FLUKE®

572

Precision Infrared Thermometer

Users Manual

March 2005

LIMITED WARRANTY AND LIMITATION OF LIABILITY

This Fluke product will be free from defects in material and workmanship for one year from the date of purchase. This warranty does not cover fuses, disposable batteries, or damage from accident, neglect, misuse, alteration, contamination, or abnormal conditions of operation or handling. Resellers are not authorized to extend any other warranty on Fluke's behalf. To obtain service during the warranty period, contact your nearest Fluke authorized service center to obtain return authorization information, then send the product to that Service Center with a description of the problem.
THIS WARRANTY IS YOUR ONLY REMEDY. NO OTHER WARRANTIES, SUCH AS FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSED OR IMPLIED. FLUKE IS NOT LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, ARISING FROM ANY CAUSE OR THEORY. Since some states or countries do not allow the exclusion or limitation of an implied warranty or of incidental or consequential damages, this limitation of liability may not apply to you.

Safety Information

⚠⚠ Warning

A Warning identifies conditions and actions that pose hazards to the user. To avoid electrical shock or personal injury, follow these guidelines:

- ⚠ Do not point laser directly at eye or indirectly off reflective surfaces.
- Before using the thermometer inspect the case. Do not use the thermometer if it appears damaged. Look for cracks or missing plastic.
- Replace the batteries as soon as the battery indicator two or less segments.
- Do not use the thermometer if it operates abnormally. Protection may be impaired. When in doubt, have the thermometer serviced.
- Do not operate the thermometer around explosive gas, vapor, or dust.
- Do not connect the optional external probe to live electrical circuits.
- To avoid a burn hazard, remember that highly reflective objects will result in lower than actual temperature measurements.
- Do not use in a manner not specified by this manual or the protection supplied by the equipment may be impaired.

⚠ Caution

To avoid damaging the thermometer or the equipment under test protect them from the following:

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

Table of Contents

Introduction

The Fluke Model 572 Infrared Thermometer (the thermometer) is for non-contact temperature measurement. This thermometer determines an object‘s surface temperature by measuring the amount of infrared energy radiated by the object‘s surface.

Contacting Fluke

To contact Fluke, call one of the following telephone numbers:

USA: 1-888-44-FLUKE (1-888-443-5853)
Canada: 1-800-36-FLUKE (1-800-363-5853)
Europe: +31 402-675-200
Japan: +81-3-3434-0181
Singapore: +65-738-5655
Anywhere in the world: +1-425-446-5500
For USA Service: 1-888-99-FLUKE (1-888-993-5853)

Or, visit Fluke's Web site at www.fluke.com.
To register your product, visit register.fluke.com.

Symbols and Safety Markings

Symbol	Explanation
⚠	Risk of danger. Important information. See Manual.
⚠	Hazardous voltage. Precedes warning
⚠	Warning. Laser.
CE	Conforms to requirements of European Union and European Free Trade Association (EFTA)
°C	Celsius
°F	Fahrenheit
	Battery

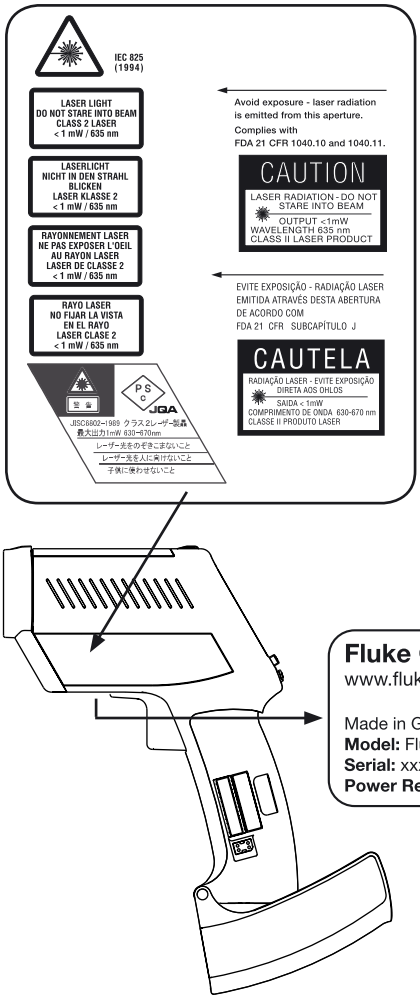
LASER

ON/OFF

The laser sight simplifies sighting of the measurement object. It shows the spot size that includes the measured target.

A laser symbol (1) appears when the laser is on. The laser automatically turns off if you release the trigger.

