

Highlights

- Wide temperature range from -40 to 2250°C (-40 to 4082°F)
- Optical resolution up to 100:1
- Spot sizes down to 1.1 mm (0.04 in)
- Variable focus from 0.2 to 2.2 m (0.7 to 72 ft)
- Fast response time down to 20 ms
- Real time video monitoring and recording capability
- Through-the-lens sighting with video or laser aiming
- Digital RS485 communications (networkable)
- Real time ambient background radiation compensation
- Simultaneous analogue and digital outputs
- Programmable relay output
- Ambient temperatures up to 315°C (600°F) with ThermoJacket™
- Compact, rugged design, IP65 / NEMA-4 rated
- DataTemp® Multidrop software for remote configuration

Electrical Specifications

| Outputs | |
|---------|---|
| mA | 0/4-20 mA |
| Relay | 48 V, 300 mA, response time < 2 ms |
| RS485 | 2-wire or 4-wire, networkable to 32 sensors |
| Video | analog, NTSC, 510x492 pixel, FOV 8° |

| Inputs | |
|--------|---|
| | Emissivity setting, background radiation compensation, trigger, laser on/off (software enabled) |

| Power Supply | |
|--------------|---------------------|
| | 24 VDC ±20%, 500 mA |

General Specifications

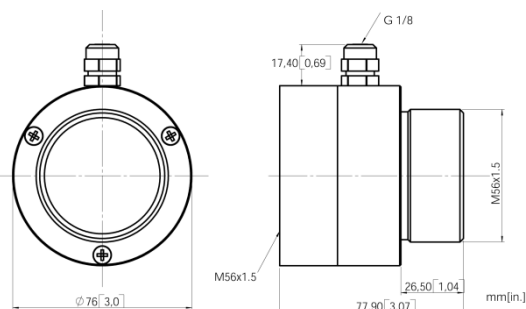
| | |
|-----------------------------|---|
| Environmental Rating | IP65 (IEC529), NEMA-4 |
| Ambient Temperature | |
| without cooling | 5 to 65°C / 41 to 149°F (video: 50°C/122°F) |
| with air cooling | 10 to 120°C (50 to 250°F) |
| with water cooling | 10 to 175°C (50 to 350°F) |
| with ThermoJacket | 10 to 315°C (50 to 600°F) |
| Storage Temperature | -20 to 70°C (-4 to 158°F) |
| Relative Humidity | 10 to 95%, non-condensing |
| Shock | IEC 68-2-27 |
| Vibration | IEC 68-2-6 |
| Weight | 700 g (25 oz) |

Options

Options must be specified at time of order.

- Laser sighting (...L) or Video sighting (...V)
- Variable focus (...VF1)
- Water-Cooled Housing, incl. Air Purge Collar (...W)
- Manufacturer's Calibration Certificate based on certified probes traced on national standards, e.g. DAKKS (XXXMMCERT)

Air Purge Collar (XXXMMACAP)



Marathon Series

MM LT, G7, G5, MT, 3M

Datasheet



Measurement Specifications

Temperature Range

| | |
|-----|-------------------------------|
| LT | -40 to 800°C (-40 to 1472°F) |
| G7 | 300 to 900°C (572 to 1652°F) |
| G5L | 250 to 1650°C (482 to 3002°F) |
| G5H | 450 to 2250°C (842 to 4082°F) |
| MT | 250 to 1100°C (482 to 2012°F) |
| 3M | 100 to 600°C (212 to 1112°F) |

Spectral Response

| | |
|----|-------------------------|
| LT | 8 to 14 μm |
| G7 | 7.9 μm |
| G5 | 5 μm |
| MT | 3.9 μm |
| 3M | 2.1 – 2.5 μm |

