RESIDENTIAL

WINAICO
WBC Series Ultra Black

Up to 500 watt
WST-BDX54-B2

BC

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

SOLAR PRO SUMER AWARD GERMANY
MODULES
PURCHASE RECOMMENDATION
EUPD Research
2022/23

EUPD RESEARCH
TOP BRAND PV
MODULES
GERMANY
2022

WINAICO®
Power to Perform
www.winaico.com.au

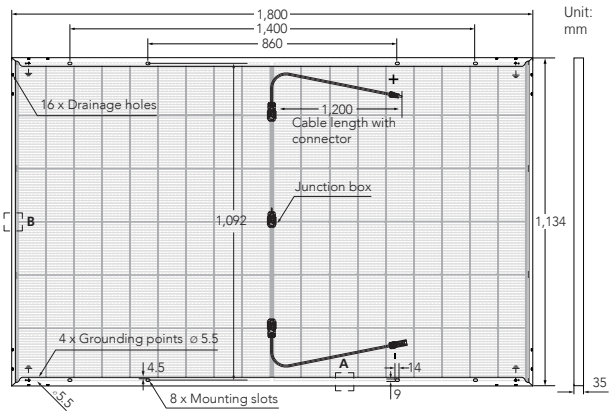
MECHANICAL DATA

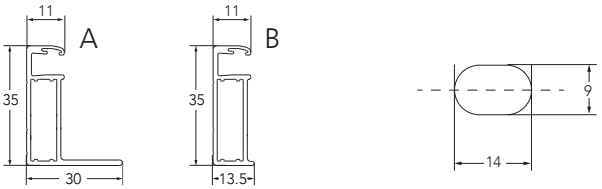
Cell	Monocrystalline, N-type, bifacial
Quantity and wiring of cells	108 (6 strings x 18 cells)
Bifaciality	70 ± 5%
Dimensions	1,800 x 1,134 x 35 mm
Weight	25 kg (55.1 lbs)
Front-side glass	2.0 mm, semi-tempered solar glass with anti-reflective coating
Back-side glass	2.0 mm, semi-tempered solar glass, partially black printed
Frame	Black anodised aluminium
Junction box	IP68, 3 bypass diodes
Connector type	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 A
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 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

DIMENSIONS





Frame cross section

Mounting slot

PACKAGING



1,820 mm | 1,130 mm | 1,259 mm | 31 modules | 815 kg | 24 pallets

ELECTRICAL DATA

Module type

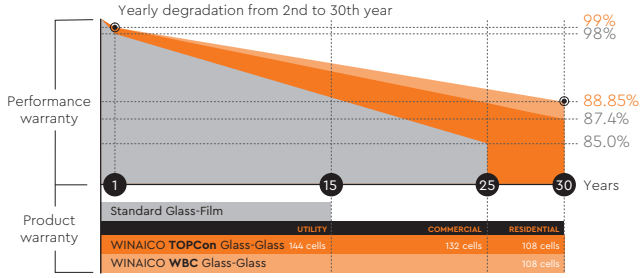
Electrical data		WST-475BDX54-B2			WST-480BDX54-B2			WST-485BDX54-B2			WST-490BDX54-B2			WST-495BDX54-B2			WST-500BDX54-B2			
		STC[2]	NOCT[3]	BNPI[4]	STC[2]	NOCT[3]	BNPI[4]	STC[2]	NOCT[3]	BNPI[4]	STC[2]	NOCT[3]	BNPI[4]	STC[2]	NOCT[3]	BNPI[4]	STC[2]	NOCT[3]	BNPI[4]	
Nominal performance	P_{MAX}	475	361	515	480	364	520	485	368	525	490	372	530	495	375	535	500	379	540	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	34.04	32.30	34.05	34.14	32.40	34.15	34.24	32.49	34.25	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	14.40	11.51	15.57	14.50	11.59	15.67	14.60	11.67	15.77	A
Open circuit voltage	V_{OC}	40.63	38.55	40.63	40.76	38.67	40.73	40.89	38.80	40.83	41.02	38.92	40.93	41.15	39.04	41.03	41.28	39.16	41.13	V
Short circuit current	I_{SC}	14.89	12.03	16.06	14.96	12.09	16.16	15.03	12.15	16.26	15.10	12.21	16.36	15.17	12.26	16.46	15.24	12.32	16.56	A
BSI: 1000 W/m² front / 300 W/m² rear irradiance	I_{SC}	17.72			17.80			17.88			17.96			18.04			18.12			A
Maximum power bifaciality coefficient	φP_{MAX}	70±5			70±5			70±5			70±5			70±5			70±5			%
Open circuit current bifaciality coefficient	φV_{OC}	100±5			100±5			100±5			100±5			100±5			100±5			%
Short circuit current bifaciality coefficient	φI_{SC}	70±5			70±5			70±5			70±5			70±5			70±5			%
Module efficiency		23.3			23.5			23.8			24.0			24.3			24.5			%
Pmax at 200W/m²		92.3			93.2			94.2			95.1			96.1			97.1			W
Bifacial gain[5] *Depending on irradiation conditions	10 % Pmpp	523 (+48)			528 (+48)			534 (+49)			539 (+49)			545 (+50)			550 (+50)			W
	15 % Pmpp	546 (+71)			552 (+72)			558 (+73)			564 (+74)			569 (+74)			575 (+75)			W
	20 % Pmpp	570 (+95)			576 (+96)			582 (+97)			588 (+98)			594 (+99)			600 (+100)			W
Power binning tolerance		0~+5			0~+5			0~+5			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

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.

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 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. 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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Specifications included in this datasheet are subject to change without notice. WST-500BDX54-B2_AUS_CEC.0725