Diagnostic and Detection Products

Infrared Thermometers 214

When your job calls for leading-edge temperature-measurement technology, 3M provides the solution with its family of 3M™ Infrared Thermometers and Data Communications and Coax Cable Detection Instruments.

Infrared Thermometers

These units provide a fast, easy and accurate way to measure a wide range of temperatures at a safe distance. Plant engineers and technicians can now monitor equipment more closely, more accurately and more often—helping to spot trouble before it leads to costly malfunction and repair.

For general, commercial and professional use, 3M offers a wide range of models to meet your preventative maintenance requirements.

Repair and Calibration

The purpose of this communication is to notify you of a change in the way we handle repair and calibration of heat tracers in the US. In the past, 3M orchestrated all repair and calibration requests through Austin. In the future, customers will deal directly with a 3M Authorized Repair and Calibration Center. The contact phone number will be 888-993-5853. This repair center is located in Everett, Wash., and will be able to provide all the same services that 3M provided in the past, including repair, calibration, NIST certification and spare parts. After contacting the repair center, customers will be advised on cost, time for repair and any other information they require.

Infrared Thermometers

The 3M™ Infrared Thermometer is a rugged, highly accurate and easy-to-use, portable, non-contact (infrared) thermometer. It is an invaluable tool for monitoring operating temperatures of mechanical and electrical, plant and production equipment without removing the equipment from service.

The infrared thermometer allows the electrician and/or technician to locate and identify overheating conditions in electrical wiring connections, panels, switchgear, motors and mechanical equipment, and to perform preventative maintenance before catastrophic failure occurs.

General Use

3M™ Infrared Thermometer IR-500

- Temperature range of 0˚F (18˚C) to 500˚F (260˚C)
- 8:1 distance-to-spot ratio
- Single-point laser sighting
- Best used at a distance of less than 4 feet away
- Pocket-sized with easy-to-use one-button operations

3M™ Infrared Thermometer IR-999

- Temperature range of -25˚F (-32˚C) to 999˚F (535˚C)
- 12:1 distance-to-spot ratio
- Single-point laser sighting

Commercial Use

3M™ Infrared Thermometer IR-1100

- Temperature range of -25˚F (-32˚C) to 1100˚F (600˚C)
- 30:1 distance-to-spot ratio
- Single-point laser sighting
- High and low alarm
- Stores 12 data points in memory
- Recalls maximum, minimum, differential, average, and last temperature readings
- Adjustable emissivity

3M™ Infrared Thermometer IR-1400

All features of IR-1100 plus:

- Increased temperature range of -25˚F (-32˚C) to 1400˚F (760˚C)
- 50:1 distance-to-spot ratio

3M™ Infrared Thermometer Model IR-60EXPL2

3M™ Probe IR

An optional accessory for the IR-1100 and the IR-1400 is the Probe IR, a Resistance Temperature Detector that plugs into the standard jack on these units and provides contact temperature simultaneously with noncontact temperature. Accuracy +/- 2°F. Temperature Range: -13°F to 500°F.

3M™ Infrared Thermometer IR-1400IS

All the benefits of the IR-1400 plus:

- Factory Mutual Approved for usability in potentially hazardous (explosive or flammable) locations
- Rated Intrinsically Safe for Class I, Division I, Groups A, B, C, D. Class 1, Zone 0, AEX is IIC, T4 at 50C when used with 9v alkaline battery, and it includes an approved external contact probe

3M™ Infrared Thermometer IR-60L2 and IR-60CFO

- Temperature range of -25˚F (-32˚C) to 1600˚F (870˚C)
- 60:1 distance-to-spot ratio
- 3-dot laser sighting provides increased accuracy
- High alarm for scanning
- Adjustable emissivity
- The IR-60L2 is also available in a close focus model, the IR-60CFO, with a 50:1 distance-to-spot ratio that allows for the precise reading of small objects at a distance

Professional Use

3M™ Infrared Thermometer IR-60EXPL2 and IR-60EXCFO

All features of the IR-60L2 and IR-60CFO plus:

- Connect directly to a PC or printer for data download
- Store 100 data points in memory
- Standard pack-out includes an RS232 cable, Windows® operating system-based software, power supply, contact probe, wrist strap and hard plastic case

