



## 2. Preferences



# Preferences of JENOPTIK GRYPHAX® software

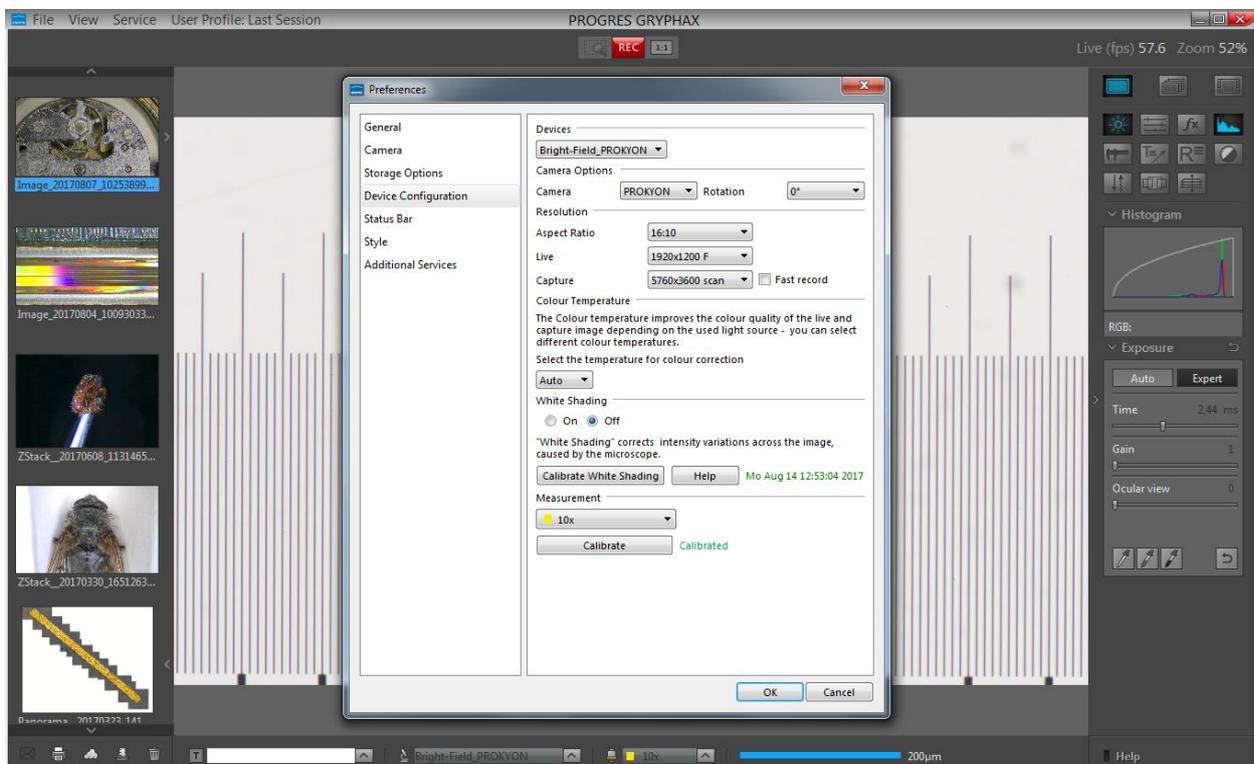
### General description:

JENOPTIK GRYPHAX software is a modular and platform independent software for state of the art microscopy. It contains camera control and image processing to optimize by a wide range of techniques.

To work **versatile** with favorite equipment, user can use the Preferences to create own device configurations, which can optionally transferred to other computers and software platforms.

The “Preferences” menu of JENOPTIK GRYPHAX software is located at the title bar and contains all major software and camera settings for initial software setup and to generate individual device configuration.

### Opened preferences during device calibration:

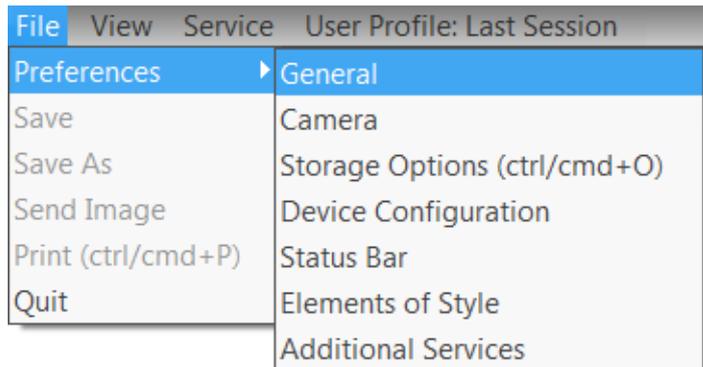


## 2.1 Enter Preferences:

To **enter** software Preferences go to the program title bar under menu File / Preferences. A submenu will be displayed to directly enter specific preferences section.

