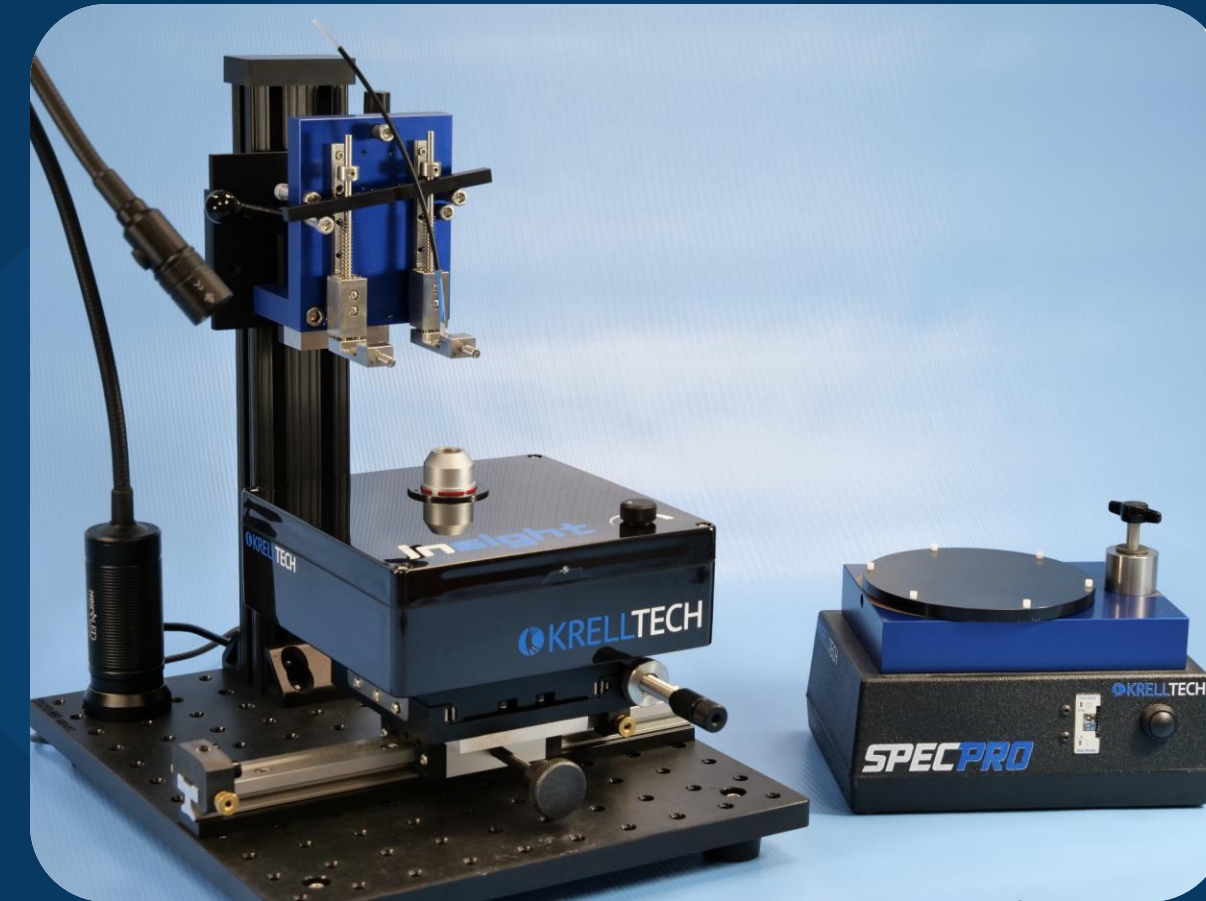


insight

Inverted Benchtop Microscope

Operational Guide



 **KRELLTECH**
ENERGIZE PHOTONICS

Insight Overview

1. Workholder Clamp
2. Fine Z-Axis (Focusing) Control
3. Coarse Z-Axis Translation
4. Universal Workholder Mount
5. Interchangeable Objective Lens
6. Epi-Illumination Dial
7. Coarse Y-Axis Adjustment
8. Fine Y-Axis Adjustment
9. X-Axis Locking Screw
10. Y-Axis Locking Screw
11. X-Axis Reference Stops
12. Gooseneck L.E.D Lamp (not shown)

