FLUKE®

566/568

Infrared Thermometers

Getting Started

PN 2812159
August 2007 Rev. 2, 4/08

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Infrared Thermometers

Introduction

The 566 and 568 Infrared Thermometers (the thermometers) are for non-contact temperature measurement. These thermometers determine an object's surface temperature by measuring the amount of infrared energy radiated by the object's surface. The thermometers also support contact-temperature measurement via K-type thermocouple. See the Users Manual CD for complete operating instructions. Note that the Japanese models indicate Celsius only.

Safety Information

⚠Warning

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

- **Do not point laser directly at eye or indirectly off reflective surfaces.**
- **Replace the batteries as soon as the low-battery indicator appears.**
- **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 or fire, know that reflective objects may be much hotter than the indicated temperature reading.**
- **Do not leave the thermometer on or near objects of high temperature.**
- **Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser radiation exposure.**
- **If the thermometer is used in a manner not specified by the manufacturer, the protection provided by the thermometer 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- for highest accuracy, allow 30 minutes for thermometer to stabilize before use).**

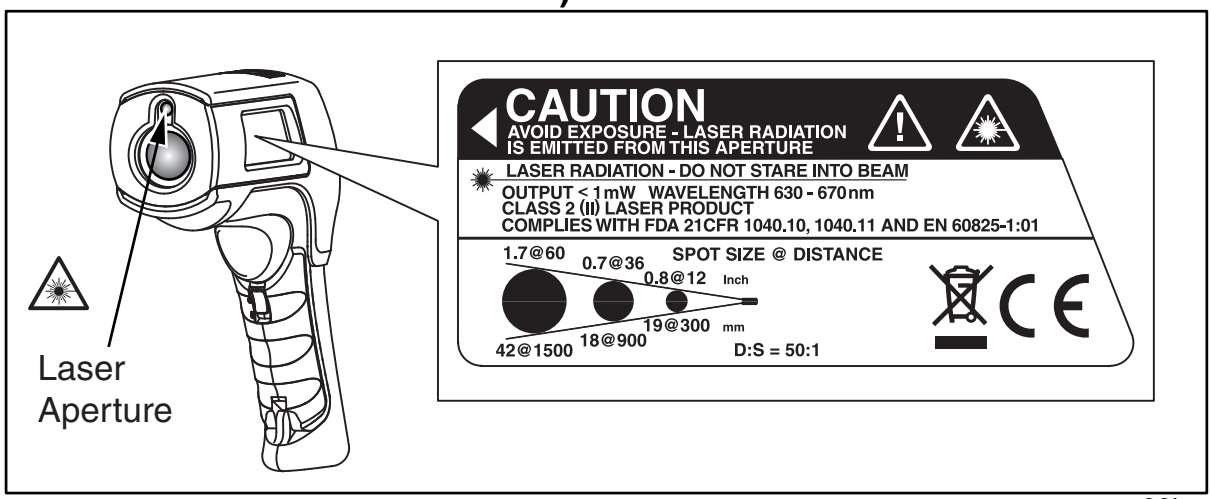

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Figure 1. Laser Safety Markings

Using the Thermometer

To take a temperature reading, point the Thermometer at the desired object and pull the trigger. You can use the laser pointer to help aim the Thermometer. You may also insert the K-type thermocouple probe for contact measurement.

Connecting the K-Type Thermocouple, USB Cable (568 Only), and Changing Batteries

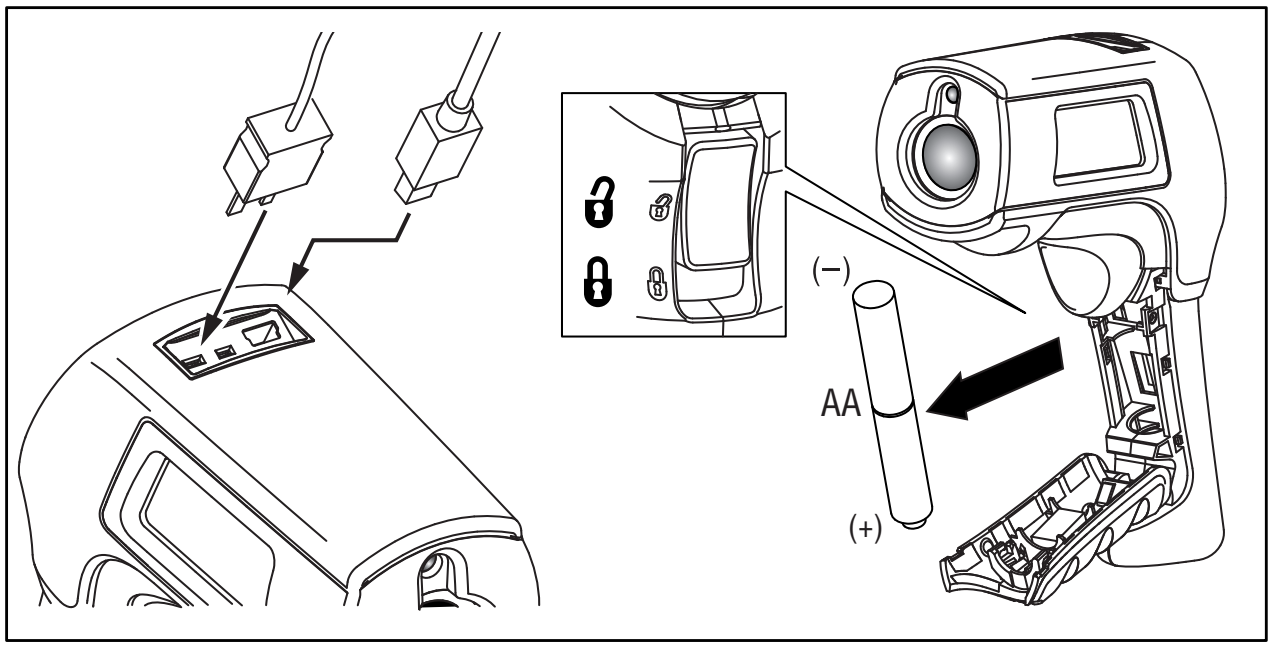

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Figure 2. Thermocouple and USB Connection and Changing Batteries