For the **initial software start**, we strongly recommend to begin with top first preferences entry "General" and follow up all sections step by step.

File menu and submenu to enter software Preferences.



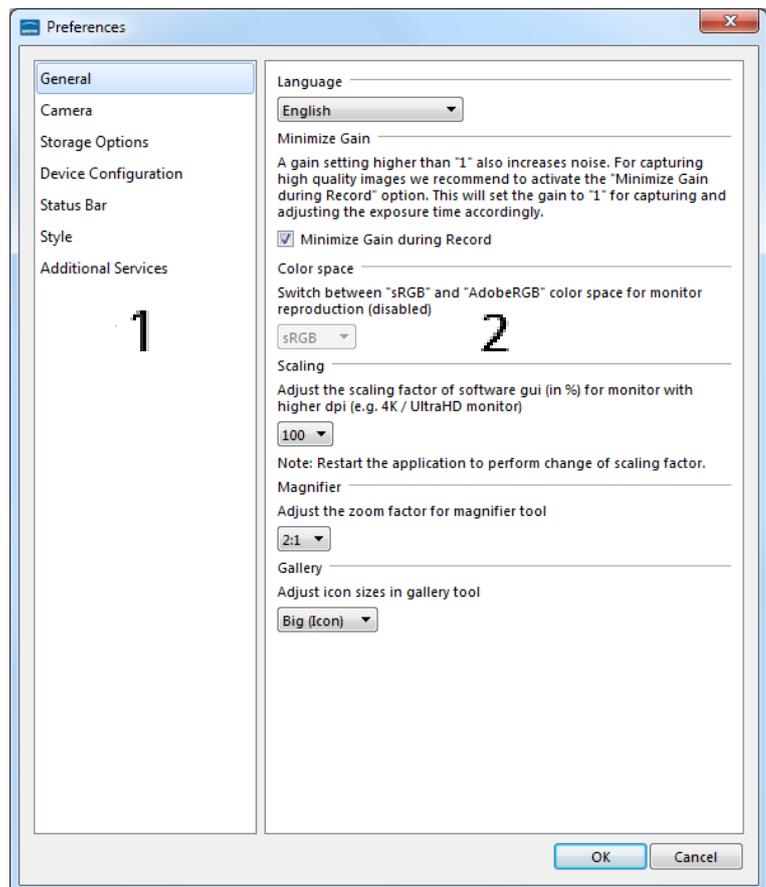
After click on option e.g. "General" a separate "Preferences" window will be opened. The window is separated into two areas:

To **navigate** through the **preferences sections**, click to the corresponding option from column on the **left** window side (1).

To **change** options according your needs, edit on **right** window section (2).

To **apply** any changes to software settings, leave preferences window by "OK" button!

To **leave** preferences without applying any changes press "Cancel" button.



**Note:** Some options depending on camera type. Disabled options are greyed out and can't be reached.



## 2.2 General:

At "General" menu, all global software settings can be adjusted. Initial language is assumed from system language. All other settings are pre-defined by software default values.

### Language

To **change** language, select one of the available software languages from drop down list. Entire software GUI will change language after software restart.

### Minimize Gain

Option "**Minimize Gain**" is activated as default. Function increase image quality by **reducing noise level** for recorded images by minimize gain value. Deactivate this function if you want to record images with gain factor from live preview.

### Color space

To **switch** between "sRGB" and AdobeRGB color space to enhance color reproduction on corresponding monitor. AdobeRGB currently disabled.

