

SYMN156TBD0

N-TYPE DOUBLE GLASS BIFACIAL MODULE

650W

Maximum Power Output

23.25%

Maximum Module Efficiency

80%

Bifaciality

0~5W

Pmax Tolerance



Lower LCOE

N-TOPCon bifacial technology: lower degradation, higher bifaciality, ≥30 year service life and lower BOS.



Lower Temperature Coefficient

lower temperature coefficient and higher power generation under high-temperature conditions.



PID Resistance

Excellent Anti-PID performance guarantee via optimized mass-production process and materials control.



ZERO LID (Light Induced Degradation)

N-type modules with Tunnel Oxide Passivating Contacts (TOPcon) technology offer zero LID degradation.



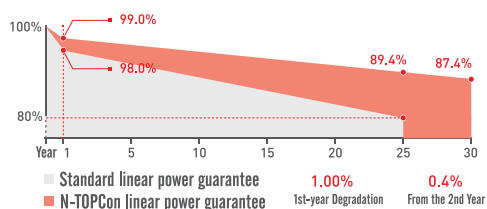
Better Low Light Performance

Higher power output even under low-light weather such as cloudy and foggy days.



Mechanical Load Enhanced

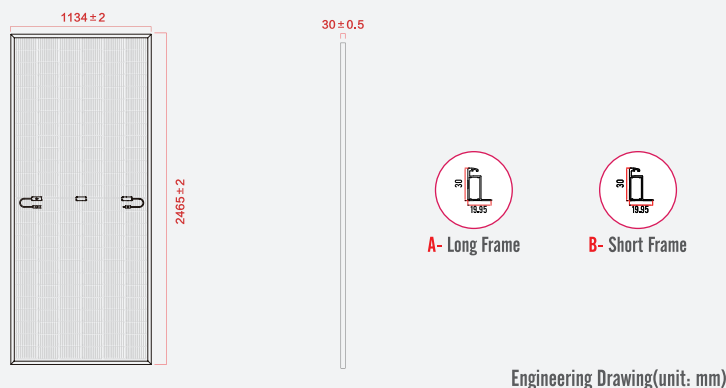
Certified to withstand: 5400 Pa front side max static test load and 2400 Pa rear side max static test load.



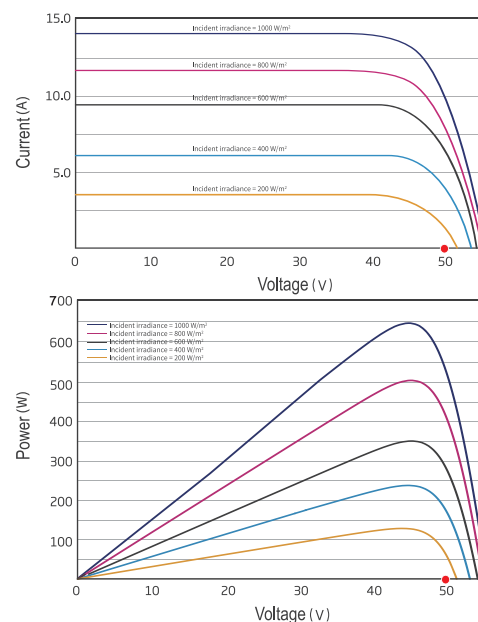
12 Years Material & Workmanship Warranty
30 Years Linear Performance Warranty

 TÜVRheinland®
Precisely Right.





Characteristic Curves (SYM156TBD0-650W)



Mechanical Properties

Cell Size	182.2mm*91.875mm	Front Glass/Back Glass	Heat-strengthened Glass 2mm /2mm
Number of Cells	156 (2*78)	Frame	Composite Material Frame
Module Dimension	2465mm×1134mm×30mm	Junction Box	IP68
Weight	35.3Kg	Connector	MC4 Compatible Connector
Length of Cable	TUV 1×4.0mm ² (+): 300mm,(-):200mm(Or Customized Length)		

SPECIFICATIONS(FRONT)

STC*

	625	630	635	640	645	650
Maximum Power (P _{max} /W)	625	630	635	640	645	650
Peak Power Voltage (V _{mp} /V)	47.89	48.05	48.22	48.37	48.53	48.69
Peak Power Current (I _{mp} /A)	13.05	13.11	13.17	13.23	13.29	13.35
Open Circuit Voltage (V _{oc} /V)	56.75	56.97	57.14	57.32	57.51	57.70
Short Circuit Current (I _{sc} /A)	13.69	13.75	13.81	13.87	13.93	13.99
Module Efficiency(%)	22.36%	22.54%	22.72%	22.90%	23.07%	23.25%

The above data is for reference only, the actual data is subject to the actual test

*STC: Irradiance 1000 W/m², Cell Temperature 25°C, AM1.5

BIFACIAL OUTPUT-REAR SIDE POWER GAIN

5%	Maximum Power (P _{max})	656	662	667	672	677	683
	Module Efficiency STC (%)	23.48	23.66	23.85	24.04	24.23	24.42
15%	Maximum Power (P _{max})	719	725	730	736	742	748
	Module Efficiency STC (%)	25.71	25.92	26.12	26.33	26.54	26.74
25%	Maximum Power (P _{max})	781	788	794	800	806	813
	Module Efficiency STC (%)	27.95	28.17	28.40	28.62	28.84	29.07

Operating Properties

Temperature Coefficient

Packaging Configuration

Operating Temperature	-40°C~+85°C	Temperature Coefficient of P _{max}	-0.29%/°C	Packing Type	40'HQ Container	17.5m Flatbed Trailer
Maximum System Voltage	DC1500V(IEC)	Temperature Coefficient of V _{oc}	-0.25%/°C	Pcs/Pallet	36 pcs	36pcs
Maximum Series Fuse Rating	30A	Temperature Coefficient of I _{sc}	+0.045%/°C	Pallet/Container	16 pallets	23 pallets
P _{max} Tolerance	0~+5W	Nominal Operating Cell Temperature (NOCT)	45±2°C	Pcs/Container	576 pcs	828 pcs
Bifaciality	80±5%					

*Bifaciality=P_{maxrear} (STC)/P_{maxfront} (STC)

