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# **EnergyPal**

## **Solar Panel Guide Specification Data Sheet**

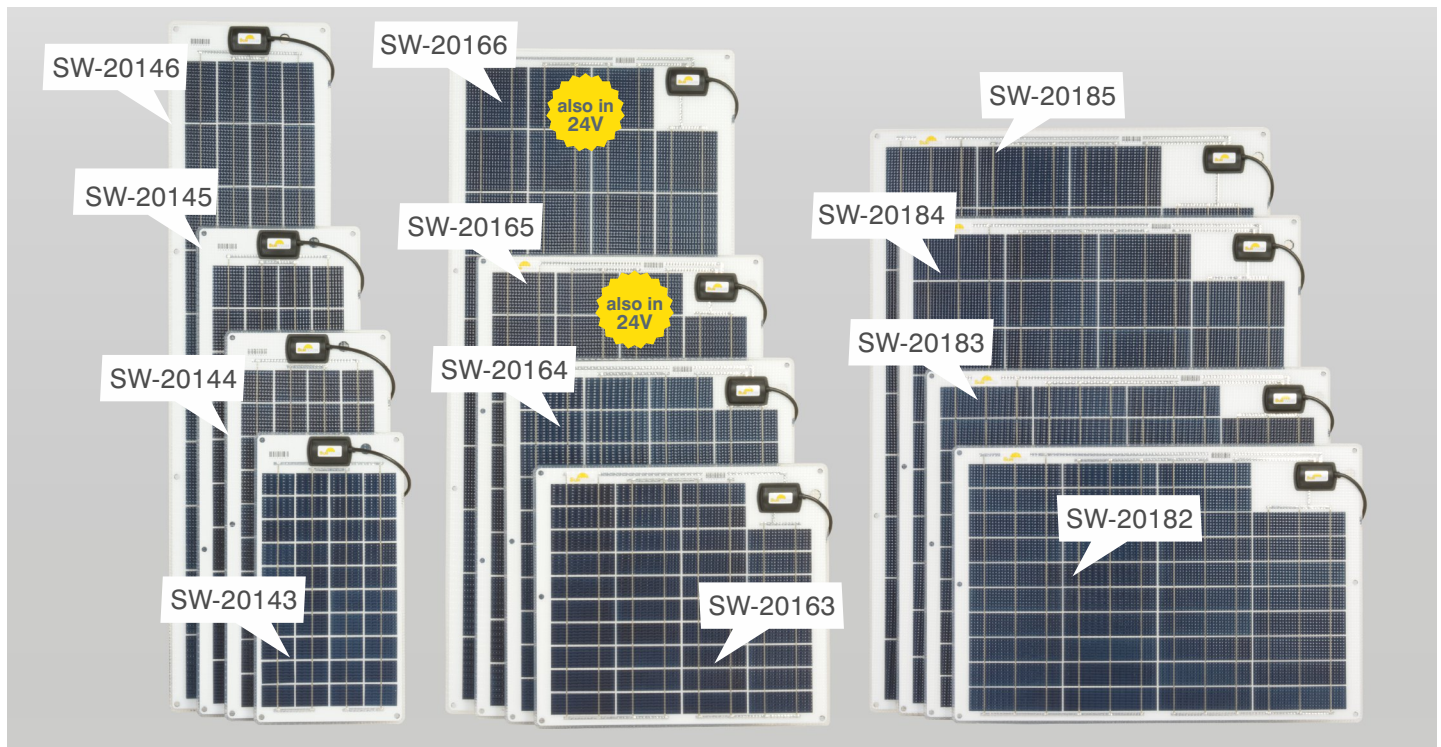
**SunWare Solartechnik GmbH & Co KG**

**Serie-20**

**SW-20184 12V**

Also available on the web at

[EnergyPal.com/sunware-solartechnik-gmbh-co-kg-solar-panels/sw-20184-12v](http://EnergyPal.com/sunware-solartechnik-gmbh-co-kg-solar-panels/sw-20184-12v)



## Solar panels 20-series

Solar panels with cable outlet front side mounted. Designed for boats, flat trucks, navigation aids, sea buoys, streetlamps and many other. Made in Germany.

### Product characteristics

- 100% sea- & saltwater resistant
- Non-Glass-module with unbreakable Nowoflon foil
- Light-weight mounting plate made from aluminium sandwich, powder-coated white
- Cable output screwed, sealed and utterly water proof, with strain relief at the cable outlet
- Crystalline cells of highest performance class for maximum power
- Ultraflat panel construction (5mm), at cable output max. 16mm
- Connection cable of 3m length
- On the side, the laminate overhangs the mounting plate by approx. 5mm for a maximum of corrosion protection
- Rounded corners to prevent risk of injuries
- Structured surface reduces slip risks when wet
- 100% maintenance-free, self-cleaning surface
- Installation: without rear ventilation because panels are equipped with 39 or 40 cells
- Walkable when installed on a solid surface (using boat shoes)
- Panels can be slightly bent till max. 3% (3cm/1 meter)
- 3 years warranty on power output

12V	Power Wp	I sc A	I max A	U oc V	Length mm	Width mm	Bore holes D=9mm	Weight netto kg	Weight brutto kg	Cable mm <sup>2</sup>	Cell-protector
SW-20185	100	5,75	5,43	22,2	1012	689	8	4,7	7,0	3 x 1,5	✓
SW-20184	83	4,30	4,10	24,6	859	689	6	4,2	6,0	3 x 1,5	✓
SW-20183	55	2,90	2,7	24,6	599	689	6	3,0	4,1	3 x 1,5	✓
SW-20182	40	2,20	2,0	23,9	469	689	6	2,5	3,8	3 x 1,5	✓
SW-20166	75	3,84	3,62	24,6	1119	481	8	3,6	5,8	3 x 1,5	✓
SW-20165	50	2,54	2,4	24,6	772	481	8	2,6	4,1	3 x 1,5	✓
SW-20164	38	1,92	1,8	24,6	599	481	6	2,0	2,4	3 x 1,5	✓
SW-20163	27	1,44	1,36	24,1	426	481	6	1,4	2,3	2 x 1,5	-
SW-20146	38	1,92	1,81	25,4	1154	273	8	2,2	4,4	3 x 1,5	✓
SW-20145	25	1,37	1,20	25,4	807	273	8	1,6	3,2	2 x 1,5	-
SW-20144	20	0,96	0,91	25,4	634	273	6	1,2	2,5	2 x 1,5	-
SW-20143	14	0,72	0,69	25,4	468	243	4	0,8	1,8	2 x 1,5	-

24V	Power Wp	I sc A	I max A	U oc V	Length mm	Width mm	Bore holes D=9mm	Weight netto kg	Weight brutto kg	Cable mm <sup>2</sup>	Cell-protector
SW-22146	75	1,92	1,81	49,8	1119	493	8	3,6	6,0	2 x 1,5	-
SW-22145	50	1,27	1,20	49,8	772	493	8	2,6	4,0	2 x 1,5	-

