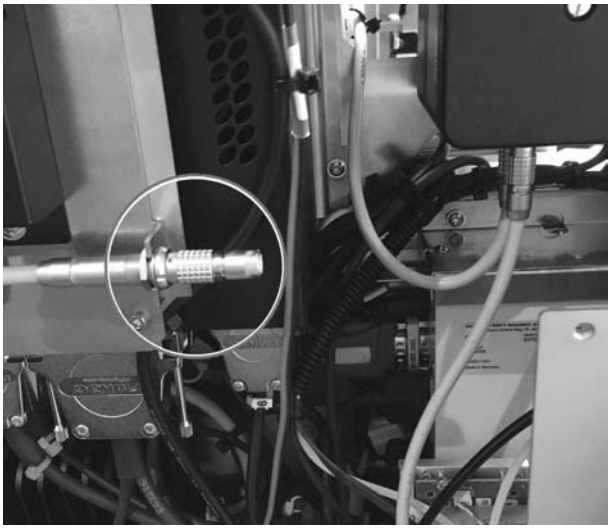
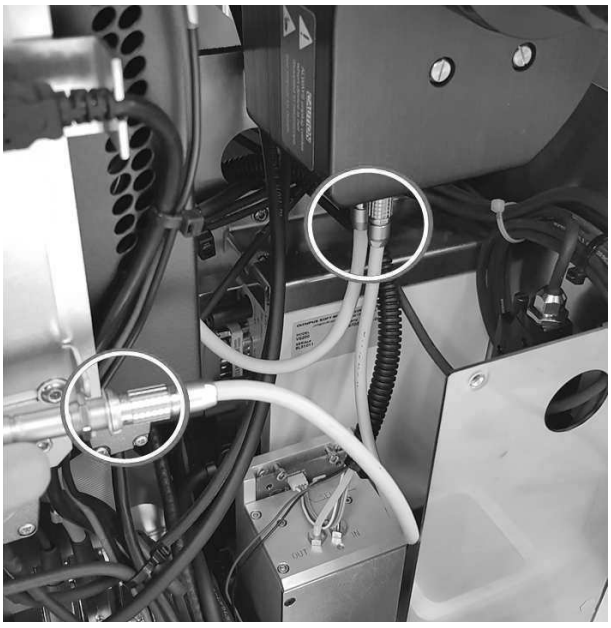


3. Use the short CAN bus cable (30cm) which you will find in the accessories box of the VS200 scanner to connect the U-FFWR to the VS200 system. Note the plug orientation indicated by the red dot.



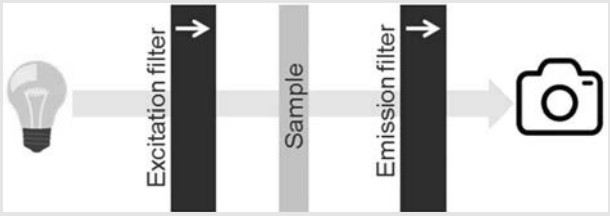
4. In case you do not have a U-FFWO connect the terminator to the second plug at the U-FFWR.

11.3.2 Add or replace filter (U-FFWR)

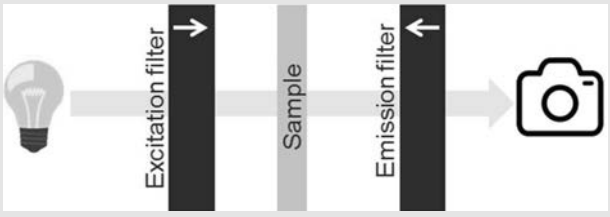
1. Make sure that the power of the VS200 system is switched off.
2. Remove the backside top panel. See Assembly of the housing for the VS200 scanner on page 81.
3. To add or replace a 25 mm emission filter in the U-FFWR open the cover of the filter wheel loosening the knurled head screw.

4. Insert the filter into an empty position. Make sure that you orient the filter correctly when you insert it.
   » Refer to the U-FFWR instruction manual for more information.

The correct orientation for Semrock emission filters is with the arrow towards the camera.



The correct orientation for Chroma emission filters is with the arrow pointing away from the camera.



5. Write down the position number of the filter as you will need it later.
6. Configure the filter in the VS200 ASW software. To do this, open the [Device Settings] dialog box. You can open this dialog box in the

[Manual Control] layout.

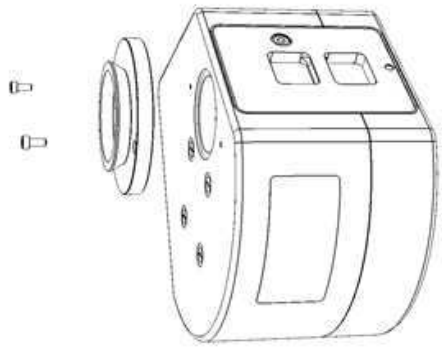
7. Click the [Additional layouts] button to go to a different layout. You can find the [Additional layouts] button at the top right in the navigation bar on the software's start page.
8. At the top right, on the menu bar click the [Manual Control] button.
9. Select the [Acquire] > [Devices] > [Device Settings] command to open the [Device Settings] dialog box.
10. Configure the filter. See Device settings - filter on page 118.

11.3.3 U-FFWO T3 (Motorized fast observation filter wheel)

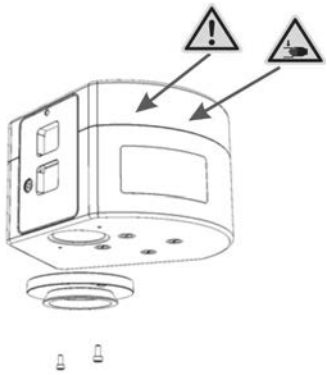
The units described below must be assembled and adjusted by Evident. If these units are assembled or adjusted by the customer, the operations are not ensured.

- » 2 mm hex key to lock the tubus
- » 3 mm hex key to open the filter wheel
- » Small spanner to adjust the height of the tubus
- » Spanner to fix the tubus

1. Before you can mount the U-FFWO T3 you need to assemble the bottom flange. The bottom flange is fixed with two hex socket screws (size 2 mm hex key).
   - » For details refer to the U-FFWO manual.



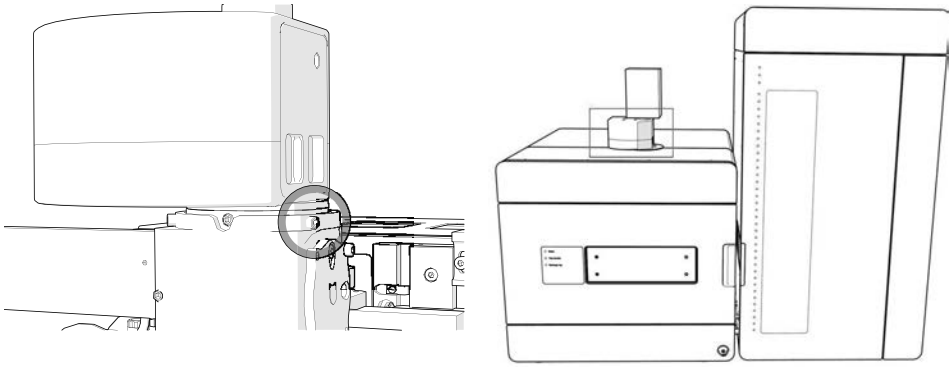
2. Stick the two caution labels on the U-FFWO T3 as shown in the image.



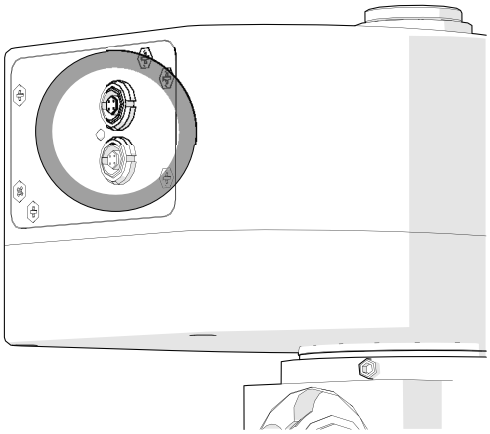
Before you mount the U-FFWO T3, make sure you insert all emission filters into the filter wheel. Note the position of the individual filters as you might need them later for the observation method adjustment. Refer to chapter Add or replace filter (U-FFWO) on page 66 for filter orientation.

U-FFWO T3 position	25 mm emission filter
1	DAPI 432/36
2	FITC 515/30
3	CY3 595/31
4	CY5 680/42
5	CY7
6	Black-out filter
7	Black-out filter
8	25 mm glass

3. Refer to the [Inserting the Optical Filters] chapter in the U-FFWO instruction manual for more information about filter insertion.
4. Mount the U-FFWO T3 with the cable connector facing to the left side onto the beam splitter and tighten the headless hex screw (size 3 mm hex key) facing towards the front. The location of the U-FFWO is indicated in the right figure.



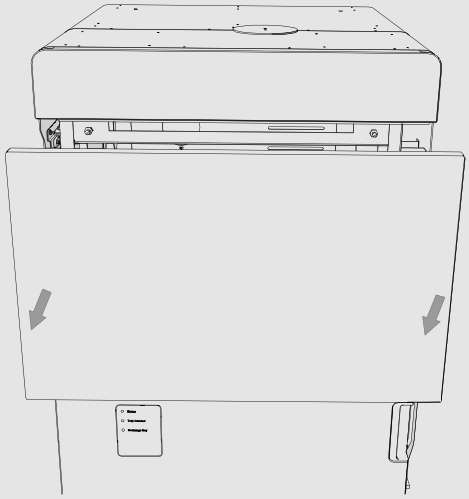
5. Connect the CAN-bus cable (which you find in the inside of the VS200 scanner) to the lower connector and the CAN-terminator to the upper connector.



