CRC[®] Family of Dose Calibrators

Dependable Technology at Your Fingertips





CRC®-55tR

COLOR LCD TOUCH SCREEN

Menu-driven, 8" color VGA touch screen interface that is easy to learn and use

ENHANCED SOFTWARE Supports dual chamber technology

VERSATILITY

Entering data through the custom touch screen interface is fast and includes 28 programmable keys

STREAMLINED QUALITY ASSURANCE

Automated quality control tests and self-diagnostics are built-in with automatic zero and background subtraction

SE HABLA ESPAÑOL?

Bilingual English/Spanish software

CRC[°]-55tR Dose Calibrator- Item #5130-3234 Additional R Chamber- Item #5130-2210

SPECIFICATIONS

Ionization Chamber

- Type: Thin wall, deep well, high pressure
- Fill Gas: 12 atm Ultra Pure Argon

Measurement Range

- Type: Auto Ranging
 - Activity: 250 GBq (6 Ci), max.
 - Resolution: .001 MBq (.01 μCi), max.

Display Screen

- Type: 8" VGA LCD color touch screen display
- Format: Direct reading in Bq or Ci
- Bq/Ci Reading: User selectable or fixed
- Values Displayed: Nuclide name (Atomic symbol, Mass number), calibration

number Electrometer

- Accuracy: Better than ± 2%
- Linearity: Within $\pm 2\%$
- Response Time: Within 2 sec., 4 to 16 sec. for very low activity samples

Tests

- Diagnostics: Full test of program, system memories
- Daily: Auto Zero, Auto Background Adjust, Data Check, Accuracy and Constancy, Voltage Test
- Enhanced: Linearity, Geometry, Strip QC

Nuclear Data

- Nuclide Keys: 28 programmable keys
- System Memory: Over 80 nuclides (cal number and half-life)

Standard Source Data

• System Memory: Co-57, Co-60, Ba-133, Cs-137 Standard Sources





Repeatability of Measurement

 \bullet Repeatability: Within \pm 1% within 24 hours, during which time the calibrator is on

all the time.

- Molybdenum-99 Assay
 - Methods: Canister or CAPMAC
 - Measured Values: Mo-99 elution, Tc-99m, Tc-99m/Mo-99 Ratio
- PC Port
 - Interface: RS-232 & USB
 - Compatibility: Standard Nuclear Medicine Management Systems
- Printer (Optional)
 - Type: Epson Roll, Epson Slip or Okidata full size dot matrix or USB PCL compliant non-host based
 - Printing Options: Full size test report or measured results on a ticket

Power Requirements

- 100-240 VAC (50/60Hz) 90 MA
- Console Dimensions
 - Height: 42cm (9.5in) x Width: 23cm (9.0in) x Depth: 27cm (10.5in)
 - Weight: 3.4kg (7.5lb)
- Chamber Dimensions
 - Height: 43.8cm (17.25in) x Diameter: 17.2cm (6.76in)
 - Weight: 13.6kg (30lb)
 - Well Diameter: 6.1cm (2.4in) x Well Depth: 25.4cm (10.0in)
 - Cable Length: 3.7m (12ft)- Longer cables are available. Consult factory
- Cables
 - Power: 1.8m (6ft)- Longer cables are available. Consult factory
 - Printer: 1.8m (6ft)



DOSE DECAY SCREEN

- Any selected isotope can be decay-corrected for specific time/date
- Large, easy to read decay-corrected data displayed in RED



[Ci,E	Iq Conv] Input Activity:			
Decay Calcul	lator]			
Nuclide:	Tc99m (Technetium) 6.01 hr			
FROM:	Aug 27 2013 15 34	act	1 000 0	
TO:	Aug 31 2013 15 34	act	15.46uCi	
Dose Tabl	e			

UTILITIES SCREEN

- Rapid conversion of Ci/Bq
- Decay calculator for dose calculations
- Diagnostics- tests the integrity of the dose calibrator
- Dose Table- defines specific volumes from a measured sample for user-defined doses at a future time



Epson Roll Printer Item # 5430-0058



Epson Ticket Printer Item # 5430-0100

CRC®-55tW

BEST OF BOTH WORLDS

An integration of the CRC[®]55tR Dose Calibrator and Well Counter with chamber plug-n-play capability

PRECISION

Ion chamber is capable of measuring a dose as high as 6 Ci (250 GBq) with high accuracy

USER-DEFINED COUNTING PROTOCOLS

Allows the user to define specific counting procedures (protocols) with trigger levels for work, patient, unrestricted areas and sealed source leak tests