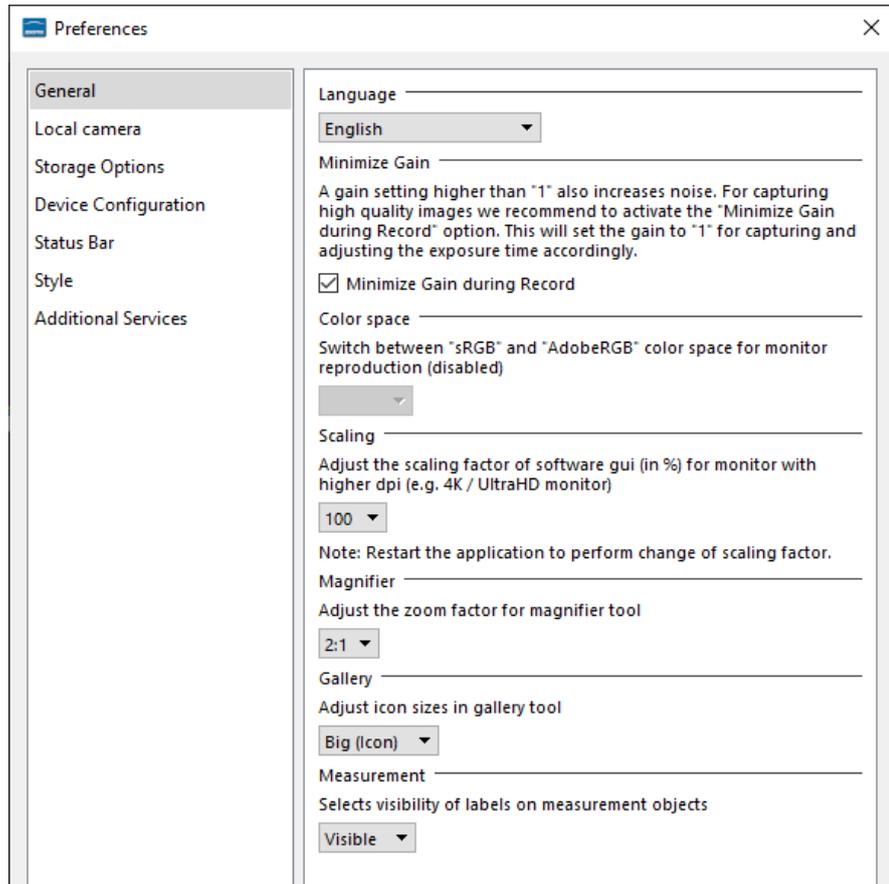
### Scaling

To **adjust** scaling factor of software interface (GUI) and mouse pointer in correlation to high resolution screens (e.g. **Ultra-HD / 4K / 5K**).

Default scaling value is 100. Select according scaling factor from drop down list. Entire software GUI will change scaling after software restart.

### Magnifier

To **adjust** the zoom factor of detail window for magnifier tool. The factor can be chosen in steps from 100% to 300%. Select according zoom factor from drop down list.

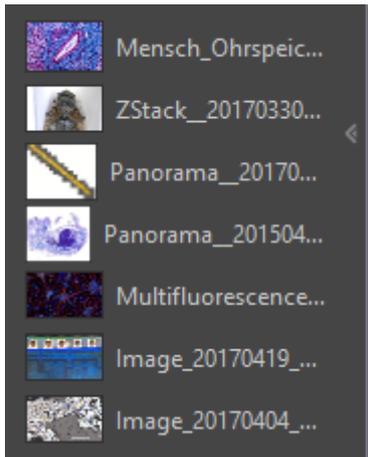


## Gallery

To [adjust](#) the icon sizes of preview thumbnails in gallery window. The size can be chosen between small preview and big preview thumbnails. Select according size option from drop down list.

In default, the Gallery thumbnails size is "big".

Small icons as "list":



Big icons as "preview":



## Measurement

[Selects](#) the visibility of [labels](#) from overlaid objects like measurements or counter objects. User can change between the option "Visible" and "Hidden". Option hidden selected as default.

By option **visible** all detailed description is display on overlay.

By option **hidden** the naming and description is removed on displayed overlay. Only values and counts are displayed instead.

As example for counter labels.

The red counter label is displayed "visible", the blue counter label is displayed "hidden":



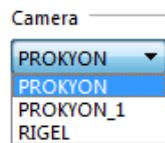


## 2.3 Local camera:

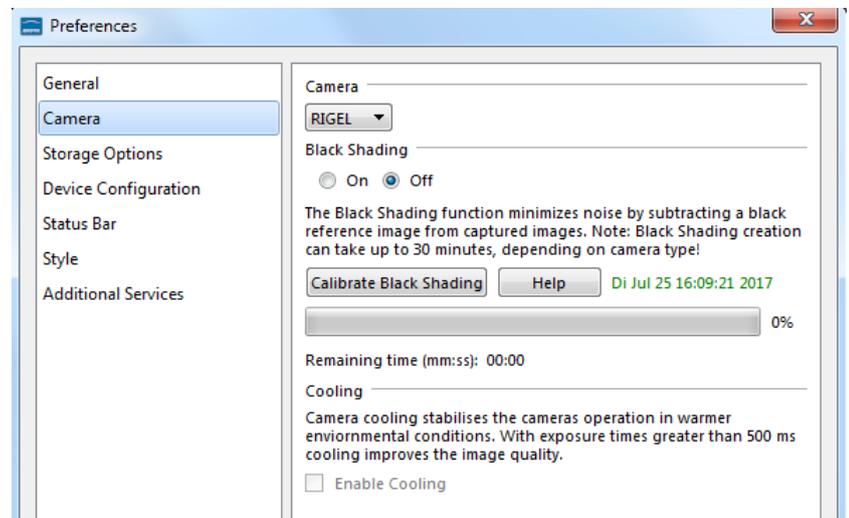
At "Camera" menu all camera related settings can be adjusted independently from configured devices.

