FIDELIS

SECONDARY STANDARD RADIONUCLIDE CALIBRATOR

The FIDELIS is a next generation radionuclide calibrator with unsurpassed accuracy and traceability, and enables rapid, demonstrable compliance with NPL good practice guidance on the assay of radiopharmaceuticals.

The instrument uses our own high resolution, high linearity 'PAM Electrometer Module', in conjunction with an ionisation chamber designed at the National Physical Laboratory (NPL). The friendly user interface makes it well suited for use as a reference instrument - to assay samples for calibrating other radionuclide calibrators, thus saving money on calibrators and reference sources.

The FIDELIS **fully certified Secondary Standard** ionisation chamber is an identical version of the national standard chamber held at NPL. Each chamber is tested against the master chamber using a range of radionuclides before delivery. The flexible software makes it very easy to update calibration factors for the instrument using data published by NPL.

FEATURES

- Secondary Standard Radionuclide calibrator with full traceability to the UK national standards maintained by NPL
- Comprehensive Windows® software included (XP and Windows 7 compatible), providing a simple to use, unparalleled set of measurement tools
- Designed to meet or exceed the requirements of The Measurement Good Practice Guide No.93: *Protocol for Establishing and Maintaining the Calibration of Medical Radionuclide Calibrators and their quality control (Available from NPL)*
- Provided with a well liner and removable sample holder for the assay of vial and ampoules.
- Supplied calibrated for more than 60 radionuclides (with the option to add user defined factors, and holders)
- Future proof - Calibration factors for new types of vial or new isotopes can be added using published data. Calibration data stored in chamber
- Fully automatic self testing and daily checks
- Compatible with nuclear medicine management systems (export to MS Excel etc)
- USB interface for easy connection to a PC
- Available with either a laptop or desktop PC and optional printers
- Upgrades available for older systems

SPECIFICATION

IONISATION CHAMBER

Type	Aluminium alloy, thin wall, deep well, high pressure
Well Dimensions	370 mm (H) x 65 mm (Diameter)
Cabling	1.8 m (6 ft) USB cable
Power Supply	Mains adaptor (110V available)
Gas	Nitrogen @ IMPa (~10 atmospheres)

MEASUREMENT RANGE

Type	Autoranging high precision PAM module
Activity	Typ. 0.001 MBq to 75 GBq (for ^{99m}Tc)
Activity Units	Bq, Ci
Current Units	pA, nA
Resolution	0.001 MBq (0.01 µCi)
Energy Range	25 keV to 3 MeV
Linearity	+/- 1% Typical output for ^{99m}Tc 1.25 pA/MBq

NUCLEAR DATA

Over 60 nuclides directly traceable to NPL Primary Standards, plus user definable entries
NPL test each chamber against the master chamber using: ^{241}Am, ^{57}Co, ^{137}Cs, ^{125}I and ^{226}Ra

STANDARD SOURCE DATA

Every unit has provided a 10 MBq ^{137}Cs Standard Test Source

OPERATING ENVIRONMENT

Temperature	+5 °C to +35 °C
Humidity	0 - 95% (non-condensing)
For indoor use only	Calibrators should always be operated in a stable environment. Meets all CE (EMC and Safety) requirements

PAM ELECTROMETER (Internal to chamber)

Accuracy	Better than +/- 1%
Linearity	Within +/- 1%
Response Time	Typically 1 second

OVERALL ACCURACY DETERMINED BY

1.	Calibration for the specific nuclide and the sample configuration
2.	Accuracies of standard sources used for calibration of electrometer

REPEATABILITY OF MEASUREMENT

Within +/- 1% within 24h (when powered)

TESTS (Complies with NPL good practice guide)

Diagnostics	Full test of program and hardware
Test	Daily Tests: Accuracy of standard sources used for calibration of electrometer

DIMENSIONS

Dimensions	510 mm x 300 mm (Diameter)
Weight	27 kg Approx.
Cable Length	1.8 m (6 ft) USB

COMPUTER SOFTWARE

Supplied with a PC or Laptop running Windows 7 or Windows XP. Various options are available.

ANNUAL CALIBRATION

Various options available, please contact us.

PLEASE NOTE: This instrument is specified for use as a Secondary Standard reference dose calibrator for calibration and QA of tertiary standard calibrators.

The Fidelis is **not** intended for the direct treatment of patients.

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