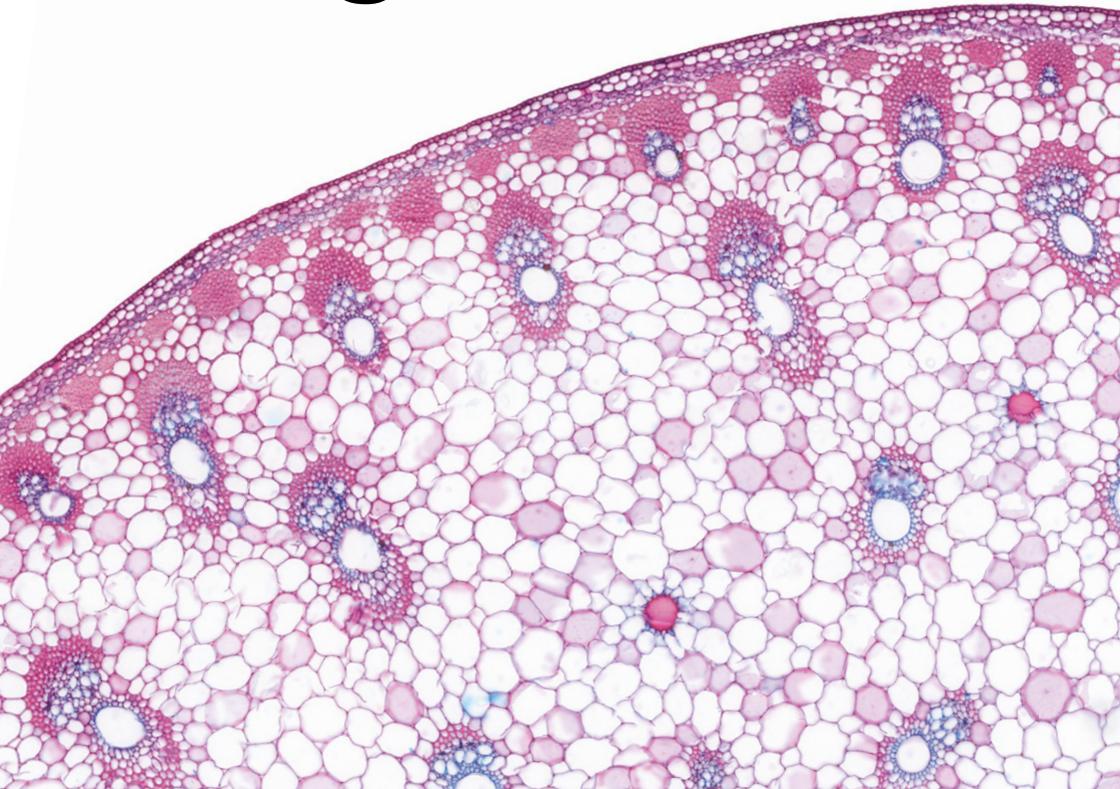precipoint

Quick
start guide

Hardware set-up
Step-by-step list

1 **Connect the computer to the microscope**
Use the USB 3.0 cable to connect the microscope and the computer. Make sure to use enclosing screws on the microscope. The PC port has to be USB 3.0, not USB 2.0. Use prefered the Display Port (DP) or HDMI Cable to connect the monitor to the computer.

