

Infrared Thermometer Operation Manual

Model: YK-IRT2

Before using this Infrared Thermometer, please read this manual carefully and use it correctly. After reading, please keep this manual for reference at any time when necessary.

The pictures in this manual are for reference only.

The contents of this manual and specifications of this product are subject to change without prior notice.

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Important safety instructions

1. Please do not use the infrared thermometer for the purpose beyond its original design. it suitable for medical unit and home use.
2. Since the infrared thermometer is not waterproof, please do not immerse it into water or other liquids. The cleaning and disinfection shall refer to the instructions in the section of Maintenance and Storage.
3. The infrared thermometer should be placed in a clean and dry place, away from the sun, at a best work temperature between 15°C-40°C and humidity between. 30%-85%RH.
4. Please do not touch the sensor with your finger.
5. Obstructions such as sweat stains, hair, hats or scarves may cause a lower temperature reading. Please remove obstructions to ensure accurate results.
6. Please do not drop, dismantle, repair or reform the product.
7. Please do not keep the infrared thermometer close to strong electrostatic fields or high-intensity magnetic fields, so as to avoid effects on the accuracy of the measured data.
8. In case of any problem, please stop using the product and contact the retailer. Please do not fix it on your own.
9. Please dispose of the product and battery according to local laws and regulations.
10. During long periods of non-use, please take out the battery so as to avoid liquid leakage due to an expired battery
11. Do not insert new batteries along with semi-used batteries. Hazards or product damages may occur due to inconsistent battery discharge characteristics.

Warnings

- A. Please keep the infrared thermometer out of reach of children;
- B. Please do not put the battery into a fire;
- C. The usage of infrared thermometer cannot substitute for medical treatment.

Symbols and Definitions

Symbols	Definitions
	BF type applied part
	Refer to operation manual
	Cautions
IP22	First characteristic numeral 2: Against ingress of solid foreign objects: ≥ 12.5 mm diameter Second characteristic numeral 2 Against ingress of water with harmful effects: dripping (15° tilted)
	Manufacturer
	Date of manufacture
	European union representative
	Serial number
	Separate collection
	Keep dry
	Keep away from sunlight
	Humidity range
	Temperature range
	Product certification

1. Product introduction

This product is a handheld non-contact Infrared Thermometer. It can record 34 sets of body temperature data. Product functions include high and low temperature prompts, backlight display of different body temperature ranges and auto shutdown.

1.1 Intended use

The infrared thermometer that we produced is specially for measuring body temperature, it can measure human temperature of forehead , it suitable for medical unit and home use.

User Group

Age: Adult/Children

-Fever patient;

-Other people who need to have their temperature taken

-Doctor

1.2 Contraindications

None

1.3 Product features

1. Accurate and fast: 1 second measure the temperature, easily and fast.
2. Health and safety: a non-contact measurement of forehead temperature, which has a measuring distance of 1-5cm, without contacting human skin, so as to avoid cross infection.
3. User-friendly and useful
4. Acousto-optic prompt: green, yellow and red backlights are used to indicate whether body temperature is normal, low fever or high fever, together with a sound prompt.
5. Smart analysis: it can store 34 sets of measured data for easy analysis and comparison.
6. Correction setup: its setup parameters can be revised, so as to adapt to different skin colors and human bodies with different characteristics.

1.4 Product structure



Diagram 1. Structure diagram of infrared thermometer

1. Sensor: this terminal aligns with the measured person.
2. Trigger key: used for power-on and taking measurements.
3. ▲ Up key: used to query memory data.
4. SET key: a long press can be used to turn sound on/off.
5. ▼ Down key: used to query memory data.
6. MODE key: switches between body temperature and surface temperature modes.
7. Display screen: displays measured data.
8. Battery cover: can be opened to replace battery.
9. Loudspeaker

