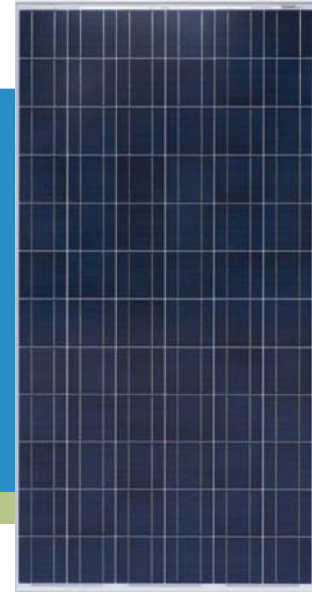


# LIGHTWAY SOLAR MODULE

## P 1970 × 990 Series for USA



**15.89%**  
Max Efficiency

**310W**  
Max Peak Power

**10YEAR**  
Product Warranty

**25YEAR**  
Linear Power Warranty



**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/m<sup>2</sup> is less than 4%

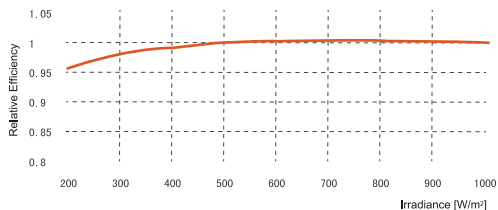


**Passed Ammonia Gas and Salt Mist Corrosion Resistance Test**  
Tested and approved by TUV Rheinland according IEC 62716 Draft C and FprEN 61701 Ed.2

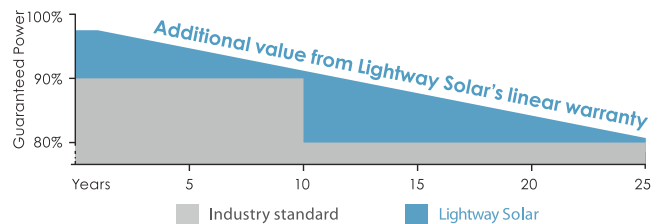


**ISO 9001:2008 - ISO 14001:2004 - OHSAS 18001:2007**

### PERFORMANCE AT LOW IRRADIANCE



The typical relative change in module efficiency at an irradiance of 200W/m<sup>2</sup> in relation to 1000W/m<sup>2</sup> (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_Imp	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/m<sup>2</sup>, cells temperature 25 °C

## 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_Imp	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/m<sup>2</sup>, ambient temperature 20 °C, wind speed 1m/s

### TEMPERATURE RATING

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

### MAXIMUM RATING

Max. System Voltage	1000Vdc
Operating Temperature	-40 ~ +85 °C
Max. Series Fuse Rating	15A
Max. Reverse Current	15A
Max. Mechanical load	30PSF

### CONSTRUCTION MATERIALS

Solar cells	72 mc, 156mm*156mm(cells original from Taiwan)
Glass	3.2mm low-iron tempered glass
Encapsulant	ethylene vinyl acetate(EVA)
Frame	anodized aluminium alloy(Silver)
Junction Box	≥IP65 rated, 3/6 diodes
Cable	4mm <sup>2</sup> PV cable, 1200mm
Connector	MC4 compatible

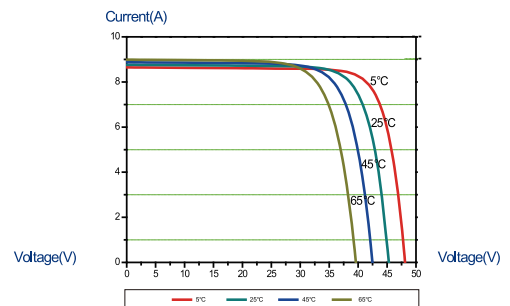
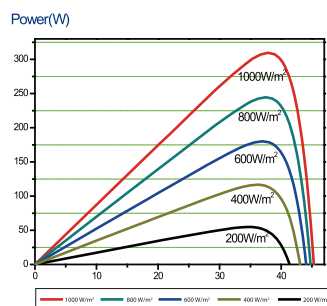
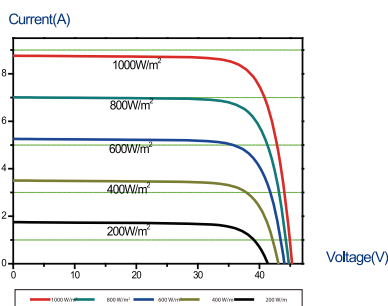
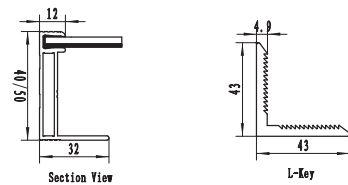
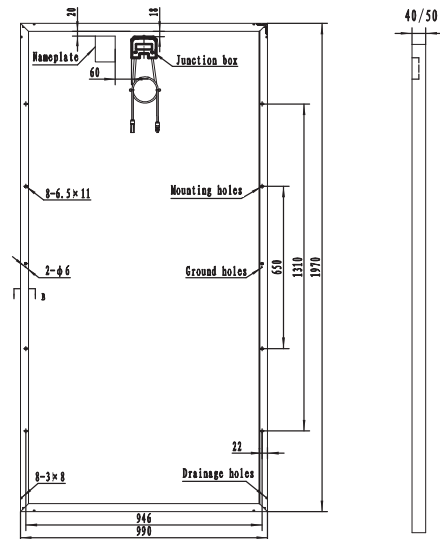
### GENERAL DATA

Module Dimension(L×W×H)	1970×990×40mm	1970×990×50mm
Weight	22kg	23kg

### PACKING

Modules per pallet	26	21
Pallets per 40' container	22	22
Packing box dimension(L×W×H)	2000×1120×1160mm	2000×1120×1160mm

Unit:mm



MKT-20140811