



ST. MARY'S MEDICAL CENTER

2900 First Avenue • Huntington, WV 25702
304-526-1234 • www.st-marys.org

April 5, 2006

Ms. Shirley Xu
Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Control Number: 138600
Re: Additional Information

Dear Ms. Xu:

The recent request for amendment is for the addition of a hot lab in the new nuclear cardiology area. The existing hot lab for nuclear medicine will remain in place. For the new area the following equipment will be available for use:

Dose Calibrator- Capintec model CRC-15W (or similar model) includes both a well chamber and an ionization chamber for the measurement of doses and wipes. (Documentation attached)

Survey Meter- Ludlum model 14-C (or similar) with model 44-6 (or similar) is to be provided for area surveys and in the event of a spill. (Documentation attached)

Leaded waste storage- At least one leaded storage bin will be available in the hot lab containing at minimum 1/4" lead on all six sides. The attached documents are the models being considered at this time.

Co-57 flood field source- The field source is shielded within its container during periods of non-use and will also be stored beside or between the leaded storage bins to provide additional protection.

L-block- A leaded L-block will be provided to protect the staff in keeping with ALARA principle during dose preparation.

Again, this is for an additional hot-lab. The existing hot-lab will remain in place within the main nuclear medicine department.

Should you have additional questions or require additional information please contact Michael Bidy, Medical Physicist, at 304-522-1550 extension 245.

Sincerely,

Ruth Johnson, BSN, MBA
Vice President, Patient Services

RECEIVED
REGION I
2006 APR 10 PM 2:11

Q-8
47-09576-01
03603388

138600

NMCS/RGN MATERIALS-002
FAX RECEIVED 4/5/2006

Dose Calibrators

Two Products in One Compact Package...

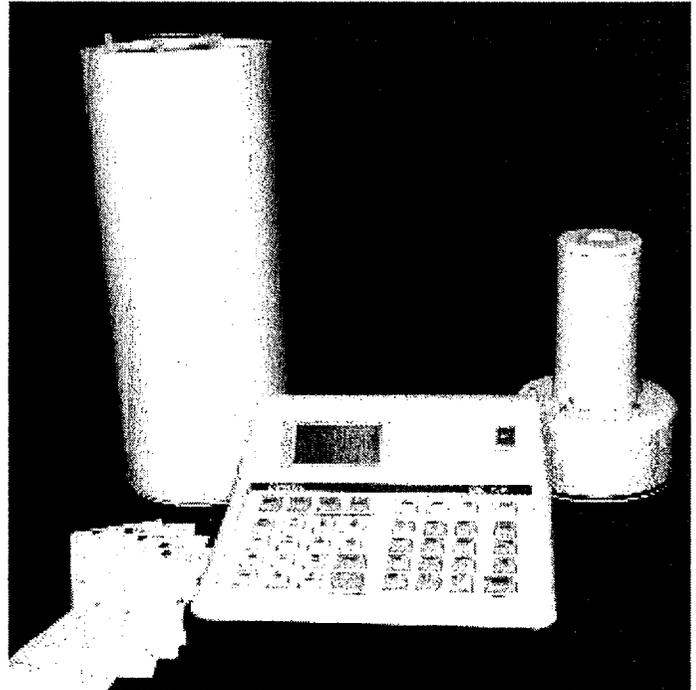
CRC[®]-15W Dose Calibrator/Well Counter

The Capintec CRC-15W has a little of this and a whole lot of that. The CRC-15W is an innovative combination of the tried and true CRC-15R Dose Calibrator and the CAPRAC-R Well Counter. One compact package allows you to accurately measure your patient doses, achieve regulatory compliance for detection of contamination and perform lab tests.

The console of the CRC-15W is an efficiently designed control center, with its custom alphanumeric keyboard the user can toggle between the dose calibrator and well counter with the push of a button. There are 9 factory assigned nuclide keys and 5 unassigned nuclide keys that can be programmed by the user. There is a large LCD display that when operating as a dose calibrator will show the isotope, activity and calibration number; when operating as a well counter will show CPM, DPM or the 6-channel pulse height analyzer.

