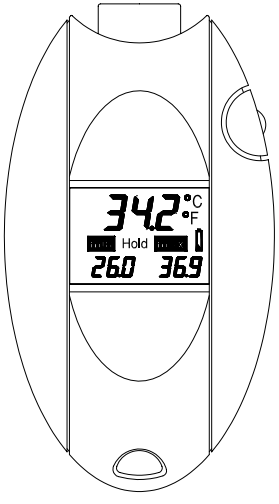
IR 101
InfraScan™
Infrared Thermometer

Instruction Manual



LA CROSSE TECHNOLOGY *tools and technology for home and office*

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General

1. Quick Instructions

Press and hold the operating button for more than 1.5 seconds. The temperature of the surface the lens is aimed at will read on the top of the display. The minimum and maximum temperatures of the current measurement are shown on the bottom of the display. When the operating button is released "Hold" will be displayed between "min" and "max" indicating the measurement is completed. After 4 seconds the backlight will turn off. The unit will switch off after 8 seconds. Press and hold the operating button again to begin a new measurement. To switch between °F and °C simply "double click" the operating button.

2. Equipment Supplied

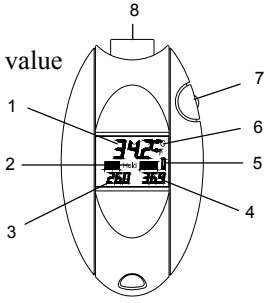
a. Infrared Thermometer base unit
b. 4 button cell batteries (already in unit)
c. Neck strap
d. Soft sided case

3. Description of measuring principle

When making a temperature measurement, the surface radiation of the object to be measured is evaluated using the principle of radiation thermometry. This is a purely passive process, i.e. no radiation is transmitted, but instead, use is only made of the natural electromagnetic radiation energy (heat radiation) that every body above a temperature of absolute zero (-273 °C) has. The temperature can be determined very accurately from this radiation energy if the emission factor of the object being measured is known.

Operation

1. **Display and operator controls**
   All of the functions of the measuring unit are controlled and monitored using the operating button (7) and the back lit display.



   a. Temperature display - currently measured value
   b. Hold indicator
   c. Temperature display - minimum value
   d. Temperature display - maximum value
   e. Battery symbol – low battery indicator
   f. Temperature units – °F or °C
   g. Operating Button
   h. Lens

2. **Making a measurement**
   The object being measured should be a minimum of twice the size of the infrared thermometer's lens. The ideal measuring distance is 3 to 12 inches, which will yield a measurement area of ½ inch to 2 inches. As the infrared thermometer is moved away from the object being measured the area being measured increases (6:1 ratio).

   The infrared thermometer is switched on by holding the operating button down for 1.5 seconds or more. By continuously holding down the operating button the measured value will be updated as long as the operating button is pressed. Releasing the operating button will finish the measurement. The "Hold" indication signals that measuring has stopped. The backlight will shut off 4 seconds after the operating button is released. The infrared thermometer will automatically switch off 8 seconds after the last measurement. Holding down the operating button again will clear the minimum and maximum memory and begin a new measurement.

3. **Minimum and maximum temperature indication**
   The minimum and maximum value memories are cleared at the start of a measurement by pressing the operating button. The temperature will be measured and the minimum and maximum temperatures will be determined for as long as the button is pressed. The minimum temperature is shown in the lower left-hand part of the display and the maximum temperature can be seen in the lower right hand part. These values each apply to the current measuring cycle and are cleared as soon as the button is pressed again.

4. **Changing the temperature units (°F/°C)**
   The units for the temperature display can be switched between degrees Celsius (°C) and degrees Fahrenheit (°F) by pressing the button briefly twice (double click).

5. **Back light**
   The LCD back light is constantly switched ON while the operating button is pressed. When the operating button is released, the backlight will be ON for approximately 4 seconds before automatically switching off 8 seconds after the last measurement.

6. **Measurement inaccuracies**
   The following points should be observed in order to avoid measurement errors:
   a. It must be ensured that the object to be measured completely fills the Infrared Thermometer monitoring area. Errors can occur when measuring small objects, as the unit also monitors the temperature of the surroundings as well as the object to be measured.
   b. The principle of measurement requires the ambient temperature to be determined. This takes place at one-minute intervals or each time the unit is switched on. Changes in the ambient temperature, which can occur when the user holds the unit in their hand, are not monitored within this time period and therefore neither of them is taken into account when determining the indicated temperature. A gradual warming of the unit (the lens) between ambient temperature measurements can, for example, lead to the indicated temperature slowly falling.
   c. If the emission factor for the object does not correspond to the preset value of 0.95, the temperature will not be calculated correctly. Most surfaces have an emission factor in the range of 0.8 to 0.98. In general,

the darker and more matte the surface is, the larger their emissions factor. If the factor is greater the 0.95, the temperature indicated will be greater than the actual temperature of the object being measured. If the factor is less then 0.9, the temperature indicated will be less than the surface temperature. Polished metals have a very low emission factor and are therefore not suitable for measuring with an infrared thermometer. On the other hand, affixing adhesive tape to or painting the surface will increase the emission factor and reduce the inaccuracy of the measurement.

d. It is not possible to take measurements through transparent materials (glass, plexiglas, etc.).
e. It is not possible to measure air temperatures.
f. Measurement errors can occur due to air contaminated with dust, steam, smoke, etc.

