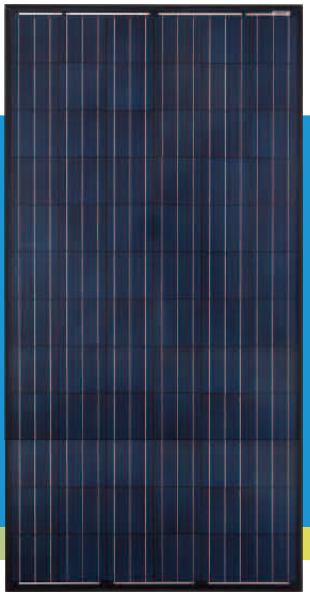
Lightway

Power for a changing world

# LIGHTWAY SOLAR MODULE

## P 1970×990 Series BLACK FRAME



**15.89%**
Max Efficiency

**310W**
Max Peak Power

**10YEAR**
Product Warranty

**25YEAR**
Linear Power Warranty

0-5W **Positive Tolerance 0-5W**
Provides our customers with maximum power output

**Electric Current Classification**
System output maximized by reducing mismatch losses up to 2% with modules sorted and package by amperage

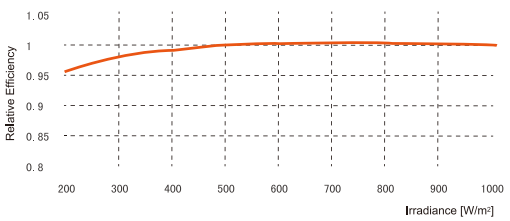
**Excellent weak light performance**
Relative change of module efficiency at 200W/m² is less than 4%

5400 pa **Upto 5400Pa Mechanical load**
Module certified to withstand extreme wind and snow loads

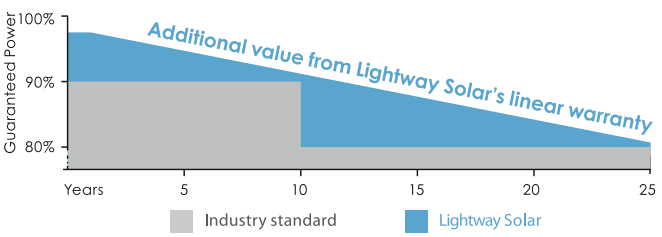
**Passed Ammonia Gas and Salt Mist Corrosion Resistance Test**
Tested and approved by TUV Rheinland according IEC 62716 Draft C and FprEN 61701 Ed.2

SGS **ISO 9001:2008 - ISO 14001:2004 - OHSAS 18001:2007**

### PERFORMANCE AT LOW IRRADIANCE




The typical relative change in module efficiency at an irradiance of 200W/m² in relation to 1000W/m² (both at 25°C and AM 1.5 spectrum) is less than 4%.




### LINEAR WARRANTY

- 10-year warranty on materials and workmanship
- 25-year warranty > 80% power output
- 3% degradation rate the first year
- 0.68% yearly linear degradation

## ELECTRICAL DATA @ STC

| Module Type | | LW310(35) P1970×990 | LW305(35) P1970×990 | LW300(35) P1970×990 | LW295(35) P1970×990 | LW290(35) P 1970×990 | LW285(35) P1970×990 |
|---|---|---|---|---|---|---|---|
| Peak Power_Pmax | W | 310 | 305 | 300 | 295 | 290 | 285 |
| Power tolerance_ΔPmax | W | 0,+5 | | | | | |
| Voltage at Pmax_Vmpp | V | 36.54 | 36.34 | 36.15 | 35.99 | 35.81 | 35.69 |
| Current at Pmax_Impp | A | 8.51 | 8.42 | 8.31 | 8.21 | 8.11 | 8.01 |
| Open Circuit Voltage_Voc | V | 45.56 | 45.31 | 45.08 | 44.91 | 44.81 | 44.53 |
| Short Circuit Current_Isc | A | 8.85 | 8.76 | 8.68 | 8.59 | 8.49 | 8.46 |
| Module Efficiency_η | | 15.89% | 15.64% | 15.38% | 15.13% | 14.87% | 14.61% |

Values at standard test condition STC: air mass AM 1.5, irradiance 1000W/m², cells temperature 25℃

