

CAL/RAD MARK VI

Nuclear Associates Model 34-165



Introduction

Innovation abounds in the CAL/RAD MARK VI from Cardinal Health. Our dose calibrator contains the features most-wanted by health care professionals today – increased productivity, dose accuracy, and reduced absorbed patient dose. A touch-screen interface combined with Microsoft® Windows XP® provides an unbeatable combination that's not only easy-to-use but saves valuable time. Automated dose-drawing calculates the correct future dose, providing you and your patients with the confidence that the right dose will be delivered each and every time.



- Streamlines future dose-drawing
- Touch screen interface
- Fast Microsoft® Windows XP® embedded system
- 1% electrometer accuracy
- Built-in software for automated linearity, geometry, accuracy, constancy, molybdenum breakthrough, system checks, and more
- 15 front panel preset isotopes

Features

- QA protocols for daily and quarterly checks
- Kit inventory control remembers activity and volume in prepared kits
- Extensive isotope library
- Autoranging
- RS-232
- Source inventory
- Fast response
- Multiple geometries for each radionuclide

Specifications

Electrometer/readout unit

Touch screen display 8.4 inch TFT display, 800 x 600 resolution
Operating system Microsoft Windows XP embedded
Memory 64 MB 133 SDRAM; 64 MB compact flash card
Peripheral interfaces 1 x special RS-232 for detector; 1 x standard RS-232 for label printer
Readout 0.001 MBq to 222 GBq; 0.01 μ Ci to 6 Ci
Defined isotopes 56 touch screen selectable isotopes
User definable isotopes 100 user definable isotopes
Preset isotopes 15 preset isotopes, all user selectable
Temperature range 32° to 104°F (0° to 40°C)
Humidity Maximum 90% relative humidity, non-condensing
Dimensions 280 x 360 x 230 mm
Weight 9.9 lb (4.5 kg)
Voltage 85 to 264 V, 47 to 63 Hz
Power consumption 90 W

Detector

Ionization chamber Pressurized (12 ATM Argon)
Ionization voltage 150 V lithium battery
Well size 60 mm \varnothing x 250 mm
Saturation 222 GBq (^{99m}Tc); 6 Ci (^{99m}Tc)
Resolution 0.001 MBq; 0.01 μ Ci
Energy range 25 keV to 3 MeV
Lead shielding 3 mm Pb
Linearity $\pm 1\%$ between 1 MBq and 222 GBq (^{99m}Tc)
Electrometer accuracy $\pm 1\%$
Battery test accuracy $\pm 5\%$
Temperature coefficient 0.1% between 10° and 40°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 end value
Ranges Three ranges (autoranging)

Detector (continued)

Gain Digital adjustment
Bias correction Digital adjustment
Zero adjustment Digital adjustment
Calibration Digital adjustment
Background Subtraction Digital control
Battery test Digital control
Interface Standard RS-232 interface, no handshake, 9600 baud
Power supply 5 VDC, 250 mA
Cable 2.5 m
Dimensions 150 mm \varnothing x 420 mm
Weight 34.1 lb (15.5 kg)

Optional accessories

Seiko Label Printer (Model 34-165-1000)
Molybdenum Breakthrough Set (Model 34-204)
Extra Dipper (Model 34-162-2100)
Extra Well-Liner (Model 34-162-1241)

The CAL/RAD MARK VI chamber shielding is designed to offer extra protection from high-energy gamma rays. The shielding consists of 8 interlocking lead rings and a lead bottom, thus completely surrounding the ionization chamber. The lead rings are individually coated white. There are two models available:

Chamber Shielding from high-energy activity 0.8 inch lead shielding (Model 34-211-9998)

Lead Shielding: 0.8 in (20 mm)

Inner Dimensions: 6.7 in \varnothing x 17.7 in (170 x 450 mm)

Weight: 154 lb (70 kg)

Chamber Shielding from high-energy activity 2 inch lead shielding (Model 34-211-9999)

Lead Shielding: 2 in (50 mm)

Inner Dimensions: 6.7 in \varnothing x 17.7 in (170 x 450 mm)

Weight: 385 lb (175 kg)

Available model(s)

34-165 CAL/RAD MARK VI

For additional information, please contact Cardinal Health, Radiation Management Services customer service at 440.248.9300, 800.850.4608, or fax: 440.349.2307; located at 6045 Cochran Road, Cleveland, Ohio 44139-3303, USA.

CE Tested. Meets applicable standards.

Specifications are subject to change without notice.

