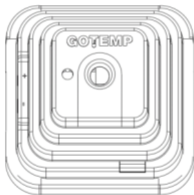# GOTEMP

THB4002

GoTemp

Food Infrared Thermometer

With Laser Sighting And Thermocouple Jack

User Guide

Measuring Temperature
The Smart Way

Provided by

Zippy Yum
YOUR QSR PRODUCTIVITY TOOL PARTNER

Table Of Contents

Thank you for purchasing GoTemp. We are confident that you will be pleased with the quality and performance of this product. Please take a few moments to familiarize yourself with the operation, features, and benefits of this fine product.

⚠ **CAUTION! – This product is not intended for medical use or use on humans**
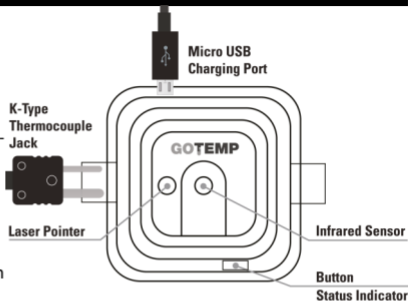
Description

The zippyYum GoTemp Model THB4002 is smart contactless thermometer featuring Bluetooth 4.0 Low Energy. GoTemp combines two precision thermometers: accurately calibrated noncontact infrared thermometer and a thermocouple port for penetration probe. The noncontact mode can be used for quick scans of a surface temperature, while the probe mode is used to accurately measure internal temperatures.

GoTemp is a battery operated device and can be recharged via the standard micro USB connector from any computer or 5V charger. A K-type thermocouple connector is used to connect the insertion probe.

The interface of the device is minimal as it includes an illuminated push button to provide ability to reset and give feedback about device status and a slide switch to turn ON and OFF

Features

- Contactless temperature measurement

- Laser pointer to indicate the measured location

- Accepts K-type thermocouples

- Rechargeable battery

- Interchangeable holders for iPhone 5, 6, 6+, and universal bracket for use on all other phone models

Micro USB Charging Port

K-Type Thermocouple Jack

GOTEMP

Laser Pointer

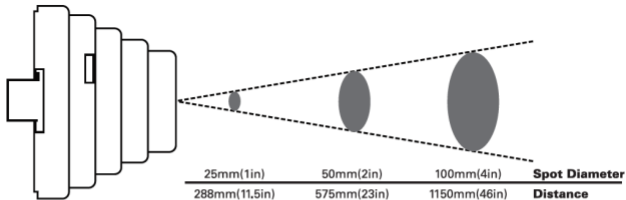**Infrared Sensor**

Button

Status Indicator

Distance to Spot

The field of view (Distance to Spot) is the area or portion of food product that is being measured thermally. The distance of the infrared thermometer from the target determines the dimension of this area. The further away from the target, the larger is the area being measured.

The ideal working range of GoTemp is between 25 mm and 300 mm (1 and 12inches). The laser pointer helps to indicate the measurement spot. To ensure accurate measurements, the measured spot must fill or exceed the field of view.

Moving closer to the target produces more accurate measures

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| 25mm(1in) | 50mm(2in) | 100mm(4in) | **Spot Diameter** |
| 288mm(11.5in) | 575mm(23in) | 1150mm(46in) | **Distance** |

Reset

To reset GoTemp, press and hold the button for 3 seconds. 5 orange blinks appear after the reset.

Indicators

GoTemp is equipped with two LEDs to indicate the device's state. Please note that Amber color appears if both red and green LEDs are lit simultaneously.

Indicator reflects the device state and warns you if battery is getting low or there is not enough charge to power device. Green color indicates full battery, orange means that battery is low and red means battery is empty. Blinking light means the device is connected to a phone.

You can always check the battery percentage and charging state on the phone's display.

