

## Solar modules 20-series

Solar modules 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 module 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 modules are equipped with 39 or 40 cells
- Walkable when installed on a solid surface (using boat shoes)
- Modules can be slightly bent till max. 3% (3cm/1 meter)
- 3 years warranty on power output

	SW-	20143	20144	20145	20146	20163	20164	20165	20166	20185
Power*	[Wp]	14	20	25	38	25	38	50	75	100
I sc, charging current	[A]	0,72	0,96	1,37	1,92	1,44	1,92	2,54	3,84	5,75
I max	[A]	0,69	0,91	1,2	1,81	1,36	1,8	2,4	3,62	5,43
U oc	[V]	25,4	25,4	25,4	25,4	24,1	24,7	24,7	24,7	24,7
Cell sizes	[mm]	39 x 52	52 x 52	69 x 52	104 x 52	39 x 104	52 x 104	69 x 104	104 x 104	104 x 156
Length	[mm]	468	643	807	1154	426	599	772	1119	1012
Width	[mm]	243	273	273	273	481	481	481	481	689
Bore holes (D=9,0 mm)		4	6	8	8	6	6	8	8	8
Weight netto	[kg]	0,7	1,2	1,6	2,2	1,3	1,8	2,3	3,6	4,7
Weight brutto	[kg]	1,8	2,5	3,2	4,4	1,7	2,4	4,1	5,8	7,0
Cable	[mm <sup>2</sup> ]	3 x 1,5	3 x 1,5	3 x 1,5	3 x 1,5	3 x 1,5	3 x 1,5	3 x 1,5	3 x 1,5	3 x 1,5
Cell-protector		-	-	-	✓	-	✓	✓	✓	✓

**Valid for all modules 20-series:** Laminate: ETFE/EVA/ETFE / carrier plate 3 mm aluminium sandwich / individually packed / Environmental conditions : - 40 up to + 85 °C, thermal characteristic values: TK I<sub>sc</sub>: 0,06%/K, TK U<sub>oc</sub>: -0,34%/K, TK P<sub>mpp</sub>: -0,42%/K

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



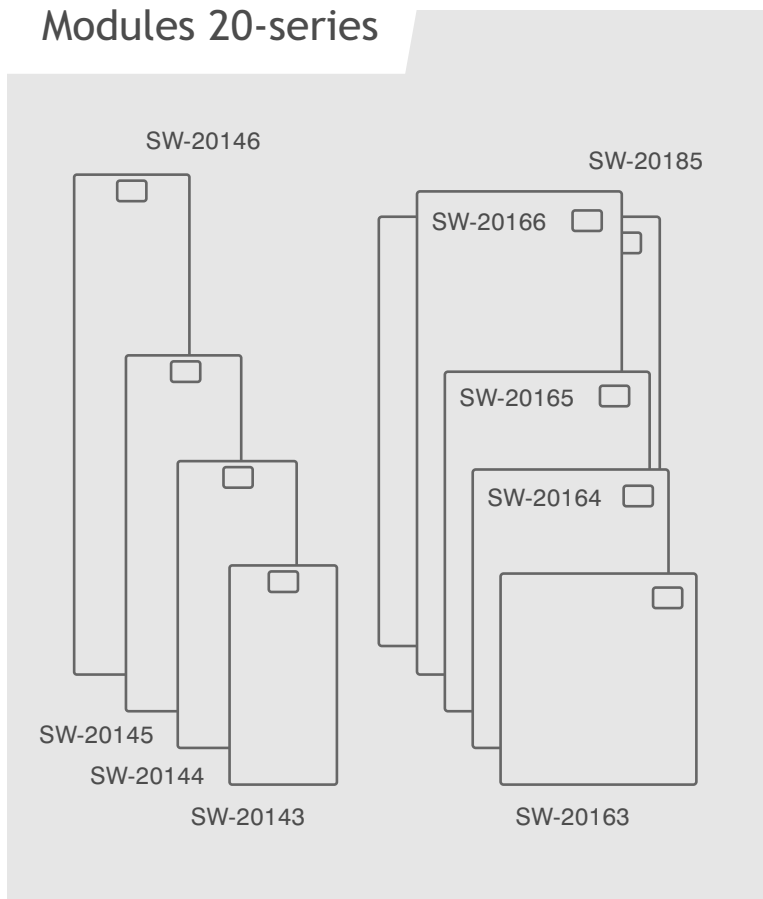
Technical changes reserved. State 4/2016

