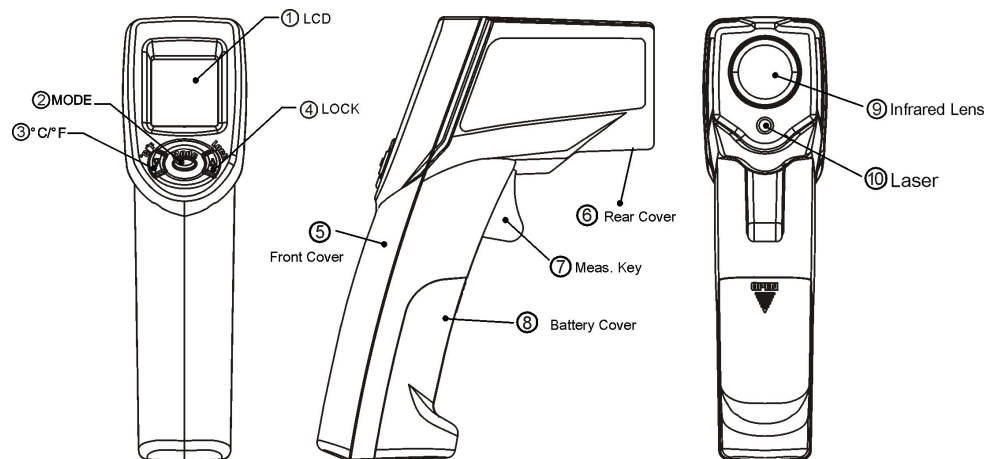# IR-GUN-S Thermometer Operating Instructions

The thermometer is a non-contact infrared thermometer. There are many mathematical modes for the Infrared function. Please remember to keep away from children and don't use it for safety related applications.

(Default Screen)
Simply aim the thermometer at the measure target with Lens and press Meas. key to display the surface temperature. The Distance:Spot is 12:1. Please make sure the target area is within the field of view.

FUNCTION
Press Mode key for scrolling more display function as follows.

▲E ▼ / ▲E ▼	Here will show the emissivity data. (The default emissivity is 0.95.)
	Press Mode key, then press Lock key or °C/ °F key to **set the emissivity**, then press Mode key to confirm it. The emissivity can be changed from 0.10 (10E) to 1 (100E).
MAX / MIN / DIF / AVG	Press Mode key for the **Maximum (MAX), Minimum (MIN), Different between MAX and MIN (DIF) and Average (AVG) modes. During the measurement, the special modes reading will be displayed beside the mode icon.**
HAL / LAL	Press Lock key or °C/ °F key to change the **High Alarm (HAL)** or **Lo Alarm (LAL)**, then press Meas. key to confirm it. For example: When the reading 26.9 °C < LAL 27 °C, the Low icon will flash and you will hear a beep sound.

ADD VALUE

In E,MAX, MIN, DIF, AVG mode:	Press Lock key for **LOCK mode** ON/OFF. The lock mode is particularly useful for continuous monitoring of temperatures for up to 60 minutes.
	Press °C/ °F key for **°C** or **°F transferred.**
In all modes: First hold on the Meas. key	and press Lock key for **backlight function** ON/OFF.
	and press °C/ °F key for **laser function** ON/OFF.
Memory	Recall the last reading memory by pressing Mode key while power off.

⚠CAUTION
1. **WHEN DEVICE IS IN USE, DO NOT LOOK DIRECTLY INTO THE LASER BEAM–PERMANENT EYE DAMAGE MAY RESULT.**
2. **USE EXTREME CAUTION WHEN OPERATING THE LASER.**
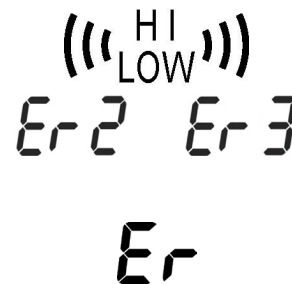3. **NEVER POINT THE DEVICE TOWARDS ANYONE'S EYES.**
4. **KEEP OUT OF REACH OF ALL CHILDREN.**

STORAGE & CLEANING
It should be stored at room temperature. The sensor lens is the most delicate part of the thermometer. The lens should be kept clean at all times, care should be taken when cleaning the lens using only a soft cloth or cotton swab with water or medical alcohol, allowing the lens to fully dry before using the thermometer. Do not submerge any part of the thermometer.

