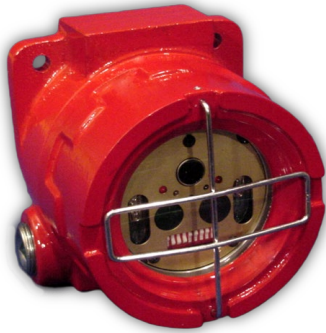


# RED1

## Hazardous Location Flame Detector



### Standard Features

- Hazardous Location Rated for Indoor & Outdoor Use
- Wide 120° Solid Cone of Vision
- UV / IR / Visible Sensor Array
- Broadband Detection for Silane, Hydrocarbon & Other Fuel Types
- Microprocessor Based Design
- **FireScape™** & **DataScan™** Enabled
- Field Programmable Sensitivity Settings

### Available Options

- UV Self-Test System Available
- Alarm Verification & UV Test Relays
- 4-20ma Output Model Available
- Red or White Housing



### General Information

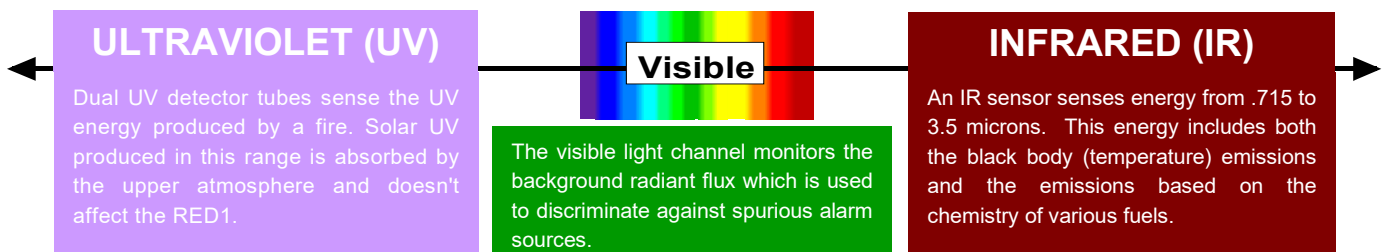
Multiple spectrums are sensed and evaluated by the sensor array allowing the internal microprocessor to analyze signature correlations using intensity values, change of intensity values, relationship of intensity values, and frequency distribution.

Using a computer and Interface Box with **DataScan™** software allows a detector to be evaluated for proper operation and installation. In addition, once an event is detected, the pre-fire spectral data (**FireScape™**) is stored in nonvolatile memory and is retrievable for evaluation and analysis via the **DataScan™** software.

Most RED1 detectors integrate a UV Self-Test feature to check the integrity of the UV System.

On enhanced models, an alarm verification relay is added to allow for greater certainty that a fire event has occurred. These models also include a separate auxiliary relay to indicate when the integrity of the UV Sensor system is compromised.

Flame detectors should be tested periodically as specified by the authority having jurisdiction. Typical requirements are listed in NFPA 72.



### Sensitivity:

Field selectable dip switch settings allows a detector to respond to a 1 sq. ft. heptane fire on axis within 3 seconds at a distance of 20, 40, 60 or 80 feet.

### Standard Test Fuels:

Heptane, Hydrogen, Silane, Kerosene and Isopropyl Alcohol (70%)

### Spectral Response:

Ultraviolet: 185 to 260 nm  
Infrared: .715 to 3.5 μm  
Visible: 480 to 560 nm

### Field-of-View:

120-Degree Solid Cone

### Hazardous Classification:

NEMA 4X, Explosion Proof  
Class I Divisions I & II Groups B, C, D  
Class II Divisions I & II Groups E, F, G  
Class III

### Enclosure:

Copper free cast aluminum with F.D.A. approved epoxy finish for high corrosion resistance. Available in red or white. Includes two 3/4-inch NPT feed-through Hubs.

### Weight:

3.5 pounds (approximate)

### Dimensions:

4.5" X 4.8" X 3.7"

### Relay Contacts:

0.5 amp @ 120 VAC  
1.0 amp @ 24 VDC Resistive

### RED1-420 Output:

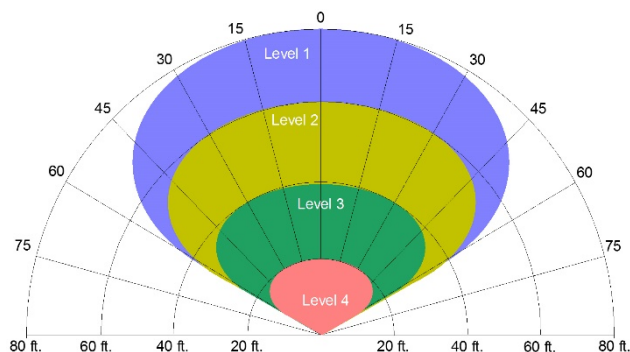
0 ma fault, 4 ma normal, 12 ma fire, 20 ma verified.

### Electrical:

Input Voltage: 15 to 32 VDC  
Current Draw Relay Models  
24 VDC @ 62 ma nominal  
Current Draw RED1-420 Model  
24 VDC @ 72 ma nominal

### Temperature Range:

Tamb (Operating): -40° C to 85° C  
Storage: -55° C to 110° C



This graph illustrates the range and wide field-of-view of the RED1 for each of its field selectable sensitivity settings.

Detector Response to Various Fuels			
Fuels	Distance	Fire Size	Average Response Time
Heptane	80 feet	1 sq/ft	2.75 seconds
Silane	50 feet	18" jet	3.42 seconds
Hydrogen	15 feet	18" jet	3.28 seconds
Kerosene	75 feet	1 sq/ft	2.85 seconds
Isopropyl	6 feet	1.75" diameter	2.60 Seconds

### False Alarm and Fire Response

This table shows the detector's ability to tolerate both modulated and unmodulated false alarm stimuli while detecting a fire in the presence of the false alarm source. All fire tests used a 1.75 inch diameter IPA pan fire at 6 feet.

False Alarm Source	Distance to Source	Distance to Fire	Modulated/Unmodulated	Response Time to Fire
Resistive Electric Heater (1320 Watt)	6 feet	6 feet	No Response	Less than 5 Seconds
Fluorescent Light (two 40 Watt Bulbs)	6 feet	6 feet	No Response	Less than 5 Seconds
Halogen Light (500 Watt Bulb)	10 feet	6 feet	No Response	Less than 5 Seconds
Incandescent Light (100 Watt Bulb)	6 feet	6 feet	No Response	Less than 5 Seconds
Arc Welder (50 Watt)	25 feet	6 feet	No Response	Less than 5 Seconds

### Ordering Information

Model	Fire/Fault Relay	Verify Relay	Aux. Relay	UV Self-Test	CE
RED1-NT	N.O. and N.C.	N/A	N/A	No	Yes
RED1-ST	N.O. and N.C.	N/A	N/A	Yes	Yes
RED1-E1	N.O. and N.C.	N.O.	N.C.	Yes	Yes
RED1-E2	N.O. and N.C.	N.C.	N.O.	Yes	Yes
RED1-E3	N.O. and N.C.	N.O.	N.O.	Yes	Yes
RED1-E4	N.O. and N.C.	N.C.	N.C.	Yes	Yes
RED1-420	Outputs: 0 ma fault, 4 ma normal, 12 ma fire, 20 ma verified			Yes	No

Note: N.O. means Normally Open and N.C. means Normally Closed.

White Housing option may be ordered by adding a -WB to the Model (i.e. RED1-ST-WB).