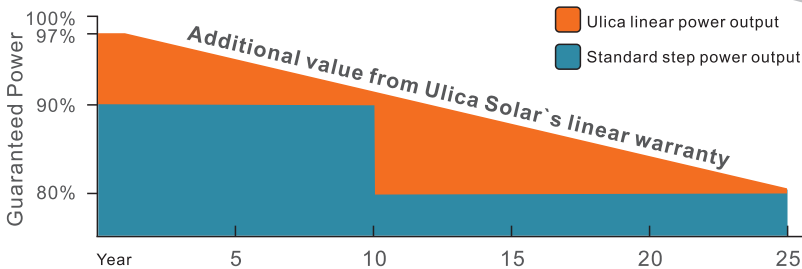


MONO HALF-CUT MODULE

UL-405 | 410 | 415M-144

405W~415W 1500V



Global Tier 1 bankable brand



Mono PERC Half-cell Module
Reduced resistance between cells
Less micro cracks, higher output power



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



High performance under low light
Works at cloudy, rainy days



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



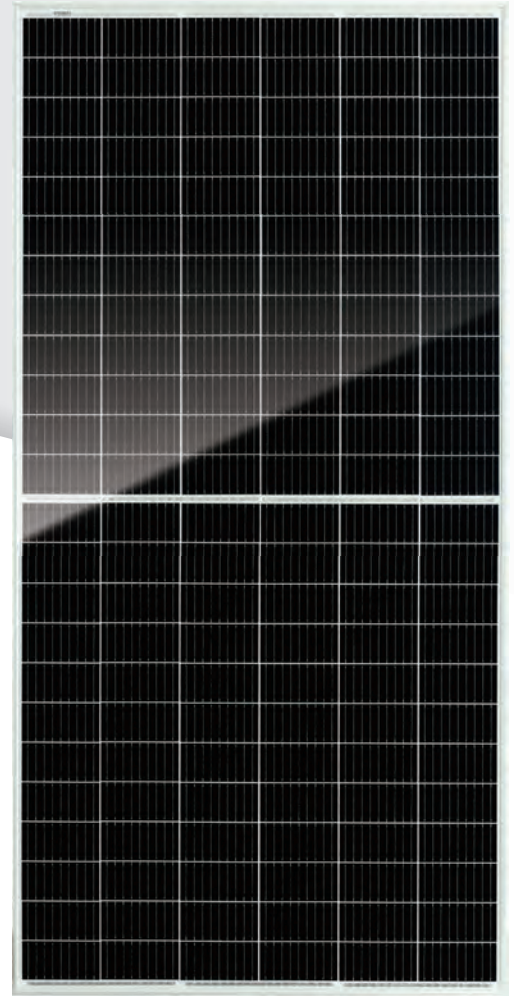
Great Durability against extreme conditions
Passed salt mist corrosion test, ammonia corrosion test,
dust & sand test, fire test, all certified by TUV



Double electroluminescence (EL) tests
Carefully inspected before and after lamination
to guarantee fault-free modules



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



12 year product warranty

25 year linear power warranty



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 the global Tier 1 brand as announced by Bloomberg NEF of Q1 2020, with the annual capacity of 800MW, and own investment projects of 300MW.

MONO UL-405 | 410 | 415M-144



ELECTRICAL PERFORMANCE

Electrical Parameters Standard Test Conditions

Module Type			UL-405M-144	UL-410M-144	UL-415M-144
Power Output	P _{max}	W	405	410	415
Power Tolerance	ΔP _{max}	W		0/+5W	
Module Efficiency	η _m	%	19.93	20.18	20.42
Voltage at P _{max}	V _m	V	40.6	40.8	40.9
Current at P _{max}	I _m	A	9.98	10.05	10.15
Open-Circuit Voltage	V _{oc}	V	49.5	49.7	49.8
Short-Circuit Current	I _{sc}	A	10.48	10.55	10.65

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

THERMAL CHARACTERISTICS

Nominal Operating Cell Temperature	NOCT	°C	45±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/ 158.75 x79.375mm
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)	1200mm/4mm ²
Plug Connector	MC4 compatible

GENERAL CHARACTERISTICS

Dimension(L/W/H)	2024/1004/40mm
Weight	22.5kg

PACKING CONFIGURATION

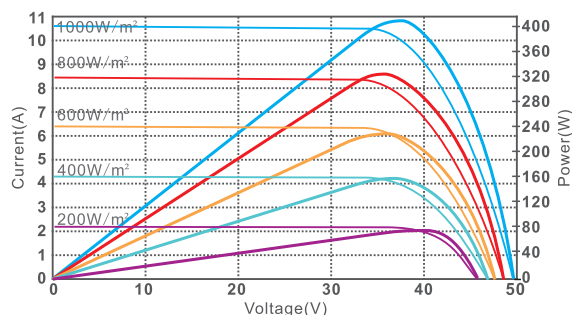
Pallet Size(L/W/H)	2065/1120/2490mm
Pallet Weight	1360kg
Pieces per Pallet	52pcs+4pcs
Pieces per Container	616pcs

INTERNATIONAL CERTIFICATES

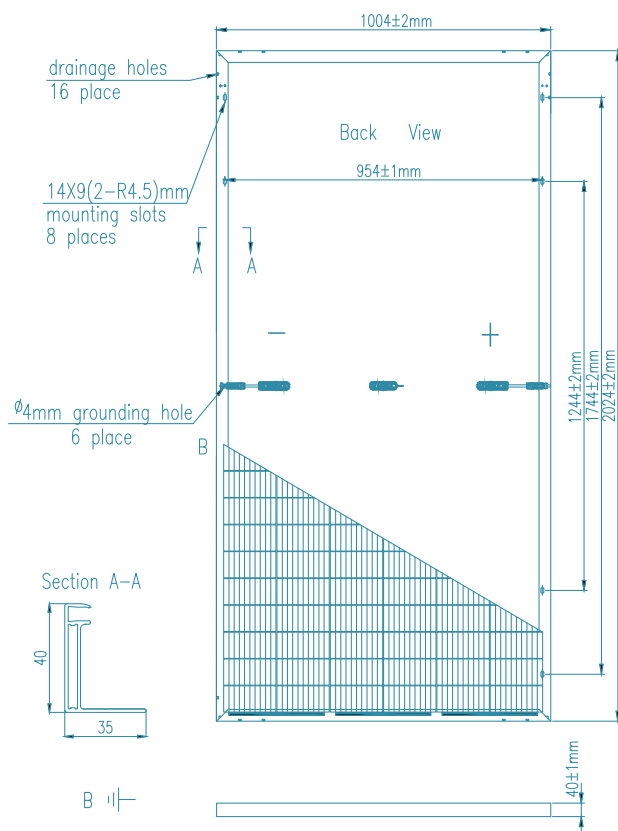
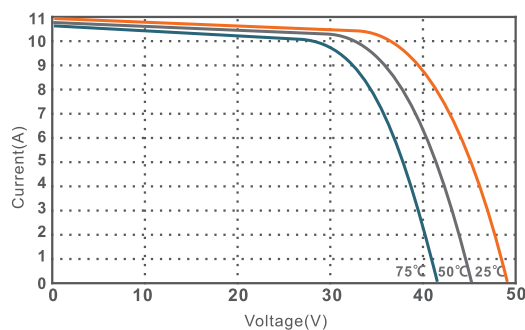
- IEC 61215, IEC 61730
- ISO 9001: 2015(Quality management systems)
- ISO 14001: 2015 (Environmental management systems)
- OHSAS 18001: 2015 (Occupational health and safety)

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.