

Infrared Monitoring System

Early Fire Detection and Security Applications

INFRA^{TEC}.

Monitoring of waste bunkers, warehouses and open areas

Automated early detection of bunker fires

Prevention of toxic air pollution emissions

Established fire-protection system



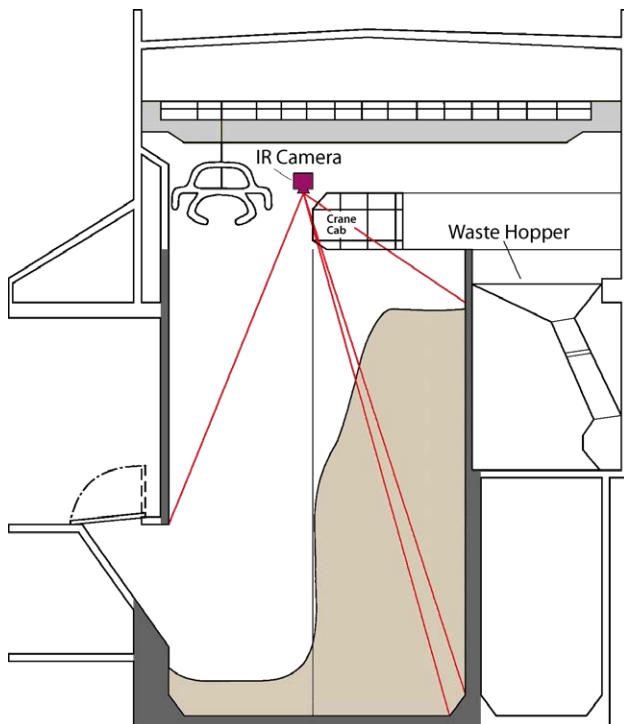
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Reliability by
Automated Thermography

Complete Storage Space Monitoring

Features

- Works even with one single thermographic camera by application of pan-tilt head
- Automated scanning of several inspection sections
- Maximum cycle time two minutes
- Sector position accuracy $< 0.2^\circ$
- Switch to manual control for observing suspect spots and evacuating critical objects
- Pilot control of extinguishing zones according to a pre-defined zone table
- Support of multiple recipes (day and night time operation)
- Detect automatically sources of interference



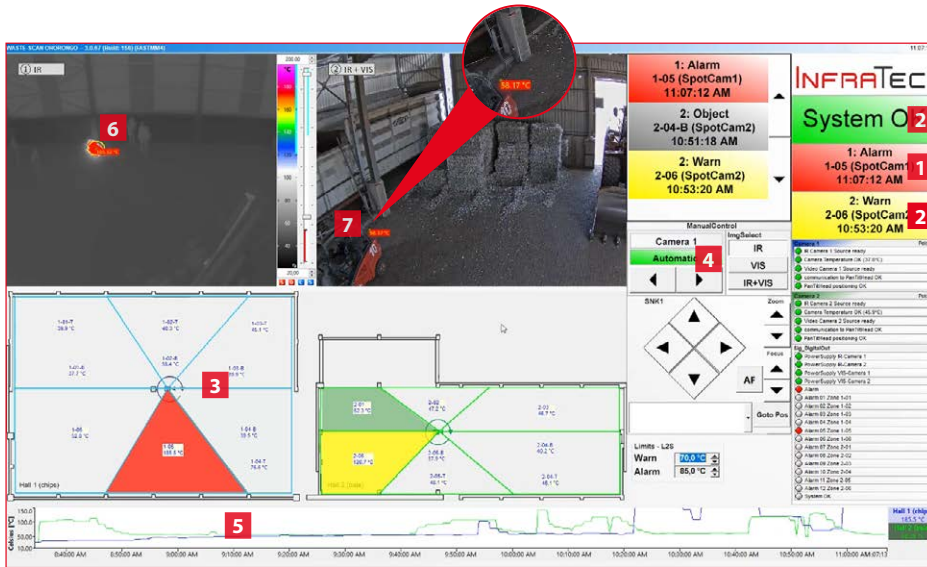
High-resolution Thermographic Camera

- Quality made in Germany
- Uncooled FPA-Microbolometer detectors of various formats
- High geometrical resolution and thermal sensitivity
- High-contrast, low-noise thermal image
- Localisation of hot spots even under dusty or smoky conditions
- Spectral range (7.5 ... 14) μm ; frame rate 50/60 Hz
- Real-time data acquisition (Gigabit Ethernet)
- Internal automatic calibration
- Rugged housing for industrial applications IP65 (stainless steel*)
- Extremely high level of system availability
- Additional digital colour video camera*



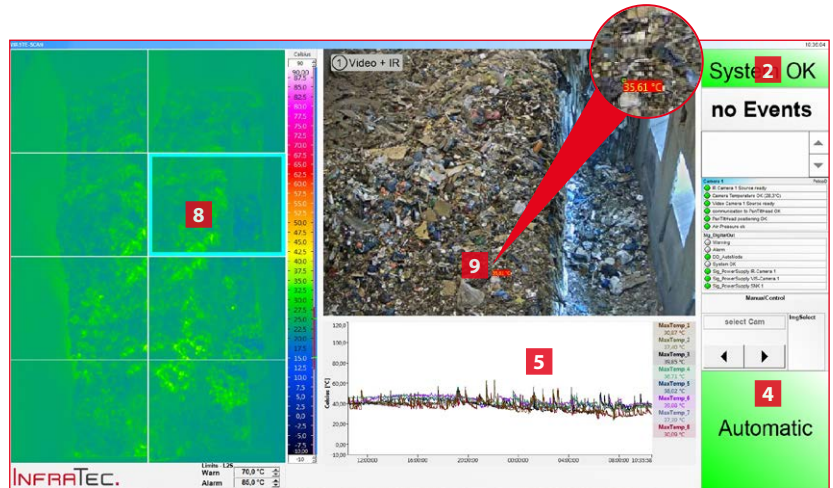
Ruggedized outdoor housing

Powerful Software



Software interface of multiple camera solution

- 6 Camera 1: Thermal image incl. detecting and marking sources of interference
- 7 Camera 2: Merging of thermal and live image of the detected area incl. hot spot
- 8 Thermal images of all sectors
- 9 Chosen sector: Merging of thermal and live image of the detected area incl. hot spot