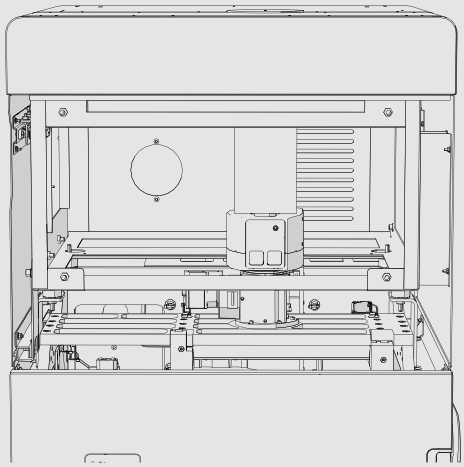
11.3.4 Add or replace filter (U-FFWO)

» Hex key (3 mm)

If your system is equipped with the optional VS200 camera cover, remove the front cover of the VS200 camera cover first to get access to the filter wheel or monochrome camera. Pull the cover towards you by grasping the left and right sides of the cover as shown in the following picture.

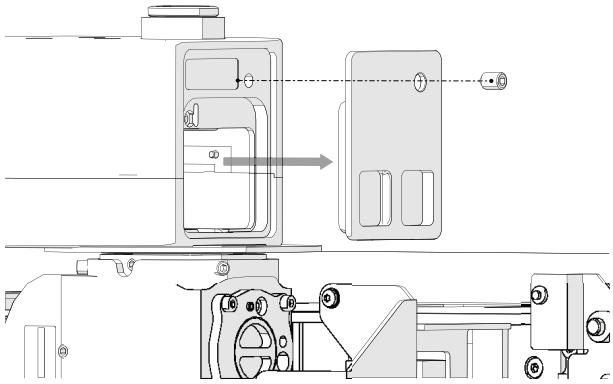


Removing the front cover by grasping the left and right sides of the cover.



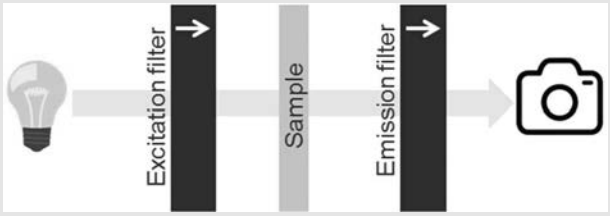
VS200 camera cover without front cover.

1. Make sure that the power of the VS200 system is switched off.
2. To add or replace a 25 mm emission filter in the U-FFWO open the cover of the filter wheel using a 3 mm hex key.

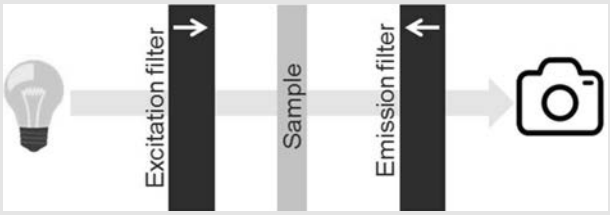


3. Insert the filter into an empty position. Make sure that you orient the filter correctly when you insert it.
   » Refer to the [Inserting the Optical Filters] chapter in the U-FFWO instruction manual for more information.

The correct orientation for Semrock emission filters is with the arrow towards the camera.



The correct orientation for Chroma emission filters is with the arrow pointing away from the camera.

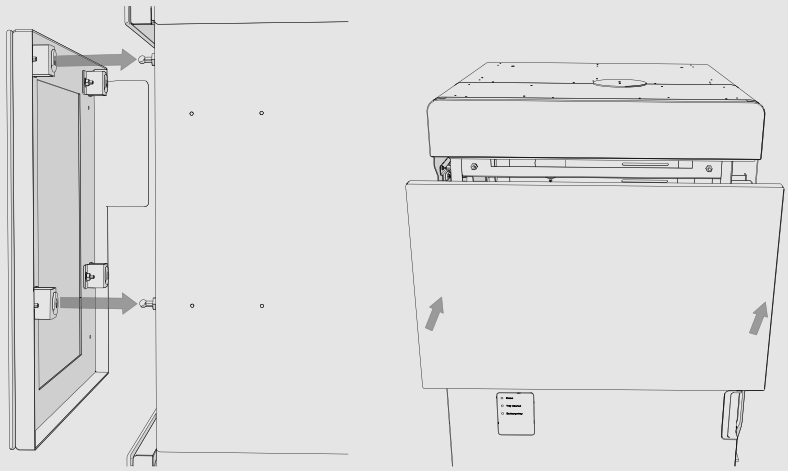


4. Write down the position number of the filter as you will need it later.
5. Configure the filter in the VS200 ASW software. To do this, open the [Device Settings] dialog box. You can open this dialog box in the [Manual Control] layout.

6. Click the [Additional layouts] button to go to a different layout. You can find the [Additional layouts] button at the top right in the navigation bar on the VS200 ASW software's start page.
7. At the top right, on the menu bar click the [Manual Control] button.
8. Select the [Acquire] > [Devices] > [Device Settings] command to open the [Device Settings] dialog box.
9. Configure the filter. See Device settings - filter on page 118.

If your system is equipped with the optional VS200 camera cover, you will then need to remount the front cover of the VS200 camera cover.

To mount the front cover, place it on the fixing points and press it onto the VS200 camera cover. Refer to the following figures.



11.3.5 TV 1.0x adapter

The units described below must be assembled and adjusted by Evident. If these units are assembled or adjusted by the customer, the operations are not ensured.

1. If you have a TV1.0x adapter, mount it onto the beam splitter and tighten the headless hex screw (3.0 mm) which is facing towards the front.

11.4 Monochrome camera

The units described below must be assembled and adjusted by Evident. If these units are assembled or adjusted by the customer, the operations are not ensured.

Depending on the fluorescence configuration, VS200 offers four different monochrome cameras:

- VS-304M (iDS)
- ORCA-Flash 4.0 (V3)
- ORCA-Fusion
- ORCA-Fusion BT

When you switch on an ORCA camera wait at least one minute before you start the VS200 ASW software otherwise the camera will not be recognized.

Do not switch off any ORCA-camera while the VS200 system is operating.

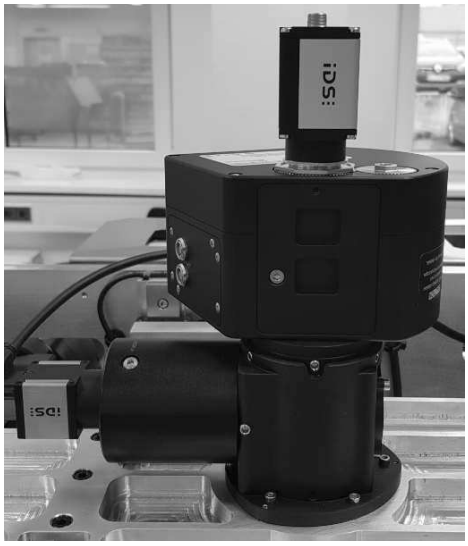
If you have a TV1.0x adapter on top of the beam splitter, screw the camera on top of the adapter. See Orientation of the monochrome camera on page 69 for the orientation of the camera.

11.4.1 Orientation of the monochrome camera

The units described below must be assembled and adjusted by Evident. If these units are assembled or adjusted by the customer, the operations are not ensured.

The orientation of the monochrome camera is very important!

The orientation of the VS304M camera should be with the iDS logo to the front (angled USB-C cable port to the back). The camera's black metal surface should be on the left side.



The orientation of the ORCA-Flash 4.0 camera should be with liquid cooling connectors to the front (USB 3 and power connector on the left side).

The orientation of the ORCA-Fusion / ORCA-Fusion BT camera should be with the water cooling connectors facing the front side of the system.

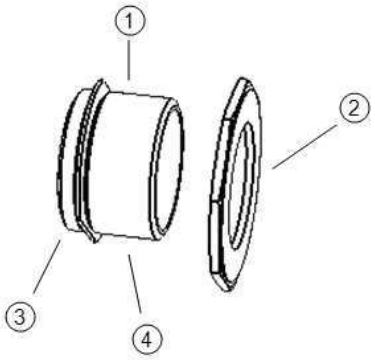
If your fluorescence configuration contains a U-FFWO T3, follow the following instructions to mount a monochrome camera. For more details refer to the U-FFWO manuals.

This example describes how to attach an ORCA-Flash 4.0 camera to the U-FFWO T3. The attachment of VS304M (iDS) and ORCA-Fusion or ORCA-Fusion BT is identical.

11.4.2 Mounting a camera to the U-FFWO

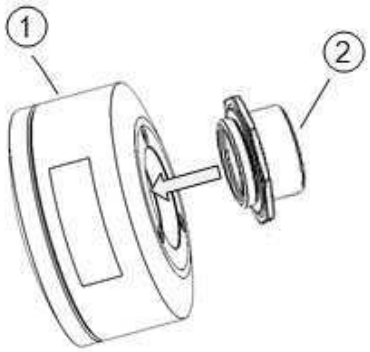
Refer to the [Mounting a camera to the U-FFWO] chapter in the U-FFWO instruction manual for more information.

1. Check that the counternut is pre-installed on the long side of the C-mount adapter. The counternut should be screwed in 3/4 of the thread (4).