1.5 Instruction of display screen

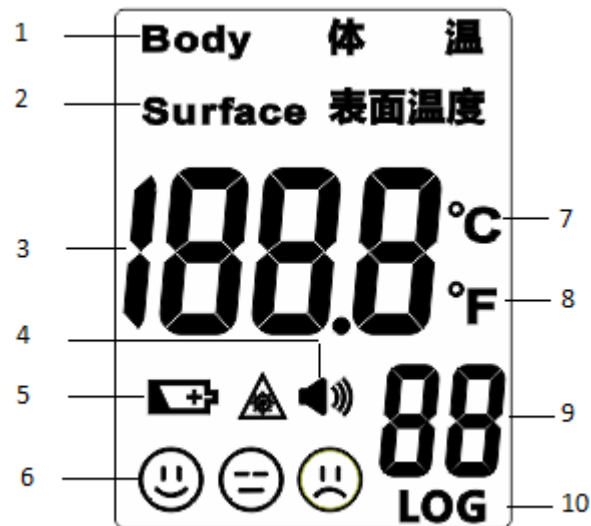


Diagram 2. Display screen interface

1. Body temperature
2. Surface temperature
3. Measured value of temperature
4. Sound/mute indicator
5. Low battery warning
6. Measured results: normal/low fever/high fever
7. Degrees Celsius
8. Degrees Fahrenheit
9. Number of memory sets
10. Memory symbol

2. Technical specifications

Working environment:

Ambient temperature: 15°C ~ 40°C

Relative humidity: 30% ~ 85%

Atmospheric pressure: 70kPa ~ 106kPa

Battery voltage: DC3V (2 AAA (7) batteries)

Product size: about 150mm×75mm×50mm (length × width × height)

Product weight: 120g (without batteries)

Measuring ranges: 34.0°C ~ 43.0°C

Range Indicator: <34.0°C Show Lo · >43.0°C Show Hi

Accuracy:

< 35.0°C and >42.0°C : ±0.3°C

35.0°C~ 42.0°C : ±0.2°C

Measuring distance: 1-5cm

Tri-color backlit:

≤37.5°C Green

37.6°C~38.0°C Yellow

≥38.1°C Red

Auto power-off: ≤60 seconds

Storage and transportation:

Ambient temperature: -20°C ~ 55°C

Relative humidity: 15% ~ 93%

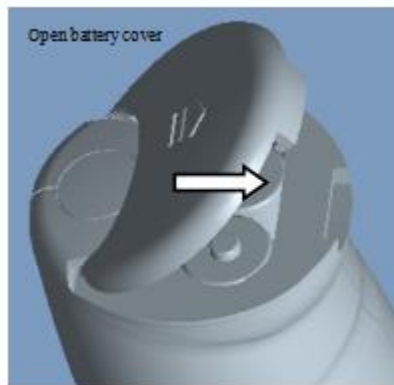
Atmospheric pressure: 50kPa ~ 105kPa

3. Instrument operation and usage

3.1 Installing batteries

1. Push the battery cover in the direction of the arrow to open;
2. Insert 2 AAA batteries, paying attention to positive and negative electrodes;

3. Press the battery cover and push in the opposite direction of the arrow to close.



3.2 Preparing for measurement

The correct usage method is key for ensuring measuring accuracy. To avoid incorrect measurement, please operate according to the following tips:

1. When measuring body temperature, aim at the middle of the forehead (above eyebrows) and hold the product vertically, at a distance of ≤ 1 cm, as shown in the following picture. When the “trigger” key is pressed, the measured value of temperature will be displayed on the screen.



2. Before measuring, please keep the forehead free from obstructions, such as hair, sweat, cosmetics or hat.

3. When the measured person has a relatively large difference in the temperature of the measuring environment, they are required to stay in the testing environment for around 5 minutes. After their temperature is consistent with the ambient temperature, measuring can be conducted again.

4. For fever patients, a cold compress on the forehead and other cooling measures will result in lower temperature measurements.

5. The ambient temperature around the measured person should be stable. The test cannot be conducted in places with larger airflows, including fan and air outlets of air conditioning.

6. Place the infrared thermometer in the operating environment for 20 minutes prior to using, so as to adjust to the relative ambient temperature.

