

FLUKE®

56x

Infrared Thermometers

Getting Started

Including Safety Information



PN 3833028 (English)

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Introduction

The 561, 566 and 568 Infrared Thermometers (“the thermometers” or “the Product”) 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. Note that the Japanese models indicate Celsius only.

Safety Information

To register your product, or to view, print, or download the latest manual or manual supplement, go to our website:

<http://www.fluke.com/productinfo>

A **Warning** identifies hazardous conditions and procedures that are dangerous to the user. A **Caution** identifies conditions and procedures that can cause damage to the Product or the equipment under test.

Warning

To prevent eye damage and personal injury:

- Read all safety Information before you use the Product.
- Do not look directly into the laser with optical tools (for example, binoculars, telescopes, microscopes). Optical tools can focus the laser and be dangerous to the eye.
- Do not look into the laser. Do not point laser directly at persons or animals or indirectly off reflective surfaces.
- Do not use laser viewing glasses as laser protection glasses. Laser viewing glasses are used only for better visibility of the laser in bright light.

- Do not open the Product. The laser beam is dangerous to eyes. Have the Product repaired only through an approved technical site.
- Do not use the Product if it operates incorrectly.
- Do not use the Product around explosive gas, vapor, or in damp or wet environments.
- Do not connect the optional external probe to live electrical circuits.
- See emissivity information for actual temperatures. Reflective objects result in lower than actual temperature measurements. These objects pose a burn hazard.
- 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.
- Use the Product only as specified, or the protection supplied by the Product can be compromised.

** Warning**

Batteries contain hazardous chemicals that can cause burns or explode. If exposure to chemicals occurs, clean with water and get medical aid. To prevent injury and for safe operation and maintenance:

- **Replace the batteries when the low battery indicator shows to prevent incorrect measurements.**
- **The battery door must be closed and locked before you operate the Product.**
- **Remove all probes, test leads, and accessories before the battery door is opened.**
- **Do not disassemble the battery.**
- **Repair the Product before use if the battery leaks.**
- **Remove batteries to prevent battery leakage and damage to the Product if it is not used for an extended period.**
- **Be sure that the battery polarity is correct to prevent battery leakage.**
- **Do not short the battery terminals together.**
- **Do not disassemble or crush battery cells and battery packs.**
- **Do not keep cells or batteries in a container where the terminals can be shorted.**
- **Do not put battery cells and battery packs near heat or fire. Do not put in sunlight.**

** 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).**

Table 1. Symbols

Symbol	Explanation
	WARNING - RISK OF DANGER.
	WARNING. LASER RADIATION. Risk of eye damage.
	Battery
	Conforms to European Union directives.
	This product complies with the WEEE Directive and its marking requirements. The affixed label indicates that you must not discard this electrical/electronic product in domestic household waste. Do not dispose of this product as unsorted municipal waste. For information about take-back and recycling programs available in your country, see the Fluke website.

Figure 1. 561 Laser Safety Markings

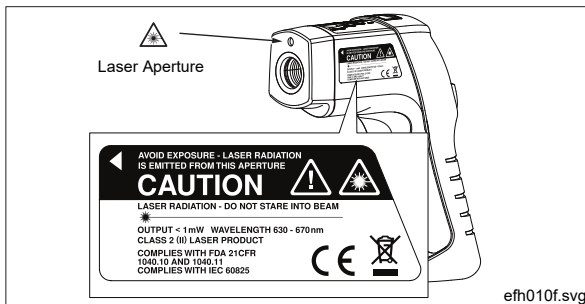
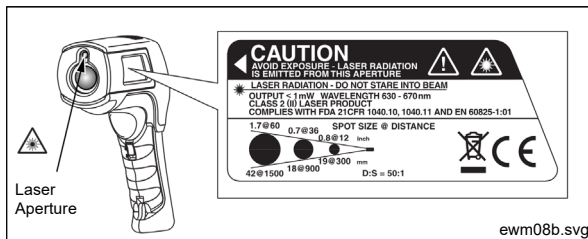


Figure 2. 566/568 Laser Safety Markings



For complete specifications, see the Users Manual.

