

Luxury Candle Supplies

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All pictures shown are for illustration purpose only. Actual product may vary due to product enhancement. Made in China.



infrared thermometer

Instructions Manual

IMPORTANT! Please read, observe and understand the usage and safety instructions of this thermometer before usage. When using this thermometer, please observe the basic safety precautions in order to reduce, fire, electric shock or personal injury.

FEATURES

- Precise non-contact measurements
- Built in laser pointer
- Automatic selection 0.1°C/1°C
- °C/°F switchable button
- Automatic Data Hold & Auto power
- The meter at 12 inches away measures a 1 inch target
- Backlit LCD display

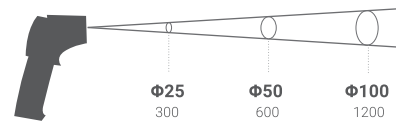
WIDE RANGE OF APPLICATIONS

Measuring wax temperatures, food preparation, safety and fire inspectors, plastic moulding, asphalt, marine and screen printing, measure ink and dryer temperature, diesel and fleet maintenance.

FIELD OF VIEW

Meter's field of view is 12:1, meaning that if the meter is 12 inches away from the target, the diameter of the object under test must be at least 1 inch. Other distances are shown below in the diagram. Refer to the chart printer on the meter for more information.

Fig.1



Distance (D) : Spot (S) = 12:1 Unit : mm

SAFETY

- Use extreme caution when the laser beam is on.
- Do not let the beam enter your eye, another person's eye or the eye of an animal.
- Be careful not to allow the reflection of the beam to strike your eye.
- Do not allow the laser light beam impinge on any gas which can explode.



CAUTION
LASER RADIATION DO NOT STARE INTO BEAM
DIODE LASER 1mW Output at 675nm, Class II Laser Product

SPECIFICATIONS

General Specifications

Display	3-1/2 digit (1999 count) LCD with backlighting
Temperature range	-50°C to 380°C (-58°F - 716°F)
Polarity	Automatic (no indication for positive polarity); Minus (-) sign for negative polarity.
Emissivity	0.95 fixed value
Field of view	D/S = Approx. 12:1 ratio (D = distance, S = spot) (Has 90% encircled energy at the focal point)
Diode Laser	Output <1mW, Wavelength 630~670nm, class 2(II) Laser product
Spectral Response	6~14um
Power Off	Automatic shut off after 7 seconds, approx.
Operating Temperature	0°C - 50°C (32°F - 122°F)
Storage Temperature	-20°C - 60°C (-4°F - 140°F)
Relative Humidity	10%~90%RH operating, <80%RH storage
Power Supply	9V battery, NEDA 1604A or IEC 6LR61, or equivalent
Weight	130g
Size	86mm x 46mm x 160mm

Infrared Thermometer Specifications

RANGE (Automatic selection 0.1°C/1°C)	UTOMATIC RESOLUTION	ACCURACY
-50.0°C to 380.0°C	-50.0°C to -20.0°C	0.1°C/1°C
	-20.0°C to 380.0°C	± 2% of reading or ± 2°C
-58°F to 716.0°F	-58.0°F to -4.0°F	0.1°F/1°F
	-4.0°F to 716°F	±2% of reading or ±3.6°F

NOTE

Accuracy is given at 18°C to 28°C (64°F to 82°F), less than 80%RH.

FIELD OF VIEW

Make sure that the target is larger than the units spot size. The smaller the target, the closer you should be to it. When accuracy is critical, make sure the target is at least twice as large as the spot size.

EMISSIVITY

0.95 fixed value

FRONT PANEL DESCRIPTION

- 1 IR Sensor
- 2 Laser sight
- 3 LCD Display
- 4 Laser Button
- 5 Backlight Button
- 6 Mode Button
- 7 °C/°F Button
- 8 Measurement Frigger
- 9 Battery Cover
- 10 Handle



TIP! MEASURING WAX TEMPERATURES

Direct the thermometer approx. 10cm directly over liquified wax. Never point the thermometer above the wax while in a wax melter as it may register the temperature off the heating elements of the melter. For accuracy, always dispense your wax in pouring jugs to measure your heated liquified wax.

NOTE: MEASUREMENT CONSIDERATIONS

Holding the meter by it's handle, point the IR Sensor towards the object whose temperature is to be measured. The meter automatically compensates for temperature deviations from ambient temperature. Keep in mind it will take 30 seconds to complete the compensation, if you plan to operate low temperature measurements after high temperature measurements for several minutes. This is a result of the cooling process which must take place for the IR sensor.

