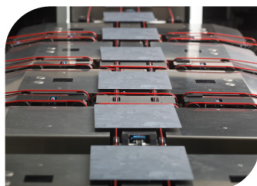
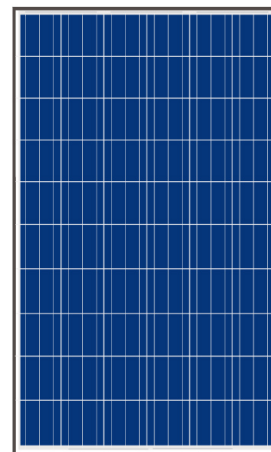


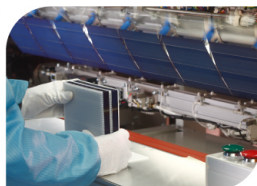
## LIGHTWAY SOLAR MODULE P 1650×990 Series

### KEY FEATURES

-  **Positive Tolerance 0-5W**  
Provides our customers with maximum power output
-  **Electric Current Classification**  
Lightway can classify solar modules based on the value of each module's electric current for customers
-  **Three bus bars ensure high power output of solar modules**
-  **Excellent weak light performance**
-  **Robust Aluminum Frames (50mm)**  
Designed for long term strength and stability in adverse environments
-  **Passed the 5400pa Test**
-  **Vertically Integrated Automatic Production Line**  
Allows us to strictly control quality and costs throughout the entire process
-  **Fully Automatic Stringing Machine and Laying up Machine**  
Guarantees excellent stringing quality and perfect appearance
-  **Electroluminescence (EL) Testing**  
Tests before and after lamination avoid micro cracks and control the production quality with high efficiency
-  **Wafer and Cell Inspection**  
Every wafer and cell is inspected individually ensuring consistent performance in the modules



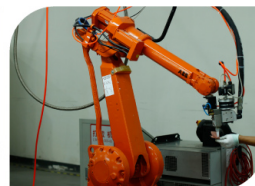
Wafer Sorting



Automatic Stringing



EL Testing



Automation

#### WARRANTY:

- 10 years material & workmanship limited warranty
- 10 years at 90% of minimum rated output
- 25 years at 80% of minimum rated output

## ELECTRICAL CHARACTERISTICS

Module Model Number	Unit	LW240(29) P1650×990	LW235(29) P1650×990	LW230(29) P1650×990	LW225(29) P1650×990	LW220(29) P1650×990
Maximum Power (Pmax)	W	240	235	230	225	220
Short Circuit Current (Isc)	A	8.56	8.45	8.38	8.28	8.18
Max-Power Current (Imp)	A	8.05	8	7.87	7.7	7.53
Open Circuit Voltage (Voc)	V	37.4	37.2	36.6	36.6	36.6
Max-Power Voltage (Vmp)	V	29.8	29.6	29.2	29.2	29.2
Module Efficiency	η (%)	14.7	14.4	14.1	13.8	13.5
Maximum System Voltage	VDC	600/1000				
Tolerance Rating	W	(0, +5)				
Operating Temperature	℃	-40~+85				
Over-Current Protection Rating	A	15				
Test Condition	STC: AM=1.5, 1000w/m <sup>2</sup> , Cell's Temperature: 25℃					

## MECHANICAL CHARACTERISTICS

Cell Type		Poly-Crystalline Silicon, 60pcs(6×10)
Cell Size	mm	156×156
Thickness of Glass	mm	3.2
Cable Type		USE-2, UL Certified / 4mm <sup>2</sup> TUV Certified
No. of Bypass Diodes	pcs	6/3
Withstand High Wind And Snow Loads	Pa	5400

## TEMPERATURE CHARACTERISTICS

P <sub>m</sub> Temperature Coefficient	%/K	-0.44071
I <sub>sc</sub> Temperature Coefficient	%/K	0.0691
V <sub>oc</sub> Temperature Coefficient	%/K	-0.33453

## PACKING

Weight	Kg	21
Packing	pcs/carton	20
Dimensions (l x w x h)	mm	1650×990×50

