

**18.3% EFFICIENCY**

**UP TO 320 W**

**60 CELLS**



**EUPD RESEARCH**

**TOP BRAND PV**

**MODULES**

**GERMANY**

**2018**

**EUPD RESEARCH**

**TOP BRAND PV**

**MODULES**

**AUSTRALIA**

**2018**



**Exceeds the IEC standard 3 times over**

Because standards are there to be surpassed.



**Low series resistance**

Because we want best yields for you.



**PERC Technologies**

Because a 3% increase in yield is better than nothing.



**15 year product warranty**

25 year linear performance guarantee.



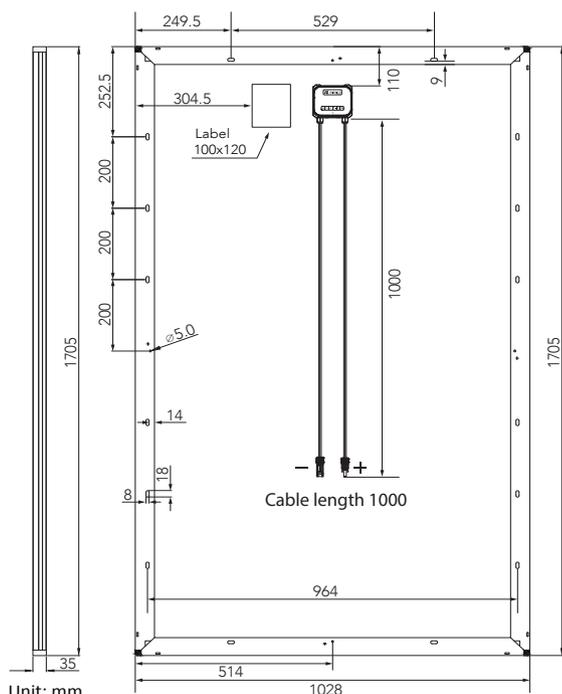
**10 years of WINAICO quality modules**

WINAICO has been providing the global market with quality solar panels for over 10 years.



**Water drainage design**

Avoid water accumulation and dust to cause the power degradation and hotspot problems.



### Mechanical data

Cell	Monocrystalline 161.7 x 161.7 mm
Quantity and wiring of cells	60 in series
Dimensions	1,705 x 1028 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 4
Fire safety class	C

### Operating conditions

Operating temperature	-40 °C to +85 °C / -40 °F to +185 °F
Maximum system voltage IEC/UL	1,000 V/1,000 V
Maximum series fuse	20 A
Maximum design load (+) / (-)	3,600 Pa / 2,400 Pa
Maximum test load (+) / (-)	5,400 Pa / 3,600 Pa
Nominal Module Operating Temperature NMOT	43.85 ± 3 °C
Temperature coefficient of P <sub>MAX</sub>	-0.44%/°C
Temperature coefficient of V <sub>OC</sub>	-0.34%/°C
Temperature coefficient of I <sub>SC</sub>	0.07%/°C

### Certifications

IEC 61215-1:2016, IEC 61215-2:2016, IEC 61730-1:2016, IEC 61730-2:2016

Electrical data (STC)		WSP-320MX	
Nominal performance	P <sub>MAX</sub>	320	Wp
Voltage at maximum performance	V <sub>MP</sub>	32.76	V
Current at maximum performance	I <sub>MP</sub>	9.77	A
Open circuit voltage	V <sub>OC</sub>	39.26	V
Short circuit current	I <sub>SC</sub>	10.48	A
Module efficiency		18.26	%
Power tolerance		-0/+5	W

The 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> at STC: ±3%. Accuracy of other electrical data: ±10%.

Electrical data (NMOT)		WSP-320MX	
Nominal performance	P <sub>MAX</sub>	233	Wp
Voltage at maximum performance	V <sub>MP</sub>	30.10	V
Current at maximum performance	I <sub>MP</sub>	7.74	A
Open circuit voltage	V <sub>OC</sub>	36.98	V
Short circuit current	I <sub>SC</sub>	8.29	A

The 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.



This frame design, produced entirely from aluminum, guarantees maximum stability and protection against material fatigue. The rounded corners provide greater torsional stiffness and waterproofing in this critical area, where the material is at its weakest. In contrast to other corner connections that use mitered cuts or threaded connections, WINAICO's corner pieces guarantee the best possible transfer of tension across each section of the frame. It also comes with water drainage away function, rainwater can quickly eliminate from the surface of the module to avoid water accumulation and dust causing the power degradation and hotspot problems.



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