



EMPOWERING YOUR VISION

OPTILIA – STRATEGY

- The Original inspection camera
- Hallmark for quality in Visual Inspection
- Service minded externally and internally
- Modular products configured to customer needs
- State-of-the-art video imaging technology with intelligent, user-friendly software.
- Robust and reliable design.
- Ergonomic and easy to operate.
- Excellent image quality.
- Wide range of extra lenses, illuminations, stands and other accessories.
- Cost effective in the investment and operation.
- Selection in connection methods and standards

OPTILIA INSPECTION SYSTEMS



OPTILIA – PRODUCT SEGMENTS



OPTICAL INSPECTION SYSTEMS

- INSPECTION CAMERAS
- OPTIPIX
- IMAGE CAPTURE
- ACCESSORIES



BGA/FLEXIA INSPECTION SYSTEMS

- BGA INSPECTION SYSTEMS
- FLEXIA VIDEOMICROSCOPES
- OPTIPIX
- ACCESSORIES



MEDICAL

- VIDEOCAPILLAROSCOPY (NVC)
- DERMATOLOGY
- OPTIPIX
- ACCESSORIES

OPTILIA- MISSION

“Optilia is committed to delivering state-of-the-art video imaging solutions for particularly demanding applications, where quality, ease-of-use, picture clarity and excellent support are essential requirements for the customer”

OPTILIA INSPECTION SYSTEMS





Circle3P 1: 1.93 mm

Area 1: 1.13mm²

Line 1: 0.71 mm

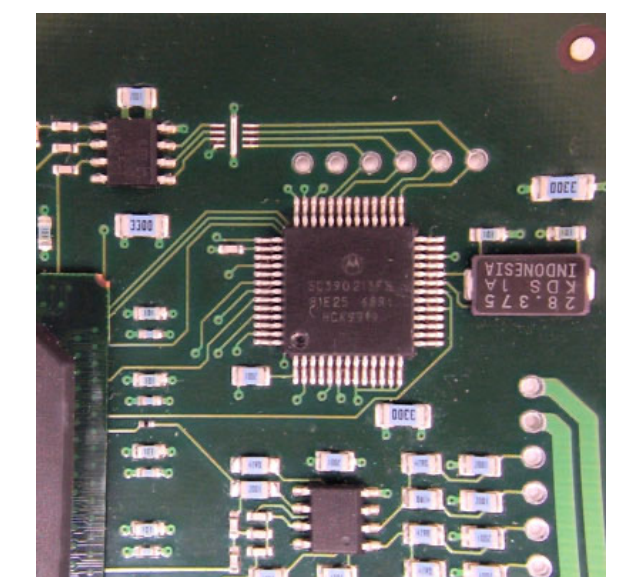
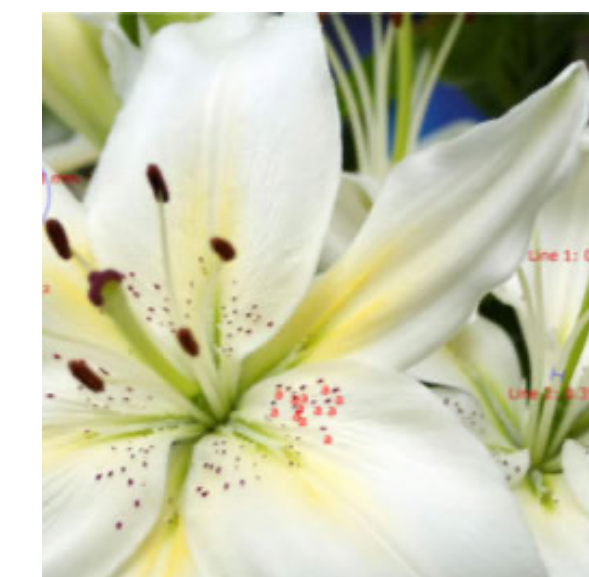
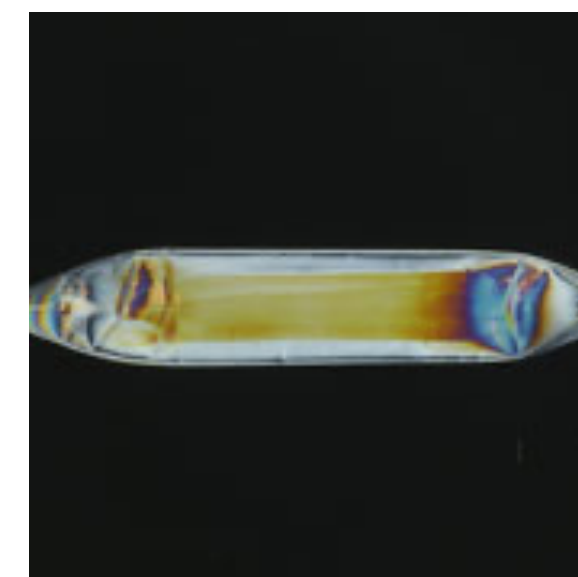
Line 2: 0.39 mm

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a
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OPTICAL INSPECTION SYSTEMS – OPTICAL



High Definition Inspection Cameras



OPTICAL INSPECTION SYSTEMS – THE CAMERA FAMILY

M CAMERAS

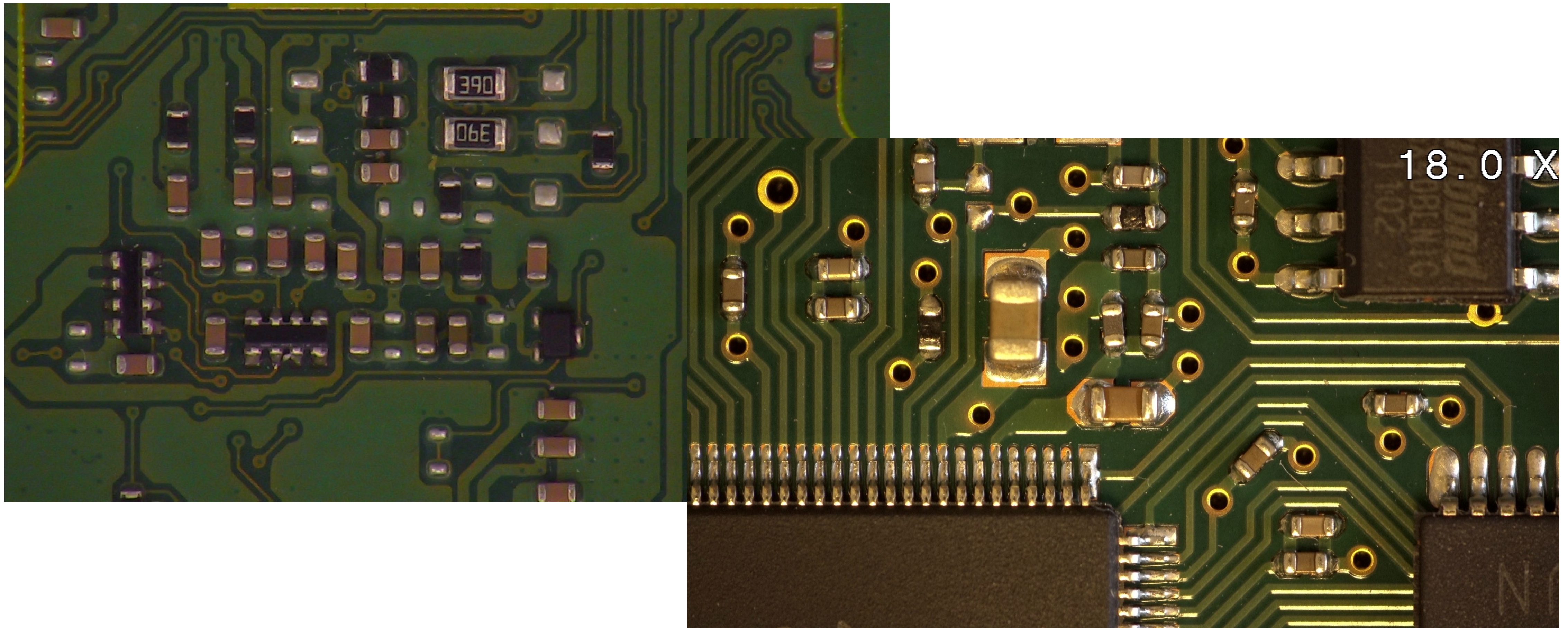
- Built in control unit
- Easyview or Freesight
- 720 or 1080p
- Connection via component or HDMI
- Lower cost and less advanced functions

W CAMERAS

- Choice of control between advanced control units or control software.
- Easyview or Freesight
- 1080p or 4K Ultra HD
- Connection via component or HDMI
- Higher cost and more advanced functions

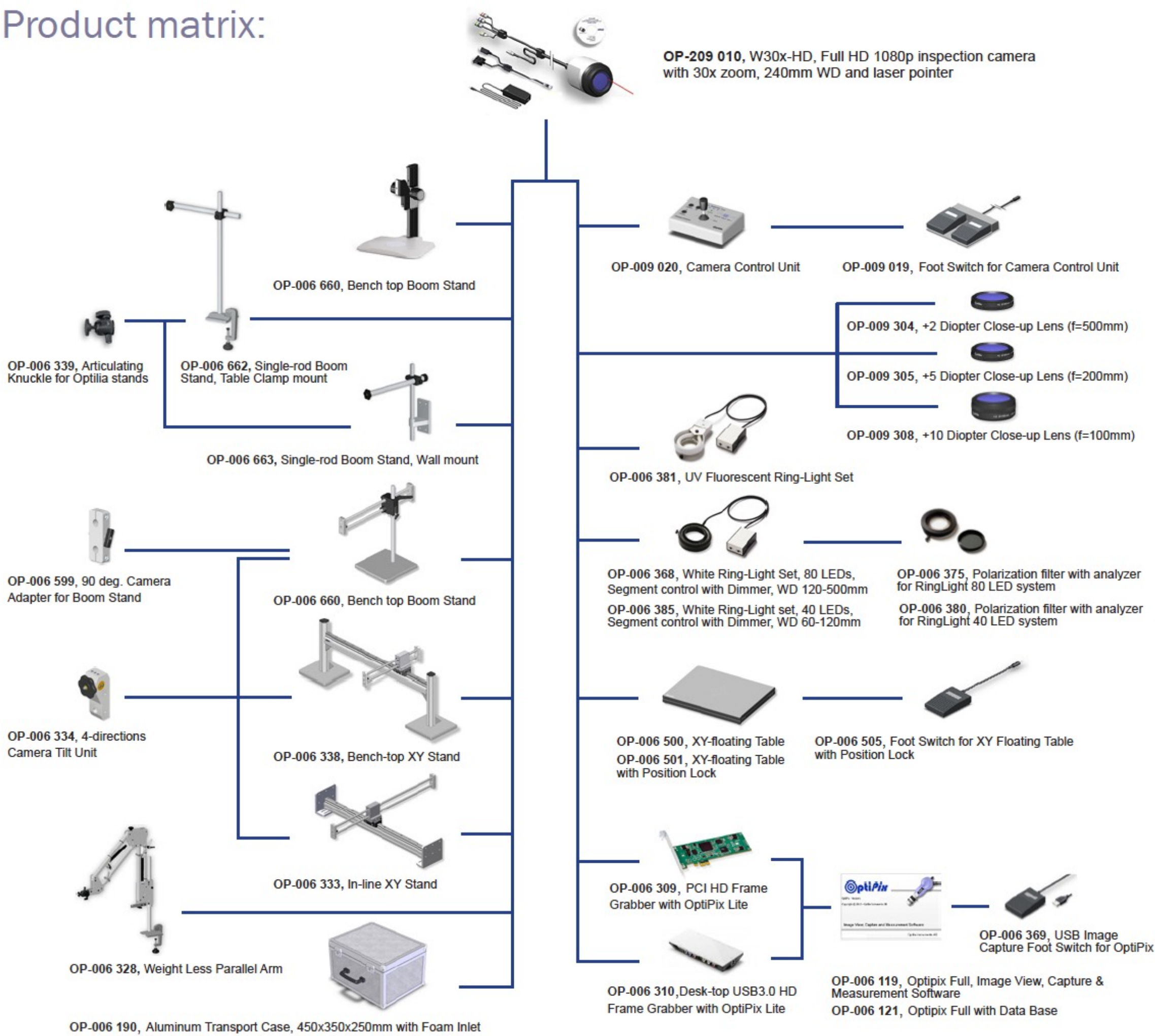


OPTICAL INSPECTION SYSTEMS — FHD vs 4K



OPTICAL INSPECTION SYSTEMS – PRODUCT MATRIX

Product matrix:

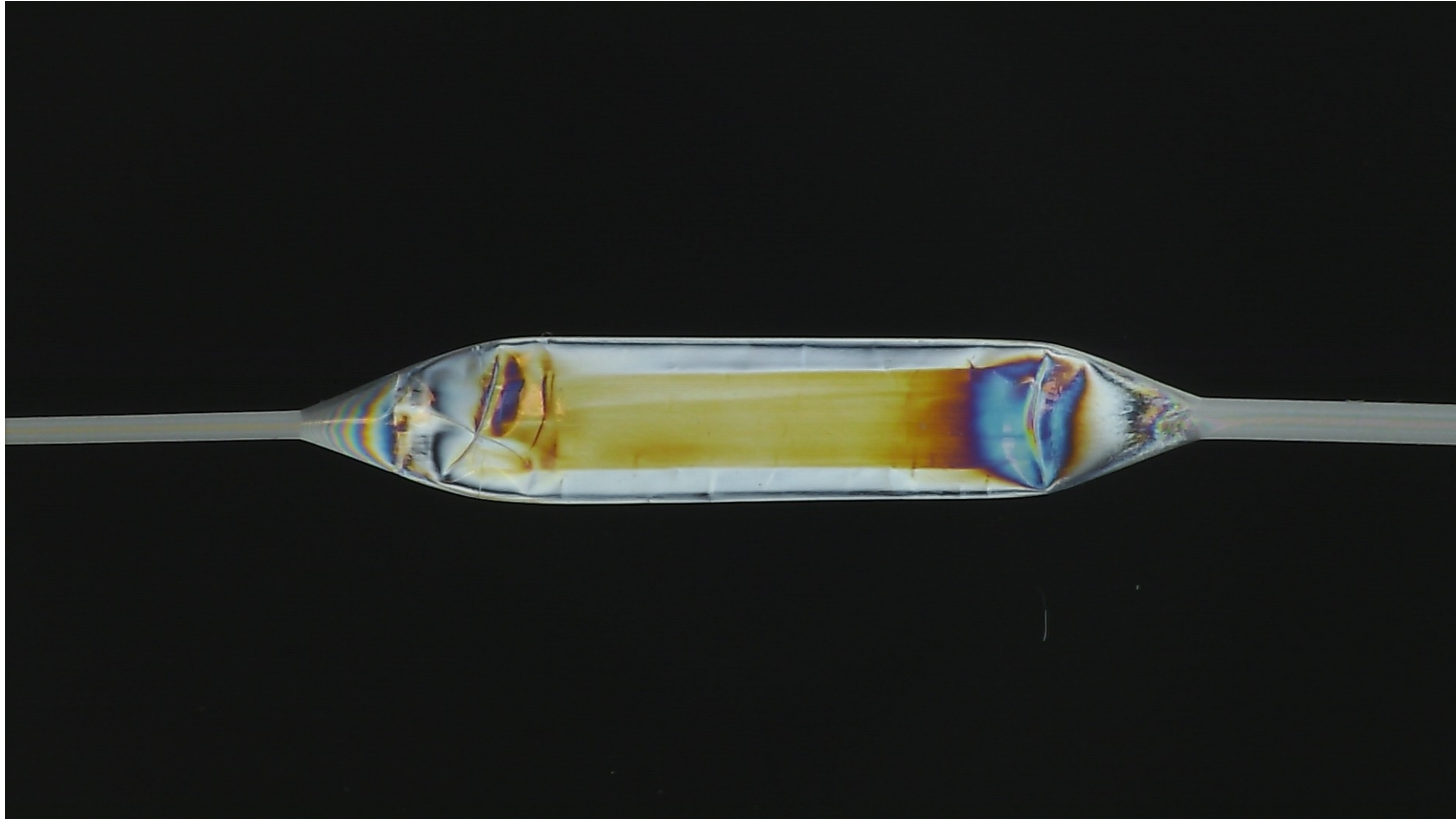


OPTICAL INSPECTION SYSTEMS – SAMPLE IMAGE



20x zoom with +5 close-up RingLight LED Illumination

OPTICAL INSPECTION SYSTEMS – SAMPLE IMAGE



15x zoom Darkfield Illumination with Polariser

OPTICAL INSPECTION SYSTEMS – EASYVIEW

- Crisp Full HD video with powerful 30x optical Zoom
- Easy to setup and to operate
- Built in control unit
- Less clutter – same image quality
- For all kind of Optical inspection
- 720, 1080p or 4K
- Connection via Component or HDMI for full modularity



EasyView

OPTICAL INSPECTION SYSTEMS – SAMPLE IMAGE



20x zoom with +5 close-up RingLight LED Illumination

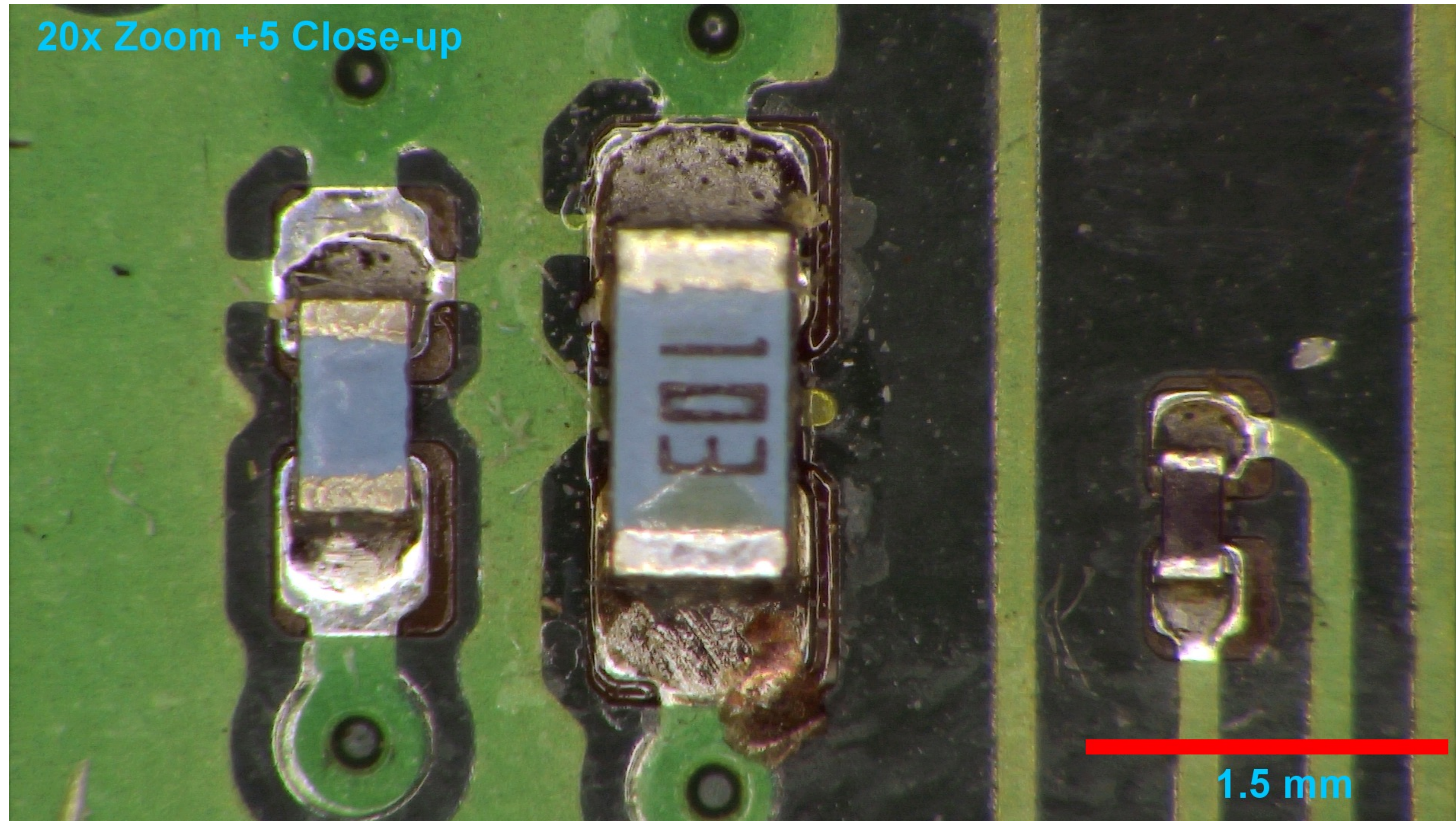
OPTICAL INSPECTION SYSTEMS —FREESIGHT



- Clutter-free working space with clear viewing of the monitor due to higher Working Distance
- Excellent Depth of Field
- Maximum comfort ergonomics
- For assembly, small item manufacturing, reparation and re-work.
- Extended 350 to 490 mm Working Distance
- 720, 1080p or 4K
- Connection via component or HDMI for full modularity