DETAILED SPECTRUM ANALYSIS

256 channel MCA which provides detailed spectrum for identification and analysis

CRC°-55tW Dose Calibrator- Item #5130-2216

SPECIFICATIONS

Well Detector

- Type: Sodium Iodide (NaI) drilled-well crystal detector
- 256 Channel MCA, manual and automatic ROI
- Warning Trigger Levels: User-definable
- Tests: Daily test, energy calibration, and reproducibility
- Enhanced QC includes Chi-Square and MDA

Ionization Chamber

- Fill Gas: 12 atm Ultra Pure Argon
- Measurement: Auto ranging
- Activity Range: Up to 6 Ci (250 GBq)
- Resolution: .001 MBq (.01 µCi)
- Response Time: Within 2 sec., for low activity sample, 4 to 16 sec. (user selectable)
- Tests: Daily tests include Auto Zero, Background Adjustment, Voltage Test, Data Check, Accuracy and Constancy
- Enhanced QC includes linearity, geometry, strip QC

Display Screen

- Type: 8" VGA LCD color touch screen display
- Bq/Ci Reading: User selectable or fixed
- Activity Display: Selected radionuclide, calibration number, measured activity and display units (Bq/Ci)
- Count Rate Values: Wipe and lab test results

Standard Source Data

• System Memory: Co-57, Co-60, Ba-133, Cs-137

Repeatability of Measurement

 \bullet Within $\pm 1\%$ within 24 hours, during which time calibration is powered at all times

Electrometer

- \bullet Accuracy: Better than \pm 2%
- Linearity: Within ± 2% Molybdenum-99 Assay
 - Methods: Canister or CAPMAC



Measured Values: Mo-99 elution, Tc-99m, Tc-99m/Mo-99 Ratio
 Nuclide Data

- Nuclide Setting Keys: 28 programmable keys
- System Memory: Over 80 nuclides (cal number and half-life)
- A pre-set key measures up to 2.0 Ci (74.0 GBq) of F-18
- PC Port
 - Interface: RS-232 and USB
 - Compatibility: Standard nuclear medicine management systems

Printer (Optional)

- Type: Epson Roll, Epson Slip or Okidata full size dot matrix or USB PCL compliant non-host based
- Printing Options: Full size test report or measured results on a ticket
- Power Requirements
- 100-240 VAC (50/60 Hz) 100 MA Tests
- Diagnostics: Full test of program, system memories

Cable

• Printer (Optional): 1.8m (6ft)

Power: 1.8m (6 ft)

- Console Dimensions
 - Height: 42cm (9.5in) x Width: 23cm (9.0in) x Length: 27cm (10.5in)

• Weight: 3.4kg (7.5lb) Chamber Dimensions

- Height: 43.8cm (17.25in) x Diameter: 17.2cm (6.76in)
- Weight 13.6kg (30lb) x Well Diameter: 6.1cm (2.4in) x Well Depth: 25.4cm (10.0in)
- Cable Length: 3.7m (12ft)- Longer cables are available. Consult factory.

Well Counter Dimensions

- Height: 23.8cm (9.38in.) x Diameter: 15.2cm (6in.)
- Weight: 6.9kg (15.2lb.)
- Well Diameter: 1.7cm (.67in.) x Well Depth: 3.8cm (1.5in.)
- Cable Length: 2.7m (9ft.)



AUTO CALIBRATION REPORT

- Provides detailed calibration data including:
 - Gain
 - FWHM
 - Linearity
- Well counter data archived by date for later viewing or printing

	Auto Calibratio	on Report	Ba
Calibration time	Aug 27 2013 15 42	Secial Number	000000
Threshold	80	IN	700 voits
Gain	64.15	Detector	WELL
2010	8	Channels	256
FW7/M	10.279 %		
Linearity Correction	32.810 keV = -0.122 %		
	40 966 NeV = 0 406 %		
	129 289 MeV = 6 148 %		
	348 946 keV = 1 349 %		
	661 268 MV = .0 059 %		



WIPE TEST SPECTRUM

- 256 channel MCA with detailed spectrum for identification analysis
- Manual and automatic ROI capabilities

WIPE REPORT

- Provies user-defined wipe groups and trigger level data
- Final report, archived by date and location, includes:
 - Bkg
 - Total counts (cpm)
 - Net counts (cpm)
 - Net activity (cpm)
 - Trigger levels

	Lab (Work	(Area)		Back
Aug 27 2013 15 44 Eff: 37 040 %	Time 60.0 sec Trigger 2000.00	dpm	clide Cs137, 76996	
Background	588 cpm	Total G	ounts: 9799 cpm	
Net Counts	9211 cpm	Net Ac	24869 apm	HIGH
Energy(key) 101 424 785 1242 2446 3477	Net Counts(com) 313 2134 733 1032 639 744	Nuclide	Activity(dpm)	
Inactivate				Spectrum

