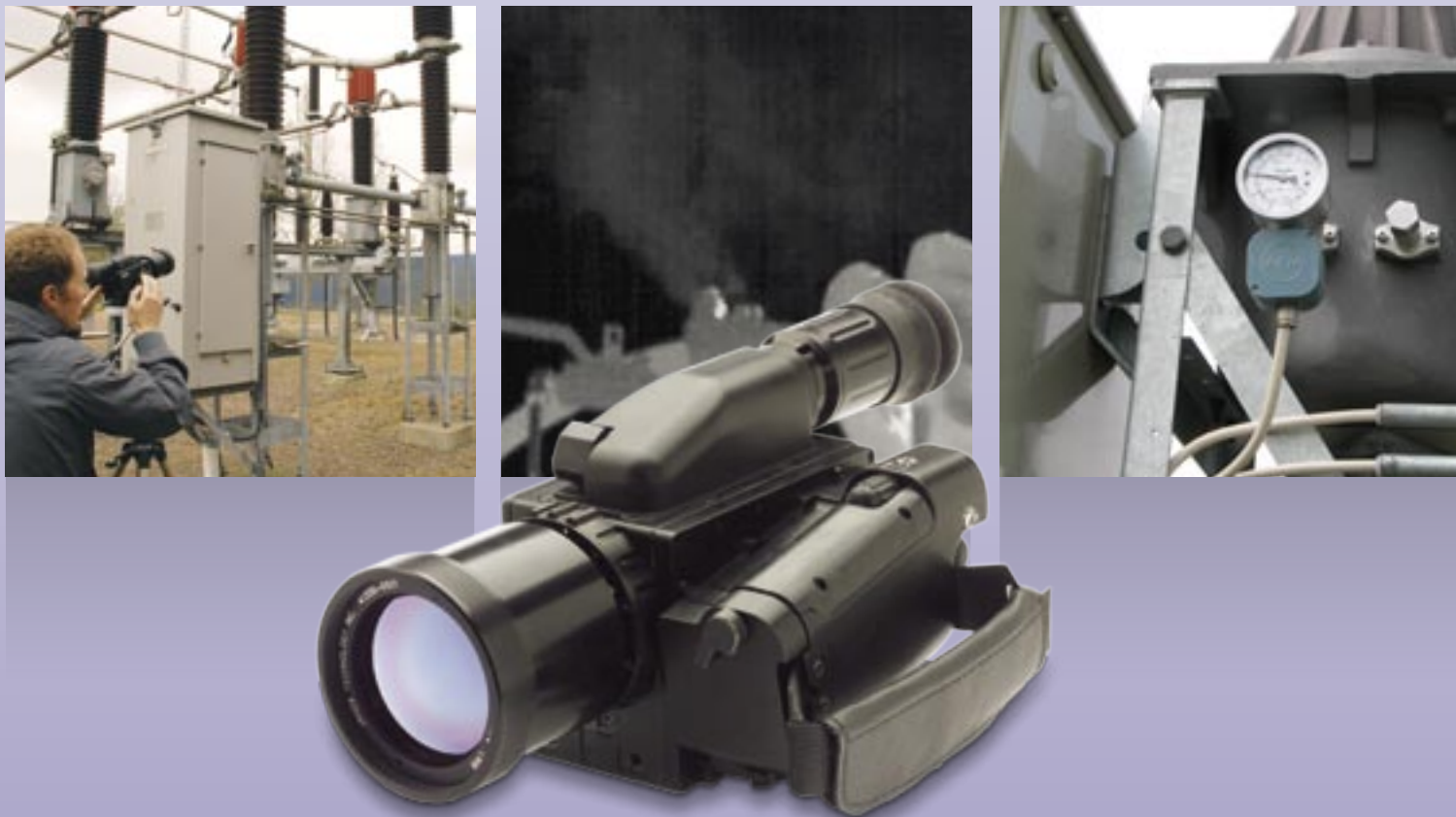


THE ULTIMATE DETECTOR



ThermaCAM™ GasFindIR™ LW

The Nr 1 Infrared gas imaging camera detecting sulfur hexafluoride (SF₆)

Save time, save money and save the world !

ThermaCAM® GasFindIR™ LW infrared gas imaging camera enables utilities, manufacturers, and consultants to proactively diagnose leaks of Sulfur Hexafluoride SF₆ in electrical substations and equipment.

A Solution that Makes Sense

The integrity of numerous electrical substations around the world are being compromised by age, weather, and other factors. As a result, highly-potent SF₆ gases are escaping from electrical transmission and distribution equipment at increasing rates. This has a huge economic and environmental impact.

Before FLIR Systems introduced the new GasFindIR LW, it was impossible for the utility industry to efficiently survey and find SF₆ gas leaks in substation equipment. Earlier methods of SF₆ detection required close or near contact using "sniffer" technology and probes. These methods can be time consuming, unsafe, or impractical for examining live high-voltage equipment.

