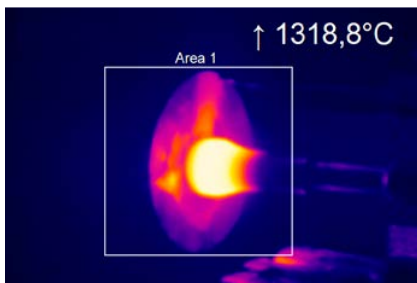
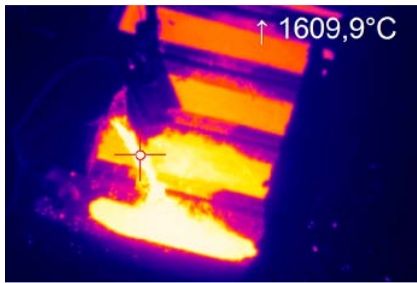


Short wavelength and ultra compact IR camera for metal surfaces

Features:

- Wide measurement ranges from 450 °C to 1800 °C without sub-ranges
- Highly dynamic CMOS detector with up to 764 x 480 pixels resolution
- Up to 1 kHz frame rate for fast processes
- Real-time analog output with 1 ms response time
- Extensive software package and SDK included
- Optional 1 kHz linescanning function



Technical specifications

Optical resolution (switchable)/ Frame rate	764 x 480 pixels @ 32 Hz 382 x 288 pixels @ 80 Hz (switchable to 27 Hz) ¹⁾ 72 x 56 pixels @ 1 kHz ¹⁾ 764 x 8 pixels @ 1 kHz ¹⁾	
Detector	CMOS (15 µm x 15 µm)	
Spectral range	0.85 – 1.1 µm	
Temperature ranges	450 ²⁾ ... 1800 °C (27 Hz mode) 500 ²⁾ ... 1800 °C (80 Hz and 32 Hz mode) 600 ²⁾ ... 1800 °C (1 kHz mode)	
Optics	FOV @ 764 x 480 px: 41° x 25° (f = 16 mm) 27° x 17° (f = 25 mm) 13° x 8° (f = 50 mm) 9° x 6° (f = 75 mm)	FOV @ 382 x 288 px: 20° x 15° (f = 16 mm) 14° x 11° (f = 25 mm) 7° x 5° (f = 50 mm) 4° x 3° (f = 75 mm)
Thermal sensitivity (NETD) ³⁾	< 2 K (< 900 °C) < 4 K (< 1400 °C)	
Accuracy (at T _{amb} = 23 °C)	For object temperature < 1400 °C: ±1 % of reading for 27/32/80 Hz / ±1,5 % of reading for 1 kHz For object temperature < 1600 °C: ±2 % of reading for 27/32/80 Hz / ±2,5 % of reading for 1 kHz	
PC interface	USB 2.0 / optional USB to GigE (PoE) interface	
High speed analog output (@ 1 kHz mode)	1 ms real-time analog output (0 - 10 V) of 8 x 8 pixels (position selectable)	
Standard process interface (PIF)	0 – 10 V input, digital input (max. 24 V), 0 – 10 V output	
Industrial process interface (PIF)	2x 0-10 V inputs, digital input (max. 24 V), 3x 0/4 – 20 mA outputs, 3x relays (0 – 30 V/ 400 mA), fail-safe relay	
Cable length (USB)	1 m (standard), 5 m, 10 m, 20 m 5 m and 10 m also available as high temperature USB cable (180 or 250 °C)	
Ambient temperature	0 ... 50 °C	
Storage temperature	–40 ... 70 °C	
Relative humidity	20 – 80 %, non-condensing	
Enclosure (size/ rating)	46 x 56 x 88 - 129 mm (depending on lens + focus position) / IP 67 (NEMA 4)	
Weight	245 - 311 g, (depending on lens)	
Shock / Vibration ⁴⁾	IEC 60068-2-27 (25G and 50G) / IEC 60068-2-6 (sinus shaped), IEC 60068-2-64 (broadband noise)	
Tripod mount	¼ – 20 UNC	
Power supply	via USB	
Scope of supply (standard)	<ul style="list-style-type: none"> • USB camera incl. 1 lens • USB cable (1 m) • PIF cable (1 m) incl. terminal block • Table tripod • Aluminum case <ul style="list-style-type: none"> • Software package optris PIX Connect • Optional: CoolingJacket, High temperature cable, protective window 	

