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Solar Panel Guide Specification Data Sheet

Ningbo Ulica Solar Science & Technology Co., Ltd.

UL-310-325M-60MBB

UL-320M-60MBB

Also available on the web at
EnergyPal.com/ningbo-ulica-solar-science-technology-co-ltd-solar-panels/ul-320m-60mbb

Ulica Solar is a subsidiary of Shanshan Co.,Ltd(SH.600884), Top 500 Enterprise in China. Ulica designs and manufactures high-quality solar cells and panels starting from August 2005. Its product line covers both mono and poly crystalline models, suitable for full range of projects from off-grid to on-grid, from residential to commercial.

MONO 60CELL 12BB



12 Busbar (MBB) Module
Main busbar redesigned, more cell area, reduced power loss



Positive power tolerance (0~+5W)



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



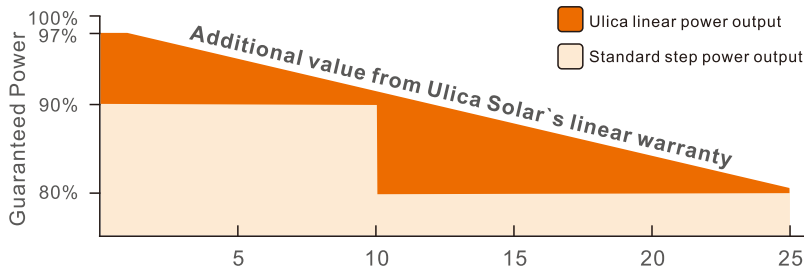
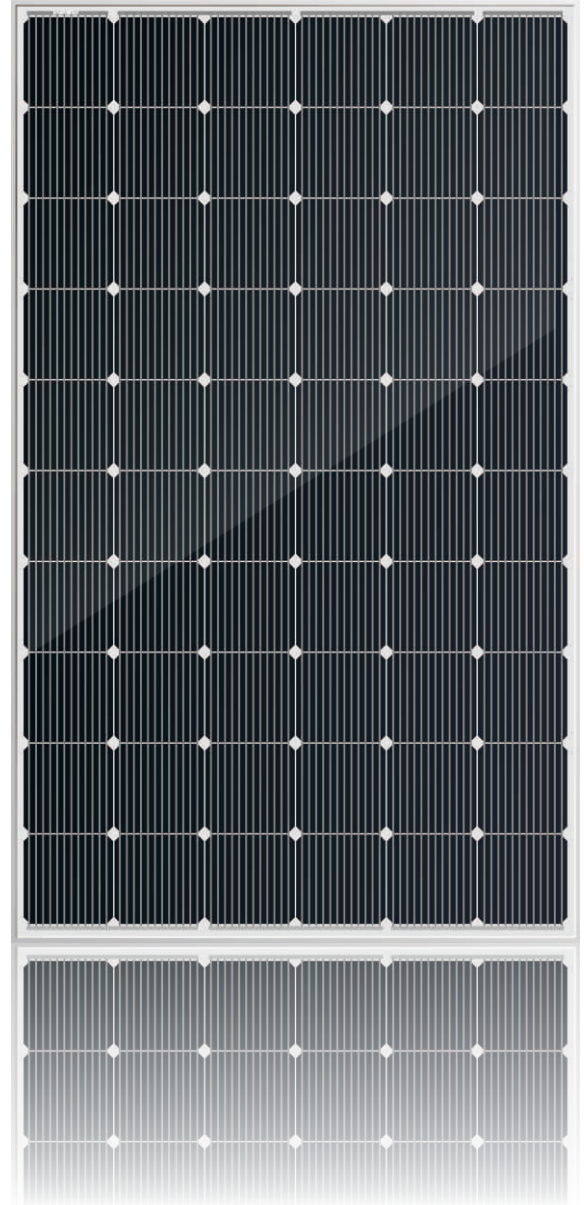
Great Durability against extreme conditions
Passed salt mist corrosion test, ammonia corrosion test, dust & sand test, fire test, all certified by TUV



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



MONO 310W/315W/320W/325W

ELECTRICAL PERFORMANCE

Electrical Parameters Standard Test Conditions

| Module Type | | | UL-310M-60MBB | UL-315M-60MBB | UL-320M-60MBB | UL-325M-60MBB |
|-----------------------------|-------------------|---|---------------|---------------|---------------|---------------|
| Power Output | P _{max} | W | 310 | 315 | 320 | 325 |
| Power Tolerance | ΔP _{max} | W | 0/+5W | | | |
| Module Efficiency | η _m | % | 18.94 | 19.24 | 19.55 | 19.86 |
| Voltage at P _{max} | V _m | V | 32.9 | 33.1 | 33.2 | 33.4 |
| Current at P _{max} | I _m | A | 9.42 | 9.52 | 9.64 | 9.73 |
| Open-Circuit Voltage | V _{oc} | V | 40.4 | 40.6 | 40.7 | 40.9 |
| Short-Circuit Current | I _{sc} | A | 9.83 | 9.93 | 10.05 | 10.15 |

