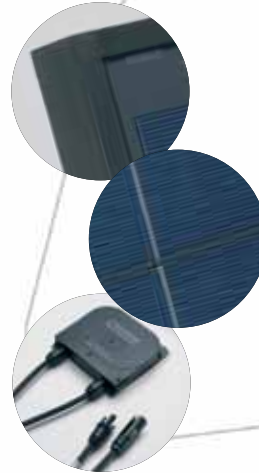


WINAICO module range WSP, poly (Blackline)



About WINAICO

As a result of our passion for performance, we offer not only high performance photovoltaic modules, but also comprehensive support to the successful execution of photovoltaic projects.

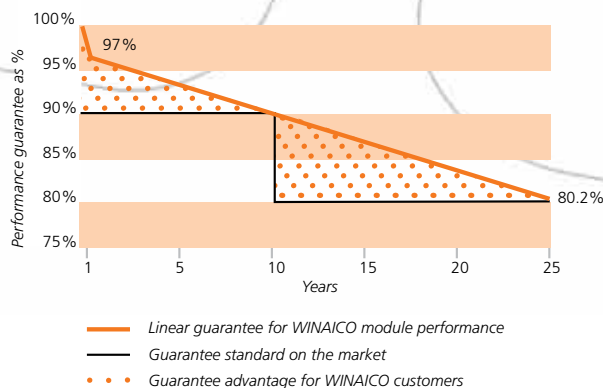
As a Taiwanese module manufacturer with German and other subsidiary companies around the world, WINAICO is positioned amongst top brand manufacturers with a high-quality product from an automated production line. The parent company, Win Win Precision Technology Co., Ltd. has its origins in the semiconductor sector, which is subject to the same quality management demands as those applied in the solar industry. With leading-edge system technology and process expertise originating from the semiconductor industry, WINAICO is setting qualitative benchmarks on the PV market.

Thousands of installed systems are proving this every day.

Advantages of the WINAICO high performance modules

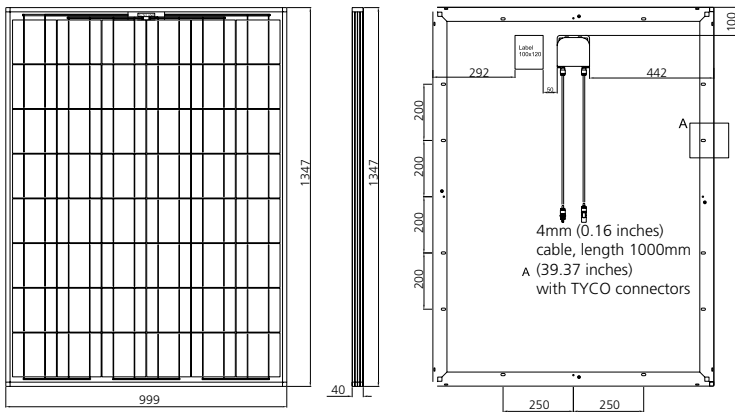
- + Exclusive use of top quality brand components
- + 10-year product guarantee
- + Performance tolerance of -1.5/+3 %
- + High cell efficiency ratings, reaching over 19 %
- + Increased surface loading of 540 kg/m²
- + Full insurance protection against all material damage, losses due to operating interruptions and minimum yields included in the module purchase; if required up to 10 years

25-year linear performance guarantee



When you buy a WINAICO module, in the first year we guarantee a performance of at least 97% of rated performance.

For the following 24 years, WINAICO guarantees a maximum drop in performance of 0.7% of nominal performance per year. Through this promise, WINAICO guarantees the quality and performance of its own products and provides you with investment protection.



WSP series Front view
(Blackline)

Rear view

Mechanical data

Cell	Polycrystalline 156 x 156 silicon cells
Quantity and wiring of cells	6 x 8 in series
Dimensions	1,347 x 999 x 40 mm (53.03 x 39.33 x 1.57 inches)
Weight	18.0 kg
Glass thickness	3.2 mm (0.13 inches)
Connection type	Tyco connection socket and connector (IP 65)

Limit values

Operating temperature	-40 bis +90°C
Storage temperature	-40 bis +90°C
Maximum system voltage	1,000 VDC
Maximum load	5,400 N/m ²
Maximum reverse current	15 A

Electrical data (STC)	WSP-180P6	WSP-185P6	WSP-190P6	WSP-195P6	
Module type	poly	poly	poly	poly	
Nominal performance	P_{max} 180	185	190	195	Wp
No-load voltage	V_{OC} 29.76	29.85	30.14	30.38	V
Short circuit current	I_{SC} 8.00	8.22	8.28	8.33	A
Voltage at max. performance	V_{PM} 24.50	24.74	25.22	25.51	V
Current at max. performance	I_{PM} 7.35	7.51	7.54	7.65	A
Module efficiency	13.38	13.80	14.12	14.51	%
Temperature coefficient performance	P_M -0.45	-0.45	-0.45	-0.45	%/°C
Temperature coefficient short circuit current	I_{SC} 0.06	0.06	0.06	0.06	%/°C
Temperature coefficient no-load voltage	V_{OC} -0.34	-0.34	-0.34	-0.34	%/°C

Reduction in the module efficiency rating from 1,000 W/m² to 200 W/m²: < 4%. The performance tolerance of this module is -1.5/+3%. The electrical data applies under standard test conditions (STC): Solar radiation 1,000 W/m² with light spectrum AM 1,5 with a cell temperature of 25 °C. The measurement tolerance applied to all electrical values is -5/+5 % (with the exception of P_{max} (STC) and NOCT). Subject to specification changes.

Electrical data (NOCT)	WSP-180P6	WSP-185P6	WSP-190P6	WSP-195P6	
Nominal performance	P_{max} 131.46	135.59	138.71	142.53	Wp
No-load voltage	V_{OC} 27.08	27.19	27.43	27.65	V
Short circuit current	I_{SC} 6.56	6.74	6.79	6.83	A
Voltage at max. performance	V_{PM} 22.05	22.27	22.70	22.96	%
Current at max. performance	I_{PM} 5.95	6.08	6.10	6.20	A
Module efficiency	9.77	10.08	10.31	10.59	%

The electrical data applies under standard operating conditions of the cells: 800 W/m²; 20 °C; AM 1,5; wind speed 1m/s. NOCT: 44.7°C (normal operating cell temperature). Subject to specification changes.



WINAICO is a trademark of Win Win Precision Technology Co., Ltd.

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