4K
MAKROLITE

Vision
E N G I N E E R I N G

Makrolite 4K
Ultra high definition
digital microscope

4K VIDEO INSPECTION MADE EASY

Improve your inspection performance with the superb clarity of 4K image resolution, suitable for a wide range of complex and high contrast applications.

Makrolite 4K, a powerful imaging solution ideal for challenging inspection routines. Makrolite 4K provides high definition video images with a wide dynamic range and up to 330x magnification.
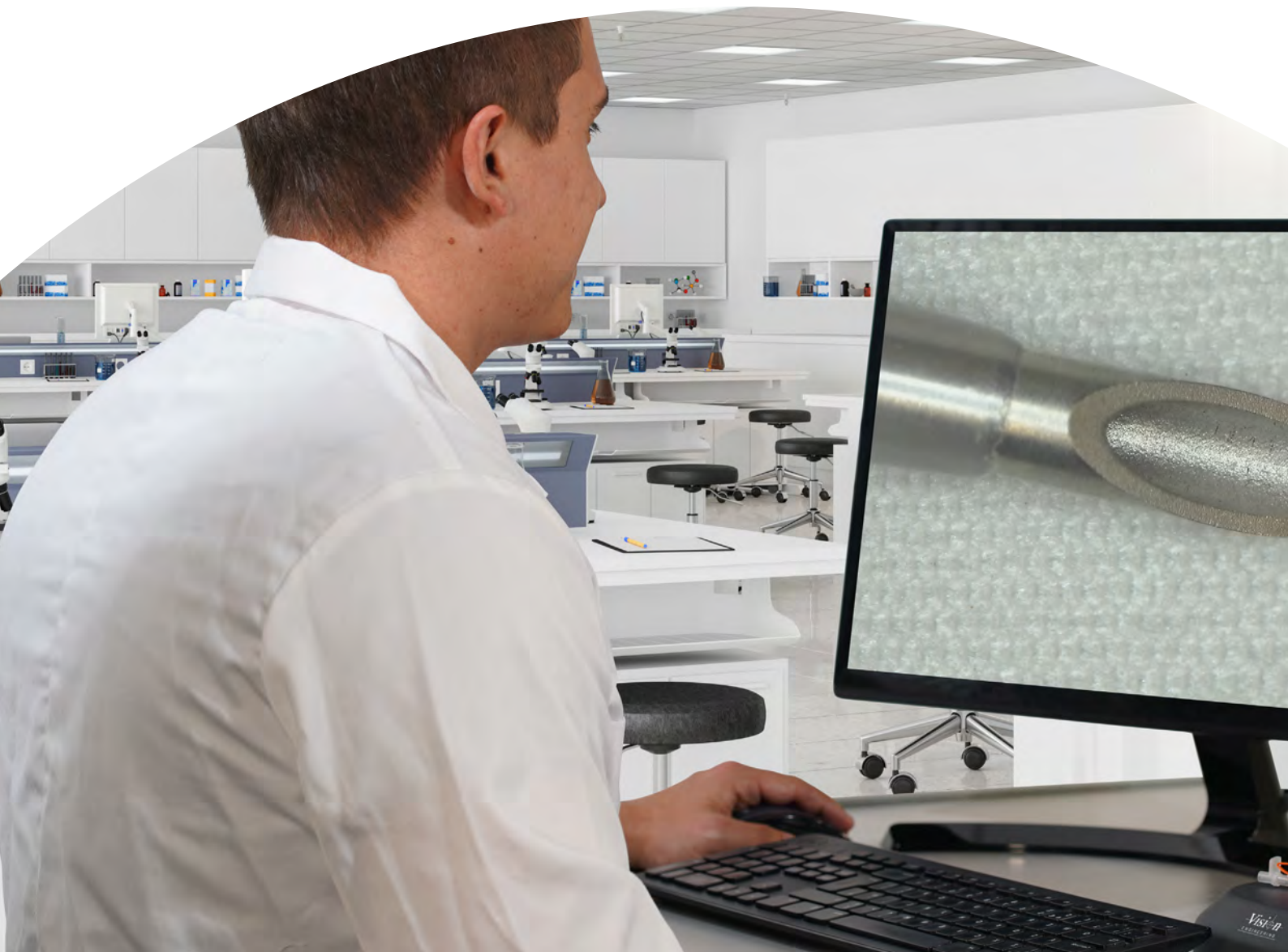
Versatile solution - ideal for a range of applications

Makrolite 4K is easy to use delivering both versatility and high performance. Suitable for industrial and life science sectors including production, lab research, R&D, micro assembly, quality control, inbound/outbound product checking, dissection and re-work.