FreeSight

OPTICAL INSPECTION SYSTEMS – SAMPLE IMAGE



20x zoom with +5 close-up RingLight LED Illumination

OPTICAL INSPECTION SYSTEMS – MHD and WHD



- Clutter-free working space with clear viewing of the monitor
- Excellent Depth of Field
- Maximum comfort ergonomics
- Extra long Working Distance, up to 1200 mm
- Perfect for inspection of big items

OPTICAL INSPECTION SYSTEMS – SAMPLE IMAGE



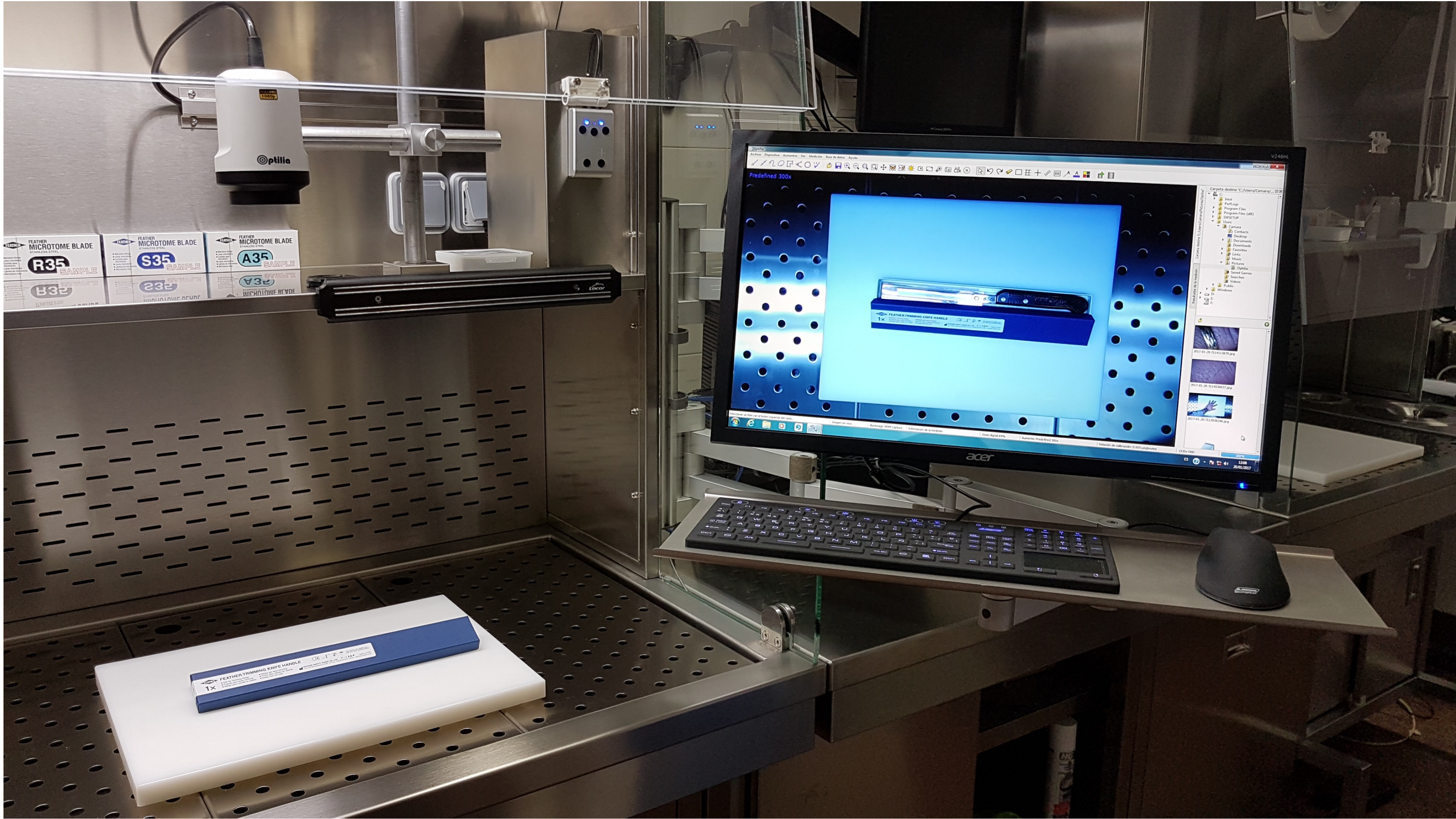
20x zoom with standard lens Ambient light

OPTICAL INSPECTION SYSTEMS – APPLICATION



The Camera positioned over conveyor after Pick & Place

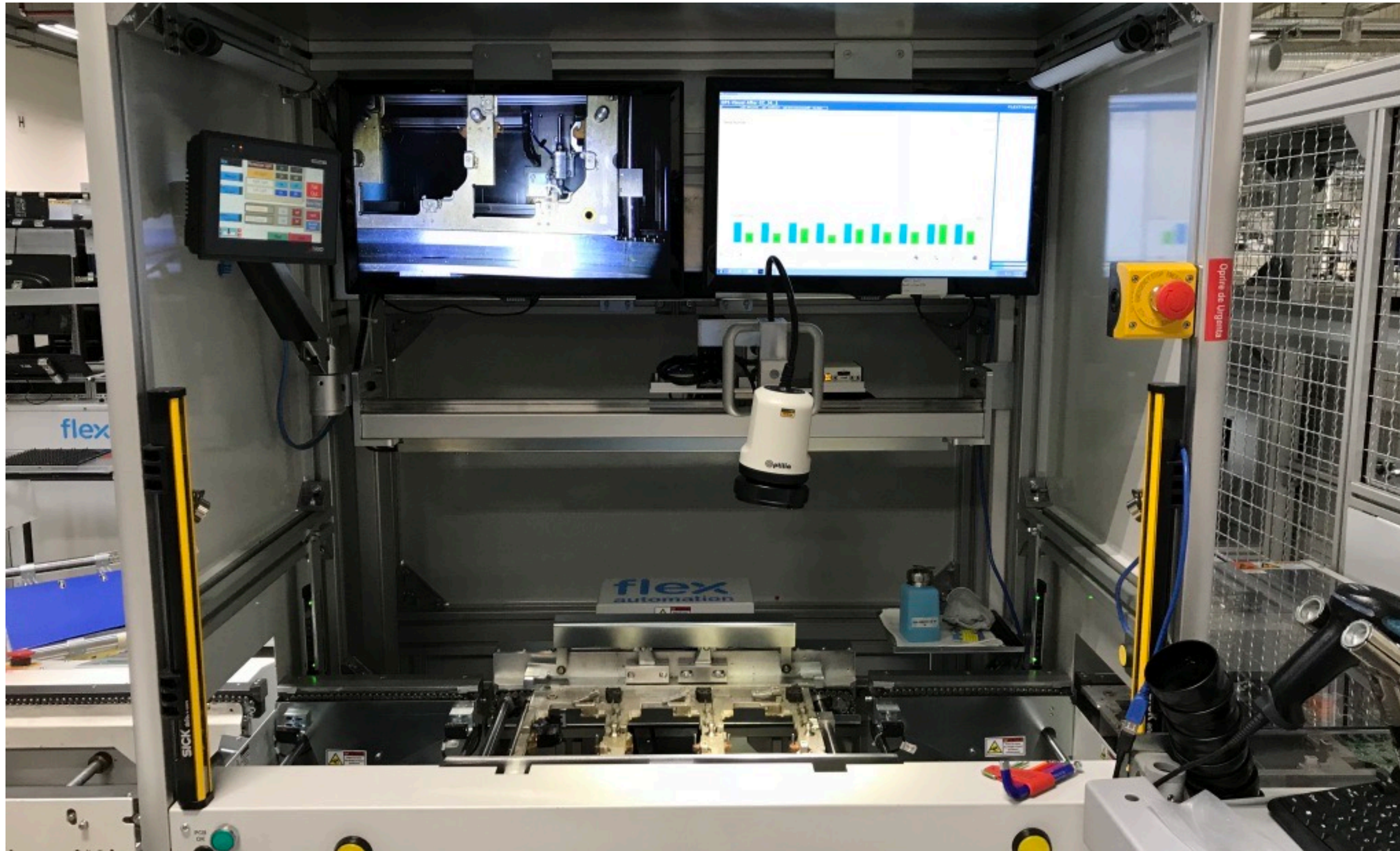
OPTICAL INSPECTION SYSTEMS – APPLICATION



Pathology grossing station with built in M30X



OPTICAL INSPECTION SYSTEMS – APPLICATION



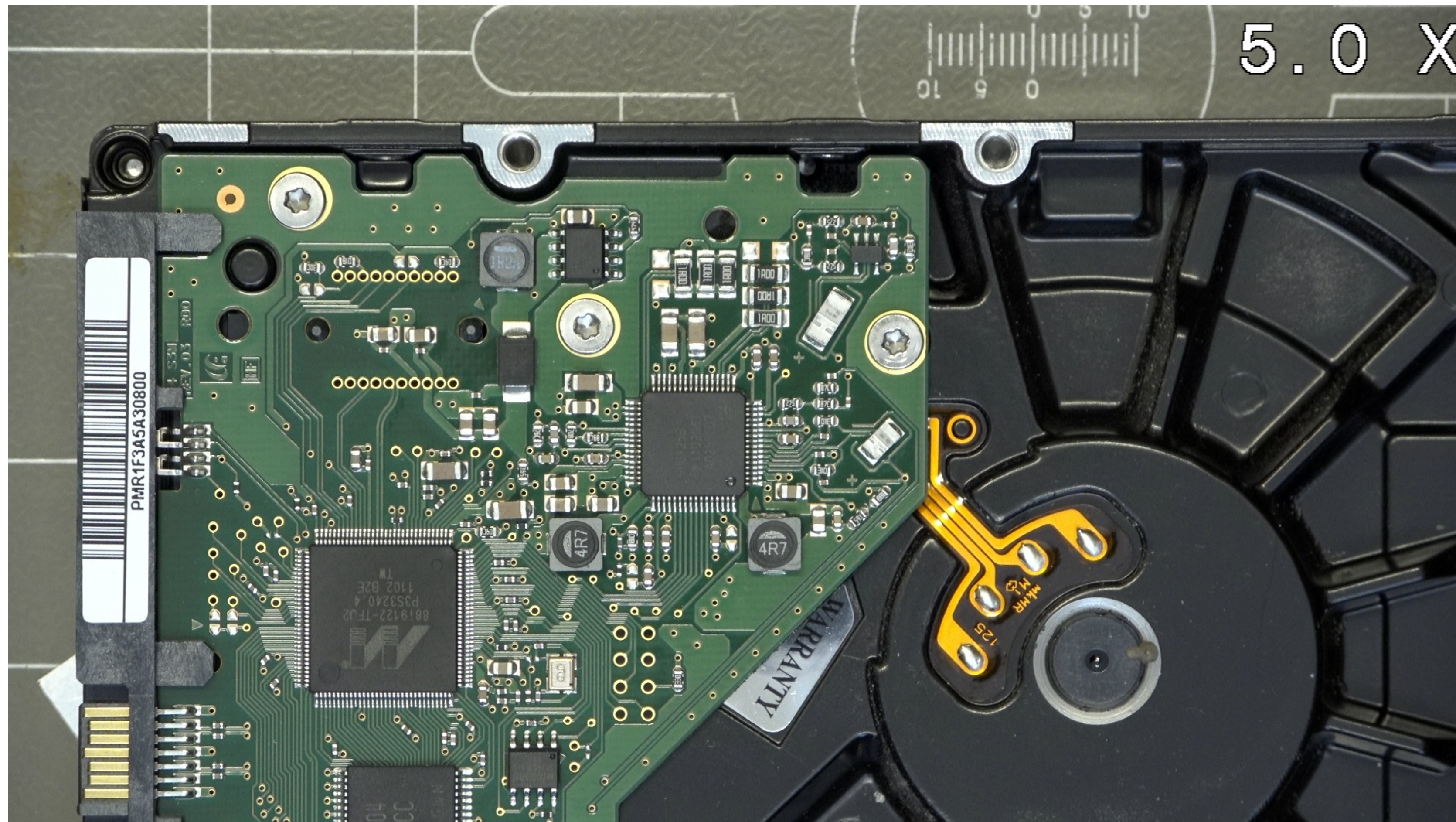
Manual inspection station at Flextronics – M30X