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CAL/RAD MARK V

Nuclear Associates Model 34-164



Nuclear Medicine



- Microprocessor-controlled
- Eight user preset isotopes selected directly from the menu. Presets may be easily changed
- 45 preset isotopes - instant selection using the keys cursor
- Ten additional user definable calibration factors
- Intelligent and intuitive user interface

Introduction

Nuclear Associates – excels in its no-nonsense approach to supplying you with only the finest products in the world to make your job easier, while helping you maintain an efficient, cost-effective department. That's why we're so excited to offer you the CAL/RAD MARK V Dose Calibrator. If you're looking for a high quality dose calibrator that does a great job and can be easily connected to a PC or printer – look no further – The CAL/RAD MARK V is for you.

Whenever you need to know the precise activity of a particular isotope, the CAL/RAD MARK V will give you quick and reliable measurements each and every time. It's elegantly simple design translates nicely into reliability, unsurpassed accuracy, ease-of-use and all at a cost effective, budget-pleasing price.

Applications

Using the CAL/RAD MARK V is as easy as 1-2-3. Just insert the sample, select the isotope and the MARK V automatically performs the measurements. Measurements are done on a continuous basis and are background compensated. The CAL/RAD MARK V is so intelligent, it has its own built-in performance QC check. The CAL-RAD MARK V is easily connected to a PC or optional serial label printer with real-time clock, and enables the date and time information to be printed on labels.

No more confusing keyboards and buttons...

The CAL/RAD MARK V eliminates confusing keyboards with lots of buttons and numerous steps to activate needed functions. They're now a thing of the past. You get more performance and increased capability with just 4 function and cursor keys that select radionuclides and modes. That's the beauty of the CAL/RAD MARK V.

Features

- Touch sensor keypad with adjustable signals
- Large backlit LCD for easy viewing
- Auto-ranging
- Readout in curies or becquerels
- Quick response time
- Extremely sensitive
- Accurate measurements
- RS-232 interface
- Optional remote LCD readout
- Optional printer and battery backup clock
- Satisfy state and NRC requirements

Specifications

Control unit

Electronics 80C652 microcontroller, 64 kb EEPROM, 32 kb battery backed-up RAM

Display 80 x 160 dots, 88 x 84 mm graphical LCD

Scale illumination Fluorescent display illumination

Keyboard Membrane keyboard with mechanical depress action and acoustic signal

Readout 0.001 MBq to 200 GBq, 0.01 μ Ci to 6 Ci, selected isotope and gain factor

Defined isotopes 45 keyboard selectable isotopes

Undefined isotopes 10 user programmable gain factors

Preset isotopes 8 presets, user programmable

Calibration Keyboard adjustable

Bias correction Keyboard adjustable

Zero adjustment Keyboard adjustable

Background adjustment Keyboard selectable

Battery test Keyboard selectable

Chamber interface RS-232 plus power supply

Peripheral interface RS-232 interface, no handshake, 9600 Baud; keyboard selectable modes: computer format, printer format, Extra LCD readout format

Temperature range 32° to 104°F (0° to 40°C)

Relative humidity 0 to 90%, non-condensing

Power supply 220/240 V, 50/60 Hz, 25 W or 110/115 V, 50/60 Hz

Dimensions 11 (w) x 9.6 (d) x 3.2 (h) (28 x 24.5 x 8 cm)

Weight 8.5 lb (4 kg)

Detector

Ionization chamber Pressurized (12 bar argon)

Ionization voltage 150 V lithium battery

Well size 6 cm Ø x 25 cm

Saturation > 200 GBq (^{99m}Tc), > 6 Ci (^{99m}Tc)

Energy range 35 keV to 3 MeV

Lead shielding 3 mm Pb

Linearity $\pm 1\%$ between 1 MBq and 200 GBq (^{99m}Tc)

Electronics 80C652 microcontroller, 32 kb EEPROM, 32 kb battery backed-up RAM, 16-bit A/D converter, 14-bit D/A converter, 9 decades auto ranging amplifier

Electrometer accuracy $\pm 2\%$

Battery test accuracy $\pm 10\%$

Temperature coefficient 0.3%/°C between 10° and 30°C

Reproducibility $\pm 1\%$ over 24 hours, stable conditions

Response time Maximum 6 seconds for 95% of the end value

Detector (continued)

Ranges Two ranges (auto ranging): from 0 to 50 MBq (^{99m}Tc), from 50 MBq to 200 GBq (^{99m}Tc)

