

Dose Calibrator

Model VDC-405

While all Veenstra Dose Calibrators are fully digitised, it is possible to directly connect our state of the art ionisation chamber to a standard PC. Control and readout of the system are then managed by our Windows™ based software package, the VDC-405 software.

The incomparable VDC-405 software offers a very friendly and flexible user interface with a rich set of features. Defining patient lists, allowing the program to calculate and display pre-calculated activity values are amongst these features.

The VDC-405 is often used to measure both vials and syringes, where the software allows the operator to define form, size and contents of labels printed by the program. As standard this dose calibrator also offers a complete range of quality control routines for the calibrator, like linearity, constancy and accuracy tests.

Due to its PC based design, the VDC-405 can be used both in a stand-alone version or as a single entity in a network environment for the import and export of patient related data. Further this system can also be configured with more than one display. This makes the VDC-405 extremely suitable for integration into all sorts of safety cabinets.

If wanted the VDC-405 software can be upgraded to the Veenstra Hotlab Management System that offers you complete support of

your daily routines according to the latest regulatory guidelines. So your investment is protected if further needs or upgrades appear.

All VDC dose calibrators come as standard with one well liner and dipper. Optional extras available are:

- Extra lead shielding
- Mo-99 breakthrough set
- Copper dipper
- Extra well liner
- Extra dipper
- Label printer



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INSTRUMENTS

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Specifications controller / readout unit

Readout:	Curie/Becquerel (mouse selectable)
Measuring range:	0.001 MBq – 200 GBq (Tc-99m) 0.01 μ Ci – 6000 mCi (Tc-99m)
Display:	PC monitor
Control:	Mouse / keyboard
Operating system:	Microsoft $\text{\textcircled{R}}$ Windows
Peripheral interfaces:	1 x standard RS-232 for label printer 1 x standard RS-232 for detector unit Ethernet (optional) External monitor (optional) Footpedal switch (optional)
Defined isotopes:	> 50 menu selectable isotopes
User definable isotopes:	100 user definable isotopes (name, half life, calibration factor)
Pre-set isotopes:	10 pre-set isotopes

Specifications detector unit

Ionisation chamber:	Pressurised (12 bar argon)
Ionisation voltage:	150 V lithium battery
Well size:	60 mm \varnothing x 250 mm
Saturation:	> 200 GBq (Tc-99m) > 6 Ci (Tc-99m)
Resolution:	0.001 MBq 0.01 μ Ci
Energy range:	25 keV - 3 MeV
Lead shielding:	3 mm Pb
Linearity:	\pm 1 % between 1 MBq and 200 GBq (Tc-99m)
Electrometer accuracy:	\pm 1 %
Battery test accuracy:	\pm 5 %
Temperature coefficient:	0.1%/ $^{\circ}$ C between 10 $^{\circ}$ C and 40 $^{\circ}$ C at 5 MBq and up
Reproducibility:	\pm 1% over 24 hours, stable conditions
Overall accuracy:	\pm 3 % dependant of specific calibration source and geometric variations
Response time:	Maximum 2 seconds for 95% of the end value
Ranges:	Three ranges (auto ranging)
Isotope factor:	Digital adjustment (library over 50 isotopes available)
Bias correction:	Digital adjustment
Calibration:	Digital adjustment
Zero adjustment:	Digital control
Background subtraction:	Digital control
Battery test:	Digital control
Interface:	RS-232C
Power supply:	5 VDC, 250 mA
Cable:	2.5 meters
Dimensions:	150 mm \varnothing x 420 mm
Weight:	15.5 kg

Detector units for special purposes:

Extended measurement range model
Drop-through (sluice) model
Different sized models

The Netherlands

Madame Curieweg 1
P.O. Box 115
NL 8500 AC Joure
Tel. +31 (0) 513 41 69 64
Fax +31 (0) 513 41 69 19

E-mail:

info@veenstranet.com

Website:

www.veenstranet.com

Deutschland,

Hillenkrog 20
21702 Ahlerstedt
Tel. +49 (0) 4166 84 19 99
Fax +49 (0) 4166 84 19 98

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