Raytek XR Series

XR

Datasheet

Highlights

- Multiple temperature and spectral ranges
- Local user-interface for sensor programming
- User-selectable 0/4-20 mA, 0-5 V, J or K thermocouple output
- User-scalable 0/4-20 mA or 0-5 V output
- Simultaneous analog and digital RS485 outputs
- Choice of terminal wiring or DIN connector wiring
- Laser sighting for high resolution optics (LTH models)
- Optional stainless steel housing
- Field Calibration software

Electrical Specifications

Outputs	
Analog	4-20 mA, 0-20 mA, 0-5V, J or K thermocouple (with terminal connector)
Digital	RS485 (bidirectional)
Alarm	opto-coupled contact closure
Inputs	Emissivity setting, background radiation compensation, trigger, laser control
Power Supply	24 VDC ±20%, 100 mA

General Specifications

Environmental Rating	IP65 (IEC529), with DIN connector only
Ambient Temperature	
without cooling	0 to 70°C
with air cooling	120°C
with water cooling	175°C
with ThermoJacket	315°C
with laser	40°C
Storage Temperature	-20 to 70°C
Relative Humidity	10 to 95%, non-condensing
Shock	IEC 68-2-27, 50 G, 11 ms, 3 axis
Vibration	IEC 68-2-6, 3 G, 11 – 200 Hz, 3 axis
Dimension	192 mm L x 42 mm diameter
with cooling jacket	192 mm L x 63 mm diameter
Weight	585 g
with cooling jacket	675 g

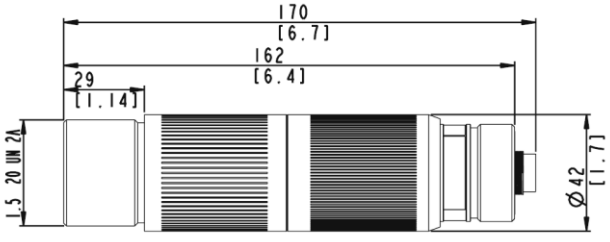
Measurement Specifications

Temperature/Spectral Ranges		
LT/LTHSF (Low Temp.)	-40 to 600°C	8 to 14 µm
MT (Medium Temp.)	250 to 1200°C	3,9 µm
G5 (Glass)	250 to 1650°C	5,0 µm
P7 (Plastic)	10 to 350°C	7,9 µm
Optical Resolution[1]		
LTHSF	50 : 1	
LT, G5	33 : 1	
MT, P7	30 : 1	
System Accuracy	±1% or ±1,0°C [2, 3]	
Repeatability	±0,5% or ±0,5°C [3, 4]	
Temperature Resolution		
P7	1,0°C	
all other models	0,5°C	
Response Time (95%)		
all models	150 ms	
Emissivity	adjustable: 0,100 to 1,100	
Signal Processing	°C/°F, Min, Max, Average, advanced hold, ambient background temperature compensation	

[1] 90% energy, standard focus optics
[2] at ambient temperature 23°C ± 5°C
[3] whichever is greater
[4] LT: for target temperature > 25°C @ ambient temperature of 23°C; P7: for target temperature > 95°C

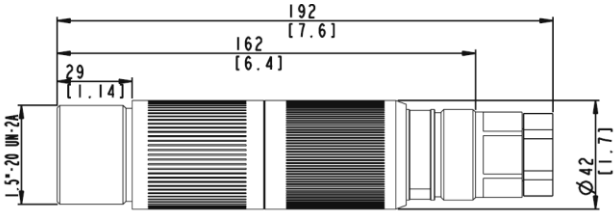
Sensor and Fixed Bracket

Each sensor comes with a fixed bracket, a mounting nut, a software CD and an operator's manual.



Sensor with 12-pin DIN connector

mm [in]



Sensor with terminal connector

Options

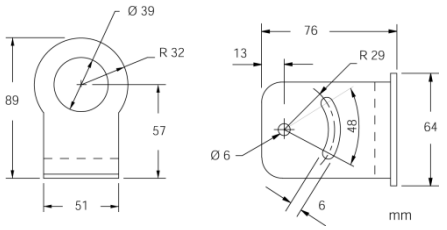
Options must be specified at time of order.

