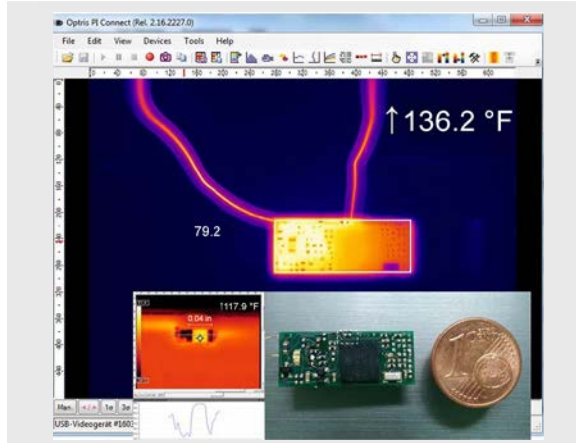


### Microscope optics for the inspection of electronic boards



#### Features:

- Exchangeable, focusable optics for most flexible use of the camera
- Analysis of small chip level components down to 28  $\mu\text{m}$
- 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  $\pm 2^\circ\text{C}$  measurement accuracy
- License-free analysis software and complete SDK included



| Typ                                                          | Specification                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature range (scalable)                                 | -20 ... 100 °C, 0 ... 250 °C, (20)150 ... 900 °C <sup>1)</sup>                                                                                                                                                                                                                                                                             |
| Detector                                                     | FPA,<br>640 x 480 pixels @ 32 Hz<br>640 x 120 pixels @ 125 Hz                                                                                                                                                                                                                                                                              |
| Spectral range                                               | 8 – 14 $\mu\text{m}$                                                                                                                                                                                                                                                                                                                       |
| Microscope optics (FOV)                                      | 12° x 9° (F=1.1) / f= 44 mm                                                                                                                                                                                                                                                                                                                |
| Minimum spot size (IFOV)                                     | 28 $\mu\text{m}$                                                                                                                                                                                                                                                                                                                           |
| MFOV                                                         | 85 $\mu\text{m}^2$                                                                                                                                                                                                                                                                                                                         |
| Working distance                                             | 80 – 100 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),<br>3x 0/4 – 20 mA outputs, 3x relays (0–30 V / 400 mA),<br>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 <sup>3)</sup> (size / rating)                      | 46 x 56 x 119 - 126 mm (depending on focus position) /<br>IP 67 (NEMA 4)                                                                                                                                                                                                                                                                   |
| Weight                                                       | 370 g, incl. lense                                                                                                                                                                                                                                                                                                                         |
| Shock/Vibration <sup>3)</sup>                                | IEC 60068-2-27 (25G and 50G) / IEC 60068-2-6 (sinus shaped),<br>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<br>(PI camera + Microscope<br>accessory kit) | <ul style="list-style-type: none"> <li>• PI camera (PI 640i)</li> <li>• Microscope optics (MO44)</li> <li>• Standard USB cable (1 m)</li> <li>• Manual PI camera</li> <li>• Rugged outdoor transport case</li> <li>• Software package optris PIX Connect on USB flash drive</li> <li>• Microscope stand</li> <li>• Standard PIF</li> </ul> |

<sup>1)</sup> Accuracy statement effective from 150 °C

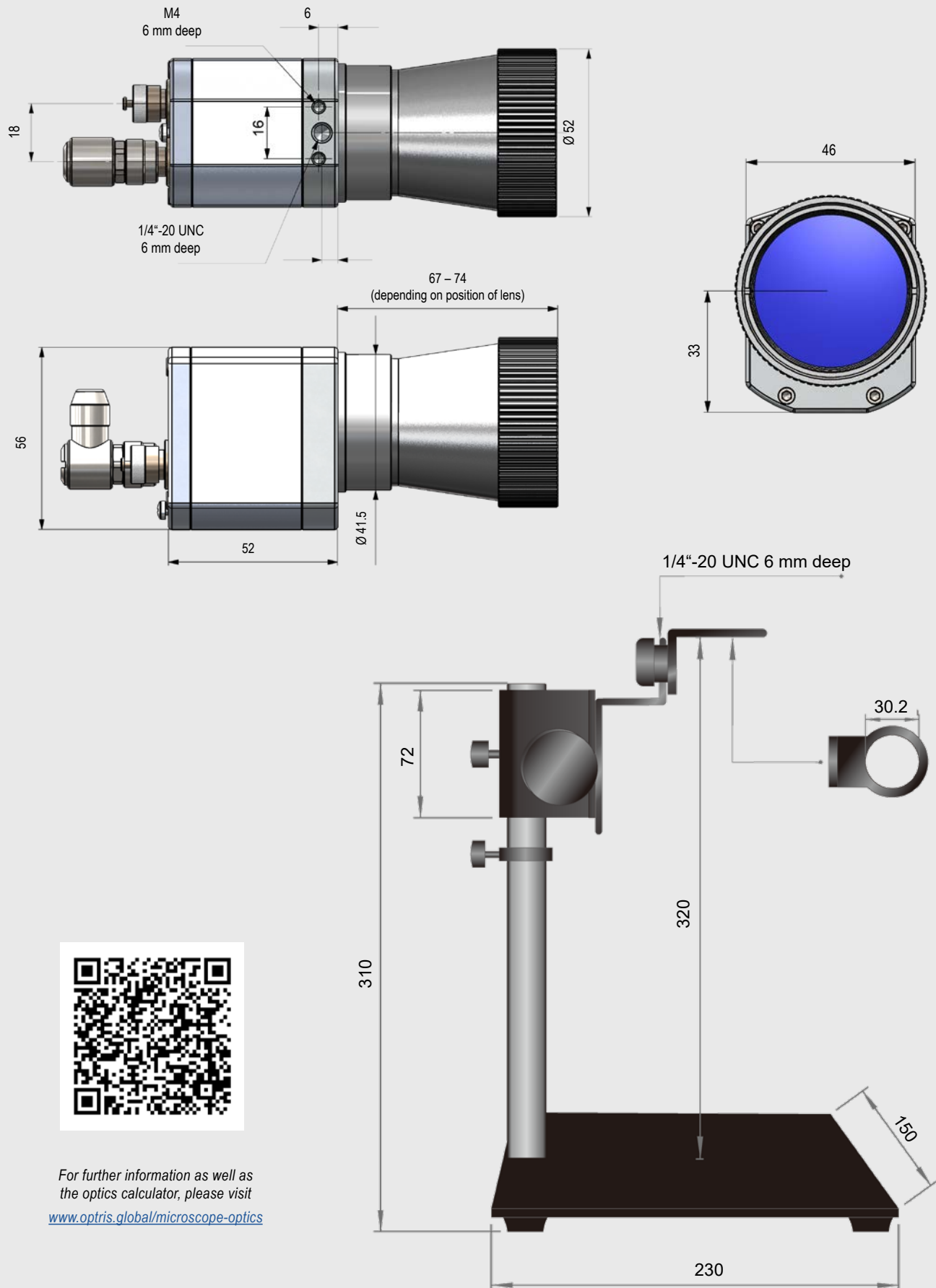
<sup>2)</sup> MFOV on PI 640i 3 x 3 px

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

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# optris PI 640i Microscope optics

## Dimensions in mm



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

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