



midsummer **BOLD** Solar roof for bitumen- and membrane roofs

Midsummer BOLD is an ultralight and flexible solar panel which, among other things, is intended for roofing felt and membrane roofs as a base, where the end product becomes a discreet solar roof. Midsummer BOLD is suitable for flat and sloping roofs and follows the shape of the roof, regardless of whether it is flat or curved. No extra stands are required to angle the panels.

The solar panel is only 2 mm thin, consists of 60 thin film solar cells and weighs only 3 kg / m². With its low weight, Midsummer BOLD is a new alternative for roofs with weight restrictions. This means less cost of strengthening the roof structure. Thanks to the low weight, you can also cover more roof space and increase the number of solar panels on your roof = more solar power.

Midsummer BOLD is suitable for installation on commercial properties, industrial buildings, warehouses and sports arenas, but also apartment buildings and private homes.



Minimal weight enables easy and safe installation without penetrating the waterproofing layer of the roof.

Access to the roof - the solar panels can be carefully walked on during maintenance.

Made in Sweden – We at Midsummer owns the entire value chain from production to installation and have the entire production in Järfälla outside Stockholm. This means low climate footprints and decent working conditions.

Safe and complete installation throughout Sweden – We at Midsummer guides our customers through the entire process and offers turnkey installations - ready to go.

Flexible solar panels allow installation on curved surfaces and roofs.

Superior shading performance
The bypass diodes between each cell ensures that shading on one or more solar cells only affects the current cells instead of the entire panel.

Highly efficient CIGS cells without toxic cadmium thanks to our unique Midsummer DUO system.



MADE IN SWEDEN

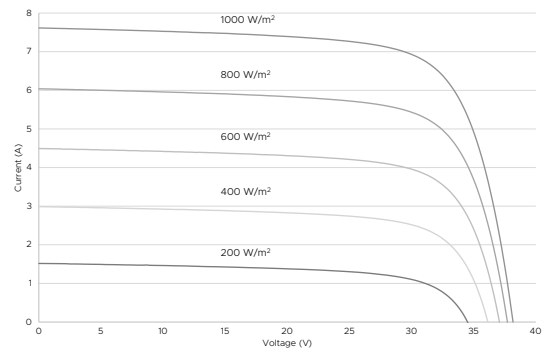
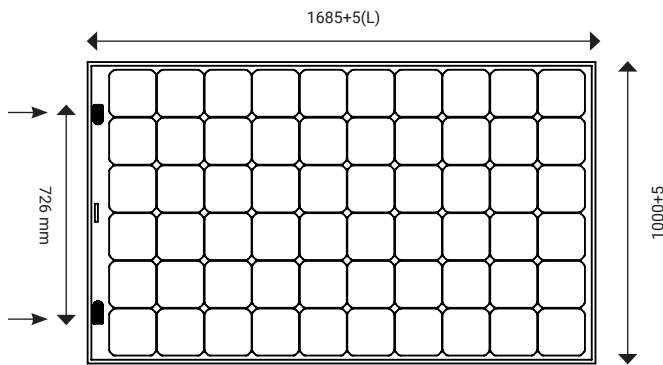


Technical characteristics

Description

Solar modules consisting of serial connected thin film cells (CIGS) on ultra thin 15 micron stainless steel substrate. The cells are protected and encapsulated by several film layers to ensure a long time durability. The module is delivered with IP68 rated junction boxes to endure a durable and weather resistant electrical connection.

Midsummer BOLD can be retrofitted to an existing roof or mounted at the same time as a complete roof replacement, without drilling holes in the roof's waterproofing layer.



ARTICLE INFORMATION	
Number of cells (1 bypass diode between each cell)	60
Weight	5 kg/panel
Width	1000 mm
Length	1685 mm
Thickness	2 mm
Roof pitch	min 2°
Minimum bend radius	0,25 m
Cell type thin film	CIGS (Cu (In, Ga) Se₂)
Product warranty	10 years
Power guarantee after 10 years	90%
Power guarantee after 25 years	80%
Certifications	IEC 61730 IEC 61215 TÜV Rheinland certified
Fire Safety	BROOF (t2)***
Color of the panel	Black

TECHNICAL DATA	
Nominal Power, P _{MAX} *	200 W
Power/m ²	119 W
Power/kg	40 W
Maximum Power Voltage, V _{MPP}	31,2 V
Maximum Power Current, I _{MPP}	6,6 A
Open Circuit Voltage, V _{OC} *	37,9 V
Short Circuit Current, I _{SC} *	7,5 A
Maximum Series Fuse Rating	10 A
Maximum System Voltage, V _{DC}	1000 V
Protection class against electrical shock	II
Design Load**	± 3600 Pa
Module operating range	-40 to +85 °C
Temperature coefficient, P _{MAX} (W), γ	-0,3992 % / C
Temperature coefficient, V _{OC} (V), β	-0,3279 % / C
Temperature coefficient, I _{SC} (A), α	0,0099 % / C



Consult Midsummer for a technical assessment of your roof.

* Testing performed at STC (Standard test conditions): solar radiation of 1000 W/m² with perpendicular incidence towards the module surface, module temperature 25 °C, Air mass 1.5 (AM 1.5 spectrum). The tolerance for the value is ±10%.

** Test load ± 5400 Pa, Max altitude: 2000 m

*** Classification has been carried out by RISE Research Institutes of Sweden AB in accordance with EN 13501-5-2016

Appendix A

BOLD Electrical Characteristics for different sizes

Number of cells	Length	P _{MAX}	V _{MPP}	I _{MPP}	V _{OC}	I _{SC}
6x10	1685	200	31,2	6,6	37,9	7,5
6x11	1843	220	34,3	6,6	41,9	7,6
6x12	2001	240	37,4	6,6	45,7	7,6
6x14	2317	280	43,7	6,6	53,3	7,6
6x16	2633	320	49,9	6,6	60,9	7,6
6x18	2949	360	56,1	6,6	68,6	7,6
6x20	3265	400	62,3	6,6	76,2	7,6
6x22	3581	440	68,6	6,6	83,9	7,6
6x24	3897	480	74,8	6,6	91,3	7,6