Feature	561	566	568
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)	0 °C to 50 °C (32 °F to 122 °F)	
Storage Temperature	-20 °C to 65 °C (-4 °F to 149 °F)	-20 °C to 60 °C (-4 °F to 140 °F)	
Power	2 AA IEC LR6 or 2 AA NiCd Batteries		2 AA IEC LR6 or 2 AA NiCd 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)		

Electromagnetic Compatibility (EMC)

International	IEC 61326-1: Basic Electromagnetic Environment IEC 61326-2-1 CISPR 11: Group 1, Class A <i>Group 1: Equipment has intentionally generated and/or uses conductively coupled radio frequency energy that is necessary for the internal function of the equipment itself.</i> <i>Class A: Equipment is suitable for use in all establishments other than domestic and those directly connected to a low-voltage power supply network that supplies buildings used for domestic purposes. There may be potential difficulties in ensuring electromagnetic compatibility in other environments due to conducted and radiated disturbances.</i> <i>Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments. Emissions that exceed the levels required by CISPR 11 can occur when the equipment is connected to a test object. The equipment may not meet the immunity requirements of this standard when test leads and/or test probes are connected.</i>
Korea (KCC)	Class A Equipment (Industrial Broadcasting & Communication Equipment) <i>Class A: Equipment meets requirements for industrial electromagnetic wave equipment and the seller or user should take notice of it. This equipment is intended for use in business environments and not to be used in homes.</i>
USA (FCC)	47 CFR 15 subpart B. This product is considered an exempt device per clause 15.103.

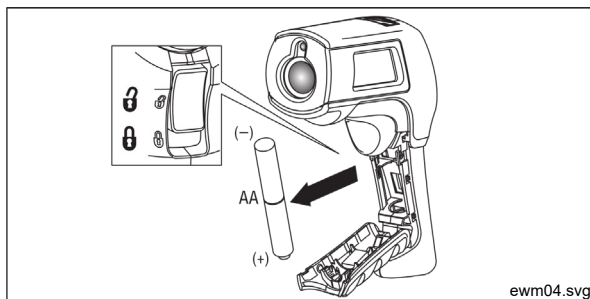
Using the Thermometer

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.

Changing Batteries

To change the batteries, see Figure 3:

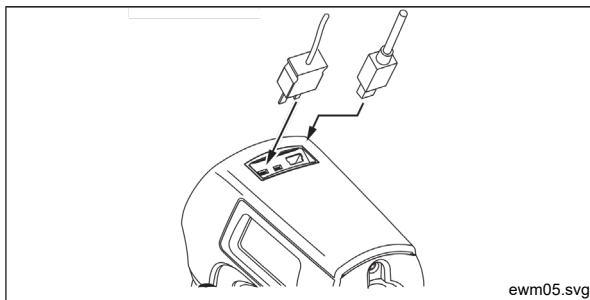
Figure 3. Changing Batteries (566/568 is shown)



Cable Connections (568 Only)

To connect the USB and Thermocouple to the 568, see Figure 4:

Figure 4. Connecting the K-Type Thermocouple, USB Cable (568 Only)



Note

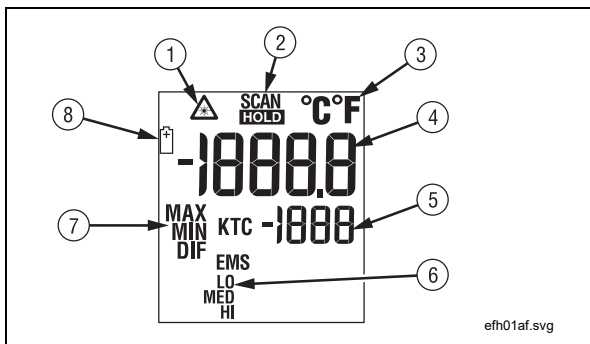
To prevent incorrect readings, do not perform a temperature measurement of an earthed conductor while the 568 is connected to a PC that is earthed by a three-phase grounding plug.

561 Display

The primary temperature display reports the current or last IR temperature read until the 7-second hold time elapses.

The secondary temperature display reports current thermocouple temperature when a type-K thermocouple is attached. See Figure 5.

Figure 5. 561 Thermometer Display



Number	Description
①	Laser "On" symbol
②	SCAN or HOLD
③	°C/°F symbol (Celsius/Fahrenheit)
④	Primary temperature display
⑤	Secondary temperature display
⑥	Emissivity LO, MED, HI
⑦	Temperature values for the MIN, MAX, DIF, KTC. KTC indicates the thermocouple temperature.
⑧	Low Battery symbol. Appears when the battery charge is <25 %.

566/568 Menu Overview

There are many settings that can be easily changed by using the menu. Table 2 is a top-level description. Selecting the **Menu** button advances the menu to the next level. Figure 6 shows the LCD and menu interface. The Users Manual explains the menus in full detail.

Figure 6. Menu Navigation

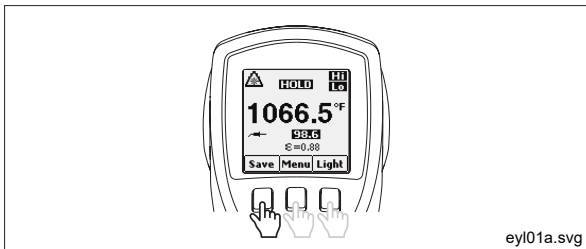


Table 2. Top-Level Menu Description

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		