**Model:11115**


# Infrared Thermometer

# User Manual

Manual Version: 1.1
Issuing Date: 2020/11

# Introduction

Thank you for choosing the Dual-mode Digital Infrared Thermometer. The infrared thermometer can be used to read the body temperature by measuring the ear and forehead temperature, which is suitable for adult and children (ear test mode only for the child above 3 months).
Please read the instructions carefully before using the product and put it in a safe and secure place for reference.

# Contents

## 1. **Advantages of the infrared thermometer**

Dual-mode design (forehead temperature and ear temperature),you can take body temperature by detecting the infrared ray given off by the forehead or eardrum. The measuring range of the thermometer in forehead /ear mode is between 32.0°F - 212.0°F (0 °C- 100 °C) .
The product consists of ABS plastics, temperature sensor, Infrared temperature measuring element, microcomputer controlled circuit, LCD , backlight and buzzer.

**Convenient for use**

● Special ergonomic design to facilitate operation.
● No inconvenience would be caused to your daily life. It's available for measurement when your child is sleeping.
● It provides comfortable user experience compared with anal thermometer for children, fast reading and simple operation compared with mouth thermometer.

**Memory recall**

A maximum of 20 previous readings is available to help you track the changes of your body temperature.

**Safe and hygienic**

● Compared to mercury thermometer, there is no danger of breaking the glass or swallowing mercury.
● It is totally safe for children use.

**Fever warning**

When the reading exceeds 37.5℃/99.5℉, this product shall warn the user that he/she may have a fever by 7 rapid and short beeps with LCD flicker.(For normal forehead temperature, the signal is long beep with LCD no flicker)

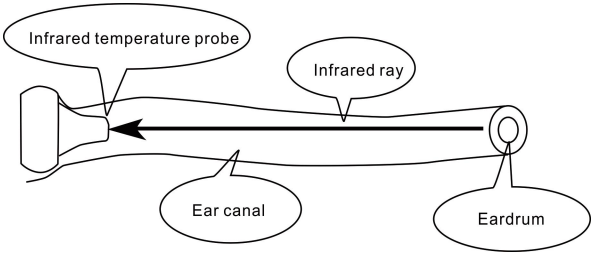
**Extensive clinical data of hospital**

The cooperation with designated hospitals is subjected to precise clinical verification, with the support of extensive clinical data and professional medical experts.

**Application scope**

The thermometer takes human body temperature for clinical or home use. It applies to all age groups who are suffering from a fever.

**Operating principle**
The infrared temperature sensor detects infrared energy emitted by the eardrum. A built-in lens focuses the collected energy, which is then converted into a temperature reading by the thermopiles and measurement circuits.




## 2. Necessary safety instructions

- Take care of the temperature probe lens, which is fragile.
- The device is not a continuous monitoring device.
- The device is not waterproof. Please do not douse it into water or other liquids. Cleaning and disinfection procedure shall be in accordance the instructions specified in [Cleaning and Disinfection]
- Do not try to repair the product if it is damaged. Please contact the nearest Zewa Customer Service.
- The device consists of precision parts with high quality. Please prevent the product falling off.

- **Operating Conditions:**

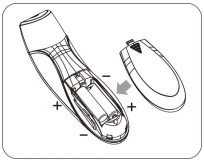
Temperature: 10°C to 40°C
Humidity: 15-95% RH, non-condensing
Atmospheric pressure: 86kPa to 106kPa

- **Storage and Shipping Conditions:**

Temperature: -20°C to 55°C
Humidity: 0-95% RH, non-condensing
Atmospheric pressure: 50kPa to 106kPa

- **Battery Installation:**

Put the two AAA batteries into battery compartment in correct polarities.
Install the battery cover along the arrow.



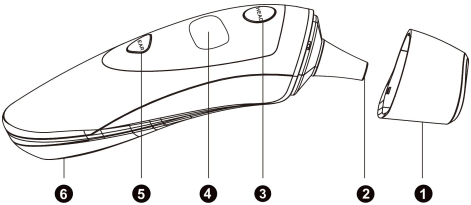

**Notes:**

☆ If you are using the thermometer for the first time, Please pull out the insulation piece.
☆ Battery polarities should be correctly installed. Otherwise, damage may be caused to the device.
☆ Please put in or remove batteries in right order, or may cause damage to the device bracket.
☆ Please remove the batteries if the thermometer will not be used for a long time.

**Warnings**

- Please keep this infrared thermometer out of children
- Medical assistance can't be replaced by the use of infrared thermometer
- The infrared thermometer is not waterproof, Keep it away from water.

