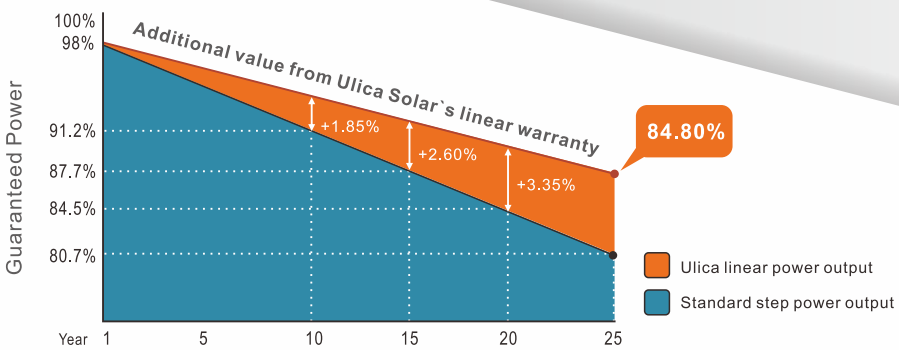
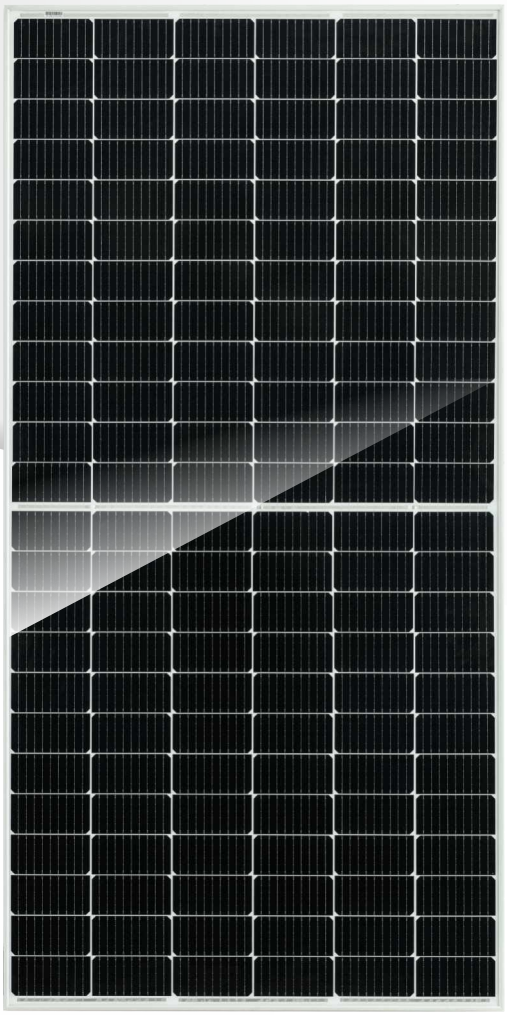
ulica solar
LEADING IN TECHNOLOGY

MONO HALF-CUT MODULE
UL-445 | 450 | 455M-144HV
445W~455W 1500V





Global Tier 1 bankable brand

12% more power than conventional modules

Lower power degradation
Lower internal current
Lower hot spot temperature

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

World famous insurance
CHUBB(USA), Solar Insurance&Finance(Netherlands)

12 year product warranty

25 year linear power warranty

CEC Listed

CERTIFIED

About Ulica Solar: 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 1.2GW, and own investment projects of 300MW.

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MONO UL-445 | 450 | 455M-144HV

ELECTRICAL PERFORMANCE

Electrical Parameters Standard Test Conditions

Module Type			UL-445M-144HV	UL-450M-144HV	UL-455M-144HV
Power Output	Pmax	W	445	450	455
Power Tolerance	△Pmax	W		0/+5W	
Module Efficiency	η m	%	20.14	20.37	20.60
Voltage at Pmax	Vm	V	40.9	41.0	41.1
Current at Pmax	Im	A	10.88	10.98	11.07
Open-Circuit Voltage	Voc	V	49.7	49.8	49.9
Short-Circuit Current	Isc	A	11.45	11.55	11.64

