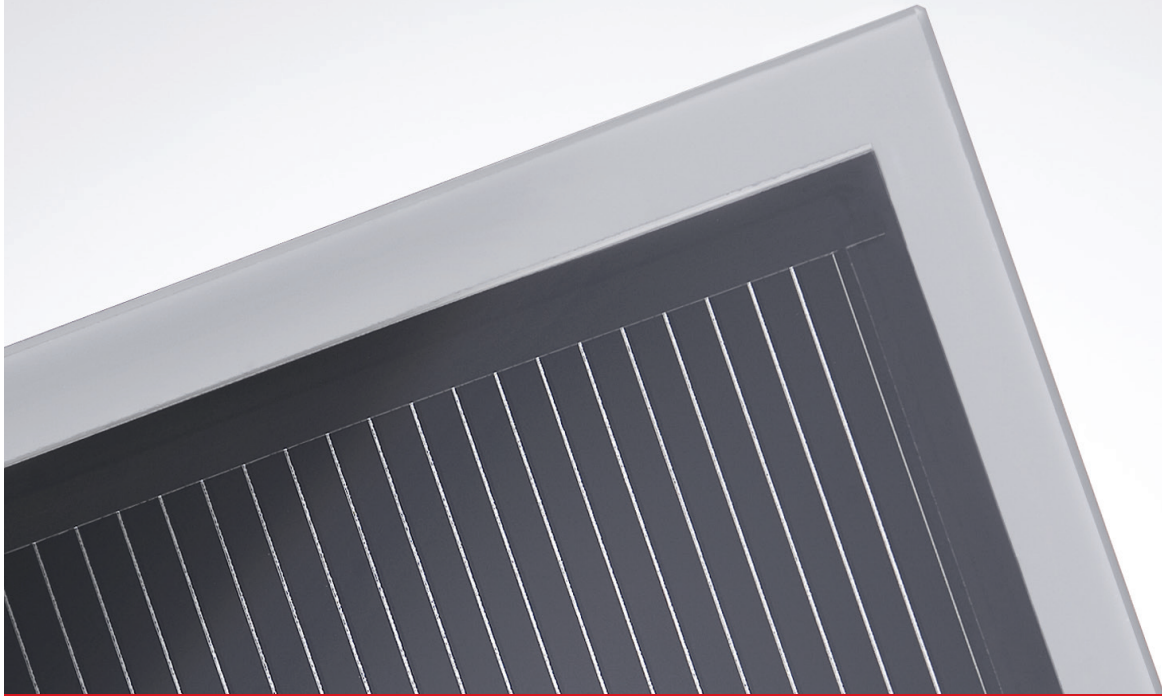


SOLIBRO SL2 CIGS THIN-FILM MODULE

Generation 1.4 - Efficiency and aesthetics have a new name



Solibro's SL2 thin-film modules offer efficiencies up to 13.2 % in serial production. The modules are especially suited for roof-parallel installations on flat rooftops. This allows minimal shadowing with maximal energy yield. Due to their frameless design, SL2 modules possess excellent self-cleaning properties and require minimal maintenance. All SL2 modules are "Made in Germany" and are tested according to very high standards in order to insure a long lifetime and stable module performance.



MAXIMIZE YOUR ENERGY YIELD

Additional power through positive lightsoaking: In contrast to ordinary solar cells, our CIGS modules increase in power under illumination. Combined with our strict positive sorting, you get up to 15 % more power for your money.

Our modules deliver top performance even at very high temperatures: With a temperature coefficient of -0.38 \% / K , the Solibro CIGS modules are a long way ahead of their crystalline competitors, producing high yields even under critical climatic conditions.

Excellent usage of sunlight: Our modules allow PV installations regardless of whether the roof faces to the south, east or west. SL2 modules generate high energy yields even when installed parallel to the roof.

ONE MORE ADVANTAGE FOR YOU

Aesthetic appearance: The uniformly black SL2 solar modules are ideal for architecturally demanding photovoltaic installations.

Controlled quality: Solibro's SL2 modules are certified according to IEC 61646, IEC 61730 and UL 1703. A multitude of additional quality checks ensure that each single module fulfills the same high standards guaranteeing your long-term energy yields.

MECHANICAL SPECIFICATION		TECHNICAL DRAWING
Length	1190 (+3/-1) mm	
Width	789.5 (+3/-1) mm	
Height	7.3 mm (+ Junction box, 15 mm)	
Weight	16.5 kg	
Front cover	4 mm tempered low iron glass (ESG)	
Back cover	3 mm float glass	
Frame	None	
Cell type	CIGS [Cu(In, Ga) Se ₂]	
Junction box	Protection class IP 65, with 1 bypass diode (3A) 66 x 54 x 15 mm ³	
Cable type	Solar cable 2.5 mm ² ; (+) 855 (+30/-0) mm; (-) 735 (+30/-0) mm	
Connector	MC4	