Gain Digital adjustment

Bias correction Digital adjustment

Zero adjustment Digital adjustment

Calibration Digital adjustment

Background subtraction Digital control

Battery test Digital control

Interface Standard RS-232 interface, no handshake 9600 Baud

Power supply ± 15 VDC, 100 mA; 5 VDC, 200 mA

Cable 8 ft (2.5 m)

Dimensions 5.9 in Ø x 16.5 in (d) (15 x 42 cm)

Weight 34 lb (15.5 kg)

Optional accessories

Label Printer including Real-Time Clock, 110 V
(Model 34-164-1000)

Label Printer including Real-Time Clock, 220 V
(Model 34-164-1220)

Molybdenum Breakthrough Set (Model 34-204)

Extra Dipper (Model 34-162-2100)

Extra Well-Liner (Model 34-162-1241)

The CAL/RAD MARK V chamber shielding is designed to offer extra protection from high-energy gamma rays. The shielding consists of 8 interlocking lead rings and a lead bottom, thus completely surrounding the ionization chamber. The lead rings are individually coated white. There are two models available:

Chamber Shielding from high-energy activity 0.8 inch lead shielding (Model 34-211-9998)

Lead Shielding: 0.8 in (20 mm)

Inner Dimensions: 6.7 in Ø x 17.7 in (170 x 450 mm)

Weight: 154 lb (70 kg)

Chamber Shielding from high-energy activity 2 inch lead shielding (Model 34-211-9999)

Lead Shielding: 2 in (50 mm)

Inner Dimensions: 6.7 in Ø x 17.7 in (170 x 450 mm)

Weight: 385 lb (175 kg)

Available model(s)

34-164 CAL/RAD MARK V, 110 V, includes one well-liner and one dipper

34-164-2200 CAL/RAD MARK V, 220 V, includes one well-liner and one dipper

For additional information, please contact Cardinal Health, Radiation Management Services customer service at 440.248.9300, 800.850.4608, or fax: 440.349.2307; located at 6045 Cochran Road, Cleveland, Ohio 44139-3303, USA.

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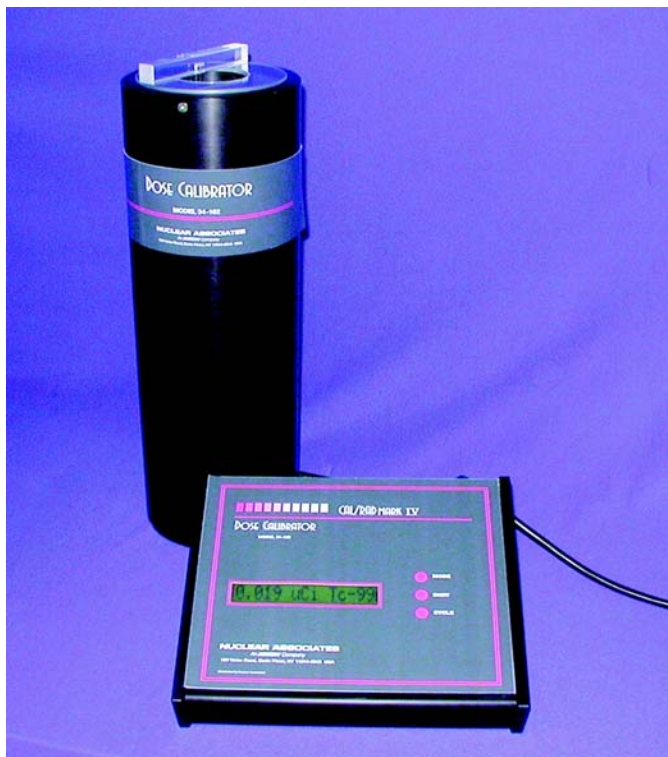
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CAL/RAD MARK IV

Model 34-162



Nuclear Medicine



- Microprocessor-controlled
- PET ready - this dose calibrator is set up electronically to read the most commonly used isotopes: ^{18}F , ^{13}N , ^{11}C , ^{15}O , ^{22}Na
- Great for small labs and cardiac clinics
- A simple 3-key operation
- User-friendly
- Reliable and a great value

Introduction

Our CAL/RAD MARK IV can easily handle the day-to-day preparation of the syringes in small labs and private practices. It can also be used for the final check of unit doses. Whenever you need to know the precise activity of a particular isotope, call on the CAL/RAD MARK IV.

Applications

The simple 3-key operation of the CAL/RAD MARK IV makes it easy to select $^{99\text{m}}\text{Tc}$ or the programmable calibration factor. The activity value and the isotope are always displayed on a 16-character, large-digit LCD.

