

ryf ag  
 Ryf AG  
 Bettlachstrasse 2  
 2540 Grenchen  
 tel 032 654 21 00  
 fax 032 654 21 09  
 www.ryfag.ch

*Vision*  
 ENGINEERING



Power your productivity

## High productivity eyepiece-less stereo microscope

- Unrivalled ergonomics improves productivity
- Advanced optics allows fast and accurate inspection
- Flexibility for a wide range of applications



FM 557119

Vision Engineering Ltd has been certified for the quality management system ISO 9001:2008.



*“No other company has dedicated so much time to advancing microscope ergonomics, because we understand the critical link between operator ergonomics and increased productivity”*



Lynx EVO is a **high productivity** stereo microscope without eyepieces, **powering your productivity** through stunning 3D imaging. The unique **patented eyepiece-less** optics of Lynx EVO liberates users from restrictive working practices, opening up a world of enhanced efficiency through unrivalled ease of use and **ergonomic performance**.

For over 50 years, Vision Engineering has been a pioneer in cutting-edge optical development, introducing eyepiece-less microscopes to the world in the 1970s. Since their introduction, the world's leading manufacturers have come to rely on our eyepiece-less stereo microscopes to overcome the daily challenges of increasing quality demands, smaller components, greater efficiencies and accuracies.

## The ergonomic advantage

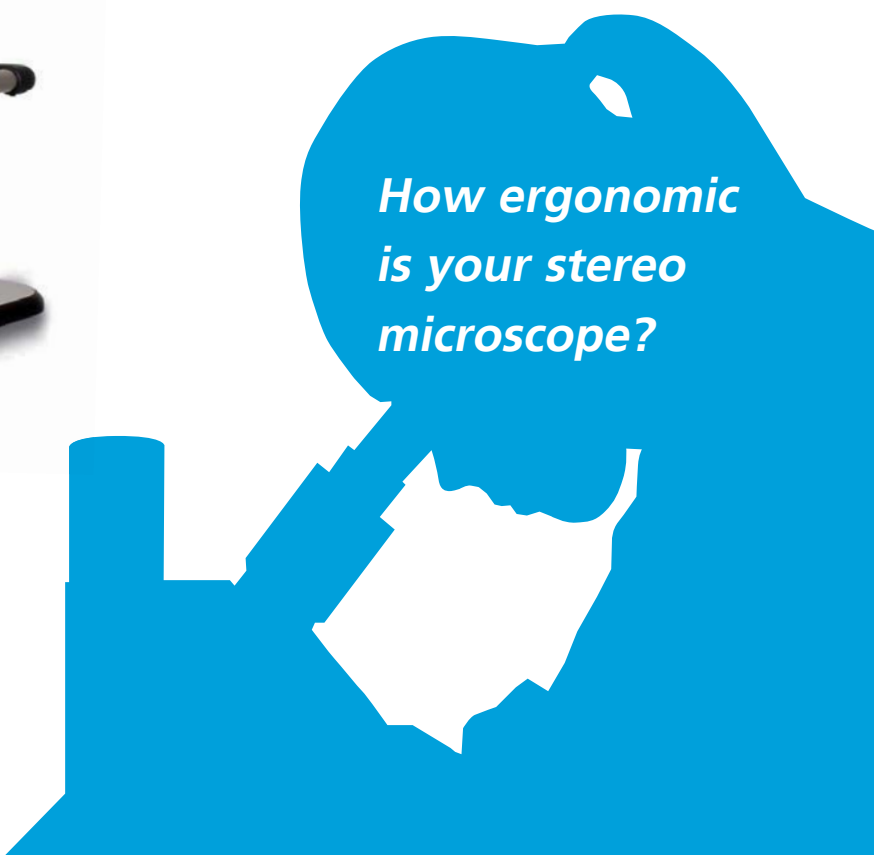
Although the Lynx EVO advantage comes from stunning 3D (stereo) imaging, the real brilliance of the eyepiece-less design is the unrivalled simplicity of operation. No other company has dedicated so much time to advancing microscope ergonomics, because we understand the critical link between operator ergonomics and increased productivity, efficiency and ultimately improved quality.

**Lynx EVO is ergonomic without adjustments or modification.** Users benefit from dramatically improved comfort and ease of use; businesses benefit from increased productivity and efficiency, driving quality improvements and reduced costs.

