

## PHOENIX TRIPLE IR

Multi-spectrum Infrared  
Flame Detector

SIL 2  
RATED



ref.: Tucano: EXBCR0020

- **No External Reflector–  
Greatly Reduces Faults  
and Maintenance Costs**
- **Market-Leading  
7 Year Warranty**
- **Proprietary Automatic  
Digital Zoom Feature–  
Advanced Flame Source  
Identification/Detection**
- **Three Infrared Sensors  
Precisely Tuned to Identify  
Flame Source Radiation**
- **90 Degree Field Of View**
- **Fast Response Times  
At All Field Adjustable  
Sensitivity Settings**
- **Operating Range  
of -50°C to +75°C**
- **Global Certifications for  
Hazardous Indoor and  
Outdoor Applications**

Very serious risks to human life, productivity and equipment are always present at industrial facilities that store, transport and process flammable or explosive chemicals. Automatic flame detection and protective action must be initiated within seconds whenever a fire ignites.

Net Saf Phoenix Triple IR flame detector provides the reliable and instantaneous flame detection response that is required while utilizing advanced technologies to reduce maintenance costs and provide rock-solid performance in any environment.

**Three discrete infrared sensors** are precisely tuned to infrared wavelengths where our research team identified dynamic differences in absolute amplitude, relative amplitude, flicker frequency, phase relationship and bandwidth of energy emitted by typical fires, whether small, gradually expanding fires or massive, instantaneous explosions. Unexpected bursts of thermal energy, reflections of hot equipment or heavy rain and snow can cause other flame detectors to ignore actual fire, cause false alarms, or go into a fault condition.

**Automatic Digital Zoom (ADZ)** technology was developed by our engineers to precisely and reliably identify a broad spectrum of flame types and sizes while minimizing false alarms. Phoenix ADZ, provides accurate detection of small and massive flames in the most difficult working situations where other detectors fail.

The Phoenix Triple IR is the **ONLY** flame detector on the market that **does not have an external reflector** or light source. Experience has shown that external reflectors and light sources often become obscured by industrial dirt and corrosion which causes unwanted fault alarms that requires difficult and costly maintenance to correct. The Phoenix Triple IR flame detector completely eliminates these issues in applications where salt, dust, petroleum vapor, heavy rain/snow or blowing sand are present.

**Net Saf has engineered a superior and affordable, multi-spectrum IR flame detector that is simple to operate and maintain while delivering all the security and performance required for high-risk, industrial installations!**

# PHOENIX TRIPLE IR

Multi-spectrum Infrared Flame Detector

SPECIFICATIONS	ANALOG	RELAY	DIGITAL
Operating Voltage Range	10 to 32 Vdc		
Power Consumption (at 24 Vdc)	Nom 31 mA / 0.74 W Max 65 mA / 1.56 W	De-Energized - Nom 39 mA / 0.94 W Max 73 mA / 1.75 W Energized - Nom 53 mA / 1.22 W Max 86 mA / 2.06 W	Nom 31 mA / 0.74 W Max 65 mA / 1.56 W
Power Consumption (at 12 Vdc)	Nom 46 mA / 0.55 W Max 114 mA / 1.37 W	De-Energized - Nom 66 mA / 0.79 W Max 138 mA / 1.66 W Energized - Nom 93 mA / 1.12 W Max 165 mA / 1.98 W	Nom 46 mA / 0.55 W Max 114 mA / 1.37 W
Temperature Range	Certified -40°C to +75°C (-40°F to +167°F) — Operational -50°C to +85°C (-58°F to +185°F)		
Field of View	90 degrees vertical / 90 degrees horizontal		
Spectral Range	Wavelengths between 2.5 – 5.5 microns		
Time Delay	Dip switch selectable to 0, 3, 5, 7 seconds		
Sensitivity Settings	Two adjustable settings via DIP switch (High / Low)		
Typical Response Time	<5 seconds		
Enclosure Material	Red powdercoat with clear anodizing, copper-free aluminum (optional stainless steel), factory sealed housing		
Humidity Range	0 to 95% RH, non-condensing		
Weight (with swivel)	2.1 Kg/4.5 lb (Stainless Steel option 3.4 Kg/7.5 lb)		
Outputs	Digitally stepped analog output 0 to 20 mA - into a maximum loop impedance of 800 Ohms at 32 Vdc or 150 Ohms at 10.5 Vdc. Isolated/ Non-isolated loop supply.	Normally open/normally closed Form C contacts rated 5 Amps at 30 Vdc 125 Vac. Selectable energized /de-energized Fire relay. Fault relay fixed as energized. Both Fire and Fault relays fixed as non-latching and cannot be modified.	RS-485 RTU Modbus protocol
Certifications/Approvals	CSA - Class I, Division 1, Groups A (Canada only), B, C and D - Temperature code T5 - CANADA: Class 1, Zone 1, Ex d IIB + H2 T5 ANSI-UL/ISA - Class I, Division 1, Groups B, C and D - Temperature code T5 - UNITED STATES: Class 1, Zone 1, AEx d IIB + H2 T5 ATEX - EEx d II B+H2 T5 GOST-R - IEx d II BT5/H2 INMETRO - BR-Ex d II B+H2 T5 Factory Mutual (FM) 3260 Performance Certification SIL 2 Rated NEMA Type 4X • IP66 - Enclosure ratings		
Warranty	7 Years (see website for details)		