Operation is as easy as 1-2-3

1. Select the isotope.
2. Enter the calibration factor into the CAL/RAD MARK IV.
3. The activity of the sample is automatically measured.

Function keys

- **Mode** Used to select one of five possible modes
- **Digit** Used to select the desired digit on the LCD screen when user input of a factor is needed
- **Cycle** Used to change the value of the digit currently selected on the LCD screen

Features

- Large backlit LCD
- Auto-ranging
- Accurate measurements
- Quick response time
- Readout in curies or becquerels
- Satisfy state and NRC requirements
- Sturdy construction

Specifications

Control unit

Electronics 80C51 family microcontroller, 16 kb EEPROM

Display 16-character display

Scale illumination LED display illumination

Keyboard Membrane keyboard with mechanical depress action and acoustic signal

Readout 0.001 MBq – 200 GBq, 0.01 μ Ci – 6 Ci

Bias correction Keyboard adjustable

Zero adjustment Keyboard adjustable

Battery test Keyboard selectable

Chamber interface RS-232 plus power supply

Temperature range 32° to 104°F (0° to 40°C)

Relative humidity 0 to 90%, non-condensing

Power supply 220/240 V, 50/60 Hz, 25 W, (110/115 V, 50/60 Hz jumper selectable)

Dimensions 11 x 10 x 3.5 in (28 x 24.5 x 8 cm)

Weight 8.5 lb (4 kg)

Detector

Ionization chamber Pressurized (11.8 ATM argon)

Ionization voltage 150 V lithium battery

Well size 2.4 x 10 in (6 cm Ø x 25 cm)

Saturation > 200 GBq (^{99m}Tc), > 6 Ci (^{99m}Tc)

Energy range 35 keV to 3 MeV

Lead shielding 3 mm Pb

Linearity $\pm 1\%$ between 1 MBq and 200 GBq (^{99m}Tc)

Electronics 80C652 microcontroller, 32 kb EEPROM, 32 kb battery backed-up RAM, 16-bit A/D converter, 14-bit D/A converter, 9 decades auto-ranging amplifier

Electrometer accuracy $\pm 2\%$

Battery test accuracy $\pm 10\%$

Temperature coefficient 0.3%/°C between 10° and 30°C

Reproducibility $\pm 1\%$ over 24 hours, stable conditions

Response time Maximum 6 seconds for 95% of the end value

Ranges Two ranges (auto-ranging): from 0 to 50 MBq (^{99m}Tc), from 50 MBq to 200 GBq (^{99m}Tc)

Detector (continued)

Gain Digital adjustment

Bias correction Digital adjustment

Zero adjustment Digital adjustment

Calibration Digital adjustment

Background subtraction Digital control

Battery test Digital control

Interface Standard RS-232 interface, no handshake 9600 Baud

Power supply ± 15 VDC, 100 mA; 5 VDC, 200 mA

Cable 8 ft (2.5 m)

Dimensions 5.9 in Ø x 16.5 in (d) (15 x 42 cm)

Weight 34 lb (15.5 kg)

Optional accessories

Label Printer including Real-Time Clock, 110 V
(Model 34-164-1000)

Label Printer including Real-Time Clock, 220 V
(Model 34-164-1220)

Molybdenum Breakthrough Set (Model 34-204)

Extra Dipper (Model 34-162-2100)

Extra Well-Liner (Model 34-162-1241)

The Cal/Rad Mark IV chamber shielding is designed to offer extra protection from high-energy gamma rays. The shielding consists of 8 interlocking lead rings and a lead bottom, completely surrounding the ionization chamber. The lead rings are individually coated white. There are two models available:

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Lead Shielding: 0.8 in (20 mm)

Inner Dimensions: 6.7 in Ø x 17.7 in (170 x 450 mm)

Weight: 154 lb (70 kg)

Chamber Shielding from high-energy activity 2 inch lead shielding (Model 34-211-9999)

Lead Shielding: 2 in (50 mm)

Inner Dimensions: 6.7 in Ø x 17.7 in (170 x 450 mm)

Weight: 385 lb (175 kg)

Available model(s)

34-162 CAL/RAD MARK IV, 110 V

34-162-2200 CAL/RAD MARK IV, 220 V

For additional information, please contact Cardinal Health, Radiation Management Services customer service at 440.248.9300, 800.850.4608, or fax: 440.349.2307; located at 6045 Cochran Road, Cleveland, Ohio 44139-3303, USA.

