

ONYX

405-420W

High Efficiency PERC Monofacial Black Frame Module



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.

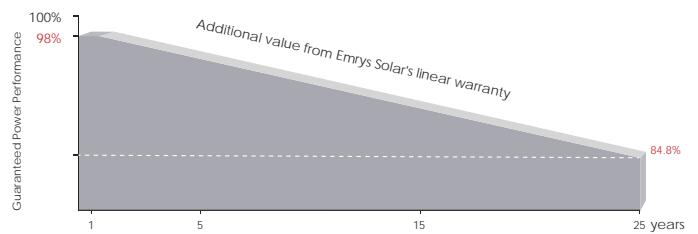


Certified to withstand: wind load (2400 Pa) and snow load (5400 Pa).



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

LINEAR PERFORMANCE WARRANTY



25 years

Product Workmanship Warranty

25 years

Output Power Warranty

COMPREHENSIVE CERTIFICATES



ELECTRICAL DATA(STC)

Model Number	ES405M54-S2	ES410M54-S2	ES415M54-S2	ES420M54-S2
Peak Power Watts- $P_{MAX}(Wp)^*$	405	410	415	420
Power Output Tolerance	0~5W			
Open Circuit Voltage- $V_{oc}(V)$	37.19	37.33	37.48	37.63
Short Circuit Current- $I_{sc}(A)$	13.91	13.95	14.06	14.14
Maximum Power Voltage- $V_{MPP}(V)$	31.31	31.44	31.60	31.74
Maximum Power Current- $I_{MPP}(A)$	12.95	13.05	13.14	13.24
Efficiency(%)	20.70	21.00	21.30	21.50

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

ELECTRICAL DATA(NOCT)

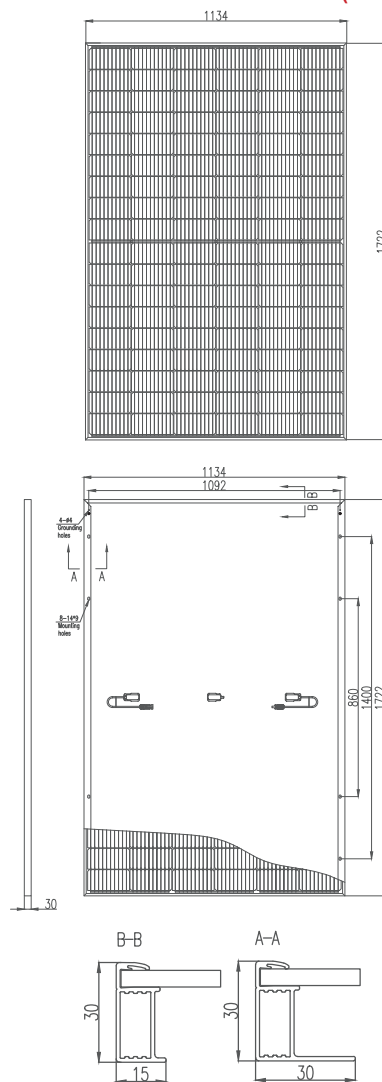
Maximum Power- $P_{MAX}(Wp)^*$	301	305	309	312
Open Circuit Voltage- $V_{oc}(V)$	35.25	35.38	35.52	35.67
Short Circuit Current- $I_{sc}(A)$	11.23	11.28	11.35	11.41
Maximum Power Voltage- $V_{MPP}(V)$	29.68	29.80	29.95	30.08
Maximum Power Current- $I_{MPP}(A)$	10.14	10.23	10.32	10.37

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

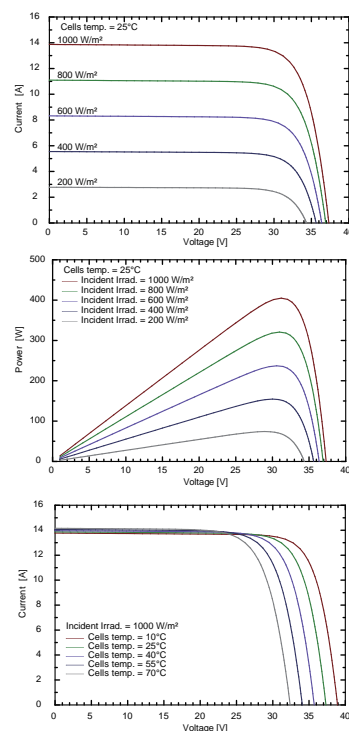
MECHANICAL DATA

Dimensions	1722 x 1134 x 30 mm
Weight	20.7kg
Cell Type	Monocrystalline PERC
Cell Size	182 x 91 mm
Cell Number	108
Glass Type	3.2mm,High Transmission tempering Glass
Encapsulant Type	EVA
Frame Type	Anodized Aluminium Alloy,Silver or Black
Junction Box Diodes	3
Junction Box Protection Class	IP 68
Connector Type	MC4 or MC 4 Compatible
Cables	1x4mm ² ,(+):1100mm ,(-):1100mm or Customized Length

DIMENSIONS OF PV MODULE(mm)



CURVES OF PV MODULE



TEMPERATURE RATINGS

NOCT	41°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)

MAXIMUM RATINGS

Operational Temperature	-40~+85 °C
Front/Rear Side Load	5400/2400pa
Max Series Fuse Rating	25A
Max System Voltage	1500V (IEC)
Fire Rating	Class C

WARRANTY

25 years Product Workmanship Warranty
25 years Output Power Warranty

PACKAGING CONFIGURATION

Modules per box:36 pieces
Modules per 40'container:936 pieces