



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

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## The solar measurement module SUSE 5.24

Analogue measurement device for measuring the irradiance(intensity) of the sunlight or the light of light sources in the unit W/m<sup>2</sup>



### The photovoltaics experimental solar radiation measurement device SUSE 5.24

is a special device for measuring the irradiance  $S$  of solar radiation or light radiation, directly displayed on an analog milliamperemeter (100 mA) in the international standard unit W/m<sup>2</sup> (Watts per m<sup>2</sup>).  
Max. display: 1000 W/m<sup>2</sup> 1 scale mark = 50 W/m<sup>2</sup>  
Min. display: 1 scale mark = 50 W/m<sup>2</sup>

SUSE 5.24 is the little brother of the digitally displaying measurement module SUSE 5.23.

The solar radiation shows a great fluctuation outdoors, from approx. 1000 W/m<sup>2</sup> with bright sunshine down to 30 W/m<sup>2</sup> with heavy clouding, indoors  $S$  is < 10 W/m<sup>2</sup>. Shadowing by clouds strongly decreases the radiation. If the direct solar radiation is shadowed, the diffuse radiation of the bright sky can also be measured.

**Function:** The short-circuit current of the solar cell, that is proportional to  $S$ , is adjusted with an exactly fitting electric shunt, so that with 1000 W/m<sup>2</sup> a current of exactly 100.0 mA flows, which is displayed on the measurement device with the value "100" = 1000 W/m<sup>2</sup>.

**The display "100" corresponds to  $S = 1000 \text{ W/m}^2$ .**

The device is constructed with a 8 mm stand for the operation on the optical bench **SUSE 5.0alu** or on any common optical bench or tripods/stand bases.  
A battery is not necessary, the energy needed for measurements is extracted from the solar cell.

#### Photo at the top:

The measurement module SUSE 5.24 seen from the front. The SUSE solar module SUSEmod2 is visible on the front and the 100 mA measuring element at the top.

#### Photo at the bottom:

Display on a sunny winter's day with light cirrostratus clouding:  
 $S = 690 \text{ W/m}^2$