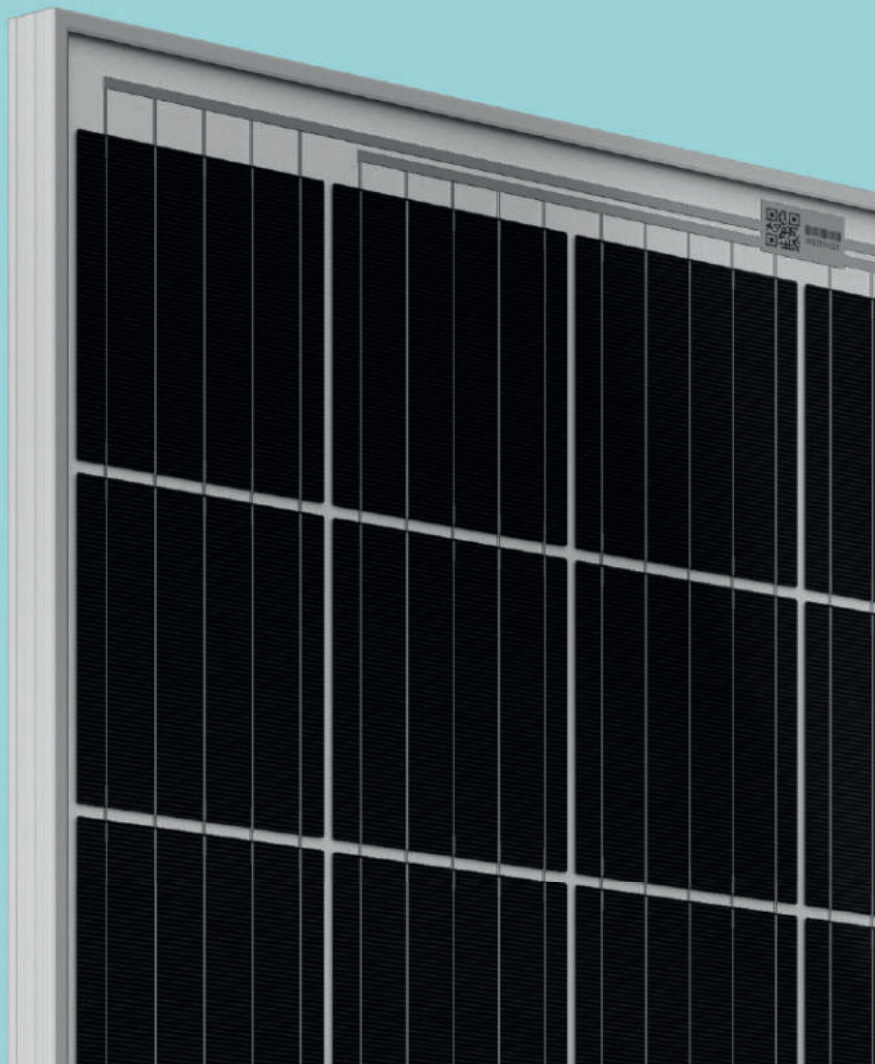


P23

320 - 330 W

 Made in
GERMANY



GERMAN ENGINEERING AND MANUFACTURING

Incorporated in 2001, aleo is recognized as one of the most trustworthy manufacturers of solar panels. We produce all our products in our certified production plant in Prenzlau, Germany.

POWERFUL AND RELIABLE. FOR YEARS.

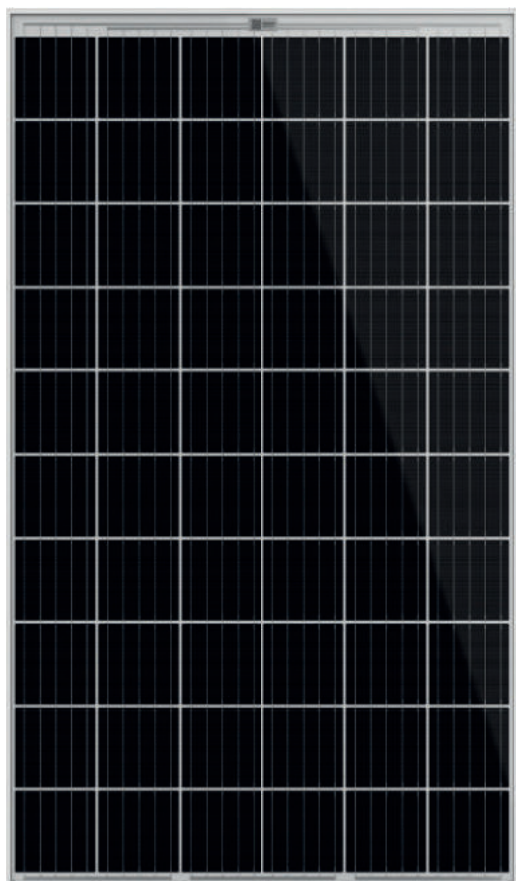
-  25 Years linear Performance Guarantee
-  12 Years Product Guarantee upgradeable to 25 Years as a permium option

OUR QUALITY IS CERTIFIED

This module is certified according to the latest international standards: **IEC 61215:2016** and **IEC 61730:2016**.

