



FLIR GF306

SF₆ Optical Gas Imaging Camera

The FLIR GF306 is an optical gas imaging camera that visualizes and pinpoints SF₆ and other gas emissions without the need to shut down operations. This portable, non-contact system allows you to quickly scan wide areas for leaks, so you can begin repairs sooner.

Sulfur Hexafluoride (SF₆) is used in the electric power industry as an insulator and quenching medium for gas-insulated substations and circuit breakers. These facilities have thousands of connections and fittings that need regular inspection, but more than 80% of a gas leaks occur in less than 1% of those components. As a result, crews spend more than 99% of their time inspecting safe, non-leaking parts.

The FLIR GF306 reduces revenue loss by detecting gas leaks efficiently, at a safe distance away from high-voltage areas.

Visualize SF₆ and Many Other Gases

Invisible gases look like smoke through the lens of the GF306, making even the smallest emissions easy to see. Unlike a traditional “sniffer”, the camera allows you to survey large areas quickly and effectively and see into spaces that are difficult to reach with non-contact measurement tools. The GF306 is capable of detecting not only SF₆, but several other gases including Anhydrous Ammonia (NH₃), and Ethylene (C₂H₄).

Optical Gas Imaging and Thermography in One

The GF306 accurately measures temperatures up to 500°C as well as detects gas. Integrate this camera into your facility’s predictive maintenance program for benefits beyond leak detection.

Meet EPA Regulations

One pound of SF₆ has the same global warming impact of 24,000 pounds of CO₂. It has an atmospheric lifespan of 3,200 years, so even small amounts of SF₆ can have a significant impact on global climate change.

The US Environmental Protection Agency includes optical gas imaging as an accepted leak detection technique in its Greenhouse Gas Reporting Rule.



Visible vs. OGI image of SF₆ leak



SF₆ leaking from the bushing of a gas circuit breaker



Ammonia (NH₃) gas escaping from pipes

Specifications

Model	GF306
Detector Type	Focal plane array, cooled QWIP
Spectral Range	10.3 – 10.7 μm
Resolution	320 x 240 pixels
Detector Pitch	30 μm
NETD/Thermal Sensitivity	< 15 mK @ +30°C (+86°F)
Sensor Cooling	Stirling Microcooler (FLIR MC-3)
Electronics / Imaging	
Image Modes	IR image, visual image, High Sensitivity Mode (HSM)
Frame Rate (Full Window)	60 Hz
Dynamic Range	14-bit
Video Recording / Streaming	Real-time non-radiometric recording: MPEG4/H.264 (up to 60 min./clip) to memory card Real-time non-radiometric streaming: RTP/MPEG4
Visual Video	MPEG4 (25 min./clip) to memory card
Visual Image	3.2 MP from integrated visible camera
GPS	Location data stored with every image
Camera Control	Remote camera control via USB
Measurement	
Temperature range	–40°C to +500°C (–40°F to +932°F)
Accuracy	$\pm 1^\circ\text{C}$ ($\pm 1.8^\circ\text{F}$) for temperature range (0°C to +100°C, +32°F to +212°F) or $\pm 2\%$ of reading for temperature range (>+100°C, >+212°F)
File Storage	
Storage Media	Removable SD or SDHC memory card; two card slots
Image Storage Capacity	> 1200 images (JPEG) with post-process capability per GB on memory card
Optics	
Camera f/number	f/1.5
Available Fixed Lenses	14.5° (38 mm), 24° (23 mm)
Focus	Automatic (one touch) or manual (electric or on the lens)
Image Presentation	
On-Camera Display	Built-in widescreen, 4.3 in. LCD, 800 x 480 pixels
Automatic Gain Control	Continuous/manual, linear, histogram
Menu Commands	Level/span, auto adjust continuous/manual/semi-automatic, zoom, palette, start/stop recording, store image, playback/recall image
Color palettes	Iron, Gray, Rainbow, Arctic, Lava, Rainbow HC
Zoom	1-8x continuous, digital zoom
General	
Operating Temperature Range	–20°C to +40°C (–4°F to +104°F)
Storage Temperature Range	–30°C to +60°C (–22°F to +140°F)
Encapsulation	IP 54 (IEC 60529)
Bump / Vibration	25 g (IEC 60068-2-27) / 2 g (IEC 60068-2-6)
Power	AC adapter 90-260 VAC, 50/60 Hz or 12 V from a vehicle
Battery System	Rechargeable Li-ion battery
Weight w/ Battery & Lens	2.48 kg (5.47 lb.)
Size (L x W x H) w/ Lens	305 x 169 x 161 mm (12.0 x 6.7 x 6.3 in.)
Mounting	UNC 1/4"-20



The gases FLIR's GF306 can detect include:

- Sulphur Hexafluoride
- Anhydrous Ammonia
- Ethylene
- Ethyl Cyanoacrylate ("Superglue")
- Chlorine Dioxide
- Acetic Acid
- FREON-12
- Methyl Ethyl Ketone (MEK)

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