

PCE Instruments PCE-RDM 5

PCE Instruments PCE-RDM 5 Radiation Dose Meter User Manual

Model: PCE-RDM 5 | Brand: PCE Instruments

1. INTRODUCTION

The PCE Instruments PCE-RDM 5 is a highly sensitive and compact radiation dose meter designed for the precise monitoring of X-ray, Gamma, and Beta radiation. Utilizing an energy-compensated Geiger-Müller counter tube, this device ensures accurate measurements crucial for personal dosimetry and radiation protection in various environments. Its user-friendly interface, powered by a robust microprocessor and a clear TFT screen, makes operation straightforward.

The PCE-RDM 5 incorporates advanced safety features, including three distinct alarm modes: audible alerts, LED light indicators, and vibration. These alarms are fully customizable, allowing users to set specific dose rate limits. Upon exceeding these predefined limits, the device immediately triggers an alarm, providing critical protection. This instrument's technical specifications meet international standards, making it a reliable tool for radiation measurement.



Figure 1: PCE Instruments PCE-RDM 5 Radiation Dose Meter. A grey, rectangular radiation dose meter with a black display showing '0.18 uSv/h' and 'REAL'. The device has several control buttons, including a navigation button, a D/O button, and a menu button. The brand 'PCE Instruments' and 'RADIATION DOSE METER' are printed on the left side, and 'PCE-RDM 5' and 'CE' mark are on the right.

2. SAFETY INFORMATION

Please read all safety instructions carefully before operating the PCE-RDM 5. Failure to comply with these instructions may result in inaccurate readings, device damage, or personal injury.

- **Intended Use:** This device is designed for monitoring X-ray, Gamma, and Beta radiation. Do not use it for purposes other than its intended use.
- **Environmental Conditions:** Operate the device within the specified temperature and humidity ranges. Avoid exposure to extreme temperatures, direct sunlight, or high humidity.
- **Handling:** Handle the device with care. Avoid dropping or subjecting it to strong impacts.
- **Power Source:** Use only the specified USB-C charging cable and a compatible power adapter for charging the internal battery.
- **Maintenance:** Do not attempt to open or repair the device yourself. Refer all servicing to qualified personnel.
- **Disposal:** Dispose of the device and its battery according to local regulations for electronic waste.

3. SETUP

Before first use, ensure the device is fully charged.

1. Charging the Device:

- Connect the provided USB-C cable to the charging port on the device.
- Connect the other end of the USB-C cable to a standard USB power adapter (not included) or a computer USB port.
- The battery indicator on the TFT screen will show the charging status. Allow the device to charge completely before initial operation.

2. Powering On/Off:

- To power on, press and hold the power button (usually marked with a power symbol or located near the display) until the screen illuminates.
- To power off, press and hold the power button again until the device shuts down.

4. OPERATION

The PCE-RDM 5 is designed for intuitive operation. Familiarize yourself with the display and control buttons.

4.1 Display Overview

The TFT screen provides real-time radiation dose rate readings and other important information:

- **Real-time Dose Rate:** Displays the current radiation level in $\mu\text{Sv/h}$.
- **Accumulated Dose:** Shows the total radiation dose received over a period.
- **Battery Indicator:** Shows the remaining battery life.
- **Alarm Status:** Indicates if an alarm is active or if alarm limits have been set.

4.2 Basic Functions

- **Measurement:** The device continuously measures X-ray, Gamma, and Beta radiation once powered on.
- **Dose Measurement Range:** The device measures dose rates from $0.08 \mu\text{Sv/h}$ up to $9999 \mu\text{Sv/h}$.
- **Alarm Function:** The PCE-RDM 5 features an adjustable alarm function with sound, LED light, and vibration alerts.
- **Navigation:** Use the navigation buttons (e.g., '>', 'D/O', menu button) to cycle through display modes, adjust settings, and acknowledge alarms. Refer to the on-screen prompts for specific button functions.

4.3 Setting Alarm Limits

To set or adjust the alarm limits:

1. Access the device's menu (usually by pressing the menu button).
2. Navigate to the 'Alarm Settings' or similar option.
3. Adjust the desired dose rate threshold using the navigation buttons.
4. Confirm your selection to save the new alarm limit.