Refer to the below table for detailed indicator states

Battery Level	Connected?	Charging?	LED State
Not enough charge	NO	NO	OFF
Not enough charge	NO	YES	Orange solid
Not enough charge	YES	NO	Red blink
Not enough charge	YES	YES	Orange blink
Enough charge	NO	NO	OFF
Enough charge	NO	YES	Green solid
Enough charge	YES	NO	Green blink
Enough charge	YES	YES	Green blink

Bluetooth & Pairing

GoTemp must be paired with smartphone before the first use. Every GoTemp device has a unique identifier printed on the back, it is known as **MAC**.

The Mobile App will automatically connect to the available GoTemp if there is only one GoTemp found in the range, otherwise, a list will pop up for the user to select the device to be used. The names of available GoTemp devices show up as "GOTEMP_XX", with XX denoting the last two digits of **MAC**.

Once the correct GoTemp is chosen, the indicator starts blinking and a text box appears on mobile app to enter the PIN. Enter "123456" as pairing PIN.

Specifications

Model: THB4002

Bluetooth Power: 0dBm

Operating Conditions

Parameter	Value
Storage Temperature	-10 – 45°C (14 – 113°F)
Operating Temperature	10 – 40°C (50 – 104°F)
Humidity	10 – 90% RH
Charging Current	<100mA
Charging Voltage	5V

Battery

Parameter	Value
Capacity	400 mAh
Voltage	3.7V
Lifetime	360 hours Standby
	16 hours measuring

Laser

Parameter	Value
Peak Wavelength	650nm
Optical Power	<1mW

Probe Temperature

Parameter	Conditions	Value
Measurement range		-10 – 120°C (14 – 250°F)
Resolution		0.25°C (0.25°F)
Accuracy at room temperature	Object temperature: -10– 120°C	±1°C (2°F)
Repeatability		Within accuracy
Response Time		1 second

Infrared Temperature

Parameter	Conditions	Value
Measurement range		-10 – 120°C (14 - 250°F)
Resolution		0.1°C (0.1°F)
Typical Measurement Distance		25 – 300mm (1-12")
Distance to Spot		12:1
Accuracy at room temperature (25 °C)	Object temperature: 0 - 60°C	±0.5°C (2°F)
Accuracy at room temperature (25 °C)	Object temperature: < 0 °C or > 60°C	±1°C (4°F)
Repeatability		Within accuracy
Response Time		1 second

AVOID STORING THE UNIT IN EXTREME TEMPERATURE CONDITIONS. DO NOT STORE INFRARED THERMOMETERS BELOW FREEZING TEMPERATURE OR WHERE THE RADIANT TEMPERATURE MAY EXCEED 48.9°C (120°F)

Proper Application and Operation

The IR thermometer only measures surface temperature, critical temperatures must be verified with an internal temperature probe.	**Use Probe For Internal Temperature**
To take a spot temperature measurement, aim the sensor at the desired target and activate the unit. The spot size measured is indicated in section "Distance to Spot" .	**Mind The Measured Spot**
The IR thermometer cannot measure through transparent surfaces such as glass and plastic. It will measure the surface temperature of the glass, or plastic instead.	**Remove Transparent Covers Before Measuring**
Steam, dust, smoke and/or vapors can prevent accurate measurement by obstructing the unit's optics. Please refer to maintenance section for cleaning in case any of these conditions happened .	**Keep Unit Clean**
Infrared thermometers are not designed for use in high humidity-condensing environments.	**Do Not Measure in High humidity**
For the most accurate temperature measurements, aim the infrared thermometer perpendicular to the target. If possible, the field of view should be an even, horizontal plane (the flattest surface of a food product being measured).	**Keep Device Perpendicular To Measured Surface**

