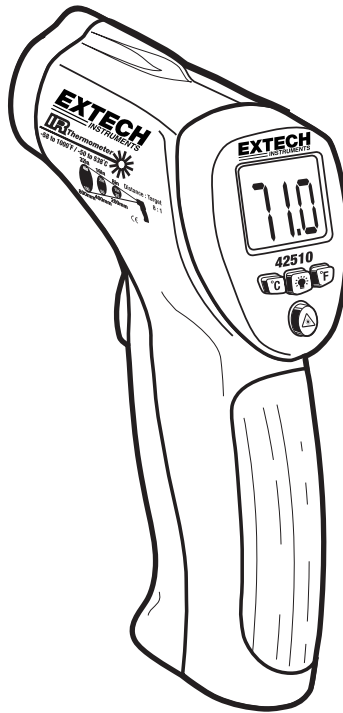# User's Manual

EXTECH
INSTRUMENTS

Wide Range Mini InfraRed Thermometer
with Laser Pointer

MODEL 42510

Introduction

Congratulations on your purchase of the Model 42510 IR Thermometer. This thermometer measures and displays non-contact (infrared) temperature readings at the touch of a button. The built-in laser pointer increases target accuracy while the backlit LCD and handy push-buttons combine for convenient, ergonomic operation. Proper use and care of this meter will provide years of reliable service.

Warranty

Safety

- Use extreme caution when the laser pointer beam is on

- Do not point the beam toward anyone's eye or allow the beam to strike the eye from a reflective surface

- Do not use the laser near explosive gases or in other potentially explosive areas

CAUTION

LASER RADIATION
DO NOT STARE INTO BEAM

DIODE LASER
<1mW Output at 675nm
CLASS II LASER PRODUCT

Specifications

Infrared Thermometer Specifications

Range / Resolution	-58 to 200^{0}F (-50 to 200^{0}C)	0.1^0
	200°F to 1000°F (200^{0}C to 538°C)	1°
Accuracy	± 1% of reading or ± 1.8^{o}F (1°C) whichever is greater, from 60 to 113°F (15 to 50°C)	
	± 2% of reading or ± 4°F (2°C) whichever is greater, for remainder of range: -58 to 1000°F (-50 to 537°C)	
	Note: Accuracy is specified for the following ambient temperature range: 64 to 82°F (18 to 28°C)	
Emissivity	0.95 fixed value	
Field of View	D/S = Approx. 8:1 ratio (D = distance; S = spot)	
Laser power	Less than 1mW	
Spectral response	6 to 14 μm (wavelength)	

General Specifications

Display	Backlit LCD display with function indicators
Display update rate	1 second approx.
Operating Temperature	32^{0}F to 122^{0}F (0^{0}C to 50^{0}C)
Operating Humidity	Max. 80% RH.
Power Supply	9V battery
Automatic Power Off	Meter shuts off automatically after 6 seconds
Weight	6.4 oz. / 180g
Dimensions	3.2 x 1.6 x 6.3" (82 x 42 x 160mm)

Meter Description

1. Laser pointer beam
2. IR Sensor
3. Measurement trigger
4. Battery compartment cover
5. Handle grip
6. LCD Display
7. Function Buttons
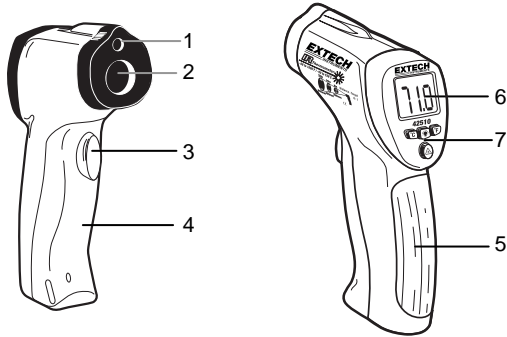
Operating Instructions

1. Hold the meter by its Handle Grip and point it toward the surface to be measured.
2. Pull and hold the orange Trigger to turn the meter on and begin testing. The temperature reading, the 'SCAN' icon, the emissivity icon (E=0.95), and the unit of measure will appear. Note: Replace the battery if the display does not light.
3. While continuing to pull the Trigger:
   a. Push the laser button ⚠ to turn on the laser pointer. When the laser is ON the laser icon⚠ will appear on the LCD over the temperature reading. Aim the red beam approximately a half inch above the point of test (pressing the laser button again turns the laser off).
   b. Select the temperature units using the $^\circ$**C** or $^\circ$**F** button.
   c. Push the backlight button ☼ to turn on the LCD backlighting function.
4. Release the Trigger and the reading will hold for approximately 6 seconds (HOLD will appear on the LCD) and then the meter will automatically shut off.

Over-range Indicator

If the temperature measurement exceeds 1000°F (538°C), the thermometer will display dashes in place of a temperature reading.

Field of View

The meter's field of view is 8:1. For example, if the meter is 16 inches from the target (spot), the diameter of the target must be at least 2 inches. Other distance ratios are shown below in the field of view diagram.

Note that measurements should normally be made less than 2 feet from the target. The meter can measure from further distances but the measurement may be affected by external sources of light. In addition, the spot size may be so large that it encompasses surface areas not intended to be measured.

Diameter of Spot

Distance to Object
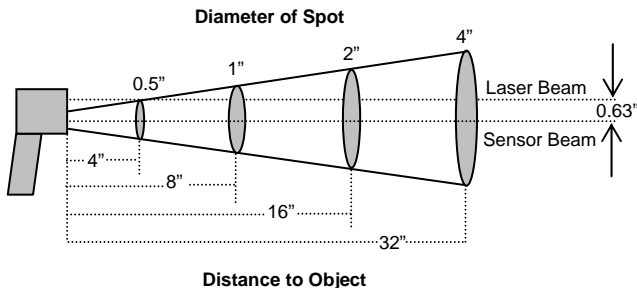
Measurement Notes

1. The object under test should be larger than the spot (target) size calculated by the field of view diagram.
2. If the surface of the object under test is covered with frost, oil, grime, etc., clean before taking measurements.
3. If an object's surface is highly reflective, apply masking tape or flat black paint to the surface before measuring.
4. The meter may not make accurate measurements through transparent surfaces such as glass.
5. Steam, dust, smoke, etc. can obscure measurements.
6. The meter compensates for deviations in ambient temperature. It can, however, take up to 30 minutes for the meter to adjust to extremely wide ambient temperature changes.
7. To find a hot spot, aim the meter outside the area of interest then scan across (in an up and down motion) until the hot spot is located.

Battery Replacement

When the low battery symbol ⬚ appears on the lower left side of the display, replace the meter's battery (9V). The battery compartment is located behind the light green panel that surrounds the meter's trigger (see diagram). Open the compartment by pulling the light green panel down from the trigger area. Replace the 9V battery and close the battery compartment cover.

Calibration and Repair Services

Extech offers repair and calibration services for the products we sell. Extech also provides NIST certification for most products. Call the Customer Service Department for information on calibration services available for this product. Extech recommends that annual calibrations be performed to verify meter performance and accuracy.

☎

Support line (781) 890-7440

Technical support: Extension 200; E-mail: support@extech.com

Repair & Returns: Extension 210; E-mail: repair@extech.com

Product specifications subject to change without notice

For the latest version of this User's Guide, Software updates, and other up-to-the-minute product information, visit our website: www.extech.com

Extech Instruments Corporation, 285 Bear Hill Rd., Waltham, MA 02451