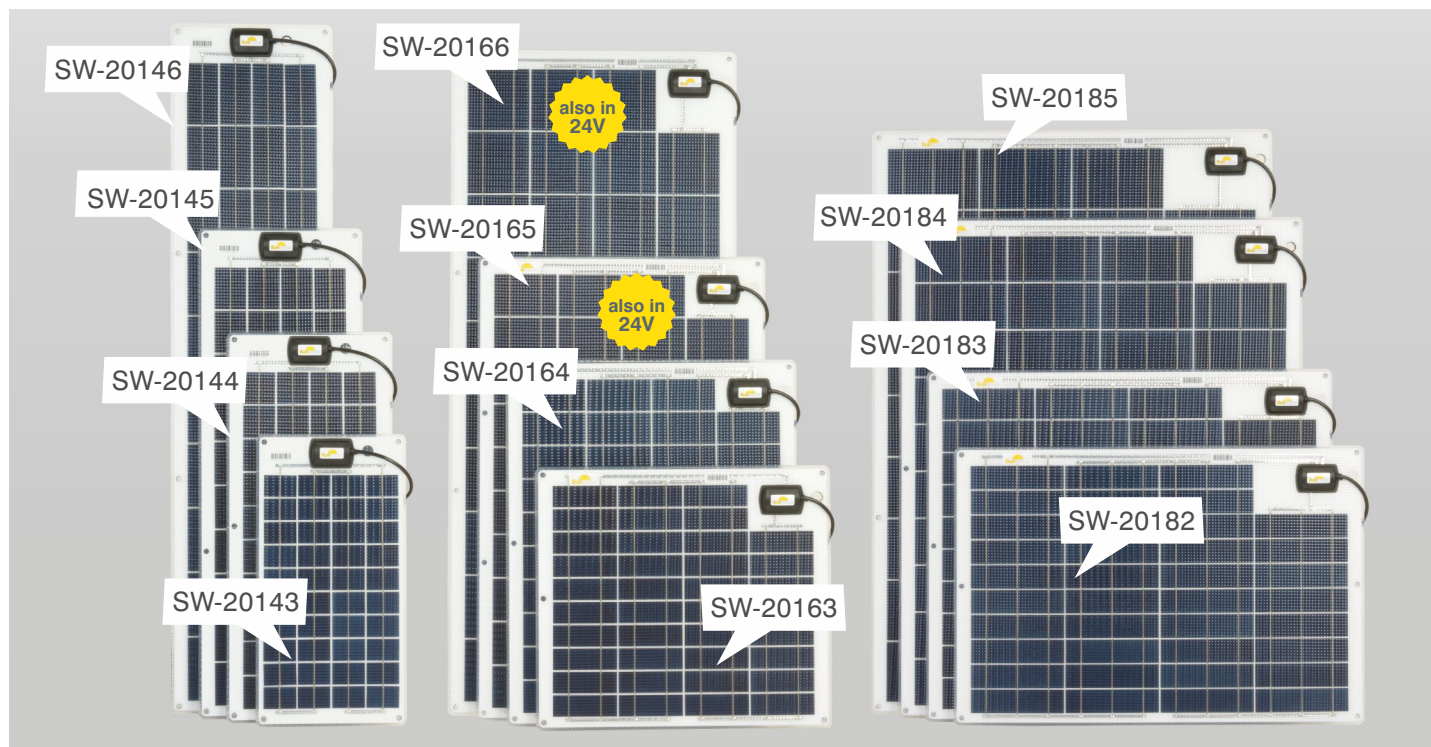




Solar panels 20-series

Solar panels with cable outlet front side mounted. Designed for boats, sea buoys, flat trucks, navigation aids, 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
- Monocrystalline PERC high-performance solar cells for maximum power
- Ultra flat 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 mm²	Cell-protector
SW-20185	110	6,34	5,87	22,2	1012	689	8	4,7	7,0	3 x 1,5	✓
SW-20184	90	4,70	4,35	24,6	859	689	6	4,2	6,0	3 x 1,5	✓
SW-20183	68	3,13	2,89	24,6	599	689	6	3,0	4,1	3 x 1,5	✓
SW-20182	50	2,40	2,23	23,9	469	689	6	2,5	3,8	3 x 1,5	✓
SW-20166	90	4,10	3,84	24,6	1119	481	8	3,6	5,8	3 x 1,5	✓
SW-20165	60	3,10	2,87	24,6	772	481	8	2,6	4,1	3 x 1,5	✓
SW-20164	45	2,17	2,01	24,6	599	481	6	2,0	2,4	3 x 1,5	✓
SW-20163	33	1,59	1,48	24,1	426	481	6	1,4	2,3	2 x 1,5	–
SW-20146	46	2,14	1,96	25,4	1154	273	8	2,2	4,4	3 x 1,5	✓
SW-20145	30	1,51	1,40	25,4	807	273	8	1,6	3,2	2 x 1,5	✓
SW-20144	22	1,11	1,03	25,4	634	273	6	1,2	2,5	2 x 1,5	–
SW-20143	15	0,76	0,71	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 mm²	Cell-protector
SW-22146	90	1,92	1,96	49,8	1119	493	8	3,6	6,0	2 x 1,5	–
SW-22145	60	1,27	1,40	49,8	772	493	8	2,6	4,0	2 x 1,5	–

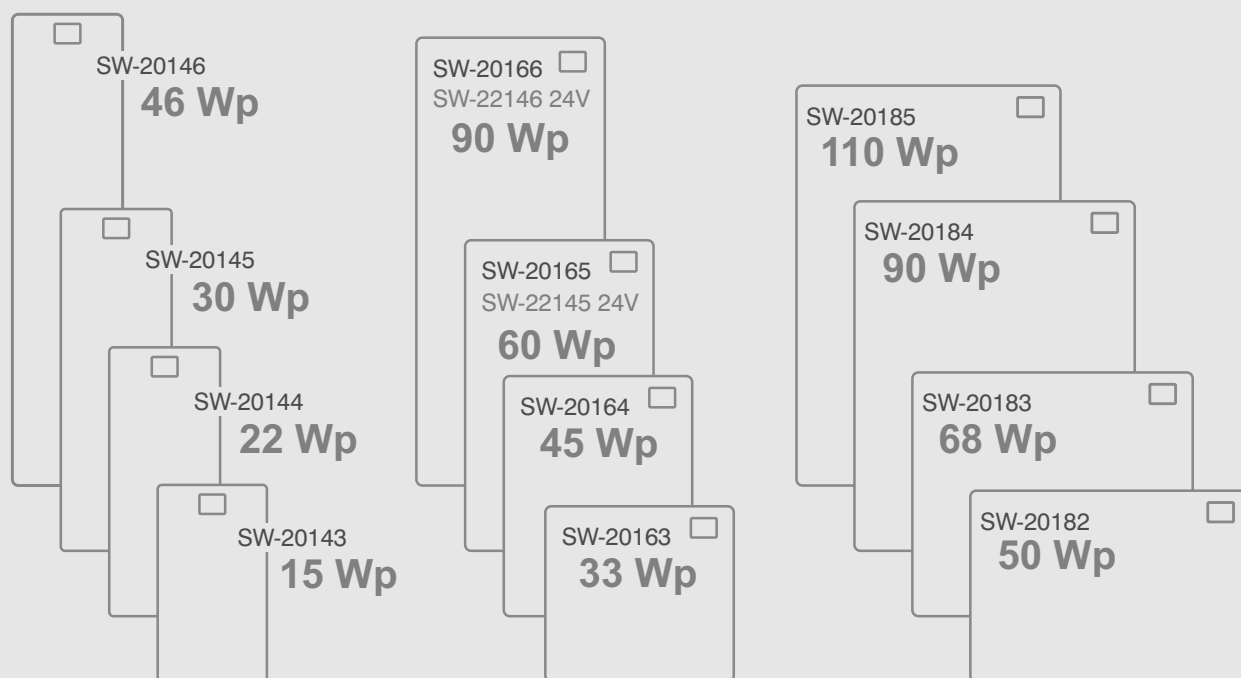
Valid for all panels: laminate: ETFE/EVA/ETFE / carrier plate: aluminium sandwich / individually packed

