User's manual

OptiVID

Warning !

- **Gently handle this material, it is sensitive to shocks.**
- **Cable ducts must be free from defects.**
- **A humid environment can harm the equipment.**
- **Checks can be performed by anyone but only a specifically trained person is authorized to perform a corrective action.**
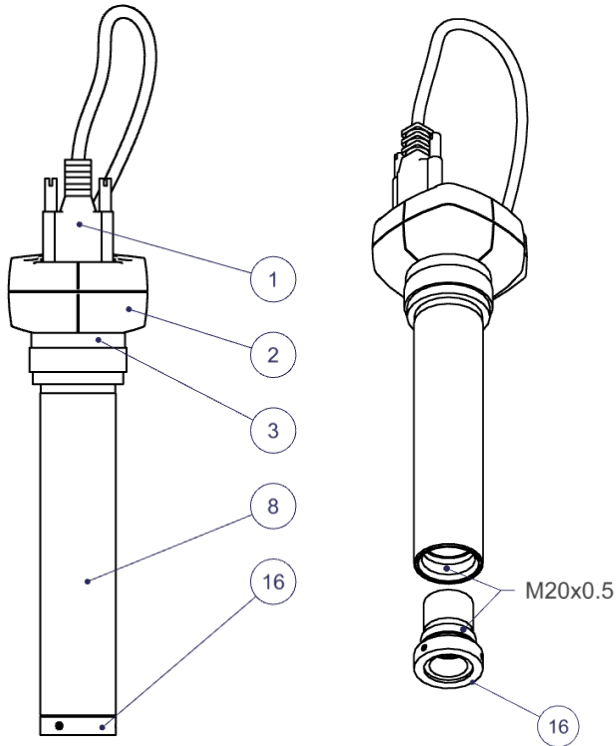
Notice

Some optics without zoom have a centering C-mount. In this case, the instructions concerning the centering of the optical axis remain valid.

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"Interchangeable lens" OptiVID

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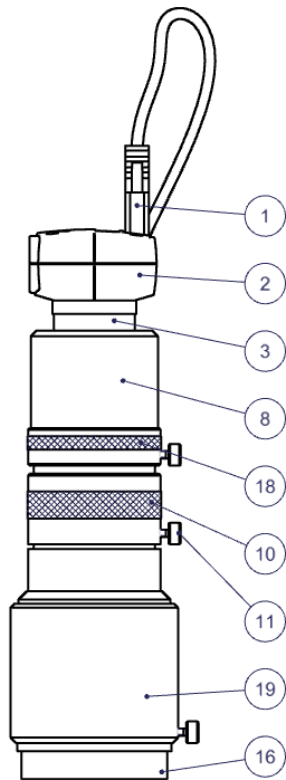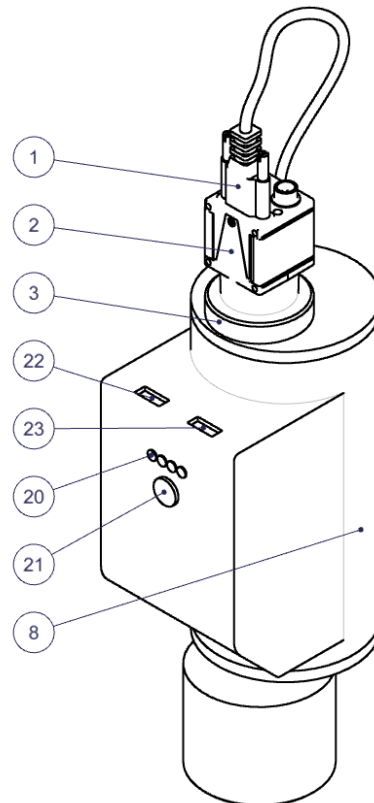23) Mini-B USB controller connector for motorized zoom

M20x0.5

"Zoom" OptiVID
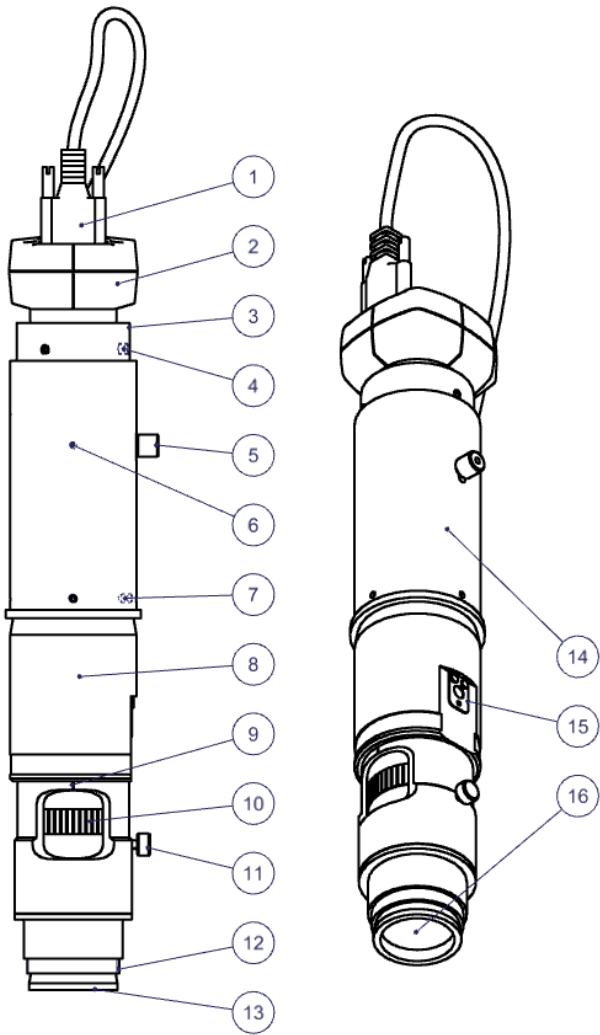
"High Magnification" OptiVID
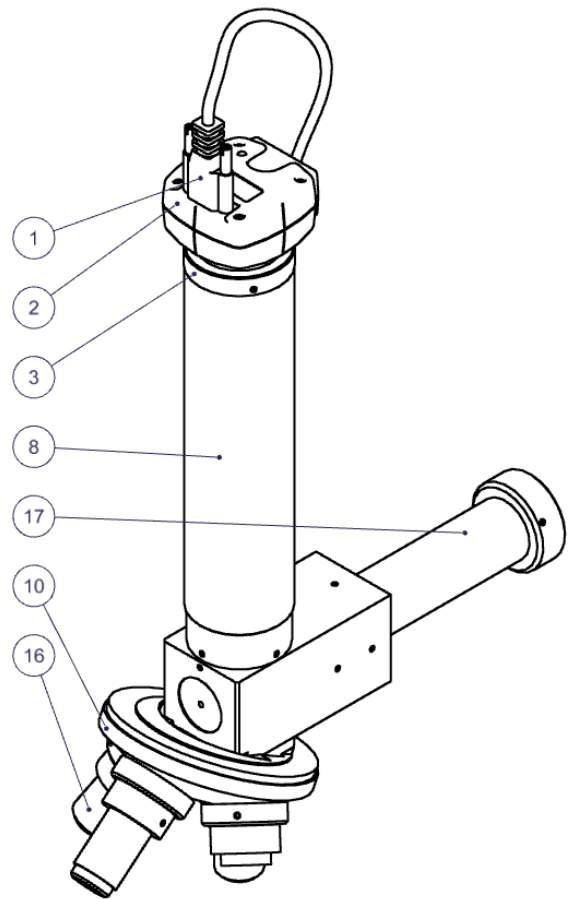
"Wide field" OptiVID