### Camera

To **select** connected camera from drop down list. Camera will be activated immediately. Live preview is starting at image window in background.



**Note:** Connecting **multiple** cameras from same type will be displayed by a suffix number at name to distinguish from each other.



### Black Shading

The **Black Shading** function **minimizes noise** by subtracting a black reference image from recorded images.

It is recommended to create black shading correction especially for long exposure images e.g. Fluorescence or dark field applications.

**Before create** a black shading reference file, remove camera from microscope and close the sensor by the protection cap. Take care that no light falls into the sensor; otherwise the creation will be aborted.

**Press** the icon **Calibrate Black Shading** "Calibrate Black Shading" to start and wait until the process is successfully finished.

During creation the calculated remaining time and status will be displayed.



After successful creation the file date will be displayed on preferences window. **Di Jul 25 16:09:21 2017**

Black Shading correction can be switch on or off by selecting of corresponding radio buttons  On  Off .

On the "Help" button **Help** you will find detailed information to create shading reference file.

**Note:** Black shading creation can take up to 120 minutes depending on camera type. For cameras with internal "factory created" black shading file, option *Calibrate Black Shading* is greyed out. In addition, the cooling option is enabled instead and can't be deactivated by users.

### Cooling

Option to activate camera cooling to stabilize camera operation in warmer environmental condition.

**Note:** This option is available for cameras with active cooling function only.



## 2.4 Storage Options:

At "Storage Options" menu all related options for image format and storage can be adjusted.

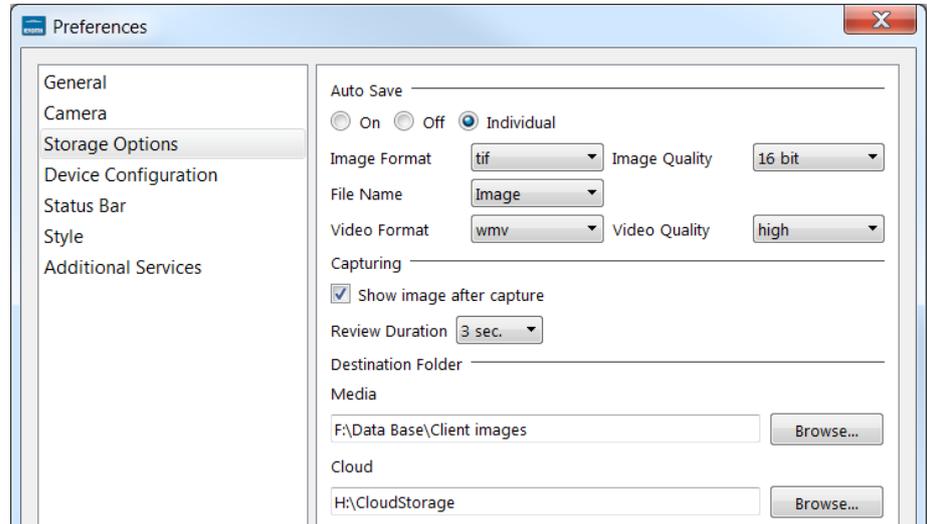
### Auto Save

Option **Auto Save** is activated as default. With the storage option "Auto save" all recorded media files will be saved with an automatic given naming structure.

Manual file save can be used by deactivate "Off" Auto Save function

By option "Auto Save Individual" media files can be saved by individual file name structure.\*

A separate individual save dialog to configure file naming structure or use of **Barcode scanner** will appear with hotkey "F4".\*



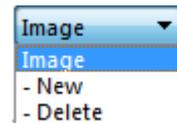
For details, please see the section [Barcode & Individual save option](#).

**Image Format** can be select from drop down list. The following formats are available: bmp, jpg, tif and png.

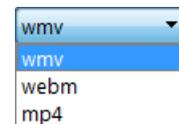
At option **Image Quality** user can select quality level and bit depth of according selected image format.

Option **File Name** represents the image name prefix for auto saved images. **Create**, **select** or **delete** file name to any individual prefix at drop down menu.

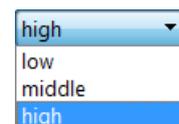
The number for name prefix is limited by 25.



**Video Format** can be select from drop down list. The following formats are available: wmv, webm and mp4 depending on operating system.