Environmental conditions : – 40 up to + 85 °C; thermal characteristic values of solar cells: TK Isc: 0,06%/K, TK Uoc: -0,30%/K, TK Pmpp: -0,39%/K

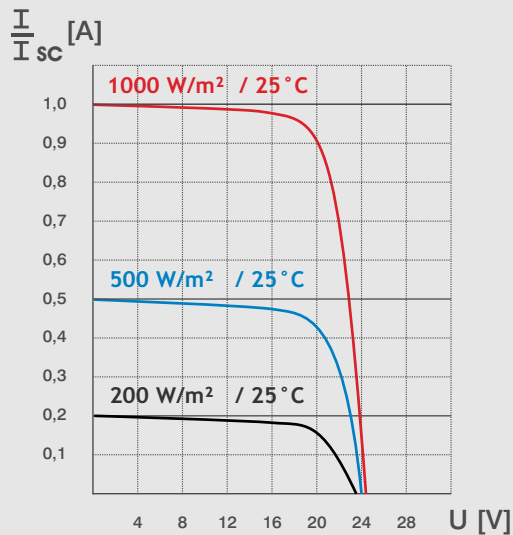
P max according to STC (standard test conditions) AM 1,5, 1000 W/m², 25°C, measuring tolerance: 10%.

Technical changes reserved. State 12/2022

Panels 20-series