Save Time, Money, and the Environment

Now, with the help of the GasFindIR LW camera, utility companies and other organizations can search for SF₆ leaks across a range of substation equipment at safe distances without the need to interrupt power. Also, when utilities take advantage of the new GasFindIR LW technology, they can show consumers and the public they are part of the solution to help reduce greenhouse gases.

Why detect SF₆?

Half a kilo of SF₆ has the same global warming impact of 11 tons of CO₂. It has 23,900 times the global warming potential of CO₂ and has an atmospheric lifetime of 3,200 years.

Because of its long lifespan and high potency, even a relatively small amount of SF₆ can have a significant impact on global climate change. The most common use for SF₆ is as an electrical insulator in equipment that transmits and distributes electricity. Since the 1950s, the electric power industry has used SF₆ because of its dielectric strength and arc-quenching characteristics. SF₆ is used widely in gas-insulated substations, circuit breakers, and other switchgear.

New and Advanced High Sensitivity Mode™ (HSM)

High Sensitivity Mode (HSM) is a new feature of the FLIR Systems GasFindIR camera. HSM uses advanced technology to enhance the presence of SF₆ and other gases against stationary backgrounds. The HSM feature makes the inspection process easier, faster, and more accurate for utility engineers and camera operators.

The GasFindIR LW camera takes advantage of a spectral filter that is optimized to detect SF₆ and other gases and vapors. Thermally, the camera's sensitivity is <35mK when FLIR's adaptive temporal filter is engaged. The GasFindIR LW weighs only 2.4 kg and is powered by a camcorder battery. The GasFindIR LW enables thermographers to quickly and easily find SF₆ gas leaks from ground level whether the leaks are nearby or meters away.

Easy Documentation

Capable of scanning large areas from the ground, the GasFindIR LW camera delivers real-time, high-resolution

thermal images of gas leaks. Images can be recorded on the Personal Video Recorder (PVR) included with the GasFindIR LW camera and displayed on a standard TV. This makes documenting and reporting of affected areas easy and efficient for utility companies. As a result, professionals can scan more equipment in less time, which maximizes their investment in leak detection technology.

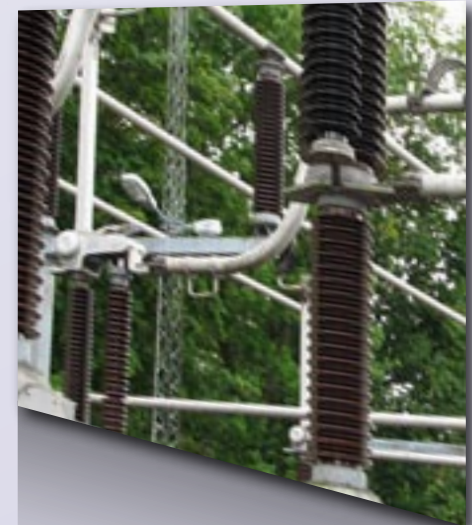
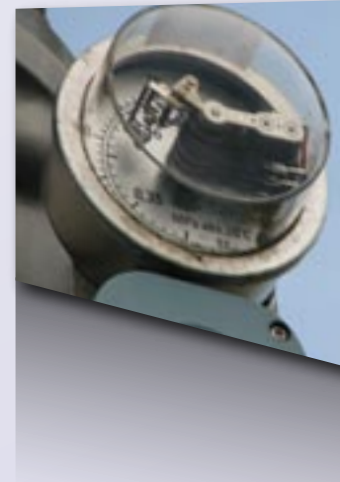
Did You Know?

Once released, SF₆ remains in the atmosphere for thousands of years and traps more heat than any other greenhouse gas. Early detection and repair of leaks is one way electric power systems are helping to protect the environment.

The Kyoto Protocol is the chief global instrument for tackling climate change. The Kyoto Protocol tackles emissions of six greenhouse gases, of which Sulfur hexafluoride (SF₆) has the highest global warming potential.


The European Parliament and the Council have issued a Regulation No 842/2006. The primary objective of this Regulation is to reduce the emissions of the fluorinated greenhouse gases covered by the Kyoto Protocol and thus to protect the environment.


As an example, operators of high voltage equipment shall be responsible for putting in place arrangement for proper recovery of Sulfur hexafluoride (SF₆) to ensure their recycling, reclamation or destruction.



