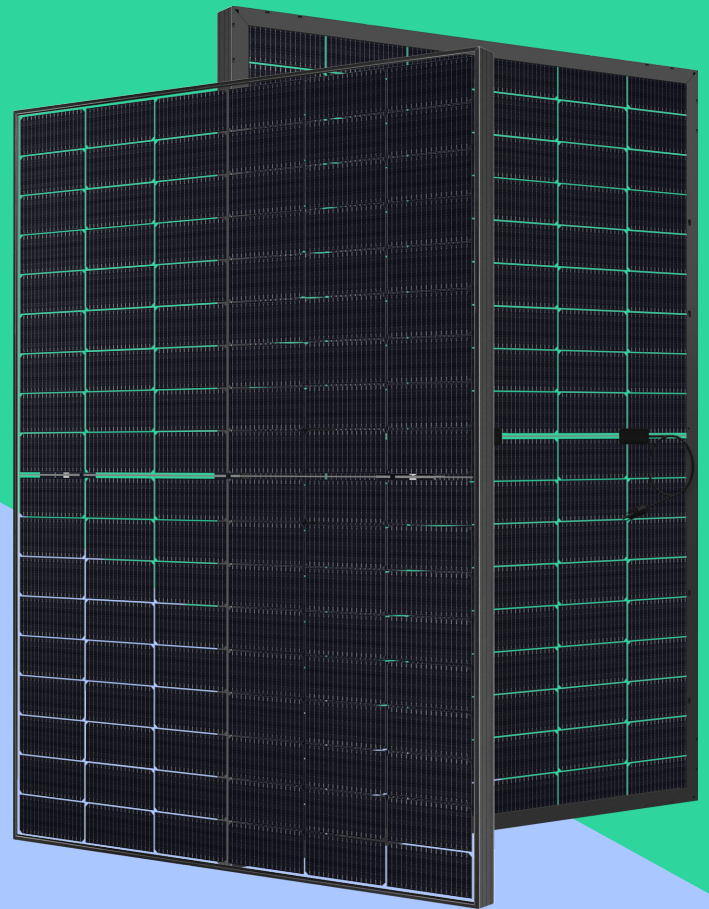


Keep it glassy



Denim Black Transparent Glass Glass Bifacial 440Wp



denim

SOLAR, IT'S THAT SIMPLE

N-TYPE BLACK TRANSPARENT GLAS GLAS BIFACIAL MODULES

The Denim Black Transparent Glass Glass Module stands out for its high efficiency, elegant design, and robust construction with 2.0 mm glass on both the front and back. This makes it our most reliable module, with a long service life and a product and power warranty of no less than 35 years. This makes it not only a safe choice, but also the ultimate combination of price and quality.

WARRANTY

35-year product warranty.

35-year linear power output warranty.

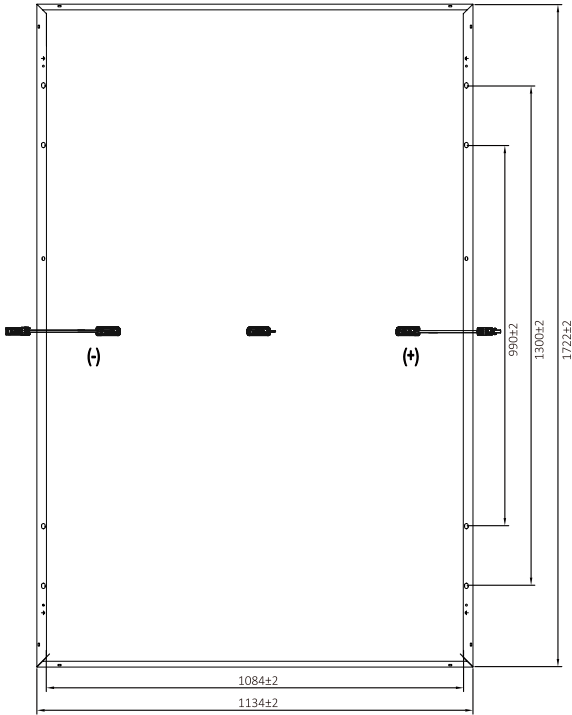
Always assured of a good yield thanks to the long product warranty of up to 35 years. After 35 years, we guarantee an output of 85.4%.

