

The RAM GENE-1 mark II

Gamma Contamination and Dose Rate Monitor

The RAM GENE-1 mark II model is the latest edition to the successful line of GENE instruments produced by Rotem. We have upgraded the basic reliable model to be compliant to applications which demand a rugged instrument for harsh environments. Ideal for Emergency Response Teams, Ambulance Services and the Police force.

The RAM GENE-1 mark II features a specially designed energy filter embedded in the cap for ambient dose equivalent dose rate radiation monitoring down to 17keV, with the additional flexibility of a contamination meter.

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 transition between measuring radiation dose rate and contamination is achieved with the aid of a mechanical switch on the gm housing which is activated by either removing or replacing the plastic cap



FEATURES

- External power input which can also be used to charge appropriate batteries
- Aluminum case with splash resistant keypad
- Backlight for easy reading in unfriendly environments
- 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
- Unit readouts of count rate:
(CPS in contamination mode and (µSv/hr) in dose mode.
- 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

Technical Data

| | |
|--------------------|--|
| Display | Large, four digit, continuous ranging 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 mR/hr |
| Controls | Three key keypad with positive feedback for ON/OFF Key combinations for selecting count rate or dose rate unit displays |
| Power | External 9VDC or Standard 9V alkaline battery - approximately 50 hours continuous use with speaker off. Automatic battery check under full load. |
| Detector | 1.75" Pancake GM tube - LND73118 or equivalent |
| Window | Mica, 1.5 - 2.0 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}Cs |
| Measuring Range | 0.05 mR/hr to 700 mR/hr (0.05 $\mu\text{Sv/hr}$ to 7000 $\mu\text{Sv/hr}$) |
| Display Resolution | 0.001 mR/hr (0.01 $\mu\text{Sv/hr}$) |
| Background | 0 - 1 cps |
| Temperature Range | Operation: -10°C to $+50^\circ\text{C}$ (15°F to 122°F) Storage: -20°C to $+60^\circ\text{C}$ (-5°F to 140°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) |

Variation of Response with Particle Energy

- $E_{\text{max}} < 0.2 \text{ MeV} - ^{14}\text{C}$
- E_{max} between 0.2 MeV and 0.5 MeV - ^{147}Pm and ^{60}Co
- $E_{\text{max}} > 0.5 \text{ MeV} - ^{36}\text{Cl}$ and $^{90}\text{Sr}/^{90}\text{Y}$

| Nuclide | Activity (Bq cm^{-2}) | Instrument Indication (counts s^{-1}) | Response Factor | Uncertainty |
|----------------------------------|------------------------------------|---|--------------------|-------------|
| $^{90}\text{Sr} + ^{90}\text{Y}$ | 70.55 | 277 | 3.92 | $\pm 10\%$ |
| ^{36}Cl | 35.84 | 135 | 3.78 | $\pm 10\%$ |
| ^{60}Co | 34.62 | 56 | 1.63 | $\pm 10\%$ |
| ^{147}Pm | 18.65 | 19.6 | 1.05 | $\pm 10\%$ |
| ^{14}C | 142.64 | 143 | 1.00 | $\pm 10\%$ |
| ^{241}Am | 21.57 | 27.2 | 1.26 | $\pm 10\%$ |
| ^{238}Pu | 21.54 | 27.9 | 1.30 | $\pm 10\%$ |

ROTEM INDUSTRIES reserves the right to change specifications without advance notice

ROTEM INDUSTRIES LTD.