Choose the 3M™ Infrared Thermometer That's Right for Your Job

Product	Laser Sighting	Distance-to-Spot Ratio	Alarms	Data Logs	Emissivity	Maximum Temperature
IR-500	Single dot	8:1	-	-	Fixed	500°F (260°C)
IR-999	Single dot	12:1	-	-	Fixed	999°F (535°C)
IR-1100	Single dot	30:1	HI-LO	12	Adjustable	1100°F (600°C)
IR-1400	Single dot	50:1	HI-LO	12	Adjustable	1400°F (760°C)
IR-1400IS	Single dot	50:1	HI-LO	12	Adjustable	1400°F (760°C)
IR-60L2	3 dot	60:1	HI Only	-	Adjustable	1600°F (870°C)
IR-60CFO	3 dot Close focus	50:1	HI Only	-	Adjustable	1600°F (870°C)
IR-60EXPL2	3 dot	60:1	HI-LO	100, Software	Adjustable	1600°F (870°C)
IR-60EXCFO	3 dot Close focus	50:1	HI-LO	100, Software	Adjustable	1600°F (870°C)

Does your job require NIST or DKD compliance? Be sure to order your IR-999, IR-1100, IR-1400, IR-60L2, or IR-60EXPL2 with certification (NIST or DKD).

Single Dot Laser **3 Dot Laser**

The 3 point laser defines the diameter of the area being measured; a single laser spot shows the center of the measurement area.

3M™ INFRARED THERMOMETERS

FEATURES	ADVANTAGES	BENEFITS
Contains built-in laser sighting	User can literally "spot" and scan the object from a safe distance	Easy to use
Constructed of light, yet rugged plastics	Lightweight, withstands use in industrial environments	Easy to use
Non-contact temperature measurement	Designed to provide accurate measurement and personal safety	Improves quality and safety
Back-lit LCD display	Readable in dark areas	Easy to use

Specifications for 3M™ Infrared Thermometers

Specifications	Models			
	IR-500	IR-999	IR-1100	IR-1400
Temperature Range	0 to 500°F (-18 to 260°C)	-25 to 999°F (-32 to 535°C)	-25 to 1100°F (-32 to 600°C)	-25 to 1400°F (-32 to 760°C)
Accuracy of Reading	±2%	±1%	±1%	±1%
Repeatability of Reading	±2%	±0.5%	±0.5%	±0.5%
95% Response Time	500 msec	500 msec	500 msec	500 msec
Spectral Response	7-18 microns	8-14 microns	8-14 microns	8-14 microns
Optical System	8:1	12:1	30:1	50:1
Max. Temperature	–	X	X	X
Min., Dif., Avg. Temp.	–	–	X	X
Recall Last Reading	–	–	X	X
Display Hold	X	X	X	X
High Alarm	–	–	X	X
Low Alarm	–	–	X	X
Low Battery Indicator	X	X	X	X
LCD Backlight	X	X	X	X
Laser (Class II)	X	X	Single dot	Single dot
Emissivity	Pre-set 0.95	Pre-set 0.95	Adjustable from 0.10 to 1.0	Adjustable from 0.10 to 1.0
Temperature Display	°C or °F selectable 3.5 digit LCD	°C or °F selectable 3.5 digit LCD	°C or °F selectable 3.5 digit LCD	°C or °F selectable 3.5 digit LCD
Display Resolution	–	0.5°F (0.2°C)	0.1°F (0.1°C)	0.1°F (0.1°C)
Ambient Operating Range	32 to 120°F (0 to 50°C)	32 to 120°F (0 to 50°C)	32 to 120°F (0 to 50°C)	32 to 120°F (0 to 50°C)
Relative Humidity, Ambient	10-95% RH noncondensing, @ > 86°F (30°C)	10-95% RH noncondensing, @ > 86°F (30°C)	10-95% RH noncondensing, @ > 86°F (30°C)	10-95% RH noncondensing, @ > 86°F (30°C)
Storage Temperature	-13° to 158°F (-20° to 60°C) w/ out battery	-13° to 158°F (-20° to 60°C) w/ out battery	-13° to 158°F (-20° to 60°C) w/ out battery	-13° to 158°F (-20° to 60°C) w/ out battery
Power	9V Alkaline or NiCd battery	9V Alkaline or NiCd battery	9V Alkaline or NiCd battery	9V Alkaline or NiCd battery
Battery Life (Alkaline)	12 hours; 40 hours with laser and backlight off	10 hours with laser and backlight on	20 hours with laser and backlight on 50%, 40 hours with laser and backlight off	20 hours with laser and backlight on 50%, 40 hours with laser and backlight off
Dimensions	7.25" x 1.75" x 1.5" (184 x 45 x 38 mm)	8" x 6" x 2" (200 x 160 x 55 mm)	8" x 6" x 2" (200 x 160 x 55 mm)	8" x 6" x 2" (200 x 160 x 55 mm)
Weight	8 oz. (227g)	11 oz. (320g)	11 oz. (320g)	11 oz. (320g)
Locking Trigger	–	–	X	X
Tripod Mount	–	1/4"- 20 UNC Threading	1/4"- 20 UNC Threading	1/4"- 20 UNC Threading
Accessories Standard with Each Unit	–	Hard plastic case Wrist strap	Hard plastic case Wrist strap	Hard plastic case Wrist strap
Data Logger Points	–	–	12 data points in memory	12 data points in memory

