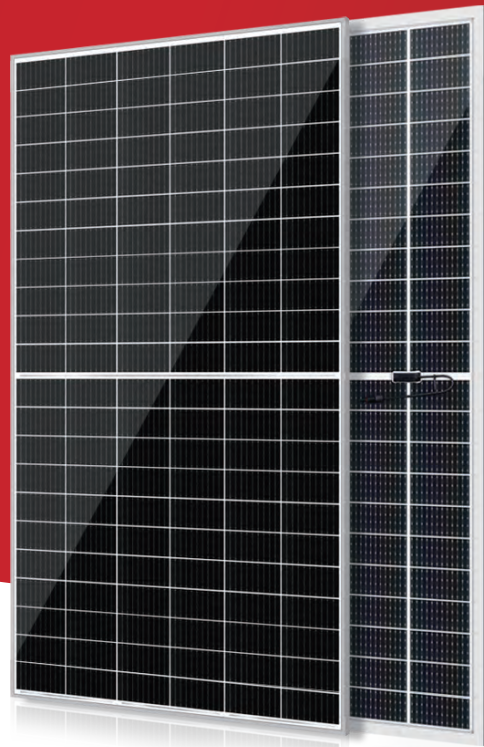


ONYX

645-665W

High Efficiency PERC Bifacial Module



Bifacial technology enables additional energy harvesting from rear side (up to 30%)



Excellent low irradiance performance.



Better light trapping and current collection to improve module power output and reliability.



Industry leading lowest thermal co-efficient of power.



Optimized electrical design and lower operating current for reduced hot spot loss and better temperature coefficient.

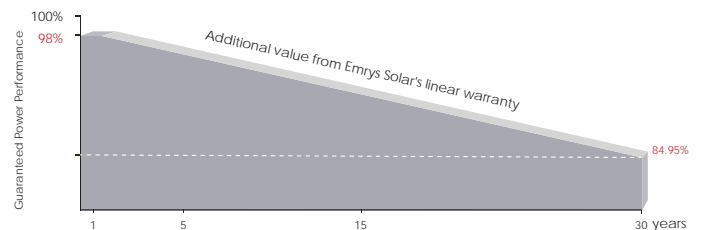


Certified to withstand: wind load (2400 Pa) and snow load (5400 Pa).



100% triple EL test enabling remarkable reduction of hidden crack rate of modules

LINEAR PERFORMANCE WARRANTY



30 years

Product Workmanship Warranty

30 years

Output Power Warranty

COMPREHENSIVE CERTIFICATES



ELECTRICAL DATA(STC)

Model Number	ES645M66-S3-BF	ES650M66-S3-BF	ES655M66-S3-BF	ES660M66-S3-BF	ES665M66-S3-BF
Peak Power Watts- $P_{MAX}(Wp)^*$	645	650	655	660	665
Power Output Tolerance	0~5W				
Open Circuit Voltage- $V_{oc}(V)$	45.30	45.50	45.70	45.90	46.10
Short Circuit Current- $I_{sc}(A)$	18.31	18.50	18.40	18.45	18.50
Maximum Power Voltage- $V_{MPP}(V)$	37.50	37.70	37.90	38.10	38.30
Maximum Power Current- $I_{MPP}(A)$	17.23	17.27	17.31	17.35	17.39
Efficiency(%)	20.80	20.90	21.10	21.20	21.40

STC :Irradiance 1000w/m²,Cell Temperature 25°C,Measure Tolerance :+/- 3%

ELECTRICAL DATA(NOCT)

Maximum Power- $P_{MAX}(Wp)^*$	488	492	495	499	504
Open Circuit Voltage- $V_{oc}(V)$	42.70	42.90	43.00	43.20	43.40
Short Circuit Current- $I_{sc}(A)$	14.75	14.79	14.83	14.87	14.91
Maximum Power Voltage- $V_{MPP}(V)$	34.90	35.10	35.20	35.40	35.60
Maximum Power Current- $I_{MPP}(A)$	13.98	14.01	14.05	14.10	14.16

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

MECHANICAL DATA

Dimensions	2384 x 1303 x 35 mm
Weight	38kg
Cell Type	Monocrystalline
Cell Number	132
Front Glass	2.0 mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE/EVA
Back Glass	2.0mm, Heat Strengthened Glass (White Grid Glass)
Frame	35mm Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² Portrait: 350/350 mm Length can be customized
Connector	MC4 EVO2 / MC4 Compatible

TEMPERATURE RATINGS

NOCT(Nominal Operating Cell Temperature)	43°C(±3°C)
Temperature Coefficient of P_{MAX}	-0.34%/°C
Temperature Coefficient of V_{oc}	-0.25%/°C
Temperature Coefficient of I_{sc}	+0.04%/°C

(Do not connect Fuse in Combiner Box with two or more strings in parallel connection)

WARRANTY

30 years Product Workmanship Warranty
30 years Output Power Warranty

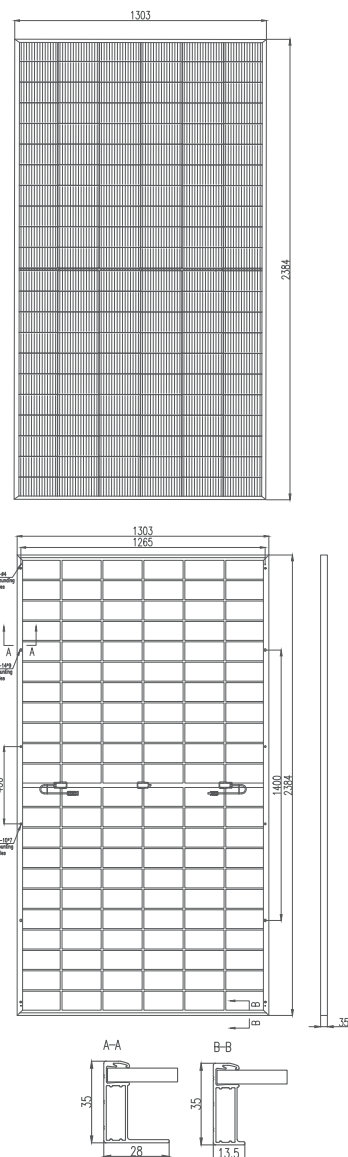
MAXIMUM RATINGS

Operational Temperature	-40~+85 °C
Front/Rear Side Load	5400/2400pa
Max Series Fuse Rating	35A
Max System Voltage	1500V (IEC)
Fire Rating	Class A

PACKAGING CONFIGURATION

Modules per box:31 pieces
Modules per 40'container:558 pieces

DIMENSIONS OF PV MODULE(mm)



CURVES OF PV MODULE

