

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)
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Power Supply	24 VDC ±20%, 500 mA
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General Specifications

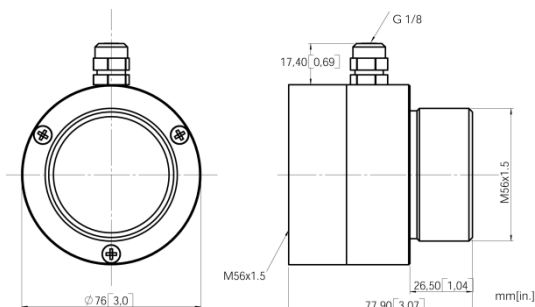
Environmental Rating	IP65 (IEC529), NEMA-4
Ambient Temperature	5 to 65°C / 41 to 149°F (video: 50°C/122°F)
without cooling	10 to 120°C (50 to 250°F)
with air cooling	10 to 175°C (50 to 350°F)
with water cooling	10 to 315°C (50 to 600°F)
with ThermoJacket	
Storage Temperature	-20 to 70°C (-4 to 158°F)
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) ²
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°C ²
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Temperature Resolution (mA)	0.1 K
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Response Time (95%)

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

Emissivity	0.100 to 1.150 in 0.001 increments
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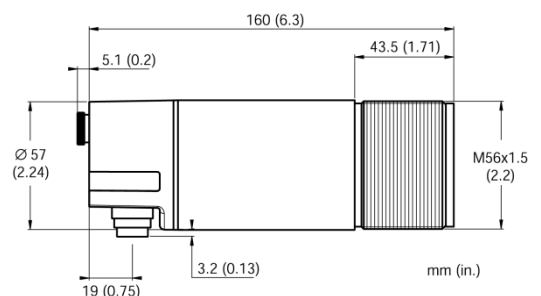
Signal Processing	Peak hold, valley hold, averaging, ambient background temperature compensation
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¹ at 23°C ±5°C (73°F ±9°F), emissivity = 1.0, and time response 1.0 s

² whichever is greater

³ at 23°C ±5°C (73°F ±9°F)

Dimensions



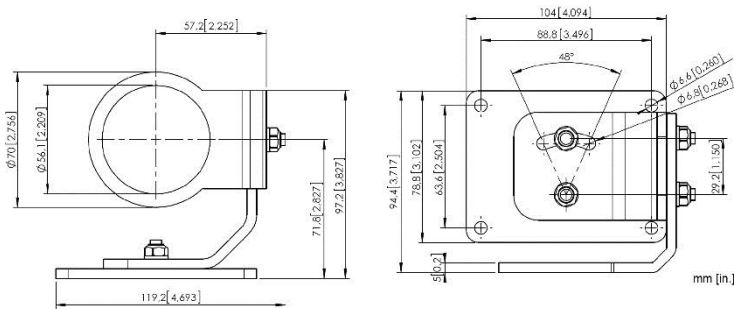
Accessories

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

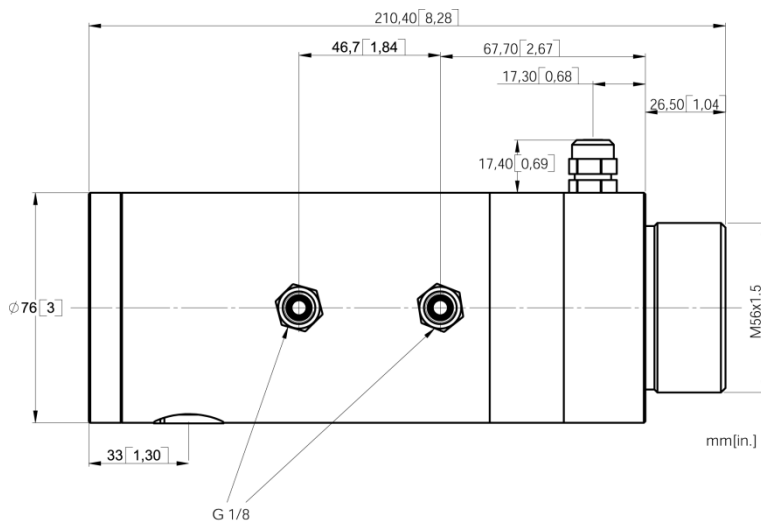
Additional accessories are available:

- 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 (XXXSYSPS)
- 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