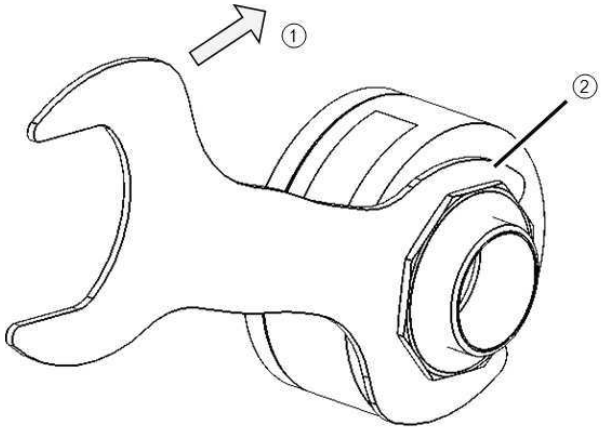
(1)	C-mount adapter
(2)	counternut
(3)	short side
(4)	long side

2. Hand-tighten the short side of the C-mount adapter to the camera clockwise.



(1)	camera
(2)	C-mount adapter and counternut

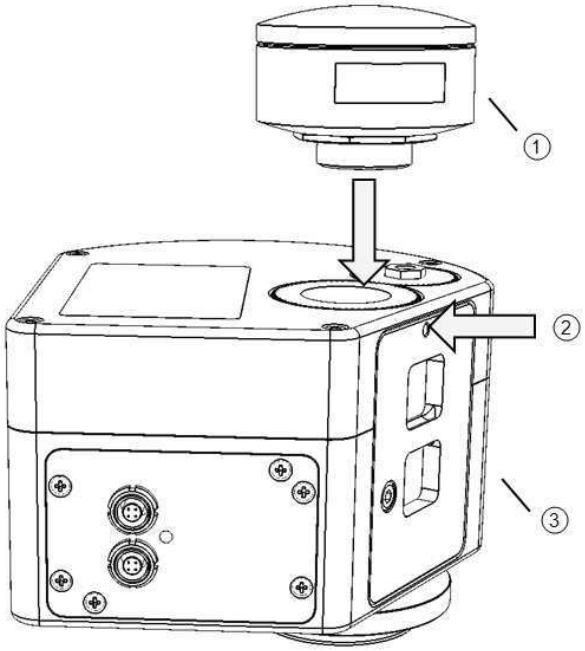
3. Fasten the C-mount adapter (not the counternut) clockwise to the camera by using the large wrench tool as indicated below.



(1)	fasten clockwise
(2)	large wrench, small side

4. Hand-tighten the camera and C-mount adapter to the U-FFWO.

> Make sure to tighten the camera orientation lock first to prevent slippage of the locking mechanism. To do so, tighten the rotation locking screw using a 2 mm hex key.



(1)	camera
(2)	tighten rotation locking screw
(3)	U-FFWO

5. Refer to chapter Camera adapter U-FFWO T3 on page 187 to adjust the parfocality of the C-Mount adapter.

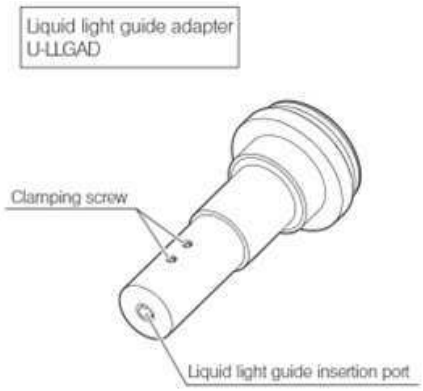
How to adjust the camera adapter (tubus) is described in chapter Camera Adapter on page 187.

11.5 X-Cite adapter or U-LLGAD

The units described below must be assembled and adjusted by Evident. If these units are assembled or adjusted by the customer, the operations are not ensured.

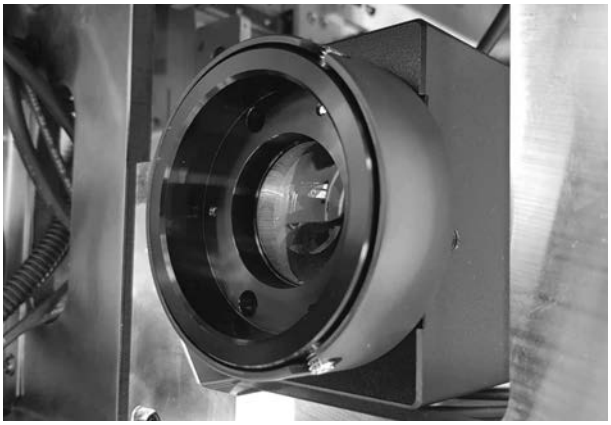
» Hex key (3.0 mm)

X-Cite adapter



U-LLGAD

1. Depending on the system configuration attach the X-Cite adapter or the U-LLGAD to either the IX3-RFALFE flange (A) directly, or - if a U-FFWR is present - attach it to the flange of the U-FFWR (B).



Option A: IX3-RFALFE flange

Option B: U-FFWR

11.6 4x Objective

For proper system performance when acquiring fluorescence overview images the UPFLN4X has to be mounted on position 6 of the IX3-nosepiece.

See Mounting of components on page 49 for installation instructions.

11.7 LED light source

The units described below must be assembled and adjusted by Evident. If these units are assembled or adjusted by the customer, the operations are not ensured.

Three LED light sources (U-LGPS, X-Cite XYLIS and X-Cite NOVEM) are available for the VS200 system.

✓ The X-Cite NOVEM light sources are not available in all countries.

1. Unbox the LED light source and avoid bending or stretching of the liquid light guide.
2. Mount the light guide into the X-Cite adapter and tighten the knurled head screw.
3. Insert the other end of the light guide into the LED light source (see manufacturer's operating manual for detailed information).

Safety information for operation

Follow the safety precautions at all times during operation and maintenance of this product. Non-observance may result in eye injury or damage to the system.

CAUTION
Risk of injury to the eyes

- Do not look at operating lamp/LED as it can emit UV light.
- Never look into the light emitting end of the light guide. The light could severely damage the eye if the light is observed directly.

» Always make sure that the liquid light guide and light guide adapters are securely attached to the VS200 system. This will minimize the risk of exposure to the UV light.

» If the light source has a malfunction, please contact Evident, Excelitas or Cobolts customer support. If the light source is serviced always make sure that the power cord is disconnected.

» Place the unit onto a hard, stable surface and make sure the ventilation openings are not covered by something.

11.8 Filter set

Depending on the purchased filter set insert the single-band excitation filters into the U-FFWR filter wheel. Refer to chapter Fluorescence filter wheels or camera adapter for monochrome camera on page 58 for the position information.

» Insert the single-band emission filters into the U-FFWO (if available). Refer to chapter Fluorescence filter wheels or camera adapter for monochrome camera on page 58 for position information.

» Put the 25 mm glass filter into position 8 of the U-FFWO.

» Put the black-out filter into all empty filter wheel positions.

The following chapters describe how to mount filter cubes into the IX3-RFACA. The filter set which was delivered together with the VS200 system must be assembled by Evident. However, additional filters which were purchased later can be installed by the customer.

11.8.1 U-FF filter cube (IX3)

The units described below must be assembled and adjusted by Evident. If these units are assembled or adjusted by the customer, the operations are not ensured.

1. Open the door of the VS200 scanner.
2. Slide the door of the IX3-RFACA to the left to insert an IX3 filter cube.
3. Insert a new filter cube into the correct position (position 2) as shown in the image.

The correct position is printed inside of the IX3-RFACA and is hard to read as the IX3-RFACA is mounted upside down. If you cannot read it make sure that the filter is placed between the position index 7 and 8 as shown in the image below.

4. After the cube is inserted slide the door of the IX3-RFACA back to the right.

11.8.2 Add or replace filter cube (IX3)

1. Make sure that the power of the VS200 system is switched off.
2. To add or replace an IX3 filter cube into the IX3-RFACA slide the door of the IX3-RFACA to the left.
3. Insert the filter cube into an empty position.
4. Write down the position number of the filter cube as you will need it later.

5. Configure the mirror cube in the VS200 ASW software. To do this, open the [Device Settings] dialog box. You can open this dialog box in the [Manual Control] layout.
6. Click the [Additional layouts] button to go to a different layout. You can find the [Additional layouts] button at the top right in the navigation bar on the software's start page.
7. At the top right, on the menu bar click the [Manual Control] button.
8. Select the [Acquire] > [Devices] > [Device Settings] command to open the [Device Settings] dialog box.
9. Configure the filter cube. See Device settings - filter on page 118.

11.8.3 U-FDICT filter cube

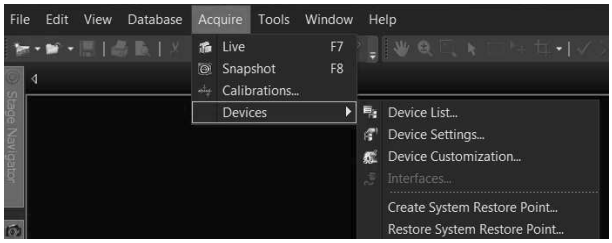
Mount an optional U-FDICT for polarized light acquisition. The U-FDICT should be placed into position 8 of the IX3-RFACA because this position is configured in the default device settings.

1. Insert the U-FDICT into position 8 as shown in the image.

» It is between the index 5 and 6.

Refer to chapter Activate the motorized polarizer on page 114 and Setup polarization (Pol) observation method on page 125 to configure the system to scan with polarized light.

If you would like to install other filter cubes please make sure that you register them in the dialog box [Device Settings] later. See Device settings - filter on page 118.



11.8.4 X-Cite NOVEM

You can purchase the Novem with or without excitation filters, as indicated in the product code.

» XT9x0 – **without** excitation filters (please remember to buy them separately) .

» XT9x0-**F** – **with** excitation filters pre-installed.

12 Assembly of the housing for the VS200 scanner

Before starting with the assembly of the housing make sure the main power is disconnected!

The VS200 system is shipped with only the front door mounted. Side, back and top panels have to be attached on site.

1. Remove the four handles.

Follow the correct order for mounting the elements of the housing so that you don't run into any trouble.

After assembling the panels

Check if assembling the loader housing was successful. The gap between the individual parts of the housing must be identical.

12.1 VS200 camera cover (optional)

The camera cover must only be installed by an Evident service technician.

12.2 Left, right, back and top panels

The units described below must be assembled and adjusted by Evident. If these units are assembled or adjusted by the customer, the operations are not ensured.