Notes:
* NIST and DKD certification is optional on all models except the IR-500.
** The IR-60CFO has the same specifications as the IR-60L2, and IR-60EXCFO has the same specifications as the IR-60EXPL2.
*** The IR-1400IS has the same specifications as the IR-1400.

3M™ Infrared Thermometers

Specifications	Models	
	IR-60L2	IR-60EXPL2
Temperature Range	-25 to 1600°F (-32 to 870°C)	-25 to 1600°F (-32 to 870°C)
Accuracy of Reading	±1%	±1%
Repeatability of Reading	±0.5%	±0.5%
95% Response Time	250 msec	250 msec
Spectral Response	8-14 microns	8-14 microns
Optical System	60:1	60:1
Max. Temperature	X	X
Min., Dif., Avg. Temp.	–	X
Recall Last Reading	X	X
Display Hold	X	X
High Alarm	X	X
Low Alarm	–	X
Low Battery Indicator	X	X
LCD Backlight	X	X
Laser (Class II)	3 dot	3 dot
Emissivity	Adjustable from 0.10 to 1.0	Adjustable from 0.10 to 1.0
Temperature Display	°C or °F selectable 3.5 digit LCD	°C or °F selectable 3.5 digit LCD
Display Resolution	Tenth degree reading up to 199.9 (F or C)	Tenth degree reading up to 199.9 (F or C)
Ambient Operating Range	32 to 120°F (0 to 50°C)	32 to 120°F (0 to 50°C)
Relative Humidity, Ambient	10-95% RH noncondensing, @ > 86°F (30°C)	10-95% RH noncondensing, @ > 86°F (30°C)
Storage Temperature	-25° to 122°F (-30° to 50°C) w/ out battery	-25° to 122°F (-30° to 50°C) w/ out battery
Power	2 x 1.5V Alkaline Type AA	2 x 1.5V Alkaline Type AA
Battery Life (Alkaline)	25 hours measurement mode, 11 hours with laser on, 6 hours with backlight and laser on (50% backlight used)	25 hours measurement mode, 11 hours with laser on, 6 hours with backlight and laser on (50% backlight used)
Dimensions	6.7" x 2" x 7.9" (170 x 50 x 200 mm)	6.7" x 2" x 7.9" (170 x 50 x 200 mm)
Weight	1 lb - 6 oz.	1 lb - 6 oz.
Locking Trigger	X	X
Tripod Mount	1/4"-20 UNC Threading	1/4"-20 UNC Threading
Accessories Standard with Each Unit	Hard plastic case Wrist strap	Software, RS232 cable, 7.5 V power supply, contact probe, hard plastic case, wrist strap
Data Logger Points	–	100 points in memory

