

# DIGI THERM<sup>®</sup>

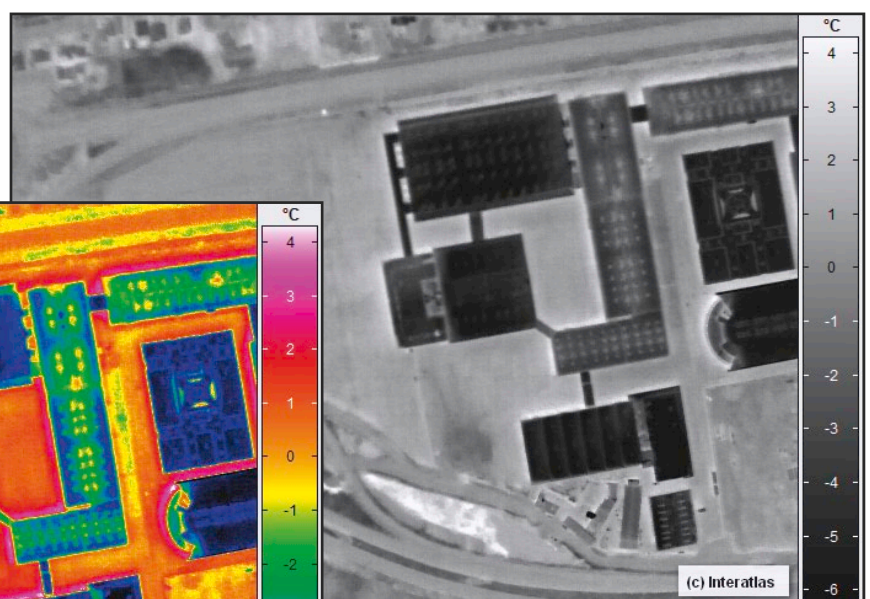
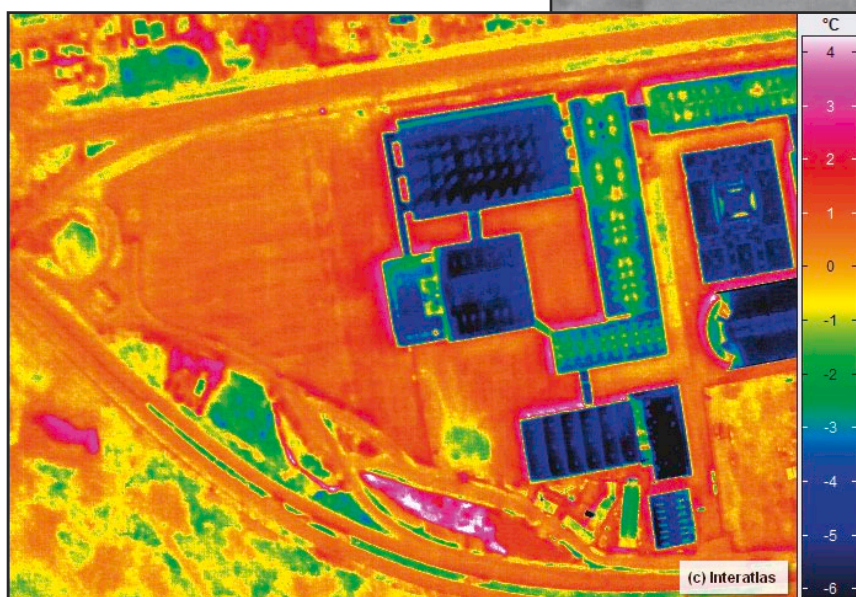
*DigiTHERM* is IGI's airborne thermal camera system for professional digital aerial thermography. With a thermal resolution of 0.005K, the standard temperature range is -40°C to 120°C. The uncooled microbolometer FPA-detector with 640x480 pixels delivers brilliant thermal images in high quality. Using a graphical user interface with real time preview, no additional video system is required. Both featuring rugged metal housings and being part of IGI's Modular Sensor Systems, *DigiTHERM* and *DigiCAM* are extremely robust and can be exchanged conveniently and inexpensively during airborne missions. Combined with *IGIplan*, *CCNS4* and *AEROcontrol* GPS/IMU system, *DigiTHERM* forms a complete solution for an extremely rapid and automated workflow for the generation of directly georeferenced thermal images.

