

# ThermoHawk™ Series Owner Manual

## Overview of the ThermoHawk™ Series

The ThermoHawk™ is a non-contact touchless infrared thermometer designed to instantly test surface temperatures at the touch of a button. The ThermoHawk™ operates on two LR-44 1.5V cell batteries.

## What is Infrared Temperature Testing?

Surface temperature measurement traditionally had been a slow process that required contact with a surface probe or sensor. This creates issues with surfaces that are too hot to touch or move. Also, because constant contact is required and readings are slow, continuous surface temperature monitoring is difficult. These problems have been overcome with developments in infrared (IR) measurement technology.

Understanding how infrared thermometers work is relatively simple. All objects emit infrared energy. As objects increase in heat, their molecules become more active and in turn emit more infrared energy. Optical sensors placed inside an infrared thermometer collect the infrared energy emitted by an object and send the energy to a detector. The detector then is able to take the signal and convert it to a digital reading.

IR thermometers offer many advantages over older contact surface temperature measurement devices, such as:

- IR thermometers have the ability to take temperature measurements of hot, hazardous, sterile, or small areas without contact.
- IR thermometers are substantially more accurate compared to many contact devices. (The ThermoHawk™ has a margin of error of only  $\pm 2.5\%$ .)
- IR thermometers have a substantially shorter response time compared to contact thermometers. It is not uncommon to wait 30 seconds or more when taking a surface measurement with a conventional contact thermometer. IR thermometers have response times as low as  $\frac{1}{2}$  a second.

## Preparation

### Installing the Battery

Insert enclosed LR-44 batteries.



Installing LR44 batteries



Installing AAA battery (flashlight models only)

### Switching Between Fahrenheit (F) or Celsius (C)

To switch the display between F or C, use a paper clip or pin head to press the C/F Switch to set the desired temperature display method. (Note: The unit comes factory set to display in Fahrenheit(F).

# Operating Instructions

1. Remove the Sensor Cap.
2. Press the On/Test Button.
3. Point the device at the desired object and press the On/Test Button to test.\*
4. If the device is not used it will automatically shut off after 15 seconds.

**\*Note** the ThermoHawk™ has a Distance-to-Spot (D:S) ratio of 1:1. This means that the distance the tip of the thermometer can be held from the diameter of the spot to be measured. Therefore, to measure a spot with a 1 inch diameter, you would need to hold the device 1 inch from the test spot. To test a spot that is 20 inches in diameter, you could effectively test the spot at a distance of 20 inches from the device.

## Operating Instructions For Models That Include The Flashlight Feature

1. Press the flashlight on/off button.
2. Press the on/off button again when testing is completed to avoid draining the battery because the flashlight will not automatically shut off.

## Temperature Conversions

$$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$$

$$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \times 0.555$$

$$^{\circ}\text{Kelvin} = ^{\circ}\text{C} + 273.2$$

$$^{\circ}\text{Rankin} = ^{\circ}\text{F} + 459.67$$

## Understanding the Results

The ThermoHawk™ is capable of displaying surface temperature readings in either the Fahrenheit (F) or Celsius (C) temperature scales. (See Preparation above for changing the display). For more detailed temperature conversions, see Temperature Conversions section.

## Specifications

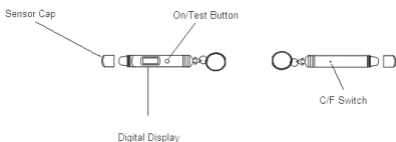
Model	ThermoHawk™ 200	ThermoHawk™ 400/400L
Measurement Range	-33 to 110°C (-27 to 230°F)	-33 to 220°C (-27 to 428°F)
Operating Range	0 to 50°C (32 to 122°F)	0 to 50°C (32 to 122°F)
Accuracy	+/-2.5% (2.5°C)	+/-2.5% (2.5°C)
Resolution	0.2°C (0.5°F)	0.2°C (0.5°F)
Response Time	1 second	1 second
Distant to Spot Ratio (D:S)	1:1	1:1
Emissivity	0.95 fixed	0.95 fixed
Dimension	0.50 x 5 Inches	0.50 x 5 Inches (400 model)
Wave Length	5 um - 14 um	5 um - 14 um
Weight	1.6 Ounces	1.6 Ounces (400 Model)
Power	Two LR44 Batteries	Two LR44 Batteries (Note: Model 400L requires 1 AAA battery for flashlight operation).

# Components Diagrams

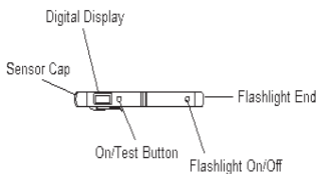
## ThermoHawk™ 200/400

Front

Back



## ThermoHawk™ 400L



# Precautions

- 1.Keep out of reach of children.
- 2.This device is not designed or to be used to test internal body temperature or for any other medical application.
- 3.When the low battery icon is displayed, replace the LR-44 batteries.
- 4.Use of the device outside the environment temperature range of 32-120°F may affect the accuracy of the device.
- 5.This device has an emissivity of 0.95. In other words, this device is set to measure objects that do not have high reflection. This device cannot accurately test objects with a high amount of reflective properties such as a mirror or tin foil.
- 6.This device should not be used to test items through glass because it will typically provide the surface temperature of the glass itself and not the object through the glass.

## DISCLAIMER

Manufacturer and Q3I expressly disclaim any liability for incidental, special, or consequential damages of any nature when using this device. This device should only be used for testing surface temperatures of objects. It is NOT designed or to be used to test internal body temperature or for any other medical or clinical application. This device should only be used in accordance with the instructions and when obeying all precautions and warnings.

## LIMITED WARRANTY

Manufacturer and Q3I warrant this device to be free from defects in workmanship or material under normal use for one year from the date of purchase. Manufacturer's obligations under this limited warranty are limited to replacing, adjusting, or repairing the unit if returned along with the proof of purchase. This warranty is void if the unit has been tampered with, maliciously damaged, or physically abused.

The enforceability of this warranty is limited to the original consumer purchaser and is not transferable to, or enforceable by, any subsequent owner. In the event of a defect, malfunction or other failure to conform to this warranty, Q3I will, at its sole discretion, repair or replace the unit at no charge. You are responsible for all shipping cost in connection with warranty service. This warranty commences on the date of retail purchase and shall be effective for a period of one year.

THERE ARE NO EXPRESS WARRANTIES COVERING THE UNIT OTHER THAN THOSE SET FORTH IN THIS WARRANTY. ALL IMPLIED WARRANTIES ARE LIMITED TO THE PERIOD OF THIS WARRANTY AND NO WARRANTIES, EXPRESS OR IMPLIED, EXTEND BEYOND THIS PERIOD. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

Manufacturer and Q3I will in no event be liable for any consequential, incidental, indirect or special damages (including, but not limited to, lost profits) arising out of or in connection with the use, misuse or function of the unit. Some states do not allow exclusion of limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

If you feel the device is not functioning properly, please review this manual, particularly the instructions. If you still feel warranty service is required, please follow the below instructions:

1. To obtain service during the warranty period, please call 319-334-3412 or email [service@q3i.com](mailto:service@q3i.com) to obtain a Return Authorization number and shipping instructions. Remember to return the device postage paid, insured and in suitable packaging.
2. For your own protection, obtain a proof of delivery receipt. Shipping costs are your responsibility.
3. You must enclose with the unit the following information:
  - a. Your name, complete return address and written description of the problem (No PO Box please.)
  - b. A telephone number where you can be reached during normal business hours.
  - c. A copy of your dated sales receipt or invoice.