Read about our ergonomic advantage:  
[www.visioneng.com/ergonomics](http://www.visioneng.com/ergonomics) »



Lynx EVO with  
Multi-axis stand.



*How ergonomic  
is your stereo  
microscope?*

Businesses choose **Lynx EVO** because they know their operators are **more efficient, more accurate** and **more productive**. The operator benefits and so does the business.

## 1 Stunning 3D (stereo) imaging

The Lynx EVO advantage begins with stunning 3D (stereo) imaging, viewed through an ergonomic viewing lens.

Patented eyepiece-less optical technology allows users to move within the optical path, effectively looking around the subject, further enhancing the 3D view and depth perception.

## 2 A natural view of the subject

With conventional 'eyepiece' stereo microscopes, users must position their eyes extremely close to the eyepieces, blocking out ambient light. The intense light exiting the eyepieces causes the pupils to contract. It is this constant opening and closing of the pupils which is the main cause of eye fatigue, leading to headaches.

With the eyepiece-less design of Lynx EVO, users sit back from the viewer, allowing ambient light into the eyes, providing an entirely natural view of the subject.

## 3 Ability to wear glasses

With Lynx EVO, operators do not need to remove their glasses (or safety glasses) to use the microscope. In fact, you can easily use Lynx EVO in a laminar flow, or safety cabinet.

## 4 Protection against cross-infection and sample contamination

By removing the contact between eyepieces and the user, Lynx EVO is kept clean, also preventing user contamination affecting sensitive samples in clean and sterile environments.

## 5 Ergonomic working position

An ergonomic working position not only makes Lynx EVO much more comfortable and much less fatiguing, but also much easier to use. Optimal operator ergonomics minimises the risk of repetitive strain-related injuries. A happy worker is a productive worker.

## 6 Freedom of head movement

An additional benefit of Vision Engineering's patented eyepiece-less design is that users do not need to precisely align their eyes with the viewing lens. This freedom of movement reduces the neck and back strain associated with a fixed body position required when using a binocular stereo microscope with eyepieces.