## RANGE OF APPLICATIONS

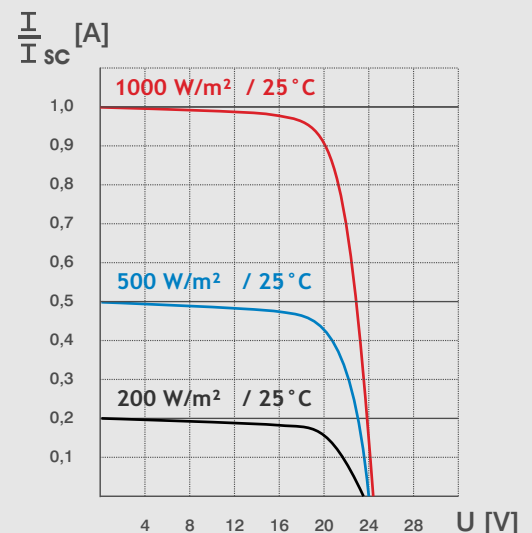
- For motor boats and sailing yachts
- For camping, caravan, off road and 4x4
- For mobile current supply
- For industry, shipping and building sector



## Modules 20-series

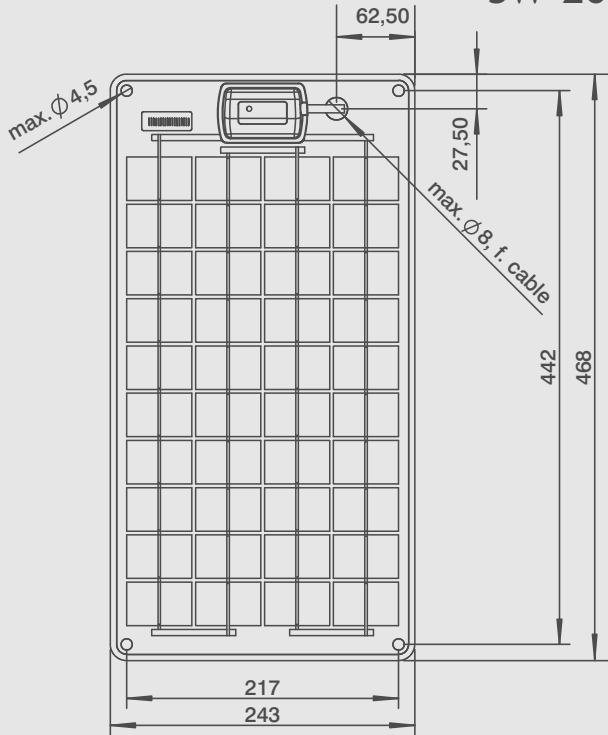


## Electrical characteristic



# DIMENSIONS

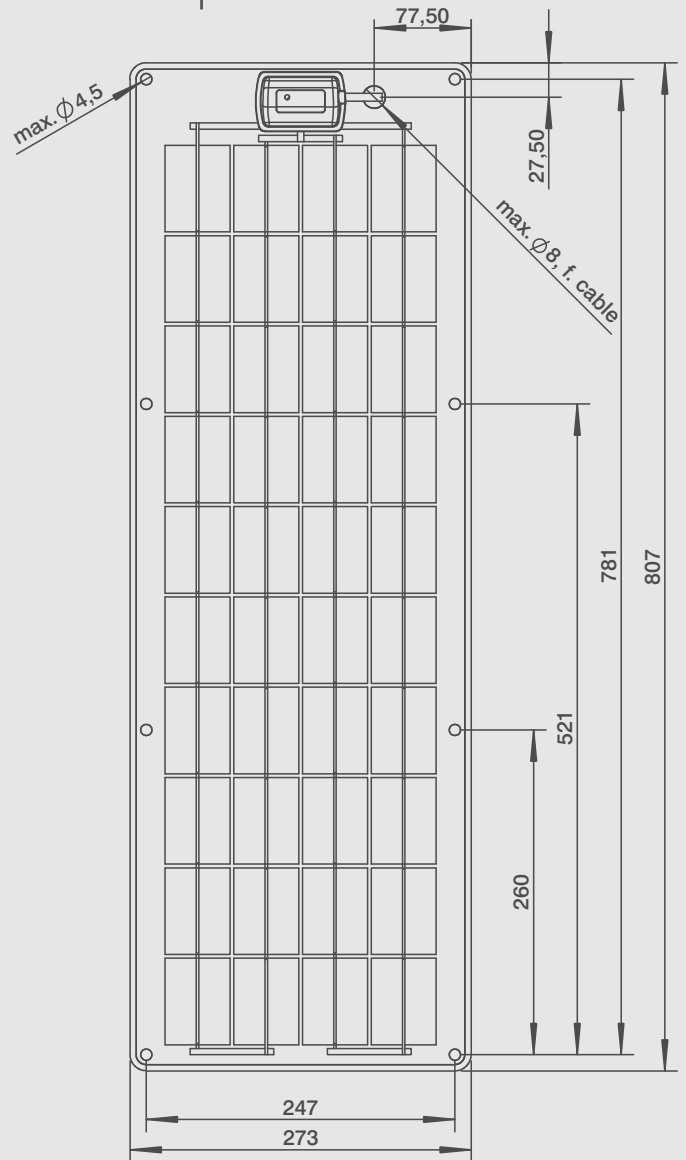
