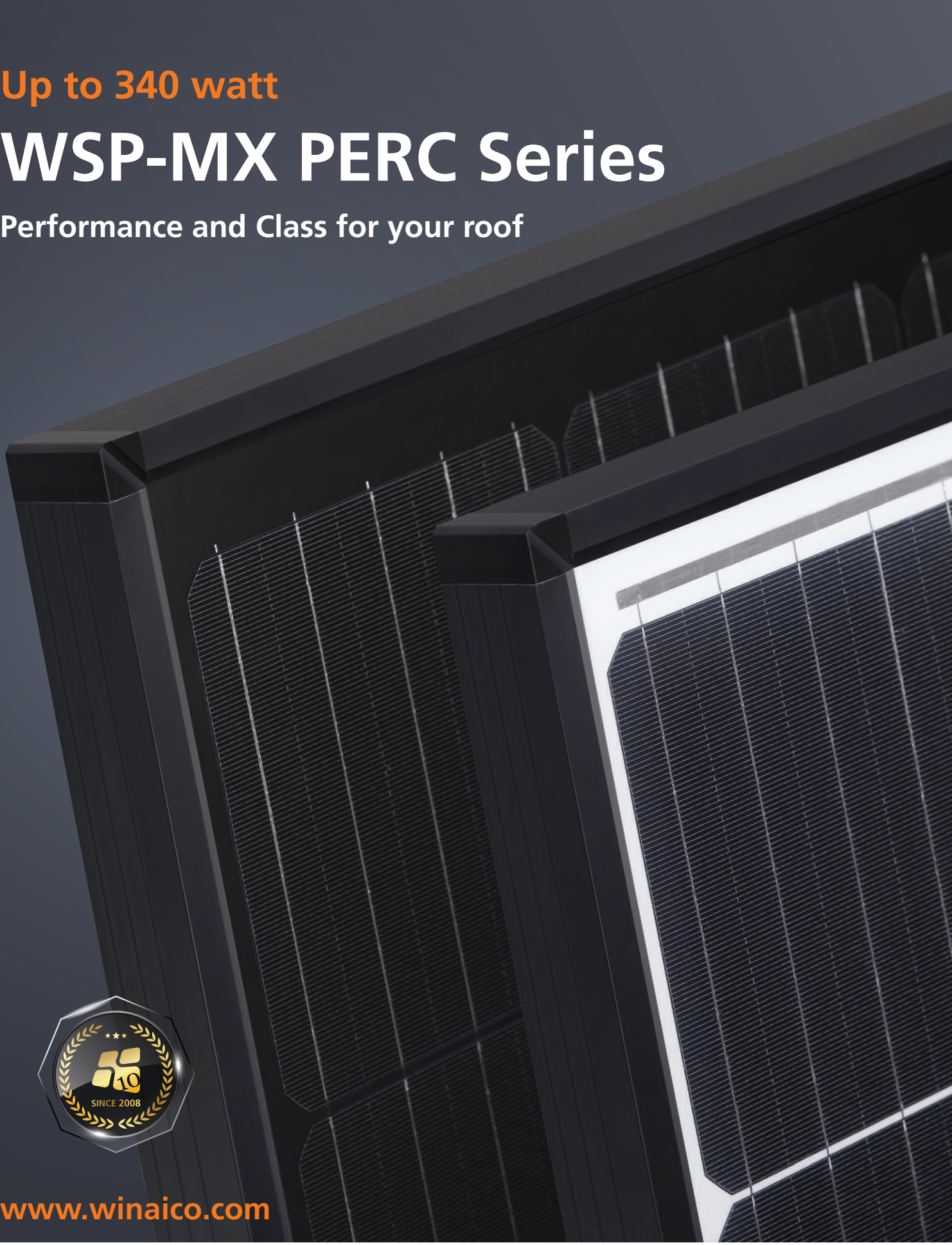
Up to 340 watt

# WSP-MX PERC Series

## Performance and Class for your roof




www.winaico.com

WINAICO®

Power to Perform

EUPD RESEARCH TOP BRAND PV MODULES GERMANY 2018

EUPD RESEARCH TOP BRAND PV MODULES AUSTRALIA 2018

# WSP-MX PERC **MONO FULL BLACK**

**325-330 W / 60 Cells / Up to 18.8% EFFICIENCY**

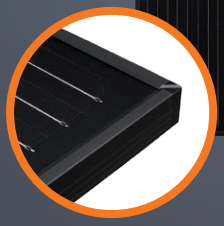
# WSP-MX PERC **MONO**

**330/340 W / 60 Cells / 19.4% EFFICIENCY**

**15 year product guarantee**
Linear performance guarantee for 25 years.

**PERC technology**
For long term performance in all conditions.

**Patent Water drainage design**
To stop water and dust build up.



## Greater Value

## Premium quality from solar module specialists

A solar system is a long term investment, which should last for over 20 years. You want to be able to trust that the solar panels you install will perform for you for their whole life. With WINAICO modules, you can rely on products from a manufacturer that specialises in premium quality solar.

