

Model PCM-3 – Portable Contamination Monitor

(Special Unit for measurement of radioactive contamination in Steel and other metals)



Portable Contamination Monitor, Model PCM-3, is a micro controller based, portable, light weight, battery operated instrument for measurement of environmental / field dose rate of gamma ray and x-ray radiation. It is useful for Health Physics applications in Nuclear Power Plants, Nuclear Medical Centres and Radio Isotope laboratories. Model PCM-3 employs external GM detector for direct readout of either dose rate in $\mu\text{R/hr}$, $\mu\text{Sv/Hr}$, contamination in Bq/gm , Count Rate in CPS or CPM. With Pancake type GM tube, Model PCM-3 is useful for measurement of Contamination in Steel, other metals and alloys.

This pancake type GM tube is supplied externally with 1 meter long cable. Portable Radiation Survey Monitor, Model PCM-3, works on 6V rechargeable Ni-MH batteries. A mains operated charger is also supplied with PCM-3 for keeping the batteries charged. Typical operational battery charge life is 8 to 10 hours of continuous use.

Selection of Material, either Aluminium or Iron or Cast Iron or Copper is provided. In addition to these materials, user can add two more materials (of his choice) of different densities. User can enter material thickness between 0.1 mm to 999.9 mm. Backlit ON/OFF key allows user to turn OFF the backlit to enhance the battery charge. Backlit Time can be set as 1 or 2 or 5 minutes. Two line LCD display is used as interactive Menu for displaying Dose Rate in $\mu\text{R/Hr}$ or Contamination in CPS or in Bq/gm and also to get the type of material and its thickness. Display of battery voltage and HV is also provided. No Pulse Alarm, Low Battery and HV Fail indications are also shown on LCD.

Calibration of PCM-3 is done at factory, using Co-60 radioactive sources supplied by BRIT, Mumbai. A small check source (Co60) can be supplied as an option at extra cost. Dose Rate Alarm setting is also provided to activate an LED indicator when the incident dose rate value exceeds the set alarm value.

Model PCM-3 is supplied with standard accessories like battery charger, operating manual and carrying case.



Detector

- GM Tube** : Pancake type, externally mounted with 1 meter long interconnecting cable
- Radiation Detected** : Alpha, Beta (without Shutter), Gamma/X Rays

Contamination Monitor

- Measurement Ranges (User Selectable)** : Contamination : 0.01 - 100.00 Bq / gm
Dose Rate : 0 - 20,000 μ R/Hr, 0-200 μ Sv/Hr
Count Rate : 0- 10,000 CPS
- Accuracy** : \pm 20% of Range
- Energy Range** : 100 KeV to 2 MeV
- Time Constant** : 1 second for CPS and 10 second for Bq/gm or μ R/Hr or μ Sv/Hr
- High Voltage** : +300 to + 900 Volts at 0.1 mA internally set
- Material** : Stainless Steel, Aluminum, Copper, Iron and Cast Iron + two user settable materials of known densities (only for Bq/gm scale)
- Material Thickness** : 0.1 to 999 mm (only for Bq/gm scale)
- Menu Display** : 16 x 2 Line display for display of reading and parameters
- Dose Rate Alarm** : Settable in mR/Hr throughout the range
- Alarm Indication** : Illuminated RED LED, Audio Buzzer
- Diagnostic Output** : No pulse, Low battery and HV fail Indication
- Audio Output** : Chirper output proportional to incident dose rate, user selectable ON/OFF
- Backlit** : User selectable ON or OFF, Backlit time : 1, 2 or 5 minutes (settable)
- Battery / Charger** : 4 nos of Ni-MH AA type Duracell (20 Hrs of operational life) with external battery charger

General

- Dimensions** : 140 W x 110 B x 50 H cm
- Weight** : Approximately 500 gms
- Standard Accessories** : Operating Manual, Carrying Case

Due to continuous R&D, specifications are likely to change without notice

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