

Survey meter OD-01Hx

Dose and dose rate meter for measuring the photon dose equivalent H_x and dose rate equivalent dH_x/dt of continuous and pulsed radiation fields.

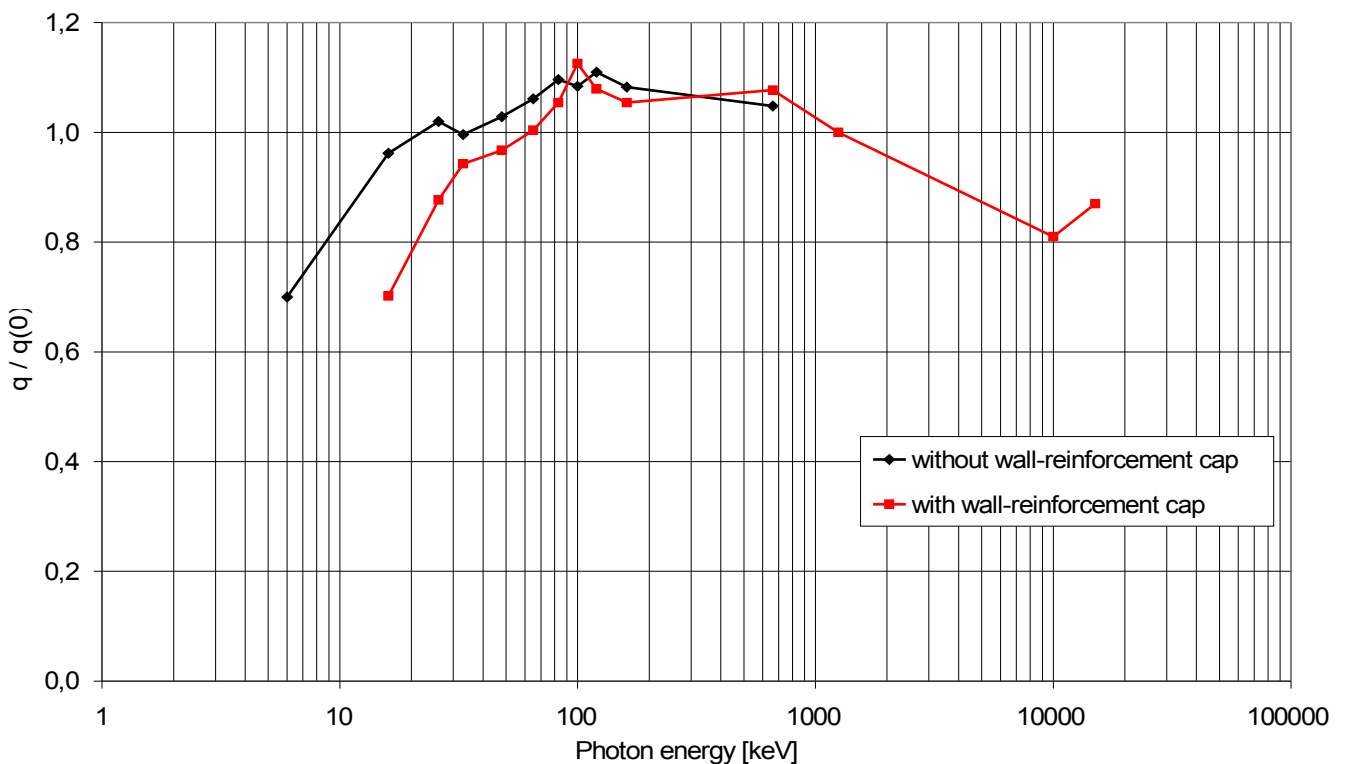


Survey meter OD-01Hx

Product characteristics

- Compact device consisting of display and control unit, probe, device support and 0.7m of connecting cable
- Radiation detector: air equivalent ionisation chamber
- Display ranges:
 - Dose rate:* 0 .. 2000 mSv/h, 0 .. 2000 μ Sv/h
 - Dose:* 0 .. 2000 μ Sv
- Measurement range: 3 decades for dose, 6 decades for dose rate measurement
- Automatic switch of the fine measurement ranges
- Measurement of ambient and directional dose of pulsed radiation fields
- Measurement of photon radiation above 6 keV
- Measurement of hard X-rays and gamma radiation as well as bremsstrahlung of up to 7.5 MeV (up to 15 MeV using an additional acrylic plastic shielding)
- Qualitative evidence of beta radiation of energies above 160 keV
- Battery powered, transportable and stationary applicable device
- Probe disposable up to 100 m from display and control unit
- Easy-to-read back-lighted LCD panel

Energy response of OD-01Hx detector



End use

The OD-01Hx is a new development that is directly linked to the success of the gamma-ray dosimeter RGD 27091.

As a portable, battery-powered dose and dose rate meter with ionisation chamber it is versatile used, e.g. in nuclear laboratories, nuclear medicine clinics, irradiation facilities and reactor systems for measurement of X-ray, gamma and beta radiation.

Beta Radiation may be measured qualitatively above energies $E \geq 160$ keV.

The high sensitivity and wide energy range together with low directional dependence allow you to use the OD-01Hx as a precision radiation protection device.

Measurement principle and electronics allow the measurement of pulsed radiation fields.

The wide measuring range permits to use the device as a dose and dose rate meter for high dose rates.

For stationary measuring arrangements the probe can be disposed of up to 100 meters from the device.