7. Do not use the infrared thermometer in strong sunshine.

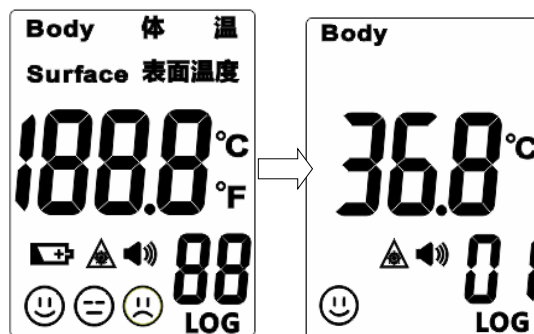
8. It is recommended to measure three times, so as to display the highest group of data.

9. When measuring a person's forehead temperature, please select the "body temperature" mode;

3.3 Starting measurement

1. Aim at the measured target and press the "trigger" key. Refer to the display screen for the results. Since the infrared thermometer will conduct a self-inspection when powering on, this picture will display for around two seconds.

2. After this self-inspection is completed, a "beep" will be heard (if the sound is turned on), which indicates that the product is on and the measurement has finished. Meanwhile, the display screen will indicate the results from the measured target.



⚠ Caution ⚠

If the temperature exceeds the set value of a low fever, the LCD backlight will be yellow.

If the temperature exceeds the set value of a high fever, the LCD backlight will be red and a crying face will be displayed, accompanied with three quick "beep" sounds.

After continuously measuring five times, please wait for at least 20 seconds to ensure measurement accuracy.

3.4 Switching measurement patterns

When powered on, a short press of the "MODE" key switches between the body

temperature and surface temperature modes.

The body temperature mode can be used to measure human body temperatures

3.5 Viewing memory values

When powered on, a short press of the ▲ up key or ▼ down key will allow for memory queries.

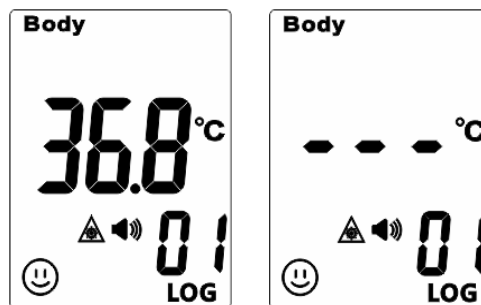
To look over earlier measured values, quickly press the ▼ down key.

To look over recently measured values, quickly press the ▲ up key.

Note:

1) The higher the memory serial number, the earlier the measured value is. The lower the memory serial number, the more recent the measured value is.

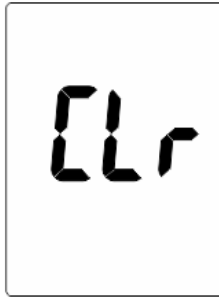
2) If there is memory value, it will display the memorized value directly, or it will displays “--” as shown in the following diagram.



3) The infrared thermometer can store 34 sets of recently measured values at most. The values beyond 34 sets are covered automatically in chronological order.

3.6 Deleting memory values

When powered off, press and hold the “MODE” key, while pressing the “trigger” key. This will display “CLr” and the product will shut down after two seconds. All the memory values will be deleted.






3.7 Unit setup

1. Unit setup F1

Turn the power on. Press and hold the “MODE” key until “F1” appears on the screen. Quickly press the down key (▼) to switch between temperature units °C/°F.

4. Error messages

Displayed problem	Meaning of the display	Possible reasons and troubleshooting
Hi	Measured temperature is too high	Body temperature mode: the temperature of the measured target is higher than 43°C;
Lo	Measured temperature is too low	Body temperature mode: the temperature of the measured target is lower than 34°C;
 (flashes)	Low battery warning	Low battery warning. Power off after the screen flashes  symbol. Please replace batteries at once.
 (blank screen)	infrared thermometer will shut down automatically	Restart by pressing “trigger” key

	Battery is not installed well	Check whether the positive and negative electrodes (“+” and “-”) are fitted correctly.
	Dead battery	Please replace batteries at once.
	The screen is still blank	Please contact the retailer and send it for repair.