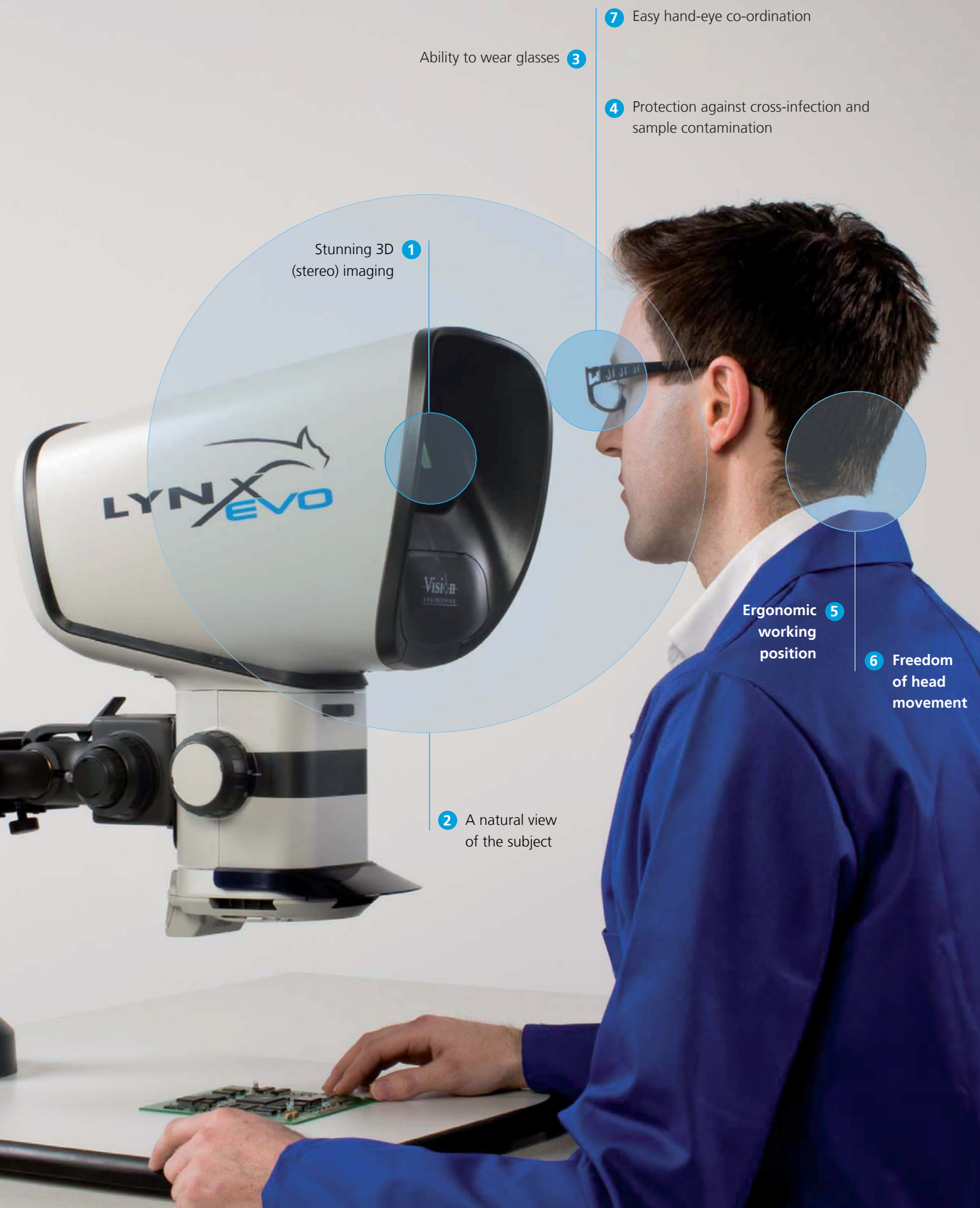
## 7 Easy hand-eye co-ordination

Sitting back from the viewing lens provides users with much better peripheral vision, allowing natural hand-eye co-ordination, critical for precision inspection tasks, re-work, repair, dissection and other manipulation activities.



Work more efficiently with Lynx EVO.

# Power your productivity through eyepiece-less technology



Stunning 3D **1**  
(stereo) imaging

Ability to wear glasses **3**

**7** Easy hand-eye co-ordination

**4** Protection against cross-infection and  
sample contamination

Ergonomic **5**  
working  
position

**6** Freedom  
of head  
movement

**2** A natural view  
of the subject

## The eyepiece-less advantage

Lynx EVO employs revolutionary Dynascope® technology, improving productivity through unrivalled ergonomics and ease of use.

- Superior ergonomics promotes greater productivity and efficiency.
- A natural view of the subject with easy hand-eye co-ordination.



## Lynx EVO product details

### Highlights

In addition to unrivalled ergonomic benefits, Lynx EVO has the flexibility to be tailored to your requirements.

- Modular design allows tailoring for individual applications.
- 10:1 zoom ratio provides 6x - 60x magnification, increasing to 120x with supplementary lenses.
- Integrated HD camera/software (option) provides seamless image/video capture and annotation capabilities.
- Long working distance for easy sample manipulation.
- Flexible stand options, ideal for industrial and life science applications.

### Illumination

- 8-point LED ringlight with intensity control.
- In-built rotating diffuser for contrast adjustment.
- 5-point LED transmitted (substage) illumination (option).

### Optical excellence

- Lynx EVO incorporates Dynascope® patented optical technology. Dynascope® technology optimises head and body freedom providing 10mm side-to-side and 70mm front-to-back head freedom.
- 6x – 60x multiplied with objective lenses to a total magnification of 120x. 10:1 zoom ratio with indexing lever.
- Iris control within the zoom unit for greater control over the depth of field and contrast.
- Coarse and fine adjustment for fast and precision focusing.

| Objective lens | Zoom range | Working distance | Field of view at min. zoom | Field of view at max. zoom |
|----------------|------------|------------------|----------------------------|----------------------------|
| 0.45x          | 2.7x – 27x | 176mm            | 55mm                       | 5.5mm                      |
| 0.62x          | 3.7x – 37x | 128mm            | 40mm                       | 4.0mm                      |
| 1.0x           | 6x – 60x   | 75mm             | 25mm                       | 2.5mm                      |
| 1.5x           | 9x – 90x   | 42mm             | 16mm                       | 1.6mm                      |
| 2.0x           | 12x – 120x | 29mm             | 12mm                       | 1.2mm                      |

# Lynx EVO stand options



## Ergo stand

- Small footprint for restricted bench space.
- Exceptionally stable for high magnification use.
- Transmitted (substage) illumination (option) permits viewing of a wider range of sample types.
- Floating stage (option) provides sensitive control for accurate inspection of samples; ideal for inspecting fragile samples, or for avoiding contamination by handling.