Laser Warning and Serial Number Labels



Delivery Content

- The unit
- Getting Started
- Two AA batteries
- Manual on CD

Functions and Display

FUNCTIONS

USER INTERFACE

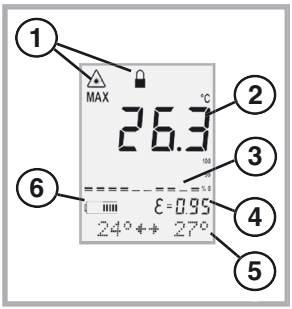
Function keys and display:

(A) Visual and audible Hi-Alarm
(B) Display
(C) Up and Down keys
(D) Enter
(E) Switches for adjustments (inside the unit's handle)
(F) Trigger
(G) Tripod mount (underside of unit)

DISPLAY

Displayed functions:

(1) Laser condition / Lock symbol
(2) Main temperature display
(3) Graphic display
(4) Emissivity value
(5) Status bar
(6) Battery life indicator



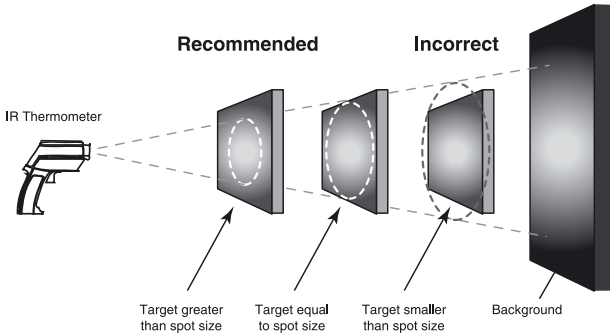
Batteries and Measurement

To open the battery compartment, press gently on the top part of the handle to release the catch and pivot the grip as shown in the figure. Orient the batteries (two alkaline R6 (AA, UM3)) positive side up as shown on the housing.

MEASUREMENT

To take a temperature measurement, hold the unit as shown. Aim at the target. Pull the trigger (F). The temperature of the object being measured is shown on the display (B). The temperature will be displayed for seven seconds after trigger is released.

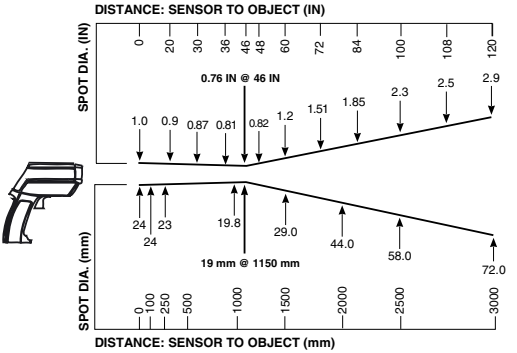
Field of View and Emissivity



Make sure that the target is larger than the unit's spot size. The smaller the target, the closer you should be to it.

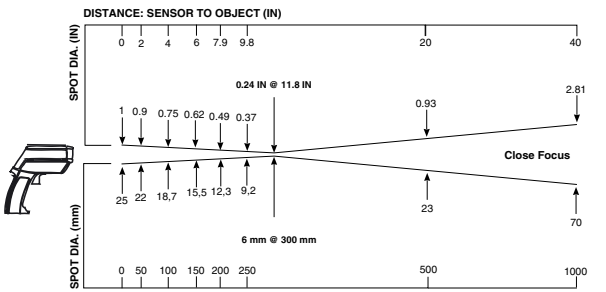
Spot Size

STANDARD MODEL
Optical Chart



FOCUS POINT D:S = 60:1 FAR FIELD D:S = 35:1

CLOSE FOCUS MODEL
Optical Chart

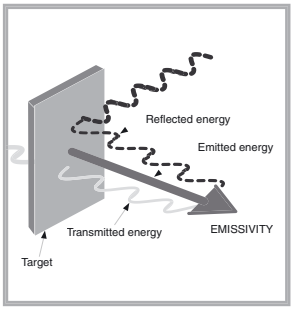


FOCUS POINT D:S = 50:1 FAR FIELD D:S = 12:1

The measured spot size depends on the distance between the object you are measuring and the infrared thermometer.
The relationship between distance and spot size is 60:1(Standard Focus) or 50:1 (Close Focus) at the focus point. The D:S in the far field (>33ft/ 10m) is 35:1 (Standard) or 12:1 (Close Focus).

Emissivity

The amount of infrared energy radiated by an object depends on its emissivity and its temperature.
The emissivity depends on the material and its surface characteristics.
For more accurate readings, adjust the emissivity value for the type of material being measured.



ADJUST EMISSIVITY

The “Setup” DIP switch (located inside the unit’s handle) must be in the “ON” position to adjust the emissivity.
When the trigger is pulled, the display will show an emissivity value (4). To set it to another value, use the up and down keys (C).
See the Emissivity Table for approximate material emissivities.

Mode and Setup Alarm

MODE

MIN-MAX VALUES

The minimum and maximum temperature values during a measurement session are shown in the status bar at the bottom of the display (5), except when adjusting the high alarm.

