

# CIGS THIN FILM SOLAR MODULE SL2

The New Power Module



**PRELIMINARY DATA SHEET**

- 0.94 SQUARE METERS OF POWER
- 25 % MORE AREA
- MORE POWER PER MODULE
- LOWER BALANCE OF SYSTEM COSTS

## MECHANICAL SPECIFICATION

Thickness	7.4 mm (22 mm including junction box)
Weight	16.5 kg
Front Cover	4 mm tempered low iron glass
Back Cover	3 mm float glass
Frame	None
Cell Type	CIGS [Cu(In, Ga) Se <sub>2</sub> ]
Junction Box	Protection class IP 65 with by-pass diode
Cable Length	730mm (+ cable) / 635 mm (- cable)
Connector	Multicontact MC4

## ELECTRICAL CHARACTERISTICS

PERFORMANCE AT STANDARD TEST CONDITIONS (STC: 1000 W / m<sup>2</sup>, 25°C, AM 1.5 SPECTRUM)<sup>1)</sup>

PRODUCT NAME			SL2-95	SL2-100	SL2-105	SL2-110	SL2-115
Nominal Efficiency	$\eta$	[%]	10.1	10.6	11.2	11.7	12.2
Nominal Power (+5/-0 W)	$P_{max}$	[W]	95.0	100.0	105.0	110.0	115.0
Short Circuit Current	$I_{sc}$	[A]	1.56	1.57	1.60	1.61	1.61
Open Circuit Voltage	$V_{oc}$	[V]	87.5	89.2	91.0	92.8	94.7
Current at Maximum Power	$I_{mp}$	[A]	1.40	1.42	1.45	1.47	1.49
Voltage at Maximum Power	$V_{mp}$	[V]	68.0	70.3	72.6	74.9	77.0

PERFORMANCE AT NORMAL OPERATING CELL TEMPERATURE (NOCT: 800 W/m<sup>2</sup>, 51±2°C, AM 1.5 SPECTRUM)

PRODUCT NAME			SL2-95	SL2-100	SL2-105	SL2-110	SL2-115
Nominal Efficiency	$\eta$	[%]	9.1	9.6	10.0	10.5	11.0
Nominal Power	$P_{max}$	[W]	68.3	71.9	75.4	79.0	82.6
Short Circuit Current	$I_{sc}$	[A]	1.25	1.26	1.28	1.29	1.29
Open Circuit Voltage	$V_{oc}$	[V]	79.1	80.6	82.2	83.9	85.6
Current at Maximum Power	$I_{mp}$	[A]	1.11	1.13	1.15	1.17	1.18
Voltage at Maximum Power	$V_{mp}$	[V]	61.4	63.5	65.6	67.7	69.6

### PERFORMANCE AT LOW IRRADIANCE

The typical relative change in module efficiency at an irradiance of 200 W/m<sup>2</sup> in relation to 1000 W/m<sup>2</sup> (both at 25°C and AM 1.5 spectrum) is -7%.

### TEMPERATURE COEFFICIENTS (AT 1000 W / m<sup>2</sup>, AM 1.5 SPECTRUM)

Temperature Coefficient of $I_{sc}$	$\alpha$	[%/K]	+0.02 ± 0.04
Temperature Coefficient of $V_{oc}$	$\beta$	[%/K]	-0.36 ± 0.04
Temperature Coefficient of $P_{max}$	$\gamma$	[%/K]	-0.45 ± 0.04

<sup>1)</sup> The power classes are defined by positive sorting (+5/-0 W) according to measured Pmax under STC. The accuracy of this measurement is ±3%.  $I_{sc}$ ,  $V_{oc}$ ,  $I_{mp}$ ,  $V_{mp}$  are within ±10% of the indicated values under STC. Valid indoor measurement of STC performance is obtained by pretreating the modules before measurement with 1 hour light soak (at approx. 1000 W/m<sup>2</sup> in open circuit) followed by cool down to 25°C.

## PROPERTIES FOR SYSTEM DESIGN

Safety Class	II		
Maximum System Voltage	$V_{sys}$	[V]	1000 (IEC) / 600 (Canada / USA)
Maximum Reverse Current	$I_R$	[A]	3.0

See the Installation and Operating Manual or contact the Technical Service for further information on the installation and use of this product.

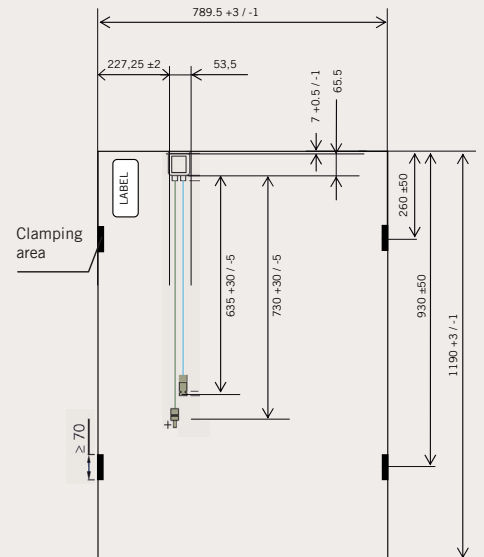
## QUALIFICATIONS AND CERTIFICATES

IEC 61646 (pending); IEC 61730 Application Class A (pending)

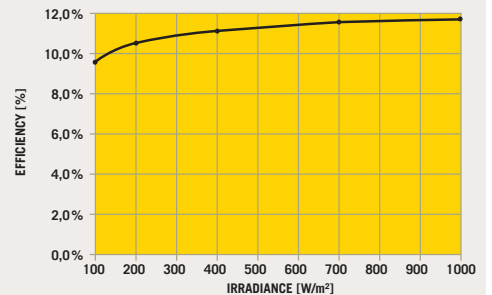


Safety Class II

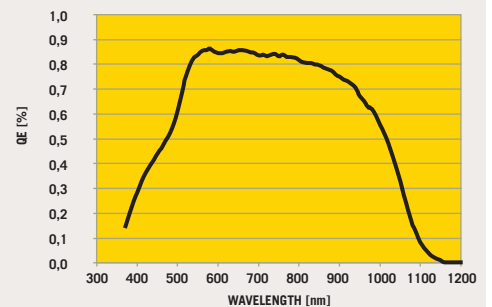
## MECHANICAL DRAWING



## EFFICIENCY VERSUS IRRADIANCE



## QUANTUM EFFICIENCY VERSUS WAVELENGTH



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