# Caution

LumaCon

**Even though the use of the LumaCon is self-explanatory, please read the underneath carefully.**

Make sure the projector does not touch the front of the lens. This risk is bigger when the “Macro extender” is applied.

Do not move the projector by hand nor block the projector while it is moving.

Use the included PC only for the LumaCon. The PC is optimized for the software, other use will affect the performance.


If applicable use the lens-support to release the lens from weight-related stress

# Installation guide

Version 1.01-t730

**For the electrical connections, simply connect the different connectors according to their color (blue to blue etc.)**

Iiyama T1531 monitor


①USB (to PC)

② PC connection

③ Mains connection

HP t730 Personal computer


① Monitor connection

② USB connectors

③ Power connector

Power supply (to PC)

LumaCon rear-view


① Power supply

② & ③ USB (to PC)

④ To light-source

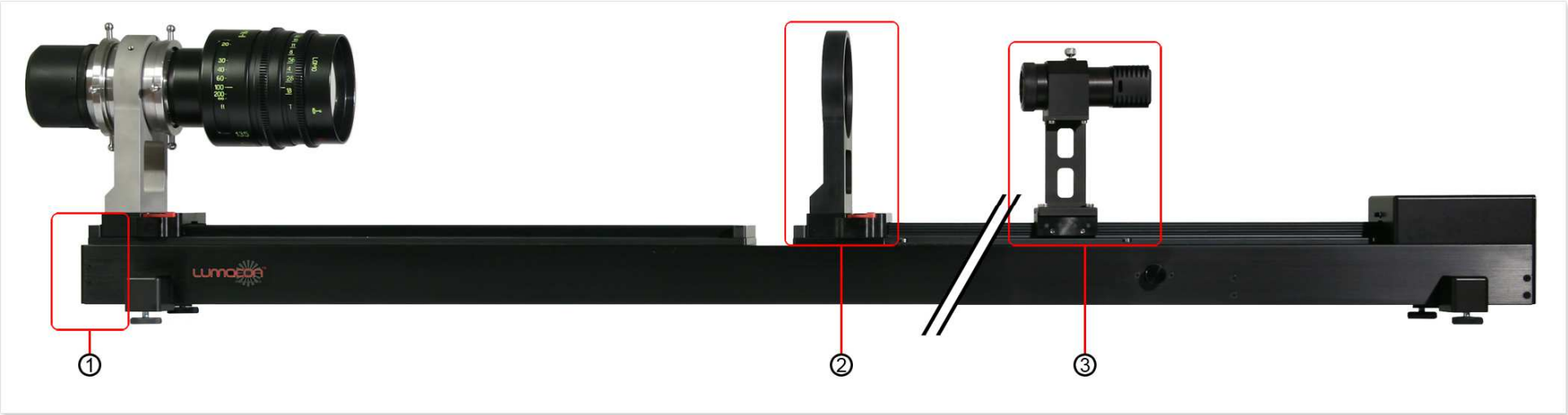
⑤USB (to camera)

Power supply (to LumaCon)

.

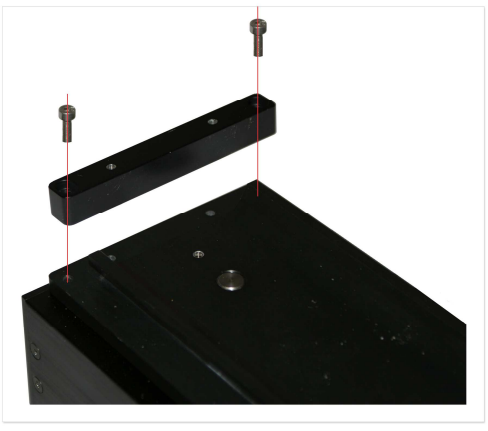
# Installation guide

Version 1.01-t730




② The field-lens can be slid on- & off the rail

① Installing the lens-mount



- Release the 2 hex-screws that hold the end-locking in place
- Slide the mount onto the rail
- Reinstall the end-locking and the 2 hex-screws.