2 **Plug in the power cords**
Use the delivered power cables to plug the microscope, the computer and the monitor into the multiple socket. Check that the plug is firmly placed in the connector. Plug the multiple socket into the wall socket.
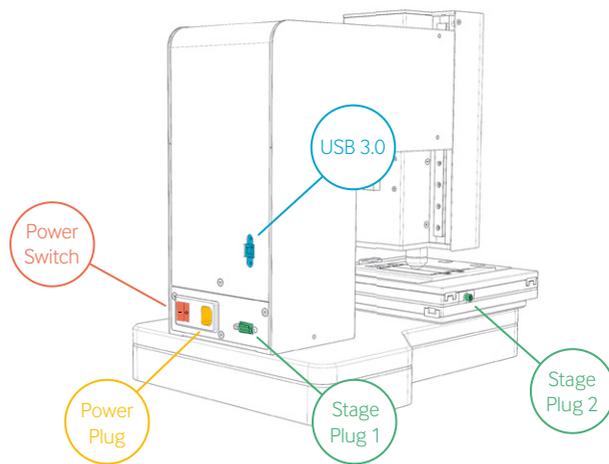
3 **Connect the stage to the microscope**
Plug and screw in the Stage-Cable on the back of the microscope and connect it to the plug on the side of the stage. Don't use force, make sure the plugs are properly aligned to prevent damage to the pins. On the right side you can see how to align the proper 45° angle.
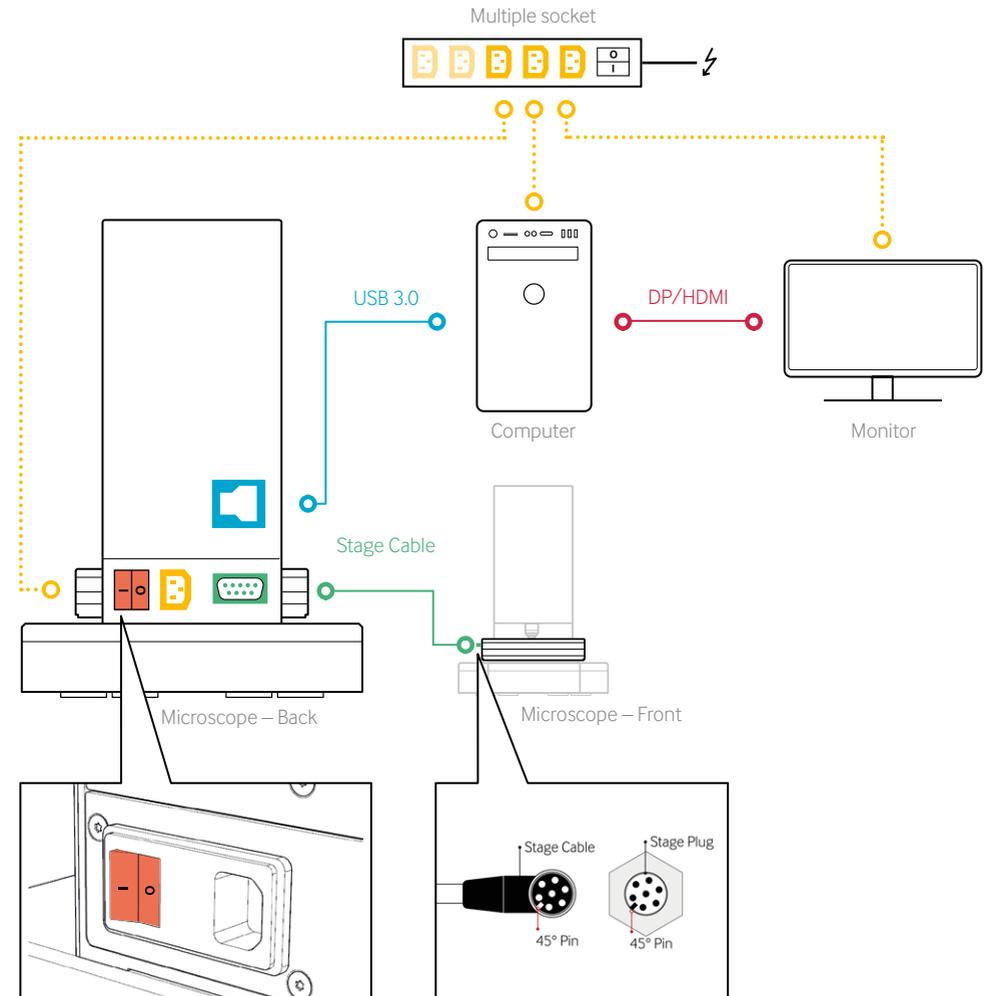
4 **Start the system**
First turn on the computer and wait until the computer is completely finished with booting. Next switch on the microscope by using the toggle switch on its back. Push "I" to turn the microscope on and "0" to turn it off.