"Telecentric" OptiVID

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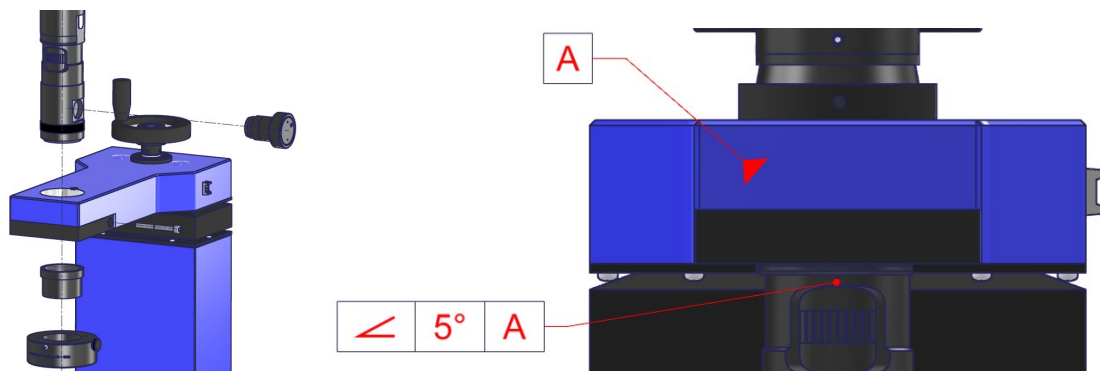
Procedures

1. Optics installation

- Fix the optic in its attachment diameter 8), magnification graduations 9) of the optic towards the operator. Orient the magnification graduations 9) of your zoom lens so that it is within 5° of your X axis. (if necessary, first remove coaxial illuminator 17) and/or unscrew magnification blocking screw 11) and ring illuminator).

- If necessary, add a ring (shown here in red) to the Ø 6) or 8) so that you can rotate your optics without losing height adjustment.
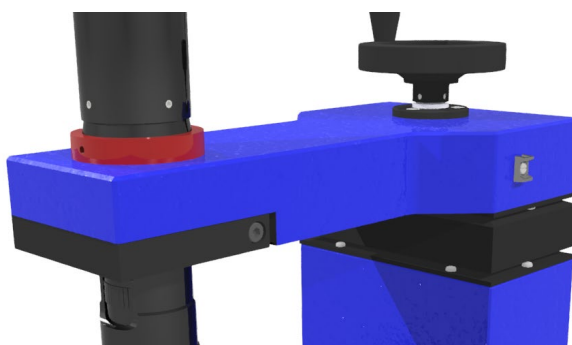

- Connect the camera cable 1) to the camera 2) and to the PC. If the camera has a USB3, ensure that the PC port is also USB3 (usually blue). An LED (on most cameras) lights up (usually green) to indicate that the camera is operating correctly. In the event of a problem, please refer to chapter 10.
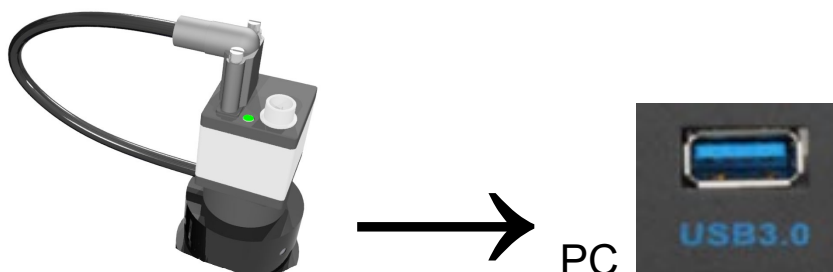
- Start the Marcel Aubert software via your shortcut (the software does not appear in your program list)

- Move your optical drive (normally a Z-axis column) as close as possible to your horizontal axis (normally on the glass of an XY table) until you have a sharp image (see box below).
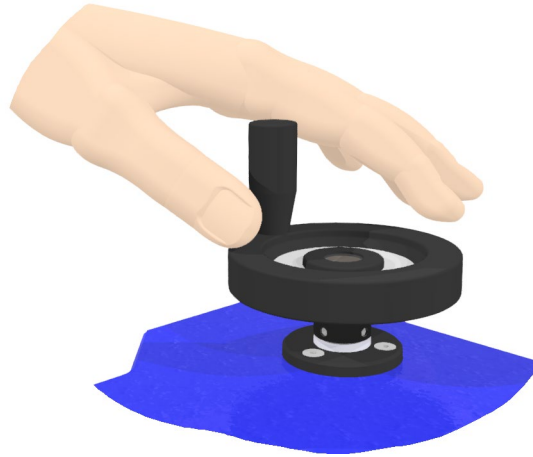

- Replace any parts you may have disassembled.

> **Sharp image**
> To obtain a sharp image on screen, physically move your optics until the image is sharp, then continue your movement until the image is blurred. Then move back, past the sharp image, until you have a blurred image again. Finally, return to the halfway point to get a perfectly sharp image.
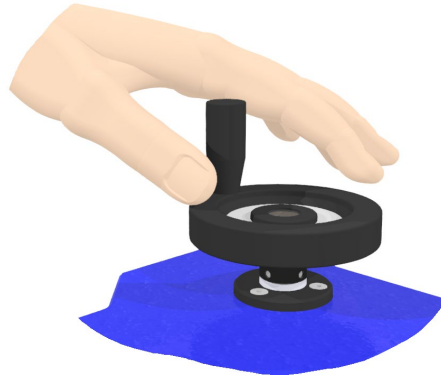
2.1   Sharpness control
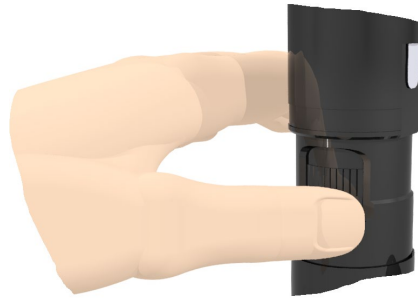
- Set zoom magnification 10) to maximum.
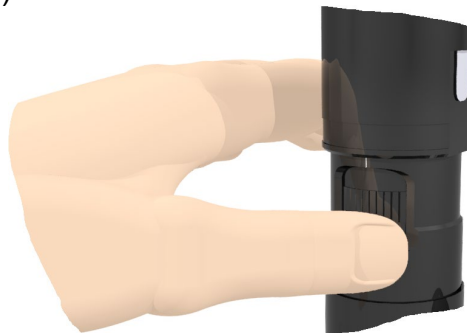
- Adjust the brightness of the diascopic illuminator (green backlight).

