ATOMLAB™

Dose Calibrators • Wipe Test Counter

**PROVEN PERFORMANCE FOR FAST, ACCURATE MEASUREMENTS.**

**NEW**

**NEW**

**BRING SCIENCE, TECHNOLOGY AND APPLICATION TOGETHER...WITH BIODEX**

ISO 9001:2008
ISO 13485:2003
CERTIFIED

www.biodex.com
1-800-224-6339
Int’l 631-924-9000
**ATOMLAB™ 500 Dose Calibrator**

Proven performance for fast, accurate measurements. One dose calibrator for all your requirements.

**UPGRADE-ABILITY**
The Atomlab™ 500 Dose Calibrator can be upgraded to include a fully functioning Atomlab™ Wipe Test Counter. The “Smart Display” recognizes the chamber / detector configuration and instantly reconfigures the screen to the appropriate icons.

**Easy to use, touch-screen display with intuitive menus.**

- Windows® 10 Operating System, SQL Database
- Communicates with most commercially available NM management systems via Ethernet or USB
- Pre-programmed for 89 most commonly used radionuclides; any 12 can be conveniently touch selected
- Extensive Isotope Libraries include Lu-177 and Ra-223
- Automatic range selection up to 100 Curies of Tc-99m or 25 Curies of F-18
- Ultra-fast response
- Displays in Curies or Becquerels
- USB ports accommodates a mouse, keyboard, printing and software upgrades via memory devices.
- Report and label printers available
- Easy to use, color touch-screen display with intuitive menus
- Small footprint economizes workspace
- Upgradeable at any time to include a wipe test counter
- Two-year warranty

**Standard Apps for Atomlab 500 include:**

- Automated Quality Assurance Apps
  - Constancy and Expanded Constancy
  - Linearity and Auto Linearity
  - Accuracy
  - Geometry
- Nuclear Pharmacy Apps
  - Future dose and volume computation
  - Half-Life Verification
  - Moly Assay
One dose calibrator that can be used for a wide variety of Nuclear Medicine, PET and radioimmunotherapy applications.

**Atomlab™ 500**

The Atomlab 500 can be used for a wide variety of nuclear medicine, PET and radioimmunotherapy applications, with proven performance for fast, accurate measurements. The system consists of a low pressure ionization chamber, electrometer with extraordinary linearity and an auto-ranging color touch-screen display. Additionally, there are advanced, but easy-to-use programs for nuclear pharmacy.

Activity measurements are performed by the microprocessor controlled electrometer located within the chamber assembly. The chamber is shielded with .25" (6.3 mm) lead. It can be located up to eight feet away from the display unit. Chamber bias is generated by an electronic high voltage supply, eliminating the need for expensive battery changes.

Every element of the design and technical development will increase dose accuracy, department productivity and regulation compliance. The attractive and intuitive human interface guides the user through each operation. Software can easily be updated via the Biodex website or by using a convenient USB memory device.

In addition to powerful self diagnostics, the Atomlab 500 includes an exclusive chamber monitoring technology to assure longer life and accuracy. Integrated pressure and temperature sensors feedback data so that the influence of gas pressure change will not effect an accurate reading.

**OPERATION**

The system is easy to use. There are 12 isotope selection touch keys pre-programmed for the most commonly used radionuclides. Any of those keys can be reprogrammed by the user for a desired isotope. There are 89 isotope-specific dial values listed in the library. Dial values can easily be changed if required.

Activity is displayed on the touch screen color display in either Curie or Becquerel units. Background correction is performed at the touch of a button. Range selection is automatic, from .01 microcurie to 100 Curies of Tc-99m or 25 Curies of F-18.

**QUALITY ASSURANCE**

The Atomlab 500 has been designed to make life easier. The extensive selection of quality assurance applications streamlines and simplifies hot lab administration requirements. The system stores and decay corrects multiple reference sources and compares the measured activity to the calculated activity for the daily constancy test.

Linearity tests can be performed in the traditional manual method or by a fully automated program that allows for readings from a source to be taken, and automatically recorded at specified intervals. The system will graph the results.

The attenuation tube test for linearity can be performed using software that will guide the user through the procedure, store the values and make all calculations.

**ACCURACY**

Atomlab Dose Calibrators have a reputation for being extremely accurate. Biodex and chamber manufacturer Sun Nuclear Corporation have participated in the isotope program sponsored by National Institute of Standards and Technology. Each month a certified isotope is received from National Institute of Standards and Technology and is measured in the Atomlab™ Dose Calibrator, producing direct traceability to National Institute of Standards and Technology.

www.biodex.com/dose500
ATOMLAB™ 500 DOSE CALIBRATOR

▲ Constancy Data
▲ Moly Assay
▲ Geometry Test
Easy to use color touch-screen with intuitive menus.