|	
The IR thermometer is not recommended for use in measuring reflective surfaces such as stainless steel and/or aluminum wrapping. The temperature of a reflective object may be measured if the surface is coated with a matte material.	**Avoid Measuring Shiny Surfaces**
The infrared emissivity of a target is a function of the reflective properties of its surface. GoTemp Emissivity is preset to 0.95 which is optimal for most Food Products. If the emissivity of the target material is questionable, determine its value by referring to the emissivity table. GoTemp emissivity can be changed from 0.1 to 1.0 in 0.01 steps, refer to instruction in the mobile app to modify emissivity.	**Most Food Products Do Not Require Change of Emissivity**
GoTemp is designed to work between 10 °C and 40°C (50 - 104°F). In case a change in temperature happened like walking in/out of walk-in freezer, the unit must not be used for at least 15 minutes (preconditioned). Failure to precondition the unit may result in thermal shock and/or inaccurate measurements.	**Precondition For 15 Minutes If Ambient Temperature Changed**
GoTemp can display temperatures in Celsius or Fahrenheit, refer to instruction in the mobile app to change scale.	**Select Desired Display Unit**

Power Switch

Power Switch located on the bottom of GoTemp is turned OFF to minimize battery drain. Use a small plastic pin to switch the power button ON before operation.

Five orange blinks appear at power up. Make sure the LEDs are working, otherwise, plug charger and expect flashing orange light.

Power button can be turned off if GoTemp is not used for long time, which will save battery and extend its life.

Power Switch
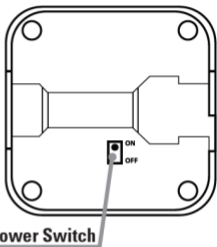
Mounting Brackets

Four mounting brackets are provided for iPhone 5/5s, iPhone 6, iPhone 6+ and adjustable bracket for use on all other phones.

After turning the switch ON, position the bracket and push it in the guiding grooves to snap in place. Push the bracket in opposite direction to remove.
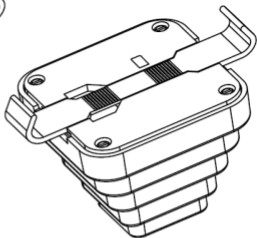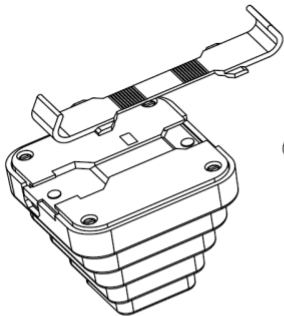
iPhone 5/5s

iPhone 6 +

iPhone 6

Universal

Other Operational Considerations

GoTemp is protected from the following:

- EMI (Electro Magnetic Interference) from induction heaters and microwave ovens

- Electrostatic discharge

- Should the unit become damaged, check the accuracy of the unit by performing the verification process recommended in this manual. If the unit is out of calibration, do not rely on it for critical temperature measurements. Contact a zippyYum for information

Maintenance
Field Verification of Accuracy

GoTemp is pre-calibrated. However, their accuracy can be verified in the field by using the following simple procedure. It is suggested that the accuracy of the instrument be verified on a regular basis.

For food applications, the IR thermometer accuracy should be verified at the relevant critical food temperatures [5°C (41°F); 60/71.1°C (140°/165°F)]. A two-point verification is recommended.

Materials needed:

1. Aluminum container (beverage can).
2. Matte-black spray paint or matte-black self-adhering paper appliqué. Masking tape may also be used.
3. Temperature-standard thermometer.

Preparation:

Prepare container by painting or applying the matte material to the outer surface.

Verification Procedure:

1. Fill the aluminum container with refrigerated water, insert the temperature standard thermometer and allow the can and temperature-standard thermometer to come to equilibrium.

2. Take a reading with the IR thermometer. Do not exceed the spot size of the IR thermometer as indicated on the unit.

3. Compare the temperature reading of the IR unit with the temperature standard thermometer *.

4. Repeat this procedure using hot water.

* If the temperature deviation exceeds accuracy limit, return the unit for repair.
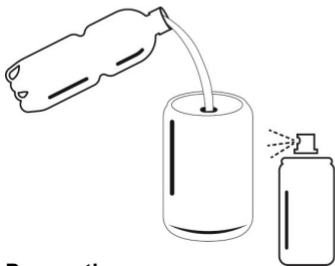
Preparation   **Verification**   14
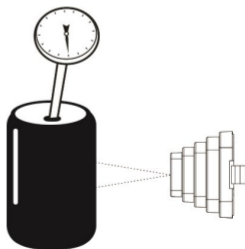
Cleaning Instructions

To ensure an accurate temperature reading, the lens of the IR unit should be free of dirt, dust, moisture, fog, smoke and debris.

