

DIGI THERM™

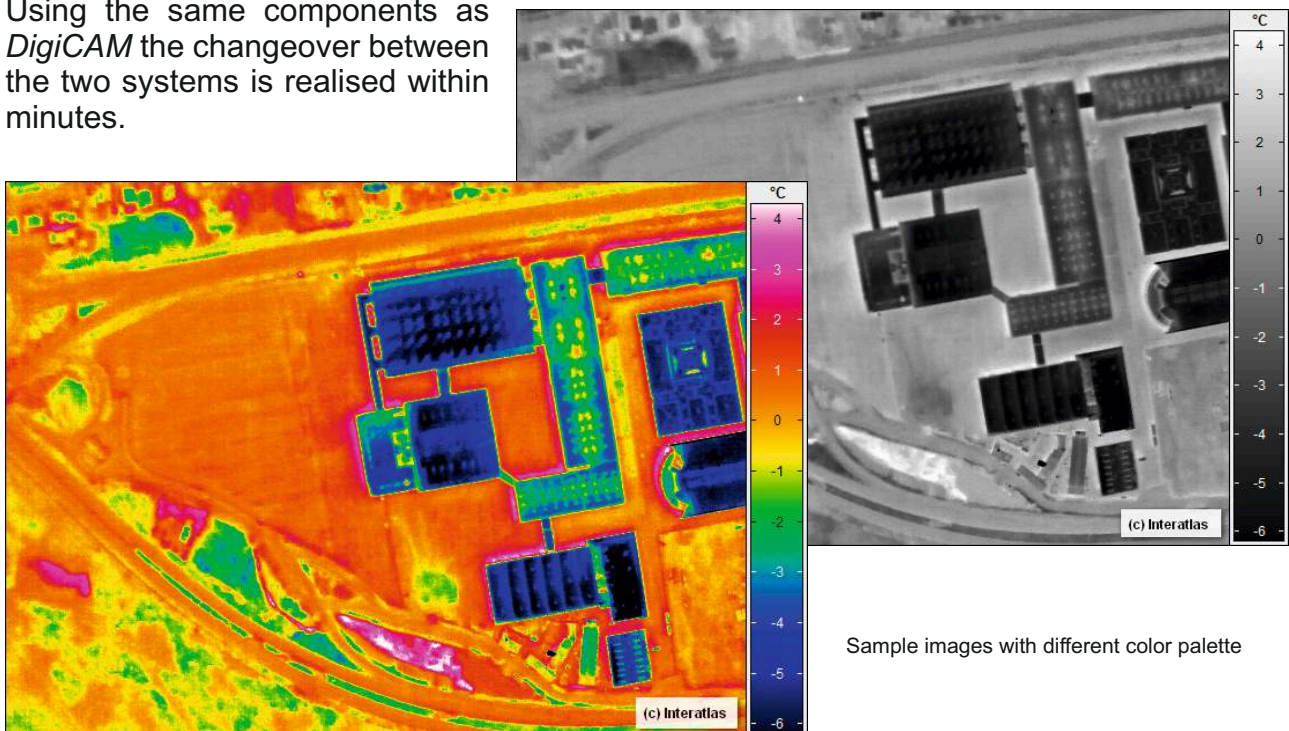
DigiTHERM is IGI's airborne thermal camera system for professional digital aerial thermography. With a thermal resolution of 0.05K the standard temperature range is -40°C to 120°C. The uncooled microbolometer FPA-detector with 640x480 pixels delivers brilliant thermal images in high quality. Using a 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 the *DigiTHERM* forms a complete solution for an extremely rapid and automated workflow for the generation of directly georeferenced thermal images.

Modular Sensor System



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

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 changeover between the two systems is realised within minutes.



Sample images with different color palette

Applications:

- Capture loss of heat in:
 - Populated areas
 - Industrial plants
 - Pipelines and power lines
- Reduce CO₂ emissions
- 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 thermal camera system. Components are:

- Mission Planning Software:
IGIplan
- Aircraft Guidance & Sensor Management:
CCNS4
- GPS/IMU System for direct georeferencing:
AEROcontrol with AEROoffice
- Image analysis software

Lenses:

Available lenses for the *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 Taastrup in Denmark, uses the *DigiTHERM* to measure temperature of buildings/roofs (heat loss).

They use this data to calculate and monitor their CO₂ emissions. Their aim is to reduce their CO₂ emissions about 10%, for public buildings even 25% in the next five years.



Video from www.dr.dk

Performance Features and Specifications

- 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 16x12 mm
- Standard temperature range -40°C to 120°C
- Temperature resolution of NETD < 50 mK
- Measurement accuracy:
 - +/- 1.5 K (0°C ... 100°C)
 - otherwise +/- 2 K
- 16 bit dynamic range colours
- 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 the *LiteMapper* LiDAR system and *DigiCAM* digital aerial camera system

IGI mbH
Langenauer Str. 46
57223 Kreuztal
Germany

P: +49 (0)2732 5525-0
F: +49 (0)2732 5525-25
E: info@igi-systems.com
W: www.igi-systems.com
www.litemapper.eu
www.streetmapper.eu