BTMETER GC-01

BTMETER GC-01 Nuclear Radiation Detector User Manual

Model: GC-01

1. Introduction

This manual provides instructions for the BTMETER GC-01 Nuclear Radiation Detector. This device is designed for detecting, measuring, and monitoring radiation levels, including alpha, beta, gamma, and X-ray radiation. It is equipped with a Geiger-Müller tube for sensitive and precise measurements.

2. Product Overview

2.1. Key Features

- Equipped with an energy compensation GM tube for sensitive and accurate detection.
- Measures Dose Equivalent Rates from 0.0-10000μSv/h and Cumulative Dose Equivalent up to 500.0mSv.
- Detects Beta, Gamma, and X-rays.
- Adjustable alarm settings for cumulative and current dose equivalent rates with sound, vibration, and flash light alerts.
- Displays real-time, average, and maximum CPM readings.
- Five selectable dosage units: μSv/h, μGy/h, mR/h, CPS, CPM.
- Powered by a 1100mAh USB Type-C rechargeable lithium battery, providing up to 10 hours of operation.
- Adjustable screen brightness for varied lighting conditions.

2.2. Components

Image 2.2.1: Front view of the BTMETER GC-01 Nuclear Radiation Detector, showing the display, control buttons, and included USB-C charging cable. The device is yellow and black with a clear digital screen.

Image 2.2.2: Diagram illustrating the dimensions (120mm x 78mm x 27mm) and highlighting the 1100mAh rechargeable lithium battery and USB Type-C charging port. The image also shows the anti-drop and non-slip silicon material of the device casing.

2.3. What's in the Box

- BTMETER GC-01 Nuclear Radiation Detector
- USB Type-C Charging Cable
- User Manual (this document)

3. Setup

3.1. Initial Charging

Before first use, fully charge the device. Connect the supplied USB Type-C cable to the detector's charging port and to a standard USB power adapter (not included). The battery indicator on the display will show charging status. A full charge provides approximately 10 hours of continuous operation.

3.2. Powering On/Off

- To power on: Press and hold the **OK/Power** button until the display illuminates.
- To power off: Press and hold the **OK/Power** button until the display turns off.

4. Operating Instructions

4.1. Understanding the Display

Image 4.1.1: The main display of the GC-01, showing real-time radiation levels, current alarm settings, cumulative alarm, and various measurement units. Icons for X, Y, β-RAY detection are visible.

The display provides real-time radiation readings, along with average and maximum values. It also shows the cumulative dose equivalent and current alarm settings.

4.2. Unit Selection

The device supports five dosage units. To change the unit:

1. Navigate to the 'Set Unit' option in the menu using the navigation buttons.
2. Press **OK** to select.
3. Choose from µSv/h, µGy/h, mR/h, CPS, or CPM.
4. Press **OK** to confirm your selection.

Image 4.2.1: The device display showing the menu for selecting measurement units (µSv/h, µGy/h, mR/h, CPS, CPM) and demonstrating the dimmable brightness feature.

4.3. Alarm Settings

The GC-01 features adjustable alarm thresholds for both current and cumulative dose equivalent rates. When a threshold is exceeded, the device can alert via sound, vibration, or flashing light.

1. Access the 'Set Alarm' option in the menu.
2. Adjust the desired threshold for current dose and cumulative dose using the navigation buttons.
3. Select the preferred alarm method(s): sound, vibration, or light.
4. Press **OK** to save settings.

Image 4.3.1: The device display showing the menu for adjustable alarm settings, including current alarm and cumulative alarm thresholds. Icons for sound, vibration, and LED flash light alarm modes are displayed.

4.4. Clearing Cumulative Dose

To reset the cumulative dose equivalent value, navigate to the appropriate option in the settings menu and confirm the action.

4.5. Brightness Adjustment

The screen brightness can be adjusted to improve visibility in various lighting conditions. Access the 'Set Disp' (Display Settings) option in the menu to modify brightness levels.

5. Maintenance

5.1. Cleaning

Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents, as these can damage the casing or display.

5.2. Battery Care

To prolong battery life, avoid fully discharging the device frequently. If storing for an extended period, charge the battery to approximately 50% and recharge every few months.

