

SKALA

FOR SOLAR FAÇADES



SKALA

- is a glass-glass module without disturbing frame
- has an opaque black color as standard version
- does not need mechanical clamping on the front glass due to its backrail system fitting to all common façade substructures
- is most suitable for rainscreen ventilated façades
- can be combined with a variety of other façade materials
- can be installed in portrait and landscape format (depends on regional building regulations)
- has the general technical building approval (abZ) from Deutsches Institut für Bautechnik (DIBt)
- is developed and produced in Germany – approved according to all relevant certifications
- is available in different colors and sizes:



SKALA

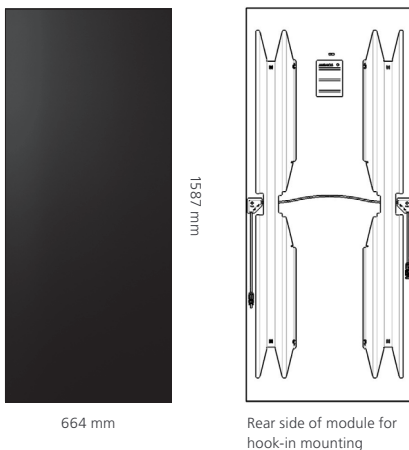
Valid for product variant 4.1

MECHANICAL SPECIFICATIONS

SKALA	Value
External dimensions	1,587 x 664 mm ²
Thickness	38 mm
Weight	17 kg
Cell type	CIGS
Frame	none
Front cover	3.0 mm / 3.2 mm tempered glass
Design load (safety factor 1.5)	upward 1600 Pa downward 3400 Pa
Junction box protection class	IP67
Dimensions of the junction boxes	60 x 60 x 11.5 mm ³
Cable lengths (⊖ plug ⊕ socket)	200 320 mm
Cable cross section	2.5 mm ² minimal bending radius: 6x outer diameter
Connector type	TPCB-4
Fire rating	Class C (ANSI/UL 790:2004)



- Design qualification and type approval: IEC 61215:2016
- Safety qualification: IEC 61730:2016
- Safety standard: UL 61730 (Pending)
- Salt mist corrosion: IEC 61701 (Pending)



ELECTRICAL SPECIFICATIONS

Data measured under standard test conditions (STC):

SKALA color code	B001 G001	G003	4002 3001 7001	3002
Nominal power P_{nom}^*	140W	135W	130W	120W
Sorting	-0/+10 W			
Module efficiency η	13.3 %	12.8 %	12.3 %	11.4 %
Aperture efficiency η	14.7 %	14.2 %	13.6 %	12.6 %
Open-circuit voltage V_{oc}^*	79.5V	78.9V	78.3V	77.1V
Short-circuit current I_{sc}^*	2.51A	2.44A	2.37A	2.23A
Voltage at mpp V_{mpp}^*	61.9V	61.6V	61.3V	60.3V
Current at mpp I_{mpp}^*	2.26A	2.19A	2.12A	1.99A
Max. over-current protection I_R	4.0 A			
Max. system voltage V_{sys}	1000V			

Irradiance of 1000W/m² on the module area, module temperature 25°C and a spectral distribution of the sunlight according to the atmospheric mass (AM) 1.5.

* Tolerance of manufacturing: -5 %/+10 %

Data measured at nominal module operating temperature (NMOT)** and AM 1.5:

SKALA	120	130	135	140
NMOT	40 °C			
Nominal power P_{nom}	90W	97W	101W	105W
Open-circuit voltage V_{oc}	73V	74V	75V	76V
Short-circuit current I_{sc}	1.78A	1.90A	1.95A	2.01A
Voltage at mpp V_{mpp}	57V	58V	58V	58V

** NMOT: Module operating temperature at light intensity of 800W/m² on the module area, air temperature 20°C, wind speed 1m/s and operating at mpp.

Temperature coefficients:

SKALA	Value
Temperature coefficient P_{nom}	-0.39 %/°C
Temperature coefficient V_{oc}	-230 mV/°C
Temperature coefficient I_{sc}	0 mA/°C

Data measured at low light intensity:

The relative reduction of the module efficiency at a light intensity of 200 W/m² is 6%, compared to 1000 W/m² at 25°C module temperature and spectrum AM 1.5. At 500 W/m², the relative increase of module efficiency is +1%.

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Standard packaging:

Packaging information

Measurements including pallet	L 1,650mm x B 800mm x H 1,000mm
Approx. gross weight (full box)	374 kg
Modules per box	20
Maximum no. of stacked boxes	1 on 1 (batch of 2)
Max. truck loading (24t)	48 (3 x 8 + 3 x 8)
Max. 40ft container load (24t)	28 (1 x 14 + 1 x 14)

Variation of packaging sizes on individual request.



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