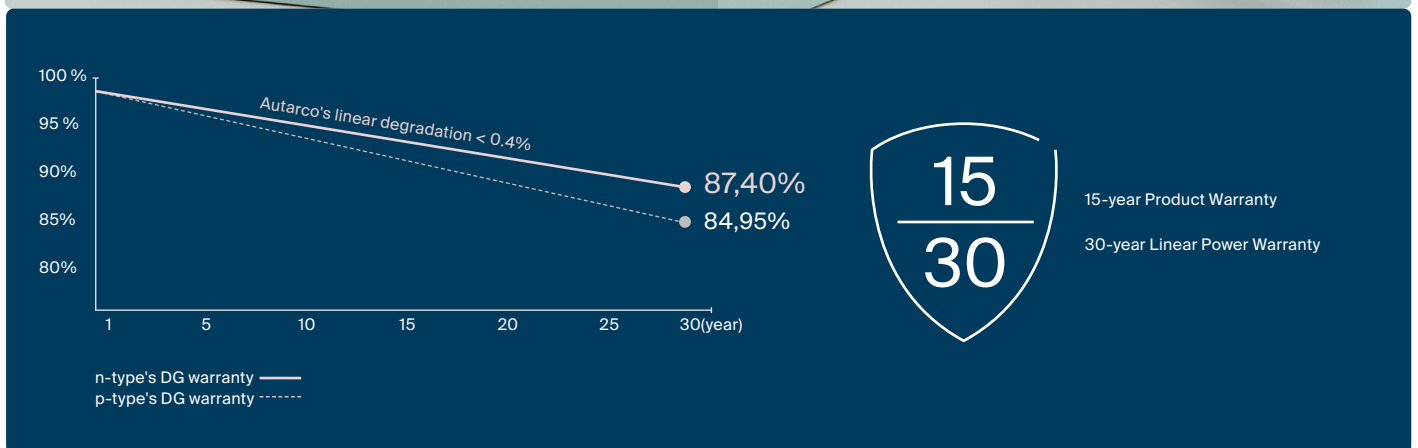
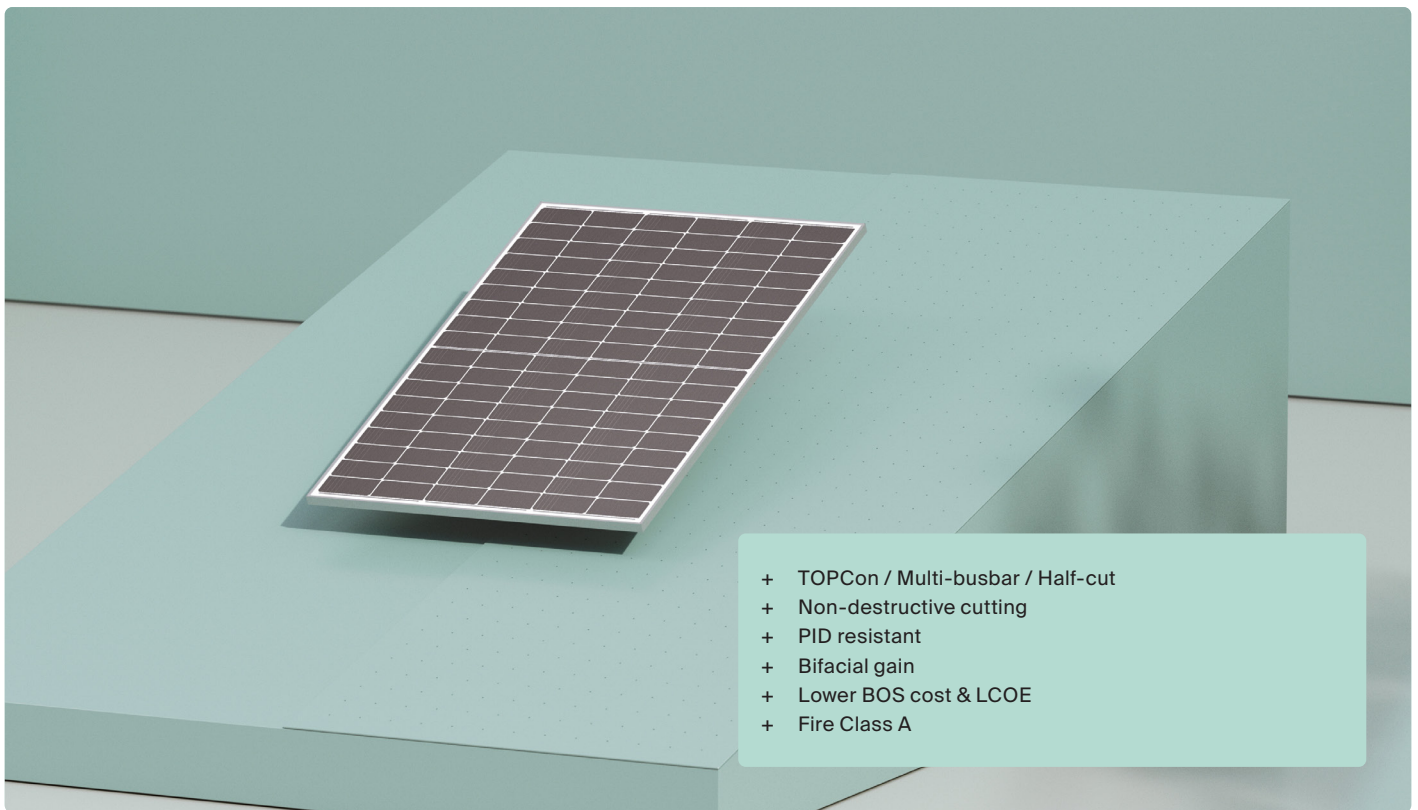