5. Battery replacement

The infrared thermometer uses 2 AAA (7) batteries. When the infrared thermometer prompts a low battery warning, please refer to the method specified in section 3.1 to replace batteries.

⚠ Caution ⚠

1. When opening the battery cover, pay special attention to the polarities of batteries. Wrong placement may cause damage to the product.
2. If the product has not been used, or will not be used, for a long period, please remove the batteries, so as to avoid possible damages caused by liquid battery leakage.
3. If the product displays signs of battery leakage or mildew, do not use it.
4. Do not keep batteries close to a fire or place in a fire, which can cause batteries to explode.
5. Do not store batteries in high temperatures and humidity.
6. To avoid short circuiting, please do not put batteries and metal objects, including coins or keys, in the same place as products that may cause short circuiting.

6. Maintenance and storage

1. The infrared probe accuracy will be affected if not carefully protected. Please do not use fingers or other objects to contact or press it.
2. Use 75% alcohol cotton wet cloth to clean the infrared thermometer shell .. Do not let liquid enter the infrared thermometer. Never clean it with corrosive detergents, diluents or gasoline, and do not immerse the product into water or other liquids.
3. Carefully protect the LCD (liquid crystal display) surface.

4. Keep the infrared thermometer in a dry place and avoid dust, pollution or direct sunlight.

7. Troubleshooting

● What may cause “Lo” to appear?

Possible reasons include:

1. The measuring distance is too far. This may measure the temperature of the surrounding environment rather than person. The designed measuring distance of this infrared thermometer is ≤ 1 cm.
2. The measuring position has deviated. If measuring body temperature, the infrared thermometer should be aimed at the middle of forehead (above eyebrows) and kept vertical.
3. “Lo” may appear if there is hair covering the forehead of the measured person, or if the measurement is taken under air conditioning or strong winds. Measuring should be conducted again after the measured person stays still for 5-10 minutes in a relatively static environment.
4. There are rare cases of people whose forehead temperature is lower than average. Their test result may be “Lo”. A comparison can be conducted by measuring the surface temperature of another person’s forehead after adjusting the infrared thermometer to the mode of “surface temperature” for measurement. The body temperature of this person can be judged as normal.

Main attention should be paid to high temperature prompt or the “Hi” display for fever.

● Is the infrared thermometer dangerous? Does it emit radiation?

The infrared thermometer collects radiant infrared of the human body to calculate the body temperature of human body. It belongs to passive reception of infrared radiation energy. The product is not used by directly contacting with human body. Therefore, it cannot bring cross infection from different human bodies. Additionally, the infrared thermometer manufactured by this company does not emit radiation, so it cannot damage the human body.

8. Common sense of body temperature

The human body is a very complex integrated biological system and body temperature is a very important vital sign. In general, we test our healthy conditions through measuring the temperatures of the forehead, cochlea, anus, oral cavity and armpit. Different temperatures may be measured at different parts. The specific difference reference is shown in the

following Table I:

Measured part	Normal temperature
Temperature of cochlea	35.8-38.0°C
Temperature of forehead	34.7-37.8°C
Temperature of oral cavity	35.5-37.5°C
Temperature of armpit	34.7-37.3°C
Temperature of anus	36.6-38.0°C

Table I

Age	Normal temperature
0-2 years old	36.4-38.0°C
3-10 years old	36.1-37.8°C
11-65 years old	35.9-37.6°C
>65 years old	35.8-37.5°C

Table II

The temperature of the human body changes during the day. Meanwhile, it is also affected by other factors such as age, gender, skin color and skin thickness. The specific reference for the changes of body temperature over time is shown in the above Table II.

The body temperature of female is different from that of male. In general, the body temperature of female is higher than that of male by about 0.3°C. During ovulation, the average female body temperature is increased by 0.3-0.5°C. Therefore, temperature can also be used as a tool to determine whether a female is in her ovulation period, which can be beneficial to family planning.

It is a common practice to use the infrared thermometer to measure the basic body temperature of females every day for at least one month. Then, a curve chart of basic body temperatures can be drawn. The ovulation period can be seen clearly from the chart.