Software interface of single camera solution

- Continuous display of current thermal images of all sections (mosaic-overview)
- Simultaneous display of live image (thermal image and colour video)
- Camera and system status indication
- Merging of live images of thermographic and video camera
- Recording of maximum, minimum and average temperature of each section
- Single or multiple-camera system available
- Graphics of temperature-time profile of all sections
- Logging of operations
- Filing of image data
- Detecting and marking of sources of interference, e.g. wheel loaders

Alarm Release

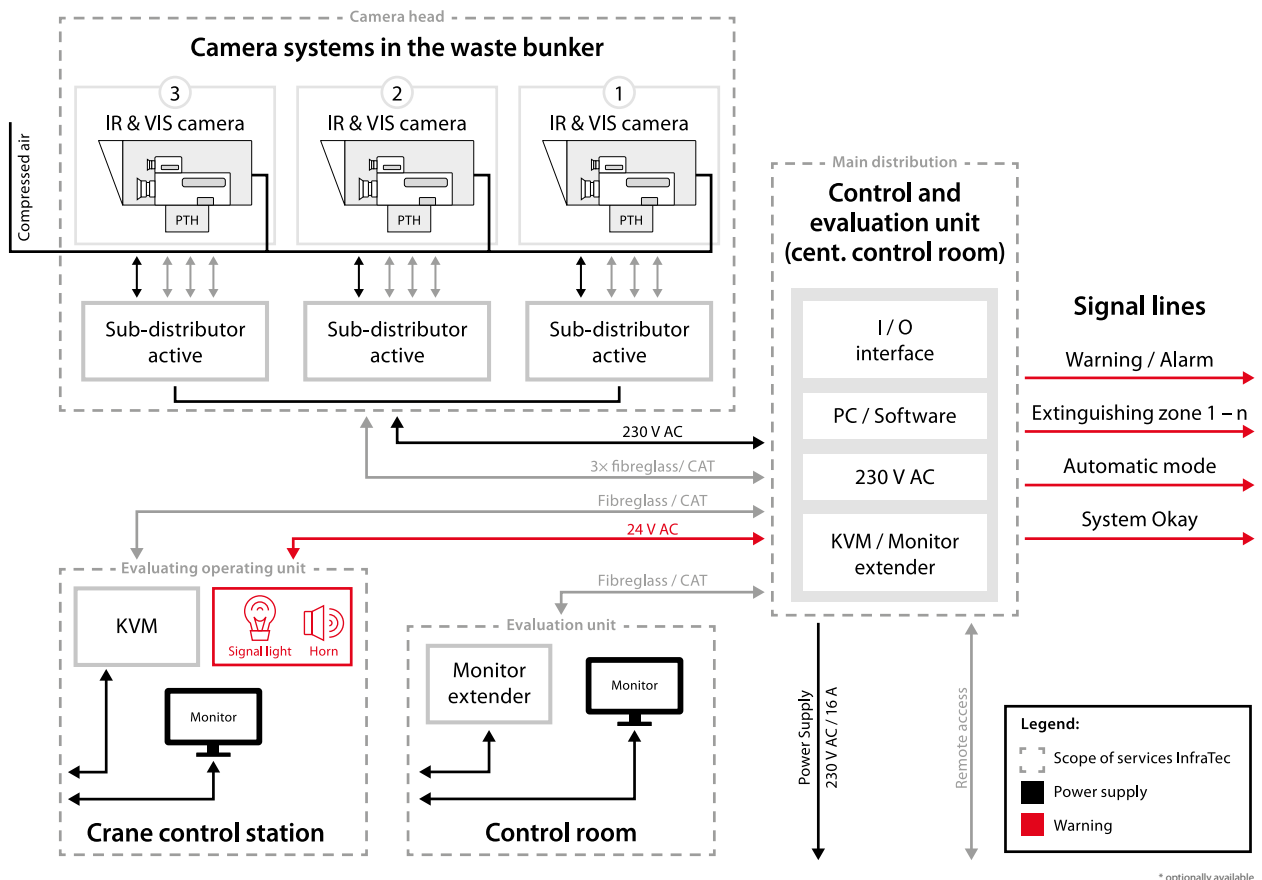
- Automatic alarm release when temperature values exceed critical thresholds
- Multi-level alarm functions with adjustable warning and alarm threshold values
- Analysis of long-term temperature trend with adjustable time basis
- Documentation of alarm situations for analysing fire formation
- Wide range of system versions due to modular design concept



Visual image with hot spot merging

Customised System Design

- Suited for sustained continuous operation 24 hours/day
- Transfer of thermal images from the camera to a central control room
- Flexible wiring technology (copper or fibre optics)
- Versatile solution for display and operation in the crane control station, the control room and/or the gate
- Uninterruptable power supply*
- System maintenance at PC in control cabinet (via remote control*)
- Large surface black body reference for atmosphere transmission compensation*



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