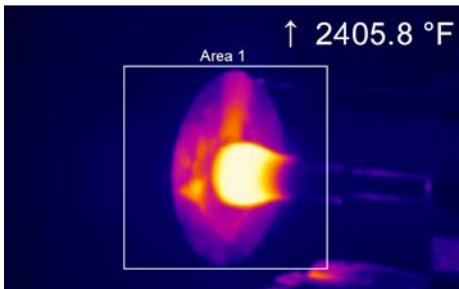
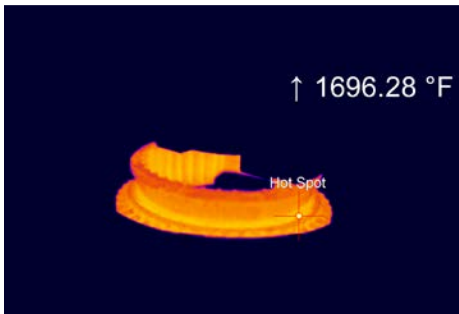
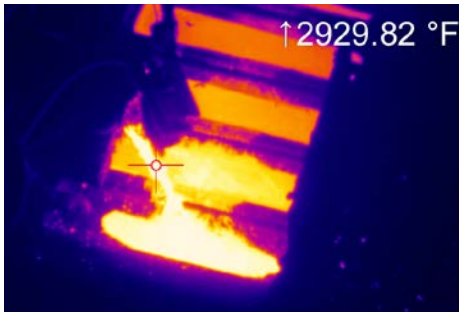


Short wavelength and ultra compact infrared camera for metal surfaces

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



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

Technical specifications

Optical resolution (switchable)/ Frame rate	764 x 480 pixels @ 32 Hz 382 x 288 pixels @ 80 Hz (switchable to 27 Hz) <sup>1)</sup> 72 x 56 pixels @ 1 kHz <sup>1)</sup> 764 x 8 pixels @ 1 kHz <sup>1)</sup> (fast linescanning mode) <sup>1)</sup>
Detector	CMOS (15 µm x 15 µm)
Spectral range	0.85 – 1.1 µm
Temperature ranges	450 <sup>2)</sup> ... 1800 °C (842 ... 3272 °F) (27 Hz mode) 500 <sup>2)</sup> ... 1800 °C (932 ... 3272 °F) (80 Hz and 32 Hz mode) 600 <sup>2)</sup> ... 1800 °C (1112 ... 3272 °F) (1 kHz mode)
Frame rate	1 kHz
Optics	<b>FOV @ 764 x 480 px:</b> 39° x 25° (f = 16 mm) (f = 0.6 in) 26° x 16° (f = 25 mm) (f = 1.0 in) 13° x 8° (f = 50 mm) (f = 2.0 in) 9° x 5° (f = 75 mm) (f = 3.0 in) <b>FOV @ 382 x 288 px:</b> 20° x 15° (f = 16 mm) (f = 0.6 in) 13° x 10° (f = 25 mm) (f = 1.0 in) 7° x 5° (f = 50 mm) (f = 2.0 in) 4° x 3° (f = 75 mm) (f = 3.0 in)
Thermal sensitivity (NETD) <sup>3)</sup>	< 1 K (700 °C [ $< 1292$ °F]), < 2 K (1000 °C [ $1832$ °F])
Accuracy (at T <sub>amb</sub> = 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) <sup>4)</sup>
Weight	245 - 311 g (8.46 - 10.97 oz), depending on lens
Shock <sup>5)</sup> / Vibration <sup>5)</sup>	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"> <li>• USB camera (1 lens)</li> <li>• USB cable (1 m [3.3 ft])</li> <li>• PIF cable (1 m [3.3 ft]) incl. terminal block</li> <li>• Table tripod</li> <li>• Lens protection tube incl. protective window</li> <li>• Software package optris PIX Connect</li> <li>• Aluminum case</li> <li>• Optional: CoolingJacket, high temperature cable</li> </ul>