The wide dynamic range of 4K resolution is ideal for reflective subjects, for example solder joints, subjects in shadow, or subjects with low contrast, such as rubber and plastic.

Combined with a wide range of objective lenses and stand options, Makrolite 4K is a flexible solution to your specific inspection needs.

Makrolite 4K with console

Makrolite 4K with PC

Console control version

The console configuration provides direct HDMI connection to the monitor for live display with full control of zoom and all camera settings. An option to enable 4K image/video capture to a USB drive is also available.
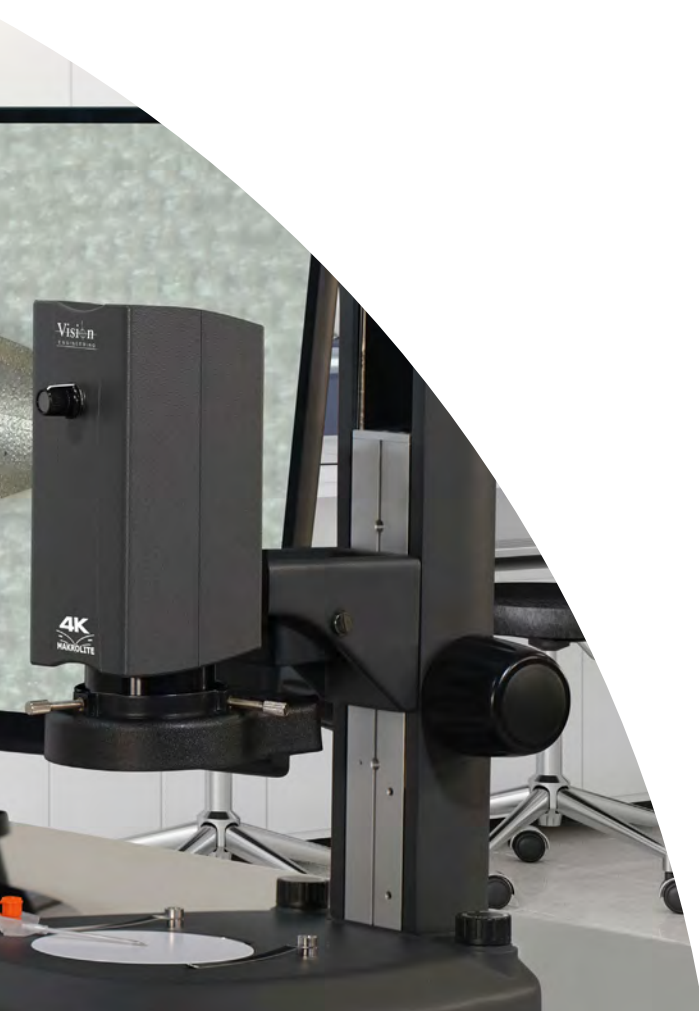
Camera controls include:
• Zoom. 20:1 zoom ratio, with magnification range 3x to 330x
• Autofocus and manual focus
• Aperture, exposure (AE, AP and ME modes)
• Gain, white balance, image flipping

PC control version

Connecting Makrolite 4K to a PC with our dimensioning software, ViPlus, extends its capabilities to include image capture, annotation, on-screen measurement, data/image report generation and a range of image processing tools.

ViPlus software offers:
• Control of camera settings
• Image capture in JPEG, PNG, BMP and TIFF formats
• Annotation tools, including markers and measures
• Measurement tools such as distance, angle, diameter, area
• Import of CAD files for inspection
• Image processing such as colour inversion, shape detection, focus stacking, overlays
• Generation of reports in Excel and other formats

ViPlus software

Data sharing

Share 4K images, videos or reports with colleagues, suppliers, customers and regulators easily and instantly across networks. The option to save images and video to a USB drive is also available with both the PC and the console configurations.

4K IMAGE QUALITY REVEALS EVERY DETAIL

Makrolite 4K simplifies imaging tasks with the superb clarity of 4K image resolution.

Image quality

Inspect, measure or capture and share real time 4K video without image delay.

