

ATOMLAB 200

# DOSE CALIBRATOR

The Atomlab 200 provides fast, accurate radionuclide activity measurements with performance that easily surpasses the most stringent regulatory requirements.

The unit is simple to operate. There are 13 isotope selection keys, ten are pre-programmed for the most commonly used radionuclides and three are user defined. There are 88 isotope-specific dial values listed in the manual, including Y-90 and Sr-89. Any key can be reprogrammed by the user for a desired isotope.

Activity is displayed on a LED readout in either Curie or Becquerel units. Background correction and zero adjustment are performed at the touch of a button. Range selection is automatic.

Activity measurements are performed by a microprocessor controlled electrometer located within the detector assembly of the ionization chamber. The chamber is shielded with .25" (.64 cm) lead. It can be located up to ten feet away from the display unit. Chamber bias is generated within the display unit by an electronic high voltage supply, eliminating the need for expensive battery changes.

The Atomlab 200 Dose Calibrator provides inventory management, quality assurance, and record-keeping functions. The dot matrix printer allows hard copy records to be produced for all functions. The microprocessor-driven memory provides inventory control for 25 samples, storing and correcting the volume, activity, and moly concentration. When drawing a dose from an inventory sample, the Atomlab 200 will display the required volume for a specific dose and, if required, print a decay chart showing required volumes for that dose at future times.

An industry exclusive two-year warranty is standard.



- *All functions microprocessor controlled*
- *Ultra fast response*
- *Automatic range selection Ranges up to 9.999 curies of Tc-99m or 2.5 curies of F-18*
- *Pre-programmed for the most commonly used radionuclides*
- *Display in Curies or Becquerels*
- *Automatic background subtraction and zeroing at the touch of a button*
- *Remote ionization chamber with .25" (.64 cm) lead shielding and 10 foot cable*
- *Self-diagnostic software*
- *Daily constancy isotope keys*
- *Electronic power supply (no battery in chamber)*
- *Industry exclusive two-year warranty*
- *Inventory control of 25 samples, correcting for volume, activity, and moly concentration*
- *Volume determination and future dose computations*
- *Pharmaceutical quality control programs*
- *Isotope decay projection*
- *Automatic linearity calculations using attenuator tubes*
- *Dot matrix printer*
- *ETL to UL 3101-1 and cETL to CAN/CSA C22.2 No. 1010.1-M92*

[www.jgravengaard.com](http://www.jgravengaard.com) 2007-07-09

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Medical Imaging Sales & Service

## ATOMLAB 200 DOSE CALIBRATOR

The Atomlab 200 facilitates dose calibrator quality assurance with automatic constancy and linearity functions. The system stores and decay corrects Co-57 and Cs-137 reference sources and compares the measured activity to the calculated activity for the daily constancy test. Quarterly linearity tests are simplified by software which guides the user through the attenuator tube procedure (regardless of which brand you use), stores all values, and does all calculations.

For radiopharmaceutical quality control, the Atomlab 200 performs all counting and calculations for paper chromatography tests, computing the percentages of free pertechnetate, hydrolyzed reduced Tc-99m, and labeled radiopharmaceuticals.

The optional RS-232 port enables the Atomlab 200 Dose Calibrator to communicate with most commercially available nuclear medicine management systems.

### SPECIFICATIONS:

**Isotope Selection Keys:** Ten pre-programmed — Tc-99m, Mo-99, Tl-201, I-123, Xe-133, Ga-67, In-111, I-131; Cs-137, and Co-57; Three user-defined keys

**Activity Range:** 0.01  $\mu$ Ci to 9999 mCi (.001 MBq to 399.9 GBq) of Tc-99m Energy Range: 25 keV to 3 MeV photons

**Response Time:** One second for doses greater than 2 mCi; Three seconds for doses between 200  $\mu$ Ci and 2 mCi; 3-30 seconds for doses below 200  $\mu$ Ci

