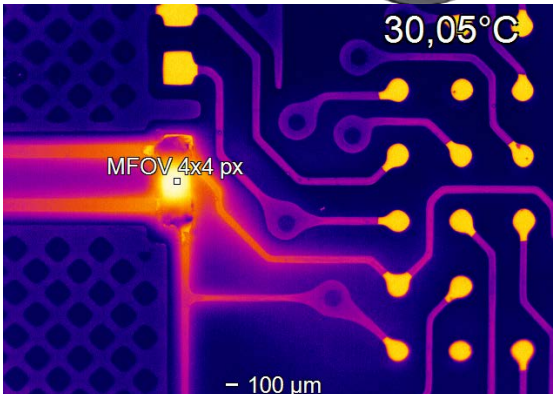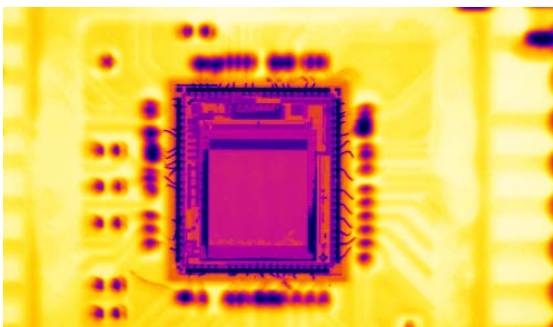### Microscope optics for chip-level thermal imaging of electronic components and boards
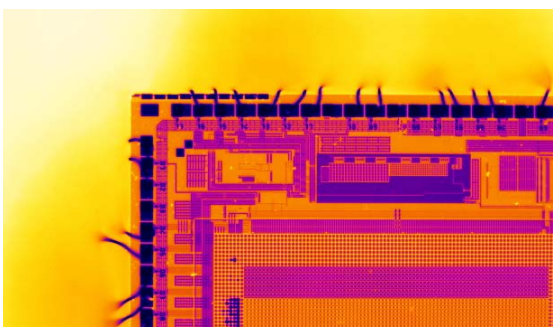
Features:

- Thermal analysis of tiny 8 µm chip-level structures on electronic components
- Exchangeable, focusable optics for most flexible use of the camera
- Microscope stand included for hands-free simultaneous operation / testing
- Frame rates up to 125 Hz allow inspection of fast processes (like pulsed laser diodes)
- Radiometric video or tiff recording with +/-2 °C measurement accuracy
- License-free analysis software and complete SDK included

30,05°C

MFOV 4x4 px

− 100 µm

Comparison optris microscope optics:

PI 640i with standard microscope optics and 28 µm resolution (MO44)

PI 640i with microscope optics with 2x magnification and 8 µm resolution (MO2x)