COMMERCIAL NUCLEAR PHARMACY

The Atomlab 500 Dose Calibrator features a nuclear pharmacy “Dose Calculation Screen” to meet the needs of a commercial nuclear pharmacy. All the information needed to draw doses efficiently is readily available on one screen. The feature easily performs pre- and post-decay calculations, volume calculations for specific times and isotope changes all with minimal screen touches. No calculators needed!

Atomlab Dose Calibrators can read up to 100 Curies of Tc-99m, thereby eliminating the need for an aliquot preparation, a significant time saver every time a generator is milked.

COMMUNICATIONS

Network and USB ports to communicate in real time with the most commercially available nuclear medicine management systems, connect to external monitor or upload software upgrades.

Specifications featured inside back cover.

Sample Labels for Future Dose with Dose in Chamber

086-341, Optional label printer for Atomlab 500 and Atomlab 500 Plus

EASY UPDATE

Your Atomlab 500 Dose Calibrator is upgradeable. You can easily install software updates via the Biodex website or by using a convenient USB memory device.
Eliminate the tedium of wipe testing.

An extensive selection of quality assurance applications streamlines and simplifies hot lab administration requirements.

- **Windows® 10 Operating System, SQL Database**
- **Communicates with most commercially available NM management systems.**
- **USB Ports allow connection with external monitor and facilitate software upgrades**
- **64 Channel MCA**
- **NEW Manual MCA Program**
- **Adjustable wide window and individual isotopes**
- **2x2 NaI drilled-well detector**
- **Remote shielded well**
- **Energy spectrums with individual ROI**
- **Ability to help identify isotopes causing contamination**
- **User-specific wipe locations and trigger levels**
- **Wipes that exceed trigger levels are immediately recognized**
- **Detailed wipe reports including cpm and dpm**
- **Wipe testing results stored**
- **Upgradable at any time to a dose calibrator by adding an ionization chamber**
- **Report and label printers available**
- **Two-year warranty**

Standard Apps for Atomlab Wipe Test Counter include:

- **Automated Quality Assurance Apps**
  - Full Width at Half Max (FWHM)
  - Chi Square
  - Minimum Detectable Activity (MDA)

The Atomlab Wipe Test Counter is easy to use, easy to understand, fast and dependable. A color touch-screen display utilizing intuitive software eliminates the tedium of wipe testing. Simply perform a daily calibration and background count, then count the wipe for each predetermined location. Trigger levels can be set for any isotope at any location including 200 dpm for iodine. In seconds the system will determine if the location is above or below the user defined trigger level.

When performing a wipe test, the full spectrum is displayed. A wide window that includes the isotope energies expected in a particular department is set by the user. The efficiencies of the isotopes selected for the window can be either factory defaults or user determined using an integrated detector efficiency program. Individual isotope ROIs along with the wide window can be set. This feature helps identify the isotope(s) causing contamination.
The user may define an unlimited number of “Area” names and wipe “Locations” and designate them as restricted area, unrestricted area, sealed source or package. The Wipe Test Program automatically calculates net contamination levels and reports results in dpm, uCi and Bq.

The system consists of a lead shielded 2” x 2” sodium iodide (NaI) well detector and a 64 channel multi-channel analyzer. The displayed energy range (spectrum) is 0-800 KeV, which is typically found in nuclear medicine departments.

The wipe counter is designed to meet or exceed all NRC (10 CFR 35.70, 10 CFR 20.1906 and 10 CFR 35.2067) and state wipe test requirements. There are automated programs for the quality assurance functions: calibration, FWHM, chi-square and minimum detectable activity (MDA).

Wipe test results and QA test data can be stored in memory and printed at any time.

**MANUAL MCA PROGRAM**

For performing sample counts and analysis beyond the scope of the standardized programs.

- Expandable library of 28 commonly used isotopes
- Unlimited user-defined isotopes
- Three counting methods: preset time, preset ROI, and continuous counting

In addition to providing “standardized” programs for routine test and survey procedures, the Atomlab 500 now offers a “manual” program to accommodate other counting and spectrum analysis tasks. The user can select from three counting methods: preset time, preset ROI counts, and continuous counting. After any count, the Spectrum Analysis option can be used to produce a Spectrum Analysis Report. The monitor shows when a test is in progress, and graphically displays the spectrum, time, counts and cpm.

**Specifications featured inside back cover.**

**Easy to use, easy to understand.**
ATOMLAB™ 500Plus Dose Calibrator

Dose Calibrator + Wipe Test Counter

Atomlab™ 500Plus... comprehensive, easy-to-use and feature rich.
One solution for all your molecular imaging needs.

