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WARRANTY, SERVICE, OR RECALIBRATION
For warranty, service, or recalibration, contact:

TRACEABLE® PRODUCTS

Traceable® Products is ISO 9001:2018 Quality-Certi ied by DNV and ISO/IEC 17025:2017 accredited as a Calibration Laboratory by A2LA.

 92-4472-00 Rev. 5 032420

TRACEABLE® INFRARED THERMOMETER WITH MEMORIES/ ALARM INSTRUCTIONS

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Emissivity Adjustment

Emissivity adjustments are used to provide a truer temperature reading. Different materials radiate infrared energy at slightly different temperatures. The emissivity adjustment is used to compensate for different types of materials.

The factory set emissivity of 0.95 will cover 90% of typical applications. The following instructions indicate how to change the emissivity setting. The following table provides a guide of different emissivity values for different materials.

When the emissivity of an object is unknown use a non-infrared thermometer, such as a probe type thermometer to measure the object's surface. Then adjust the emissivity until the temperature of the Infrared Thermometer matches the temperature of the probe type thermometer. Use this emissivity value to measure similar materials.

To set emissivity you must pass through the alarm setting function. Press and hold the MODE button and the LCD displays the alarm adjustment function. Go through the key presses for the alarm setting function. Press the MODE button again to display the current emissivity value (preset to 0.95). The emissivity range is 0.3 to 1.0. Press the "C/F ▼" button to decrease and the "☼/▲" button to increase the emissivity setting. Pressing the MODE button will lock in the value. This value will become the unit's default value until reset.

Typical Emissivity Values - METALS

SURFACE	EMISSIVITY
Iron and Steel	
Cast iron (polished)	0.2
Cast iron (tumed at 100°C)	0.45
Cast iron (tumed at 1000°C)	0.6 to 0.7
Steel (ground sheet)	0.6
Mild steel	0.3 to 0.5
Steel plate (oxidized)	0.9
Iron plate (rusted)	0.7 to 0.85
Cast iron (rough) rusted	0.95
Rough ingot iron	0.9
Molten cast iron	0.3
Molten mild steel	0.3 to 0.4
Stainless steel (polished)	0.1
Stainless steel (various)	0.2 to 0.6
Aluminum	
Polished aluminum	0.1*
Aluminum (heavily oxidized)	0.25
Aluminum oxide at 260°C	0.6
Aluminum oxide at 800°C	0.3
Aluminum Alloys, various	0.1 to 0.25
Brass	
Brass (polished)	0.1*
Brass (roughened surface)	0.2
Brass (oxide)	0.6
Copper	
Copper (polished)	0.05*
Copper (oxide)	0.8
Molten copper	0.15
Lead	
Leadr (polished)	0.1*
Leadr (oxide at 25°C)	0.3
Leadr (oxide)	0.6
Nickel and Its Alloys	
Nickel (pure)	0.1*
Nickel plate (oxide)	0.4 to 0.5
Nichrome	0.7
Nichrome (oxide)	0.95
Zinc (oxidized)	0.1*
Galvanized iron	0.3
Tin-plated steel	0.1*
Gold (polished)	0.1*
Silver (polished)	0.1*
Chromium (polished)	0.1*

Typical Emissivity Values - NON-METALS

SURFACE	EMISSIVITY
Refractory & Building Materials	
Red brick (rough)	0.75 to 0.9
Fire clay	0.75
Asbestos	0.95
Concrete	0.7
Marble	0.9
Carborundum	0.85
Plaster	0.9
Alumina (fine grain)	0.25
Alumina (coarse grain)	0.45
Silica (fine grain)	0.4
Silica (coarse grain)	0.55
Zirconium silicate up to 500°C	0.85
Zirconium silicate at 850°C	0.6
Quartz (rough)	0.9
Carbon (graphite)	0.75
Carbon (soot)	0.95
Timber (various)	0.8 to 0.9
Miscellaneous	
Enamel (any color)	0.9
Oil paint (any color)	0.95
Lacquer	0.9
Matte black paint	0.95 to 0.98
Aluminum lacquer	0.5
Water	0.98
Rubber (smooth)	0.9
Rubber (rough)	0.98
Plastics (various, solid)	0.8 to 0.95
Plastic films (0.05 mm thick)	0.5 to 0.95
Polythene film (0.03 mm thick)	0.2 to 0.3
Rubber (smooth)	0.9
Rubber (rough)	0.98
Plastics (various, solid)	0.8 to 0.95
Plastic films (0.05 mm thick)	0.5 to 0.95
Polythene film (0.03 mm thick)	0.2 to 0.3
Paper and cardboard	0.9
Silicone polish	0.7