- Manufacturer's calibration certificate based on NIST/DKD probes (XXXXRCERT)

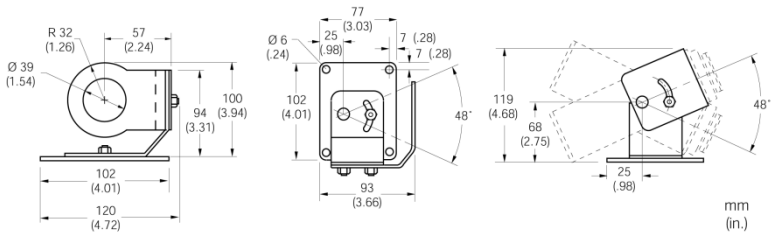
Accessories

- RS232/485 converter serving for stand-alone or multiple sensors (RAYMINCONV2)
- Protective Windows according to spectral range (XXXTXACTW…)
- Cable extensions in different lengths
- Water/Air Cooled Housing for field retrofit as stainless steel (XXXXRACWCS) or aluminium (XXXXRACWCA)
- ThermoJacket: extra rugged cast metal housing for thermal/mechanical environmental protection (RAYTXXTJ5)

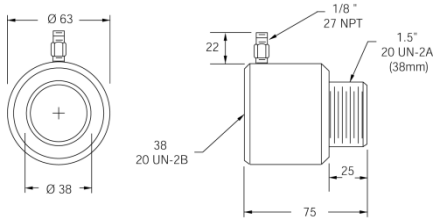
Fixed Bracket
(XXXTXXACFB)

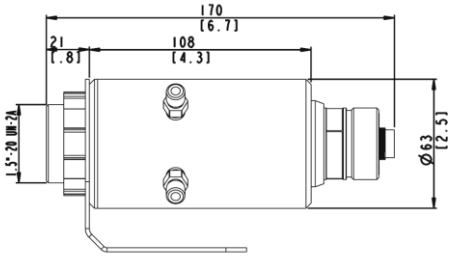


Adjustable Bracket (XXXTXXACAB)



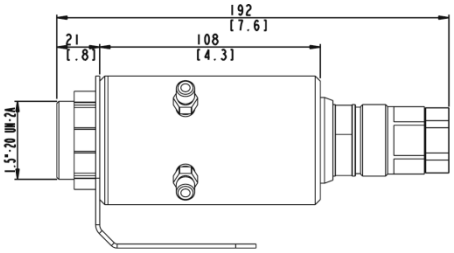
Air Purge Collar
(XXXTXXACAP)





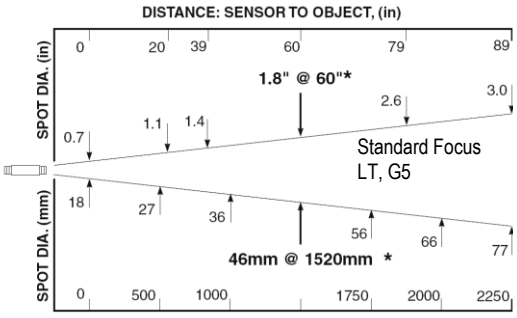
Water/Air Cooled Housing
(sensor with 12-pin quick connector)

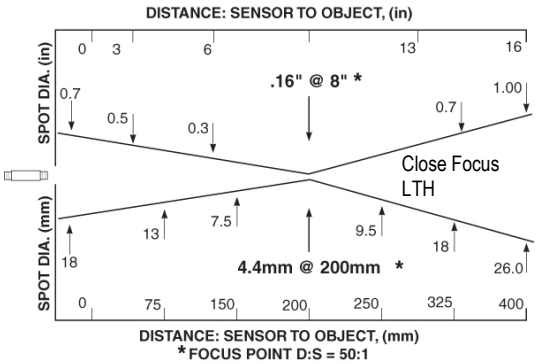
mm [in]

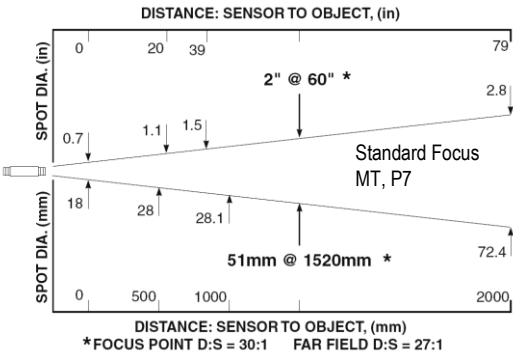


Water/Air Cooled Housing
(sensor with terminal connector)

Optical Specifications







* D:S for the focus point
90% energy