



Firm-Light Series

N Type Solar Module

PRODUCT:

T1148L-WZ / T1148L-BZ

POWER RANGE:

435-460W

*Recommend for C&I and residential rooftop



460W Max Power Output	23.1% Max Panel Efficiency	SMBB Super Multi-busbar Technology	N Type 210R Wafer
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Excellent Energy Efficiency

- Market leading temperature coefficient (-0.29%/°C);
- 182*105mm and SMBB technology provide higher efficiency (23.1%)



Multi-busbar Technology

- Extremely high light utilization;
- Greater power collection capability;
- Effectively improve power output and reliability



Aesthetic Appearance Design

- Elegant design in all-black appearance, harmonious integration with the components of the building to provide an intense aesthetic experience



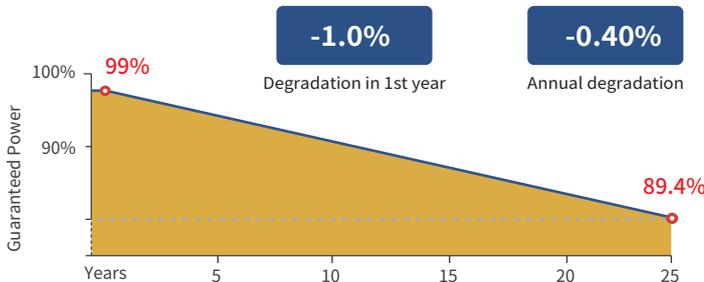
Flexible Module Design

- Small panel design, light in weight, flexible in transportation and loading



Excellent Low Light Performance

- More power output in low light conditions such as cloudy day, mornings and evenings



15 years Product Warranty



25 years Power Warranty

Certificates & Warranty

IEC61215 : 2021&IEC61730 : 2023



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Electrical Data(STC)

Max. Power (W)	435	440	445	450	455	460
Max. Power Voltage Vmp (V)	29.04	29.27	29.50	29.73	29.96	30.19
Max. Power Current Imp (A)	14.98	15.04	15.09	15.14	15.19	15.24
Open Circuit Voltage Voc (V)	34.44	34.66	34.88	35.10	35.32	35.54
Short Circuit Current Isc (A)	15.83	15.88	15.93	15.98	16.03	16.08
Module Efficiency (%)	21.8	22.1	22.3	22.6	22.8	23.1

*STC (Standard Test Condition): Irradiance 1000W/m², Cell Temperature 25°C, Air Mass 1.5
 *Measurement Tolerance (±3.0%)

Electrical Data(NOCT)

Max. Power (W)	330	334	337	341	345	349
Max. Power Voltage Vmp (V)	27.6	27.82	27.97	28.21	28.45	28.68
Max. Power Current Imp (A)	11.96	12.01	12.05	12.09	12.13	12.17
Open Circuit Voltage Voc (V)	32.89	33.10	33.31	33.52	33.73	33.94
Short Circuit Current Isc (A)	12.77	12.81	12.85	12.89	12.93	12.97

*NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

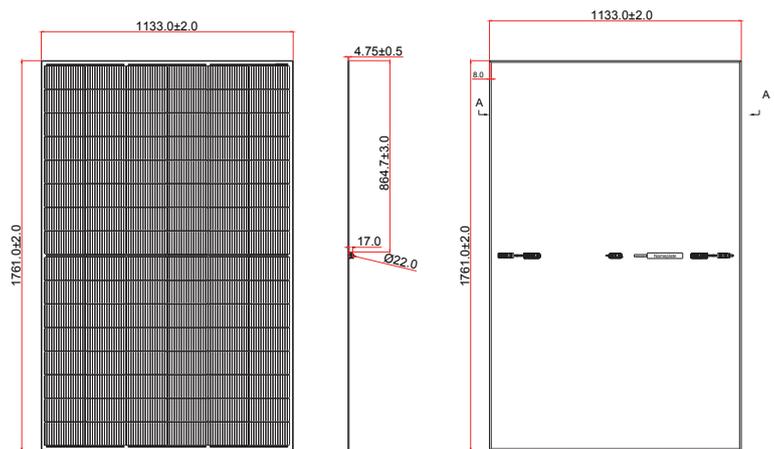
Temperature Ratings

Power Tolerance (W)	0~+5
Temperature Coefficients of γPmp (%/°C)	-0.29
Temperature Coefficients of βVoc (%/°C)	-0.25
Temperature Coefficients of αIsc (%/°C)	+0.045
Max. Over-Current (A)	25
NOCT(Nominal Operating Cell Temperature)	43±2°C

Mechanical Parameters

Cell Type (mm)	N type 182*105
NO. of Cells and Connections	96 (6X16)
Dimensions(L*W*H) (mm)	1761*1133*4.75
Front AR Coated Glass (mm)	1.1/1.6
Backsheet Thickness(mm)	0.3(Common)
Cable Length (mm)	255,Length can be customized
Unit Weight (kg/m ²)	4.76/5.91
NO. of Diodes	3
Container 40'HQ (pcs)	52/bottom, 52/top, 104/stack, 1248/container
Container 20'GP (pcs)	52/pallet, 312/container

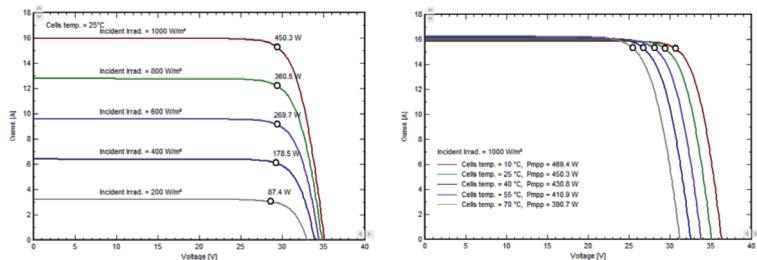
Dimensions of PV Module(mm)



Working Condition

Maximum System Voltage (V)	1500V DC
Operating Temp (°C)	-40~+85
Max. Wind Load (Pa)	2400
Max. Snow Load (Pa)	2400

Characteristic Curves(450W)



[Public Platform] [Official Web]

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Notice: All data and specifications are preliminary and subject to change without notice.

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