

WINAICO WBC Series Ultra Black

475/480/485 watt
WST-BDX54-B2



No frontal gridline

No front-side gridlines maximize light intake and absorption, enabling higher module power output



Anti-shading

BC cells with bypass function limit shading loss to a single cell, improving overall energy yield



Aesthetic advantage

With all electrodes on the back, BC cells have no front busbars, offering a sleek look ideal for rooftop designs



Anti-microcrack advantage

BC modules feature one-line welding structure to reduce edge stress, lowering microcrack risk and improving reliability

30 years product warranty

30 years linear performance

-1 % 1st-year degradation

-0.35 % annual power degradation

>88.85 % of linear performance after 30 years



COMPLIMENTARY
INSURANCE



Power to Perform

www.winaico.com.au

MECHANICAL DATA

Cell	Monocrystalline, N-type, bifacial
Quantity and wiring of cells	108 (6 strings x 18 cells)
Bifaciality	70 ± 5%
Dimensions	1,800 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 black printed
Frame	Black anodised aluminium
Junction box	IP68, 3 bypass diodes
Connector type	MC4-EVO2A
Cable length (IEC/UL)	Cable x 2 1,200 mm / 4 mm ²
Fire safety class ¹ (IEC61730)	Class A
Protection class (IEC 61140)	II

OPERATING CONDITION

Operating temperature	-40°C to +85°C / -40°F to +185°F
Maximum system voltage IEC	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 operation cell temperature NOCT	45 ± 2°C
Temperature coefficient of P _{MAX}	-0.26%/°C
Temperature coefficient of V _{OC}	-0.22%/°C
Temperature coefficient of I _{SC}	0.05%/°C

*The installation of additional blocking diodes or fuses is necessary with the parallel connection of module strings.

ELECTRICAL DATA

Module type		WST-475BDX54-B2			WST-480BDX54-B2			WST-485BDX54-B2			
Electrical data		STC ²	NOCT ³	BNPI ⁴	STC ²	NOCT ³	BNPI ⁴	STC ²	NOCT ³	BNPI ⁴	
Nominal performance	P _{MAX}	475	361	515	480	364	520	485	368	525	Wp
Voltage at maximum performance	V _{MP}	33.74	32.01	33.75	33.84	32.11	33.85	33.94	32.20	33.95	V
Current at maximum performance	I _{MP}	14.09	11.27	15.27	14.19	11.35	15.37	14.30	11.44	15.47	A
Open circuit voltage	V _{OC}	40.63	38.55	40.63	40.76	38.67	40.73	40.89	38.80	40.83	V
Short circuit current	I _{SC}	14.89	12.03	16.06	14.96	12.09	16.16	15.03	12.15	16.26	A
BSI: 1000 W/m ² front / 300 W/m ² rear irradiance	I _{SC}	17.72			17.80			17.88			A
Module efficiency		23.3			23.5			23.8			%
Bifacial gain ⁵	10 % P _{mp}	523 (+48)			528 (+48)			534 (+49)			W
*Depending on irradiation conditions	15 % P _{mp}	546 (+71)			552 (+72)			558 (+73)			W
	20 % P _{mp}	570 (+95)			576 (+96)			582 (+97)			W
Power tolerance		0~+5			0~+5			0~+5			W

PRODUCT AND QUALITY CERTIFICATES

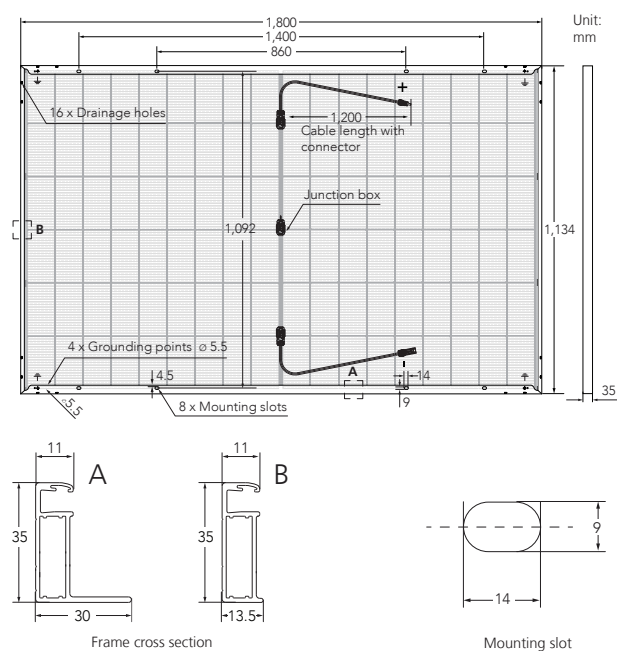
IEC 61215:2021, IEC 61730:2023

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

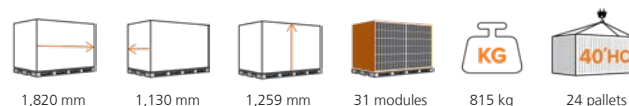


- The fire safety test methods according to IEC 61730-2, Fire Tests of Roof Coverings.
- Electrical data applies under standard test conditions (STC): solar radiation 1,000 W/m² with light spectrum AM 1.5, with cell temperature 25°C. Measurement tolerance of P_{max}±3%; V_{oc}±3%; I_{sc}±3% at STC.
-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

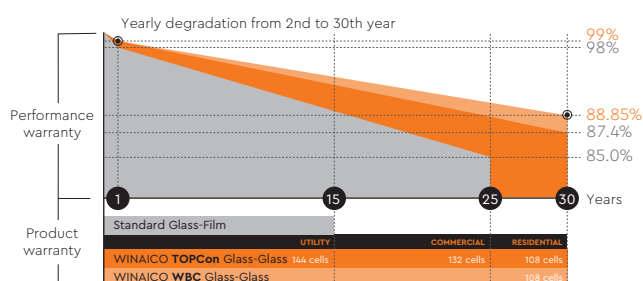
DIMENSIONS



PACKAGING



WINAICO PERFORMANCE GUARANTEE



30 year product guarantee.
Linear performance guarantee for 30 years.
No more than 0.35% degradation per year from 2nd year to 30th year.



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