The ionization chamber of the CRC-15W has 1/8" (3.2mm) mechanically reinforced lead shielding. The chamber is a sealed thin wall, deep well design with high pressure Argon gas in order to achieve optimal speed of response (within 2 seconds) without having to make temperature or pressure adjustments.

The well of the CRC-15W is 1/2" lead shielding with a drilled, high sensitivity Sodium Iodide (NaI) crystal. The well crystal is sensitive enough to measure activities as low as 1 nCi in as little as 6 seconds.



All of the functions of the CRC-15W are controlled through the menu driven software program. There are built in Daily QC functions and self-diagnostics for both the dose calibrator and well counter, including autocalibration of the well. There is a library of over 80 nuclides with half-lives. The wipe tests can be divided into restricted, unrestricted, general and sealed sources, with specific trigger levels for each.

As always Capintec's unsurpassed technical support and service team backs it up.

Visit us on the web at



www.capintec.com

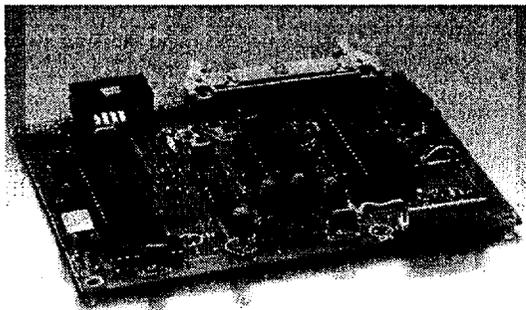
Dose Calibrators

15W SPECIFICATIONS

- Ionization Chamber: Thin wall, deep well, high-pressure Argon gas[26cm (10") deep x 6cm (2.5") dia. opening]
- Chamber Shielding: 1/8" (3.2mm) mechanically reinforced lead
- Measurement Range: Autoranging, up to 240 GBq (6.5 Ci) Tc 99m max.
- Resolution: 0.001 MBq (0.01 µCi)
- Electrometer Accuracy: Better than ± 2%,
- Linearity: Within ± 2%
- Response Time: Within 2 seconds, For very low activity 4 to 16 sec. (user selectable)
- Calibration Key: Over 200 Nuclides
- Nuclide Keys: 9 pre-set and 5 user defined
- Printer Interface: Provided for serial printer
- System Memory: Over 80 Nuclides (w/ CAL number and half-life)
- Well detector: Drilled Sodium Iodide (NaI) crystal detector, Max count rate 60,000 cps
- Energy Discrimination: Fixed range MCA; channel windows are 15-100, 100-200, 200-400, 400-660, 660-800 and >800 keV
- Warning Trigger Levels: User-definable
- Power Requirements: 100-240 VAC 50/60, Hz 150mA
- Display Unit Dimensions: 12.1 x 25.4 x 26.7cm (4.75" x 10.0" x 10.5") Weight: 2kg (4lb)
- Chamber External Dimensions: 41.8 x 16.8cm (16.4" x 6.6") Weight: 15.6kg (34.3lb)
- Cables: 8' long on the chamber and 9' long on the well
- Metal cable connectors with thumb screws
- No battery required

15W FEATURES

- ★ Capintec quality and reliability
- ★ Microprocessor controlled
- ★ Large LCD display for nuclide data, activity (in Ci or Bq) and calibration number
- ★ Daily QC functions, including zero adjust, background subtraction, system test, accuracy (with deviation percentage) and constancy
- ★ Autocalibration of the well
- ★ Library of over 80 nuclides with calibration number and half-life and room for 10 additional nuclides
- ★ Auto ranging
- ★ Max activity up to 6.5 Ci of Tc-99m
- ★ Schillings, Dicopac and blood volume lab tests
- ★ User defined wipe rest protocols
- ★ 6-Channel pulse height analyzer
- ★ Sealed, high pressure gas filled ionization chamber (no temperature or pressure corrections required)
- ★ High sensitivity, drilled NaI well crystal
- ★ Menu driven programming for easy navigation
- ★ An unsurpassed technical support and service team
- ★ 