OPTICAL INSPECTION SYSTEMS – APPLICATION



Manual inspection station with W30X

OPTICAL INSPECTION SYSTEMS — 4K SAMPLE IMAGE



OPTICAL INSPECTION SYSTEMS – ACCESSORIES

STANDS



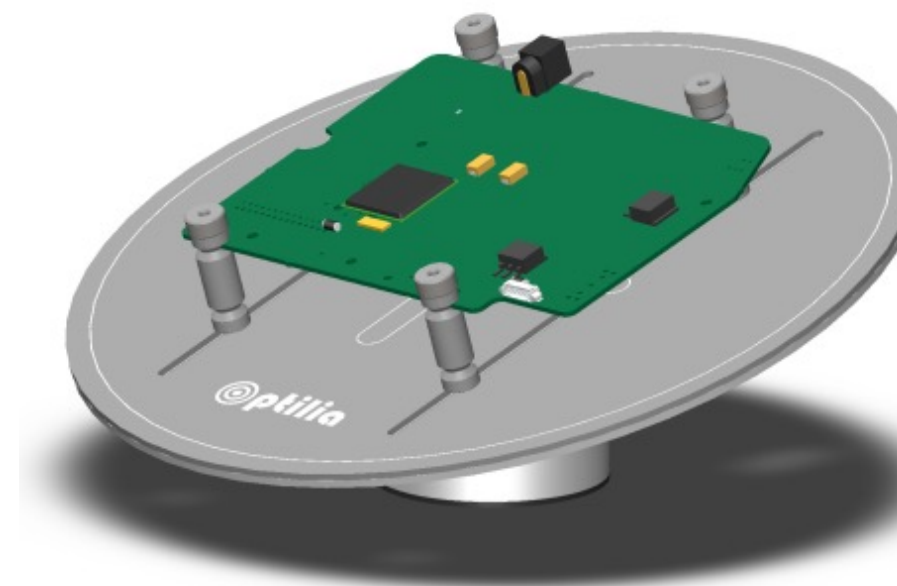
TABLES



LIGHTING OPTIONS

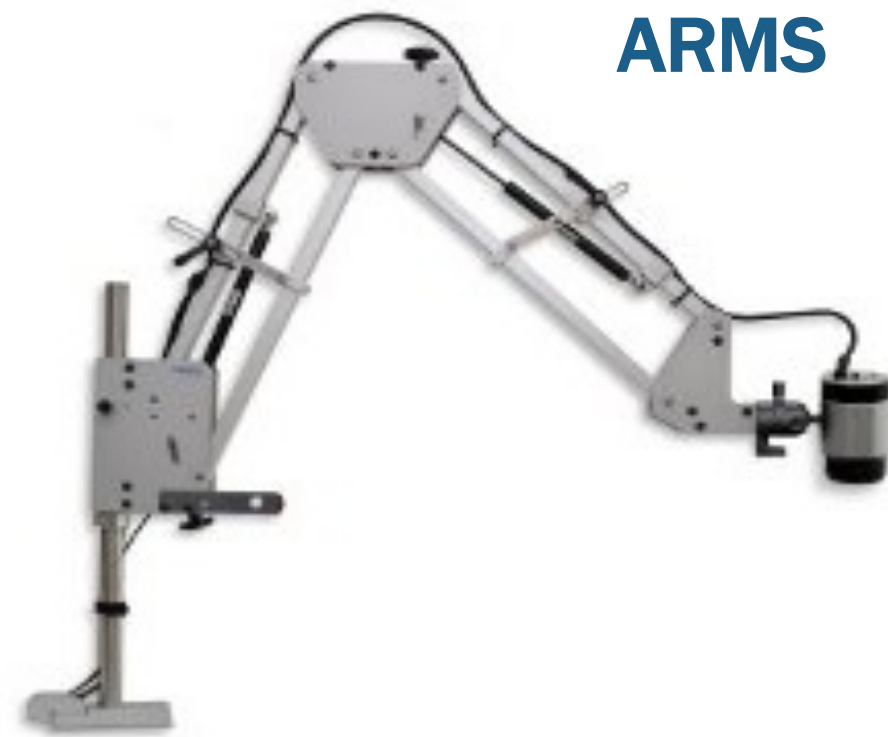


**TILT
TABLES**



OPTICAL INSPECTION SYSTEMS – ACCESSORIES

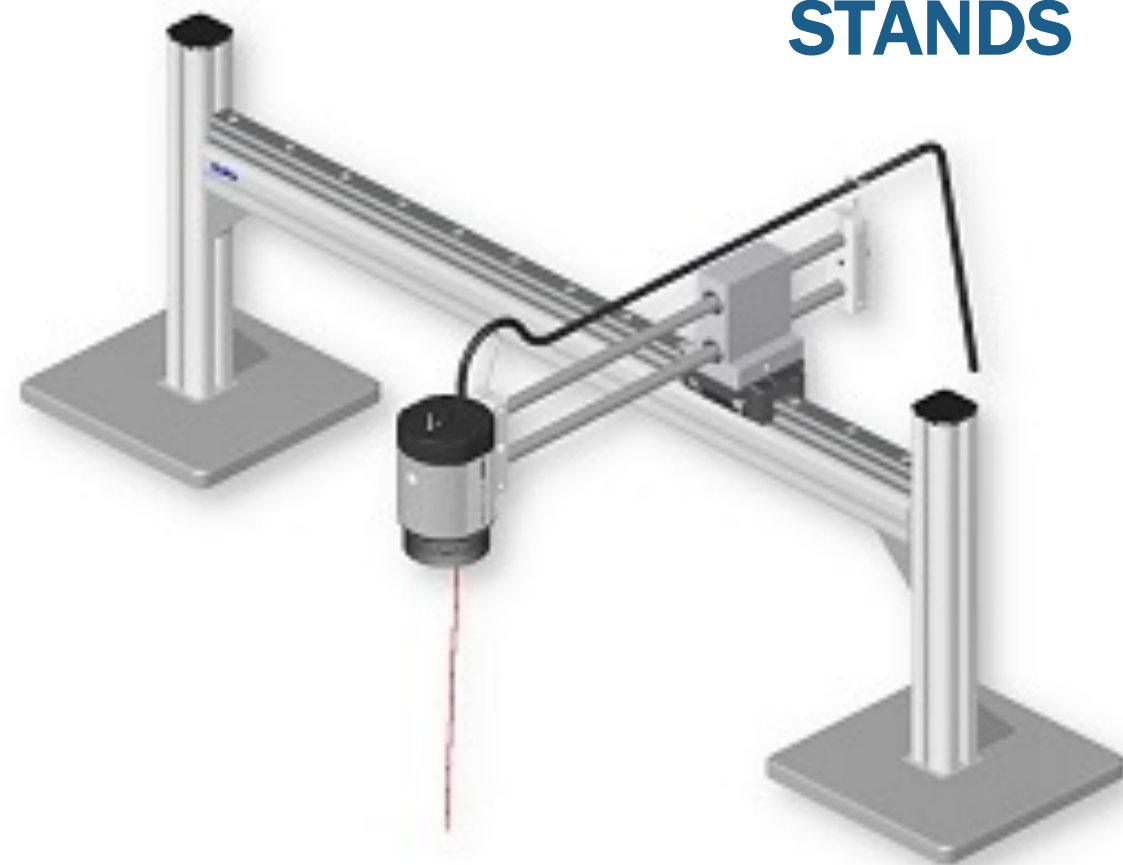
ARMS



**TABLE
MOUNTED
OPTIONS**



**BENCH TOP
STANDS**



**INLINE
STANDS**



OPTICAL INSPECTION SYSTEMS – SAMPLE IMAGE



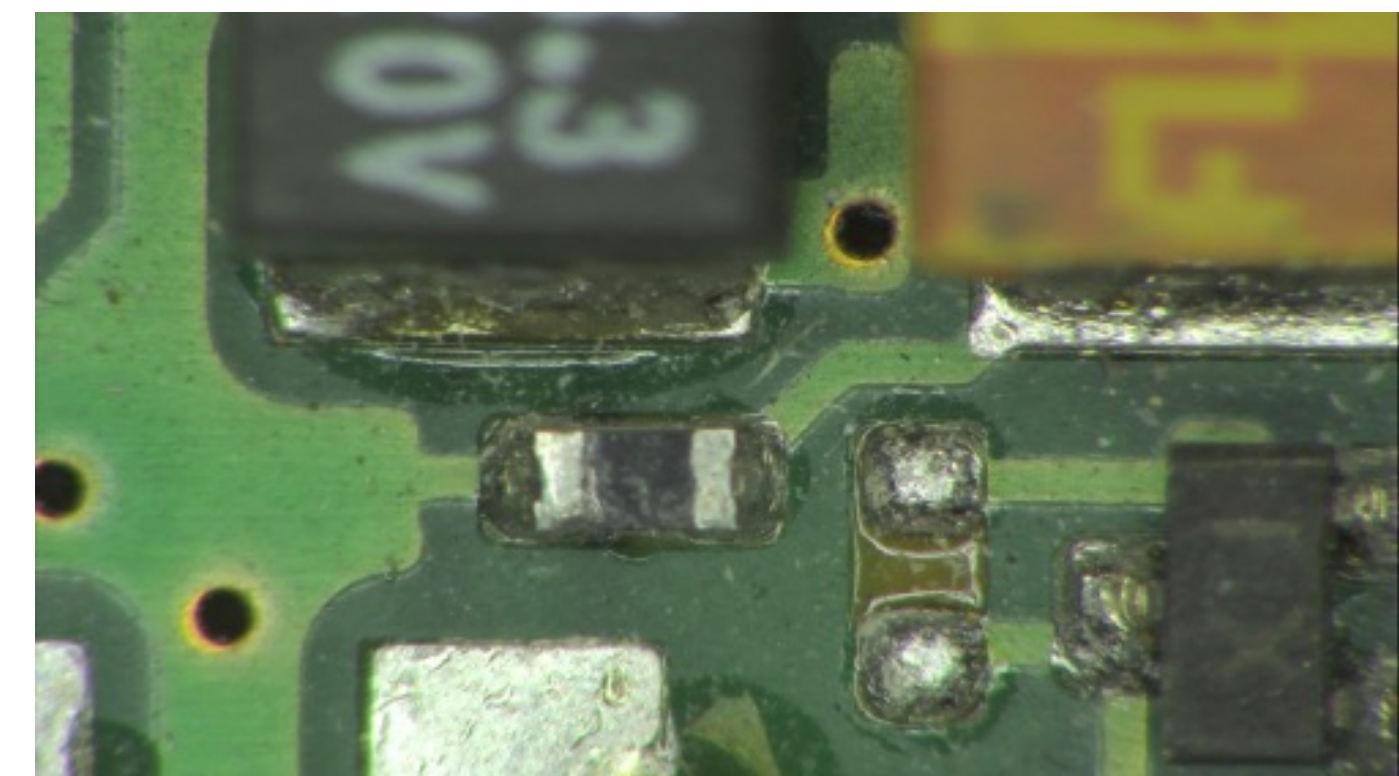
OPTICAL INSPECTION SYSTEMS – ADD ON LENSES



- 30X with +2 - 52 X magnification
- 30X with +5 - 95 X magnification
- 30X with +10 - 144 X magnification
- 30X with +10 and +5 - 196 X magnification



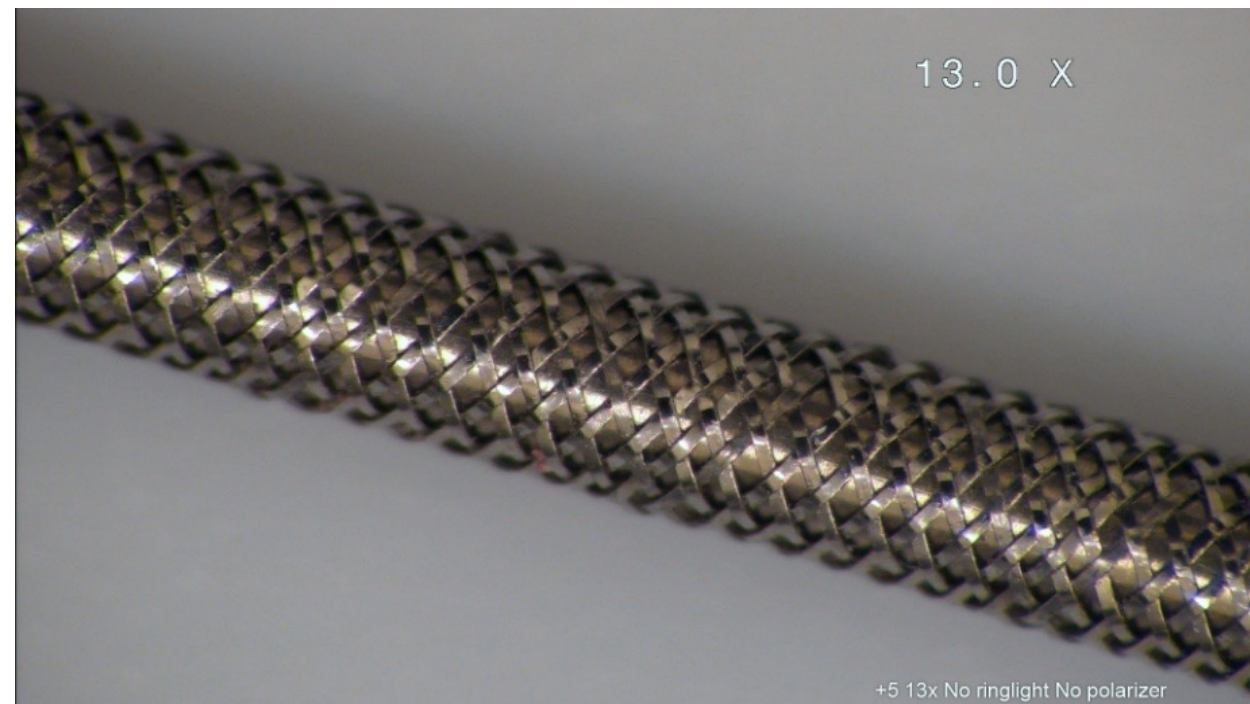
W30x, standard lens



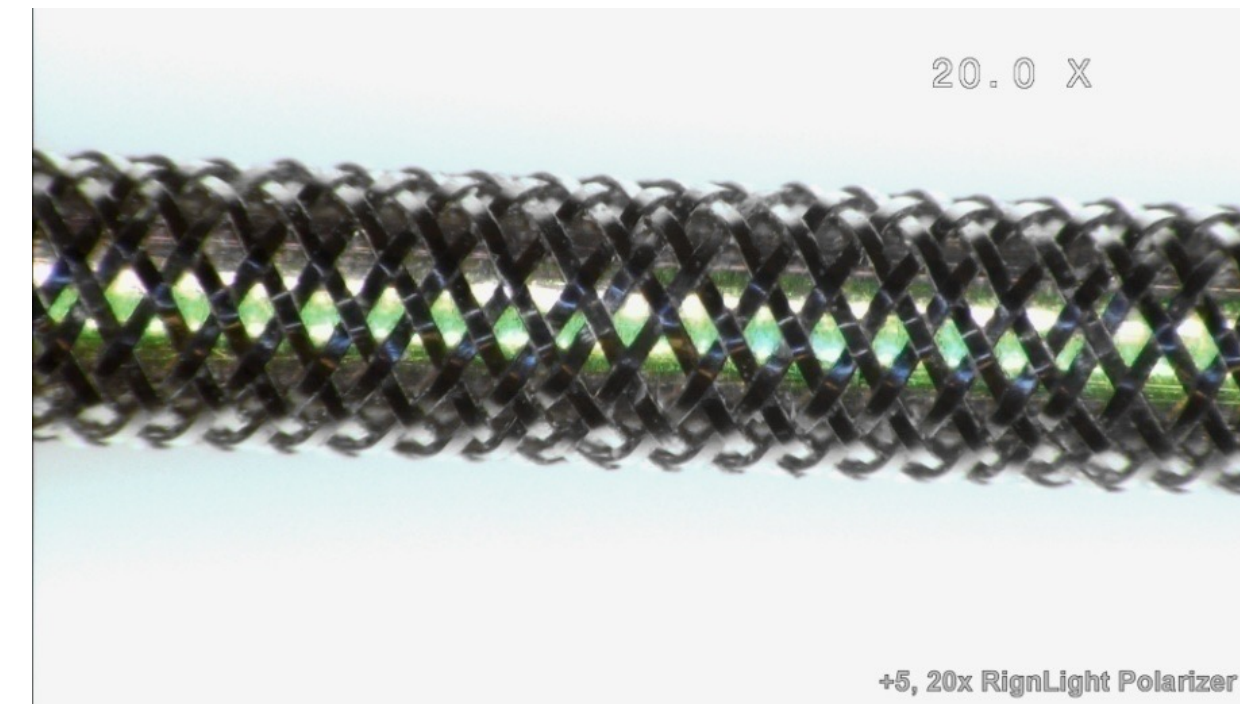
W30x, standard lens +5 Close up

- Several Close-up Lenses can be stacked for more optical power!
- Specially designed for best Colour and highest Image Quality!

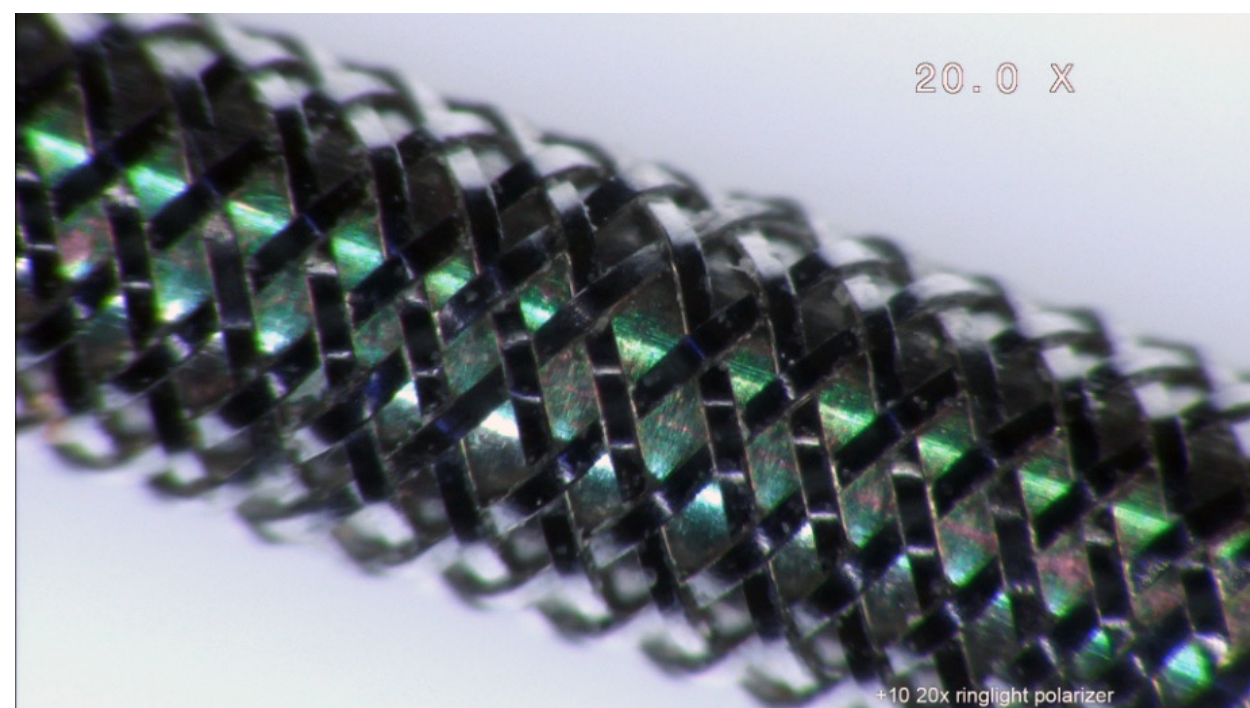
OPTICAL INSPECTION SYSTEMS —ILLUMINATION EFFECTS



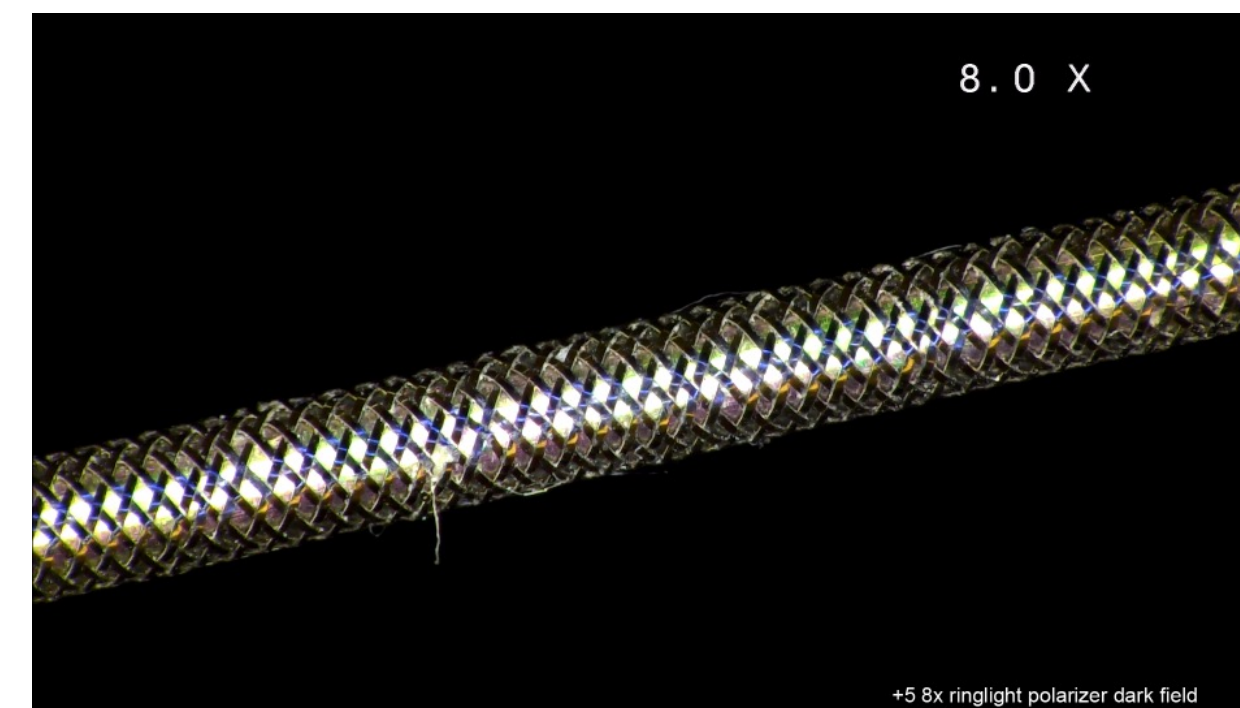
**13x Zoom +5,
Ambient office light!**



**20x Zoom +5, with
Ring light & Polarizer!**



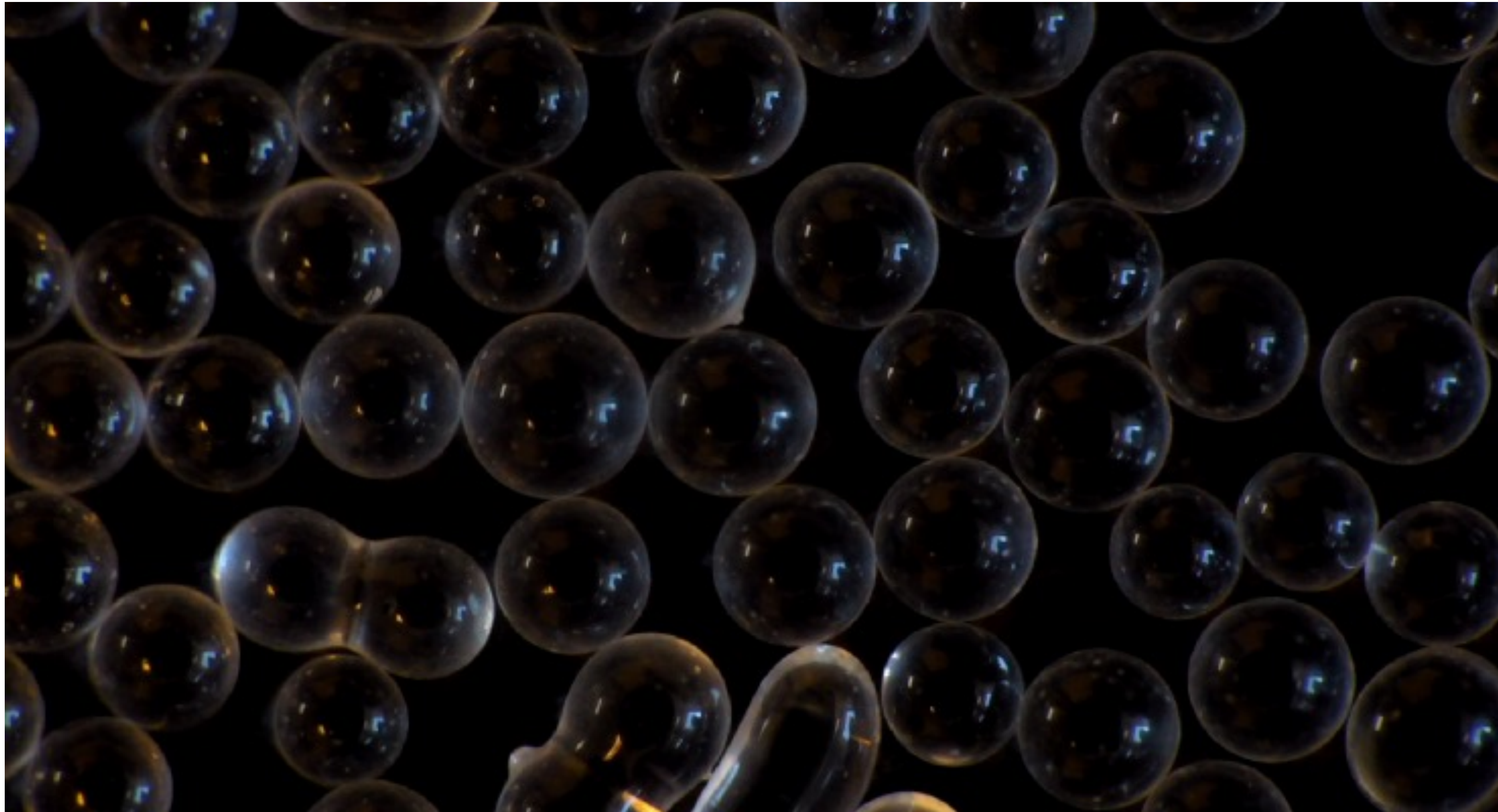
**20x Zoom +10, with
Ring light & Polarizer!**



**8x Zoom +5, with Dark
Field & Ring light!**

**All images taken by W30x-HD, same sample
Tube f1.65 mm**

OPTICAL INSPECTION SYSTEMS – SAMPLE IMAGE



W30X with +5 and +10 lens = 196X magnification.

OPTICAL INSPECTION SYSTEMS – SOFTWARE



- **OP-006 120, OptiPix Light.** Display/Capture/Line measurement Included in Frame Grabbers.
- **OP-006 119, OptiPix Standard.** Display/Capture/Geometrical Measurements/Overlay. Micrometer Calibration Scale included.
- **OP-006 121, OptiPix Advanced with database.** Display/Capture/Geometrical Measurements/Overlay/Database/Reporting. Micrometer Calibration Scale included.



