



# DOSE 1

High Performance Reference Class Electrometer



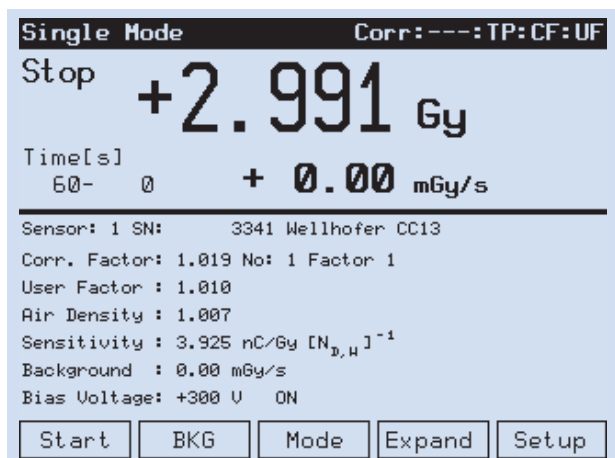
Significantly exceeds IEC 60731 and AAPM ADCL Recommendations.

# The efficient solution for Absolute Dosimetry

The DOSE 1 is a portable, single channel, high-precision reference class electrometer that significantly exceeds the recommendations of the IEC 60731 and the AAPM ADCL. It combines superior accuracy with an excellent resolution in a wide dynamic range. The electrometer can be used with ionization chambers, semiconductor detectors and diamond probes for measurements of absorbed dose. In combination with radioactive check sources the response stability of the ionization chambers is verified and the cross calibration performed.

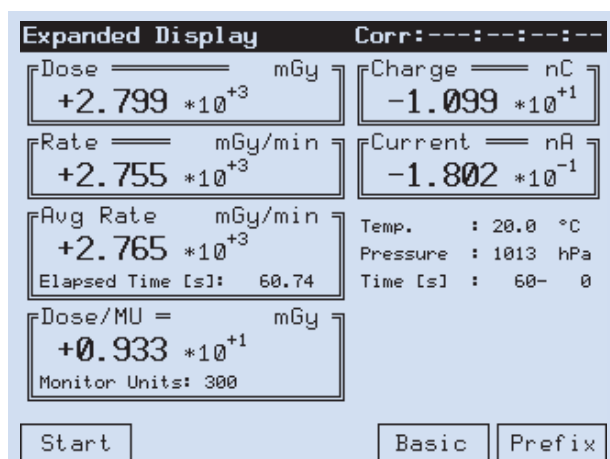
## The Hardware

- ▶ 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



- ▶ Ergonomic design of the operator interface, intuitive easy to use soft keys, pop-up menus

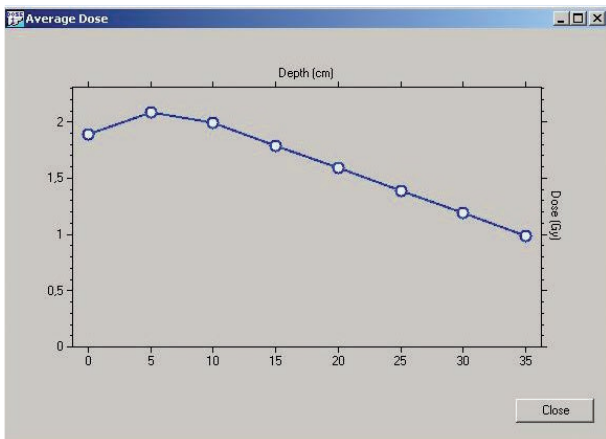
- ▶ Dose, dose rate, average dose rate, charge, current and dose per monitor unit measurements are displayed simultaneously



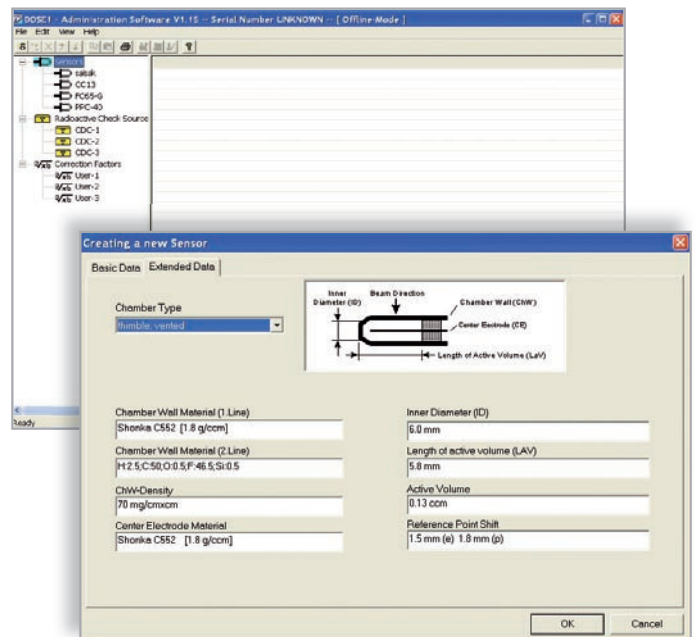
- ▶ For verification of instrument, connecting cable and proper sensor operation, an electrical check source as well as leakage and bias voltage testing are included as standard built-in features
- ▶ Possibility to store up to 40 different sensors, same number of correction factors and up to 10 radioactive check sources

### The Software

- Separate measurement or performance of a whole queue of batches\*
- Automatic starting and stopping function when running a batch measurement
- Fully automated calculation of average and normalization to a reference value (e.g. automated output factor determination)
- Visibility of old results due to saving of measurements in a database or file
- Results are collected and sent from the electrometer to the PC continuously
- Results can be presented on the screen as tables or graphics



- The communication between the DOSE 1 and the PC is realized via RS-232 serial interface
- Result of individual measurements as well as batch summaries can be adapted and saved in text and XML formats for data import, e.g. into Excel for further analysis
- The administration software allows the management of detectors, correction factors and radioactive check sources with PC



\* Batch measurement consists of doing several measurements, and to compute the average

# Technical Specifications

## DOSE 1

<b>Bias voltage:</b>	± 500 V, programmable in steps of 1 V
<b>Sensor connector types</b>	
– standard option:	triaxial TNC (threaded) in combination with triaxial BNC (bayonet)
– alternative: (“convertible option”)	M-Type, BNC/Banana and triaxial TNC, triaxial BNC
<b>Temperature range:</b>	15 – 35°
<b>Relative humidity:</b>	10 – 80% rel. humidity
<b>Absolute humidity:</b>	max. 20 g/m <sup>3</sup>
<b>Power supply (Mains):</b>	100 – 240 V, 50/60 Hz
<b>PC interface:</b>	bidirectional RS-232, configuration and measurement software
<b>Outer dimensions:</b>	259 mm (L) x 259 mm (W) x 165 mm (H)
<b>Weight:</b>	3.5 kg

## Measuring Modes / Range

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

## Measuring Quantities and Units

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

## Computer Requirements

<b>Operating system:</b>	Windows® XP Pro, Windows® 2000
<b>Interface to DOSE 1:</b>	RS232

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Technical data is subject to change without prior notice.