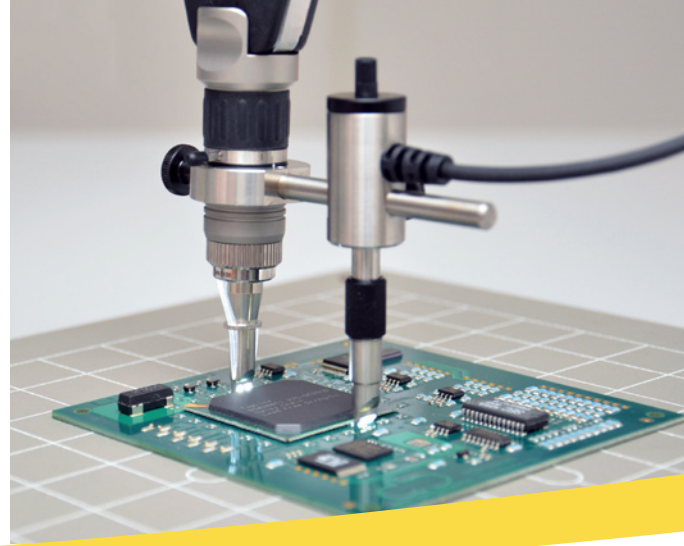


# BGA Inspection Lenses

Ultra Small Size 90° side-view Probe

Small Size 90° side-view Probe

Standard 90° side-view Probe



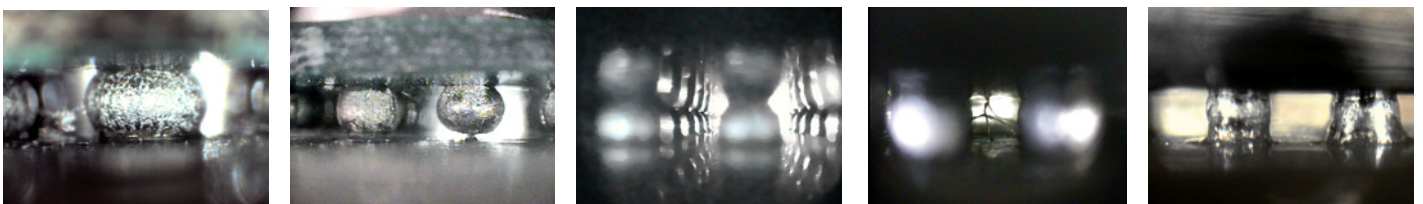
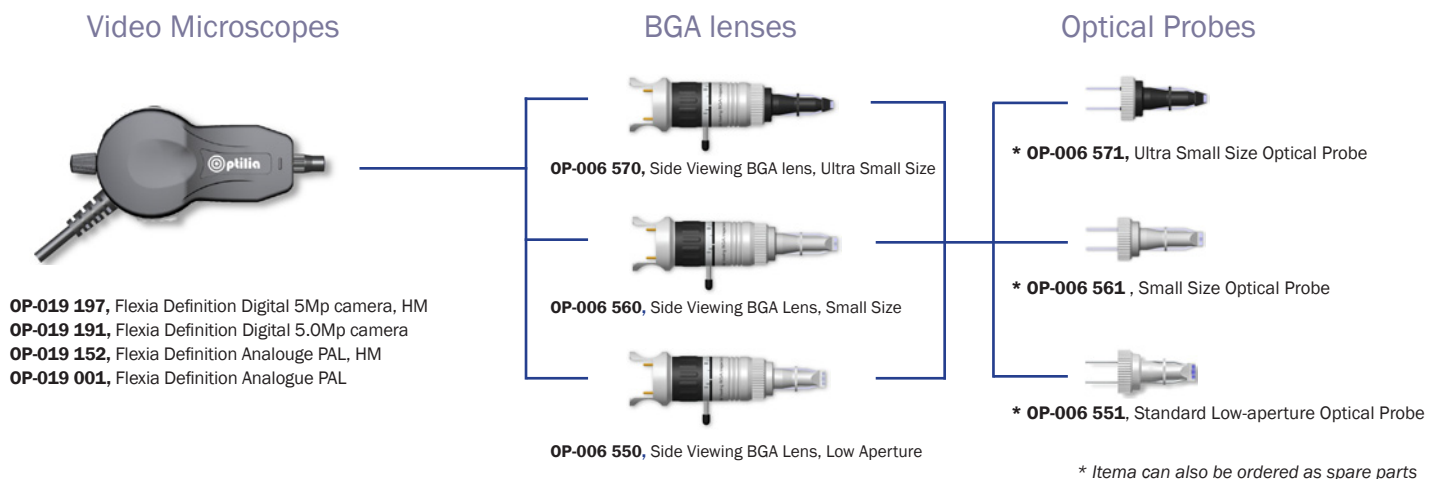
State of the art BGA Lenses with a range of Side-view Probes for reliable Visual Inspection of solder joints of BGA, uBGA, CSP and Flip-Chip packages with stand-off down to 0.04 mm (40 microns). The interchangeable Optical Probes are key elements in the Optilia BGA Inspection system and are easily attached to Flexia 5.0 mega pixel Digital Video Inspection Microscopes.