**Video Quality** can be select from drop down list. The following quality levels are available: High, Middle and Low. The quality level "Low" is pre-selected as default. Because of the best ratio between video frame rate, bitrate and used CPU utilization. The used video decoding bitrate for each video format and quality level varies and is depending on used operating system.\*

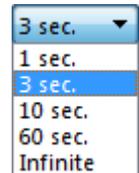


**Note:** The video frame rate depends on the used hardware environment of PC, video format and selected quality level. \*(Available as of Jenoptik GRYPHAX version 2.1 or newer)



## Capturing

By option Capturing user can adjust preview **duration time** of recorded images after capture. The time can be chosen in steps from 1 second until infinite by drop down list.



If option “**Show image after capture**” is **deactivated**, live image immediately restarts after image capture.

## Destination Folder

To **change** media file **destination folder** where to save recordings. Click on “Browse” button  and a separate window will be opened. Select correspond folder by browse folder structure of hard drive. Confirm new destination folder by “Select Folder” button.

After change of destination folder, the *Gallery* will display all media files of new selected folder. All new captured images and media files will be saved to the selected folder. Furthermore, the media destination folder of Tree view tool is synchronized with the software preferences.

Additionally, a separate media files destination folder for **cloud services** can be predefined.

## 2.5 Device Configuration:

At menu “Device Configuration” user can create individual device sets **to enhance user’s daily work-flow** by changing between different cameras or workstations within seconds from Status bar at main GUI!

### Devices

To **create, select, rename** or **delete device configurations** at drop down menu.

### Camera Options

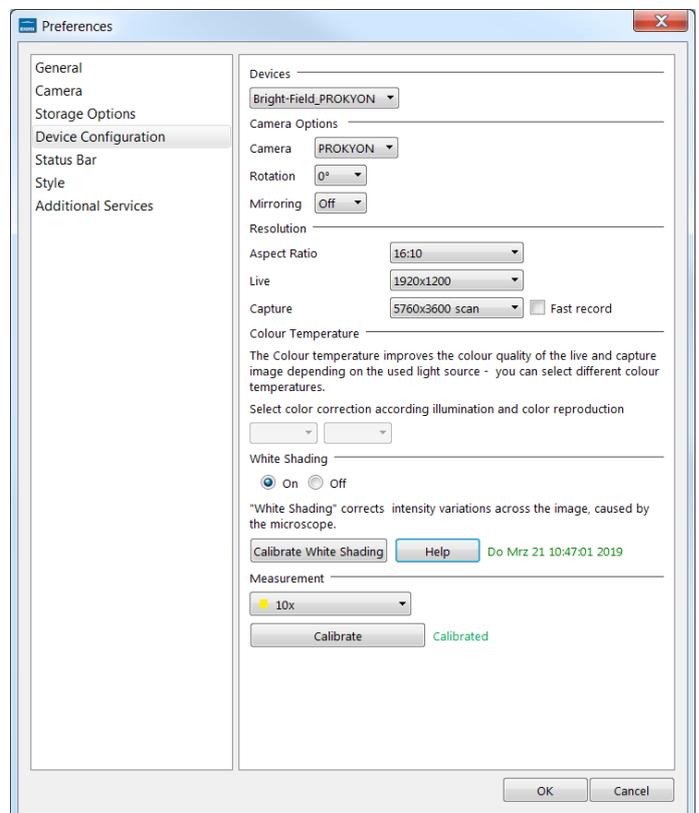
To **select** a connected **camera** from list (either local as well as network cameras are displayed on drop down list).

**Change** image **orientation** according camera mounting from drop down list in steps of 90° (degree). Default value is 0°.

**Choose** option **mirroring** to activate mirror option horizontally (Flip from left to right)\*

**Select Framerate limit** according available values. Depending on camera type from 15 fps up to **120 fps**. Lower frame rate can reduce CPU consumption and relieve PC\*.

After initial start, default frame rate limit is used.



**Note:** Lower limit to reduce CPU consumption. Recommended on older or low performance computers.



## Resolution

Choose available **aspect ratio** from list. Resolutions for "Live" & "Capture" will be displayed accordingly.

Define camera resolution **separately** for live preview and captured images.

Activate "Fast record" option for **fast image capture**. Recommended for high-resolution images and network storage. Not supported for scanning modes.

## Colour Temperature

To **select** the temperature for **colour correction** according light source at drop down list to reach best colour reproduction. With option "Auto" software **automatically** choose best fitting colour correction according your light source after grey balance adjustment.

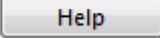
## White Shading

Before **create** a **white shading** reference file, remove specimen from microscope and activate the light source. Take care that no dust or specimen is in the light path, otherwise the white reference file will correct temporary objects.

