

IR FLAME DETECTOR RIV-601P/F

General notions

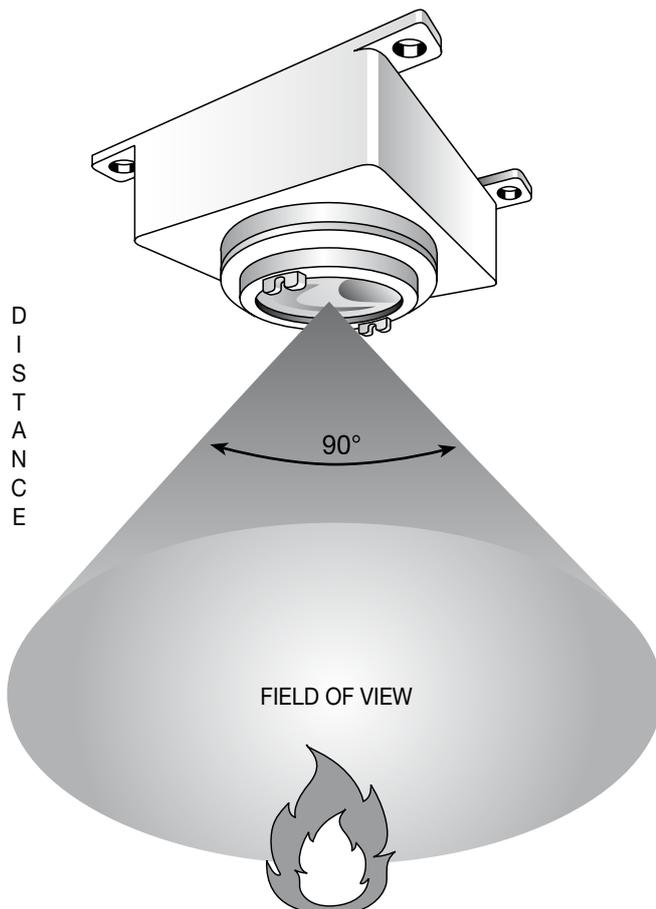
The IR flame detector model RIV-601P/F is an electronic optical fire detector device that responds immediately to the thermal infrared radiation emitted by fire, and is tuned to the pulse frequency of the flame to ignore sun, lamps and other light and infrared radiation sources.

WHY IR (infrared) FLAME DETECTOR

Eye is faster than nose. In the event of live fire the IR flame detector responds immediately. Its behaviour is similar to that of the eye. In fact it "sees" the radiation emitted by fire, and its sensitivity is inside a cone of 90° which is called the field of view.

The minimum flame size that can be detected by the RIV-601P/F varies with the distance. It doubles at double distance and is half at half distance. The sensitivity value is 2-3% of the distance.

For example, at 10m the smallest detectable flame size is 20-30cm.



WHY IR (infrared) RADIATION

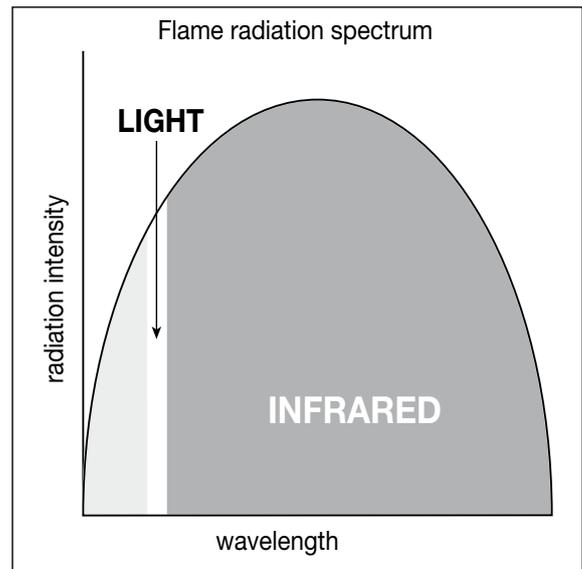
The visible radiation emitted by fire is just a small amount of the emitted energy.

The most part is comprised of invisible thermal infrared radiation, typically emitted by all hot bodies, with a wavelength varying with the body temperature.

At higher temperature a shorter wavelength is generated and viceversa. The IR flame detector sees very well this IR radiation but is near blind to the visible light.

Furthermore the thermal infrared radiation passes through the smoke, while the light does not.

For this reason the IR flame detector responds to the fire also when smoke is present.



WHY IT DOES NOT RESPOND TO THE SUNLIGHT AND LAMPS

Sun and lamps also generate thermal infrared radiation.

But flame is different because it flickers at a particular frequency in the range from 3 to 30 Hz (pulses per second).

The IR flame detector is tuned to this pulsing radiation like a radio receiver is tuned to one station and ignores all others.

Nevertheless direct exposition to the sunlight and lamps must be avoided, since it causes the detector to become blind or give false alarms.