- Move the optics vertically until the image is sharp (see box).

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- Set magnification to minimum using <u>zoom</u> magnification ring 10).
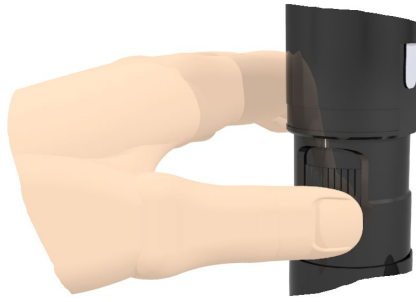

The image should remain sharp. **If the image is not sharp**, proceed to corrective action 2.2.

2.2   Corrective action for sharpness adjustment

- Loosen locking screw 6) and sharpness adjusting screw 5) on magnification adapter tube 14). Adjust image sharpness by moving sharpness adjusting screw 5) vertically and slightly. Note that for the 1x adapter, adjusting screw 5) is an hexagonal socket head screw embedded in a slot.
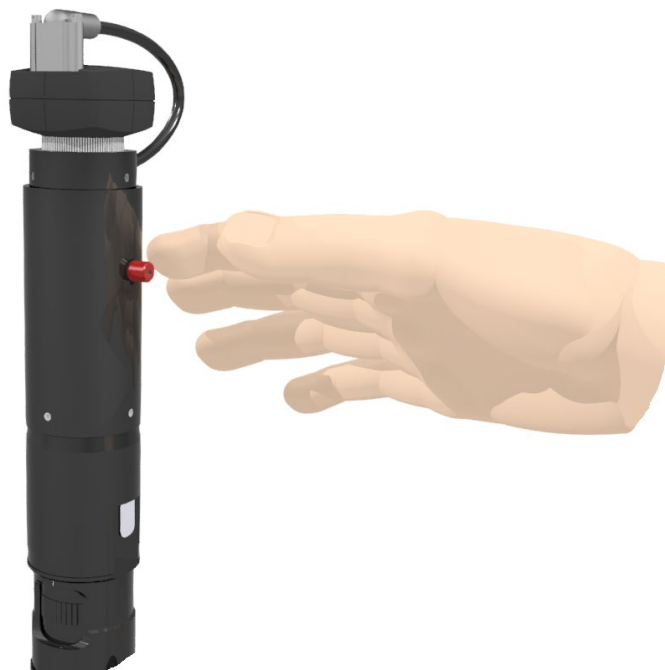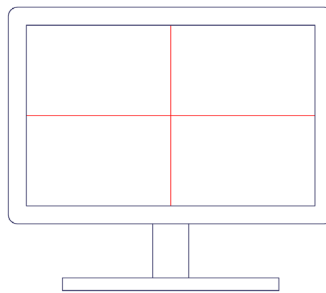

- Tighten sharpness adjusting screw 5) and sharpness locking screw 6).
- Check sharpness at maximum magnification and return to minimum magnification.

- If the image is blurred, repeat the adjustment.
- The image should remain sharp throughout the zoom magnification adjustment range.
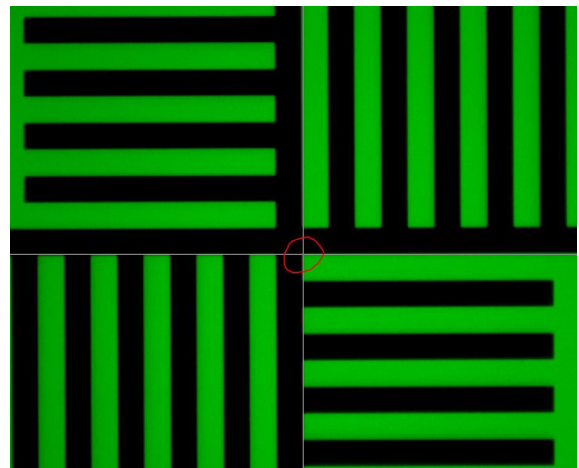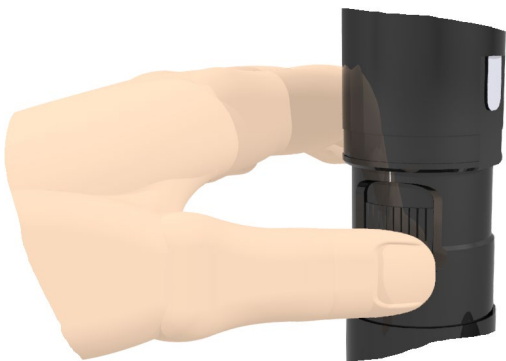
3.1 Optical axis control
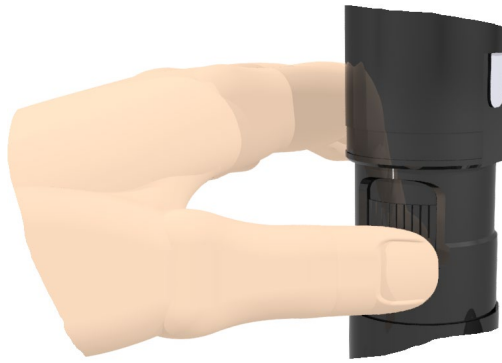
- Project a cross using your software.

- Adjust brightness, if possible only with diascopic illuminator (backlighting)

- Take a sharp image of a precise point in the center of your screen at **maximum magnification**, using the ring for magnification changes 10) as shown in Fig. B.

- Return to minimum magnification.

