COMMERCIAL

N-TYPE HJT BIFACIAL GLASS-GLASS SERIES

510/515 watt
WST-NHX54-A4

High Bifaciality
With a remarkable bifaciality factor of 90%, it's increasing energy yield from the backside.

High efficiency
HJT has achieved impressive conversion efficiencies. It optimizes light trapping and minimizes energy losses, leading to improved overall efficiency.

Outstanding Temperature Coefficient
Its resistance to temperature fluctuations, making it a dependable choice for extreme heat conditions.

PID & LID Resistant
To reduce power degradation and ensure long-term sustained performance.

25 years product warranty
30 years linear performance
-1 % 1st-year degradation
-0.30 % annual power degradation
>90.3 % of linear performance after 30 years

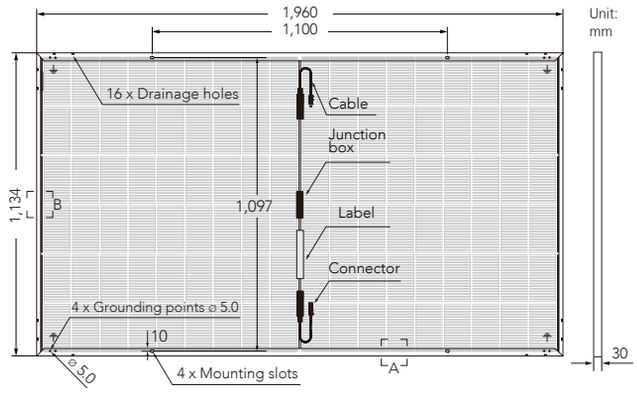
MECHANICAL DATA

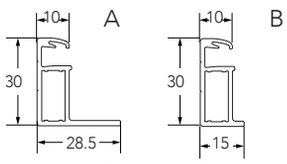
Cell	Monocrystalline, N-type, bifacial
Quantity and wiring of cells	108 (6 strings x 18 cells)
Bifaciality	90 ± 5 %
Dimensions	1,960 x 1,134 x 30 mm
Weight	27.4 kg (60.4 lbs)
Front-side glass	2.0 mm, semi-tempered solar glass with anti-reflective coating
Back-side glass	2.0 mm, semi-tempered solar glass, partially white printed
Frame	Black anodised aluminium
Junction box	IP68, 3 bypass diodes
Connector type	PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy
Cable length (IEC/UL)	Cable x 2 1,250 mm / 4 mm²
Fire safety class[1] (IEC61730)	Class C
Protection class (IEC 61140)	II

OPERATING CONDITION

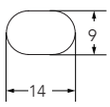
Operating temperature	–40 °C to +85 °C / –40 °F to +185 °F
Maximum system voltage IEC/UL	1,500 V / 1,500 V
Maximum series fuse	30 A
Maximum design load (push/pull)	3,600 Pa / 1,600 Pa
Maximum test load (push/pull)	5,400 Pa / 2,400 Pa
Nominal module operating temperature NOCT	44 ± 2°C
Temperature coefficient of P_{MAX}	-0.24%/°C
Temperature coefficient of V_{OC}	-0.22%/°C
Temperature coefficient of I_{SC}	0.04%/°C

DIMENSIONS



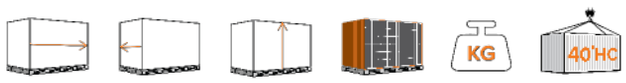


Frame cross section



Mounting slot

PACKAGING



1,976 mm	1,120 mm	1,255 mm	36 modules	1,041kg	24 pallets

ELECTRICAL DATA

Module type		WST-510NHX54-A4			WST-515NHX54-A4			
Electrical data		STC[2]	NOCT[3]	BNPI[4]	STC[2]	NOCT[3]	BNPI[4]	
Nominal performance	P_{MAX}	510	389	571	515	393	577	Wp
Voltage at maximum performance	V_{MP}	34.38	32.83	34.50	34.49	32.93	34.61	V
Current at maximum performance	I_{MP}	14.84	11.86	16.58	14.94	11.94	16.69	A
Open circuit voltage	V_{OC}	40.98	39.11	41.12	41.09	39.22	41.23	V
Short circuit current	I_{SC}	15.70	12.55	17.61	15.81	12.64	17.73	A
BSI: 1000 W/m² front / 300 W/m² rear irradiance	I_{SC}	19.94			20.08			A
Module efficiency		22.9			23.2			%
Bifacial gain[5] *Depending on irradiation conditions	10 % Pmpp	561(+51)			567 (+52)			W
	15 % Pmpp	587(+77)			592 (+77)			W
	20 % Pmpp	612 (+102)			618 (+103)			W
Power tolerance		0~+5			0~+5			W

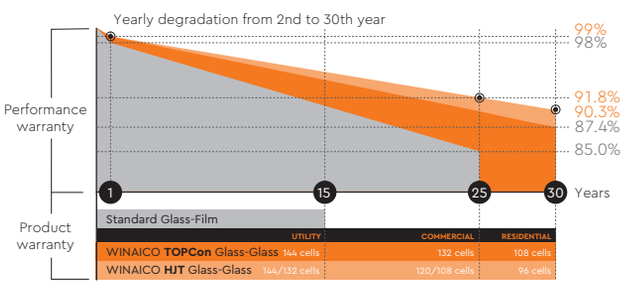
PRODUCT AND QUALITY CERTIFICATES

IEC 61215:2021, IEC 61730:2023

ISO 9001 Quality Management System
ISO 45001 Occupational Health and Safety Management System
ISO 14001 Environment Management System
SA 8000 Social Accountability

1. The fire safety test methods according to IEC 61730-2, Fire Tests of Roof Coverings.
2. 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 Pmax:±3%; Voc:±3%; Isc:±5% at STC.
3. Electrical data applies under Nominal Operation Cell Temperature (NOCT), irradiance of 800 W/m², spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.
4. BNPI: The front side 1,000 W/m² solar irradiance and rear 135 W/m² .
5. The additional power gain from the rear side depends on the irradiance conditions at the installation site and the mounting situation.

WINAICO PERFORMANCE GUARANTEE



25 year product guarantee.
Linear performance guarantee for 30 years.
No more than 0.3% degradation per year from 2nd year to 30th year.

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Power to Perform