



SPPM-NM10-GG 640 - 660W

BIFACIAL DOUBLE GLASS MODULE



Worldwide Standard



Key Features



N-TYPE Technology M10

N-Monocrystalline silicon with silicon nitride layers for higher reliability



PID Resistance excellence

Anti-performance deterioration induced by negative potential to ground



1500 VDC IEC Compatibility

Safe measurement from series circuit connection up to 150 voltage



SMBB Technology

Better light trapping with multi busbar decreasing resistance and power loss



Anti-reflective and anti-soiling

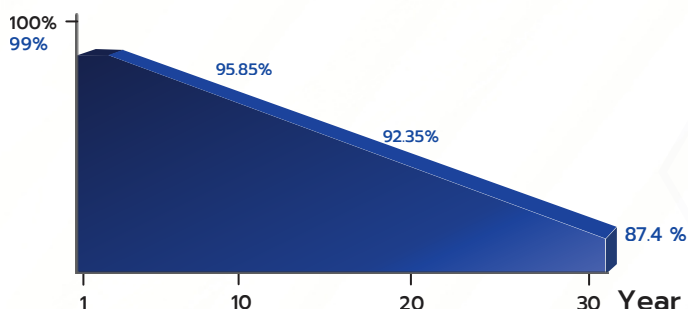
Reducing reflection loss and dust adhesion and improving power conversion efficiency (PCE)



Doubleglass Bifacial

Better resistant to harsh environments - salt, ammonia, high humidity and temperature

Power Performance



Linear Performance Warranty

15 Year Product Warranty

30 Year Linear Power Warranty

0.40% Annual Degradation Over 30 years

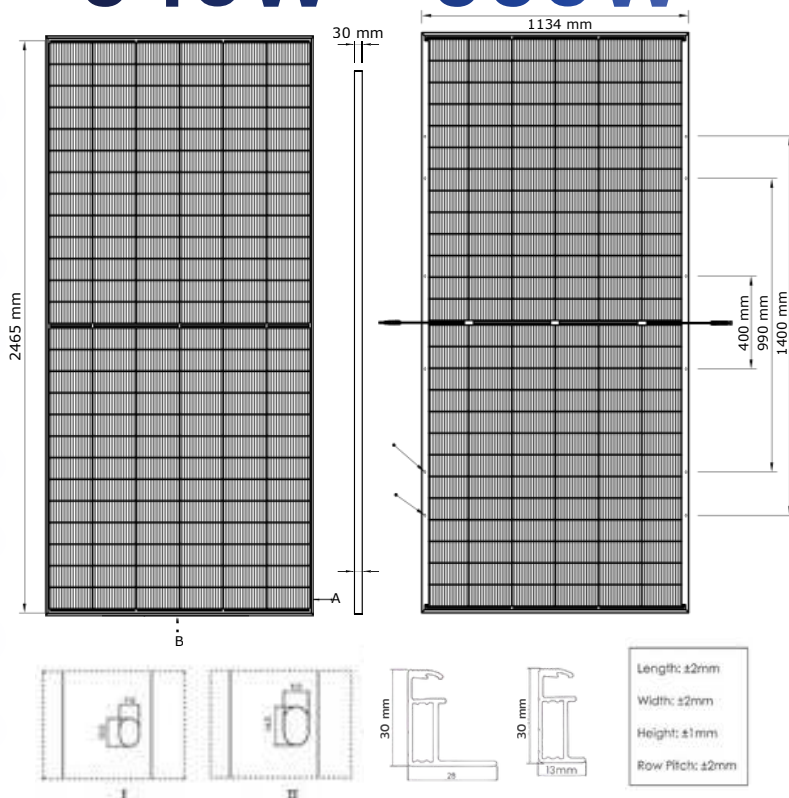
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MECHANICAL PARAMETERS

Cell (mm)	MONO N-TYPE 182 x 91mm
Weight (Kg)	35KG
Glass Thickness (mm)	2.0 , Transparent, Low Iron , Heat Strengthened Glass
Dimensions (L x W x H) (mm)	2465 X 1134 X 30 mm
Cable Cross Section Size (mm2)	4.0
No. of Cells and Connections	156 (6x13)x2
Junction Box	IP68,3 Schottkydiode
Connector	MC4 Compatible
Packaging Configuration	Anodized Aluminium Alloy

WORKING CONDITIONS

Maximum System Voltage	DC1500V (IEC)
Operating Temperature	-40 C +85 C
Maximum Series Fuse	25A
Maximum Static Load, Front(e.g., snow and wind)	5400Pa
Maximum Static Load, Back(e.g., wind)	2400Pa
NOCT	45±2
Application Class	C A
Fire Performance Class	Class C / Type 1



ELECTRICAL PARAMETERS

TYPE	SPPM-NM10-GG 640W	SPPM-NM10-GG 645W	SPPM-NM10-GG 650W	SPPM-NM10-GG 655W	SPPM-NM10-GG 660W
Rated Maximum Power at STC (W)	640	645	650	655	660
Open Circuit Voltage (Voc/V)	56.73	56.85	56.97	57.09	57.21
Maximum Power Voltage (Vmp/V)	48.13	48.35	48.57	48.79	49.01
Short Circuit Current (Isc/A)	13.96	14.02	14.08	14.14	14.02
Maximum Power Current (Imp/A)	13.30	13.35	13.39	13.44	13.48
Module efficiency (%)	22.90%	23.08%	23.26%	23.44%	23.62%
Power tolerance	-0 to +5 Watt				
Temperature Coefficient of Isc	0.045%/ C				
Temperature Coefficient of Voc	-0.25%/ C				
Temperature Coefficient of Pmax	-0.29%/ C				
STC	Irradiance 1000W/m2 , Cell Temperature 25 C, Air Mass 1.5				

NOCT

TYPE	SPPM-NM10-GG 640W	SPPM-NM10-GG 645W	SPPM-NM10-GG 650W	SPPM-NM10-GG 655W	SPPM-NM10-GG 660W
Maximum Power (Pmax) (W)	476.8	481.6	486.4	491.2	496.0
Open Circuit Voltage (Voc/V)	52.50	52.61	52.72	52.83	52.94
Maximum Power Voltage (Vmp/V)	44.54	44.64	44.74	44.84	44.94
Short Circuit Current (Isc/A)	11.24	11.30	11.36	11.42	11.48
Maximum Power Current (Imp/A)	10.70	10.75	10.80	10.85	10.90
Condition	Under Normal Operating Cell Temperature, Irradiance of 800W/m2 , Spectrum AM1.5, ambient temperature 20 C, wind speed 1 m/s				

PACKAGE CONFIGURATION

Modules per box : 36 pieces

Modules per 40' container: 567 pieces

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