



EURONET

ISO 9001: 2015 CERTIFIED

The Future of Solar Energy



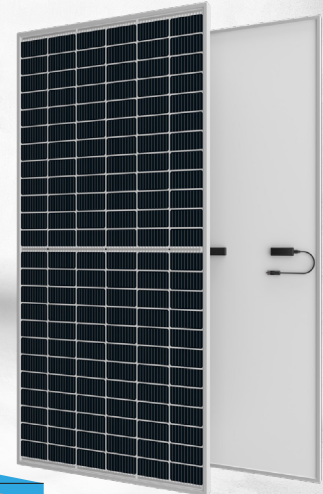
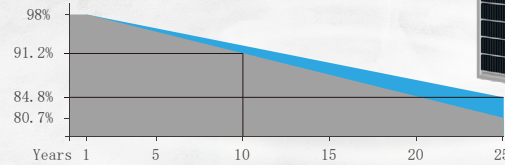
WIDE RANGE OF SOLAR PANELS

Highlights

- Assembled with multi-busbar cells, reduce shading effect on the energy generation, lower risk of hot spot.
- Pass the test for weather resistance in harsh environments (salt mist, ammonia corrosion and sand).
- Excellent encapsulating materials and strict production process to ensure highly resistance against PID (Potential Induced Degradation) of PV module.
- Lower oxygen and carbon content result in lower LID.
- Series and parallel design, reduce the series resistance R_S of module, reduce the loss of internal electrical performance, and improve the power generation capacity of whole system.
- Cutting solar cell technology, which significantly reduces string current and module damage, it is good choice for projects in high temperature areas.

Long-term Quality Assurance

Euronet Linear Power



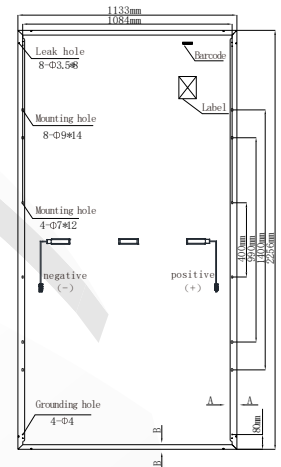
TECHNICAL SPECIFICATIONS

PHOTOVOLTAIC MODULE

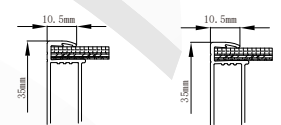
Solar Module Type: EU-450-BMA-HV

Maximum Power	(Pmax)	450W
Power Tolerance		0- +3W
Maximum Power Voltage	(VMP)	41.20 V
Maximum Power Current	(Imp)	10.92 V
Open Circuit Voltage	(Voc)	50.06 V
Short Circuit Current	(Isc)	11.47 A
Nominal Operating Cell Temp	(NOCT)	45±2°C
Maximum System Voltage		1500 VDC
Maximum Series Fuse Rating		20A
Operating Temperature		-40°C- +85°C
Application Class		A
Fire Class		C
Weight		23.5(Kg)
Dimension		2094*1038*35 (mm)
STC: 1000W/m ² , Am1.5, 25°C		

Module Dimension



Back View



Electrical performance parameters | STC

Power Output	Pmax (W)	450
Rated Power Maximum Voltage	Vmp (V)	41.20
Rated Power Maximum Current	Imp (A)	10.92
Open Circuit Voltage	Voc (V)	50.06
Short Circuit Current	Isc (A)	11.47
Module Efficiency	(%)	21.1
Power Tolerance	(W)	0-+3W

* STC : 1000W/m² irradiance, 25° C module temperature, AM1.5 spectrum.
Power measurement error +/- 3%

Electrical performance parameters | NMOT

Power output	Pmax (W)	337.8
Rated Power Maximum Voltage	Vmp (V)	37.82
Rated Power Maximum Current	Imp (A)	9.9
Open Circuit Voltage	Voc (V)	46.73
Short Circuit Current	Isc (A)	10.8

* NMOT: 800W/m² irradiance, 20° C module temperature, 1m/s wind speed.
Power measurement error +/- 3%