CRC®-55tPET DOSE CALIBRATOR

Ultimate Features in the Industry's Finest Package

- Touch screen interface
- Reduced chamber voltage and increased bias voltage increases the maximum activity range for high energy PET isotopes
- USB/Flash card capabilities for software upgrades and more •
- Chamber Plug-n-Play
- Enhanced remote functionality •
- **User-defined Hotkeys**
 - Touch technology provides rapid selection of isotopes
 - 28 programmable keys for site-specific keyboard layout
- **Enhanced Automated Software**
 - Facilitates rapid completion of quality assurance and self diagnostics
 - Reference source data decay-corrected to current time/date •
 - Automatic zero and background subtraction

CRC°-55tPET Dose Calibrator- Item #5130-3235 CRC*-55tPET Multiple Chamber Option- Item #5130-2212

SPECIFICATIONS

Ionization Chamber

- Type: Thin wall, deep well
- Fill Gas: 5 atm Ultra Pure Argon
- Measurement Range
 - Type: Auto Ranging • Activity: 20 Curies of F-18
 - Resolution: 0.1 µCi (0.01 MBq), max.

Display Screen

- Type: 8" VGA LCD Color Touch Screen Display
- Format: Direct reading in Ci or Bg
- Bq/Ci Reading: User selectable or fixed
- Values Displayed: Nuclide name (Atomic symbol, Mass number), calibration number

Electrometer

- Accuracy: Better than $\pm 2\%$
- Linearity: Within ± 2%
- Response Time: Within 2 sec., 4 to 16 sec. for very low activity samples Bias Voltage: +500V
- Standard Source Data
- System Memory: Co-57, Co-60, Ba-133, Cs-137, Na-22 Standard Sources Overall Accuracy
 - Accuracy Determined By:
 - 1) Calibration for the specific nuclide and the sample configuration,
 - 2) Accuracies of standard sources used for calibration of electrometer tests
 - Diagnostics: Full test of program, system memories
 - Daily: Auto Zero, Auto Background, Voltage Test, Data Check, Accuracy and Constancy





- Enhanced: Linearity, Geometry
- **Repeatability of Measurement**
 - Repeatability: Within \pm 1% within 24 hours during which time the calibrator is continuously on all the time

Nuclear Data

- Nuclide Keys: 28 programmable keys
- System Memory: Over 80 nuclides
- PC Port
 - Interface: RS-232 & USB
 - Compatibility: Standard Nuclear Medicine Management Systems
- Printer (Optional)
 - Type: Epson Roll, Epson Slip or Okidata full size dot matrix or USB PCL compliant non-host based
 - Printing Options: Full size test report or measured results on a ticket
- Power Requirements
- 100-240 VAC (50/60 Hz) 100mA
- **Console Dimensions**
 - Height: 42cm (9.5in) x Width: 23cm (9.0in) x Depth: 27cm (10.5in)

Weight: 3.4kg (7.5lb)

- **Chamber Dimensions**
 - Height: 43.8cm (17.25in) x Diameter: 17.2cm (6.76in)
 - Weight: 13.6kg (30lb)
 - Well Diameter: 6.1cm (2.4in) x Well Depth: 25.4cm (10.0in)
 - Cable Length: 3.7m (12ft)- Longer cables are available. Consult factory.
- Cables
 - Power: 1.8m (6ft)- Longer cables are available. Consult factory.
 - Printer: 1.8m (6ft)



AUTOLINEARITY

- Enhanced linearity software for time-specific automatic measurements, or
- User-defined linearity tests for
 - Manual
 - Calicheck
 - Lineator

Nuclide: Cs137 In	terval: 5 min	s	Elap Remai	ning Minutes
Date Time / Elapsed	Measured	Predicted	16V. 18	
Oct 16 2013 10:29 Elapsed: 0 min	7 57uQ	8.57uCi	-11.7	
Oct 16 2013 10:34 Elapsed: 5 min	9.87uCi	8.57uCi	151	
Oct 16 2013 10:39 Elapsed: 10 min	8.25uCi	8.57uCi	-3.8	
Oct 16 2013 10:44	8.25uQ	8 57uQ	-3.8	
Oct 16 2013 10.49 Elapsed: 20 min	8.93uQ	8.57uQ	41	
				Abor
				ADOI

Home	Daily Test	Back
1) Remove All Source	s from Chamber	ок
2) Auto Zero		-0.05 mV
3) Measure Backgnd		43.8uCi
4) Check Chamber Vo	Itage	510.1V OK
5) Data Check		Passed
6)		Accuracy

DAILY TEST

- Automated software provides:
 - Improved productivity
 - Rapid completion of daily tests
 - User-defined constancy measurements

