

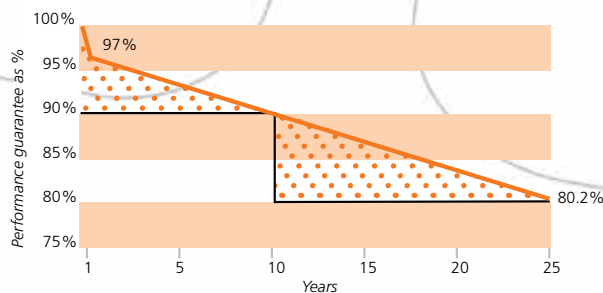
WINAICO module range WSP, poly



Advantages of the WINAICO high performance modules

- + Exclusive use of top quality brand components
- + 10-year product guarantee
- + Positive tolerances of 0/+5 Wp
- + 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



- Linear guarantee for WINAICO module performance
- Guarantee standard on the market
- Guarantee advantage for WINAICO customers

About WINAICO

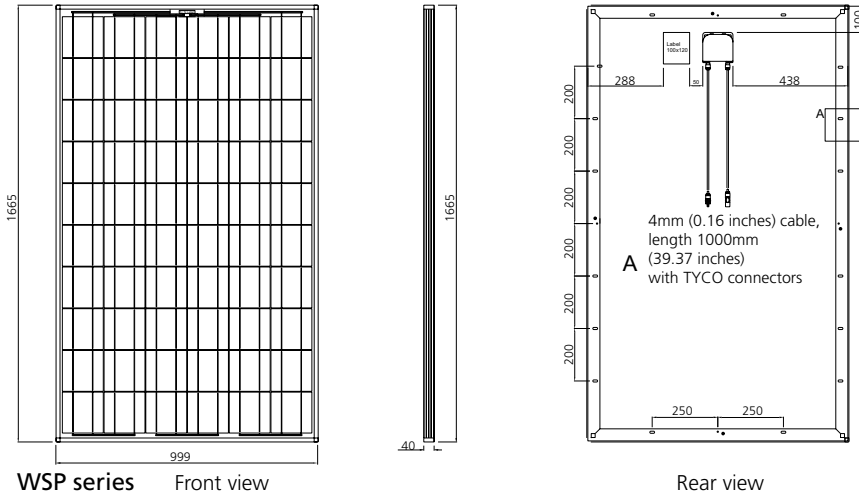
As a result of our passion for performance, we offer not only high performance photovoltaic modules, but also comprehensive support to the successful execution of photovoltaic projects.

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.

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

Rear view

Mechanical data

Cell Polycrystalline 156 x 156 silicon cells
 Quantity and wiring of cells 60 in series
 Dimensions 1,665 x 999 x 40 mm (65.55 x 39.33 x 1.57 inches)
 Weight 22.7 kg
 Glass thickness 3.2 mm (0.13 inches)
 Connection type Tyco connection socket and connector (IP 65)

Limit values

Operating temperature -40 to +90°C
 Storage temperature -40 to +90°C
 Maximum system voltage 1,000 VDC
 Maximum load 5,400 N/m²
 Maximum reverse current 15 A

Electrical data (STC)	WSP-230P6	WSP-235P6	WSP-240P6	WSP-245P6	WSP-250P6	WSP-255P6	
Module type	poly	poly	poly	poly	poly	poly	
Nominal performance P_{max}	230	235	240	245	250	255	Wp
No-load voltage V_{OC}	36.86	36.92	37.12	37.32	37.52	37.72	V
Short circuit current I_{SC}	8.30	8.35	8.41	8.47	8.53	8.60	A
Voltage at max. performance V_{PM}	29.81	29.95	30.21	30.47	30.73	30.99	V
Current at max. performance I_{PM}	7.72	7.85	7.96	8.06	8.15	8.24	A
Module efficiency	13.84	14.13	14.46	14.76	15.06	15.35	%
Temperature coefficient performance P_M	-0.45	-0.45	-0.45	-0.45	-0.45	-0.45	%/°C
Temperature coefficient short circuit current I_{SC}	0.06	0.06	0.06	0.06	0.06	0.06	%/°C
Temperature coefficient no-load voltage V_{OC}	-0.34	-0.34	-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 0/+5 Wp. 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-230P6	WSP-235P6	WSP-240P6	WSP-245P6	WSP-250P6	WSP-255P6	
Nominal performance P_{max}	167.69	171.47	175.38	178.57	183.22	187.32	Wp
No-load voltage V_{OC}	33.54	33.60	33.78	33.96	34.14	34.27	V
Short circuit current I_{SC}	6.81	6.85	6.90	6.97	7.05	7.11	A
Voltage at max. performance V_{PM}	26.83	26.96	27.19	27.43	27.76	28.00	%
Current at max. performance I_{PM}	6.25	6.36	6.45	6.51	6.60	6.69	A
Module efficiency	10.08	10.31	10.54	10.74	11.02	11.26	%

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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