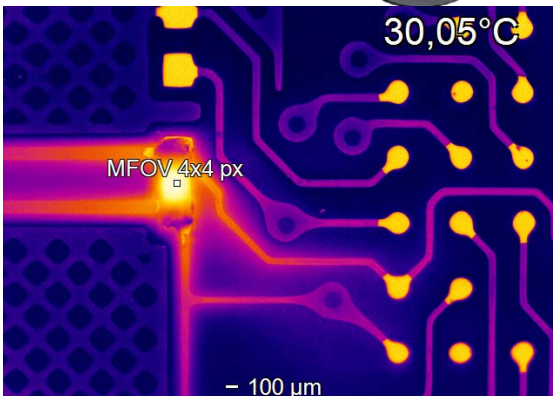


## Microscope optics for chip-level thermal imaging of electronic components and boards

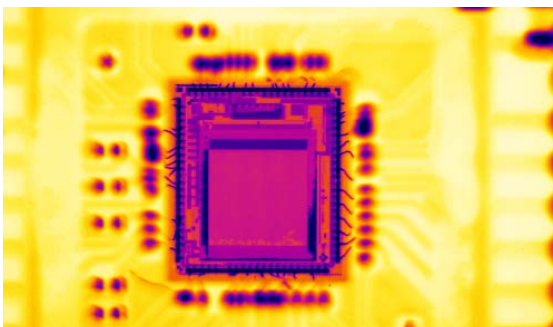


### Features:

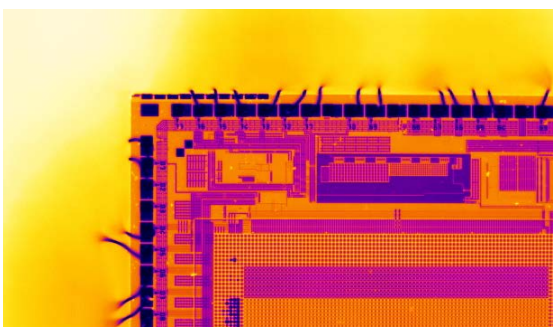
- Thermal analysis of tiny 8  $\mu\text{m}$  chip-level structures on electronic components
- Exchangeable, focusable optics for most flexible use of the camera
- Microscope stand included for hands-free simultaneous operation / testing
- Frame rates up to 125 Hz allow inspection of fast processes (like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



### Comparison optris microscope optics:



PI 640i with standard microscope optics and 28  $\mu\text{m}$  resolution (MO44)



PI 640i with microscope optics with 2x magnification and 8  $\mu\text{m}$  resolution (MO2x)

Typ	Specification
Temperature range (scalable)	-20 ... 100 $^{\circ}\text{C}$ , 0 ... 250 $^{\circ}\text{C}$ , (20)150 ... 500 $^{\circ}\text{C}$ <sup>1)</sup> ,
Detector	FPA, 640 x 480 pixels @ 32 Hz 640 x 120 pixels @ 125 Hz
Spectral range	8 – 14 $\mu\text{m}$
Microscope optics (FOV)	5.4 mm x 4.0 mm (F=1.3) / f = 60 mm
Minimum spot size (IFOV)	8 $\mu\text{m}$
MFOV	34 $\mu\text{m}$ <sup>2)</sup>
Working distance	15 mm
System accuracy	$\pm 2$ $^{\circ}\text{C}$ or $\pm 2$ %, 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 relays (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 $^{\circ}\text{C}$
Storage temperature	-40 ... 70 $^{\circ}\text{C}$
Relative humidity	20–80 %, non condensing
Enclosing <sup>3)</sup> (size / rating)	52 x 59 x 139 IP 67 (NEMA 4)
Weight	410 g
Shock/Vibration <sup>3)</sup>	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)	<ul style="list-style-type: none"> <li>• PI camera (PI 640i)</li> <li>• Microscope optics (MO2x)</li> <li>• Standard USB cable (1 m)</li> <li>• Rugged outdoor transport case</li> <li>• Software package optris PIX Connect on USB flash drive</li> <li>• Premium microscope stand with coarse and fine drive and adapter for PI camera</li> </ul> <ul style="list-style-type: none"> <li>• Standard PIF</li> <li>• Manual PI camera</li> <li>• Base plate with ESD pad</li> </ul>