ENHANCED TESTS: GEOMETRY

- Automated user-defined geometry testing for:
 - Vials
 - Syringes

Home	Ennanced Tests	Baci
	Geometry	
	Linearity	
and and	DET	

CRC[®]-25R DOSE CALIBRATOR

28 PROGRAMMABLE KEYS

Calibration numbers for over 200 radionuclides are easily accessed by use of the Cal key

NUCLIDE DATA AT YOUR **FINGERTIPS**

All nuclide data is entered via the custom keyboard that includes 8 preset and five user-definable keys

STREAMLINED COMMUNICATION

- PC/Nuclear Medicine Manager Systems communicated via USB
- Optional printers interface via USB or RS232

AUTOMATED DECAY-CORRECTED DATA

Storage of five reference sources in memory that are automatically decay corrected for today's time and date

CRC°-25R Dose Calibrator- Item #5130-3215

SPECIFICATIONS

Ionization Chamber

- Type: Thin wall, deep well, high pressure
- Dimensions: 26 cm (10") deep x 6 cm (2.4") dia.
- Cabling: 3.7m (12') interconnecting cable

Measurement Range

- Type: Auto Ranging
- Activity: 250 GBq (6 Ci), max.
- Resolution: .001 MBq (.01 μCi), max.
- **Display Screen**
 - Type: Dot Matrix Liquid Crystal Display
 - Format: Direct reading in Bg or Ci
 - Bq/Ci Reading: User selectable or fixed
 - Values Displayed: Nuclide name (Atomic symbol, Mass number), calibration numher

Electrometer

- Accuracy: Better than $\pm 2\%$
- Linearity: Within ± 2%
- Response Time: Within 2 sec., 4 to 16 sec. for very low activity samples (user selectable average period)

Repeatability of Measurement

• Repeatability: Within \pm 1% within 24 hours, during which time the calibrator is on

all the time.

Molybdenum-99 Assay

- Methods: Canister or CAPMAC
- Measured Values: Mo-99 elution, Tc-99m, Tc-99m/Mo-99 RatioTests • Diagnostics: Full test of program, system memories

 - Quarterly: Daily, Accuracy and Linearity



Standard Source Data

- System Memory: Co-57, Co-60, Ba-133, Cs-137 Standard Sources Nuclear Data
 - Nuclear Setting Keys: 8 Pre-set, 5 User
 - System Memory: Over 80 nuclides (w/cal number and half-life)
 - A pre-set key measures up to 2.0 Ci (74.0 GBq) of F-18

PC Port

- Interface: Rs-232C Protocol & USB
- Compatibility: Standard Nuclear Medicine Management Systems
- Printer (Optional)
 - Type: Epson Roll, Epson Slip or Okidata full size dot matrix or USB PCL compliant non-host based
 - Printing Options: Full size test report or measured results on a ticket

Power Requirements

- 100-240 VAC (50/60Hz) 90 MA
- **Console Dimensions**
- Height: 13.7cm (5.38in) x Width: 26.0cm (10.25in) x Depth: 26.7cm (10.5in)

Weight: 1.8kg (3.9lb)

- Chamber Dimensions
 - Height: 43.8cm (17.25in) x Diameter: 17.2cm (6.76in)
 - Weight: 13.6kg (30lb)
 - Well Diameter: 6.1cm (2.4in) x Well Depth: 25.4cm (10.0in)
 - Cable Length: 3.7m (12ft)- Longer cables are available. Consult factory.

Cables

• Power: 1.8m (6ft) • Printer: 1.8m (6ft)- Optional

- Daily: Auto Zero, Auto Background Adjust, Data Check, Accuracy and Constancy

CRC[®]-25W DOSE CALIBRATOR

BEST OF BOTH WORLDS

A combination of the popular CRC[®]-25R Dose Calibrator and the Well Counter

28 PROGRAMMABLE KEYS

Ion chamber is one of Capintec's time-tested, high pressure well designs capable of measuring a dose as high as 6 Ci (250 GBq) of Tc 99m with high accuracy

RAPID COUNTING FUNCTIONS

Performs counting functions for wipe tests in as little as 6 seconds at activities as low as 1 nCi

USER-DEFINED COUNTING PROTOCOLS

Allows the user to define specific counting protocols for wipe and laboratory procedures

CRC°-25W Dose Calibrator- Item #5130-3216

SPECIFICATIONS

Well Detector

- Type: Sodium Iodide (NaI) drilled-well crystal detector
- 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
- Tests: Daily test by standard sources (Cs-137 or Ba-133), data and program memory configuration

Ionization Chamber

- Type: Thin wall, deep well, high pressure
- Measurement: Auto ranging
- Activity Range: Up to 6 Ci (250 GBq)
- Resolution: .001 mBq (.01 µCi)
- Response Time: Within 2 sec., for low activity sample, 4 to 16 sec. (user selectable)
- Tests: Daily tests include Auto Zero, Background Adjustment, Voltage Test, Data Check, Accuracy and Constancy