## SW-20143



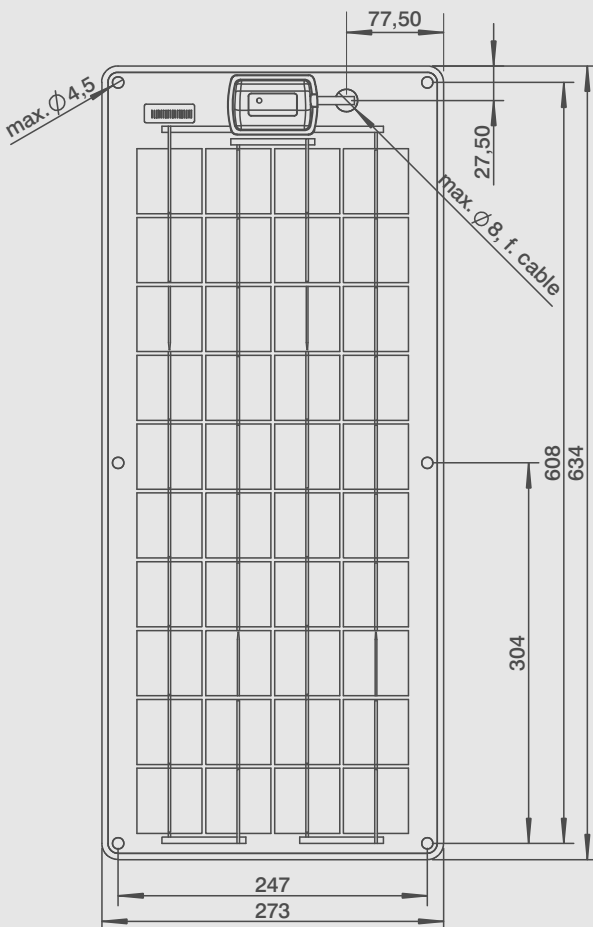
max. 16

Cable output

## SW-20145



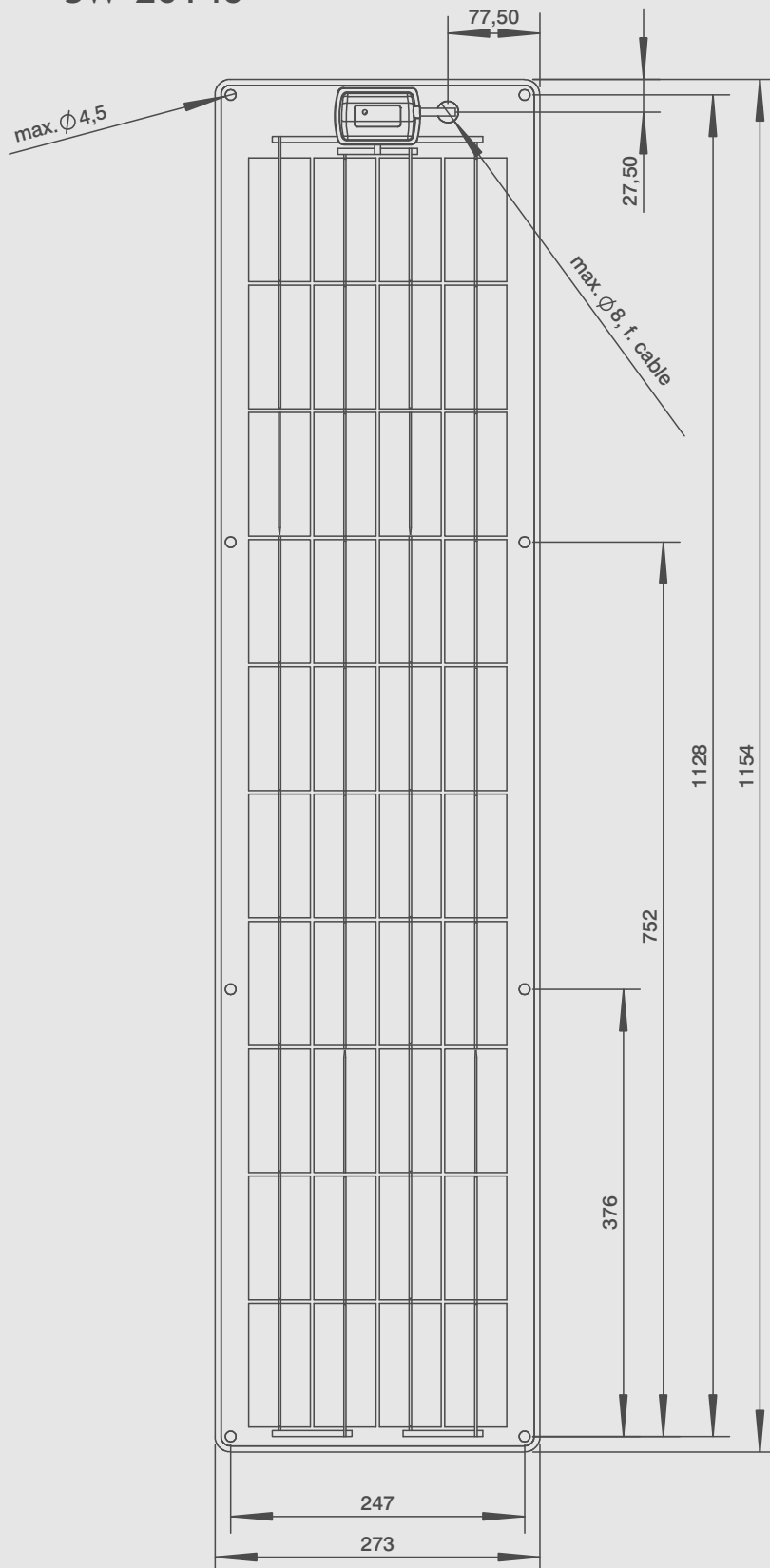
## SW-20144



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