**Valid for all panels:** laminate: ETFE/EVA/ETFE / carrier plate: aluminium sandwich / individually packed

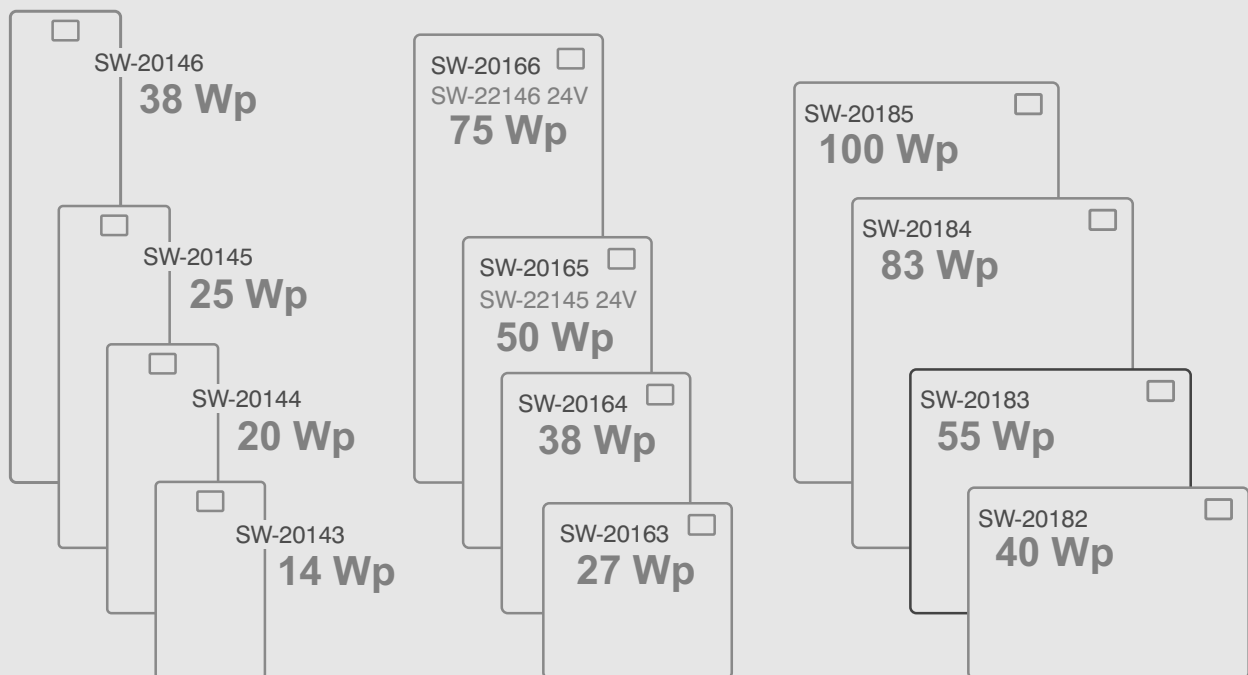
Environmental conditions : - 40 up to + 85 °C; thermal characteristic values: TK Isc: 0,06%/K, TK Uoc: -0,34%/K, TK Pmpp: -0,42%/K

*P max according to STC (standard test conditions) AM 1,5, 1000 W/m<sup>2</sup>, 25°C, measuring tolerance: 10%.*

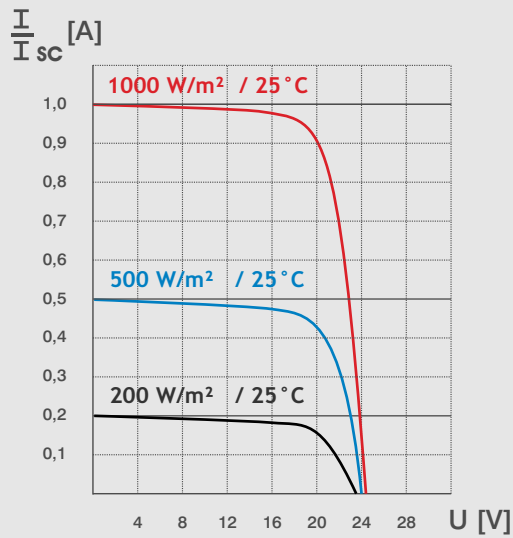


Technical changes reserved. State 11/2017

## Panels 20-series

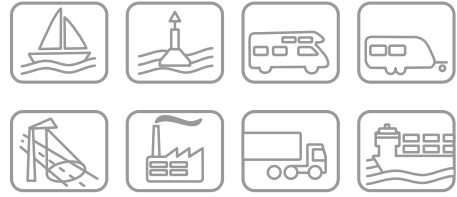


## Electrical characteristic



## RANGE OF APPLICATIONS

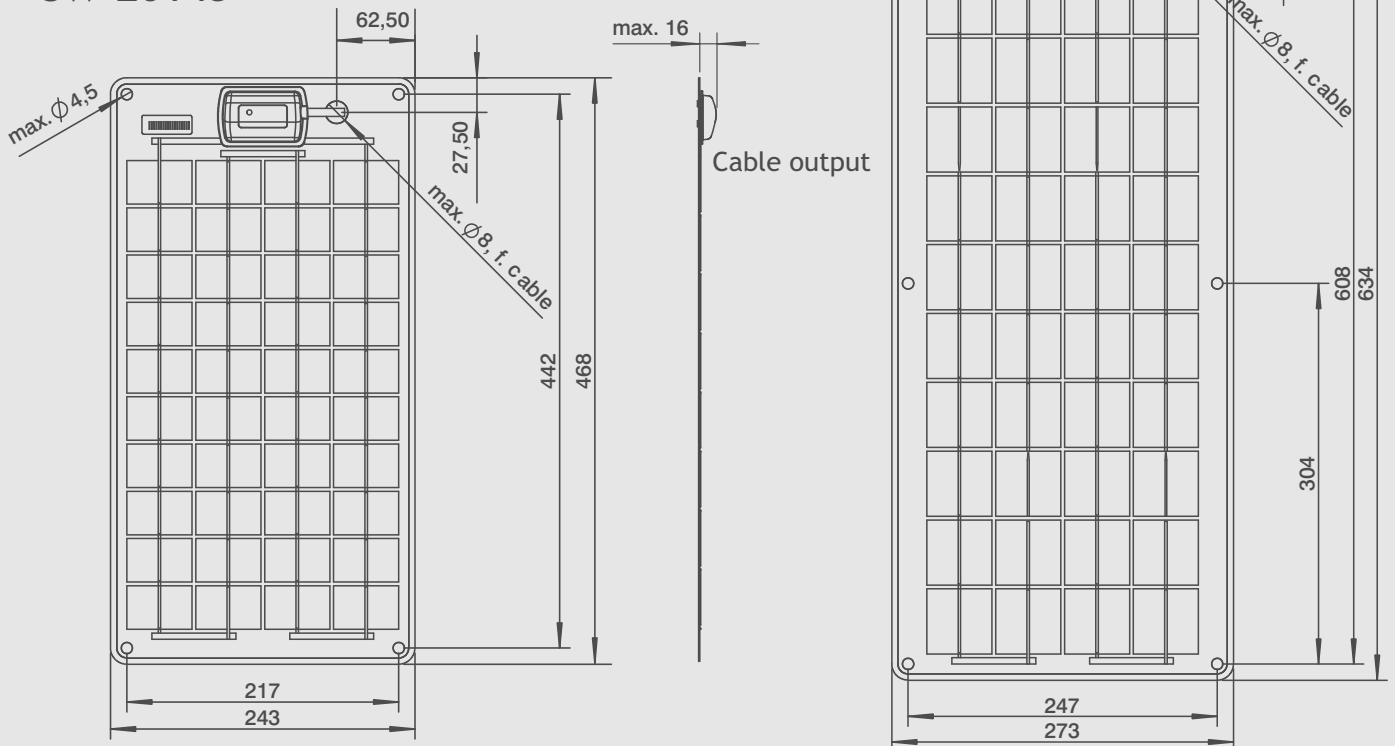
- For motor boats and sailing yachts
- For camping, caravan, off road and 4x4
- For mobile current supply
- For industry, shipping and building sector