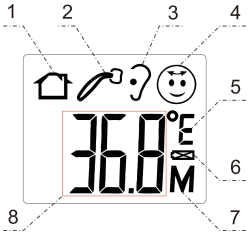
## 3.Instructions for product designs




(1) Probe cover (put the cover on when using forehead mode)
(2) Probe (take off the cover when using ear mode)（applied part)
(3) Forehead mode
(4) LCD display
(5) Ear mode
(6) Battery cover

## Display description

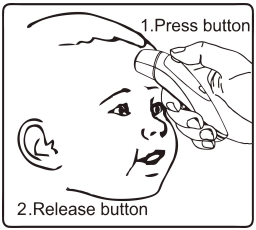
1. Ambient temperature
2. Ready for measurement
3. Ear mode
4. Head mode
5. °C / °F
6. Low power indicator
7. Memory mode
8. Temperature value




## 4.How to measure the forehead temperature

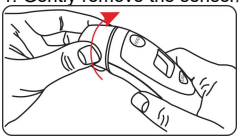
1. With the sensor/probe cover attached, position the thermometer at the center of the forehead, just above the eyebrow, with a distance of 1-3cm.

2. Press and release the **HEAD** button.The temperature will be displayed on the screen instantly.




## 5.How to measure the ear temperature

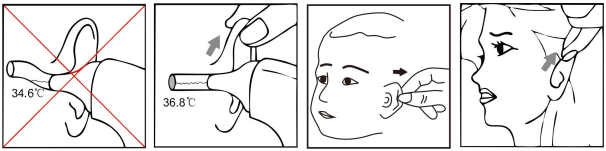
1. Gently remove the sensor/probe cover to reveal the ear probe.



2. Insert the ear probe into the ear canal.
3. Press and release the **EAR** button. The reading will be displayed on the screen instantly.

**Note:**

Children under 1 year: Pull the ear straight back.
Children aged 1 year to adult: Pull the ear up and back.




**In order to avoid the inaccuracy:**

(1) Please make sure that there is no dirt on the temperature sensor
(2) Please make sure that the device only be used in room, and there is no strongly conversation of wind.
(3) Before you measure the forehead temperature, there shall be no water or any shade on the forehead.
(4) Before you measure the ear temperature, please clean the ear canal first.
(5) Please make sure that there is no intense emotion and movement before measuring.
(6) If thermometer is transferred from one condition to another which has different ambient temperature, it is suggested to deposit for more than 30 minutes, and please follow the rule (2).
(7) If the user is transferred from one condition to another which has different ambient temperature, it is suggested to have a rest for more than 10 minutes, and please follow the rule (2).
(8) Do not hold thermometer for long time as it is highly sensitive to heat.

## Connecting the thermometer to an APP

The thermometer has a built-in Bluetooth module and can be connected to a smartphone by using the Bluetooth wireless technology. View the measurement data in real time by using mobile phone software. The software automatically saves the measurement which helps view the temperature change in real time.

## 6.Instructions for display and operation

| LCD display | Operational method and instruction for displays | Sound and backlit |
|---|---|---|
| 98.0°F | 1.Measurement of forehead temperature:<br>Position the thermometer at the center of the forehead above the eyebrow. With the thermometer touching the forehead, press and release the **HEAD** button. The temperature will be displayed on the LCD screen.<br><br>2.Measurement of ear temperature:<br>Insert the thermometer ear probe into the ear canal. Press and release the **EAR** button. The temperature will be displayed on the LCD screen.<br><br>3. To measure again, simply press the **HEAD/EAR** button accordingly. | When the temperature is between 32.0°F/ 0°C and 99.5°F/ 37.5°C, there will be a long beep and a green backlit will be displayed for 3 seconds.<br><br>When the temperature is between 99.6°F/37.6°C and 107.9°F/42.2°C, there will be 7 short beeps and the reading will flicker with a red backlit for 3 seconds. This indicates that the subject may have a fever. Please consult your doctor if you are not sure. |
| 98.0°F<br>98.0°F | Forehead measurement mode<br><br>Eardrum measurement mode | |
| H°F | The measured value exceeds 212 °F/100°C. | 3 short beeps with a red backlit for 3 seconds. |