LCD ERROR MESSAGES
The thermometer incorporates visual diagnostic messages as follows:

'Hi' or 'Lo' is displayed when the temperature being measured is outside of the settings of HAL and LAL.

'Er2' is displayed when the thermometer is exposed to rapid changes in the ambient temperature. 'Er3' is displayed when the ambient temperature exceeds 0 °C (32°F) or +50°C (122°F). The thermometer should be allowed plenty of time (minimum 30 minutes) to stabilize to the working/room temperature.

Error 5~9, for all other error messages it is necessary to reset the thermometer. To reset it, turn the instrument off, remove the battery and wait for a minimum of one minute, reinsert the battery and turn on. If the error message remains please contact the Service Department for further assistance.
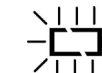
BATTERIES
The thermometer incorporates visual low battery indication as follows:

'Battery OK': measurements are possible | 'Battery Low': battery needs to be replaced, measurements are still possible | 'Battery Exhausted': measurements are not possible

⚠ When the 'Low Battery' icon indicates the battery is low, the battery should be replaced immediately with AAA, 1.5V batteries.
Please note: It is important to turn the instrument off before replacing the battery otherwise the thermometer may malfunction.
⚠ Dispose of used battery promptly and keep away from children.

SPECIFICATION

Measurement Range	-60 to 550 °C (-76 to +1022 °F)
Operating Range	0~50°C (32~122°F)
Accuracy, (Tamb=25°C)*	15-35°C+/-1.5°C (2.7°F)
Accuracy (Tamb=23 +/- 3°C)*	0~550°C:+/-2% of reading or 2°C (4°F) whichever is greater -60~0°C: +/-(2°C+0.05/degree C)
Emissivity	0.95 default – adjustable 0.1 to 1 step .01
Resolution (-9.9~199.9°C)	0.1°C/0.1°F
Response Time (90%)	1sec
Distance:Spot	12:1
Battery Life	Typ.18, min 14 hours continuous use
Dimensions	112.58x147.93x36mm (3.74x5.82x1.63")
Weight	145 grams(5.1 oz) including batteries (AAA 2pcs)

Note: Under the electromagnetic field of 3V/m from 200 to 600 MHz, the maximum error is 10 °C (18°F).
The thermometer will automatically shut off if left idle for more than 15 sec.

⚠ **EMC/RFI:** Readings may be affected if the unit is operated within radio frequency electromagnetic field strength of approximately 3 volts per meter, but the performance of the instrument will not be permanently affected.

*_IR accuracy can be affected by the emissivity setting, target spot size, and rapid changes in ambient temperature._

ThermoWorks

CERTIFICATE OF CONFORMANCE

The manufacturer of this instrument has implemented a quality assurance system under ISO 9001:2000 certified quality system and fully follow ISO GUM (Guide to the Expression of Uncertainty in Measurement) to evaluate the uncertainty of temperature and resistance standards, guarantee performance as below;

Calibration Temperature	Max Error	Target Accuracy	Target Stability
-30°C	±2.0°C	±0.3°C	0.3°C
0°C	±2.0°C	±0.4°C	0.1°C
100°C	±2.0°C	±0.4°C	0.1°C
200°C	±4.0°C	±0.5°C	0.1°C

Note: Assume the operation ambient temperature under 23 ± 3°C

Furthermore, we certify that this infrared thermometer has been inspected and found to comply with published specifications. This device has been calibrated by temperature and/or resistance standards that are traceable to NIST (U.S. National Institute of Standards and Technology) or NML (National Measurement Laboratory) of Taiwan, and the calibration procedure corresponds with generally accepted regulations and standards.