3i

Handheld Infrared Thermometer

Specialized Models for Specialized Applications

Advanced applications and processes need specialized tools like the Raynger® 3i IR (infrared) thermometer.

The Raytek 3i series of noncontact thermometers measures surface temperature in places other thermometers cannot. With a choice of spectral responses, temperature ranges, laser sighting options and on-board data logging capabilities, the Raytek 3i meets the individual requirements of demanding users.

Raytek®
A Fluke Company

Raynger 3i Series

Overcome the limitations of contact thermometers in manufacturing plants with Raynger 3i series infrared thermometers. For the most accurate readings in hot environments, the 3i thermometer compensates for the energy reflected by the background around the target. Reflected background energy compensation allows for accurate measurement even when the area measured is reflecting energy from nearby objects with higher temperatures; for example, inside a furnace. Varying spectral responses, laser-sighting systems, and distance-to-measurement spot ratios ensure the Raytek 3i temperature measurements are precise.

LT and LR

For maintenance and quality control applications, the Raytek 3i Low Temperature (LT) and Long Range (LR) models are available for various temperature range and optical requirements. The strong 105:1 distance-to-spot ratio of the 3i LRL2SC thermometer combined with a –30 to 1200°C (-20 to 2200°F) temperature range and scope permits easy temperature measurements of elevated objects at great distances, such as electrical connectors in towers.

Useful in the following manufacturing situations:

- Utilities
- Electrical Connectors
- Plant Maintenance
- Paper Production
- Fire Safety

Laser Sighting Options

Single Laser (L2, L3)
Single laser models are designed for accuracy over distances and pinpoint the center of the target area with a bright laser spot. The single laser L3 unit is equipped with a 4 milliwatt laser, providing the brightest laser guide.

Dual Laser (DL2, DL3)
The dual laser uses two laser spots to indicate the diameter of the target area measured.

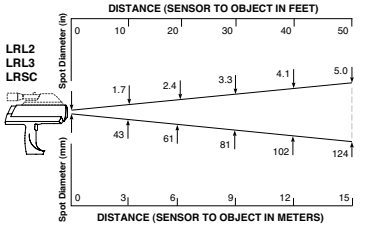
Crossed Laser (CL2, CL3)
For precise measurement of smaller targets, minimum measurement spot is indicated at the point the two laser beams meet.

Scope Only (SC) or Scope with Laser (SCL2)
Measure temperature at a distance in bright daylight. At the focus point, 3i scopes are parallax-free and provide circular reticles for pinpoint accuracy. To enhance the sighting capabilities of the scope, combine the scope with a laser equipped model.

Models ending with L2 meet FDA Class II and IEC Class 2 requirements. Models ending with L3 meet FDA Class IIIa requirements.

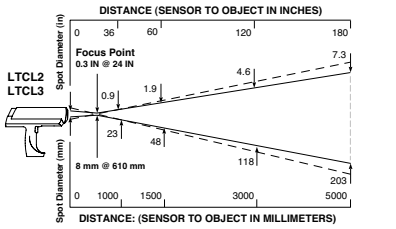
Optical Resolution D:S (distance to spot using 90% encircled energy at focal point)

Long Range



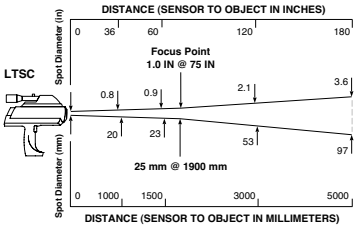
FOCUS POINT D:S = 120:1 @ 15 m (50 ft) FAR FIELD D:S = 100:1
IR Spot Diameter at Lens = 23 mm (0.9 in)

Low Temperature



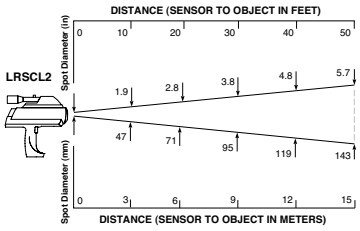
FOCUS POINT D:S = 75:1 FAR FIELD D:S = 20:1
IR Spot Diameter at Lens = 23 mm (0.9 in)
Laser Diameter at Lens = 40 mm (1.6 in)
IR Beam Profile
Laser Profile