## DIMENSIONS

SW-20144

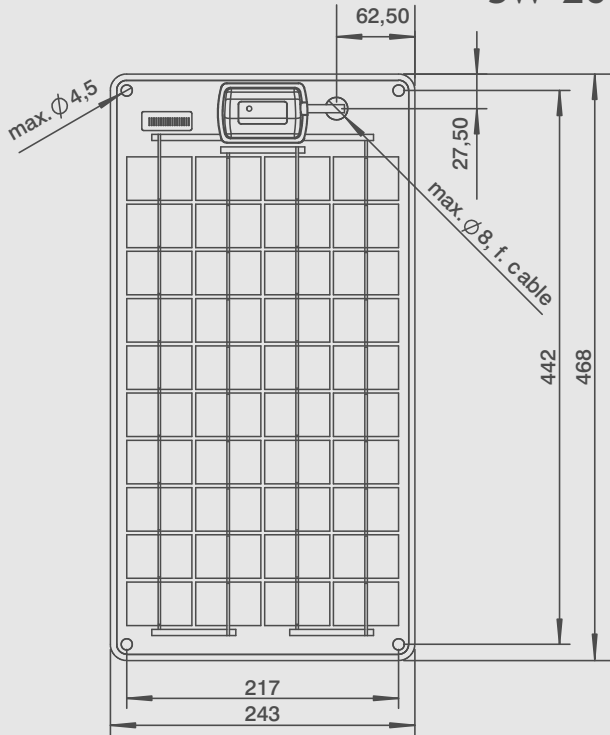
SW-20143



Technical drawings at [www.sunware.de/download](http://www.sunware.de/download)

# DIMENSIONS

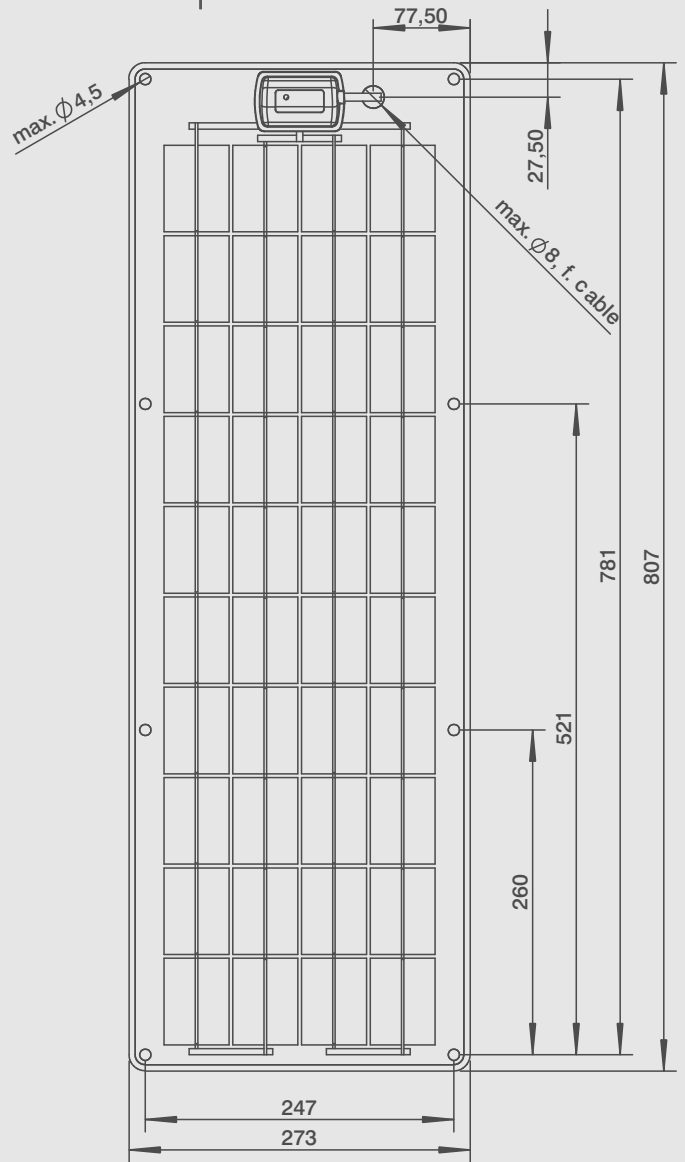
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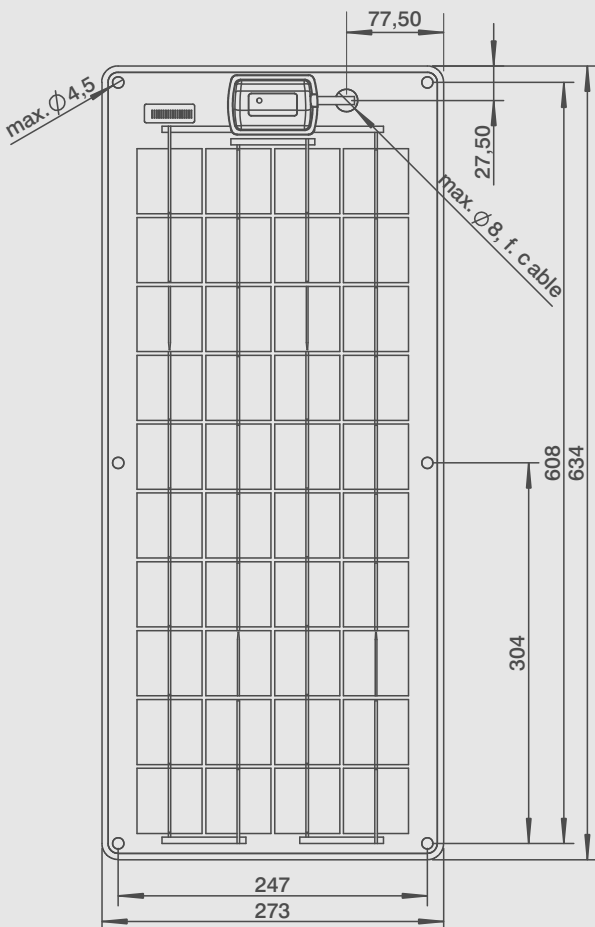
max. 16

