



# ALPHA

## Advanced Stereo Zoom Microscope for inspection and material rework

- Wide range of magnification x2.1 - x160
- Patented stereo Expanded-Pupil optical technology provides superb resolution and contrast
- Easy hand-to-eye coordination resulting in increased throughput, accuracy and reduced scrap
- Stereo optics for easy viewing and documenting of complex surfaces

Alpha utilises Vision Engineering's patented ISIS Expanded-Pupil technology to provide up to 10 times greater freedom of head movement than conventional binocular eyepiece microscopes.

The Expanded-Pupil optics of Alpha significantly increases head freedom and eye-relief compared to conventional eyepiece microscopes, reducing operator stress and fatigue over long periods of time. High precision optics provide maximum brilliance with high contrast images.

Alpha is used in a wide range of both industrial and life science applications, ranging from general manufacturing, medical devices, electronics, precision engineering, plastics and rubber to intricate life science work. The multiple accessories available for Alpha enable a wide variety of tasks including inspection, manipulation, assembly, dissection, soldering, polishing and finishing.

## Features and Benefits

- Incorporated modern advances in optical design allow eyes and hands to work together resulting in increased throughput, accuracy and reduced scrap and rework.
- Wide magnification range of x2.1 - x160 provides clear, sharp images with long working distances and large depth of field.

## Speed

- Increased head and body freedom for the operator leads to greater productivity, improved quality control and reduced fatigue.

## Versatility

- Modular design allows for quick changeover of accessories and options. For example, from manipulation to high magnification inspection on to image capture.

## Ergonomics

- Patented Expanded-Pupil technology expands the exit pupil providing head freedom and eye-relief for excellent ergonomics, superb hand-to-eye coordination and the ability to wear glasses, if required.



Alpha bench stand with optional oblique and direct viewer.

## Stand Options

- Stable, focusable bench stand with subject holder, substage illumination and floating or measuring stage options.
- Adjustable, swing away boom mount for mounting directly to user's work surface or with coated platform base for easy transport.

Crank handle option allows convenient vertical adjustment when frequent changes in working distance are required.



Alpha boom mount with optional fixed angle viewer.

## Technical Data

### Optical

- Afocal stereo zoom Expanded-Pupil microscope provides a 26.4° field angle.
- Expanded-Pupil patented technology optimises head and body freedom providing 10 times greater head freedom than conventional binocular eyepiece microscopes.

### Zoom Magnification (see table below)

- x7 - x40 multiplied by combinations of objective lenses and multipliers (total zoom magnification range x2.1 - x160).
- Zoom ratio 5.7:1
- Secondary multipliers x1.5 and x2.0
- Reducing objectives to increase working distance and field of view.
- Magnifying objectives to increase total magnification.

### Illumination

- 12V/60W semi-coaxial long-life spotlamps.
- 6 or 10-point ringlight options with 21V/150W Halogen lamp.
- Substage illumination (bench stand only) 12V/20W Halogen lamp.
- Option of tilting substage illuminator to enhance contrast.

## Alpha UV / White Light

Alpha UV / White Light is ideal for a wide range of non-destructive testing, crack & fatigue detection, conformal coating inspection of PCB's, UV medical adhesives and general UV inspection tasks.



- Superb stereo vision gives unsurpassed crack and coating visibility.
- Fast & accurate fault detection.
- Enhanced productivity and reduced scrap rates.

Fault detection is made more effective by magnification, highlighting minute cracks and pitting. Alternate UV / white light inspection can be selected with a footswitch allowing the inspector hands-free component manipulation.

