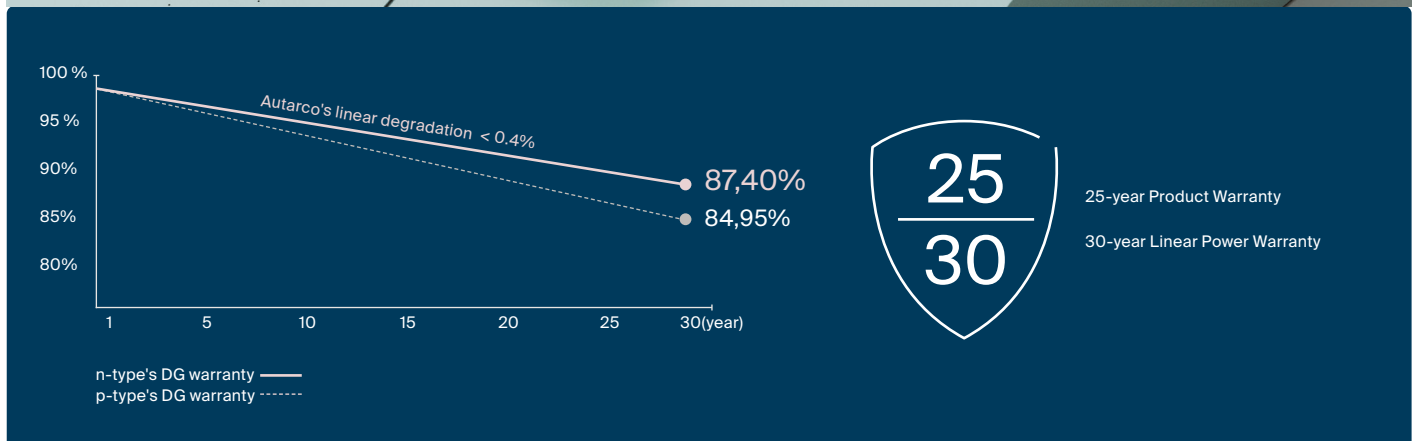
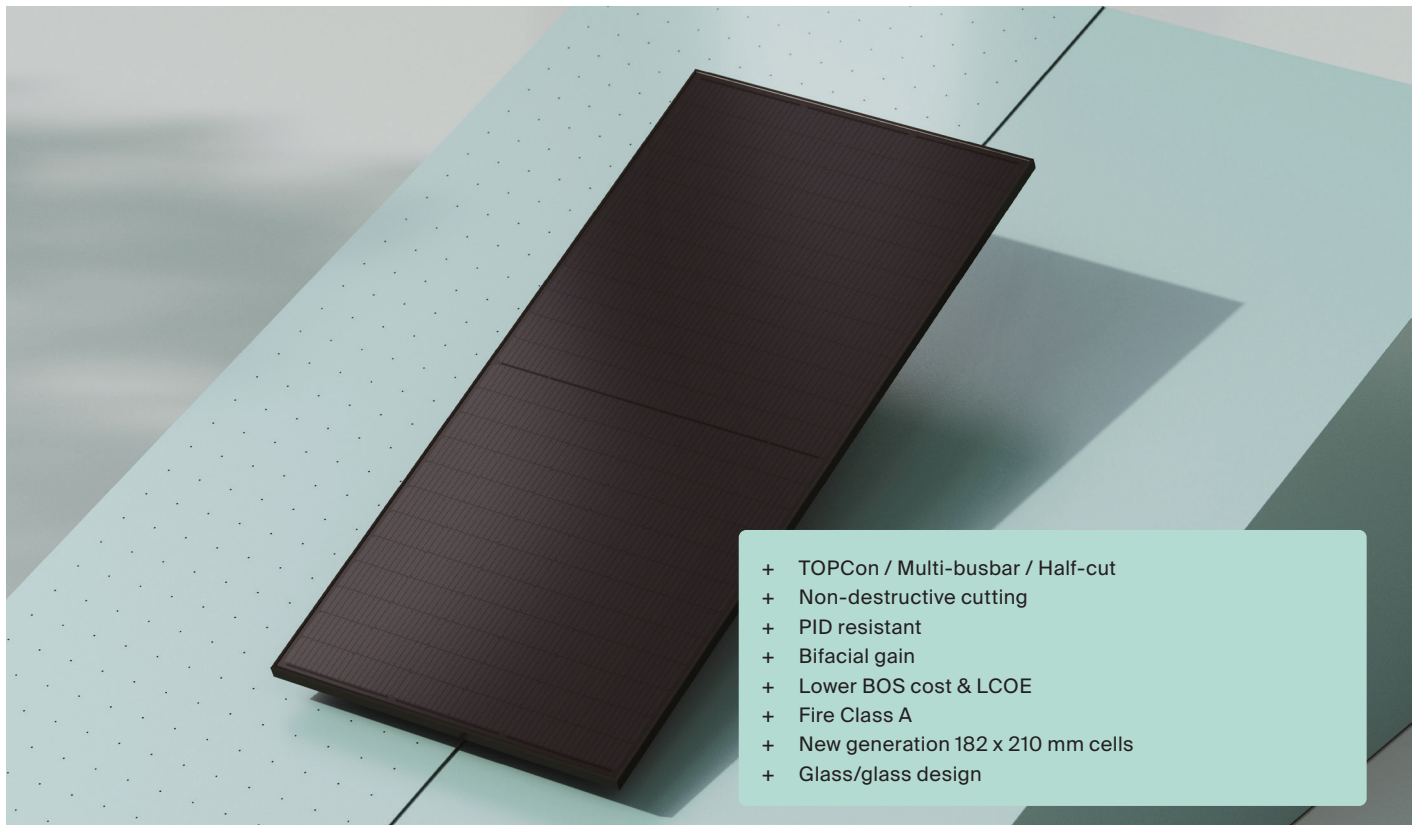