Low Temperature



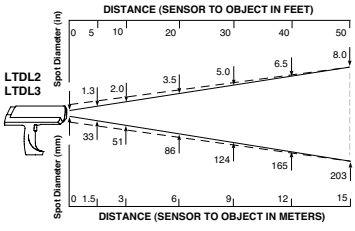
FOCUS POINT D:S = 75:1 FAR FIELD D:S = 40:1
IR Spot Diameter at Lens = 23 mm (0.9 in)

Long Range



FOCUS POINT D:S = 105:1 @ 15 m (50 ft) FAR FIELD D:S = 90:1
IR Spot Diameter at Lens = 23 mm (0.9 in)

Low Temperature



FOCUS POINT D:S = 75:1 @15 m (50 ft) FAR FIELD D:S = 68:1
IR Spot Diameter at Lens = 23 mm (0.9 in)
Laser Diameter at Lens = 40 mm (1.6 in)
IR Beam Profile
Laser Profile

3i Models		Low Temp (LT)	Long Range (LR)
Sighting Options	Single Laser (L2) Class II	-	LRL2
	Single Laser (L3) Class IIIa	-	LRL3
	Dual Laser (DL2) Class II	LTDL2	-
	Dual Laser (DL3) Class IIIa	LTDL3	-
	Crossed Laser (CL2) Class II	LTCL2	-
	Crossed Laser (CL3) Class IIIa	LTCL3	-
	Scope (SC)	LTSC	LRSC
	Scope with Laser (SCL2) Class II	-	LRSCL2

Specifications and Features

Model	LT	LR	LRSCL2
Temperature Range	-30ºC to 1200ºC (-20ºF to 2200ºF)		
Accuracy	±1% of reading or ±1ºC (±1.5ºF) whichever is greater at 23ºC ±5ºC (73ºF ±9ºF) ambient operating temperature		
Repeatability	±0.5% of reading or ±1ºC (± 1ºF), whichever is greater		
Response Time (95%)	700 mSec		
Spectral Response	8 to 14µm		
Adjustable Emissivity* (from 0.1 to 1.0 by 0.01)	✓		
Ambient Operating Temperature	0ºC to 50ºC (32ºF to 120ºF)		
Relative Humidity	10 to 90%, noncondensing @ up to 30ºC (86ºF)		
Storage Temperature	-20ºC to 50ºC (-4ºF to 120ºF) without batteries		
Dimensions/Weight	Laser Models: 208 H x 257 L x 71 W mm / 794 g (8.2 H x 10.1 L x 2.8 W in / 1.75 lb) Scope Models: 244 H x 257 L x 71 W mm / 1000 g (9.6 H x 10.1 L x 2.8 W in / 2.21 lb)		
Power	4 AA batteries or 6 to 9 V, 200 mA DC power supply		
Battery Life (Alkaline)	21–25 hours		
Laser	L2 models are IEC Class2/FDA Class II (<1mW), L3 models are FDA Class IIIa (<5mW)		
Reflected Energy Compensation	✓		
Distance to Spot (D:S)	75:1	120:1	105:1
MAX, MIN, DIF, AVG Temperatures	✓		
Display Hold	7 Seconds		
Backlit LCD	✓		
Temperature Display	ºC or ºF (selectable), multifunction 4-digit backlit LCD		
Display Resolution	1ºC or 1ºF		
Locking Trigger	✓		
Tripod Mounting	✓		
Audible/Visible Hi/Lo Alarms	✓		
Analog Output	1mV/ºC or 1mV/ºF		
Digital Output	RS232, 9600 baud, output interval adjustable from 1 to 9999 seconds		
100 Point Data Logging	✓		
Options/ Accessories	Nylon carry case with shoulder strap • NIST Certification (Must be specified at time of order) Variable brightness filters (scope only) • 110V/60Hz or 220V/50Hz voltage adapters • Computer, analog, and printer cables • DataTemp® 2 software		

** For more details visit www.raytek.com/emissivity.htm*

The Worldwide Leader in Noncontact Temperature Measurement

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