

Highlights

- Simple, two-wire installation
- Simultaneous 4-20 mA and digital output for smart TX sensors
- Compact, rugged sensor with IP 65 rating
- Wide temperature range from -18 to 2000°C
- Advanced signal processing
- Point-to-point or multidrop installation
- Install up to 15 sensors on a single multidrop network
- Windows software for remote configuration and monitoring
- Wide choice of focus distances
- Special models for glass and plastics applications

Electrical Specifications

Outputs

Analog	4-20 mA, max. loop resistance 700 Ω
Digital (Smart models)	HART® to RS-232 (with optional adapter)
Alarm (Smart models)	24 V / 150 mA; adjustable setpoints, deadband, normally open/closed settings

Power Supply

12 - 24 VDC $\pm 20\%$ (Standard models)
24 VDC $\pm 10\%$ (Smart models)

General Specifications

Environmental Rating	IP65 (IEC529)
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Ambient Temperature

without cooling	0 to 70°C
with air cooling	up to 120°C
with water cooling	up to 175°C
with ThermoJacket™	up to 315°C

Storage Temperature	-18 to 85°C
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Relative Humidity	10 to 95%, non-condensing
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Shock	IEC 68-2-27, 50 G, 11 ms, any axis
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Vibration	IEC 68-2-27, 3 G, any axis, 11 – 200 Hz
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Dimension	187 mm L x 42 mm diameter
with cooling jacket	187 mm L x 60 mm diameter

Weight	330 g
with cooling jacket	595 g

Raytek Thermalert Series

TX

Datasheet



Measurement Specifications

Temperature/Spectral Ranges

LT/LTP (Low Temp.)	-18 to 500°C	8 to 14 μm
MT (Medium Temp.)	200 to 1000°C	3,9 μm
HT (High Temp.)	500 to 2000°C	2,2 μm
G5 (Glass)	250 to 1650°C	5,0 μm
P7 (Plastic)	10 to 360°C	7,9 μm

Optical Resolution¹

LT, MT, G5, P7	33 : 1
LTP	15 : 1 (Fresnel optics)
HT	60 : 1

System Accuracy

$\pm 1\%$ or $\pm 1,4^\circ\text{C}$ ^{2,3}

Repeatability

$\pm 0,5\%$ or $\pm 0,7^\circ\text{C}$ ³

Temperature Resolution

LT	0,1°C
all other models	1°C

System Response Time⁴

G5	65 ms
HT	100 ms
all other models	165 ms

Emissivity

adjustable: 0,10 to 1,00

Signal Processing

Standard model	emissivity
Smart model	emissivity, °C/°F, advanced peak / valley hold, averaging, background radiation compensation

¹ 90% energy, standard focus optics

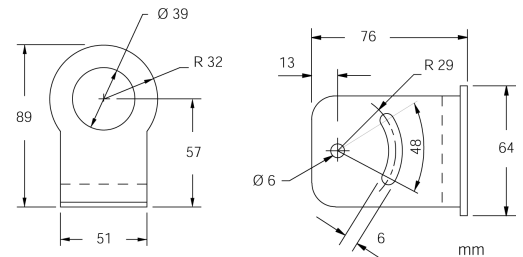
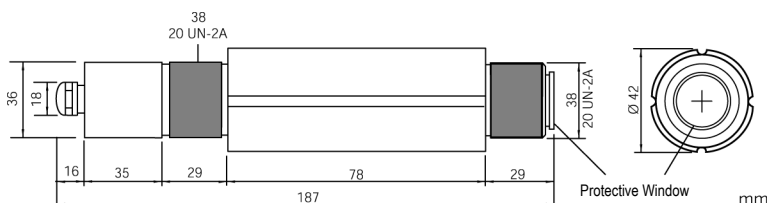
² at ambient temperature 23°C $\pm 5^\circ\text{C}$

³ whichever is greater

⁴ 95% value

Sensor and Fixed Bracket

Each sensor comes with a fixed bracket, a mounting nut, and an operator's manual. All models have 4 to 20 mA output.



Fixed Bracket (XXTXACFB)



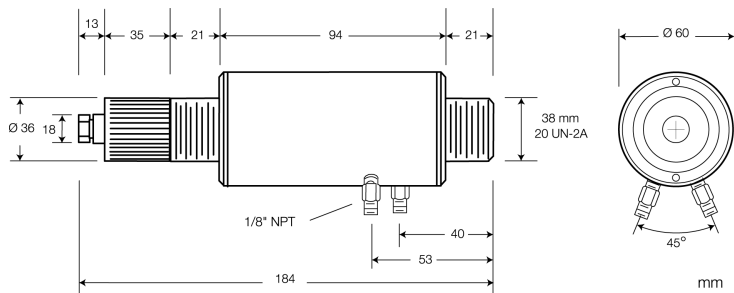
INGENIEROS ASOCIADOS DE CONTROL S.L.

