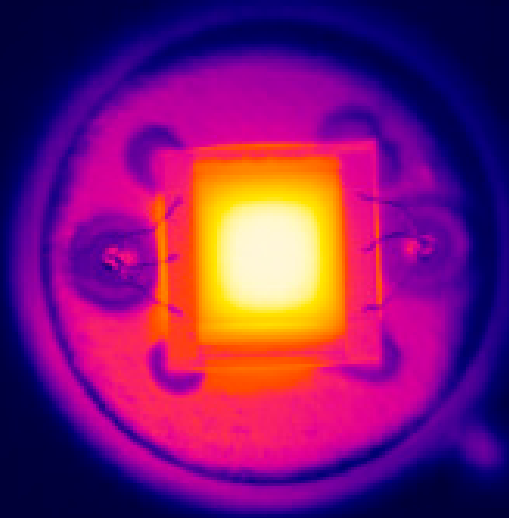




Microscope Optics

For PI 450 and PI 640 infrared cameras

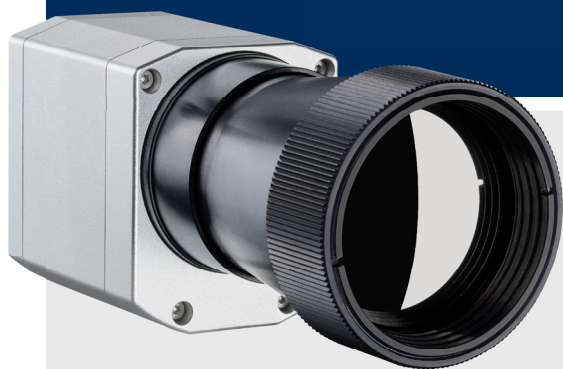
innovative infrared technology



optris® Microscope Optics

TECHNICAL DATA

Microscope optics for the inspection of electronic boards

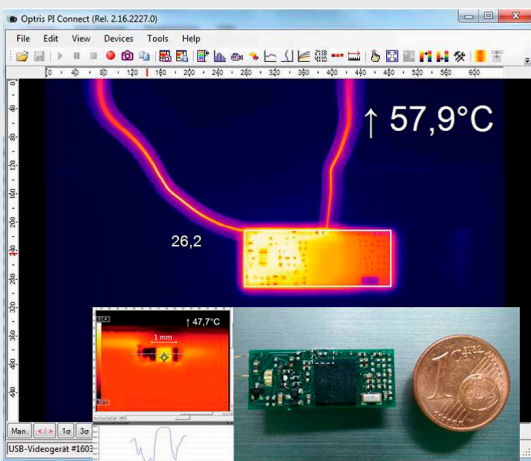


Features:

- Exchangeable, focusable optics for most flexible use of the camera
- Analysis of small chip level components down to 28 µm
- Hands-free operation for simultaneous testing and IR imaging
- 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



	Technical Specifications	
Camera type	PI 450	PI 640
Temperature range (scalable)	-20 ... 100 °C, 0 ... 250 °C, (20)150 ... 900 °C ¹⁾	
Detector	FPA, 382 x 288 pixels @ 80 Hz (switchable to 27 Hz)	FPA, 640 x 480 pixels @ 32 Hz 640 x 120 pixels @ 125 Hz
Spectral range	7.5 – 13 µm	
Microscope optics (FOV)	10° x 8° (F=1.1) / f= 44 mm	12° x 9° (F=1.1) / f= 44 mm
Minimum spot size (IFOV)	42 µm	28 µm
MFOV	85 µm ²⁾	
Working distance	80 – 100 mm	
System accuracy	±2 °C or ±2 %, whichever is greater	
Temperature resolution (NETD)	90 mK	120 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 input, digital input (max. 24 V), 3x 0–10 V output, 3x relay (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 ... 70 °C	0 ... 50 °C
Storage temperature	-40 ... 70 °C	
Relative humidity	20–80 %, non condensing	
Enclosing ³⁾ (size / rating)	46 mm x 56 mm x 130 mm / IP 67 (NEMA 4)	
Weight	370 g, incl. lense	
Shock/Vibration ³⁾	IEC 60068-2	
Tripod mount	1/4 – 20 UNC	
Power supply	via USB	
Emissivity	0.100 ... 1.100	
Software	optris® PI Connect / Windows and Linux SDKs	
Scope of supply (PI camera + Microscope accessory kit)	<ul style="list-style-type: none"> • PI camera (PI 450 or PI 640) • Standard lens (PI 450: O29; PI 640: O33) • Microscope optics (MO44) • Standard USB cable (1 m) • Manual PI camera • Rugged outdoor transport case • Software package optris® PI Connect on USB flash drive • Microscope stand • Standard PIF 	



¹⁾ Accuracy statement effective from 150 °C

²⁾ MFOV on PI 450 is 2 x 2 px; on PI 640 3 x 3 px

³⁾ For more details see operator's manual

