Infrared Early Fire Detection System

PYROVIEW FDS
Fire Detection System

Early Fire Detection Systems PYROVIEW FDS

↗ Storage areas

Our fire detection system is a reliable system for surveillance and recognition of spontaneous fires inside bunkers or free air dumps of waste or combustible materials like paper, waste or charcoal among many others.

Since the dumped materials are mostly inflammable the probability of spontaneous combustions is high with disastrous effects for man and environment.

Many insurance policies recommend the usage of fire early warning systems based on infrared cameras.

The high performance infrared cameras **PYROVIEW FDS 380L** and **640L** combined with the powerful Software **PYROSOFT FDS** for the analysing the thermographic images allows an early warning and fire prevention.

The infrared cameras **PYROVIEW FDS 380L** and **640L** mounted on a pan-tilt head automatically monitors the user defined area to be observed and continuously quantifies the surface temperature distribution.

The **PYROSOFT FDS** software checks the temperatures inside the regions of interest (ROI). An alarm will be raised in case the predefined temperature limits are exceeded and the current infrared image is saved.

Alarms and the system status are displayed on the monitor and the control panel. External equipment for alerting and firefighting can be controlled via the flexible I/O system.

↗ Waste bunkers

If waste is stored for waste incineration plants, as well as combustible materials for coal-fired or wood-fired power plants in closed bunkers and storage areas, devices for the detection and control of fires are necessary. Due to chemical processes within the material or the insertion of hot material may spark a fire with great danger for people and environment. Proper facilities for early fire detection and fire fighting are needed. A proven early fire detection is based on the use of PYROVIEW infrared cameras within the wavelength range from 8 µm to 14 µm for a continuous automatic temperature measurement of waste and combustible filling. In this way hot spots or smoldering fires can be detected early and get eliminated with suitable measures before the fire can break out. The cameras are built in a robust industry housing (IP 65).
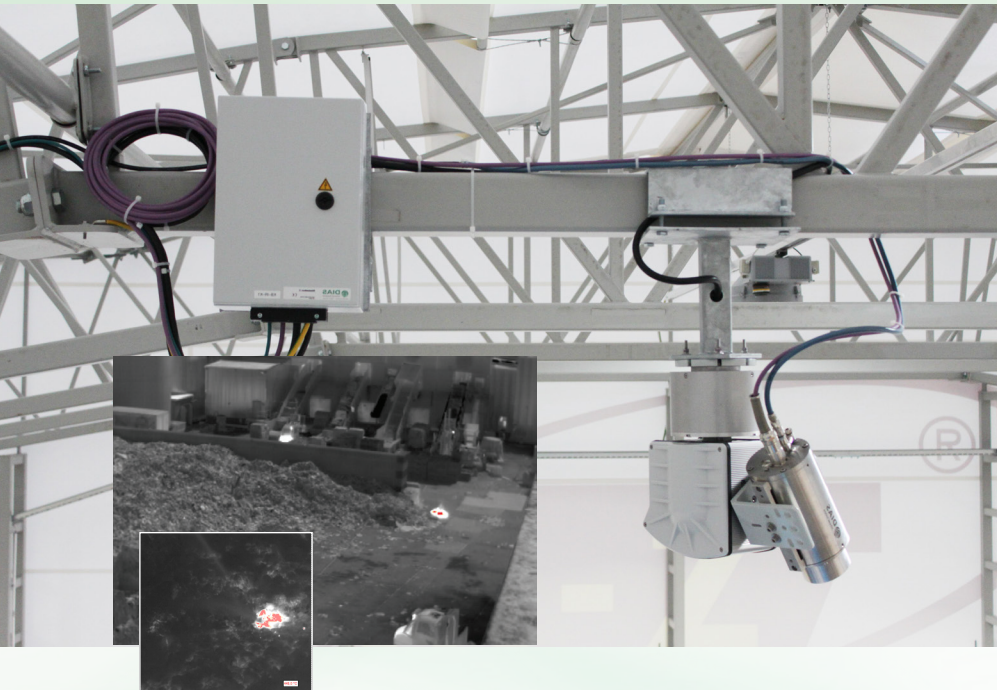
A fully equipped system meets the demands of the VdS guideline "IR camera units for temperature surveillance for fire detection" (VdS Schadenverhütung GmbH, guideline no. 3189).
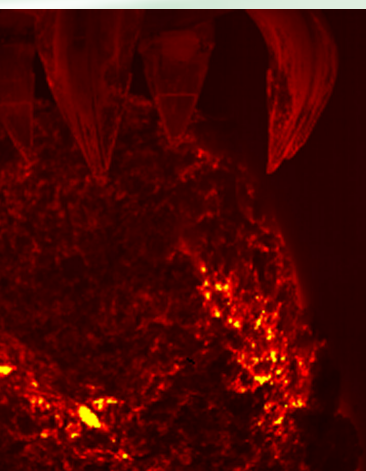
Hot spot in a waste bunker

Our PYROVIEW with industry protection housing and pan-tilt-unit

DIAS
Infrared Systems

↗ Fire detection

The infrared image is displayed in a pseudo color image mode gray-scale; the brighter the color, the higher the temperature.