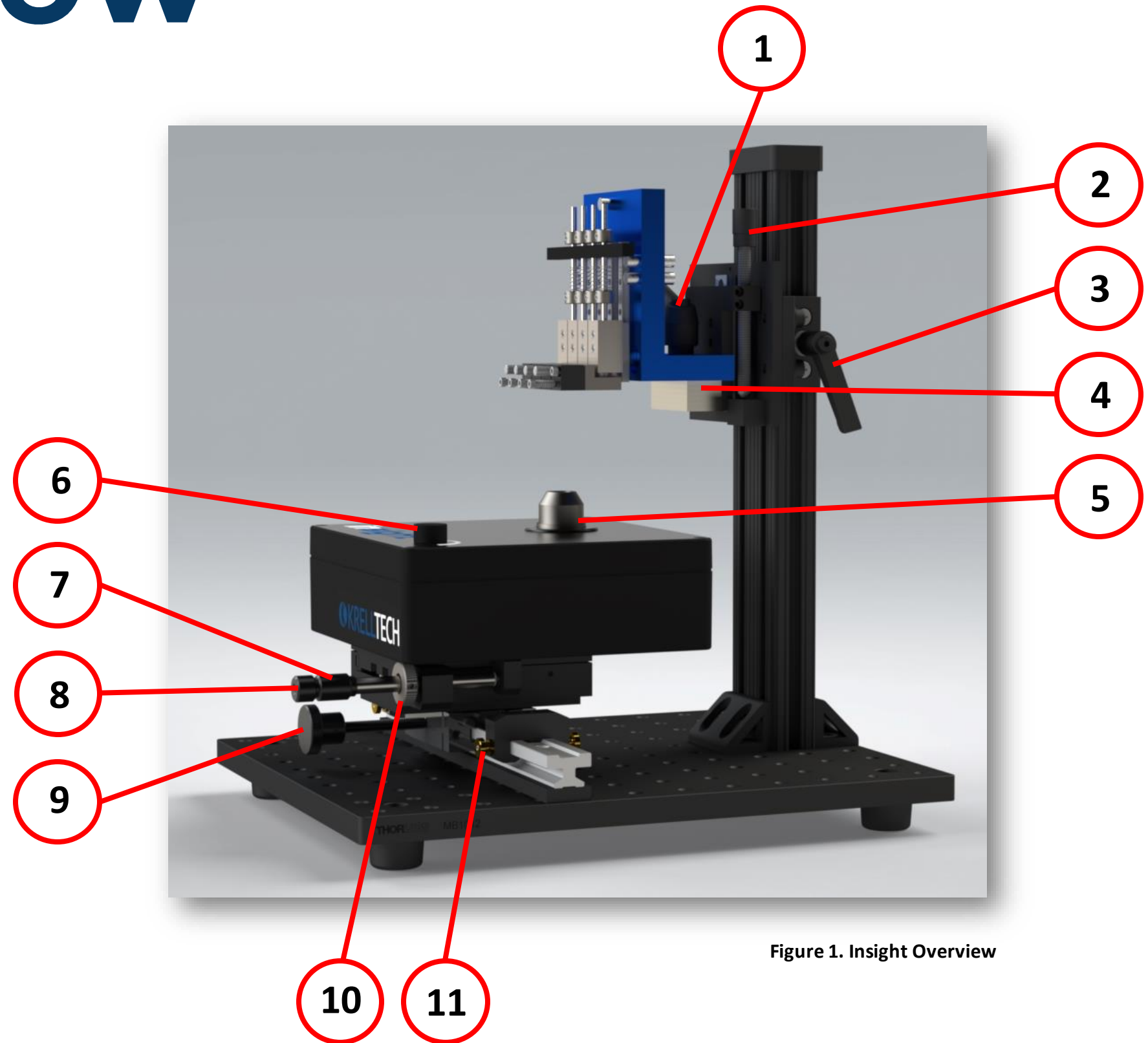


Figure 1. Insight Overview

Setup

1. Plug into PC: Insert the USB microscope cable into the corresponding port on the provided PC. Select the Insight Camera.

