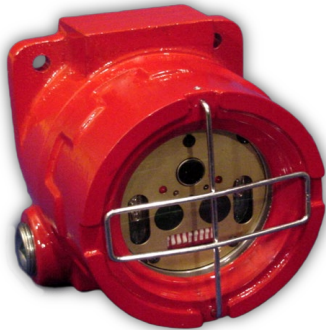


RED1-420

Hazardous Location Flame Detector



Standard Features

- Rated for Indoor & Outdoor Hazardous Locations
- 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
- Alarm Verification State
- 4-20ma Output
- Red or White Housing



General Information

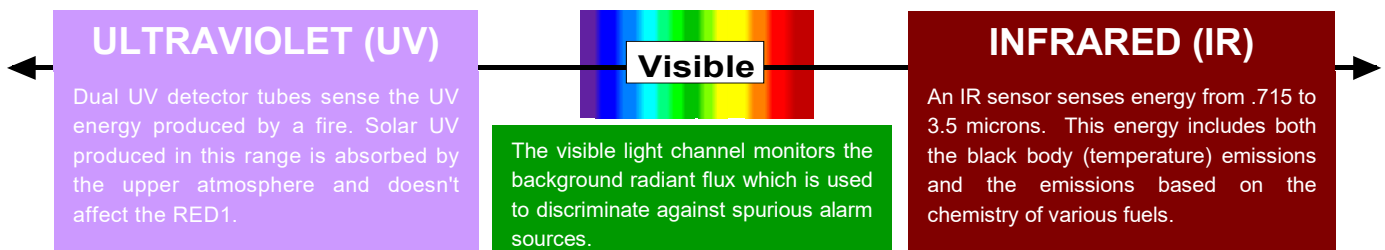
Multiple spectrums are sensed by the sensor array and evaluated by an internal microprocessor. It analyzes signature correlations using intensity values, change of intensity values, relationship of intensity values, and frequency distribution.

With a computer and Interface Box, **DataScan™** software allows a detector to be evaluated for proper operation and installation. 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.

This RED1 detector integrates a UV Self-Test feature to check the integrity of the UV System.

An alarm verification state is added to allow for greater certainty that a fire event has occurred.

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



Sensitivity:

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

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"

Electrical:

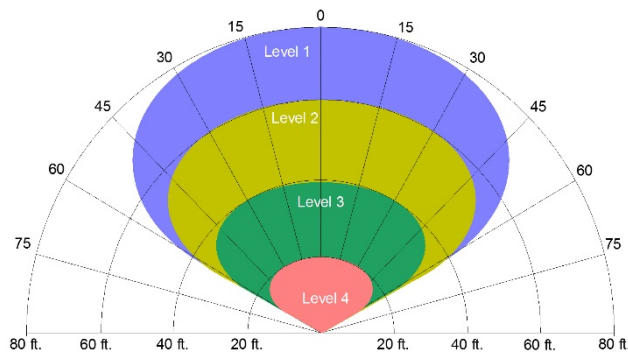
Input Voltage: 15 to 32 VDC
 Current Draw
 24 VDC @ 72 ma nominal

Temperature Range:

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

420 Interface Response

| Detector State | Interface Current |
|----------------------|-------------------|
| Fault | 0 ma |
| Normal | 4 ma |
| Fire | 12 ma |
| Verified Fire | 20 ma |



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

| 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 | Housing Color |
|-------------|---------------|
| RED1-420 | Red |
| RED1-420-WB | White |