

N-TYPE BIFACIAL GLASS-GLASS SERIES

435/440/450 watt
WST-NGX-D3



Better low-light performance

Enhanced electricity production in low-irradiance environments



PID & LID Resistant

To reduce power degradation and ensure long-term sustained performance



Excellent durability in extreme environments

WINAICO modules are tested above and beyond international standards.

30 years product warranty

30 years linear performance

-1% 1st-year degradation

-0.40% annual power degradation

>87.4% of linear performance after 30 years



PERFORMANCE
WARRANTY



COMPLIMENTARY
INSURANCE



Power to Perform

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MECHANICAL DATA

Cell	Monocrystalline, N-type, bifacial
Quantity and wiring of cells	108 (6 strings x 18 cells)
Bifaciality	Up to 80 %
Dimensions	1,722 x 1,134 x 35 mm
Weight	21.4 kg (47.18 lbs)
Front-side glass	1.6 mm, semi-tempered solar glass with anti-reflective coating
Back-side glass	1.6 mm, semi-tempered solar glass, partially white printed
Frame	Black anodised aluminium
Junction box	IP68, 3 bypass diodes
Connector type	Stäubli PV-KST4-EVO2A/xy (M), PV-KBT4-EVO2A/xy (F) IP68
Cable length (IEC/UL)	Cable 2 x 1,200 mm / 4 mm ²
Fire safety class ¹ (IEC61730)	C
Protection class (IEC 61140)	II

OPERATING CONDITION

Operating temperature	-40 °C to +85 °C / -40 °F to +185 °F
Maximum system voltage IEC/UL	1,500 V / 1,500 V
Maximum series fuse	30 A
Maximum design load (push/pull)	3,600 Pa / 1,600 Pa
Maximum test load (push/pull)	5,400 Pa / 2,400 Pa
Nominal module operating temperature NMOT	42 ± 2 °C
Temperature coefficient of P _{MAX}	-0.30%/°C
Temperature coefficient of V _{OC}	-0.25%/°C
Temperature coefficient of I _{SC}	0.045%/°C

ELECTRICAL DATA

Module type		WST-435NGX-D3			WST-440NGX-D3			WST-450NGX-D3			Wp
		STC ²	NMOT ³	BNPI ⁴	STC ²	NMOT ³	BNPI ⁴	STC ²	NMOT ³	BNPI ⁴	
Nominal performance	P _{MAX}	435	325	475	440	334	480	450	342	490	
Voltage at maximum performance	V _{MP}	33.01	30.83	33.01	33.26	31.32	33.26	33.76	31.79	33.76	V
Current at maximum performance	I _{MP}	13.18	10.58	14.47	13.23	10.6	14.49	13.33	10.75	14.75	A
Open circuit voltage	V _{OC}	38.72	36.82	38.72	38.88	37.23	38.88	39.36	37.69	39.36	V
Short circuit current	I _{SC}	13.89	11.12	15.29	13.98	11.27	15.30	14.08	11.35	15.57	A
BSI: 1000 W/m ² front / 300 W/m ² back irradiance	I _{SC}		17.22			17.34			17.40		A
Module efficiency			22.3			22.5			23.0		%
Bifacial gain ⁴ *Depending on irradiation conditions	10 % Pmpp		478 (+43)			484 (+44)			495 (+45)		W
	15 % Pmpp		500 (+65)			506 (+66)			518 (+68)		W
	20 % Pmpp		522 (+87)			528 (+88)			540 (+90)		W
Power tolerance			0~+5			0~+5			0~+5		W

PRODUCT AND QUALITY CERTIFICATES

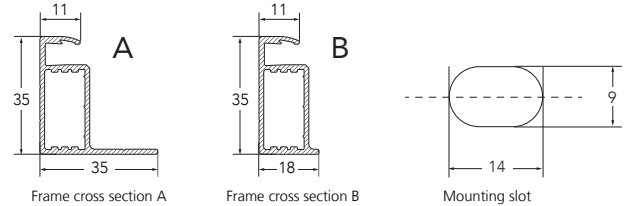
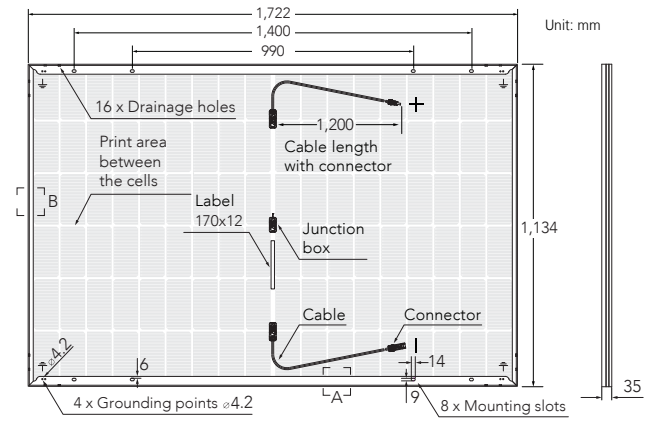
IEC 61215:2021, IEC 61730:2023

ISO 9001 Quality Management System
ISO 50001 Occupational Health and Safety Management System
ISO 14001 Environment Management System



- The fire safety test methods according to IEC 61730-2, Fire Tests of Roof Coverings.
- Electrical data applies under standard test conditions (STC): solar radiation 1,000 W/m² with light spectrum AM 1.5, with cell temperature 25 °C. Measurement tolerance of P_{max}: ±3%; V_{oc}: ±3%; I_{sc}: ±5% at STC.
- Electrical data applies under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m², spectrum AM 1.5, ambient temperature 20 °C, wind speed 1 m/s.

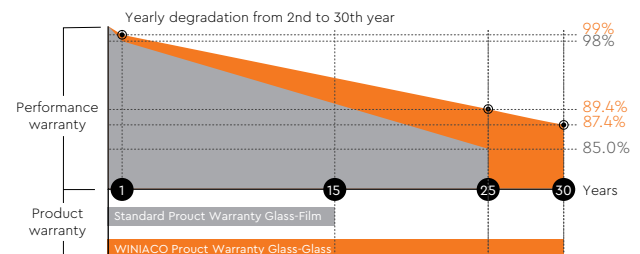
DIMENSIONS



PACKAGING



WINAICO PERFORMANCE GUARANTEE



30 year product guarantee.
Linear performance guarantee for 30 years.
No more than 0.4% degradation per year from 2nd year to 30th year.

- BNPI: The front side 1,000 W/m² solar irradiance and rear 135 W/m².
- The additional power gain from the rear side depends on the irradiance conditions at the installation site and the mounting situation.



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