Highlights

- Low temperature limits:
  FA1: 475°C (887°F), FA2: 250°C (482°F)
- High accuracy
- High optical resolution up to 100:1
- Focus distances down to 100 mm (3.9 in)
- Fast response time down to 10 ms
- Fiber optic assembly withstands 200°C (392°F), optional up to 315°C (600°F)
- 0/4 - 20 mA analog output
- RS485 serial output; networkable (up to 32 sensors)
- Advanced signal processing
- Background radiation compensation
- Programmable relay output: dual temperature setpoints and failsafe alarm
- Marathon DataTemp® software for remote configuration and monitoring
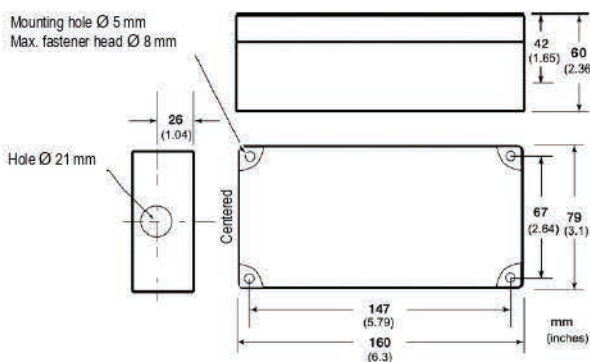
Electrical Specifications

Outputs	0/4-20 mA; RS485, 2-wire or 4-wire, networkable to 32 sensors Relay, 48 V, 300 mA, response time < 2 ms
Power Supply	24 VDC ± 20%, 500 mA

General Specifications

Environmental Rating	IP65 (IEC529) / NEMA-4
Ambient Temperature	
Optical head	0 to 315°C (32 to 600°F)
Fiber cable	0 to 200°C (32 to 392°F) optional up to 315°C (600°F)
Electronics housing	0 to 50°C (32 to 122°F) with cooling platform up to 150°C (302°F)
Storage Temperature	
Electronics housing	-20 to 70°C (-4 to 158°F)
Relative Humidity	10 to 95%, non-condensing
Shock	
Electronics housing	IEC 68-2-27
Vibration	
Electronics housing	IEC 68-2-6
Weight	
Optical head	100 g (3.5 oz)
Electronics housing	710 g (25 oz)
Fiber Cable Protection	rated to 200°C (392°F), stainless steel armour, Viton coated, IP65 / NEMA-4, provision for conduit to protect fiber cable

Measurement Specifications

Temperature Range	
FA1A	475 to 900°C (887 to 1652°F)
FA1B	800 to 1900°C (1472 to 3452°F)
FA1C	1200 to 3000°C (2192 to 5432°F)
FA2A	250 to 800°C (482 to 1472°F)
FA2B	400 to 1700°C (752 to 3092°F)
Spectral Response	
FA1	1.0 μm (Si detector)
FA2	1.6 μm (InGaAs detector)
System Accuracy	$\pm\,(0.3\%\ T_{meas} + 2°C)$, T_{meas} in °C
Repeatability	± 1°C
Temperature Resolution	
Current output	± 0.05°C
Display and RS485	± 1°C
Response Time	10 ms (95%), selectable to 10 s
Emissivity	0.10 to 1.00 in 0.01 increments
Signal Processing	Peak hold, valley hold, averaging

Dimensions

Electronics Housing

Optical Head

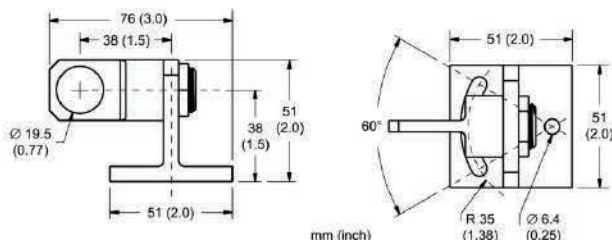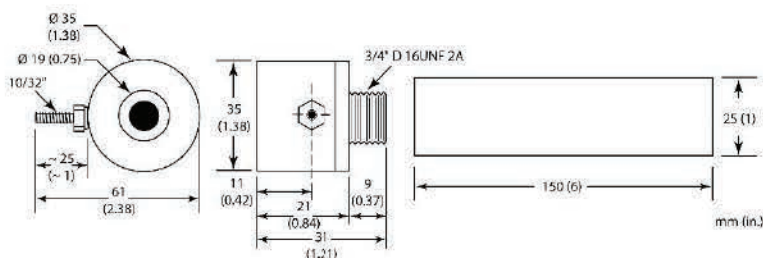
L1 = 25 mm (1 in)
L2 = 62 mm (2.4 in)
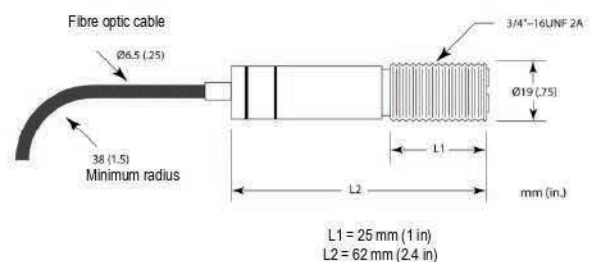
Accessories

The models include a mounting nut, adjustable mounting bracket, an operator's manual and the DataTemp Software. Additional accessories are available:

- Furnace rooftop mounting/purging system available with either flange (XXXFORFMF) or gravity-held base (XXXFORFMC)
- Stainless steel air-purge collar for optical head with integrated stainless steel sighting tube (XXXFOHAPA)
- Fiber-optic sighting tube conduit accessory, L 300 mm (12 in), ∅ 32 mm (1.3 in), (XXXFOSTCA)
- 24 VDC / 1.3 A power supply with universal 100 / 240 VAC input (XXXSYSPS)
- USB/RS485 converter (XXXUSB485)
- Aiming-light (battery powered) for fiber optic front end including adapter to FA fiber cable (XXXFAFAL)
- Terminal block (XXXMATB)
- Terminal block with 24 VDC power supply and enclosure (RAYMAPB)

Optical Specifications

Optical Resolution D : S[1]

FA1A[2]	20 : 1
FA1B	100 : 1
FA1C	100 : 1
FA2A[2]	20 : 1
FA2B	40 : 1

Focus Distances

Standard Focus	∞
Close Focus 1	100 mm (3.9 in)
Close Focus 2	300 mm (12 in)

[1] at 95% energy, D: Distance between sensor and object, S: diameter of spot size
[2] available with laser sighting

Options

Options must be specified at time of order.

- Fiber optic cable lengths: 1, 3, 6, 10 m (3, 10, 20, 33 ft)
- Manufacturer's Calibration Certificate based on certified probes traced on national standards, e.g. DAkkS (XXXFACERT)
- Laser Sighting (…L), only for FA1A/FA2A
- Electronics Housing Cooling Platform (…W)
- 12-pin DIN quick disconnect connector on electronics box (…C)
- High Temperature Fiber Cable (…H), rated to 315°C, not available on FA2, option excludes Viton coating and IP65 rating

Adjustable Bracket (XXXFOMB)

Air Purge Collar (XXXFOHAPA)

Furnace rooftop mounting/purging system
available with either flange (XXXFORFMF) or gravity-held base (XXXFORFMC)

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