2. Load Workholder: Load the workholder onto the universal mount at a slight angle while the clamp is loose, then place it flush to the interfacing plate and tighten the clamp to secure (see Figure 2). The clamp can be adjusted to accommodate different workholders and custom fixturing. To adjust, first lift the handle while applying pressure to the center nut using a flathead screwdriver. Rotate the center nut to adjust the clamping position, then release the handle to engage (Figure 3).

3. Illumination: Turn on the Epi-illumination (in-line) by twisting the knob on the top of the Insight (6). Depending on lab lighting conditions, the 'Auto-Exposure' option may need to be deselected within the Vision Software. The Epi-illumination allows for greater detail of surface defects when inspecting fibers. The external L.E.D gooseneck lamp allows for greater visual details of the surrounding sample.

4. Adjust Positional Stages:

X Stage - Slide the microscope along the translational rail until centered under the sample. Slide and lock the Reference Stops in place on either side for quick viewing repeatability.

Y and Z Stages - Use the coarse adjustments to quickly locate the sample in the viewfinder software, then use fine adjustments to obtain a precise image of the sample.

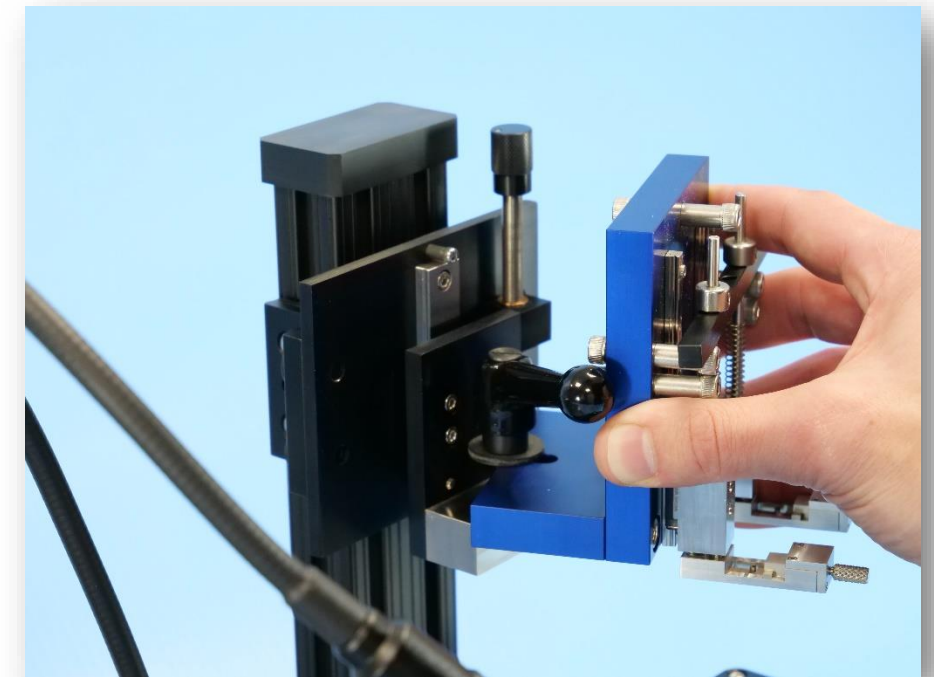


Figure 2. Loading SpecPro Workholder



Figure 3. Adjusting Clamping Handle

Vision Software

Software Settings:

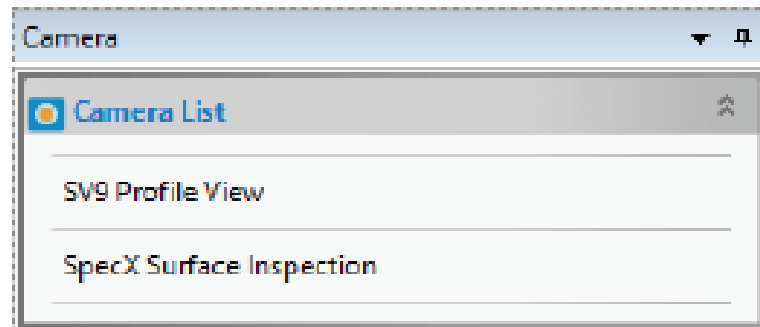


Figure 4. Camera Selection

1. Select the microscope to be used (see Figure 4). Please note only one camera can be run at a time. The camera view must be closed out to switch views. To close current view, press CTRL+W or right click the live view tab and close.

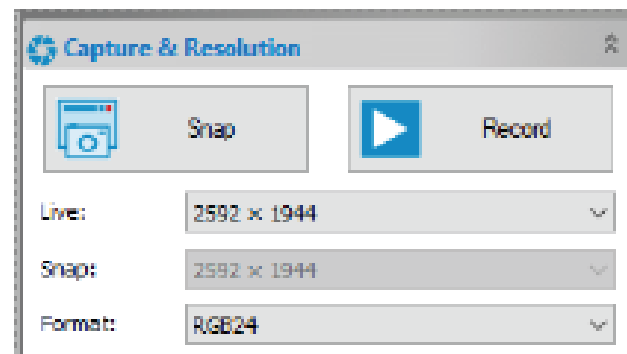


Figure 5. Capture and Resolution

2. Select the resolution. Higher resolutions will have a greater impact on frames per second performance. Low frames will cause choppy video quality. For videoscopes purchased pre-February 2023, 800x600 resolution should be selected for smooth operation.

NOTE: Snap and Record will capture images and video, respectively. For images with measurements, the image must be merged to save with graphics. Either press F2 to flatten image or navigate to: 'Layer' > 'Merge to Image.'

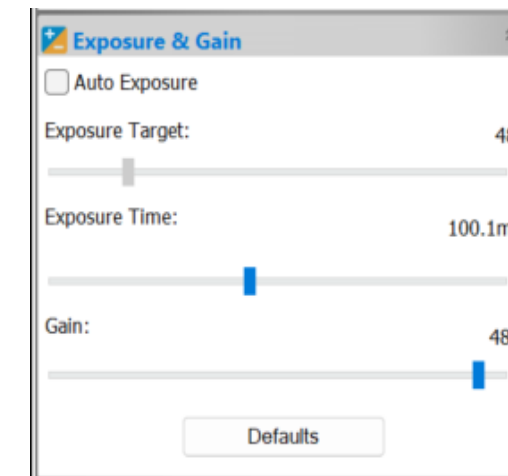


Figure 6. Exposure and Gain

3. Auto Exposure. Auto exposure and Exposure target will automatically adjust based on the amount of light and the selected area. If experiencing insufficient light upon inspection, deselect Auto Exposure.

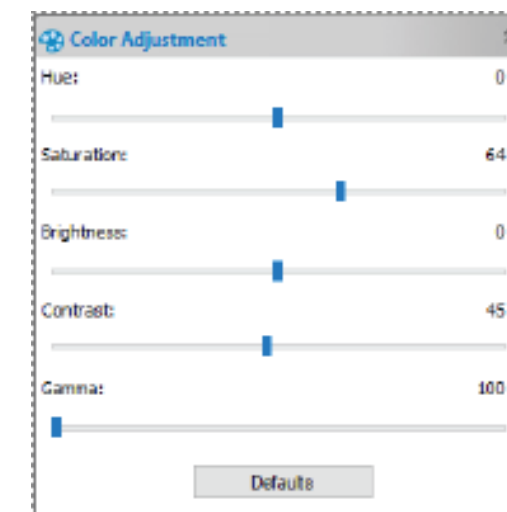


Figure 7. Color Adjustment

4. Color Adjustment. For surface inspection, the coarseness of the polishing step will affect the amount of light reflected. Saturation, Brightness and Contrast can be adjusted for optimal viewing quality.