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

THERMAL CHARACTERISTICS

Nominal Operating Cell Temperature	NOCT	°C	43±2
Temperature Coefficient of Pmax	γ	%/°C	-0.360
Temperature Coefficient of Voc	βvoc	%/°C	-0.330
Temperature Coefficient of Isc	αisc	%/°C	+0.049

OPERATING CONDITIONS

Max.System Voltage	1500V
Max.Series Fuse Rating	20A
Operating Temperature Range	−40℃～85℃
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)	400mm(or Customized Length)/4mm²
Plug Connector	MC4 compatible

GENERAL CHARACTERISTICS

Dimension(L/W/H)	2108/1048/35mm
Weight	24kg

PACKING CONFIGURATION

Pallet Size(L/W/H)	2150/1120/2490mm
Pallet Weight	1636kg
Pieces per Pallet	62pcs+2pcs
Pieces per Container	704pcs

INTERNATIONAL CERTIFICATES

IEC 61215, IEC 61730

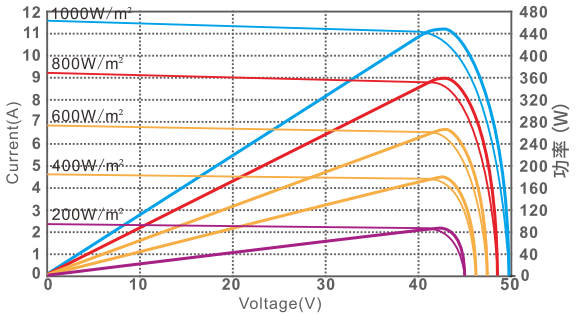
ISO 9001: 2015(Quality management systems)

ISO 14001: 2015 (Environmental management systems)

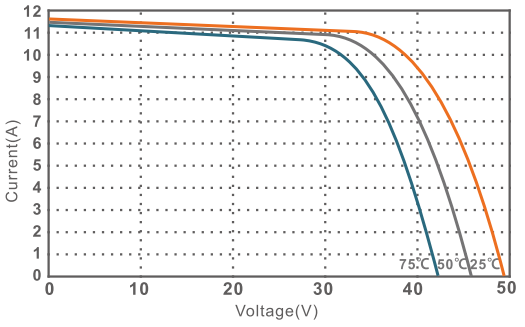
OHSAS 18001: 2015 (Occupational health and safety)

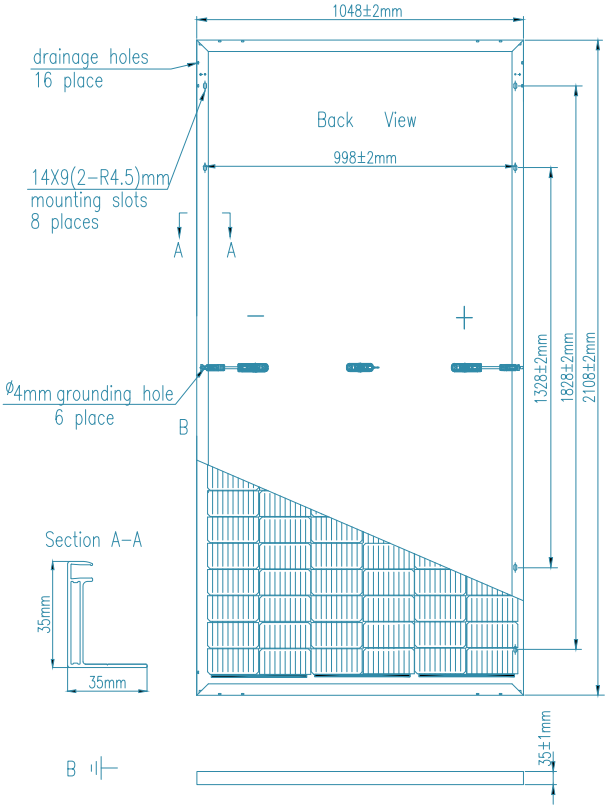
I-V CURVE

I-V characteristics at different irradiations



I-V characteristics at different temperature





Please read the instruction entirely before handling, installing and operating Ulica Solar modules.

Due to continuous research and development, the specification is subject to change without prior notice.