

3i

3i Series Infrared Thermometer

Noncontact Temperature Measurement



Specialized Models for Specialized Applications

Advanced applications and processes need specialized tools like the Raytek® 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

Raytek 3i Series



Overcome the limitations of contact thermometers in manufacturing plants with Raytek 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.

G5

Accurately measure glass and plastics processing with specialized spectral responses using the Raytek 3iG5. The 3iG5 model is a 5-micron instrument designed for glass manufacturing and recycling, and is useful for temperature measurements of float sheets and gobs.

Well suited for many processes within glass and plastic manufacturing.

Ideally suited for:

- Tempering
- Annealing
- Forming
- Sealing
- Laminating
- Bending

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

1M and 2M

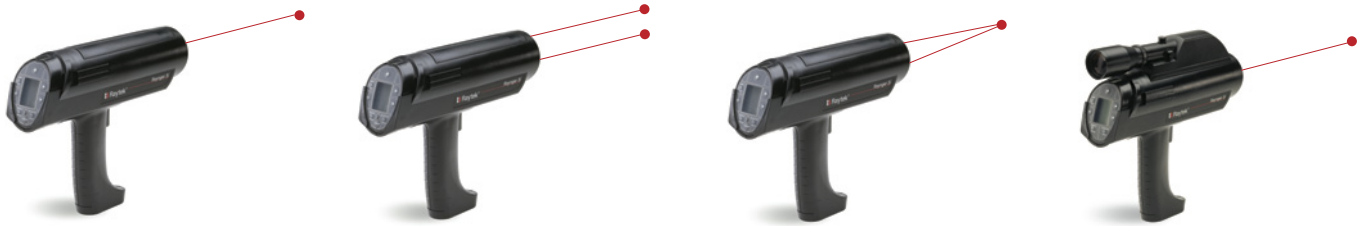
Raytek high temperature infrared thermometers, such as the 3i 1M & 2M models are ideal for foundry and processing operations, such as heat treating, tempering and forging.

Due to the high-resolution 180:1 optics of the Raytek 3i 1M unit, it can take the approximate temperature measurements of molten glass by measuring the surface temperature of the port arch and bridge wall. Measuring the surface temperature of regenerator stacks or furnace melts may also assess the possibility of brick damage.

Ideally suited for:

- Iron
- Steel
- Metal Refining
- Foundry and Processing Operations
- Ceramics
- Semiconductor
- Chemical Furnaces
- Petrochemical Furnaces

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.

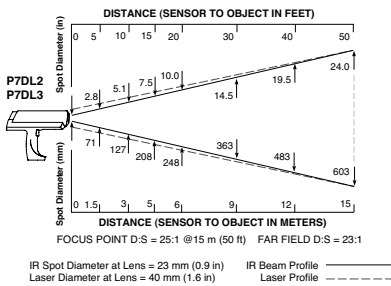
Crossed Laser (CL2, CL3)
For precise measurement of smaller targets, minimum measurement spot is indicated at the point the two laser beams meet.

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.

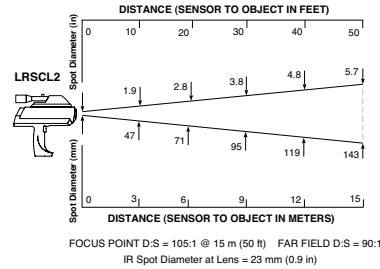
Models ending with L2 meet FDA Class II and IEC Class 2 requirements.
Models ending with L3 meet FDA Class IIIa requirements.