System Accuracy¹

| | |
|--------------|---|
| LT | ± 1% of reading or ± 1°C for $T_{\text{meas}} > 0^\circ\text{C}$ (32°F) |
| G5L, G5H, G7 | ± 1% of reading |
| MT | ± 1% of reading for $T_{\text{meas}} > 350^\circ\text{C}$ (662°F) ± 2°C or ± 2% for $T_{\text{meas}} < 350^\circ\text{C}$ (662°F) ² |
| 3M | ± 1% of reading for $T_{\text{meas}} > 150^\circ\text{C}$ (302°F) ± 5°C for $T_{\text{meas}} < 150^\circ\text{C}$ (302°F) |

Repeatability³

± 0.5% of reading or ± 0.5°C²

Temperature Resolution (mA)

0.1 K

Response Time (95%)

| | |
|------------|--------|
| LT, MT, G7 | 120 ms |
| G5 | 60 ms |
| 3M | 20 ms |

Emissivity

0.100 to 1.150 in 0.001 increments

Signal Processing

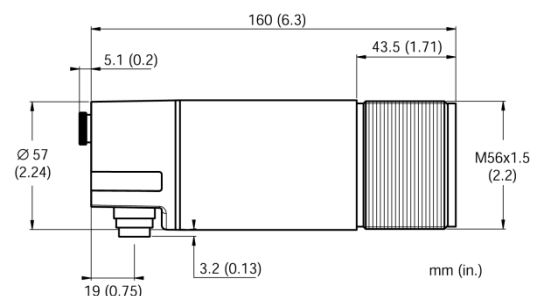
Peak hold, valley hold, averaging, ambient background temperature compensation

¹ at 23°C ±5°C (73°F ±9°F), emissivity = 1.0, and time response 1.0 s

² whichever is greater

³ at 23°C ±5°C (73°F ±9°F)

Dimensions



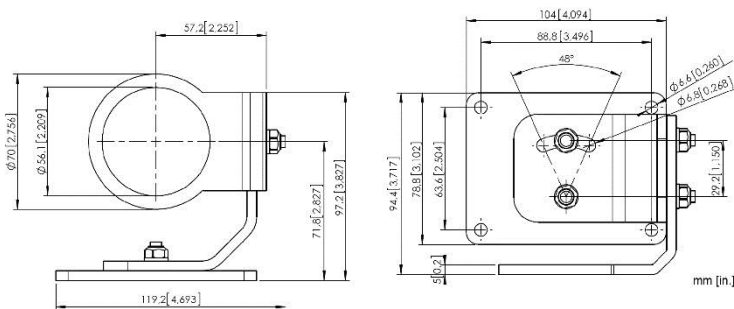
Accessories

The models include through-the-lens sighting, mounting nut (stainless steel), fixed bracket (stainless steel), an operator's manual and DataTemp Multidrop Software.

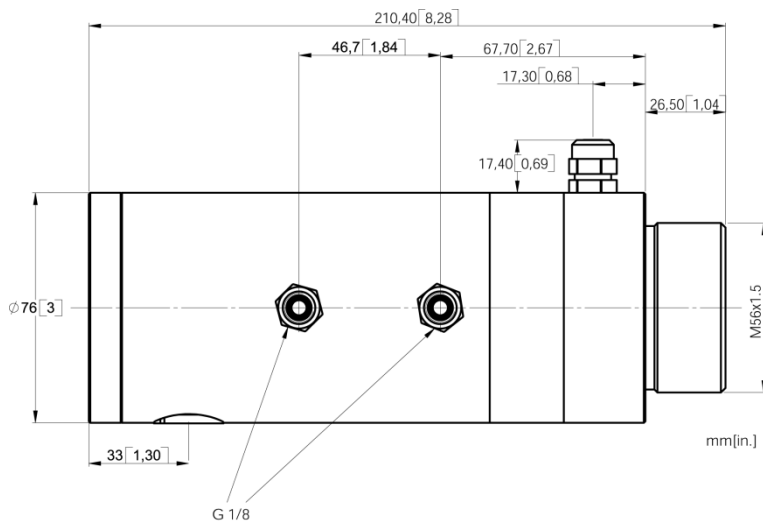
Additional accessories are available:

- Sight Tube made from stainless steel up to 800°C/1472°F (XXXST12)
- Sight Tube made from ceramic up to 1500°C/2732°F (XXXSTC12)
- Pipe Thread Adapter made from stainless steel (XXXMMACPA)
- Protective Window for LT, MT, G5 (XXXMMACTWL)
- USB/RS485 Converter (XXXUSB485)
- Industrial Power Supply 100/240 VAC to 24 VDC, 1.25 A (XXXSYSYS)
- Low Temp Cable (XXX2CLTCB...)
- High Temp Cable (XXX2CCB...)
- Terminal Block (XXXMATB)
- Terminal Block including 24 VDC power supply (110/230 VAC input) and IP65/NEMA-4 rated housing (RAYMAPB)
- ThermoJacket enclosure for ambient temperatures to 315°C/600°F (RAYTXJT4), see also ThermoJacket datasheet

Adjustable Bracket (XXXMMACAB)



Air/Water-Cooled Housing (...W)



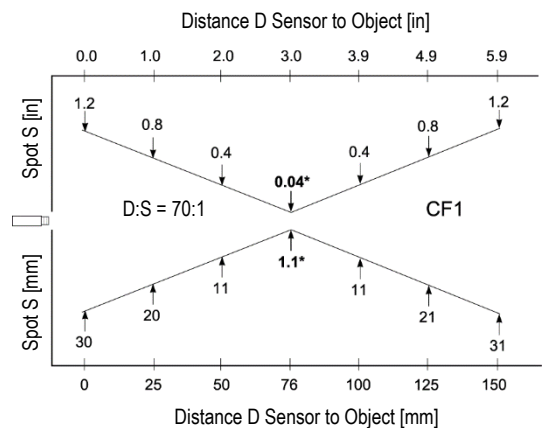
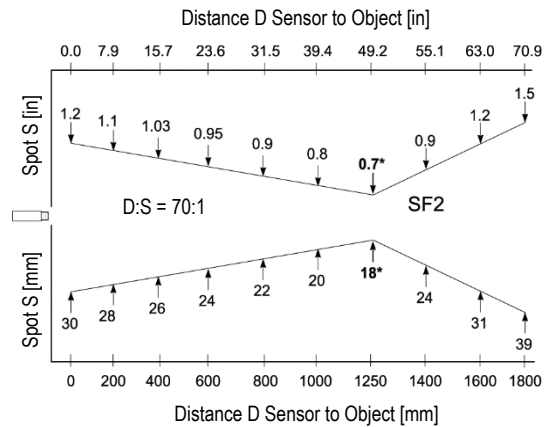
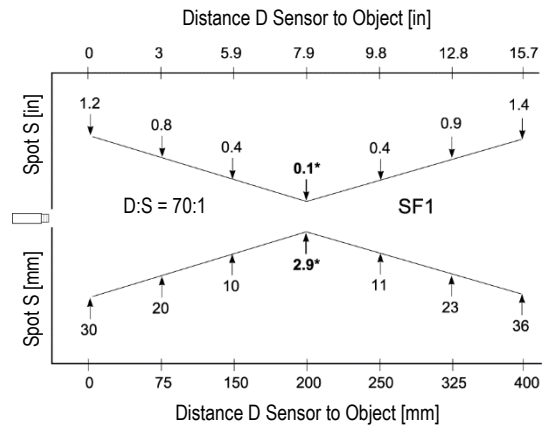
Optical Specifications

Optical Resolution (90% energy, for the focus point)

| | |
|----------------|-------|
| LT, MT, G5, 3M | 70:1 |
| G7 | 100:1 |

Optics

| | |
|----------------|---------------|
| LT, MT, G5, G7 | SF1, SF2, SF3 |
| LT, 3M | CF1 |



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Worldwide Service

Fluke Process Instruments offers services, including repair and calibration. For more information, contact your local office.

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