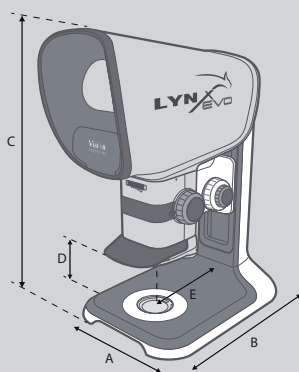


## Multi-axis stand

- Precise and robust, ideal for industrial applications where maximum work space is desired.
- Extended reach permits the inspection of large samples (max. throat depth 439mm).
- Integrated gas strut provides counter-balanced adjustability, making operation quick and effortless. Switch between tall components and flat samples with ease.



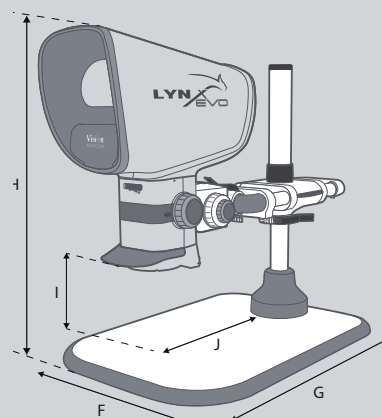
## Technical details



**Dimensions:**  
A = 280mm  
B = 420mm  
C = 670mm max.  
D = 200mm max.  
(less working distance)  
E = 200mm

**Unpacked weight:** 15.3kg  
**Packed weight:** 19.5kg

**Ergo stand**



**Dimensions:**  
F = 455mm  
G = 635mm  
H = 425mm max.  
I = 270mm max.  
(less working distance)  
J = 285mm max.

**Unpacked weight:** 26.6kg  
**Packed weight:** 30.8kg

**Multi-axis stand**



Floating stage

## Floating stage

A floating stage accessory for the Ergo stand provides smooth and precise control, ideal for inspecting sensitive samples, checking uniformity of components, or together with the measuring graticule for scaling or measuring subjects.



Smart Cam

## Objective lenses

Choose from a range of objective lenses to provide the desired magnification range or working distance.

Objective lenses incorporate anti-reflection coatings to enhance imaging performance.

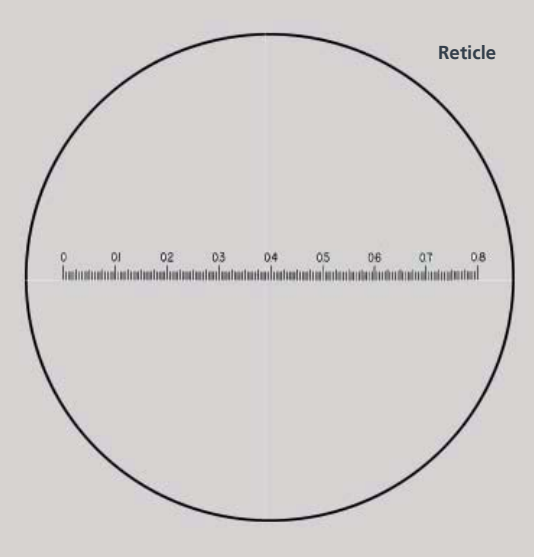


Objective lenses

## Smart Cam

Easy and convenient image/video capture while retaining both optical paths (for simultaneous stereo viewing).

The supplied uEye software includes easy annotation and mark-up capability.



Reticle

## Reticle

Both simple cross hair, and measurement reticle (pictured) with scale are available for the Lynx EVO.

The measurement reticle allows quick, simple dimensioning of the subject as it is being inspected.

Custom reticles are also available.



360° rotating viewer

## Transmitted (substage) illumination

Transmitted illumination (option) permits viewing of a wider range of sample types. Provides flexibility as transparent samples can be viewed by transmitted as well as incident light.



Transmitted (substage) illumination

## 360° rotating viewer

The 360° rotating viewer for Lynx EVO is the ultimate inspection accessory, permitting a full 360° rotating view of the subject (at an angle of 34°). Operators can simply switch between rotating and a conventional direct view.