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Cal/Rad Wiper™ Multi-Channel Analyzer Single-Well Wipe Test Counter Model 05-500



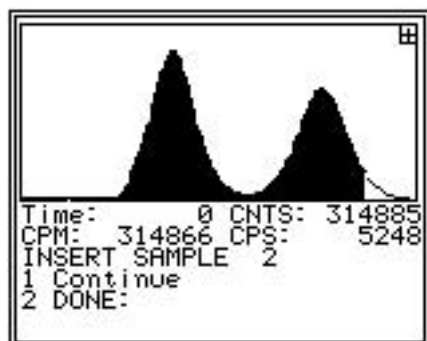
The Cal/Rad Wiper Multi-channel Analyzer/Single-Well Wipe Test Counter is a compact, highly sophisticated, 4096 channel analyzer specifically developed for wipe testing in a nuclear medicine setting. The Wiper satisfies the strictest regulations, while providing a superior user interface. With its single well-type NaI(Tl) detector, the Cal/Rad Wiper is ideal for the cost-conscious department that wants total compliance and long-term reliability.

Sophisticated software makes getting accurate, detailed location reports fast, easy and effective. Up to 20 predefined locations may be entered into the system. On a daily or weekly basis, the user simply chooses "Do Wipe Test" from the main menu, selects a location from the library, and counts.

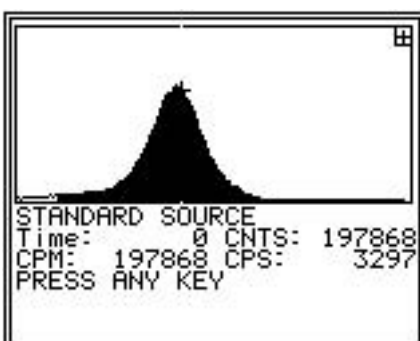
A detailed report will be printed to the screen and/or the optional printer. The user may choose between a compact printer designed to complement the system, or may opt for an RS-232 Hewlett Packard or Epson printer (not included). For added versatility, the user may send all isotope data to a computer for storage or to another department via the built-in serial port.



- Meets all requirements for nuclear medicine wipe testing
- Integral-line NaI(Tl) well detector with heavy shielding for maximum sensitivity
- Full-featured multi-channel analyzer for high resolution detail
- Graphical display of isotope spectra and menu software
- Identifies unknown isotopes
- Automatic calibration for trouble-free compliance
- Removable well liner protects against detector contamination
- Meets all NRC and State Regulatory Requirements for unrestricted areas
- Ratio calculation for dual isotope studies
- Pass/fail warning
- Choice of full-page or compact printer (both optional)
- Provides wipe test reports by location, for easy regulatory compliance
- Results available in CPM or DPM



Spectrum



Passed calibration screen



Features

- **Isotope window selection**

Fully user-programmable and selectable by location. A sophisticated isotope identification helps users to identify the content of a contaminated wipe

- **Built-in ratio program**

Ideal for running single and dual isotope Schillings tests

- **Automatic high-voltage adjustment**

Ensures that the Cal Rad Wiper is properly calibrated for superior accuracy

- **Spectrum compensation**

This unique feature provides accuracy across the energy spectrum by compensating for the inherent non-linearity of sodium iodide detectors. This superior technology presents the isotopes in their truest form, not squeezed or compressed into an unnatural, biased shape. It allows simpler determination of energy peaks when operating the unit in the Pulse Height Analyzer (PHA) Mode

- **Password-protection**

For added departmental security

The Cal/Rad Wiper consists of three major components

Detector assembly

This may be placed on either the right or left side of the Cal/Rad Wiper chassis. It consists of an NaI(Tl) detector enclosed in heavy lead shielding. The detector well has a removable liner to protect against contamination. The liner can be removed for cleaning, decontamination, or replacement. The sodium iodide (NaI) crystal and integral photomultiplier tube (PMT) convert the gamma radiation into electrical pulses that are proportional to the energy of the radiation striking the detector. The Cal/Rad Wiper's unique Pulse Height Analyzer (PHA) and 4096-channel circuitry identifies and stores this pulse information. This highly advanced device illustrates in clear, graphic detail the profile of a particular isotope.

Video display

Featured in the Cal/Rad Wiper, is a backlit liquid crystal display. This high resolution graphics unit allows the Cal/Rad Wiper to draw and present the actual radiation spectra of the nuclide being measured.

Keypad

Allows the user to input names, dates, time, commands, etc. into the system. It will take on additional functions when using Pulse Height Analyzer (PHA) mode.

