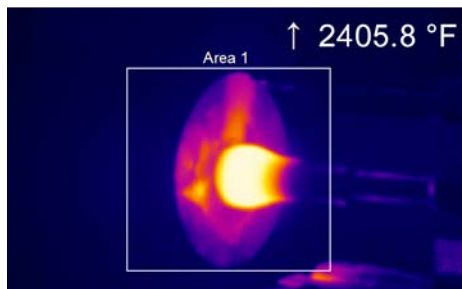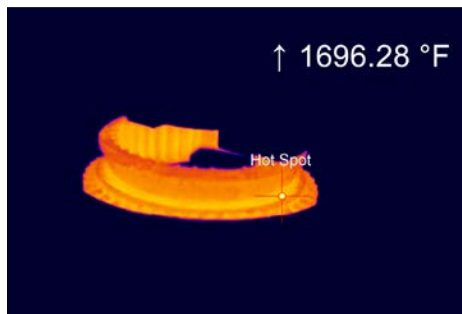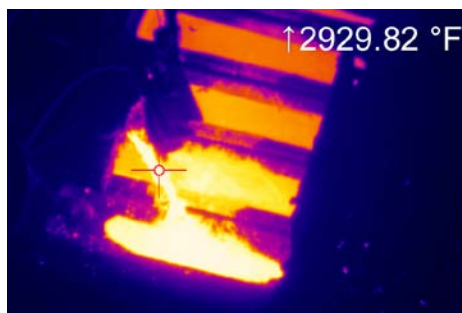## Short wavelength and ultra compact infrared camera for metal surfaces

Features:

- Wide measurement ranges from 450 °C to 1800 °C (842 °F to 3272 °F) 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

↑2929.82 °F

↑ 1696.28 °F

Hot Spot

↑ 2405.8 °F

Area 1

Technical specifications

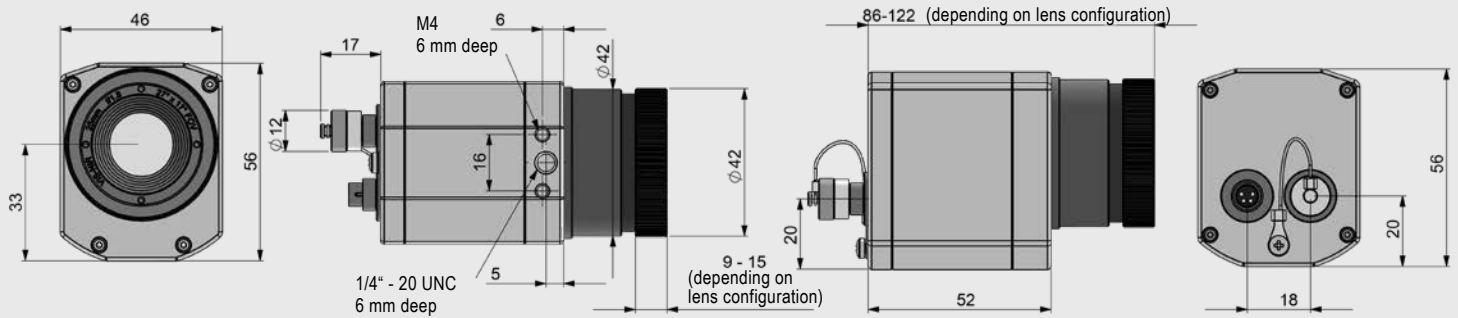|	
Optical resolution (switchable)/ Frame rate	764 x 480 pixels @ 32 Hz 382 x 288 pixels @ 80 Hz (swichable to 27 Hz)[1] 72 x 56 pixels @ 1 kHz[1] 764 x 8 pixels @ 1 kHz[1] (fast linescanning mode)[1]
Detector	CMOS (15 μm x 15 μm)
Spectral range	0.85 – 1.1 μm
Temperature ranges	450[2] ... 1800 °C (842 ... 3272 °F) (27 Hz mode) 500[2] ... 1800 °C (932 ... 3272 °F) (80 Hz and 32 Hz mode) 600[2] ... 1800 °C (1112 ... 3272 °F) (1 kHz mode)
Frame rate	1 kHz
Optics	**FOV @ 764 x 480 px:** **FOV @ 382 x 288 px:** 41° x 25° (f = 16 mm) (f = 0.6 in) 20° x 15° (f = 16 mm) (f = 0.6 in) 27° x 17° (f = 25 mm) (f = 1.0 in) 14° x 11° (f = 25 mm) (f = 1.0 in) 13° x 8° (f = 50 mm) (f = 2.0 in) 7° x 5° (f = 50 mm) (f = 2.0 in) 9° x 6° (f = 75 mm) (f = 3.0 in) 4° x 3° (f = 75 mm) (f = 3.0 in)
Thermal sensitivity (NETD)[3]	< 1 K (700 °C [< 1292 °F]), < 2 K (1000 °C [1832 °F])
Accuracy (at T_{amb} = 23 °C)	±1 % of reading (object temperature < 1400 °C [2552 °F])
PC interface	USB 2.0 / optional USB to GigE (PoE) interface
High speed analog OP (@ 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 relay (0 – 30 V/ 400 mA), fail-safe relays
Cable length (USB)	1 (standard) 5 / 10 / 20 m (3.3 [standard] / 16.4 / 32.8 / 65.6 ft) 5 and 10 m (16.4 and 32.8 ft) available as HT cable (180 or 250 °C [356 °F])
Ambient temperature	0 ... 50 °C (32 ... 122 °F)
Storage temperature	– 40 ... 70 °C (–40 ... 158 °F)
Relative humidity	20 – 80 %, non-condensing
Enclosure (size/ rating)	46 x 56 x 88 - 129 mm (1.8 x 2.2 x 3.5 - 5.1 in) (depending on lens + focus position)/ IP 67 (NEMA 4)
Weight	245 - 311 g (8.46 - 10.97 oz), 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)	• USB camera (1 lens) • Software package optris PIX Connect • USB cable (1 m [3.3 ft]) • Aluminum case • PIF cable (1 m [3.3 ft]) • Optional: CoolingJacket, high temperature incl. terminal block cable, protective window • Table tripod