**1080HD Frame grabber with
Software for image capture.**

OPTICAL INSPECTION SYSTEMS – IMAGE CAPTURE



Full HD
1080

- HDMI output
- Dual picture display via USB output as reference
- Overlay lines, patterns, annotations or CAD drawings on live image
- “Digital Graticule”
- Foot switch for hand-free operation
- Capture 32 GB of Full HD still pictures on removable SD-card
- RGB to HDMI converter

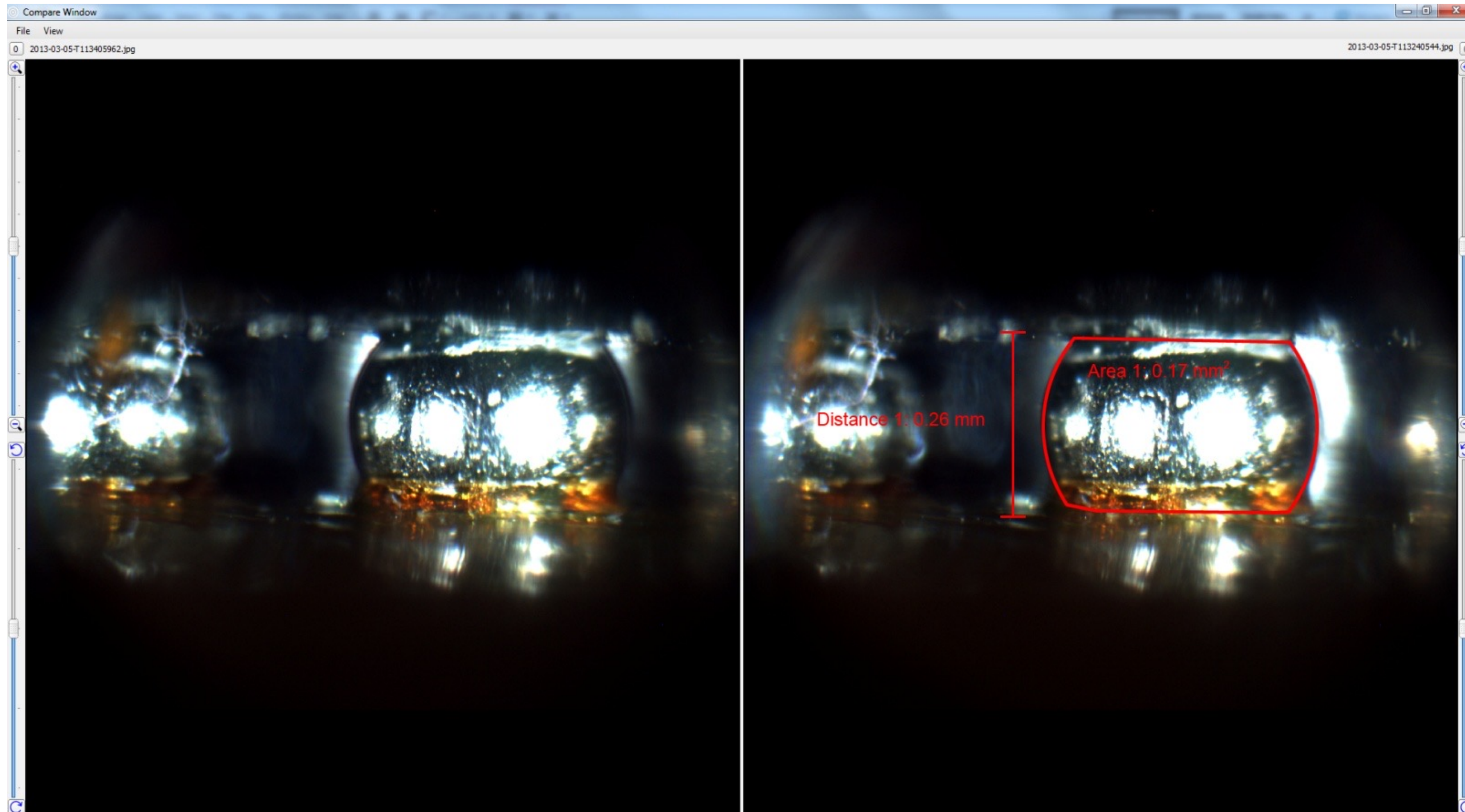
OPTICAL INSPECTION SYSTEMS – SAMPLE IMAGE



30x zoom with standard lens

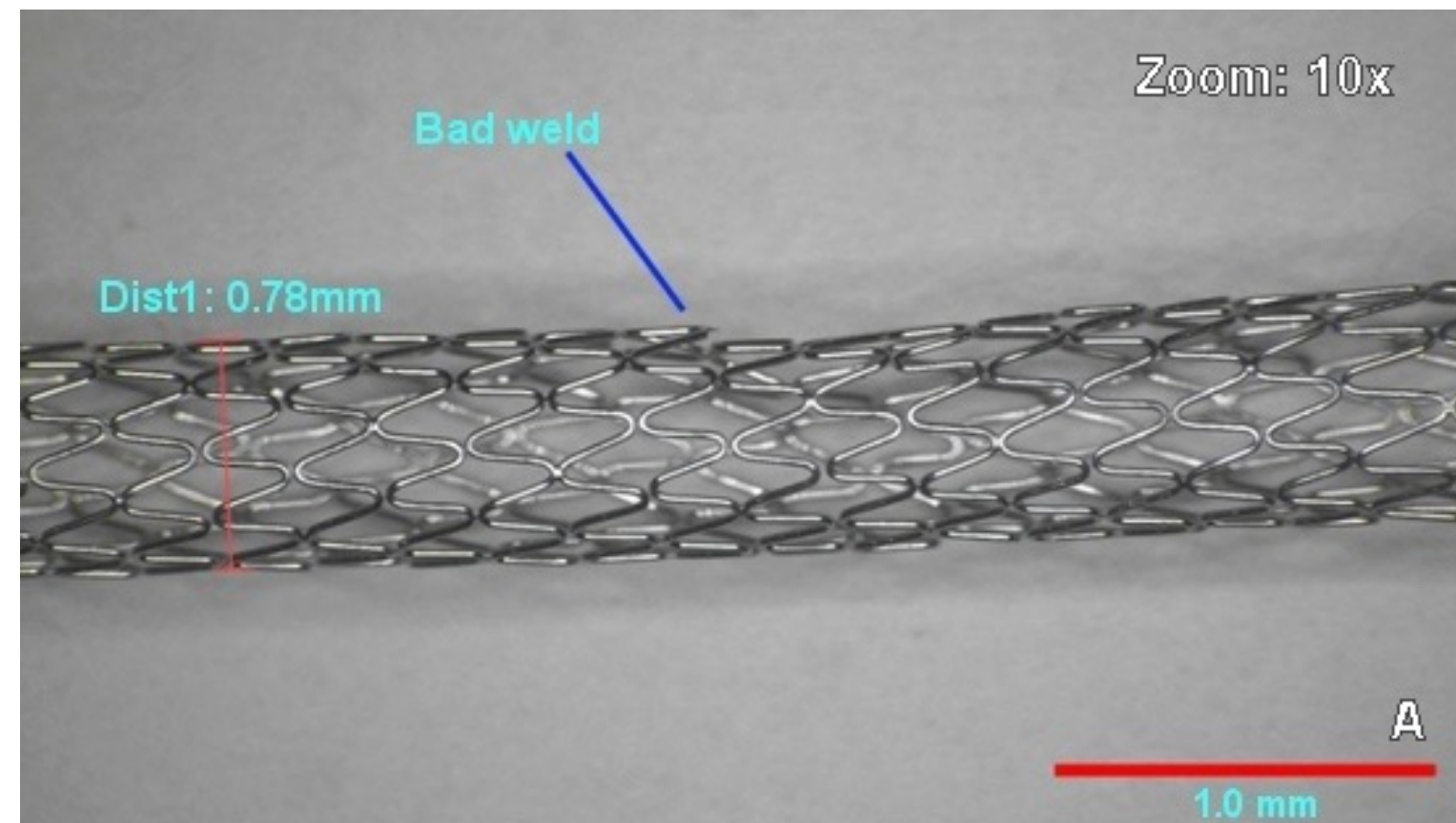
OPTICAL INSPECTION SYSTEMS – OPTIPIX

Image comparison

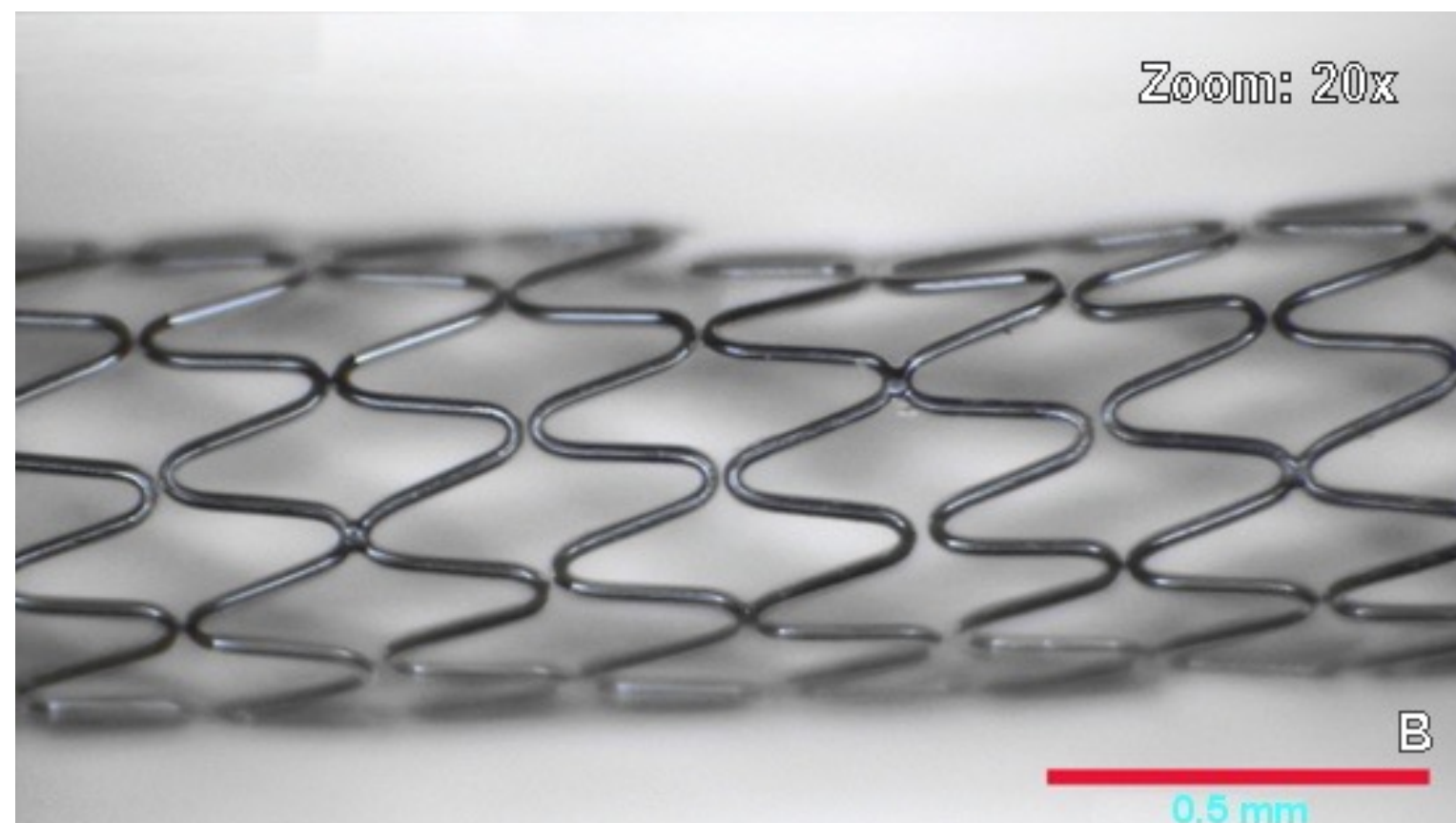


- OptiPix enables you to view and compare the live image side by side with a reference image.

OPTICAL INSPECTION SYSTEMS – OPTIPIX

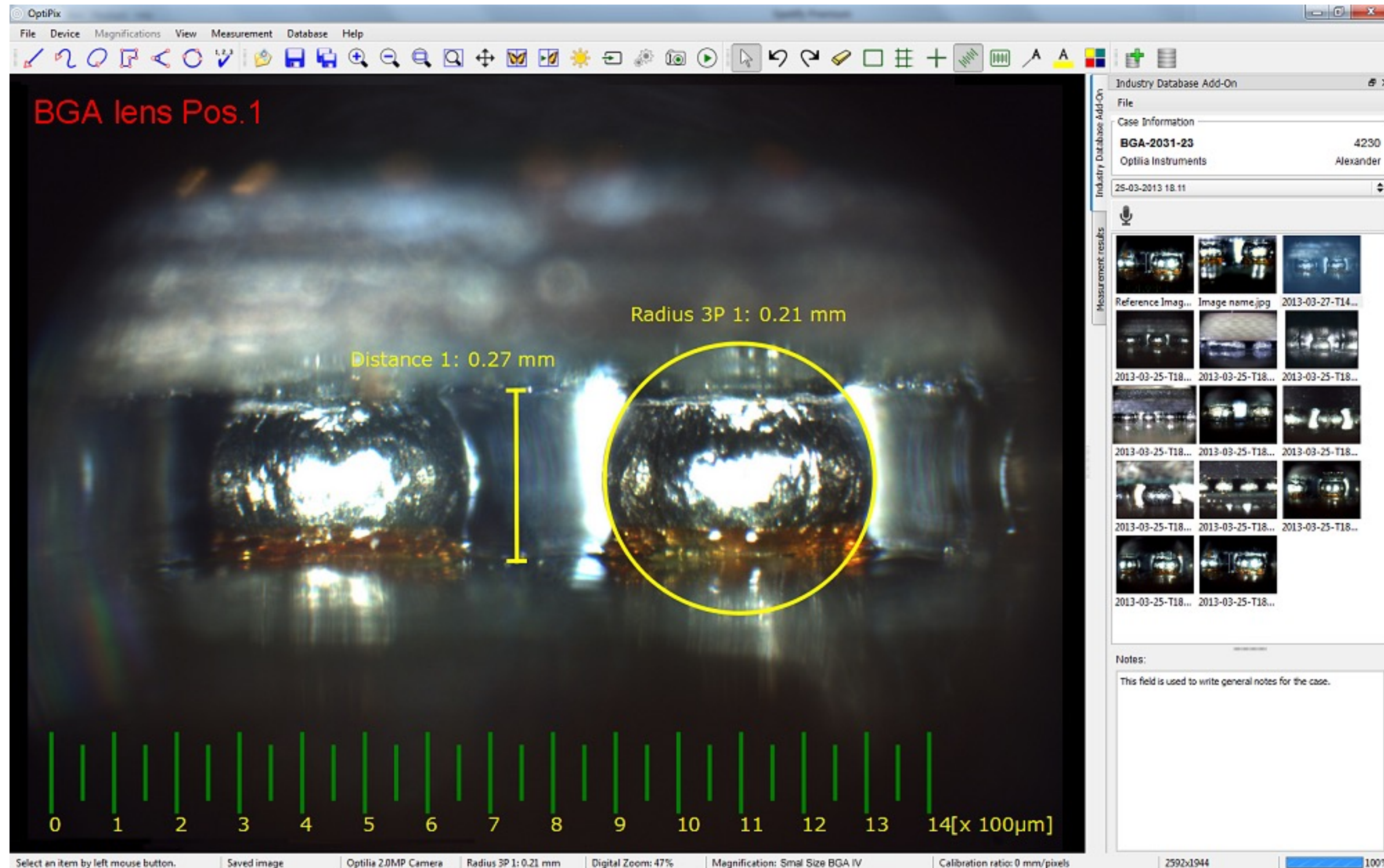


**W30x with +10
lens, 10x zoom
RingLight**



**W30x with +10
lens, 20x zoom,
RingLight**

OPTICAL INSPECTION SYSTEMS – OPTIPIX



OPTICAL INSPECTION SYSTEMS – OPTIPIX



CB Certificate
Verified by Optilia

2013-03-25

Case Name: BGA-2031-23	Case ID: 4230	Company: Optilia Instruments	Inspection Date: 25-03-2013 18.11
Used System: Flexia HM		Manager: Hazar	
Notes: This is the front page of the report. The selected images shown below has its own page. This Report has for example 17 page (front page + 16 images). Every data that is connected to the image such as measurements, comments, magnifications, calibration et.c. are visible on each image page. This field is used to write general notes for the case. The two titles above "Used System" and "Manager" are customisable and it is possible to add additional five customisable fields (maximum 7).			

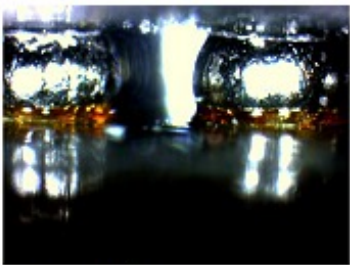
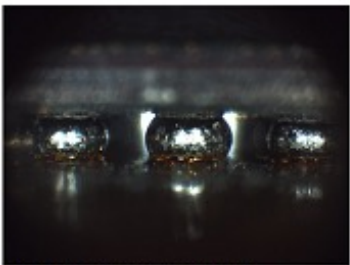
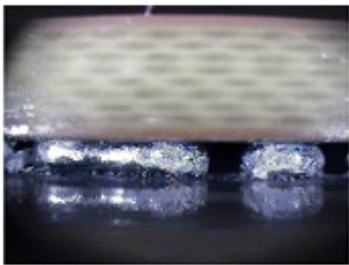


Image name.jpg



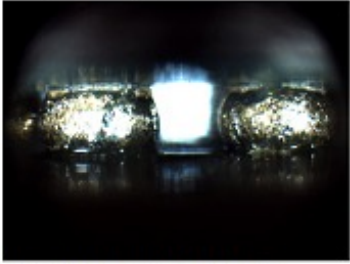
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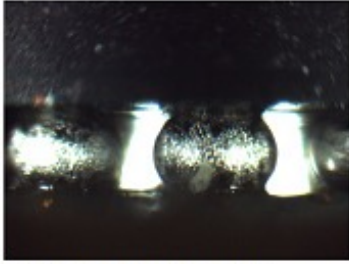
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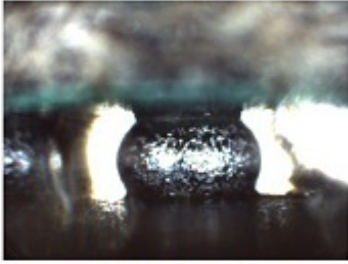
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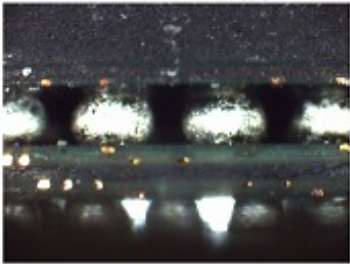
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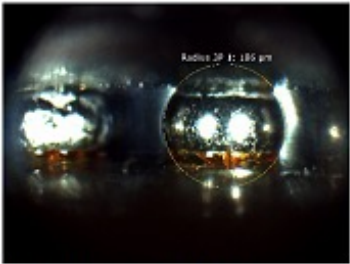
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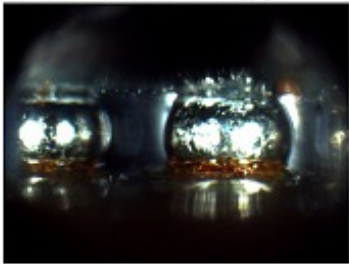
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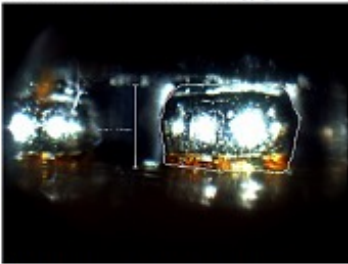
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2013-03-25-T181431571.jpg