## Modular Sensor System



*DigiTHERM* is one part of IGI's Modular Sensor Systems. Its components consist of a thermal camera, a *DigiControl* SMU with hot swap storage unit for up to 36 hours of flying time and an 8 inch TFT touch-screen. Using the same components as *DigiCAM*, the change-over between the two systems is realised within minutes.

8 inch TFT touch-screen, *DigiControl* SMU with hot swap storage unit and thermal camera



Sample images with different color palette

# DigiTHERM® - Aerial Modular Thermal Camera

## Applications:

- Capture loss of heat in:
  - Populated areas
  - Industrial plants
  - Pipelines and power lines
- Flow measurement of streams and rivers
- Forrest fire warning system
- Monitoring volcanos
- Animal tracking
- Search and rescue operations
- Support of all LiDAR applications

## Complete Solution:

IGI offers a complete solution for a modern digital aerial camera system. Components are:

- Mission Planning Software  
*IGIplan*
- Aircraft Guidance & Sensor Management  
*CCNS4*
- GPS/IMU System for direct georeferencing  
*AEROcontrol* with *AEROoffice*
- Postprocessing Software  
Support of common photogrammetric software packages

## Lenses:

Available lenses for *DigiTHERM* are:

- Wide angle lens:
  - 1.0 / 12.5 mm (FOV 65° x 51°)
- Standard lens:
  - 1.0 / 30 mm (FOV 30° x 23°)
- Telephoto lenses:
  - 1.0 / 50 mm (FOV 18° x 14°)
  - 1.0 / 75 mm (FOV 12° x 9.1°)

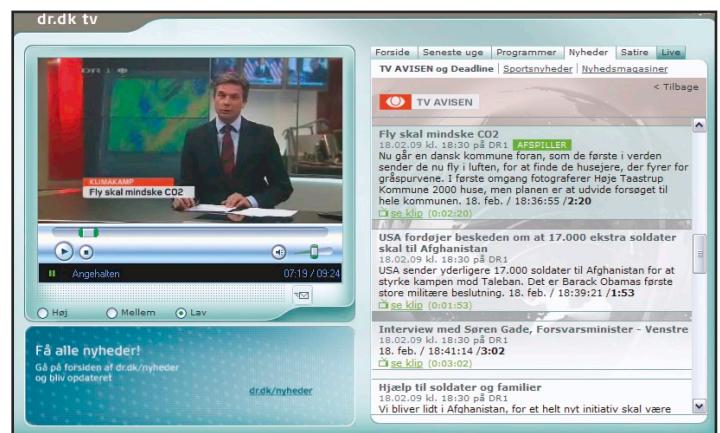
## DigiTHERM in action:

One of the first commune in the world, Høje Tastrup in Denmark, uses the *DigiTHERM* to measure temperature of buildings / roofs (heat loss).

They use this data to calculate and monitor their CO<sub>2</sub> emissions. Their aim is to reduce their CO<sub>2</sub> emissions about 10%, for public buildings even 25% in the next five years.

## Highlights

- Uncooled microbolometer FPA-detector (Focal Plane Array) with 640x480 pixels
- Spectral range 7.5 ... 14 µm
- Pixelsize of 25 µm
- Size of sensor head is 16 x 12 mm
- Standard temperature range -40 ... 120°C
- Temperature resolution of NETD < 50 mK
- Measurement accuracy:
  - +/- 1.5 K (0°C ... 100°C)
  - otherwise +/- 2 K
- 16 bit dynamic range colors
- Frame rate 60 Hz / Image storing rate 6 Hz
- Rugged lightweight metal housing, IP65 conform
- Pilot-only missions possible
- Automated workflow
- Automated release of exposures at pre-planned positions
- Graphical User Interface with real time previews
- Automatic temperature calibration
- Compliance with a pre-defined overlap
- Operating temperature -15 ... +50°C
- Storing temperature -40 ... +70°C
- Dimensions (sensor head)
  - 153 mm x 91 mm x 111 mm
- Weight (sensor head) 1050 g
- Easily interchangeable with *DigiCAM*
- *DigiTHERM* mounting possibilities:
  - IGI provides adapters for camera mounts
  - Together with *LifeMapper* LiDAR system and *DigiCAM* digital aerial camera system



Video from www.dr.dk