

User Manual Radiation Meter PCE-RAM 6



5. Parameter setting

The parameters that can be modified by the user include: system time, system information, automatic shutdown, and language setting. The corresponding parameters can be modified through the keyboard.



Relevant Knowledge for Radioactive Unit 6. Conversions

I. International standards (our country implement this standard) 1990

1. Radioactive staff: 20mSv/h

2. General Public: 1mSv/a

Note: the standard above is according to ICRP suggestions and GB-492-04 regulations.

II. Knowledge for Unit Conversions and Itc

1kVh=1000h

1nCg=1.7mGy/h

1. Functional overview

Radiation individual alarm device is collocated with highly flexible Geiger counting pipe as detector. It is mainly responsible for monitoring the radiation of X, y and hard β ray in various radioactive work areas; it is featured as swift response and broad measurement scope; it is able to display the dosage equivalent rate it is widely applied in the individual safety protection monitor and radioactive indication for work personnel in the following fields: nuclear power plant, accelerator, iron & steel industry, chemical industry, isotope application, industrial X and y non-destructive flaw detection, radioactive medical treatment, Cobalt source treatment, y radiation, radioactive laboratory and surrounding environment monitor of nuclear facilities.

2. Features

1. Monitor X, gamma and hard beta rays.
2. With high sensitivity, the instrument can also measure the environment background.
3. Interface using all of Chinese, Traditional Chinese and English.
4. Graphic LCD with adequately big screen.
5. Optional alarm modes including sound/vibration.

3. Technical Parameters

1. Radiation Detection: X, gamma and hard betas
2. Detector: energy compensation GM tube (Geiger counter tube)
3. Normal count standard within 0.5μSv/h
4. Measurement range
5. Energy range: 40 keV-1.5 MV ±30% (for 137Cs-60)
6. Sensitivity: 80 CPM/μSv/h (for Co-60)
7. Measurement display: the dose rate display will update every second and the protect alarm display is shorter than 5 seconds.
8. Operating environment: temperature -10°C ~+40°C, Relative humidity <95% (45°C)
9. Dimensions: 143*77*28mm

4. General Operation Method

1. Start-up

Prepare 2 AA batteries. Since with batteries installed, press and hold [On] button for 3 seconds and the instrument will start up. The LCD display is as the following figure:



1) Shutdown

Press and hold [Off] button for 3 seconds, and the instrument will shut down.

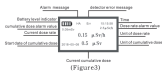
2) Measurement

The instrument will be in measurement mode since start-up. There are two measurement values: one is dose rate with units of μSv/h or Gy/h, mR/h, cps and cpm; the other one is accumulated dose, which is the accumulative value of dose rate for some time, with units of μSv or mSv. The instrument will ring an alarm as the preset alarm mode when a type of value exceeds the set alarm threshold.

3) Refresh: Press the [C] key to instant the device for testing.

4) Alarm settings: audible alarm, vibration alarm.

5) Instructions for LCD Display Data This information displayed on this instrument is as follows:



(Figure 3)

Radioactive Source	Have and 1/10 value (cm) of different materials					
	Lead	Ferrum	Concrete			
	half	1/10	half	1/10	half	1/10
Co-137	6.65	2.2	1.6	5.4	4.9	16.3
Ir-192	0.55	1.9	1.3	4.3	4.3	14.0
Co-60	1.10	4.0	2.0	6.7	6.3	20.3

Note: R=2260/(1608 year)=0.825Rn2/hr

Co-137(t=59 year)=0.33Rn2/hr

Co-60(t=5.23 year)=1.32Rn2/hr

N/Relationship between Radioactive Resource and Distance

The strength of the radioactive source is inverse proportion of the square of the distance.

X=A/r²

A: the activity of point radioactive source;

R: the distance to the source;

r: the constant of exposure rate

8. Accessories List

Item	Quantity
Radiation Meter	1
User Manual	1
USB-C Cable	1
Instrument box	1

9. Notice

Radiation individual alarm is a precise instrument. Please protect it carefully. The following suggestions are for the maintenance and life extending of the instrument.

- Keep it dry as much as possible in the process of storage and use, and too much moisture will cause the instrument damage.
- Do not drop, knock or severely shake the detector; or it will cause damages of this detector.
- Remove the battery when the instrument is not used for a long period of time. If the instrument does not work properly. The company reserves the right to change product of product performance modification of the manual without prior notice to users.

10. Safe Operation Norms

Please read the manual carefully. It may cause the improper working of the instrument if the user doesn't operate following the manual.

Please apply standard AA batteries or rechargeable batteries. Without accepted any rebuild or maintenance may cause damages of this instrument.

When at work, if you suspect that the instrument may be malfunction, please turn off the instrument and quickly with draw the hazardous location. Contact the manufacturer as soon as possible.

Notice:

The company has the final right to interpret this manual. The company reserves the right to improve product performance and modify this manual without prior notice to users.