

IC3 Ion Chamber

Highly Stable and Accurate Ion Chamber Based Meter



Radiation Detection Division

Health Physics

The **IC3** is a battery operated, auto ranging, portable ion chamber survey meter designed for highly stable and accurate measurement of dose rates and integrated dose of gamma, x-ray and beta radiation.

The meter covers a measuring range of 1 $\mu\text{Sv/h}$ to 1 Sv/h (0.01 mR/h to 100 R/h) in the dose rate mode, and 0.01 μSv to 10 Sv (1uR to 999 R) in the integrated dose mode. The auto ranging meter utilizes a combination display consisting of a smoothed digital readout for minimum fluctuation and a two decade analog bar graph for fast response.

The **IC3** survey meter combines an ionization chamber vented to atmospheric pressure, and a micro-controller to offer optimal performances and special features. Furthermore it is a compact hand-held, lightweight, rugged meter, easy to use and maintain.

The **IC3** provides a very straightforward, fast and reliable method of collecting and storing monitoring data on site for later use. The **IC3** can store data records that are time stamped and identify measurements location. The stored data records can be downloaded by the **RMVC** (Rotem Meter View) software package which is freely available off our website.

The **IC3** is ideal for use in nuclear power plants, nuclear medicine, radiography and radiotherapy facilities, life science laboratories, nuclear research centers and in other industrial applications.

Features

- **New** Electrometer provides complete protection in high humidity areas
- **New** Mylar beta window provides excellent beta responses
- NDT safety providing accurate readings from 50 nanosecond X-Ray pulses
- Wide measuring range of 1 $\mu\text{Sv/hr}$ to 1 Sv/hr (0.1 mR/hr to 100 R/hr)
- Built in memory to store data
- Compact, lightweight and easy-to-use, one hand operation
- Dose rate and accumulated dose measurement
- Auto Display illumination
- Freeze mode to record the highest dose rate
- User programmable dose rate and accumulated dose alarms
- Remote PC communication via Wi-Fi (optional) or USB Type C connector
- Quick Response Hot Spot detection

IC3 Survey Meter

Technical Data

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|---|---|
| Measuring Range | 1 μ Sv/h to 1 Sv/h (0.1 mR/h to 100 R/h) |
| Accuracy (^{137}Cs) | $\pm 10\%$ of reading within measuring range |
| Gamma Energy Dependence | Better than $\pm 20\%$ from 20keV to 3MeV |
| Beta Energy Dependence | Better than $\pm 20\%$ from 200keV |
| Angular Dependence (^{137}Cs) | Less than $\pm 30\%$ (for $\pm 90^\circ$ of front direction) |
| Ion Chamber Volume | 350 cm ³ |
| Chamber Wall and Cover Thickness | 1000 mg/cm ² (tissue equivalent) |
| Window Thickness | 7 mg/cm ² Mylar |
| Response Time | 3 sec. for readings above 1 mR/h 5 sec. for auto-ranging change, from Low Range to High Range (2sec. +3 additional seconds for auto ranging delay) |
| Power Source (Built in automatic battery check) | <i>meter</i> : Four 1.5 Volt AA batteries - 120 hours of continuous operation |
| Display | Color TFT Display 3 digits with auto ranging units of measurement |
| Data Logging | 200 data records |
| Temperature Range | Operation: -10°C to +50°C (15°F - 122°F) Storage: -20°C to +60°C (-5°F - 140°F) |
| Humidity Range | Up to 95% RH (non-condensing) |
| Dimensions | Width: 13cm (5.1"), length 24cm (9.5"), height 14cm (5.5") |
| Weight | 1000g (2.4lb) including batteries |
| Casing | High impact ABS |
| Data Connection | USB for calibration, configuration, upgrade firmware and stored data points Optional Internal 900 MHz or 2.4 GHz RF Radio (WRM2/WiFi) |
| Threshold Alarms | User selectable |

Ordering Information

BAK-0245 IC3 Ion Chamber

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