

Highlights

- Multiple sensor design (up to 8 heads for 1 box)
- Plug & Play (automatic head detection from the box)
- High temperature resistance for the head up to 180°C (356°F) without cooling
- Multiple spectral ranges covered by one sensor model
- Extended temperature range for LT head up to 1000°C (1832°F)
- Dedicated 5 µm head for measuring of glass
- Laser sighting for 1M/2M sensing heads
- Spot sizes down to 0.5 mm (0.02 in) with Close Focus Lens
- Fast 10 ms response time
- Industrial rugged head cable (PUR): Silicone and Halogen free, resistant against oil, bases, and acids
- Networkable OEM head model (without a box)
- Intrinsically safe sensing heads with dedicated Ex-power supply

Measurement Specifications

| | |
|---------------------------------------|--|
| Temperature Range | |
| LTS02, LTS10, LTH10 | -40 to 600°C (-40 to 1112°F) |
| LTS20, LTF, LTH20 | 0 to 1000°C (32 to 1832°F) |
| G5 | 250 to 1650°C (482 to 3002°F) |
| 2M | 250 to 1400°C (482 to 2552°F) |
| 1M | 500 to 1800°C (932 to 3272°F) |
| Spectral Response | |
| LT | 8 – 14 µm |
| G5 | 5 µm |
| 2M | 1.6 µm |
| 1M | 1 µm |
| Optical Resolution¹ | |
| LTS (standard) | 2:1, 10:1, 22:1 typ. (21:1 guaranteed) |
| LTH | 10:1, 22:1 typ. (21:1 guaranteed) |
| LTF (fast) | 10:1 |
| G5 | 10:1 |
| 1M, 2M | 100:1 |
| Accuracy² | |
| LT, G5 | ± (1% of reading or 1°C) ^{3,4} |
| 1M, 2M | ± (0.5% of reading + 2°C) |
| Repeatability | |
| LT, G5 | ± 0.5% of reading or ± 0.5°C ³ |
| 1M, 2M | ± (0.25% of reading + 1°C) |
| Temperature Coefficient | |
| LT, G5 | ± 0.05 K / K or ± 0.05% / K of reading ³ |
| 1M, 2M | ± 0.01% / K of reading |
| Response Time⁵ | |
| LTS (standard), LTH | 130 ms |
| LTF (fast) | 20 ms |
| G5 | 130 ms |
| 1M, 2M | 10 ms |
| Emissivity ε | |
| | 0.100 to 1.100 |
| Transmission | |
| | 0.100 to 1.000 |
| Signal Processing | |
| | Peak hold, valley hold, adjustable up to 998 s variable averaging filter |

¹ 90% energy

² at ambient temperature 23°C ± 5°C (73°F ± 9°F), ε = 1.0, and calibration geometry

³ whichever is greater

⁴ ± 2°C (± 4°F) for target temperatures < 20°C (68°F)