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Options

Options must be specified at time of order.

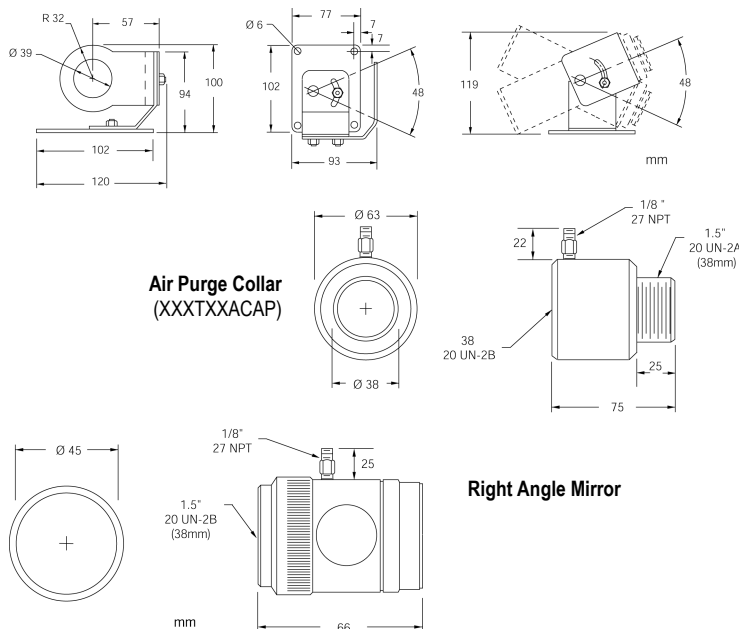
- ISO Calibration Certificate, based on NIST/DKD certified probes (XXXDKDCERT)
- Intrinsically-Safe Rating, PTB-approval (...IS1)
- Water/Air Cooled Housing incl. Air Purge Collar (...W)



Accessories

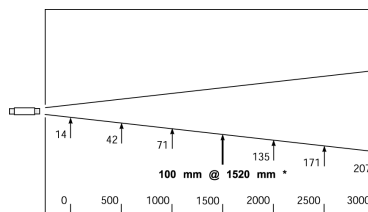
- Sighting Viewer Tool (XXXTXXACSV)
- Protective Window according to spectral range (XXXTXACTW...)
- ThermoJacket: extra rugged cast metal housing for thermal/mechanical environmental protection (RAYTXXTJ3M), see also ThermoJacket datasheet

Adjustable Bracket (XXXTXXACAB)



Optical Specifications

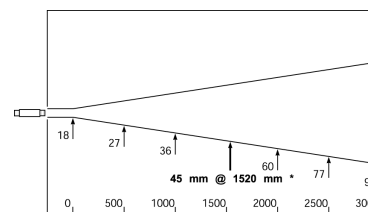
Standard Focus: LTP models



Close Focus Option	
D (mm)	S (mm)
0	10
50	7,5*
500	115

D:S = 7:1, Far Field = 4:1
*focus point

Standard Focus: LT, MT, G5, P7 models



Close Focus Option 1	
D (mm)	S (mm)
0	16
76	2,5*
500	92

D:S = 30:1, Far Field = 5:1

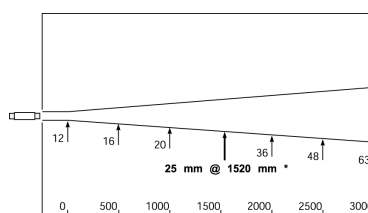
Close Focus Option 2	
D (mm)	S (mm)
0	17
200	6,4*
450	32

D:S = 32:1, Far Field = 10:1

*focus point

Close Focus not available for G5 and P7

Standard Focus: HT models



Close Focus Option 1	
D (mm)	S (mm)
0	11
76	1,3*
500	66

D:S = 60:1, Far Field = 7:1

Close Focus Option 2	
D (mm)	S (mm)
0	11
200	3,4*
450	22

D:S = 60:1, Far Field = 14:1

*focus point

Remote Communication Kit

Required for smart models, the kit (RAYTXSCAL) includes the HART/RS-232 adapter and the Windows DataTemp Multidrop software package. One kit serves multiple sensors. Requires RS-232 serial port voltage and Windows 95/98, or Windows NT/2000.



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