Display Screen

- Type: Dot matrix liquid crystal display
- Bq/Ci Reading: User selectable or fixed
- Calibrator Values: Selected radionuclide, calibration number, measured activity and
- display units (Bq/Ci)
- Counter Values: Wipe and lab test results

Electrometer

- Accuracy: Better than $\pm 2\%$
- Linearity: Within ± 2%

Nuclide Data

- Nuclide Setting Keys: 8 pre-set, 5 user selectable
- System Memory: Over 80 nuclides (w/cal number and half-life Standard Source Data

System Memory: Co-57, Co-60, Ba-133, Cs-137, Ra-226 standard sources



- Methods: Canister or CAPMAC
- Measured Values: Mo-99 elution, Tc-99m, Tc-99m/Mo-99 Ratio
- PC Port
 - Interface: RS-232C and USB port
 - Compatibility: Standard nuclear medicine management systems
- Printer (Optional)
 - Type: Epson Roll, Epson Slip or Okidata full size dot matrix or USB PCL compliant non-host based
 - · Printing Options: Full size test report or measured results on a ticket

Printer Port

RS-232 & USB **Power Requirements**

- 100-240 VAC (50/60 Hz) 100 MA
- Tests
 - · Diagnostics: Full test of program, system memories
- Cable

• Printer (Optional): 1.8m (6ft) **Console Dimensions**

- Height: 13.7cm (5.38in) x Width: 26.0cm (10.25in) x Depth: 26.7cm (10.5in)
- Weight: 1.8kg (3.9lb)

Chamber Dimensions

- Height: 43.8cm (17.25in) x Diameter: 17.2cm (6.76in)
- Weight: 13.6kg (30lb)
- Well Diameter: 6.1cm (2.4in) x Well Depth: 25.4cm (10.0in)
- Cable Length: 3.7m (12ft)- Longer cables are available. Consult factory.
- Well Counter Dimensions
 - Height: 23.8cm (9.38in.) x Diameter: 15.2cm (6in.)
 - Weight: 6.9kg (15.2lb.)
 - Well Diameter: 1.7cm (.67in.) x Well Depth: 3.8cm (1.5in.)
 - Cable Length: 2.7m (9ft.)- Longer cables are available. Consult factory.





CRC®-25PET

AUTOMATED EFFICIENCY

Dose calibration quality control tests, self-diagnostics, automatic zero and background subtraction are built-in

CHAMBER PLUG-AND-PLAY

Current chambers or readouts can be plugged into an CRC[®]-25 readout or chamber

DOUBLE YOUR PRODUCTIVITY

Ability to add a second PET chamber

STAY CURRENT

Use SD flash cards for software upgrades

CRC°-25PET Dose Calibrator- Item #5130-3217

Additional PET Chamber- Item #5130-2212

SPECIFICATIONS

Ionization Chamber

- Type: Thin wall, deep well
- Dimensions: 43.8 cm (17.25") high x 17.2 cm (6.76") dia.
- Cabling: 3.7 m (12') interconnecting cable
- Fill Gas: 5 atmospheres Argon
- Well Dia: 6 cm (2.4")
- Well Depth: 26 cm (10")
- Measurement Range
 - Type: Auto Ranging
 - Activity: 20 Curies of F-18
 - Resolution: 0.1 Ci (0.01 MBq), max.

Display Screen

- Type: Dot Matrix Liquid Crystal Display
- Format: Direct reading in Ci or Bq
- Bq/Ci Reading: User selectable or fixed
- Values Displayed: Nuclide name (Atomic symbol, Mass number), calibration number

Electrometer

- Accuracy: Better than ± 2%
- Linearity: Within $\pm 2\%$
- Response Time: Within 2 sec., 4 to 16 sec. for very low activity samples
- Bias Voltage: 500V
- Automated Geometry and Linearity

Repeatability of Measurement

 \bullet Repeatability: Within \pm 1% within 24 hours during which time the calibrator is continuously on all the time

Overall Accuracy

- Accuracy Determined By:
 - Calibration for the specific nuclide and the sample configuration,
 - 2) Accuracies of standard sources used for calibration of electrometer