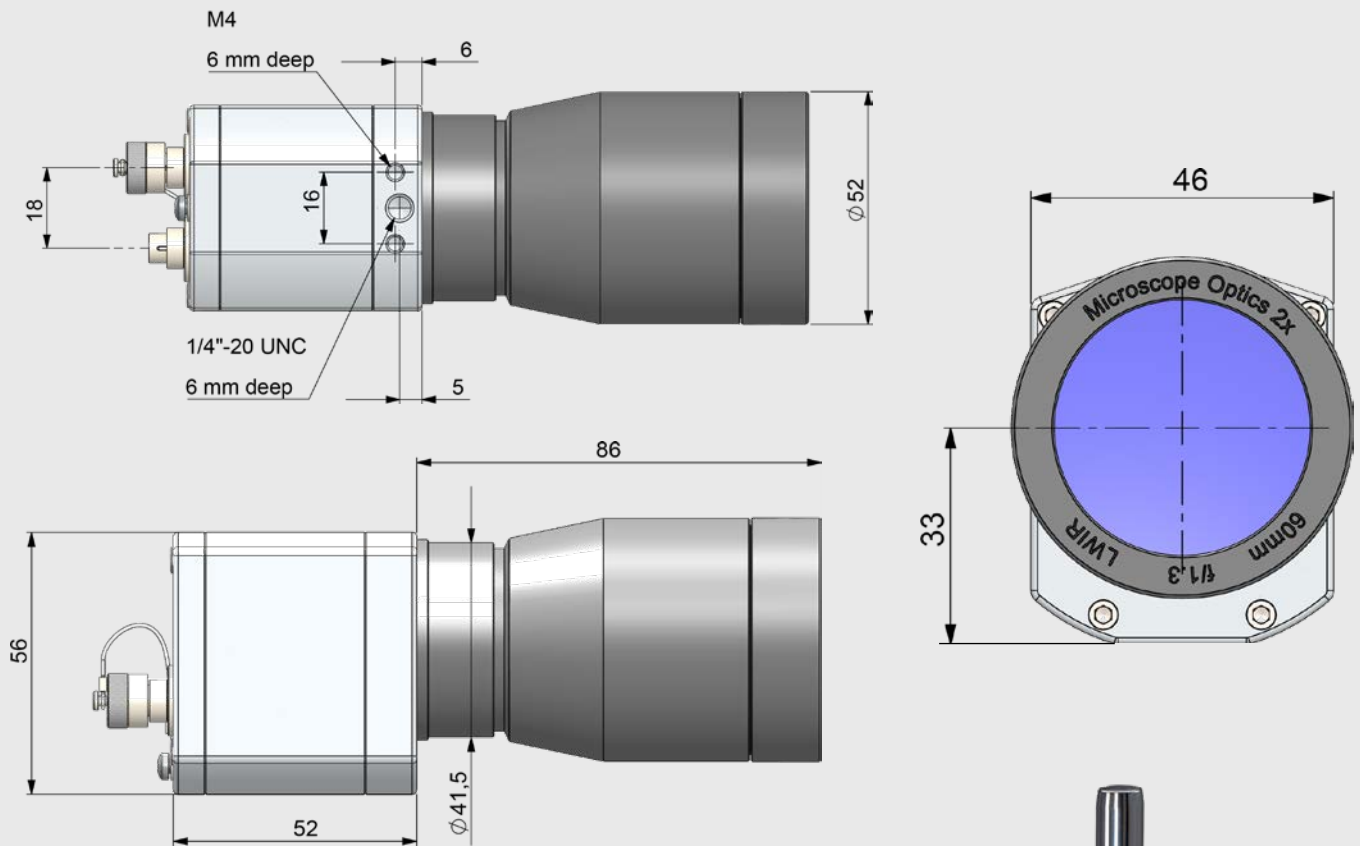| Typ	Specification
Temperature range (scalable)	–20 ... 100 °C, 0 ... 250 °C, (20)150 ... 500 °C[1],
Detector	FPA, 640 x 480 pixels @ 32 Hz 640 x 120 pixels @ 125 Hz
Spectral range	8 – 14 µm
Microscope optics (FOV)	5.4 mm x 4.0 mm (F=1.3) / f = 60 mm
Minimum spot size (IFOV)	8 µm
MFOV	34 µm[2]
Working distance	15 mm
System accuracy	±2 °C or ±2 %, whichever is greater
Temperature resolution (NETD)	80 mK
PC interface	USB 2.0
Standard process interface (PIF)	0–10 V input, digital input (max. 24 V), 0–10 V output
Industrial process interface (IPIF)	2x 0–10 V inputs, digital input (max. 24 V), 3x 0/4 – 20 mA outputs, 3x relais (0–30 V / 400 mA), fail-safe relay
Cable length (USB)	1 m (standard), 3 m, 5 m, 10 m, 20 m
Ambient temperature	0 ... 50 °C
Storage temperature	–40 ... 70 °C
Relative humidity	20–80 %, non condensing
Enclosing[3] (size / rating)	52 x 59 x 139 IP 67 (NEMA 4)
Weight	410 g
Shock/Vibration[3]	IEC 60068-2-27 (25G and 50G) / IEC 60068-2-6 (sinus shaped), IEC 60068-2-64 (broadband noise)
Tripod mount	1/4 – 20 UNC
Power supply	via USB
Emissivity	0.100 ... 1.100
Software	optris PIX Connect / Windows and Linux SDKs
Scope of supply (PI camera + Microscope accessory kit)	• PI camera (PI 640i) • Standard PIF • Microscope optics (MO2x) • Manual PI camera • Standard USB cable (1 m) • Base plate with ESD pad • Rugged outdoor transport case • Software package optris PIX Connect on USB flash drive • Premium microscope stand with coarse and fine drive and adapter for PI camera

[1] Accuracy statement for this temperature range effective from 150 °C
[2] Measurement field of view (MFOV) on MO2x optics: 4x4 px
[3] For more details see operator's manual

optris **PI 640i 2x Microscope optics**

M4
6 mm deep

6

18

16

⌀ 52

1/4"-20 UNC
6 mm deep

5

46

33

Microscope Optics 2x
60mm   f/1.3   LWIR

86

56

52

⌀ 41,5

*For further information as well as
the optics calculator, please visit*
www.optris.com/microscope-optics