5.5W							
Topology	Transformerless							
Cooling	Natural convection							
Protection degree	IP66							
Relative humidity	0~100%							
Altitude	4000m							
DC connection	H4/MC4(Optional)							
AC connection	Connector							
Display	OLED+LED/WIFI+APP							
Interfaces: USB/RS485/WIFI /GPRS/LAN/RF	Yes/Yes/Optional/Optional/Optional/Optional							
Warranty: 5 years /10 years	Yes/Optional							
CE, VDE0126, Greece, EN50549, C10/C11, VFR 2019, IEC62116, IEC61727, IEC 60068, IEC 61683, CEI0-21, N4105, TOR Erzeuger G98/G99, G100, AS4777, UNE217001, UNE206007, PO12.2								

*1 The AC voltage range and frequency range may vary depending on specific country grid standard. All specifications are subject to change without notice.

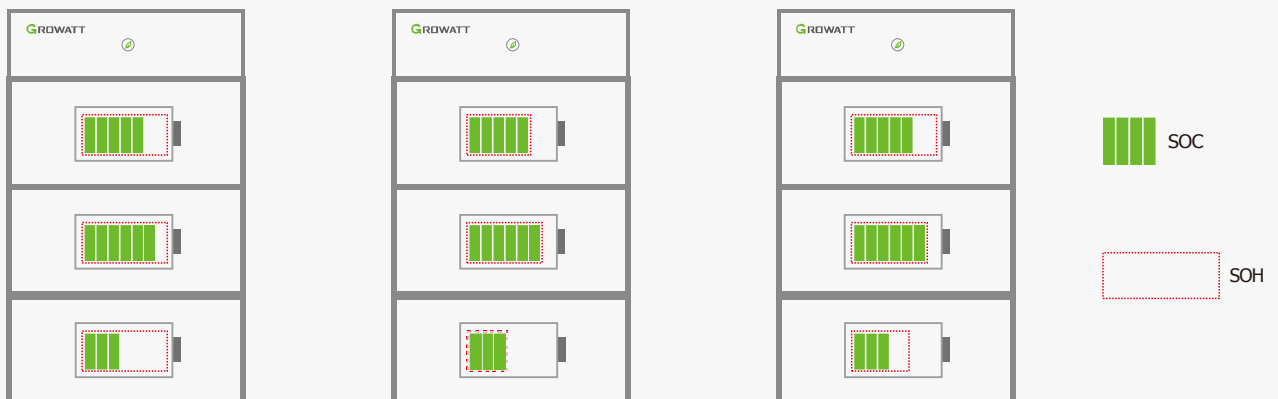
*2 The backup function is ready for the BP version with Backup table by using the SYN 50-XH-30 device.

Battery

- Flexible capacity options, 5kWh to 30kWh
- Module level energy optimization
- Support to mix new and old battery modules in one system
- Easy installation with modular and stacked design
- Long lifespan, 10 years warranty



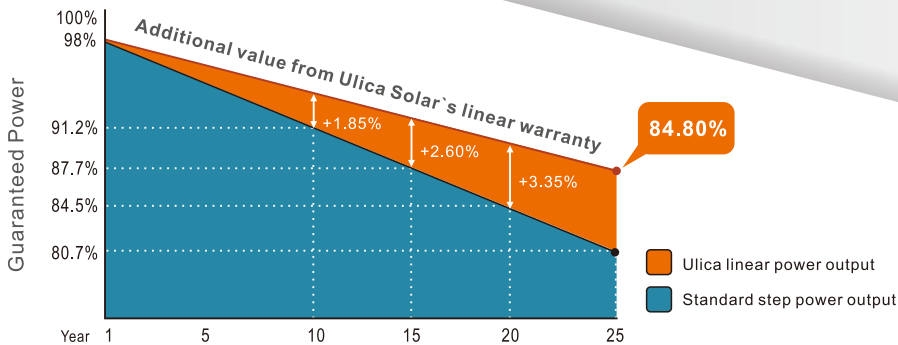
- Different SOC and SOH of the battery modules can be mixed in one system.



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



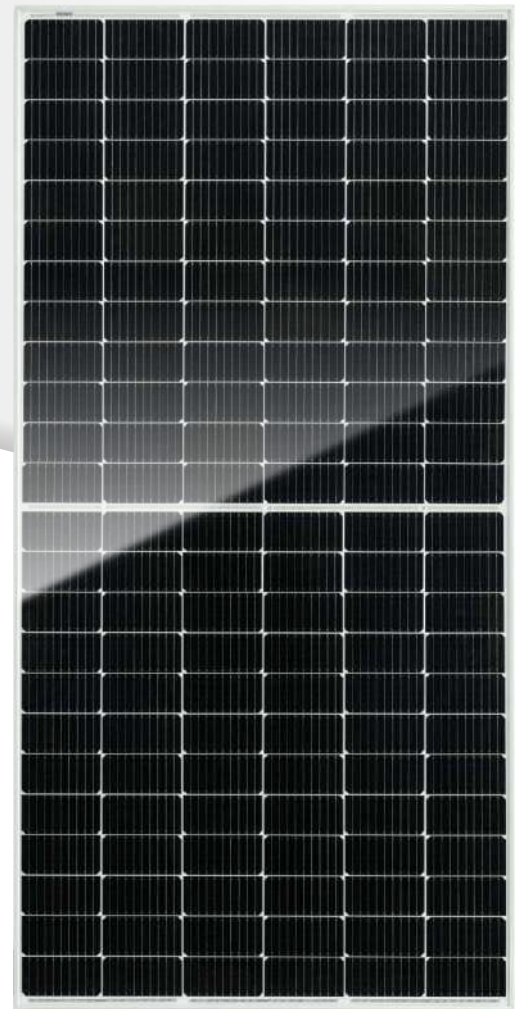
Outstanding mechanical load resistance
3800 Pa wind load, 5400 Pa snow load



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 TÜV



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,25°C 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
	4mm ²
Cable(length/cross-sectionalarea)	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

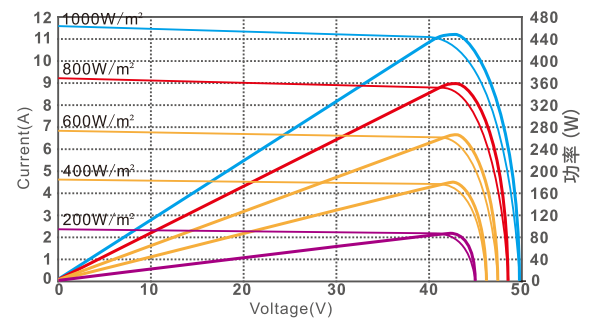
Pallet Size(L/W/H)	2134/1130/2350mm
Pallet Weight	1526kg
Pieces per Pallet	62pcs
Pieces per Container	682pcs

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