| | | |
|---|---|---|
| L °F | The measured value falls below 32.0°F/0°C. | 3 short beeps with a red backlit for 3 seconds. |
| **Inquiry for memory data, Storing 20 temperature readings** | | |
| **LCD display** | **Operational method and instruction for displays** | **Sound and backlit** |
| - - - M | Press and hold **EAR** button for **3-6 seconds** and the LCD will display "- - -" with the M signal blinking. | None |
| 1 M<br>98.0 °F M<br>98.0 °F M<br>65.8 °F M | Press button **EAR** again and the LCD will display the number '1' with the M signal. After 1 second, the measured temperature with the mode of measurement icon will be displayed. Note that this is the latest reading.<br><br>To recall the next recorded reading, press button **EAR** again. The number '2' with the M signal will be displayed. After 1 second, the measured temperature with the mode of measurement icon will be displayed.<br><br>Repeat to recall earlier recordings (up to 20 total) if necessary. | None |
| - - - M | The LCD will display "- - -" with the M signal blinking if there is no test data. | None |
| **°C/°F conversion** | | |
| **LCD display** | **Operational steps** | **Sound and backlit** |
| - - - °C | When the thermometer is off, press and hold the **EAR** button for **6-9 seconds**. The screen will display "- - - " with "M" at the bottom right. Continue to hold the button until "- - -°C/°F" appears on the screen. Release the **EAR** button and | None |

| | | |
|---|---|---|
| ---°F | the “- - -°C/°F” temperature unit will start to blink. Press the **EAR** button again within 5 seconds to change the temperature unit to your choice. | |
| **Error message & Low voltage** | | |
| Er1 | LCD screen will display “Er1” when ambient temperature exceeds 104.0°F/40.0°C or drops below 50.0°F/10.0°C. | 3 short ticks and red backlit for 3 seconds. |
| ErC | LCD screen will display “ErC” if there is EEPROM data reading error or the calibrating process is not finished. Please contact your supplier. | 3 short ticks and red backlit for 3 seconds. |
| | Low-voltage signal when the battery voltage is below 2.5V±0.1V. Please replace battery. | None |
| **Power Off Mode** | | |
| The thermometer will power off automatically in10 seconds. | | |

**Attention:**

● Electromagnetic interference: thermometer contains sensitive electronic component and shall not be used under the condition with electromagnetic interference,( such as the place nearby the mobile phones and microwaves )

● Please dispose the used products and batteries in accordance with local regulation requirements when the products and batteries are not available.

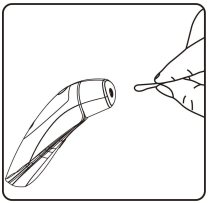
● Please take out the battery if the device is not used for a long time.

## 7.Cleaning and Disinfection

**Cleaning**

1) Clean the temperature probe with a soft cloth. Clean the lens of the temperature probe with a cotton swab.

2) Wipe the thermometer body with a slightly damp soft cloth, and gently dry the body with a piece of tissue paper.



⚠ Keep water off the lens during the cleaning process. Otherwise, the lens may be damaged.

⚠ The lens may be scratched if it is cleaned with a piece of tissue paper, resulting in inaccurate readings.

⚠ Do not clean the thermometer with corrosive cleansers. During the cleaning process, do not touch the lens using hard objects, immerse any part of the thermometer into liquid, or allow liquid to enter the thermometer.

**Disinfection**

1) Disinfect the thermometer body and the area around the temperature probe with a cloth slightly moistened with 75% medical alcohol.

⚠ Do not use hot steam or ultraviolet radiation for disinfection. Otherwise, the thermometer may be damaged or quickly aged.

## 8.Maintenance

1) After each use, clean the temperature probe as described in "Cleaning and Disinfection".
2) Store the thermometer in a dry, dust-free, and well-ventilated place. Ensure that the thermometer is not exposed to sunlight. Ensure that the storage and transportation environments meet the requirements
3) Check whether safety risks exist on a regular basis.
4) Remove the batteries if the thermometer will not be used for more than two months.

## 9. Replace the battery.

Slide the battery cover off along the marked direction. Put the two AAA batteries into the compartment correctly.

Remove the batteries if the thermometer will not be used for more than two months.