Structure Features

Solar Cell		182M00 (Half Cell)
Solar Cell Array		144 pcs (6x24)
Module Dimension		2094x1038x35mm
Weight		23.5 kg
Glass	3.2 mm (0.13 inches)	highly transparent anti-reflection coating tempered glass
Back sheet		White
Frame		Anodized Aluminum Alloy
Junction Box		IP68 rated
Cable	4m ² , L=300 mm	PV cable
Diode Quantity		3
Wind Pressure/Snow Pressure		2400pa / 5400pa
Connector		MC4 Compatible

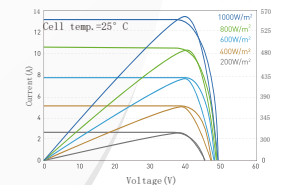
Temperature Characteristics

Solar Cells Rated Working Temperature	45±2°C
Temperature Coefficient (Isc)	+0.06%/°C
Temperature Coefficient (Voc)	-0.35%/°C
Temperature Coefficient (Pmax)	-0.38%/°C

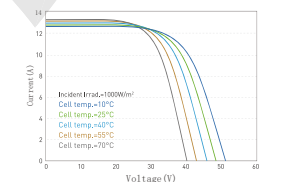
Maximum Ratings

Working Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Maximum Fuse Rated Current	20A







I-V curves/P-V curves of module under different irradiation (540w)

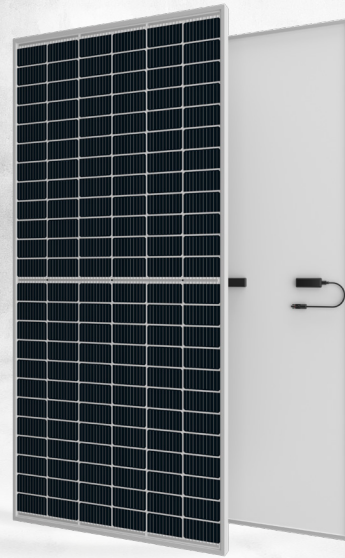


I-V curves of module under different temperature (540w)



Highlights

-  Assembled with multi-busbar cells, reduce shading effect on the energy generation, lower risk of hot spot.
-  Pass the test for weather resistance in harsh environments (salt mist, ammonia corrosion and sand).
-  Excellent encapsulating materials and strict production process to ensure highly resistance against PID (Potential Induced Degradation) of PV module.
-  Lower oxygen and carbon content result in lower LID.
-  Series and parallel design, reduce the series resistance RS of module, reduce the loss of internal electrical performance, and improve the power generation capacity of whole system.
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TECHNICAL SPECIFICATIONS

540W

Electrical performance parameters | STC

Power Output	Pmax (W)	540
Rated Power Maximum Voltage	Vmp (V)	40.80
Rated Power Maximum Current	Imp (A)	13.27
Open Circuit Voltage	Voc (V)	49.50
Short Circuit Current	Isc (A)	13.85
Module Efficiency	(%)	21.1
Power Tolerance	(W)	0~+5W

* STC : 1000W/m² irradiance, 25° C module temperature, AM1.5 spectrum.
Power measurement error +/- 3%

Electrical performance parameters | NMOT

Power output	Pmax (W)	408.8
Rated Power Maximum Voltage	Vmp (V)	37.82
Rated Power Maximum Current	Imp (A)	10.81
Open Circuit Voltage	Voc (V)	46.73
Short Circuit Current	Isc (A)	11.08

* NMOT: 800W/m² irradiance, 20° C module temperature, 1m/s wind speed.
Power measurement error +/- 3%

Structure Features

Solar Cell Array Solar Cell	182MONO (Half Cell)
Module Dimension	144 pcs (6×24) 2256×1133×35mm
Weight	27.5 kg
Glass	3.2 mm (0.13 inches) highly transparent anti-reflection coating tempered glass
Back sheet	White
Junction Box Frame	Anodized Aluminum Alloy
Diode Quantity Cable	IP68 rated
Wind Pressure/Snow Pressure	4mm ² , L=300 mm, PV cable 2400pa / 5400pa
	MC4 Compatible

* More details please read the installation manual.

