

# 20 W solar module SUSE 4.42

Professional multicrystalline solar module with 36 solar cells in intern series connection  
Especially suited for solar module experiments or as off-grid system in combination with 12 V rechargeable battery and solar charge controller

With DC-DC converter SUSE 4.17 ideally suited for charging smartphones/tablet PCs/notebooks

The professional 20 W solar module SUSE 4.42 is well suited for photovoltaics experiments in Secondary Schools.

With the solar module **SUSE 4.42** all relevant measurements of a solar module can be conducted in the sunlight or in the light of a halogen spot light. Furthermore a small photovoltaic off-grid system can be established with an additional charge controller and a 12 V rechargeable battery. The module contains 36 solar cells in intern series connection.

With the DC-DC converter SUSE 4.44 a stable output voltage of 9 V / 12 V / 15 V (depending on the model of 4.44) with varying module voltages results and can directly be used for electric devices (without rechargeable battery and charge controller). With the back side ground/table positioner the module can be placed on the ground or on a desk with an adjustable inclination angle.

With the DC-DC converter SUSE 4.17 the module can be used optimally for charging and operating smartphones/tablet PCs/notebooks or powerbank rechargeable batteries.

For the experiments an extensive and detailed manual is available.



### Photo of the solar module SUSE 4.42

Visual appearance and cell shape can differ. The junction box is located on the back side of the module and is not visible here.

**Top:** The **voltmeter** shows the open circuit voltage of 22.2 V.



**Left:** Indicator LED showing operational readiness

Above the junction box the holding of the desk/ground positioner is visible.

### The technical data of the solar module SUSE 4.42

With a solar irradiation of 1000 W/m<sup>2</sup> and T = 25°C AM 1.5

Electrical power	20.0 W
Dimensions	470 x 345 x 25 mm (can be modified)
Frame	Stable aluminum frame (anodized) with mounting holes
Solar cells	36 multicrystalline solar cells in intern series connection
Embedding	In EVA lamination under hail-proof security glass, specially hardened
Open circuit voltage $V_{oc}$	21.9 V
Short-circuit current $I_{sc}$	1.23 A
Electrical connectivity	Back side junction box with 2 feeder clips, dust- and water-proof
Bypass diode	1 bypass diode in junction box
Connection cable	2-core cable 1.5 m long with one 4mm lab plug red + black- each
Positioner	With adjustable desk/ground positioner



The **amperemeter** shows the short-circuit current of 1.27 A.

The short-circuit current is proportional to the light's irradiation (irradiance) in W/m<sup>2</sup>.

**Additional technical data and characteristic curves can be found in the experimentation manual for the solar module SUSE 4.42**