

FLUKE®

**MT4 MAX/MT4 MAX+/
MT4 MAX IND/
59E/59E+**
Infrared Thermometer

Users Manual

PN 4326561 (English)

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LIMITED WARRANTY AND LIMITATION OF LIABILITY

The Fluke MT4 MAX, MT4 MAX+, 59E, and 59E+ Infrared Thermometers will be free from defects in material and workmanship for 1 year from the date of purchase. The MT4 MAX IND Infrared Thermometer will be free from defects in material and workmanship for 5 years 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.

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Introduction

The Fluke MT4 MAX, MT4 MAX+, MT4 MAX IND, 59E, and 59E+ Infrared Thermometers (the Product) can determine the surface temperature by measuring the amount of infrared energy radiated by the target's surface.

Contact Fluke

Fluke Corporation operates worldwide. For local contact information, go to our website: www.fluke.com.

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

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Safety Information

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 possible electrical shock, fire, or personal injury:

- **Read all safety information before you use the Product.**
- **Do not alter the Product and use only as specified, or the protection supplied by the Product can be compromised.**
- **Carefully read all instructions.**
- **Do not use the Product if it operates incorrectly.**
- **Do not use the Product around explosive gas, vapor, or in damp or wet environments.**
- **Have an approved technician repair the Product.**
- **Examine the case before you use the Product. Look for cracks or missing plastic. Carefully look at the insulation around the terminals.**

- **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.**
- **Use the Product only as specified or hazardous laser radiation exposure can occur.**
- **See emissivity information for actual temperatures. Reflective objects result in lower than actual temperature measurements. These objects pose a burn hazard.**
- **Replace the batteries when the low battery indicator shows to prevent incorrect measurements.**
- **Remove the batteries if the Product is not used for an extended period of time, or if stored in temperatures above 50 °C. If the batteries are not removed, battery leakage may result.**
- **Repair the Product before use if the battery leaks. Battery leakage may create a shock hazard or damage the Product.**
- **Be sure that the battery polarity is correct to prevent battery leakage.**

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Symbol	Description
	Consult user documentation.
	WARNING. RISK OF DANGER.
CE	Conforms to European Union directives.
	Battery
	WARNING. LASER RADIATION. Risk of eye damage.
	Indicates a Class 2 laser. DO NOT STARE INTO BEAM The following text may appear with the symbol on the product label: "IEC/EN 60825-1:2014. Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice 50, dated June 24, 2007." In addition, the following pattern on the label will indicate wavelength and optical power: $\lambda = xxxnm, x.xmW$.
	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.

Maintenance

Warning

To prevent possible electrical shock, fire, or personal injury, have an approved technician repair the Product.

Caution

To avoid damage to the Product, do not leave the thermometer on or near objects of high temperature.

How to Change the Battery

To install or change the AA IEC LR06 battery, open the battery compartment and replace the battery as shown in Figure 16.

How to Clean the Product

Use soap and water on a damp sponge or soft cloth to clean the Product case. Carefully wipe the surface with a moist cotton swab. The swab may be moistened with water. See Figure 17.

Product Disposal

Dispose of the Product in a professional and environmentally sound manner:

- Delete personal data on the Product before disposal.
- Remove batteries that are not integrated into the electrical system before disposal and dispose of batteries separately.
- If this Product has an integral battery, put the entire Product in the electrical waste.

Specifications

	MT4 MAX/59E	MT4 MAX IND	MT4 MAX+/59E+
Temperature Range	-30 °C to 350 °C (-22 °F to 662 °F)	-30 °C to 400 °C (-22 °F to 752 °F)	
Accuracy (Calibration geometry with ambient temperature 23 °C ±2 °C)	≥0 °C: ±2.0 °C (≥32 °F: ±4.0 °F) or ±2.0 % of reading, whichever is greater		≥0 °C: ±1.5 °C (≥32 °F: ±3.0 °F) or ±1.5 % of reading, whichever is greater
	≥-10 °C to <0 °C: ±2.0 °C (≥14 °F to <32 °F: ±4.0 °F)		
	<-10 °C: ±3.0 °C (<14 °F: ±6.0 °F)		

Infrared Thermometer Specifications

	MT4 MAX/59E	MT4 MAX IND	MT4 MAX+/59E+
Response Time (95 %)	<500 ms (95 % of reading)		
Spectral Response	8 μ m to 14 μ m		
Emissivity	0.10 to 1.00		
Optical Resolution	8:1 (calculated at 90 % energy)		10:1 (calculated at 90 % energy)
Display Resolution	0.1 °C (0.2 °F)		
Repeatability (% of reading)	± 1.0 % of reading or ± 1.0 °C (± 2.0 °F), whichever is greater		± 0.8 % of reading or ± 1.0 °C (± 2.0 °F), whichever is greater
Power	1 AA IEC LR06 Battery		
Battery Life	12 hours with laser and backlight on		
Weight	220 g (7.76 oz)		
Size	(156 x 80 x 50) mm (6.14 x 3.15 x 2) inches		
Operating Temperature	0 °C to 50 °C (32 °F to 122 °F)		
Storage Temperature	-20 °C to 60 °C (-4 °F to 140 °F), (without battery)		