Cable output

## SW-20145



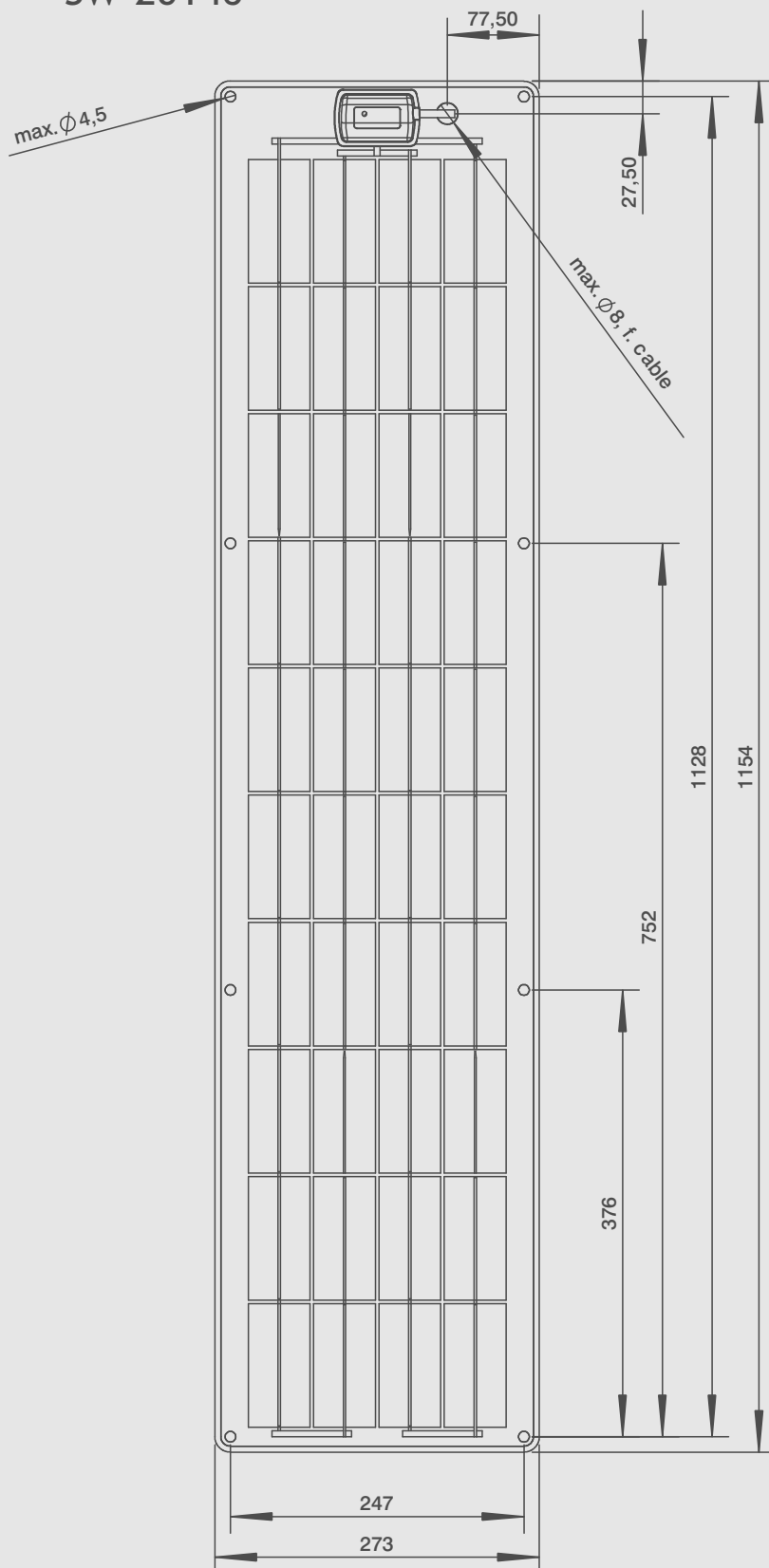
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Technical drawings at [www.sunware.de/download](http://www.sunware.de/download)

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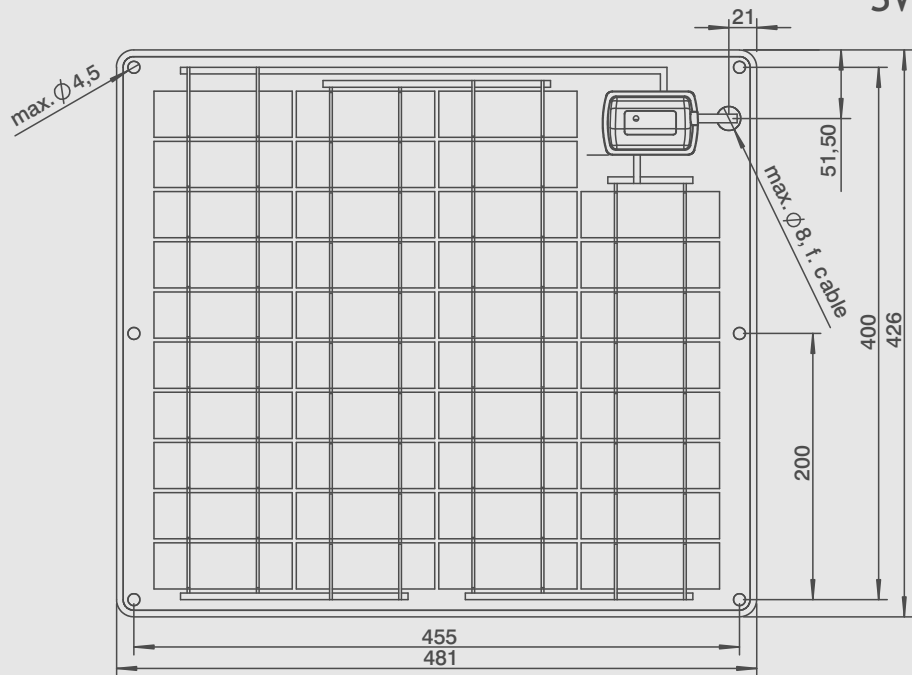
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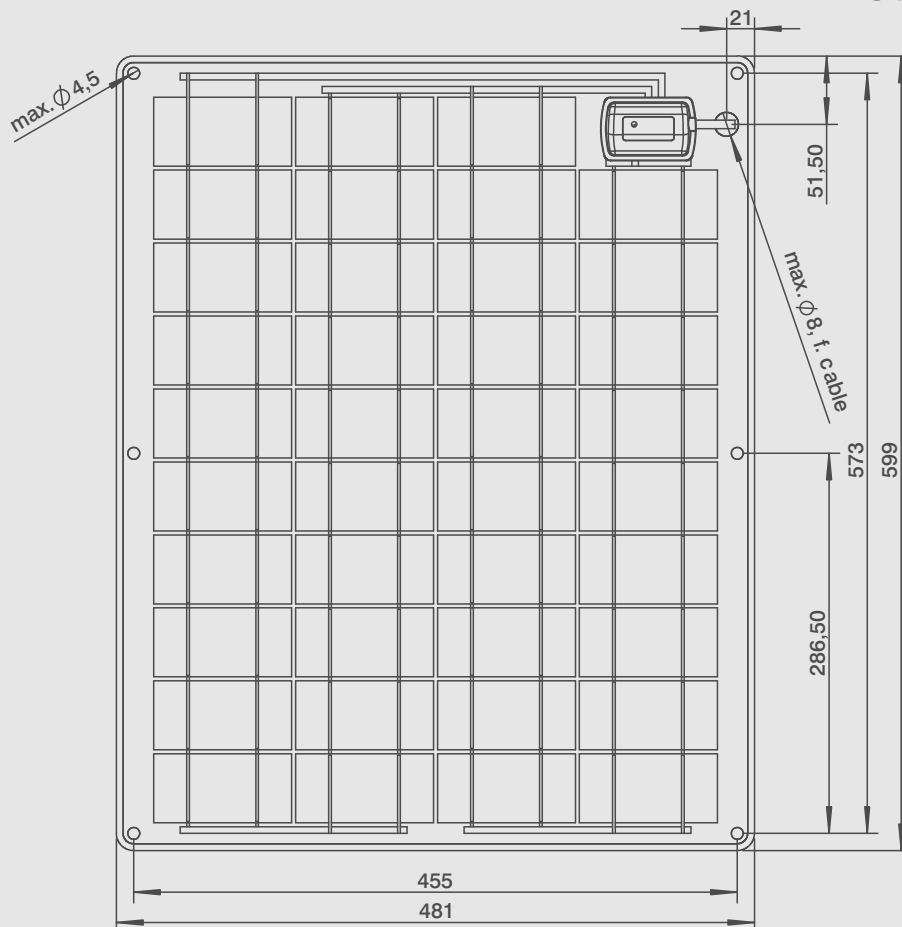
Technical drawings at [www.sunware.de/download](http://www.sunware.de/download)

