

FLUKE®

59 MAX/59 MAX +

Infrared Thermometer

Users Manual

Introduction

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

Specifications

	59 MAX	59 MAX +
Temperature Range	-30 °C to 350 °C (-22 °F to 662 °F)	-30 °C to 500 °C (-22 °F to 932 °F)
Accuracy (Calibration geometry with ambient temperature 23 °C ±2 °C)	≥0 °C: ±2.0 °C or ±2.0 % of reading, whichever is greater (≥32 °F: ±4.0 °F or ±2.0 % 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)	≥0 °C: ±1.5 °C or ±1.5 % of reading, whichever is greater (≥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 °C (<14 °F: ±6.0 °F)
Response Time (95 %)	<500 ms (95 % of reading)	<500 ms (95 % of reading)
Spectral Response	8 μm to 14 μm	
Emissivity	0.10 to 1.00	

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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)	
Operating Humidity	10 % to 90 % RH non-condensing @ 30 °C (86 °F)	
Operating Altitude	2000 meters above mean sea level	
Storage Altitude	12,000 meters above mean sea level	
Drop Test	1 m	

Standards and Agency Approval

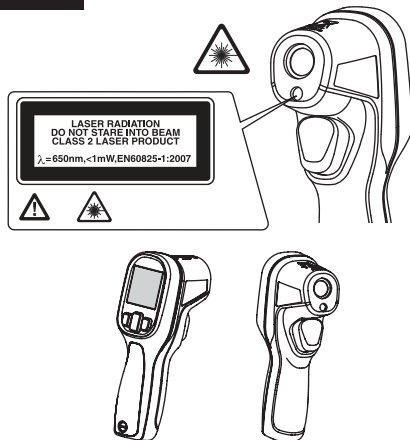
Ingress Protection Rating.....	IP40 per IEC 60529
Vibration and Shock.....	IEC 68-2-6 2.5 g, 10 to 200 Hz, IEC 68-2-27, 50 g, 11 ms
Compliance	EN/IEC 61010-1
Laser Safety	FDA and EN 60825-1 Class II
Electromagnetic Compatibility.....	61326-1 EN 61326-2

Nominal Surface Emissivity

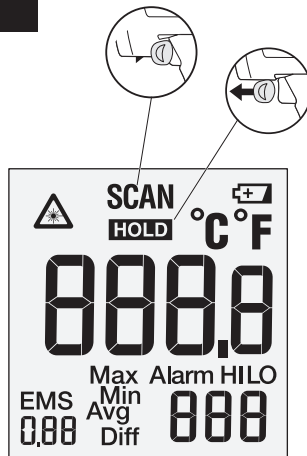
Material	Value	Material	Value
Default****	0.95	Glass (plate)	0.85
Aluminum*	0.30	Iron*	0.70
Asbestos	0.95	Lead*	0.50
Asphalt	0.95	Oil	0.94
Brass*	0.50	Paint	0.93
Ceramic	0.95	Plastic**	0.95
Concrete	0.95	Rubber	0.95
Copper*	0.60	Sand	0.90
Food - Frozen	0.90	Steel*	0.80
Food - Hot	0.93	Water	0.93
		Wood ***	0.94
* Oxidized ** Opaque, over 20 mils *** Natural **** Factory Setting Highlighted items may also be found in the emissivity table built into the Thermometer.			

The Product

1



2



3

L i t E 0n

SET

L i t E OFF

4

°F/°C

°F

SET

°C

5

EMS

EMS 0.88

EMS 0.98

EMS 0.58

5

LAS 0n

SET

LAS OFF

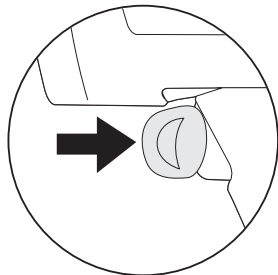
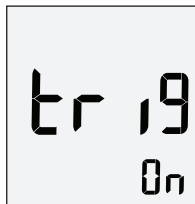
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Max/Min/Avg/Diff

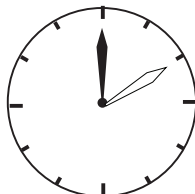
SCAN °F	SCAN °F	SCAN °F	SCAN °F
68.0	68.0	68.0	68.0
EMS 0.95 Max 90	EMS 0.95 Min 68	EMS 0.95 Avg 76	EMS 0.95 Diff 22

SEL SEL SEL SEL

7



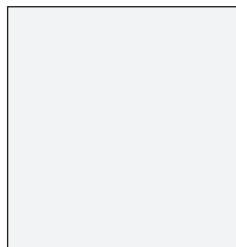
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10 min