*Emissivity varies with purity

SPECIFICATIONS

Range: –4 to 788°F / –20 to 420°C

Resolution: 1°

Accuracy: ±2° C, ±2%

Alarm: Audio

Emissivity: 0.3 to 1.0

Sampling Rate: 0.5 second

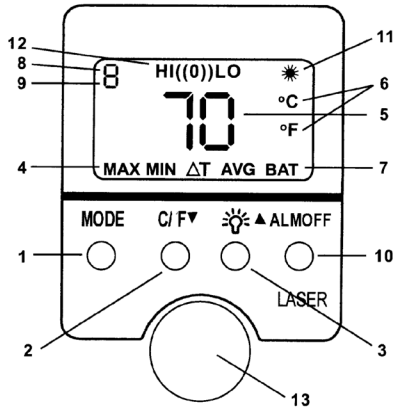
Features: Backlight, 9 Point Memory, Laser Targeting, Programmable Alarm

Included: Lanyard and carrying case

Battery: 9-Volt

CONTROLS AND INDICATORS

1. **MODE key**. Temperature display mode select, memory recall and programming select button.
2. **C/F ▼ key**. Fahrenheit/Celsius select button and mode down/decrease button.
3. ☼/▲ **key**. Backlight button and up/increase selector.
4. **MAX/MIN/▲T/AVG**. Temperature display mode indicator.
5. Temperature measurement reading.
6. **C/F**. Fahrenheit/Celsius scale indicator.
7. **BAT**. Low battery annunciator.
8. 8. Memory location annunciator.
9. 8 Emissivity annunciator.
10. **ALMOFF key**. Alarm mode indicator button and laser on/off.
11. ✷. Laser-on annunciator
12. **HI((0))LO**. Alarm mode indicators.
13. **POWER/HOLD key**. Turns unit off/on and holds reading.

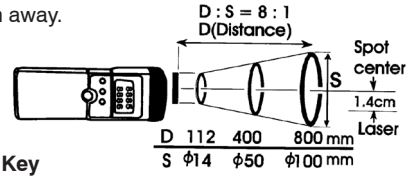


DISTANCE / SPOT RATIO

To take temperature measurements, point the meter at the surface to be measured and press the power button.

There are other factors that may effect measurement accuracy - the target must completely fill the spot diameter seen by the infrared senor, otherwise readings will be influenced by the surface surrounding the target.

The ratio of the distance to the size of the spot being measured is 8:1. For example, an object's diameter of 100mm can be measured from 800mm away.



Power Key

With each press of the power key, five values are recorded:

1. MAX - Highest temperature measured
2. MIN - Lowest temperature measured.
3. Difference between MAX and MIN
4. Time-weighted average temperature.
5. The value last displayed before releasing the button.

Selecting °F or °C

Pressing the blue "C/F ▼" button will toggle the temperature in °F or °C.

Backlight Operation

The yellow "☼/▲" button will toggle the backlight off and on. Once the backlight has been turned on, it will come on each time the power key is pressed until it is toggled off.

Measurement Modes

Press and hold down the power button. While holding down the power button, press the mode button. Each press of the MODE button will select one of the 5 temperature modes. You can cycle through the modes in this order:

1. Real-time temperature - the value is updated once every 1/2 second (no words or symbols appear on lower line).
2. "MAX" (Maximum temperature) - press the MODE button repeatedly until you see the word MAX displayed on the LCD. In the MAX mode the highest temperature measurement taken is displayed on the LCD and will update each time a higher temperature is measured.

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