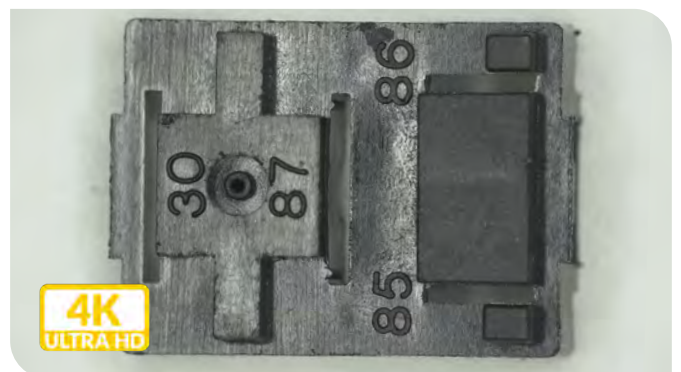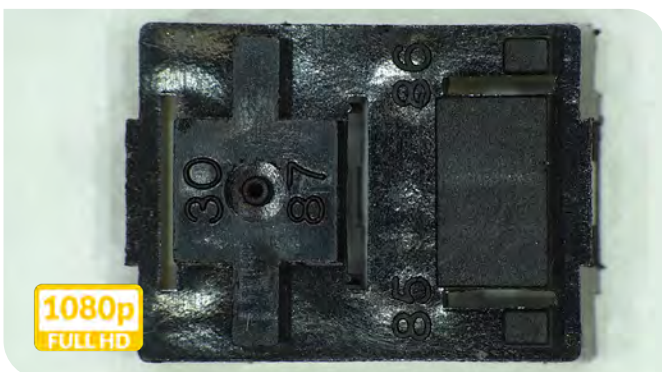Get closer to your subject with 20:1 optical zoom and up to 330x magnification.

4K resolution

Makrolite 4K's resolution is 4x greater than full HD and provides exceptional image quality. A clearer view of the subject shows finer details, improves productivity and accuracy, reduces waste and customer problems due to bad sample quality.
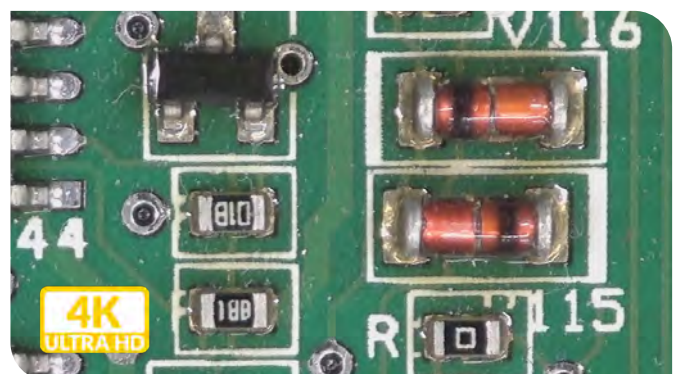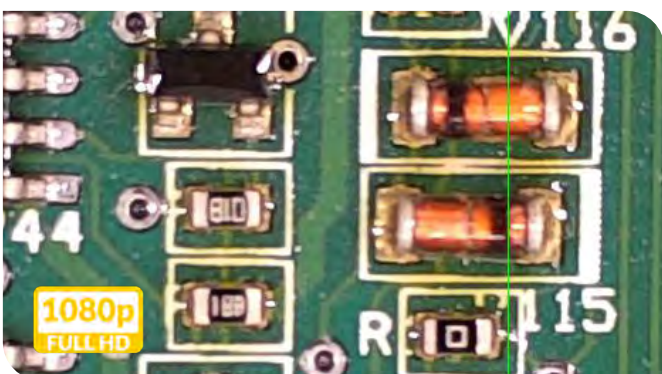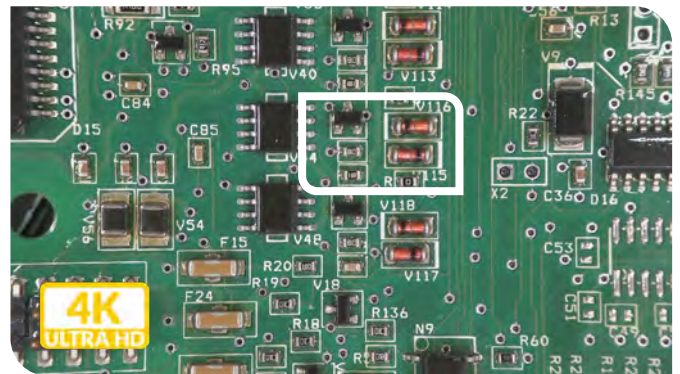
Wide dynamic range
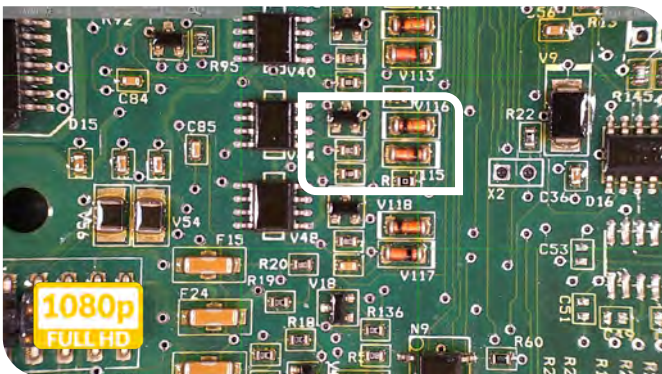
Makrolite 4K's wider dynamic range is perfect for imaging of bright and shadowed areas. It is also better suited for reflective subjects such as electro-polished finishes and solder joints and subjects with high contrast, even at higher magnification.

