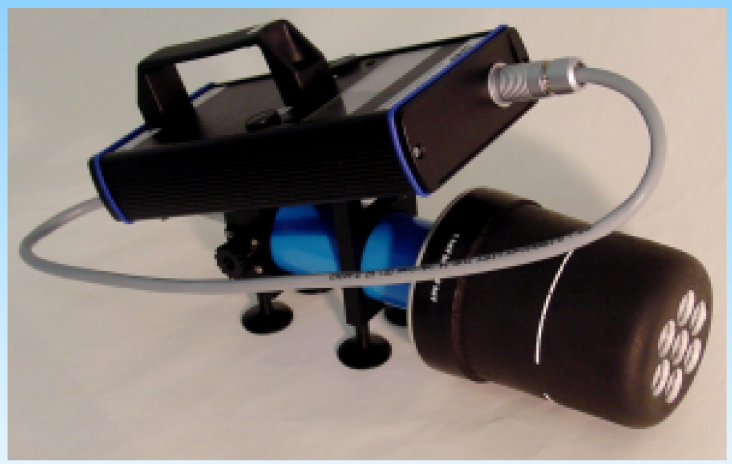
Survey meter OD-01

Dose and dose rate meter for measuring the ambient dose equivalent H*(10) and dose rate equivalent dH*(10)/dt as well as the directional dose equivalent H’(0,07) and dose rate equivalent dH'(0,07)/dt in mixed radiation fields.



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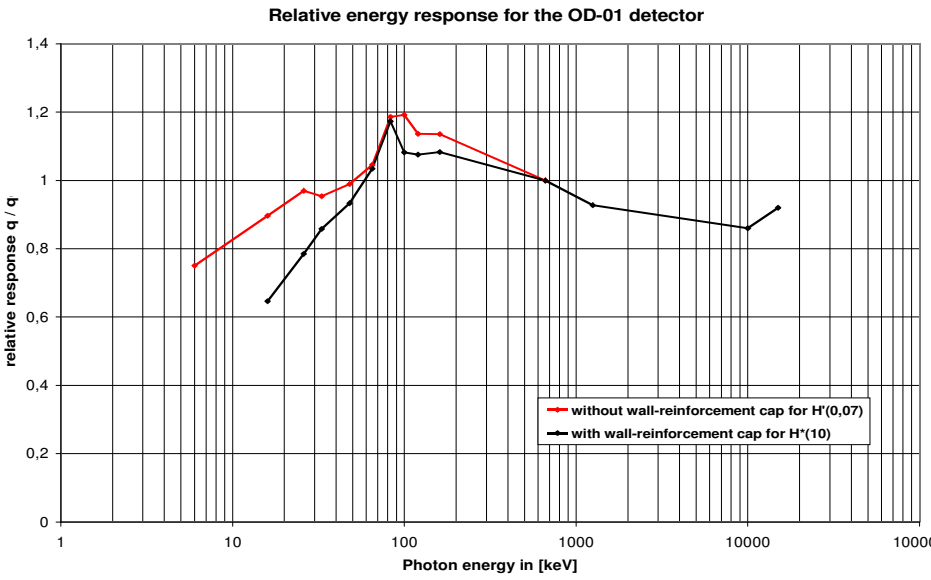
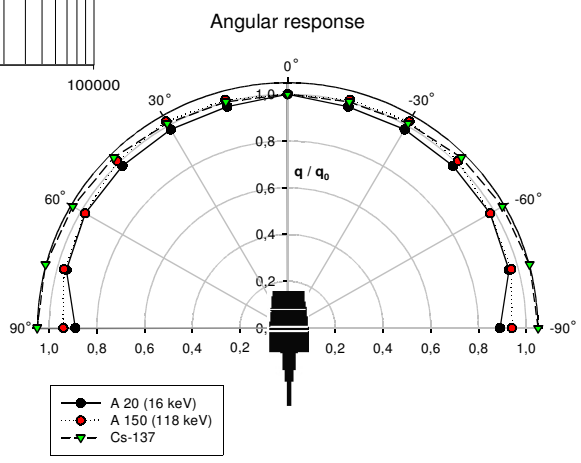
Survey meter OD-01

Product characteristics

- Compact device consisting of display and control unit, probe, device support and 0.7m of connecting cable
- Radiation detector: air opened ionisation chamber
- Display ranges:
  Dose rate: 0 .. 2000 mSv/h, 0 .. 2000 µSv/h
  Dose: 0 .. 2000 µSv
- 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 15 MeV (> 15 MeV using an additional acrylic plastic shielding)
- Measurement of beta radiation of energies from 60 keV up to 2 MeV
- Probe disposable up to 100 m from display and control unit
- Easy-to-read back-lighted LCD panel
- Battery powered, transportable and stationary applicable device





End use

The OD-01 is a new development that is directly linked to the success of the gamma-ray dosimeter RGD 27091/U.
As a portable, battery-powered dose and dose rate meter with ionization 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 quantitatively from Energies E ≥ 60 keV to
2 MeV.

