))) ThermoWorks

CERTIFICATE OF CONFORMANCE

The manufacturer of this instrument has implemented a quality assurance system under ISO 9001 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	±1.5°C	±0.3°C	0.3°C
0°C	±1.5°C	±0.4°C	0.1°C
400°C	±6.0°C	±2.0°C	0.2°C
900°C	±13.5°C	±3.0°C	0.4°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.

ThermoWorks

IR-PRO

Professional Infrared Thermometer

Operating Instructions

Introduction

Congratulations on purchasing ThermoWorks IR-PRO, Professional Infrared Thermometer. Each instrument is factory tested and a certificate of conformance is included to ensure that it was tested against NIST-Traceable standards. Please review this operation guide prior to use.

Operating Instructions

Open the battery compartment by pulling forward on the front handle. Insert the batteries noting the polarity. Pull the trigger, and the temperature reading of the surface being measured will be shown on the LCD display. Use the dual laser pattern to identify the target area being measured. On the side of the unit are slots to insert a type K thermocouple probe (sold separately) for contact measurements. The instrument will automatically turn off after 60 seconds. When in probe mode, it will turn off after 12 minutes.

Infrared measurements are affected by many factors including emissivity, distance, ambient temperature, material of target being measured and many other factors. **For tips on using infrared thermometers visit the ThermoWorks Help Center at help.thermoworks.com.**

Features

(Default Screen)
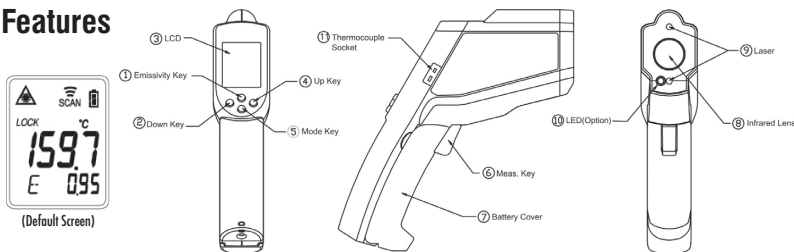
Function Keys (Press Mode button to scroll)

E	Current emissivity setting. (The default emissivity is 0.95.)
$\wedge E \vee$	Press 'Mode' button, then press 'Up' key or 'Down' key to **set the emissivity**. Press 'Mode' key to save. The emissivity is settable from 0.10 (10E) to 1 (100E).
MAX MIN dIF AVG	Press 'Mode' button to view **Maximum (MAX), Minimum (MIN), Different between MAX and MIN (DIF) and Average (AVG) modes**. All functions are reset when measurements resume.
HAL LAL	Press 'Up' key or 'Down' key to change the **High Alarm (HAL)** or **Lo Alarm (LAL)**, then press 'Meas.' key to save. Alarm will sound and screen will flash when limits are exceeded. Alarm is for infrared measurements only.
PRB	Connect a suitable type K thermocouple probe to the connection on the side of the unit. Within the PRB function the temperature of the probe will be displayed in the lower display.

Lock Mode

Press the "Lock" button to enable the continuous operation mode. In this mode the unit will measure without requiring the press of the trigger for up to 60 minutes. Press 'Lock' button again to disable continuous operation mode.

Backlight

To turn on the LCD backlight, press the "Lock" button while holding down the trigger. Press again to turn the backlight off.
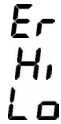
Laser

To turn on the dual laser, press the "C/F" button while holding down the trigger. Press again to turn the laser off.

Storage & Cleaning

The thermometer 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.

Troubleshooting

The thermometer incorporates visual diagnostic messages as follows:

$((\text{'}_{\text{LOW}}^{\text{HI}}\text{'}))$	'Hi' or 'Lo' is displayed when the temperature being measured is outside of the settings of HAL and LAL.
$Er\ 2$ $Er\ 3$	'**Er2**' is displayed when the thermometer is exposed to rapid changes in the ambient (working / room) temperature. '**Er3**' is displayed when the ambient temperature exceeds 32°F (0°C) or 122°F (50°C). The thermometer should always be allowed plenty of time (minimum of 30 minutes) to stabilize to the ambient temperature.
Er Hi Lo	**Error 5-9** is displayed for all other error messages; it is necessary to reset the thermometer. To reset the thermometer, turn it off and remove the batteries for at least one minute. Reinsert the batteries and turn on. If the error message remains, please contact Technical Support at techsupport@thermoworks.com for further assistance. 'Hi' or 'Lo' is displayed when the temperature being measured is outside of the measurement range.
🔋	'**Battery Low**' Replace batteries. Measurements are not affected
⌁	Replace batteries

⚠ When the 'Low Battery' icon flashes, the batteries should be replaced immediately with 2x AAA, 1.5V batteries.
Please note: Turn the instrument off before replacing the batteries.

⚠ Dispose of used batteries promptly and keep away from children.

Specifications

Range	–76 to 1832°F (–60 to 1000°C)
Type K Thermocouple Range	–83.2 to 1999°F (–64 to 1400°C)
Operating Range	32 to 122°F (0 to 50°C)
Accuracy*(Tamb=25°C)	59 to 95°F ±1.8°F (15 to 35°C ±1.0°C)
Accuracy*(Tamb=23±3°C)	32 to 1832°F: ±1.5% of reading or 2.7°F (1.5°C), whichever is greater
Thermocouple Accuracy	±1% of reading or 1.8°F (1°C) whichever is greater (Test under Tamb=23±6°C)
Emissivity Range	0.95 default — adjustable 0.1 to 1 step .01
Resolution	0.1° at -83.2 to 999.9°, otherwise 1°
Response Time (90%)	1 sec.
Distance/Target Spot Ratio	50:1
Battery Life	Typical 140 hours continuous use (Alkaline, without Laser and Backlight)
Dimensions	1.8 x 7.7 x 8.0 inches (47.0 x 197.0 x 203.3 mm)
Weight	13.62 oz. (386.1g) including batteries (AAA x 2)

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

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