Connection diagram

Please read this "Operating Manual PreciPoint M8 or O8" (separate volume) carefully to familiarize yourself with safe and effective usage. Please retain this manual for future reference.
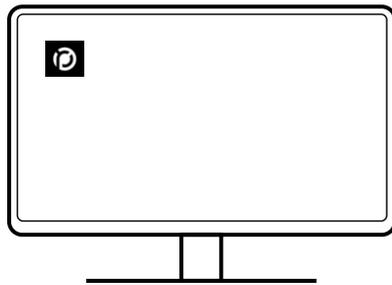
Software quick use
Getting started

Start MicroPoint
After turning on the microscope, wait for about 30 seconds. Then, double-click on the white desktop shortcut MicroPoint. Alternatively you can start the software by a Double Tap on the screen, when using a touchscreen device.
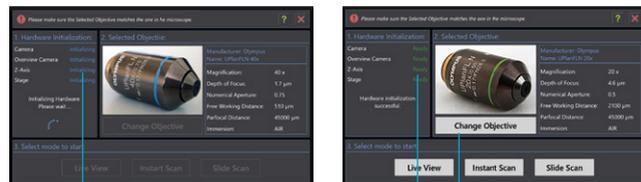
MicroPoint desktop icon

(2)

Wait to initialize the hardware
After starting MicroPoint, it will first initialize the hardware. Wait until all components are initialized. After the initialization has been completed, the buttons at the bottom will be activated/unlocked. After the initialization is done, make sure, that the mounted objective matches the one shown in the dialogue picture. If change is needed, select the matching objective by clicking the "Change Objective" button.

Buttons are locked

Buttons are unlocked
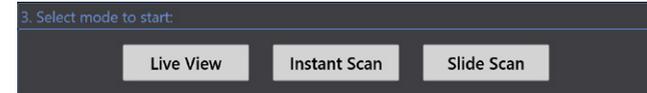
Change Objective button

Initialization status: ongoing

Initialization status: completed

(3)

Choose your operating mode
Choose between Live View, Instant Scan and Slide Scan.

Live View. This mode operates the microscope like a conventional microscope , showing only the field of view of the currently selected objective.

Instant Scan. You can get a fast overview over the whole slide, using real-time scanning. Navigate and zoom through the details and use annotations, measurements, counting and image manipulation tools.

Slide Scan. You can digitize your samples to view them virtually later or to send them to your colleagues.

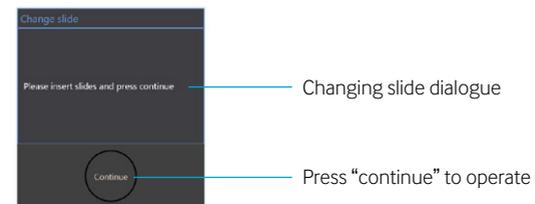In the next step, you will be asked to place the slide into the designated mount of the x-y-stage.

(4)

Insert slides
Move the slide mount to the right by using the handle.
Hold this position while changing slides. Always insert the slides with the label pointing to the right side. Put the first slide gently onto the glass plate with your left hand and move the slide to the back of the holder until the stop is reached.

Repeat this step to insert a second slide. When all slides are mounted, release the handle. The slide mount closes automatically.