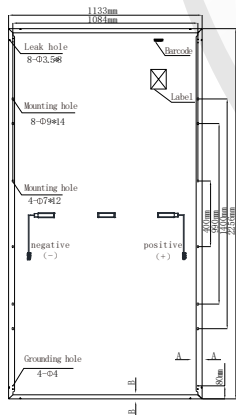
Temperature Characteristics

Solar Cells Rated Working Temperature	44±2°C
Temperature Coefficient (Isc)	+0.06%/°C
Temperature Coefficient (Voc)	-0.35%/°C
Temperature Coefficient (Pmax)	-0.38%/°C

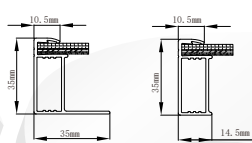
Maximum Ratings

Working Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Maximum Fuse Rated Current	25A

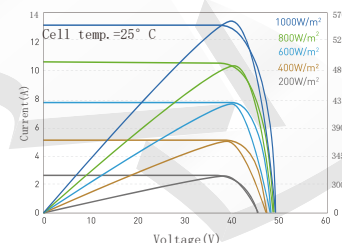
Module Dimension



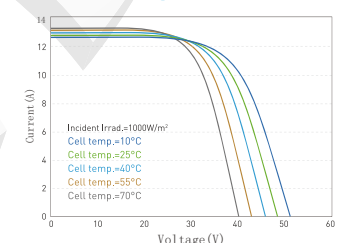
Back View



I-V curves/P-V curves of module under different irradiation (540w)

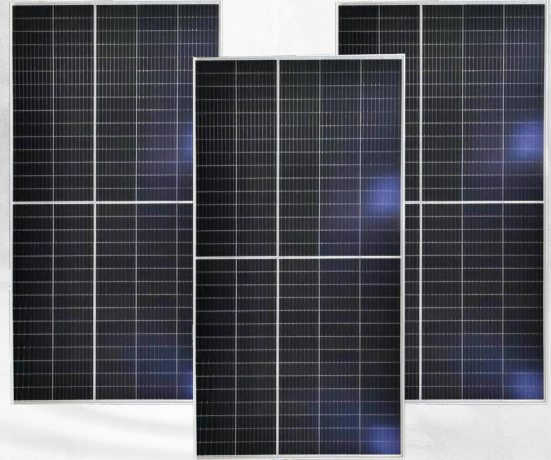


I-V curves of module under different temperature (540w)



Features:

- Eco friendly
- Micro Crack free Panels - 100%
- Positive Power Tolerance Modules
- Excellent performance in Low Light.
- Anti-Reflective Coating (ARC) Glass.
- Tested Before and After Lamination.
- Ideal for On-Grid as well as Off-Grid applications
- Advanced IP67/IP68 Junction Box with rated MC4.
- Salt Mist, Ammonia, Blowing Sand & Hail Resistant.
- All Panels have RFID (Radio frequency identification) Tag.
- Sustain Heavy Wind and Snow Loads (2400Pa and 5400Pa).
- Compatible Connectors for Long-Term Weather Endurance.
- Undergoes Rigorous Quality Control and more than 20 in-house tests (DH: Damp Heat Test, TC: Thermal Cycling Test, HF: Humidity Freeze Test)
- Highly Classified A-Grade Solar Cells for Lesser Degradation & High Energy.
- PID (Potential Induced Degradation) Free Modules with Long Term Reliability.



TECHNICAL SPECIFICATIONS

Electrical Specification	545W
Nominal maximum power (Pmax)	545W
Optimum operating Voltage (Vmp)	41.79V
Optimum Operating Current (Imp)	13.04A
Open Circuit Voltage (Voc)	50.15V±3%
Short Circuit Current (Isc)	13.94A±4%
Operating Temperature	-40°C~+85°C
Maximum System Voltage	1500-2000 VDC
Maximum Series Fuse Rating	25A
RFID	Yes
Power Measurement Tolerance	±3%
Temperature Coefficient	
Pmax	-0.45/°C
Voc	-0.35/°C
Isc	-0.060/°C
NOCT (Nominal Operating Cell Temperature)	45°C
Mechanical Data	
Cell Type	Monocrystalline
Cell Arrangement	75 (5x15)
Dimensions	2185 x 1098 x 35 mm
Weights	29.0 (kg)
Front Cover	Tempered glass
Frame material	Anodized aluminium alloy
Application Level	Class A+