Tests

- Diagnostics: Full test of program, system memories
- Daily: Auto Zero, Auto Background, Voltage Test, Data Check, Accuracy and Constancy
- Nuclear Data
- Nuclide Setting Keys: 9 programmable user keys, 4 pre-set
- Standard Source Data
- System Memory: Co-57, Co-60, Ba-133, Cs-137, Na-22 Standard Sources
 PC Port
- Interface: Rs-232 Protocol & USB
- Compatibility: Standard Nuclear Medicine Management Systems
- Printer (Optional)
 - Type: Epson Roll, Epson Slip or Okidata full size dot matrix or USB PCL compliant non-host based
 - Printing Options: Full size test report or measured results on a ticket
- Power Requirements
 - 100-240 VAC (50/60 Hz) 100mA
- Console Dimensions • Height: 13.7cm (5.38in) x Width: 26.0cm (10.25in) x Depth: 26.7cm (10.5in)
- Weight: 1.8kg (3.9lb)
- Chamber Dimensions
 - Height: 43.8cm (17.25in) x Diameter: 17.2cm(6.76in)
 - Weight: 13.6kg (30lb)
 - Well Diameter: 6.1cm (2.4in) x Well Depth: 25.4cm (10.0in)
 - Cable Length: 3.7m (12ft)- Longer cables are available. Consult factory.
- Cables
 - Power: 1.8m (6ft)- Optional
- Printer: 1.8m (6ft)
- Chamber Ports
 - 2 Ports- Chamber 1 and Chamber 2- Software selectable





CRC®-25-55t PC Series Communications Software

Fast and Easy Data Acquisition- Track, Record and Store Dose Calibrator Measurements on Your PC

CRC[®] PC Communications software will allow for faster and easier data acquisition and storage to your computer. Measurement data, including isotope name and activity, will be transmitted and stored on your PC via an RS232 interface port and the Dose-Link Software package. Ideal for maintaining regulatory compliance, research studies or use in production facilities.

The PC Communications software will create an interface between your CRC*-25R dose calibrator and your PC. The Dose Link program has four modes of operation:

• Acquire and Store Data - Each second the name and activity of the isotope selected on the dose calibrator console will be updated by the program. This data can be saved and exported to an Excel spreadsheet.

• Repetitive Acquisitions - Following user defined parameters of time intervals and number of measurements, activity and isotope data are acquired and saved. The data can then be printed or exported. Great for performing quarterly linearity tests (you don't even have to be there).

• Maximum Activity Acquisition - The activity and isotope are updated and displayed at time intervals defined by the user, when

CRC® Enhanced Software

Increased Functionality for Your Dose Calibrator...

Enjoy the added functionality of enhanced software including:

- Inventory control
- Dose table calculations
- Newly added linearity protocol
- Radiochromatography QC package
- Built in geometry testing

The ENHANCED SOFTWARE will still perform the Daily QC protocol, zero adjust, background subtraction, system test, accuracy (with a deviation percentage) and constancy. In addition, the software will calculate dose tables, perform geometry tests (forbetween 2 and 10 measurements), do radiochromatography, calculate linearity (using standard, Lineator or Calicheck methods) and maintain a radiopharmaceutical inventory of kits or unit doses. All of the acquired data are printable.

Enhanced Features

- Capintec quality and reliability
- Calculation of a printable dose table
- · Inventory control maintains inventory of unit doses and kits
- Linearity test calculates a report for standard, lineator and calicheck methods
- · Geometry test showing variations for 2 to 10 different measurements
- Radiochromatography of kit QC strips one strip, two strip, HMPAO and MAG3



Data Acquisition Screen

data acquisition is stopped, the maximum activity and time will be saved and can be printed or exported.

The CRC[®] PC Communications software is easy to install, easy to use and almost as cost conscious as you are. Help your department maintain accurate record keeping without breaking the department budget.

PC Communications Software- Item #0960-0173

	STANDARD LINE	EARITY
#	MEASURED	%VAR
1	50.4mCi	2.10
2	36.5mCi	1.85

Any Key to Continue

Standard Linearity Test Results Screen

- INVENTORY
- 1. ADD
- 2. KIT
- 3. WITHDRAW
- 4. PRINT
- 5. DELETE

Single Strip Result Screen

```
QC TEST
Single Strip
Top / (Top + Bottom)
%
Bottom / (Top + Bottom)
%
Any Key to Continue
```

Inventory Menu

CRC[®]-ULTRA DOSE CALIBRATOR

THE POSSIBILITIES ARE ENDLESS!

Connect up to eight ionization chambers plus one well counter and one beta counter

GROWS WITH YOU

Units are field upgradeable at any time to support future growth or new applications as your department grows

VERSATILITY

The CRC-Ultra can also combine both 12 atmosphere and 5 atmosphere PET chambers, and uses the same outstanding proprietary sealed and pressurized Capintec chambers

ENHANCED FUNCTIONALITY

Connect additional printers for enhanced functionality

DESIGN YOUR DEPARTMENT

CRC®-ULTRA: READOUT UNIT

- Height: 6 in. (15.2 cm) x Width: 10.9 in. (27.7 cm) x Length: 10 in. (25.4 cm)
- Weight: 4.2 lbs. (1.9 kg)
- Power Requirements: 100 to 240 VAC, 0.5A, 50/60 Hz