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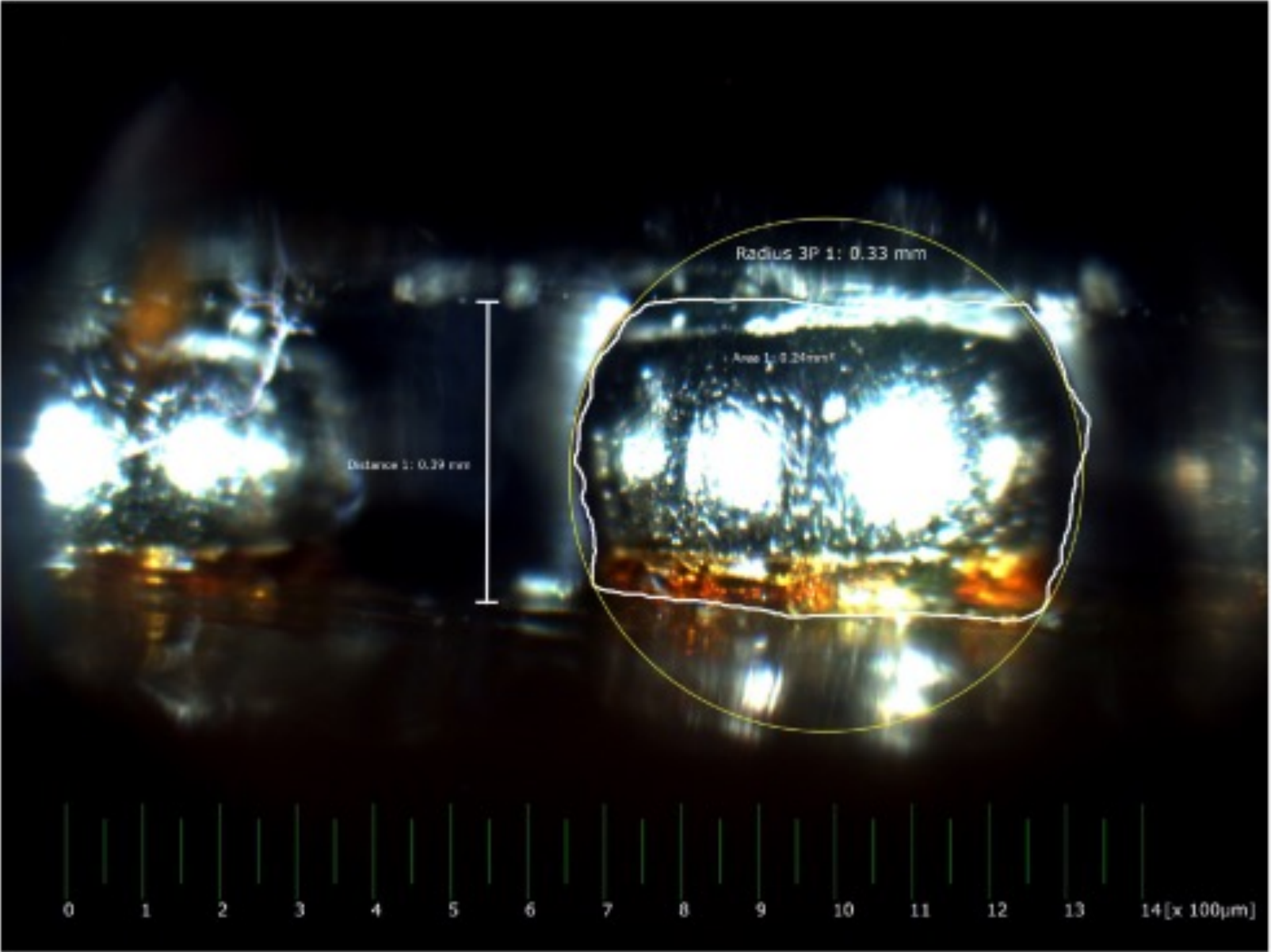


2013-03-25-T181300431.jpg

Alexander
Printed name of Operator


Signature of Operator

Reference Image.jpg, Optilia Flexia BGA Small Size Lens



Measurement Results

Tool	Physical quantity	Value	Unit
Distance 1	Length	0.39	mm
Area 1	Perimeter	2	mm
	Area	0.24	mm²
Radius 3P 1	Radius	0.33	mm

Comments

This image is used as reference image to verify BGA Package.



OPTICAL INSPECTION SYSTEMS – SAMPLE IMAGE



30x zoom with +10 lens

OPTICAL INSPECTION SYSTEMS – ADVANTAGES

- Less tiring than looking under binocular based cameras / ocular microscopes
- Longer working distances no risk of board contact. Crucial for efficient assembly, reparation and rework
- Auto focus optics ‘frees up’ the hands and allows quick inspection of objects at different heights and magnifications
- Larger depth of field for easier and quicker work
- Powerful optical zoom 1x to 30x produces “large field” to “high magnification” images
- Remote control of magnification, focus, brightness, Iris etc. provides flexibility to different inspection objects and lighting conditions
- Live image overlay for displaying graticules, cross-line, zoom factor
- Foot switch allows hand free control of zoom image capture etc.
- 4 K or Full HD 1080p resolution 60 fps video with no lag for easy optical inspection
- Product options = modularity

OPTICAL INSPECTION SYSTEMS — RELAX HAVE A COFFEE



OPTICAL INSPECTION SYSTEMS

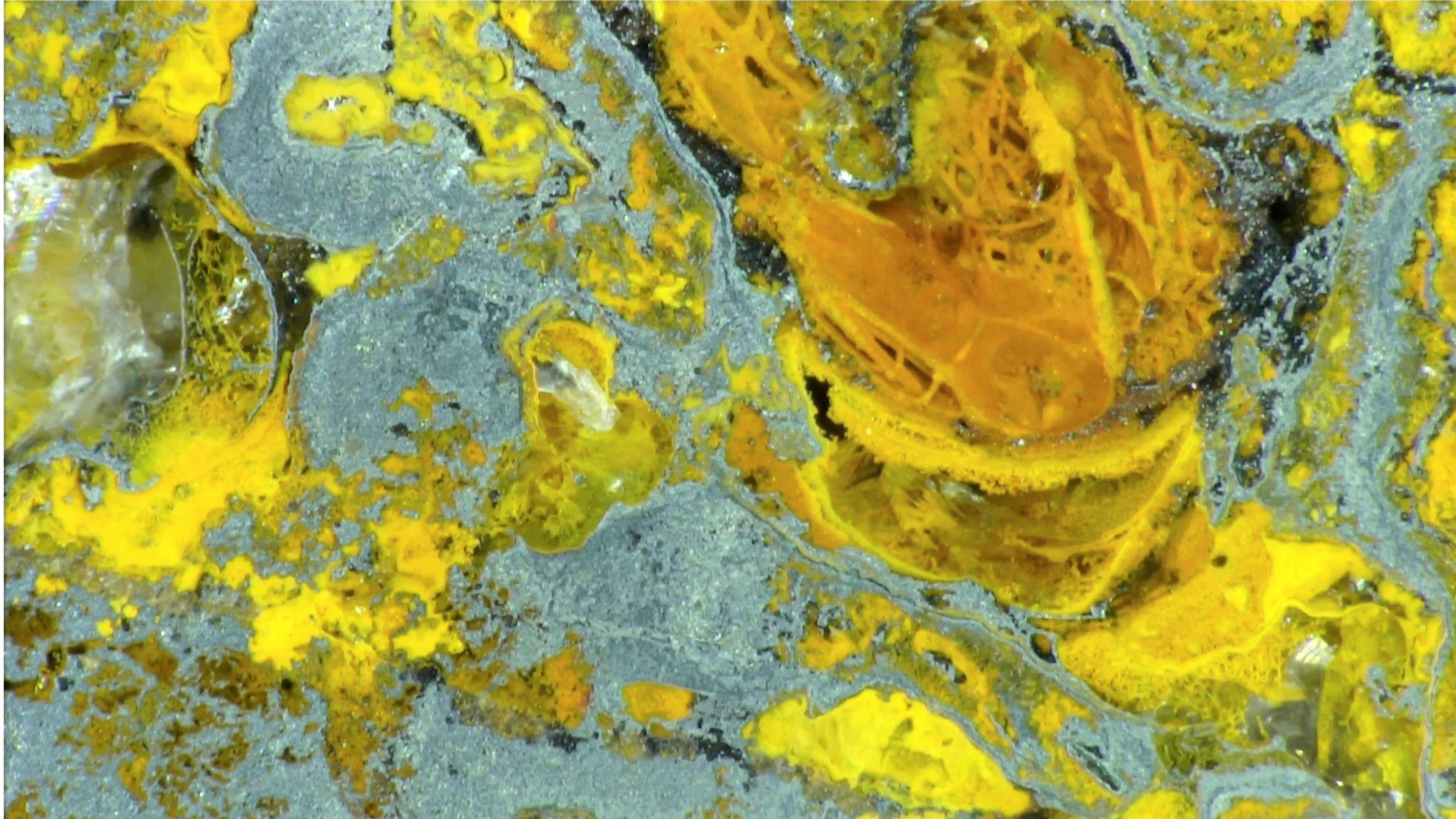
Performance	HD Video	Stereo Microscope
Ergonomic Inspection	Excellent	Poor
Large Working Distance	Excellent	Good
Large Depth of Focus	Excellent	Good
Large Field Of View	Excellent	Good

Application	HD Video	Stereo Microscope
Optical Inspection	Excellent	Excellent
In-line Inspection	Excellent	Poor
Video / Image Recording	Excellent	Optional
Documentation	Excellent	Optional
Repair / Rework	Good	Excellent
Assembly Work	Excellent	Good

OPTICAL INSPECTION SYSTEMS

- **Best image quality and true colour** resulting from Optilia's superior optics and SONY's Exmor® image sensor, facilitating more accurate and reliable inspection tasks
- **Fast Autofocus** allows quick inspection of objects at different heights and magnifications
- **Extended 500mm working distances** in Optilia's FreeSight models provides clutter-free working space with clear viewing of the monitor
- **Full HD 1920x1080 still image capture** with Optilia's unique SD-card Capture Device for documentation and communication
- **Dual display of still reference image and live image** of inspected object using Optilia's unique SD-card Capture Device
- **Live Image Overlay** utility for superimposing custom made soft Graticules, Test patterns, CADs, and Scales allows simple and quick dimensional control and geometrical measurement of inspecting parts
- **Modular Camera System Design with SDK** for system integration and flexibility for adaptation according to customer's needs

OPTICAL INSPECTION SYSTEMS — SAMPLE IMAGE



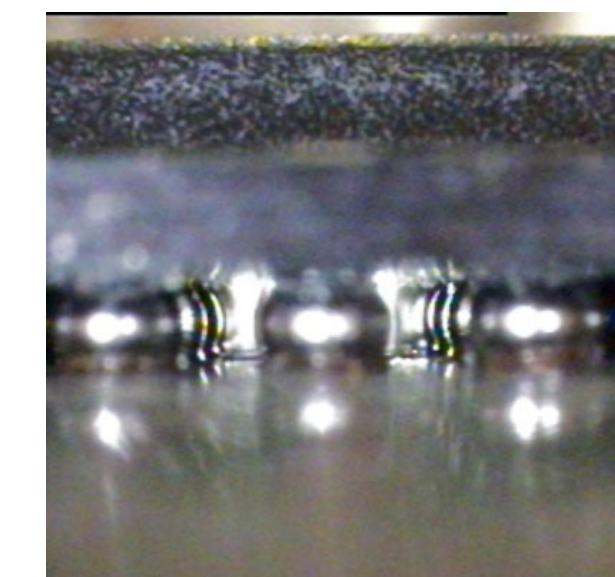
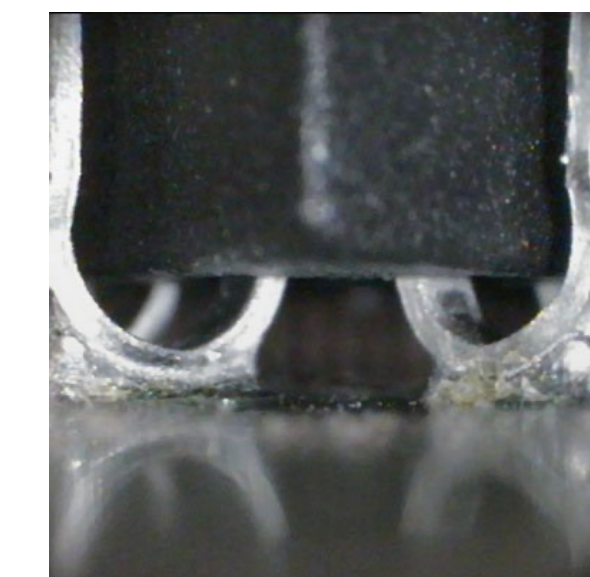
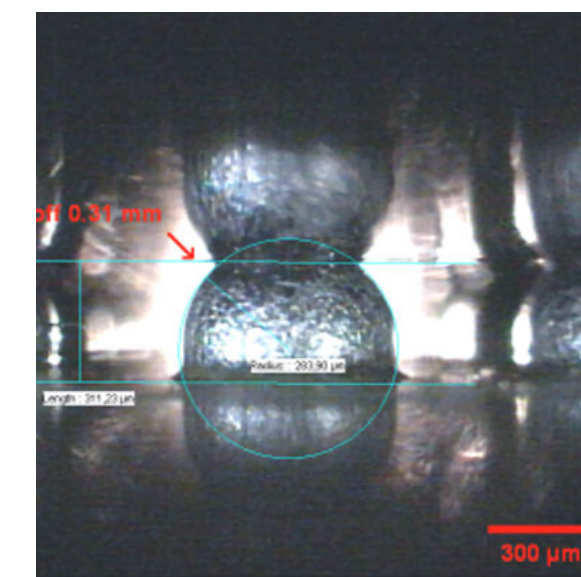
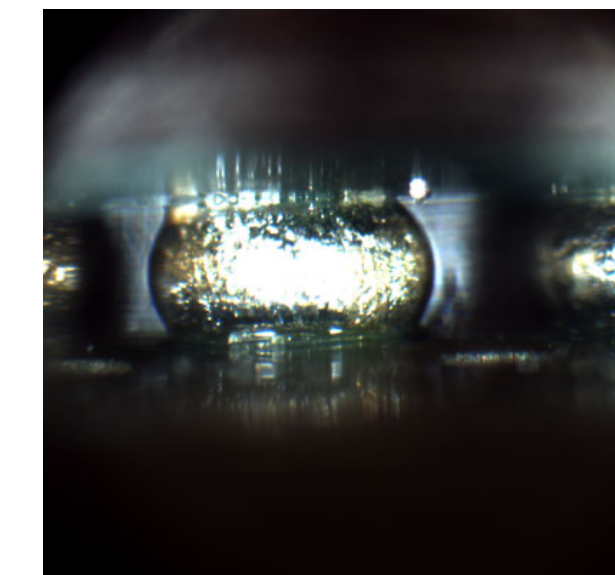
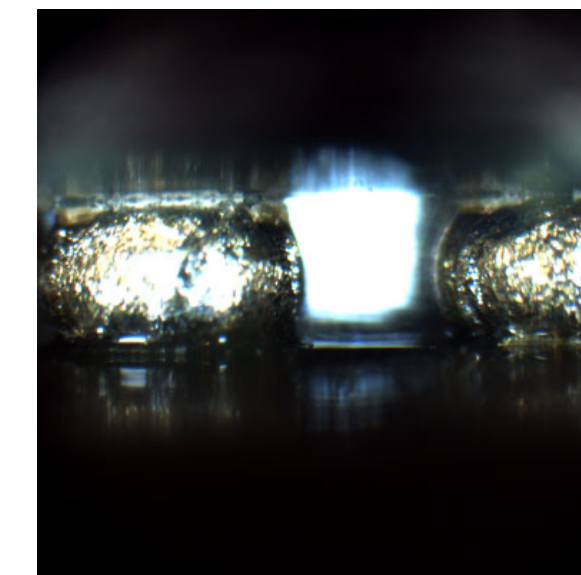
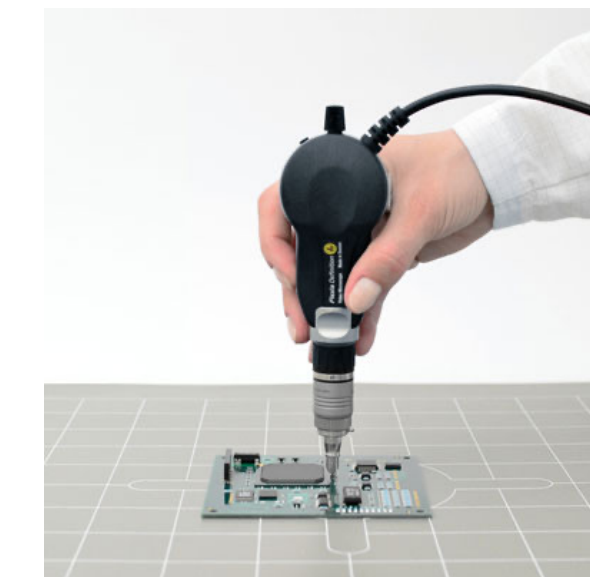
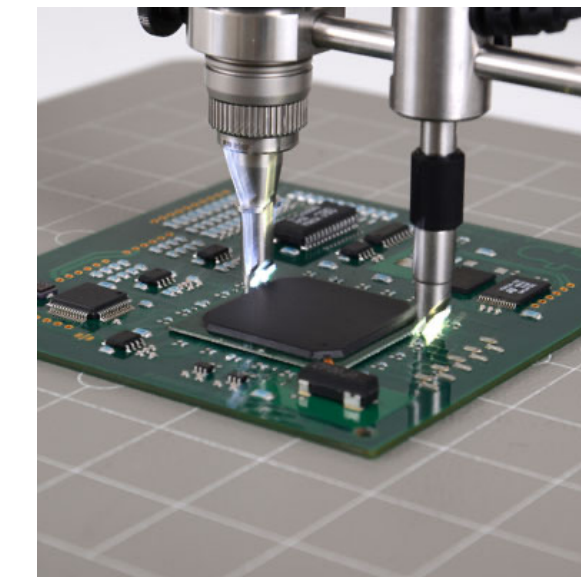
OPTICAL INSPECTION SYSTEMS – APPLICATIONS

- Small items manufacturing
- Electronics production
- Automotive
- Defense industry
- Aerospace
- Medical production
- Quality control
- Welding control
- Forensics
- Pathology
- ETC