SETUP

HIGH ALARM

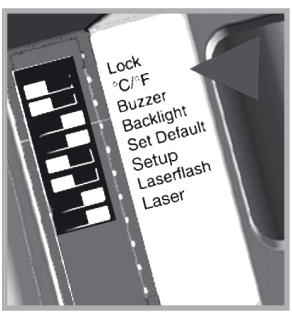
The high alarm feature (HiAl) generates a visual (A) and audible alarm if the temperature is above the setpoint. To set the alarm value (which is in the status bar (5), move the “Setup” DIP switch inside the unit’s handle to ON. Press ENTER (D) once, and use the up and down keys (C) to adjust the value.

Graphic Display and DIP Settings

The graphic display (3) shows the temperature as a moving bar graph. The last ten measurements are shown.
The minimum and maximum temperature scale of the graph is set automatically by the unit (Auto Range Feature).
Recall previous display by pushing ENTER (D).

SETTINGS

Change the settings in the unit by using the DIP switches located in the battery compartment (see BATTERIES section).



Lock: Trigger locked (ON) or unlocked (OFF).
°C/°F: changes between °C and °F.
Buzzer: Audible alarm ON or OFF.
Backlight: Backlight ON or OFF.
Set Default: Activates the factory defaults.
Setup: Setup HiAlarm and Emissivity adjustment activated.
Laserflash: The laser flashes when the alarm values are surpassed.
Laser: activated (ON), not activated (OFF).

DIP Switch Factory Settings

Factory settings

Lock	OFF
°C/°F	°C
Buzzer	ON
Backlight	OFF
Set Default	OFF
Setup	ON
Laserflash	ON
Laser	ON

The Factory DIP switch settings can be changed according to your needs. For information on accessing the DIP switches, see the BATTERIES section in this manual. For information on the DIP switch functions, see SETTINGS on the previous page.

Troubleshooting

Code	Problem	Action
-O- -U-	Target temp. is over or under range	Select target within unit's specs
EEPROM-Err	EEPROM error	Contact factory
CalAreaErr ProbCalErr	Calibration errors	Contact factory
Battery icon flashes or LowBatt on Status line	Battery is low	Replace batteries
Blank display	Battery is dead	Replace batteries
Laser won't work	Low or dead battery	Replace batteries
	Ambient above 45°C (113°F)	Operate unit in 45°C (113°F) ambient or below

Maintenance

Lens Cleaning:
Blow off loose particles using clean compressed air. Brush remaining debris away with a camel's hair brush.
Wipe the surface with a moist cotton swab. The swab may be moistened with water or a water based glass cleaner.
NOTE: DO NOT use solvents to clean the plastic lens.

Cleaning the Housing:
To clean the exterior housing, use soap and water or a mild commercial cleaner. Wipe with a damp sponge or soft rag.

Emissivity Table (Selected Values)

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

* oxidized
** opaque, over 20 mils
*** natural

CE Conformity

CE

This instrument conforms to the following standards:
EMC: - EN 61326-1:1997+A1:1998+A2:2001
Safety: - EN 61010-1:2001
- EN 60825-1:2001
This product herewith complies with the requirements of the EMC Directive 89/336/EEC and the Low Voltage Directive 73/23/EEC.
This instrument conforms to the Standards of the European Community.

Certification

The temperature sources used to calibrate this instrument are traceable to the U.S. National Institute of Standards and Technology (NIST) and the Deutscher Kalibrierdienst (DKD). Calibration certificates are available as an option.

Specifications

Temperature range	-30 to 900°C (-25 to 1600°F)
Display Resolution	0.1°C (0.2°F)
Accuracy	± 0.75% of reading or ± 1K (± 1.5°F), whichever is greater at 25°C (77°F) ambient temperature, ± 2°K (± 4°F) for targets below -5°C (23°F)
Ambient derating	< 0.05K/K or < 0.05 %/K, whichever is greater at +25°C (77°F) ± 25K (± 45°F)
Repeatability	±0.5% of reading or ±1°C (±2°F), whichever is greater
Response Time (95%)	250 mSec
Hot Spot Detection (30%)	85 mSec
Spectral Range	8 to 14 μm
Optical Resolution (Standard Focus)	60 : 1 (19mm spot size at 1.15M.) (0.75 in. spot size at 3.8 feet)
Optical Resolution (Close Focus)	50 : 1 (6mm spot size at 0.3M.) (0.24 in. spot size at 0.98 feet)
Ambient Operating Range	0 to 50°C (32 to 122°F)
Storage Temperature (without batteries)	-20 to 50°C (-4 to 122°F)
Power	2 x 1.5 V Alkaline Type AA
Battery Life	13 hrs. (50% laser and 50% backlight used)
Dimensions	200 x 170 x 50 mm (7.9 x 6.7 x 2 inches)
Tripod Mount	1/4"-20 UNC

Factory defaults

	Default	Range
Emissivity/Gain	0.95	0.10 to 1.50, in steps of 0.01
Hi Alarm	50°C (122°F)	-30 to 900°C (-25 to 1600°F)