Specifications

Detector Well-type NaI(Tl) integral line single-piece assembly

Shielding 0.75 in (20 mm) virgin lead

Analyzer 4096-channel MCA

Well liner Removable, inert plastic

Display Backlit LCD; 4.5 in (11.25 cm) diagonal

Data output Via screen, serial port, full or compact printer

Data input Alphanumeric keypad

Power requirements 110/220 VAC; 0.5/0.25 A; 50/60 Hz; 30 W

Dimensions

Base unit 10.5 (w) x 8.5 (d) x 10 in (h) (27 x 22 x 25 cm)

Detector 6 in Ø x 10 in (h) (15 x 25 cm)

Weight 32 lb (14.5 kg)

Optional accessories

80-Column, High-Resolution Printer (Model 05-500-3500), includes power pack and cable

Check Source, ⁵⁷Co, 0.1 µCi, NIST Traceable (Model 05-500-2000)

Test Wipes, 200 per box (Model 03-202)

Available model(s)

05-500 Cal/Rad Wiper Multi-Channel Analyzer Single-Well Wipe Test

For additional information, please contact Cardinal Health, Radiation Management Services customer service at 440.248.9300, 800.850.4608, or fax: 440.349.2307; located at 6045 Cochran Road, Cleveland, Ohio 44139-3303, USA.

Specifications are subject to change without notice.

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05-500-ds rev 1 13 mar 03

Deluxe Wipe Test Counter

Nuclear Associates Model 05-578



Nuclear Medicine



- Specifically designed so you can EASILY and QUICKLY comply with ALL NRC and most Agreement State Regulatory Requirements for Wipe Test Counting
- Measures surface contamination levels in areas where radiopharmaceuticals are used
- Digital LED readout plus PASS/FAIL lights
- Can be calibrated for all important isotopes, including sealed sources
- Can be used as a scaler displaying counts up to 999×10^6
- Can detect ^{99m}Tc levels to meet NRC requirement

NRC Requirement

“A licensee shall survey for removable contamination, once each week, all areas where radiopharmaceuticals are routinely prepared for use, administered or stored.”

Nuclear Regulatory Commission

Publication 10CFR35, “Medical Use of By-Product Material,” Paragraph 35.70, “Surveys for Contamination and Ambient Radiation Exposure Rate.”

Introduction

The Deluxe Wipe Test Counter is a rugged, miniaturized system for determining removable radioactive contamination (wipe testing). Though priced much lower than well counters and other types of wipe test counters that produce comparable results, the Deluxe Wipe Test Counter’s reliability, accuracy, ease-of-operation and convenience make it the best choice everywhere that wipe testing must be performed.

Applications

The Deluxe Wipe Test Counter consists of a thin-window ($2\text{mg}/\text{cm}^2$) Geiger-Müller tube that detects beta and gamma radiation and a microprocessor that utilizes built-in memory to convert the data to thousands of disintegrations per minute (kDPM), the units in which this data is reported.

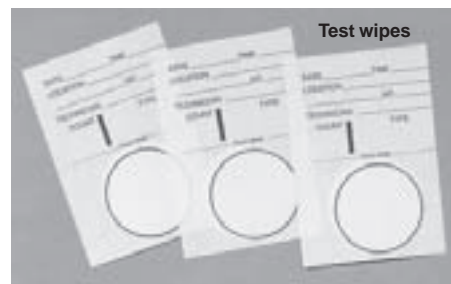
The instrument counts 0.5 inch diameter wipe samples or cotton swabs.

In addition to “pass/fail” indicators—a green light (PASS) for contamination less than the preset threshold, a red light (FAIL) if contamination exceeds the threshold—this deluxe instrument has a 4-digit LED digital display indicating the level of contamination in kDPM. The pass/fail threshold can be adjusted for levels other than 2000 DPM (e.g., iodine and other beta emitters have a maximum allowed contamination level limit of 200 DPM in uncontrolled areas).

Applications (continued)

As an added convenience, the instrument can also be used as a scaler, displaying counts to three or four significant figures up to a maximum of 999×10^6 . The counting times available are 1, 5, and 20 minutes.

The Deluxe Wipe Test Counter includes a ^{137}Cs , 1 μCi check source, and a package of 0.5 inch diameter test wipes. Cotton swabs can also be used for making the wipe tests.



Here's how easy it is to meet the NRC requirements using the Deluxe Wipe Test Counter...

Step 1

Press the Background button. This initiates a background count which takes about 20 minutes. When the background light goes off, the count has been completed. This needs to be done only once before the first sample in a group.

Step 2

Place the test source in the sample tray and press the Calibration or Test button. At the end of one minute, the light will go off and the instrument will be calibrated.