## Greater Experience

## Shared with thousands of satisfied system owners worldwide

Established in 2008 WINAICO is one of the world oldest solar manufacturers. Since inception we have focused on building close relationship with our customers through our international branches. WINAICO stands for quality, reliability and customer engagement, values we apply everyday in our business. Working closely with our customers builds trust and understanding, a feeling shared by thousands of satisfied customers worldwide.

## Greater Investment Protection

## Through superior quality – way above standards!

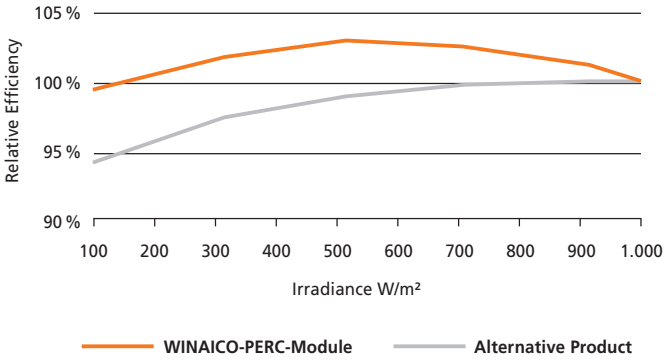
Regulations and standards are there to be exceeded. WINAICO modules go through all the relevant tests and significantly exceed the market requirements in all areas. The complete set of reliability tests imitate all variations of hazards experienced by the modules during their useful lifetime. As a result of WINAICO's evaluation, the modules can withstand heat, snow, wind, and other adversities much better and much longer.

## Greater Quality
## Excellent Independent Ratings

WINAICO is one of the few manufacturers to be awarded the EUPD Research "Top Brand PV" seal. The criteria for this award centres around customer satisfaction from the performance of their solar systems in the real world. This award shows that WINAICO's customers are happy with their decision for years to come.

## Greater Performance
## Leading Module Technology

WINAICO combines cutting edge components to build exceptional performance into every panel. With technologies such as PERC solar cells are Light Conducting Ribbons WINAICO maximises efficiency and minimises power loss to give you the best outcomes. We don't cut corners on quality, every piece of a WINACIO panel is designed for performance.




## Greater Stability
## Protection Against the Extremes

With extreme weather becoming more frequent solar modules need to have the ability to withstand whatever nature throws at them, whether it be extreme heat, wind, hail or snow. WINAICO's unique frame and patent L-key design protects the panels and keeps them working hard for you!

## Greater Safety
## Tested to the Limits

WINAICO's modules are tested above and beyond international standards. Aiming to use lab conditions to simulate 25 years of service life, we push our modules to withstand conditions far above what they will likely experience on your roof. Be confident that your WINAICO panels will last the tests of time.

## Greater Quality Control
## 100 % Inspection

We examine all cells and finished laminates for internal damage with a special electroluminescence testing device. In doing so, we can virtually eliminate all micro-fissures, hot spots, solder defects and other faulty structures that cannot be seen with the naked eye. A type of "X-ray image" proves the 100% cell quality - for each individual module.

## Beyond Industry Standard Testing

| | | |
|---|---|---|
| **Thermal Cycling (TC)**<br>Cycles between –40°C and +85°C | IEC Standard | 200 Cycles |
| | WINAICO | 3 times IEC standard |
| **Damp Heat (DH)**<br>Constant +85°C and 85% relative humidity | IEC Standard | 1,000 Hours |
| | WINAICO | 3 times IEC standard |
| **Mechanical Load (ML)** | IEC Standard | 5,400 Pa |
| | WINAICO | 6,500 Pa |
| **Hail Impact** | IEC Standard | 25 mm ice ball at 83 km/h |
| | WINAICO | 35 mm ice ball at 100km/h |

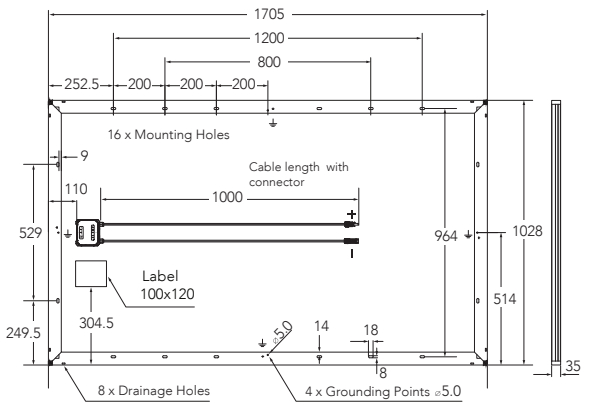
*At WINAICO we believe that our customers deserve complete peace of mind which is why we test beyond the Industry testing standards.*