# DIMENSIONS

SW-20163



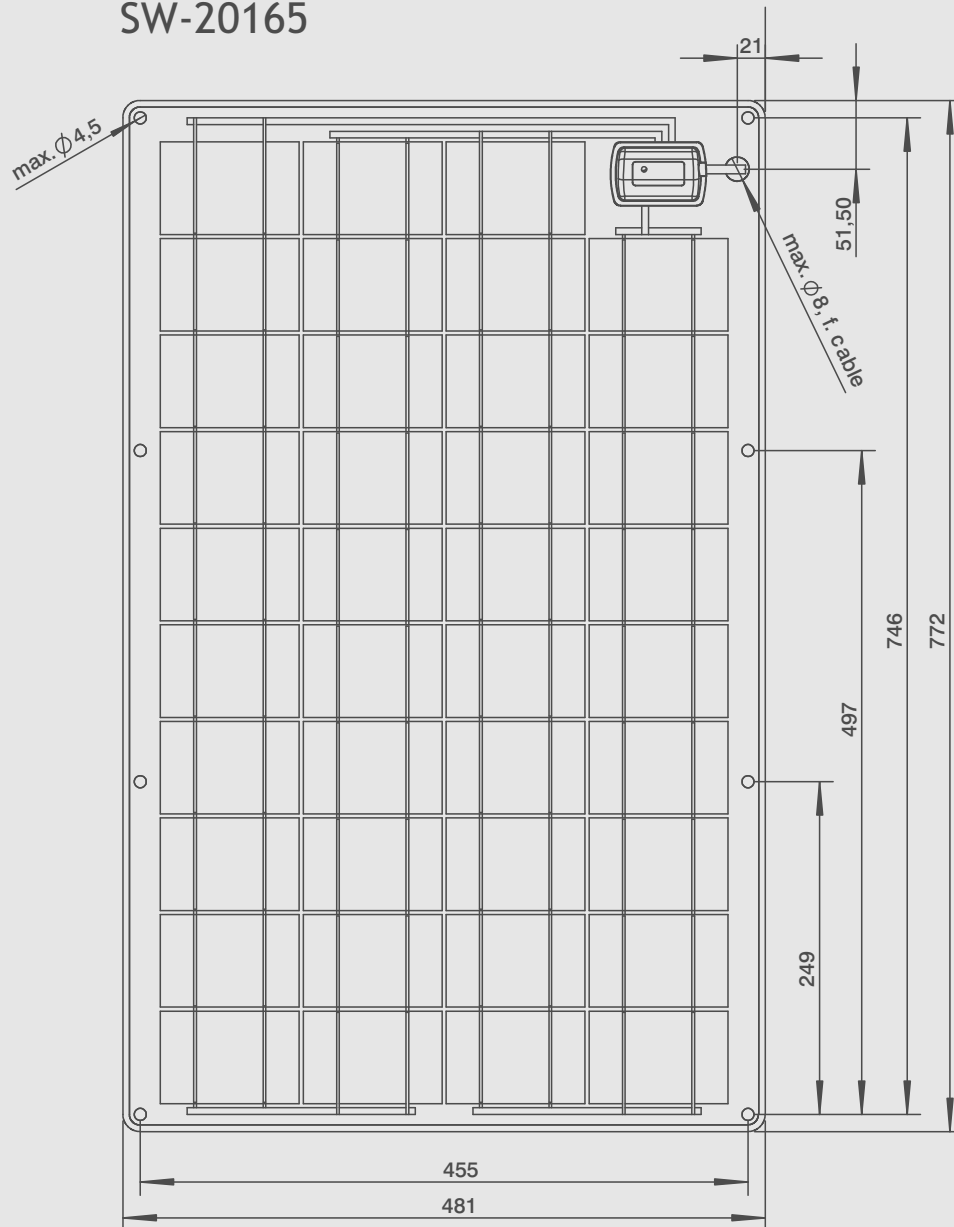
SW-20164



Technical drawings at [www.sunware.de/download](http://www.sunware.de/download)

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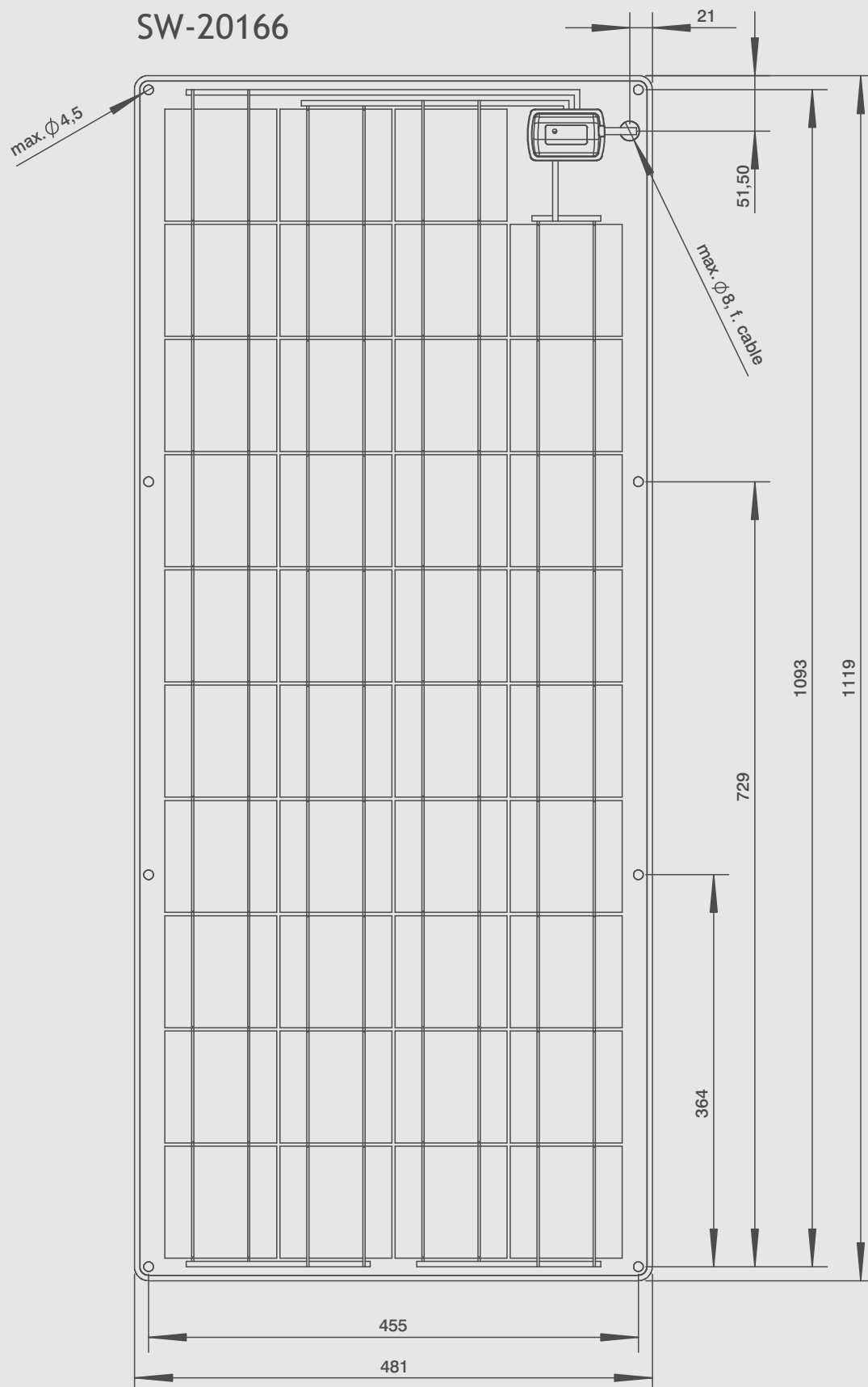
SW-20165



