

Safety & Operating Instructions for JENOPTIK GRYPHAX® Microscope Cameras



Dear GRYPHAX user,

Welcome to the GRYPHAX community! Please read the safety & operating instructions carefully before using your GRYPHAX camera. By observing the advice on this page, you can make optimum use of the functions and avoid causing damage or injuries resulting from operating errors. The safety & operating instructions apply for all GRYPHAX cameras in connection with GRYPHAX imaging software.

- ⚠ The sign **Caution** warns against possible health dangers at risk if the advice is not observed.
- ⚠ The sign **Attention** warns against possible damage to the instrument.
- ℹ The sign **Information** highlights important information for the operation of your camera.
- ♻ This symbol highlights that special guidelines have to be followed when disposing of this product.

Intended Use

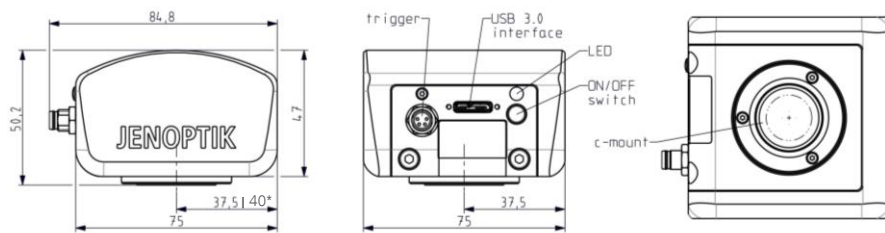
GRYPHAX cameras are intended for the use on a microscope. They can be adapted via c-mount adaption to the microscope and via USB3.0-cable to a computer or laptop.

- ⚠ Take care to use only the USB3.0 cables included with your camera or explicitly recommended by Jenoptik.

Power Supply

For GRYPHAX cameras, power supply and data communication are carried out using the USB3.0 (USB3.1 Gen1) interface. Additional power supply connections are not necessary.

Technical Drawing / Dimensions



* only valid for GRYPHAX® PROKYON

Instructions for Use

Our separate **user manual** and the **video tutorials** contain all necessary information for the installation and operation of GRYPHAX cameras. They help you to capture and process your microscope images in the easiest way. You will find the manual and video tutorials at: www.jenoptik.com/gryphax as well as on the USB memory card included with your camera.

Contents

- GRYPHAX® microscope camera
- GRYPHAX® software - available:
 - on USB-memory card – item 5,
 - to download at www.jenoptik.com/progres-gryphax-software
 - on request by e-mail to gryphax@jenoptik.com
- USB3.0 cable
- Safety and Operating Instructions & Quick Start Guide
- USB memory card containing manuals, video tutorials & GRYPHAX software

System Requirements

Operating System

For Windows PC: OS Microsoft Windows 10 version 1903 or newer - 64 bit
For Apple Macintosh: OS X 10.15 (Catalina) & 11.0 (Big Sur) - 64 bit
For Linux: OS Ubuntu 18.04 LTS - 64 bit

Hardware

Minimum:

- USB3.0 - PCI Express from V1.1,
- Processor: i5 Dual core (or comparable), 4 GB RAM
- Monitor resolution: 1280x720
- Graphic card equipped with on-board memory

Recommended:

- USB3.0 - PCI Express V2.0
- Processor: i7 Quad core (min. 3 GHz), 8 GB RAM (dual-channel*)
- Monitor resolution: 1920x1200 for SUBRA & KAPELLA & Mono cameras
3840x2160 for other GRYPHAX® cameras
- Dedicated Graphic card equipped with on-board video memory
- dual-channel memory architecture mandatory to reach full camera performance

Recommended PCI Boards

For PC: PCI Express Card (Desktop PC); Express Card (Laptop) with Renesas USB3.0 chipset
Technical requirement: PCI Express V2.0; Important: never use PCI Express V1.0!
Driver requirement for Windows OS: Renesas USB 3.0 host controller driver – Freeware:
https://www.station-drivers.com/index.php?option=com_remository&Itemid=353&func=select&id=196&lang=en

Trigger Operation

Some GRYPHAX cameras support trigger out operation. After image capture, the camera delivers a signal to the device (Trigger Out) to signal the completion of the function. Trigger Out does not require any additional power supply. Connect the cable shield with the casing of the external device. Only use shielded cables!
Order number for GRYPHAX trigger plug: 109370

