

TC721

Thermal imaging for gas detection



Optical gas imaging that makes leaks visible

TC721

Gas leak detection thermal imager

amperis

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Hydrocarbon and VOC escapes shown live on screen, from up to 80 m.

Product overview



Substation survey with the installation in service



Leak plume as seen by the cooled detector

How optical gas imaging works

The TC721 is a cooled-detector optical gas imaging (OGI) camera. Passive infrared imaging reads the narrow 3.2-3.5 μm band, where the target gases absorb strongly, so an escape appears as a live plume on screen.

Energised electrical equipment can be inspected from up to 80 m and kept in service throughout the survey, while the cooled 320×256 quantum-well detector reveals faint escapes that a conventional thermal camera would miss.

Features and advantages

- Cooled detector with a thermal sensitivity (NETD) of ≤ 0.015 $^{\circ}\text{C}$ for high-contrast imaging of small releases.
- Standard and multi-level high-sensitivity detection modes; also serves for routine infrared temperature checks (-40 $^{\circ}\text{C}$ to $+500$ $^{\circ}\text{C}$).
- Visualises dozens of VOCs, including methane (CH_4), ethane, propane, butane, pentane and hexane.
- Ex ic nC op IIC T4 Gc rating for potentially explosive atmospheres.
- 5 MP visible camera, radiometric image and video storage, voice and text annotation.



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Applications and field documentation



Articulating viewfinder for awkward inspection angles

Applications

- Leak surveys around energised substations and switchgear.
- Petrochemical, oil-and-gas and natural-gas facilities.
- Chemical and process plants handling combustible hydrocarbons and VOCs.

Complete reports on site

Findings are documented with radiometric images and video, complemented by the built-in 5 MP visible camera and voice or text notes. GPS, laser pointer and fill light assist location and low-light work.

Designed for field use

The camera operates from -20°C to $+50^{\circ}\text{C}$ with IP54 protection; the rechargeable lithium battery provides 4 h of continuous operation and charges on the unit.



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TC721 – TECHNICAL SPECIFICATIONS

Detector	Cooled quantum-well, 320 × 256
Spectral range	3.2-3.5 µm (VOC absorption band)
Thermal sensitivity (NETD)	≤ 0.015 °C at 30 °C
Gas detection sensitivity	0.4 g/h of CH ₄ at 2 m
Field of view / min. focus	14.5° × 10.8° / 0.5 m
Spatial resolution (IFOV)	0.79 mrad
Frame rate and focus	60 Hz; automatic, motorised or manual focus
Built-in visible camera	5 MP CMOS with LED light
Displays	0.6-inch HD OLED viewfinder; 5-inch HD colour touchscreen
Temperature range	-40 °C to +500 °C
Accuracy	±2 °C or ±2 % of reading, whichever is greater
Measurement corrections	Temperature (auto/manual); background; atmospheric transmittance
Storage	32 GB SD card (expandable); manual/automatic capture; continuous infrared and visible video
File formats	Infrared JPEG (14-bit with measurement data) and MPEG-4; visible JPEG / MPEG-4
Annotation	60 s voice recording (built-in microphone) and text notes
Auxiliary functions and interfaces	Laser pointer (1 mW / 635 nm), GPS, fill light, buzzer; video output, Wi-Fi, Bluetooth
Power supply	Rechargeable lithium battery, 4 h runtime; power-on < 7 min; on-unit charging
Environment	-20 °C to +50 °C; ≤ 90 % RH (non-condensing); IP54
Hazardous-area rating	Ex ic nC op IIC T4 Gc



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