5.3. Storage

Store the detector in a cool, dry place away from direct sunlight and extreme temperatures. Keep it away from strong magnetic fields and corrosive substances.

6. Troubleshooting

6.1. Device Does Not Turn On

- Ensure the battery is charged. Connect the device to a power source using the USB-C cable and allow it to charge for at least 30 minutes before attempting to power on again.
- Verify that the power button is pressed and held correctly.

6.2. Readings Appear Slow or Unresponsive

- The device updates readings every second. In environments with very low radiation levels, changes may not be immediately apparent.
- Ensure the device is not obstructed or placed in an area that could interfere with its sensor.

6.3. Inaccurate Readings

- Ensure the device is used within its specified operating temperature and humidity ranges.
- Avoid exposing the device to strong electromagnetic interference.
- If persistent issues occur, contact customer support.

7. Specifications

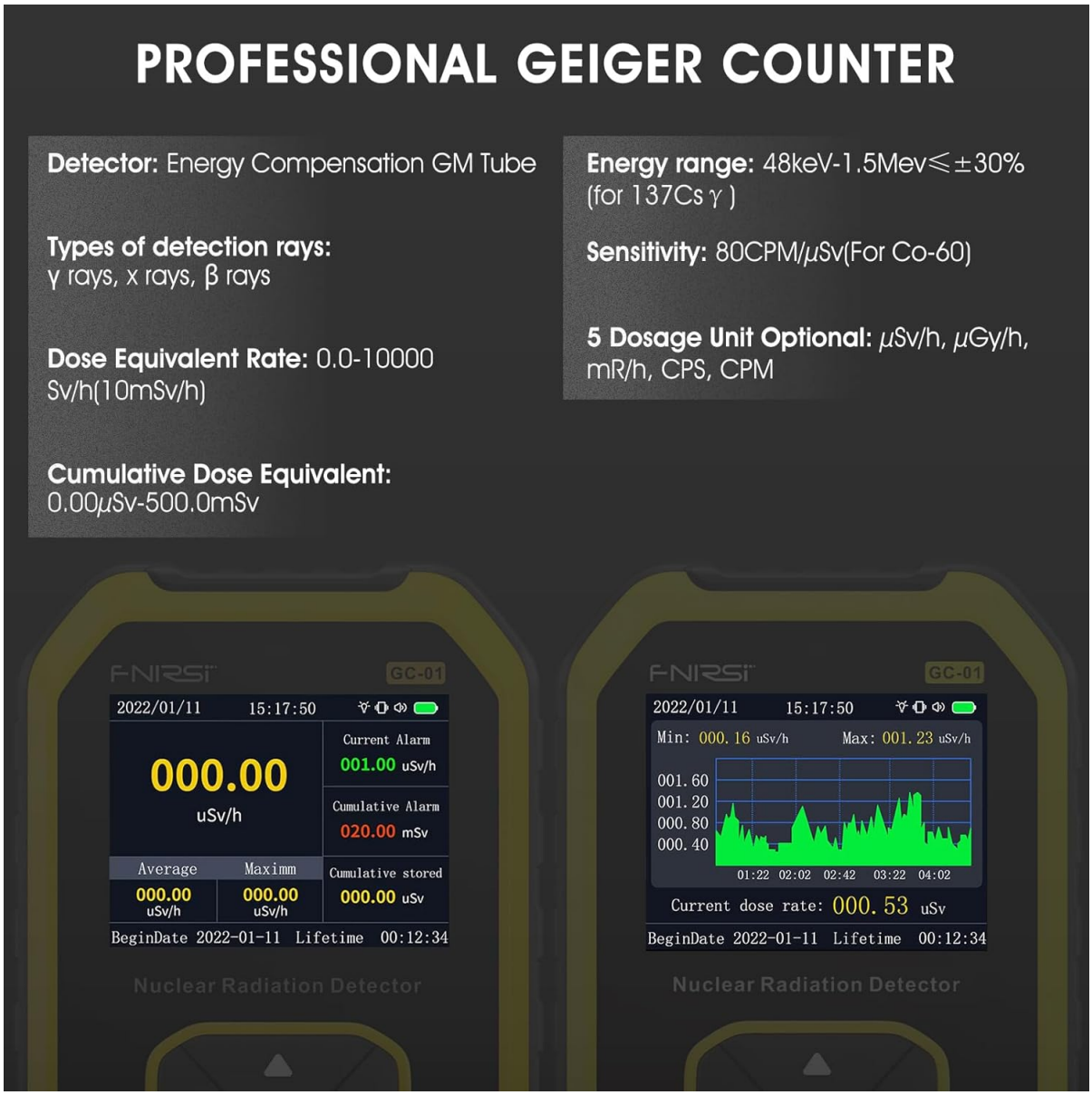


Image 7.1.1: Detailed specifications of the GC-01, including detector type, detection rays, dose equivalent rate, cumulative dose equivalent, energy range, sensitivity, and dosage units.

Detector	Energy Compensation GM Tube
Types of Detection Rays	γ rays, x rays, β rays
Dose Equivalent Rate	0.0-10000μSv/h (10mSv/h)
Cumulative Dose Equivalent	0.00μSv-500.0mSv
Energy Range	48keV-1.5Mev ≤±30% (for 137Csγ)
Sensitivity	80CPM/μSv (For Co-60)
Dosage Units	μSv/h, μGy/h, mR/h, CPS, CPM
Alarm Method	Light, Vibration, Sound
Battery	1100mAh USB Type-C Rechargeable Lithium Battery
Battery Life	Up to 10 hours (after full charge)
Dimensions	120 x 78 x 27mm
Weight	250g

8. Warranty and Support

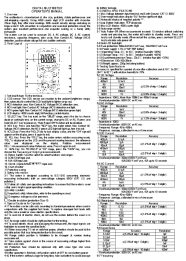
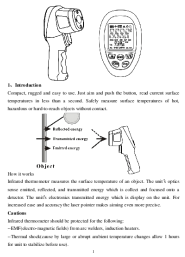
8.1. Warranty Information

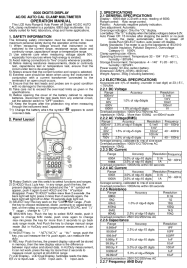
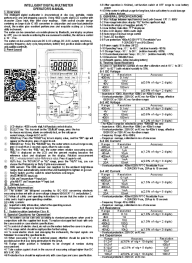