BATTERY REPLACEMENT

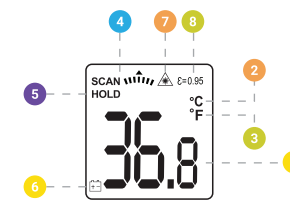
- When battery power is not sufficient, LCD will display to prompt that a new battery is required. This meter utilises a 9V type battery.
- Open battery cover, remove the old battery from the instrument and replace with a new 9V battery and replace the battery cover.

NOTES

- **How it Works**
Infrared thermometers measure the surface temperature of an object. The unit's optic's sense emitted, reflected and transmitted energy, which is collected and focused onto a detector. The unit's electronics translate the information into a temperature reading which is displayed on the unit. In units with a laser, the laser is used for aiming purposes only.
- **Field of View**
Make sure that the target is larger than the unit's spot size. The smaller the target, the closer you should be to it. When accuracy is critical, make sure the target is at least twice as large as the spot size.
- **Distance & Spot Size**
As the distance (D) from the object increases, the spot size (S) of the area measured by the unit becomes larger. See Fig. 1.

INDICATOR

- 1 Digital readout
- 2 Temperature °C (Celsius)
- 3 Temperature °F (Fahrenheit)
- 4 Measuring Indication
- 5 Data Hold
- 6 Low Battery Indicator
- 7 Laser Point
- 8 Fixed Emmissivity



MEASUREMENT OPERATION

1. Hold the meter by its HANDLE GRIP and point it toward the surface to be measured.
2. Pull and hold the TRIGGER to turn the meter on and begin testing. The display will light if the battery is good. Replace the battery if the display does not light up.
3. While measuring, the **SCAN** display icon will appear in the upper left corner of the LCD.
4. 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. Aim the red beam approximately a half inch above the point of the test (pressing the LASER button again turns the laser off).
 - b. Select the temperature units (°C or °F) using the °C and °F buttons.
 - c. Push the BACKLIGHT key to turn on the LCD backlighting function.
 - d. Press MODE button to switch the maximum minimum value.
5. Release the TRIGGER and the **HOLD** display icon will appear on the LCD indicating that the reading is being held.
6. The meter will automatically power down after approximately 7 seconds after the trigger is released.

NOTES (Cont'd)

- **Locating a Hotspot**
To find a hot spot aim the thermometer outside the area of interest, then scan across with an up and down motion until you local the hotspot.
- **Reminders**
 - i. Not recommended for use in measuring shiny or polished metal surfaces (stainless steel, aluminium, etc.). See Emmissivity section below.
 - ii. The unit cannot measure through transparent surfaces such as glass. It will measure the surface temperature of the glass instead.
 - iii. Steam, dust, smoke etc., can prevent accurate measurement by obstructing the unit's optics.
- **Emissivity**
Most (90% of typical applications) organic materials and painted or oxidized surfaces have an emissivity of 0.95 (pre-set in the unit). Inaccurate readings will result from measuring shiny or polished metal surfaces. To compensate, cover the surface to be measured with masking tape or flat black paint. Allow time for the tape to reach the same temperature as the material underneath it. Measure the temperature of the tape or the painted surface.

Emmissivity Values

SUBSTANCE	THERMAL EMISSIVITY	SUBSTANCE	THERMAL EMISSIVITY
Asphalt	0.90 to 0.98	Cloth (black)	0.98
Concrete	0.94	Human Skin	0.98
Cement	0.96	Leather	0.75 to 0.80
Sand	0.90	Charcoal (powder)	0.96
Earth	0.92 to 0.96	Lacquer	0.80 to 0.95
Water	0.92 to 0.96	Lacquer (matte)	0.97
Ice	0.96 to 0.98	Rubber (black)	0.94
Snow	0.83	Plastic	0.85 to 0.95
Glass	0.90 to 0.95	Timber	0.90
Ceramic	0.90 to 0.94	Paper	0.70 to 0.94
Marble	0.94	Chromium Oxides	0.81
Plaster	0.80 to 0.90	Copper Oxides	0.78
Mortar	0.89 to 0.91	Iron Oxides	0.78 to 0.82
Brick	0.93 to 0.96	Textiles	0.90