The CRC-Ultra's comprehensive automated QC includes linearity, geometry and strip tests, and a

complete inventory and dispensing module for unit or multi-vial doses. Design includes tilting display, user adjustable backlight, easy to read keypad and audible feedback on keypress. With R Chamber-Item #5130-3209; Without R Chamber- Item #5130-3210

CRC[®]-ULTRA: EXPANSION UNIT





• Weight: 2.8 lbs. (1.3 kg)

The expansion module is necessary for combinations that utilize more than two Ion Chambers (contains ports for 6 additional Chambers). Item #5120-2268

ADDITIONAL UNITS: CHAMBER ASSEMBLY

Height: 17.25 in. (43.8 cm) x Weight: R: 30 lb. (13.6 kg); PET: 32 lb. (14.5 kg) x Diameter: 6.75 in. (17.2 cm)

The CRC-Ultra can combine both 12 and 5 atmosphere PET chambers. Additional chambers are field upgradeable. Suitable for most BT applications with appropriate source holder. Item #5130-2237 (Ion), Item #5130-2238 (PET Ion)







ADDITIONAL UNITS: WELL COUNTER

Height: 9.4 in. (23.8 cm) x Weight: 15.2 lbs. (6.9 kg) x Diameter: 6 in. (15.2 cm)

The CRC-Ultra's Well Counter option includes both wipe and lab tests. Item #5130-2214

ADDITIONAL UNITS: BETA COUNTER

- Height: 5.6 in. (14.1 cm) x Width: 3.3 in. (8.4 cm) x Length: 18 in. (45.7 cm)
- Weight: 18.6 lbs. (8.4 kg)

The CRC-Ultra's Beta

Detector option is opti-

mized for high energy beta measurements.

Item #5130-2213

SOFTWARE & HARDWARE SPECIFICIATIONS

Software Features: QC Module

· Auto Zero, Auto Background, bias voltage, accuracy, constancy, linearity, geometry; one.

- two, or three strip models
- · Moly assay-CAPMAC or canister
- · Self diagnostics and reference data records

Software Features: Inventory

· Maintains decay corrected inventory levels, generates dose tables, calculates multidose

vials and unit doses

Software Features: Nuclides

- · 80 nuclides with stored calibration numbers and half-lives for decay calculations
- · User can modify calibration numbers for geometry corrections
- · Up to 8 preset keys

· Up to 9 user definable keys

Software Features: Utilities

- · Activity units in either Ci or Bq, with lock out feature
- · Decay calculation
- · Ci to Bq conversion
- · Future time calculations

Software Features: Well Counter

- · Auto-calibration includes energy calibration and constancy
- · Displays net counts with automatic background subtract
- · Six channel fixed MCA
- · User-definable wipe test protocols
- · Counting error displayed
- Trigger limits to flag high values
- · Schilling, Blood Volume and RBC Volume lab tests

Software Features: PC Features

- · Change isotope for any chamber in system
- Select chamber displayed on main unit
- · Request measurement value for any chamber
- · Perform background, zero, bias voltage, and daily test
- · Export data to database
- \cdot Measure wipe test value from Well counter
- Measure activity from Beta counter
- · Enhanced PC control allows user to control readout through the PC

Software Features: Beta Counter

The Epson roll printer makes an excellent com-

panion to the CRC-Ul-

tra. Compact and ideal

in locations where space

is a minimum, it uses an

easily accessible ribbon cartridge that prints red

or black. Item #5430-0058 The CRC-Ultra

printers with USB interface.

- · Auto-calibration includes energy calibration and constancy
- · Displays net counts with automatic background subtract
- · Six channel fixed MCA
- · Stores reference, vial, and syringe correction factors for each nuclide

also accomodates Okidata, HP Deskjet, and Epson Stylus

- · Stores efficiencies for both 10 cm and 20 cm locations
- · Count rate corrections
- Software Features: Interface
- · RS-232 or USB bi-directional ports
- · Software controlled switching features
- Hardware Specifications: Dose Calibrator
- Thin walled, pressurized, deep well re-entrant ionization chamber
- · Ultra Pure Argon fill gas
- · Electronic bias supply
- · Measurement Range (Auto Ranging)
- · Maximum Activity: 244 GBg (6.0 Ci in Tc) for standard 12 atm chambers
- · 740 GBq (20 Ci of F-18) for PET chamber
- · Maximum Resolution: 0.001 MBq (0.01 uCi) 0.01 MBq (0.1 uCi) for PET chamber
- · Measurements will repeat to within +/- 0.5% within 24 hours during which time the calibrator is powered at all times
- · Electrometer Accuracy < 2%, linearity +/- 2%, response time: 2 Seconds
- · 12 foot standard cable length, optional extension cables up to 200 feet