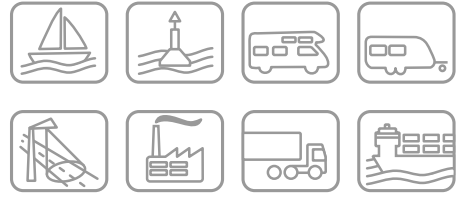


Electrical characteristic



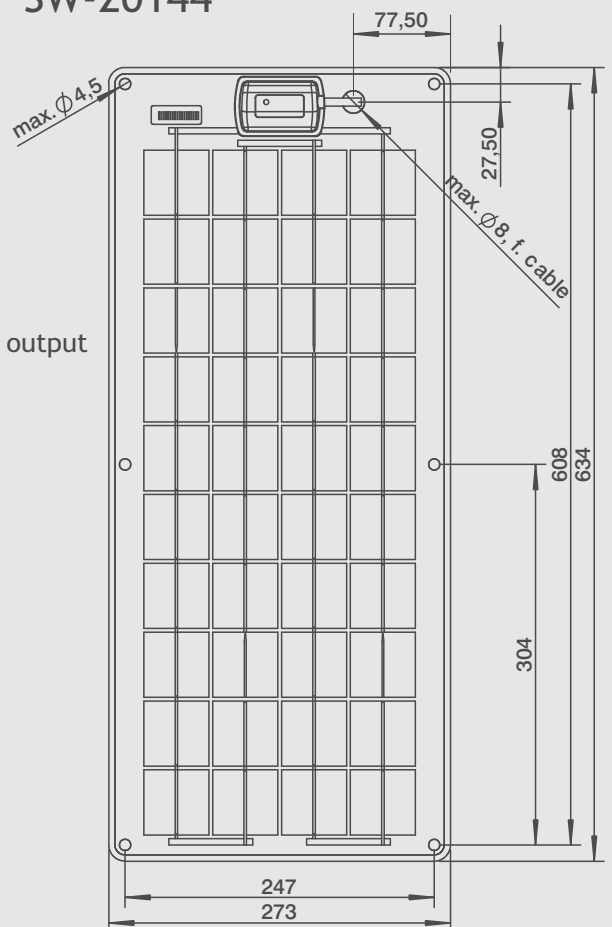
RANGE OF APPLICATIONS

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

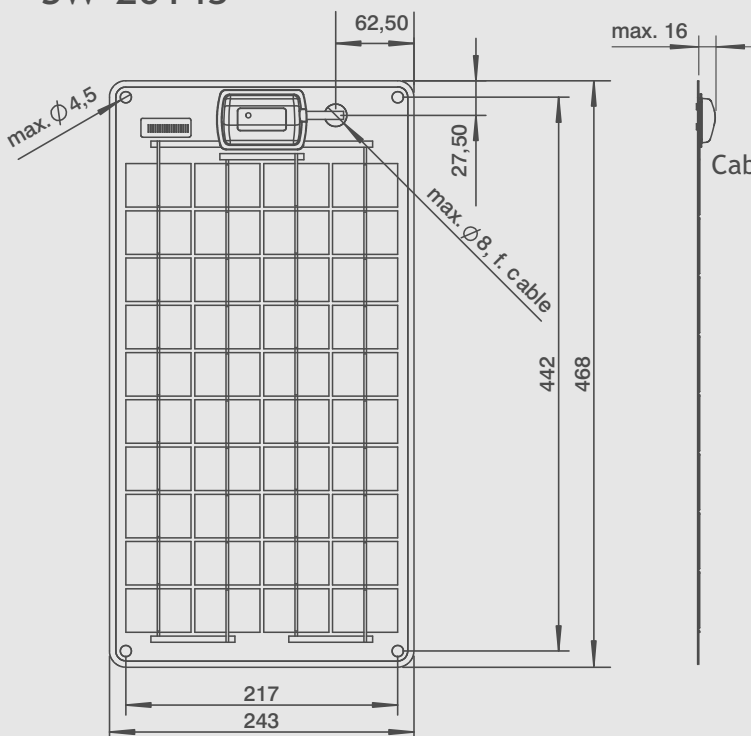


DIMENSIONS

SW-20144



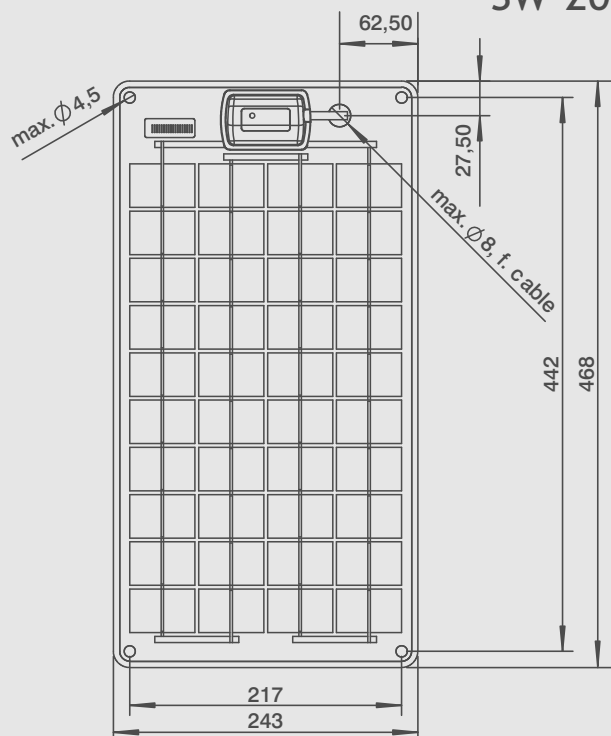
SW-20143



Technical drawings at www.sunware.de/download

DIMENSIONS