Press the icon  "Calibrate White Shading" to start and wait until the process is successfully finished.

After successful creation, the file date will be displayed on preferences window. **Di Jul 25 16:09:21 2017**

White Shading correction can be switch on or off by selecting of corresponding radio buttons:  On  Off

On the "Help" button  user will find detailed information to create shading reference file.

Note: White shading reference will be connected to the currently used objective from microscope. By change of objective at microscope, a new white shading reference must be created!

White shading calibration associated with device set. \* This enables user to create multiple white shading calibrations for different objective. To change magnification with correlated white shading user can change device set.

## Measurement (calibration)

To use **Measurement tool** you have to calibrate your microscope objectives in advance! Otherwise, the Measurement tool or Scale bar cannot be activated and used.

To calibrate the microscope you can use the JENOPTIK GRYPHAX® **calibration slide / stage micrometer** (order number: 648806).

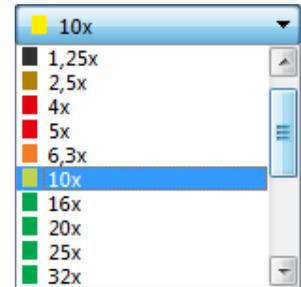
\*(Available as of JENOPTIK GRYPHAX version 2.1 or newer)





### 2.5.1 Create:

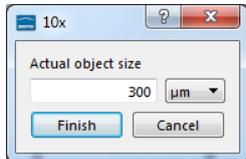
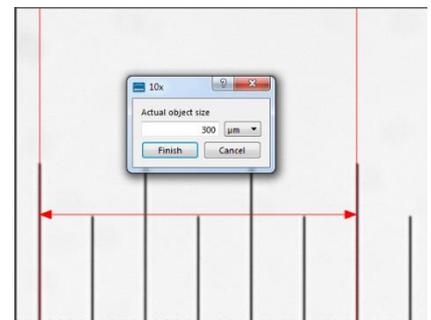
To **create** measurement calibration please oriented the object micrometer horizontally on the microscope stage. **Select** objective type from drop down list according to the currently used objective from microscope e.g. 10x.



Press "Calibrate" button  to start **drawing** a reference line onto live preview at image window.

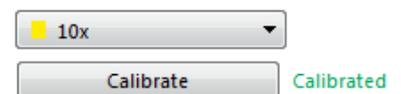
Start **drawing** by left-hand mouse click on first reference point and release. Move mouse to reference endpoint confirm position by click and release again. While drawing a detail window will appear to find exact positions.

Reference line will be drawn as overlay onto the image window and the calibration value window will appear.



Enter **reference length** into the calibration value window. Choose the correct **unit** from drop down list and finally **confirm** by button "Finish".

After successful objective calibration the status for each objective from list is displayed by "**Calibrated**" in green.



Note: If a specific objective is not listed, user can create individual *custom objectives* as well. Please see section "Create custom objectives" below.

### 2.5.2 Remove:

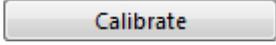
To **remove** created calibration from list, select corresponding objective type and use the drop down menu entry "Remove Calibrations" --**Remove Calibration**. Only calibration information will be deleted.

After remove, calibration status of objective will be displayed as not calibrated "**Not Calibrated**".



### 2.5.3 Create custom objectives:

To **create** a **custom objective** use the drop down menu entry **Create Custom Objective** from drop down list.

Enter custom objective name at input field and start objective calibration with button "Calibrate" .

A screenshot of a software interface. At the top, the word "Measurement" is followed by a horizontal line. Below this is a dropdown menu with a white background and a blue border, containing the text "myObjective" and a small downward-pointing triangle on the right. Below the dropdown menu is a rectangular button with a grey gradient and the word "Calibrate" in black text.

After successfully calibration the custom objective is added to the objective drop down list of measurement and the status for objective from list is displayed by "**Calibrated**" in green. The new custom objective will be available at magnification menu of status bar.

### 2.5.4 Remove custom objectives:

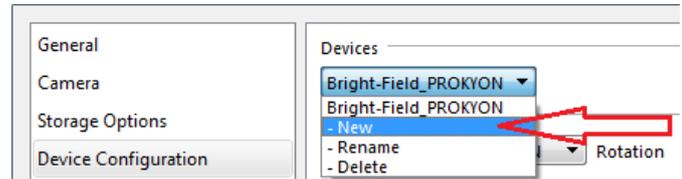
To **remove** custom objective calibration from list, select corresponding objective type and use the drop-down menu entry "Remove Objective Calibrations". Custom objective entry at list and calibration information will be deleted.

