

## Highlights

- Wide temperature range from -18 to 2000°C
- Simple, two-wire installation for simultaneous 4-20 mA and digital output
- Wide choice of optics
- Special models for glass and plastics applications
- Rugged accessories for harsh industrial environments
- Optional stainless steel versions
- Advanced signal processing
- Install up to 15 sensors on a single multidrop network
- Windows software for remote configuration and monitoring
- For use in potentially explosive atmospheres with intrinsically-safe ratings for dust and gas

## TX Datasheet



### Electrical Specifications

#### Outputs

Analog	4-20 mA, max. loop resistance 700 Ω
Digital (Smart models)	HART® to RS232 (with optional adapter)
Alarm (Smart models)	24 V / 150 mA; adjustable setpoints, deadband, normally open/closed settings

#### Power Supply

12 - 24 VDC ±20% (Standard models)
24 VDC ±10% (Smart models)

### General Specifications

**Environmental Rating** IP65 (IEC529)

#### 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

**Relative Humidity** 10 to 95%, non-condensing

**Shock** IEC 68-2-27, 50 G, 11 ms, any axis

**Vibration** IEC 68-2-27, 3 G, any axis, 11 – 200 Hz

**Dimension**  
without cooling jacket 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

### 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 Resolution<sup>1</sup>

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

#### System Accuracy

±1% or ±1,4°C<sup>2,3</sup>

#### Repeatability

±0,5% or ±0,7°C<sup>3</sup>

#### Temperature Resolution

LT	0,1°C
all other models	1°C

#### System Response Time<sup>4</sup>

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

<sup>1</sup> 90% energy, standard focus optics

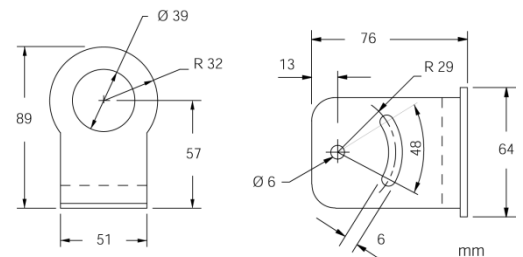
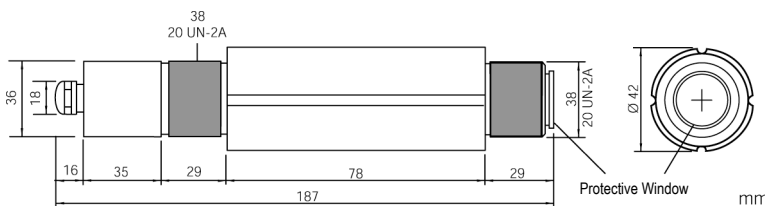
<sup>2</sup> at ambient temperature 23°C ± 5°C

<sup>3</sup> whichever is greater

<sup>4</sup> 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.

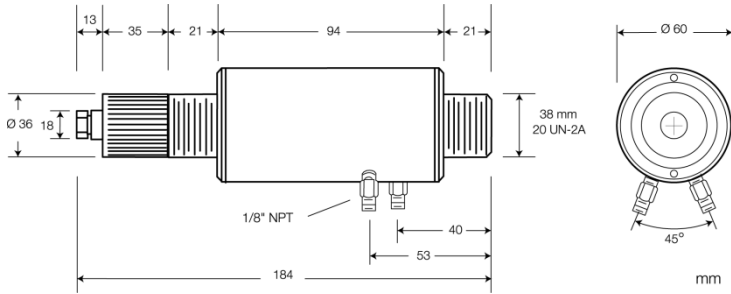


Fixed Bracket (XXXXXXACFB)

## Options

Options must be specified at time of order.

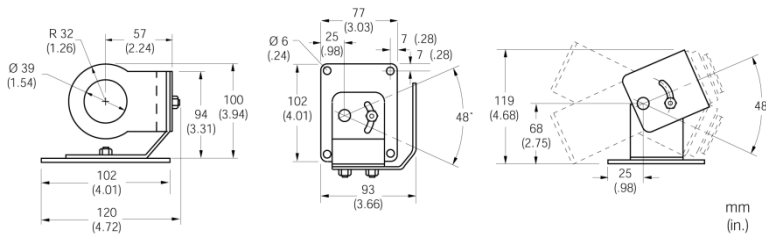
- Manufacturer's calibration certificate based on NIST/DKD probes (XXTXCERT)
- Intrinsically-Safe Ratings  
EX II 2G Ex ib IIC T4 Gb (gases/vapors)  
EX II 2D Ex ibD IIIC T135°C Db (dusts)  
TXS models (...IS4), TXS models in stainless steel (...IS5)
- Water/Air Cooled Housing incl. Air Purge Collar (...W), optional in stainless steel



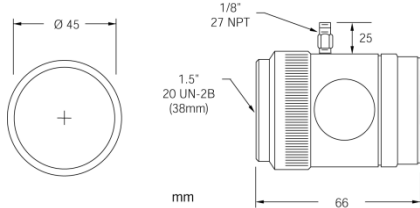
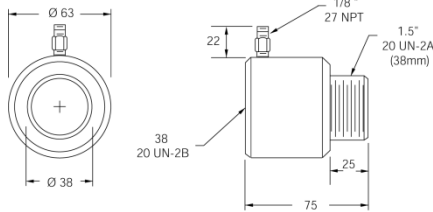
## Accessories

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

## Adjustable Bracket (XXTXXACAB)



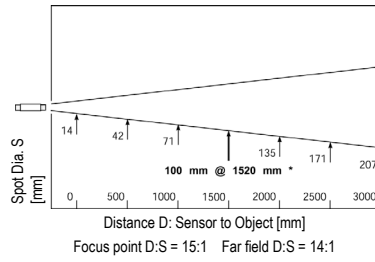
## Air Purge Collar (XXTXXACAP)



## Right Angle Mirror for measuring targets at right angles to sensor axis (XXTXXACRA)

## Optical Specifications

### Standard Focus: LTP models

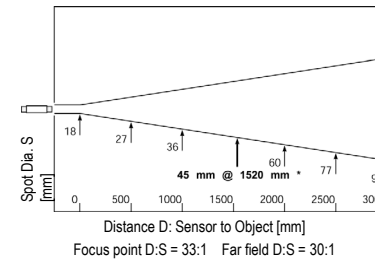


Close Focus Option CF	
D (mm)	S (mm)
0	10
50	7.5*
500	115

D:S = 7:1, Far Field = 4:1

\*focus point

### Standard Focus: LT, MT, G5, P7 models



Close Focus Option CF1	
D (mm)	S (mm)
0	16
76	2.5*
500	92

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

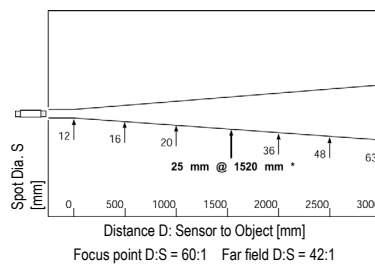
Close Focus Option CF2	
D (mm)	S (mm)
0	17
200	6.4*
450	32

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 (XXTXACRCK) includes the HART/RS232 adapter and the Windows DataTemp Multidrop software package. One kit serves multiple sensors. Requires RS232 serial port and Windows 2000/XP/Vista/Win7.

[www.raytek.com](http://www.raytek.com)

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