Step 3

Place a wipe test sample in the holder and press the Count button. At the end of the count period, there will be a green or red "signal" light. The green light indicates "pass" (less than 2000 DPM). The red light indicates "fail" (2000 DPM or higher).

Specifications

Contamination threshold + 2 sigma above background plus threshold set by user

Scaler Counts up to 999×10^6 maximum

Scaler time intervals 1, 5, or 20 minutes

Radiation detected Gamma > 15 keV; Beta > 70 keV

Detector Halogen--quenched GM tube, 1.1 cm Ø, 2 mg/cm² mica window, 0.13 inch lead tube shielding, 3 mg/cm² mylar tube guard

Efficiency Approximately 3 CPM/kDPM for ^{99m}Tc

Detector voltage 500 V regulated

Background count 20 minutes, maximum limit 24 CPM

Environmental limits - 20° to + 50°C; 90% Rh; 10,000 ft. alt

Power requirements 18 V, UL approved external 115 VAC power converter

Dimensions 6 x 6 x 4 in (h)

Weight 2 lb (0.9 kg)

Optional accessories

Check Source, ¹³⁷Cs, 0.8 µCi (Model 05-578-2001)

Test Wipes (Model 03-202), 0.5 inch Ø, on Record Folder Backing Sheets (for better grip while wiping, record-keeping and contamination prevention during transport), package of 200

Power Converter, 110 V (Model 87-578)

Power Converter, 220 V (Model 87-578-2210)

Available model(s)

05-578 Deluxe Wipe Test Counter, includes check source and test wipes, 110 V

05-578-2200 Deluxe Wipe Test Counter, includes check source and test wipes, 220 V

For additional information, please contact Cardinal Health, Radiation Management Services customer service at 440.248.9300, 800.850.4608, or fax: 440.349.2307; located at 6045 Cochran Road, Cleveland, Ohio 44139-3303, USA.

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05-578-ds rev 1 3 mar 03

The Genesys™

Model 05-605



Nuclear Medicine



- Multi-well RIA Gamma and Wipe Test Counters
- Multi-well design (5, 10, 15, 20, 25) simultaneously count up to 25 wipes for maximum time efficiency
- Fully adjustable isotope windows offer complete flexibility
- Meets all NRC and state regulatory requirements

Introduction

The time spent counting wipes represents a waste with respect to income generation by the department. Therefore, it only stands to reason that the larger the department, the greater the need for higher throughput wipe test counting. The small extra cost of a multi-well counter pays for itself within a short time as a result of enormous time savings and throughput.

Utilizing the same, highly sensitive NaI(Tl) well-type detectors as the Wiper™, the Genesys 5000 remains highly efficient across the energy spectrum.

Applications

The Genesys 5000™ series of multi-well gamma counters is ideal for the larger or higher volume department which can't waste all day counting a large number of wipes on a single well counter. Choose from 5, 10, 15, 20, or 25 wells to match your volume needs. Imagine the time saved by counting up to 25 wipes simultaneously.

A unique, single analyzer optimized with anti-coincidence circuitry borrowed from gamma camera technology makes certain that all samples are treated identically for maximum accuracy.

DPM calculations, full-page printout and easy interfacing to a computer for long-term storage of data is simple and efficiently accomplished.

Designed to meet or exceed all NRC and State regulations, the Genesys 5000 series combines speed, efficiency and accuracy in a cost-conscious package for the larger Department.

Features

- Results available in CPM or DPM
- Simplified gain adjustment
- Programmable reports by location
- Integral-line NaI(Tl) well detectors with heavy shielding
- Pass/Fail cutoff is user-programmable
- Full page printout
- Programmable for Ratio and/or RIA tests

Specifications

Detectors Well-type NaI(Tl) integral line single piece assemblies

Shielding 0.4 inch between detectors, 0.65 inch surrounding assembly

Analyzer Dual channel with anti-coincidence circuitry (gamma camera technology)

Well liner Removable, inert plastic protects each well

Display 12 inch high resolution CRT

Data output Via screen, dual serial ports, full page printer

Data input Touch-screen, keyboard, RS-232 serial port(s)

Dimensions 28 (w) x 20 (d) x 15 in (h) (71 x 50 x 38 cm)

Power requirements VAC 110/200, 1/0.5 A, 50/60 Hz, 150 W

Available model(s)

05-605 The Genesys (5 well). Weight: 115 lb (52.1 kg)

05-605-1000 The Genesys (10 well). Weight: 130 lb (59.9 kg)

05-605-1500 The Genesys (15 well). Weight: 145 lb (65.7 kg)