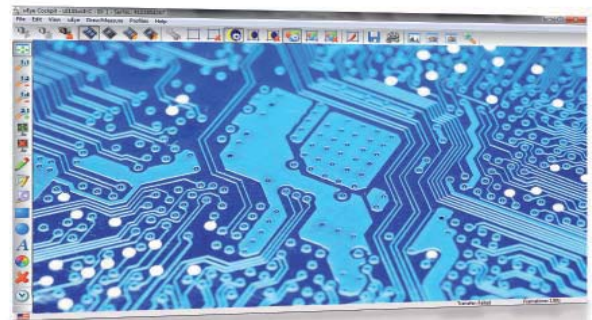
## Smart Cam digital camera

- Integrated HD camera/software (option) provides seamless image/video capture and annotation capabilities for documentation purposes, with simultaneous on-screen display (via PC). Ideal for demonstration or training.
- Easy convenient image/video capture while retaining both optical paths for stereo viewing.
- USB2.0 interface for easy connectivity.

| Camera data        |   |
|--------------------|---|
| Sensor type        | CMOS  |
| Resolution (W x H) | 1600 x 1200 pixels                          |
| Sensor size        | 1/3"  |
| Pixel size         | 2.8µm                                       |
| Colour depth       | 8-bit                                       |
| Refresh rate (fps) | 18.3 fps max.                               |
| File formats       | BMP, JPEG, PNG and AVI                      |
| Supplied software  | uEye Cockpit<br>(Other solutions available) |

## uEye Cockpit software

- The included software provides easy annotation and quick reporting of inspected products. Annotations can be loaded as separate files and so can be used for template checking.
- Easy image capture in compressed JPEG, PNG, or uncompressed BMP format.
- Record video in highly compatible AVI format, allowing a high level of control over movie clips.



## Measuring software option

*DimensionOne™* is a powerful software solution for Lynx EVO, providing enhanced annotation, as well as on-screen measurement and dimensioning capabilities. *DimensionOne™* comes with a CD and calibration artefact for easy on-screen measurement.

Other compatible software solutions are also available.

Read about *DimensionOne™* software:  
[www.visioneng.com/dimensionone »](http://www.visioneng.com/dimensionone)





360° rotating viewer

## 360° rotating viewer

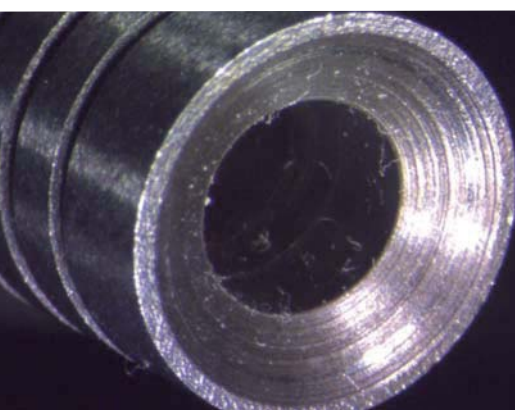
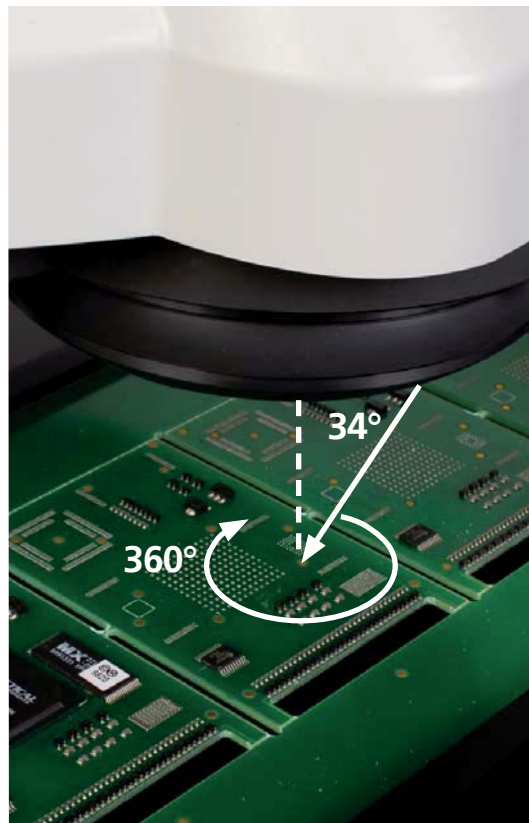
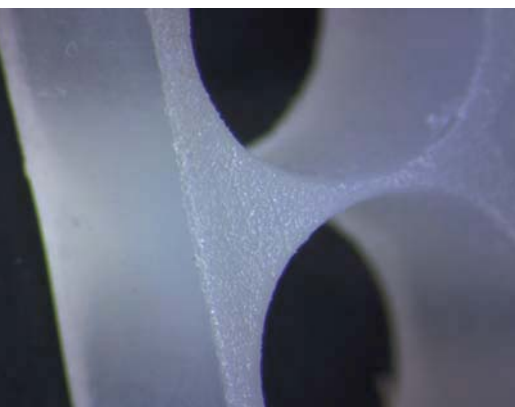
Allows the operator to view a subject from an angle of 34° from vertical, which can be rotated through to 360° enabling a complete stereo view of 3-dimensional subjects.