[1] Positioning of choice within FOV
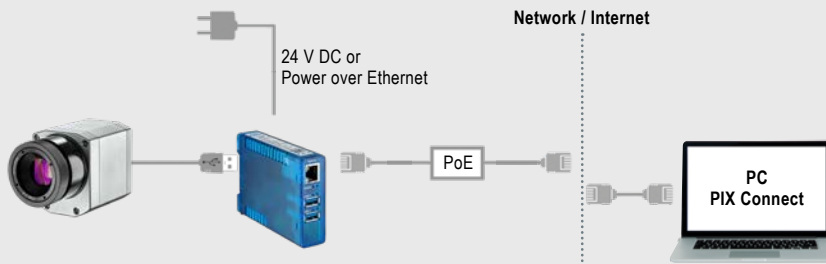[2] Lenses with focal lengths f = 50 mm and f = 75 mm have an elevated starting temperature of +75 °C
[3] At 27 Hz, 32 Hz and 80 Hz   [4] For further information see operator's manual

For further information as well as the product configurator, please visit:
www.optris.com/thermal-imager-optris-pi-1m

optris **PI 1M**

Dimensions in mm

46 · 56 · 33 · 17 · M4 6 mm deep · 6 · Ø42 · Ø12 · 16 · 5 · 1/4" - 20 UNC 6 mm deep · Ø42 · 9 - 15 (depending on lens configuration) · 86-122 (depending on lens configuration) · 56 · 20 · 20 · 52 · 18

Process integration

24 V DC or Power over Ethernet · Network / Internet · PoE · PC PIX Connect
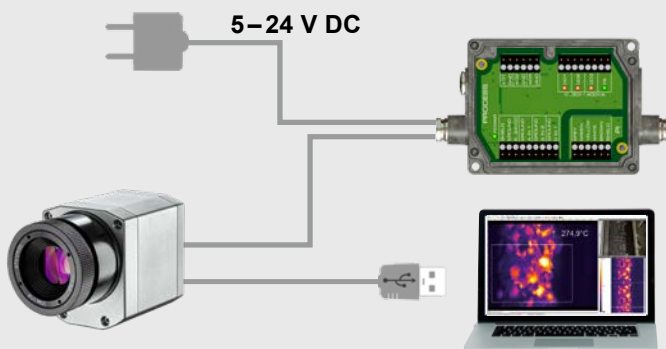
optris USB-Server Gigabit 2.0

- 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

For further information please visit
www.optris.com/usb-server-industry-isochron
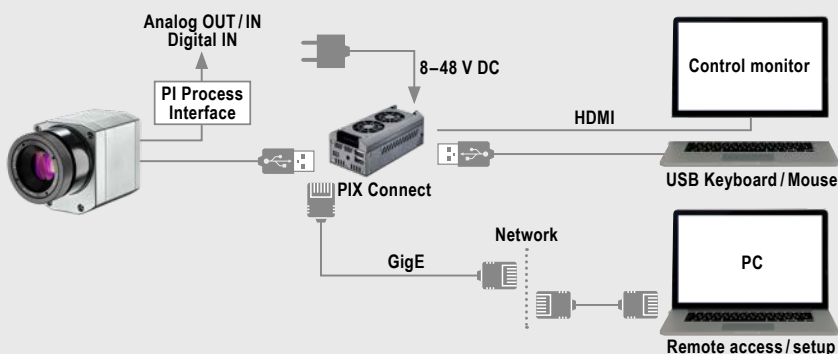

5 – 24 V DC

optris Industrial process 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 relais, 1 fail safe relay

For further information please visit
www.optris.com/industrial-process-interface

Analog OUT / IN Digital IN · PI Process Interface · 8 – 48 V DC · Control monitor · HDMI · PIX Connect · USB Keyboard / Mouse · Network · GigE · PC · Remote access / setup

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

For further information please visit
www.optris.com/pi-netbox