9. Manufacturer's Declaration of the EUT

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

1	Guidance and manufacturer's declaration – electromagnetic emission		
2	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.		
3	Emissions test	Compliance	Electromagnetic environment - guidance
4	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.
5	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.
6	Harmonic emissions IEC 61000-3-2	N/A	
7	Voltage fluctuations / flicker emissions IEC 61000-3-3	N/A	

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	EN 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with a synthetic material, the relative humidity should be at least 30%.
Electrostatic transient / burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	N/A	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode	N/A	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5 % U_T (>95 % dip in U_T) for 0.5 cycle 40 % U_T (60 % dip in U_T) for 5 cycles 70 % U_T (30 % dip in U_T) for 25 cycles	N/A	Mains power quality should be that of a typical commercial or hospital environment. If the user of the infrared thermometer requires continued operation during power mains interruptions, it is recommended that the infrared thermometer be powered from an uninterruptible power supply or a battery.

	$< 5 \% U_T$ ($>95 \%$ dip in U_T) for 5 sec		
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE U_T is the a. c. mains voltage prior to application of the test level.			

**Guidance and manufacturer’s declaration – electromagnetic immunity –
for EQUIPMENT and SYSTEMS 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	EN 60601 test level	Compliance level	Electromagnetic environment - guidance
			Portable and mobile RF communications equipment 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

Conducted RF	3 Vrms	N/A	$d = \left[\frac{3.5}{V_1}\right]\sqrt{P}$
IEC 61000-4-6	150 kHz to 80 MHz		$d = \left[\frac{3.5}{E_1}\right]\sqrt{P}$ 80 MHz to 800 MHz
			$d = \left[\frac{7}{E_1}\right]\sqrt{P}$ 800 MHz to 2.5GHz
Radiated RF	3V/m		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
IEC 61000-4-3	80 MHz to 2.7GHz	3 V/m	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
			Interference may occur in the vicinity of equipment marked with the following symbol: 

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetism 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 reorienting or relocating the infrared thermometer .

^b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/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			
	Separation distance according to frequency of transmitter m		
Rated maximum output of transmitter W	150 kHz to 80 MHz $d = \left[\frac{3.5}{V_1}\right]\sqrt{P}$	80 MHz to 800 MHz $d = \left[\frac{3.5}{E_1}\right]\sqrt{P}$	800 MHz to 2.5 GHz $d = \left[\frac{7}{E_1}\right]\sqrt{P}$
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.

- ❖ **This company shall bear no quality responsibility for machine faults due to the customer's nonobservance of the above precautions or other correct application methods.**

10 Warranty and manufacturer information

10.1 Warranty

1. The company shall provide a one-year free warranty from the purchasing date of this product.
2. The company shall provide no free warranty services for the faults caused by the personal reasons of users, as follows:
 - Faults caused by unauthorized dismounting or refitting of this product;
 - Faults caused by accidental falling-off during use or handling process;
 - Faults caused by the improper maintenance or lack of reasonable maintenance;
 - Faults caused by the failure of operating according to the correct knowledge specified in the manual;
 - Faults caused by natural disasters, for instance, immersion and fire;
 - Faults caused by improper repairs by repair shop without the authorization of this company.
3. In case free service is required, you must show effective warranty card and proof of purchase.
4. In case warranty service is required, please take this product to the point of sale for repair.
5. In case of warranty service, if necessary, circuit diagram and data of repairable components and parts of the product can be provided to the qualified technicians recognized by our part.
6. Repair service beyond the warranty range shall be charged as according to regulations.

Statement: If you think the device is damaged or abnormal, please stop using the device. Please

contact the manufacturer

10.2 Manufacturer information

Contact information:

Xuzhou Yongkang Electronic Science Technology Co., Ltd

4F Building C8, 40 Jingshan Road, Economic and Technological Development Zone, Xuzhou,
China

TEL: +86-516-87892766 -601 FAX: +86-516-87892755-606



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Xuzhou, China



The authorized representative of European Union:



Prolinx GmbH
Brehmstr. 56, 40239 Duesseldorf
Germany

Item name	Quantity
Host	1
Manual	1
Certification	1