

MONO HALF-CUT MODULE
UL-450 | 455 | 460M-144HV
450W~460W 1500V

▲1.18%



er of Shanshan Group (stock
D Enterprise in China, Ulica
rer of solar cells and solar
has been continuously listed
ufacturer from Q1 2020 by
capacity of 2GW, and own

MONO UL-450 | 455 | 460M-144HV



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	-0.360
Temperature Coefficient of V _{oc}	β _{voc}	%/°C	-0.330
Temperature Coefficient of I _{sc}	α _{isc}	%/°C	+0.049

OPERATING CONDITIONS

Max.System Voltage	1500V
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/black
Junction Box(protection degree)	IP68
Cable(length/cross-sectional area)	400mm(or Customized Length)/4mm ²
Plug Connector	MC4 compatible

GENERAL CHARACTERISTICS

Dimension(L/W/H)	2094/1038/35mm
Weight	24kg

PACKING CONFIGURATION

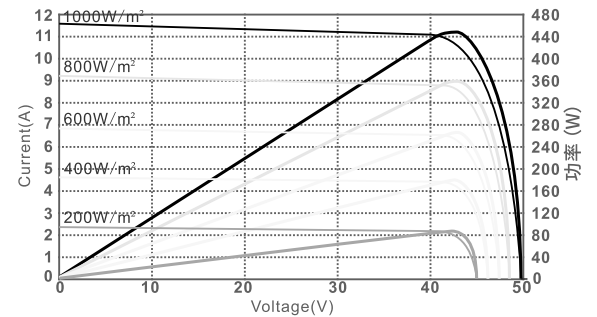
Pallet Size(L/W/H)	2134/1120/2490mm
Pallet Weight	1674kg
Pieces per Pallet	65pcs
Pieces per Container	715pcs

INTERNATIONAL CERTIFICATES

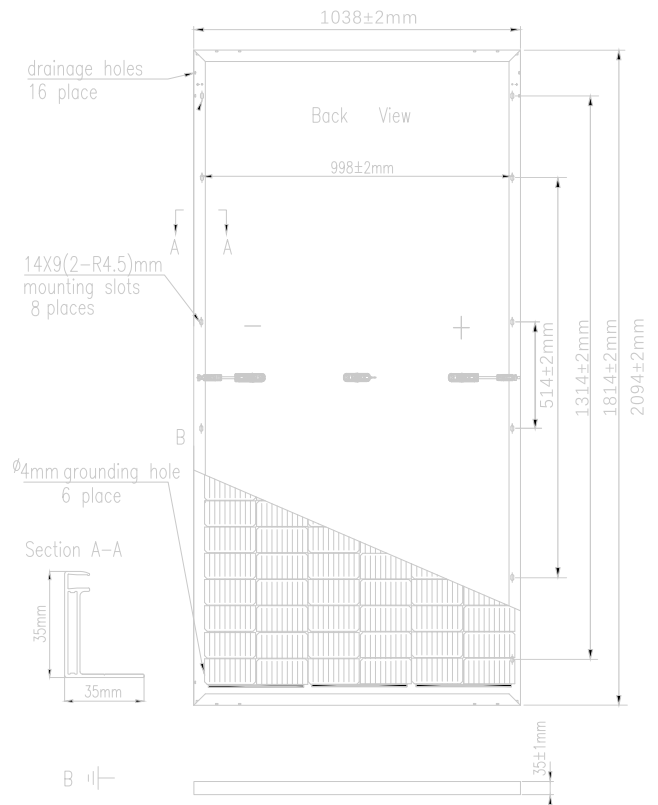
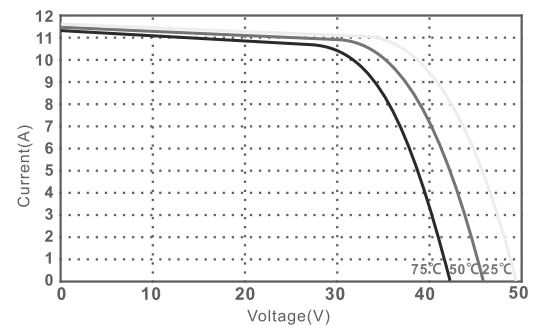
IEC 61215, IEC 61730
 ISO 9001: 2015(Quality management systems)
 ISO 14001: 2015 (Environmental management systems)
 OHSAS 18001: 2015 (Occupational health and safety)

I-V CURVE

I-V characteristics at different irradiances



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.