In case of fire areas exceeding the temperature limits become red colored. The operator recognizes the source of fire immediately and can start fire fighting actions. The infrared image on the left side shows a initial fire in a paper stock.

Because of the early recognition and warning fire fighting is started instantly with a high efficiency – ecological and material damages are avoided.

| Overview – FDS components	
Infrared camera PYROVIEW FDS 380L/640L … detects infrared radiation with an infrared image sensor und transferrs image information as digital data via Ethernet.	– temperature range from –20 °C to 300 °C (optional: 500 °C) – spectral range 8 µm to 14 µm – 384 × 288 pixels (380L) or 640 × 480 pixels (640L) – maximum frame rate 50 Hz – integrated air purge to prevent/delay disposal of soiling
Weatherproof housing[1]	– with heating and hard-coated GE window
Pan-tilt head	– move towards to programmable positioning – free manual positioning – 359° horizontal, 180° vertical, 0.2° resolution
Reference radiator[2]	– control of camera function, lens soiling – little deviations are corrected, malfunction information when heavily soiled
Power supply/USV[2]	– 2 isolated feeds (1x buffered, 1x unbuffered) – switch for feeds – optional: separated USV for 4 h operation
I/O system programmable bus controller	– control of pan-tilt heads, control panel, video system, reference radiator – control system status – transmission to PC – altering via relay, 24 V or PROFIBUS®/PROFINET®
Touch-PC	– operation and surveillance station – with 21"/19" touch display
PYROSOFT FDS Software	– server-/client software

[1] Only for storage areas FDS. [2] Optional.

Operation

The software **PYROSOFT FDS** is easy to handle and offers various possibilities to setup the whole functionality:

- Displaying of status information
- Displaying of the maximum temperature inside the image
- Definition of ROIs (Region of interest)
- Overview images and state of single sectors
- Cyclic changeover for up to 32 cameras
- Current image of the camera setting off an alarm
- Free positioning of the pan-tilt head in manual operation mode
- Map display/Panorama display
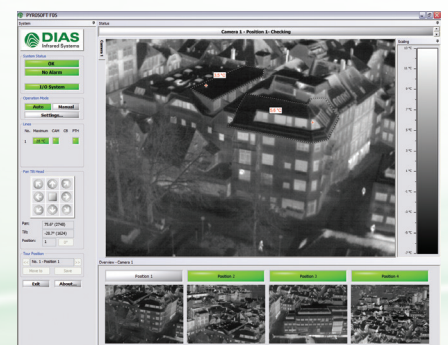
References

## Successfully installed fire detection systems (extracts)

DIAS Infrared Systems

• Umweltdienst Burgenland (Oberpullendorf, Austria)

In the Austrian city Oberpullendorf a camera systems monitors a recycling storage.

• Uddevalla Energi AB (Uddevalla, Sweden)

In Swedish city of Uddevalla our PYROVIEW/PYROSOFT FDS monitors the waste incineration plant of Uddevalla Energi AB.
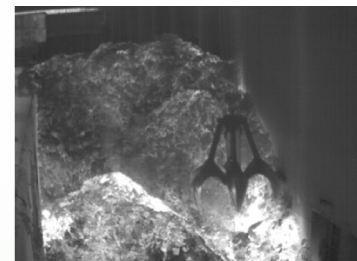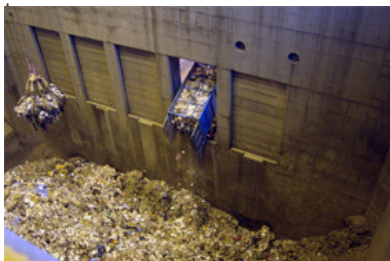
• Hazardous waste deposit Kölliken (Kölliken, Switzerland)

A part of the new security concept is the permanent monitoring of the entire dismantling of the hall and storage area with the thermal imaging cameras. The decision was made for the system solution PYROVIEW/PYROSFT FDS of the company DIAS Infrared GmbH, which was realized together with the company Transmetra GmbH..
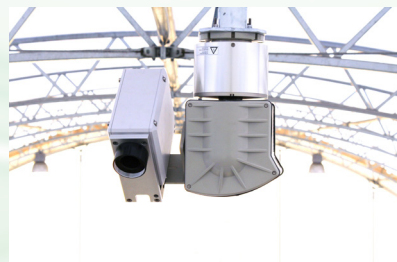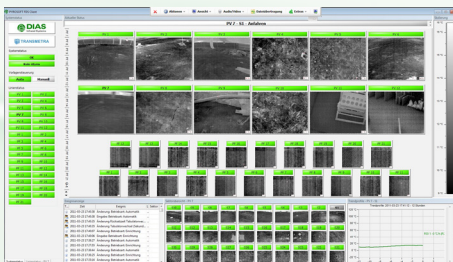
• National park Pirin (Province Blagoevgrad, Bulgaria)

For the project "Sustainable forest management and environmental protection by building a forest fire detection system and an information center in the national park Pirin, Bulgaria", funded by the Foundation European Economic Area (EEA Grants), a fire detection system PYROVIEW/PYROSOFT FDS was delivered and installed by the company DIAS Infrared GmbH.

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