- The 360° rotation provides enhanced observation for many applications, including electronics, mechanical, medical and plastics components.
- At 34° angle allows detail to be seen at the base of any vertical components or features.
- Simply switch between 360° rotating view and a conventional direct view for ultimate convenience.
- Includes integrated 8-point LED ringlight and objective lens.

| 360° rotating view |                  |                            |                            |                   |
|--------------------|------------------|----------------------------|----------------------------|-------------------|
| Zoom range         | Working distance | Field of view at min. zoom | Field of view at max. zoom | Viewing angle     |
| 4.2x (16x*) – 42x  | 35.5mm           | 10.2mm*                    | 3.8mm                      | 34° from vertical |

| Direct view       |                  |                            |                            |               |
|-------------------|------------------|----------------------------|----------------------------|---------------|
| Zoom range        | Working distance | Field of view at min. zoom | Field of view at max. zoom | Viewing angle |
| 6.8x (15x*) – 68x | 56.5mm           | 12.0mm*                    | 2.5mm                      | -             |

\* Uninterrupted



# How Lynx EVO works...

## Dynascope® inside

Lynx EVO employs an evolution of Vision Engineering's patented Dynascope® eyepiece-less optical projection technology. Dynascope technology removes the need for conventional microscope eyepieces, providing the user with brilliant, high contrast imaging, unrivalled ergonomic performance and amazing ease of use.

## Dynascope® technology explained

Lynx EVO is a true optical stereo microscope. High resolution, true-colour optical images are viewed through an ergonomic eyepiece-less viewing head.

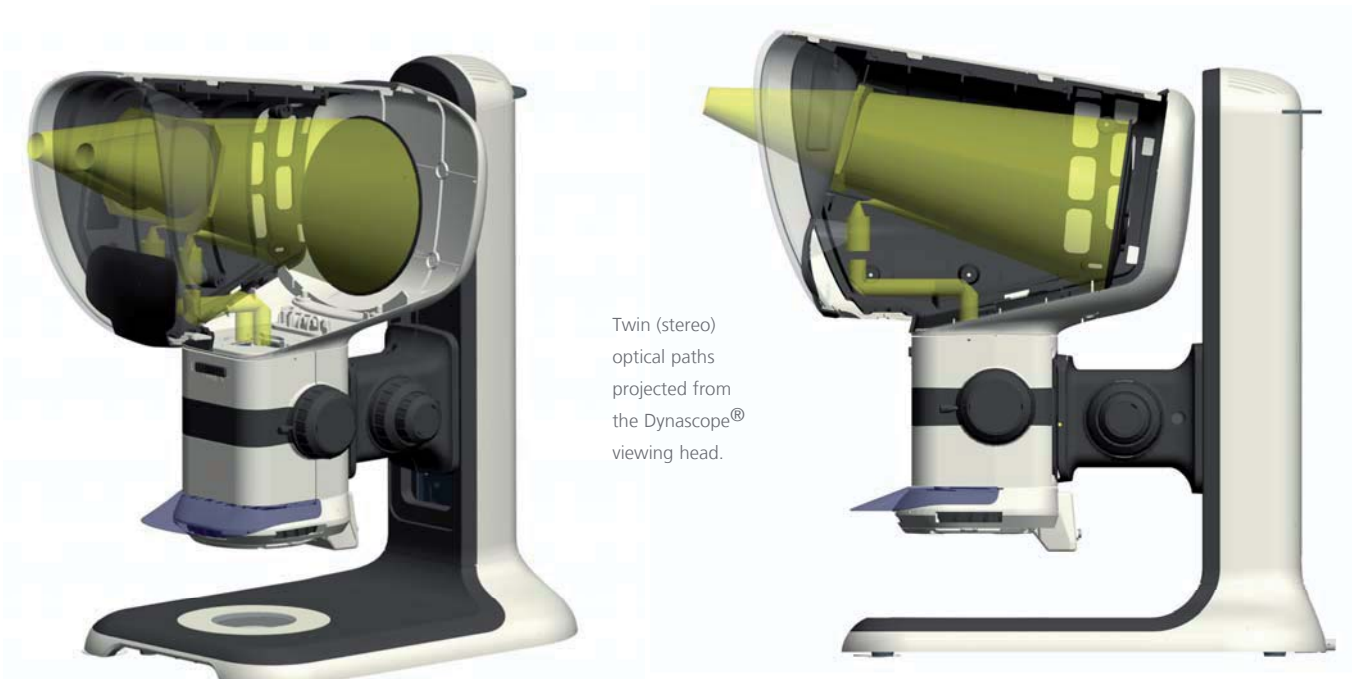
Light reflects from the patented Dynascope optics, exiting the single viewing lens as twin (stereo) light paths. The large diameter of these exit rays means that users do not need to precisely align their eyes with the viewing lens in order to see the image.