- If centering is good, the object should always be in the center of the image. If there is a shift, it is necessary to go to point 4.2. for corrective action on the optical axis.
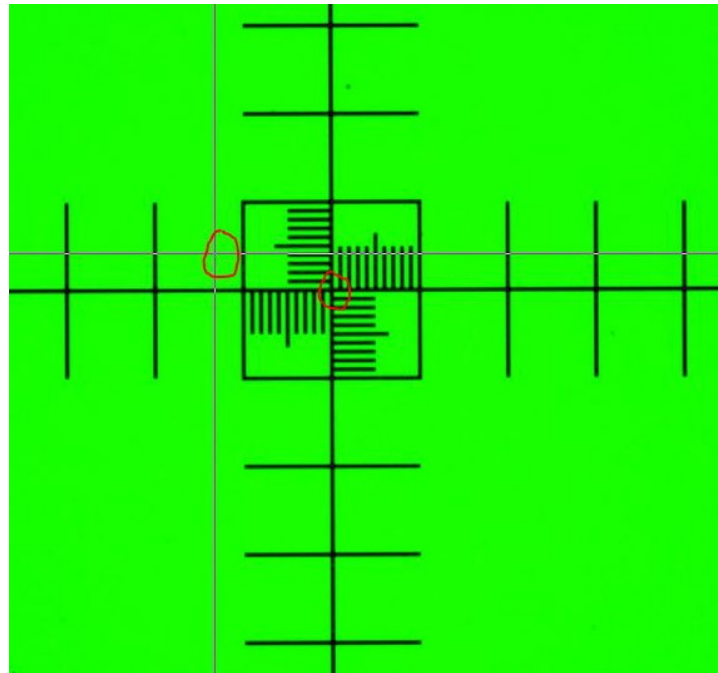
3.2   Optical axis corrective action

- Slightly loosen the screws 4) of the C-mount 3) with an Allen key, while tightening one of the "opposite" screws.

- Operation "D": Move your cross using the Allen keys one after the other. As far as possible, keep 2 Allen keys under tension, then loosen and tighten 2 other keys. Gradually, you should be able to superimpose your filmed reference point and the cross projected by the software.
- Return to maximum magnification. If the reference point on the calibration glass is still perfectly superimposed on the cross projected by the software, the operation has been successful and you can proceed to the last operation "R". If the reference point on the

calibration glass has "moved", repeat operations "N" and "D" until perfect superposition is achieved.

- Operation "R": Tighten screws 4) on C-mount 3).

## 4.1 Check alignment of camera sensor with respect to movement

When installing a camera, or after the chaotic movement of a camera-equipped machine, it's essential to ensure that your camera sensor is perfectly aligned with the axes of movement to avoid measurement error.
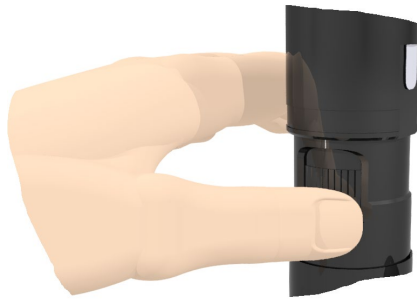
Here's how to proceed :

- Project a cross in the center of the image with your software
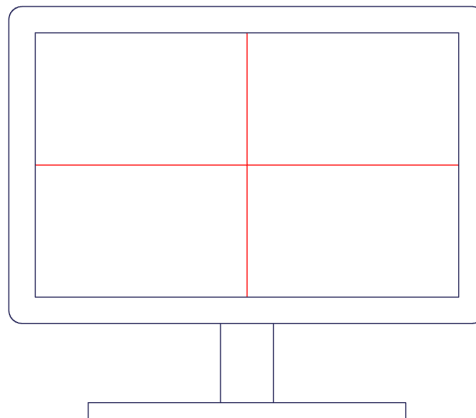
- Set the sharpness to a REF reference point (e.g. your calibration glass or a flat, pointed object). REF will be your reference point.
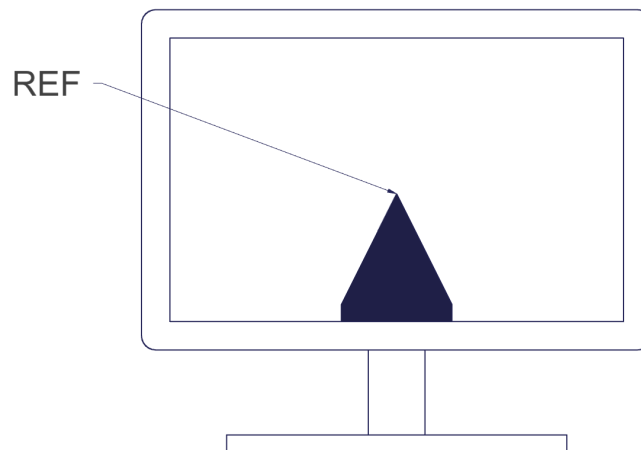

- Set the lens to its lowest magnification (if optics is equipped with a [zoom](#)) using the ring 10)

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- Position your projected line slightly (T-space) above your REF reference over the greatest distance you can travel (on an X-Y measuring table; usually the X axis).
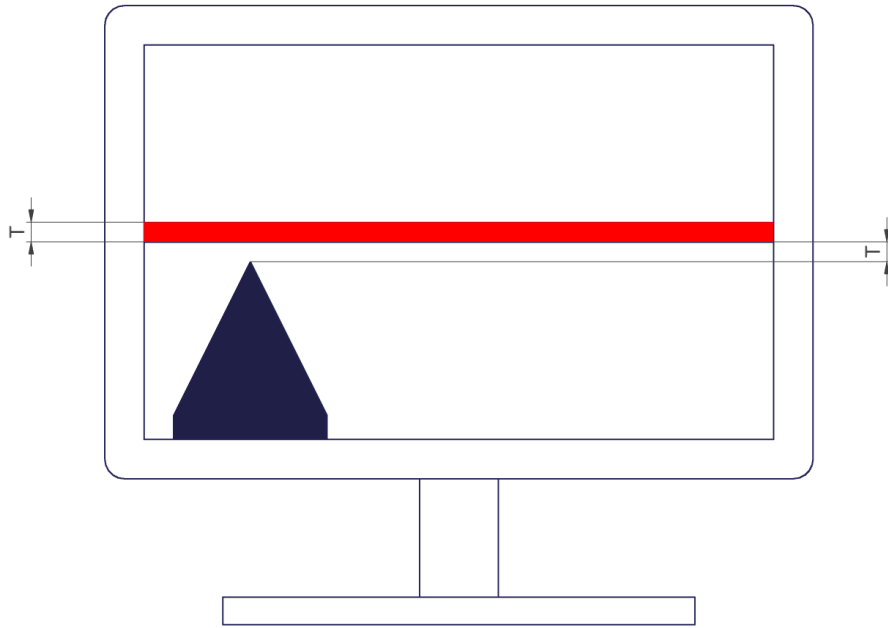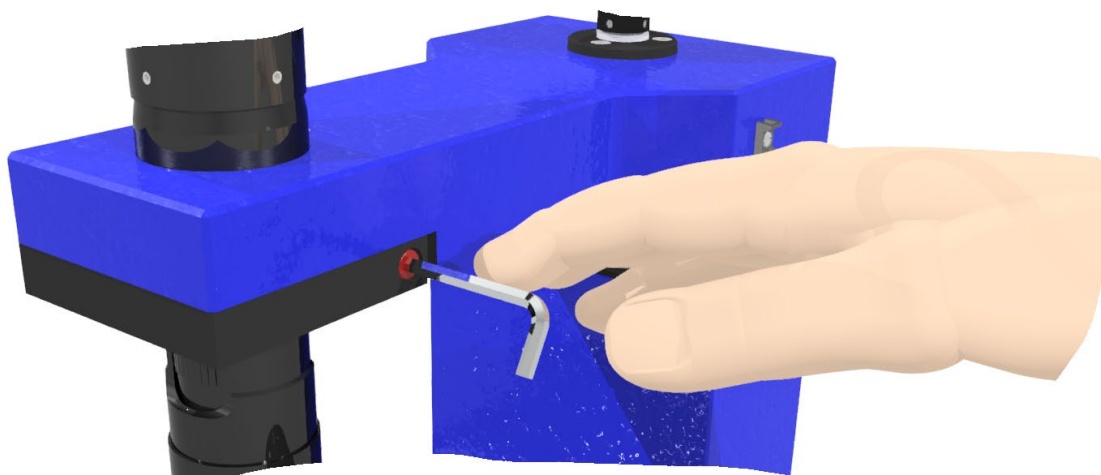