## ELECTRICAL DATA @ NOCT

| Module Type | | LW310(35) P1970×990 | LW305(35) P1970×990 | LW300(35) P1970×990 | LW295(35) P1970×990 | LW290(35) P 1970×990 | LW285(35) P1970×990 |
|---|---|---|---|---|---|---|---|
| Peak Power_Pmax | W | 230 | 226 | 221 | 217 | 213 | 209 |
| Voltage at Pmax_Vmpp | V | 34.71 | 34.48 | 34.13 | 33.94 | 33.78 | 33.33 |
| Current at Pmax_Impp | A | 6.63 | 6.56 | 6.48 | 6.40 | 6.32 | 6.27 |
| Open Circuit Voltage_Voc | V | 42.16 | 41.90 | 41.63 | 41.45 | 41.33 | 41.02 |
| Short Circuit Current_Isc | A | 7.17 | 7.10 | 7.04 | 6.96 | 6.88 | 6.86 |

Nominal operating cell temperature NOCT: irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

### TEMPERATURE RATING

| | | |
|---|---|---|
| Nominal operating cell temperature(NOCT) | ℃ | 45±2 |
| Temperature Coefficient of Pmax | %/℃ | -0.4204 |
| Temperature Coefficient of Isc | %/℃ | 0.0654 |
| Temperature Coefficient of Voc | %/℃ | -0.3215 |

### MAXIMUM RATING

| | |
|---|---|
| Max. System Voltage | 1000Vdc |
| Operating Temperature | -40～+85℃ |
| Max. Series Fuse Rating | 15A |
| Max. Reverse Current | 15A |
| Max. Mechanical load | 5400Pa |

### CONSTRUCTION MATERIALS

| | |
|---|---|
| Solar cells | 72-multicrystalline silicon cells, 156mm*156mm |
| Glass | 3.2mm low-iron tempered glass |
| Encapsulant | ethylene vinyl acetate(EVA) |
| Frame | anodized aluminium alloy(Black) |
| Junction Box | ≥IP65 rated, 3/6 diodes |
| Cable | 4mm² PV cable, 1200mm |
| Connector | MC4 compatible |

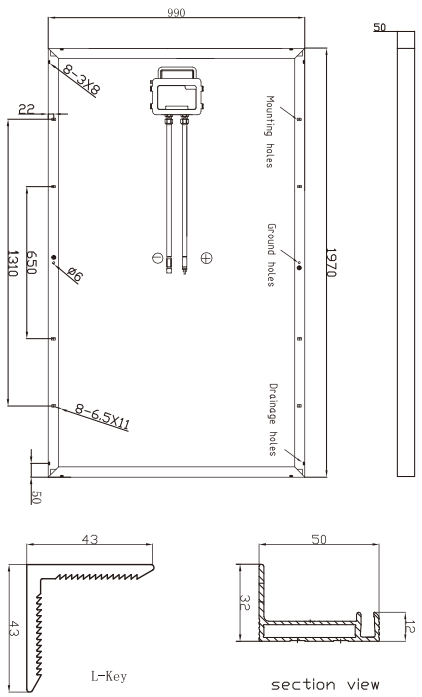
### GENERAL DATA

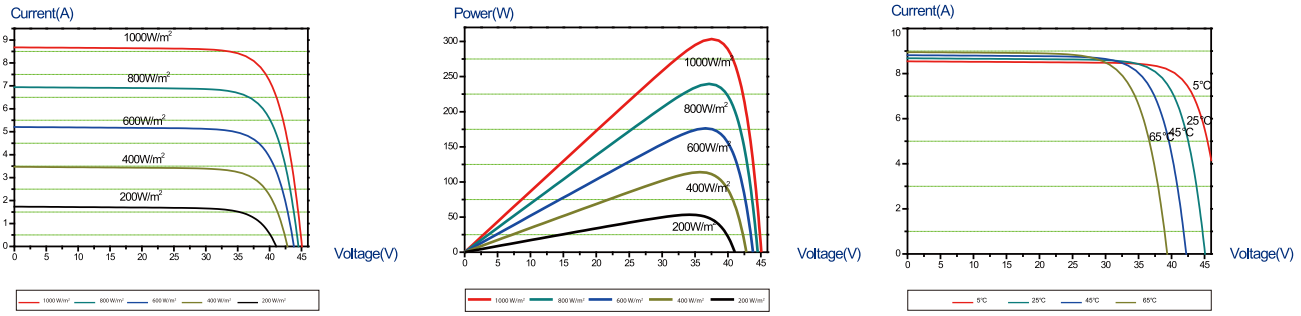
| | |
|---|---|
| Module Dimension(L×W×H) | 1970×990×50mm |
| Weight | 23kg |

### PACKING

| | |
|---|---|
| Modules per pallet | 20 |
| Pallets per 40' container | 22 |
| Packing box dimension(L×W×H) | 2000×1100×1165mm |

Unit:mm




MKT-20130913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