Available model(s) (continued)

05-605-2000 The Genesys (20 well). Weight: 160 lb (75.5 kg)

05-605-2500 The Genesys (25 well). Weight: 175 lb (79.3 kg)

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05-605-ds rev 1 13 mar 03

Calicheck™ Dose Calibrator Linearity Test Kit Model 34-210

- Easily checks linearity in minutes, without sample decay or fractionating
- Fast, accurate, and reliable
- Eliminates costly waste of radionuclide
- Meets NRC and Agreement State guidelines*

Specifications

Maximum tube size 1.94 in Ø x 11.75 in (d) (5 x 30 cm)

Capacity Accepts vials up to 30 cc (maximum 30 mm Ø)

Typical tube absorption factors for ^{99m}Tc 1, 2, 3.5, 10, 30, 120, and 350

Storage container dimensions 6 in Ø x 13.75 in (h) (15.24 x 35 cm)

Weight 10 lb (4.5 kg)

Available model(s)

34-210 Calicheck Dose Calibrator Linearity Test Kit



The unique Calicheck Kit allows you to verify the linearity of your dose calibrator accurately and reliably, in minutes rather than days. You no longer need to follow the decay of ^{99m}Tc for three or more days to collect data for this test. Radiation exposure is reduced dramatically and the radionuclide can still be used for imaging. Testing with Calicheck allows the calibrator, isotope and the user to return to productive service in minutes. Since the kit works so fast, linearity tests can be made more frequently to spot trouble before it becomes serious.

Calicheck is designed to attenuate ^{99m}Tc by known values. With six lead-lined tubes of varying thickness and one central plastic unlined tube, it provides for seven successive measurements of a vial of ^{99m}Tc, using radiation-absorbing shields that simulate decay at approximately 0, 6, 12, 20, 30, 40, and 50 hours from the initial assay.

Operation is simple. The central tube, with a vial of ^{99m}Tc inserted, is placed in the dose calibrator and counted, providing a "0" hour reading. Then, in sequence, each of the remaining six color-coded tubes is positioned over the central tube and counted individually. The readings are then normalized with predetermined factors, and the degree of linearity can be seen virtually at a glance.

The Calicheck Kit includes:

One plastic central tube with a lead base, six color-coded, lead-wrapped plastic tubes, a supply of record-keeping sheets, and complete instructions.

* NRC Program-Specific Guidance about Medical use Licenses (NUREG-1556, Vol. 9) Appendix J: Model Procedures for Dose Calibrator Calibrations.

For additional information, please contact Cardinal Health, Radiation Management Services customer service at 440.248.9300, 800.850.4608, or fax: 440.349.2307; located at 6045 Cochran Road, Cleveland, Ohio 44139-3303, USA.

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Calicheck™ Upgrade Kit

If you have the original Calicheck Kit, it was supplied with six color-coded tubes. You can now purchase the Calicheck Upgrade Kit which provides you with a plastic base puck, a 0.25 inch thick lead disc and a new large diameter-purple banded tube.

This kit will allow you to simulate decay to 50 hours and gives you a tube absorption factor of up to 350.

Available model(s)

34-210-1100 Calicheck Upgrade Kit

Ashley Dose Calibrator Funnel Dipper Model 34-001



Nuclear Medicine

Imagine a dose calibrator dipper where you don't have to thread the needle. The unique funnel design positions the syringe in place, you just toss it in. Accommodates 0.5, 1, 3, 5, 6, 10, 12, 20, and 60 ml syringes.

Specifications

Construction Acrylic

Weight 0.57 lb (0.26 kg)

Available model(s)

34-001 Ashley Dose Calibrator Funnel Dipper



Standard Dose Calibrator Dipper Model 34-002

This dose calibrator dipper is specially designed to hold syringes and vials. Fits in all Capintec dose calibrators.

Specifications

Construction Acrylic

Weight 0.25 lb (0.11 kg)

Available model(s)

34-002 Standard Dose Calibrator Dipper



Well Liner Sleeve Model 34-003

This well chamber insert fits all models of Capintec dose calibrators. The sleeve protects the dose calibrator from contamination and is easily removed for cleaning.

Specifications

Construction Acrylic

Weight 1.1 lb (0.5 kg)

Available model(s)

34-003 Well Liner Sleeve



For additional information, please contact Cardinal Health, Radiation Management Services customer service at 440.248.9300, 800.850.4608, or fax: 440.349.2307; located at 6045 Cochran Road, Cleveland, Ohio 44139-3303, USA.

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