#### Video tutorial:

[Press the link](#) to watch the video tutorial **how to calibrate** the microscope objectives.

### 2.5.5 Create device:

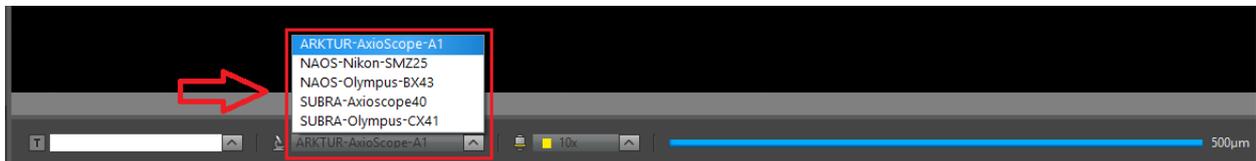
(1) To **start** with “**device**” creation follow up the given structure step by step by choose option “**New**” to enter individual “**device name**” at first.



(2) **Select** a camera from camera list and set all relevant parameters from “**Device Configuration**” page and calibrate all objectives of microscope.

(3) To **save** device configuration and confirm all changes from preferences press button “**OK**” .

(4) After succesfull device configuration users are able to **switch easily between created devices and calibrated magnifications** at the “**Status Bar**” of JENOPTIK GRYPHAX software.



Note: Remove device configurations by option “**Delete**” will lost all settings and calibrations of those!

### 2.6 Status Bar:

At “**Status Bar**” menu all related options for status bar and scale bar can be defined.

In addition, a “**status bar**” can be **added** at the bottom of captured images to **display significant information** like scale, device name, used magnification and notification from text box.

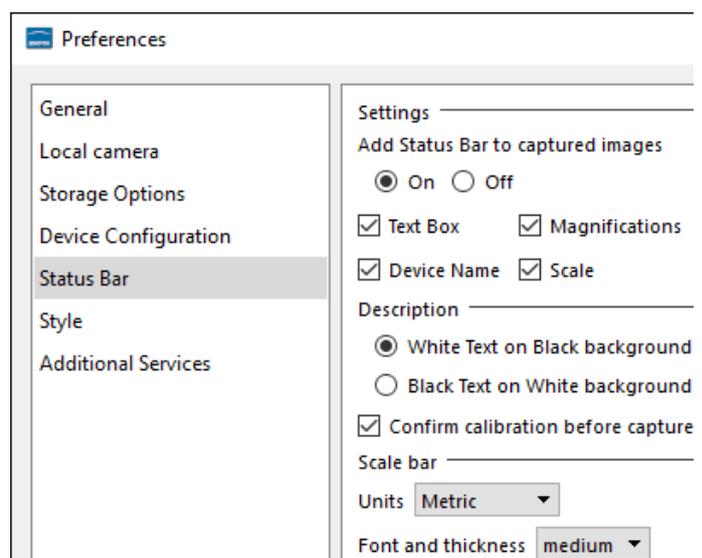
#### Settings

**Decide** if status bar should be added to the captured images by radio buttons **On / Off**.

Moreover, the status will displayed and can be changed on the Status Bar from GUI as well.

**St. bar**  Unselect the check box to **switch** off added status bar for recorded images quickly.\*

**Check mark** all information, which has to displayed on added status bar of recorded images.





## Description

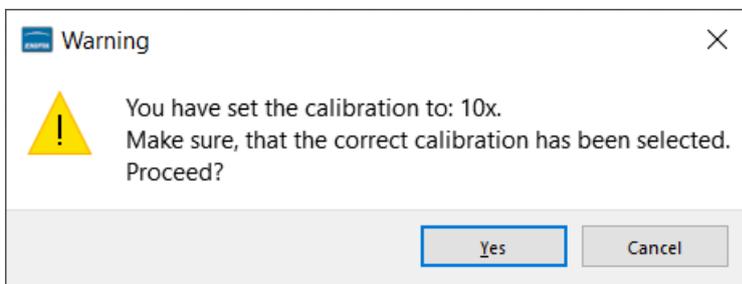
Choose the appearance of the added status bar between:

- (a) "White text on Black background" or
- (b) "Black text on White background"

Activate the option "Confirm calibration before capture" to display an additional warning message which appear after "REC" record to confirm the current selected magnification.

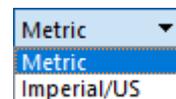
The current applied magnification will be displayed on pop-up warning.

If selected magnification is correct user can proceed with "Yes" or if not abort by "Cancel" button.