Menu Overview

There are many settings that can be easily changed by using the menu. Table 1 is a top-level description. Selecting the **Menu** button advances the menu to the next level. Figure 3 shows the LCD and menu interface. The Users Manual explains the menus in full detail.

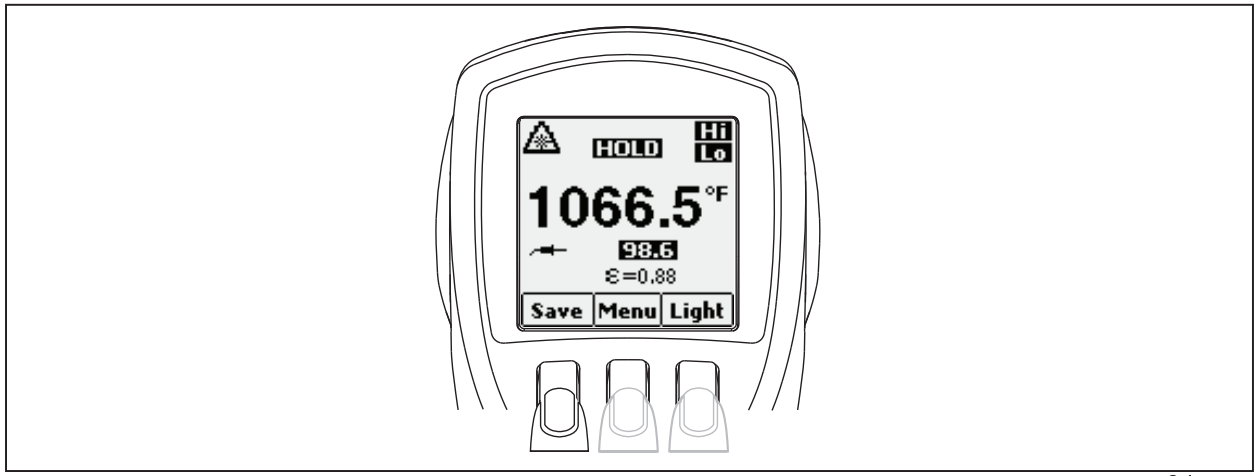

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Figure 3. Menu Navigation

Table 1. Top-Level Menu Description

Level	Left Softkey	Description	Center Softkey	Right Softkey	Description
1	**Save**	Save reading to memory	**Menu**	**Light**	Turn on bright backlight
2	**Mem**	Review / delete memories	**Menu**	**ε**	Set emissivity
3	**MnMx**	Enables Min/Max	**Menu**	**Avg**	Enable Avg/Diff
4	**°F/°C**	Toggle between C and F	**Menu**	**Alarm**	Set and enable alarms
5	**(Lock)**	Lock the thermometer on	**Menu**	**Laser**	Toggle the laser on/off
6	**Setup**	- Turn off backlight - Change Time/Date - Change Language	**Menu**		

Specifications Summary

See Users Manual on CD for full specifications.

Feature	566	568
IR Temperature Range	-40 °C to 650 °C (-40 °F to 1202 °F)	-40 °C to 800 °C (-40 °F to 1472 °F)
Accuracy above 0 °C (32 °F)	> 0 °C: ±1 % or ±1.0 °C (> 32 °F: ±1 % or ±2 °F), whichever is greater	
K T/C Temperature Range	-270 °C to 1372 °C (-454 °F to 2501 °F)	
K T/C Input Accuracy	-270 °C to -40 °C: ±(1 °C + 0.2 °/1 °C) (-454 °F to -40 °F: ±(2 °F + 0.2 °/1 °F)) -40 °C to 1372 °C: ±1 % or 1 °C (-40 °F to 2501 °F: ±1 % or 2 °F), whichever is greater	
Distance:Spot (90 % energy)	30:1	50:1
Laser sighting	Offset single laser <1 mW	
Minimum spot size	19 mm	19 mm
Emissivity	Digitally adjustable from 0.10 to 1.00 by 0.01	
Data storage	20 points	99 points
Communication	None	USB 2.0
Operating Altitude	3000 meters above mean sea level	
Storage Altitude	12,000 meters above mean sea level	
Relative Humidity	10 % to 90 % RH non-condensing up to 30 °C (86 °F)	
Operating Temperature	0 °C to 50 °C (32 °F to 122 °F)	
Storage Temperature	-20 °C to 60 °C (-4 °F to 140 °F)	
Power	2 AA /LR6 Batteries	2 AA /LR6 Batteries or USB connection when used with a PC
Battery Life	12 hours with laser and backlight on; 100 hours with laser and backlight off, at 100 % duty cycle (continuously on)	

Feature	K-Type Thermocouple Probe (Bead Type)
Measurement Range	-40 °C to 260 °C (-40 °F to 500 °F)
Accuracy above 0 °C (32 °F)	±1.1 °C (±2.0 °F)