Technical drawings at [www.sunware.de/download](http://www.sunware.de/download)



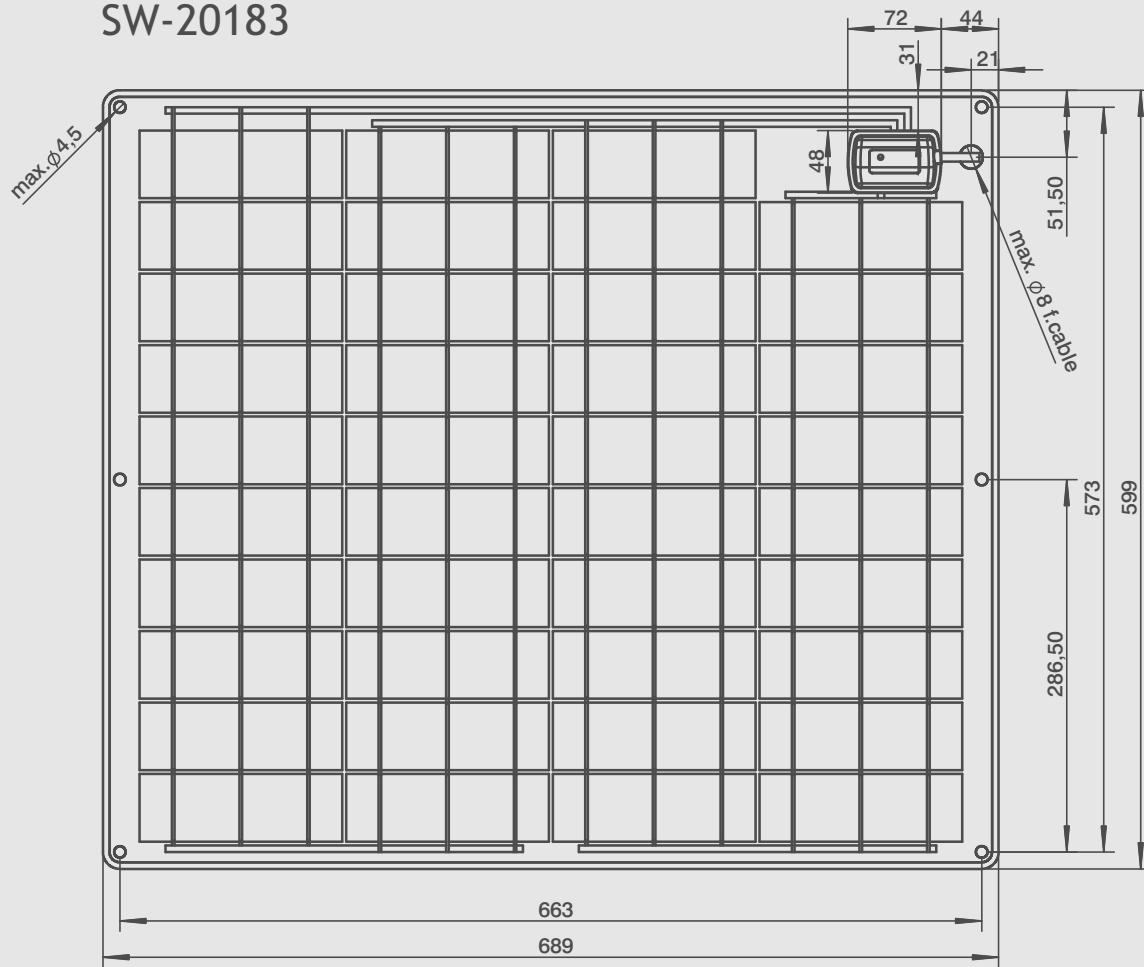
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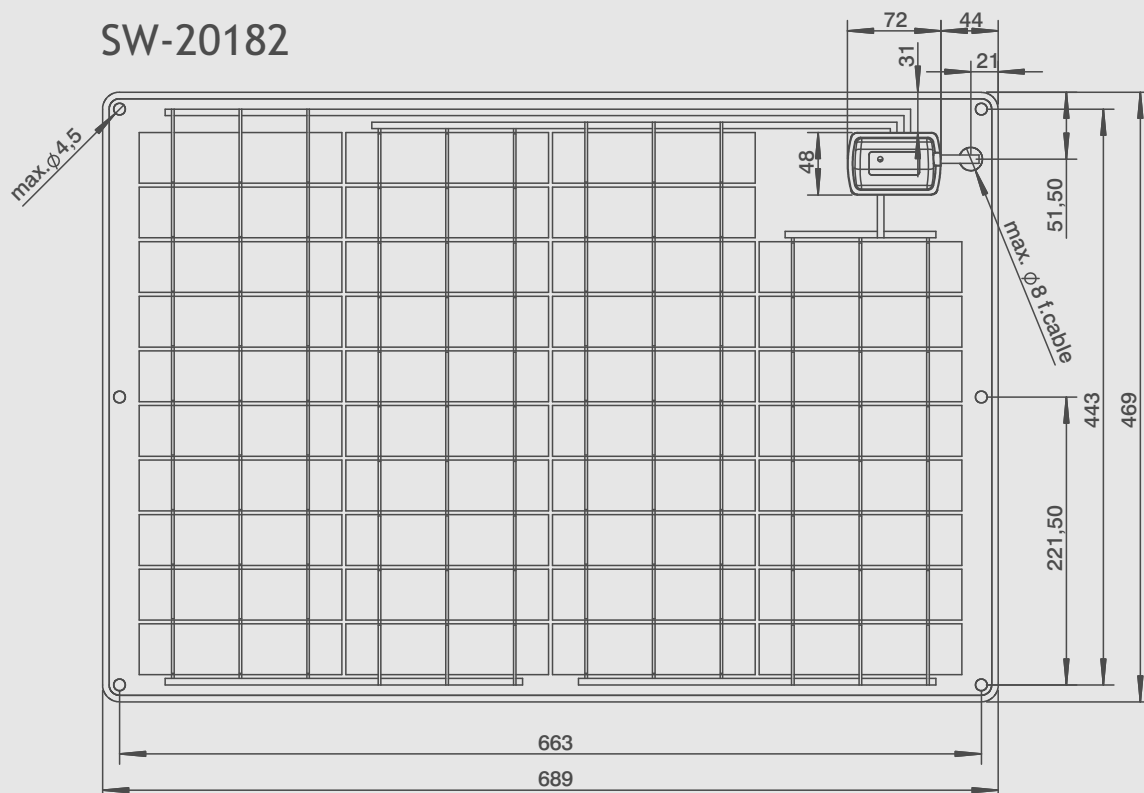
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# DIMENSIONS