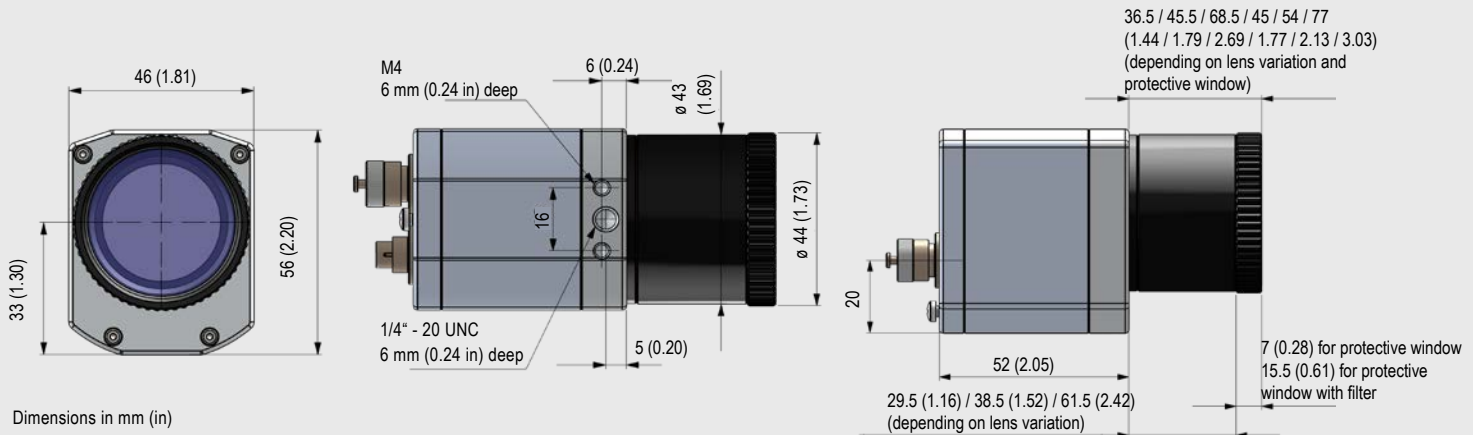
<sup>1)</sup> Positioning of choice within FOV

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

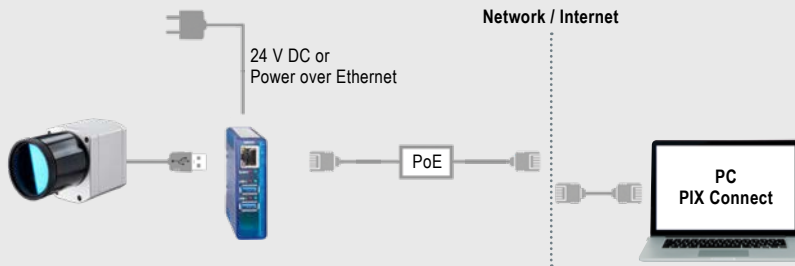
<sup>3)</sup> At 27 Hz, 32 Hz and 80 Hz <sup>4)</sup> Only applies when using protection tube <sup>5)</sup> For further information see operator's manual

# optris PI 1M

## Dimensions



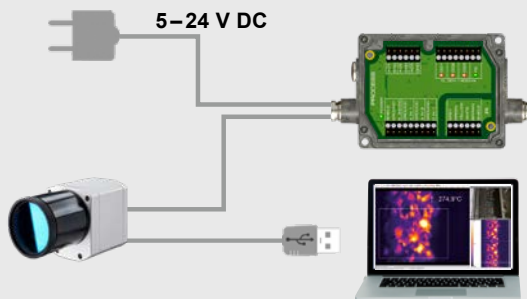
## Process integration



### 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<sub>RMS</sub>
- Remotely configurable via web based management

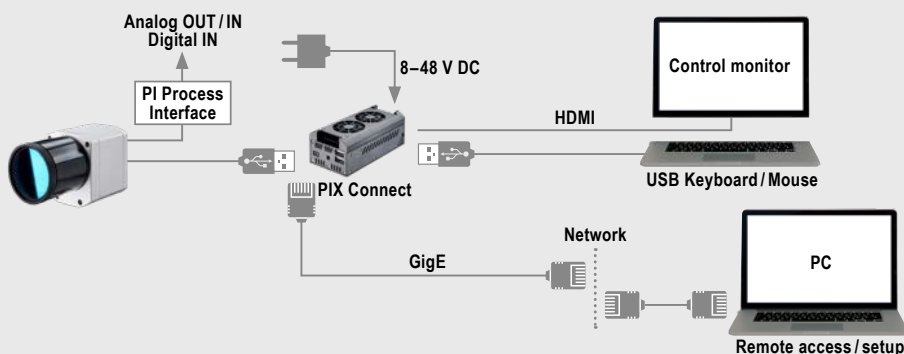
For further information please visit [www.optris.com/usb-server-industry-isochron](http://www.optris.com/usb-server-industry-isochron)



### 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 relays, 1 fail safe relay

For further information please visit [www.optris.com/industrial-process-interface](http://www.optris.com/industrial-process-interface)



### optris PI NetBox

- Miniature PC as add-on to the PI series for stand-alone system
- Integrated hardware and software watchdog
- Connections: 2x USB 2.0, 1x USB 3.0, 1x Mini-USB 2.0, Micro-HDMI, Ethernet (Gigabit Ethernet), micro SDHC / SDXC card

For further information please visit [www.optris.com/pi-netbox](http://www.optris.com/pi-netbox)