SF₆ Finds SF₆ leaks quickly & safely

 Weighs only 2.4 kg

 Ergonomic, robust & easy to operate

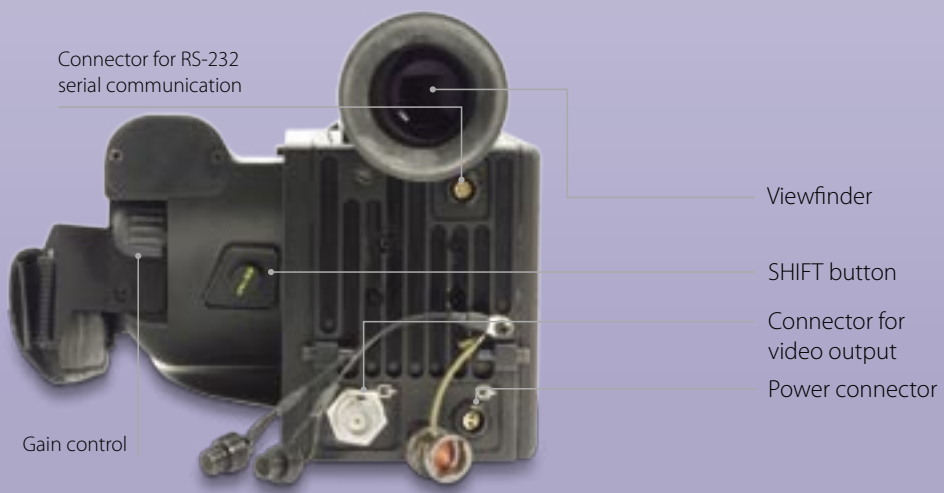
 High Sensitivity Mode (ability to detect even very small leaks)

 High detector Sensitivity < 35 mK



The GasFindIR LW detects

- SF₆ Sulfur Hexafluoride
- NH₃ Anhydrous Ammonia
- ClO₂ Chlorine Dioxide
- C₂H₃NO₂ Ethyl Cyanoacrylate, "Superglue"
- C₂H₃O₂ Acetic Acid, "Vinegar"
- CCl₂F₂ FREON-12
- C₂H₄ Ethylene
- MEK Methyl ethyl ketone



Applications



Captured gas leak from production site



Captured SF₆ leak



THE GLOBAL LEADER IN INFRARED CAMERAS

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Training

FLIR Systems closely co-operates with ITC, the Infrared Training Centre, an independent, ISO certified, worldwide training facility. The ITC offers IR training as well as specialised instruction in many application areas.

Technical specifications

Imaging Performance

Field of view/min focus distance

Focus near
Focusing
Thermal sensitivity (N.E.T.D)
F-number

Detector

Type
Spectral Range
Integration time

Power Input

Voltage
Power Consumption

Physical Characteristics

Weight (with battery and lens)
Color
Size with 50mm lens (LxHxW)
Interface

Available Lenses

Field of View

Environmental

Operating temperature range
Storage temperature range
EMC

Image Specifications

Image storage
Image out
Camera control
Connectors/function
Frame rate

GasFindIR LW Camera is Lab Tested to Detect:

Not tested but assumed detectable.

The Camera Includes

Fixed lens 11° x 8.25° with fixed 50 mm lens
*GasFindIR LW with interchangeable lenses optionally available**
< 1m
Manual
35 mK @ 30° C
2.0

Focal Plane Array (FPA), QWIP, 320x240 pixels
10-11 µm
16 ms, user selectable

6V
<8W typ

Approx. 2.4 kg
Black
300mm x 132mm x 152mm
Tripod mounting UNC 1/4", rotation safe

25 mm (22°) *optionally available
50 mm (11°) (standard)
100 mm (5.5°) *optionally available

-15° C to +40° C
-30° C to +50° C
EN 55011:1998 (Emission)
EN 61000-4-2:1995 (Electrostatic Discharge)
EN 61000-4-3:1996 (Electromagnetic Field Immunity)
EN 61000-4-3:1993 (Magnetic Fields)

Hand-held personal video recorder, commercial, off-the-shelf
CVBS (ITU-R-BT.470 PAL/SMPTE 170M NTSC)
RS-232, push-button on camera
C-video, PAL, NTSC, power connector and Serial RS-232
50 Hz/25 Hz, user selectable for cold/temperature environments
(60 Hz/30 Hz version available as well)

Sulfur Hexafluoride, Anhydrous Ammonia; Ethyl Cyanoacrylate "Superglue", Chlorine Dioxide, Acetic Acid "Vinegar", FREON-12, Ethylene, Methyl ethyl ketone (MEK)
Acetyl Chloride, Allyl Bromide, Allyl Chloride, Allyl Fluoride, Bromomethane, FREON-11, Furan, Hydrazine, Methylsilane, Methyl Vinyl Ketone, Propenal, Propene, Tetrahydrofuran, Trichloroethylene, Uranyl Fluoride, Vinyl Chloride, Vinyl Cyanide, Vinyl Ether

320x240 QWIP High Performance FPA, 50mm Lens with Lens Cover, Viewfinder, Auto Gain Control (AGC), HSM, Intelligent Battery Charger, Battery (3 each) LiOn, Video Cable, Hand Strap, Shipping/Carrying Case, Operating Manual, Personal Video Recorder (PVR) with battery and battery charger.

** GasFindIR LW with interchangeable lenses 25 mm and 100 mm are subject to special export licenses under control of the US Department of State Export Licensing department.*

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

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