

MR

Datasheet



Highlights

- One- or two-color operation (unique feature)
- Wide temperature range: 600 to 3000°C
- High speed digital signal processor
- Fast response time down to 10 ms
- Superior optical resolution to 130:1
- Bi-directional RS485 communications (networkable)
- Programmable relay output (dual setpoints / fail safe alarm)
- Variable-focus optics and built-in interface, display
- Through-the-lens sighting
- Simultaneous analog and digital output
- Ambient temperatures to 315°C with ThermoJacket™ enclosure
- Compact, rugged design, IP65 rated
- Unique "dirty window" alarm
- Support software for remote configuration and monitoring

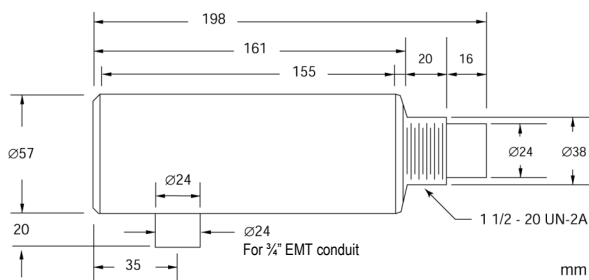
Electrical Specifications

Outputs	0/4-20 mA, max. load: 500 Ω RS485 full duplex, networkable Relay, 48 V, 300 mA, response time < 2 ms
Power Supply	24 VDC ±20%, 500 mA

General Specifications

Environmental Rating	IP65 (IEC529)
Ambient Temperature	without cooling 0 to 50°C with air cooling up to 120°C with water cooling up to 175°C with ThermoJacket up to 315°C
Storage Temperature	-20 to 70°C
Relative Humidity	10 to 95%, non-condensing
Shock	IEC 68-2-27
Vibration	IEC 68-2-6
Weight	Optical head 480 g with air/water cooled housing 800 g

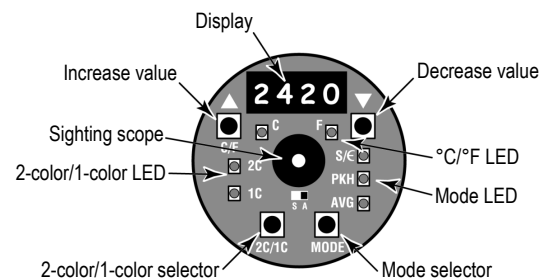
Dimensions



Measurement Specifications

Temperature Range	MR1SA 600 to 1400°C MR1SB 700 to 1800°C MR1SC 1000 to 3000°C
Spectral Response	1,0 μm nominal (Si/Si layered detector)
System Accuracy	± (0,5% T _{measured} + 2°C)
Repeatability	±0,3% full scale
Temperature Resolution	1°C
Response Time	10 ms (95%)
Emissivity	0,10 to 1,00 in 0,01 increments (one-color)
Slope	0,850 to 1,150 in 0,001 increments (two-color)
Signal Processing	Peak hold, averaging

User Interface

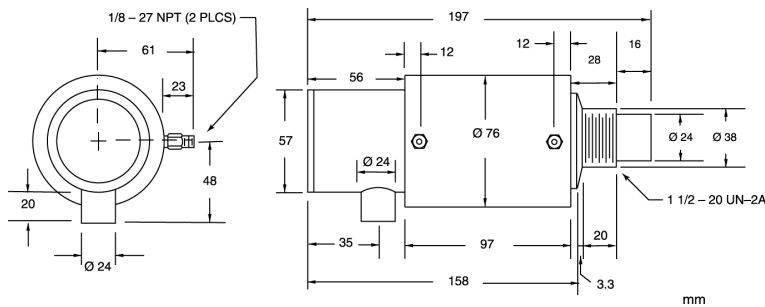


Accessories

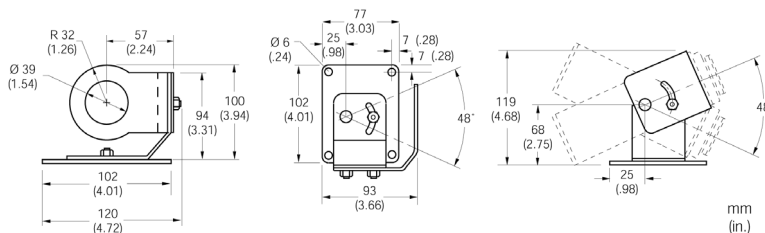
The models includes a mounting nut, an adjustable bracket, end cap for display, an operator's manual and Marathon DataTemp Software. Additional accessories are available:

- Fixed bracket (XXXTXXACFB)
- Air purge collar (XXXTXXACAP)
- ThermoJacket enclosure for ambient temperatures to 315°C (RAYTXXTJ1M), see ThermoJacket documentation
- Polarizing filter end cap (XXXTPFEC)
- Cable with terminal block (XXX2CCB...)
- Switching power supply 100 / 240 VAC to 24 VDC, 1,25 A (XXXSYSPS)
- RS232/485 interface converter with 220 VAC / 9 VDC adapter (XXX485CVT2)
- Focus adjustment tool when the sensor is installed in a ThermoJacket (XXX2CFT)
- Replacement front window incl. O-ring (XXX2CPW)
- Marathon transportable accessory kit (RAYMTAKE)

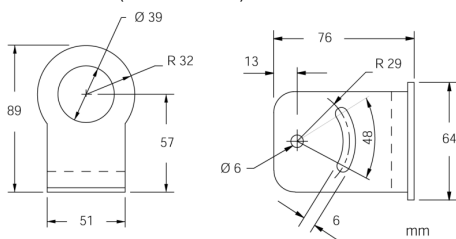
Air/Water-Cooled Housing (...W)



Adjustable Bracket (XXXTXXACAB)



Fixed Bracket (XXXTXXACFB)



Optical Specifications

Optical Resolution D : S¹

MR1SA	44 : 1
MR1SB	82 : 1
MR1SC	130 : 1

Focus Distance

Standard Focus	600 mm to ∞
Close Focus	300 mm to 600 mm

Smallest Spot Size²

MR1SASF	14 mm
MR1SBSF	7,3 mm
MR1SCSF	4,6 mm
MR1SACF	7,0 mm
MR1SBCF	3,7 mm
MR1SCCF	2,3 mm

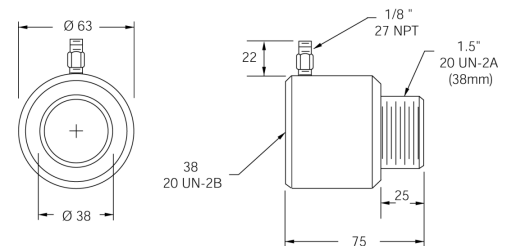
¹ at 95% energy, D: Distance between sensor and object, S: diameter of spot size
² typical values at minimum focus distance, SF = Standard Focus, CF = Close Focus

Options

Options must be specified at time of order.

- ISO Calibration Certificate, based on NIST/DKD certified probes (XXXMRCERT)
- Water-Cooled Housing, incl. Air Purge Collar (...W)

Air Purge Collar (XXXTXXACAP)



Polarizing Filter (XXXTPFEC)

