

RESIDENTIAL

# 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 liner performance

-1 % 1st-year Degradation

-0.40 % annual power degradation

>87.4 % of linear performance after 30 years



*Power to Perform*

[www.winaico.com.au](http://www.winaico.com.au)



PERFORMANCE  
WARRANTY



COMPLIMENTARY  
INSURANCE

## 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 <sup>2</sup>                         |
| Fire safety class <sup>1</sup> (IEC 61730) | 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 <sub>MAX</sub> | -0.30%/°C                        |
| Temperature coefficient of V <sub>OC</sub>  | -0.25%/°C                        |
| Temperature coefficient of I <sub>SC</sub>  | 0.045%/°C                        |

## ELECTRICAL DATA

| Module type                                                             |                      | WST-430NGX-D3    |                   |                   | WST-435NGX-D3    |                   |                   | WST-440NGX-D3    |                   |                   | WST-445NGX-D3    |                   |                   | WST-450NGX-D3    |                   |                   |    |
|-------------------------------------------------------------------------|----------------------|------------------|-------------------|-------------------|------------------|-------------------|-------------------|------------------|-------------------|-------------------|------------------|-------------------|-------------------|------------------|-------------------|-------------------|----|
|                                                                         |                      | STC <sup>2</sup> | NMOT <sup>3</sup> | BNPI <sup>4</sup> | STC <sup>2</sup> | NMOT <sup>3</sup> | BNPI <sup>4</sup> | STC <sup>2</sup> | NMOT <sup>3</sup> | BNPI <sup>4</sup> | STC <sup>2</sup> | NMOT <sup>3</sup> | BNPI <sup>4</sup> | STC <sup>2</sup> | NMOT <sup>3</sup> | BNPI <sup>4</sup> |    |
| Nominal performance                                                     | P <sub>MAX</sub>     | 430              | 322               | 470               | 435              | 325               | 475               | 440              | 334               | 480               | 445              | 338               | 485               | 450              | 342               | 490               | Wp |
| Voltage at maximum performance                                          | V <sub>MP</sub>      | 32.68            | 30.51             | 32.68             | 33.01            | 30.83             | 33.01             | 33.26            | 31.32             | 33.26             | 33.51            | 31.56             | 33.51             | 33.76            | 31.79             | 33.76             | V  |
| Current at maximum performance                                          | I <sub>MP</sub>      | 13.16            | 10.56             | 14.45             | 13.18            | 10.58             | 14.47             | 13.23            | 10.6              | 14.49             | 13.28            | 10.71             | 14.70             | 13.33            | 10.75             | 14.75             | A  |
| Open circuit voltage                                                    | V <sub>OC</sub>      | 38.60            | 36.52             | 38.6              | 38.72            | 36.82             | 38.72             | 38.88            | 37.23             | 38.88             | 39.12            | 37.46             | 39.12             | 39.36            | 37.69             | 39.36             | V  |
| Short circuit current                                                   | I <sub>SC</sub>      | 13.80            | 11.11             | 15.28             | 13.89            | 11.12             | 15.29             | 13.98            | 11.27             | 15.30             | 14.03            | 11.31             | 15.52             | 14.08            | 11.35             | 15.57             | A  |
| BSI: 1000 W/m <sup>2</sup> front / 300 W/m <sup>2</sup> back irradiance | I <sub>SC</sub>      | 17.11            |                   |                   | 17.22            |                   |                   | 17.34            |                   |                   | 17.33            |                   |                   | 17.40            |                   |                   | A  |
| Module efficiency                                                       |                      | 22.0             |                   |                   | 22.3             |                   |                   | 22.5             |                   |                   | 22.8             |                   |                   | 23.0             |                   |                   | %  |
| Bifacial gain <sup>5</sup><br>*Depending on irradiation conditions      | 10 % P <sub>mp</sub> | 473 (+43)        |                   |                   | 478 (+43)        |                   |                   | 484 (+44)        |                   |                   | 490 (+45)        |                   |                   | 495 (+45)        |                   |                   | W  |
|                                                                         | 15 % P <sub>mp</sub> | 494 (+64)        |                   |                   | 500 (+65)        |                   |                   | 506 (+66)        |                   |                   | 512 (+67)        |                   |                   | 518 (+68)        |                   |                   | W  |
|                                                                         | 20 % P <sub>mp</sub> | 516 (+86)        |                   |                   | 522 (+87)        |                   |                   | 528 (+88)        |                   |                   | 534 (+89)        |                   |                   | 540 (+90)        |                   |                   | W  |
| Power tolerance                                                         |                      | 0~+5             |                   |                   | 0~+5             |                   |                   | 0~+5             |                   |                   | 0~+5             |                   |                   | 0~+5             |                   |                   | W  |

## PRODUCT AND QUALITY CERTIFICATES

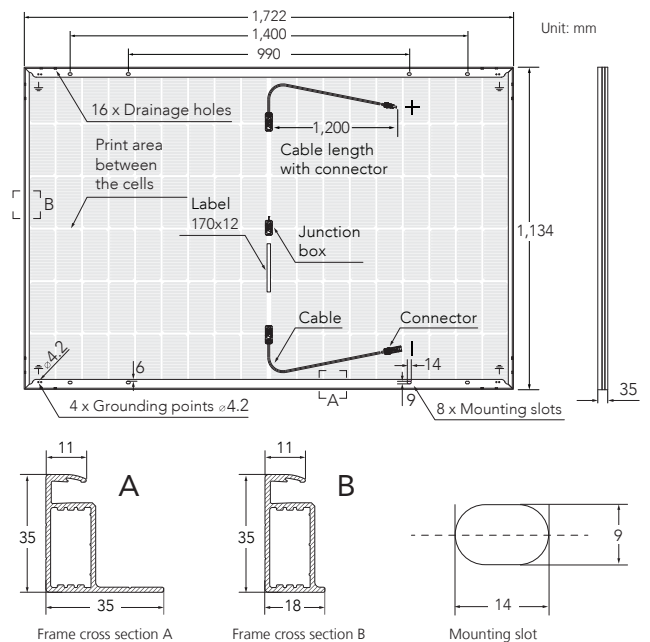
IEC 61215:2021, IEC 61730:2023

ISO 9001 Quality Management System  
ISO 50001 Occupational Health and Safety Management System  
ISO 14001 Environment Management System  
SA 8000 Social Accountability

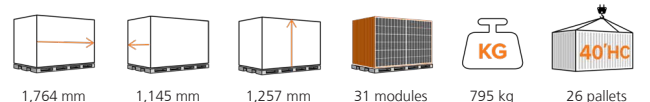


- The fire safety test methods according to IEC 61730-2, Fire Tests of Roof Coverings.
- Electrical data applies under standard test conditions (STC): solar radiation 1,000 W/m<sup>2</sup> with light spectrum AM 1.5, with cell temperature 25°C. Measurement tolerance of P<sub>max</sub>: ±3%; V<sub>oc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

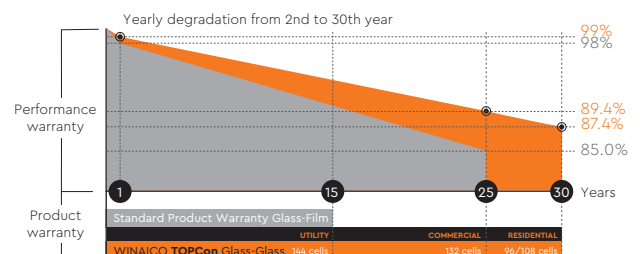
## DIMENSIONS



## 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/m<sup>2</sup> solar irradiance and rear 135 W/m<sup>2</sup>.
- 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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