



# Cardinal Health

Nuclear Pharmacy Services

## CERTIFICATE OF CALIBRATION

CUSTOMER: **Cardiovascular Consultants Haffar** Location: **7109**

MFG	MODEL	SERIAL NO.	TYPE	CHK SRC.	cpm/1mR/hr
Bicron	2000	C596E	SM		Cs137
Bicron	PGM	C862E	GM	1 mR/hr	1,200

Calibration Date 9-Sep-21
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FACE ID: \_\_\_\_\_ DETECTOR: 910 Volts  
 PRI. RANGE 2.00 mR/hr INPUT SENS. na mV  
 2ND RANGE 2400 cpm BATTERY: OK  
 TEMP: 20.1 °C RH: 50 % Alt: 988 hPa

CALIBRATION PERFORMED	w/PROBE:	OPEN	Zeroed [ X ], Reset [ X ], Geotropism [ X ], Alarm [ X ]
CHECK SOURCE ±10%	w/PROBE:	FIXED	Mechanical [ X ], F/S Response [ X ], Audio [ X ]

NOTE: Source reading taken at the approximate 'center' of the probe tube and 'source' for 15 to 30 seconds.

Scale Setting	Cal. Reference mR/hr	Calibration Readings		As Left	As Left Err	CorFac
		As Found	As Found Err			
x1000	1600.0	na	#VALUE!	1.60	0.00%	1.000
x1000	400.0	na	#VALUE!	0.40	0.00%	1.000
x100	160.0	1.60	0.00%	1.60	0.00%	1.000
x100	40.0	0.40	0.00%	0.40	0.00%	1.000
x10	16.0	1.60	0.00%	1.60	0.00%	1.000
x10	4.0	0.40	0.00%	0.40	0.00%	1.000
x1	1.60	1.60	0.00%	1.60	0.00%	1.000
x1	0.40	0.40	0.00%	0.40	0.00%	1.000

\*not functional  
\*not functional

Scale Setting	Reference mR/hr	Equivalent As found	Equivalent As Found Err	Equivalent As Left	Equivalent As Left Err	CorFac	Equivalent cpm
x1	1.50						1800
x0.1	0.15	1.50	0.00%	1.50	0.00%	1.000	180
x0.1	0.05	0.50	0.00%	0.50	0.00%	1.000	60

Calibration Source: 1.0 Ci of Cs-137; radiation output 335 x (1 ± 5%) mR/hr at 100 cm on December 14, 1982.

J.L. Shepherd, Model 28-6A SN 10082. Cs-137 Amersham type X.19 Capsule  
 Ludlum Mini Pulser model 500-2 SN:251103.

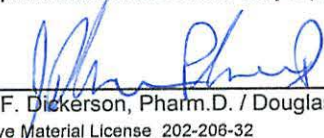
\*Am241 1.040 uCi as of 01-Jun-11 S/N 1513

**NOTES**

**CALIBRATION CONDITIONS**

Radiation levels are based on standards whose calibration are traceable to the NIST. All readings are corrected for background radiation. Any corrections made to the survey instrument (e.g. energy dependence) are up to the user to apply. Care must be used in applying any such factors. The GM probe front will provide the most sensitive contamination survey. The longest dimension of the probe detector tube or tube array is placed in a plane perpendicular to, and centered in, the beam of radiation.

Calibrated by:  
 Reviewed by:  
 # 1

  
 Joseph F. Dickerson, Pharm.D. / Douglas S. Broell, ANPT  
 Radioactive Material License 202-206-32

**PASS**

Cal Due Date 9-Sep-22
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REV: June 2016  
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