Changing slide dialogue

Press "continue" to operate

When all slides are inserted, press "Continue" in the dialogue window of the software. The device continues operation by generating an overview image of the inserted sample.
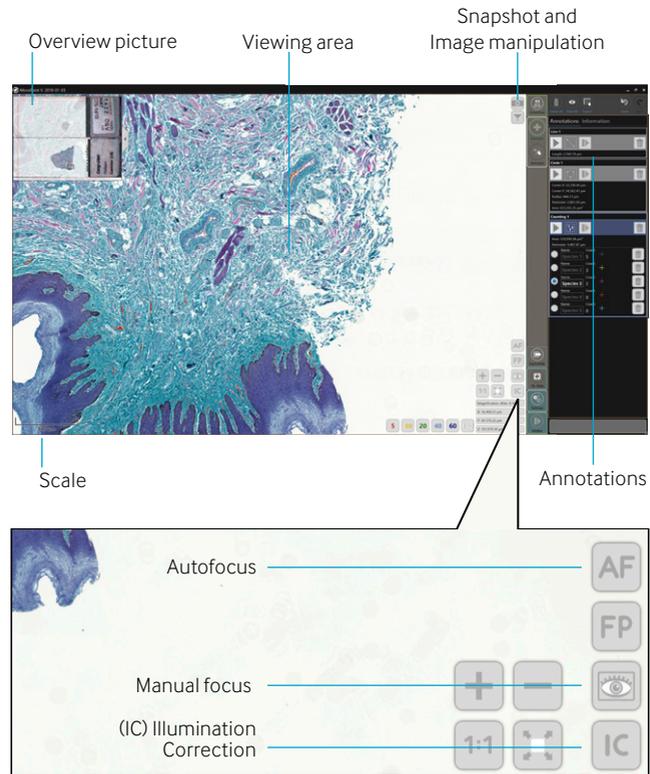
Explore the sample
InstantScan mode

1

Get an overview of the sample
After selecting Instant scan mode, you can start to navigate through the sample. The experience is similar to zooming and scrolling with current car map navigation software. An overview of the specimen is available (top left) while zooming seamlessly through the details of the sample. Navigating and zooming through the sample requires no change of objective.
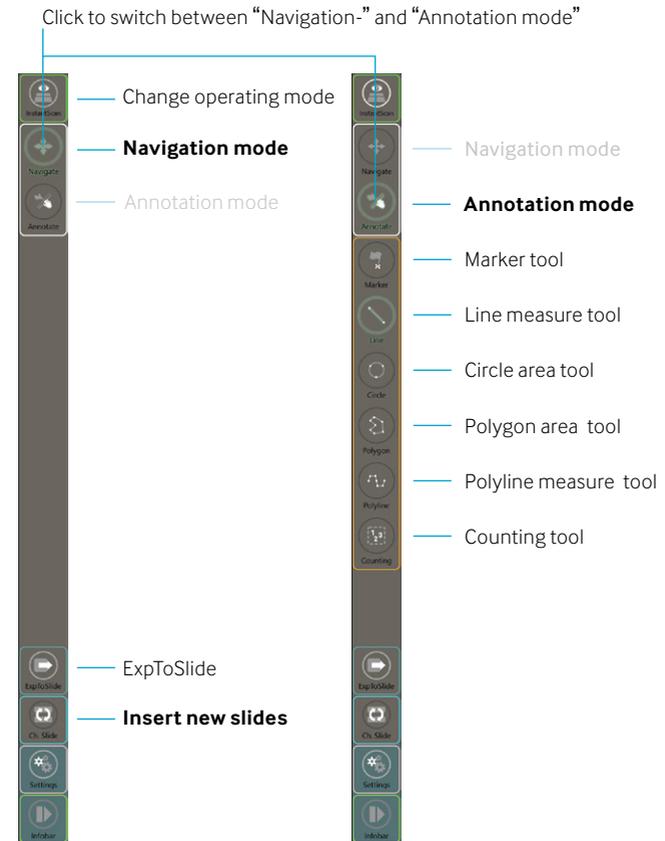
This mode is also well suited to identify regions of interest for later digitization in the slide scan mode. By clicking "ExpToSlide" the currently viewed region is selected to be scanned. Before clicking "ExpToSlide", wait until the device finishes its movements.

