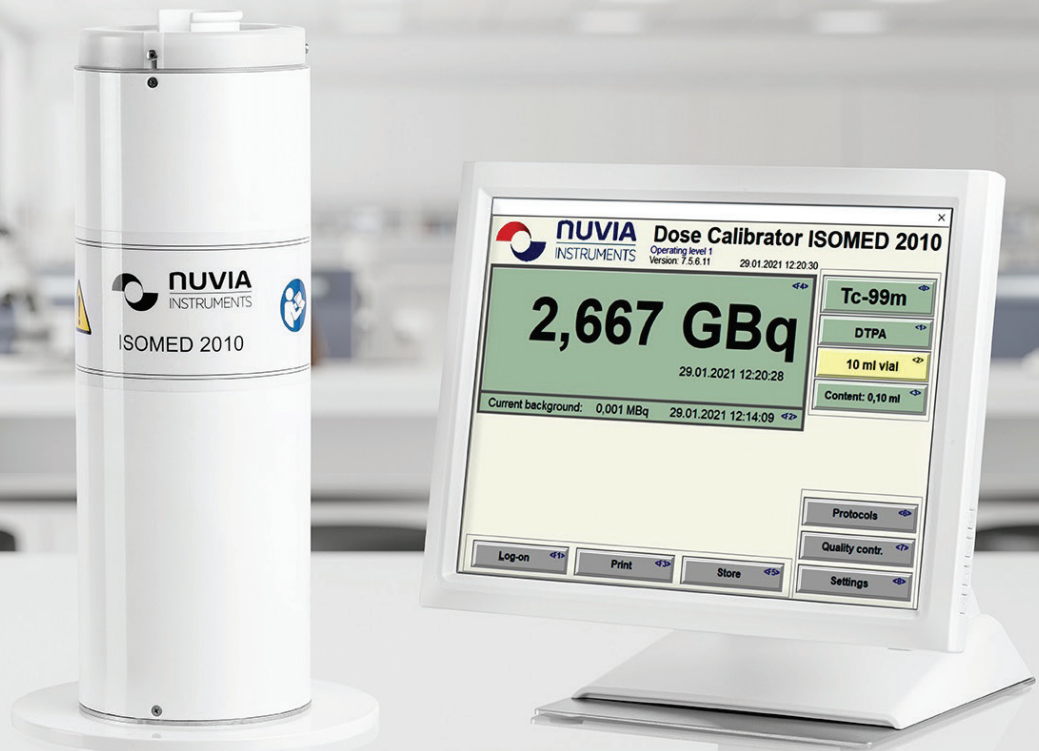




# ISOMED 2010 DOSE CALIBRATOR



The Dose Calibrator ISOMED 2010 is designed for fast and precise measurement of activity and volume activity of radioactive isotopes used in nuclear medicine for diagnostics and therapy. It is supplied as a NetTop PC in combination with the proven NUVIA measurement chamber.

## Benefits

- PC-based Dose Calibrator running on Windows\*\*
- Optional space-saving NetTop PC System
- Optional monitor with or without touch screen function
- Expandable nuclide database
- Calculation of the activity to assure the correct time of medication administration
- Integrated quality controls according to DIN 6855-11 (IEC 61948-4) and DIN 61303 (IEC 61303)
- Various mounting options

## Key Figures

more than 30 nuclides  
 50 GBq (Tc-99m)  
 70 GBq (F-18)  
 5% basic error

The integrated database with nuclides, compounds, containers and contents can be modified or expanded by the customer or system operator. This enables high measurement accuracy and detailed data storage. Further information is available on request.

## Product Description

The Dose Calibrator ISOMED 2010 consists of ISOMED 2010 software and a measuring chamber. The software is installed on a PC system. Data is exchanged between software and measuring chamber via a USB interface. An integral Cs-137 source is used for QA checks.

The Dose Calibrator ISOMED 2010 is designed for fast and precise measurement of activity and volume activity of radioactive isotopes used in nuclear medicine for diagnostics and therapy. The measurement technology is operated outside the patient environment. The performance characteristic of the Dose Calibrator ISOMED 2010 is the activity measurement of radioactive isotopes in diagnostic and therapeutic nuclear medicine. According to the applicable national regulations, an activity measurement must be carried out before each patient application.

The radioactive substances for measurement are available in liquid or gaseous form and are used to fill hypodermic syringes, injection bottles or sealed ampoules. Solid radioactive substances (capsules, seeds, and in vivo placements of radiation sources in brachytherapy) can also be measured.

## Functionalities

- Fast and accurate measurement of activity and volume activity of radioactive substances and eluates obtained from isotope generators
- Support in the dosage of injection solutions or orally administered radiopharmaceuticals for diagnostic testing and treatment
- Isotope half-life included in the pre-determination of radioactivity for an application time
- Measurement of all common radionuclides used in PET
- Short measuring times for use in filling systems of PET equipment
- Documentation of measurement results and patient data on labels and storage on hard disk and external storage devices

## Optimized Quality Control

The integrated menu for quality control implements all requirements of DIN 6855-11 (IEC 61948-4) and the requirements of all medical authorities. The user interface of the dose calibrator prompts quality control checks such as background or responsiveness to be carried out (in some cases every working day) and provides documented evidence. For background measurements, one measurement with and one without the sample holder is carried out. The activated schedule control reminds users of checks to be performed. For example, a linearity check can be performed over weekend every 6 months. In this case a measurement of the Tc eluate is carried out automatically every 3 hours (for example). The linearity curve can also be printed out as a graph.

A menu for molybdenum breakthrough according to DIN 6854 is available.