**Detector Linearity:**  $\pm 1\%$  or 0.2  $\mu$ Ci, whichever is greater

**Electrometer Linearity:**  $\pm 1\%$  or 0.2  $\mu$ Ci, whichever is greater

**Electrometer Accuracy:**  $\pm 1\%$  or 0.2  $\mu$ Ci, whichever is greater

**Overall Accuracy:**  $\pm 3\%$  or 0.3  $\mu$ Ci, whichever is greater. Overall accuracy is affected by such factors as the accuracy of the specific source calibration, geometric variations due to sample volume or configuration, detector linearity, electrometer accuracy and readout accuracy

**Repeatability:**  $\pm 0.3\%$  above 1 mCi short term (24 hr); 1% long term (1 yr)

**Digital Calibration Dial:** Four-digit LED dial display with increment/decrement keys to change the value. Range is from 0.1 to 999

**Detector:** Well-type pressurized ionization chamber, with Argon fill gas; Well opening 2.75" (7cm), well depth 10.5" (26.7 cm)

**Detector Shielding:** .25" (6.3 mm) lead on all sides except top well opening. Supplementary shielding available.

**Chamber Bias:** 340 volt electronic power supply

**Environmental Operating Conditions:**

**Temperature:** 0-40° C; Humidity: 0-90%

**Power Requirements:** 100 to 120 VAC @ 1/2A, 200 to 240 VAC @ 1/4A

**Line Frequency:** 50/60 Hz; Detachable line cord; Built-in EMI filter and transient suppression.

**Detector and Interface Cable:** 10' (304.8 cm) long, six conductor cable (power, chassis ground, serial data for digital I/O) Ends terminated with AMP Mate-n-Lock connectors with hooded strain relief.

### Display Unit:

**Dimensions:** 12" w x 14.3" depth x 3.75" h (30.5 x 36.3 x 9.5 cm)

**Weight:** 6 lb (2.7 kg)

### Detector Unit:

**Dimensions:** 7.5" w x 7.5" depth x 16.25" h (19 x 19 x 11.3 cm)

**Well I.D.:** 2.75" dia x 10.5" h (7 x 26.7 cm)

**Well I.D. with Liner:** 2.5" dia x 10.25" h (6.35 x 26 cm)

**Lead Shielding:** .25" lead (.63 cm)

**Weight:** 35 lb (16 kg)

**Approvals:** ETL to UL 3101-I and cETL to CAN/CSA C22.2 No.1010.1 M92

Prices subject to change without notice.

### Patient Dose Record (Inventory Subtraction)

- Enter the required dose and which sample (vial) it's to be taken from.
- LED responds with exact liquid volume for that dose.
- Draw the dose, place in the chamber, and press Print.

### Lineator (and Calicheck)

The Atomlab 200 stores the correction factors of the user's Lineator or Calicheck attenuation sleeves, and performs all necessary calculations to determine system linearity.

### Daily Constancy Record

- Stores Co-57 and Cs-137 reference source activity.
- Compares measured activity with decayed activity and calculates percent of error.
- Automatically prints the entire month's constancy test results.

**086-270** Dose Calibrator, Atomlab 200, 115VAC ... \$7,000.00  
Includes RS-232 port, Vial/Syringe Dipper, Well Insert and Printer

**086-297** Dose Calibrator, Atomlab 200, 230VAC ..... 7,000.00  
Includes RS-232 port, Vial/Syringe Dipper: Well Insert and Printer

### Related:

**086-301** Shielding Rings, Interlocking, 2" lead ..... \$2,100.00  
For additional protection from high energy activity

**086-423** Shield, Moly Breakthrough ..... 125.00

**086-435** Moly Shield, Syringe, .28" lead ..... 425.00

**086-509** Lineator ..... 495.00

### Replacement:

**086-242** Vial/Syringe Dipper ..... \$70.00

**086-241** Well Insert ..... 70.00

**086-278** Ribbon, Printer, 4/pkg ..... 18.00

**086-277** Paper, Printer, 1 part ..... 25.00

**086-279** Paper, Printer, 2 part, 6 rolls/pkg ..... 40.00  
100' per roll.

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