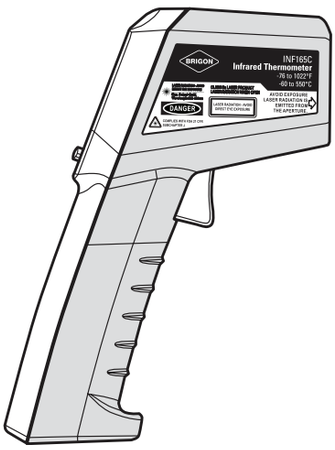
BRIGON

INF165C
Infrared Thermometer

INSTRUCTION MANUAL

ENGLISH



www.brigon.de
Tel. 06106/ 82 07-0

Introduction

The INF165C quality IR Thermometer is perfect for apprentice level applications when cost is important but performance is critical.

Features include

- Temperature Range -76 ~ 1022˚F (-60 ~ 550˚C)
- Circular laser targeting
- Distance to Spot ratio: 12:1
- Fixed Emissivity 0.95
- Max value capture
- Auto off

Safety Notes

Before using this meter, read all safety information carefully.
In this manual the word "***WARNING***" is used to indicate conditions or actions that may pose physical hazards to the user. The word "***CAUTION***" is used to indicate conditions or actions that may damage this instrument.

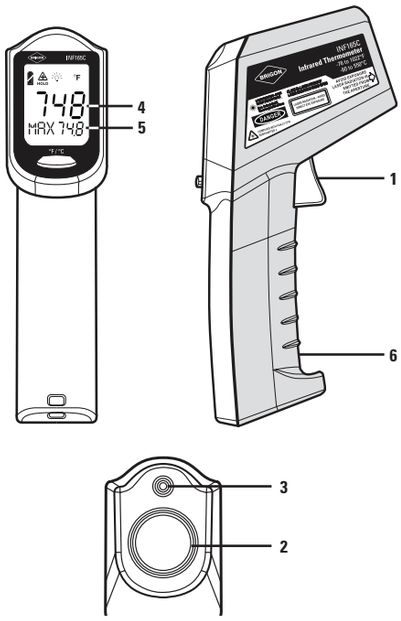
NOTE: *The INF165C is not recommended for use on shiny surfaces such as chrome, mirrors or polished metals.*

WARNING!
To avoid thermal shock, the instrument should be stored at room temperature between 32˚ to 122˚F (0˚ to +50˚C).

WARNING!
DO NOT look directly into the laser beam. Permanent eye damage may result.



Controls and Indicators



Front view

1. **Trigger:** Initiates measurements
2. **Infrared Lens**
3. **Dual Beam Laser**
4. **LCD Display:** Temperature
5. **LCD Display:** Maximum value
6. **Battery Compartment**

Displays and Indicators



1. **Mode button:** Select ˚F or ˚C
2. **Numerical Display:** Indicates measured temperature value
3. **Scale Icons:** Indicate that either the Fahrenheit (˚F) or Celsius (˚C) scale is selected
4. **MAX:** Displays maximum measured value
5. **HOLD:** Indicates display is in "HOLD" mode
6. **Battery Level**

Operating Instructions

Taking Measurements
To take a temperature measurement using your INF165C, you simply point the aperture at an object and pull the trigger. The object's temperature will show up on the display and update at a rate of approximately 2 times per second.

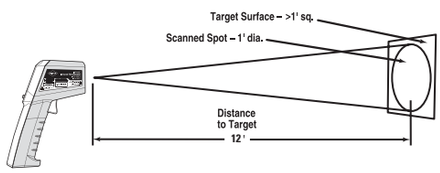
There will be a delay of approximately one-second between the time you initially pull the trigger and the time the display comes on. The 60-second auto-hold initiates at the moment you release the trigger. The maximum temperature is viewed beside the "MAX" icon.

NOTE: This thermometer will automatically shut off if left idle for more than 15 seconds.

