Vision ENGINEERING

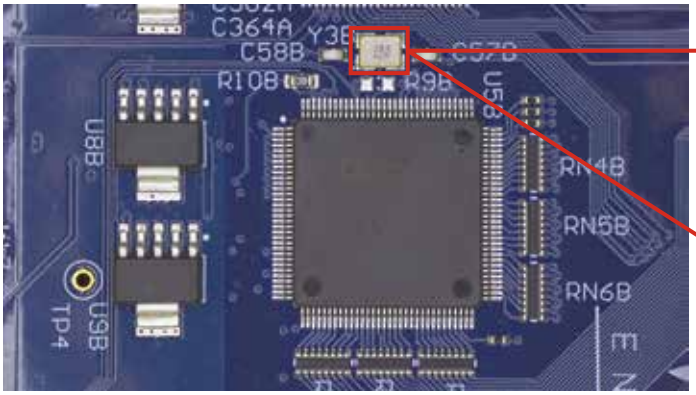
FOCUSED | QUALITY

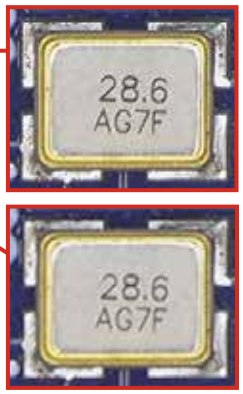
EVO Cam HALO

4K ULTRA HD Digital Microscope
with Intelligent Features

4K INSPECTION MADE EASY

EVO Cam HALO digital microscope combines stunning 4K image quality with advanced, adaptive illumination to deliver unmatched precision and versatility for inspection and measurement tasks.





4K

FHD

Four times more detail

4K image sensor delivers four times more detail than full HD cameras. High Dynamic Range (HDR) ensures important details are not lost in dark or light areas of the image.

Measure, analyse, report

HALO's ViPlus software provides real-time insights, making it easier to detect anomalies and patterns that would otherwise go unnoticed. With intuitive image capture, measurement, and analysis tools, the software delivers accurate and actionable results, enabling faster, data-driven decisions. This supports more efficient workflows and increased confidence in the results.

Intelligent features

Auto lens ID

Easy to use, intelligent lens mount automatically adjusts magnification display providing accurate inspections every time.

Quick-clip ring-light

Intelligent clip-on ring-lights automatically save and recall settings when connected. Quadrant controlled white, white and UV and wide area panel lights fit directly to the camera and are changed in seconds.

360-degree Oblique and Direct Viewer (ODV)

Switch on an extra dimension with direct and rotating oblique views of your subject. Switch from a direct perpendicular view to a 34° oblique angle, and rotate around the subject to enhance inspections. The oblique view allows easy inspection of joints, intersections, raised components, and the inside of holes.

4K ULTRA HD

Outstanding image quality

0.84x - 468x

Magnification

Auto lens ID

AF

Auto focus

Measurement & Analytics

360°

360 viewer compatible

Range of stands

Whatever the application requirements, EVO Cam HALO is available with a stand that meets the needs of the workspace. It is supported by a range of accessories, making it a versatile solution.

CHOICE AND PRECISION

EVO Cam HALO offers configurable options to optimise workflows, meet inspection requirements, and deliver insightful reporting.

PC control version

Connect HALO to a PC with ViPlus software to capture images, annotate them, measure objects on the screen, generate reports, and use 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

Range of lenses

HALO's dedicated bayonet lenses are easy to fit and feature Auto Lens ID. The bespoke design is optimised for digital systems and includes filter thread for easy addition of polarisation or other filters.

Console (keypad control) version

The console version connects directly to a monitor via HDMI, allowing full control of zoom and other camera settings. It can also capture 4K images and videos to a USB drive.

Data sharing

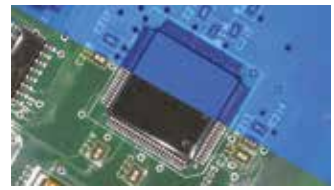
Share 4K images, videos, or reports with colleagues, suppliers, customers, and regulators quickly and easily across networks. The option to save images and video to a USB drive is also available with both the PC and the console configurations.

Camera controls include:

- 20:1 zoom ratio
- Auto, Spot and Manual focus modes
- Auto, Spot and Manual exposure modes
- 3 customisable presets for recall of groups of settings
- Range of image optimisation features
- Control of lighting from above and below

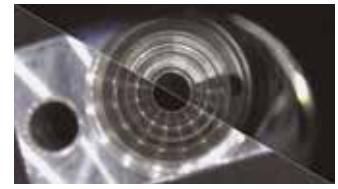
Range of lighting

The best images require the best lighting, and HALO comes fully equipped. Quadrant-controlled top lights with white and UV, sub-stage illumination, and specialised EPI and contrast-enhancing illuminators ensure optimal performance.


White and UV light


Contrast-enhancing base


Polarised sub-stage illumination

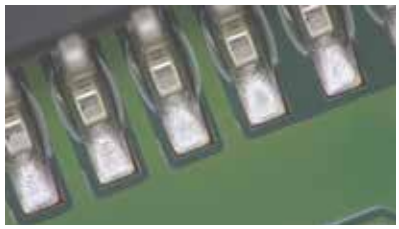

Without and with EPI illuminator

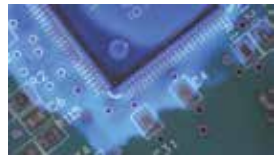
PRECISION ACROSS INDUSTRIES

EVO Cam HALO can improve inspection performance with exceptional clarity of 4K image resolution across industries and applications.