Option: RS-232-R Serial Port see page

OPTIONS

CRC-AD15 Auxiliary Display	5130-2082
RS-232-R Serial Port	5130-0080
Okidata Printer	5130-0074
Epson Roll Printer	5430-0058
Epson Ticket Printer	5430-0100

ITEM #	DESCRIPTION
5130-3113	CRC-15W Calibrator

Order online

Thin-Wall Syringe Shields* for ^{99m}Tc

Models 56-272 to 56-273

NM

Nuclear Medicine

- Designed specifically for ^{99m}Tc or any other gamma emitter < 140 keV
- Slim design
- Lightweight

Here is a slim, lightweight, lead and lead-glass shield that has been developed for use with technetium-99m and other radionuclides with gamma energies below 140 keV. It is similar in construction to the Gamma-Vue Syringe Shield but has a thinner lead wall with flat surfaces.

The shield consists of a 0.10 inch thick lead cylinder and a lead glass window which provides optimum shielding to the user. For a 10 mCi dose of ^{99m}Tc (7.2 R/hr at 1 cm unshielded), the shield provides an attenuation factor of 200. A syringe is locked in position by a screw.

Specifications

Weight of shield 0.20 lb (0.10 kg)

Weight of replacement lead glass 0.05 lb (0.02 kg)

Replacement lead glass windows

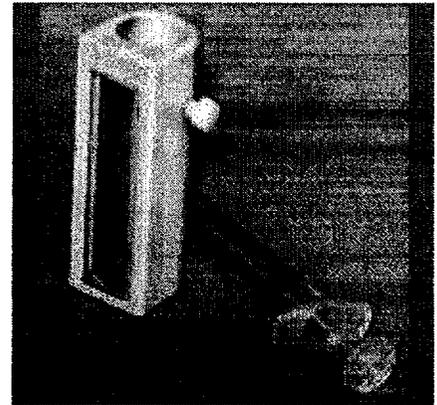
56-272-1000 Thin-Wall Syringe Shield, 2.5 to 3 cc, Replacement Lead Glass

56-273-1000 Thin-Wall Syringe Shield, 5 to 6 cc, Replacement Lead Glass

Available model(s)

56-272 Thin-Wall Syringe Shield, 2.5 to 3 cc

56-273 Thin-Wall Syringe Shield, 5 to 6 cc



* US Patent No. 3,596,659.

All-Vue™ Syringe Shields

Models 56-211 to 56-213

Order online

- Provide maximum visibility of syringe
- Lightweight
- Large, clear viewing area
- Replaceable lead glass window
- Reduce exposure by over 95%

All-Vue Syringe Shields give users the maximum viewing area required when dispensing radionuclides, a full 180°. Half of the shield is made of lead; the other half is clear, high-density lead glass. With an All-Vue Syringe Shield, exposure to the technologist is reduced by over 95%. A major feature of the shield is its replaceable lead glass window. If it should crack or break accidentally, a new window can be installed easily and at a relatively low cost.

Specifications

Weight of shield 0.2 lb (0.09 kg)

Weight of replacement lead glass 0.10 lb (0.04 kg)

Replacement lead glass windows

56-211-1000 All-Vue Syringe Shield, 1 cc, Replacement Lead Glass

56-212-1000 All-Vue Syringe Shield, 2.5 to 3 cc, Replacement Lead Glass

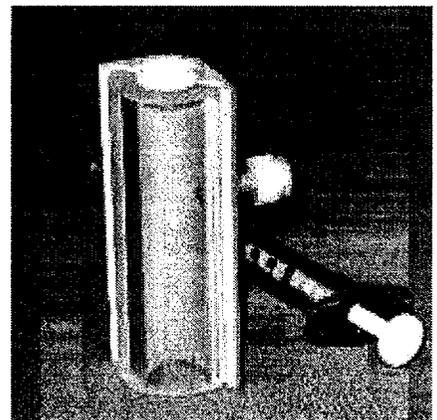
56-213-1000 All-Vue Syringe Shield, 5 to 6 cc, Replacement Lead Glass

Available model(s)

56-211 All-Vue Syringe Shield, 1 cc

56-212 All-Vue Syringe Shield, 2.5 to 3 cc

56-213 All-Vue Syringe Shield, 5 to 6 cc



For more information, receive our full product catalog, or order online, contact **Radiation Management Services** business of **Fluke Biomedical**: 440.248.9300 or www.flukebiomedical.com/rms.