⁵ 90% value

MI3 Heads

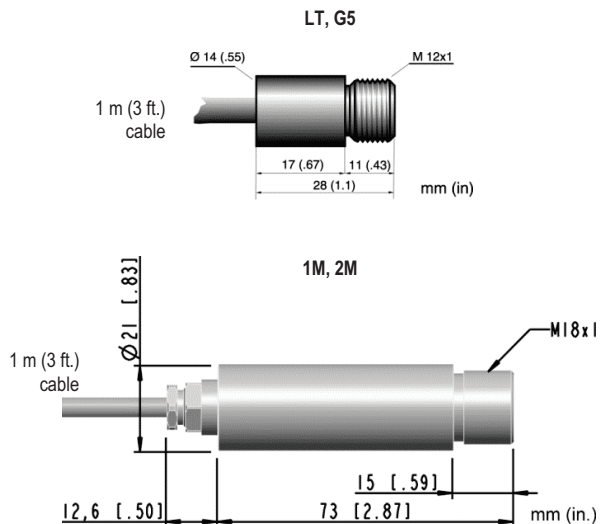
Datasheet



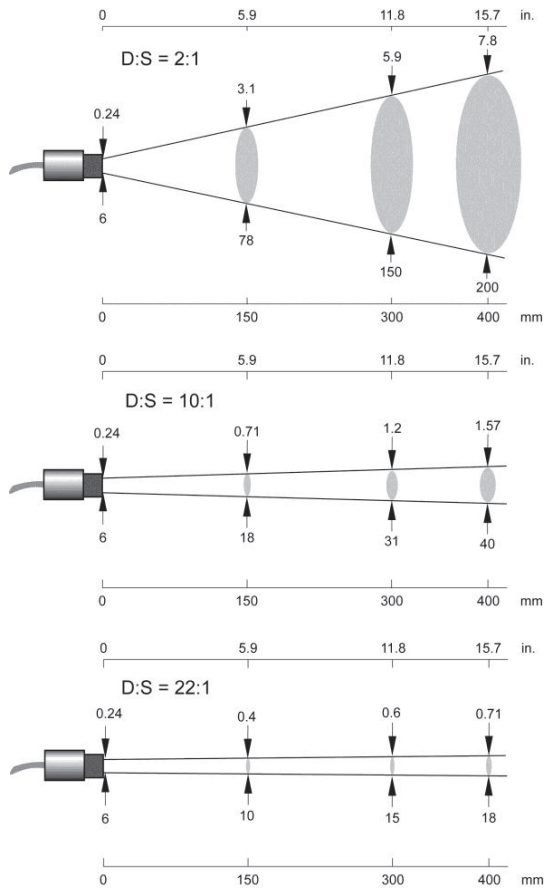
General Specifications

| | |
|-----------------------------|--------------------------------------|
| Ambient Temperature | |
| LT, G5 | -10 to 120°C (14 to 248°F) |
| LTH | -10 to 180°C (14 to 356°F) |
| 1M, 2M | 0 to 120°C (32 to 248°F) |
| Laser (1M, 2M) | automatic switch off at 65°C (149°F) |
| Storage Temperature | |
| LTH | -20 to 180°C (-4 to 356°F) |
| all other models | -20 to 120°C (-4 to 248°F) |
| Environmental Rating | |
| | IP65 (NEMA-4) |
| EMC | |
| | EN 61326-1:2006 |

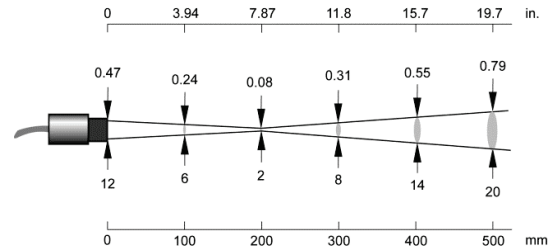
Dimensions



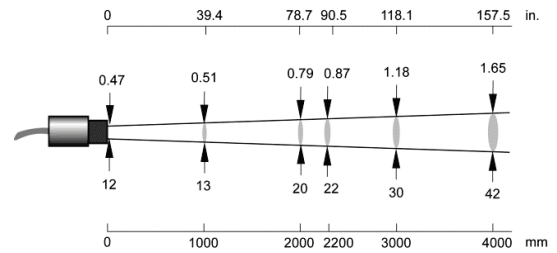
Optical Specifications (90% energy)



SF1 D:S = 100:1



SF3 D:S = 100:1



Intrinsic Safety

Intrinsically safe sensing heads (MI3...IS):

- II 2G Ex ib IIC T4 Gb (gas)
- II 2D Ex ib IIC T135°C Db (dust)

Ex Power supply (MI3ACIS):

- II (2)G [Ex ib Gb] IIB (gas)
- II (2)D [Ex ib Db] IIC (dust)

Accessories

Accessories include items that may be ordered at any time and added on-site:

- Adjustable Bracket (LT, G5: XXXMIACAB / 1M, 2M: XXXMI3100ADJB)
- Fixed Bracket (LT, G5: XXXMIACFB / 1M, 2M: XXXMI3100FB)
- Isolation Kit for Fixed Bracket (1M, 2M: XXXMI3100ISOKIT)
- Air Purge (LT, G5: XXXMIACAJ / 1M, 2M: XXXMI3100AP)
- Air Cooling Jacket (XXXMIACCJ: 0.8 m/2.6 ft, XXXMIACCJ1: 2.8 m/9.2 ft) for ambient temperatures up to 200°C/392°F (LT, G5 only)
- Close Focus Lens (LT, G5: XXXMI3ACCFL)
- Protective Window (LT, G5: XXXMIACPW / 1M, 2M: XXXMI3100PW)

