

Survey meter

OD-02

and OD-02 Hx

IEC 60846-1 2009, modified
compliant



Function and characteristics

The OD-02 is a compact survey meter for measuring the directional dose / dose rate equivalent $H'(0,07;\Omega)$; $\dot{H}'(0,07;\Omega)$ and the ambient dose / dose rate equivalent $H^*(10)$; $\dot{H}^*(10)$ of mixed radiation fields (X-rays, gamma and beta radiation).

Optional OD-02 Hx:

The OD-02 is a compact survey meter for measuring the photon- equivalent dose / - dose rate H_x ; \dot{H}_x of mixed radiation fields (X-rays, gamma and qualitatively beta radiation).

Properties:

- Compact device consisting of display and control unit, probe, device support and a 0.7m connecting cable or optional up to 100m cable
- Radiation detector: air-opened ionization chamber (Volume 600cm³)
- Measurand:
 - OD-02: Ambient and directional equivalent dose and -dose rate according to IRCU
 - OD-02Hx: Photon- equivalent dose / -dose rate
- Measurement range:
 - Dose rate: 3 decades for dose, 6 decades for dose rate
2 coarse measuring ranges: $\mu\text{Sv/h}$ and mSv/h
3 fine measuring ranges* each: 20 / 200 / 2000
* End values
 - Dose: 0...1999 μSv
- Automatic switching (auto ranging) of the fine measuring ranges
- Resolution display: 2 digits after the decimal point
- Extremely wide energy range:
 - Photons: 1 keV to 15 MeV
 - Beta: 40 keV to 2 MeV
- Measurement of continuous and pulsed radiation
- Battery operated and on customer request additionally with power supply (automatic switching)
- Possibility to transfer the measured values via USB, data recording, evaluation software available
- Possibility for setting the acoustic signaling and alarm thresholds (PC software required)

Conformity

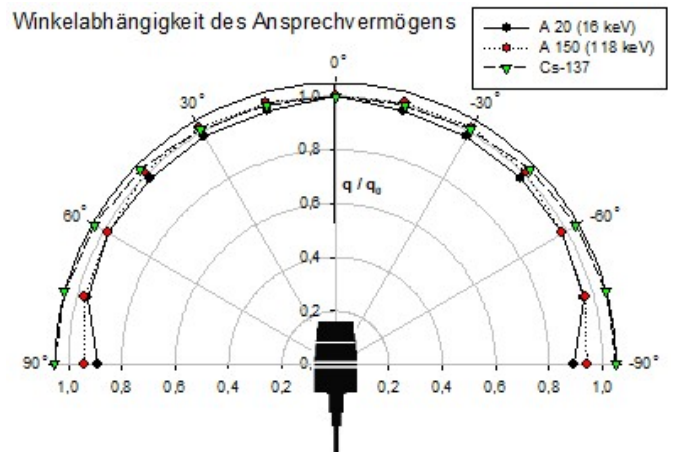
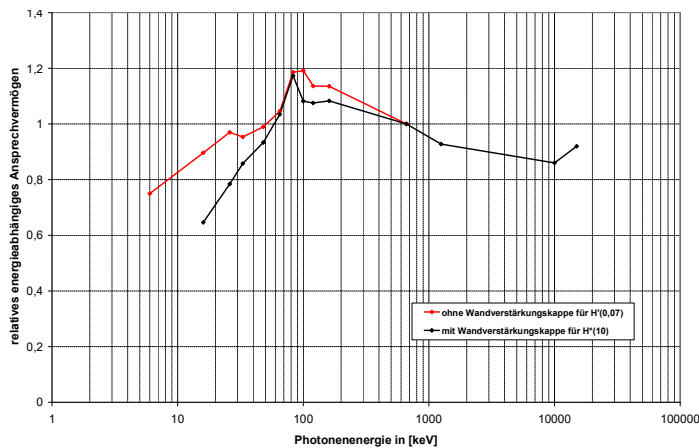
- DIN EN 60846-1 Radiation protection measuring instruments -Environmental and/or directional dose equivalent (dose rate) meters and/or monitors for beta, X-ray and gamma radiation
Part 1: Portable measuring instruments and monitors for the workplace and the environment
- DIN EN 61000 Electromagnetic compatibility (EMC)



Scope of delivery:

- Display and control unit
- Measuring probe
- Connecting cable 0,7 m
- Device carries
- Wall-reinforcement cap
- Replacement batteries
- Operating instructions and certificate of calibration
- Case for the device

