

# The RAM GENE-1 monitor

## Contamination and Radiation Monitor

The RAM GENE-1 features the high sensitivity offered by the RAM GENE for surface contamination monitoring, with the additional flexibility of area monitoring.

The RAM GENE-1 is equipped with a recessed, internal GM pancake detector using a thin mica window protected by a stainless steel screen. The instrument can be quickly changed to an area monitor simply by inserting an aluminum attenuation disk at the front of the detector and selecting a dose unit readout.



### Features

- Large, four digit, continuous ranging, LCD display
- Simple, three key operation
- Large 1.75" pancake GM detector
- Suitable for alpha, beta or gamma contamination detection
- Provides gamma area monitoring with aluminum attenuation plate
- Unit readouts of count rate (cps or cpm) in contamination mode and (mR/h or  $\mu$ Sv/hr) in dose mode
- Units of either counts per minute or counts per second
- Audible and visual (LED) count rate indication
- Smart software provides fast, yet stable response
- Dead time correction
- Alarms for overflow, low battery and detector failure
- Automatic self diagnostic routines
- Durable case with splash resistant keypad



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## Technical Data

|                    |  |
|--------------------|--|
| Display            | Large, four digit, continuous ranging<br>LCD readout for display of count rate, dose rate, overflow, low battery, and detector failure   |
| LED                | Flashing count rate indication   |
| Audio              | Piezo electric element synchronized with count LED   |
| Units              | Counts per second (cps) or counts per minute (cpm) and $\mu\text{Sv/hr}$ or $\text{mR/hr}$   |
| Controls           | Three key keypad with positive feedback for ON/OFF<br>Key combinations for selecting count rate or dose rate unit displays   |
| Power              | Standard 9V alkaline battery - provides approximately 50 hours continuous use with speaker off.<br>Automatic battery check under full load.  |
| Detector           | 1.75" Pancake GM tube - LND73118 or equivalent   |
| Window             | Mica, 1.5 - 2.0 $\text{mg/cm}^2$ protected by stainless steel mesh   |
| Count Range        | 0 - 42,000 cps   |
| Sensitivity        | Approximately 5.8 $\text{cps}/\mu\text{Sv/hr}$ (58 $\text{cps}/\text{mR/hr}$ ) - $^{137}\text{Cs}$   |
| Measuring Range    | 0.05 $\mu\text{Sv/hr}$ to 7000 $\mu\text{Sv/hr}$ (0.05 $\text{mR/hr}$ to 700 $\text{mR/hr}$ )  |
| Display Resolution | 0.01 $\mu\text{Sv/hr}$ (0.001 $\text{mR/hr}$ )   |
| Background         | 0 - 1 cps  |
| Temperature Range  | Operation: $-10^\circ\text{C}$ to $+50^\circ\text{C}$ ( $15^\circ\text{F}$ to $122^\circ\text{F}$ )<br>Storage: $-20^\circ\text{C}$ to $+60^\circ\text{C}$ ( $-5^\circ\text{F}$ to $140^\circ\text{F}$ ) |
| Humidity Range     | 40% to 95% RH (non condensing)   |
| Case               | High impact ABS  |
| Dimensions         | 11cm x 6.7cm x 7.4cm (4.3" x 2.6" x 2.9")  |
| Weight             | 0.340 Kg (0.75 lbs)  |

Performance (surface sensitivity - in contact) Beta Emitting Isotopes

| Isotope                          | $E_{\text{max}}$ (keV) | $2\pi\Omega$ | Effic (%) | Sensitivity cps/Bq/cm <sup>2</sup> | MDL Bq/cm <sup>2</sup> |
|----------------------------------|------------------------|--------------|-----------|------------------------------------|------------------------|
| $^{14}\text{C}$                  | 156                    | 3            |           | 0.25                               | 9.0                    |
| $^{35}\text{S}$                  | 167                    | 8            |           | 0.65                               | 3.7                    |
| $^{147}\text{Pm}$                | 224                    | 15           |           | 1.25                               | 2.0                    |
| $^{99}\text{Tc}$                 | 290                    | 20           |           | 1.75                               | 1.5                    |
| $^{90}\text{Sr} + ^{90}\text{Y}$ | 580 + 2280             | 50           |           | 8.50                               | 0.3                    |
| $^{36}\text{Cl}$                 | 714                    | 45           |           | 3.50                               | 0.7                    |
| $^{210}\text{Pb}$                | 1160                   | 50           |           | 4.00                               | 0.6                    |
| $^{32}\text{P}$                  | 1710                   | 70           |           | 5.50                               | 0.5                    |
| $^{99\text{m}}\text{Tc}$         |                        |              |           | 0.45                               | 5.5                    |
| $^{125}\text{I}$                 |                        |              |           | 0.04                               | 63.0                   |
| $^{131}\text{I}$                 |                        |              |           | 3.00                               | 0.8                    |
| $^{230}\text{Th}$                |                        |              |           | 1.00                               | 2.5                    |
| $^{241}\text{Am}$                |                        |              |           | 1.00                               | 2.5                    |

ROTEM INDUSTRIES reserves the right to change specifications without advance notice

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