## SW-20183

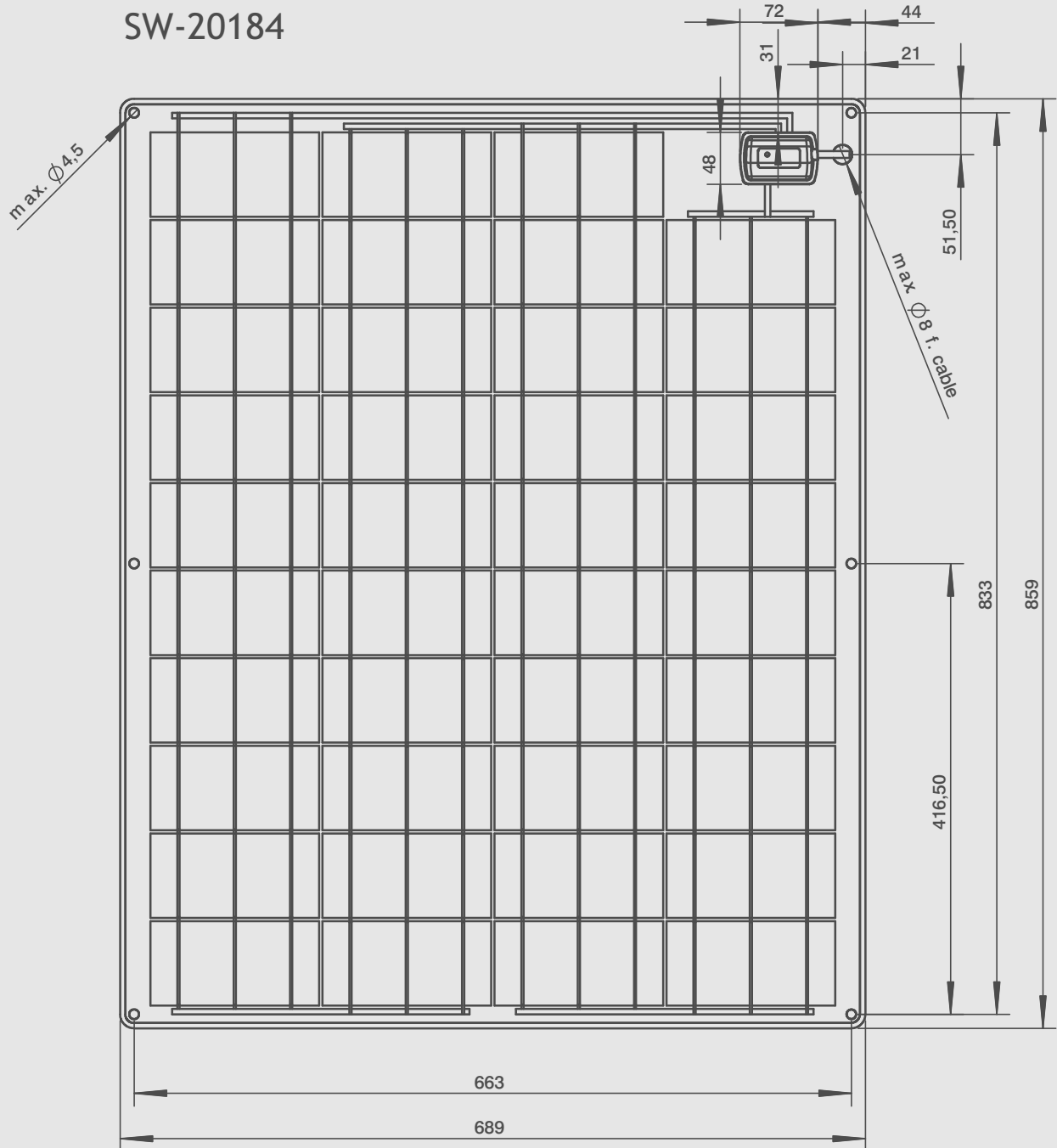


## SW-20182



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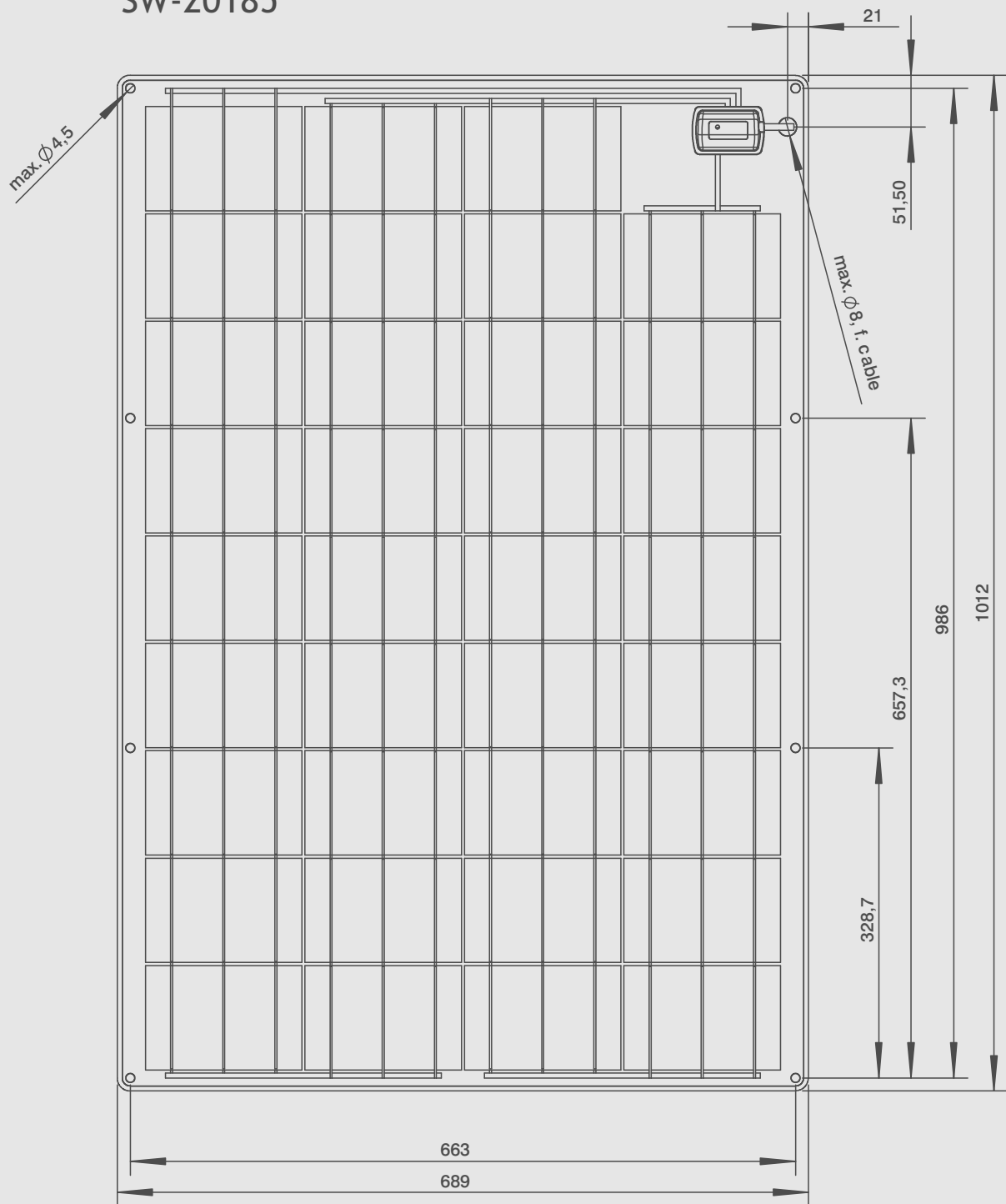
# DIMENSIONS



Technical drawings at [www.sunware.de/download](http://www.sunware.de/download)