## 10.Troubleshooting

| Symptom | Possible Cause | Solution |
|---|---|---|
| The thermometer | The battery level is | Use new batteries of |

| Symptom | Possible Cause | Solution |
| --- | --- | --- |
| fails to power on. | extremely low. | the same model or specifications. |
| | Polarities of the batteries are reversed. | Ensure that the batteries are correctly installed according to the polarity symbols in the battery compartment. |
| | The thermometer is faulty. | If the warranty period does not expire, contact Zewa or a local distributor. |
| Only the battery symbol is displayed after the thermometer power on. | The battery level is low. | Use new batteries of the same model or specifications. |
| "Er1" is displayed. | The ambient temperature is lower than 10°C (50.0°F) or higher than 40°C (104°F). | Take a measurement under an ambient temperature between 10°C (50.0°F) and 40°C (104°F). |
| "ErC" is displayed. | An error occurs when data is being read from or written into the memory, or the temperature correction is not complete. | Contact Zewa. |
| The temperature reading is lower than the typical body temperature | The lens of the temperature probe is dirty. | Clean the lens using a cotton swab. |
| | The distance between | Move the thermometer |

| Symptom | Possible Cause | Solution |
| --- | --- | --- |
| range. | the temperature probe and the target is too long. | closer to the target. |
| | The thermometer is not used within 30 minutes after being taken from a cold environment. | Wait for more than 30 minutes after the thermometer is moved into the measurement environment. |
| The temperature reading is higher than the typical body temperature range. | The temperature probe is faulty. | Contact Zewa. |

## 11. Technical specifications

| Items | Standards |
|---|---|
| Model | Infrared Ear Forehead Thermometer |
| Temperature units | ℃/℉, adjustable |
| Measurement range | Forehead temperature mode:0.0℃-100.0℃ /32.0◦F – 212.0 ◦F<br>Ear temperature mode:0.0℃-100.0℃ /32.0◦F – 212.0 ◦F |
| Accuracy (Laboratory) | ±0.2℃ /±0.4◦F(36℃-39℃/96.8℉-102.2℉)<br>±0.3/±0.5℉(less than 36 °C (96.8°F) or more than 39 °C (102.2 °F) |
| Accuracy (Clinical) | ±0.3°C (±0.6°F) |
| Display resolution | 0.1℃/0.1℉ |
| Measuring site | Ear canal, Forehead (keep distance 1~3 cm from forehead) |
| Reference body site | Armpit |
| Mode of operation | Adjusted mode |
| Measure time | About 1 second |
| Latency Time | About 1 second |
| Measuring distance | Forehead temperature:1-3cm |
| Sound | volume≧50 db (the perpendicular distance from dB Volume sensor to thermometer is 10cm ) |
| Automatic shutdown function | 10s±1s |
| Low-voltage display function | The product shall display low-voltage signal if the voltage is below 2.5V±0.1V. |

| | |
|---|---|
| Memory function | Memorize 20 groups of measured temperature. |
| Power supply | Internal power supply |
| Operating voltage | DC 3V |
| Battery | AAA ×2 |
| The date of production | See the label |
| Life | 2 years |
| Battery life | Alkaline dry battery for around 20000 measurements |

The infrared thermometer has been tested and conforms to the standard ASTM E1965-98. ASTM laboratory accuracy requirements in the display range of 96.8°F to102.2°F (36°C-39°C) for ear canal IR thermometers is ±0.4°F (±0.2°C). Note that for mercury-in-glass and electronic thermometers, the requirement per ASTM Standards E667-86 and E1112-86 is ±0.2°F (±0.1°C).

## 12. After-sale service

The device is under warranty for one year since the date of acquisition. Application for repairing should be presented during the warranty period. The damage caused by improper use is not under the warranty scope. Batteries and packaging are not under warranty scope either.

After-sale service:
Zewa, Inc.
12960 Commerce Lakes Dr. # 29
Fort Myers, FL 33913
E-mail：support@zewa.com
Website: www.zewa.com
Phone: 888-993-3592

## 13. Security type

The signal indicates that the thermometer is type BF applied part.

## 14. Authorized European Representative:

N/A

## 15. Symbols

| Symbol | Description |
|---|---|
| | Type BF applied part. |
| | Attention must be paid. |
| | The action is prohibited. |
| | Information about a manufacturer, such as name and address. |
| | Date of manufacture. |
| | Consult the instructions for use. |
| CE 0482 | This product complies with the MDD93/42/EEC requirements. |
| | Waste electrical materials should be sent to a dedicated collection point for recycling.Must contact its local authorities to determine the proper method of disposal of potentially bio hazardous parts and ACCESSORIES. |
| IP22 | Degree of protection against ingress of water and particulate matter |
| Warning | A personal injury or thermometer damage may occur if the thermometer is not correctly used. |
| Attention | Inaccurate reading or thermometer damage may occur if the thermometer is not correctly used. |

## 16.Declaration

EMC of this product complies with IEC60601-1-2 standard.