¹⁾ Positioning of choice within FOV

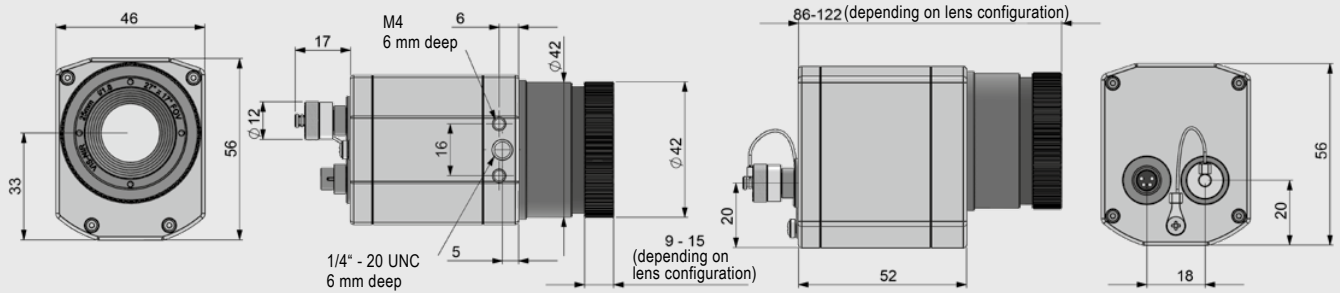
²⁾ Lenses with focal lengths f = 50 mm and f = 75 mm have an elevated starting temperature of +75 °C

³⁾ Specified NETD value applies to all frequencies

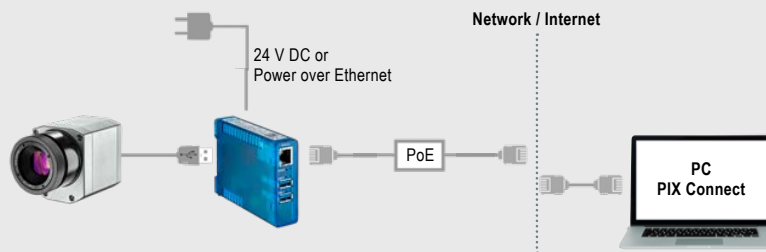
⁴⁾ For further information see operator's manual

optris PI 1M

Dimensions in mm

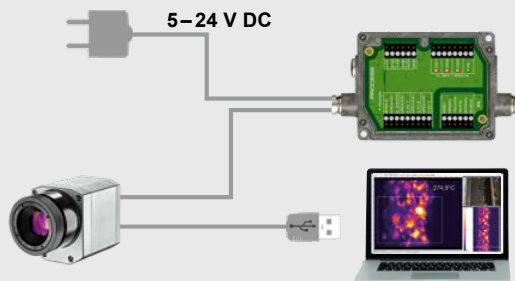


Process integration



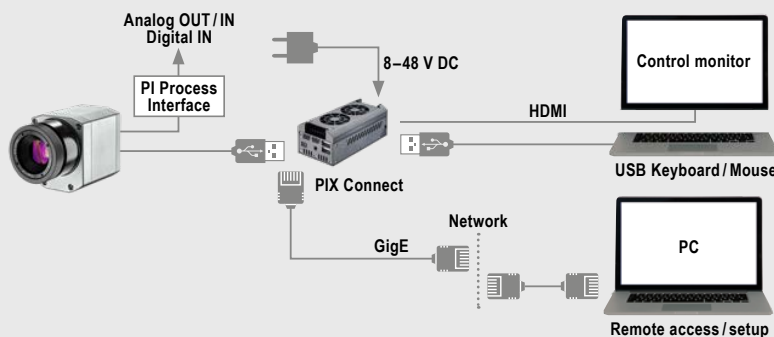
optris USB-Server Gigabit 2.0

- Network connection via Gigabit Ethernet
- Full TCP/IP support incl. routing and DNS
- Two independent USB ports
- Power via PoE or external voltage supply at 24 – 48 V DC
- Galvanic isolation 500 V_{RMS}
- Remotely configurable via web based management



optris Industrial Prozess Interface

- Use of camera for process monitoring in industrial environments
- Continuous fail safe monitoring of imager, software and cable connections
- 3 analog/ alarm outputs, 2 analog inputs, 1 digital input, 3 alarm relays, 1 fail-safe relay



optris PI NetBox

- Miniature PC as add-on to the PI series for stand-alone system
- Integrated hardware and software watchdog
- Connections: 3x USB 2.0, 1x Mini-USB 2.0, Micro-HDMI, Ethernet (Gigabit Ethernet), micro SDHC/ SDXC card