The Atomlab 500Plus Dose Calibrator brings it all together - science, technology and application.

The Atomlab 500Plus combines the industry gold standard Atomlab 500 Dose Calibrator and Wipe Test Counter, offering you a complete and cost-effective solution for all of your molecular imaging needs. The intuitive Atomlab 500Plus provides fast, accurate radionuclide activity measurements with performance that complies with the most stringent regulatory requirements. It’s comprehensive, easy-to-use and feature rich. The software mirrors the way you think and work. It guides when necessary, but does not burden the advanced user. The touch-screen and easy-to-follow on-screen prompts mean you won’t need “cheat sheets.”

When required, you can be confident that every operation is captured and documented. That documentation makes compliance a breeze. The Atomlab 500 Dose Calibrator is upgradable. You can easily install software updates via the Biodex website or by using a convenient USB memory device.

- **Window® 10 Operating System, SQL Database**
- **Communicates with most commercially available NM management systems via Ethernet or Serial Port**
- **Preprogrammed for 89 most commonly used radionuclides; any 12 can be conveniently touch selected**
- **Automatic range selection; up to 100 Curies of Tc-99m or 25 Curies of F-18**
- **Remote shielded ionization chamber**
- **Ultra-fast response**
- **Displays in Curies or Becquerels**
- **64 Channel MCA**
- **NEW Manual MCA Program**
- **Remote shielded well**
- **Adjustable wide window and individual isotopes**
- **Energy spectrums with individual ROI**
- **Ability to help identify isotopes causing contamination**
- **2 x 2 NaI drilled-well detector**
- **User-specific wipe locations and trigger levels**
- **Wipes that exceed trigger levels are immediately recognized**
- **Detailed wipe reports including cpm and dpm**
- **Wipe testing results stored**
- **Intuitive software with extensive functionality**
- **USB port accommodates a mouse, printing and software upgrades via memory devices.**
- **Report and label printers available**
- **Easy-to-use, color touch-screen display with intuitive menus**
- **Small footprint economizes workspace**
- **Two-year warranty**

**Standard Apps for Atomlab 500Plus include:**

- **Automated Quality Assurance Apps**
  - Constancy and Expanded Constancy
  - Linearity and Auto Linearity
  - Accuracy
  - Geometry
  - Full Width at Half Max (FWHM)
  - Chi Square
  - Minimum Detectable Activity (MDA)

- **Nuclear Pharmacy Apps**
  - Future dose and volume computation
  - Half-Life Verification
  - Moly Assay

**Specifications featured inside back cover.**
A complete Hot Lab Management System

Linearity Decay (Dose)

The Atomlab™ 500 Dose Calibrator integrates seamlessly with ec² Software Solutions Management Systems, forming a comprehensive isotope tracking package.

What’s the advantage of this combination?

Save time across the board – from loading and measuring a dose, to maintaining easy records and ultimately satisfying the inevitable audit, painlessly. The combined result is communication and tracking at its finest... from two powerful companies dedicated to providing a single source for isotope measurement and management. For more information about ec² Software Solutions visit www.ec2software.com.

Atomlab & ec² – now that’s easy!

- NMIS or BioDose for nuclear medicine department management
- BioRx or RMIS for the nuclear pharmacy
- BioTrax QMS for complete Quality Management for GMP production

BIODEX
ATOMLAB™ 500 and 500 Plus Features

- A “zero background” feature allows users to configure system background count time for 30, 60 or 100 seconds. This feature changes the counting time when selecting the “zero background” button in all functions including the moly assay application.
- Isotope libraries in both the dose calibrator and wipe test counter include Lu-177 and Ra-223 isotopes. Libraries include updated dial values, isotope ROIs and efficiency settings.
- Half-Life Verification App included in the nuclear pharmacy menu. Simply select the isotope, choose two or three readings for the calculation, and set the time between readings. The results show the calculated half-life and the variance to the real half-life for the selected isotope.

Proven Accuracy & Quality Assurance

QA Dose Calibrator Screen – The extensive selection of quality assurance applications is readily available and simplifies regulatory requirements.

Half-Life Verification Screen – Results show the calculated half-life and the variance to the published half-life for the selected isotope.

Constancy Data Screen – System stores and decay corrects multiple reference sources, compares the measured activity to the calculated activity and displays the percent variance. Data and source activity plots can be displayed, printed or stored.

Detailed Constancy Data
An Expanded Constancy test allows the user to measure a long-lived source and up to 14 routinely used isotope settings, all in a matter of seconds with just one touch of the screen. The system stores and decay corrects multiple reference sources and compares the measured activity to the calculated activity for the daily constancy test.