- Physically move your REF reference (left-hand side of illustration) to the other end of the image (right-hand side of illustration). If your REF reference always has the same T space as in the illustration above, you're perfectly aligned. If your REF reference is above or below your line (right-hand side of illustration), this means you're not aligned, and you need to move on to point 3.2 to take corrective action.
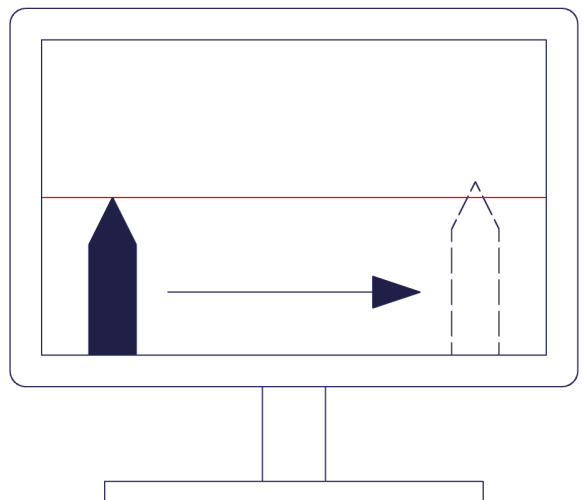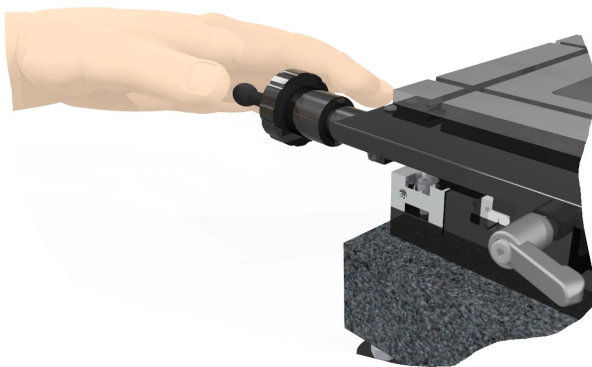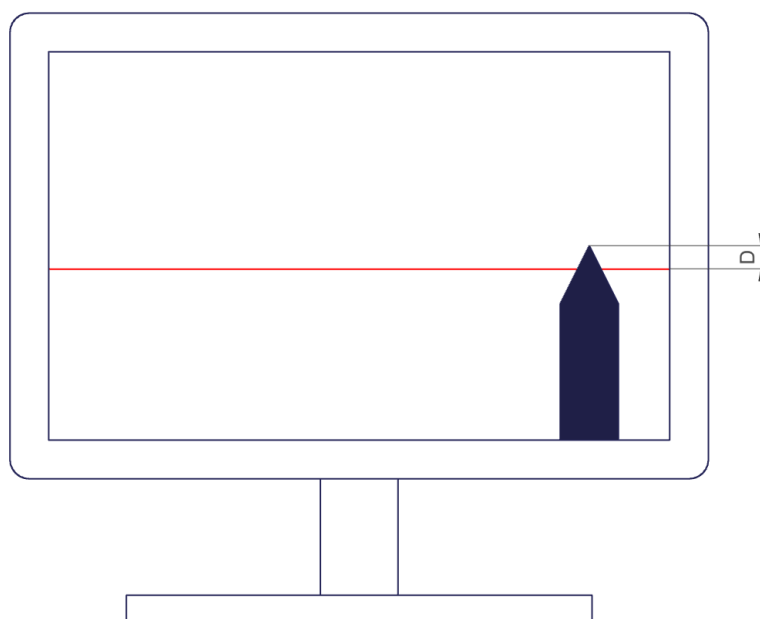
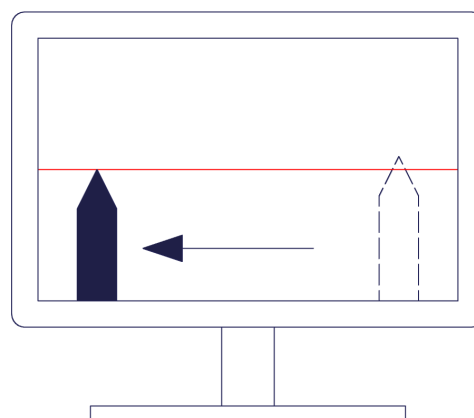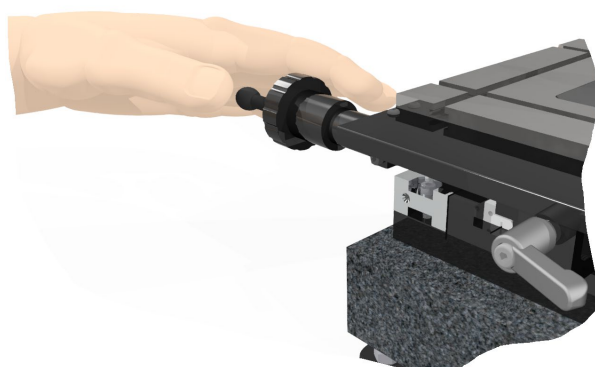## 4.2 Corrective action for camera sensor alignment with respect to movement

- Slightly loosen the clamp screw (in red) so that the lens can be rotated without losing object sharpness.


- Rotate the entire lens until you have corrected **half of the "D" defect** detected.