In VS200-BU-V2 and VS200-BU-L-V2, the panels are pre-mounted before shipping the system. If there is a need to disassemble the panels, please check the repair manual for detailed instructions.

13 Cabling

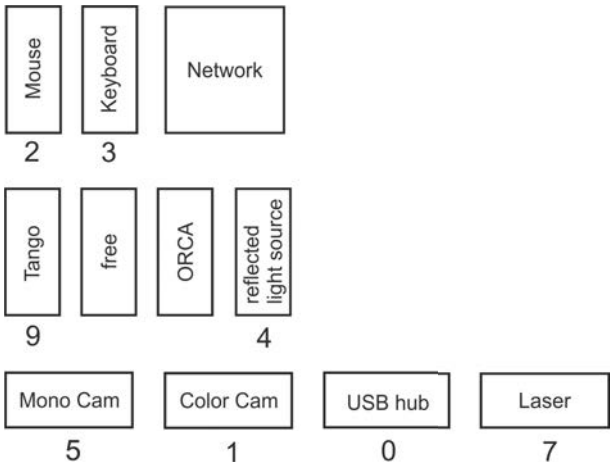
The units described below must be assembled and adjusted by Evident. If these units are assembled or adjusted by the customer, the operations are not ensured.

! ATTENTION
Do not plug anything into or unplug anything from the ports when the system is connected to the power supply.

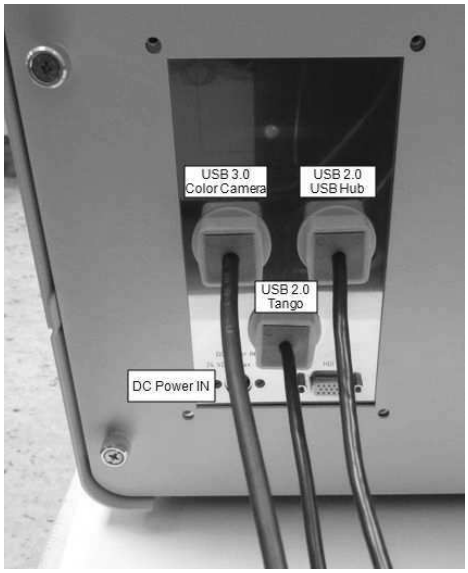
The VS200 PC has a label on its backside indicating where to plug in the individual cables. Before you plug the cables into the PC, put the colored cable clips which you will find in the accessories box to the following cables to make it easier to identify them:

Clip	Cable
2	Mouse
3	Keyboard
4	Reflected light source
5	VS-304M

The USB cables for the Tango controller (clip 9) and the USB hub (clip 0) as well as the color camera (clip 1) are mounted ex works.



It is important to connect all cables according to the connection scheme as otherwise components might not work correctly.



Please refer to the following table:

Cable	Type	Location	PC position number
VS-304M (s/w)	USB 3.0	Top of camera	5
Color camera	USB 3.0	Back of VS200	1
ORCA-Flash/Fusion BT	USB 3.0	Top of camera	ORCA
DC Power In	Power supply	Back of VS200	Power socket
USB 2.0 Tango	USB 2.0	Back of VS200	9
USB 2.0 Hub	USB 2.0	Back of VS200	0
Reflected light source	USB 2.0	Back of reflected light source	4
Reflected light source	Power cord	Back of reflected light source	Power socket
U-FFWR	CAN Bus	VS200 internal	See chapter U-FFWR (Motorized fast reflected light filter wheel) on page 58.
U-FFWO	CAN Bus	VS200 internal	
HP LCD screen	Display port	Bottom of LCD screen	
HP LCD screen	Power cord	Bottom of LCD screen	Power socket
HP mouse	USB 2.0		2

HP keyboard	USB 2.0		3
USB2.0 VS20-LASER	USB 2.0	Back of VS20-LASER	7
TTL signal cable	TTL	Back of VS20-LASER	VS20-TRIGGER

14 Assembly of the VS200 loader housing

The units described below must be assembled and adjusted by Evident. If these units are assembled or adjusted by the customer, the operations are not ensured.

In VS200-LOADER-V2, all housing panels are pre-mounted before shipping the system. If there is a need to disassemble the panels, please check the repair manual for detailed instructions.

15 Connection VS200 scanner and VS200 loader

15.1 Mechanical connection between the VS200 scanner and VS200 loader

The units described below must be assembled and adjusted by Evident. If these units are assembled or adjusted by the customer, the operations are not ensured.

This chapter describes the mechanical connection between the VS200 scanner and the VS200 loader. When you are upgrading a VS200 ST (Single Tray) scanner, first perform the steps for upgrading an ST (Single Tray) system to an MTL (Multi Tray Loader) system.

CAUTION

Risk of injury and risk of device damage if components are dropped

The loader, scanner or other components might drop when you are moving them. Injury to your feet or damage to the device can result.

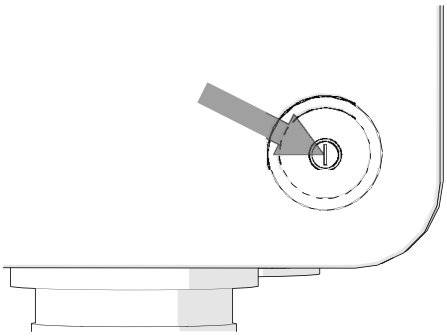
- Make sure that all handles for transportation are screwed in completely and tight.
- The system must be carried by two people.

» Hex screwdriver (size 5 mm)

Notes about the optional camera cover

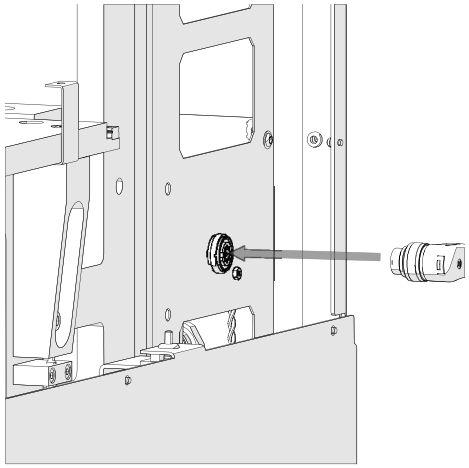
Before connecting the VS200 loader to the VS200 scanner unit, make sure that the optional camera cover is mounted on the VS200 scanner unit.

1. Switch the VS200 system off using the main power switch and disconnect the system from the power supply. To do so, disconnect the external power supply unit from the power supply.



2. Place the VS200 loader to the right of the VS200 scanner, leaving a small gap between them.
3. Remove the handles from the right side of the VS200 scanner and from the left side of the VS200 loader.

4. Check the orientation of the VS200 scanner and the VS200 loader. If the devices have a different orientation or height level, adjust the feet of the VS200 loader. See Adjusting the leveling feet of the VS200 loader on page 271.
5. Remove the jumper plug on the VS200 scanner. The jumper plug is located in the lower right corner of the scanner's right panel (see figure below).
6. Now mount the VS200 scanner's right housing side cover. Note that the right housing side cover will accommodate the operation of the loader. You can identify this part of the housing by its one large and one small opening.
7. Plug the VS200 loader's control cable into the port on the VS200 scanner where the terminator was. The plug should point towards the back.



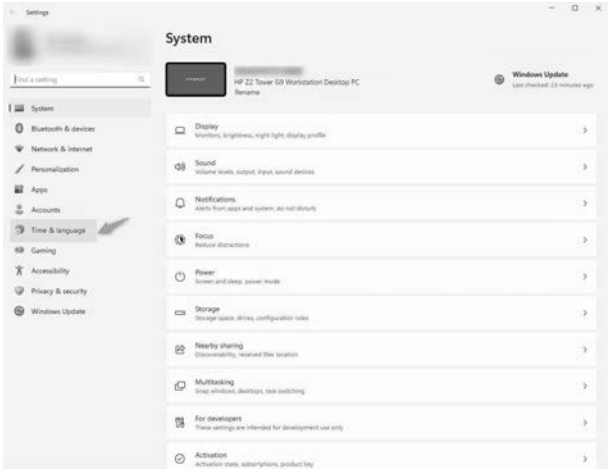
8. With its left housing side cover mounted, slide the VS200 loader onto the VS200 scanner's connector.
9. Tighten the 2 hex screws (size 5 mm hex screwdriver) which attach the connector of the VS200 scanner to the VS200 loader.
10. Remove the remaining handles from the VS200 scanner and the VS200 loader.
11. Reconnect the VS200 system to the power supply.

16 PC operating system language

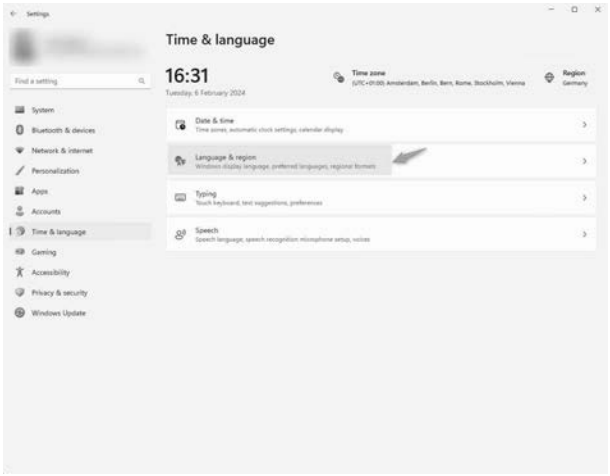
If you want to change the language of the operating system follow the instructions below.

✓ Japanese and Chinese are pre-installed on the VS200 PC.