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	MT4 MAX/59E	MT4 MAX IND	MT4 MAX+/59E+
Operating Humidity	Non condensing when $\leq 10\text{ }^{\circ}\text{C}$ (50 $^{\circ}\text{F}$) $\leq 90\%$ RH @ 10 $^{\circ}\text{C}$ to 30 $^{\circ}\text{C}$ (50 $^{\circ}\text{F}$ to 86 $^{\circ}\text{F}$) $\leq 75\%$ RH @ 30 $^{\circ}\text{C}$ to 50 $^{\circ}\text{C}$ (86 $^{\circ}\text{F}$ to 122 $^{\circ}\text{F}$)		
Operating Altitude	2000 m		
Storage Altitude	12 000 m		
Drop Test	1 m		
Safety	IEC 61010-1; Pollution Degree 2		
Ingress Protection	IEC 60529; IP40		
Laser	IEC 60825-1:2007 and IEC 60825-1:2014		
Laser medium	InGaAlP; QL-65D5S-B Laser Diode		
Wavelength	650 nm		
Output Power	<1 mW; CW		
Class	Class 2		

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Electromagnetic Compatibility (EMC)

International IEC 61326-1: Portable; CISPR 11: Group 1, Class A

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.

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.

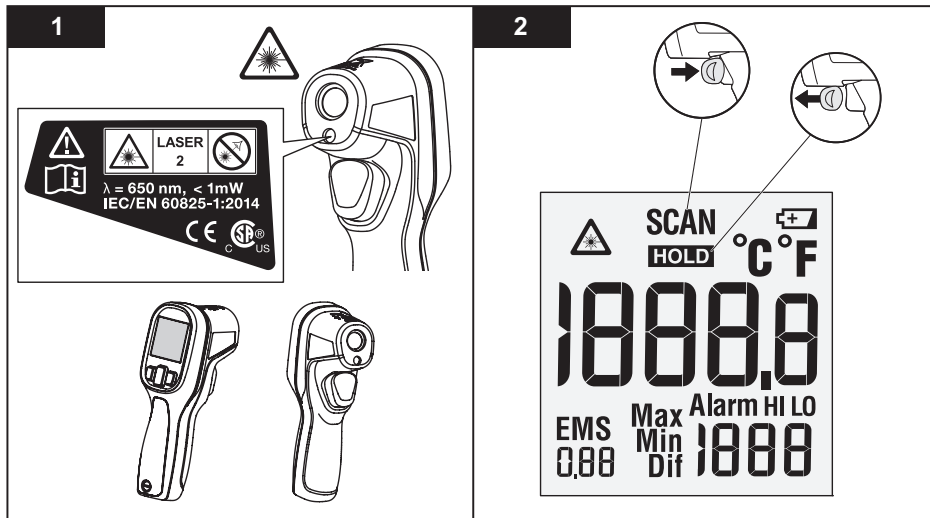
Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

USA (FCC) 47 CFR 15 subpart B. This product is considered an exempt device per clause 15.103.

Nominal Surface Emissivity

Material	Value		Material	Value
Default****	0.95		Glass (plate)	0.85
Aluminum*	0.30		Iron*	0.70
Asbestos	0.95		Lead*	0.50
Ashphalt	0.95		Oil	0.94
Brass*	0.50		Paint	0.93
Ceramic	0.95		Plastic**	0.95
Concrete	0.95		Rubber	0.95
Copper*	0.60		Sand	0.90
Food - Frozen	0.90		Steel*	0.80
Food - Hot	0.93		Water	0.93
			Wood***	0.94
* Oxidized ** Opaque, over 20 mils *** Natural **** Factory Setting				