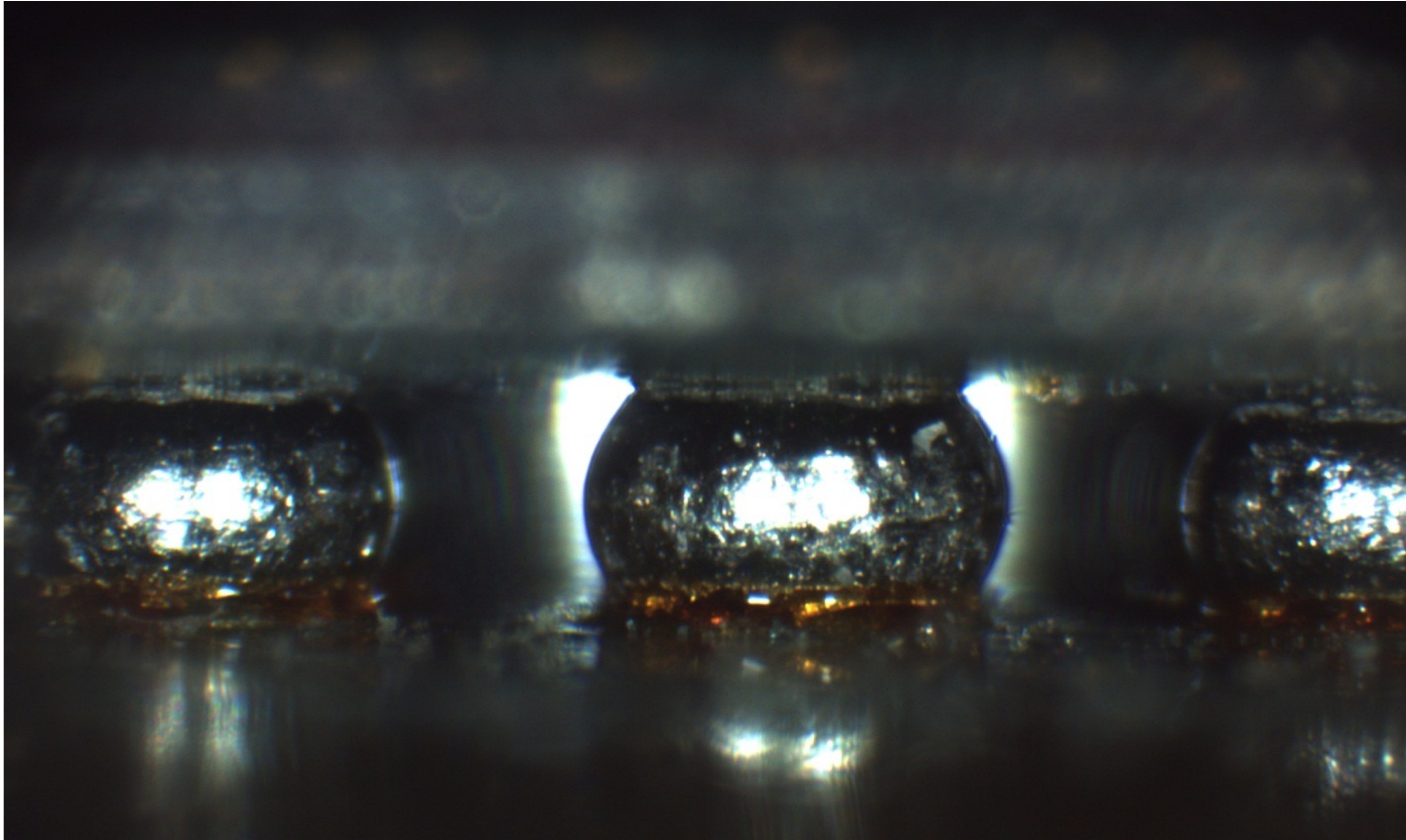
OPTICAL INSPECTION SYSTEMS — BGA/FLEXIA



Flexible BGA and handoperated
inspection



BGA/FLEXIA INSPECTION SYSTEMS — SAMPLE IMAGE



BGA/FLEXIA INSPECTION SYSTEMS

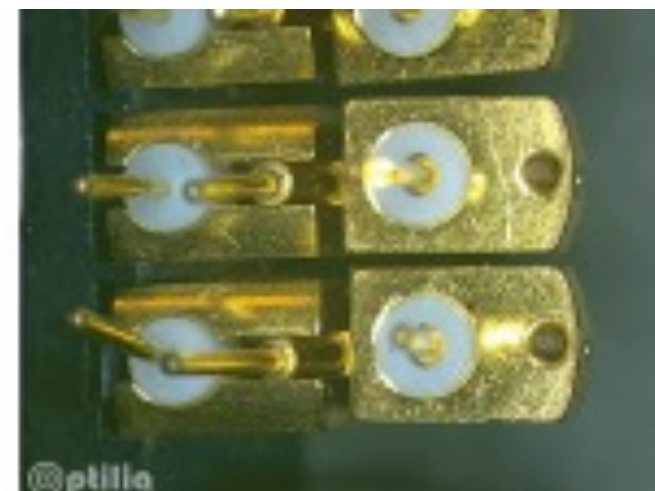
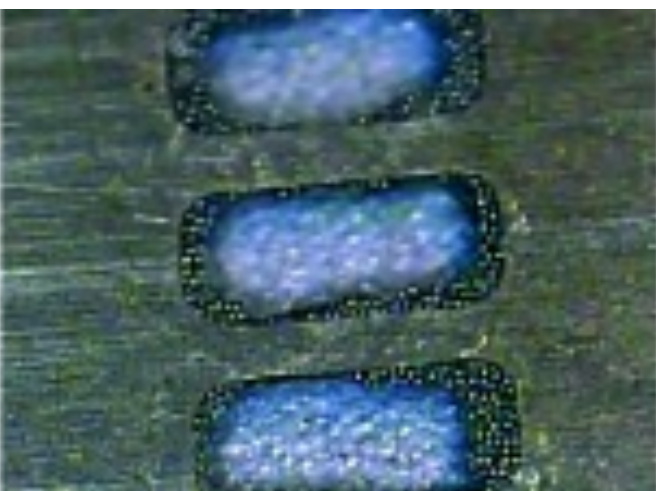
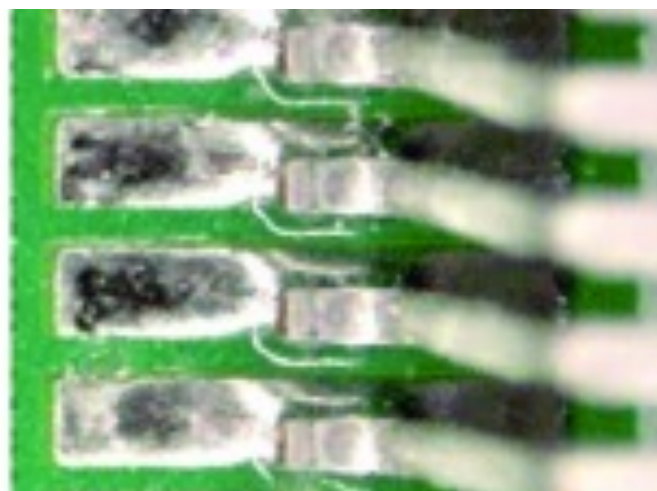
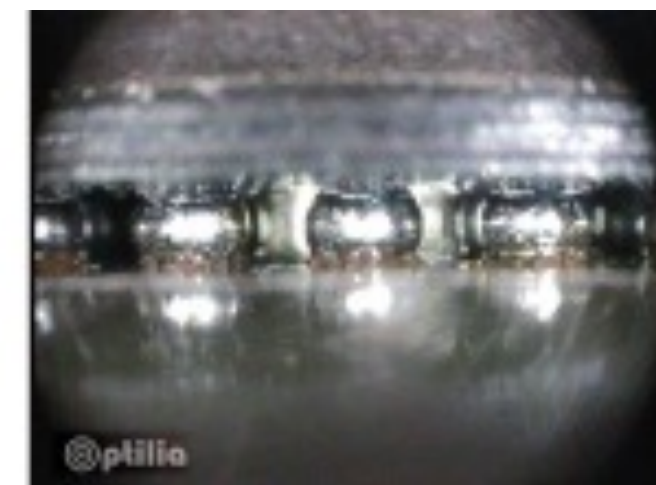
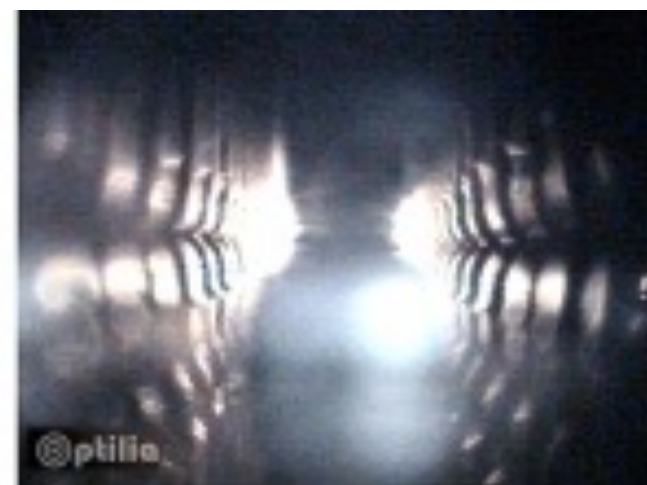
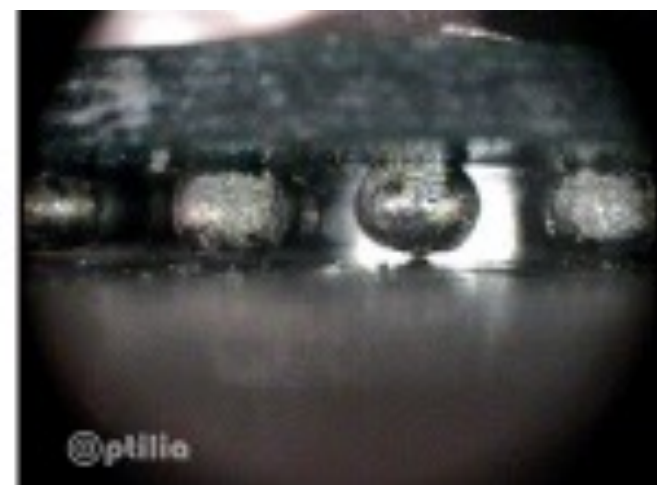
BGA	Optical Inspection	X-ray Inspection
Placement	✓	✓
Bridging	✓	✓
Cold Solder Joints	✓	✓
Reflow Problems	✓	✓
Excess Flux	✓	✗
Contamination	✓	✗
Ball Shape	✓	✓
Voids	✗	✓

PCB	Optical Inspection	X-ray Inspection
Top Inspection	✓	✗
Assembly and Rework	✓	✗

BGA/FLEXIA INSPECTION SYSTEMS

- BGA
- μ BGA as low as 40 microns stand-off
- CSP
- Flip-Chip

- SMD Solder Joints
- Printed Solder Paste
- Assembled PCBs
- Stencil Apertures
- Components, pad, scores, connectors, cables



BGA/FLEXIA INSPECTION SYSTEMS

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

Flexia Video Microscopes



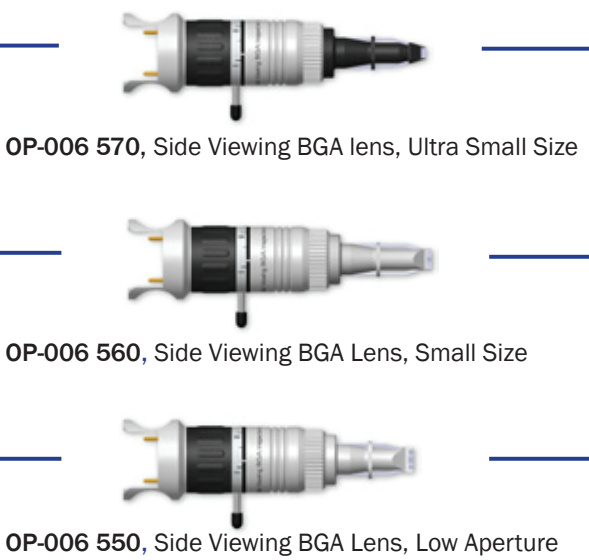
OP-019 197, Flexia Definition Digital 5Mp camera, HM
OP-019 191, Flexia Definition Digital 5.0Mp camera
OP-019 152, Flexia Definition Analogue PAL, HM
OP-019 001, Flexia Definition Analogue PAL

100x lens is always included in Flexia Definition

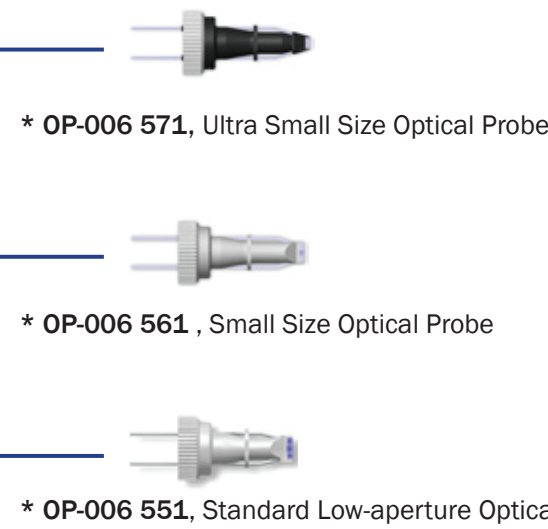


Fixed focal length Objective lenses replace 100x lens in order to achieve higher magnification

BGA lenses

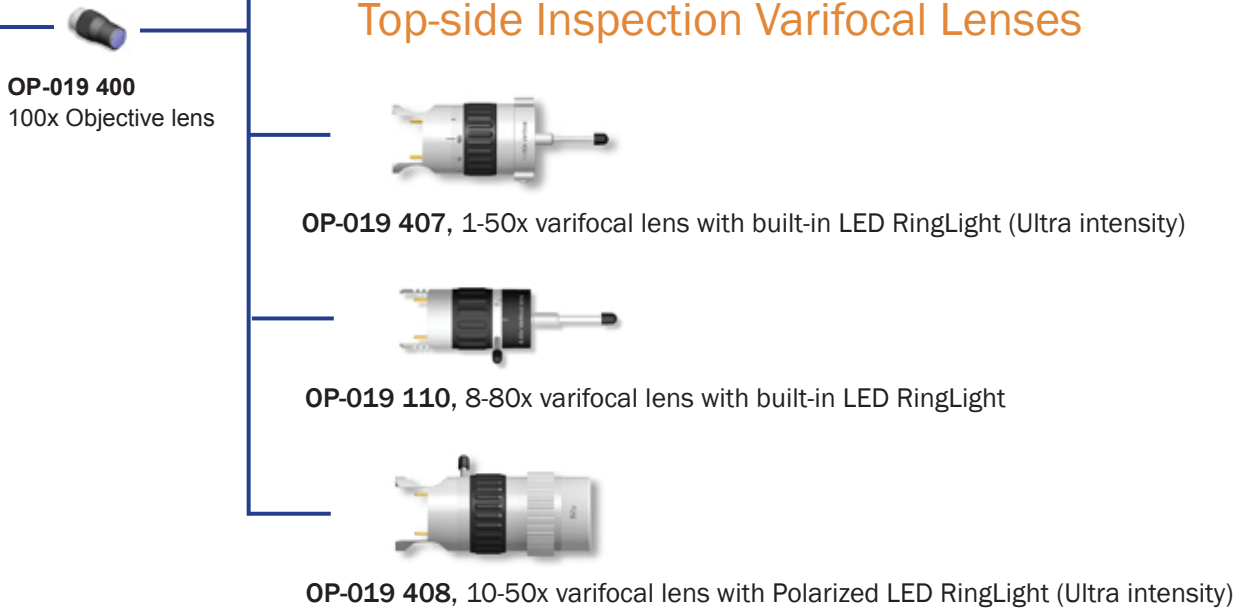


Optical Probes for BGA Lenses

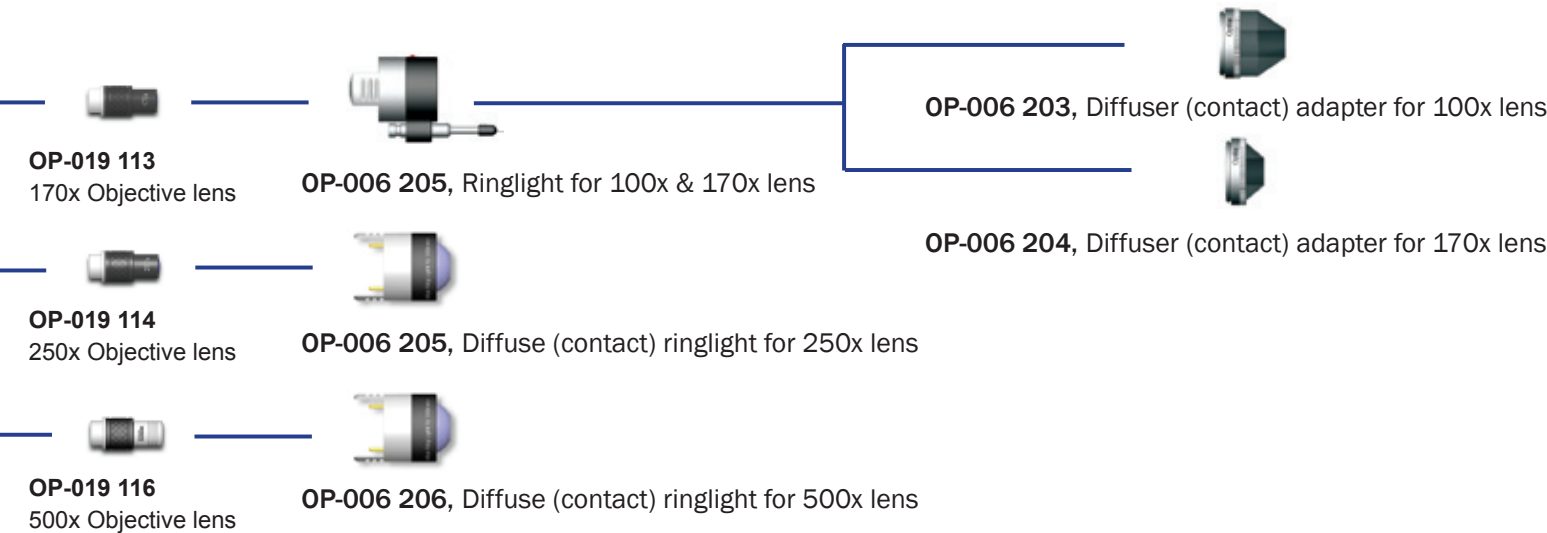


* Items can also be ordered as spare parts

Top-side Inspection Varifocal Lenses



Fixed focal length Objective Lenses and RingLights

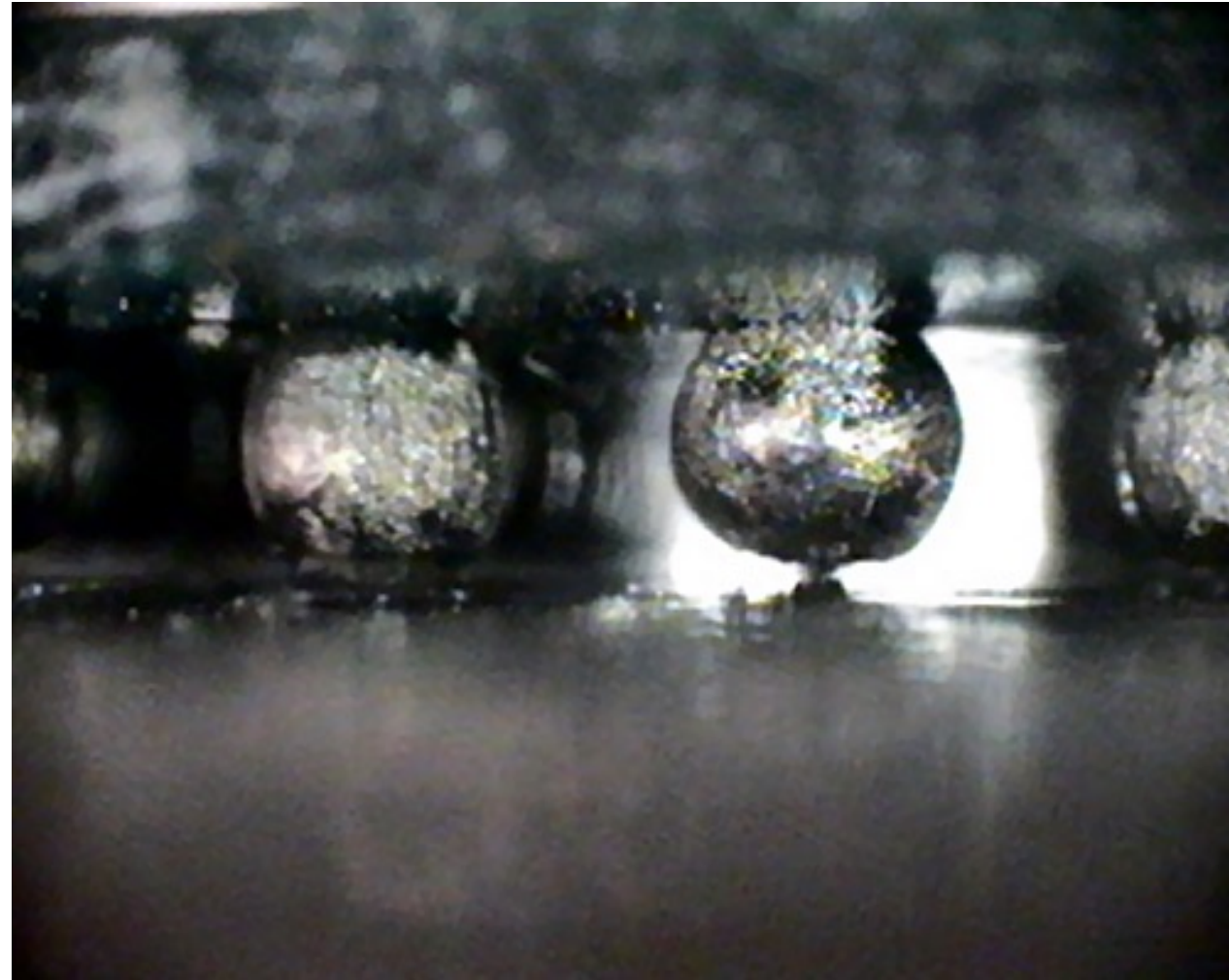


TR-0743, RevF November-13

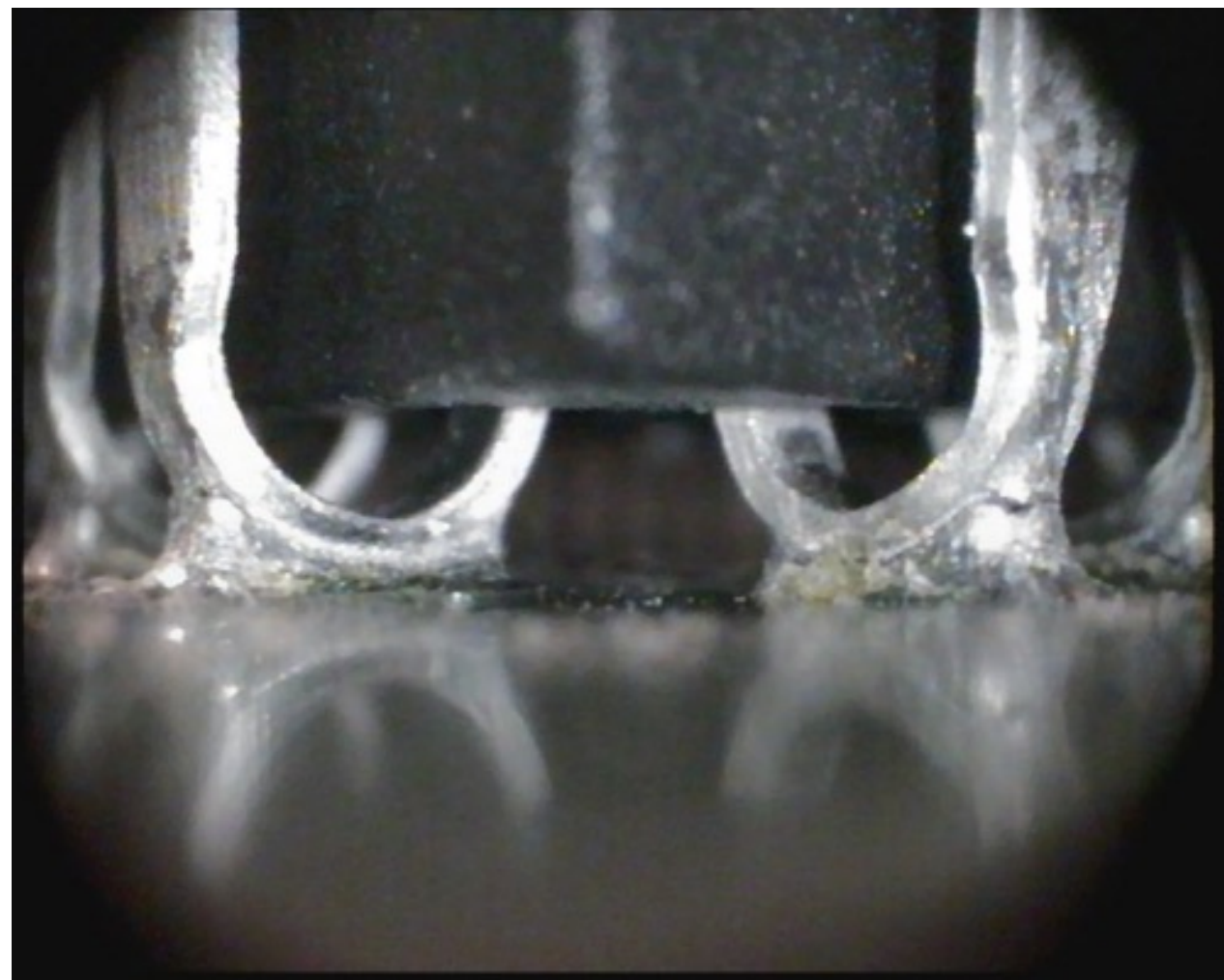
Optilia Instruments AB
Djupdalsvägen 22, SE-192 51 Sollentuna, Sweden.
Phone: +46 8 35 33 60
Email: info@optilia.eu
Web: www.optilia.eu



BGA/FLEXIA INSPECTION SYSTEMS — SAMPLE IMAGE



Connection failure, BGA component.