The BTMETER GC-01 Nuclear Radiation Detector comes with a 365-day quality warranty from the date of purchase. This warranty covers manufacturing defects and ensures the product functions as described under normal use.

8.2. Technical Support

Lifetime technical support is provided for this product. For assistance with setup, operation, troubleshooting, or any other inquiries, please contact BTMETER customer service. Refer to the product packaging or the official BTMETER website for contact details.

Related Documents - GC-01

	BTMETER BT-570CAPP Bluetooth Connection Guide Step-by-step instructions for connecting the BTMETER BT-570CAPP clamp meter to your smartphone via Bluetooth.
	Digital Multimeter Operator's Manual - BTMETER BT-39K Operator's manual for the BTMETER BT-39K Digital Multimeter, detailing its features, specifications, operating instructions, safety precautions, and maintenance.
	BTMETER BT-1500 Non-Contact Infrared Thermometer User Manual User manual for the BTMETER BT-1500 non-contact infrared thermometer, covering its introduction, how it works, safety warnings, quick start guide, maintenance procedures, and detailed specifications.
	BTMETER BT-1500 Quick Start Guide A quick start guide for the BTMETER BT-1500 infrared thermometer, covering battery installation, basic operation, and display interpretation.

	[6000 Digits Clamp Multimeter Operation Manual] Operation manual for the 6000 Digits AC/DC Auto Cal Clamp Multimeter, detailing safety information, specifications, measuring instructions, and maintenance.
	[Intelligent Digital Multimeter Operator's Manual - BTMETER BT-90EPD] Comprehensive operator's manual for the BTMETER BT-90EPD Intelligent Digital Multimeter. Covers detailed specifications, safety guidelines, operating instructions for measuring voltage, current, resistance, capacitance, frequency, duty cycle, temperature, and battery testing. Features include a 4000-count LCD, auto/manual ranging, auto backlight, and Bluetooth connectivity for mobile app data logging and analysis.