Hardware Specifications: Well Counter

- · Type: 1 1/2 inch Sodium Iodide (NaI) drilled-well crystal detector
- Energy Discrimination: Fixed range MCA windows are 15-100, 100-200, 200-400, 400-660, 660-800, >800 keV
- · 2.7 m (9 ft) triax cable
- · Shielded with 1.3 cm (1/2 in.) painted lead including top shield
- · Optional auxiliary 1/2 in. lead shield available

Hardware Specifications: Beta Counter

- Type: Thin Sodium Iodide (NaI) scintillator optimized for bremsstrahlung sensitivity
- · Sample Distance: 10 cm (4") and 20cm (8")
- · Counting Rate: 50,000 counts per second, max. (25 to 100m Ci pure beta emitter)
- · Shielding: 1.3 cm (1/2 in.) lead collimator
- \cdot 2.9 m (9.5 ft) triax cable
- · Optional auxiliary 1/2 in. lead shield available
- Hardware Specifications: Multiple Chambers
- \cdot Up to two chambers, well detector and beta detector connect directly to readout
- · Additional chambers require an expansion unit



	CRC [®] -55T	CRC®-ULTRA	CRC®-25
FEATURES			
Display	8" VGA Color	Dot Matrix Liquid	Dot Matrix Liquid
	Touch Screen	Crystal	Crystal
Data Entry	Touch Screen	Keypad	Keypad
Nuclide Data	8 User Definable "Hot Keys" 28 User Definable Keys	8 Preset Keys 9 User Definable Keys	8 Preset Keys 5 User Definable Keys
Interface			
RS-232	\checkmark	✓	\checkmark
USB	\checkmark	✓	✓
Software upgrade	USB, Flashdrive	SD Card	SD Card
Chamber Selection	R, PET	R, PET	R, PET
Chamber plug-n-play	\checkmark	✓	\checkmark
Printers (optional)			
Specific Ink jet printer	✓	✓	✓
Epson roll printer	✓	✓	✓
Epson Ticket Printer	✓	✓	✓
Okidata Dot Matrix Printer	✓	~	✓
Built in Features			
Quality Control	\checkmark	✓	\checkmark
Automatic zero and back- ground subtraction	✓	✓	✓
Auto constancy/linearity	\checkmark		
Enhanced Tests			
Linearity	\checkmark	~	\checkmark
• Geomertry	\checkmark	\checkmark	\checkmark
Strip QC	✓	✓	✓



	CRC [®] -55T	CRC®-ULTRA	CRC [®] -25
FEATURES			
Optional components/ configuration			
Remote display	✓	✓	\checkmark
Multiple Chambers	\checkmark	\checkmark	
Well counter	\checkmark	✓(Beta)	\checkmark
Channels	256	6	6
• Spectrum display	\checkmark		
Communication Software	\checkmark		\checkmark
Compatible with nuclear medicine manager systems	\checkmark	~	\checkmark

OPTIONAL COMPONENTS



Acrylic L-Beta Shield: Item #5130-2083



Mini Clear-pb L-Block Shield: Mini: Item #5730-0033 Standard: Item #5730-0031 Jumbo: Item #5730-0032



Mounting Flange: Item #7310-2307



CRC-MF Chamber Mounting Flange: Item #7300-2785



 Reference Sources:

 Co-57 vial/3 mCi: Item #0975-0573

 Co-57 vial/5 mCi: Item #0975-0006

 Co-57 vial/10 mCi: Item #0975-0006

 Co-57 vial/10 mCi: Item #0975-0002

 Cs-137 vial/200 µCi:

 Item #0975-3720

 Cs-137 vial/250 µCi:

 Item #0975-3725

 Ba-133 vial/250 µCi:

 Item #0975-0003

 Co-60 vial/100 µCi:

 Item #0975-0001

OPTIONAL COMPONENTS



Epson Roll Printer Item # 5430-0058



Epson Ticket Printer Item # 5430-0100



CRP-200 Dose Tickets & Labels Item # 7120-1199



Dipper Item # 7300-2005



Auxiliary Shield Item #5420-2116



Canister for Syringes

Item #5130-2046

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Vial/Syringe Sample Holder:

Item #7300-2005

Molly Assay Canister Item #5130-0006

I-125 Cartridge Holder: Item

#5120-1238



Chamber Liner Item #7300-2004



Positron Shield Item #7300-2903

C-Tec[™] Syringe Shields:

1cc: Item #4300-0030

3cc: #4300-0031

5cc: #4300-0032

10cc: #4300-0033



CAP-MAC-2 Item #5130-0108



Pin-Tec[™] Syringe Shields: 1cc: Item #4300-0034 3cc: #4300-0035 5cc: #4300-0036 10cc: #4300-0037





Environmental Shield Item #7300-2450



Wipe Samples Item #5420-0086



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