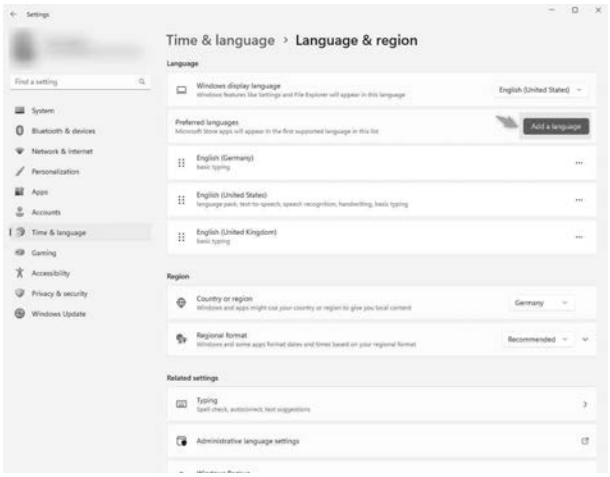
1. Open the [Settings] dialog box in Windows and select [Time & Language].



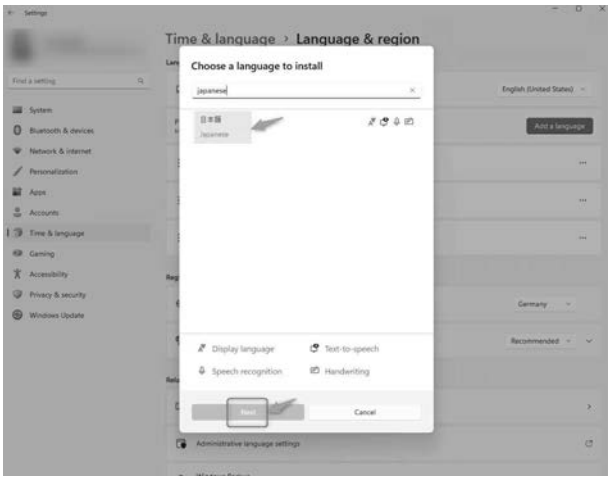
2. Select [Language & region].



3. Click the [Add a language] button.



4. Choose the language that you want to install.



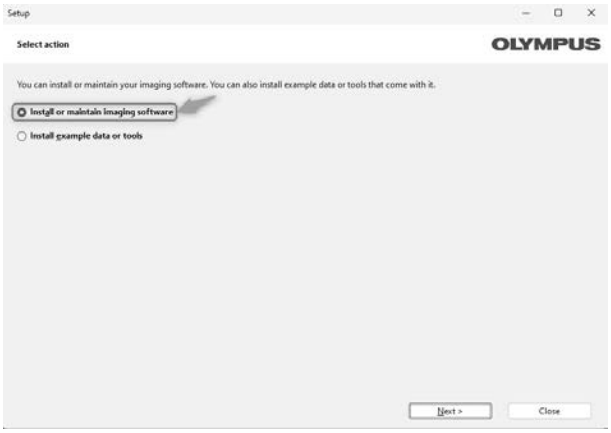
17 VS200 ASW software setup

The units described below must be assembled and adjusted by Evident. If these units are assembled or adjusted by the customer, the operations are not ensured.

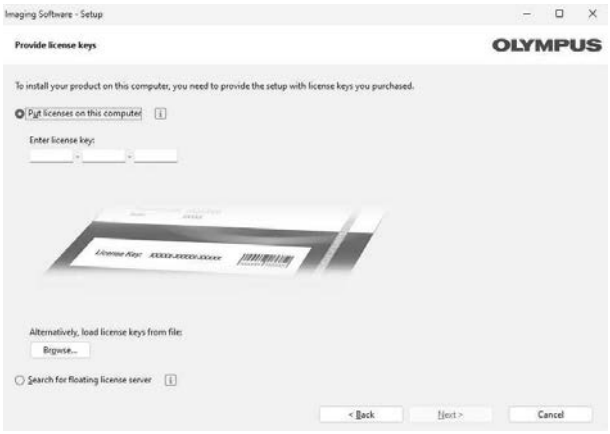
This chapter describes the installation of VS200 ASW on a VS200 system PC.

1. Turn on the PC.
2. To start the setup process, go to D:\EVIDENT_SERVICE_ONLY_DO_NOT_DELETE\SetupMain\ and run the Setup.exe.
3. Click [Yes] to allow changes to the PC device.

4. Select the [Install or maintain imaging software] option and proceed with [Next].



5. To provide the licenses open the envelope of the license cards and enter the license keys. You might have more than one license key depending on the configuration of your kit.



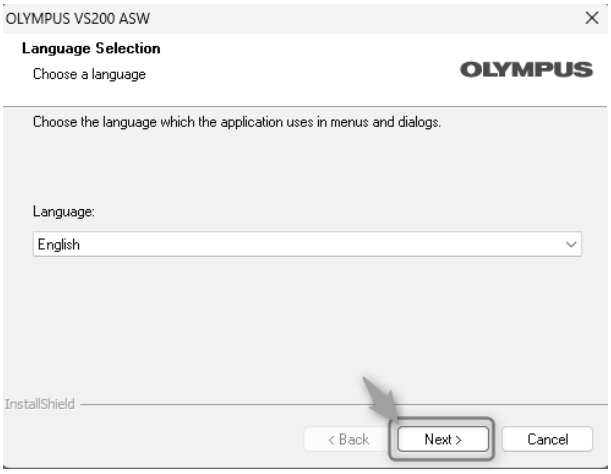
Available license keys are:

- VS200 ASW
- VS20S-CONV
- VS20S-DICOM
- VS20S-FLUO
- VS20S-LIS
- VS20S-SILA

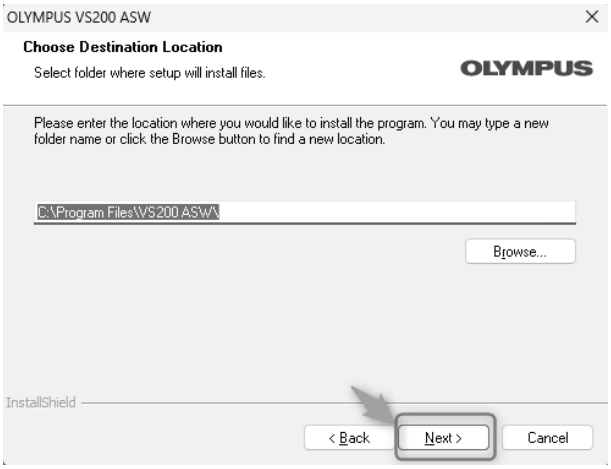
6. Accept the license agreement.

   To activate the licenses at the customer's premises the PC needs internet access. If no internet access is available the licenses can also be activated offline. In this case follow the instruction during the activation process.

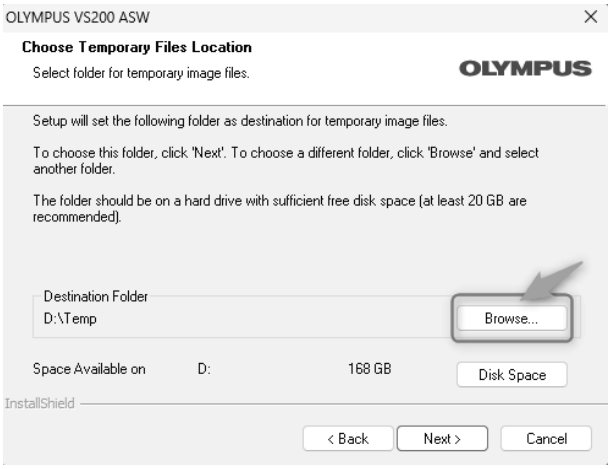
7. Change language (English is default). Proceed with [Next].



8. Change installation location (not recommended). Proceed with [Next].

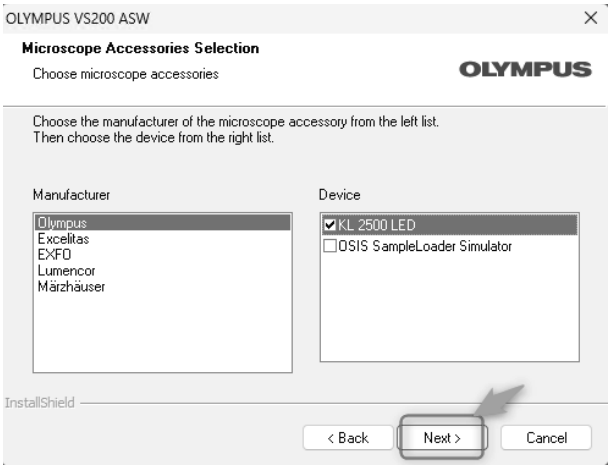


9. Changing the temporary file location (D:\Temp) is not recommended. Proceed with [Next].

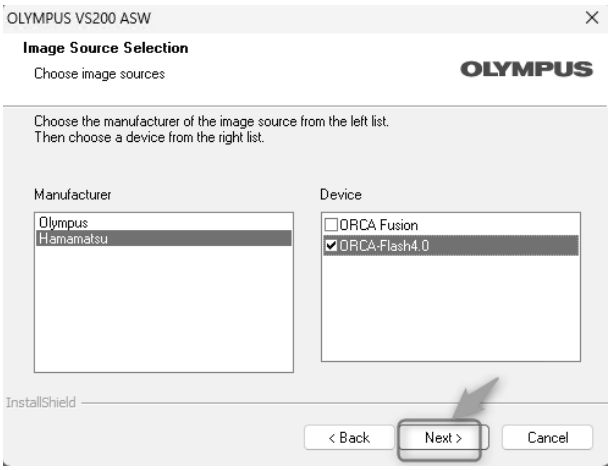


10. Choose the image source.

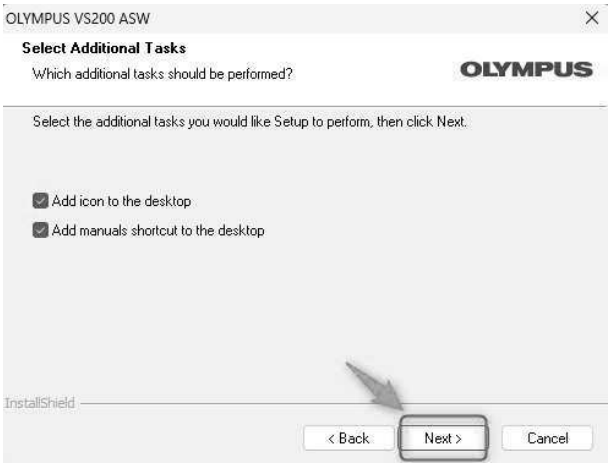
» If your kit includes reflected bright field, select [KL2500 LED] and proceed with with [Next].