- Return to original position

- Physically move your REF reference (left-hand side of illustration) to the other end of the image (right-hand side of illustration). If your REF reference always has the same T space as in the illustration above, you're perfectly aligned. If your REF reference is above or below your line (right-hand side of illustration), this means you're not aligned, and you need to move on to point 4.2 to take corrective action.
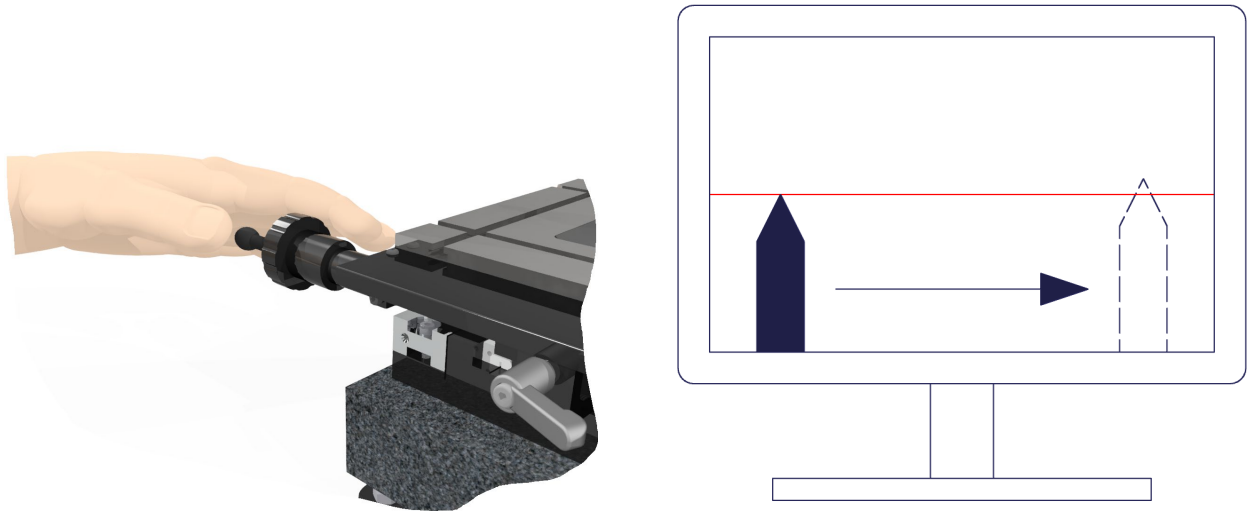
- Make sure the optic is securely fixed in its grip.

5. Interchangeable lens change

- Unscrew position 16) to replace it with another lens.
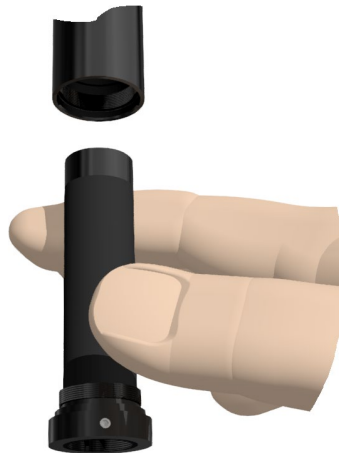
6. Software

- Press **F1** on your keyboard and a help window will open.

7. Coaxial illuminator

- To control coaxial illuminator 17), use manual [MA 356-041](#).

8. Using the " telecentric " zoom

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- Zoom position control: The 4 LEDs (20) indicate the field of view you are in. According to the color code of the LED, you know the positioning status:
- green: correct positioning
- orange: searching for position
- red: positioning not achieved
- To change position, use the software or the button 21) under the LEDs.

9. Cleaning

- Use a dry cloth if there are stains on the lens. If it is greasy, use an eyewear wipe.

Troubleshooting

The camera 2) isn't functioning properly or not functioning at all

- Verify that the camera indicator is green. If it isn't the case, it means the camera is not powered.
- Verify that the cable 1) of the camera 2) is correctly fastened to the camera and to the computer.
- Plug the cable 1) of the camera to a different port (generally blue or noted "SS" (Super Speed) for the USB3 models).
- Verify, by unplugging it, that another device connected to the computer (external hard drive, speaker, etc…) does not disturb the camera signal.

A problem occurs on the zoom or its adapter

- Please contact our technical service, because if you intervene yourself on the zoom part, the warranty will no longer be valid.

PC or screen no longer works

- Check that the cables are correctly inserted into the plugs on the monitor and PC.
- If this is not enough, contact your IT department or, if necessary, our technical support.

An error message regarding the camera occurs

This message may be different depending on the software that generates it.