Conformity to CE / WEEE / ROHS / China RoHS / Korean KC

- GRYPHAX microscope cameras comply with:
 - KC in accordance of Clause 3, Article 58-2 of Radio Waves Act
 - CE in accordance with EMC Directive 2014/30/EU
 - WEEE •ROHS / China RoHS

ALTAIR TR-E2101-013
ARKTUR TR-E2101-004
AVOIR TR-E2101-006
BETRIA TR-E2101-005
USB Memory drive TR-E2101-012

KAPELLA TR-E2101-007
NAOS TR-E2101-014
POLARIS TR-E2101-024
PROKYON TR-E2101-003
USB Drive card TR-E2101-011

RIGEL TR-E2101-010
SUBRA TR-E2101-008
WEGA TR-E2101-009

Type Label

Note: Please observe the information on the type label when installing the camera. The following information is printed on the type label: (e.g. GRYPHAX SUBRA)

- Camera type:
- Serial number (written and in code format):
- Manufacturer's website:
- CE mark / WEEE mark / Voltage / Power:
- Country of origin:



Service & Support

In the first instance, please have a look into our software manual or watch video tutorials to find a solution to your issue: <https://www.jenoptik.com/products/cameras-and-imaging-modules/microscope-cameras/faq-progres-gryphax>

Should you need further support please contact your local dealer for questions regarding GRYPHAX cameras. Your local dealer can provide you with detailed information about the product, accessories, and applications in microscopy. If a solution cannot be found, please contact Jenoptik's technical support team at: gryphax@jenoptik.com

The manufacturer data of each product is encoded into the product's serial number. Contact the support team to obtain the manufacture date of your specific product.

If you need to return your camera for repair, please send it to the following address:
Note: Request a RMA number in advance!

JENOPTIK Optical Systems GmbH
Attn. Steffen Derbsch / Service & Repair Centre
Pruessingstrasse 41
D-07745 Jena, Germany

Cleaning and Maintenance

Cleaning the camera casing: If the camera casing is only slightly soiled, clean it with a soft, slightly moistened piece of cloth. Make sure that no water enters the camera and risks becoming in contact with any internal components. Do not use any aggressive substances or solvents to clean your camera.

Cleaning the filter glass: Cleaning the filter glass by yourself is not recommended. If the filter glass is severely soiled, please contact your expert dealer or the manufacturer for assistance.

Disclaimer

Exemption from warranty: Jenoptik shall be exempt from warranty during the warranty period in the event that the safety regulations are not observed.

- ⚠ **Exemption from statutory liability for accidents:** Jenoptik shall be released from statutory liability for accidents that occur in the event of non-observance of the safety instructions by any operating person.

Safety & Operating Instructions

GRYPHAX cameras are intended for the use on a microscope and for operation and control with GRYPHAX microscopic imaging software. The GRYPHAX microscope camera is an optical and fine mechanical device. Please handle it with due care.

- ⚠ GRYPHAX cameras should be used in clean and dry locations.
- ⚠ Every GRYPHAX camera has been thoroughly tested and has left the factory in perfect operating condition.
- ⚠ For your own safety and to keep the camera in good operating condition, please follow all safety and operating instructions in this document and observe all advice and labels on the unit and on any accessory.
- ⚠ **Expansions and alterations:** The camera must be operated in compliance with these safety instructions. Do not attempt to carry out any expansions, adjustments, alterations, or repairs by yourself. Repairs and maintenance work may be carried out only by authorized service personnel.
- ⚠ **Electric installations:** The electric installations of the room where the system is set up must be in compliance with the IEC requirements.
Voltage supply: 5 V (USB) / Consumption: Variable according to camera type. Please refer to your camera's technical data sheet.
Unplug the USB cable to disconnect the camera from the power supply.
Use only cables included with your camera or explicitly recommended by Jenoptik.
 - Make sure that the cables are installed so that they do not obstruct persons and do not cause a tripping risk.
 - Protect cables against mechanical impact or damage.**Note:** Observe the information on the type label when installing the camera.

- ⚠ **Caution, fire hazard!** To prevent a risk of fire, do not operate or store the camera nearby easily inflammable materials or gases.