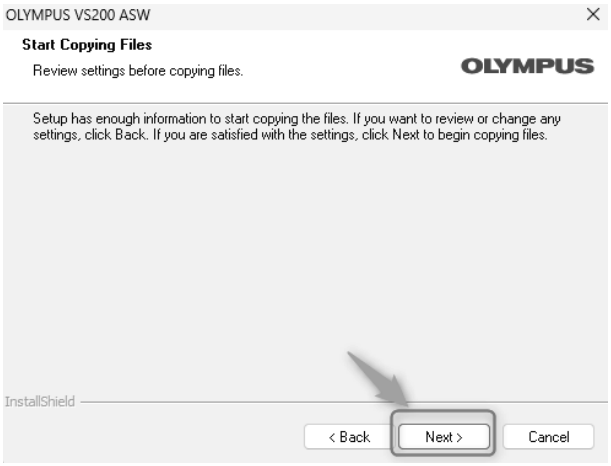
» If your kit includes a different monochrome camera than the iDS-VS-304M select either [ORCA-Flash4.0] or [ORCA-Fusion] and proceed with [Next].



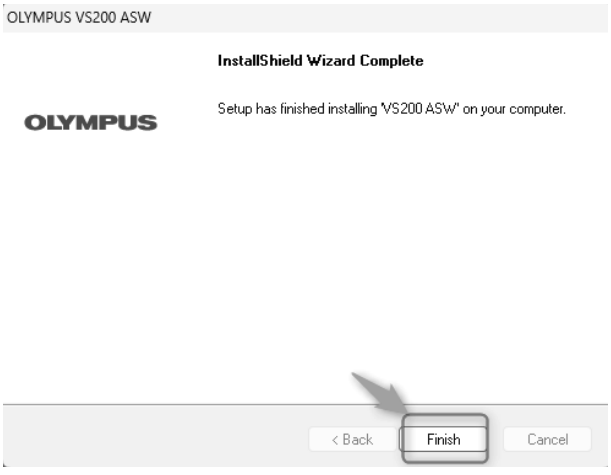
11. Select [Add icon to the desktop] and [Add manuals shortcut to the desktop] and proceed with [Next].



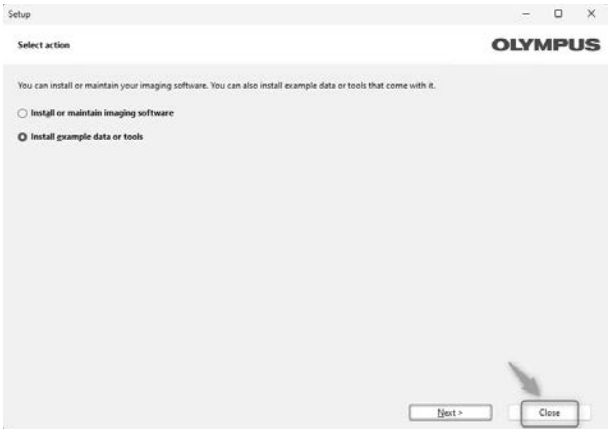
12. Start setup by clicking [Next].



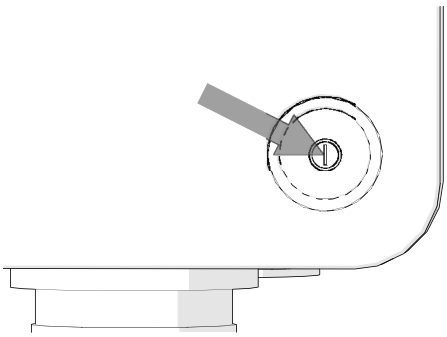
13. Finish the setup process by clicking the [Finish] button.



14. In the following dialog box, click the [Close] button and do not install any example data or tools.

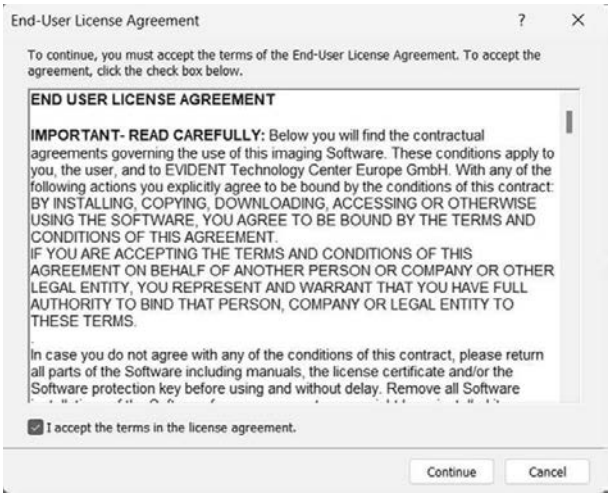


15. Turn on the VS200 system.



16. To start the software double-click the VS200 ASW icon.

17. At the first start agree to the End-User License Agreement and proceed with [Continue].



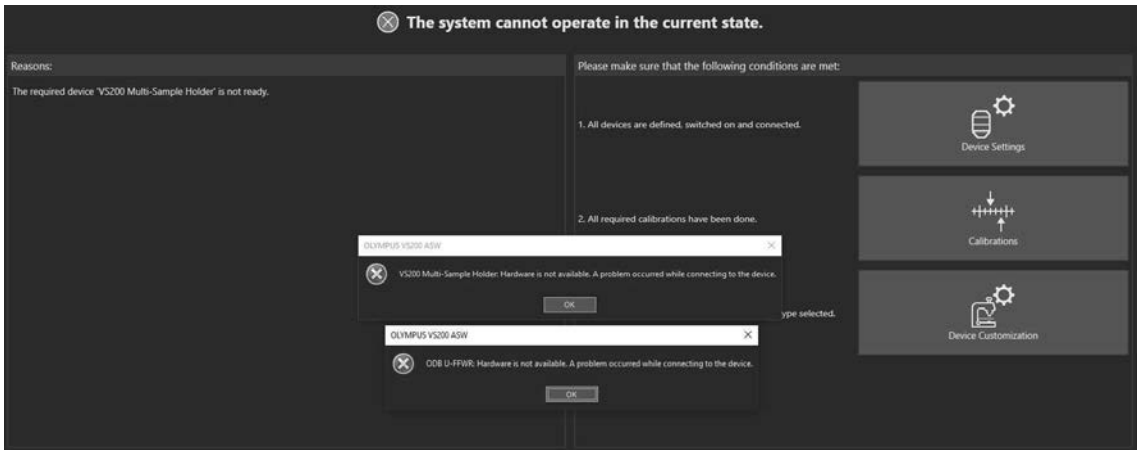
» A splash screen is displayed while the VS200 system is initializing.

The initialization process might need up to two minutes.

Error messages

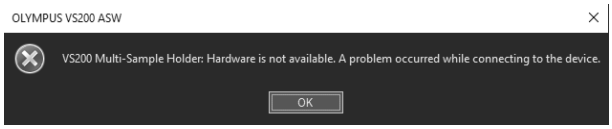
» If you see the error message below once the software is up and running please refer to Troubleshooting on page 261.

The system cannot operate in the current state.



In most cases this message occurs because you are using a wrong device configuration. Refer to chapter VS200 device configuration on page 112 to change or adapt the VS200 device configuration.

» If you see the following error message it means that you are using a VS200 loader which is not yet configured in the device list.

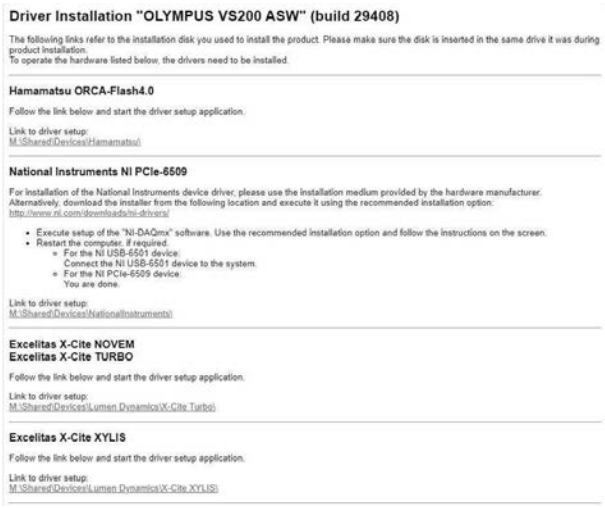


Refer to chapter VS200 device configuration on page 112 to add the VS200 loader to the system configuration.

18 Driver installation (ORCA cameras and X-Cite light sources)

After the installation of VS200 ASW you will find an icon on the desktop which enables you to install Windows drivers for the X-Cite XYLIS, TURBO or NOVEM light source as well as for the ORCA-Flash, ORCA-Fusion or ORCA-Fusion BT camera.

1. Double-click on the icon to open the installation webpage.



Driver Installation "OLYMPUS VS200 ASW" (build 29408)

The following links refer to the installation disk you used to install the product. Please make sure the disk is inserted in the same drive it was during product installation.
To operate the hardware listed below, the drivers need to be installed.

Hamamatsu ORCA-Flash4.0

Follow the link below and start the driver setup application.