# DIMENSIONS

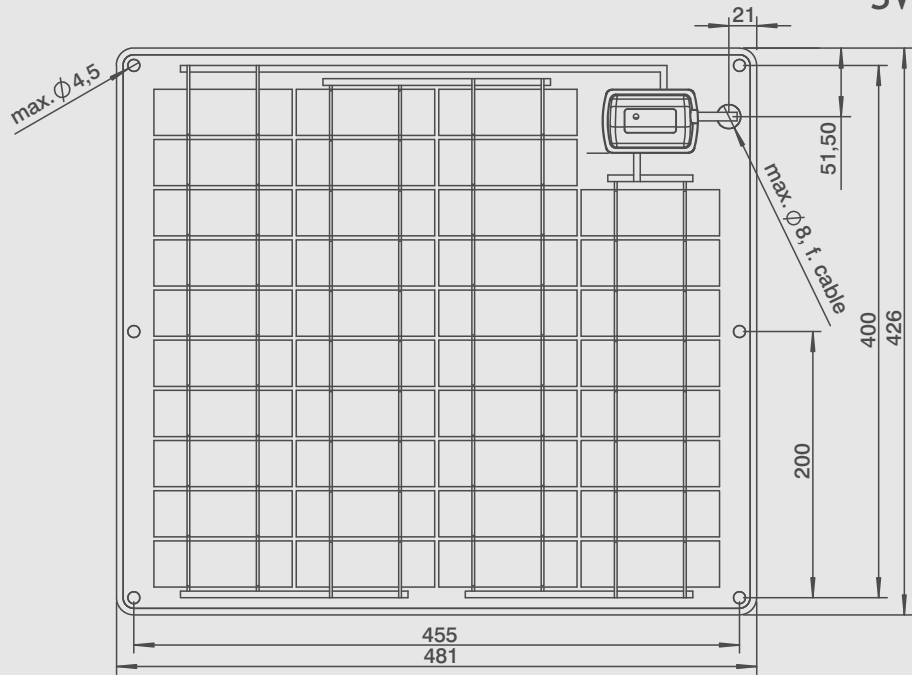
SW-20146



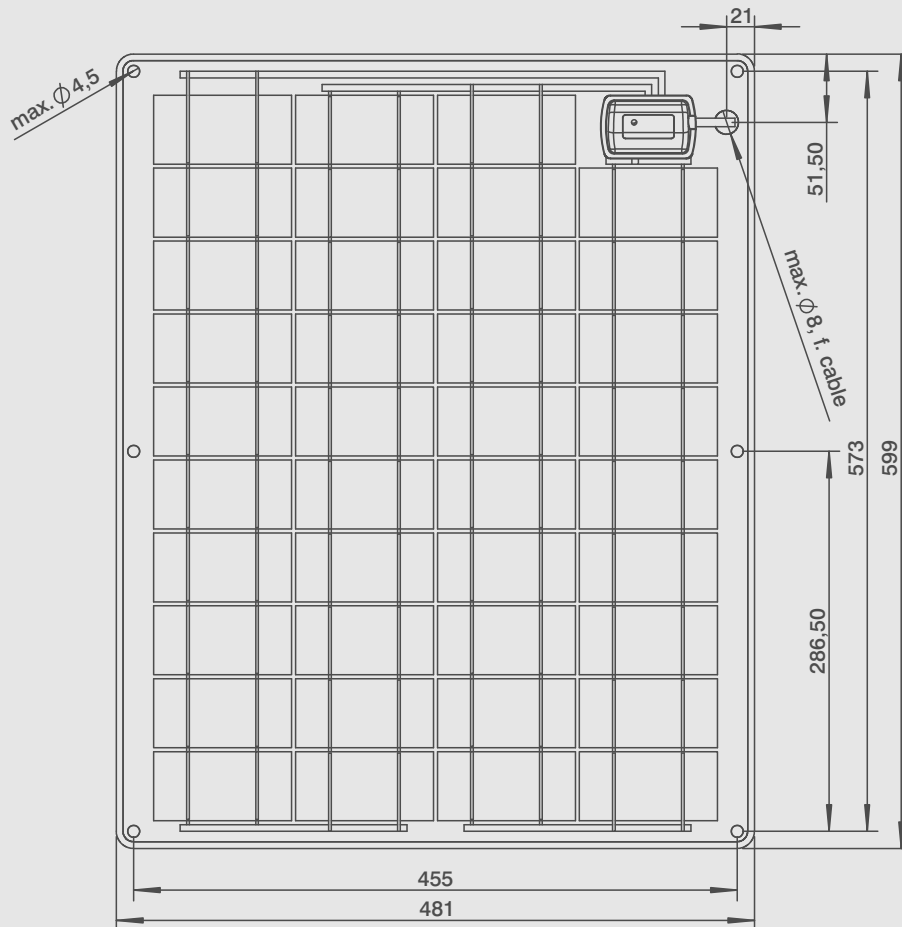
Technical drawings at [www.sunware.de/download](http://www.sunware.de/download)

