## INFRATEC.

## **Reliable Detectors for Medical Gas Analysis**

Shenzhen Prior-Care Technology equips Anesthesia and Breathing Gas Analyzers with InfraTec Detectors

The Chinese company Shenzhen Prior-Care Science Technology (Prior-Care) manufactures analysers for anaesthetic gases as well as other medical products. The accurate, continuous real-time measurement of the concentrations of inhaled and exhaled gases is vital for patients during surgery. That is why Prior-Care only uses highly reliable detectors in its analyzers. An InfraTec detector (LRM-284) was selected for two devices due to its high stability and consistency.

Monitoring of anesthetic gas concentrations during surgery is of critical importance for maintaining the patient's vital functions. The risk of the operation as well as the safety and controllability of the surgical process also depend on correct measurements and, if necessary, adjustment of the gas concentrations. Prior-Care develops, manufactures and distributes a range of gas analyzers that are used for these tasks in the medical field.

The AG-100 is a side stream anesthesia gas analyzer for patient monitoring. The measuring device displays the accurate gas concentration up to 150 bpm at all respiratory rates. It uses NDIR technology to monitor  $CO_2$  in the patient's breathing gas and to measure various anesthetic gases. The portable anesthesia gas analyzer MG2000, on the other hand, is designed for low tidal volumes with high respiratory rates. It is used for a wide range of clinical applications and can measure the concentrations of  $CO_2$  and various anesthetic gases.

Since both devices need to analyze several gases at the same time, the developers at Prior-Care chose the LRM-284 four-channel detector from InfraTec. The pyroelectric multi-channel detector is ideally suited for the demanding task: In the usually open environment of the measurement, high demands are placed on the detection rates, thermal response time and temperature stability of the detectors.



AG100

MG2000

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For Mr XIONG Menglong, General Manager of Shenzhen Prior-Care Science Technology, the high product quality is a decisive factor for using the detectors in anesthetic gas analyzers, in addition to their functionality: "Our company uses InfraTec detectors, because the stability and consistency of the sensor is higher than that of similar products of other brands", explains Mr Menglong. "The production pass rate in production can reach more than 99.9 %."

Another argument in favor of the InfraTec detector is the integrated thermal compensation: "This improves the accuracy of the detector and increases the stability and precision of the signal during the detection process", says Mr Menglong.

The PYROMID<sup>®</sup> 4-channel detector LRM-284 is equipped with two double-operational amplifiers enabling the current mode operation. The detector offers a very large field of view (FOV) and can quickly visualize signal changes. The signal voltage generated is high, which simplifies the circuit design and makes the detector more robust against interference.



The detector, primarily designed for industrial and medical gas detectors, is equipped with a thermal compensation chip that cancels out the pyroelectric currents generated by temperature changes under rapidly changing temperatures.

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