BTMETER BT-1800

BTMETER BT-1800 Infrared Thermometer Instruction Manual

Model: BT-1800

Brand: BTMETER

1. INTRODUCTION AND OVERVIEW

The BTMETER BT-1800 is a professional-grade non-contact infrared thermometer gun designed for accurate and rapid temperature measurement across an extremely wide range. Ideal for industrial, mechanical, and smelting applications, this pyrometer allows users to safely measure high temperatures from a distance. Its robust design and advanced features make it an essential tool for professionals requiring precise temperature readings.

Figure 1: BTMETER BT-1800 Infrared Thermometer with included accessories.

2. PRODUCT FEATURES

- **Extremely High Temperature Range:** Measures from -58°F to 3272°F (-50°C to 1800°C).

- **High Accuracy:** +/- 3% +3 digits for -58 to 320°F; +/- 2% +2digits for 32 to 2120°F; +/- 3% +3digits for 2120 to 3272 °F.

- **Distance to Spot Ratio (D:S):** 50:1, allowing for safe measurement from a significant distance.

- **Rapid Response Time:** Instantly captures hot spots within 0.25 seconds.

- **Multiple Measurement Modes:** Includes MAX (Maximum), MIN (Minimum), Average, and Difference modes.

- **Adjustable Emissivity:** Range from 0.1 to 1.0 for accurate readings on various surfaces.

- **High/Low Temperature Warning:** Features a flashing alarm when current temperature exceeds set-point.

- **Enhanced Visibility:** Equipped with a front flashlight and a large backlit screen for use in dark environments.

- **Dual Laser Pointers:** Helps accurately locate the measurement area.

- **Durable Design:** Built with a non-slip rubber handle for comfortable and secure grip.
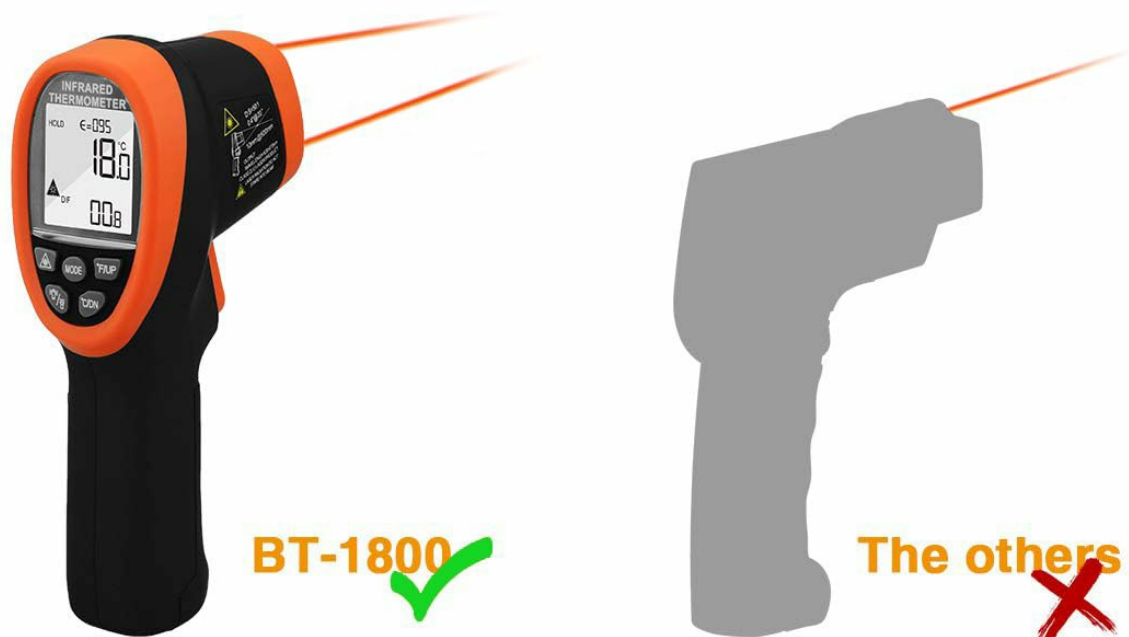
- **Power Saving:** Features Auto Power OFF and a low power indicator to extend battery life.

Laser Hole

LED Light

Laser Lens

1 **LCD Screen**
Back Light

2 **MODE**
MAX/AVG/MIN/DIF/LAL/HAL Mode
Long Press →
Emissivity Select/
HI,LO Temp Alarm

3 **Laser Pointer**
Turn on/off circle laser pointer

4 **Trigger**

5 **Backlit Screen/ Flashlight**
Turn on/off backlit
Press + trigger →
Turn on/off front flashlight

6 **°C/DN button**

7 **°F /UP button**

8 **Battery door**

192mm
7.6 in

95mm
3.7 in

63mm
2.5 in

Figure 2: Key components and controls of the BT-1800 Infrared Thermometer.

