

INSTRUMENTATION AND SYSTEMS FOR NUCLEAR MEDICINE DEPARTMENTS AND CYCLOTRONS

Rotem Industries Ltd. is an Israeli high-tech company active in the implementation of technologies, processes and products. Rotem's Radiation Detection Division develops, manufactures and markets state-of-the-art Health Physics Radiation Monitoring systems and Instruments. A variety of instruments and systems serve different applications such as: Homeland Security, Nuclear Power Plants, Medical Applications, Radio Isotope Laboratories, etc. The company specializes in giving unique solutions to its customers and in fulfilling the increasing worldwide demand for sophisticated radiation monitoring instruments and systems.



ROTEM INDUSTRIES reserves the right to change specifications without advance notice

WEBSMARTS: A MODULAR ON-LINE RADIATION MONITORING SYSTEM

The WebiSmarts system is a web based IP platform, designed to measure and collect radiation data automatically and continuously from cyclotron facilities, radiochemistry laboratories, treatment rooms and PET Centers. Radiation is monitored by a variety of detectors and results are transferred through a series of monitoring channels to a central computer located in the control room.

PET Monitoring and Nuclear Medical Departments

Our Area Radiation Monitoring is based on field proven, highly reliable radiation detectors, Data Processing Units and unique Computer Software. The system provides real time on line radiation levels. The data is used for both radiation safety and improving the site operation.

Features:

- Stack Monitoring with quantitative activity release measurement.
- Area Monitoring.
- Production Monitoring.
- Comprehensive radiation analysis software.
- Site Safety Control.
- Automatic Activity Release Report.
- Automatic calculation of the total activity for selected period of time.

The Basic DPU-3 Monitoring Channel:

- IP-65, Hardened, High Impact Plastic Casing
- Supports 1 internal and 3 external detectors
- Auto recognition of ALL Rotem, and other detectors
- Large 7" HD Graphic Display with Status icons
- Background Color on Display reflects dose rate according to thresholds
- Up to 100 yards cable between Detector and Meter



Some Supported Detectors:

GM-41 Detector



Used in the Cyclotron vault and in the Hot Cells. Can be set to report activity and is useful to measure the activity before the material is moved out of the Hot cell into the Dose Calibrator. (dose and dose rate)

Measuring Range: 1 μ Sv/h to 1 Sv/h (0.1 mR/h to 100 R/h)

GM-42 Detector



Used in the Radiochemistry Lab, Control Room, Q.A. Dept, Radiopharmacy and other rooms to measure general radiation (dose and dose rate).

Measuring Range: 0.1 μ Sv/h to 10 mSv/h (0.01 mR/h to 1 R/h)

PM-11 Detector



High Sensitivity detector used in the Exhaust Stack to measure radioisotope releases, down to the 10-7 μ Ci/cc regulatory requirements. Combined with online readings from the flow meter, provides full reporting on released concentration and amounts.

Measuring range: 0 to 50,000 cps

Neutron Monitoring Channel



Used in cyclotron and accelerator sites to measure the neutron flux during the activation period. Can be fixed as part of a Monitoring Channel and together with our RAM DA-2000 as a portable survey meter.

Portable Survey Meters

RAM GAM-1: Portable gamma dose rate & dose survey meter



Features:

Detector: Energy compensated GM tube.
Audible click, LED flash.
"Smoothed" digital display.
Weighs less than 0.5 kg.
Self-test, low battery and threshold alarm, hands-free use.
Plastic or metal case.
IRP-51-H*(10) version available
One 9V cell battery with external power supply plug

Applications:

Personal dose equivalent/dose rate verifications for operations, HP and chemistry personnel.
HP emergency planning kits "High Rad" entrance requirements (redundant to dosimeters).
Sensitive to 32P and 35S isotopes.

Measuring Range: **New** 0.5 μ Sv/h to 40 mSv/h (0.05 mR/h to 4 R/h)



RAM GENE-1 Contamination and Radiation Survey Meter

Features:

Metal casing with backlight
Detector: 1 $\frac{3}{4}$ " Pancake GM tube.
Set up thresholds.
Simple 3 push-button operation.
New One 9V cell battery with external power supply plug

Applications:

Specially designed for nuclear medicine, molecular biology. laboratories, nuclear materials transportation and others.

Measuring Range: 0 to 42,000 cps ; 0.01 μ Sv/h to 7200 μ Sv/h (0.001 mR/h to 720 mR/h)

RAM SURF: Contamination Survey Meter with detachable detector

Features:

Detector: 1 $\frac{3}{4}$ " Pancake GM tube.
Audible click, LED flash.
"Smoothed" digital display.
Portable, lightweight and compact.
3 push-button simple use.
Available with either wire or honeycomb mesh for higher sensitivity.

Applications:

The RAM SURF accurately measures contamination levels on skin, clothing and working areas.
Maintains the highest safety standards in all nuclear facilities.
Quickly detects low level surface contamination on laboratory bench tops, shoes, skin, clothing, floors, etc.

Offers extra flexibility for accessing hard to reach places.

Measuring Range: 0 to 42,000 cps



RAM DA-2000 – Multipurpose Survey Meter

RAM DA 2000 series: Without internal detector
RAM DA 3 2000 series: With wide range internal detector

Features:

Supports a large number of external detectors with automatic recognition upon connection
Two output relay contacts for threshold and failure alarm.
Freeze mode to record the highest dose rate.
Manually set alarm threshold. Low battery & Overflow alarm.

Applications:

Nuclear Power Plants, nuclear and medical research centers, H.P. departments, radiology clinics, radiation and environmental protection authorities.

RAM DA-3 2000 Measuring Range: 0.5 μ Sv/h to 1 Sv/h (50 μ R/h to 100 R/h)



Portable Survey Meters



RAM ION Digilog

Features:

Ion chamber (500cc) survey meter IRP-51-H*(10) version available
Capable of measuring X-Ray pulses from 2 nanoseconds
Auto ranging Digital and Analog display, combines fast response and readout stability.
Data Logging capability.
Large size character digits.
Built in memory.
User adjustable threshold alarm.
Manual or computerized calibration software.
Allows for storage of data points and on-line diagnostics.

RS-232 serial port or wireless connection for downloading of data.

Applications:

Measuring and storing both Gamma radiation and Beta contamination
Control X Ray leakage, Radiography, NDT testing.

Wide Range Monitoring : 1 μ Sv/h to 500 mSv/h (0.1 mR/h to 50 R/h)



PDS-GO : Sensitive Portable Gamma & X Ray radiation Monitor

Features

Measures Dose rate and Accumulated Dose
Complies with ANSI-N42.32 and ANSI-N42.33 standards
Easy, intuitive operating mode
Background subtraction
Rechargeable battery life - 120 hours
Audio, Visual and Vibrating alarms
Reach back capabilities via USB
Vibrating option for discreet alerts
Upper and front displays

Applications:

Lightweight, small, sensitive, for alerting personnel to the presence of x-ray and gamma radiation.

Measuring Range: Background to 500 μ Sv/h | 50 mR/h