

# FC2B

## Calibration Verification Device



### OVERVIEW

Users of the FC2B Calibration Verification Device can now field-check calibration of their own UltraRadiac units, saving both time and money. Like most electronic devices, the UltraRadiac requires periodic calibration checks to maintain proper function. UltraRadiac users may wish to avoid the cost associated with factory calibration checks. These costs include:

*Shipment to and from the factory*

*Down-time associated with not having the instrument readily available on-site*

*Factory service charges*

The FC2B Calibration Verification Device is a low-level gamma radiation calibrator, which can be used to assure that current UltraRadiac response to dose-rate stays within  $\pm 33\%$  of ideal calibration\*. The FC2B checks each unit very quickly – typically in less than three minutes.

The unit consists of an aluminum housing with a side opening and an internal license free checksource, 8  $\mu\text{Ci}$  of  $^{137}\text{Cs}$ . The opening positions the UltraRadiac correctly relative to the checksource.

### FEATURES

- Portable unit for field calibration check of the UltraRadiac™ Radiation Monitor
- Uses a license-free checksource
- Check UltraRadiac response to  $\pm 33\%$  of ideal calibration
- Reduces costs and down-time typically associated with calibration checks
- Small, lightweight and easy to use
- Includes carrying handle for easy transport

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## SPECIFICATIONS

### PHYSICAL

- DIMENSIONS – 16.8 x 14.0 cm (6.6 x 5.5 in.) H x D; height includes the carrying handle.
- WEIGHT – 5.4 kg (12 lb).
- CONSTRUCTION – All aluminum, with hinged access door.

### CALIBRATION

- CHECK DATA – The FC2B includes a 137Cs 8  $\mu$ Ci checksource used to check the instrument's response. Within the instrument's environmental specifications, the response is linear up to 350 R/h (3.5 Sv/h)  $<\pm 15\%$ , and within  $\pm 20\%$  of the actual dose rate from 350 R/h (3.5 Sv/h) to 500 R/h (5.0 Sv/h).
- CALIBRATION DATA – The checksource's calibration data and its date of manufacture are listed on the Calibration Label on top of the FC2B.
- POSITIONING – When the instrument is inserted into the FC2B's side opening, the checksource mounted in the opening's bottom surface will be opposite the instrument's Geiger-Mueller detector.

A permanent Calibration Label on top of the FC2B specifies the Reference Set Point, representing the level of dose-rate to which the UltraRadiac should respond.

In addition, the Calibration Label specifies the checksource's Date of Manufacture. Since the checksource decays at a mathematically predictable rate, the Date of Manufacture and the Decay Time Correction Table provided in the user's manual together allow the user to correct for this decay over time, allowing the FC2B to be used for many years.

The calibration check routine is built into every UltraRadiac, which means that there's no need for a PC and specialized software. All that's needed to perform the calibration check is the FC2B and an UltraRadiac.



If calibration check falls outside the tolerances, UltraRadiac needs to be re-calibrated in CANBERRA™ Services with NIST traceable calibrator.