Additionally, this module obtained the following certificates:

- + Snail Trail Free
- + Salt mist corrosion resistance
- + Ammonia corrosion resistance
- + Sand and dust resistance
- + PID resistance
- + LeTID resistance
- + Hail resistance class 4
- + Dynamic mechanical load test



aleo solar module P23

ELECTRICAL DATA (STC)			P23L320	P23L325	P23L330	BASIC MODULE DATA			
Rated power	P _{MPP}	[W]	320	325	330	Length x width x height	[mm]	1716 x 1023 x 35	
Rated voltage	V _{MPP}	[V]	32.6	32.8	33.1	Weight	[kg]	19.3	
Rated current	I _{MPP}	[A]	9.81	9.90	9.97	Number of cells		60	
Open-circuit voltage	V _{OC}	[V]	40.3	40.5	40.6	Cell size	[mm]	158.75 x 158.75	
Short-circuit current	I _{SC}	[A]	10.32	10.40	10.49	Cell material		Monocrystalline Si, PERC	
Efficiency	η	[%]	18.2	18.5	18.8	Number of bus bars		5	
Electrical values measured under standard test conditions (STC): 1000 W/m²; 25°C; AM 1.5						Front sheet		3.2 mm Solar glass (TSG)	
ELECTRICAL DATA (NMOT)			P23L320	P23L325	P23L330	Back sheet			Polymer sheet, white
Power	P _{MPP}	[W]	236	240	244	Frame material			Al alloy, silver
Voltage	V _{MPP}	[V]	30.2	30.4	30.7	CERTIFICATIONS Fire Resistance Class C Protection Against Electric Shock II IEC 61215:2016, IEC 61730:2016 IEC 62716 – Ammonia Resistance IEC 61701 – Salt mist Resistance IEC 62804 – PID Resistance LeTID Resistance IEC/TS 62782:2016 - Dynamic mechanical load testing IEC 60068-2-68:1994 - Sand and Dust test Hail resistance class 4 (40 mm hailstones) Snail trail free (AgNP Test) LOADS Max. module pressure load (Testload) [Pa] 5400¹ Max. module pressure load (Designload)² [Pa] 3600¹ Max. module suction load (Testload) [Pa] 2400¹ Max. module suction load (Designload)² [Pa] 1600¹ Max. system voltage [V_{DC}] 1000 Reverse current load I_R [A] 20 Mechanical load acc. to IEC/EN 61215:2016 ¹ Please observe the mounting conditions in the installation manual ² Testload/ Safety factor 1.5 = Designload Measurement tolerance of P_{MPP} under STC -3/+3% Accuracy of other electrical values -10/+10% Efficiency relating to gross module area			
Current	I _{MPP}	[A]	7.82	7.90	7.95				
Open-circuit voltage	V _{OC}	[V]	37.7	37.9	38.0				
Short-circuit current	I _{SC}	[A]	8.31	8.38	8.45				
Efficiency	η	[%]	16.8	17.1	17.4				
Electrical values measured under nominal module operating temperature: 800 W/m²; 20°C; AM 1.5; wind 1 m/s; Module temperature NMOT : 44.5°C									
ELECTRICAL DATA (LOW IRRADIANCE)			P23L320	P23L325	P23L330				
Power	P _{MPP}	[W]	62	63	64				
Electrical values measured under: 200 W/m²; 25°C; AM 1.5									
TEMPERATURE COEFFICIENTS									
Temperature coefficient I _{SC}			α (I _{SC})	[%/K]	+0.05				
Temperature coefficient V _{OC}			β (V _{OC})	[%/K]	-0.29				
Temperature coefficient P _{MPP}			γ (P _{MPP})	[%/K]	-0.40				
BASIC DATA JUNCTION BOX									
Length x width x height			[mm]	148 x 123 x 27					
IP class			IP67						
Cable length			[mm]	1200 (+), 800 (-)					
Connectors			Genuine MC4						
Bypass diodes			3						
CLASSIFICATION			P23L320	P23L325	P23L330				
Classification range (positive classification)		[W]	0/+4.99	0/+4.99	0/+2.99				
DIMENSIONS [mm]									
GUARANTEES									