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

THERMAL CHARACTERISTICS

| | | | |
|---|------------------|------|--------|
| Nominal Operating Cell Temperature | NOCT | °C | 45±2 |
| Temperature Coefficient of P _{max} | γ | %/°C | -0.390 |
| 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 | 1000V/1500V |
| Max. Series Fuse Rating | 15A |
| 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) | 60/monocrystalline/ 156.75x156.75mm |
| Encapsulant(material) | ethylene vinyl acetate(EVA) |
| Frame(material/anodization color) | anodized aluminum alloy/silver or black |
| Junction Box(Protection degree) | IP67 |
| Cable(length/cross-sectional area) | 900mm/4mm ² |
| Plug Connector | MC4 compatible |

GENERAL CHARACTERISTICS

| | |
|------------------|---------------|
| Dimension(L/W/H) | 1650/992/35mm |
| Weight | 18kg |

PACKING CONFIGURATION

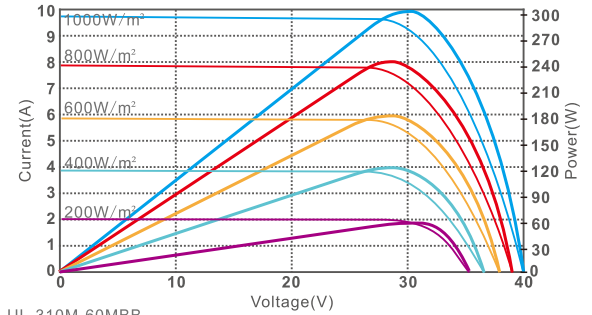
| | |
|----------------------|------------------|
| Pallet Size(L/W/H) | 1690/1100/2426mm |
| Pallet Weight | 1230kg |
| Pieces per Pallet | 64pcs |
| Pieces per Container | 896pcs |

INTERNATIONAL CERTIFICATES

- TÜV SÜD, TÜV NORD, UL, CE, JET, CEC, MCS, CQC, IMERTRO, NRE, KS
- ISO9001:2015
- ISO14001:2015
- BS OHSAS 18001:2007

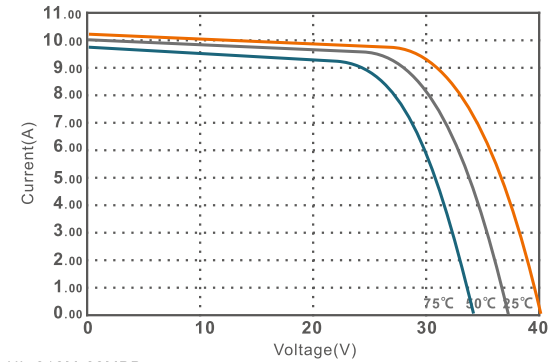
I-V CURVE

I-V characteristics at different irradiances

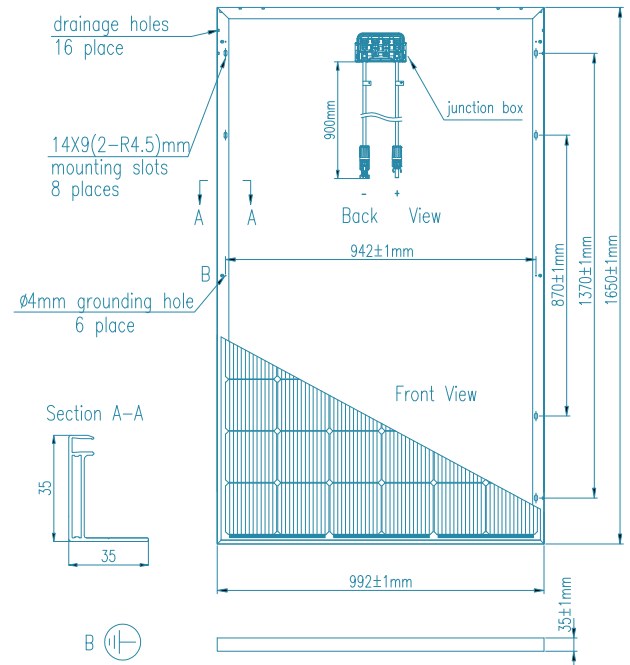


UL-310M-60MBB

I-V characteristics at different temperature



UL-310M-60MBB



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.