Dual Laser Pointers

Locate Measurement Area Accurately

BT-1800 ✓

The others ✗

50 : 1 Distance Spot Ratio

38mm @ 1900mm

75mm @ 3750mm

132mm @ 6600mm

Ø1.5" @ 75"
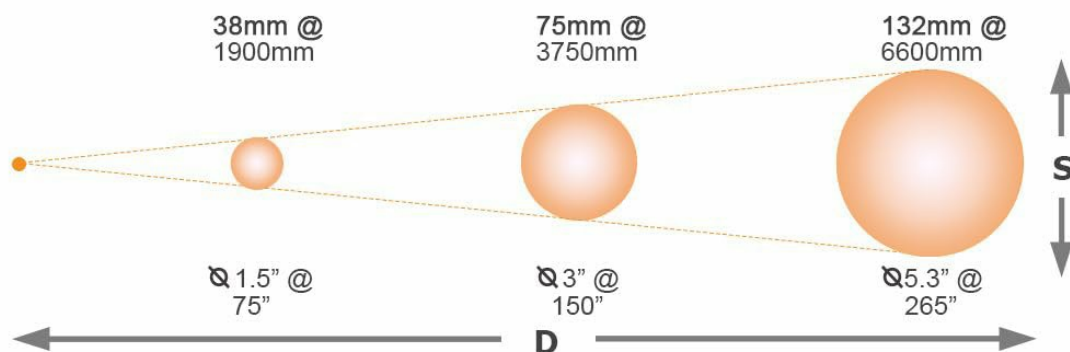
Ø3" @ 150"

Ø5.3" @ 265"

S

D

Figure 3: Illustration of the dual laser pointers and the 50:1 Distance to Spot Ratio.

3. SAFETY INFORMATION

Please read and understand all safety warnings before using this product. Failure to do so may result in injury or damage to the device.

- **Laser Safety:** This device uses a Class 2 laser product (optical power <0.5mW, Wavelength 630~670 um). **DO NOT STARE INTO BEAM.** Avoid direct eye exposure to the laser.

- **Intended Use:** The BT-1800 is specifically designed for measuring temperatures of inanimate objects. It is **NOT ACCURATE FOR HUMAN OR ANIMAL TEMPERATURE MEASUREMENT** and should not be used for medical purposes. Using it for biological temperature measurement may result in lower, inaccurate readings.

- **High Temperature Caution:** When measuring high temperatures, be aware of the surrounding environment and potential hazards. Maintain a safe distance from hot surfaces.

- **Battery Safety:** Ensure correct battery polarity when installing. Do not mix old and new batteries. Remove batteries if the device will not be used for an extended period to prevent leakage.

- **Storage:** Store the device in a cool, dry place, away from direct sunlight and extreme temperatures.

- **Cleaning:** Clean the device with a soft, dry cloth. Do not use abrasive cleaners or immerse the device in water.

4. SETUP

4.1 Battery Installation

The BT-1800 requires one 9V battery (included). Follow these steps to install the battery:

1. Locate the battery compartment on the handle of the thermometer (refer to Figure 2).

2. Gently pull down the battery compartment cover.

3. Connect the 9V battery to the battery connector, ensuring correct polarity (+ to + and - to -).

4. Insert the battery into the compartment and close the cover securely.

Your browser does not support the video tag.

Video 1: Demonstrates battery installation and basic operation of the BTMETER BT-1800.

4.2 Attaching the Carabiner (Optional)

The BT-1800 comes with a metal screw hole at the base of the handle, allowing it to be fixed on a tripod or to attach the included D-shape buckle (carabiner) for easy carrying on belt loops.

1. Locate the screw hole at the bottom of the handle.

2. Use the provided screwdriver to remove the small screw covering the hole.

3. Screw the carabiner into the threaded hole until secure.

Support Interface

A metal screw hole for you to fix it on a tripod,
Comes with a D-Shape buckle to hook on your belt loops

Note:
Tripod Not included

Figure 4: Support interface for tripod mounting or carabiner attachment. (Note: Tripod not included)

5. OPERATING INSTRUCTIONS

5.1 Taking a Measurement

1. Point the thermometer at the target object. Ensure the target is within the field of view of the dual laser pointers.

2. Press and hold the **Trigger** to begin measurement. The temperature reading will appear on the LCD screen.

3. Release the **Trigger** to hold the reading on the display. The "HOLD" icon will appear.

Instruction for Temperature Reading

1989°F
Temperature reading

44.9°F
Temperature reading

Figure 5: Examples of temperature readings for different applications.

Figure 6: The 50:1 Distance to Spot Ratio allows for precise measurement of high temperatures from a safe distance.

5.2 Changing Temperature Units (°F/°C)

Press the **°F/UP** button to switch between Fahrenheit (°F) and Celsius (°C) temperature units.

5.3 Mode Selection (MAX/MIN/AVG/DIF)

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

- **MAX:** Displays the maximum temperature measured during a scan.
- **MIN:** Displays the minimum temperature measured during a scan.
- **AVG:** Displays the average temperature measured during a scan.
- **DIF:** Displays the difference between the maximum and minimum temperatures measured.