Air Purge Jacket



for LT, G5 heads
(XXXMIACAJ)



for 1M, 2M heads
(XXXMI3100AP)

Options

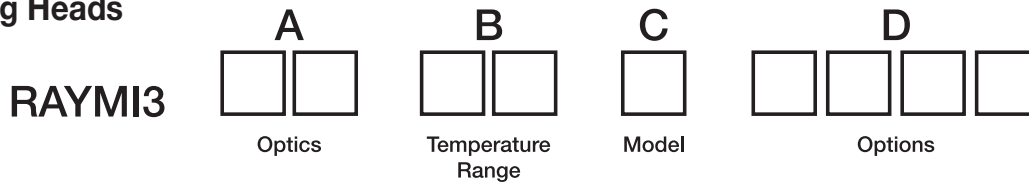
Options must be specified at time of order.

- Longer head cable lengths: 3 m, 8 m, 15 m, 30 m (9.8, 26, 49, 98 ft.)
- Water cooled housing (1M, 2M heads)
- Networkable OEM sensing head without the need for a box

Water Cooled Housing (1M, 2M)



Sensing Heads



Each MI3 sensor system is comprised of (1) MI3 sensing head and (1) MI3COMM or MI3MCOMM communication module. The sensing head includes one mounting nut and 1m (3.3ft) cable. Longer cables up to 30 m (100ft) maximum are available and must be specified at time of order. The MI3 sensing head and MI3COMM box are ordered as separate items.

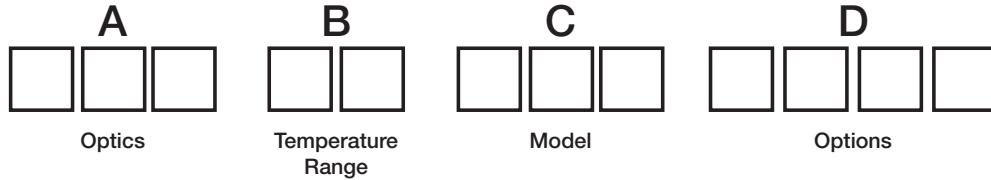
| Model | Description |
|--------|---|
| RAYMI3 | Miniature infrared sensing head with 1 meter (3.3ft) cable |
| Code A | Optical Resolution |
| 02 | 2:1 |
| 10 | 10:1 |
| 20 | 22:1 |
| Code B | Temperature Range |
| LT | -40°C to 600°C (-40°F to 1112°F) Note: 0°C to 1000°C (32°F to 1832°F) for LTF and LTS 22:1 models |
| G5 | 250°C to 1650°C (482°F to 3002°F) |
| Code C | Model |
| S | Standard sensing head, 120°C (248°F) maximum ambient |
| F | Fast response sensing head, 20 mSec response time, 120°C (248°F) maximum ambient (10:1 head only) |
| H | High ambient sensing head, up to 180°C (356°F) |
| Code D | Options |
| CB3 | 3m (10ft) cable |
| CB8 | 8m (26ft) cable |
| CB15 | 15m (49ft) cable |
| CB30 | 30m (98ft) cable |

Communication Boxes

| Model | Description |
|--------------|---|
| RAYMI3COMM | MI3 IR thermometer communication box with USB 2.0 communications, cast zinc housing and user-interface |
| RAYMI3COMM4 | MI3 IR thermometer communication box with USB 2.0 communications and RS-485 communication option, cast zinc housing and user-interface |
| RAYMI3COMM | MI3 IR thermometer communication box with USB 2.0 communications and Modbus communication option, cast zinc housing and user-interface |
| RAYMI3COMMP | MI3 IR thermometer communication box with USB 2.0 communications and Profibus communication option, cast zinc housing and user-interface |
| RAYMI3MCOMM | Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and RS485 communications |
| RAYMI3MCOMM | Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and Modbus communications |
| RAYMI3MCOMMP | Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and Profibus communications |
| RAYMI3MCOMMN | Modular DIN mountable 4-channel IR communication box with no user interface, display or RS485 interfaceIncludes USB 2.0 and alarm relay, only |
| RAYMI3MCOMMA | Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and 4 galvanic isolated analog outputs |
| RAYMI3COMME | MI3 IR thermometer communication box with USB 2.0 communications and Ethernet communication and built in HTTP-Server option, cast zinc housing and user-interface |
| RAYMI3COMMPN | MI3 IR thermometer communication box with USB 2.0 communications and Profinet communication, cast zinc housing and user-interface |
| RAYMI3COMME | Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and Ethernet interface with built-in HTTP-Server. |
| RAYMI3COMMPN | Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and Profinet interface. |