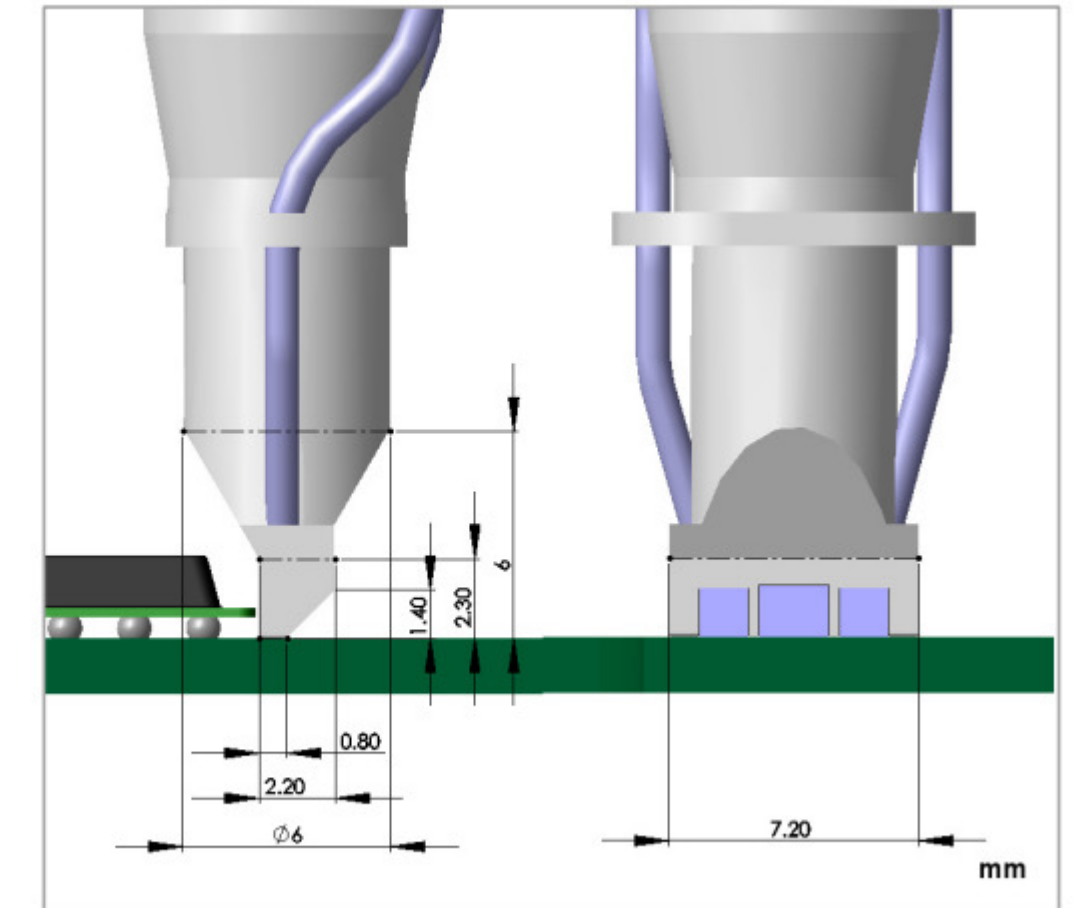
Crack on lead solders, JLCC component.

BGA/FLEXIA INSPECTION SYSTEMS

- 40 microns BGA stand-off inspection capability
- Exchangeable Optical Probe (spare part)
- Magnification Up to 280x on a 24" Monitor
- Built-in LED illumination

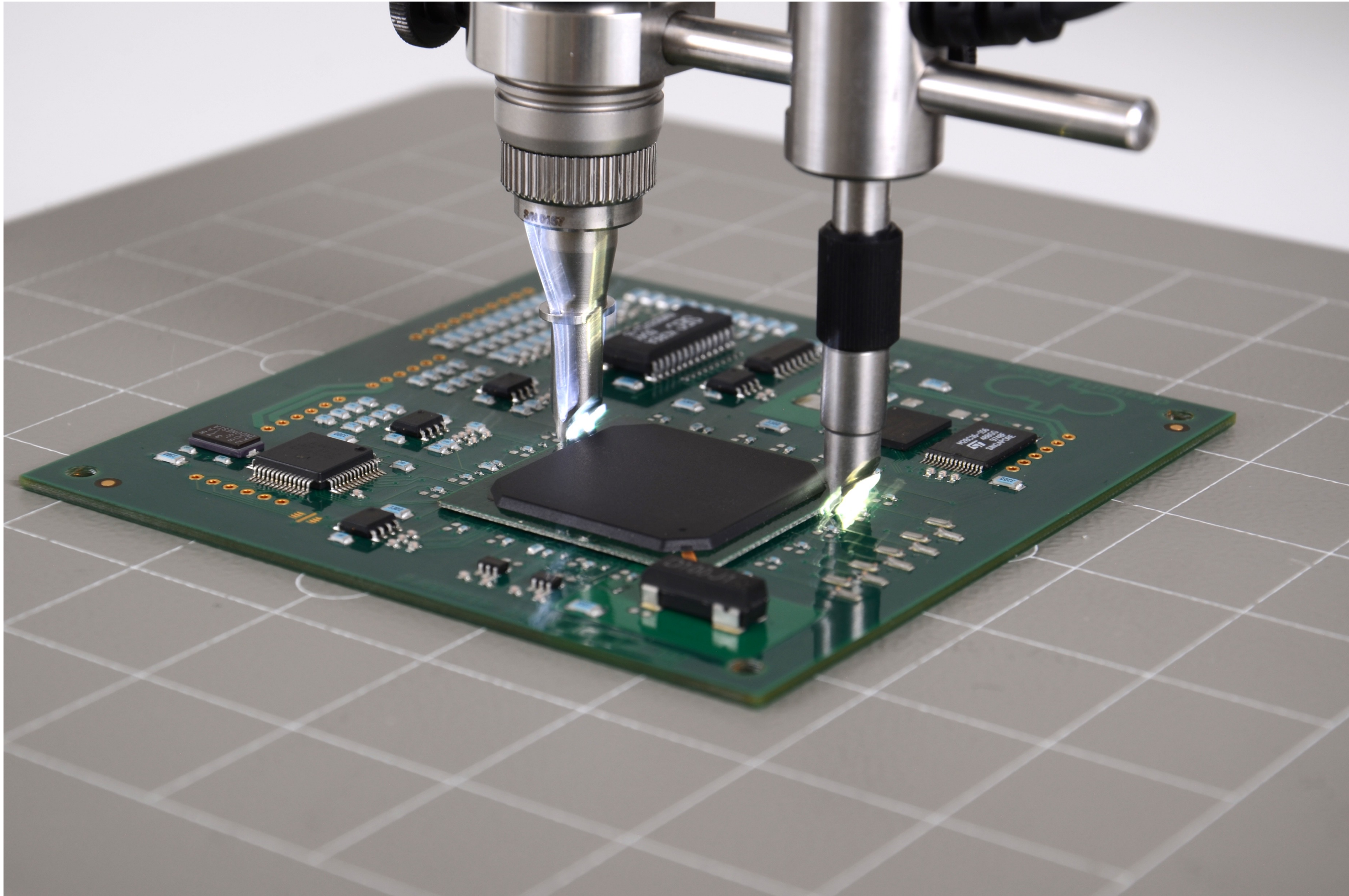


OP-006 550



OP-006 551

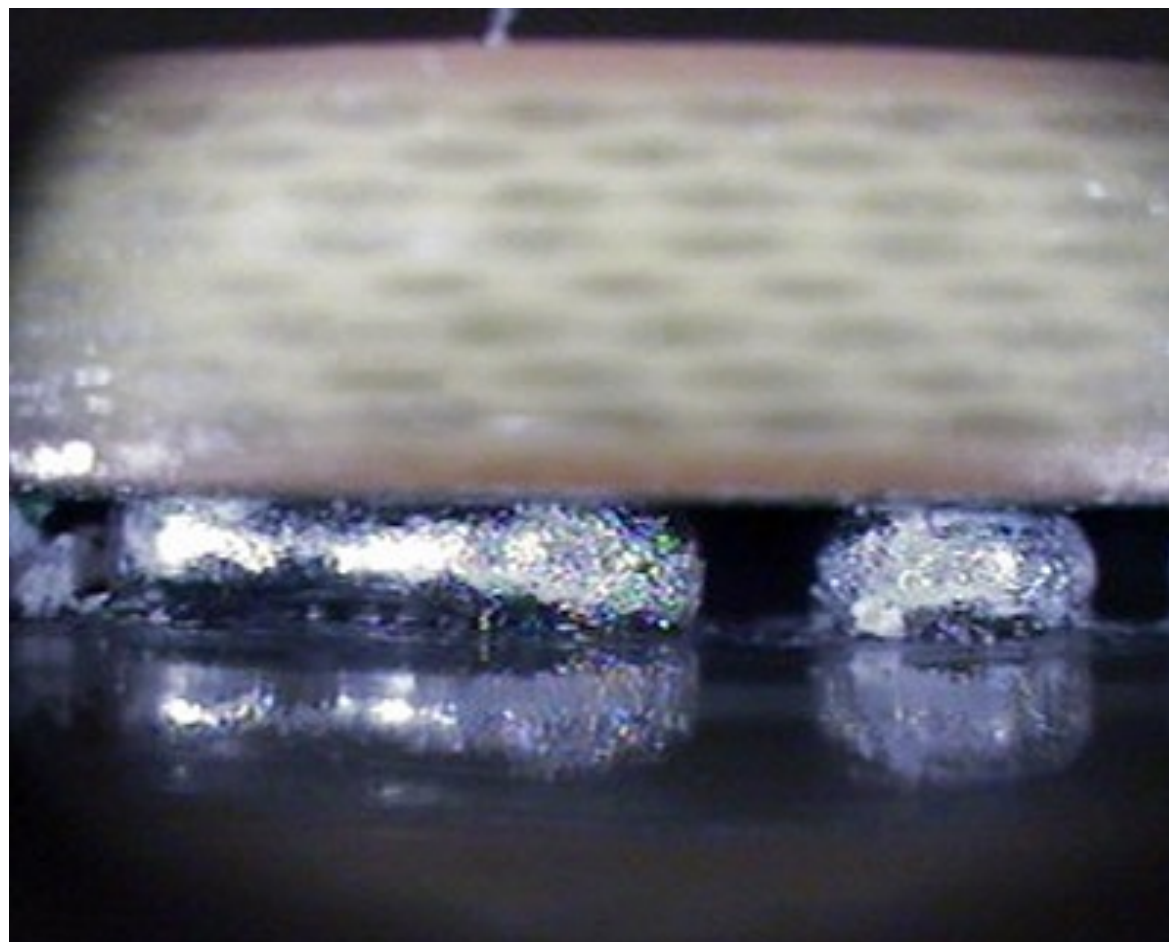
BGA/FLEXIA INSPECTION SYSTEMS – SAMPLE IMAGE



BGA/FLEXIA INSPECTION SYSTEMS — SAMPLE IMAGES



Fibres between BGA balls



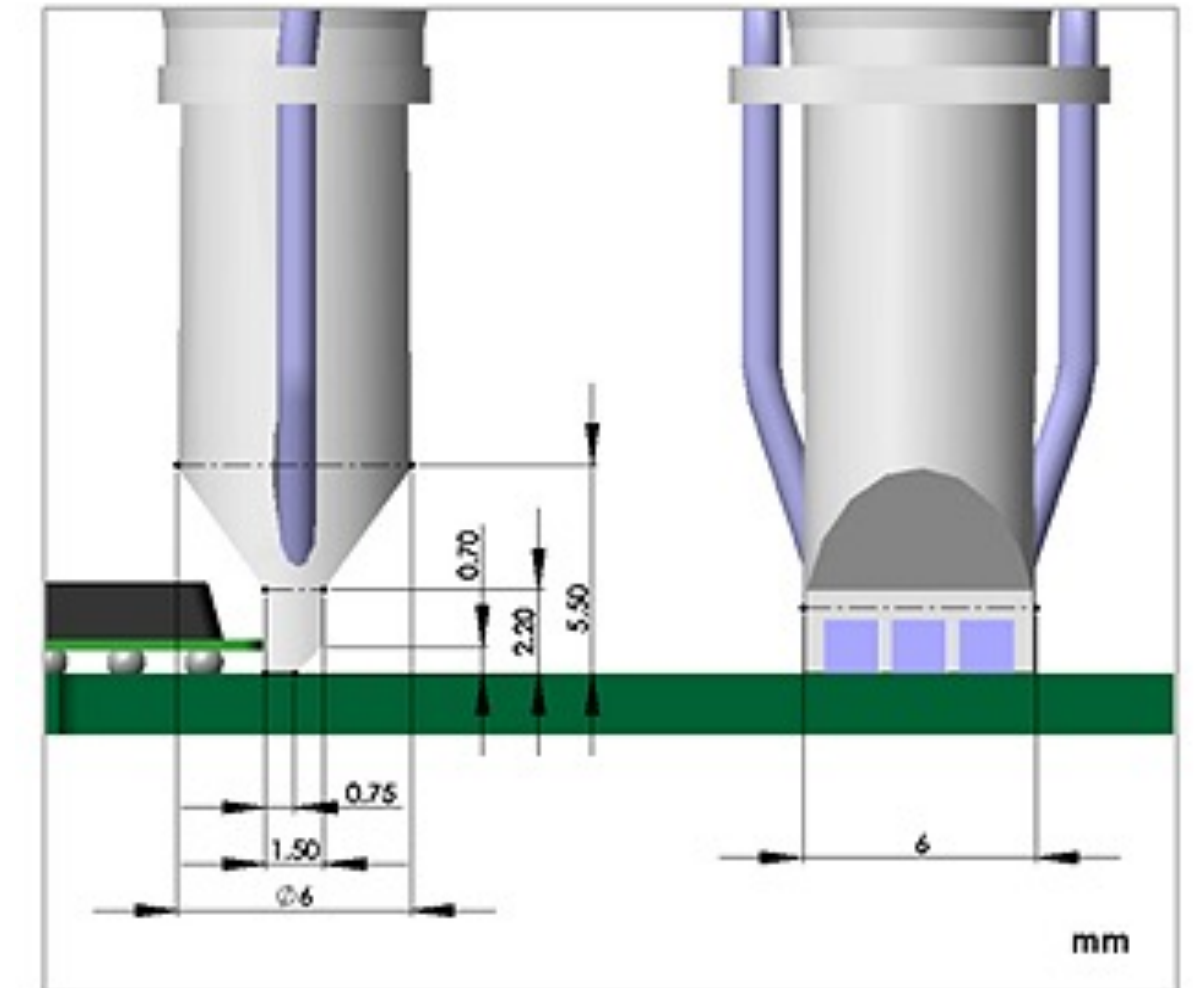
Bridge between solder points

BGA/FLEXIA INSPECTION SYSTEMS

- 40 microns BGA stand-off inspection capability
- < 1.5 mm thin optical head (0.8 mm foot print)
- Exchangeable Optical Probe (spare part)
- Magnification Up to 350x on a 24" Monitor