5.4 Emissivity Adjustment

Emissivity (ε) is a measure of an object's ability to emit infrared energy. Different materials have different emissivity values. For accurate readings, adjust the emissivity setting to match the material being measured.

1. In measurement mode, long press the **MODE** button to enter emissivity adjustment.

2. Use the **°F/UP** and **°C/DN** buttons to adjust the emissivity value (0.1 to 1.0).

3. Press **MODE** again to confirm and exit.

Common Emissivity Values:

Material	Emissivity (ε)
Asphalt	0.95
Brick	0.90
Concrete	0.95
Glass (plate)	0.85
Iron (oxidized)	0.78
Paint (flat)	0.94
Rubber	0.95
Water	0.93

5.5 Laser Pointer and Flashlight Control

- Press the **Laser Pointer button** (leftmost button below screen) to turn the laser pointers ON or OFF.
- Press the **Backlight/Flashlight button** (second from left below screen) to turn the backlight ON or OFF.
- Press the **Backlight/Flashlight button** and the **Trigger** simultaneously to turn the front flashlight ON or OFF.

5.6 High/Low Temperature Alarm

The device can be set to alert you when the measured temperature exceeds or falls below a set threshold.

1. Long press the **MODE** button until "HAL" (High Alarm) or "LAL" (Low Alarm) appears.

2. Use the **°F/UP** and **°C/DN** buttons to set the desired high or low temperature threshold.

3. Press **MODE** to switch between HAL and LAL settings.

4. Press **MODE** again to confirm and exit.

5. When the measured temperature exceeds HAL or falls below LAL, the alarm will flash on the screen.

6. SPECIFICATIONS

Feature	Specification
Temperature Range	-58°F ~ 3272°F (-50°C ~ 1800°C)
Accuracy	+/- 3% +3 digits for -58 to 320°F; +/- 2% +2digits for 32 to 2120°F; +/- 3% +3digits for 2120 to 3272 °F
Distance to Spot Ratio (D:S)	50:1
Response Time	0.25 seconds
Emissivity	Adjustable 0.1 to 1.0

Feature	Specification
Display Type	Digital, Backlit LCD
Laser Type	Class 2, Wavelength 630~670 um, Optical power <0.5mW
Power Supply	9V Battery (included)
Auto Power Off	Yes
Product Dimensions	Approx. 9.37 x 6.34 x 3.19 inches
Weight	Approx. 1.19 Pounds
Outer Material	Metal with non-slip rubber handle
Included Components	Industrial Thermometer, Carrying Case, 9V Battery, Screwdriver, Carabiner

7. MAINTENANCE AND CARE

- **Cleaning:** Wipe the device clean with a soft, damp cloth. Do not use harsh chemicals or abrasive materials. Ensure the lens is clean for accurate readings.

- **Battery Replacement:** When the low power indicator appears on the display, replace the 9V battery promptly. Refer to Section 4.1 for battery installation instructions. It is recommended to remove the battery if the device will not be used for an extended period (e.g., several months) to prevent battery drain and potential leakage.

- **Storage:** Store the thermometer in its protective carrying case when not in use. Keep it in a dry environment, away from extreme temperatures, humidity, and direct sunlight.

- **Avoid Drops:** While durable, avoid dropping the device to prevent damage to internal components or the sensitive infrared lens.

8. TROUBLESHOOTING

Problem	Solution
Device does not power on.	Check if the 9V battery is installed correctly with proper polarity. Replace the battery if it is depleted. Ensure the battery compartment is securely closed.
Inaccurate temperature readings.	Verify the emissivity setting matches the material being measured (refer to Section 5.4). Ensure the infrared lens is clean and free from dust or debris. Confirm you are within the optimal distance for the 50:1 D:S ratio. Avoid measuring through glass or other transparent surfaces, as this can lead to inaccurate readings. Remember that this device is not for human or animal temperature measurement.
Display is dim or hard to read.	Activate the backlight by pressing the Backlight/Flashlight button. In direct sunlight, the LCD may still be challenging to read; try to shade the screen.
Laser pointer is not working.	Press the Laser Pointer button to activate it. If it still doesn't work, check battery level.

Problem	Solution
Readings above 999°F appear truncated (e.g., 112 instead of 1120).	For readings above 999°F, the display may show only the last three digits. In such cases, mentally add a zero to the end of the displayed number (e.g., 112 displayed means 1120°F). This is a known characteristic for some high-temperature infrared thermometers.

9. WARRANTY AND SUPPORT

The BTMETER BT-1800 Infrared Thermometer comes with a **12-month warranty** from the date of purchase, covering manufacturing defects and material flaws under normal use.

For technical support, warranty claims, or any inquiries regarding your product, please contact BTMETER customer service through the retailer's platform or visit the official BTMETER website for contact information. Please have your purchase receipt and product model number (BT-1800) ready when contacting support.

BTMETER Official Store: Visit BTMETER Store on Amazon