BTMETER BT-1880

BTMETER BT-1880 Industrial Laser Thermometer Gun

User Instruction Manual

1. Product Overview

The BTMETER BT-1880 is a high-precision industrial-grade infrared thermometer designed for non-contact temperature measurement. It features a wide temperature range, adjustable emissivity, and a high distance-to-spot ratio, making it suitable for various industrial, HVAC, and domestic applications. This device provides quick and accurate temperature readings of surfaces.

Figure 1.1: BTMETER BT-1880 Infrared Thermometer with included accessories.

2. Safety Information

WARNING: This device is an industrial IR temperature gun and is intended to check lifeless object surface temperature only. DO NOT use it to measure temperature for human or animal bodies.

- Do not point the laser directly at eyes or indirectly off reflective surfaces.
- Do not use the device in environments with explosive gas, vapor, or dust.
- Keep the device away from electromagnetic fields generated by arc welders or induction heaters.
- If the device is damaged, do not operate it.
- Do not immerse the unit in water.

3. Product Features

- **High Accuracy:** Measures surface temperature from -58°F to 3416°F (-50°C to 1880°C) with an accuracy of ±2~3%

of the reading.

- **Fast Measurement:** Provides temperature readings within 0.25 seconds.
- **Adjustable Emissivity:** Features an adjustable emissivity range of 0.1 to 1.0 to adapt to various surface types for accurate measurements.
- **50:1 Distance-to-Spot Ratio (D:S):** Allows for accurate measurements from a greater distance, enhancing safety when measuring high-temperature objects.
- **Dual Laser Pointers:** Helps to clearly define the measurement area.
- **Multiple Measurement Modes:** Includes Max, Min, and Average (AVG) temperature readings.
- **Temperature Alarms:** Configurable high and low temperature alarms.
- **Data Hold Function:** Freezes the current temperature reading on the display.
- **Backlit LCD Display:** High-definition display with backlight for visibility in various lighting conditions.
- **Unit Switchable:** Easily switch between Celsius (°C) and Fahrenheit (°F).
- **LED Flashlight:** Integrated flashlight for illuminating the target area.

Figure 3.1: Key features of the BT-1880 thermometer, including high accuracy and various functions.

Figure 3.2: Explanation of the 50:1 Distance Spot Ratio and the dual laser system for precise targeting.

4. Setup

4.1 Battery Installation

1. Locate the battery compartment on the handle of the thermometer.
2. Open the battery compartment cover.
3. Insert a 9V battery, ensuring correct polarity (+/-).
4. Close the battery compartment cover securely.

4.2 Initial Power On

After installing the battery, the device is ready for use. Press the trigger to power on the device and begin measurement.

5. Operating Instructions

5.1 Taking a Measurement

1. Point the thermometer at the target surface. Ensure the target is within the field of view indicated by the dual laser pointers.
2. Press and hold the trigger. The temperature reading will appear on the LCD display.
3. Release the trigger to hold the reading on the display (Data Hold function).

5.2 Understanding Distance-to-Spot Ratio (D:S)

The BT-1880 has a 50:1 D:S ratio. This means that at a distance of 50 units from the target, the measurement spot diameter will be 1 unit. For example, at 50 inches away, the measurement spot will be 1 inch in diameter. To ensure accurate readings, the target area should be larger than the spot size.

5.3 Adjusting Emissivity

Emissivity (ε) is a measure of an object's ability to emit infrared energy. Different materials have different emissivity values. The BT-1880 allows adjustment from 0.1 to 1.0. For accurate measurements, adjust the emissivity setting to match the material being measured. Common emissivity values are often found in reference tables.

Figure 5.1: Displaying adjustable emissivity, temperature unit switching, and backlit LCD.

5.4 Switching Temperature Units (°C/°F)

Press the "°F/°C" button to toggle between Celsius and Fahrenheit temperature units.

5.5 Using Measurement Modes (MAX/MIN/AVG)

Press the "MODE" button to cycle through different measurement modes:

- **MAX:** Displays the maximum temperature recorded during a continuous measurement.
- **MIN:** Displays the minimum temperature recorded during a continuous measurement.
- **AVG:** Displays the average temperature recorded during a continuous measurement.

Figure 5.2: The five measurement modes available on the BT-1880.

5.6 Using the LED Flashlight

Press the "BL" button to turn the integrated LED flashlight on or off, assisting in low-light conditions.

6. Maintenance

6.1 Cleaning the Device

To clean the thermometer, wipe the casing with a damp cloth. Do not use abrasive cleaners or solvents. Ensure the lens is clean and free of dust or debris for accurate readings.

6.2 Battery Replacement

When the low battery indicator appears on the display, replace the 9V battery as described in Section 4.1.

6.3 Storage

Store the device in a cool, dry place, away from direct sunlight and extreme temperatures. If storing for extended periods, remove the battery to prevent leakage.

7. Troubleshooting

- **Inaccurate Readings:**
  - Ensure the emissivity setting matches the material being measured.
  - Verify the distance to the target and ensure the target size is appropriate for the 50:1 D:S ratio.
  - Check for obstructions or dirt on the lens.
  - Allow the device to acclimate to the ambient temperature if moved from a significantly different temperature environment.
- **No Display/Power Issues:**
  - Check if the battery is correctly installed and has sufficient charge. Replace if necessary.
- **Laser Not Working:**
  - Ensure the device is powered on. If the laser is still not visible, contact customer support.

Remember: This thermometer is not designed for measuring human or animal body temperature. Readings on living beings will be inaccurate and should not be used for medical purposes.

8. Specifications

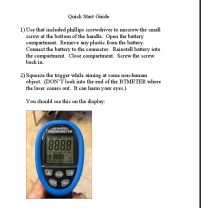
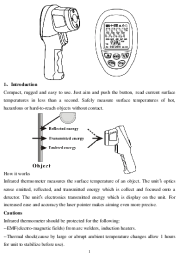
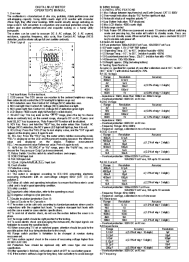
Specification	Value
Model Number	BT-1880
Temperature Range	-58°F to 3416°F (-50°C to 1880°C)
Accuracy	±2~3% of reading
Distance-to-Spot Ratio (D:S)	50:1
Emissivity	Adjustable 0.1 to 1.0
Response Time	0.25 seconds
Display Type	Digital LCD with Backlight
Power Source	9V Battery (Included)
Material	Acrylonitrile Butadiene Styrene
Dimensions	9.72 x 5.51 x 3.23 inches (Package)
Weight	1.08 Pounds (Package)

Figure 8.1: Physical dimensions of the BT-1880 thermometer.

9. Warranty and Support

The BTMETER BT-1880 comes with a 365-day warranty and lifetime technical support. For any inquiries, troubleshooting assistance, or warranty claims, please contact BTMETER customer service.
Visit the official BTMETER store for more information and support:BTMETER Store

Related Documents

	[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.
	[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-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.