③ Assembling the light-source

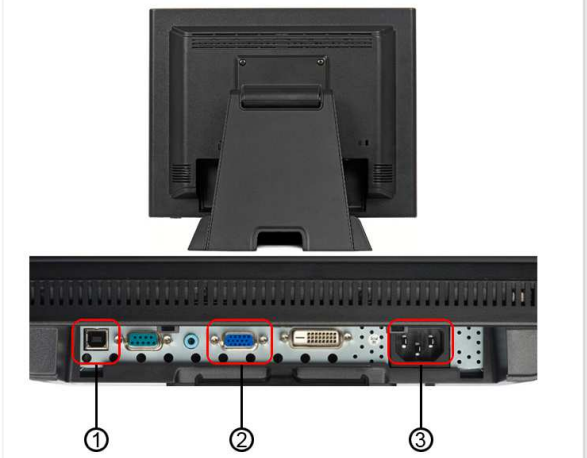

- Mount the housing on the actuator using the 3 hex-screws
- Slide the light-source into the housing
- Secure the light-source in the housing using the top-screw
- In the front of the housing you can apply the different targets

# Installation guide

Version 1.0

**For the electrical connections, simply connect the different connectors according to their color (blue to blue etc.)**

Iiyama T1531 monitor

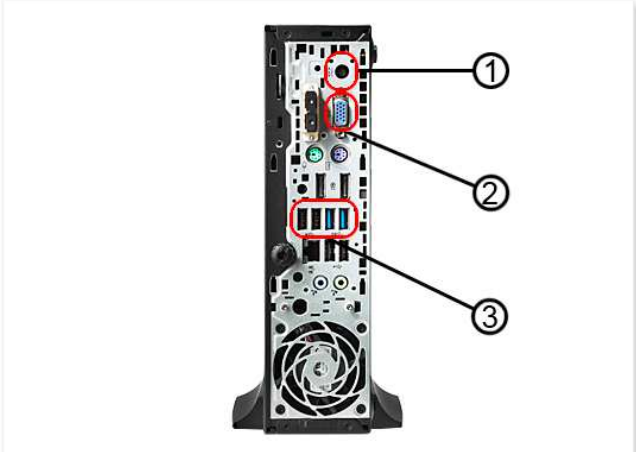



① USB (to PC)

② PC connection

③ Mains connection

HP t820 Personal computer




① Power connector

② Monitor connection

③ USB connectors

Power supply (to PC)

LumaCon rear-view


① Power supply

② & ③ USB (to PC)

④ To light-source

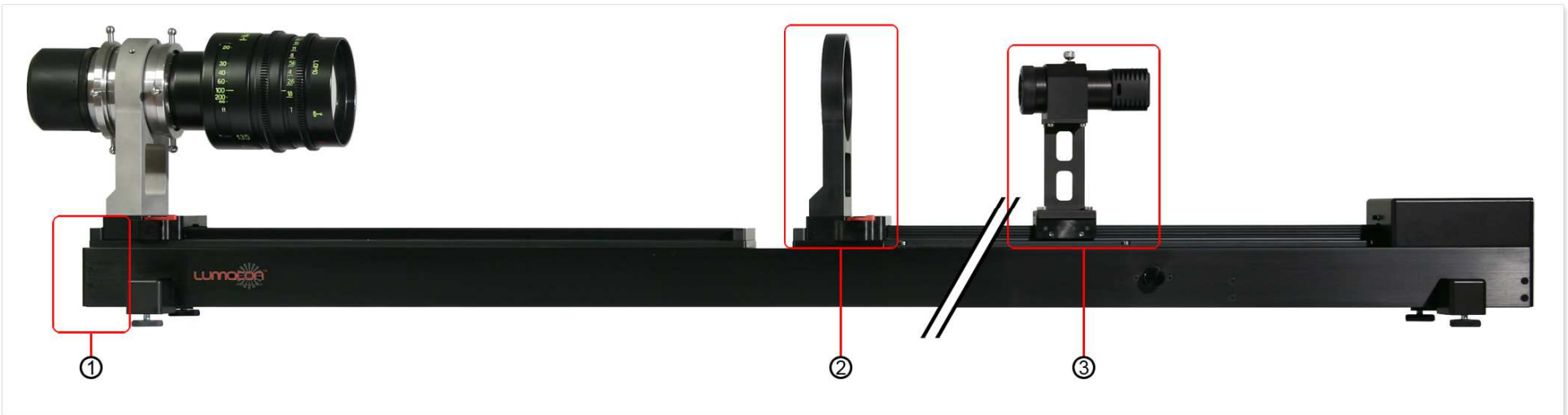
⑤ USB (to camera)

Power supply (to LumaCon)

.

