Infrared thermometer
Instruction manual

Version：550E-EN-00

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-toreach objects without contact safely and quickly.

This unit consist of Optics, Temperature Sensor Signal amplifier, Processing circuit and LCD Display. The Optics collected the infrared energy emitted by object and focus 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 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 by the units optics.

2. Cautions:

Infrared thermometer should be protected for the following:

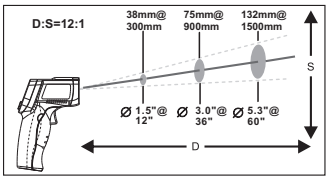
1). EMF (electro-magnetic fields) from arc welders, induction heaters.
2). Thermal shock (cause by large or abrupt ambient temperature changes allow 30 minutes for unit to stabilize before use).
3). Do not leave the unit on or near objects of high temperature.

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.

This unit is equipped with a laser, which is used for aiming.



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 units 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.

Marterial	Emissivity	Marterial	Emissivity
Aluminum	0.30	Iron	0.70
Asbestos	0.95	Lead	0.50
Asphalt	0.95	Limestone	0.98
Basalt	0.70	Oil	0.94
Brass	0.50	Paint	0.93
Brick	0.90	Paper	0.95
Carbon	0.85	Plastic	0.95
Ceramic	0.95	Rubber	0.95
Concrete	0.95	Sand	0.90
Copper	0.95	Skin	0.98
Dirt	0.94	Snow	0.90
Frozen food	0.90	Steel	0.80
Hot food	0.93	Textiles	0.94
Glass(plate)	0.85	Water	0.93
Ice	0.98	Wood	0.94

E. Operation

1. Operating the unit:

1). Open the battery door and insert a 9V battery properly.:
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.

2. Locating a Hot Spot:

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 1)

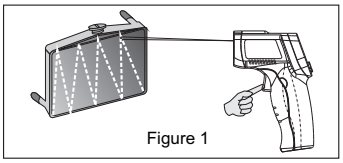
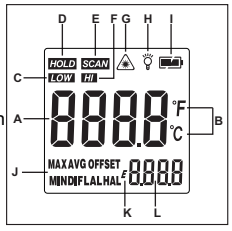


Figure 1

F. LCD display & buttons

1.LCD display:
A: measuring reading
B: measuring unit
C: low temperature alarm icon
D: data hold icon
E: scanning icon
F: high temperature alarm icon
G: laser on icon
H: back light on icon
I: battery power icon
J: mode
K:emissivity indicator
L:functional value



2. Diagram description:
(figure 2)

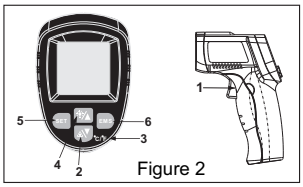


Figure 2

(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) Laser positioning: press the trigger and then press the 2 key to turn on/off the laser positioning function with an icon displaying on LCD.
(3)Temperature unit shift: press 2 key to shift the temperature unit between the Celsius and the Fahrenheit.
(4)Backlight: press the trigger first and then press the 4 key to turn on/off the backlight with an icon displaying on LCD.
(5)Press the SET key and MAX-AVG-MIN-DIF-LAL-HAL-OFFSET-E will be display on the LCD in sequence repeatedly, press SET key again to select the desired function. This device has memory function; the measuring mode will be displayed next time after turning on.

a. MAX: measuring maximum temperature
b. MIN: measuring minimum temperature
c. DIF: figure out the difference between the MAX and MIN
d. AVG: measuring average temperature
e. HAL: high temperature alarm--when selected HAL, press 4 keys and 2 keys to set high temperature alarm trigger and confirmed by pressing 6 key. When reading over trigger, LCD display HI icon with BiBi audio sounds. Alarm works in other function modes as well.
f. LAL: low temperature alarm--when selected LAL, press 4 keys and 2 keys to set low temperature alarm trigger and confirmed by pressing 6 key. When reading over trigger, LCD display LOW icon with BiBi audio sounds.Alarm works in other function modes as well.
g. OFFSET: Zero offset adjustment

(6)*E*: Press EMS key and then press 4 keys and 2 keys to set up the emissivity, and then press the EMS key to confirm the selected.
(7) Clesius / Fahrenheit switch: Please open battery and push the slide switch for convertsion.

G. Maintenence

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	**-50~550℃ (-58~1022℉)**
Accuracy	**0~550℃(32~1022℉) :±1.5℃(±2.7℉) or±1.5% -50~0℃(-58~32℉):±3℃ (±5℉) Whichever is greater**
Resolution	**0.1℃ or 0.1℉**
Repeatability	**1% of reading or 1℃**
Response time	**500 mSec, 95% response**
Spectral response	**8-14 um**
Emissivity	**0.10~1.00 Adjustable (0.95 Preset)**
Distance to Spot size	**12:1**
Operating Temperature	**0 ~40℃ (32 ~ 104℉)**
Operating Humidity	**10~95%RH non-condensing, up to 30℃(86℉)**
Storage Temperature	**-20 ~ 60℃ (-4~140℉)**
Power	**9V Alkaline or NiCd battery**
Typical battery life (Alkaline)	**Non-laser mode: 22 hrs; Laser Models:12 hrs**
Weight	**147.5g**
Dimension	**153*101*43mm**

CE

MADE IN CHINA