Sensing Heads

RAYMI3



Each MI3 sensor system is comprised of (1) MI3 sensing head and (1) MI3COMM or MI3MCOMM communication module. The sensing head includes one mounting nut and 1m (3.3ft) cable. Longer cables up to 15m (50ft) maximum are available and must be specified at time of order. The MI3 sensing head and MI3COMM box are ordered as separate items.

| Model | Description |
|--------|---|
| RAYMI3 | Miniature infrared sensing head with 1m (3.3ft) cable |
| Code A | Optical Resolution |
| 100 | 100:1 |
| Code B | Temperature Range |
| 1M | 500°C to 1800°C (932°F to 3272°F) |
| 2M | 250°C to 1400°C (482°F to 2552°F) |
| Code C | Optical Focus |
| SF1 | 200mm focus distance |
| SF3 | 2,200mm focus distance |
| Code D | Options |
| CB3 | 3m (10ft) cable |
| CB8 | 8m (26ft) cable |
| CB15 | 15m (50ft) cable |

Communication Boxes

| Model | Description |
|-------------|---|
| RAYMI3COMM | MI3 IR thermometer communication box with USB 2.0 communications, cast zinc housing and user-interface |
| RAYMI3COMM4 | MI3 IR thermometer communication box with USB 2.0 communications and RS-485 communication option, cast zinc housing and user-interface |
| RAYMI3COMM | MI3 IR thermometer communication box with USB 2.0 communications and Modbus communication option, cast zinc housing and user-interface |
| RAYMI3COMM | MI3 IR thermometer communication box with USB 2.0 communications and Profibus communication option, cast zinc housing and user-interface |
| RAYMI3MCOMM | Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and RS485 communications |
| RAYMI3MCOMM | Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and Modbus communications |
| RAYMI3MCOMM | Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and Profibus communications |
| RAYMI3MCOMM | Modular DIN mountable 4-channel IR communication box with no user interface, display or RS485 interfaceIncludes USB 2.0 and alarm relay, only |
| RAYMI3MCOMM | Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and 4 galvanic isolated analog outputs |
| RAYMI3COMME | MI3 IR thermometer communication box with USB 2.0 communications and Ethernet communication and built in HTTP-Server option, cast zinc housing and user-interface |
| RAYMI3COMM | MI3 IR thermometer communication box with USB 2.0 communications and Profinet communication, cast zinc housing and user-interface |
| RAYMI3COMME | Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and Ethernet interface with built-in HTTP-Server. |
| RAYMI3COMM | Modular DIN mountable 4-channel IR communication box with user interface, USB 2.0 and Profinet interface. |

The Worldwide Leader in Noncontact Temperature Measurement

Raytek Corporation
 Worldwide Headquarters
 Santa Cruz, CA USA
 Tel: 1 800 227 8074 (USA and Canada, only)
 1 831 458 3900
 solutions@raytek.com

European Headquarters
 Berlin, Germany
 Tel: 49 30 4 78 00 80
 raytek@raytek.de

China Headquarters
 Beijing, China
 Tel: 8610 6438 4691
 info@raytek.com.cn

To find a Raytek office near you, please visit www.raytek.com

Worldwide Service

Raytek offers services, including repair and calibration. For more information, contact your local office or e-mail support@raytek.com

www.raytek.com



Raytek is an ISO 9001 certified company

© 2015 Raytek Corporation (4106811 Rev E) 4/2015
 Raytek, the Raytek logo and DataTemp are registered trademarks of Raytek Corporation.
 Modbus is a registered trademark of the Modbus Organization, Inc
 Specifications subject to change without notice.