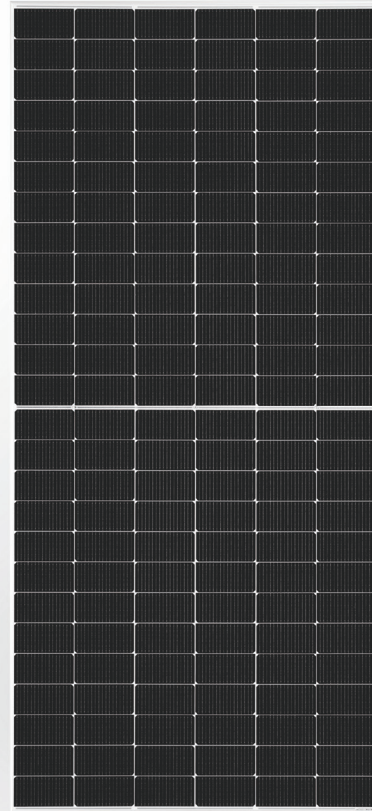


SYMN156TBD

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 solar cell has no LID naturally which can increase power generation.



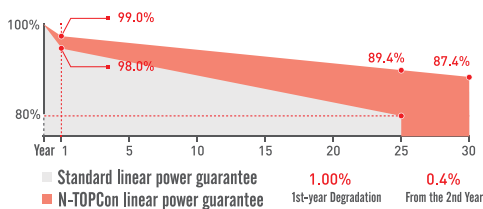
Better Low Light Performance

Higher power output even under low-light environments like on cloudy or foggy days.



Mechanical Load Enhanced

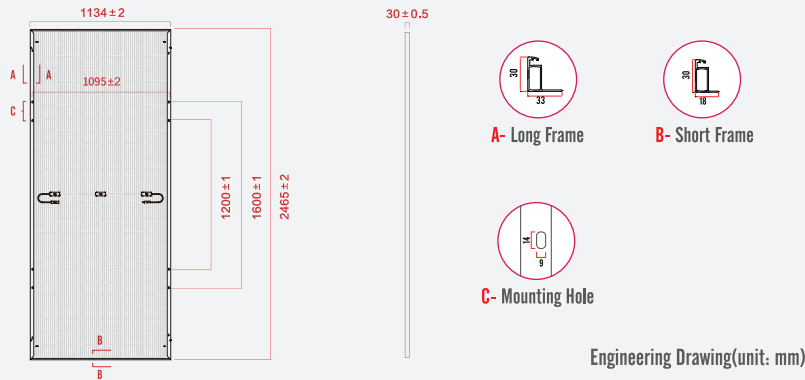
Certified to withstand: 5400 Pa front side max static test load and 2400 Pa rear side max static test load.



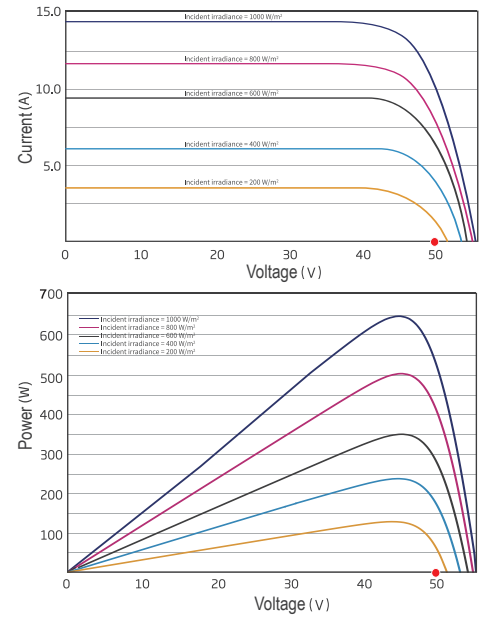
12 Years Product Material & Workmanship
30 Years Linear Performance Warranty

TÜVRheinland®
Precisely Right.





Characteristic Curves (SYMN156TBD-650W)



MECHANICAL PROPERTIES

Cell Size	182mm*183mm series	Front Glass/Back Glass	Heat-strengthened Glass 2mm/2mm
Number of Cells	156 (2*78)	Frame	Anodized Aluminium Alloy
Module Dimension	2465mm×1134mm×30mm	Junction Box	IP68
Weight	33.2kg	Connector	MC4 Compatible Connector
Length of Cable	TUV 1×4.0mm ² (+): 410mm· (-):290mm (Or Customized Length)		

SPECIFICATIONS

STC*

Testing Condition	Front Side						
	625	630	635	640	645	650	
(Pmax) (W) Peak Power(Pmax)	625	630	635	640	645	650	
MPP Voltage(Vmp)(V)	47.89	48.05	48.22	48.37	48.53	48.69	
MPP Current(Imp)(A)	13.05	13.11	13.17	13.23	13.29	13.35	
Open Circuit Voltage(Voc)(V)	56.75	56.97	57.14	57.32	57.51	57.70	
Short Circuit Current(Isc)(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

Irradiance	Parameter	625	630	635	640	645	650
		5%	Maximum Power (Pmax)	656	662	667	672
	Module Efficiency STC (%)	23.48%	23.66%	23.85%	24.04%	24.23%	24.42%
15%	Maximum Power (Pmax)	719	725	730	736	742	748
	Module Efficiency STC (%)	25.71%	25.92%	26.12%	26.33%	26.54%	26.74%
25%	Maximum Power (Pmax)	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 (°C)	-40°C~+85°C	Temperature Coefficient of Pmax	-0.29%/°C	Packing Type	40'HQ Container
Maximum System Voltage (V)	DC1500V (IEC)	Temperature Coefficient of Voc	-0.25%/°C	Pcs/Pallet	36 pcs
Maximum Series Fuse Rating (A)	30	Temperature Coefficient of Isc	+0.045%/°C	Pallet/Container	16 pallets
Pmax Tolerance (W)	0~+5 W	Nominal Operating Cell Temperature (NOCT)	45±2°C	Pcs/Container	576 pcs
Bifaciality	80±5%				

*Bifaciality=Pmaxrear (STC)/Pmaxfront (STC)