# DIMENSIONS

SW-20163



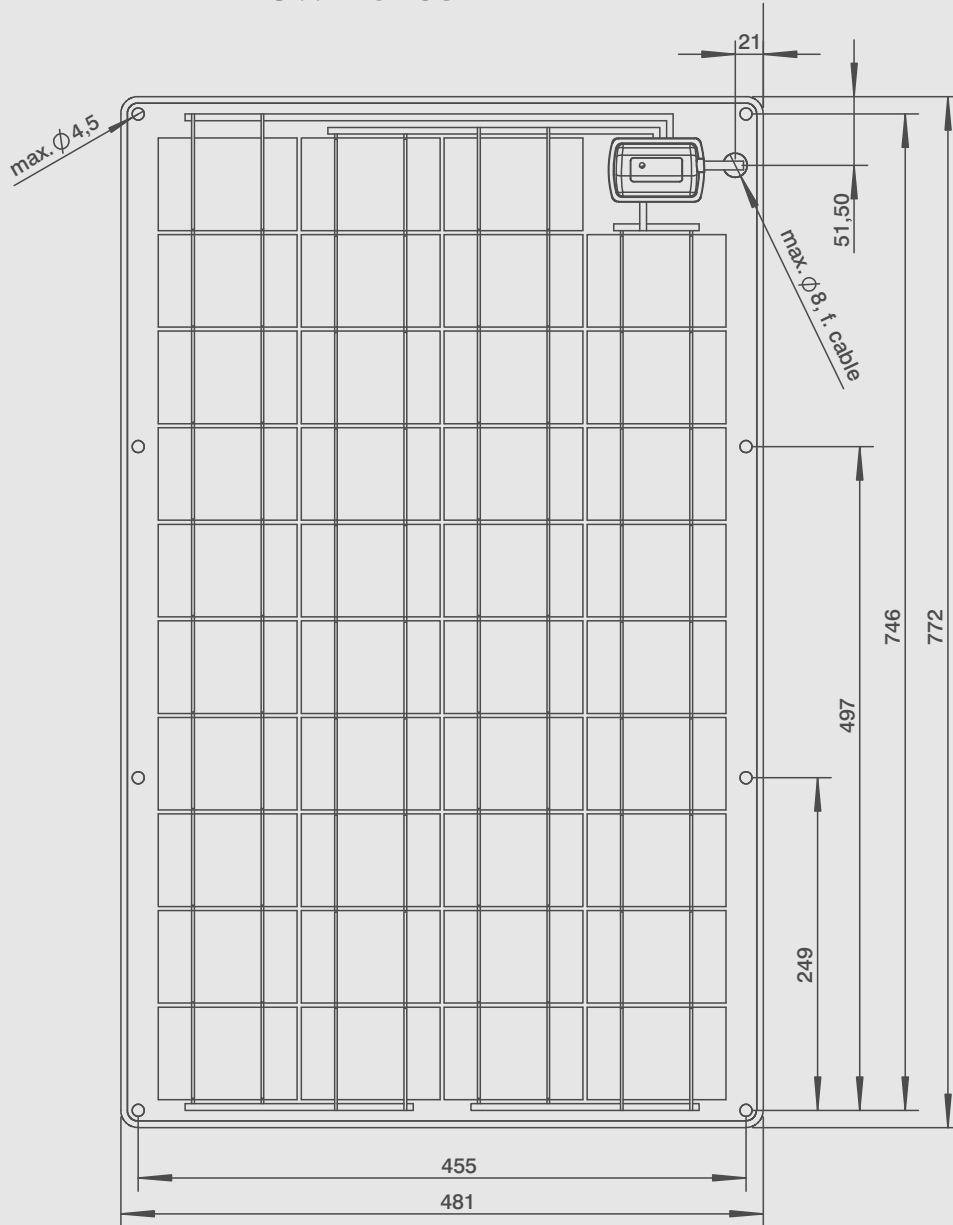
SW-20164



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