Link to driver setup:
M:\Shared\Devices\Hamamatsu\

National Instruments NI PCIe-6509

For installation of the National Instruments device driver, please use the installation medium provided by the hardware manufacturer.
Alternatively, download the installer from the following location and execute it using the recommended installation option:
http://www.ni.com/downloads/ni-drivers/

- Execute setup of the "NI-DAQmx" software. Use the recommended installation option and follow the instructions on the screen.
- Restart the computer, if required.
  - For the NI USB-6501 device:
    Connect the NI USB-6501 device to the system.
  - For the NI PCIe-6509 device:
    You are done.

Link to driver setup:
M:\Shared\Devices\NationalInstruments\

Excelitas X-Cite NOVEM
Excelitas X-Cite TURBO

Follow the link below and start the driver setup application.

Link to driver setup:
M:\Shared\Devices\Lumen Dynamics\X-Cite Turbo\

Excelitas X-Cite XYLIS

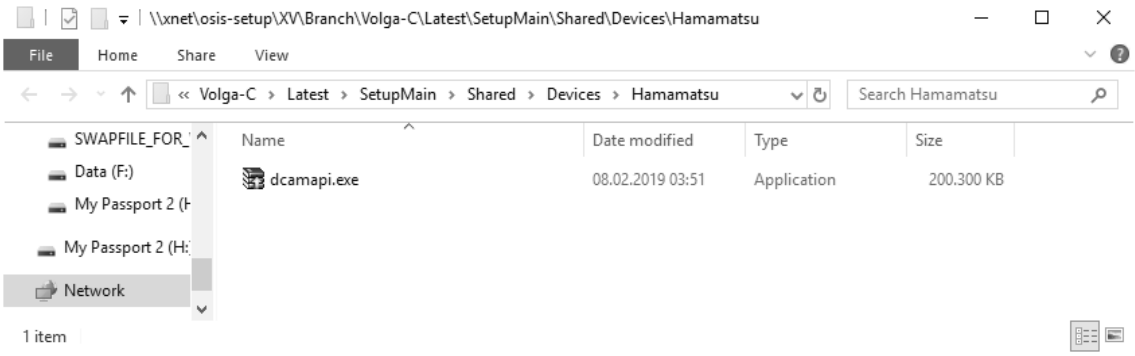
Follow the link below and start the driver setup application.

Link to driver setup:
M:\Shared\Devices\Lumen Dynamics\X-Cite XYLIS\

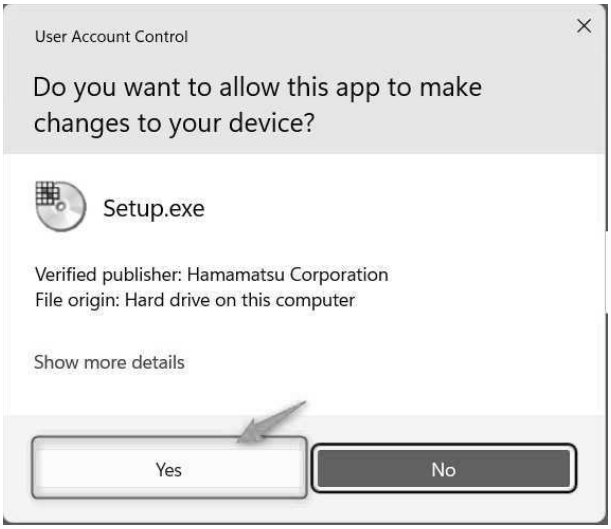
18.1 ORCA camera USB driver installation

The driver installation is for all ORCA cameras identical.

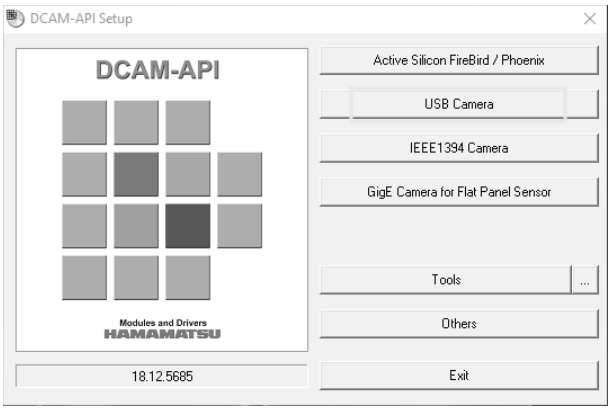
1. Open the link under e.g. ORCA-Fusion and execute the "dcamapi.exe".



2. Click Yes to confirm to allow changes to the device.

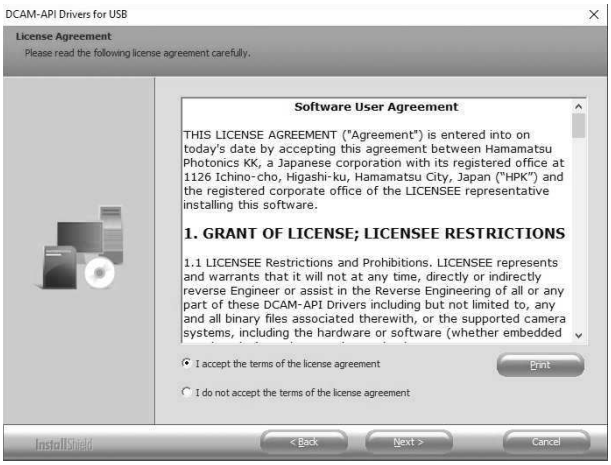


3. Click the USB camera button to install the USB camera.



4. Click Next to install the DCAM-API drivers.

5. Accept the license agreement and proceed with Next to install the driver.

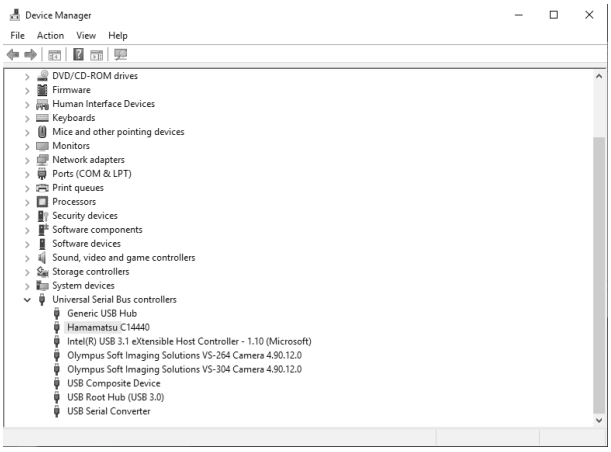


» The ORCA-Flash/Fusion can be used now.

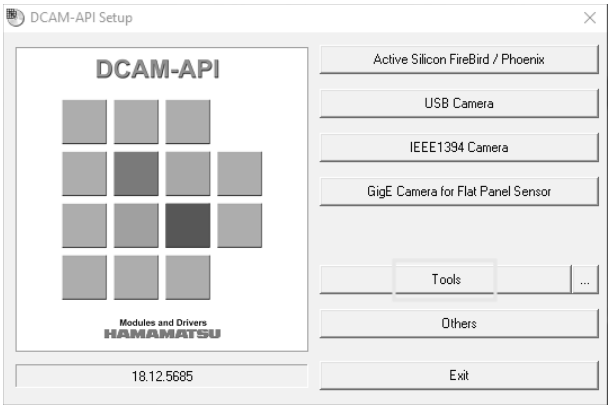
18.1.1 Check the driver installation for the ORCA camera

1. Switch on the ORCA camera and wait at least 2 minutes.
2. Open the Windows [Device manager] dialog box and select the [Universal Serial Bus controllers] section.
   » You should see a Hamamatsu entry.
   » If you do not see the Hamamatsu entry check whether the camera is

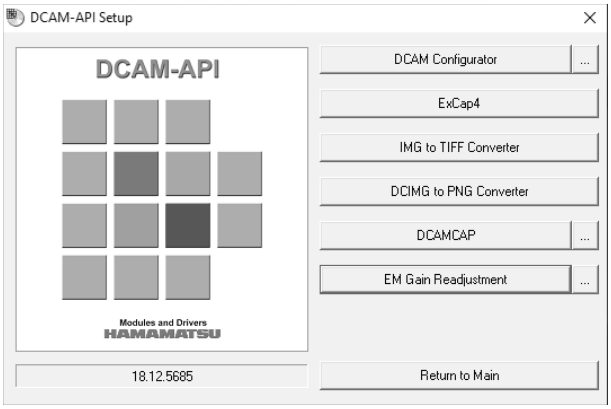
correctly connected and also the power supply is connected.



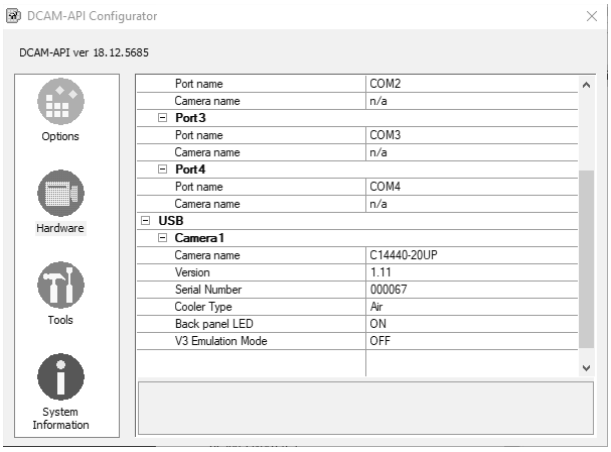
1. Alternatively you can also execute the "dcamapi.exe" again.
2. Click the Tools button.



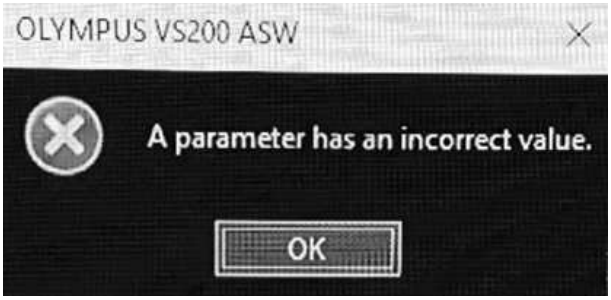
3. Click the DCAM Configurator button.



