Highlights

- Low temperature limits: FA1: 475°C, FA2: 250°C
- High accuracy
- High optical resolution up to 100:1
- Focus distances down to 100 mm
- Fast response time down to 10 ms
- Fiber optic assembly withstands 200°C, IP65 rated, optional up to 315°C
- 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

FA
Datasheet

Electrical Specifications

Outputs	0/4-20 mA; RS-485, 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

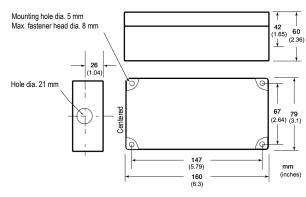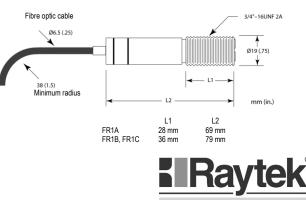|	
Environmental Rating	IP65 (IEC529)
Ambient Temperature	
Optical head	0 to 315 C
Fiber cable	0 to 200 C, optional up to 315 C
Electronics housing	0 to 50 C, with cooling platform up to 150 C
Storage Temperature	
Electronics housing	-20 to 70 C
Relative Humidity	10 to 95%, non-condensing
Shock	
Electronics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

Measurement Specifications

Temperature Range	
FA1A	475 to 900 C
FA1B	800 to 1900 C
FA1C	1200 to 3000 C
FA2A	250 to 800 C
FA2B	400 to 1700 C
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

Mounting hole dia. 5 mm
Max. fastener head dia. 8 mm
Hole dia. 21 mm
26 (1.04)
42 (1.65)   60 (2.36)
67 (2.64)   79 (3.1)
147 (5.79)
160 (6.3)
mm (inches)

Optical Head

Fibre optic cable
Ø6.5 (.25)
3/4"-16UNF 2A
Ø19 (.75)
38 (1.5) Minimum radius
L1
L2
mm (in.)

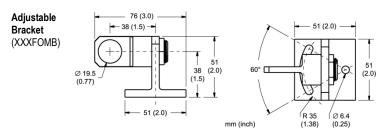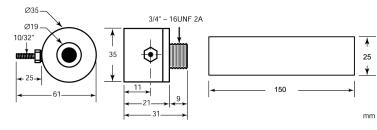|	L1	L2
FR1A	28 mm	69 mm
FR1B, FR1C	36 mm	79 mm

Raytek®
A Fluke Company

Accessories

The models include a mounting nut, adjustable mounting bracket, an operator's manual and the Marathon 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), air flow 0,5 – 1,5 l per second
- Fiber-optic sighting tube conduit accessory, L 300 mm, ⌀ 32 mm, with connection to standard electrical conduit (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 IP 65 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
Close Focus 2	300 mm

[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, or 10 m
- ISO Calibration Certificate, based on NIST/DAkkS certified probes (XXXFACERT)
- Laser Sighting (…L), only for FA1A/FA2A
- Electronics Housing Cooling Platform (...W) water flow 2 l per minute, 16 C for efficient cooling
- 12-pin DIN quick disconnect connector on electronics box (…C)
- High Temperature Fiber Cable (…H), rated to 315ºC, 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)

www.raytek.com

Worldwide Headquarters
Santa Cruz, CA USA
Tel: +1 831 458 – 3900
    +1 800 227 – 8074
solutions@raytek.com

European Headquarters
Berlin, Germany
Tel: +49 30 47 80 08 0
Fax: +49 30 4 71 02 51
raytek@raytek.de

United Kingdom
ukinfo@raytek.com

France
info@raytek.fr

||Raytek®
A Fluke Company