Caution, risk of injury! Operating the camera under the following circumstances risks injury:

- The camera is visibly damaged
- The camera has been stored under adverse conditions over a long period of time
- The camera has been transported under adverse conditions

If any of these circumstances apply, switch off the camera and ensure that it cannot be operated unintentionally. Please contact your expert dealer or the manufacturer's technical support team for assistance.

- ⚠ **Caution, risk of damage by unsuitable environment conditions!** Do not expose the camera to extreme environment conditions. Avoid extremely high or low temperatures, and keep the camera away from high humidity, liquids, chemical gases, dust or high electro-magnetic fields.

- ⚠ **Caution, risk of injury or damage by water!** If water (or other liquids) enters the camera, there is a risk of electric shock. Your camera can also be damaged or no longer usable. If water has entered the camera, switch it off and contact your expert dealer or the manufacturer for assistance.

- ⚠ **Caution, risk of damage by static charge!** Static charge can damage or destroy the electronic components of your camera. Before connecting the camera to a computer or a microscope, make sure that it is free of electrostatic charge. Ground yourself by touching the metallic housing or the reverse side of your computer or microscope, which both have to be grounded via a power socket.

- ⚠ **Caution, risk of malfunction by insufficient ventilation!** Some GRYPHAX cameras are equipped with louvers on the rear side. Ensure that the cameras are sufficiently ventilated and that the louvers are not covered.

- ⚠ **Caution, risk of damage and malfunction by overheating!** Avoid leaving your camera in direct sunlight and do not operate the camera near heat sources (e.g., radiators or stoves). Overheating can affect the image quality.

- ⚠ **Advice for handling the IR filter glass:** Protect the integrated IR filter glass against mechanic impact such as scratching or shock and against soiling. Avoid fingerprints on the glass and do not touch the C-mount cover of the camera.

- ⚠ **Caution, risk of damage and image errors by mechanic impact!** Protect the camera against impact, especially during operation. Mechanic impact can affect image quality.

Operating temperature: +10 °C ... +35 °C

Relative humidity: 5 % ... 80 %, non-condensing

Storage and transportation temperature: -20 °C ... +70 °C

Advice for transportation and storage: Protect the camera against impact. Store and transport the camera in a dry and cool place, e.g., in its case or the packaging in which it was delivered. Please use the supplied C-mount cover during transportation and storage.

Disposal

- ♻ The camera must be disposed of in compliance with the environmental protection guidelines in force. Contact your expert dealer in case of any questions.

Trade-In

Refine your workstation. Trade in your old Jenoptik microscope camera. For more information please follow the link: <https://www.jenoptik.com/products/cameras-and-imaging-modules/microscope-cameras/progres-usb-20-firmware/software-download-progres/trade-in-form>

Manufacturer Information



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Quick-Start Guide for JENOPTIK GRYPHAX[®] Microscope Cameras



Getting Started

Congratulations on purchasing your GRYPHAX microscope camera! This Quick-Start Guide will help you to quickly install your GRYPHAX[®] microscope camera and imaging software, and will give you an overview over their main functions. For more information and user training, please see our detailed **software manual** and use our video tutorials: www.jenoptik.com/gryphax

You can also find these video tutorials and software manual on the USB memory card included with your camera.

For the safe operation of your GRYPHAX microscope camera, please observe the safety and operating instructions as well as the hardware requirements described on the reverse of this page.

Important note: Only use accessories which are included with your camera or which are explicitly recommended by Jenoptik.

Easy Installation

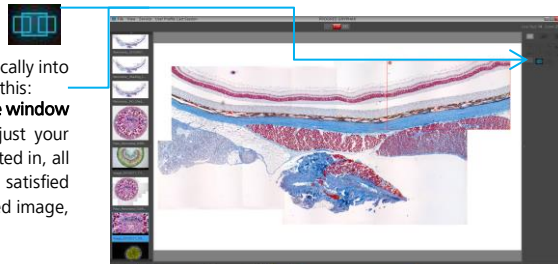
- Mount your GRYPHAX camera to the microscope using the C-Mount adapter
- Turn on the main power switch
- Open Windows Explorer and run the installation application, by following the USB path (USB memory card included with your camera) and follow the wizard to install the GRYPHAX software. (Administrator permission are necessary for successful installation)
- Connect the GRYPHAX microscope camera to your computer using the USB 3.0 cable. Power is supplied via this cable; so you do not need to connect to any further equipment.
- Ensure that the illumination of your microscope is switched on and the light path is opened

Starting the Software

Click on the Jenoptik application icon on your desktop to launch the GRYPHAX software: By default, a grey-balanced and well-exposed live image will appear in "Fit to screen mode" and you can immediately start working with the application software.