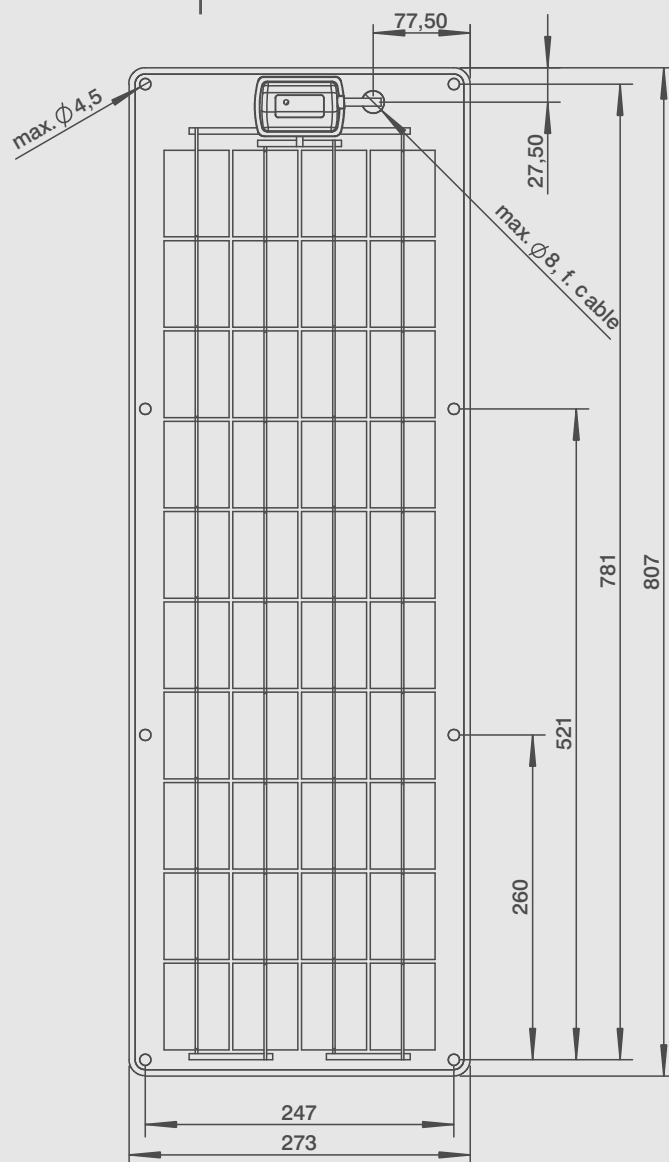
SW-20143



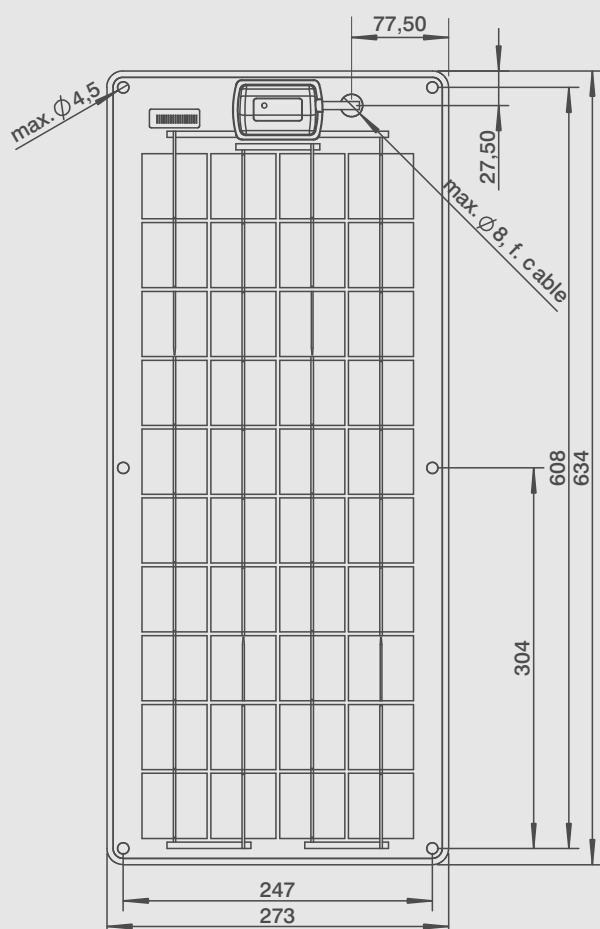
max. 16

Cable output

SW-20145



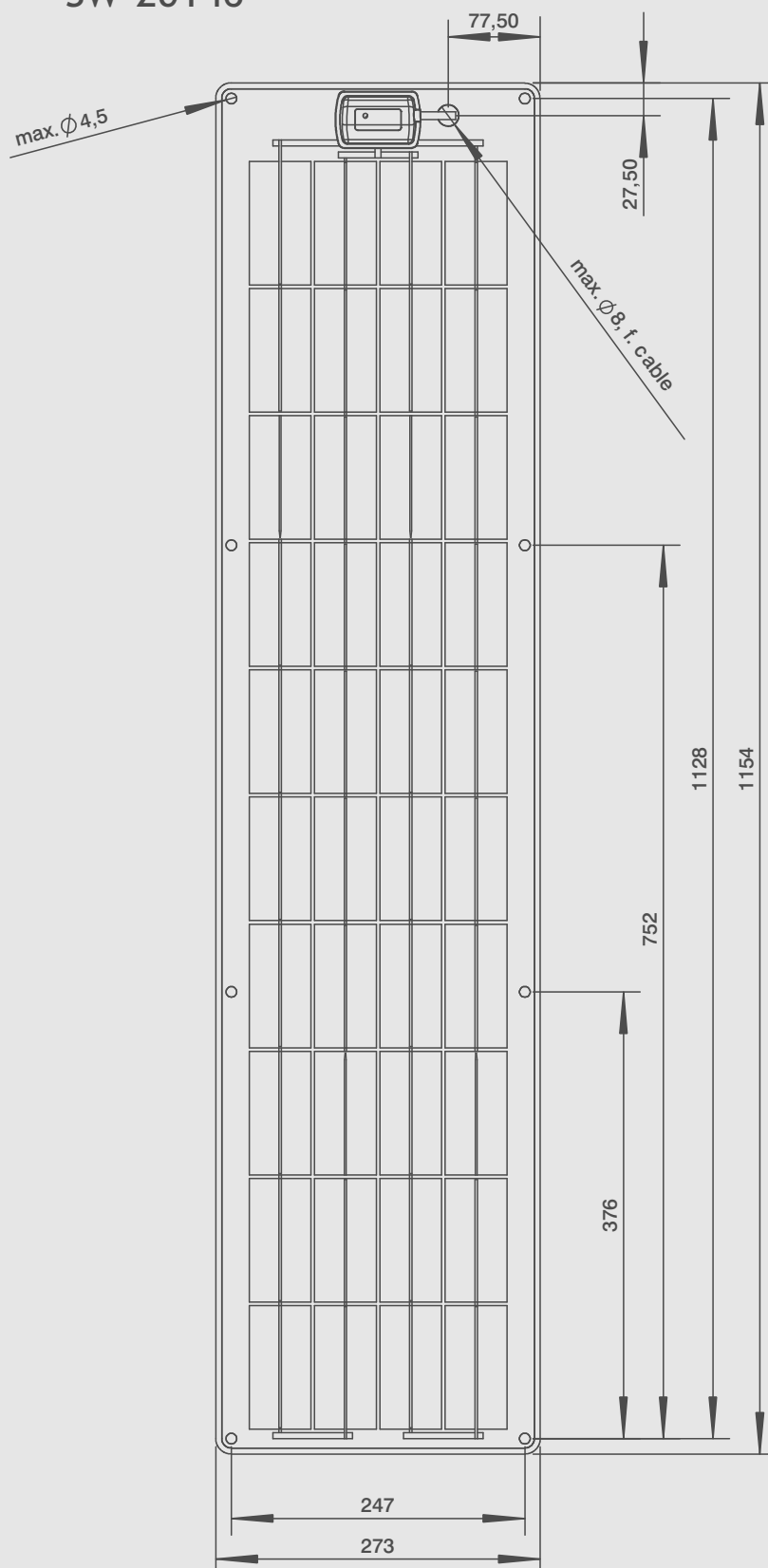
SW-20144



Technical drawings at www.sunware.de/download

DIMENSIONS

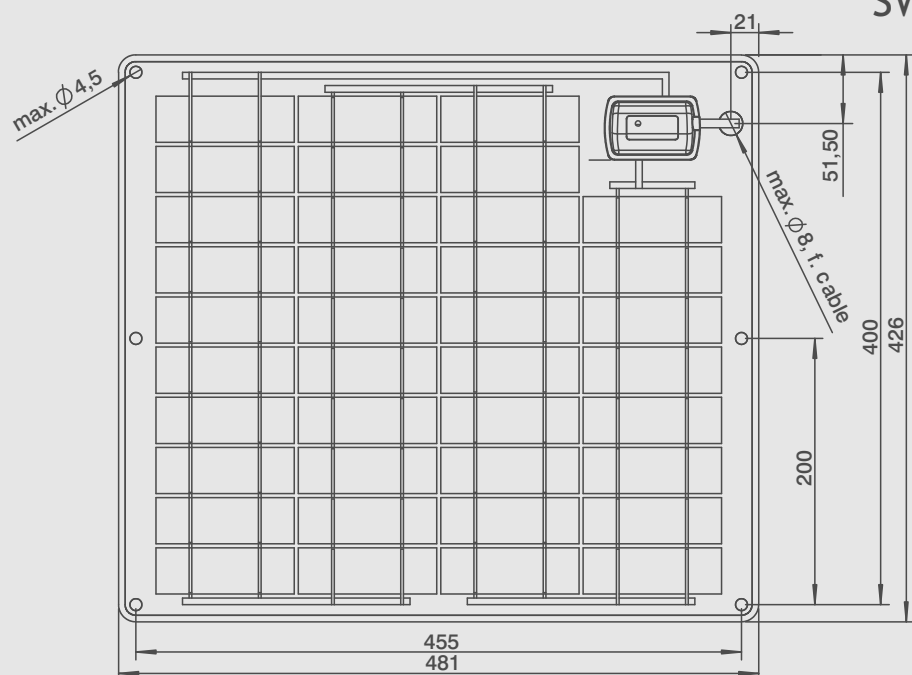
SW-20146



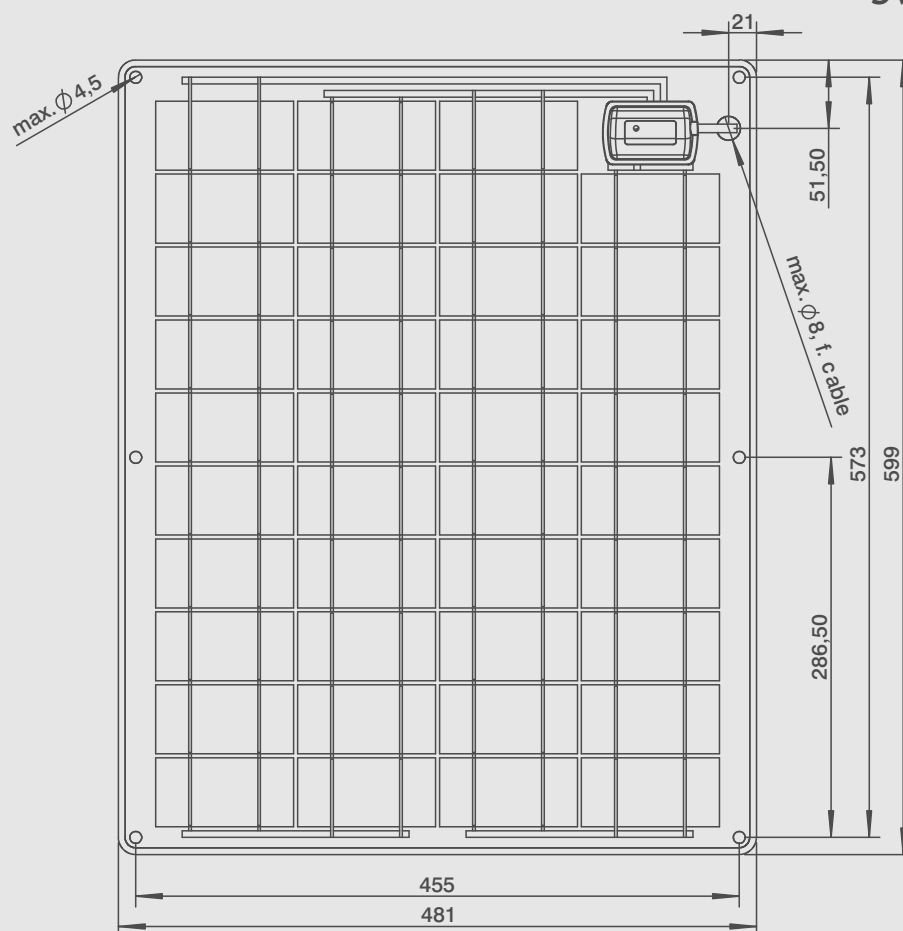
Technical drawings at www.sunware.de/download