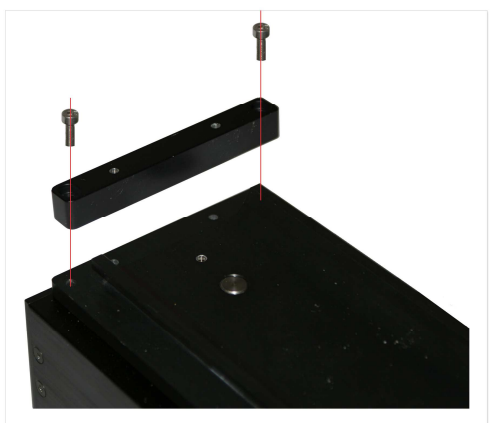
# Installation guide

Version 1.0




② The field-lens can be slid on- & off the rail

① Installing the lens-mount



- Release the 2 hex-screws that hold the end-locking in place
- Slide the mount onto the rail
- Reinstall the end-locking and the 2 hex-screws.

③ Assembling the light-source


- Mount the housing on the actuator using the 4 hex-screws
- Slide the light-source into the housing
- Secure the light-source in the housing using the top-screw
- In the front of the housing you can apply the different targets

# Screen guide

Software version 1.0.5

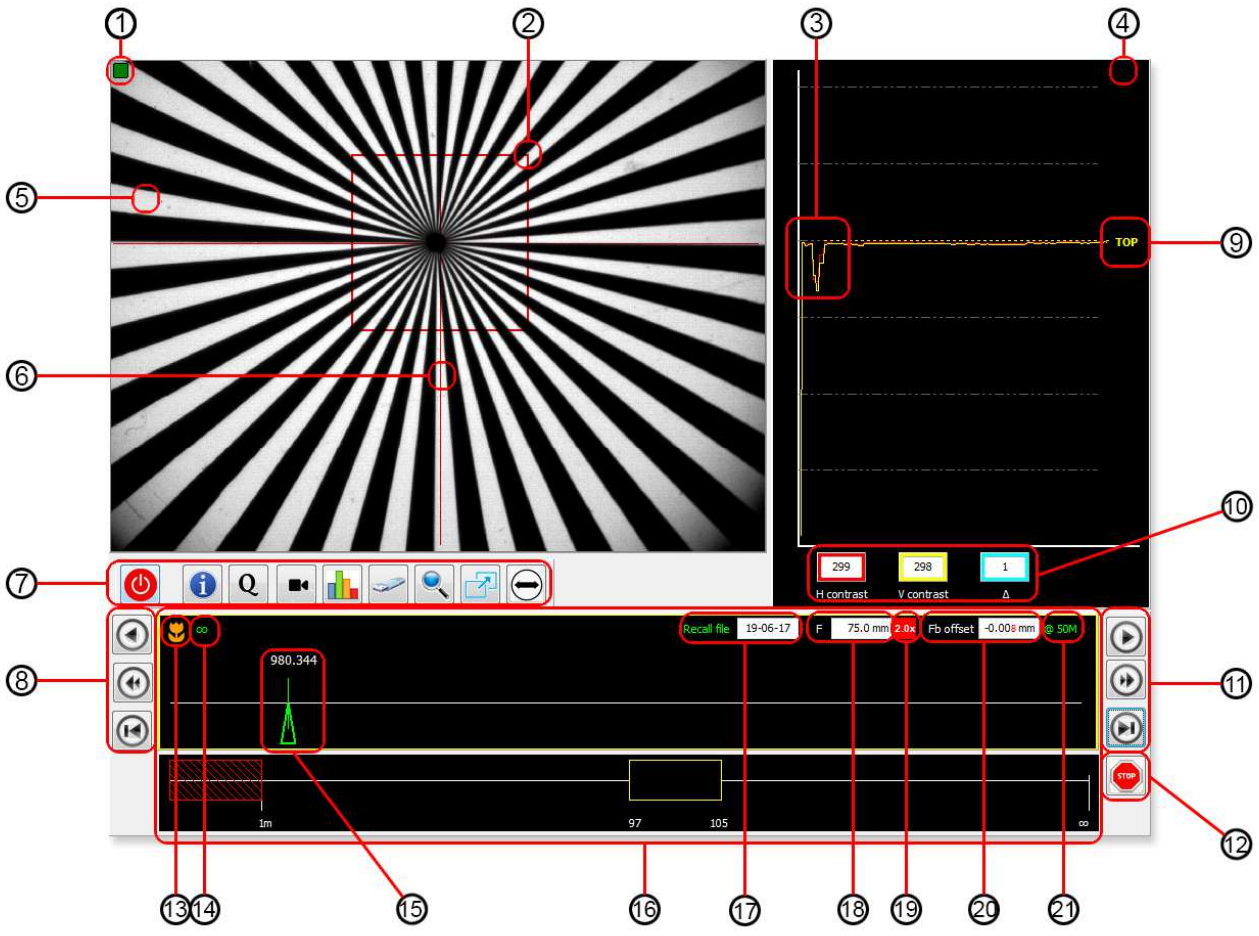
① Exposure indicator, use the dimmer to correct

