

## solar module aleo s\_02

The aleo S\_02 solar module features high-quality components which have been assembled to the highest standards. 72 multi-crystalline silicium cells (5 inches | 125 mm x 125 mm) in each module provide the basis for outstanding levels of output, even with restricted sunshine. A very low output tolerance of just +/- 3%, thanks to a purely positive module classification, meets the highest of requirements.

The solar cells are embedded in EVA plastic (ethylene vinyl acetate), which is resistant to UV radiation. The frame is made of a torsionally rigid, corrosion-resistant aluminium alloy. The modules are therefore sturdy and suitable for flexible installation. The front of the module is made of thermally prestressed solar glass. This glass guarantees high permeability to light on the one hand while protecting the solar cells from external weather influences such as hail, snow and ice, on the other. A polyester hybrid sheet on the back provides excellent insulation and the guarantee of a long service life.

The junction box at the back is equipped with bypass diodes to reduce the risk of individual solar cells overheating (hot-spot effect). Several solar modules can be connected in series very simply with the use of two pre-fitted 1.1m solar cables with solar plugs.

All aleo solar modules are certified in accordance with the applicable European and international requirements set out in IEC 61215:2005 and are compliant with requirements for protection class II. The performance guarantee, in accordance with our guarantee conditions, is 10 years in respect of 90% and 25 years in respect of 80% of the specified minimum output.

Output classes 145 W - 165 W



## solar module aleo s\_02

aleo

## → solar module aleo s\_02 5-Inch poly

Specifications	output class 145 W	output class 150 W	output class 155 W	output class 160 W	output class 165 W
<b>Description</b>	aleo S_02 145	aleo S_02 150	aleo S_02 155	aleo S_02 160	aleo S_02 165
<b>Data at 1.000 W/m<sup>2</sup> (STC)<sup>1</sup></b>					
<b>Rated output</b>	$P_{MPP}$ 145 W	$P_{MPP}$ 150 W	$P_{MPP}$ 155 W	$P_{MPP}$ 160 W	$P_{MPP}$ 165 W
<b>Rated current</b>	$I_{MPP}$ 4.39 A	$I_{MPP}$ 4.50 A	$I_{MPP}$ 4.60 A	$I_{MPP}$ 4.70 A	$I_{MPP}$ 4.80 A
<b>Rated voltage</b>	$U_{MPP}$ 33.0 V	$U_{MPP}$ 33.4 V	$U_{MPP}$ 33.7 V	$U_{MPP}$ 34.1 V	$U_{MPP}$ 34.4 V
<b>Short-circuit current</b>	$I_{SC}$ 4.98 A	$I_{SC}$ 5.05 A	$I_{SC}$ 5.12 A	$I_{SC}$ 5.19 A	$I_{SC}$ 5.26 A
<b>Open-circuit voltage</b>	$U_{OC}$ 41.8 V	$U_{OC}$ 42.1 V	$U_{OC}$ 42.4 V	$U_{OC}$ 42.7 V	$U_{OC}$ 43.0 V
<b>Specific output per unit area</b>	$P_{A\ spec.}$ 8.83 m <sup>2</sup> /kWp	$P_{A\ spec.}$ 8.53 m <sup>2</sup> /kWp	$P_{A\ spec.}$ 8.26 m <sup>2</sup> /kWp	$P_{A\ spec.}$ 8.00 m <sup>2</sup> /kWp	$P_{A\ spec.}$ 7.76 m <sup>2</sup> /kWp
<b>Efficiency<sup>3</sup></b>	$\eta$ (eta) 11.3%	$\eta$ (eta) 11.7%	$\eta$ (eta) 12.1%	$\eta$ (eta) 12.5%	$\eta$ (eta) 12.9%
<b>Data at 800 W/m<sup>2</sup> (NOCT)<sup>2</sup></b>					
<b>Output</b>	$P_{MPP}$ 102 W	$P_{MPP}$ 105 W	$P_{MPP}$ 108 W	$P_{MPP}$ 111 W	$P_{MPP}$ 115 W
<b>Current</b>	$I_{MPP}$ 3.63 A	$I_{MPP}$ 3.70 A	$I_{MPP}$ 3.76 A	$I_{MPP}$ 3.83 A	$I_{MPP}$ 3.92 A
<b>Voltage</b>	$U_{MPP}$ 28.1 V	$U_{MPP}$ 28.4 V	$U_{MPP}$ 28.7 V	$U_{MPP}$ 29.0 V	$U_{MPP}$ 29.3 V
<b>Short-circuit current</b>	$I_{SC}$ 3.93 A	$I_{SC}$ 4.00 A	$I_{SC}$ 4.07 A	$I_{SC}$ 4.14 A	$I_{SC}$ 4.21 A
<b>Open-circuit voltage</b>	$U_{OC}$ 38.2 V	$U_{OC}$ 38.4 V	$U_{OC}$ 38.6 V	$U_{OC}$ 38.8 V	$U_{OC}$ 38.9 V
<b>Efficiency<sup>3</sup></b>	$\eta$ (eta) 10.4%	$\eta$ (eta) 10.6%	$\eta$ (eta) 10.8%	$\eta$ (eta) 11.0%	$\eta$ (eta) 11.2%
<b>Output tolerance under STC</b>	+/- 3%	+/- 3%	+/- 3%	+/- 3%	+/- 3%
<b>Max. system voltage</b>	1.000 V DC	1.000 V DC	1.000 V DC	1.000 V DC	1.000 V DC
<b>Permissible module loading<sup>4</sup></b>	5.400 Pa	5.400 Pa	5.400 Pa	5.400 Pa	5.400 Pa

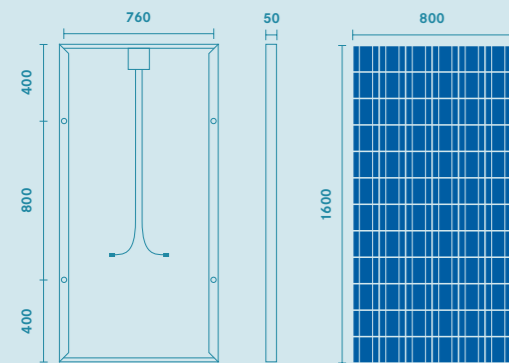
<sup>1</sup> Electrical values under standard test conditions (STC): 1000 W/m<sup>2</sup>; 25°C; AM 1.5

<sup>2</sup> Electrical values under nominal operating cell temperature: 800 W/m<sup>2</sup>, AM 1.5

<sup>3</sup> For the module surface as a whole (1.33155 m<sup>2</sup>)

<sup>4</sup> In accordance with IEC 61215, 10.16 „Extended load test“, installation in accordance with the manual

### Dimensions



### Additional information

<b>Temperature coefficients</b>	$\alpha(I_{SC})$	+ 0.08% / K
	$\beta(U_{OC})$	- 0.33% / K
<b>Certification</b>	IEC/EN 61215 and SK II, IEC/EN 61730 due shortly	
<b>Testing organization</b>	VDE	
<b>Module dimensions</b>	1600 x 800 x 50 mm	
<b>Weight</b>	16 kg	

<b>Reduction in efficiency</b>	< 7%
From 1,000 W/m <sup>2</sup> to 200 W/m <sup>2</sup>	
<b>Reverse current load</b>	$I_R$ 10 A
<b>NOCT</b>	46°C
<b>Datasheet tolerance</b>	Rated output +/- 3%, otherwise +/- 10%
<b>Power guarantee</b>	10 years: 90%, 25 years: 80%