DIMENSIONS

SW-20163



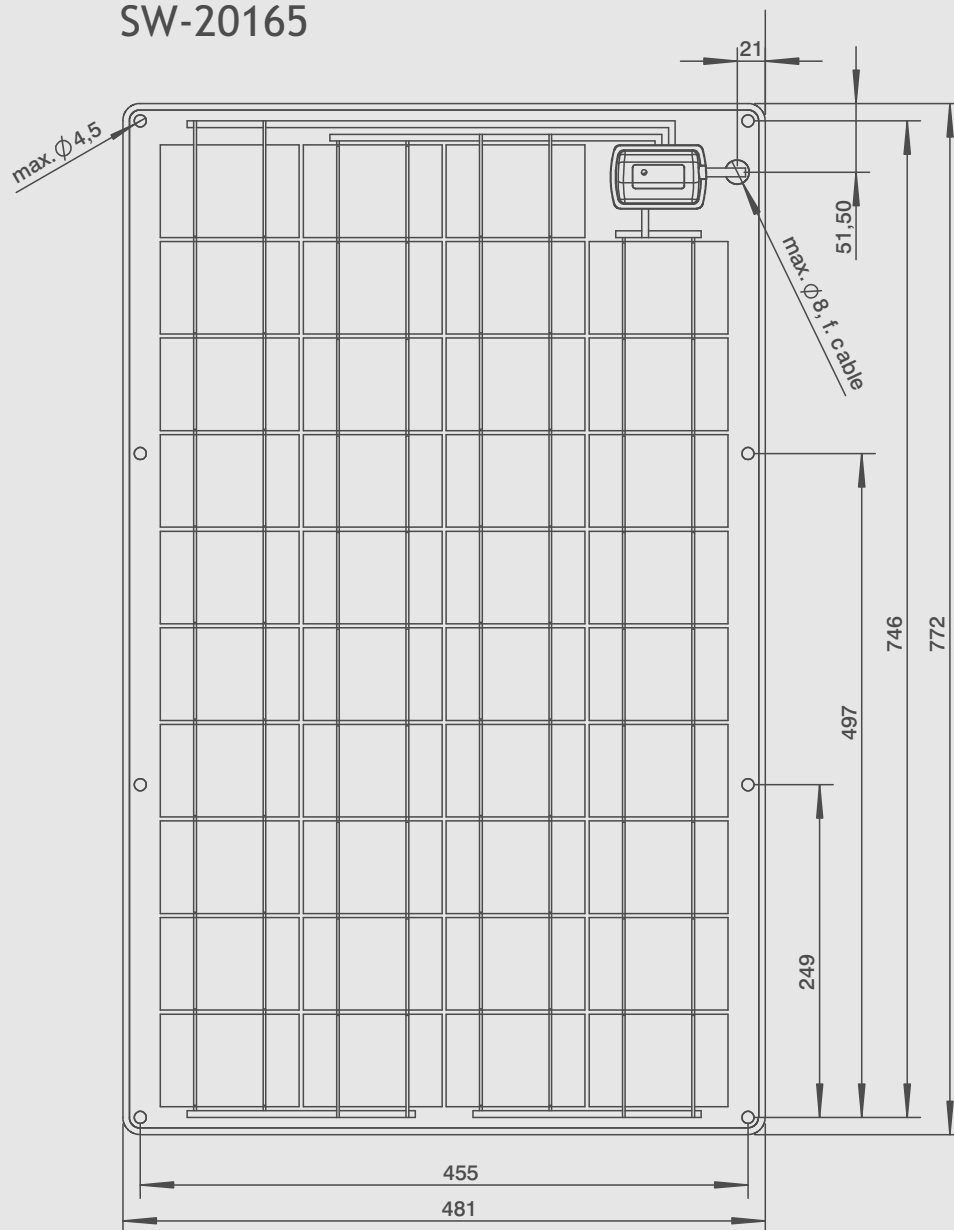
SW-20164



Technical drawings at www.sunware.de/download

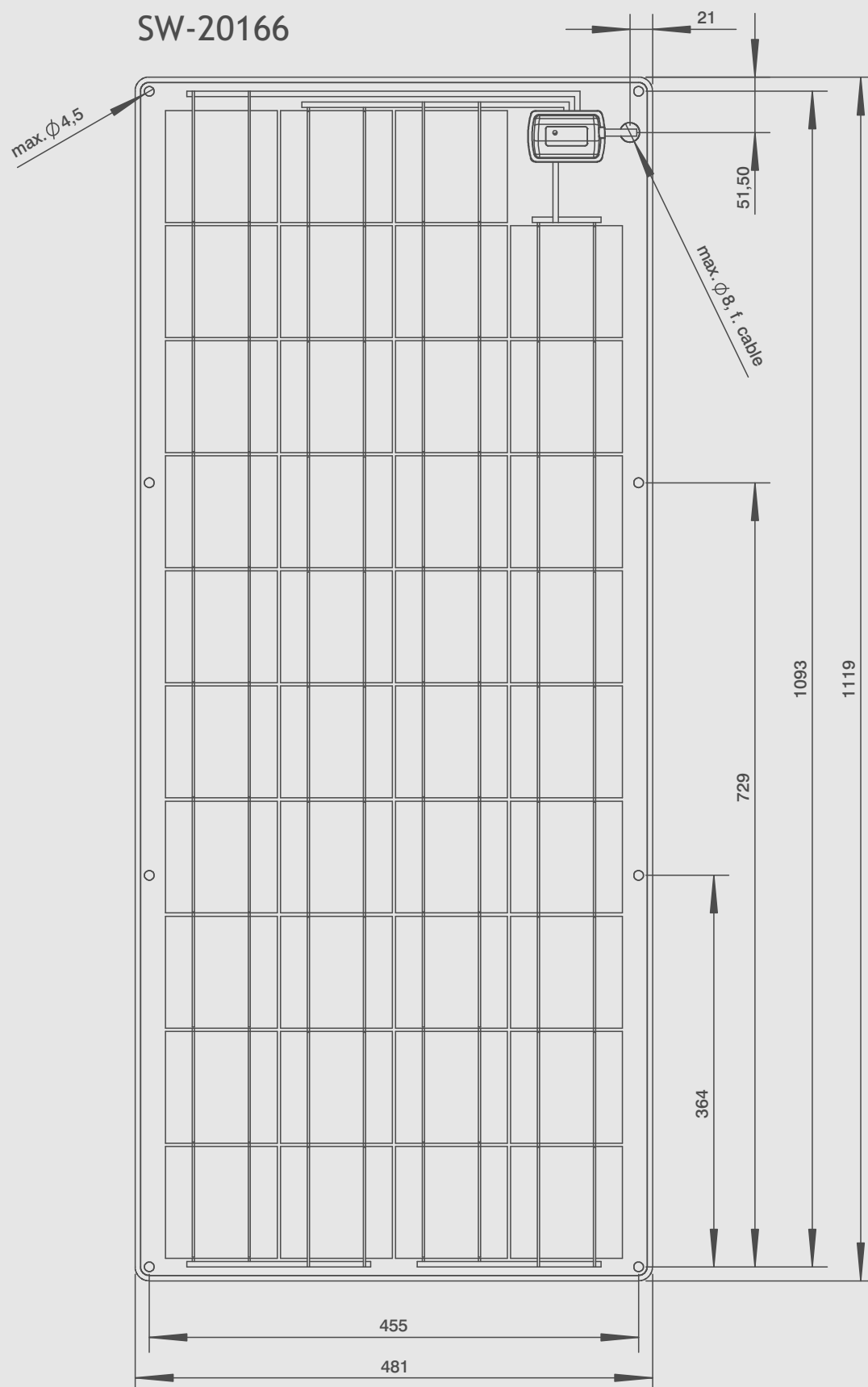
DIMENSIONS

SW-20165



