

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.

**POLY 60CELL 5BB**



**5 Bus bar cell design**

More evenly distributed mechanical stress  
Less micro cracks and resistance losses  
Higher fill factor and higher performance



**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 TÜV



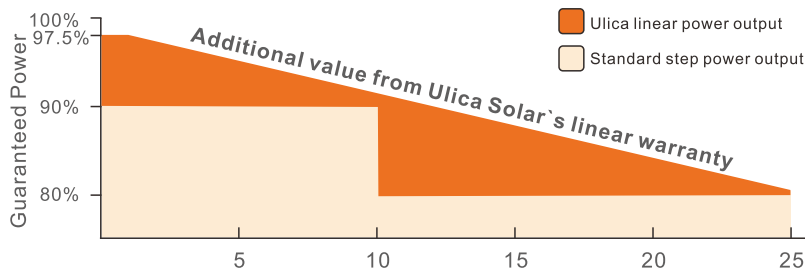
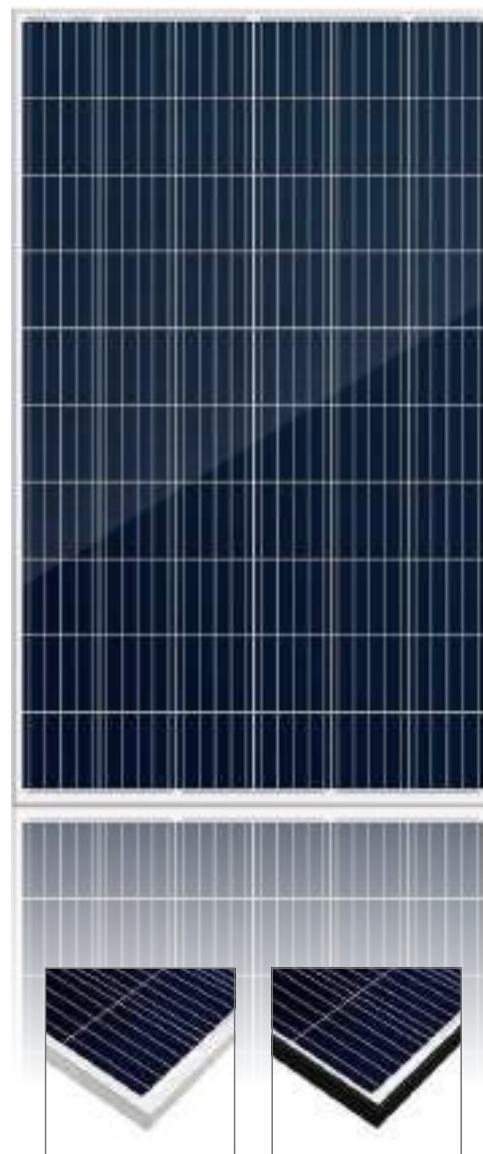
**Double electroluminescence (EL) tests**

Carefully inspected before and after lamination  
to guarantee fault-free modules



**World famous insurance**

Solar Insurance&Finance(Netherlands), AON(Japan)



**12-year product warranty**

**25-year linear power warranty**



## ELECTRICAL PERFORMANCE

Electrical Parameters Standard Test Conditions

| Module Type                 |                   |   | UL-265P-60 | UL-270P-60 | UL-275P-60 | UL-280P-60 |
|-----------------------------|-------------------|---|------------|------------|------------|------------|
| Power Output                | P <sub>max</sub>  | W | 265        | 270        | 275        | 280        |
| Power Tolerance             | ΔP <sub>max</sub> | W | 0/+5W      |            |            |            |
| Module Efficiency           | η <sub>m</sub>    | % | 16.19      | 16.50      | 16.80      | 17.11      |
| Voltage at P <sub>max</sub> | V <sub>m</sub>    | V | 30.9       | 31.0       | 31.1       | 31.3       |
| Current at P <sub>max</sub> | I <sub>m</sub>    | A | 8.58       | 8.71       | 8.85       | 8.95       |
| Open-Circuit Voltage        | V <sub>oc</sub>   | V | 38.0       | 38.2       | 38.3       | 38.5       |
| Short-Circuit Current       | I <sub>sc</sub>   | A | 9.02       | 9.13       | 9.25       | 9.35       |

STC: 1000w/m<sup>2</sup> irradiance, 25°C module temperature, AM1.5 spectrum.

