

Reference class electrometer

DOSE 1



Significantly exceeds IEC 60731 and
AAPM ADCL recommendations

High performance electrometer for absolute dosimetry

The DOSE 1 is a high-precision reference class electrometer that significantly exceeds the recommendations of the IEC 60731 and the AAPM ADCL.

The electrometer has a large and high contrast graphic electro luminescent display with a wide viewing angle (160°) for complete and comprehensive display of all measured values, chamber and correction factors on the main screen. Alternatively dose, dose rate, average rate, charge, current and dose per monitor unit are all measured and displayed simultaneously. Time base for the dose rate is selectable prior to or after the measurement. The selectable units are: second, minute and hour.

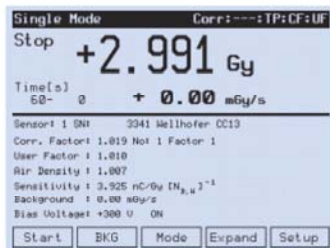
The DOSE 1 can be used with ion chambers, semiconductors and diamond probes. The stan-

dard DOSE 1 has TNC or BNC connector type. Optionally the DOSE 1 “convertible” can facilitate TNC, BNC, BNC/Banana and M-Type connectors.

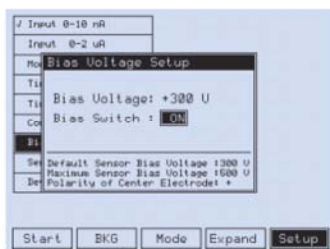
The DOSE 1 combines superior accuracy with an excellent resolution in a wide dynamic range. Standard built-in features include an electrical check source as well as leakage and bias voltage testing. These enable a simple and safe verification of the proper functioning of the sensor, connecting cable and the DOSE 1 to ensure maximum reliability and accuracy.

The DOSE 1 has a wide range power supply for automatic adoption to mains voltage worldwide. Battery operation with 4 D cells or NiCad rechargeable batteries is optionally available.

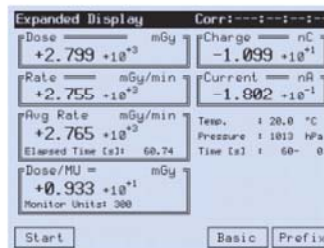
- Large and high contrast graphic electro luminescent display with a wide viewing angle (160°) for complete and comprehensive display of all measured values, chamber and correction factors on the main screen



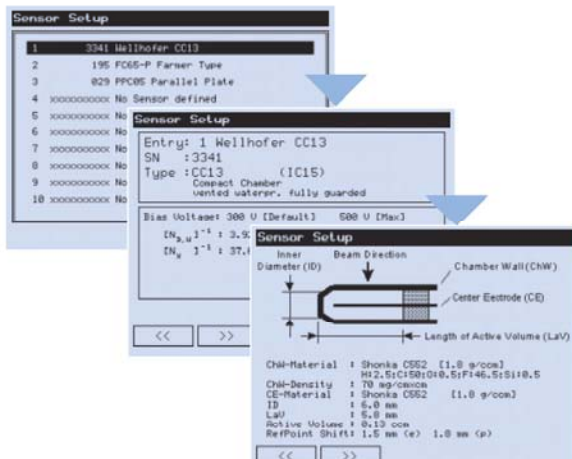
- The operator interface is ergonomically designed and intuitively easy to use with pop-up menus, operated by soft keys



- Dose, dose rate, average rate, charge, current and dose per monitor unit are measured and displayed simultaneously in the expanded screen



- Storage of up to 40 detector specific data sets in a sensor library, including physical and geometrical parameters



Technical specifications

DOSE 1

Bias voltage:	±600 V, programmable in steps of 1 V
Sensor connector types	
- standard option:	triaxial TNC (threaded) or triaxial BNC (bayonet)
- alternative ("convertible option"):	PTW-M, BNC/Banana and triaxial TNC, triaxial BNC
Temperature range:	15 – 35°
Relative humidity:	10 – 80% rel. humidity, max. 20 g/m ³
Power supply (Mains):	100 – 240 V, 50/60 Hz
Battery operation (optional):	4 D-type NiCd / NiMH – accumulator cells
PC interface:	bidirectional RS-232, configuration software
Outer dimensions:	165 x 259 x 259 mm ³ (H x W x D)
Weight:	3.5 kg

Measuring modes/range

Charge (dose):	40pC to 1.0C at 0.1pC resolution
Current (dose rate):	40pA to 1000nA at 0.1pA resolution

Measuring quantities and units

Electrical:	charge (C), current (A)
Integrate:	Gy, Sv, R, rad, rem
Time base for rate:	second, minute, hour
Interval time range:	1 to 9999 sec
Accuracy/Repeatability:	±0.2%
Leakage Current:	≤±10fA, typically 1fA
Linearity:	<±0.25% in whole range
Stability:	<±0.25% per year
Display:	graphic electro luminescent, 160° viewing angle
Zero:	automatic, within 60 sec
Memory:	all setup and detector parameters stored in EEPROM
Background compensation:	on/off mode with memory

Product range

Dosimetry in Radiotherapy

- Relative Dosimetry
- IMRT
- Absolute Dosimetry
- In Vivo Dosimetry
- Software Applications
- Film Dosimetry
- Quality Assurance
- Patient Positioning Lasers

Dosimetry in Radiology

- Patient Dose Monitoring
- QA of Film Processing Units
- QA of X-Ray Units
- QA of Computed Tomography
- QA of Ultrasound Units

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