Moly Assay Results Screen – Application simply guides you through the moly assay process making it quick and easy to perform, and displays the Moly concentration when test is complete. The system will prompt you if the results are not within regulatory limits.

Dose Calculation Screen – All the information needed to draw doses efficiently is readily available on one screen. Easily performs pre- and post-decay calculations, volume calculations for specific times, and changes isotopes all with minimal screen touches. No calculators needed!

Quality Assurance Reports

Linearity Decay Plots
Report shows isotope, initial activity, elapsed time of readings, calculation method and variance, visually plotted.

Full-size samples can be viewed at www.biodex.com/dosecalibrators
Some of the many facilities benefitting from Atomlab Dose Calibrators.

Banner MD Anderson Cancer Center
Bethesda Memorial
Boca Raton Regional Hospital
Brigham and Womens Hospital
Bronx Lebanon Hospital
Brookhaven National Lab
Cedars Sinai Medical Center
Children's of Alabama
Children's Hospital National Medical Center
Cleveland Clinic Weston
Cleveland Regional Medical Center
Colorado State University
Columbia Pet Center
Columbia University
Crozer-Chester Medical Center
Dana Cancer Center
Doctors Hospital of Sarasota
Duke Health Raleigh Hospital
Duke Medical Center Bryan
Neuro Research Facility
Duke Raleigh Hospital
Emory University
Florida Hospital Celebration
Florida Hospital Flagler
H Lee Moffitt Cancer Center
Henry Ford Medical Center
Indiana University Health Saxony
Joe DiMaggio Hospital
Mayo Clinic
Mayo Foundation
Medical Center of Aurora
Miami Children’s Hospital
Mount Sinai Hospital
Mount Sinai School of Medicine
National Institute of Standards and Technology
Nationwide Children’s Hospital
Naval Hospital Camp Pendleton
Naval Medical Center
NCI Frederick
New York Downtown Hospital
North Shore Long Island Jewish Hospital
Northwestern Medical Center
Northwestern Memorial Hospital
Ochsner Health System
Oklahoma Pet Center
Oklahoma State University
Vet Medical Teaching Hospital
Palo Alto Medical Foundation
Phoenix Children’s Hospital
Pocono Medical Center
Presbyterian Rust Medical Center
Purdue University School of Nuclear Pharmacy
Rapid City Regional Hospital Inc.
Rhode Island Hospital
Rockdale Medical Center
Salem Hospital
Stony Brook University Medical Center-Univ Physicians
Tampa General Hospital
Texas A&M University
UMASS Memorial
University Medical Center of El Paso
University of Arizona
University of California Los Angeles
University of Cincinnati
University of Illinois
University of Illinois Medical Center, Chicago
University of Iowa Hospital and Clinics
University of Louisville
University of Medicine and Dentistry of New Jersey
University of Oklahoma
University of Pittsburgh
University of Tennessee
University of Virginia
University of Virginia Medical Center - Charlottesville
UPMC East
VA Medical Center, Baltimore
VA Medical Center, Bay Pines
VA Medical Center, Boston
VA Medical Center, Dallas
VA Medical Center, Dayton
VA Medical Center, Denver
VA Medical Center, Durham
VA Medical Center, Iowa City
VA Medical Center, Las Vegas
VA Medical Center, Loma Linda
VA Medical Center, Miami
VA Medical Center, Mountain Home
VA Medical Center, Phoenix
VA Medical Center, Salem
Virginia Polytechnic Institute and State University
Walter Reed National Naval Medical Center
Washington University
William Beaumont Army Medical Center
Womack Army Medical Center

Will we be adding your facility to the list?

View more users at www.biodex.com/dose500plus
ACCESSORIES

MOLY ASSAY SHIELD

Moly Assay Shields are a convenient method to a unit dose. Whether working with syringes or vials, either unit will fit into the well chamber of any Atomlab Dose Calibrator.

086-435 Moly Assay Shield, Syringe, .3" lead
086-423 Moly Assay Shield, Vial, .3" lead

LINEATOR

The Lineator is a simple device to accurately and reliably verify the linearity of your dose calibrator. Test results are available in minutes, without waiting days for decay, making it feasible to perform a linearity test more often. Early identification can prevent problems before they occur.

086-509 Lineator

DOSE CALIBRATOR SHIELDING RING

The Dose Calibrator Shielding Ring offers an additional 2.25" of lead shielding around the remote chamber for working with 511 keV radionuclides, such as FDG F-18.