To clean the lens, you would need two lint free cotton swabs. Moist a cotton swab and insert it in the aperture to scrub the deep lens then repeat the same using the dry cotton swab.

To clean the unit itself, wipe it down with a moist cloth using water based mild detergent.

> ⚠ **Warning! – Do not submerse the unit or wash in dishwasher**

Laser Safety

Laser pointer in GoTemp is FDA 21 CFR 1040.10, subchapter J compliant. Please refer to laser specifications in specification section

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⚠ **Warning!**

1. **Avoid direct exposure of human eyes to laser light. Eye damage may result.**

2. **Never point the laser light at another person.**

3. **Keep the laser-equipped unit out of the reach of children.**

4. **Avoid indirect exposure via reflective surfaces, such as glass and mirrors.**

Warranty

ZippyYum LLC warrants that this product, at the time of its sale by ZippyYum, is free of defects in material and workmanship and component failures under normal and proper use for a period of one (1) year from date of delivery and applies world-wide.

ZippyYum's only obligation is to correct such defects by repair or replacement, at its option, if within such one year period the product is returned prepaid.

There are no other or implied warranties of any kind, including merchantability and fitness for a particular purpose. ZippyYum is not liable for incidental, indirect, special, or consequential damages, including without limitation, damage to, or loss of use of, any equipment, lost sales or profits or delay or failure to perform this warranty obligation.

ZippyYum's liability on any claim for damages arising out of in connection with the manufacture, sales, installation delivery, or use of the product shall never exceed the purchase price of the product. The remedies provided herein are the exclusive remedies under this warranty, whether based on contract, tort or otherwise.

In line with ZippyYum's policy of continuous development ZippyYum reserves the right to alter any specifications without notice.

Certifications

GoTemp conforms to the following standards:

- UL listed for UL2333 – Standard For Safety - Infrared Thermometers
- UL EPH Classified for ANSI/NSF 2 – standard for
- FCC CFR47 Part 15 Section 15.247:2014
- Industry Canada RSS-247
- European Union Directives
    - 1999/5/EC - Radio & Telecommunications Terminal Equipment (R&TTE) Directive
    - 2014/35/EU - Low Voltage (LVD) Directive
    - 2014/30/EU - Electromagnetic Compatibility (EMC) Directive
    - 2011/65/EU - EU Restriction of Hazardous Substances (RoHS) Directive
    - 2012/19/EU - Waste Electrical and Electronic Equipment (WEEE) Directive
- ACME (Australia) Standards
    - AS/NZS 4268:2012+ A1:2013
    - EN 61000-6-1:2007
    - EN 61000-6-3:2007 +A1:2011
    - EN 61000-3-2:2014
    - EN 61000-3-3:2013

INFRARED THERMOMETER
E481655

FABRICATED FOOD SERVICE EQUIPMENT
NSF/ANSI 2
SA44549

RCM Cert. No:
POC16104019

Industry Canada

Industrie Canada

IC: 21861-THB4002

FCC ID:2AE6ATHB4002

CE

RoHS

FCC Compliance

FCC Part 15.19 Warning Statement

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

FCC Part 15.21 Warning Statement

NOTE: THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

FCC Part 15.105 Warning Statement

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is

connected.

—Consult the dealer or an experienced radio/TV technician for help.

RF warning statement

The device has been evaluated to meet general RF exposure requirement. The device can beused in portable exposure condition without restriction.

IC Warning

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

RF warning statement:

The device has been evaluated to meet general RF exposure requirement.

Le dispositif de a été évalués à répondre général RF exposition exigence.

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