



Radiagem™ 4000 Personal Portable Dose Rate and Survey Meter

Features

- Measurement of H*(10) ambient dose equivalent rate up to 10 rem/h
- Easy-to-read and backlit analog bargraph and digital display
- Visual and audible alarms on dose rate and integrated dose equivalent
- External probes for remote measurements, dose rate and surface contamination
- Date stamped data-logging (1000 points in probe memory and 1000 points in Radiagem memory)
- Scaler/timer mode in Data-logging
- Lightweight, waterproof and easy to decontaminate
- Rugged and easy-to-use

Description

The Radiagem™ 4000 features excellent ergonomics such as easy handling, large custom LCD display, semi-log bargraph, average digital reading, visual and audible alarms.

Radiagem's external smart probes extend the capabilities of the instrument to a range of general surveying applications. In the "smart" design, key components of hardware circuitry (high voltage, amplifier, discriminator, etc.) are located directly inside of the probe housing rather than the host survey instrument. Also, the intelligence associated with controlling those components is located in the probe – that is, control and storage of key parameters, settings, calibrations, probe ID, alarm settings, etc. Thus the probe is a fully integrated subsystem taking and transmitting the measurement to the instrument, which is used for display.

With high voltage and digitization of the data occurring in the probe rather than the instrument, measurement quality is no longer dependent on cable quality as with older analog systems. Also, the probes can be plugged in "hot" without powering down the instrument – the instrument immediately recognizes the probe and automatically switches measurement mode to the mode required for that specific probe.

Calibrations and QA measurements can be performed directly with the probe, without even using the instrument, by connecting the probe to a computer with Radiagem calibration software, allowing your Radiagem's to remain deployed in the field.

A data-logging button allows the user to store up to 1000 date stamped data points in probe memory for external probes and in Radiagem memory for internal dose-rate detector (see probes' specifications).

A scaler/timer mode can be used for data-logging with 1 to 255 seconds acquisition time. The Radiagem 4000 firmware can be upgraded via PC serial link with the appropriate cable.

The Radiagem 4000 LCD display includes a large choice of units depending on the probe specification: CPM, DPM_{eq} , $DPM_{eq}/100\text{ cm}^2$, rem/h and R/h.

Radiagem is also part of the emergency kits that include a variety of contamination probes.



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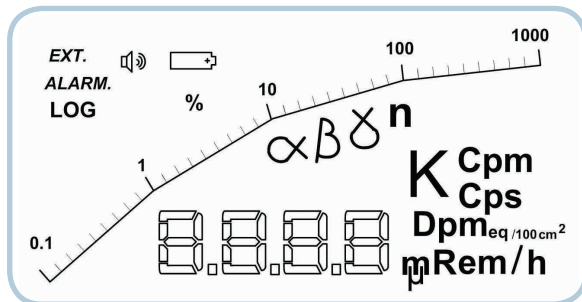
Specifications

NUCLEAR

- UNIT TO DISPLAY – rem/h, γ Dose Rate Equivalent H*(10).
- EMITTER – Gamma and X-ray.
- DETECTOR – Geiger Mueller energy compensated.
- MEASUREMENT RANGE – 0.01 mrem/h to 10 rem/h with auto-scale.
- ENERGY RANGE (IEC 60846) – 40 keV to 1.5 MeV.
- SENSITIVITY – 8.3 CPS per mrem/h.
- ACCURACY – $\pm 15\%$.
- RESPONSE TIME –
 - 1/4 s to 10 s for bargraph display on a four decades semi-logarithmic scale.
 - 1 s to 10 s for average and stable digital display.
- ALARM THRESHOLD –
 - USE – Choice of one within a list of 10 preset values (access code protected).
- EXTERNAL PROBES – 10 values for each unit to display, stored in probe memory. Each value is editable via PC setup software.

ERGONOMIC

- DISPLAY – Large LCD display with backlight enabled by button.
- ALARM – Audible piezoelectric buzzer; modulated sound (85 dB at 30 cm).
- VISUAL – Flashing 'ALARM' pictogram.
- KEYBOARD – Four sensitive buttons: power, audio, backlight and data-logging (up to 1000 points in probe memory).
- DATA STORAGE – Integrated dose, maximum dose rate, selected thresholds.
- OPERATING CONTROLS – Complete and automatic self-test when switching on. Periodical control of main functions when in use.
- Removable wrist strap.



Radiagem 4000 Display.

ELECTRICAL

- BATTERIES – Two R6/AA type batteries; alkaline 1.5 V/2.60 Ah or lithium 1.5 V/2.9 Ah.
- BATTERY LIFE – > 80 hours (alkaline) and > 150 hours (lithium), without lighting, with or without external probe.

- Display of remaining charge when switching on; permanent test of voltage, display of 'low battery' pictogram when battery life is $< 10\%$.

MECHANICAL

- HOUSING – ABS-polycarbonate molded, waterproof and easy to decontaminate.
- DIMENSIONS – 150 x 85 x 45 mm (5.9 x 3.3 x 1.8 in.) (L x W x D).
- WEIGHT – < 300 g (10.6 oz), batteries included.
- CONNECTOR FOR EXTERNAL PROBES – Waterproof Fisher socket.

ENVIRONMENTAL

- TEMPERATURE – -10 °C to $+50$ °C ($+14$ °F to $+122$ °F).
- STORAGE – -25 °C to $+60$ °C (-13 °F to $+140$ °F).
- RELATIVE HUMIDITY – IP 67, waterproof, down to 1 m (3.3 ft).



EMERGENCY KITS

| | RBK-4000 | RERK-4000-1 | RERK-4000-1-PLUS | RERK-4000-2 | RERK-4000-2-PLUS |
|--|----------|-------------|------------------|-------------|------------------|
| Radiagem 4000 | X | X | X | X | X |
| SABG-15 Pancake | X | X | X | X | X |
| SG-1R 1"x1" NaI(Tl) | | X | X | | |
| SG-2R 2"x2" NaI(Tl) | | | | X | X |
| SAB-100 100 cm ² plastic/ZnS | | | X | | X |
| Dosiman | X | X | X | X | X |
| Screwdriver | X | X | X | X | X |
| Set of 2 AA batteries | X | X | X | X | X |
| Carrying case | X | X | X | X | X |

NORM

- CEM – Conforms.
- IEC – Meets IEC 60846:2002-06 standard.
- CE – Meets CE requirements.

ORDERING REFERENCES

- Radiagem 4000 – EM76688.
- Radiagem-PC USB cable – EM88940.
- Calibration/Setup software (CSPS-R) – EM80642.
- Radiagem belt case – EM40469.
- Radiagem+SABG-15+Cable carrying case – EM76286.
- Radiagem Emergency carrying case – EM76287.
- RBK-4000 – EM77023.
- RERK-4000-1 – EM77346.
- RERK-4000-1-PLUS – EM77348.
- RERK-4000-2 – EM77347.
- RERK-4000-2-PLUS – EM77349.
- Radiagem CSP HANDLE – EM87990.
- Audio-R – EM82303.
- PNK-R – EM83118.



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