Technical drawings at www.sunware.de/download

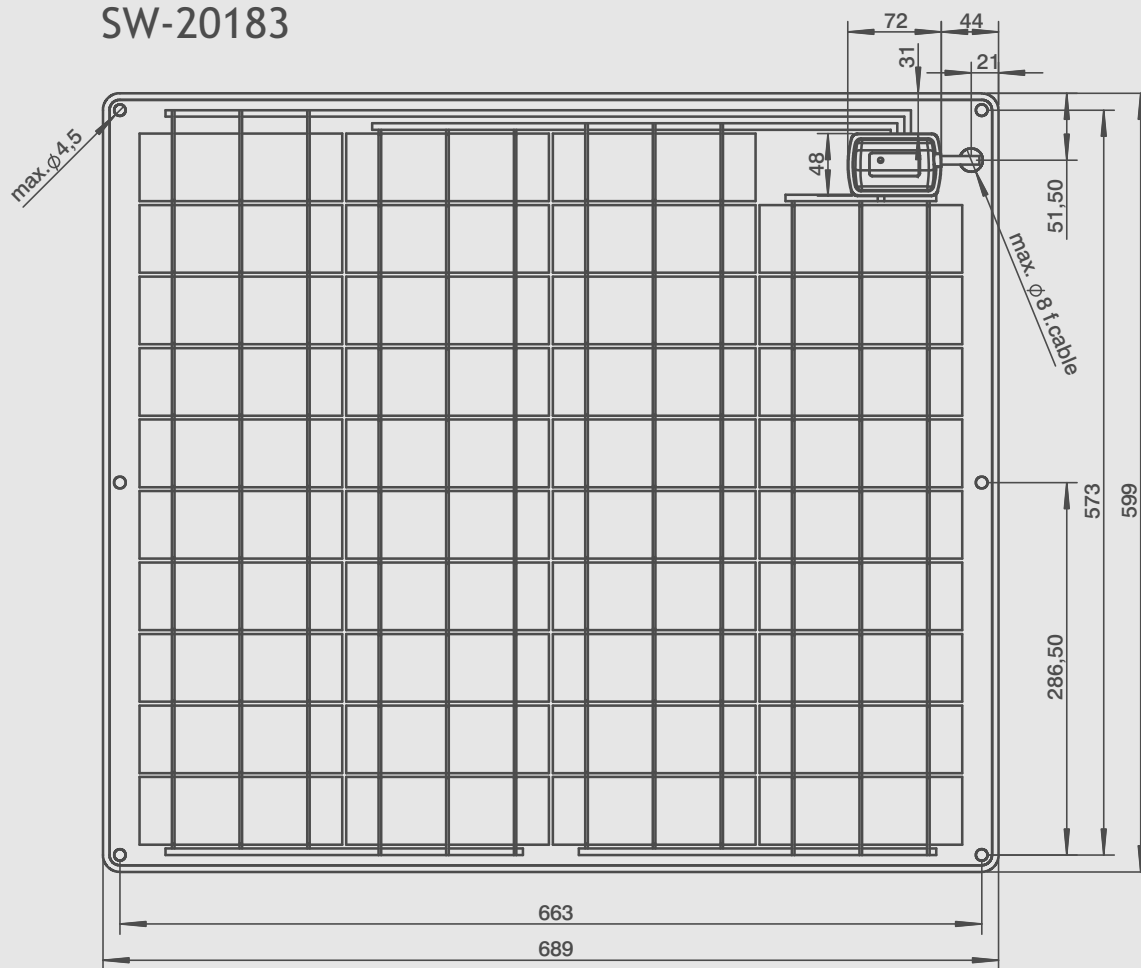
DIMENSIONS



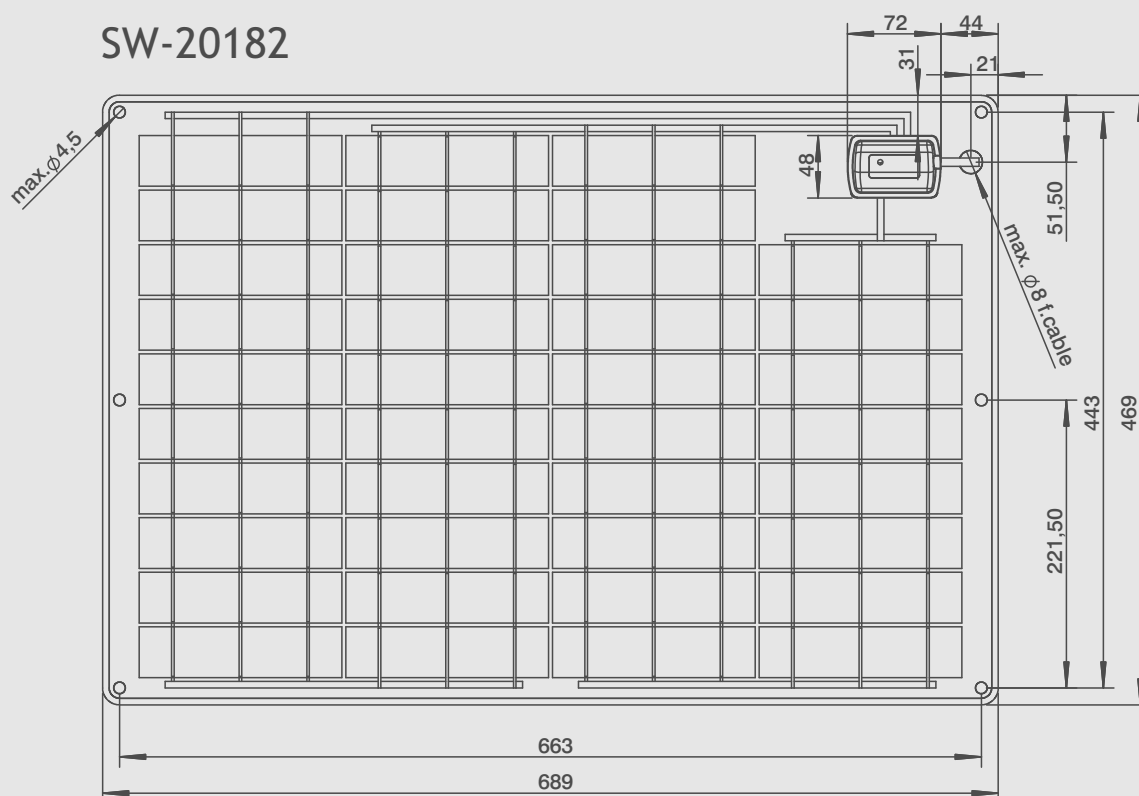
Technical drawings at www.sunware.de/download