Additional Features

Digital Zoom – 70% shown. Max Digital zoom, 1000%+ Image Capture via Microscope Software

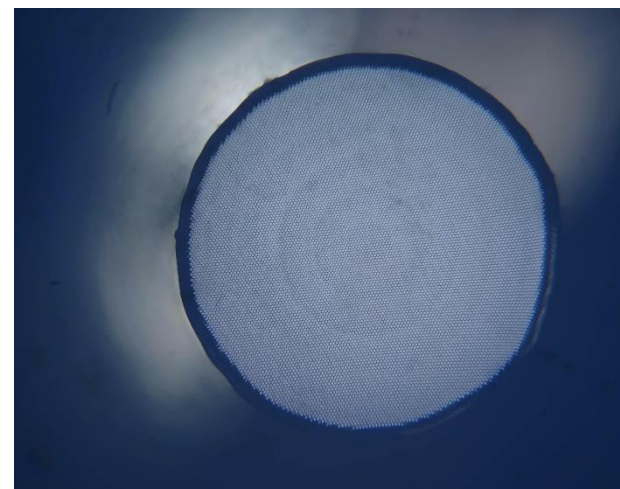
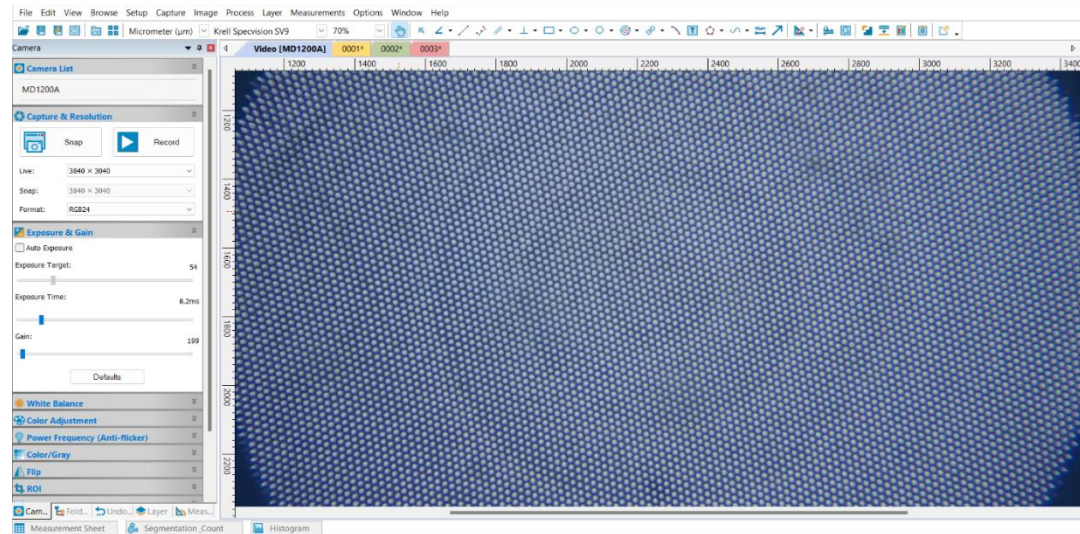


Figure 8. 2mm Fiber Digital Zoom

Interchangeable Lens – Option to swap out Finite Conjugate (160mm), Din Standard lens.

