optris® PI 160
TECHNICAL DATA
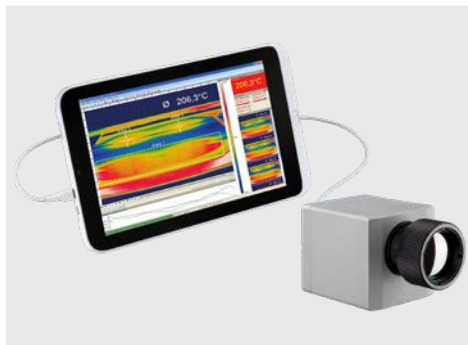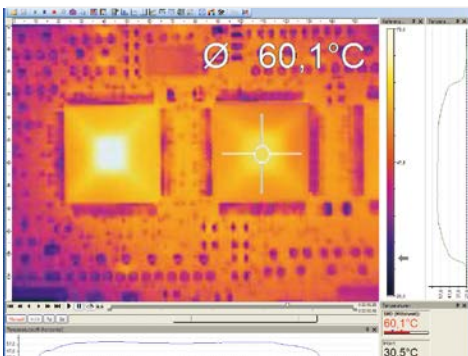
optris — infrared measurements

Small IR camera ideal for fast processes

Features:
- Outstanding price performance ratio
- Temperature range from –20 until 1500 °C
- High frame rate of 120 Hz
- Compact size: 45 x 45 x 60 mm

Further information as well as the product configurator at
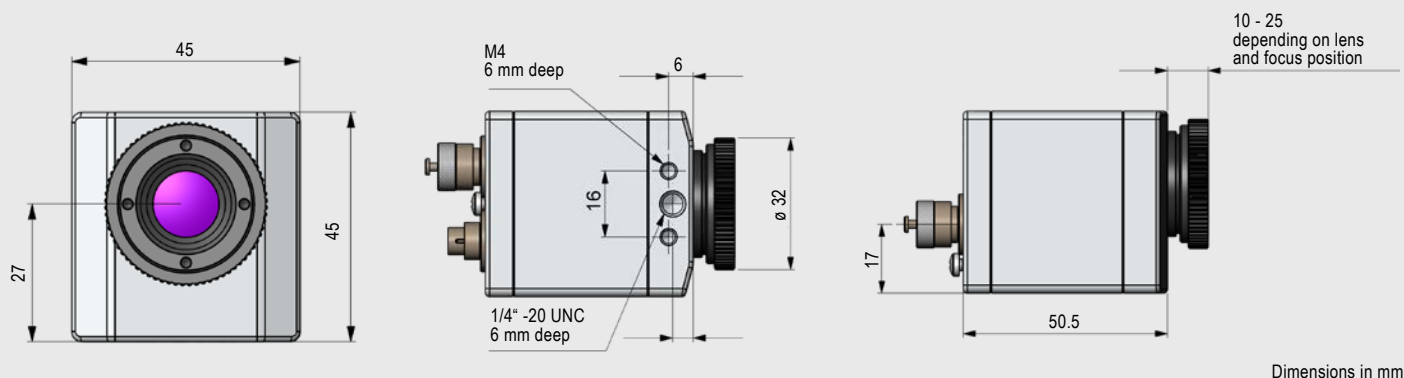*www.optris.global/thermal-imager-optris-pi160*