Scope of services

- OD-01Hx display and control unit
- OD-01Hx probe with detachable wall reinforcement cap
- OD-01Hx device carrier
- 0.7 m probe cable
- 4 x batteries LR06
- Equipment case
- Technical description and operating instructions
- Certificate of calibration

Optional equipment

- USB cable and software for measurement evaluation via PC
- Power supply (DC 6 V) with power lead
- Variable probe extension cable up to 100 m upon customer request
- Acrylic plastic shielding for energy values $E > 7,5$ MeV
- Wall holder for stationary application

Design and functionality

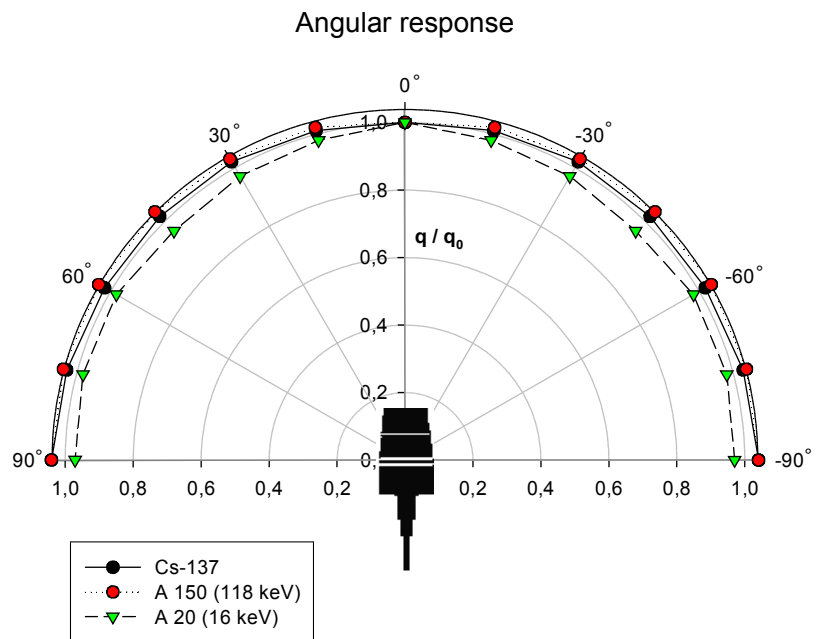
The OD-01Hx basically consists of the control and display unit, the removable probe and the device carrier. The device carrier allows the use of the device as a compact unit.

The large energy range of the OD-01Hx, which extends from 6 keV to 15 MeV, demands in accordance to the energy and measuring methods the probe with or without set up wall reinforcement cap and maybe an additional PMMA-shielding.

Power is supplied by 4 batteries LR 6 1.5 V type AA. The display device includes an LCD display with backlight, on which the current operating condition will be displayed.

The measured value is displayed as a digital value and as a quasi-analogue bar.

An USB port allows the transfer and evaluation of the measurements on a computer.



Technical Data

Measuring values	Photon dose equivalent Hx Photon dose rate equivalent dHx/dt
Type of measuring radiation:	Photons, continuous and pulsed radiation fields
Display and measuring ranges:	
<i>Dose:</i>	1 coarse measuring range μSv 3 fine measuring ranges*: 20 / 200 / 2000 (final values)
<i>Dose rate:</i>	2 coarse measuring ranges: μSv/h, mSv/h 3 fine measuring ranges*: 20 / 200 / 2000 (final values)
	* automatic switch of the fine measuring ranges
Radiation direction:	-90° .. +90°
Energy ranges	
<i>without wall reinforcement cap</i>	6 keV to 662 keV
<i>with wall reinforcement cap</i>	20 keV to 7.5 MeV
<i>with optional PMMA shielding</i>	up to 15 MeV
Radiation detector	
<i>Type:</i>	air-equivalent ionisation chamber
<i>Volume:</i>	600 cm ³
<i>Wall reinforcement cap:</i>	disposable, 550 mg/cm ²
<i>Preferred direction:</i>	Axial
<i>Point of reference:</i>	Marked on detector
<i>Wandpotential:</i>	+ 400 V mSv/h, + 40 V μSv/h
Measurement uncertainty	< 15 % (fine measurement range 20) < 10 % (fine measurement ranges 200 and 2000) 5 % - 5 % @ 2000 mSv/h
<i>Linearity:</i>	
<i>Saturation deficit:</i>	
Power supply	
<i>Batteries:</i>	4 batteries or rechargeable batteries type LR06 (AA)
<i>External power supply (option) :</i>	4 .. 6.2 V DC voltage (delay safety fuse: 315 mA)
<i>Power consumption:</i>	Approx. 30 mA @ 6 V
<i>Battery life time:</i>	Approx. 100 h
<i>Control battery voltage:</i>	battery symbol on display
Dimensions:	
<i>Measurement probe (Ø x L):</i>	112 x 260 mm
<i>Display unit (L x W x H):</i>	250 x 108 x 42 mm
<i>Cable lenght:</i>	0.7 m (standard, available up to 100 m)
Weight:	
<i>Measurement probe:</i>	600g
<i>Display unit:</i>	900g
Temperature ranges:	
<i>Operating temperature range</i>	- 10 °C .. + 45 °C
<i>Storage and transport temperature range</i>	- 20 °C .. + 55 °C
Air pressure:	80 .. 110 kPa
Humidity:	max. 80 %



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