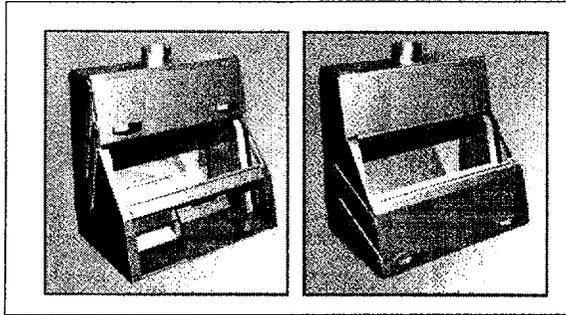
Specifications are subject to change without notice.

© 2005 Fluke Biomedical. All rights reserved. All-Vue is a trademark of Fluke Corporation. Printed in USA.
56-272-ds rev 2 10 mar 05

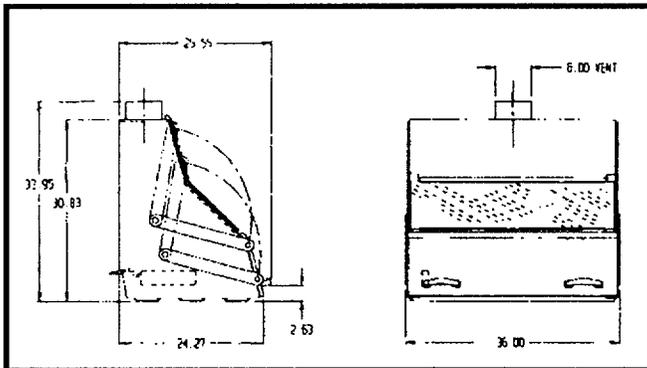
440.248.9300 www.flukebiomedical.com/rms

PREPARATION ENCLOSURE

Connects to external ductwork



Adjustable 12" shield can fold forward to load large objects. The hood can also be completely closed and used for storage.



Preparation Enclosure features built-in electrical outlets.

The Lead-Lined Preparation Enclosure is designed for applications that require handling gaseous radioactive materials. The interior provides ample floor space. A large lead glass window and fluorescent light allow safe and unobstructed viewing. The enclosure opening has an adjustable shield that creates access ports. A swing down shield covers the ports when not in use.

Gaseous materials are directed by a baffle (eliminating dead space) through a stainless steel chimney. The chimney is connected to external blowers (not supplied) and ductwork (not supplied). The blowers create a negative pressure preventing gas leaks.

SPECIFICATIONS:

Dimensions: 36" w x 24" depth x 30.5" h (91.4 a 6] a 77.5 cm)

Interior Floor Space: 31" w x 19" depth (78.7 x 48.3 cm)

Lead Shielding: 25" thick (64 cm)

Adjustable Shield: 12" w x 10" h x .5" thick (30.5 x 25.4 x 1.3 cm)

Exhaust: 6" dia (15.2 cm) chimney, fixed upper and adjustable lower baffles. Blower and filter not included

Lighting: 110v fluorescent lamp, 20 watts, U listed, 220V available on request

Lead Glass Window:

Dimensions: 34.5" w x 11.8" h x .75" thick (87.6 x 30 x 1.9 cm)