The Product



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4 °F/°C

5 EMS

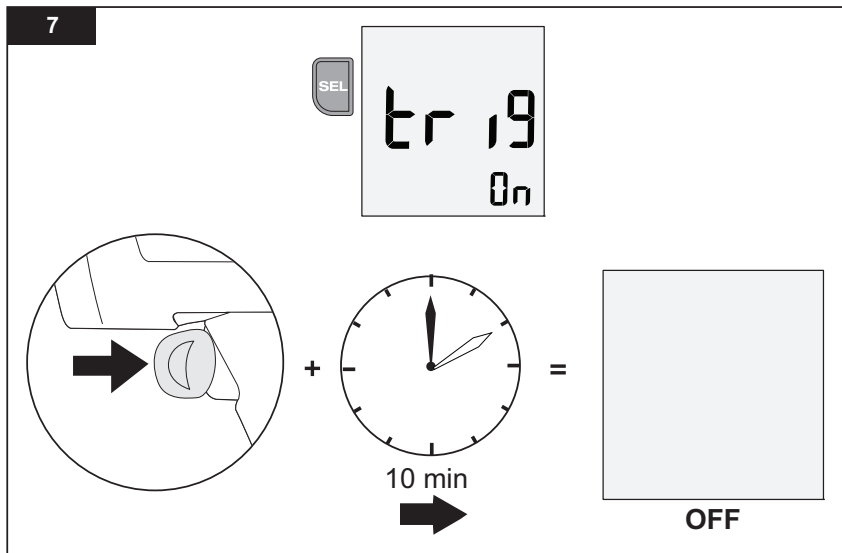
6 Max/Min/Diff

3

4 °F/°C

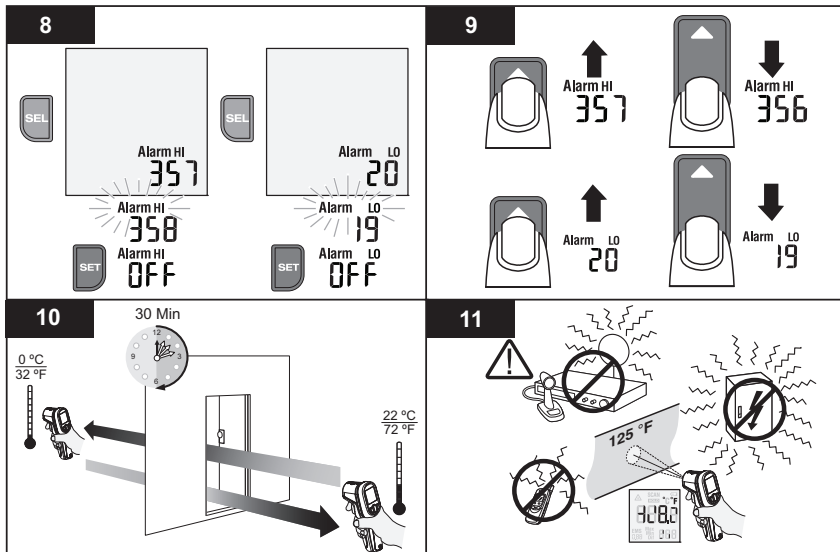
5 EMS

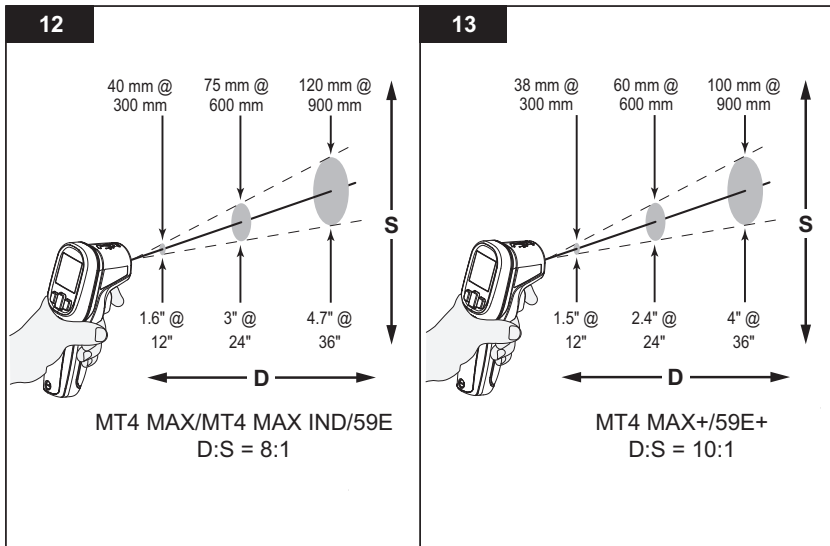
6 Max/Min/Diff

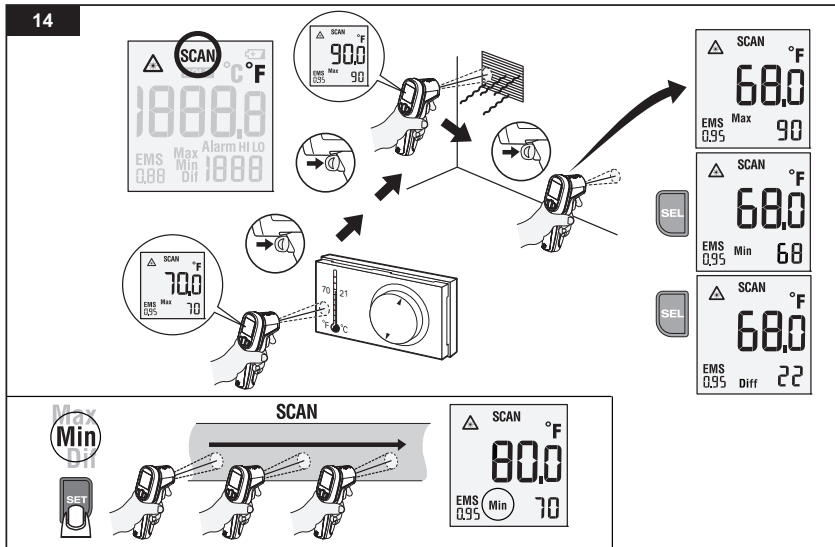


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