Objective Lens	Zoom Range			Working Distance	Field of View at Max. Zoom			Field of View at Min. Zoom		
		with x1.5 multiplier	with x2.0 multiplier			with x1.5 multiplier	with x2.0 multiplier		with x1.5 multiplier	with x2.0 multiplier
<b>x0.3*</b>	x2.1 – x12	x3.2 – x18	x4.2 – x24	312mm	14.5mm	9.7mm	7.2mm	82.6mm	55.0mm	41.3mm
<b>x0.5</b>	x3.5 – x20	x5.3 – x30	x7.0 – x40	177mm	8.9mm	5.9mm	4.5mm	51.0mm	34.0mm	25.5mm
<b>x0.7</b>	x4.9 – x28	x7.4 – x42	x9.8 – x56	130mm	6.4mm	4.3mm	3.2mm	36.0mm	24.0mm	18.0mm
<b>x1.0</b>	x7.0 – x40	x10.5 – x60	x14 – x80	85mm	4.4mm	2.9mm	2.2mm	24.9mm	16.6mm	12.5mm
<b>x1.5</b>	x10.5 – x60	x15.8 – x90	x21 – x120	47mm	3.0mm	2.0mm	1.5mm	17.0mm	11.3mm	8.5mm
<b>x2.0</b>	x14 – x80	x21 – x120	x28 – x160	29mm	2.2mm	1.5mm	1.1mm	12.6mm	8.4mm	6.3mm

\* when using the x0.3 objective lens with a bench stand model, an extended stand column is required to accommodate the increased working distance.

## Accessories

### Oblique and Direct Viewer

- Allows the operator to view a subject from an angle of 34° from vertical, which can be rotated through to 360° enabling a better stereo view of 3-dimensional subjects including PCB solder joints, holes, pillars and thread forms. Both manual and motorised versions are available.



Oblique and direct viewer

### Fixed Angle Viewer

- Allows the user three options; a fixed angle of 25° from vertical, the ability to view vertically or tilting the optical head and using the system standing up.



Fixed angle viewer

### Ergowedge

- Allows the view to be adjusted between -5° and -25° from horizontal.



Ergowedge

### Image Capture and Archive

- Digital, USB and 35mm SLR cameras including Sony, Nikon, Pixera, Canon and other leading makes.
- Modular multimedia solutions for image archiving, acquisition, processing, analysis and documentation.



Image capture and archive

### Step Magnification Multiplier

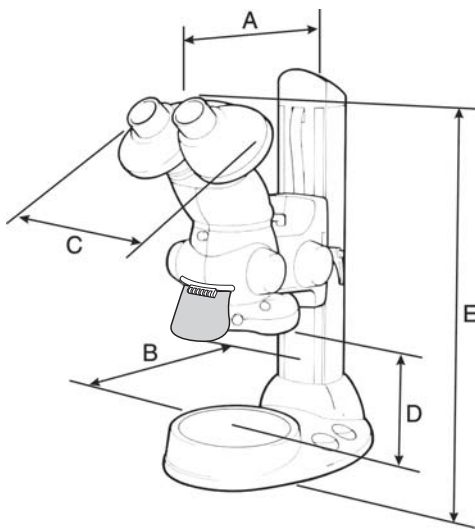
- Allows the stereo zoom range to be increased by a factor of x1.5 or x2 without any loss in working distance.



Step magnification multiplier

### Measuring/Comparison Graticule

- Allows the user the ability to measure and compare against a scale. Standard range is available as a crossline or graduated scale. Custom graticules can be manufactured to specific designs.



Alpha Bench Stand

**Bench Stand:**

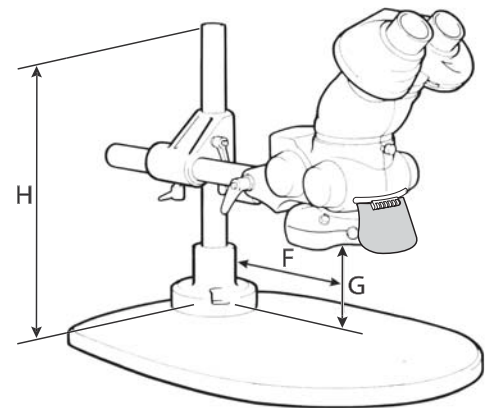
- A = 390mm
- B = 150mm
- C = 234mm
- D = 127mm
- E = 490mm

Unpacked weight: 12.0kg  
Packed weight: 14.0kg

**Boom Mount:**

- F = 400mm maximum
- G = 310mm less working distance
- H = 440mm

Unpacked weight: 19.0kg  
Packed weight: 22.0kg



Alpha Boom Mount

**For more information...**

Vision Engineering has a network of offices and technical distributors around the world. For more information, please contact your Vision Engineering branch, local authorised distributor, or visit our website.

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