RED : over exposure
Green : correct exposure
Yellow : under exposure

② Active measurement area

③ Current value

④ Graphical representation of the H & V-contrast values. This can be a line- or a bar-graph




⑤ Visualisation of the measurement

⑥ Cross-hair

⑦ Menu

⑧ Move the projector (shorten focal-distance)

⑨ The (up-to now) highest H- & V contrast values

⑩ Numerical representation of the H & V-contrast values and the difference.

⑪ Move the projector (enlarge focal-distance)

⑫ Stop projector movement

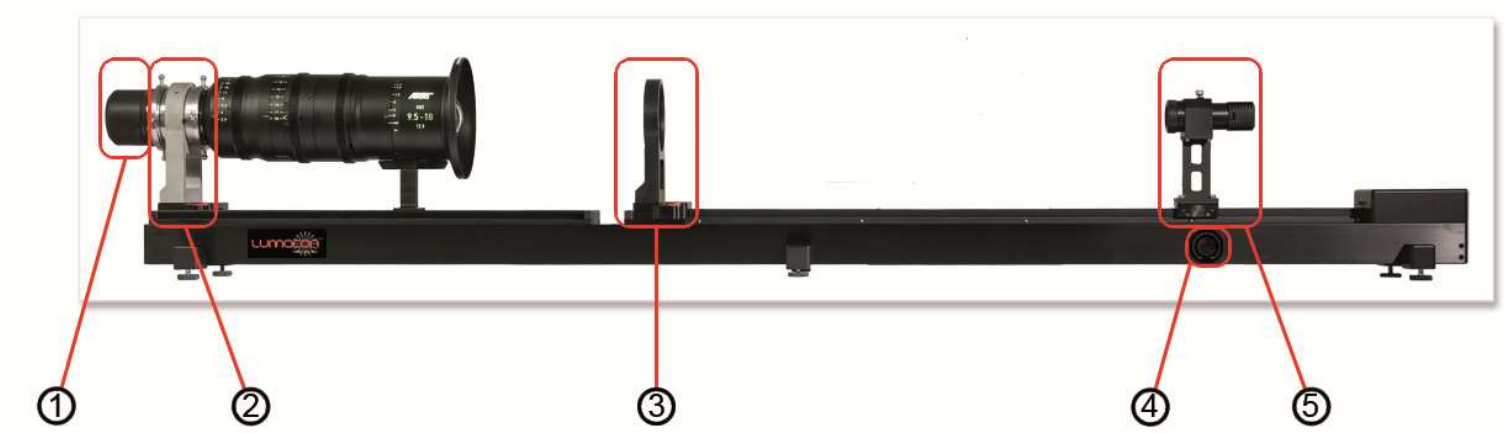
⑬ The macro option is installed
⑭ Current focal- distance