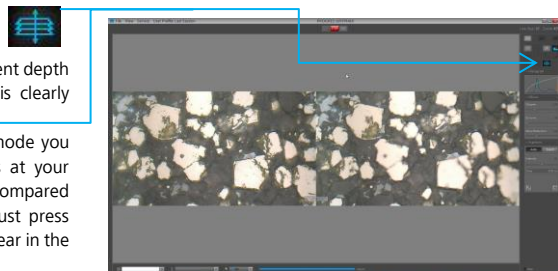
Panorama / Image Stitching (in live mode)

... captures multiple images and stitches these together automatically into one single high resolution image. You can activate it by pressing this: Then press "REC" to start recording a panorama image. The **Image window** shows a ~60% scaled-down image version to help you to adjust your sample. While you do this and select the area that you are interested in, all single images will be automatically stitched together. If you are satisfied with the stitched result, just press "STOP" to save the final stitched image, which will then appear in the **Gallery**. For more details see our software manual.



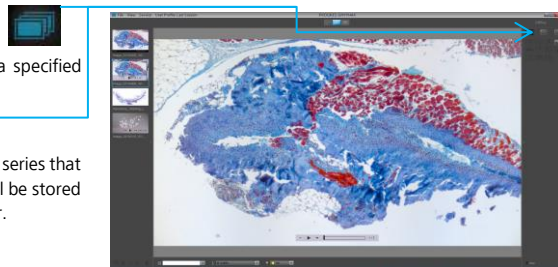
Z-stacking / Multi-focus / EDF (in live mode)

... records a series of single images automatically, each in a different depth of focus, and stitches these together to one final image that is clearly focused in all areas. You can activate it by pressing this: Then press "REC" to start recording a z-stacking image. During "REC" mode you can manually adjust the focus of your specimen in the z-axis at your microscope. The single image and the image result preview are compared and viewed side by side. If you are satisfied with the result, just press "STOP" to save the compound image and the EDF image will appear in the **Gallery**. For more details see our software manual.



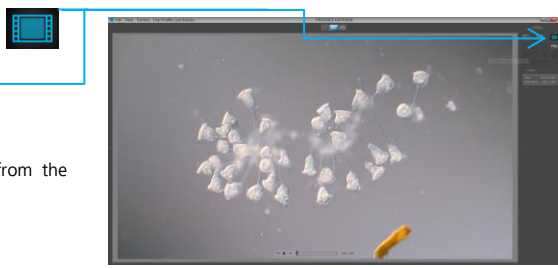
Time-lapse / Image Series (in live mode)

... records an image series (a fixed number of images during a specified time-period or within a given timeframe). You can activate it by pressing this: Then press "REC" to start recording the time-lapse image series. Recording mode automatically stops after all images of the image series that were previously defined have been recorded. The image series will be stored in a separate sub folder under the used image destinations folder. For more details see our software manual.



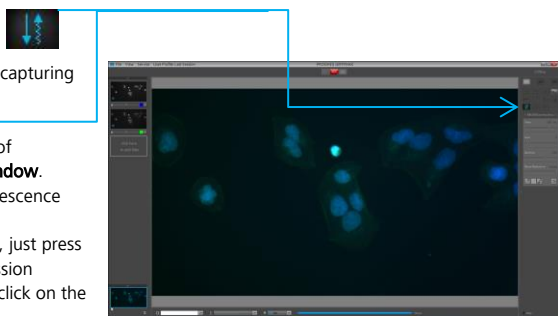
Video (in live mode)

... records a video sequence of images. You can activate it by pressing: Then press "REC" to start recording the video sequence. Clicking "STOP" will end the recording (The video is saved to the user-defined storage location). Video playback, to observe the recorded videos, are possible from the **Gallery**. For more details see our software manual.