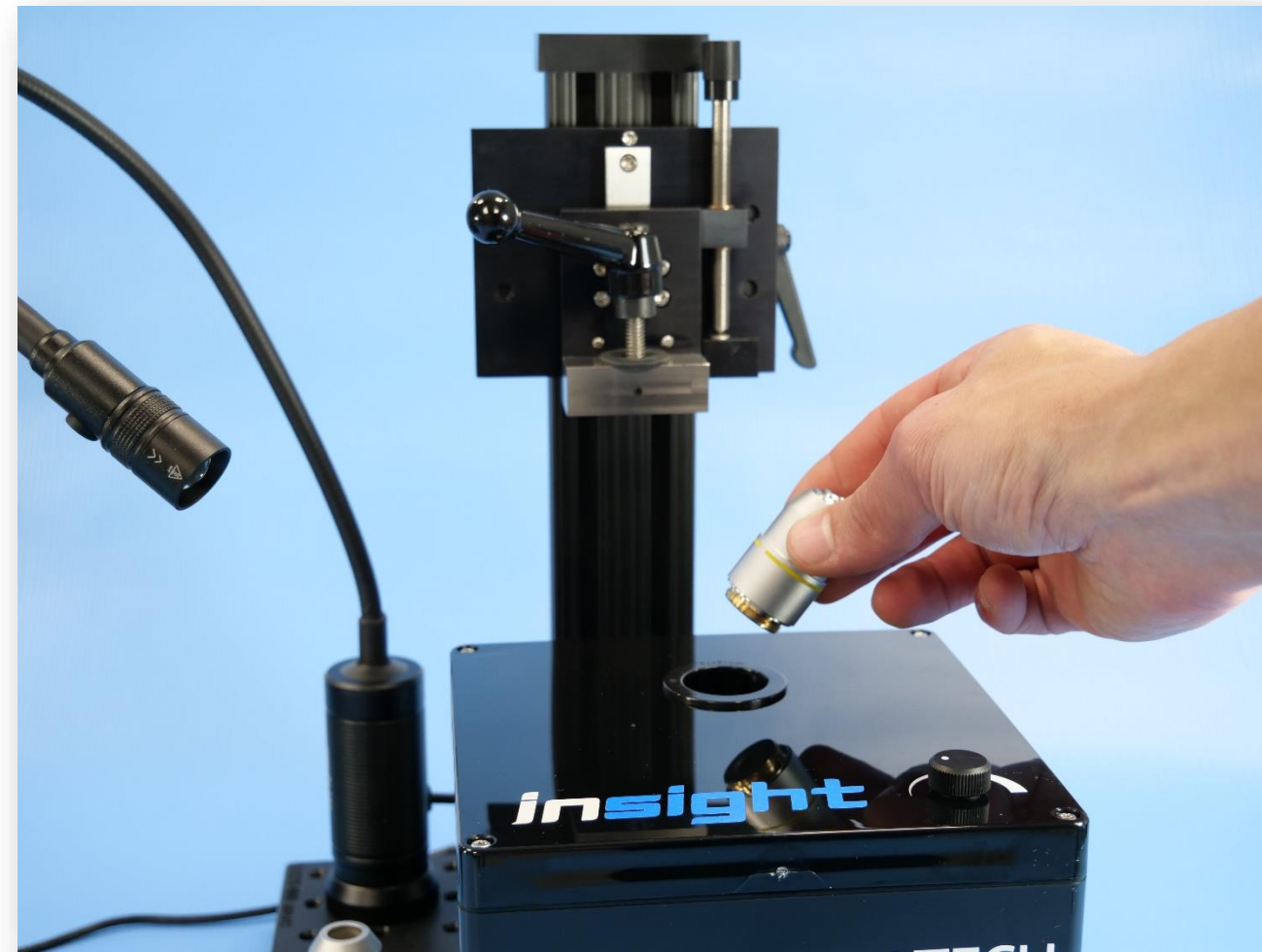


Figure 9. 10X Objective Lens Swap

Measurement Software – Precise ability to measure defects, angles and final geometry confirmation



Figure 10. Measurement Calibration Check

Select desired magnification level from the drop down menu, or select the image and scroll.

Carefully unscrew installed lens and replace with another 160mm Din Standard Objective Lens

See Help Section in Software for more information on measurement tools. Ensure correct magnification settings are selected.