

# Infrared Thermometer Instruction Manual



Version: WT320-EN-0

## A. Introduction

This infrared thermometer is used for measuring the temperature of the object's surface, which is applicable for various hot, hazardous or hard-to-reach objects without contact safely and quickly.

This unit consists of Optics, Temperature Sensor Signal amplifier, Processing circuit and LCD Display. The Optics collect the infrared energy emitted by the object and focus it onto the Sensor. Then the sensor translates the energy into an electricity signal. This signal will be turned out to be digital shown on the LCD after the signal amplifier and processing circuit.

## B. WARNING & CAUTIONS

### 1. Warning:

To avoid the potential situation that may cause harm or damage to people, please pay attention to the following items:

- 1). Do not point laser directly at eye or indirectly off reflective surfaces.
- 2). The unit cannot measure through transparent surfaces such as glass or plastic. It will measure the surface temperature of these materials instead.
- 3). Steam, dust, smoke, or other particles can prevent accurate measurement by obstructing the unit's optics.

### 2. Cautions:

Infrared thermometer should be protected for the following:

- 1). EMF (electro-magnetic fields) from arc welders, induction heaters.
- 2). Thermal shock (cause by large or abrupt ambient temperature changes allow 30 minutes for unit to stabilize before use).
- 3). Do not leave the unit on or near objects of high temperature.

## C. Distance to spot size

1. When take measurement, pay attention to the Distance to Spot Size. As the Distance (D) from the target surface increases, the spot size (S) of the area measured by the unit becomes larger.  
The Distance to Spot size of the unit is 12:1(Figure 1).

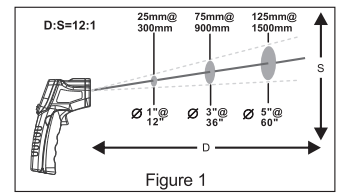


Figure 1

## 2. Field of view:

Make sure the target is larger than the unit's spot size. The smaller the target the closer measure distance. When accuracy is critical, make sure the target is at least twice as large as the spot size.

## D. EMISSIVITY

**Emissivity:** Most organic materials and painted or oxidized surfaces have an emissivity of 0.95 (preset in the unit). Inaccurate readings will result from measuring shiny or polished metal surfaces. To compensate for this, adjust the unit's emissivity reading or cover the surface to be measured with masking tape or flat black paint. Measure the tape or painted surface when the tape or painted reach the same temperature as the material underneath.

## E. Operation

### 1. Operating the unit: Figure 2

- 1). Open the battery door and insert the battery.
- 2). Pull the trigger to turn on the unit;
- 3). Aim at the target surface and pull the trigger, then temperature will be shown on the LCD.  
This unit is equipped with a laser, which is only used for aiming.

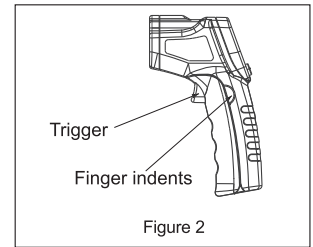


Figure 2

## 2. Locating a Hot Spot: Figure 3

To find a hot spot, aim the thermometer outside of interest, then scan across with an up and down motion until you locate the hot spot.

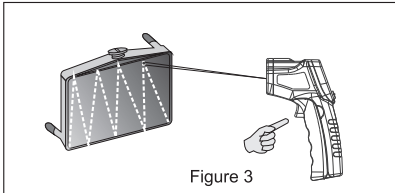


Figure 3

## F. LCD display & buttons

### 1. LCD display: Figure 4

- A: data hold icon
- B: scanning icon
- C: laser on icon
- D: back light on icon
- E: battery power icon
- F: self-calibration icon
- G: emissivity icon
- H: maximum icon
- I: minimum icon
- J: measuring unit
- K: measuring reading

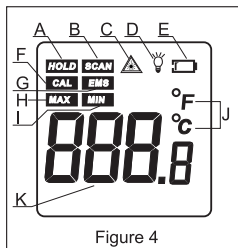


Figure 4

### 2. Diagram description: Figure 5

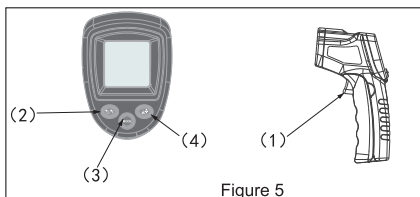


Figure 5

- (1) Trigger: press it to display temperature value with SCAN appears at meantime. Release the trigger and enter into HOLD mode to save the data automatically, and the unit turns off automatically if there is no further operation.

- (2) Switch key between Celsius degree and Fahrenheit degree. This key can also be used for increasing value set.

- (3) Mode switch key: press Mode key to switch modes in turn among MAX→MIN→EMS→CAL→MEASURING INTERFACE

a. MAX: measuring maximum temperature

b. MIN: measuring minimum temperature

Note: In measuring, hold on the Mode key to switch to Max or Min review.

- c. EMS: under this mode, select the emissivity 0.95 with °C/°F key or emissivity 0.8 with laser location key.

- d. CAL: Under self calibration mode, to calibrate the unit between -5.0°C and +5.0°C

For example: if the temperature is 26.3°C and the temperature value measured is 25°C, then and 1.3°C should be increased as a calibration value, and after calibration press the mode key to return to the measuring mode.

- (4) laser location key and backlight switch key (press the 2 keys simultaneously for backlight on/off. this key can also be used as a self calibration value decrease key.

## G. Maintenance

1. Lens Cleaning: Blow off loose particles using clean compressed air. Gently brush remaining debris away with a moist cotton swab. The swab may be moistened with water.
2. Case cleaning: Clean the case with a damp sponge/cloth and mild soap.

### Note:

- 1) Do not use solvent to clean plastic lens.
- 2) Do not submerge the unit in water.

## H. Specification

Temperature range	-50~380°C (-58~716°F)
Accuracy	0~380°C (32~716°F) : ±1.5°C (±2.7°F) or ±1.5% -50~0°C (-58~32°F) : ±3°C (±5°F) Whichever is greater
Repeatability	1% of reading or 1°C
Response time	500 mSec, 95% response
Spectral response	5~14 μm
Emissivity	0.95 Preset, 0.8 optional
Distance to Spot size	12:1
Operating Temperature	0~40°C (32~104°F)
Operating Humidity	10~95%RH non-condensing, up to 30°C (86°F)
Storage Temperature	-20~60°C (-4~140°F)
Power	3V (1.5V AAA battery * 2)
Typical battery life (Alkaline)	Laser Models: 12 hrs

### Specific Declarations:

Our company shall hold no any responsibility resulting from using output from this product as an direct or indirect evidence. We reserves the right to modify product design and specification without notice.