



THE GLOBAL LEADER IN INFRARED CAMERAS

## YOUR SIXTH SENSE



GasFindIR™ HSX

The most sensitive gas imaging camera for accurate leak detection

# GasFindIR™ HSX

## High Sensitivity infrared camera for faster gas leak detection

The new FLIR GasFindIR HSX is the next-generation GasFindIR camera from FLIR. Added features and improved sensitivity makes it unbeatable for detecting even the smallest gas leaks.

### A Camera to Detect Gas Leaks Immediately

Many industrial gases and chemical compounds are invisible to the naked eye. Yet companies transport and transform these ingredients every day. Now there is a new solution that will help chemical and petrochemical plants to detect gas leaks immediately.

Today, Toxic Vapor Analyzer (TVA) or "sniffer" technology is used in a process that requires someone to "sniff" for leaks at numerous tagged locations. An American Petroleum Institute study found that 84 percent of the leaks come from less than 1 percent of the equipment. That means companies devote most of the inspection efforts to the 99 percent of functional, safe and non-leaking sites. At the same time current technologies have major disadvantages:

- They expose human workers to invisible and potentially hazardous chemicals when tracing leaks.
- Wind or other weather factors can disperse gas and vapors leading to inaccurate measurements.
- "Point solutions" only tell you about a single point where measurements are taken.
- Chemical compounds may be lighter or heavier than air, with concentrations above human reach or at floor levels where TVAs might not reach adequately.

Optical imaging using infrared cameras, such as GasFindIR HSX, offer a number of benefits because it can scan a broader area much more rapidly and in areas that are difficult to reach with contact measurement tools. Infrared displays a leak as a plume of vapor in the infrared image. Once a leak is found, from a safe distance with the GasFindIR HSX, you can use your TVA to quantify the concentration.

### How Does it Work?

For the first time, an infrared (IR) camera - GasFindIR HSX - allows you to spot methane and other volatile organic compound (VOC) gas leaks quickly and easily.

Capable of rapidly scanning large areas and even kilometers of pipeline, this highly specialized infrared camera delivers real-time thermal images of gas leaks. These leaks appear as "black smoke" on-screen allowing you to "see" fugitive gas emissions. Using a revolutionary technology, GasFindIR HSX inverts the physics of fugitive VOC gas leaks. What was once invisible is now clear and present - and recordable to any off-the-shelf video recorder for easy archiving, documenting or e-mailing.



The GasfindIR HSX camera is a lightweight, handheld, portable infrared camera for inspections even in harsh environments.

GasFindIR HSX is a real-time infrared camera, scanning at 50 Hz. This greatly increases productivity by allowing workers to scan miles of piping from moving vehicles or pan wide-angle for broad views of piping systems without image distortion or smear.

### More Scene Temperature Ranges Produces Better Images

More user settings in the new HSX version allow the camera to be optimized for the environment and climate scene in which gases are present. The new GasFindIR HSX camera now delivers nine user-selectable temperature ranges. Normal Scene, Cold Scene and Hot Scene can be selected. This allows you to change frame acquisition rates for better image performance in hot and cold environments to help you find the smallest leaks.

### High Sensitivity Mode Detects Even Small Leaks

Images are processed and enhanced by the GasFindIR HSX High Sensitivity Mode™ which clearly shows the presence of gases. Gases that are detectable by the GasFindIR HSX camera appear as smoke. And with the five-fold increase in image clarity, users are able to determine smaller leaks, so they can be repaired before conditions become dangerous and costly.

### Makes Reporting Easy

Images from the GasFindIR HSX camera are recordable to any off-the-shelf video recorder for easy archiving, documenting and emailing.

The GasFindIR HSX enables you to:

- Scan thousands of components per shift
- Considerably reduce inspection time
- Inspect without interruption of process
- Spot leaks close by or meters away
- Perform safer inspections
- Safely monitor big leaks from meters away
- Visualize gas leaks in real time



High Sensitivity Mode (image enhancement for detection of small leaks)



9-user-selectable scene temperature ranges (Normal Scene-Cold Scene – Hot Scene)



Ergonomic, robust and easy to operate



Lightweight and handheld (only 2.4 kg)



Battery life up to 8 hours



Laboratory tested to detect 20 different gases



High detector sensitivity < 35 mK

### Stay Within a Safe Distance

GasFindIR HSX can detect leaks from distances of up to 10 meters away with standard optics, depending on the size of the leak. The camera includes a 25 mm wide-angle lens for scanning of a variety of components and operations. For longer-range needs, 50 mm and 100 mm lenses are available from FLIR. The camera helps improve productivity by enabling wide-angle scans of piping systems. Cameras equipped with longer focal length lenses have been used from helicopters to spot leaks from barges, storage tanks and gas pipelines. A camera-based inspection program can survey more than hundred of points an hour. A lot more than the average TVA system can complete in a day.

### More Power - 8 hours battery time

The GasFindIR HSX can be operated by battery, with up to eight hours continuous use. The camera also can be connected to AC power for round-the-clock use. Or the camera can be connected to 12-volt power for vehicle-based inspections. This gives thermographers greater flexibility in critical surveys.

### A Rugged Solution

The GasFindIR HSX is a rugged piece of equipment and is designed specifically for use in harsh industrial environments. It is dust and splash proof and designed for operating in a wide temperature range of -15°C to +50°C.