Overview picture   Viewing area   Snapshot and Image manipulation

Scale

Annotations

Autofocus — AF

FP

Manual focus —

(IC) Illumination Correction — 1:1   IC

Annotate, measure, count and analyse
2

Besides, the Instant Scan mode offers annotations, measurements and counting tools as well as image manipulation filters, such as changes to contrast and brightness, that all enable rapid analysis and processing of the image on the screen. The image, the filters and all annotations can be saved and exported. Overall, you may process large areas of a specimen without the need for scanning a whole slide image first.

Click to switch between "Navigation-" and "Annotation mode"

Change operating mode

Navigation mode

Annotation mode

Navigation mode

Annotation mode

Marker tool

Line measure tool

Circle area tool

Polygon area tool

Polyline measure tool

Counting tool

ExpToSlide

Insert new slides

Change operating mode with buttons

Annotation box
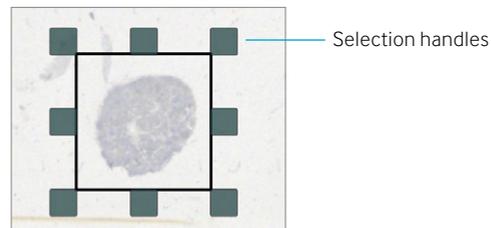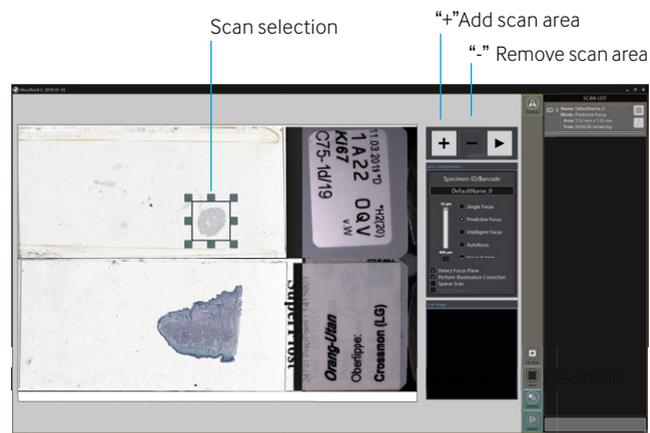
Annotation box

Annotation details

How to scan slides
SlideScan mode

① Define the scanning area

Select your region of interest with the selection-tool. To mark the scanning area, drag and adjust the selection over the area you want to digitize. Add or remove additional scan areas using the large "+" or "-" symbol in the user software.

Scan selection

"+"Add scan area

"-" Remove scan area

Selection handles

Once you are happy with the selected areas, continue to choose a scan algorithm.

It is always possible to switch between operating modes:

Change operating mode with buttons
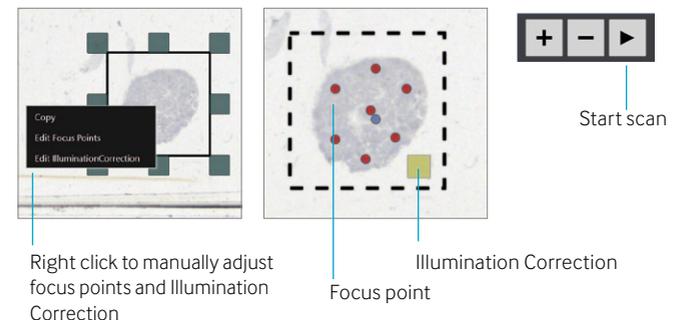
② Choose scan algorithm

Scanning is always a trade-off between time and quality: the more extensive the digitization process, the higher the probability that the best image quality can be achieved. The best ratio of quality/time can usually be achieved by using the "Predictive Focus" and "Intelligent Focus" scanning algorithms. Assign a file name as soon as all parameters are set.

Start the scan

Name the file

Select scan algorithm

Predictive Focus: The computer automatically sets focus points, calculates a focal plane and scans the area by taking one image per x-y position.