## System Properties

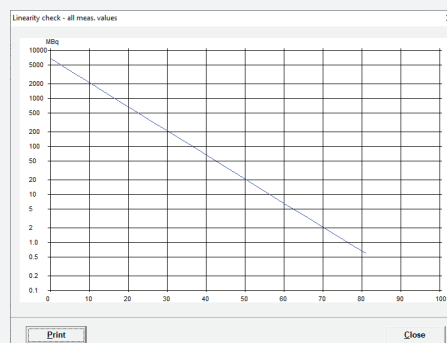
- Calibrated for more than 30 nuclides, including beta emitting radionuclides
- Calibration factors for different containers, container capacity and volume are taken into account to reduce error
- Measurement of the nuclides used in radiosynoviorthesis (Y-90, Er-169, Re-186), as well as the radiopharmaceuticals used in pain therapy (Sm-153, Re-188)
- Measurement of all radionuclides used in PET production and PET application
- Activity calculation with user specific date and time
- Measurement and compensation of background
- Software runs on Windows\*\* operating system
- Integrated quality control according to EN 61303 und DIN 6855-11 (IEC 61948-4) with possibility of data storage, protocol printout and schedule review
- Integrated database with measurement results

Linearity check - all meas. values

Isotope: Tc-99m    Meas. chamber: 1    Impurity (MBq): 0.000

No.	Date/Time	Interval [h]	Measuring range	Activity [MBq]	Error [%]
1	22.01.2020 11:17:20	0.000	3	6822.003	1.56
2	22.01.2020 14:17:32	3.003	3	4833.003	1.85
3	22.01.2020 17:17:45	6.007	3	3422.003	2.00
4	22.01.2020 20:17:57	9.011	3	2424.003	2.15
5	22.01.2020 23:18:11	12.014	2	1887.003	0.60
6	23.01.2020 02:18:24	15.018	2	1193.003	0.59
7	23.01.2020 05:18:37	18.021	2	843.003	0.59
8	23.01.2020 08:18:50	21.025	2	596.503	0.59
9	23.01.2020 11:19:03	24.029	2	421.703	0.57
10	23.01.2020 14:19:16	27.032	2	310.303	0.57
11	23.01.2020 17:19:28	30.036	2	211.003	0.52
12	23.01.2020 20:19:40	33.039	2	149.203	0.51
13	23.01.2020 23:19:54	36.043	2	105.503	0.60
14	24.01.2020 02:20:06	39.046	2	74.583	0.60
15	24.01.2020 05:20:19	42.050	2	52.773	0.57
16	24.01.2020 08:20:32	45.053	2	37.363	0.79
17	24.01.2020 11:20:44	48.057	2	26.423	0.82
18	24.01.2020 14:20:58	51.061	1	18.393	-0.76
19	24.01.2020 17:21:10	54.064	1	12.993	-0.82
20	24.01.2020 20:21:23	57.068	1	9.198	-0.75

Print    Export    Curve    Close



**NUVIA INSTRUMENTS**    **Dose Calibrator ISOMED 2010**  
Operating level 1    Version: 7.5.0.11    27.01.2020 08:36:59

**F-18**  
Fluorid  
3 ml syringe  
Content: 1.00 ml  
MR: autom.

**3,924 MBq**  
16.04.2019 12:06:15

Current background: 0.007 MBq    16.04.2019 12:06:00

Application values <->    Patient data <->

Activity	4.982 MBq	Name	Mustermann
Time	16.04.2019 12:00:00	First name	Helmut
Target value	4.00 MBq	Birth date	11.11.1950
Volume-Target		Patient-ID	11115001H
		Marking	201904160011

Attention! Quality control - Background check

Log-on    Print    Store    Settings

## Technical Data – Standard Measurement Chamber

<b>Measuring range: e.g. Tc-99m / F-18</b>	40 kBq to 50/200* GBq (* 7% additional error) 60 kBq to 70/300* GBq
<b>Measuring range settings</b>	Automatically, alternatively fixed measuring range adjustable, e.g. for PET production
<b>Energy range for Gamma sources</b>	25 keV to 3 MeV
<b>Measurement time</b>	With change of measuring range 2 s - 15 s Without change of measuring range 1 s - 3 s
<b>Basic error</b>	± 5 %
<b>Measured value display</b>	4-digit with display of unit, isotope, chemical compound, container and content
<b>Stored isotope table</b>	Ba-140, C-11, Co-57, Co-58, Co-60, Cr-51, Cs-137, Cu-64, Er-169, F-18, Fe-59, Ga-67, Ga-68, Hg-197, I-123, I-124, I-125, I-131, In-111, In-113m, Ir-192, Lu-177, Mn-54, Mo-99, N-13, O-15, Ra-223, Re-186, Re-188, Se-75, Sm-153, Sr-89, Tc-99m, Tl-201, Xe-133, Y-86, Y-90, Yb-169
<b>Containers</b>	Injection syringes 1 ml, 2 ml, 3 ml, 5 ml, 10 ml, 20 ml Bottles 2 ml, 5 ml, 10 ml (P6), 15 ml, 20 ml Ampoules 5 ml Capsules for Co-57, Co-58, I-131 Tightly enclosed for Cs-137, I-125, Ir-192 Content (sample quantity) 0.1 ml – 99.9 ml
<b>Measurement chamber</b>	Chamber Ø 120 mm, measuring chute Ø 47 mm
<b>Dimensions</b>	Total height 320 mm, chute depth 205 mm
<b>Lead shielding</b>	4 mm Pb basic shielding, additional shielding 20 mm or 50 mm
<b>PC system</b>	NetTop, from Windows 10**
<b>Monitor</b>	Standard TFT monitor or touch screen monitor

### The ISOMED 2010 Dose Calibrator is a certified Medical Device in the EU.

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