### World Class Support & Financial Solutions

GasFindIR HSX is manufactured by FLIR Systems, the largest manufacturer of infrared cameras, offering the widest selection, best post-sale technical support and training to ensure your success. With more than 40 years experience and a long history of innovation and leadership, you can trust FLIR Systems to help you protect your investment.

### New features for the GasFindIR HSX:

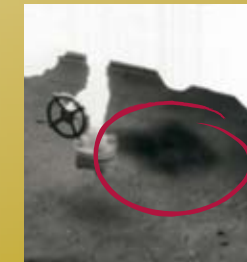
- Provides 5 times better sensitivity for gas detection
- Nine Scene Temperature Ranges to optimize image performance in hot and cold environments
- More battery and power options - 8 hours battery time



## GasFindIR HSX Camera is Laboratory Tested to Detect:

$C_6H_6$	Benzene	$C_5H_{12}$	Pentane
$C_2H_5OH$	Ethanol	$C_5H_{10}$	1-Pentene
$C_8H_{10}$	Ethylbenzene	$C_7H_8$	Toluene
$C_7H_{16}$	Heptane	$C_8H_{10}$	Xylene
$C_6H_{14}$	Hexane	$C_4H_{10}$	Butane
$C_5H_8$	Isoprene	$C_2H_6$	Ethane
$CH_3OH$	Methanol	$CH_4$	Methane
$C_2H_5$	MEK	$C_3H_8$	Propane
$CH_3O$	MIBK	$C_2H_4$	Ethylene
$C_8H_{18}$	Octane	$C_3H_6$	Propylene

### Applications: Examples of captured gas leaks from production sites



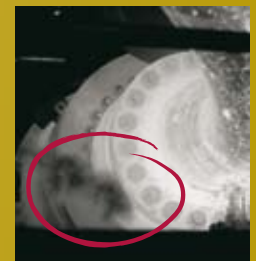
Captured gas leak from production site



Captured gas leak from production site



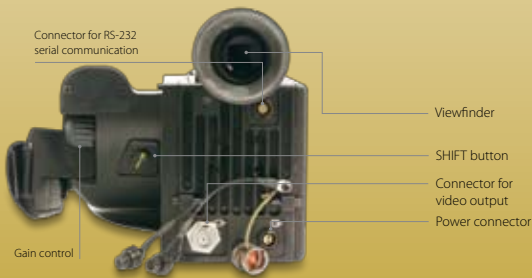
Captured gas leak from production site



Captured gas leak from production site



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# Technical specifications

## Imaging and optical data

Field of view (FOV) / Minimum focus distance  
Focal length  
Spatial resolution (IFOV)  
F-number  
Thermal sensitivity/NETD  
Image frequency  
Focus  
Digital zoom  
Digital image enhancement

22° x 16° / 0.2 m (0.66 ft.)  
25 mm (0.98 in.)  
1.2 mrad  
2.3  
35 mK @ +30°C (+86°F)  
Max 25 Hz/30 Hz (PAL/NTSC)  
Manual  
2x and 4x Digital Zoom  
High Sensitivity Mode (HSM)

## Detector data

Detector type  
Spectral range  
IR resolution

Focal Plane Array (FPA), cooled InSb  
3–5 μm  
320 x 240 pixels

## Electronics and data rate

Integration time

Selectable: 1–64 ms

## Image presentation

Viewfinder  
External display

Built-in viewfinder, 800 x 600, OLED, B/W  
Via personal video recorder

## Video recording

Video recording type

Recording of video sequences to personal video recorder

## Data communication interfaces

Serial communication, purpose  
Serial communication, standard  
Serial communication, connector type  
Video, standard  
Video, connector type

Command and control  
RS-232  
7-pin Fischer connector  
CVBS (ITU-R-BT.470 PAL/SMPTE 170M NTSC)  
BNC (CVBS)

## Power system

Battery type  
Battery voltage  
Battery operating time  
Charging system  
AC operation  
Power

Li Ion  
7.5 V  
Approx. 8 hours at +25°C (+77°F) ambient temperature and typical use  
Included battery charger (AC adapter or 12 V from a vehicle)  
Via 2-pin Fischer connector (7–24 VDC)  
< 6 W typically

## IR lenses (optionally available\*)

100 mm/5° lens, field of view (FOV)  
50 mm/11° lens, field of view (FOV)

5.5° x 4°  
11° x 8°

## Environmental data

Operating temperature range  
Storage temperature range  
EMC

–15°C to +50°C (+5°F to +122°F)  
–40 °C to +70 °C (–40 °F to +158 °F)  
EN 61000-6-2:2005 (Immunity)  
EN 61000-6-3:2007 (Emission)  
FCC 47 CFR Part 15 Class B (Emission)

## Physical data

Camera weight, incl. lens and battery  
Camera size (L x W x H)  
Tripod mounting

2.38 kg (5.25 lb.)  
262 x 158 x 132 mm (10.3 x 6.2 x 5.2 in.)  
UNC 1/4"-20

## Scope of delivery

Packaging, contents

ThermaCAM GasFindIR HSX Camera, 25 mm lens cap, Optical cleaning kit, Neck strap, Battery charger, 2 ea., Li Ion battery, 3 ea., AC-to-DC power supply, User's Manual, Hard transport case, Video cable, Personal Video Recorder (PVR) and battery, A/V Cable for Personal Video Recorder

\* Interchangeable lens version of the ThermaCAM™ GasFindIR HSX requires US Department of State License and will be subject to limitations on resale, except inside US. Allow a minimum of 90 days after application submittal for approval.

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