***The result is an incredibly easy-to-view, high resolution stereo (3D) image. Without the need for eyepieces.***

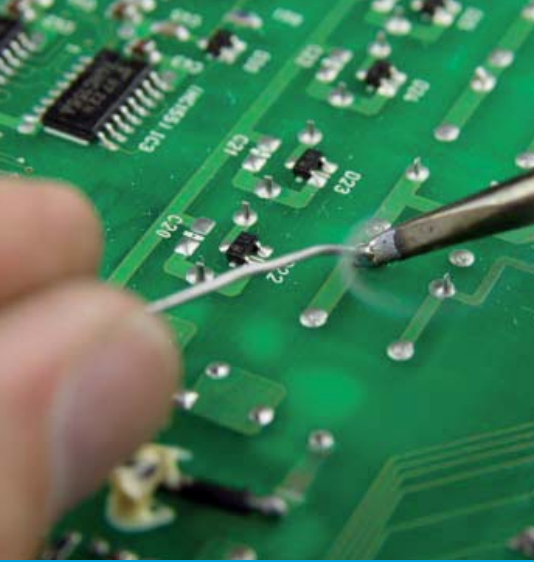
## Did you know?

At the heart of Vision Engineering's patented Dynascope® eyepiece-less technology is a spinning multi-lenticular (multi-lens) disc. On the surface of the disk there are more than 3.5 million individual lenses (known as lenticules), which act as independent image-forming surfaces. Each individual lens has a diameter of just a few microns (1 micron = 0.001mm).

The multi-lenticular disk spins at high speed to merge the millions of individual optical paths into an aberration-free, high-clarity image.

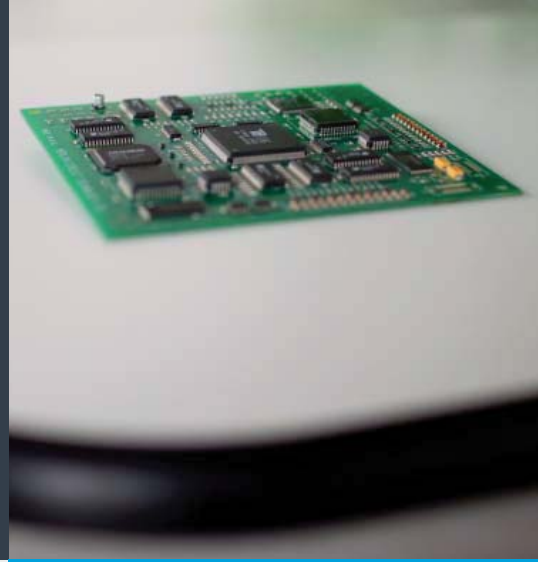






## Electronics

Lynx EVO is ideal for electronics PCB inspection and re-work. The patented optical viewing head of Lynx EVO provides unrivalled 3D viewing with ergonomic advantages of simplified hand-eye co-ordination.



