



## µScope Microscopy Software

**Pixelink® µScope Essentials (ES)** is a robust image capturing tool that is designed for ease of use.

**Pixelink® µScope Standard (SE)** includes additional features for those intermediate microscopy image capture needs.

**Pixelink® µScope Professional (PRO)** is designed for users that require more advanced tools to process and evaluate microscopy images. Some additional features include z-axis, extended focus, shading correction and reflected light elimination.

## Functionality Explained

**Live Measurement and Overlay Settings:** Measurements can be taken on a live preview image with crosshair or grid masks. Calibration markers (or scale bars) can be placed on the live preview images or automatically added to each image as they are captured.

**Calibration (Auto or Manual):** Before accurate measurements can be taken, an auto or semiauto calibration needs to be performed based on pixels-per-unit. Manual calibrations can be performed, saved and later referenced from a drop down menu. Password protection of the calibration files ensures their integrity for later use. Passwords can be utilized in the calibration menu or with the camera resolution option.

**Time Lapse Capture:** The time lapse capture feature creates a video from a sequence of still images. Images can be imported from TIF, BMP and JPG file formats. Videos can be exported as AVI, MPG, MPEG and MOV file formats.

**Export to Excel®:** Images, measurements, calibrations, annotations, statistics and charts can all be exported in Excel format for later review.

**Manual Measurement Tools:** Distance, area and angles can all be measured with the measurement tools. The tools detect the object's edge allowing for more accurate measurement between objects. The measurement tools include a 3-point circle tool and an N-point circle tool. A separate window with a close-up view allows for precise selection of measurement points. Measurement data can be captured and exported to Excel for further review.

**Line Profiling:** Single, multiple, parallel and polyline commands provide Gray/Red/Green/Blue intensity values for specific lines within an image. The profile data of each pixel on the line can be exported to Microsoft® Excel.

**Image Processing:** Brightness, contrast, gamma, background subtraction, histogram, clone, crop, ROI, resize, rotate, split and image mode can all be adjusted manually. Images can be viewed in Grayscale, RGB, HSB, YUV Pseudo, 8bit and 16bit color modes. Filters assist with enhancement and morphology.

**Manual Measurements:** It is possible to measure distance, point count, straight lines, circles by radius, circles by N points, circles by diameter, circles by 3 points, rectangles, polygons, polylines, splice lines from a common point or determine the angle between 2 lines.

**Annotations:** Include lines, arrows, polylines, splines, rectangles, ellipses and text.

**Image Editing Functions:** Undo, redo, copy, paste, paste new, delete, delete all, annotate and image information.

**Region of Interest (ROI):** Locations can be highlighted using rectangles, circles, ellipses, polylines or splines. Once the ROI is saved it can be used to reference the same location on different images.

**Image Viewing:** Images can be viewed up to a 1,600% magnification, zoomed out or fit to window, which allows for accurate edge detection. All open images can be viewed simultaneously to better establish context.

**Save Options:** Saving the project in .img format allows for future editing of text, images and measurement data. Final renderings can be saved as JPG, JPEG, TIF, TIFF, BMP, GIF, PCX, TGA, MPG, MPEG, AVI, MOV, IMG, RPT and TXT file formats.

**Window View:** Your samples can be viewed in the following views; Split Horizontal, Split Vertical, Cascade, Tile Horizontal, Tile Vertical, Arrange Icons, Dynamic User Interface (UI), Classic or Modern.

**Time Lapse Sequence Control:** When it is necessary to the progression of a sample over time, a video can be created from a series of still images. The resulting clip can be shown in forward, reverse or even split screen. The video can be saved in MPG, AVI or MOV formats.

**Z-Axis Extended and Focus Imaging (EFI):** When viewing a sample under higher magnification it often becomes difficult to focus on elements at various depths. This is even more pronounced with a stereo microscope, where the view is from an angle. To achieve a clear image that incorporates the z-axis, images with different focus depths can be combined, allowing all elements to be viewed in focus at the same time. This composite can be created manually or automatically and trace composites are eliminated.