Example – 4K image enables easier inspection of reflective subjects

Example – Better image quality improves solder joint inspection

FLEXIBLE SOLUTION

Whatever your application requirements, Makrolite 4K is available with a stand that perfectly meets your needs.

Multi-axis stand with monitor mount

Ergo stand
- Small footprint and exceptional stability for high magnification applications
- Available with floating stage option for smooth and precise control of components

Bench stand
- Compact, high stability and small footprint
- Integrated intensity adjustment for oblique and sub-stage lighting

Single arm stand
- Ideal for larger components
- Stable platform with base or attached directly to the work surface
- Good freedom of movement

Double arm stand
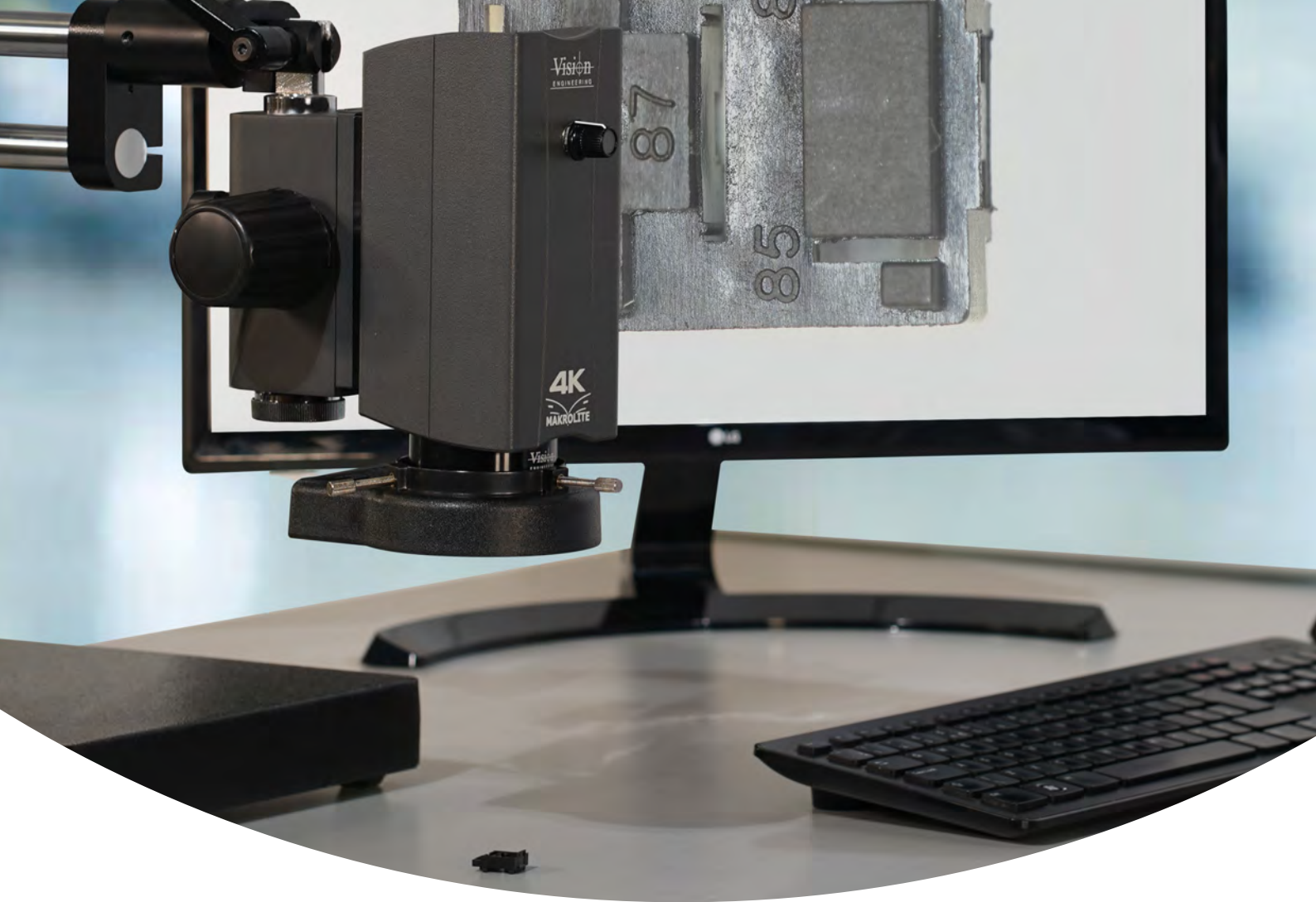- For applications requiring greater reach without compromising stability
- Easy adjustment for precise positioning and alignment
- With either base (shown) or clamp for work areas with limited space