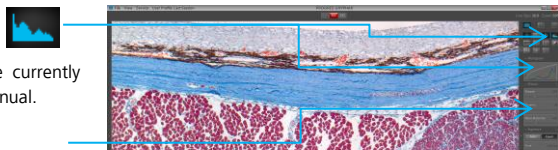
Multi-Fluorescence

... captures single or multi-coloured fluorescent images (through capturing and automatic merging of monochrome and bright-field images). You can activate it by pressing this: The multi-fluorescence panel and a coloured grey-scaled version of the live image will be opened and displayed within the **Image window**. Note: You can adjust the current image using tools of Multi Fluorescence widget. You can add and modify your fluorescence filters, with pre-defined colours according to the list of emission wavelengths, just press "Add Filter". With the colour selector besides each filter, the emission wavelengths can be changed. To delete a filter, just select it and click on the trash icon in the fluorescence tool. To apply the created filters to the image, click on a blank filter, surrounded only by a thin red border and the live image gets filled with the selected colour. After pressing "REC" the captured image will be shown within the filter frame. Repeat the previous steps for all predefined filters. The composite preview image at the bottom of the filter list will be updated on each filter capture. Please double click on the preview image to display it within the **Image window**. If you are satisfied with the composite image, just press "REC" to save the final multi-fluorescent image to the **Gallery**. After the final version is saved you can start capture new filter images. The predefined filters are available for a new multi-fluorescent capture. For more details see our software manual.



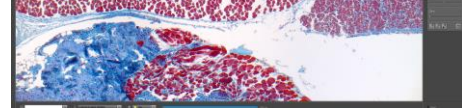
Histogram (in live mode)

... displays the colour and alpha value distribution within the currently viewed image, in real-time. For more details see our software manual.



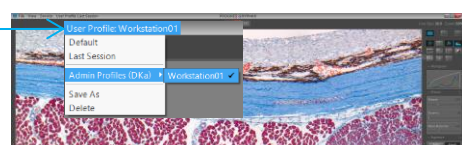
Effects / f(x) (in live mode)

... enhances the live image in order to improve the final captured image. You can individually adjust **sharpness**, as well as **dynamic** and **noise** characteristics, just by moving the sliders from the left ("off"), over "soft" and "middle" to the right ("strong"). For more details see our software manual.



User Profiles

... users can save your individually created calibrations and settings in order to make your microscopic imaging reproducible / trackable. To do this, just choose "User Profile" in the menu bar and press "Save as". You can protect your profiles by password. For more details see our software manual.

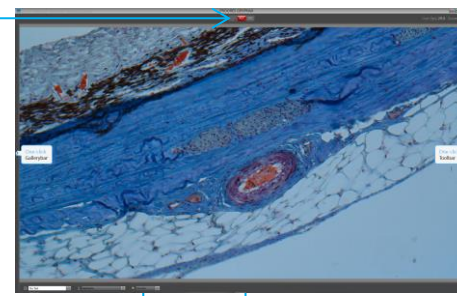


Preferences Your software setting preferences can be adjusted according to your individual needs. (all advanced settings here are described in our software manual or at the video tutorials):

- Language, Minimize gain during capture, GUI scaling, Magnifier zoom factor ("Preferences">"General")
- Set & Calibrate black shading, Activate cooling ("Preferences">"Camera")
- Auto Save, Individual save, Image format, Image quality, File name, Destination folder ("Preferences">"Storage options")
- Image resolution, Color temperature, Calibrate Measurement, Calibrate White shading ("Preferences">"Device Configuration")
- Settings for the Status bar, Scale bar unit ("Preferences">"Status bar")
- Font, Style, Colour, Width, Grid colour ("Preferences">"Style")

Capturing a Microscope Image in just One Step (in single capture mode)

You can easily take a (single shot) image capture by pressing "REC":



The following image capture parameters are preset using the one-click image capture function:

- Auto exposure:** activated by default. Exposure options can be individually adjusted using the **Exposure tool**.
- White balance:** preset / adjusted to halogen lamp HAL100 (Zeiss). Shading options can be created via "Preferences".
- Image resolution:** the settings are preset, but can be adjusted under "Preferences" > "Device Configuration"
- Target folder / Image name / File format / Language:** these settings are preset but can be individually set under "Preferences"

Further image enhancements, settings and tools have to be applied before pressing "REC". To do this open the **Gallery bar / Tool bar** by clicking here:

General note: After clicking "REC", the "REC" button instantly changes to "STOP" or "LIVE" to indicate, that the captured image is saved and the **Offline mode** is activated. During **Offline mode** only a few additional tools can be activated.