Follow these general guidelines to ensure you get the most accurate readings possible:

- Be sure the measured object fills the "**spot**" indicated by the circular laser targeting. The distance to spot ratio for the INF165C is 12:1.

This shows the one-foot spot fitting within the one-foot target area. At this distance, and anything closer, the target's temperature will be accurately measured.
NOTE: If the two-foot diameter spot includes unwanted objects in the background that are not part of the one-foot target, the temperature of the background objects will be figured in with the target's temperature and cause errors in your measurements.



- When comparing temperatures of similar objects that are far away, take your measurements at the same distance and angle to the target each time.
- When looking for abnormally hot or cold targets it may be acceptable to include background objects so long as the temperatures in the background and your methods are consistent.
- Consider the emissivity of the objects you are measuring.
- Prepare a surface for measurement. Infrared thermometers measure only the outer surface of an object. If emissivity is affecting the measurement, or you have difficulty putting the object in the sensor's line-of-site, you may need to prepare a surface that's easy for the infrared thermometer to read. A piece of masking tape is a good target and it will rapidly take on the temperature of the object it is attached to.
- Be aware that you cannot measure the temperature of air between the Infrared thermometer and an object. Air vents (registers) are quick to take on the temperature of outlet air. However, you must aim directly at the vent if you are measuring outlet air temperature.
- Keep your infrared thermometer away from strong electrical fields. When working near a strong electrical field, like that under the hood of your car, watch for unusual readings or an "over load" indication. Often, you can move the thermometer just a few inches to escape the influence of the interference.
- Keep your INF165C within its use and storage temperature range. Excessive heat or cold will adversely affect the accuracy of your readings. When the trigger is pulled the target's temperature will be displayed in a near real-time mode (less than 1/2 second between measurements). The temperature will remain on the display for sixty seconds after the trigger is released.

Emissivity

Not all surfaces emit infrared energy at the same level. A shiny surface will emit much less infrared energy at a given temperature when compared to a flat black surface. The INF165C has two preset emissivity levels used to compensate for variances in your target.

High (0.95) will work for most common surfaces and is set as default for many infrared thermometers.

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Changing Scales
To change scales between degrees Fahrenheit and degrees Celsius, press the mode button on the panel, while the display is active. Even if the trigger is released and the display is in its 60-second automatic hold, you can convert the reading between scales. Each time you press the scale button, the 60-second hold will reset. The INF165C will default to the scale last used the next time it is turned on.

Using the Laser Sight & Backlight
The INF165C is classified as a "Laser Product", and is regulated by the FDA. The laser and backlight are always on when the trigger is pulled.

CAUTION!
Using controls, making adjustments, or performing procedures in any manner other than that specified herein may result in hazardous laser radiation exposure.

LCD Error Messages
The thermometer incorporates visual diagnostic messages as follows:

: **"Er2"** is displayed when the thermometer is exposed to rapid changes in the ambient temperature.

: **"Er3"** is displayed when the ambient temperature exceeds the operation range of 32˚ to 122˚F (0˚ to 50˚C). The thermometer should be allowed plenty of time (minimum 30 minutes) to stabilize to the working/room temperature.

: For all other error messages it is necessary to reset the thermometer.

: 'Hi' or 'Lo' is displayed when the temperature being measured is outside of the measurement range.

To reset the thermometer, turn the instrument off, remove the battery and wait for a minimum of one minute. Reinsert the battery and turn it on. If the error message remains please contact UEi service department for further assistance.

Battery Indicators
The thermometer incorporates visual low battery indications.

: **"Battery OK"** measurements are possible

: **"Battery Low"** battery needs to be replaced, measurements are still possible

: **"Battery Exhausted"** measurements are not possible

Maintenance

Periodic Service

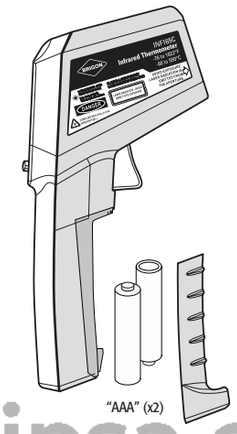
WARNING!
Repair and service of this instrument is to be performed by qualified personnel only.