## Enhanced Voluntary Quality Testing

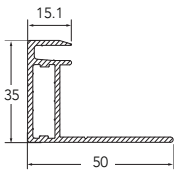
| | | |
|---|---|---|
| **Potential Induced Degradation (PID)** | 300 hours | 1,000 V, 85°C, 85% relative humidity |
| **Light and elevated Temperature Induced Degradation (LeTID)** | Non-sensitive to LeTID | 0.55A, 75°C, 162 hours, 2 cycles |
| **Dynamic Mechanical Load (DML)** | 2000 Pa | 10 push to pull cycles/minute, for 1000 cycles |
| **Salt Mist** (IEC 61701:2011) | Severity 6 | 40°C Humid storage, 90% relative humidity , 56 days |
| **Ammonia** (IEC 62716:2013) | 480 hours | 20 cycles between 8 hrs of heating up and 16 hrs of cooling test sections |

*We voluntarily submit our modules to testing laboratories to push them to the absolute limits guaranteeing your safety and return on investment for the lifetime of the product.*

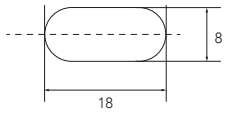
## Dimensions




Unit: mm




Frame Cross Section




Mounting Hole

## Mechanical Data WINAICO WSP-MX PERC FULL BLACK

| | |
|---|---|
| Cell | Monocrystalline Silicon Cells, 161.7 mm x 161.7 mm |
| Quantity and wiring of cells | 60 in series |
| Dimensions | 1,705 mm x 1,028 mm x 35 mm (67.13 x 40.47 x 1.38 in) |
| Weight | 20.6 kg (45.8 lbs) |
| Glass thickness | 3.2 mm (0.13 in) |
| Frame | Black anodised aluminium |
| Junction box | IP 67 |
| Connector type | MC4 (PV-KBT4/PV-KST4) IP68; QC4.10 IP67 |
| Module fire performance | Type 1 |
| Fire safety class | C |

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| Operating conditions | WINAICO WSP-MX PERC FULL BLACK | WINAICO WSP-MX PERC |
|---|---|---|
| Operating temperature | –40 °C to +85 °C / –40 °F to +185 °F | –40 °C to +85 °C / –40 °F to +185 °F |
| Maximum system voltage IEC/UL | 1,000 V/1,000 V | 1,000 V/1,000 V |
| Maximum series fuse | 20 A | 20 A |
| Maximum design load (+)/(–) | 3,600 Pa/2,400 Pa | 3,600 Pa/2,400 Pa |
| Maximum test load (+)/(–) | 5,400 Pa/3,600 Pa | 5,400 Pa/3,600 Pa |
| Nominal Module Operating Temperature NMOT | 43.85 ± 3 °C | 43.85 ± 3 °C |
| Temperature coefficient of $P_{MAX}$ | –0.38 %/°C | –0.38 %/°C |
| Temperature coefficient of $V_{OC}$ | –0.29 %/°C | –0.29 %/°C |
| Temperature coefficient of $I_{SC}$ | 0.04 %/°C | 0.04 %/°C |
| Certifications | IEC 61215-1:2016, IEC 61215-2:2016, IEC 61730-1:2016, IEC 61730-2:2016, UL1703 | |

| Electrical data (STC) | | WSP-325MX | WSP-330MX | WSP-330MX | WSP-340MX | |
|---|---|---|---|---|---|---|
| Nominal performance | $P_{MAX}$ | 325 | 330 | 330 | 340 | Wp |
| Voltage at maximum performance | $V_{MP}$ | 32.78 | 32.80 | 32.80 | 32.85 | V |
| Current at maximum performance | $I_{MP}$ | 9.93 | 10.07 | 10.07 | 10.35 | A |
| Open circuit voltage | $V_{OC}$ | 39.59 | 39.93 | 39.93 | 40.61 | V |
| Short circuit current | $I_{SC}$ | 10.56 | 10.62 | 10.62 | 10.74 | A |
| Module efficiency | | 18.54 | 18.83 | 18.83 | 19.40 | % |
| Power tolerance | | –0/+5 | | –0/+5 | | |

The 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 $P_{MAX}$ at STC: ±3%. Accuracy of other electrical data: ±10%.

| Electrical data (NMOT) | | WSP-325MX | WSP-330MX | WSP-330MX | WSP-340MX | |
|---|---|---|---|---|---|---|
| Nominal performance | $P_{MAX}$ | 237 | 240 | 240 | 248 | Wp |
| Voltage at maximum performance | $V_{MP}$ | 30.12 | 30.14 | 30.14 | 30.18 | V |
| Current at maximum performance | $I_{MP}$ | 7.87 | 7.98 | 7.98 | 8.20 | A |
| Open circuit voltage | $V_{OC}$ | 37.30 | 37.62 | 37.62 | 38.26 | V |
| Short circuit current | $I_{SC}$ | 8.35 | 8.40 | 8.40 | 8.49 | A |

The 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.

Specifications included in this datasheet are subject to change without notice. d315WSP-MX-US.0320/agentur-bernberg.de

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