**3D Visualization:** The 3D visualization feature takes a flat image and creates a 3D rendering based on variations in intensity. Adjusting the z-axis setting makes it possible to adjust the 3D effect. Rotating the sample 360° on all three axis, makes it possible to view it from any perspective. The image or a wireframe view can be saved in JPG, GIF and BMP file formats.

**Image Stitching:** When higher magnification is used the field of view often limits how much of a sample can be captured in one image. The image stitching function allows you to combine the individual tiles into on seamless, composite image. Brightness variations between slidews is automatically corrected.

**Live Image Comparison:** QA testing and go/no-go inspections can be quickly performed by comparing the live preview and stored images. This is helpful when performing size verifications.

**Combine Image Planes:** Fluorescence images and monochrome images can be merged into a single RGB composite.

**Shading Correction:** Images captured at low magnification often have a background shading near the edges. This shading can be removed with the shading correction function. Capturing an image without elements allows for the shading to be removed without affecting the color of the elemnts being viewed.

**Report Generator:** Create reports for inserted image data and other OLE Objects.

**Fast and Perfect Focus Enhancement:** Fast Focus Enhancement allows you to combine individual unfocused images into a single, in-focus composite image. Before you perform this command you need to select (enumerate) the unfocused images in the Context window. Perfect Focus Enhancement is used in the same way but will provide a better quality image, showing more detail.

**Live Focus Enhancement:** Live focus enhancement allows users to adjust focal depth or take measurments in a preview window without having to capture an image. Changes can be made while focused in on different target locations.

# Which version of $\mu$ Scope will match your requirements?

Software Features	$\mu$ Scope ES	$\mu$ Scope SE	$\mu$ Scope PRO
Pixelink API Control	✓	✓	✓
Time Lapse Capture and Movie File Production - crosshair live preview	✓	✓	✓
Save in Multiple Image File Formats - jpg, jpeg, tif, tiff, bmp, gif, pcx, tga, mpeg, avi, mov, img, rpt and txt	✓	✓	✓
Overlays - crosshair, grid mask, image, marker and time stamp	✓	✓	✓
Image Editing - mode change, done, crop, resize and rotate	✓	✓	✓
Multiple roi, shapes & copy, paste and crop roi	✓	✓	✓
Color Formats - grayscale, rgb, hsb and yuv	✓	✓	✓
Image Sequence Control	✓	✓	✓
Zoom Control - 100% to 1600% and fit to window options	✓	✓	✓
Annotation - line, arrow, polyline, spline, rectangle, ellipse and text	✓	✓	✓
Image Editing - undo, redo, copy, paste, paste new, delete, delete all, annotate and image information	✓	✓	✓
Image Processing - manual brightness, contrast, gamma, background subtraction, histogram, done, crop roi, resize, rotate, split, image mode change, grayscale, rgb, hsb and yuv pseudo color view		✓	✓
Multiple Window Configurations	✓	✓	✓
Manual Measurement Tools - 3 point circle functionality, npoint circle measurement, parallel line distance measurement, perpendicular distance measurement, object distance measurement and zoom-in view	✓	✓	✓
Report in Excel® - images to measurement, calibration, annotations, measurement data, statistics and charts	✓	✓	✓
Report Generator - create, insert images and OLE objects	✓	✓	✓
Auto and Semi-auto Calibration	✓	✓	✓
Manual Calibration	✓	✓	✓
Measurement Parameters - area, max length, line length, center x, center y and angle	✓	✓	✓
Measurement Data	✓	✓	✓
Profile View - straight line, polyline, parallel line, select and change		✓	✓
Line Profiling - single, multiple, parallel and polyline commands provide gray/red/green/blue intensity values for specific lines within an image. the profile data of each pixel on the line can be exported to Microsoft® Excel		✓	✓
Calibration Marker (scale bar) can be placed on the live preview and burned in automatically	✓	✓	✓
Live Measurement and Overlay Settings - perform measurements on the live preview image, using the crosshair or grid masks to center and count. The grid masks include calibration data	✓	✓	✓
Dynamic User Interface	✓	✓	✓
Image Stitching	✓		✓
Z-Axis Extended Focus Imaging with displacement compensation			✓
3D View - clearly view complex structures			✓
Fluorescent Image Composition			✓
Fast and Perfect Focus Enhancement			✓
Shading Correction			✓