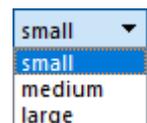
## Scale bar

To adjust the scale bar unit of status bar from software and at added status bar to captured images. Adjust between units: "Metric" or "Imperial/US".



To select the appearance for font and thickness for overlaid scale bar on images in 3 sizes:

- **small** - (default value from factory settings)
- **medium** - (about 4 times bigger as small)
- **large** - (about 16 times bigger as small)



Note: The drag and drop scale bar from status bar will appear within these setting overlaid on the image window. (For live preview and displayed items from gallery)

For detailed description about drag and drop scale bar, please read the section [Scale bar tool](#)

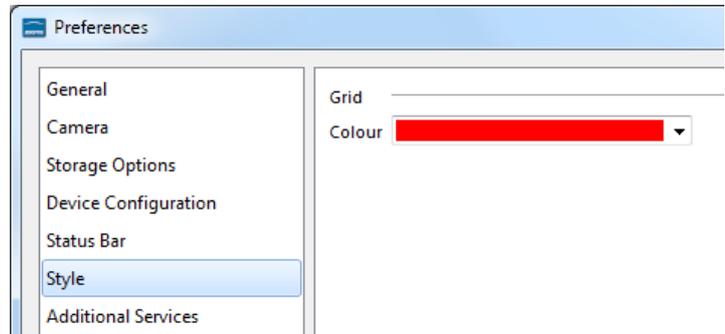
## 2.7 Elements of Style:

At “Style” menu general options for software style and colors can be adjusted.

### Grid

Lines colour for **Grid** view can be pre-defined by colors of drop-down list.

Note: Line pitch will be always restored from last defined line pitch of Grid mode use.



For detailed information, please have a look to the separate manual section “[Grid mode](#)”.

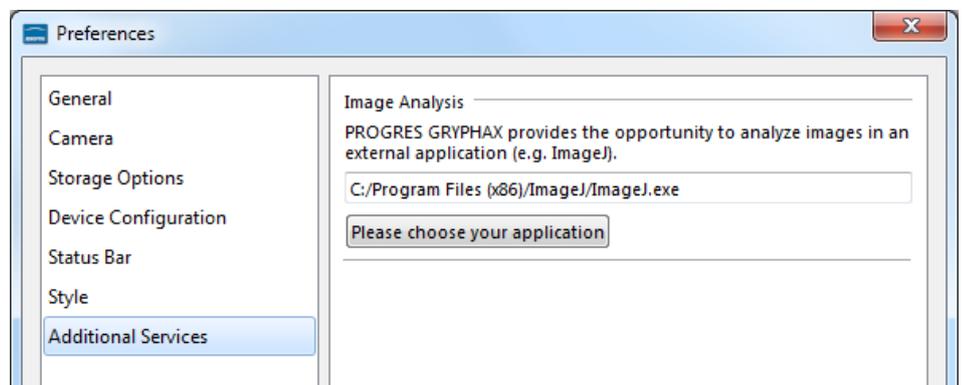
## 2.8 Additional Services:

At “Additional Services” menu the image analyses settings can be pre-defined. The “**Image Analysis Option**” enables user to open image from GRYHAX Gallery **directly** at 3<sup>rd</sup> party “analysis” applications.

### Define:

To **select** an **external application**, press the button **Please choose your application** and choose appropriate application e.g. ImageJ from your computer.

Selected application file path will be displayed at preferences window.



To **activate** the image transfer to 3<sup>rd</sup> party software tool, select the according image file thumbnail from GRYPHAX Gallery by left-hand mouse click and press the “Image analysis” button  from Gallery bar.

The analysis function immediately opening the pre-selected 3<sup>rd</sup> party software and transfer the selected image.

For detailed information, please have a look to the separate manual section for “[Image Analysis function](#)”.



## 2.9 Transfer software settings:

Software settings or "user profiles" can be transferred to other computer (platform independent) to work with same settings or devices! User can **copy and paste** the software settings file from current computer and transfer to others.

The current software settings are stored at settings file: "lastsession.ini" located under following system folder depending on used operating system:

- Windows OS: „C:\ProgramDataJenoptik\...”
- MacOS: „MacHD/Library/Application SupportJenoptik\...”
- Linux OS: „/var/lib/Jenoptik/...”

Please note: Deleting or rename of settings files will lost all software settings and calibrations! Please handle with care! For details about transfere software settings, please have a look to the separate manual section: "Transfer software settings" at user profile tool.

### Video tutorial:

[Press the link](#) to watch the video tutorial for **Preferences** of JENOPTIK GRYPHAX software.

### Limitations:

For **correct** software operation, it is mandatory that user have permission of "full control" for software settings location (system folder of OS) and settings files.