Highlights



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TECHNICAL SPECIFICATIONS

Electrical Characteristics

Module Type	600W
	STC
Maximum Power at STC (Pmp)	600
Open Circuit Voltage (Voc)	41.50
Short Circuit Current (Isc)	18.52
Maximum Power Voltage (Vmp)	34.4
Maximum Power Current (Imp)	17.45
Module Efficiency at STC(ηm)	21.2
Power Tolerance	(0,+4.99)
Maximum System Voltage	1500 VDC
Maximum Series Fuse Rating	30A

STC: Irradiance 1000 W/m² module temperature 25°C AM=1.5;

Temperature Characteristics

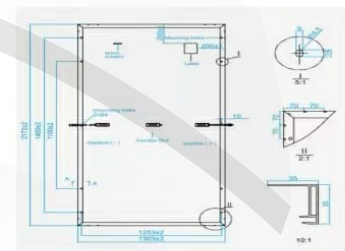
Pmax Temperature Coefficient	-0.36 %/°C
Voc Temperature Coefficient	-0.28 %/°C
Isc Temperature Coefficient	+0.05 %/°C
Operating Temperature	-40j +85 °C
Nominal Operating Cell Temperature (NOCT)	45±2 °C

Mechanical Specifications

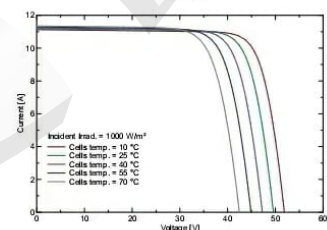
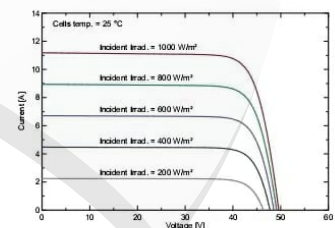
External Dimensions	2172 x 1303 x 35 mm
Weight	30.9kg
Solar Cells	PERC Mono 210mm (120pcs)
Front Glass	3.2 mm AR coating tempered glass, low iron
Frame	Anodized aluminium alloy
Junction Box	IP68 3 diodes
Output Cables	4.0 mm ² Portrait:300mm
Connector	MC4 Compatible
Mechanical Load	Front side 5400Pa/ Rear side 2400Pa

Packing Configuration

	2172 x 1303 x 35 mm
Container	40'HQ
Pieces per Pallet	31
Pallets per Container	18
Pieces per Container	558



I-V Curve





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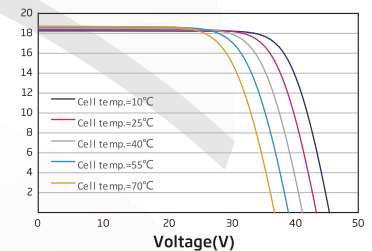
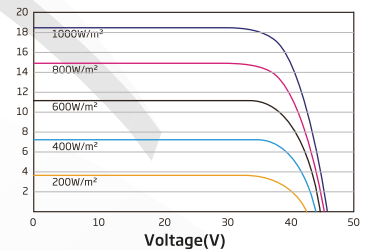
TECHNICAL SPECIFICATIONS

670W

Electrical data (at standard conditions (STC) irradiance 1000 watt/m², spectrum AM 1,5 at a cell temperature of 25°C)

Type	Nominal output P _{mpp}	Nominal voltage U _{mpp}	Nominal current I _{mpp}	Short circuit current I _{sc}	Open circuit voltage U _{oc}	Module conversion efficiency
NB640-66M	640 Wp	37,20V	17,20A	18,35A ± 4%	45,00V ± 3%	20,60%
NB650-66M	650 Wp	37,40V	17,40A	18,44A ± 4%	45,30V ± 3%	20,93%
NB660-66M	660 Wp	37,60V	17,55A	18,53A ± 4%	45,70V ± 3%	21,25%
NB670-66M	670 Wp	37,80V	17,75A	18,62A ± 4%	46,10V ± 3%	21,57%
NB680-66M	680 Wp	38,00V	17,90A	18,71A ± 4%	46,50V ± 3%	21,90%