Reasons

This may appear when the camera is not connected or incorrectly connected.
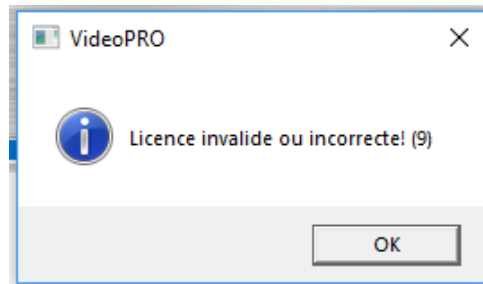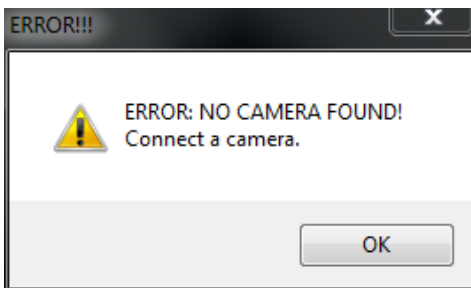
- Click "OK" and try running your software again
- If the error persists, check that the camera is connected and functional as follows: Start Menu → IDS → IDS Camera Manager
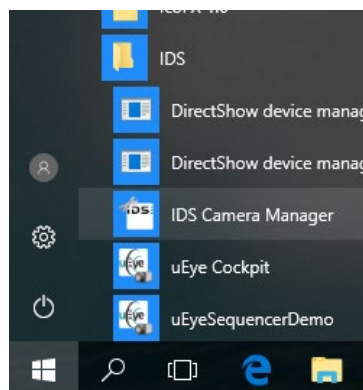
- The connected camera should appear in "Camera list"
- Check the box "Expert mode"
- Left-click on the camera once. It is now possible to check the status of the camera and on which type of port (USB) it is connected (2 or 3).
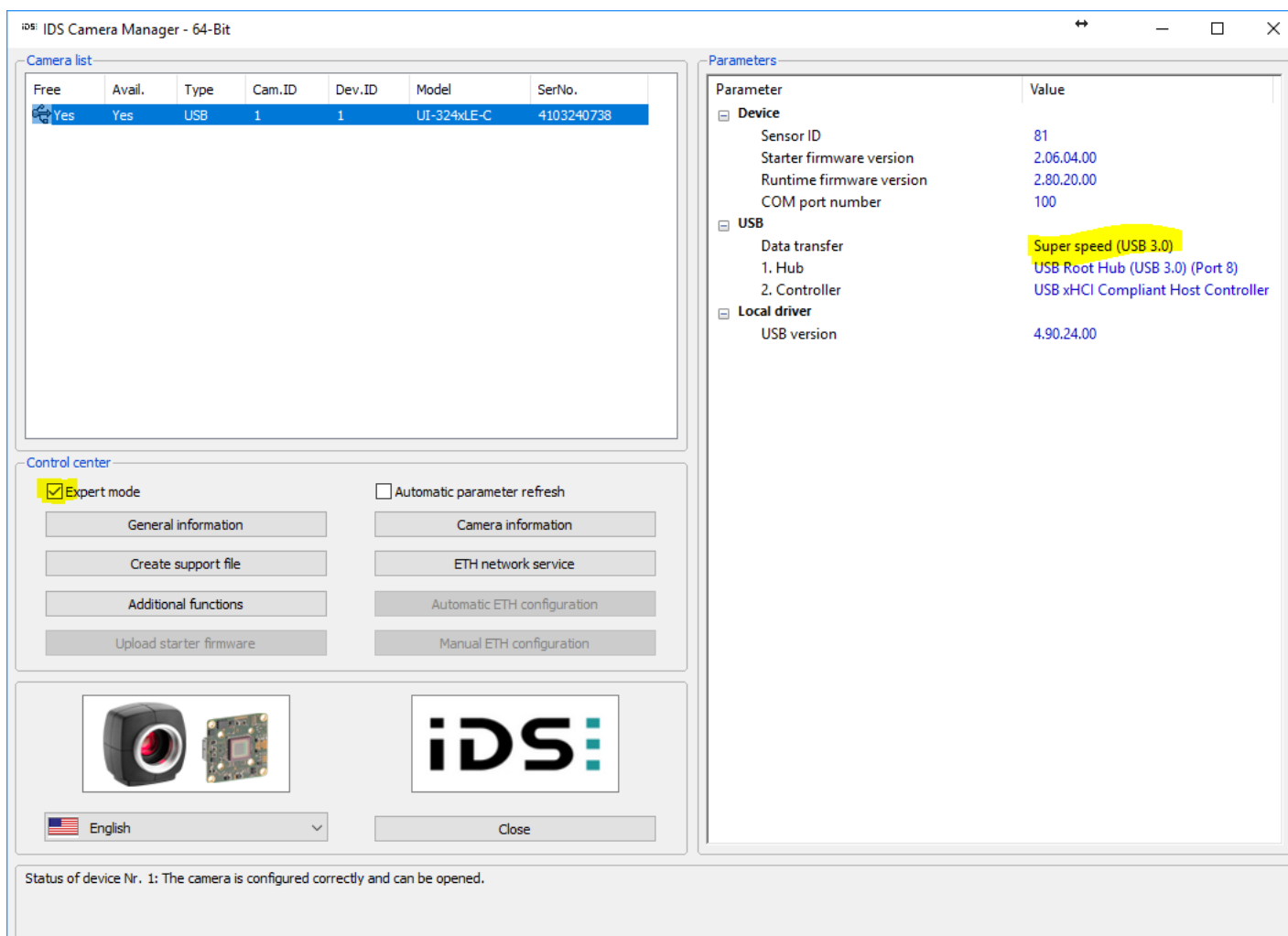
- A left double-click on the camera brings up the following window:
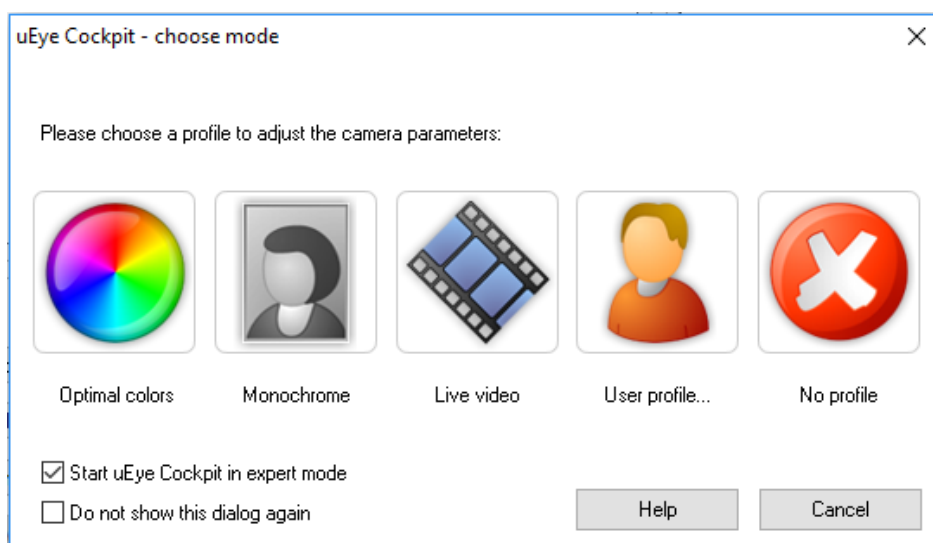
- A left click on "No profile" starts the "uEye Cockpit" software. This displays the image of the camera. This software can also be used to perform camera configurations. You can then confirm that the camera is well configured and functional.
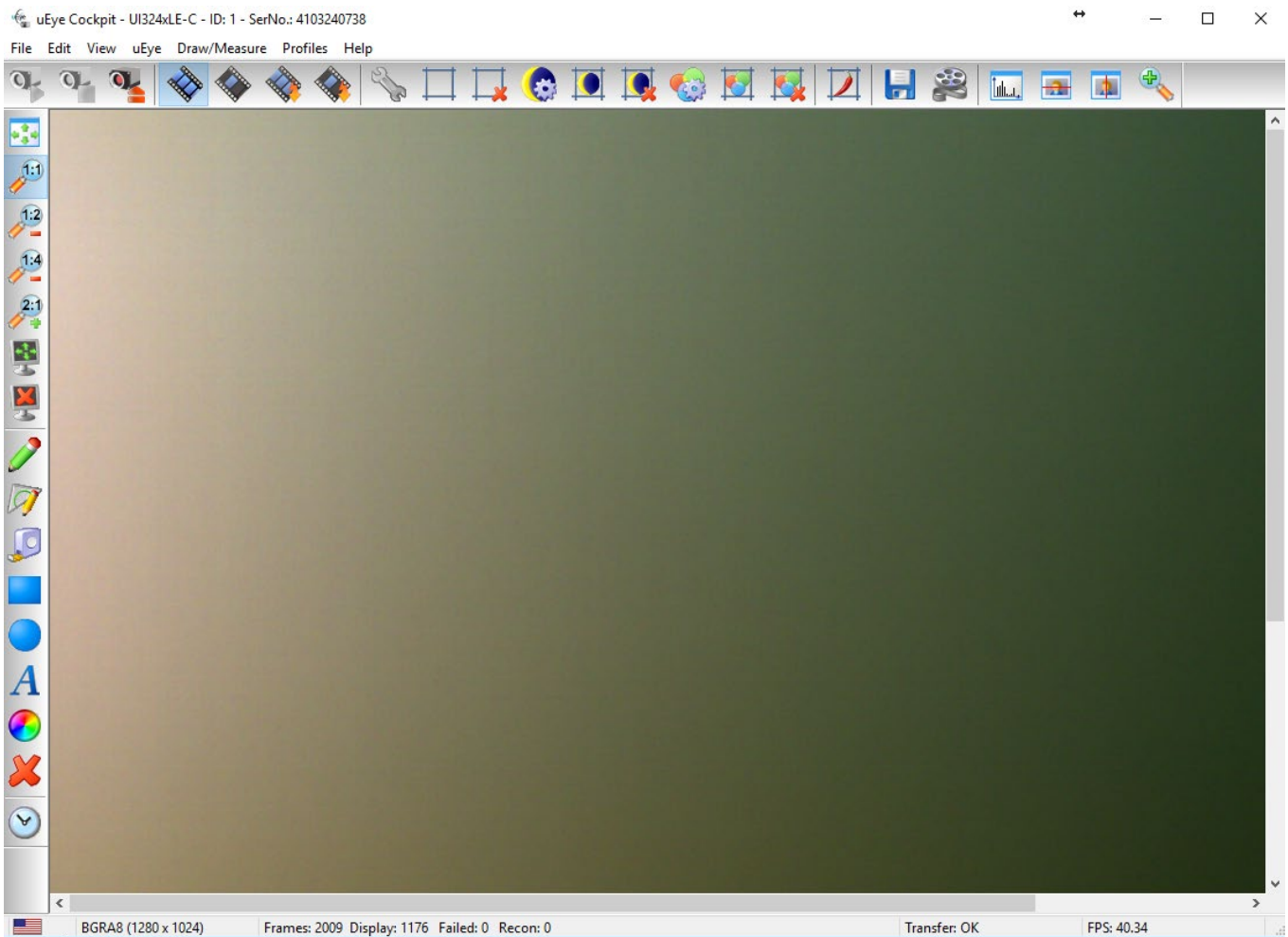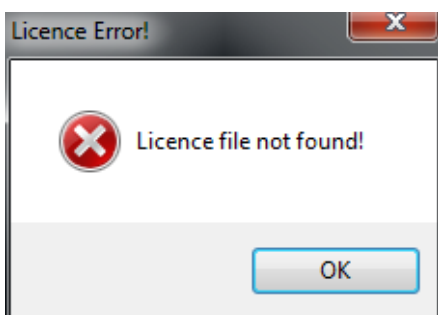
- Check that the cables are correctly inserted in the plugs.
  If this is not enough, contact your IT department or, if necessary, our technical support.

