RESIDENTIAL

N-TYPE BIFACIAL GLASS-GLASS SERIES

Up to 465 watt
WST-NCX48-AW

Better low-light performance
Enhanced electricity production in low-irradiance environments

Excellent durability in extreme environments
WINAICO modules are tested above and beyond international standards

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

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

WINAICO®

Power to Perform

www.winaico.com.au

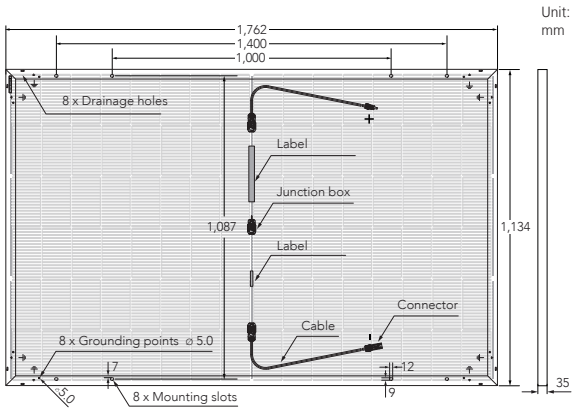
MECHANICAL DATA

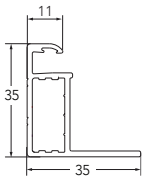
Cell	Monocrystalline, N-type, bifacial
Quantity and wiring of cells	96 (6 strings x 16 cells)
Bifaciality	Up to 80%
Dimensions	1,762 x 1,134 x 35 mm
Weight	25 kg (55.1 lbs)
Front-side glass	2.0 mm, semi-tempered solar glass with anti-reflective coating
Back-side glass	2.0 mm, semi-tempered solar glass, partially white printed
Frame	Black anodised aluminium
Junction box	IP68, 3 bypass diodes
Connector type	Stäubli Electrical Connectors AG PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy
Cable length (IEC/UL)	Cable x 2 1,200 mm / 4 mm²
Fire safety class[1] (IEC61730)	Class C
Protection class (IEC 61140)	II

OPERATING CONDITION

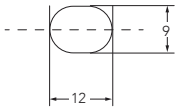
Operating temperature	–40 °C to +85 °C / –40 °F to +185 °F
Module [T98] $_{MAX}$	70°C
Maximum system voltage IEC	1,500 VDC
Maximum series fuse	30 A
Maximum design load (push/pull)	+3,600 Pa / -1,600 Pa
Maximum test load (push/pull)	+5,400 Pa / -2,400 Pa
Nominal module operating temperature NMOT	42 ± 2°C
Temperature coefficient of P_{MAX}	-0.28%/°C
Temperature coefficient of V_{OC}	-0.23%/°C
Temperature coefficient of I_{SC}	0.043%/°C

DIMENSIONS





Frame cross section



Mounting slot

PACKAGING

1,800 mm | 1,140 mm | 1,267 mm | 31 modules | 822 kg | 26 pallets

ELECTRICAL DATA

Module type

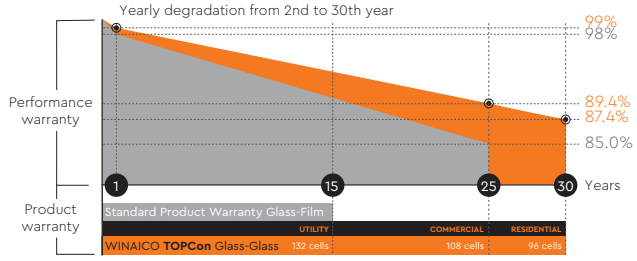
Electrical data		WST-460NCX48-AW			WST-465NCX48-AW			
		STC[2]	NMOT[3]	BNPI[4]	STC[2]	NMOT[3]	BNPI[4]	
Nominal performance	P_{MAX}	460	351	505	465	354	510	Wp
Voltage at maximum performance	V_{MP}	30.41	28.74	30.41	30.60	28.92	30.60	V
Current at maximum performance	I_{MP}	15.13	12.19	16.61	15.20	12.25	16.67	A
Open circuit voltage	V_{OC}	35.68	34.15	35.68	35.79	34.25	35.79	V
Short circuit current	I_{SC}	15.93	13.07	17.94	15.98	13.12	18.01	A
BSI: 1000 W/m² front / 300 W/m² rear irradiance	I_{SC}		20.04			20.13		A
Maximum power bifaciality coefficient	φP_{MAX}		80±10			80±10		%
Open circuit current bifaciality coefficient	φV_{oc}		95±5			95±5		%
Short circuit current bifaciality coefficient	φI_{SC}		80±10			80±10		%
Module efficiency			23.0			23.3		%
Pmax at 200W/m²			88.7			89.3		W
Bifacial gain[5] *Depending on irradiation conditions	10 % Pmpp		506 (+46)			512 (+47)		W
	15 % Pmpp		529 (+69)			535 (+70)		W
	20 % Pmpp		552 (+92)			558 (+93)		W
Power binning tolerance			0~+5			0~+5		W

PRODUCT AND QUALITY CERTIFICATES

IEC 61215:2021, IEC 61730:2023
IEC 61701 Salt Mist Resistance
IEC 62716 Ammonia Resistance
IEC 61215-2 Hail Storm Resistance (45mm at ~30.7m/s)
IEC TS 62804-1 Anti-PID

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

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.

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:±3% at STC.
3. 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.
4. BNPI: The front side 1,000 W/m² solar irradiance and rear 135 W/m². Measurement tolerance of Pmax:±3%; Voc:±3%; Isc:±3% at BNPI.
5. The additional power gain from the rear side depends on the irradiance conditions at the installation site and the mounting situation.
6. BSI: 1000 W/m² front / 300 W/m² rear irradiance. Measurement tolerance of Isc:±3% at BSI.

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