

More Precision



TIM LightWeight Miniature lightweight PC for flight applications

Special edition: Miniature lightweight PC for flight applications with thermoIMAGER series

Camera information: see data sheet thermoIMAGER TIM 4xx (standard 62° optic)

Lightweight-PC information: see table TIM LightWeight

- Total weight 350g incl. camera
- Optical resolution: 382 x 288 pixels
- Recording button on camera housing and video cable for remote control
- Miniaturised PC for TIM 4xx stand-alone operation
- Supports up to 70Hz frame rate
- Simultaneous 20Hz video signal generation parallel to 35Hz on board radiometric recording
- Additional operation of customer specific software
- Processor: Intel® Atom™ Z530 @ 1.6GHz 2GB SSD, 512MB RAM
- Ports: 2x USB 2.0, 1x Mini-USB in slave mode, Video, Gigabit Ethernet, micro SD-Card (up to 32GB)
- Wide power range: 8-48VDC or Power over Ethernet (PoE)
- Low power consumption (max. 12W)



Model	TIM LightWeight	
Ambient temperature	0 - 50°C	
Storage temperature	-20...75°C	
Relative humidity	10...95%, non-condensing	
Dimensions	TIM camera	46 x 56 x 90mm
	Miniature PC	111 x 55 x 45mm
Weight	350g (TIM camera + Miniature PC)	
Vibration	IEC-2-6: 3G, 11 - 200Hz, each axis	
Shock	IEC-2-27: 50G, 11ms, each axis	
Operating system	Windows XP Professional	
Power supply	8...48VDC (by flight battery) or power over ethernet (PoE/ 1000BASE-T)	
Power consumption	9.5W (+ additional 2.5W for TIM camera)	
Cooling	Active with integrated fan	
Board	COM Express® mini embedded board	
Processor	Intel® Atom™ Z530/ 1.6GHz	
Hard disc drive	2GB SSD	
RAM	512MB (DDR2, 533MHz)	
Ports	2x USB 2.0 1x Mini-USB 2.0 (slave mode) TV _{out} Ethernet (Gigabit Ethernet)	
Extensions	MicroSDHC Cart (up to 32GB)	
Additional functions	6x status LEDs (L1-L6), Recording button on camera housing	

TIM LightWeight

Photovoltaic thermography from the air

The 350g TIM LightWeight thermal imaging camera can be mounted to a quadcopter to carry out defect analysis on solar cells.

Defective solar cells can destroy an entire module. Thermography is therefore a great method of preventative maintenance on photovoltaics installations: any noticeable differences in temperature can be used to reliably detect electrical, mechanical, installation and processing-related defects, including short circuits, inactive cells, moisture, and poorly soldered joints. As part of scheduled maintenance operations, thermography can provide valuable information for resolving warranty claims.

Inspections using infrared cameras are performed in a non-contact, non-destructive manner from a safe distance. The new miniature thermoIMAGER TIM LightWeight IR camera from Micro-Epsilon is an ideal choice for use on a multicopter (similar to a small, remote-

controlled helicopter with 4 or more blades). Design factors to consider when using an IR camera as part of flight operations include low weight, autonomous control and sufficiently high camera resolution to ensure high quality IR images.

The new system consists of a miniature IR camera and the NetBox mini PC. With a total weight of just 350g, the TIM LightWeight is the perfect choice for flight applications. IR videos can be launched directly through a button on the camera housing; the recording is stored on a microSD storage card in the NetBox. The high resolution infrared camera offers an optical resolution of 382x288 pixels, with a thermal resolution of up to 40mK. "The thermoIMAGER TIM LightWeight is the lightest thermography system for flight applications available on the market," explains Manfred Pfadt, Product Manager for IR Sensor Technology at Micro-Epsilon.



TIM LightWeight quadcopter

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