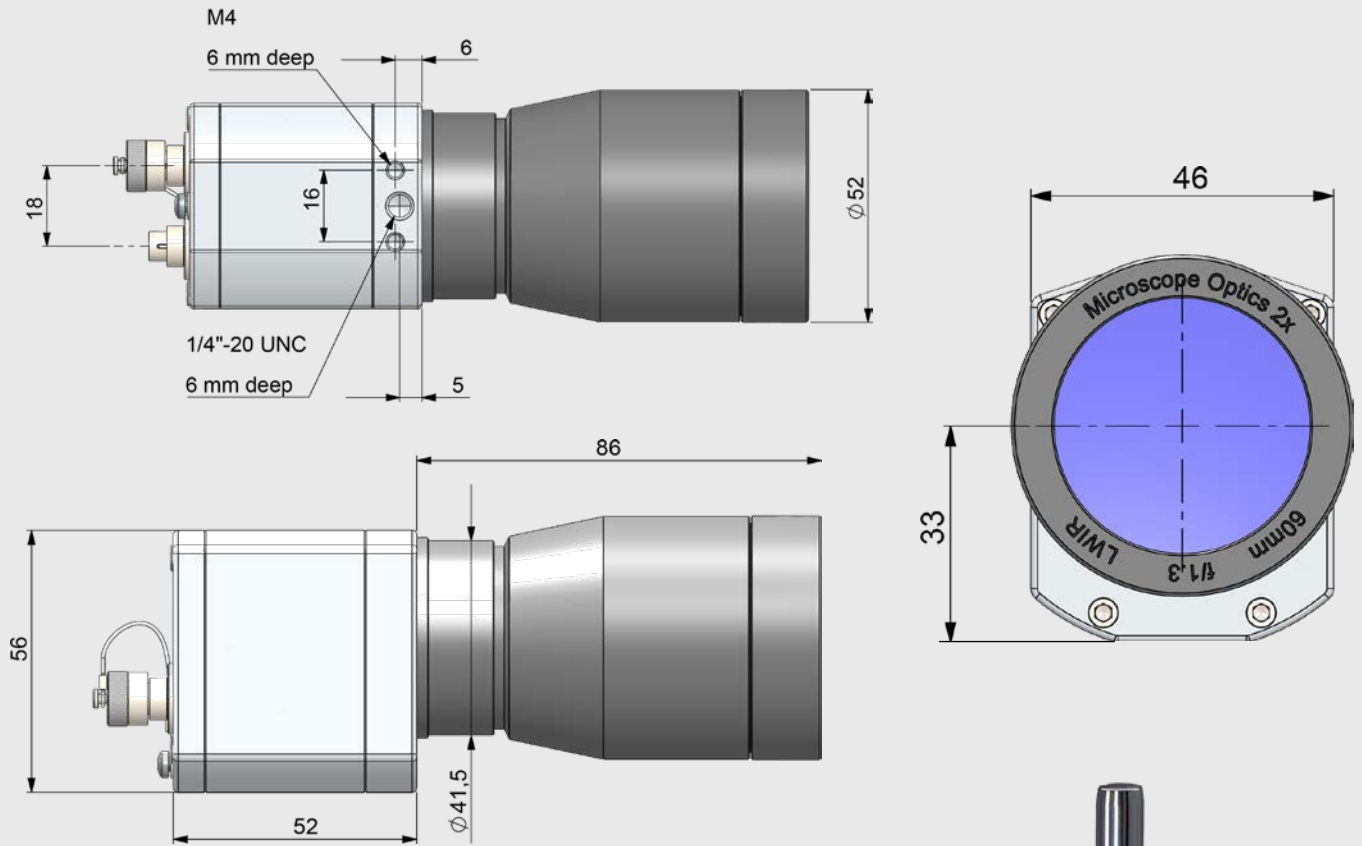
<sup>1)</sup> Accuracy statement for this temperature range effective from 150  $^{\circ}\text{C}$

<sup>2)</sup> Measurement field of view (MFOV) on MO2x optics: 4x4 px

<sup>3)</sup> For more details see operator's manual

# optris PI 640i 2x Microscope optics

Dimensions in mm



For further information as well as the optics calculator, please visit [www.optris.com/microscope-optics](http://www.optris.com/microscope-optics)