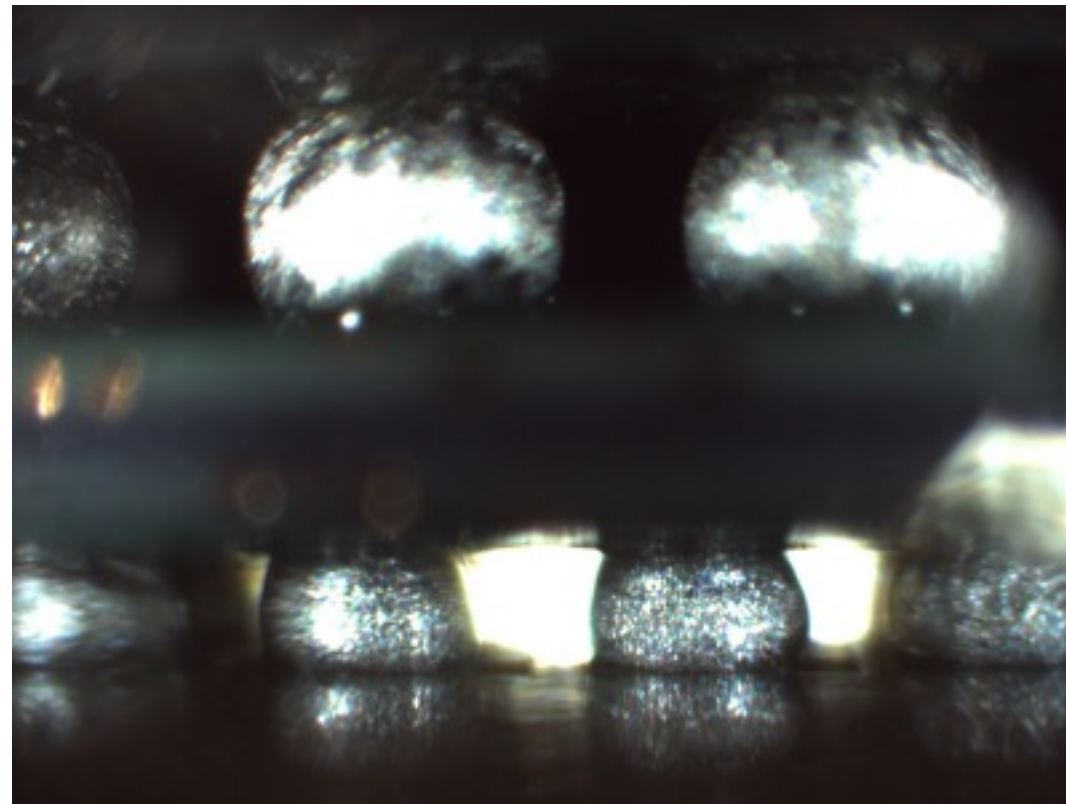
OP-006 560



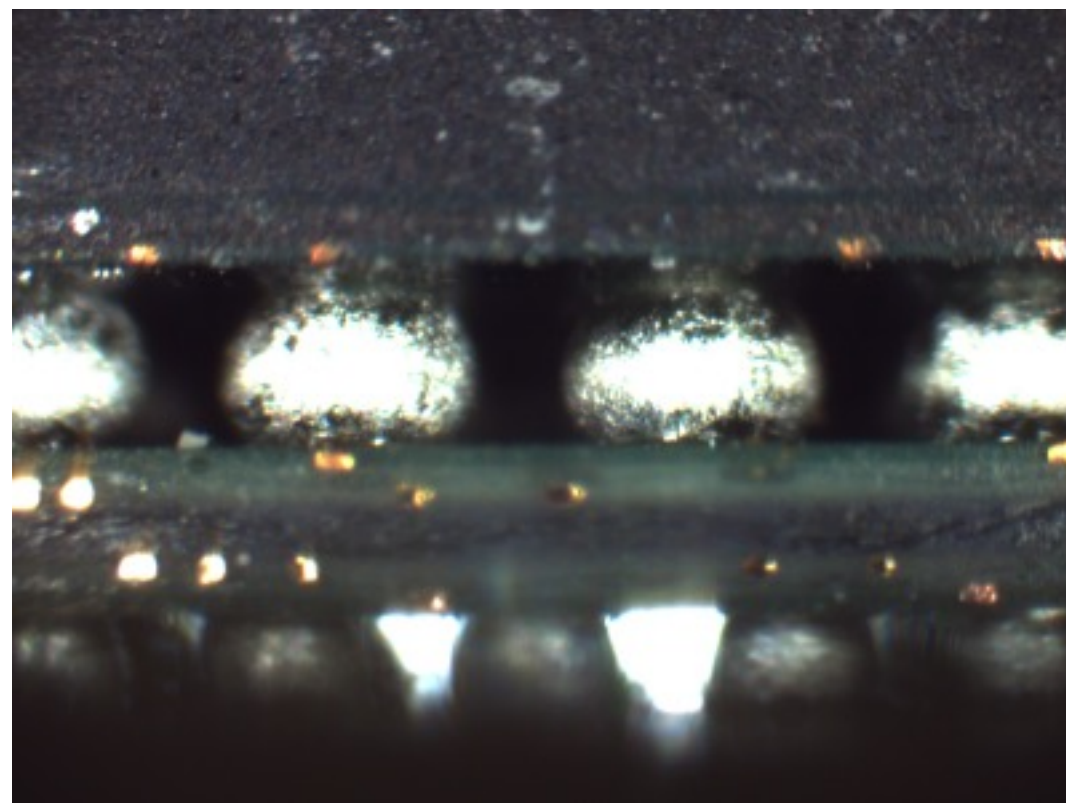
OP-006 561



BGA/FLEXIA INSPECTION SYSTEMS — SAMPLE IMAGES



Flip-chip component - BOTTOM



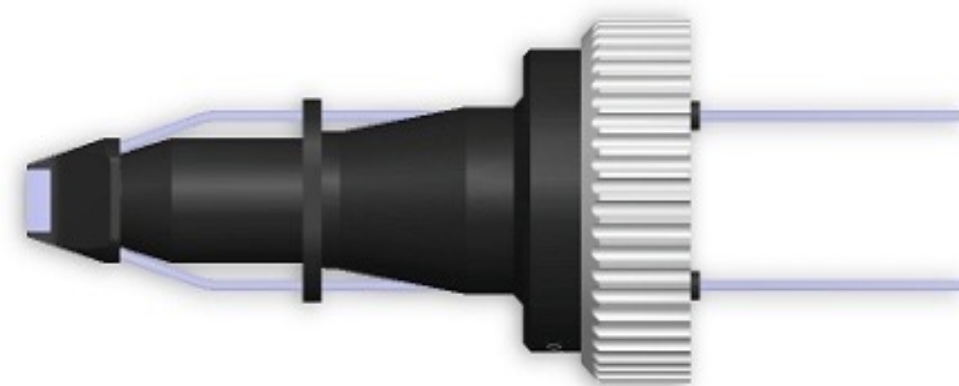
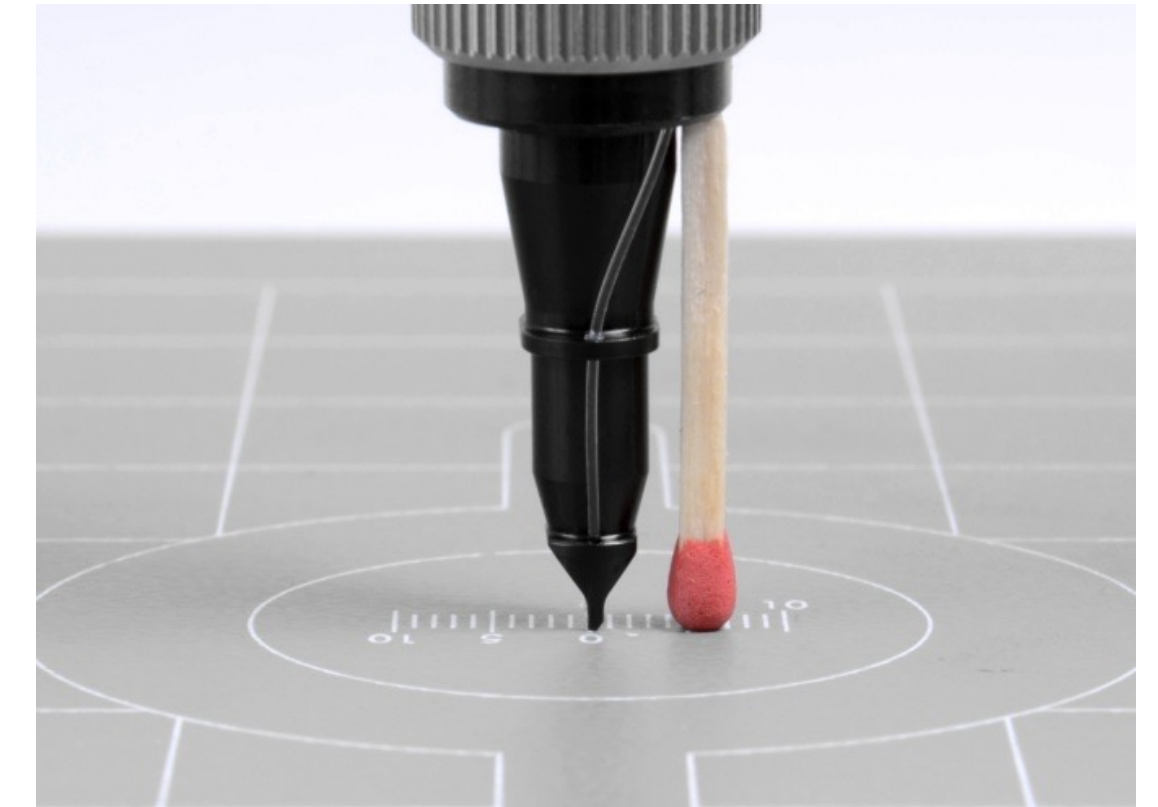
Flip-chip component - TOP

BGA/FLEXIA INSPECTION SYSTEMS

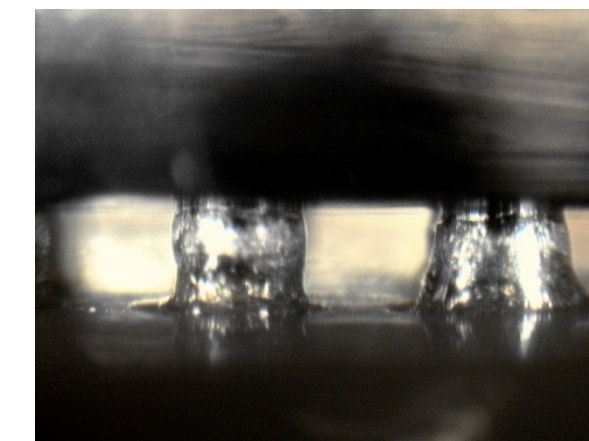
- Tiniest BGA probe in the market (0.4x3.4 mm foot print)
- 40 microns BGA stand-off inspection capability
- Exchangeable Optical Probe (spare part)
- Magnification Up to 350x on a 24" Monitor



OP-006 570



OP-006 571



BGA/FLEXIA INSPECTION SYSTEMS – TOP INSPECTION



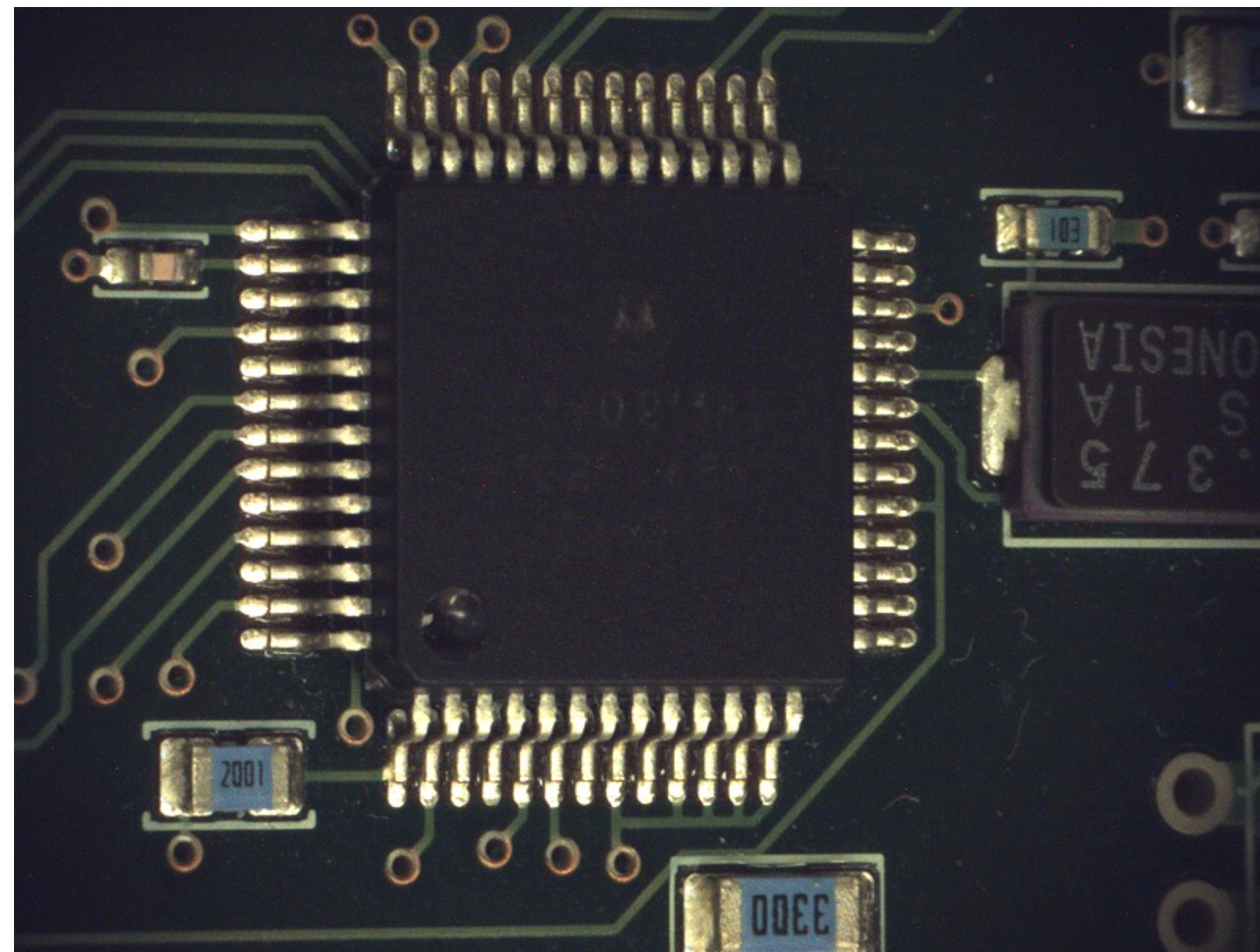
1-100x varifocal lens with built-in LED RingLight, **OP-019 407**

Built-in LED Light

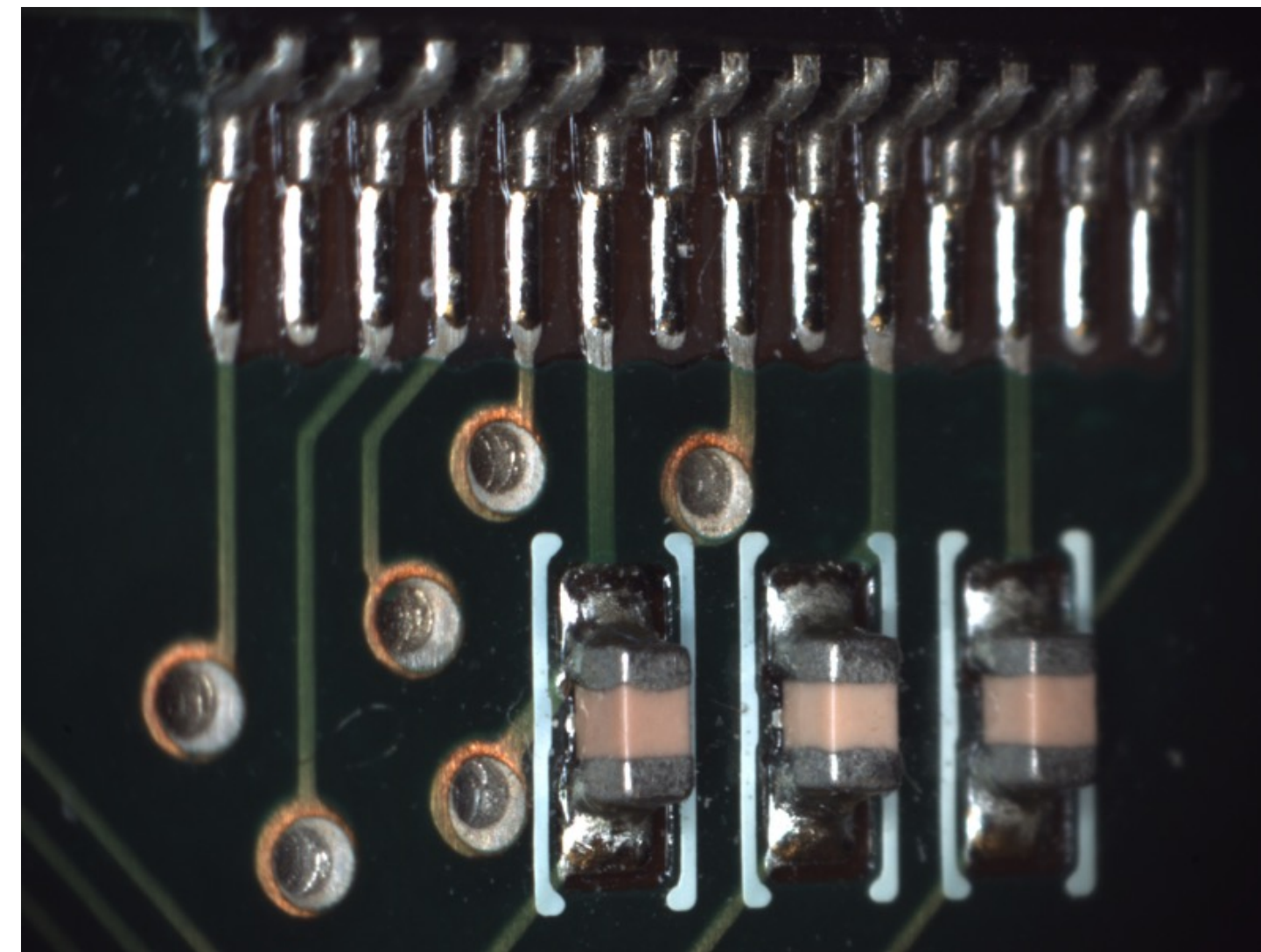


10-50x varifocal lens with Polarized LED RingLight, **OP-019 408**

Polarized LED Light



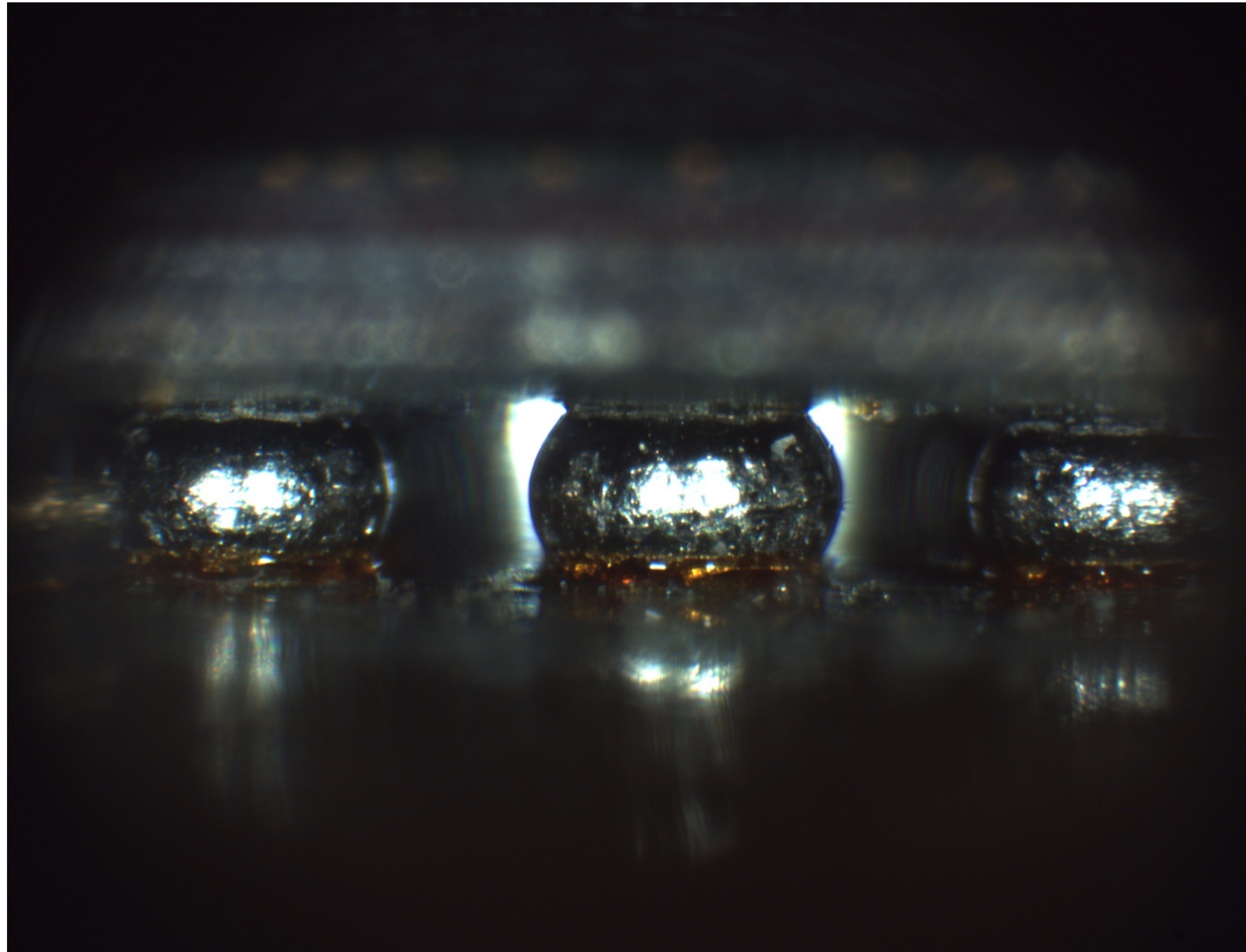
10x magnification, built-in RingLight



50x magnification, built-in RingLight

BGA/FLEXIA INSPECTION SYSTEMS

Adjustable Focus for imaging up to 20 Rows for BGA



BGA/FLEXIA INSPECTION SYSTEMS

- Free hand operation
- Stand mount with background light and XY-translation
- XL-configuration with PCB holder for large size PCBs