Density: 5.05 g/cm³

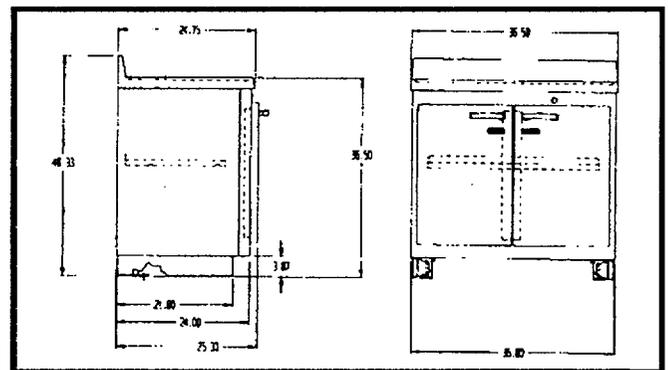
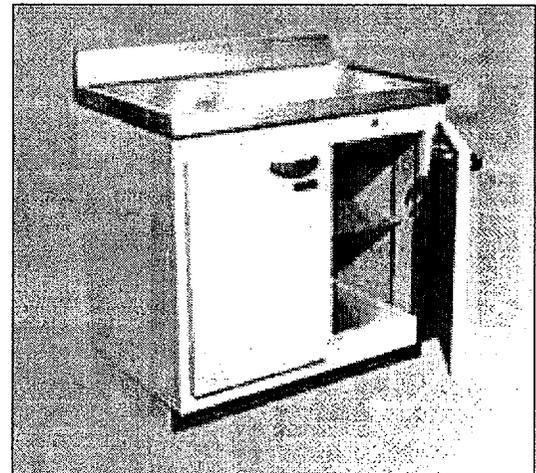
Finish: # 3 brushed, stainless steel

Weight: 733 lb (333.2 kg)

244-007 Preparation Enclosure, .25" lead **\$12,600.00**

ENCLOSURE BASE CABINET

Built to support the preparation enclosure



This module is the ideal base cabinet for the 244-007 Preparation Enclosure. Full height, overlapping double doors with key locks open up to an adjustable shelf with a 100 lb. capacity. The module may be used for storage of radioactive inventory, flood sources, or for short and long term decay.

SPECIFICATIONS:

Dimensions: 36 1/2" W x 36 1/2" H x 24" D (92.7 x 92.7 x 61 cm)

Lead Shielding: 1/4" (64 cm), 1/2" (1.3 cm) or 1" (2.5 cm) on all six sides

Shelf: 30" W x 18" D (76.2 x 45.72 cm), 100 lb. (45 kg.) capacity, adjustable height

Weight: 244-190, 812 lb. (369 kg.);

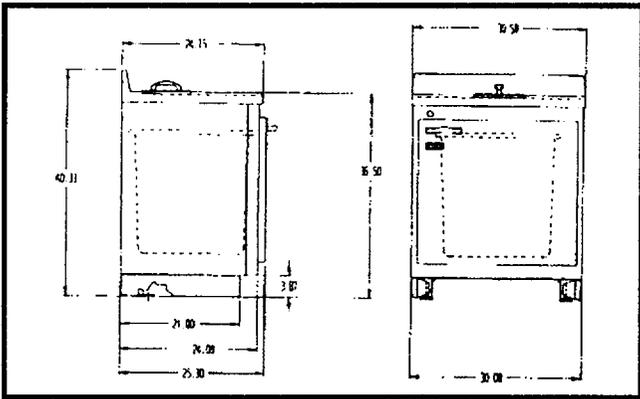
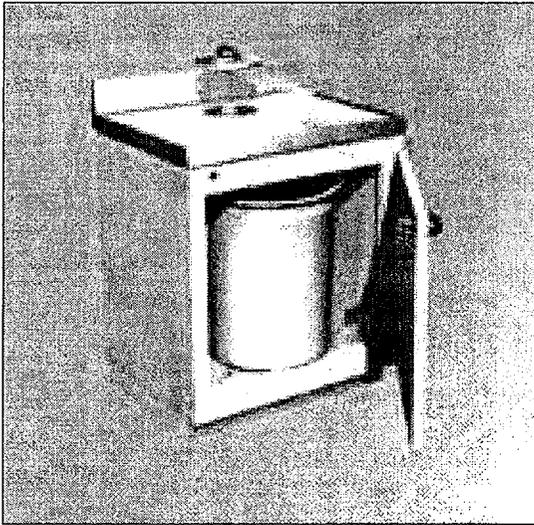
244-191, 1407 lb. (640 kg.); 244-192, 2600 lb. (1182 kg.)