## Laboratory / Life sciences

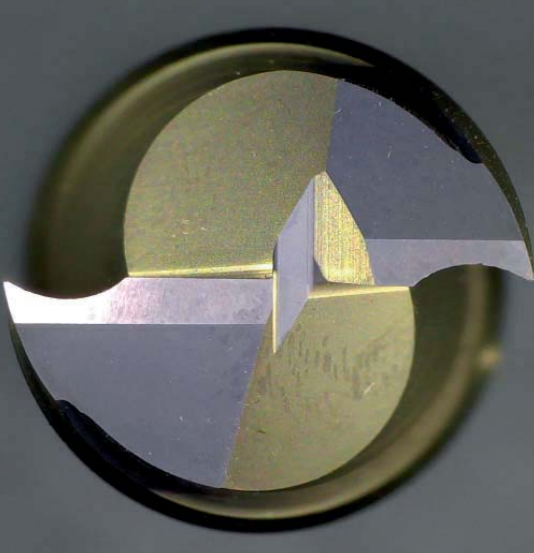
Sample preparation and dissection in a laboratory is made safer and easier with Lynx EVO. The eyepiece-less viewing head not only allows protective goggles or glasses to be worn, but also allows Lynx EVO to be used when placed in a laminar flow, or safety cabinet.



## Medical devices

From stents to catheters, medical device components require 100% inspection to ensure every product meets an exacting specification.

See every detail with Lynx EVO, time-after-time, across the entire shift.



## Precision engineering

Precision engineered components cover a very wide range of industries, from aerospace or automotive to watchmaking and general manufacturing. Lynx EVO's clear view and superior ergonomics are ideal for precision inspection, aiding visual accuracy and minimising errors caused by user fatigue.



## Plastics and rubber

Rubber seals, packaging, caps and closures are precision manufactured to work effectively. Inspection for quality is essential. Stunning 3D (stereo) viewing with a long working distance make inspection or re-work tasks such as flash removal easy.



**From forensics to fibre optics, solar cells and packaging, Lynx EVO can be utilised for thousands of inspection tasks...**

# More about Vision Engineering...

## About us

Vision Engineering has been designing and manufacturing ergonomic microscopes for over 50 years.

With a philosophy of design innovation, Vision Engineering holds world patents for a number of optical techniques which significantly improve microscope ergonomics.

To date, over 300,000 eyepiece-less microscopes have been installed for both industry and life science applications.

## ISO 9001:2008

Vision Engineering Ltd is certificated for the quality management system ISO 9001:2008.



## Service and support

Vision Engineering has a network of international offices throughout North and South America, Europe, Asia, Australasia and South Africa, supported by fully trained distributor partners. Full user training, service, and support is available, ensuring the highest levels of customer support is maintained.

## Company history

Vision Engineering was founded in 1958 by Rob Freeman, a toolmaker who had previously worked as a race mechanic with the Jaguar Racing Team. While at Jaguar, Rob developed a borescope for inspecting internal race engine parts without the need for disassembly.

Subsequently he formed Vision Engineering as a means of developing his interest in optics applied to manufacturing technology.

Over the years Vision Engineering has delivered leading-edge inspection and measurement products that have helped improved productivity and quality for thousands of companies the world over.



Falcon 3-axis video measuring machine.



Swift-Duo dual optical and video measuring system.

## Stereo microscopes

Vision Engineering's acclaimed eyepiece-less stereo microscopes offer stunning 3D (stereo) imaging combined with unrivalled ergonomics. The patented eyepiece-less designs liberate users from restrictive working practices, opening up a world of enhanced efficiency and productivity.

With more than 50 years' experience in the design and manufacture of innovative optical solutions, Vision Engineering has the expertise to advise you on the best solution for your application.

## Digital inspection

Take advantage of the power of digital imaging with Vision Engineering's range of digital video inspection systems. High resolution images combined with simple operation make digital inspection a powerful alternative for any task requiring precision magnification.

The range includes handheld digital solutions for inspection on the move, to full HD digital imaging with real-time video, for instant results.

## Non-contact measurement

Measurement applications vary greatly. This is reflected in the wide range of measurement solutions provided by Vision Engineering.

Vision Engineering manufacture a full range of non-contact measuring systems, including 'workshop' measuring microscopes, dual optical and video measuring systems, plus the latest field of view 'instant' measurement systems.

Vision Engineering also has a suite of inspection systems and software solutions, designed for simple on-screen dimensioning.



A full range of stereo microscopes and digital inspection solutions are available.

ryf ag



Ryf AG  
Bettlachstrasse 2  
2540 Grenchen  
tel 032 654 21 00  
fax 032 654 21 09

[www.ryfag.ch](http://www.ryfag.ch)