# DIMENSIONS

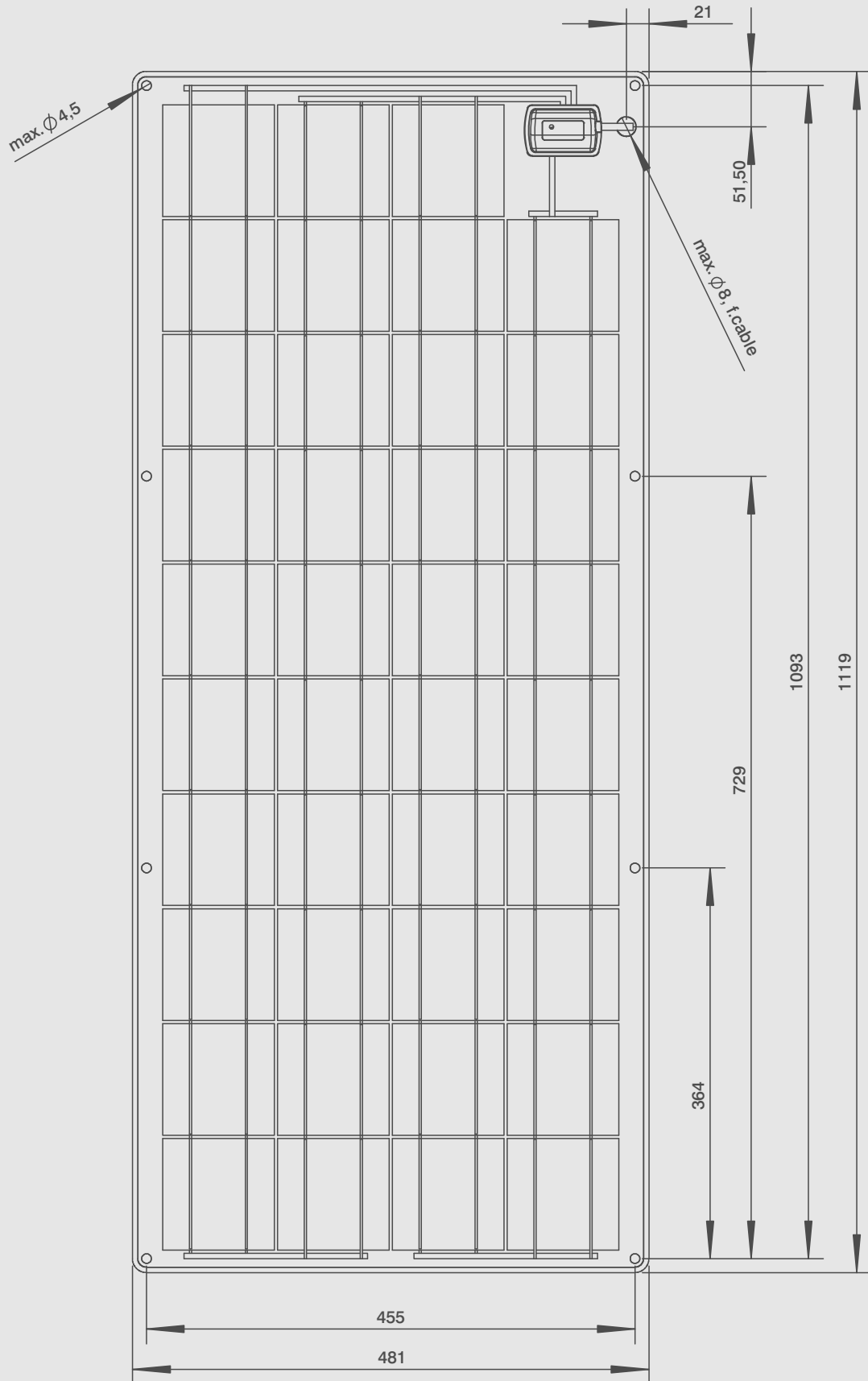
## SW-20165



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

# DIMENSIONS

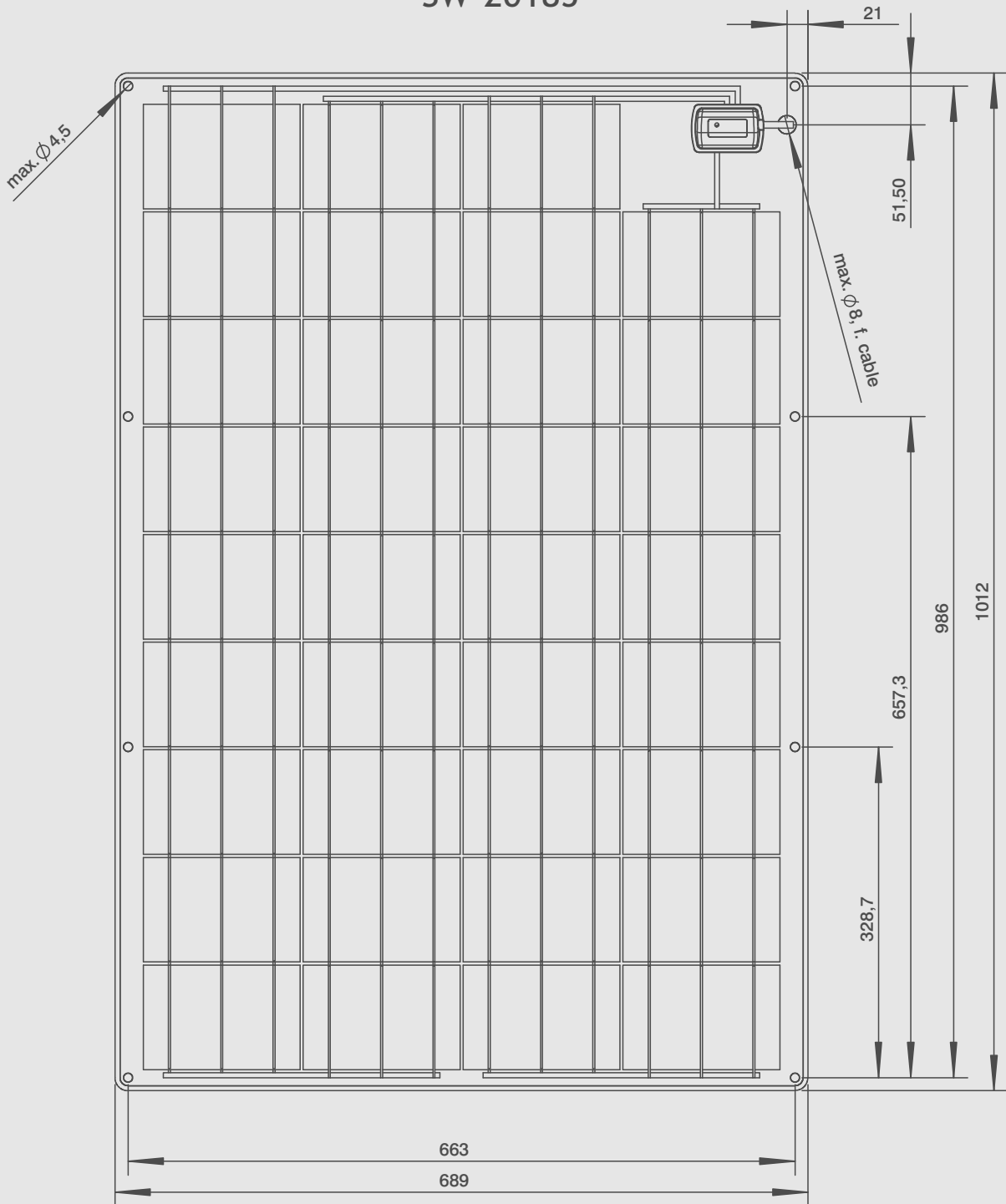
## SW-20166



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

# DIMENSIONS

SW-20185



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