244-190 Enclosure Base Module, 1/4" lead **\$8,100.00**

244-191 Enclosure Base Module, 1/2" lead **\$9,100.00**

244-192 Enclosure Base Module, 1" lead **\$11,100.00**

WASTE CABINET



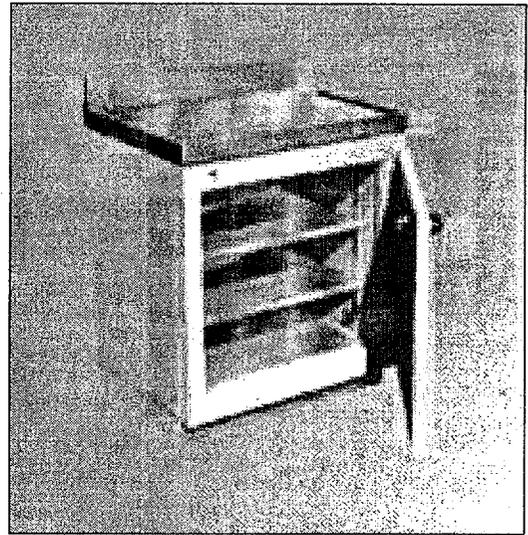
The Waste Cabinet is ideal for decay storage of used radioaerosol kits, xenon disposables, as well as other "nonsharps" radioactive waste, like gloves, vials and absorbent paper. A 6.5" diameter chute with shielded cover simplifies radioactive waste management and allows waste to be dropped directly into a polyethylene container prior to decay and disposal.

SPECIFICATIONS:

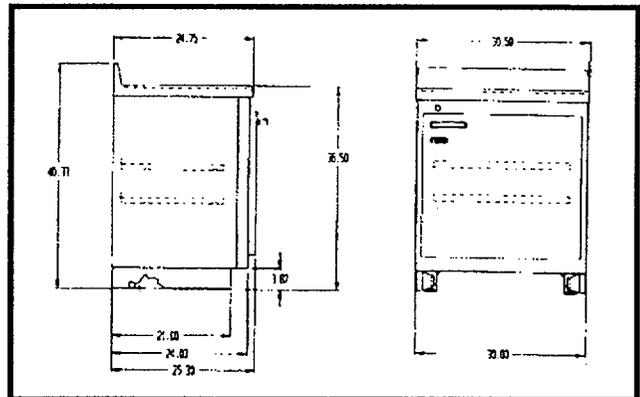
- Dimensions:** 30.5" W x 36.5" H x 24" D (77.5 x 92.7 x 61 cm)
- Lead Shielding:** 1/4" (.64 cm), 1/2" (1.3 cm) or 1" (2.5 cm) on all six sides
- Chute:** 6 1/2" D (16.5 cm) with 1/2" (1.3 cm) shielded cover
- Container:** 17" Dia x 22" H (56 x 43 cm), polyethylene
- Door:** Key locked
- Weight:** 244-150, 913 lb. (415 kg.); 244-151, 1282 lb. (583 kg.); 244-152, 2290 lb. (1039 kg.)

244-150	Waste Module, 1/4" lead.....	\$4,900.00
244-151	Waste Module, 1/2" lead.....	\$5,900.00
244-152	Waste Module, 1" lead.....	\$7,900.00

DECAY CABINET



Can be used to decay Sharps containers prior to disposal.



Featuring two heavy-duty adjustable shelves, this cabinet is ideal for long term storage of decaying material. The shelves can support up to 100 lb. each and measure 26" wide and 18" deep. Door is key-locked to prevent unauthorized access. It is appropriate for decay of sharps containers and other boxed waste prior to disposal as well as for storage of flood sources.

SPECIFICATIONS:

- Dimensions:** 30.5" W x 36.5" H x 24" D (77.5 x 92.7 x 61 cm)
- Lead Shielding:** 1/4" (.64 cm), 1/2" (1.3 cm) or 1" (2.5 cm) on all six sides
- Shelf:** 26" W x 18" D (66 x 45.7 cm), 100 lb. (45.4 kg.) capacity, adjustable height
- Door:** Key locked
- Weight:** 244-140, 730 lb. (331 kg.); 244-141, 1267 lb. (575 kg.); 244-142, 2341 lb. (1062 kg.)

