



Multi-purpose dosimeter DKS-101

Precise wide range dosimeter for radiotherapy, clinical dosimetry and ionizing radiation metrology.

Purpose:

- measurement of air kerma (Gy) and kerma rate (Gy/sec);
- measurement of absorbed dose (Gy) and absorbed dose rate (Gy/sec) in water;
- measurement of ambient equivalent dose (Sv) and ambient equivalent dose rate (Sv/s);
- measurement of electric current (A)*;
- measurement of electric charge (Q)*.

*Calibration is not available for these parameters and they are not included in the calibration certificate

Features:

- precise absolute measurements of dose characteristics of photon and electron radiation fields;
- measurement in a water phantom;
- built-in self-tests;
- software for Windows;
- warnings to notify the user after accumulation of preset dose or at the end of preset time interval;
- dosimeter accommodates different brands and types of ionization chambers;
- dosimeter can be calibrated as a class I or II working standard.

Accessory

Ionization chambers for DKS-101	
Water phantom for dosimetry “Ph410/3”	The phantom is designed for the precision measurements of dose fields in radiotherapy. The phantom is used with BMK-06 ionization chamber.
Check source 101/06, 101/50	Check source is used for periodic performance checks of the dosimeter (stability of metrological characteristics). Dosimeter DKS-101 intended for use as the I class working standard should be complete with a check source (mandatory requirement).

Technical Characteristics

Digital resolution for electric current measurement	1 fA (10-15 A)
Digital resolution for electric charge measurement	1 fC (10-15 C)
Electric current measurement range	$10^{-7} \div 2 \mu\text{A}$
Electric charge measurement range	$10^{-3} \div 100 \text{ nC}$
Electric charge measurement range by current integration	$10^{-9} \div 60 \text{ mC}$
Absorbed dose rate measurement range	$5 \cdot 10^{-9} \div 1.6 \text{ Gy/s}$
Measurement range of absorbed dose (by charge)	$4 \cdot 10^{-8} \div 4 \text{ Gy}$
Measurement range of absorbed dose (by current integration)	$4 \cdot 10^{-8} \div 5 \cdot 10^4 \text{ Gy}$
Limit of basic relative error of measurement of absorbed dose and absorbed dose rate at confidence probability 0.95	$\pm 2.5 \%$
Measurement time	selectable up to 32000 seconds
High voltage supply	bipolar, $40 \div 600 \text{ V}$ (increment 5 V)
Operation conditions:	
Temperature range	$10 \div 40 \text{ }^\circ\text{C}$
Relative humidity at $30 \text{ }^\circ\text{C}$	$20 \div 80 \%$
Power supply	220 V, 50 Hz
Overall dimensions and weight of the radiometric unit	$300 \times 290 \times 75 \text{ mm}$, 5.8 kg