Intelligent Focus: The computer automatically sets focus points, calculates a plane of focus, and scans the area by taking several pictures in a predefined height range (default: 14 µm) per x-y position, depending on the calculated plane of focus, and saves the sharpest image for each.

To adjust the focus points and the Illumination Correction, right-click inside the scanning area. You can move focus points via drag & drop. Add or remove focus points by double clicking on the sample region. You can learn more about the Illumination Correction and Focus Planes on the next pages.

Start scan

Right click to manually adjust focus points and Illumination Correction

Focus point

Illumination Correction

Start the scan by clicking on the large "Play" sign and define the destination folder. The scan will now start.

Good to know
Illumination Correction (IC) adjustment

1 **Switch to InstantScan mode**
Select InstantScan Mode either after starting MicroPoint or by changing the operating mode in the upper right corner of the user interface.

—— Change operating mode with buttons

2 **Focus on the sample**
Move the stage to a region with sample content e.g. by clicking on a specific area on the overview image. Click on the button "AF" in order to autofocus on the sample.

3 **Perform an IC**
Move the stage to a region without sample content, but still underneath the cover glass. Click on the button "IC" to update the Illumination Correction. The region within the red square should not contain any dust or sample fragments. Perform an IC by clicking on the "Ok" button. After that, confirm in the next window.
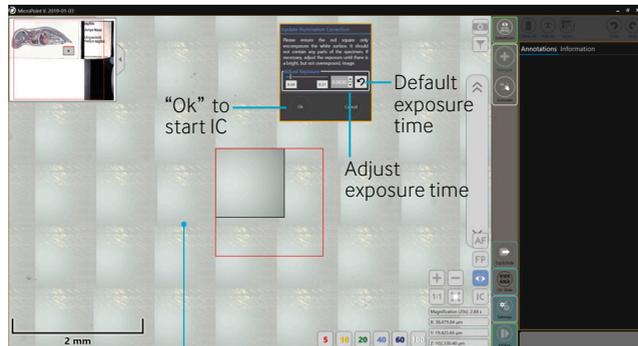
4 **Check IC**
Check if any patterns similiar to the ones in the picture below are visible. If so, redo the IC once again for another, more appropriate region.

5 **Illumination Correction failure**
If an error message "Camera image brightness is too low/high" appears, retry performing the IC with an adapted exposure time.

"Ok" to start IC
Default exposure time
Adjust exposure time
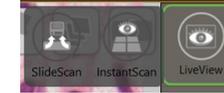2 mm

Incorrect Illumination Correction

Good to know
FocusPlane (FP) adjustment

1 **Switch to LiveView mode**
Select LiveView mode either after starting MicroPoint or by changing the operating mode in the upper right corner of the user interface.

