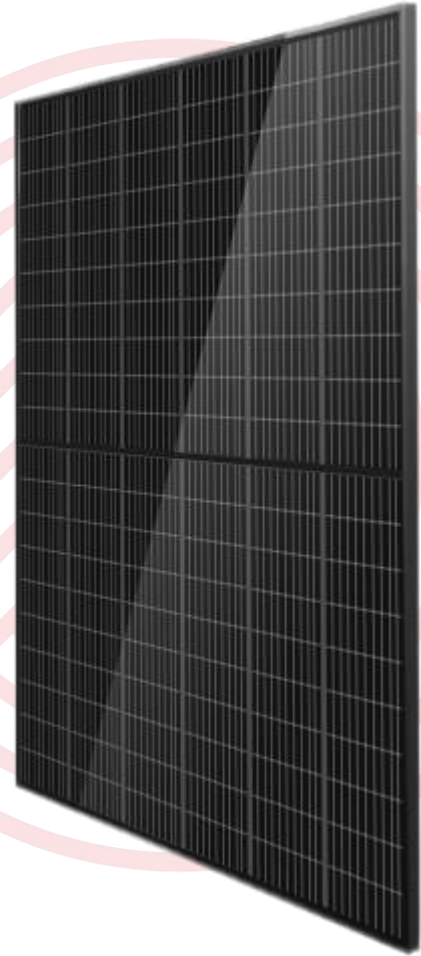


## TOPCon N type Mono-crystalline 435-455 Watt Full Black

0~+5% POWER TOLERANCE

High efficiency TOPCon N - type solar module

16/18BB



### Module characteristics



**Strong Mechanical Strength**  
Passes the wind load test of 2400Mpa and the snow load test of 5400Mpa



**Lower attenuation**  
N-type, Components have better reliability and lower LID/LETID attenuation



**PID resistance**  
The attenuation probability of PID phenomenon is minimized through solar cell production technology optimization and raw material control



**Harsh environmental adaptation**  
Third party certification for salt spray and ammonia corrosion tests

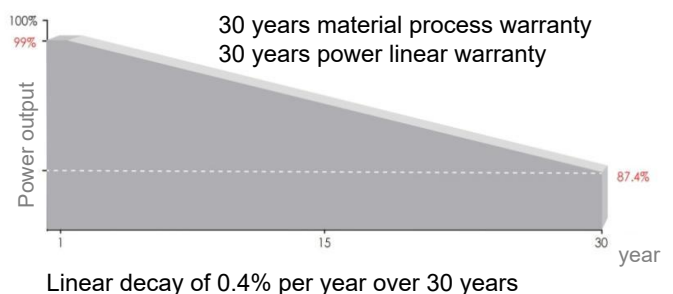


**Multiple busbar and Half cell technique**  
More light utilization and current collection capabilities, effectively improving product power output and reliability



### Long and reliable quality assurance

IEC61215(2016), IEC61730(2016)  
ISO9001:2015: Quality management system  
ISO14001:2015: Environmental management system  
ISO45001:2018: Occupational health and safety management system



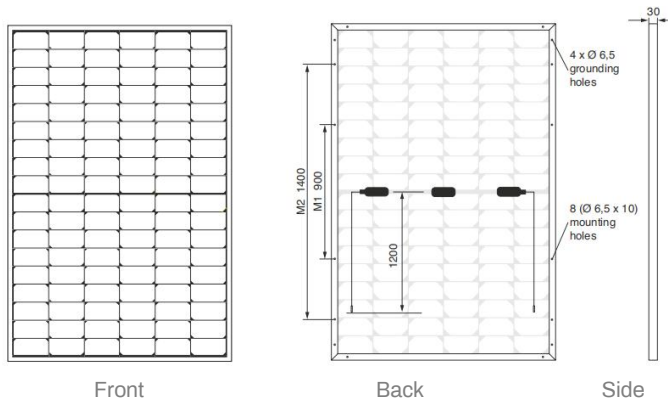
## Electrical Parameters

Model Type	ESM-435T		ESM-440T		ESM-445T		ESM-450T		ESM-455T	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	435	329	440	333	445	337	450	340	455	345
Open Circuit Voltage (Voc)	40.02	38.24	40.31	38.52	40.60	38.80	40.90	39.04	41.20	39.28
Short Circuit Current (Isc)	13.58	10.90	13.64	10.91	13.7	10.91	13.76	10.92	13.82	10.93
Maximum Power Voltage (Vmp)	33.14	30.99	33.44	31.27	33.75	31.56	34.05	31.84	34.34	32.11
Maximum Power Current (Imp)	13.13	10.62	13.16	10.64	13.19	10.67	13.22	10.69	13.25	10.72
Module Efficiency - $\eta_m$ (%)	22.27		22.53		22.78		23.04		23.30	
Operational Temperature	-40°C~+85°C									
Maximum System Voltage	1500VDC									
Maximum Series Fuse Rating	25A									
Power Tolerance	0~+5w									
Temperature Coefficient of Pmax	-0.310%/°C									
Temperature Coefficient of Voc	-0.260%/°C									
Temperature Coefficient of Isc	+0.046%/°C									
Nominal Operating Cell Temperature	45±2°C									
Safety Class	Class II									
Max Load (Front/back)	5400Mpa/2400Mpa									

STC: Irradiance 1000W/m<sup>2</sup> Cell temperature 25°C  
 NOCT: Irradiance 800W/m<sup>2</sup> Ambient temperature 25°C

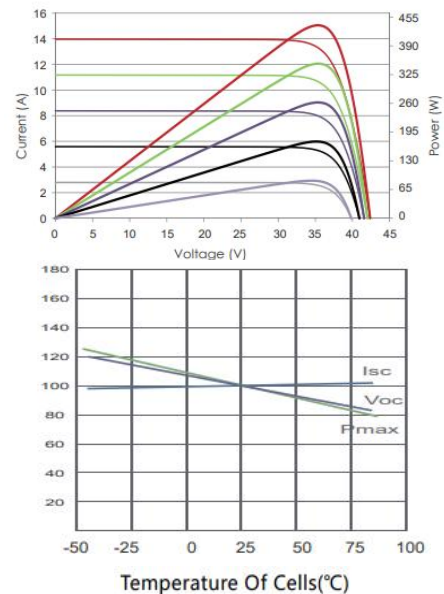
Atmospheric quality =1.5  
 Atmospheric quality =1.5 Wind speed 1m/S

## Mechanical Diagrams



Length: ± 2mm  
 Width: ± 2mm  
 Thickness: ± 1mm  
 Hole pitch: ± 2mm

## IV Curve



## Packing Details

36pcs/pallet, Pallet size: 1760×1120×1260mm

40HQ: 26 pallets/container, 936pcs.

20GP: 12 pallets/container, 384pcs.

### EINNOVA SOLARLINE ENERGY CORP. LIMITED

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 Website: www.einnova-solarline.com

## Specification

Cell type	N type mono crystalline 16/18BB
Half-cell quantity	108 (6×18)
Dimension	1722×1134×30
Weight	21kgs±3%
Glass	AR coated& toughened 3.2mm
Frame	Black Anodized Aluminum Alloy
Junction Box	IP68
	MC4 Compatible connectors
Cable	1000mm (can be customized)