086-338 Shielding Rings, Interlocking, 2.25" lead
Fits Atomlab Dose Calibrators 500 and 500Plus. For additional protection from high energy activity.

WIPE TEST CHAMBER

The optional lead shield provides an additional .5" of shielding around the Wipe Test Chamber to reduce background activity, and when working with higher energy isotopes. The shield also includes a .5" lead shielded cover for the well opening.

075-596 Lead Shield, Wipe Test Chamber

VIAL/SYRINGE DIPPER

This rugged, Vial/Syringe Dipper has a comfortable handle and it will hold 1 cc to 10 cc syringes or up to a 30 ml vial. Included with every Atomlab Dose Calibrator, the Vial/Syringe Dipper will also fit any well chamber with 2.5" x 10" interior dimension. The material used will not cause attenuation problems and is very resistant to breaking.

086-242 Dipper, Vial/Syringe

086-330 Dose Calibrator, Atomlab™ 500, 100-240 VAC
Includes: Smart Display, ionization chamber, RS-232 port, vial/syringe dipper and well insert.

Atomlab Dose Calibrators utilize low-pressure chambers and are shipped air or ground as standard goods.
**SPECIFICATIONS:**

All-In-One Flat Panel Display: 10.8" Color Touch-Screen, Windows Operating System and USB

- **Dimensions:** 11" w x .375" depth x 7" (28 x 1 x 18 cm)
- **Line Voltage:** 100 to 240 VAC, auto selectable by the power supply
- **Line Frequency:** 50/60 Hz, detachable line cord, built-in EMI filter and transient suppression
- **Auxiliary Port:** Two USB ports, one RS-232 port
- **Memory:** Stores wipe, calibration, background, high voltage, isotope specification, isotope efficiency, Chi-Square testing results, technologist list, wipe locations list and latest MDA calculation. Results can be displayed and printed.
- **Preset Radionuclides:** 27 including Tc-99m, Co-57, Cs-137, Ga-67, Tl-201, I-123, I-125, I-131, In-111, F-18

**WELL COUNTER**

- **Dimensions:** 6" dia x 11" h (15.24 x 27.9 cm)
- **Weight:** 29 lb (13.2 kg)
- **Detector:** 2" x 2" NaI (TI) integral line scintillation detector with a 0.75" dia x 1.44" depth well (1.9 x 3.7 cm)
- **Style:** Remote Detector
- **Channels:** 64
- **MCA:** Integral to Well Counter
- **Spectral Resolution:** FWHM 10%
- **Count Rate:** (Maximum) 30,000 cps
- **Lead Shielding:** 0.3" (1.2 cm) integral lead shield

Certification: ETL listed to UL 60601-1 and to CAN/CSA C22.2 No. 601.1.M90, IEC 60601-1, IEC 60601-1-4 and IEC 60601-1-2 and CE marked

Warranty: Two years parts and labor

**RELATED PRODUCTS**

Related: Dose Calibrator

- **086-336** Chamber, Dose Calibrator
- **075-594** Chamber, Wipe Test
- **086-338** Shielding Rings, Interlocking, 2.25" lead
  
  *For additional protection from high energy activity*
- **086-509** Lineator
- **086-435** Moly Shield, Syringe, .3" lead
- **086-243** Copper Dipper, Vial/Syringe
- **086-423** Moly Shield, Vial, .3" lead
- **086-341** Printer, Label, Dymo
  
  *Includes one roll 086-343 labels; two rolls 086-344 label*
- **086-339** Printer, Ink Jet (report)
- **086-334** Cable, European to Wall Outlet

Replacement:

- **086-242** Vial/Syringe Dipper
- **086-241** Well Insert
- **086-343** Label, Blank, Lg, 300/roll
  
  *(For Dyno Printer, 086-341)*
- **086-344** Label, "Radioactive", Sm, 260/roll, 2/pkg
  
  *(For Dyno Printer, 086-341)*

Related: Wipe Test Counter

- **063-139** Rod Source, Cs-137, Calibrated, 0.1 μCi
- **075-596** Lead Shield, Wipe Test Chamber
- **006-350** Wipe Test Kits, 500/pkg
- **086-342** Well Liners, Disposable, 100/pkg

**086-331** Atomlab™ Wipe Test Counter

*Includes: Smart Display, well counter and RS-232 port.*

For physics tests, sample reports, testimonials and warranty information, visit us on the web [www.biodex.com/dosecalibrators](http://www.biodex.com/dosecalibrators)
NEW Atomlab 500 Dose Calibrator and Wipe Test Counter

Biodex

ATOMLAB™ EASY
Innovative Technology · Intuitive · Fast · Seamless

www.biodex.com/dose500plus