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

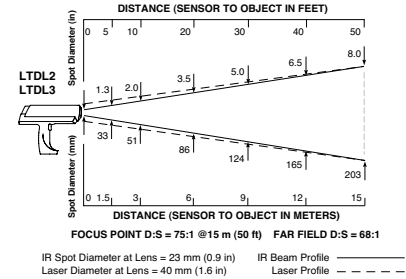
G5SC for Glass



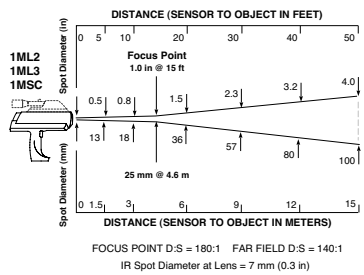
Long Range



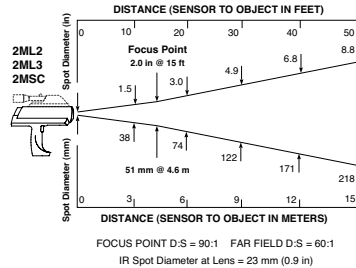
Low Temperature



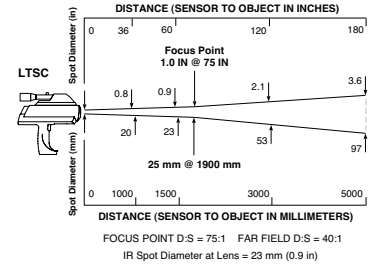
1M for Metals and Molten Glass



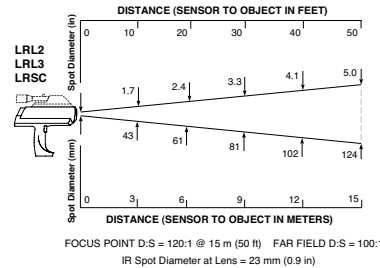
2M for Metals



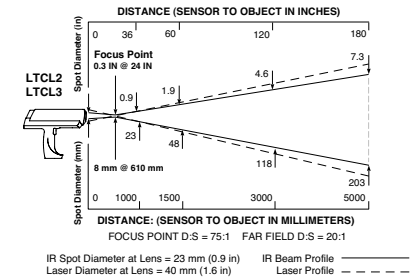
Low Temperature



Long Range



Low Temperature



3i Models		Low Temp (LT)	Long Range (LR)	1 Micron (1M)	2 Micron (2M)	Glass (G5)
Sighting Options	Single Laser (L2) Class II	-	LRL2	1ML2	2ML2	-
	Single Laser (L3) Class IIIa	-	LRL3	1ML3	2ML3	-
	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	1MSC	2MSC	G5SC
	Scope with Laser (SCL2) Class II	-	LRSC	-	-	-

Specifications and Features

Model	LT	LR	LRSL2	1M	2M	G5
Temperature Range	-30/1200°C (-20/2200°F)			600/3000°C (1100/5400°F)	200/1800°C (400/3275°F)	150/1800°C (300/3275°F)
Accuracy	±1% of reading or ±1°C (±1.5°F) whichever is greater at 23°C ±5°C (73°F ±9°F) ambient operating temperature			±0.5% of reading or ±1°C (±1.5°F) whichever is greater at 23°C ±5°C (73°F ±9°F) ambient operating temperature	±1% of reading or ±1°C (±1.5°F) whichever is greater at 23°C ±5°C (73°F ±9°F) ambient operating temperature	
Repeatability	±0.5% of reading or ±1°C (±1°F), whichever is greater					
Response Time (95%)	700 mSec			550 mSec		700 mSec
Spectral Response	8 to 14µm			1.0µm	1.6µm	5µm
Adjustable Emissivity* (from 0.1 to 1.0 by 0.01)	✓	✓	✓	✓	✓	✓
Ambient Operating Temperature	0 to 50°C (32 to 120°F)					
Relative Humidity	10 to 90%, noncondensing @ up to 30°C (86°F)					
Storage Temperature	-20 to 50°C (-4 to 120°F) without batteries					
Weight/Dimensions	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	180:1	90:1	50:1
MAX, MIN, DIF, AVG Temperatures	✓	✓	✓	✓	✓	✓
Display Hold	7 Seconds					
Backlit LCD	✓	✓	✓	✓	✓	✓
Temperature Display	°C or °F (selectable), multifunction 4-digit backlit LCD					
Display Resolution	1°C or 1°F					
Locking Trigger	✓	✓	✓	✓	✓	✓
Tripod Mounting	✓	✓	✓	✓	✓	✓
Audible/Visible Hi/Lo Alarms	✓	✓	✓	✓	✓	✓
Analog Output	1mV/°C or 1mV/°F			1mV/°C or 0.5 mV/°F	1mV/°C or 1mV/°F	
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 and G5 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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