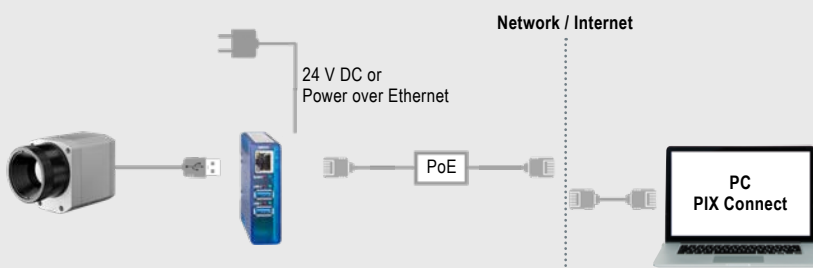| Technical specifications	
Optical resolution	160 x 120 Pixel
Detector	FPA, uncooled (25 µm x 25 µm)
Spectral range	8 – 14 µm
Temperature ranges	–20 ... 100 °C, 0 ... 250 °C, (20) 150 ... 900 °C[1], optional temperature range: 200 ... 1500 °C[2]
Frame rate	120 Hz
Optics (FOV)	6° x 5° FOV / f = 35.5 mm or 23° x 17° FOV / f = 10 mm or 41° x 31° FOV / f = 5.7 mm or 72° x 52° FOV / f = 3.3 mm
Thermal sensitivity (NETD)	40 mK with 23° x 17° FOV / F = 0.8 0.3 K with 6° x 5° FOV / F = 1.6 0.1 K with 41° x 31° FOV and 72° x 52° FOV / F = 1
Accuracy	±2 °C or ±2 %, whichever is greater
PC interfaces	USB 2.0 / optional USB to GigE (PoE) interface
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 input, digital input (max. 24 V), 3x 0 – 10 V output, 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 are also available as high temperature cable (180 or 250 °C)
Ambient temperature	0 ... 50 °C
Storage temperature	– 40 ... 70 °C
Relative humidity	20 – 80 %, non condensing
Enclosure (size / rating)	45 x 45 x 60 - 76 mm (depending on lens + focus position) / IP 67 (NEMA 4)
Weight	195 g, lens included
Shock / Vibration [3]	IEC 60068-2
Tripod mount	¼ - 20 UNC
Power supply	via USB
Scope of supply (Standard)	• USB camera, 1 lens included • USB cable (1 m) • Table tripod • Standard PIF with cable (1 m), terminal block included • Software package optris® PIX Connect • Aluminum case

[1] Accuracy effective starting at 150 °C
[2] The additional measuring range is not available for 72° HFOV
[3] For further details see operator's manual.

optris® PI 160

Dimensions

45

M4
6 mm deep

6

45

Ø 32

16

27

10 - 25
depending on lens
and focus position

17

1/4" -20 UNC
6 mm deep

50.5

Dimensions in mm

Process integration

Network / Internet

24 V DC or
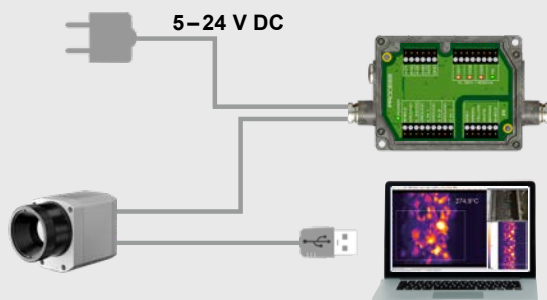Power over Ethernet

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
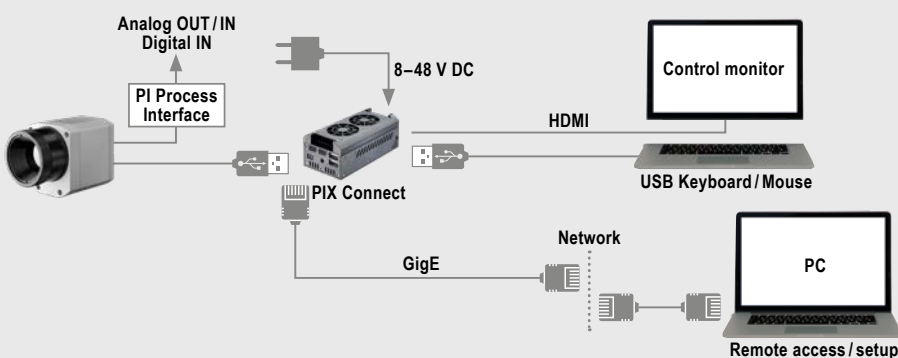www.optris.global/usb-server-gigabit

5 – 24 V DC

optris® Industrial Prozess Interface

- Use of camera for process monitoring in
  industrial environments
- Continous 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.global/thermal-imager-optris-pi160

Analog OUT / IN
Digital IN

PI Process
Interface

8 – 48 V DC

Control monitor

HDMI

USB Keyboard / Mouse

PIX Connect

GigE

Network

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: 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.global/pi-netbox