

# Survey Meter SM 8 D

Portable survey meter for the detection of low intensities of alpha, beta, X and gamma radiation



**STEP - Sensortechnik und Elektronik Pockau GmbH**

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The Survey Meter SM 8 D is a hand-held, battery powered radiometer to detect low intensities of alpha, beta, X-ray and gamma radiation.

## Product Characteristics:

- wide energy range for photons (10 keV ... 1.3 MeV)
- qualitative detection of Alpha and Beta activities
- large graphical display with a high resolution
- measurement of equivalent dose and equivalent dose rate
- audible and optical impulse detection
- USB port with data acquisition and evaluation software (optional)
- adjustable alarm thresholds
- switchable measured variable: dose rate ( $\mu\text{Sv/h}$ ), dose ( $\mu\text{Sv}$ ), counts per second (cps), area activity ( $\text{Bq/cm}^2$ )
- wide range of accessories (e.g. energy compensation filter, sample cup, positioning frame)

## Areas of application:

- Medicine, Life-Sciences, Industry, research and development facilities
- Measurement of pulse rates in mixed alpha, beta and gamma radiation fields
- Measurement of equivalent dose rates und area activities
- Evaluation of workplaces
- Fast investigations of solid and liquid food regarding of radioactive contamination

Because of the high sensitivity of the detector, the device is suited for school experiments with natural radioactivity.



## Optinal Equipment:

- energy compensation filter
- sample cup for solid and liquid foods
- positioning frame
- USB cable, data aquisition and evaluation software

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## Technical specifications

<b>Measuring range</b>	<p>Pulse rate 0 .. 1999.9 cps (measurement range overflow indication)</p> <p>Timer / Impulse 1 .. 119940 counts</p> <p>Measuring time adjustable (10 sec, 30 sec, 60 sec)</p> <p>Local dose rate of photon radiation</p> <p>0.1 <math>\mu\text{Sv/h}</math> ... 299 <math>\mu\text{Sv/h}</math> (calibrated with Co-60)</p> <p>(Signal at overflow)</p> <p>Area activity (calibrated at Am-241 and Sr(Y)-90, typical value)</p> <p>0.1 .. 199.9 <math>\text{Bq/cm}^2 \cdot k_a</math> (<math>k_a = 6</math> for Am-241)</p> <p>0.1 .. 199.9 <math>\text{Bq/cm}^2 \cdot k_b</math> (<math>k_b = 2</math> for Sr(Y)-90, typical value)</p> <p>adjustable alarm thresholds</p>
<b>Sensitivity</b>	6 cps / $\mu\text{Sv/h}$ (referring to Co-60)
<b>Energy range</b>	<p>Photons: 10 keV bis 1.3 MeV</p> <p>Beta: qualitatively, energies &gt; 160 keV</p> <p>Alpha: &gt; 2 MeV</p>
<b>Radiation detector</b>	End window Geiger-Mueller tube (area mass density < 2 $\text{mg/cm}^2$ ), not energy-compensated, effective diameter 44.5 mm
<b>Display</b>	large graphical display with a high resolution, background lighting Audible and optical impulse signalisation
<b>Outputs</b>	USB-port Evaluation software (optional)
<b>Power supply</b>	
Batteries	2 x 1.5 V LR06 (AA)
Battery lifetime	approx. 35 hrs (at background radiation level)
<b>Operating conditions</b>	
Temperature	0 °C ... + 50 °C
Rel. Humidity	max. 75 % (at 30 °C)
<b>Weight</b>	$\leq 400$ g
<b>Dimensions</b> (L x W x H)	152 x 83 x 35 mm