Radiation Detection Division

Mishor Yamin, D.N. Arava 8680600, Israel

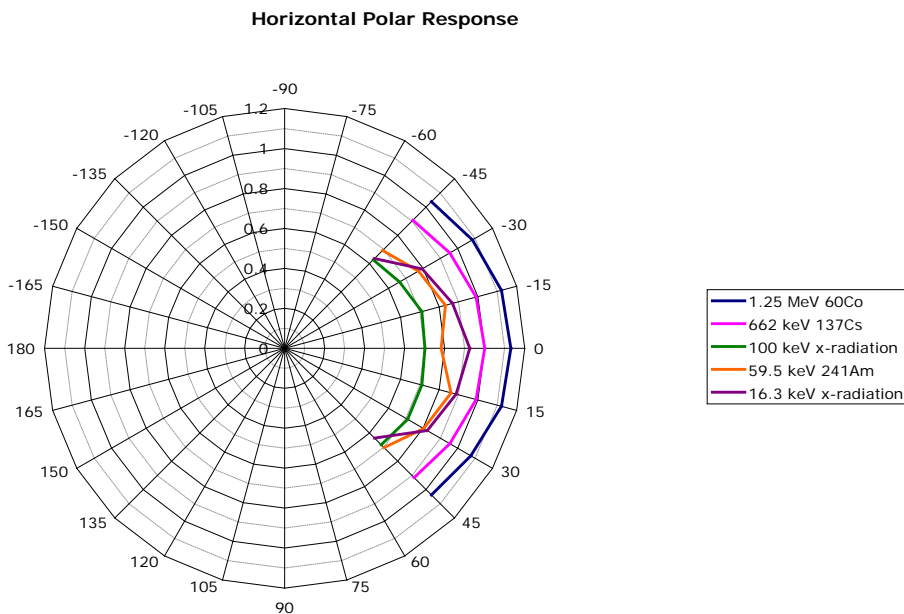
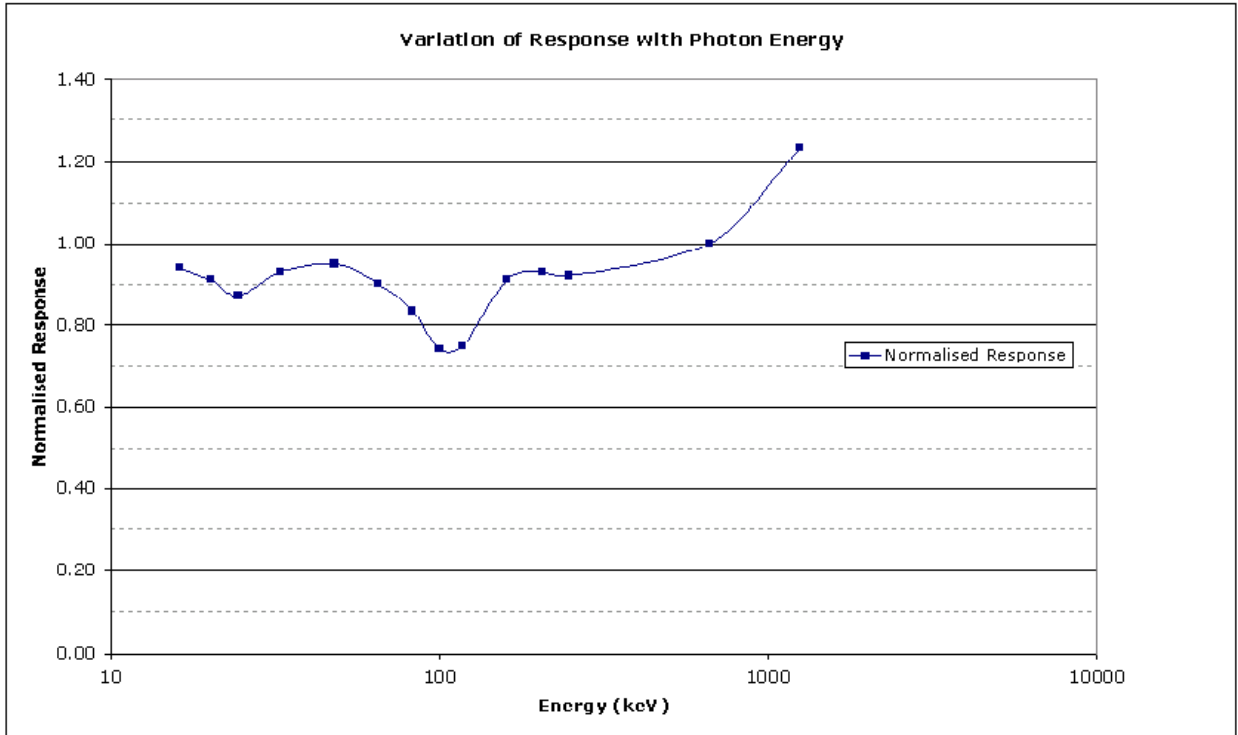
Tel. +972-8-6564780/1, Fax. +972-8-6573252

E-mail. sales@rotemi.co.il Web: www.rotem-radiation.co.il



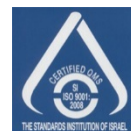
17/08/2017

Compliant to IEC 60846 and IEC 60325 for ambient dose equivalent and contamination monitoring