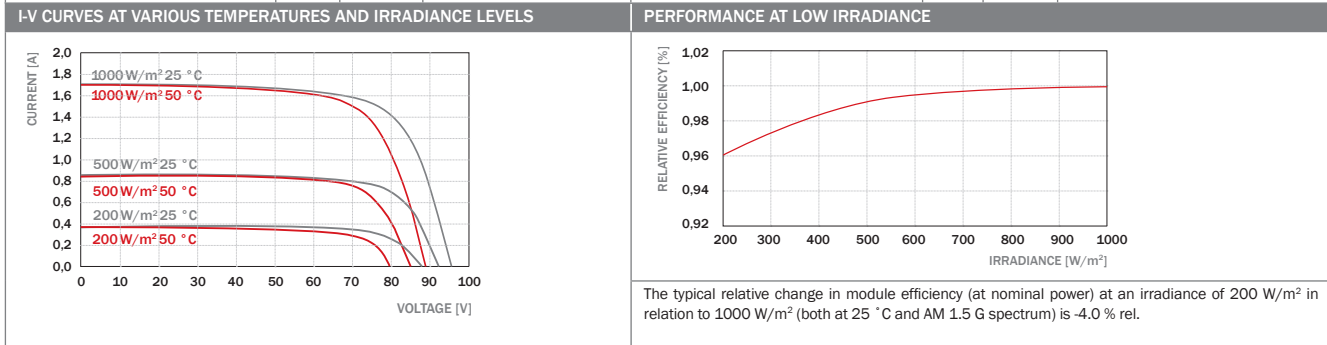
ELECTRICAL CHARACTERISTICS

PERFORMANCE AT STANDARD TEST CONDITIONS (STC: 1000 W/m ² , 25 °C, AM 1.5 G SPECTRUM) ¹							
POWER CLASS (+5/-0 W)		[W]	100	105	110	115	120
Minimum Power	P _{MPP}	[W]	100.0	105.0	110.0	115.0	120.0
Short Circuit Current	I _{SC}	[A]	1.68	1.68	1.69	1.69	1.69
Open Circuit Voltage	U _{OC}	[V]	90.1	91.6	93.3	95.1	97.6
Current at P _{MPP}	I _{MPP}	[A]	1.46	1.49	1.52	1.54	1.56
Voltage at P _{MPP}	U _{MPP}	[V]	68.5	70.5	72.4	74.7	76.9
Nominal efficiency	η	[%]	≥ 10.6	≥ 11.2	≥ 11.7	≥ 12.2	≥ 12.8

PERFORMANCE AT NORMAL OPERATING CELL TEMPERATURE (NOCT: 800 W/M ² , 51 ± 2 °C, AM 1.5 G SPECTRUM) ¹							
POWER CLASS (+5/-0 W)		[W]	100	105	110	115	120
Minimum Power	P _{MPP}	[W]	72.3	75.9	79.5	83.1	86.7
Short Circuit Current	I _{SC}	[A]	1.34	1.34	1.35	1.35	1.35
Open Circuit Voltage	U _{OC}	[V]	82.0	83.4	84.9	86.5	88.8
Current at P _{MPP}	I _{MPP}	[A]	1.16	1.18	1.21	1.22	1.24
Voltage at P _{MPP}	U _{MPP}	[V]	62.1	64.0	65.7	67.8	69.8

¹ Measurement accuracy PMPP: ± 5 %; measurement accuracy ISC, VOC, IMPP, VMPP: ± 10 %. All STC measurements are based on a pre-treatment of modules with 43 kWh/m² of light soaking (43 hours at 1000 W/m² and MPP) followed by a cool down to 25 °C. For system conception, please take into account the typical relative VOC and VMPP power increase of 2.5 % after 215 kWh/m² of light soaking. This power boost is not included in the nominal values of this data sheet.

TEMPERATURE COEFFICIENTS (AT 1000 W/M ² , AM 1.5 G SPECTRUM)							
Temperature Coefficient of I _{SC}	α	[%/K]	+ 0.00 ± 0.04	Temperature Coefficient of U _{OC}	β	[%/K]	-0.29 ± 0.04
Temperature Coefficient of P _{MPP}	γ	[%/K]	-0.38 ± 0.04				



PROPERTIES FOR SYSTEM DESIGN		QUALIFICATIONS AND CERTIFICATES	
Maximum System Voltage V _{sys}	[V]	1000 (IEC) / 600 (UL 1703)	IEC 61646 (Ed. 2), IEC 61730 (Ed.1) application class A, UL 1703 The production site is certified according to ISO 9001 for Quality Management.
Maximum Reverse Current I _r	[A]	4	
Wind / Snow Load	[Pa]	2400	
Safety Class		II	
Fire Rating		C	
Permitted module temperature on continuous duty		-40 °C bis +85 °C	
		<p>The content of this data sheet is according to DIN EN 50380.</p>	

Note: See the installation and operating manual or contact the technical service for further information on approved installation and use of this product.

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