⑮ Focal-distance indicator

⑯ Position of the projector, the lower half is the coarse setting, the upper half is the fine setting

⑰ Date of (the recalled) previous measurement
⑱ Focal length of the lens under test
⑲ Anamorphic indicator (1.3 or 2.0x)
⑳ Calculated BF offset
㉑ The focal-distance the BF offset is based upon

# Identifier



① Camera / focal plane microscope

② Lens mount

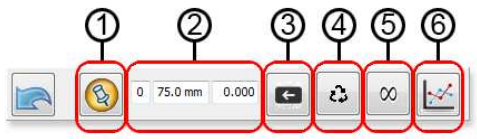
③ Field lens

④ Dimmer

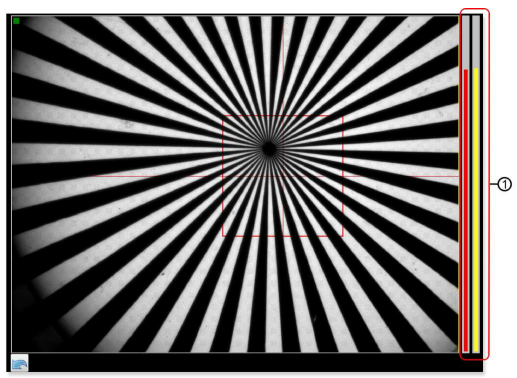
⑤ Projector with target

# Menu guide

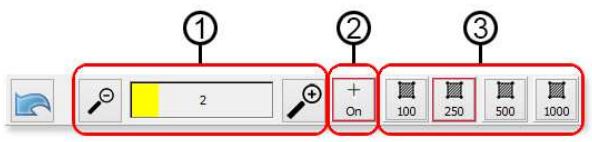
Software version 1.0.5




① Store the value
② Measurement-values
③ Remove last measurement
④ Reset measurement
⑤ Goto ∞
⑥ Draw graph

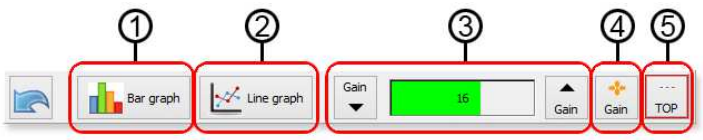


① Contrast indicator, horizontal (red) & vertical (yellow)

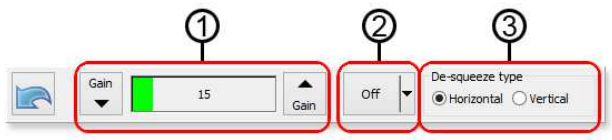



① Software zoom on the picture
② Crosshair on/off
③ Determines the size (H/V) of the measurement

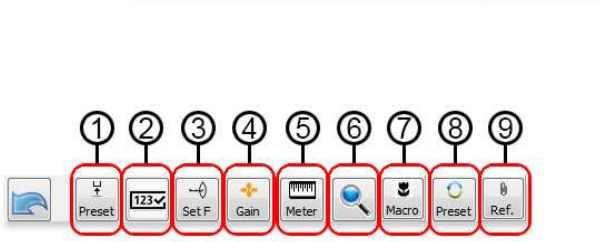
Generate an evaluation report (in pdf format). The filename is preset to the current time & date



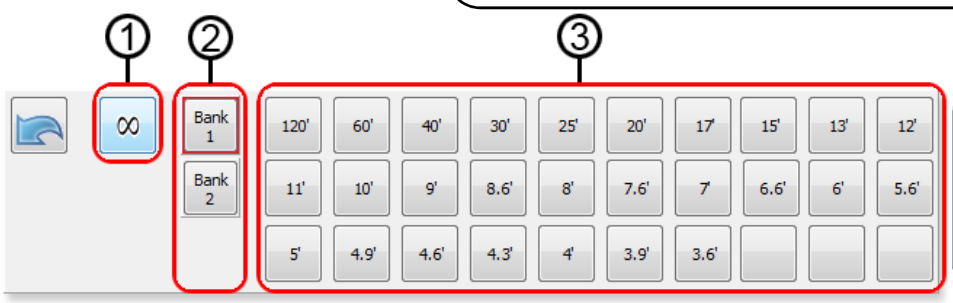

① & ② Type of graph; “bar graph” or ” line graph”
③ Manual setting of the graph-gain
④ Momentary graph-gain
⑤ Turn the “top-line” on-off