## PERFORMANCE

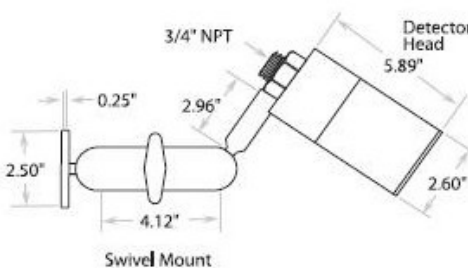
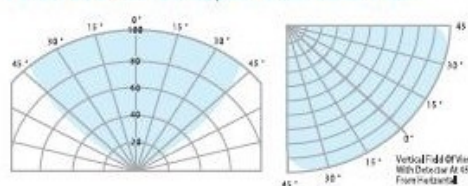
### Summary of Distances

Fuel	Fire Size	Distance	Typical Response
n-heptane	1' x 1'	210 feet max	< 2sec @ 100 ft.
gasoline	1' x 1'	150 feet max	< 5sec @ 150 ft.
methane	32" plume	140 feet max	< 5sec @ 140 ft.

### Immunity False Alarm Stimuli

Stimuli	Immunity Range
arc welding/sparking/arcing	10 ft +
direct and/or indirect sunlight	total
lightning	total
halogen, fluorescent, incandescent light	10 ft +
250W Sodium Vapor, 250W Metal Halide Light	10 ft +
electric heater (1500W)	10 ft +
propane heater - mod./unmod. (27000w)	12 ft +

### Field of View - Methane (32" plume - distances indicated in feet)



### ORDERING INFORMATION

- IR3S-A \_\_\_\_\_ 0 to 20 mA Analog Output
- IR3S-R \_\_\_\_\_ Fire and Fault Alarm Relays
- IR3S-D \_\_\_\_\_ RS-485 MODBUS RTU Protocol
- IR3S-AR \_\_\_\_\_ 0 to 20 mA Analog Output and Fire and Fault Alarm Relays (through JB-IR3SAR-A/S)
- IR3S-AD \_\_\_\_\_ 0-20 mA Analog Output and RS-485 MODBUS RTU Protocol

OPTIONS: -X (ATEX), -SS (Stainless Steel)

### Accessories

- LAT-120 - Laser Alignment Tool
- TL-IR3-KIT - Triple Infrared Test Lamp Kit

Changes are periodically made to the information within this document and incorporated without notice into subsequent revisions. Net Safety Monitoring Inc. assumes no responsibility for any errors that may be contained within this document. Please refer to manuals for complete specifications.

Distributed by:

ISO 9001:2000



Tucano Comércio de Alarmes e Sistemas Eletrônicos  
fone/fax: (41) 3286-2867 - email: tucano@tucanobrasil.com.br  
home page: www.tucanobrasil.com.br

