SUNdidactics
SolarEnergyDidactics
SolarEducation
SolarEngineering

innovative Solarsysteme für Schule und Ausbildung
innovative solar- systems for school, college, technical education

- Solardidaktik
- Solarzellen
- Solarmodule
- Photovoltaik- Experimentiergeräte
- Photovoltaik- Gerätentwicklung
- Experimentieranleitungen didaktische Konzepte
- Solarberatung
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SUNdidactics Wolf- Rüdeger Schanz, Schaperbleek 15, D-31139 Hildesheim, Germany

Phone: +49(0)5121 86 07 30 Fax: +49(0)3222 370 66 89 Mail: wr.schanz@t-online.de
Mobile: +49(0)175 766 06 07 Web: www.sundidactics.de Mail: info@sundidactics.de

Solar module SUSE 4.35

Solar module 4.9 V 630 mA 2.4 W

with 8 solar cells in intern series connection

Especially suited for experiments with the solar storage device SUSE 4.12, solar motor 4.16, LED module 4.15, solar radio 4.36, and as solar filling station for the solar vehicle 1.2

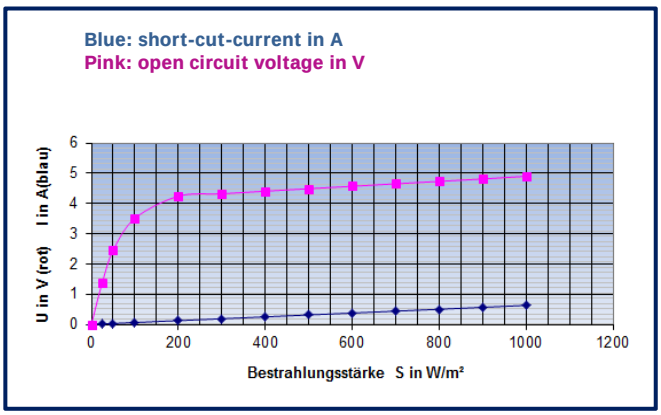
Top: The solar module SUSE 4.35, on the front there are 2 modules SUSEmod6, on the back the 2 jacks red (+) and black (-), in between the green LED as operation display, are visible. The voltmeter shows the module voltage of 4.9 V.

The solar module SUSE 4.35 is a robust module with 2 solar modules SUSEmod6 with 8 solar cells in intern series connection. The **module voltage is 4.9 V**, the **short-circuit current 630 mA**, the **power 2.1 W** with standard testing conditions (irradiance 1000 W/m², T = 25°C, AM 1.5).

The solar cells are mounted on a plexiglass base plate bent to 75°, at the short side 2 jacks positive (red) and negative (black) and a green indicator LED are fit, the LED signalizes the operational readiness.

This module is especially suited as solar filling station for the SUSE solar vehicle 1.2 as well as experiments with the storage module SUSE 4.12, LED module SUSE 4.15, solar motors SUSE 4.16, and solar radio SUSE 4.36. The device is assembled on a plexiglass base plate 160 x 310 mm, bent to 75°.

Left: The amperemeter shows the short-circuit current 0.63 A = 630 mA.
Bottom: The V(S) and I(S) characteristic curves of the solar module SUSE 4.35



The x-axis is the light intensity = irradiance S of the light in W/m². 0 is absolute darkness, 1000 is bright sunshine with deep blue sky in the summer half-year.
The **module voltage V_{oc} (pink graph)** first strongly increases from 0 on and then slowly approximates the value 4.9 V, mathematically it is an exponential function.
The **short-circuit current I_{sc}** increases in a linear fashion from 0 to its maximum value of 0.63 A = 630 mA. Because of the linear trend the irradiance of the light can easily be determined from the short-circuit current, this is done in experiments with a rule of three calculation.