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Active infrared sensors use both infrared source and infrared detectors. They operate by transmitting energy from either a LED or light emitting diode or a laser diode. While the former is used for a non-imaging active infrared detector, the laser diode is used for an imaging active infrared detector.

The LED type of infrared sensor is used to detect the target and illuminate it. The reflected energy is focused onto a detector. Photoelectric cells, photodiode or phototransistors are used as detectors in this type of arrangement. The measured data is then processed using various signal processing instruments to extract the required information.

There are stand-alone active and passive infrared sensors available and designed specifically for outdoor intrusion detection applications. Active infrared technology can be used for detection of unwanted elements using a two-column sensor. It consists of a transmitter unit that emits invisible active infrared beams. The receiver unit receives and analyses the beams and detects intruders who pass between the two columns.

Passive infrared technology uses heat radiation to detect intruder movement. The temperature contrast is easily detected by the sensors to judge an abnormal movement. The reliability of the operation is assured by the rugged construction of the system, the integrated heaters and the self-adapting technology. Despite the changing environmental condition or temperature extremes, the capacity of detecting intruders remains steadfastly high.

If you are looking for long range and high performance outdoor active infrared sensor, then there are lots of models available. They can easily detect walking, running and even crawling intruders. The best models have a two meter column which houses a transmitter unit; the source of active infrared emissions. It also has a receiver unit which receives the signal, analyzes them and detects any intruder movement passing between the two units.

If any intruder tries to cover or mask the unit, it sets off an alarm which can alert you or your neighbor. There are beam frequency channel selection options which allow multiple beams in one column to operate without interference.

There are other flexible and cost effective active infrared sensor solutions designed for short range use. The system can easily detect any intruder passing between the two columns. Alarms are triggered when multiple beam paths are interrupted simultaneously. They are generally not triggered by blowing debris, small animals and birds thus reducing their nuisance value.

The alarms can be easily set up. The best active infrared sensors come with a hood shield that prevents beam reception interruption by dew or frost.

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