



## POCKET RADIAC METER

# RGU-100™

*High Sensitivity Military Pocket Radiac*

This simple to operate, compact device is suitable for both tactical and non-tactical radiation protection use.

## FEATURES

- Detects and quantifies prompt gamma and neutron dose as well as residual gamma dose and dose rate
- Pre-settable audio and visual alarms
- Uses time tested "Time-to Count" technology
- Infrared Optical Port for computer control and data downloads

## KEY FEATURES

- Ultra small size and weight
- Ease of use for setup and operations; minimal user training required
- Computer interface for automated dose tracking systems

## APPLICATIONS

- Personnel
- Aircraft and vehicle



## DESCRIPTION

The RGU-100 Military Pocket Radiac detects and quantifies prompt gamma and neutron dose as well as residual gamma dose and dose rate in support of both tactical and non-tactical use. This rugged dosimeter is equipped with a back lit LCD as well as presettable audio and visual alarms that provide clear, real time indications of radiological conditions in demanding environments. Its built-in sleep mode offers enhanced operational flexibility by extending battery life. An infrared RS-232 port that resides in the RGU-100 unit enables its data to be accessed by a computer.

This simple to operate, compact device is suitable for both tactical and non-tactical radiation protection use. Its wide dynamic ranges for dose and dose rate and ability to measure prompt as well as residual gamma radiation make it an essential tool for the foot soldier.

The RGU-100 device also lends itself to use in military vehicles and helicopters.

The Pocket Radiac easily fits within the space constrained interiors of aircraft and fighting vehicles (circled unit, right).



Use of the infrared RS-232 port and the RGU-100 device dose storage capability enables the efficient dose management of personnel in a field organization. The serial number of the user

# RGU-100 | HIGH SENSITIVITY MILITARY POCKET RADIAC

can easily be stored in the unit. The user's total accumulated mission dose can then be read by a computer and, with minimal operator attendance, be assigned to the user's Radiation Dose file. The infrared port may also be used to automate configuration of the device in the field ensuring proper configuration control of alarm settings and key parameters. This functionality can safeguard the equipment from accidental erasure of accumulated dose or incorrect setting of alarm levels by a user.



## SPECIFICATIONS

### Data Provided:

- Residual gamma radiation: 0.01  $\mu\text{Gy/hr}$  to 350  $\text{cGy/hr}$  (0.001 $\text{mR/hr}$  to 350 $\text{R/hr}$ ) dose rate and 0.01 to 999  $\text{cGy}$  (10 $\text{mR}$  to 999 $\text{R}$ ) total dose.
- Neutron and prompt gamma radiation: 1 to 999  $\text{cGy}$  (1 $\text{R}$  to 999 $\text{R}$ ) total dose.

### Features:

- Pre-settable audible and visual: dose and dose rate alarms.
- Setup time: less than one minute for all checks and alarms.
- Accuracy:  $\pm 15\%$ .
- Enhanced battery life: sleep mode provides 1500 hr battery life.
- Circuit protection: nuclear and EMP hardened.
- Operable and readable: by persons wearing Arctic and MOPP protective clothing.
- Weight: 270 g (9.5 oz).
- Volume: 172 cc (10.5  $\text{In}^3$ ).
- Dimensions: 100 x 66 x 28  $\text{mm}^3$  (3.875 x 2.50 x 1.25  $\text{in}^3$ ).

### Detectors:

- Pin Diode (neutrons), PMOS-FET (prompt gammas) and "Time to Count" GM detector (residual gammas).
- Separate detectors for neutron and gammas are combined to provide a single dose reading.
- Total (cumulative) dose read out: will not be erased when read, resettable to zero as desired.
- Residual dose rate: minimum detectable level 0.2  $\mu\text{Gy/hr}$  (0.02 $\text{mR/hr}$ ); Rad units available.
- Response time: within 10% of final reading in four seconds at 1.0  $\text{cGy/hr}$  (1 $\text{R/hr}$ ), returns to background within four seconds.

### Display:

- An auto-ranging LCD that can be read at 3 ft, back lit for night use, updated every two seconds.
- Provides data in units of grays or rads for dose or dose rate.

### Communications:

- Data downloadable via optical (IR) communications port.

### Alarms:

- Has selectable Visual and Audible indicators for day or night use.
- Alarm levels are settable over entire dynamic range.

### Power:

- Four AAA 1.5 V batteries.
- Minimum battery life of 150 hr during continuous monitoring and 1500 hr during inactive (sleep) mode.
- Low battery LCD indication with 5 hr of battery life remaining, a "Go/No Go" feature provides battery status.

### Reliability and Maintainability:

- Mean time to repair (MTTR): 15 minutes.

### Environmental Parameters:

- Operating temperature:  $-51\text{ }^\circ\text{C}$  to  $+50\text{ }^\circ\text{C}$  ( $-59.8\text{ }^\circ\text{F}$  to  $122\text{ }^\circ\text{F}$ ).
- Storage/transport temperature:  $-60\text{ }^\circ\text{C}$  to  $+70\text{ }^\circ\text{C}$  ( $-76\text{ }^\circ\text{F}$  to  $158\text{ }^\circ\text{F}$ ).
- Operating humidity: 0-95%.
- Immersion: 3 ft for at least 2 hrs.
- Sand/dust: operates in winds to 1750 ft/min with exposure to fine dust and to 5700 ft/min to sand particles.
- Vibration: withstands vibration associated with transport.
- Explosive atmospheres: will not cause ignition of explosive gas mixtures.
- Altitude: 4572 m (15000 ft).

## QUALIFICATION TESTING

The RGU-100 unit is derived from the military qualified AN/UDR-13,14,15 Radiac Sets (Pocket Radiacs) that were developed by Aptec-NRC/Canberra Industries, now part of Mirion Technologies, under contract to the US Army. The RGU-100 unit precisely duplicates the radiological performance and user experience of the AN/UDR-14 and meets Mil-Std 810 tests.

## ORDERING INFORMATION

- RGU-100-GO: High Sensitivity Military Radiac.
  - Unit: gray
  - Color: olive
- RGU-100-RG: High Sensitivity Military Radiac.
  - Unit: rad
  - Color: grey
- Optional IR to USB cable, P/N IRUSB.
- RGU-MOUNT: Vehicle or Robot Mount with RS-232 communication port.



RGU-MOUNT