The materials which the user can come into contact have no toxicity and no action on tissues comply with ISO10993-1, ISO10993-5 and ISO10993-10.

## 17. Appendix A: EMC Information-Guidance and Manufacture's Declaration

⚠ **CAUTION:**

- Infrared Thermometer needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided for in the ACCOMPANYING DOCUMENTS.
- Portable and mobile RF communications equipment can affect Infrared Thermometer
- The Infrared Thermometer should not be used adjacent to or stacked with other equipment.

**Guidance and manufacturer´s declaration – electromagnetic emission –for all EQUIPMENT AND SYSTEMS**

| Guidance and manufacturer´s declaration – electromagnetic emission | | |
|---|---|---|
| The Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the Infrared Thermometer should assure that it is used in such an environment. | | |
| Emissions test | Compliance | Electromagnetic environment - guidance |
| RF emissions CISPR 11 | Group 1 | The Infrared Thermometer uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment. |
| RF emissions CISPR 11 | Class B | The Infrared Thermometer is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes. |

**Guidance and manufacturer's declaration – electromagnetic immunity –for all EQUIPMENT and SYSTEMS**

| Guidance and manufacturer´s declaration – electromagnetic immunity | | | |
|---|---|---|---|
| The Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the Infrared Thermometer should assure that it is used in such an environment. | | | |
| Immunity test | IEC 60601 test level | Compliance level | Electromagnetic environment- guidance |
| Electrostatic discharge (ESD) IEC 61000-4-2 | ±6 kV contact<br>±8 kV air | ±6 kV contact<br>±8 kV air | Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %. |
| Power frequency (50/60 Hz) magnetic field IEC 61000-4-8 | 3 A/m | 3 A/m | Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment. |

**Guidance and manufacturer´s declaration – electromagnetic immunity –for EQUIPMENT and SYSTEM that are not LIFE-SUPPORTING**

| Guidance and manufacturer´s declaration – electromagnetic immunity | | | |
|---|---|---|---|
| The Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the Infrared Thermometer should assure that it is used in such an environment. | | | |
| Immunity test | IEC 60601 test level | Compliance level | Electromagnetic environment - guidance |
| Radiated RF IEC 61000-4-3 | 3 V/m 80 MHz to 2.5 GHz | 3 V/m | Portable and mobile RF communications quipment should be used no closer to any part of the Infrared Thermometer, including cables, than the recommended separation |

| | | | |
|---|---|---|---|
| | | | distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance<br>$d = [\frac{3.5}{V_1}]\sqrt{P}$<br>$d = [\frac{3.5}{E_1}]\sqrt{P}$ 80 MHz to 800 MHz<br>$d = [\frac{7}{E_1}]\sqrt{P}$ 800 MHz to 2.5 GHz<br>where p is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).[b]<br><br>Field strengths from fixed RF transmitters, as determined by an Electromagnetic site survey,a should be less than the compliance level in each frequency range.[b]<br><br>Interference may occur in the vicinity of equipment marked with the following symbol:<br>  |
| NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.<br>NOTE 2 These guidelines may not apply in all situations. Electromagnetic is affected by absorption and reflection from structures, objects and people. | | | |
| a. Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF | | | |

transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Infrared Thermometer is used exceeds the applicable RF compliance level above, the Infrared Thermometer should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Infrared Thermometer.
b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

**Recommended separation distances between portable and mobile RF communications equipment and the EQUIPMENT or SYSTEM -for EQUIPMENT and SYSTEMS that are not LIFE-SUPPORTING**

| Recommended separation distances between portable and mobile RF communications equipment and the Infrared Thermometer. | | | |
|---|---|---|---|
| The Infrared Thermometer is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Infrared Thermometer can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Infrared Thermometer as recommended below, according to the maximum output power of the communications equipment. | | | |
| Rated maximum output power of transmitter W | Separation distance according to frequency of transmitter m | | |
| | 150 kHz to 80 MHz $d=[\frac{3.5}{V_1}]\sqrt{P}$ | 80 MHz to 800 MHz $d=[\frac{3.5}{E_1}]\sqrt{P}$ | 800 MHz to 2,5 GHz $d=[\frac{7}{E_1}]\sqrt{P}$ |
| 0.01 | / | 0.12 | 0.23 |
| 0.1 | / | 0.38 | 0.73 |
| 1 | / | 1.2 | 2.3 |
| 10 | / | 3.8 | 7.3 |
| 100 | / | 12 | 23 |
| For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer. | | | |

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Zewa, Inc.
12960 Commerce Lakes Dr. # 29
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