TBY Full Black

Series solar panels

Reach full potential



435~455W

Power Range

0~+3%

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/ m², Cell Temperature 25 °C, AM=1.5

Rated output (Pmpp / Wp)	435	440	445	450	455
Open circuit voltage (Voc / V)	36.10	36.26	36.42	36.59	36.75
Short circuit current (Isc / A)	15.30	15.40	15.50	15.61	15.71
Rated voltage (Vmpp / V)	30.10	30.24	30.38	30.51	30.65
Rated current (Impp / A)	14.45	14.55	14.65	14.75	14.85
Module efficiency	21.77%	22.02%	22.27%	22.50%	22.80

BNPI: Irradiance front 1000W/ m², rear 135W/ m² Cell Temperature 25 °C, AM=1.5,

Rated output (Pmpp / Wp)	480	485	490	495	500
Rated voltage (Vmpp / V)	30.11	30.25	30.38	30.52	30.66
Rated current (Impp / A)	15.94	16.03	16.13	16.22	16.31
Open circuit voltage (Voc / V)	36.10	36.27	36.43	36.60	36.76
Short circuit current (Isc / A)	16.96	17.06	17.15	17.25	17.34

Temperature ratings

Temp. coefficient (Pmpp)	-0.29% / °C
Temp. coefficient (Isc)	+0.043% / °C
Temp. coefficient (Voc)	-0.25% / °C
Nominal module operating temperature (NMOT)	43°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 _{DC}

Mechanical specifications

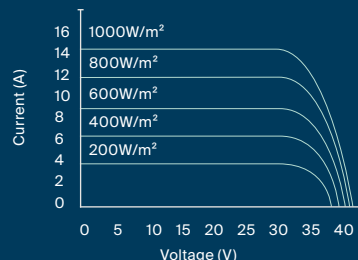
Dimensions (W x H x D)	1762 x 1134 x 30mm
Cells	96, N type mono-crystalline, in a 6 x 16 matrix connected in series
Frame technology	Aluminum, black anodized
Construction	Encapsulant: EVA
TBY450B	Front: 2 mm glass (coated) Backsheet: 2 mm glass (black pattern)

Cable length (IEC/UL)	1200 mm
Cable diameter (IED/UL)	4 mm ² / 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	25mm hail @ 30.7m/s
Fire performance	Class A (IEC)
Module weight	
TBY450B	24.4 kg
Packing unit	36 pcs / pallet
Weight of packing unit	923 kg
Quantity per 40'HQ container	936 pcs

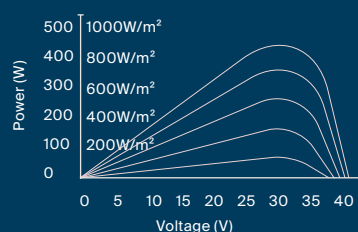
① Refer to Autarco installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

Curve

Current-Voltage (440W)



Power-Voltage (440W)



Current-Voltage (440W)