I-V Curve



Design

- Frontside: 3,2 mm hardened, low-reflection white glass
- Cells: 210 monocrystalline high efficiency cells
- Backside film: Composite film
- Frame: 35 mm silver aluminium frame

Mechanical data

- L x W x H: 2384 x 1303 x 35 mm
- Weight: 33kg with Aluminum frame

Power connection

- Socket: Protection Class IP68
- Wire: approx. 1,2 m, 4 mm²
- Plug-in system: Plug/socket IP68, Stäubli EVO2 / EVO2 pluggable

Limit values

- System voltage: 1500V~2000V DC
- NOCT (nominal operating cell temperature)*: 45°C +/-2K
- Max. load-carrying capacity: 2400 N/m²
- Reverse current feed IR: 20,0 A
- Permissible operating temperature: -40°C to 85°C / -40F to 185F

(No external voltages greater than U_{oc} may be applied to the module)

* NOCT, irradiance 800 W/m²; AM 1,5; wind speed 1 m/s; Temperature 20°C

Temperature coefficients

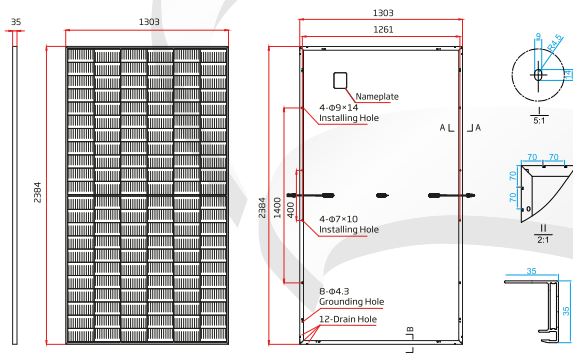
- Voltage U_{oc}: -0,27 %/K
- Current I_{sc}: 0,048 %/K
- Output P_{mpp}: -0,35 %/K

Low-light performance

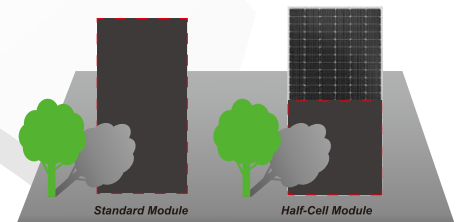
I-U characteristic curve	Current I _{pp}	Voltage U _{pp}
200 W/m ²	2,24 A	40,05 V
400 W/m ²	4,51 A	40,51 V
600 W/m ²	6,74 A	40,82 V
800 W/m ²	8,91 A	41,17 V
1000 W/m ²	10,94 A	41,61 V

Packaging

- Module pieces per pallet: 31
- Module pieces per HC-container: 558



All dimensions in mm



Certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 2122578/01**

Organization:



Smart Euronet Electronics LLC

Shop No 2&3, Al Shams Building, Naif Satellite Market,
Behind Naif Park, Deira,
Dubai,
United Arab Emirates

Site:

c/o **Smart Euronet Electronics LLC**

Shop No 2&3, Al Shams Building, Naif Satellite Market,
Behind Naif Park, Deira,
Dubai,
United Arab Emirates

Scope:

Trading of Refrigerators, Washing machines & Household
Electrical Appliances, Satellite receiving Equipment, Solar Energy
Systems & Components, Security control & Alarm Equipment,
Electrical & Electronic Appliances Spare parts

Validity:

Proof has been furnished by means of an audit that the
requirements of ISO 9001:2015 are met.

The certificate is valid in conjunction with the main certificate 01
100 2122578 from 2021-07-26 until 2024-07-25.

2021-08-03

A handwritten signature in black ink, appearing to read "K. K. K.", positioned above a horizontal line.

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln



SMART EURONET ELECTRONICS LLC

📍 Naif Electronic Market, Deira, Dubai - United Arab Emirates



www.euronetdx.com



euronetdx@gmail.com



@smarteuronet