Energy dependence and angle dependence of the response for photon radiation



Optional ist folgendes Zubehör erhältlich:

- USB Cable with Software-CD (6)
- Plug-in power supply (7)
- Acrylic plastic shielding (8)
- Extension cable (up to 100m possible) (9)
- Wall holders for probe and display unit (10)



Technical data

Measure unit:

OD-02

Ambient dose equivalent $H^*(10)$

Ambient dose rate equivalent $\dot{H}^*(10)$

Directional dose equivalent $H'(0,07;\Omega)$

Directional dose rate equivalent $\dot{H}'(0,07;\Omega)$

OD-02 Hx

Photon equivalent dose H_x

Photon equivalent dose rate \dot{H}_x

Radiation detector

OD-02 / OD-02 Hx

Type

Air-opened ionisation chamber

Volume

600 cm³

Mass per area of chamber

35 mg·cm⁻²

Entry window

3,3 mg·cm⁻² PET foil metallised (for Hx N/A)

Wall reinforcement cap

550 mg/cm², detachable

Preferred direction

Axial

Point of reference

Marked on detector

Chamber voltage

+ 400 V (mSv/h, μSv)

+ 40 V (μSv/h)

Measure range:

Dose

1 coarse measurement range: μSv

3 fine measurement ranges*: 20 / 200 / 2000 (final values)

Dose rate

2 coarse measurement ranges: μSv/h und mSv/h

3 fine measurement ranges*: 20 / 200 / 2000 (final values)

* auto ranging fine measurement ranges

Energy range:

Photons OD-02

- Without wall-reinforcement cap

1 keV ... 12 keV

for measure $H'(0,07;\Omega)$ and $\dot{H}'(0,07;\Omega)$

- With wall-reinforcement cap

12 keV ... 15 MeV

for measure $H^*(10)$ and $\dot{H}^*(10)$

- With acrylic plastic shielding

15 MeV bis ca. 25 MeV

for measure $H^*(10)$ and $\dot{H}^*(10)$

Photons OD-02 Hx

- Without wall-reinforcement cap 6 keV ... 100 keV
- With wall-reinforcement cap 100 keV ... 15 MeV
- With acrylic plastic shielding 15 MeV ... ca. 25 MeV

Beta radiation

- OD-02 40 keV ... 2 MeV
- OD-02 Hx qualitatively 160 keV ... 2 MeV

Angle of incidence

- (in relation to the longitudinal axis of the probe) -90° ... + 90° (Photons)
- 45° ... + 45° (Betas, without wall-reinforcement cap)

Uncertainty of measurement:

		Coefficient of variation
Zeroeffekt ...	0,5 µSv/h	< 35%
0,5 µSv/h ...	4 µSv/h	< 15%
4 µSv/h ...	20 µSv/h	< 10%
20 µSv/h ...	100 µSv/h	< 5%
100 µSv/h...	2000 µSv/h	< 3%
1 mSv/h ...	2000 mSv/h	< 3%

Linearity

± 5%

Saturation deficit

- 5% @ 2000 mSv/h

Warm-up time

2 minutes

Power supply

- Batteries 4 batteries or rechargeable accu type LR06 (AA)
- Current consumption approx. 80 mA @ 5 V
- Battery life approx. 35 Stunden
- Check battery voltage Capacity and Battery symbol on display
- External DC voltage supply (optional) 5,3VDC / 3A

Dimensions

- Measurement probe diameter 112 mm, length 260 mm
- Display unit 250 mm x 108 mm x 42 mm (L x B x H)
- Cable length 0,7 m (standard)

Weight

- Measurement probe 600 g
- Display unit 900 g (incl. batteries)

Display screen

LCG graphic display with backlight
resolution 128 x 64 dpi

Operating conditions

- Operating temperature range 0 ... + 45 °C (for operation)
- Storage and transport temperature range - 20 ... + 55 °C (for storage and transport)
- Air pressure 80 ... 110 kPa
- Rel. air humidity max. 80 %

EMC test

According to EN 61000

The manufacturer reserves the right to any modification of the specifications in terms of technical progress.

**STEP Sensortechnik und Elektronik Pockau GmbH**

Siedlungstrasse 5-7
D-09509 Pockau-Lengefeld

Telefon: 0049-(0) 37367 9791
9792
Fax: 0049-(0) 37367 77730