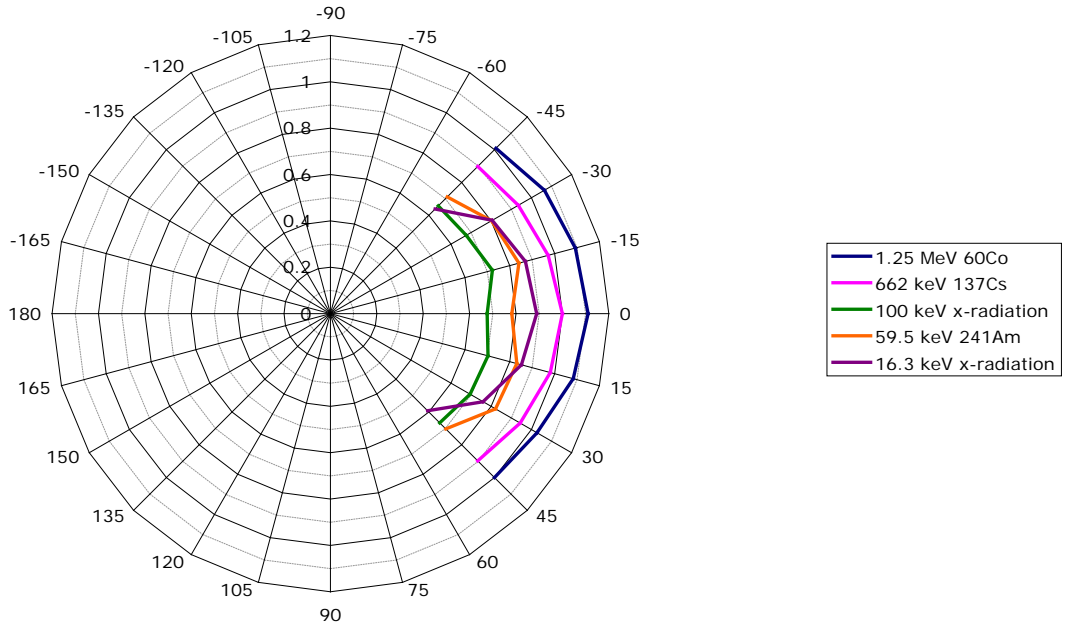


ROTEM INDUSTRIES reserves the right to change specifications without advance notice

ROTEM INDUSTRIES LTD.
Radiation Detection Division
 Mishor Yamin, D.N. Arava 8680600, Israel
 Tel. +972-8-6564780/1, Fax. +972-8-6573252
 E-mail. sales@rotemi.co.il Web: www.rotem-radiation.co.il



Vertical Polar Response



Full Energy Response Data

| Radiation Quantity | Energy (keV) | Normalized Response | Uncertainty |
|---------------------------------------|--------------|---------------------|-------------|
| ⁶⁰ Co γ -radiation | 1250 | 1.17 | $\pm 10\%$ |
| ¹³⁷ Cs γ -radiation | 662 | 1 | $\pm 10\%$ |
| ISO Low series x-radiation | 248 | 0.92 | $\pm 10\%$ |
| ISO Low series x-radiation | 205 | 0.93 | $\pm 10\%$ |
| ISO Low series x-radiation | 161 | 0.91 | $\pm 10\%$ |
| ISO Low series x-radiation | 118 | 0.75 | $\pm 10\%$ |
| ISO Low series x-radiation | 100 | 0.74 | $\pm 10\%$ |
| ISO Low series x-radiation | 83 | 0.83 | $\pm 10\%$ |
| ISO Low series x-radiation | 65 | 0.9 | $\pm 10\%$ |
| ²⁴¹ Am γ -radiation | 59.5 | 0.94 | $\pm 10\%$ |
| ISO Low series x-radiation | 48 | 0.95 | $\pm 10\%$ |
| ISO Low series x-radiation | 33 | 0.93 | $\pm 10\%$ |
| ISO Low series x-radiation | 24.5 | 0.87 | $\pm 10\%$ |
| ISO Low series x-radiation | 20.2 | 0.91 | $\pm 10\%$ |
| ISO Low series x-radiation | 16.3 | 0.94 | $\pm 10\%$ |

ROTEM INDUSTRIES reserves the right to change specifications without advance notice

ROTEM INDUSTRIES LTD.

Radiation Detection Division

Mishor Yamin, D.N. Arava 8680600, Israel

Tel. +972-8-6564780/1, Fax. +972-8-6573252

E-mail. sales@rotemi.co.il Web: www.rotem-radiation.co.il