3M™ Infrared Thermometer
IR-500

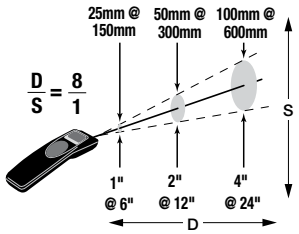
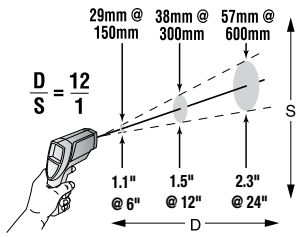
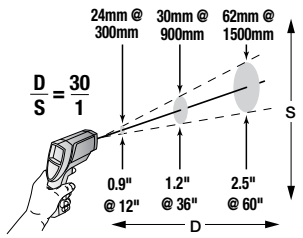
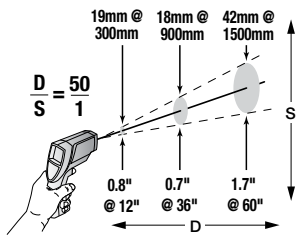
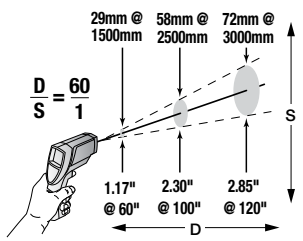
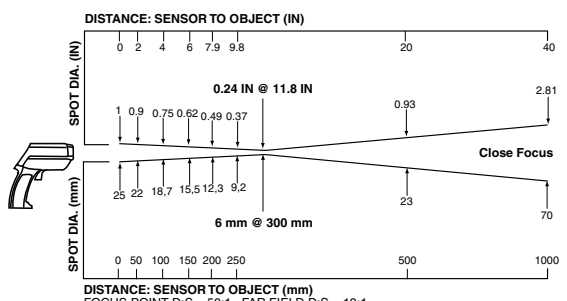
3M™ Infrared Thermometer
IR-999

3M™ Infrared Thermometer
IR-1100/1400/1400IS

3M™ Infrared Thermometer
IR-60L2/60CFO

3M™ Infrared Thermometer
IR-60EXPL2/60EXCFO

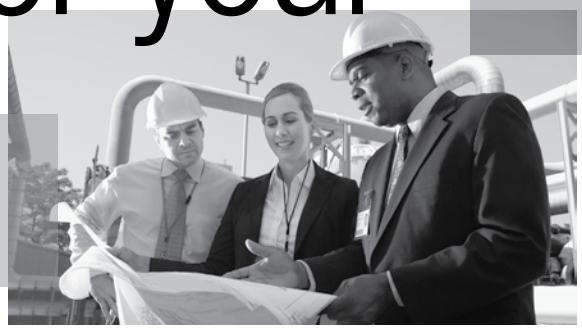
3M™ Infrared Thermometer Field of View Comparison

Model Number	Field of View
IR-500	
IR-999	
IR-1100	
IR-1400 IR-1400IS	
IR-60L2 IR-60EXPL2	
IR-60CF0 IR-60EXCF0	

Ordering Information for 3M™ Infrared Thermometers

Product Number	Description	UPC (054007-)	Billing Unit	Inner Unit Pack	Minimum Order Case Qty.
IR-500	Infrared Thermometer Sgl Laser	43556	each	1/box	20
IR-999	Infrared Thermometer Sgl Laser	44412	each	–	1
IR-999NI	Infrared Thermometer Sgl Laser NIST Certified	44433	each	1/case	1
IR-1100	Infrared Thermometer Circ Laser	44414	each	–	1
IR-1100NI	Infrared Thermometer Circ Laser Certified	44435	each	–	1
IR-1400	Infrared Thermometer Circ Laser	44415	each	–	1
IR-1400IS	Infrared Thermometer Intrinsically Safe w/ Probe	53262*	each	–	1
IIR-1400NI	Infrared Thermometer Circ Laser Certified	44436	each	–	1
IR-60L2	Infrared Thermometer 3 Dot Laser	42840	each	–	1
IR-60L2NI	Infrared Thermometer 3 Dot Laser Certified	42843	each	–	1
IR-60CFO	Infrared Thermometer, Close Focus model	43961	each	–	1
IR-60EXPL2-1	Infrared Thermometer 3 Dot Laser	42852	each	–	1
IR-60EXPL2NI-1	Infrared Thermometer 3 Dot Laser	42855	each	–	1
IR-60EXCFO	Infrared Thermometer, Close Focus w/ software	44440	each	–	1
IR-60EXPL2-2	Infrared Thermometer 3 Dot Laser	42856	each	–	1
IR-60EXPL2NI-2	Infrared Thermometer 3 Dot Laser	42859	each	–	1
IR Probe	RTD Temp Probe for IR-1100 and IR-1400	53264*	each	–	1

*UPC prefix 051128-

For repair and/or calibration of Infrared Thermometers, call (888) 993-5853.

A more effective way to monitor your equipment