The meticulous design of the Optilia BGA Inspection Systems provides great flexibility from the combination of the BGA Lens, which gives the highest image quality and the ultra slim design of the Optilia Optical Probes that allows solder bump inspection of very dense PCB designs. Ultra Small Size BGA probe needs only 0.8mm free space to produce a bright image of the solder bumps underneath BGA uBGA or CSP packages.

All Optilia BGA lenses incorporate integral high-intensity and long-life LEDs with electronic shutter control, delivering optimum white illumination via the probes' integral light guides without the need of an external light source. Magnification of the lenses can be changed from approximately 5x (~50 mm working distance) to 350x (~0.3 mm working distance).

Optilia BGA lenses and Optical Probes are constructed using ESD-protected metallic housing and precision optics with mechanical shock protection.

## Product matrix:



Empowering your Vision!

# Technical specification:

BGA Optical Probes	Low Aperture	Small Size	Ultra Small Size
Magnification*	~ 280x – 5x	~ 350x – 25x	~ 350x – 25x
Focusing range	~ 0.5 – 100 mm	~ 0.3 – 40 mm	~ 0.2 – 40 mm
Field of View	~ 1.2 – 50 mm	~ 1.0 – 20 mm	~ 1.0 – 20 mm
Required free Working Area**	~ 1.2 - 2.2 mm	~ 1.0 - 1.5 mm	~ 0.6 - 0.8 mm
Thickness of optical probe	2.2 mm	1.5 mm	0.8 mm
Width of optical probe	7.1 mm	6.0 mm	3.4 mm
Foot print of optical probe	0.8x7.1 mm	0.8x6.0 mm	0.4x3.4 mm
Weight	10 gr	10 gr	10 gr