PRODUCT CERTIFICATIONS



Denim Black Transparant Glas Glas Bifacial 440Wp

ENGINEERING DRAWING



ELECTRICAL CHARACTERISTICS

		STC ¹	NOCT ²
Maximum Power (Pmax)	(W)	440	335
MPP Voltage (Vmpp)	(V)	32.20	30.90
MPP Current (Impp)	(A)	13.68	10.84
Open Circuit Voltage (Voc)	(V)	38.60	37.10
Short Circuit Current (Isc)	(A)	14.39	11.60
Module Efficiency	(%)	22.53	
Power Tolerance	(W)	0 / +5	
Operating Temperature	(°C)	-40 to +85	
Maximum System Voltage	(V)	DC 1500	
Maximum Series Fuse Rating	(A)	25	
Product reference		Denim U N3 440 BTG 108H	

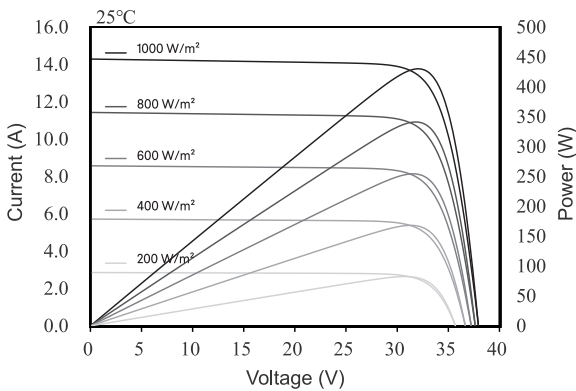
¹ STC (Standard Test Conditions): Irradiance 1000W/m², Cell temperature 25°C, Air mass 1.5

² NOCT (Nominal operating cell temperature): Irradiance 800W/m², Ambient temperature 20°C, Wind speed 1m/s

ELECTRICAL CHARACTERISTICS WITH DIFFERENT REAR SIDE POWER GAIN

Rear Gain		5%	10%	15%	20%
Maximum Power (Pmax)	(W)	462	484	506	530
MPP Voltage (Vmpp)	(V)	32.20	32.20	32.20	32.30
MPP Current (Impp)	(A)	14.36	15.05	15.73	16.42
Open Circuit Voltage (Voc)	(V)	38.60	38.60	38.60	38.70
Short Circuit Current (Isc)	(A)	15.11	15.83	16.55	17.27

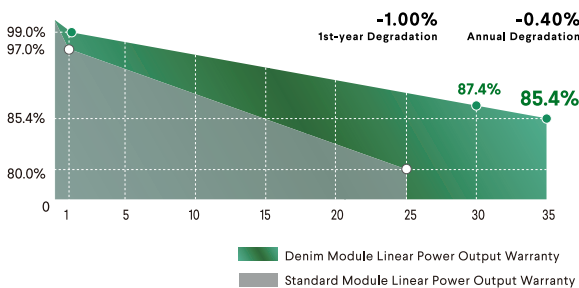
DENIM IV CURVES



MECHANICAL PROPERTIES

Cell type	N-TOPCon M10RT Monocrystalline
Number of cells	108 cells (6 x 18)
Dimensions	1722 x 1134 x 30 mm / 1.95 m ²
Weight	24.0 kg
Frame	Anodized aluminium
Front Glass	2.0mm AR coating tempered glass
Back Glass	2.0mm Heat strengthened glass
Junction Box	IP68, 3 diodes
Cable cross section/length	4 mm ² (IEC) - 1100 mm
Connector type	Stäubli - MC4-EVO2
Fire rating	Class A according to UL790
Snow load	Up to 6000 Pa
Wind load	Up to 4000 Pa
Hail test	Hailstones: Ø 45 mm, speed: 30.7 m/s

SUPERIOR WARRANTY



35 Years
Product Warranty

35 Years
Linear Power Output Warranty

TEMPERATURE RATINGS & BIFAILITY

NOCT	43±2 °C
Temperature Coefficient of Pmax	-0.30 %/°C
Temperature Coefficient of Voc	-0.25 %/°C
Temperature Coefficient of Isc	0.046 %/°C
Bifaility	80±5%

NUMBER OF PACKAGES

Quantity per pallet	36 pcs
Quantity per container	26 pallets / 936 pcs
Pallet dimensions	1759*1132*1266 mm
Pallet weight	899 kg
Max stackable pallets	2 pallets