

Press Release

InfraTec GmbH Infrarotsensorik und Messtechnik

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The Space-saving Wonder

InfraTec presents the LRM-278, the world's first eight channel pyroelectric detector in TO8 housing.

Pyroelectric detectors are ideally suited for gas analysis. Until now, this has been complicated if many gases should be measured. There were often simply too few measuring channels for this purpose. The new LRM-278 from InfraTec now offers exactly the right solution for this. Combining eight channels in a TO8 housing with a diameter of 15.2 millimetres this detector is the first of its kind worldwide. As a result, the number of gases that can be measured with a single detector of this size has doubled in one fell swoop.

Double Space Savings

When looking at the design of the single supply detector, two details become clear, which make a significant contribution towards ensuring that such a powerful solution fits into such a small space. The first detail is the central window built directly in the cap, which all other models of the series of miniaturised multi channel detectors have, too. The correspondingly large aperture of $8.5 \times 8.5 \text{ mm}^2$ means that the LRM-278 has a very large field of view (FOV). This gives rise to its outstanding signal-to-noise ratio.

The second detail is concealed inside the detector. There, on special chip carriers, the sensitive pyroelectric sensors, the compensation elements as well as the $2 \times 2 \text{ mm}^2$ filters are positioned directly on top of each other. Due to this stack design, there is sufficient space for all other components.

Temperature Sensor Directly in the Detector

The frames with sensitive elements and filters are arranged in a square each with three times three fields. With a total of eight channels, one field thus remains free – the one in the middle. At this position there is a temperature sensor. With gas sensors, the temperature is usually measured as well. Until now, this has not been possible directly in the detector, however. Measuring the temperature inside the detector, for example, provides the option of compensating the typical temperature drift of the filters very accurately by means of a calibration.

In addition to the measurement accuracy, there are also the benefits resulting from the current mode of the LRM-278. This means that it impresses particularly by its fast displaying of signal changes and dynamic response behaviour. The resulting high signal voltage simplifies the circuit design and allows the detector to become more resilient against disturbances. The higher signal levels support the easy integration of the detector into measuring modules.

Thanks to all these benefits, the LRM-278 is predestined for extremely complex tasks within the gas analysis. This includes the analysis of medical and technical gases, the measurement of emissions as well as applications in the field of safety technology.

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About InfraTec

The InfraTec infrared sensor and measuring technology company was founded in 1991 and has its headquarters in Dresden, Germany. The privately held company employs more than 200 employees and has its own design, manufacturing and distribution capabilities.

Spectrally single and multi channel infrared detectors count among the products of the infrared sensor division, next to Infrared sensors with electrically tunable filters based on MOEMS. These detectors can be used in gas analysis, fire and flame sensor technology and spectroscopy.

With its infrared measurement technology division, InfraTec is one of the leading suppliers of commercial thermal imaging technology. In addition to the high-end camera series ImageIR® and the VarioCAM® High Definition series, InfraTec offers turnkey thermographic automation solutions.

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