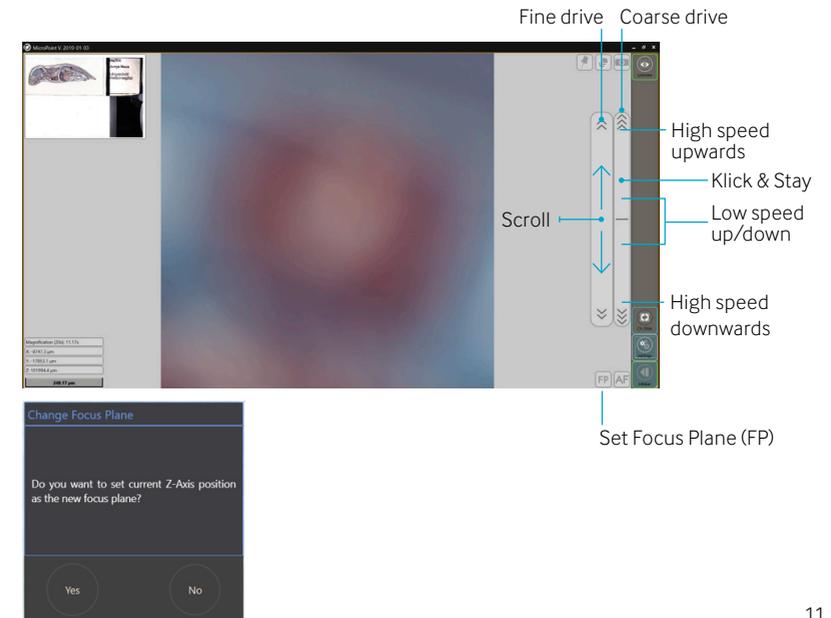—— Change operating mode with buttons

2 **Refocusing**
Move the stage to a region with sample content. Move towards the sample using fine and coarse drive scrollbars. Fine drive is used to move short distances whereas coarse drive is used to move long distances. Both drives are controlled in a different way.

3 **Setting of the FP**
When you have reached an image in focus, save the focus plane by clicking on the button "FP". Confirm in the next window. If the microscope is not moving down anymore, save the focus plane to move down further. Repeat this until you reach an image in focus.

Fine drive   Coarse drive
High speed upwards
Klick & Stay
Low speed up/down
Scroll
High speed downwards
Set Focus Plane (FP)

Change Focus Plane
Do you want to set current Z-Axis position as the new focus plane?
Yes   No

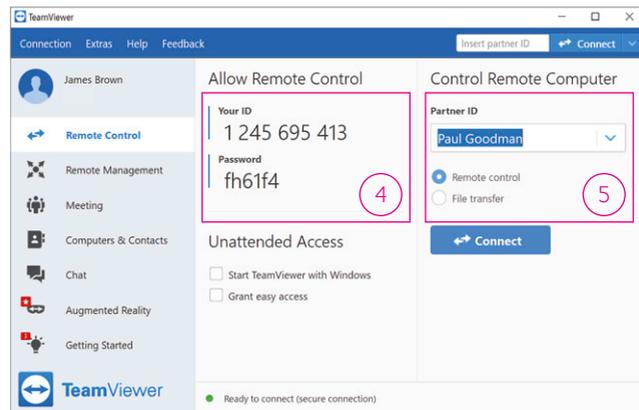# Work remotely with our microscope
Telemicroscopy

1

Start and close TeamViewer session

Check if all users are connected to the Internet. Recommended Internet speed: 80,000 Mbit/second, min. 30,000 Mbit/second. If you haven't installed TeamViewer yet, download the application on www.teamviewer.com. As soon as TeamViewer has been downloaded, start the application on your computer.

TeamViewer desktop icon

In the box "4" (see above) on the computer where the microscope is connected, you find the relevant log-in data. Forward that to the colleague connecting remotely. Enter the log-in data on the colleague's computer in the box "5" (see above).

Once a remote connection has been established, the microscope can be controlled remotely.

You may terminate the connection at any time.
After disconnecting TeamViewer, turn the microscope off using the switch at the back. Wait 10 seconds before turning the computer off.
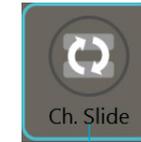
2

Use InstantScan mode

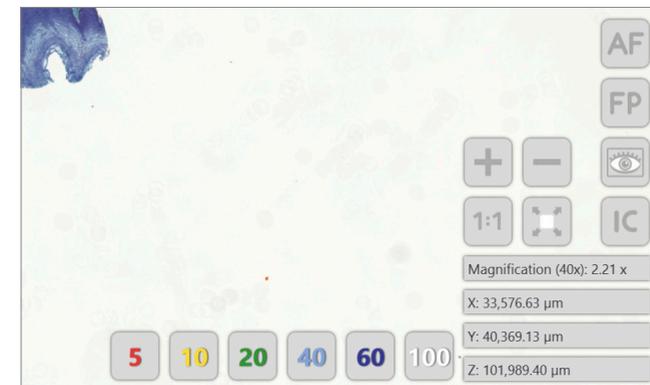Insert slides, labels to the right. Press "Continue". Wait while overview pictures are taken.