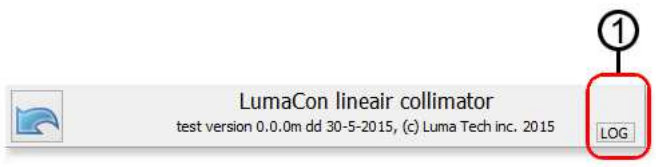

① Manual setting of the camera gain
② Anamorphic de-squeeze, choice of: off/1.3x/2.0x
③ Make the de-squeeze a horizontal- respectively a vertical fit




① Preset focus distances
② Manual input of focus distances
③ Set the focal length of the lens under test
④ One-shot graph gain
⑤ Switch between metric & imperial
⑥ Zoom menu
⑦ Macro option
⑧ Store/recall previous measurement
⑨ Set reference




① Go to the ∞ position (a field lens is required)
② Select the memory bank
③ Preset focus positions, depending on the feet- or meter setting presets can be selected




Information about the software version.
① Generate a ”log” file for support purposes


Switch of the software

# Expert guide

Version 1.0

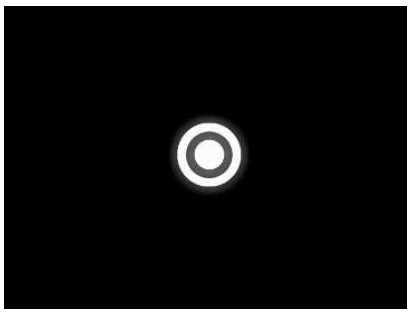
**Preparations**

- Replace the camera with the focal-plane microscope.
- Install the pinhole target in the projector in place of Siemens star
- Place the field lens
- Set the system distance to infinity

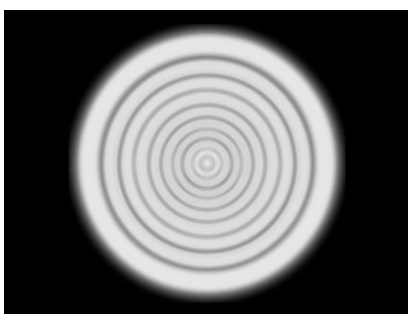
**Setup of the microscope**

Adjust the 4 alignment screws on the microscope in such a way that you can see the pinhole as close to the image-center of the eyepiece as possible. Due to the high optical magnification (300 x) this initially requires some practice.
The eye piece slides in- and out for your eye-focus(diopter)

**Reference result**
A fault free lens-assembly. The pinhole light-source is reproduced in the microscope as generated.

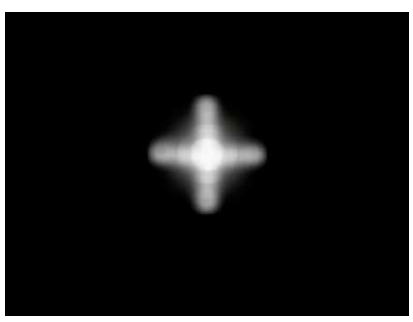


**Spherical aberration**
If the air gaps between individual elements or groups within the lens-assembly are not correct, spherical aberrations will result.
This is shown by multiple concentric rings



**Coma**
Caused by decentering of optical parts or components.
This is a common problem after replacing the front- or rear elements.

**Astigmatism**
Caused by pinching (uneven mechanical pressure).
This is a common issue when the front element is reinstalled with too much force.



**Please note**

- In some cases more than one issue may be present in a given lens. With experience you will be able to see multiple abberations are layered together
- Anamorphic lenses are intentionally designed to have a (controlled) astigmatism. Therefore anamorphic lenses cannot be evaluated by the focal-plane microscope.

Goto https://vimeo.com/user52526516 for instruction-videos