5. MAINTENANCE

Proper maintenance ensures the longevity and accuracy of your PCE-RDM 5.

- **Cleaning:** Use a soft, dry cloth to clean the device's exterior. Do not use abrasive cleaners, solvents, or immerse the device in water.
- **Storage:** When not in use, store the device in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Battery Care:** For optimal battery life, avoid fully discharging the battery frequently. Recharge the device regularly, especially if it will be stored for an extended period.

6. TROUBLESHOOTING

If you encounter issues with your PCE-RDM 5, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Device does not power on.	Low or depleted battery.	Charge the device using the USB-C cable.
Inaccurate readings.	Device not calibrated; environmental interference.	Ensure device is used in stable conditions. If issues persist, contact support for calibration.
Alarm not sounding/vibrating.	Alarm function disabled; volume too low; alarm limit not reached.	Check alarm settings in the menu. Ensure alarm limits are set appropriately.
Screen is blank or frozen.	Software glitch; low battery.	Perform a soft reset by holding the power button for 10-15 seconds. Recharge the device.

If the problem persists after attempting these solutions, please contact PCE Instruments customer support.

7. TECHNICAL SPECIFICATIONS

Parameter	Value
Model Number	PCE-RDM 5
Part Number	PCE-RDM 5
Detector	Energy-compensated Geiger-Müller counter tube
Radiation Types Detected	X-ray, Gamma, Beta
Dose Measurement Range	0.08 µSv/h to 9999 µSv/h
Alarm Modes	Sound, LED Light, Vibration
Display	TFT Screen

Parameter	Value
Power Source	Rechargeable Battery (Akkubetrieb)
Charging Port	USB Type-C
Item Weight	45 g
Product Dimensions	10.5 x 2.7 x 1.7 cm

8. WARRANTY INFORMATION

PCE Instruments products are manufactured to high quality standards. For specific warranty terms and conditions applicable to your PCE-RDM 5, please refer to the warranty card included with your purchase or visit the official PCE Instruments website. Typically, warranty covers defects in materials and workmanship under normal use.



9. SUPPORT





For technical assistance, troubleshooting beyond this manual, or service inquiries, please contact PCE Instruments customer support. Have your model number (PCE-RDM 5) and purchase information ready when contacting support.

You can find contact information on the official PCE Instruments website or through your local distributor.

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Related Documents - PCE-RDM 5

	<p>PCE-RAM 9 Radiometer: Technical Specifications and Features</p> <p>Detailed information on the PCE-RAM 9 radiometer, including its technical specifications, features, and content of delivery. This device measures beta, gamma, and X-ray radiation with a Geiger-Müller counter and offers adjustable alarms, data logging, and PC transfer capabilities.</p>
	<p>PCE-RAM 9 Radiation Detector User Manual</p> <p>User manual for the PCE-RAM 9 radiation detector, covering overview, applications, key functions, operation, technical specifications, troubleshooting, and disposal information.</p>

	<p>PCE Instruments Sound Level Meters Catalog and Specifications</p> <p>Comprehensive catalog detailing PCE Instruments' range of sound level meters, acoustic calibrators, and related accessories, including technical specifications, features, and applications for industrial and professional use.</p>
	<p>PCE-4XX-EKIT Outdoor Noise Meter Kit User Manual PCE Instruments</p> <p>User manual for the PCE-4XX-EKIT Outdoor Noise Meter Kit by PCE Instruments. Provides comprehensive information on safety, introduction, delivery contents, specifications, device description, system setup, battery recharging, warranty, disposal, and contact details for this environmental noise monitoring equipment.</p>
	<p>PCE-VT 3800/3900 Vibration Meter User Manual</p> <p>User manual for PCE Instruments' PCE-VT 3800 and PCE-VT 3900 vibration meters. Covers detailed specifications, operation, measurement modes, data logging, FFT, RPM, route measurements, safety, and calibration for effective machine condition monitoring.</p>
	<p>PCE-UX 3081/3081WQ Moisture Analyzer: Operating Instructions and Technical Guide</p> <p>Comprehensive operating instructions and technical specifications for the PCE-UX 3081 and PCE-UX 3081WQ moisture analyzers. Learn about setup, operation, safety, maintenance, and troubleshooting for accurate moisture and dry matter analysis using thermogravimetric methods.</p>