

Under Shanshan Group, Top 500 Enterprise in China, Ningbo Ulica Solar Co., Ltd. produces our own high quality solar cells and modules starting from August 2005. Our product range covers all from off-grid panels to on-grid panels, both mono-crystalline and poly-crystalline, suitable for all types of installation from residential to commercial projects

MONO HALF-CELL TOPCON



12% more power than conventional modules



**Lower power degradation
Lower internal current
Lower hot spot temperature**



**Cell crack risk limited in small region,
enhance the module reliability**



Outstanding mechanical load resistance
Snow load 5400Pa (Frontside), and Wind load 3800Pa (Backside)



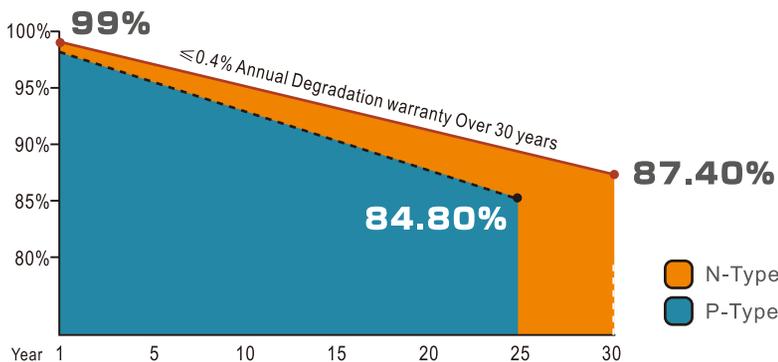
High performance under low light conditions
Cloudy days, Rainy days



Double EL test before and after lamination
Highly control the micro cracks and invisible defects.



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



15-year product warranty

30-year linear power output

Certificate Holder Name : Ningbo Ulica Solar Co.,Ltd



MONO

460W/465W

ELECTRICAL PERFORMANCE

Electrical Parameters Standard Test Conditions

| Module Type | | | UL-460M-108CHVN | UL-465M-108CHVN |
|-----------------------------|-------------------|---|-----------------|-----------------|
| Power Output | P _{max} | W | 460 | 465 |
| Power Tolerance | ΔP _{max} | W | ±3% | |
| Module Efficiency | η _m | % | 22.54 | 22.78 |
| Voltage at P _{max} | V _m | V | 33.22 | 33.42 |
| Current at P _{max} | I _m | A | 13.85 | 13.91 |
| Open-Circuit Voltage | V _{oc} | V | 39.78 ± 4% | 39.98 ± 4% |
| Short-Circuit Current | I _{sc} | A | 14.71 ± 4% | 14.78 ± 4% |

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

Remark : Sorting tolerance as 0~+5W in our factory.

THERMAL CHARACTERISTICS

| | | | |
|---|------------------|------|--------|
| Nominal Operating Cell Temperature | NOCT | °C | 43±2 |
| Temperature Coefficient of P _{max} | γ | %/°C | -0.290 |
| Temperature Coefficient of V _{oc} | β _{voc} | %/°C | -0.250 |
| Temperature Coefficient of I _{sc} | α _{isc} | %/°C | 0.046 |

OPERATING CONDITIONS

| | |
|-----------------------------|--------------|
| Max. System Voltage | 1500V |
| Max. Series Fuse Rating | 25A |
| Operating Temperature Range | -40°C ~ 85°C |
| Max static snow load | 5400Pa |
| Max static wind load | 3800Pa |
| Safety Class | II |
| Fire class rating | Class C |

CONSTRUCTION MATERIALS

| | |
|--|---|
| Front Cover(material/type/thickness) | low-iron tempered glass/3.2mm |
| Cell(quantity/material/type/dimension) | 108/N Type monocrystalline/182.2X95.8mm |
| Encapsulant(material) | ethylene vinyl acetate(EVA) |
| Frame(material/anodization color) | anodized aluminum alloy/silver |
| Junction Box(Protection degree) | IP68 |
| Cable(length/cross-sectional area) | 400mm/4mm ² |
| Plug Connector | DC1500,PV-ZH202B/PV-JM608/PV-CY20L, Made in China |

GENERAL CHARACTERISTICS

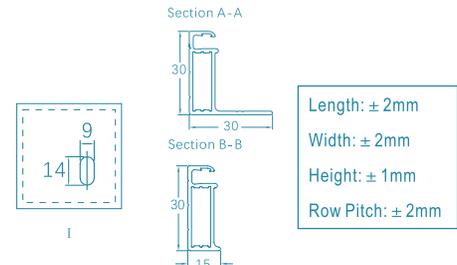
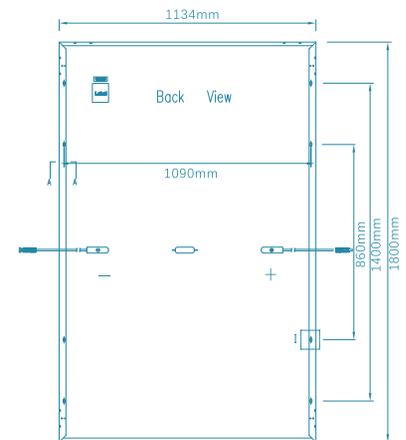
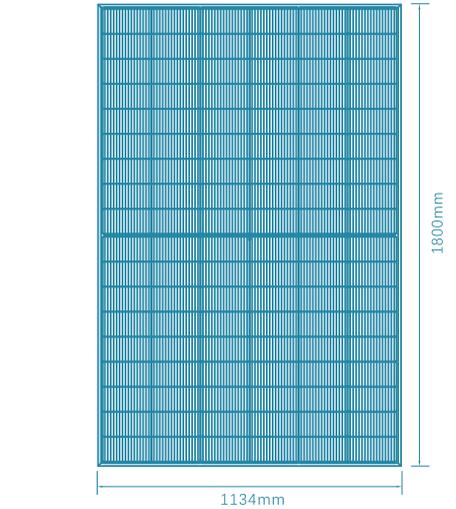
| | |
|------------------|----------------|
| Dimension(L/W/H) | 1800x1134x30mm |
| Weight | 22.5kg |

PACKING CONFIGURATION

| | |
|----------------------|--------|
| Pieces per Box | 36pcs |
| Pieces per Pallet | 72pcs |
| Pieces per Container | 864pcs |

INTERNATIONAL CERTIFICATES

- TÜV SÜD, CE, MCS, CQC, IMERTRO
- ISO9001:2015
- ISO14001:2015
- ISO45001:2018



Please read the installation manual in its entirety before handling, installing, and operating Ulica Solar modules.
Due to continuous innovation, research and improvement, the specification is subject to change without prior notice.