DIMENSIONS

SW-20183



SW-20182



Technical drawings at www.sunware.de/download

SW-20184

max. $\varnothing 4,5$

72 44 31 21

48

max. $\varnothing 8$ f. cable

51,50

833

416,50

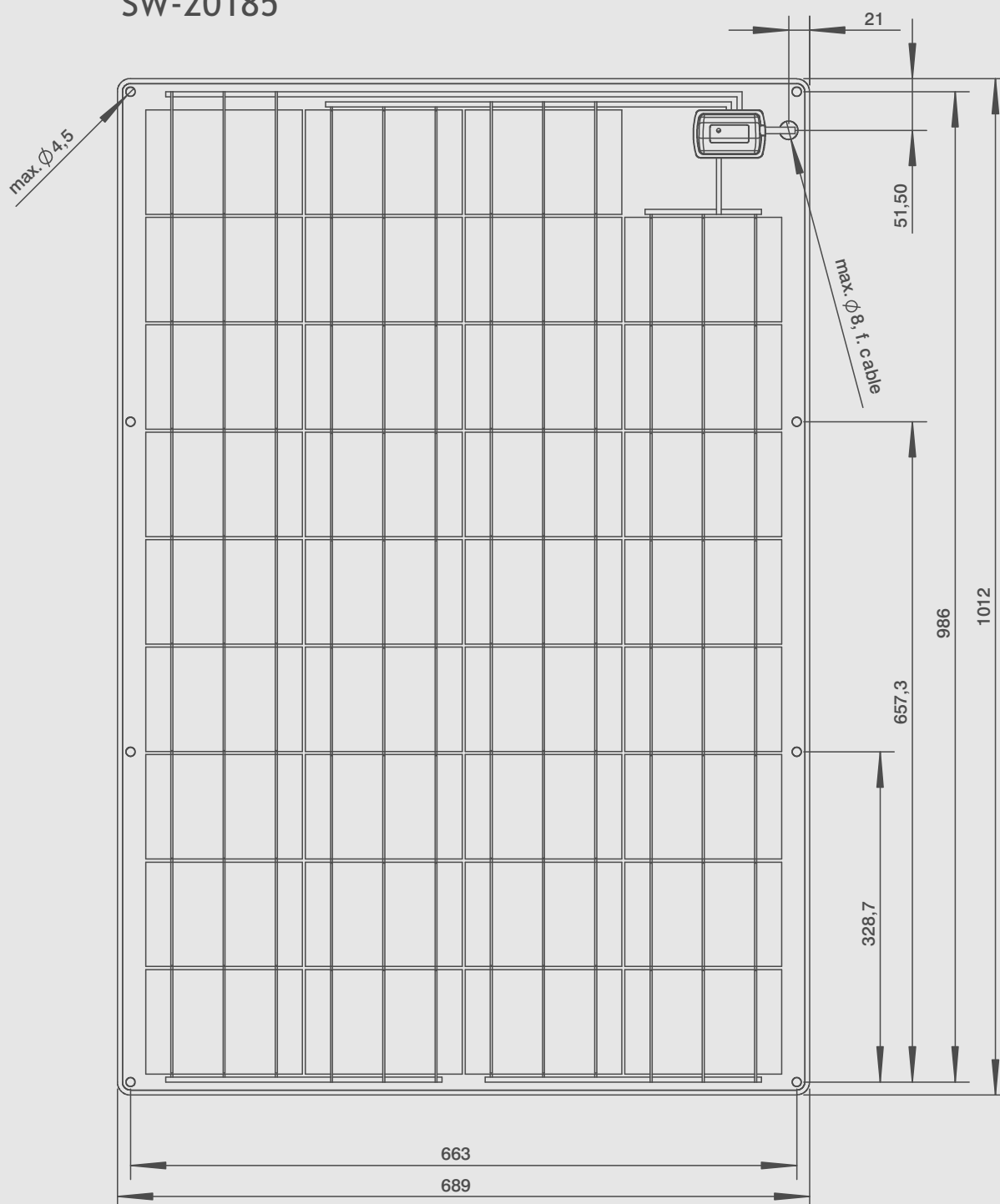
663

689

859

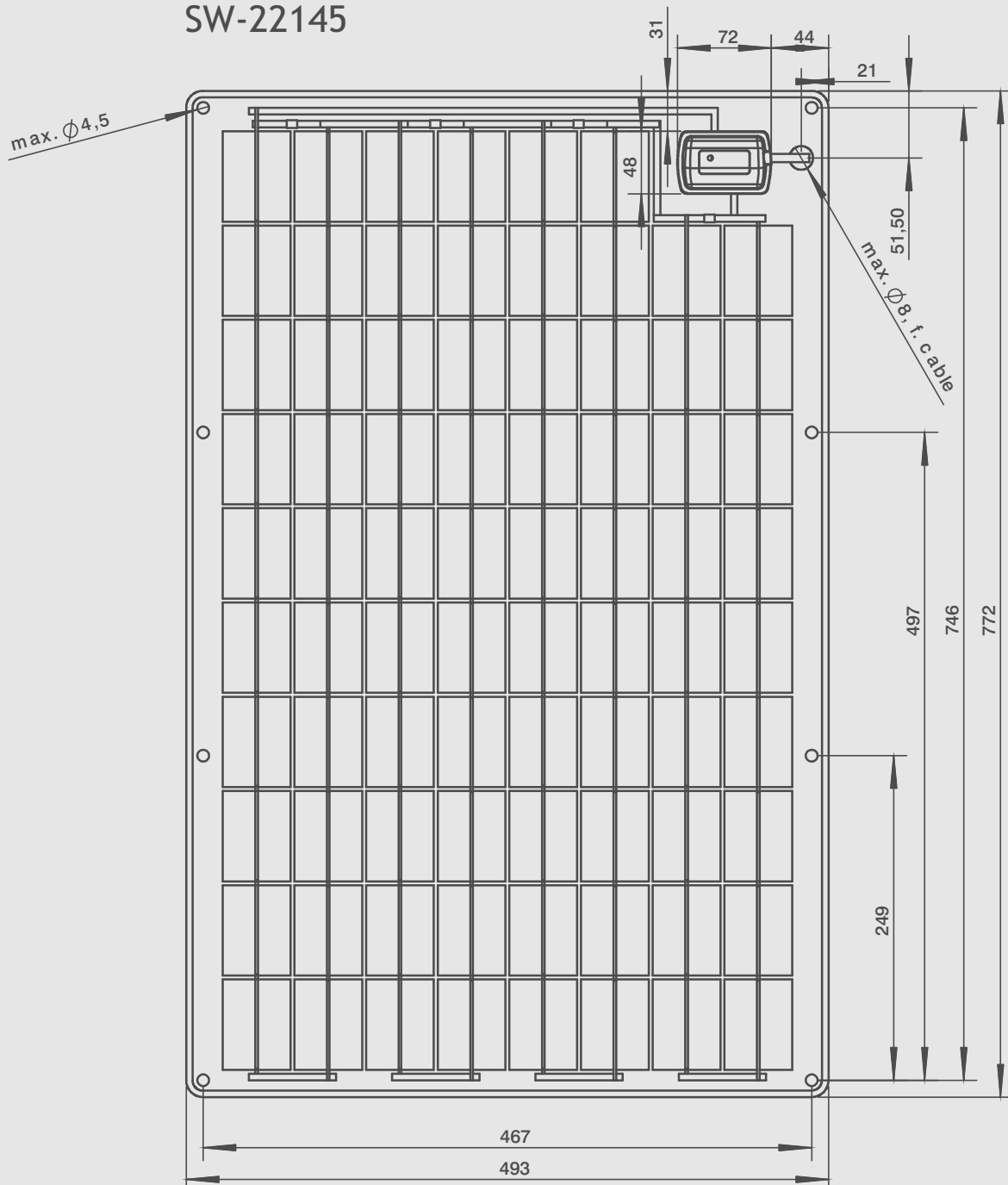