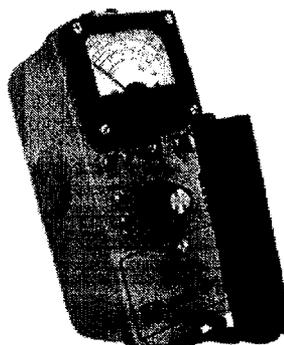
244-140	Decay Module, 1/4" lead	\$5,100.00
244-141	Decay Module, 1/2" lead	\$6,100.00
244-142	Decay Module, 1" lead	\$8,100.00

To place an order, call 1-800-682-2226.

MODEL 14C Survey Meter

PART NUMBER:48-1611

- 5 Ranges
- Internal High Range Energy Compensated G-M
- Utilizes G-M or Scintillation Detectors
- Total Range from 0 - 2000 mR/hr



COMPATIBLE DETECTORS: G-M, scintillation

METER DIAL: Typically 0 - 2 mR/hr and cpm, BAT TEST (*others available*)

MULTIPLIERS: X0.1, X1, X10, X100, X1000

LINEARITY: Reading within plus or minus 10% of true value with detector connected

CONNECTOR: Series "C" (*others available*)

INTERNAL DETECTOR: Energy compensated G-M (*used with X1000 scale only*)

ENERGY RESPONSE: Within plus or minus 15% of true value between 60 keV - 3 MeV (*internal detector only*)

THRESHOLD: 30 mV plus or minus 10 mV

AUDIO: Built in unimorph speaker with ON/OFF switch (*greater than 60 dB at 2 feet*)

CALIBRATION CONTROLS: Accessible from front of instrument (*protective cover provided*)

HIGH VOLTAGE:900 volts

THRESHOLD: 30 mV plus or minus 10 mV

RESPONSE: Toggle switch for FAST (4 seconds) or SLOW (22 seconds) from 10% to 90% of final reading

RESET: Push-button to zero meter

POWER: 2 each "D" cell batteries (*housed in sealed compartment that is externally accessible*)

BATTERY LIFE: Typically greater than 1000 hrs. (*battery condition can be checked on meter*)

METER: 2.5" (6.4 cm) arc, 1 mA analog type

CONSTRUCTION: Cast and drawn aluminum with beige polyurethane enamel paint

TEMPERATURE RANGE: -4° F(-20° C) to 122° F(50° C)

May be certified for operation from -40° F(-40° C) to 150° F(65° C)

SIZE: 6.5" (16.5 cm)H X 3.5" (8.9 cm)W X 8.5" (21.6 cm)L

WEIGHT: 3.5 lbs (1.6 kg) including batteries

Note that the Model 14C houses an internal energy-compensated G-M detector with limitations listed in the description. External suggested detectors are listed below and are not included with the survey meter price. An additional charge will be added for each detector ordered.

MODEL 44-6 Sidewall G-M Detector

PART NUMBER:47-1535

The Model 44-6 is a sidewall G-M detector with a rotary beta shield for general purpose survey.



INDICATED USE: Beta gamma survey

DETECTOR: 30 mg/cm² stainless steel wall halogen quenched G-M

SENSITIVITY: Typically 1200 cpm/mR/hr (*Cs-137 gamma*)

BETA CUT OFF: Approximately 200 keV (*window open*)

ENERGY RESPONSE: Energy dependent

DEAD TIME: Typically 95 microseconds

COMPATIBLE INSTRUMENTS: General purpose survey meters, ratemeters, and scalers

OPERATING VOLTAGE: 900 volts

CONNECTOR: Series "C" (*others available*)

CONSTRUCTION: 1000 mg/cm² polished stainless steel housing with rotary beta window

TEMPERATURE RANGE: -4° F(-20° C) to 122° F(50° C)

May be certified for operation from -40° F(-40° C) to 150° F(65° C)

SIZE: 1.2" (3.0 cm) diameter X 6.5" (16.5 cm)L

WEIGHT: 1 lb (0.5kg)

Replacement Parts

G-M Tube

Response Curves

