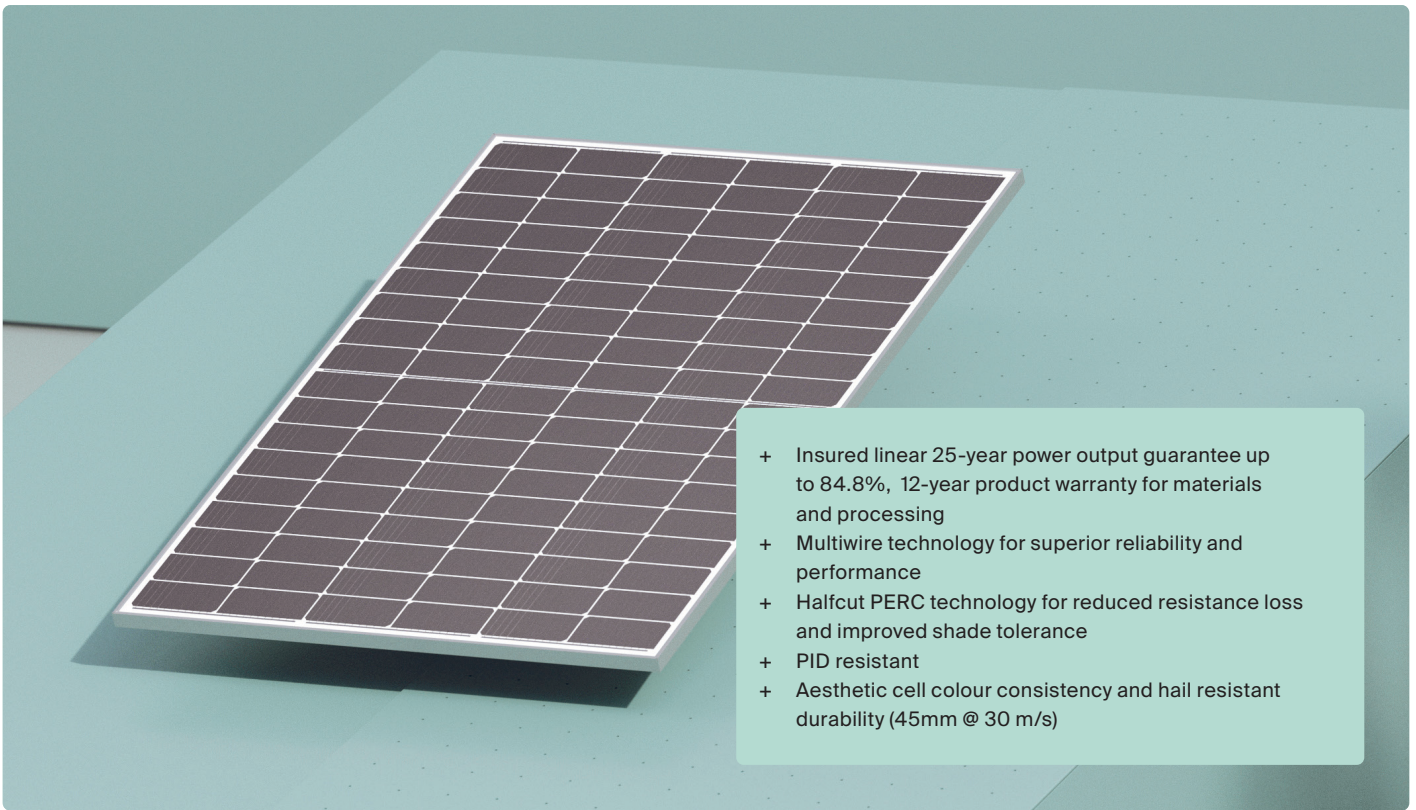


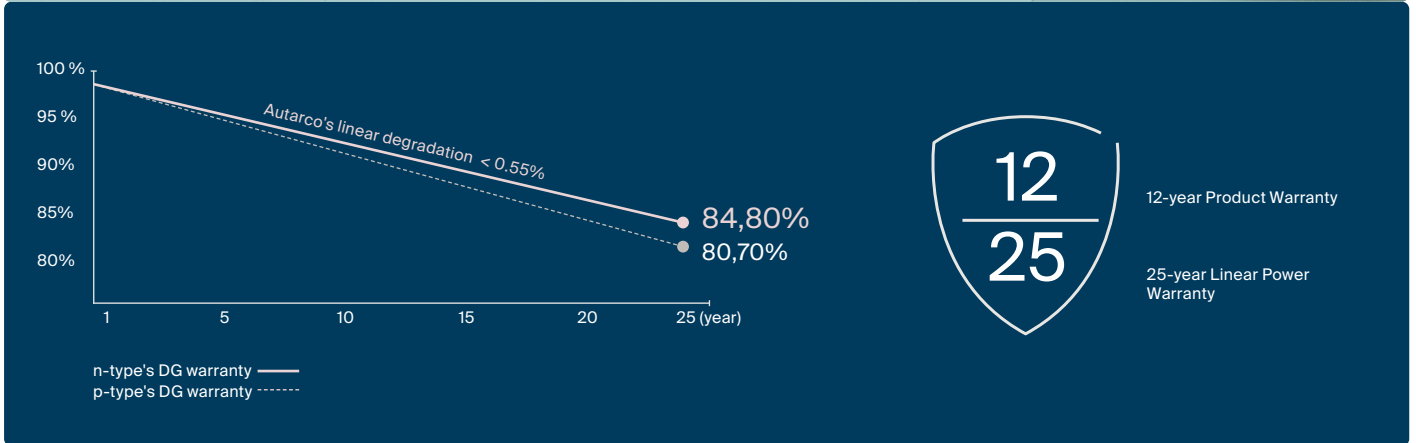
# MHL

## Series solar panels

Rethink Solar  
Reach your full potential



- + Insured linear 25-year power output guarantee up to 84.8%, 12-year product warranty for materials and processing
- + Multiwire technology for superior reliability and performance
- + Halfcut PERC technology for reduced resistance loss and improved shade tolerance
- + PID resistant
- + Aesthetic cell colour consistency and hail resistant durability (45mm @ 30 m/s)