Cleaning
Periodically clean your instrument's case using a damp cloth. DO NOT use abrasive, flammable liquids, cleaning solvents, or strong detergents as they may damage the finish, impair safety, or affect the reliability of the structural components.

Battery Replacement
Always use a fresh replacement battery of the specified size and type. Immediately remove the old or weak battery from the meter and dispose of it in accordance with your local disposal regulations. Old or defective batteries can leak chemicals that corrode electronic circuits.

To replace the battery:

1. Slide the battery cover straight down then away from the INF165C.
2. Replace with fresh AAA batteries.
3. Replace cover.



Lens Care
The sensor lens is the most delicate part of the thermometer. The lens should be kept clean at all times. Care should be taken when cleaning the lens using only a soft cloth or cotton swab with water or medical alcohol. Allowing the lens to fully dry before using the thermometer. Do not submerge any part of the thermometer in liquids.

WARNING!
Under **NO** circumstance should you expose batteries to extreme heat or fire as they may explode and cause injury.

NOTE: This instrument contains no user serviceable parts. If service becomes necessary, call UEi and ask for the service department. See the warranty section of this manual for additional details.

EMC/RFI
Readings may be affected if the unit is operated within radio frequency electromagnetic field strength of approximately 3 volts per meter, but the performance of the instrument will not be permanently affected.

IR Thermometers
Infrared Thermometers measure the amount of thermal radiation emitted from an objects surface. To take a measurement, the object must be within the field of view of the infrared thermometer, or the reading may include objects surrounding your target. This target size is determined in the distance to spot ratio stated on the instruments specifications. At a ratio of 10:1, a distance from your target of ten feet will give you a circle with one foot diameter. At 20:1 ratio gives the same one foot target now at 20 feet, so you can see that higher is better, but typically more expensive due to the cost of the optics involved.

The other common question is regarding emissivity. In simple terms emissivity is a percentage of energy emitted from a surface compared to the energy emitted from a black body source. If a surface emits one half (1/2 or 0.5) the amount of energy at a given temperature and wavelength as a black body, it is said to have an emissivity of 0.5.

Surfaces closest to the black body level would be flat black, and those farthest from it would be mirror or chrome surfaces. With a set emissivity level some surfaces may measure lower than actual, because their surface is emitting less thermal radiation at a given temperature. Although you may have a fixed emissivity of 0.95, most items measured will provide a reasonably accurate result. Having a fully adjustable emissivity will give you the ability to fine tune your instrument to a specific application.

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Warranty

For more information on warranty and service:

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Specifications

Measurement range	-76 ~ 1022˚F (-60 ~ 550˚C)
Operating range	32˚ ~ 122˚F (0 ~ 50˚C)
Accuracy (Tobj= 15~35˚C, Tamb=25˚C)	±2.7% (1.5˚C)
Accuracy (Tamb=23 ± 3˚C)	Tobj=0~550˚C: ±2% of reading or 2˚C(4˚F) whichever is greater Tobj=-60~0˚C: ±(2˚C+0.05/ degree C)
Emissivity	Fixed 0.95
Resolution	0.1˚F/0.1˚C at -76 to 999.9 (˚F/ ˚C), otherwise 1˚F/1˚C
Response Time (90%)	1 second
Distance: Spot	12:1
Battery life	Typ. 14 hours 18 minutes continuous use
Dimensions	6.12" X 1.57" X 4.45" (155.5 X 40 X 113mm)
Weight	6.1 oz (173g) including batteries (AAA x 2pcs)
The thermometer will automatically shut off if left idle for more than 15 second.	