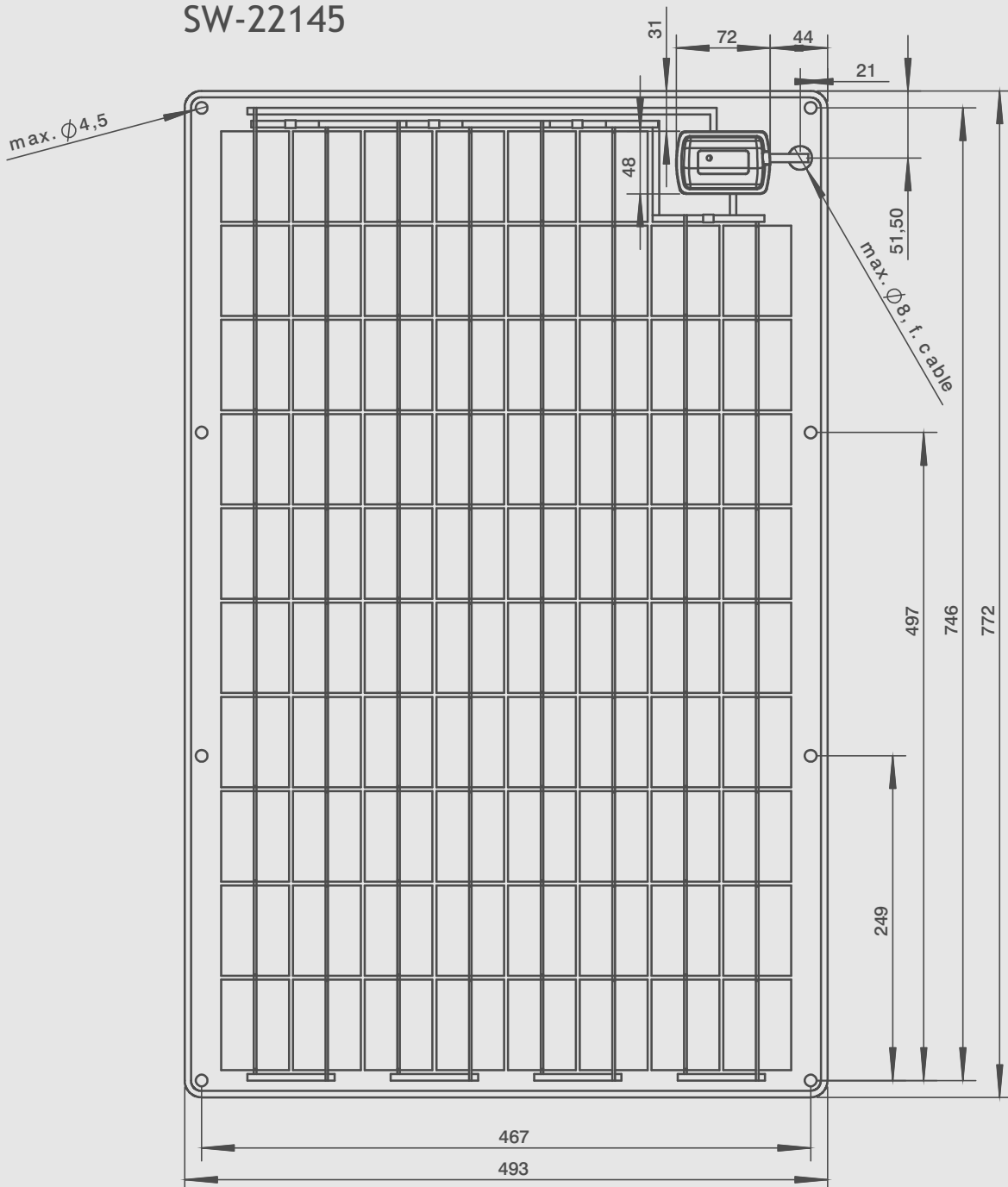
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SW-20185

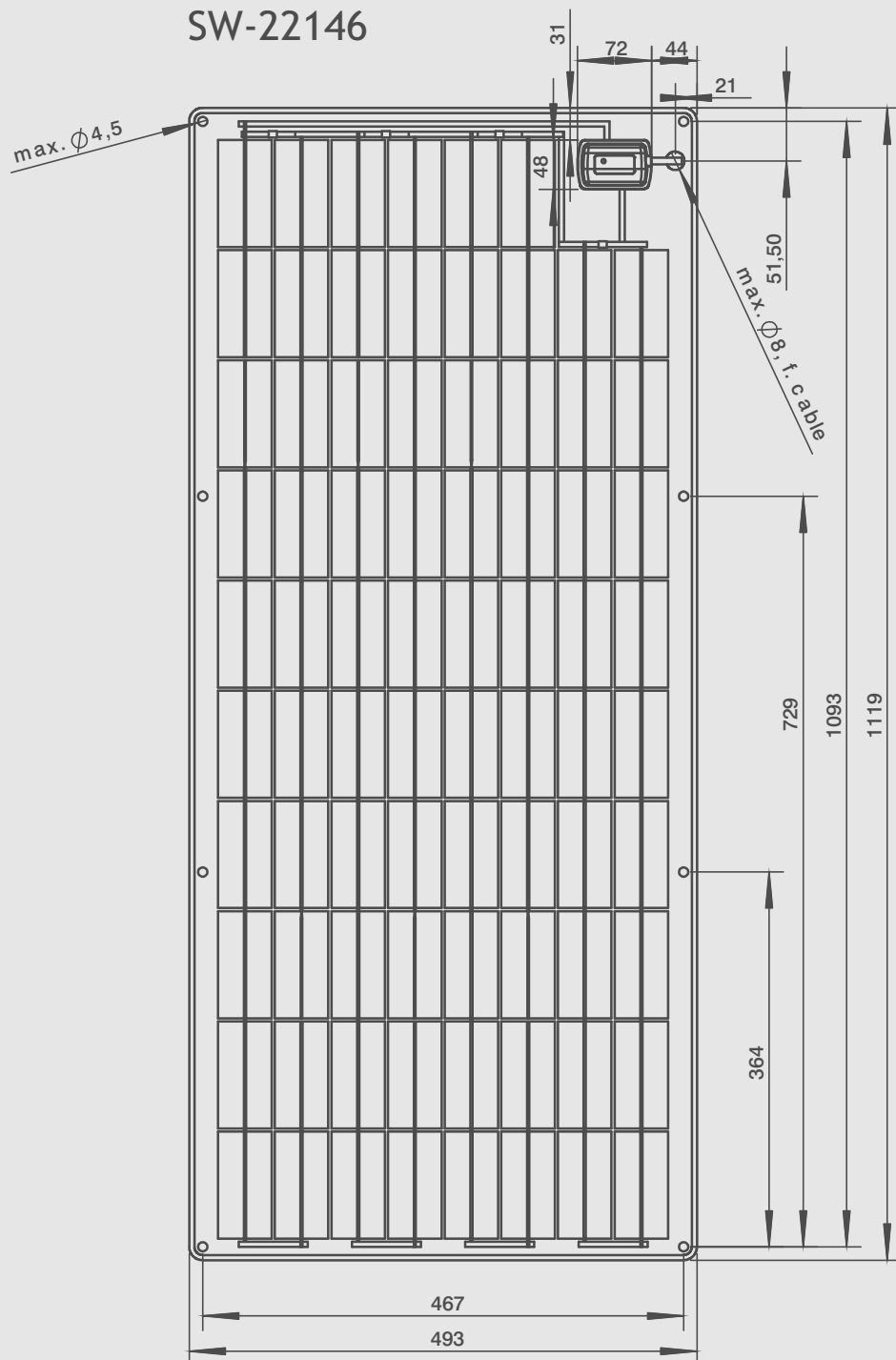


Technical drawings at [www.sunware.de/download](http://www.sunware.de/download)

SW-22145



Technical drawings at [www.sunware.de/download](http://www.sunware.de/download)



Technical drawings at [www.sunware.de/download](http://www.sunware.de/download)