An error message regarding the license occurs

This message may be different depending on the software that generates it. Here are different cases:

Case 1 :

Reasons:
The license file (***.lic**) specified in file **userparam*.ini** could not be found.
The license file (***.lic**) is provided by Marcel-Aubert-SA and linked to one or more camera serial numbers. Please follow the procedure below:

- Open the **userparam*.ini** file with a text editor. Make sure that the file indicated under [LICENSING] is present in the application folder.
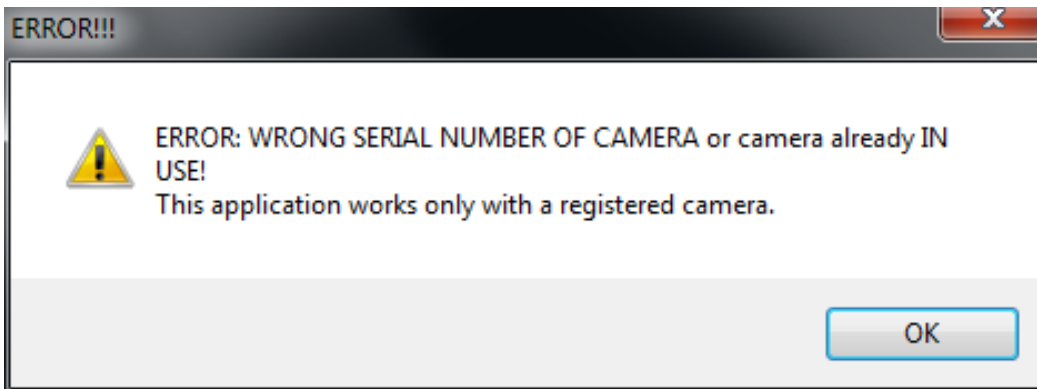
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- In the above example, the **4102906821_ALL.lic** file must be in the application folder.

Case 2 :

Reasons:
A wrong camera serial number has been entered or the camera is being used by another application. Here are the possible solutions:

- The serial number of the camera does not match the license file (***.lic**). Please contact our technical department.
- Close all other programs that may use the camera (for example, the "IDS uEye Cockpit" software), then restart your Marcel Aubert software.

Case 3 :
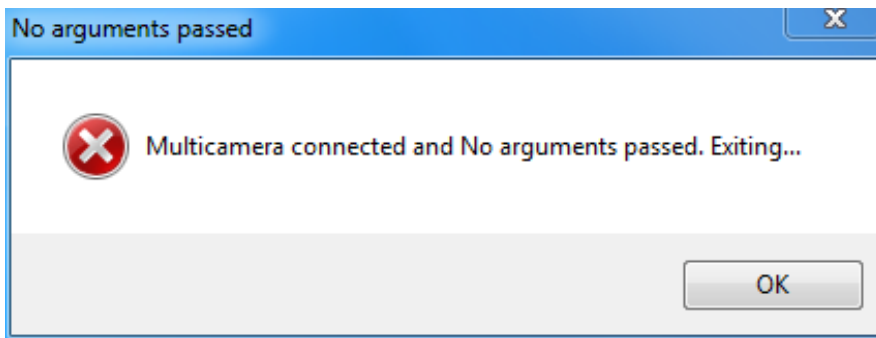
Reason:
Several cameras connected while the software configuration is for a single camera.
Here are the possible solutions:

- Connect only one camera and disconnect all others.
- Follow a specific procedure for multi-camera configuration (ask your sales manager for this procedure).

For any other case, please contact our technical department:

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