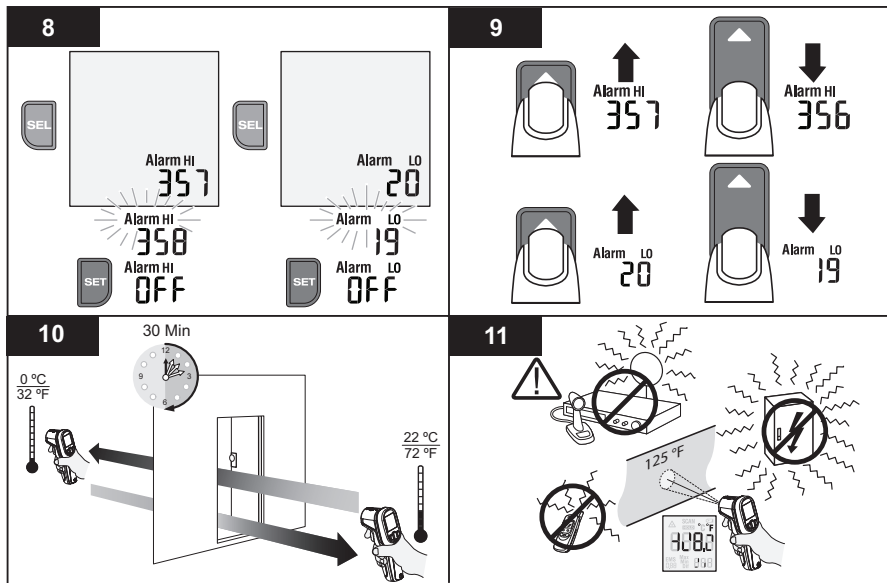
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OFF

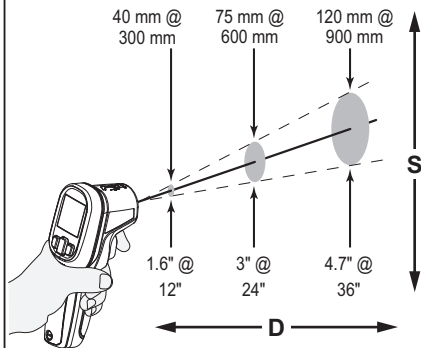
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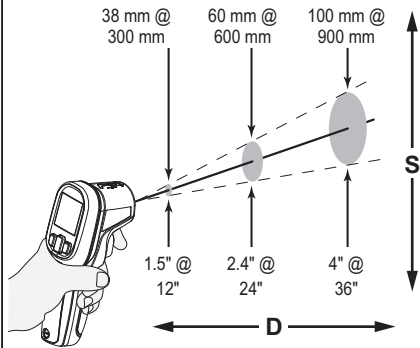
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59 MAX
D:S = 8:1

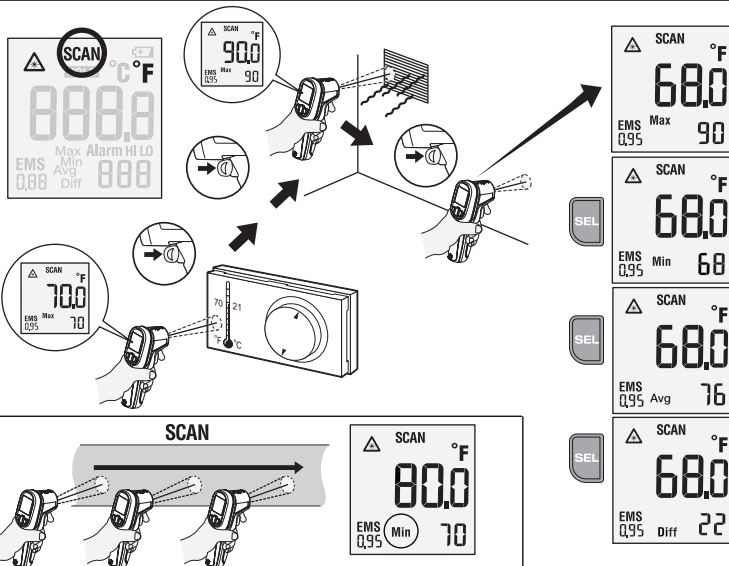
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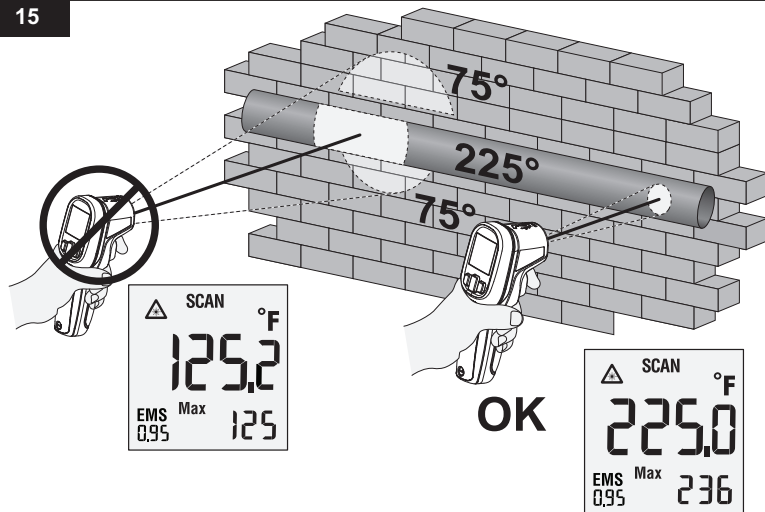
59 MAX +
D:S = 10:1

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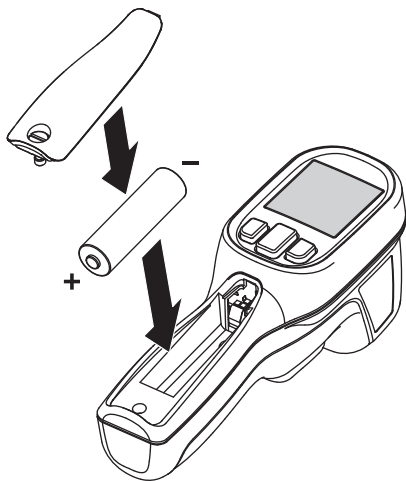
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