Multi-axis stand
- Precise and robust
- Ideal for industrial applications requiring maximum work space
- Integrated gas strut adjustment is quick and effortless
- Extended reach (maximum throat 439mm)

| Objectives | Working distance | Horizontal field of view at low magnification | Field of view at max. magnification | |
			Optical zoom	Digital zoom
0.45x	170mm	212mm (3x)	8.8mm (45x)	4.4mm (90x)
0.62x	112mm	201mm (3x)	10.2mm (57x)	5.1mm (114x)
1.0x	84mm	61mm (10x)	6.2mm (100x)	3.1mm (200x)
1.5x	43mm	28mm (20x)	4.2mm (150x)	2.1mm (300x)
2.0x	29mm	24mm (20x)	3.2mm (165x)	1.6mm (330x)

Magnification with a 27" screen, 2160p

Camera data	
Sensor	CMOS 1/2, 5" 8.51 mega pixels
Image	Ultra HD 2160p (3840 x 2160)
Focus	Autofocus or manual focus
Camera output	4K 2160p/30fps
Camera output on computer	4K 2160p/30fps on the PCI Express card

PC requirements	
Operating system	Windows 10
Processor	i7 or later version, 3GHz
Graphics	Graphics card with HDMI 2.0 or higher
Memory	8GB of RAM or more
Scalability	Slot for additional x4 or x8 PCI express card

VISION ENGINEERING
+ OUR DIFFERENCE

Vision Engineering Ltd. has been designing and manufacturing high quality ergonomic microscopes, digital instruments, inspection and non-contact measuring systems for over 60 years.

Innovation

With a philosophy of design innovation, Vision Engineering holds world patents for a number of optical / digital techniques, significantly improving viewing ergonomics and enabling customer quality and productivity improvements. In 2020, we were awarded a Queen's Award for Enterprise in the Innovation category, for our high tech ergonomic optical inspection microscope Lynx EVO.

Quality

Vision Engineering prides itself on quality products, electronics, mechanics and optics and is certified for the quality management system ISO 9001:2015. We are also now a UKAS accredited calibration laboratory, after attaining ISO 17025:2017. Quality is as important to us as it is to our customers. Our systems have proved themselves many times over and are chosen by the world's leading companies.

Global

Vision Engineering has manufacturing and design facilities in the UK and USA, plus sales and support offices throughout Europe, the Americas, the Far East, and Asia. We support our customers with close technical and service support anywhere in the world.

To see our focused quality, please contact your Vision Engineering branch, local authorised distributor, or visit our website: visioneng.com

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Vision Engineering Ltd. has been certified for the quality management system ISO 9001:2015 and calibration accreditation ISO 17025:2017.

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