Electronics and coating

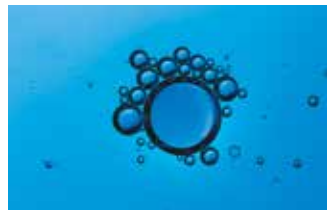
Electronics manufacturing demands a clear, accurate view of printed circuit boards, plated-through holes, components, solder masks, solder joints. HALO provides a sharp view of highly reflective fresh solder helping users to assess reflow quality and more. The white and UV ring-light allows easy inspection of and through fluorescent coatings.





Biological and life sciences

HALO's high resolution and dedicated lighting solutions are ideal for many life science applications. Paired with the contrast-enhancing base, it produces a pseudo-darkfield effect, highlighting edges and contours in translucent and transparent subjects. This makes it particularly effective for cell and bio-science research.



Plastics and 3D printing

When inspecting mould tools, moulded parts, or 3D prints pre- or post-sintering, a clear view with the right lighting is essential. HALO’s wide-area panel lighting highlights surface defects effectively, while polarisation and filters help in analysing internal stresses.

Medical device

Consistency of inspection and clarity of the finest detail are essential in medical device manufacture. HALO’s presets deliver one-press recall of settings. Intelligent features ensure accurate display of magnification and lighting for subjects and limit the zoom range to the defined level for inspection.

Micro mechanics

Precision engineering demands a clear, detailed view and the ability to verify quality specifications with confidence. HALO’s optimised illumination, combined with ViPlus software, enables accurate and efficient reporting of components and assemblies.

Jewellery and watchmaking

Jewellery and watchmaking demand precision and refinement. Accurate colour, sharp clarity, and detailed imaging are essential to achieve the demanding high standards required for intricate designs and mechanisms.

TECHNICAL INFORMATION

Specification	
Features	
Focus control	AutoFull, AutoSpot or Manual Focus
Exposure control	AutoFull, AutoSpot, Aperture Priority, Shutter Priority, Manual
Lighting control	Quadrant, White/UV and Brightness
Image control	Image Freeze, White Balance, Noise Reduction, Visibility Enhancer, Highlight Correction, Gamma, Mirror-Flip, Cross-hair
Frequency	30-25Hz (switchable)
Monitor size	7" - 100"
Zoom	Zoom-In, Zoom-Out, Zoom-To, Zoom-Limit
Information display	On, On When Changing, Magnification Only, Off
Languages	English, French, German, Italian, Portuguese, Spanish
Presets	3 User-settable Presets
Image Capture	Optional capture box or Via PC connection
Camera - Hardware	
Sensor	CMOS 1/2.5" 8.51 mega pixels
Image	Ultra HD 2160p (3840 x 2160)
Camera output	4K 2160p/30fps
Camera output on computer	4K 2160p/30fps on the PCI Express card
Zoom	20:1
Digital zoom	X12, X2, Off (selectable)
Lens mount	Auto-detect Bayonet
Interface	4K HDMI
Front Panel control	Image freeze, Zoom-In, Zoom-Out, Exposure Mode, Focus Mode, Menu, Ring-light Brightness, Sub-stage Brightness, Preset 1-3
Remote Control	Optional
Optics	11 AutoDetect Bayonet Mount Objective Lenses (see separate table)
Lighting Connection	Clip-on Intelligent Mount
Lighting	Intelligent 8-point Quadrant, Intelligent Wide-area Panel, Intelligent White/UV Quadrant, Sub-stage. External EPI, and Contrast-enhancing Illuminator
Lighting Filters	Polarisation, Colour Temperature Change
PC requirements	
Operating system	Windows 10 & 11
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

Objective lens	Magnification range*	Working distance	Horizontal field of view at low magnification	Field of view at max. magnification	
				Optical zoom only	Digital zoom (x2)
X0.45	2.16 - 43.2 x	172 mm	295 mm	16.5 mm	8.3 mm
X0.62	2.97 - 59.4 x	120 mm	230 mm	12.0 mm	6.0 mm
X1.0	4.8 - 96.0 x	84 mm	95 mm	7.5 mm	3.8 mm
X1.5	7.2 - 144 x	43 mm	47 mm	5.0 mm	2.5 mm
X2.0	9.6 - 192 x	30 mm	29 mm	3.5 mm	1.8 mm
2D	0.84 - 16.8 x	500 mm	455 mm	36.5 mm	18.3 mm
3D	1.26 - 25.2 x	333 mm	417 mm	24 mm	12.0 mm
4D	1.68 - 33.6 x	250 mm	315 mm	18 mm	9.0 mm
5D	2.11 - 42.2 x	200 mm	235 mm	14.5 mm	7.3 mm
x5 Micro **	11.70 - 234 x	21 mm	12.05 mm	2.5 mm	1.3 mm
x10 Micro**	23.41 - 468 x	21 mm	4.4 mm	1.3 mm	0.7 mm

* Based on 27" screen
** Limited zoom availability

For more information and sales support, please contact your Vision Engineering branch, local authorised distributor, or visit our website: visioneng.com

Vision Engineering Ltd.
(UK Manufacturing & Commercial)
The Freeman Building, Galileo Drive,
Send, Surrey, GU23 7ER, UK
T +44 (0) 1483 248300
E generalinfo@visioneng.co.uk

Vision Engineering Inc.
(NA Manufacturing & Commercial)
570 Danbury Road,
New Milford, CT 06776, USA
T +1 (860) 355 3776
E info@visioneng.com

FM 557119

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