D-47239 Duisburg-Rumeln
WEB www.sunware.de

SW-20185

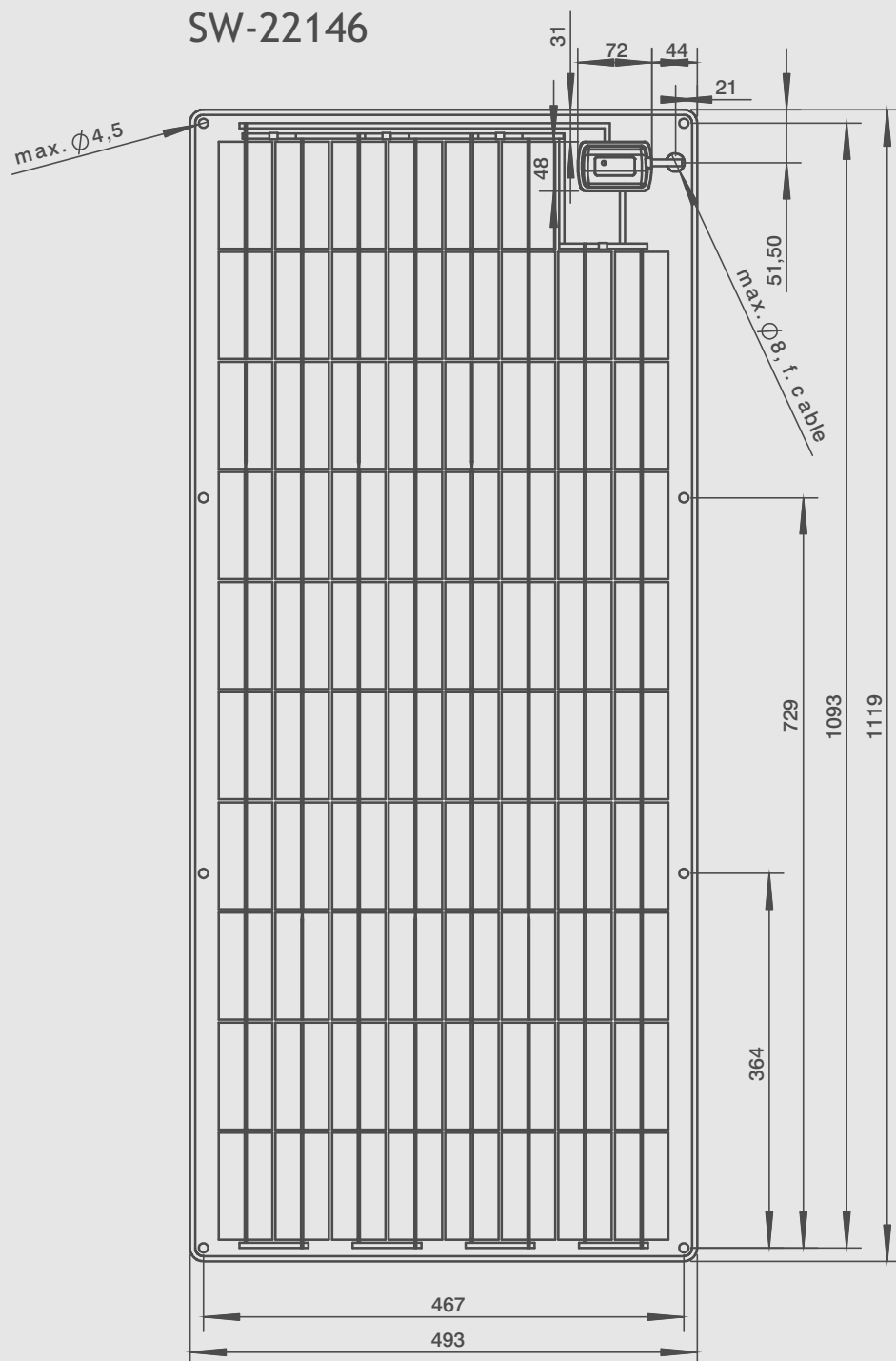


Technical drawings at www.sunware.de/download

SW-22145



Technical drawings at www.sunware.de/download



Technical drawings at www.sunware.de/download