The high sensitivity and wide energy range together with low directional dependence allow you to use the OD-01 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.

Design and functionality

The OD-01 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-01, 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 with 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.

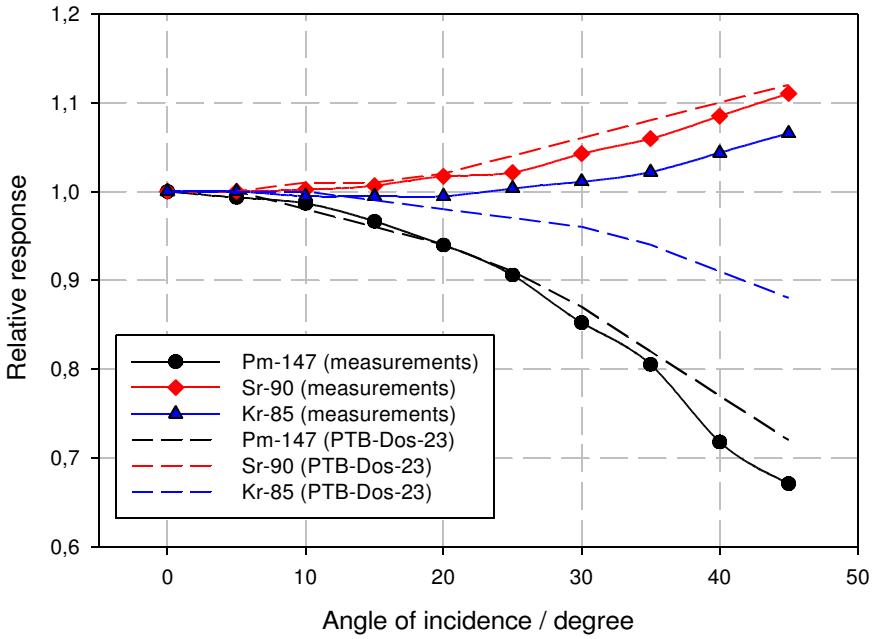
The measured value is displayed as a digital value and as a quasi-analogue bar.
The measurement of H * (10) takes place with wall reinforcement cap. The measurement of H '(0.07) and H * (10) in mixed radiation fields takes place without wall reinforcement cap.
Methods of measurement are shown by the symbols γ for H * (10) and by γ + ß for H * (10) + H '(0.07) in the display.

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

Scope of services

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

Angular response for beta radiation
(beta fields according to ISO 6980)



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 > 15 MeV
- Wall holder for stationary application

Technichal data

Measuring values	Ambient dose equivalent H*(10) Ambient dose rate equivalent dH*(10)/dt Directional dose equivalent H'(0,07) Directional dose rate equivalent dH'(0,07)/dt	
Type of measuring radiation:	Photon and beta radiation pulsed, continuous and mixed radiation fields	
Display and measuring ranges:		
Dose:	1 coarse measuring range 3 fine measuring ranges*: (final values)	µSv 20 / 200 / 2000
Dose rate:	2 coarse measuring ranges: 3 fine measuring ranges*: (final values)	µSv/h, mSv/h 20 / 200 / 2000
	* automatic switch of the fine measuring ranges	
Radiation direction:	-45° .. +45° for H'(0.07) -90° .. +90° for H*(10)	
Energy ranges		
Without wall reinforcement cap	6 keV to 100 keV	
With wall reinforcement cap	100 keV to 15 MeV	
With optional PMMA shielding	> 15 MeV	
Beta radiation	60 keV to 2 MeV	
Radiation detector		
Type:	air-opened ionisation chamber	
Volume:	600 cm^3	
Wall reinforcement cap:	disposable, 550 mg/cm^2	
Entry window:	3.3 mg/cm^2 (PET foil metallised on one side)	
Preferred direction:	Axial	
Point of reference:	Marked on detector	
Wall potentials:	+ 400 V mSv/h, + 40 V µSv/h	
Measurement uncertainity	< 15 % (fine measurement range 20) < 10 % (fine measurement ranges 200 and 2000)	
Linearity:	5 %	
Saturation deficit:	- 5 % @ 2000 mSv/h	
Power supply		
Batteries:	4 batteries or rechargeable batteries type LR06 (AA)	
External power supply (option) :	4 .. 6.2 V DC voltage (delay safety fuse: 315 mA)	
Power consumption:	Approx. 30 mA @ 6 V	
Battery life time:	Approx. 100 h	
Control battery voltage:	battery symbol on display	
Dimensions:		
Measurement probe (Ø x L):	112 x 260 mm	
Display unit (L x W x H):	250 x 108 x 42 mm	
Cable lenght:	0.7 m (standard, available up to 100 m)	
Weight:		
Measurement probe:	600g	
Display unit:	900g	
Temperature ranges:		
Operating mode	- 10 °C .. + 45 °C	
Storage and transport	- 20 °C .. + 55 °C	
Air pressure:	80 .. 110 kPa	
Humidity:	max. 80 %	

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