Press "continue" after inserting slides

Press to insert new slides

Use the objective buttons (5x – 100x) to operate and navigate. Or the navigation buttons (+/-, 1:1, overview) as well as the mouse.

The local user makes a pre-scan of the whole tissue at approx. 10x. This pre-scan significantly facilitates the work and operation of the connected viewer.

Autofocus

Manual focus

Objective buttons

Use the "AF" button for autofocus.

Use the "eye" icon for manual focus (helpful to see different layers of tissue).

When changing slides, use the button "Ch. Slide".

Troubleshooting
Quick help for common errors

1. Microscope system does not initiate

a) Make sure all cables are correctly connected, screwed in and/or
b) Restart microscope (wait 15 seconds) and/or
c) Restart computer and the microscope

2. Tissue is not in focus

a) Use auto focus or manual focus to re-focus.
b) Use button top right to change mode to "LiveView" mode. Now use manual focus to set right Focus Plane. Set new focus level by using button "FP". Note: When lowering the Focus Plane, you might have to press "FP" first, then lower the Focus Plane again, now press "FP" again and so on.

3. You see lines in the image

a) Use auto focus or manual focus to re-focus.
b) Redo Illumination Correction.

4. Cameras do not initiate

a) Check if the USB 3.0 cable is correctly plugged into a blue Superspeed (SS) USB 3.0 (not USB 2.0) port at the PC.
b) Check if the USB 3.0 cable is correctly screwed into the back of the M8 / O8.

5. Stage does not initiate

a) Check if the stage cable is correctly screwed into the back of the microscope.
b) Check if the stage cable is correctly screwed into the interface at the stage in the correct angle (see section Hardware set-up). Do never use force while connecting, as the pins could bend or break.

6. Image pattern visible in InstantScan / SlideScan

a) InstantScan: Follow the instructions given in the section Illumination Correction (IC) Adjustment on page 10.

b) SlideScan: Pattern in performed scans: Check the automatically set IC region by right-clicking on the region of interest (ROI) to be scanned and choosing "Edit Illumination Correction". Move the yellow square to a white region in the background with no tissue, dust or structures underneath the coverglass (if present). Redo scanning. Or deactivate the option "Perform Illumination Correction" before scanning. Now MicroPoint uses the IC, that you have performed in InstantScan before like described in section Illumination Correction (IC) adjustment (p.10).

7. Blurry scan

a) Right-click on the region of interest (ROI) to be scanned and choose "Edit Focus Points".
b) Add/Remove (double-clicking) or move focus points so that they are equally distributed across the scanning area. Ensure that all points are aiming on content/tissue.
c) Move the blue focus point to another region on the content/tissue
d) Check focusing in "Live Image" window after starting the scan. It should run through focused image for all focus points.

8. Black/White camera image, autofocusing not working, slow/unstable MicroPoint

a) Open your file explorer and type %localappdata% into the address line, confirm.
b) Go to path: PreciPoint\TouchMicroscopy\
c) Go into the folder of the recently used MicroPoint version (delete all other folders) and choose the folder CameraParameters.
d) Delete all .ini files with a 10-digits number "xxxxxxxxxx.ini" (e.g. 4103461808.ini)
e) Restart MicroPoint.

9. PreciPoint software running slow

a) Check the settings of your anti-virus software running in the background.
b) Define exceptions for the used PreciPoint software or
c) If possible, deinstall the anti-virus software.

How can we help you?

Phone support: +49 (0) 8161 – 976 93 - 98

Email support: support@precipoint.de

Service and Support

Our commitment to quality does not end with your purchase.
We offer different service packages tailored to your requirements.
You can expect long-term support and maintenance, that accompanies you throughout the entire service life of your product.

Company

Since 1982, we have made more than 15,000 installations of diverse systems and devices all over the globe. They are produced in Germany and made to the highest German engineering standards. Our key competence is the digitization of measurement and automation technology in the field of microscopy and micropositioning systems.