Options: You can predefine the following three settings for **Offline mode** after pressing "REC"

- the captured image is displayed for 3 sec., afterwards it automatically changes back into **Live image** mode (this option is preset)
- you can change the length of time that the captured image is displayed
- you can predefine when you will reenter **Live mode** after pressing the "LIVE" button again and to capture additional images

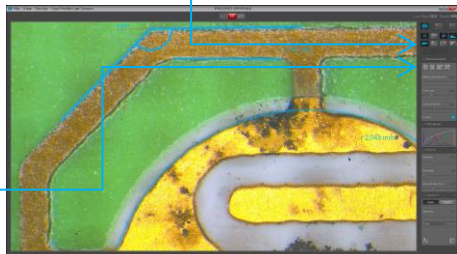
Furthermore, GRYPHAX software gives you the opportunity to further improve or modify the image before capturing it. See the following instructions or for detailed information read software manual available on USB memory card included by camera.

Measurements (in live mode)

... creates different measurements in live and captured images.

You can activate it by pressing Measurement icon:

You can choose which measurement element you would like to use (distances, freeform, radius, diameter, angle) as well as the font, outline width and colour settings of the measurement elements. The measurement automatically appears after clicking in the relevant place. Measurement calibration in advance is necessary! For more details see our software manual.

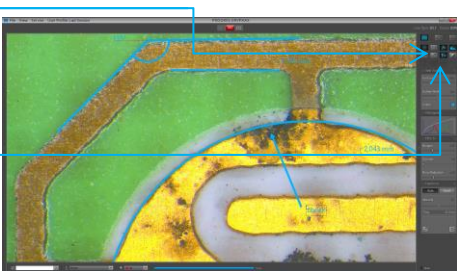


Arrow Marking (in live mode)

... inserts arrow markings into the image to highlight points of interest.

You can activate it by pressing this:

You can choose the outline width and colour. For more details see our software manual.



Text Labeling / Annotations (in live mode)

... inserts text labels into the live & captured image to highlight or to comment on points of interest. You can activate it by pressing this:

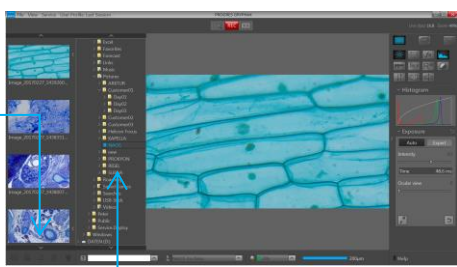
You can also select the font size, font style and colour. For more details see our software manual.



E-mail / Print / Cloud

(in offline mode, when the recorded Gallery image is selected)

You can select one or multiple images from the **Gallery** and then activate "Send via e-mail" or "Print" or "Save in the cloud" for all selected Gallery items by pressing these buttons:



Treewiew

You can select media destination folder by simple double click on the existing folder. Or you create your own entirely folder structure inside of GRYPHAX be using "Treeview". Furthermore, you can rename or delete existing folder. You can open Treeview by pressing arrow button:

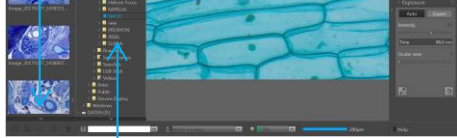
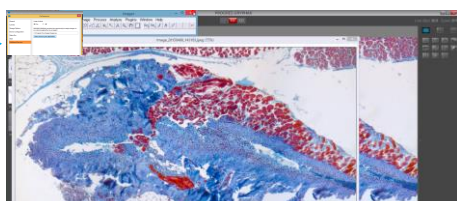


Image Analyzing in External Programs

(in offline mode, when the recorded Gallery image is selected)

You can select one or multiple images from the **Gallery** and activate external "Image Analysis" by going to "Preferences">"Additional Services" to transfer and further process the selected Gallery items to an external image analysis program. Note: The pre-configured external software will launch with the files as pre-loaded. For more details see our software manual.