7. TROUBLESHOOTING

Problem: Display shows -.-
Solution: The operating button has not been pressed for long enough. This must be pressed for at least the duration of one measurement, i.e. for at least 1.5 seconds.

Problem: Display shows **Err 1**
Solution: The ambient temperature is outside the permitted range

Problem: Display shows **1**
Solution: The measured value is outside the permitted range.

Problem: Battery symbol illuminates
Solution: The batteries are dead.

NOTE: *For problems not solved, please contact La Crosse Technology.*

Maintenance

1. **Changing the batteries**
   If the battery symbol appears in the display, the batteries must be changed. The four button cells are accessible after opening the battery compartment at the rear of the unit. The used batteries must be removed from the battery holders and replaced by new button cells of the same type. Only LR44 type batteries may be used. Care must be taken to ensure that the polarity is correct when inserting. The plus terminal of all four batteries should point upwards. The batteries must be checked to see that they are properly seated before closing the battery compartment.

2. **Cleaning**
   Clean the unit using only a dry cloth. If the unit is very dirty, the cloth may be slightly dampened. Do not use cleaners containing solvents. Make sure that no moisture enters the interior of the unit. When cleaning the lens, loose particles must be removed using compressed air. Any remaining dirt can then be removed with a soft brush or with a cotton swab moistened with water.

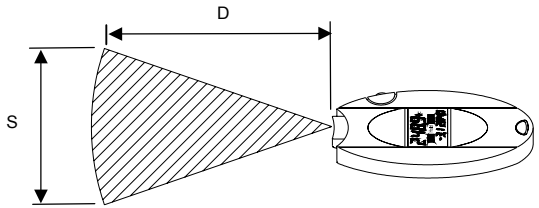
CAUTION Do not use cleaners containing solvents.

Fastening the Infrared Thermometer

A soft-sided pouch with a belt loop and a quick release neck strap are included with the infrared thermometer. To attach the infrared thermometer to the neck strap simply insert the clip of the neck strap into the buckle end of the thermometer until it clicks. To release, press both sides of the clip on the neck strap and pull the buckle end until it is free.

Technical Information

1. Accuracy: The larger of the two values given is applicable in each case.
2. Distance to measuring spot size: The parameter D : S characterizes the size of the measuring spot in proportion to the distance between the object to be measured and the Infrared Thermometer. For example, with a ratio of 6 : 1 and a distance of 12 inches, the monitoring area will have a diameter of 2 inches.



Range	:	-5°F to 575°F
Resolution	:	0.1 °F
Accuracy	:	± 1°F
Unit	:	°F or °C
Distance to measuring spot size D:S	:	6:1
Ambient temperature range	:	32°F to 104°F
Emission factor	:	0.95
Power supply	:	4 x LR44 button cell batteries
Battery life (approx.)	:	2000 measurements (depending on the usage)
Dimensions (L"xW"xH")	:	2.25" x 1" x 4"

3. Emissions factor: The physical quantity known as the emission factor describes to what extent the infrared heat radiation that is emitted from an object is determined by its own temperature. Accordingly, a value of 1 tells us that the infrared heat radiation from the object is based only on its own

temperature. A value of less than 1 means that the radiation emitted from the object is not only determined by its own temperature but also by reflections from neighboring bodies or due to the transmission, i.e. the diathermancy, of the object. The emission factor thus has an effect on the result of the measurement. The Infrared Thermometer works with an emission factor of 0.95, i.e. the measuring unit assumes that the object being monitored has a factor of 0.95. If this is not the case, there will be inaccuracies in the measurement (see Section 2.6 “Measurement Inaccuracies”).

WARRANTY INFORMATION

La Crosse Technology provides a 1-year warranty on this infrared thermometer. Contact La Crosse Technology immediately upon discovery of any defects covered by this warranty.

Before sending the infrared thermometer in for repairs, contact La Crosse Technology. The infrared thermometer will be repaired or replaced with the same or similar model.

This warranty does not cover any defects resulting from improper use, unauthorized repairs or faulty batteries.

LA CROSSE TECHNOLOGY WILL NOT ASSUME LIABILITY FOR INCIDENTAL, CONSEQUENTIAL, PUNITIVE, OR OTHER SIMILAR DAMAGES ASSOCIATED WITH THE OPERATION OR MALFUNCTION OF THIS INFRARED THERMOMETER. THIS PRODUCT IS NOT TO BE USED FOR MEDICAL PURPOSES OR FOR PUBLIC INFORMATION. THIS PRODUCT IS NOT A TOY. KEEP OUT OF CHILDRENS' REACH.

This warranty gives you specific legal rights. You may also have other rights specific to your State. Some States do no allow the exclusion of consequential or incidental damages therefore the above exclusion of limitation may not apply to you.

For warranty work, technical support, or information contact

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