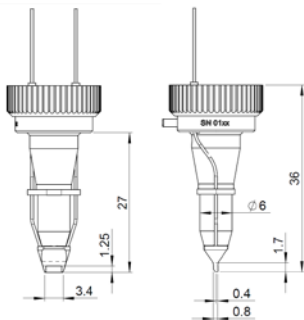
\* Attached to Flexia Definition HM

\*\* Minimum required free area depends on surrounding component heights

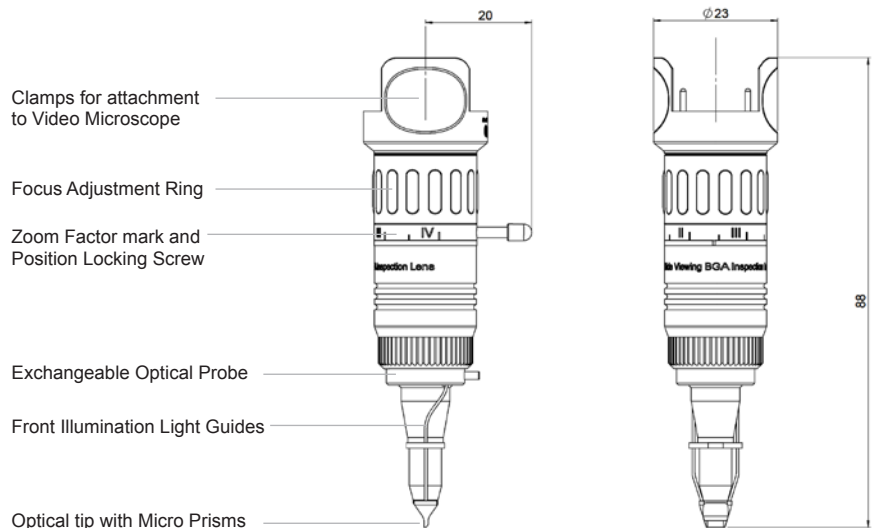
BGA Lenses	
Incident Front Illumination	Built-in long life twin LEDs via micro prisms. Cool white.
Attachable Transmitted Background Illumination	Attachable long life power LED via micro prism. Cool white.
Stand-alone Transmitted Background Illumination	Brush-light long life power LED via optical fibers. Cool white.
Light intensity control system	Individually adjustable front and back light with electronic dimmer.
Power source	- Front light via Camera (USB2.0 bus of host computer). - Back lights via external power supply. - Brush light via battery or external power supply.
Size and Weight	165x50x36 mm (LxHxW), 200 g maximum.

Digital Video Microscope	
Image Sensor	Colour 5.0Mpixel CMOS (2592x1944) USB2.0 interface.
Storage environment	-10° to +60° C, Max 98% RH, non-condensing.
Operating environment	0° to +45° C, Max 95% RH, non-condensing.

## Dimensions:



Ultra Small Size Optical Probe



BGA Inspection lens

Dimensions are in mm

Reseller:



Optilia Instruments AB  
 Djupdalsvägen 22, SE-192 51 Sollentuna, Sweden.  
 Phone: +46 8 35 33 60  
 Email: [info@optilia.eu](mailto:info@optilia.eu)  
 Web: [www.optilia.eu](http://www.optilia.eu)

# Lenses and Illumination options for Flexia Definition 5.0MP Digital & Analogue Video Microscopes

## Flexia Video Microscopes



- OP-019 197**, Flexia Definition Digital 5Mp camera, HM
- OP-019 191**, Flexia Definition Digital 5.0Mp camera
- OP-019 152**, Flexia Definition Analogue PAL, HM
- OP-019 001**, Flexia Definition Analogue PAL

100x lens is always included in Flexia Definition

Fixed focal length Objective lenses replace 100x lens in order to achieve higher magnification

## BGA lenses

- OP-006 570**, Side Viewing BGA lens, Ultra Small Size
- OP-006 560**, Side Viewing BGA Lens, Small Size
- OP-006 550**, Side Viewing BGA Lens, Low Aperture

## Optical Probes for BGA Lenses

- \* **OP-006 571**, Ultra Small Size Optical Probe
- \* **OP-006 561**, Small Size Optical Probe
- \* **OP-006 551**, Standard Low-aperture Optical Probe

*\* Items can also be ordered as spare parts*

## Top-side Inspection Varifocal Lenses

- OP-019 400**, 100x Objective lens
- OP-019 407**, 1-50x varifocal lens with built-in LED RingLight (Ultra intensity)
- OP-019 110**, 8-80x varifocal lens with built-in LED RingLight
- OP-019 408**, 10-50x varifocal lens with Polarized LED RingLight (Ultra intensity)

## Fixed focal length Objective Lenses and RingLights

- OP-019 113**, 170x Objective lens
- OP-019 114**, 250x Objective lens
- OP-019 116**, 500x Objective lens
- OP-006 205**, Ringlight for 100x & 170x lens
- OP-006 205**, Diffuse (contact) ringlight for 250x lens
- OP-006 206**, Diffuse (contact) ringlight for 500x lens
- OP-006 203**, Diffuser (contact) adapter for 100x lens
- OP-006 204**, Diffuser (contact) adapter for 170x lens