Grid Scaling and Crosshair (in live mode)

... offers an overlay-frame / mask over the current view within the **Image window** in order to correctly prepare the alignment of the specimen. It can also support your Koehler set up. You have a crosshair in the exact center of the image which can be activated by choosing the option under "View":

The grid can be easily adjustable by scrolling in the mouse. A check mark after the item label within the menu indicates that this mode is activated. Pressing the "z" button switches back to the previous window layout. Alternatively, you can close this mode via menu. Grid colour can be changed under preferences. For more details see our sw manual.

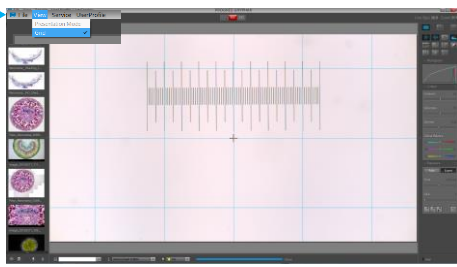
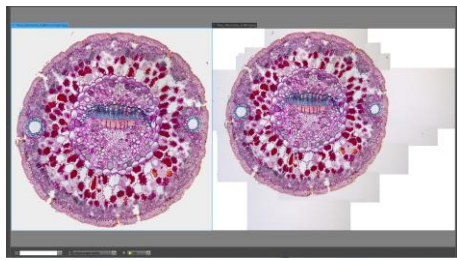


Image Comparing / Side by Side mode

... compares two images in a split-screen side-by-side view. During this mode all tools are disabled. This mode is not available when running a multi-fluorescence procedure or during any other "REC" mode (single capture, video or time-lapse). You can either compare two images from the **Gallery** (just drag and drop one image over the other) or you can compare the live image with an image from the **Gallery**. (drag and drop the gallery image over the live image). The related images are arranged side-by-side within the **Image window**.

You can be in either active **Live mode** or **Offline mode**, depending on the selected image type. For more details see our software manual.



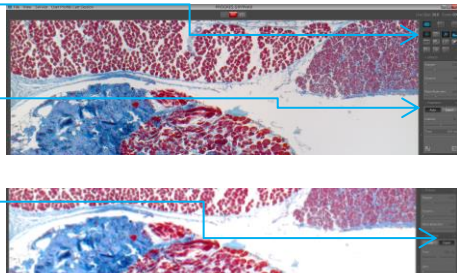
Exposure (in live mode)

... offers a choice of two modes: **Automatic** or **Expert** exposure.

Automatic exposure is activated by default.

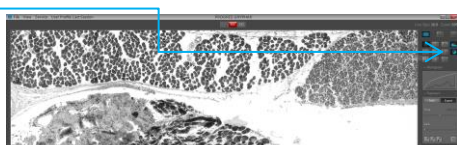
You can adjust the auto exposure intensity, "Ocular view" value or set the grey balance using the pipette. Use the "Ocular view" slider to get on the monitor what you see in the microscope eyepieces.

The expert settings "White point", "Grey balance", "Black point", "Exposure time", "Gain" and "Ocular view" are described detailed in our software manual.



Monochrome mode (in live mode)

... enables you to view the current camera live stream in greyscale images. If this tool is active all recorded media will be saved in greyscale. For more details see our software manual.



Keyboard Shortcuts

- F1 Open help
- F2 Start capturing in Capture Mode (single image, time-lapse, video)
- F3 Go back to Live mode
- F4 Open Individual save dialog
- F5 Live image freeze
- F11 Switch between full screen and standard mode
- G Open / Close Grid
- Z Switch zoom between "1:1" & "fit to screen" view
- "+" or "-" to zoom IN or OUT while Magnifier is active view
- CMD or CTRL + A Select all (all thumbnails from the **Gallery**)
- CMD or CTRL + G Open / Close **Gallery**
- CMD or CTRL + T Open / Close **Tools**
- CMD or CTRL + O Open **Preferences** storage options
- CMD or CTRL + P **Print** selected image(s) from the **Gallery**
- CMD or CTRL + D Open / Close **Treewiew**
- SPACE BAR activates **Magnifier** or **Hand tool**
- DEL **Delete** selected images from gallery or form (via context menu "Measure")