# 450~460W

Power Range

# 0~+5W

Power Tolerance

# 21.3%

Max Module Efficiency

# ≤ 2.0%

First Year Power Degradation

# ≤ 0.55%

Year 2-25 Power Degradation

## Electrical specification

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25 °C, AM=1.5

Rated output (P <sub>mpp</sub> / W <sub>p</sub> )	450	455	460
Open circuit voltage (V <sub>oc</sub> / V)	41.45	41.65	41.85
Short circuit current (I <sub>sc</sub> / A)	13.71	13.81	13.91
Rated voltage (V <sub>mpp</sub> / V)	34.83	35.00	35.17
Rated current (I <sub>mpp</sub> / A)	12.92	13.00	13.08
Module efficiency	20.8%	21.1%	21.3%

NMOT: Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20 °C, AM=1.5, Wind Speed 1m/s

Rated output (P <sub>mpp</sub> / W <sub>p</sub> )	336.3	340.0	343.8
Open circuit voltage (V <sub>oc</sub> / V)	39.17	39.36	39.55
Short circuit current (I <sub>sc</sub> / A)	11.12	11.20	11.29
Rated voltage (V <sub>mpp</sub> / V)	32.46	32.62	32.78
Rated current (I <sub>mpp</sub> / A)	10.36	10.42	10.49

## Temperature ratings

Temp. coefficient (P <sub>mpp</sub> )	-0.34% / °C
Temp. coefficient (I <sub>sc</sub> )	+0.04% / °C
Temp. coefficient (V <sub>oc</sub> )	-0.25% / °C
Nominal module operating temperature (NMOT)	41°C (+/- 2°C)

## Operating parameters

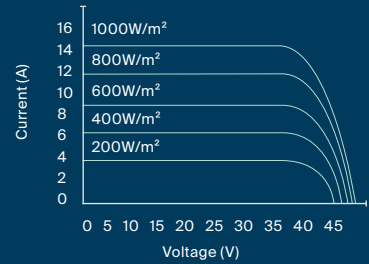
No. of diodes	3
Junction Box IP rating	IP 68
Max. series fuse rating	25 A
Max. system voltage (IEC/UL)	1500V <sub>DC</sub>

## Mechanical specifications

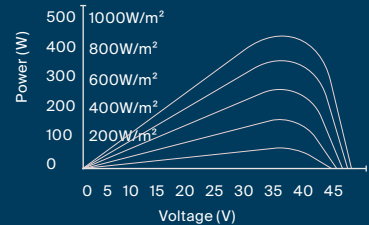
Dimensions (W x H x D)	1903 x 1134 x 30mm
Cells	120 cells, P type mono-crystalline, in a 6 x 20 matrix connected in series
Frame technology	Aluminum
Construction	Front: 3.2mm glass (coated)
Cable length (IEC/UL)	1200mm
Cable diameter (IED/UL)	4 mm <sup>2</sup> / 12 AWG
① Max. mechanical test load	5400 (front) / 2400 Pa (back)
Connector type (IEC/UL)	MC4-EVO2A
Operating temperature	-40°C to 85°C
Passed hail test	45mm hail @ 30.7m/s
Fire performance	Class C (IEC) or Type 2 (UL)
Module weight	23.9 kg
Packing unit	36 pcs / box (Subject to sales contract)
Weight of packing unit	903 kg
Quantity per 40'HQ container	864 pcs

## Curve

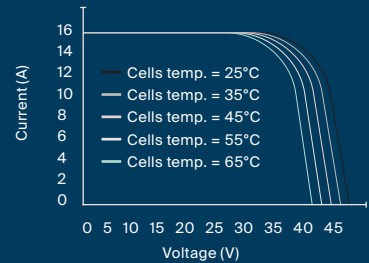
### Current-Voltage (455W)



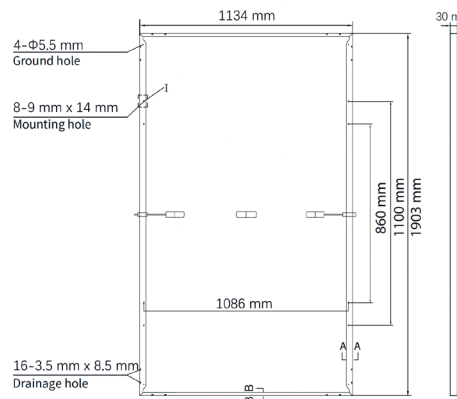
### Power-Voltage (455W)



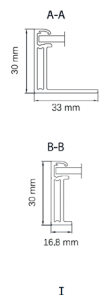
### Current-Voltage (455W)



### Solar panel



### Frame cross section



① Refer to Autarco installation manual or contact technical department. Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

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