# TBT

## Series solar panels

Reach your full potential



# 435~455W

Power Range

# 0~+3W

Power Tolerance

# 22.8%

Max Module Efficiency

# ≤ 1.0%

First Year Power Degradation

# ≤ 0.4%

Year 2-30 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> )	435	440	445	450	455
Open circuit voltage (V <sub>oc</sub> / V)	38.60	38.80	39.00	39.20	39.40
Short circuit current (I <sub>sc</sub> / A)	14.09	14.18	14.26	14.35	14.44
Rated voltage (V <sub>mpp</sub> / V)	32.44	32.61	32.77	32.94	33.11
Rated current (I <sub>mpp</sub> / A)	13.41	13.49	13.58	13.66	13.74
Module efficiency	21.8%	22.0%	22.3%	22.5%	22.8%

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> )	327.1	330.9	334.6	338.4	342.2
Open circuit voltage (V <sub>oc</sub> / V)	36.67	36.85	37.04	37.23	37.42
Short circuit current (I <sub>sc</sub> / A)	11.37	11.44	11.51	11.58	11.65
Rated voltage (V <sub>mpp</sub> / V)	30.53	30.69	30.85	31.01	31.16
Rated current (I <sub>mpp</sub> / A)	10.71	10.78	10.85	10.91	10.98

## Temperature ratings

Temp. coefficient (P <sub>mpp</sub> )	-0.29% / °C
Temp. coefficient (I <sub>sc</sub> )	+0.043% / °C
Temp. coefficient (V <sub>oc</sub> )	-0.25% / °C
Nominal module operating temperature (NMOT)	41°C (+/- 2°C)

## Operating parameters

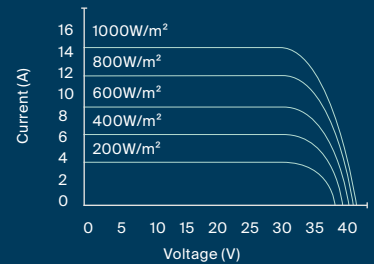
No. of diodes	3
Junction Box IP rating	IP 68
Max. series fuse rating	30 A
Max. system voltage (IEC/UL)	1500V <sub>DC</sub>

## Mechanical specifications

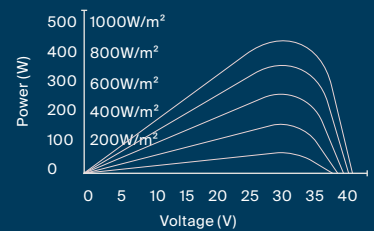
Dimensions (W x H x D)	1762 x 1134 x 30mm
Cells	108 (182 x 96 mm), N type mono-crystalline, in a 6 x 18 matrix connected in series
Frame technology	Aluminum, silver anodized
Construction	Front+Back: 1.6mm Encapsulant: EVA
Cable length (IEC/UL)	1200mm
Cable diameter (IED/UL)	4 mm <sup>2</sup> / 12 AWG
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 A (IEC)
Module weight	21.5 kg
Packing unit	36 pcs / pallet
Weight of packing unit	820 kg
Quantity per 40'HQ container	936 pcs

## Curve

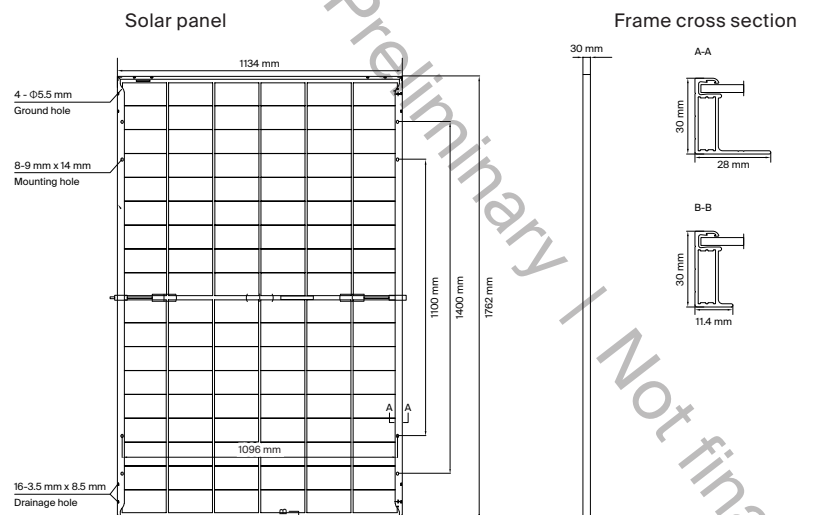
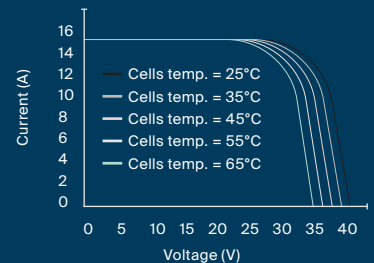
### Current-Voltage (445W)



### Power-Voltage (445W)



### Current-Voltage (445W)



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

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