## THERMAL CHARACTERISTICS

|                                             |                  |      |        |
|---------------------------------------------|------------------|------|--------|
| Nominal Operating Cell Temperature          | NOCT             | °C   | 45±2   |
| Temperature Coefficient of P <sub>max</sub> | γ                | %/°C | -0.403 |
| Temperature Coefficient of V <sub>oc</sub>  | β <sub>voc</sub> | %/°C | -0.330 |
| Temperature Coefficient of I <sub>sc</sub>  | α <sub>isc</sub> | %/°C | +0.049 |

## OPERATING CONDITIONS

|                             |            |
|-----------------------------|------------|
| Max. System Voltage         | 1000V      |
| 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/polycrystalline/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 <sup>2</sup>                  |
| Plug Connector                         | MC4 compatible                          |

## GENERAL CHARACTERISTICS

|                  |               |
|------------------|---------------|
| Dimension(L/W/H) | 1650/992/35mm |
| Weight           | 18.5kg        |

## PACKING CONFIGURATION

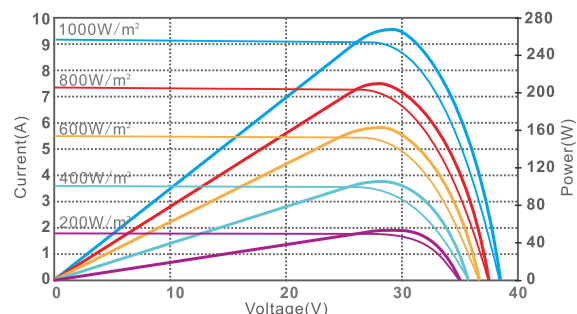
|                      |                  |
|----------------------|------------------|
| Pallet Size(L/W/H)   | 1690/1100/2440mm |
| Pallet Weight        | 1260kg           |
| Pieces per Pallet    | 64pcs            |
| Pieces per Container | 896pcs           |

## INTERNATIONAL CERTIFICATES

- TÜV SÜD, TÜV NORD, UL, CE, JET, CEC
- MCS, CQC, IMERTRO, NRE, KS
- ISO9001:2008
- ISO14001:2004
- BS OHSAS 18001:2007

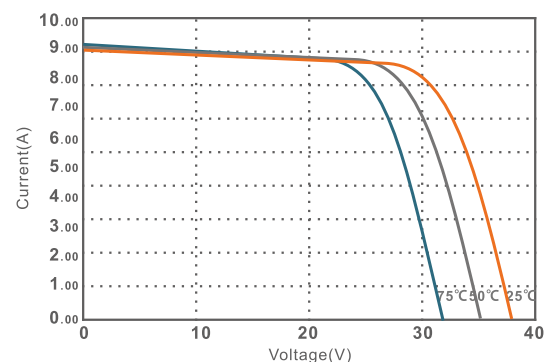
## I-V CURVE

I-V characteristics at different irradiances

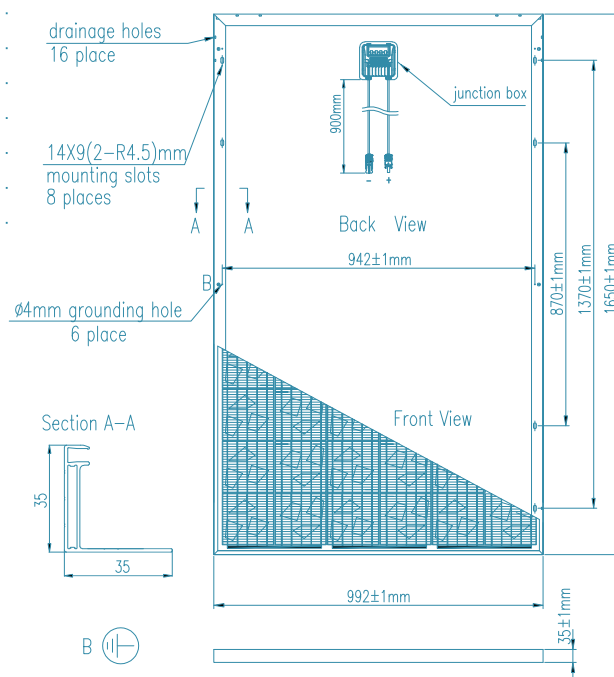


UL-270P-60

I-V characteristics at different temperature



UL-270P-60



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.