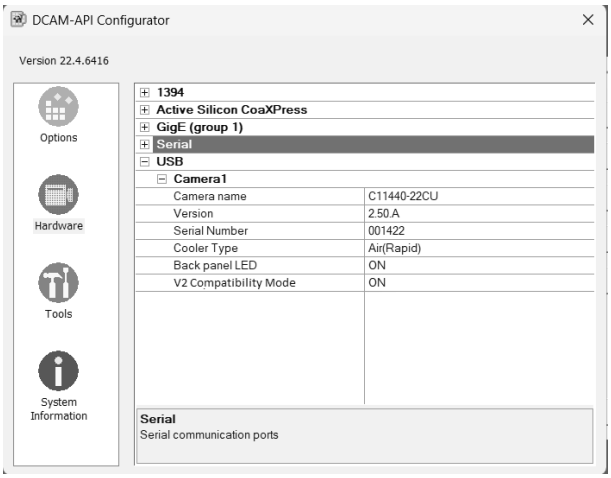
4. In the DCAM-API Configurator dialog box you should find a Camera 1 entry below the USB section.



5. In the case of using ORCA-Flash4.0 V3, the USB mode needs to be enabled in V2 compatibility mode. Otherwise, this error will appear.

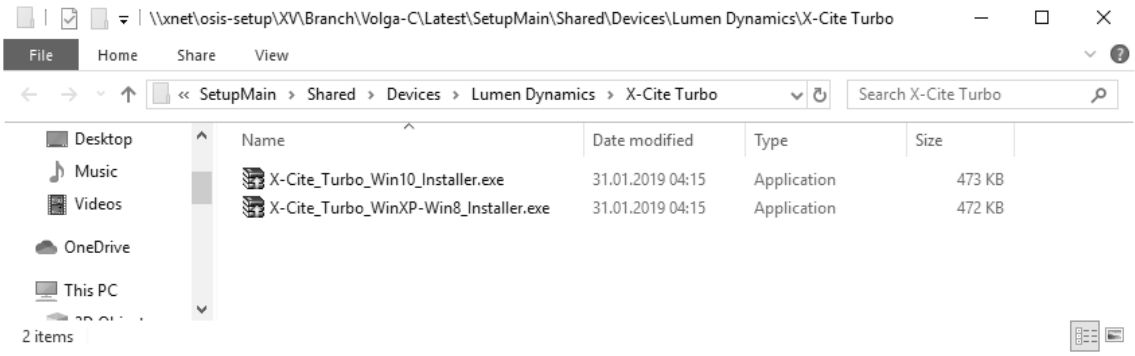


6. To enable it, click the Hardware button on the left side of the dialog box.
7. Change the V2 Compatibility mode from OFF to ON.

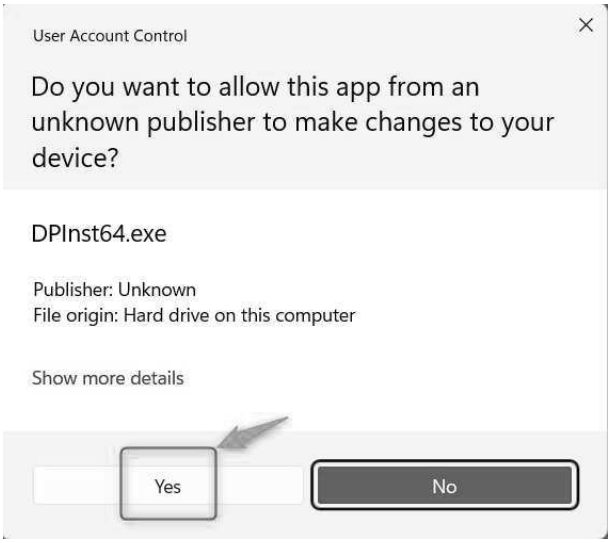


18.2 X-Cite light source driver installation

1. Open e.g. the X-Cite TURBO link and select the "Win10_Installer.exe".



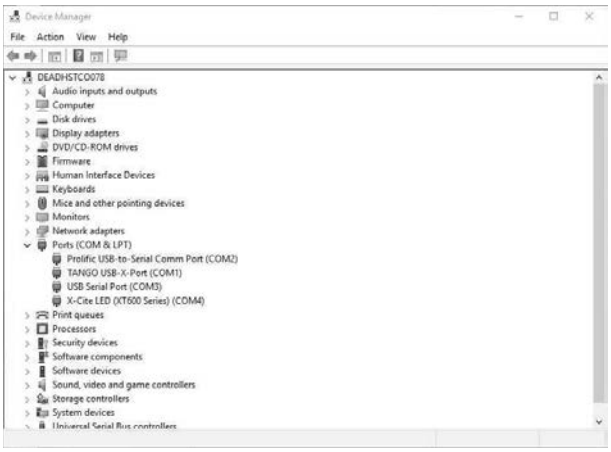
2. Click [Yes] to confirm to allow changes to the device.



» As this is a silent installation you will not see any further notifications.

18.2.1 Check the driver installation for the X-Cite light source

1. Open the Windows [Device manager] dialog box and select the X-Cite LED entry in the [Ports (Com & LPT)] section.



» If you do not see the entry make sure that the light source is connected correctly and switched on.

19 Connection VS200 scanner and VS200 loader

19.1 Mechanical connection between the VS200 scanner and VS200 loader

The units described below must be assembled and adjusted by Evident. If these units are assembled or adjusted by the customer, the operations are not ensured.

This chapter describes the mechanical connection between the VS200 scanner and the VS200 loader. When you are upgrading a VS200 ST (Single Tray) scanner, first perform the steps for upgrading an VS200 ST (Single Tray) system to an MTL (Multi Tray Loader) system.

CAUTION

Risk of injury and risk of device damage if components are dropped

The loader, scanner or other components might drop when you are moving them. Injury to your feet or damage to the device can result.

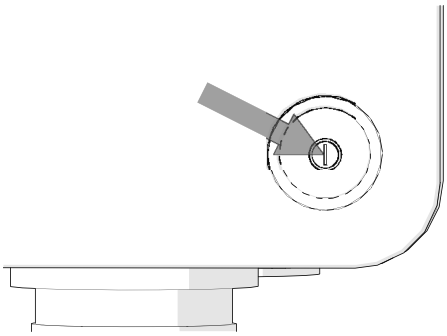
- Make sure that all handles for transportation are screwed in completely and tight.
- The system must be carried by two people.

» Hex screwdriver (size 5 mm)

Notes about the optional camera cover

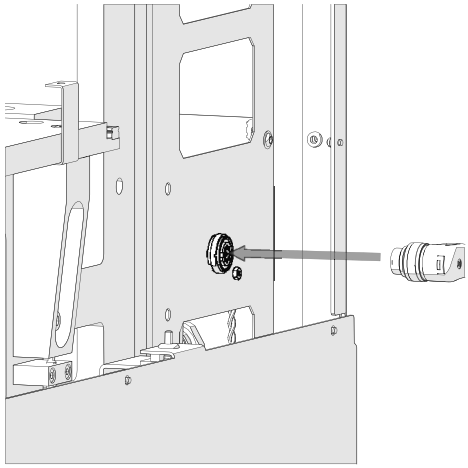
Before connecting the VS200 loader to the VS200 scanner unit, make sure that the optional camera cover is mounted on the VS200 scanner unit.

1. Switch the VS200 system off using the main power switch and disconnect the system from the power supply. To do so, disconnect the external power supply unit from the power supply.

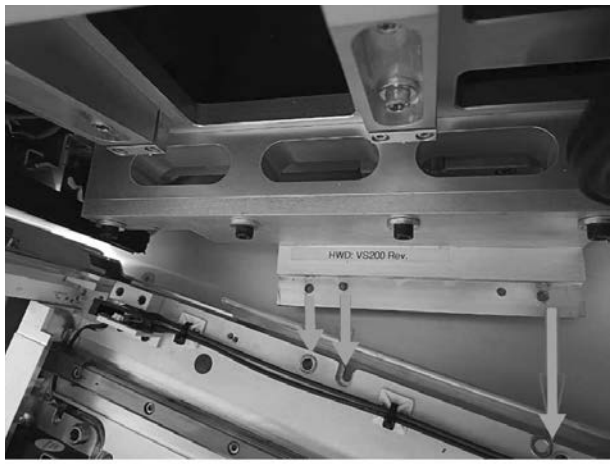


2. Place the VS200 loader to the right of the VS200 scanner, leaving a small gap between them.
3. Remove the handles from the right side of the VS200 scanner and from the left side of the VS200 loader.

4. Check the orientation of the VS200 scanner and the VS200 loader. If the devices have a different orientation or height level, adjust the feet of the VS200 loader.
5. Remove the jumper plug on the VS200 scanner.
6. Now mount the VS200 scanner's right housing side cover. Note that the right housing side cover will accommodate the operation of the loader. You can identify this part of the housing by its one large and one small opening.
7. Plug the VS200 loader's control cable into the port on the VS200 scanner where the terminator was. The plug should point towards the back.



8. With its left housing side cover mounted, slide the VS200 loader onto the VS200 scanner's lower connector. The upper connecting element of the loader slides under the upper connecting element of the scanner.



Lower connector - attachement points

9. Tighten the 2 hex screws (size 5 mm hex screwdriver) which attach the lower connector of the VS200 scanner to the VS200 loader from inside the loader. Tighten two more screws (size 5 mm hex screwdriver) which attach the upper connector of the VS200 scanner to the VS200 loader.

Upper connector - screws to be tightened

10. Remove the remaining handles from the VS200 scanner and the VS200 loader.
11. Reconnect the VS200 system to the power supply.

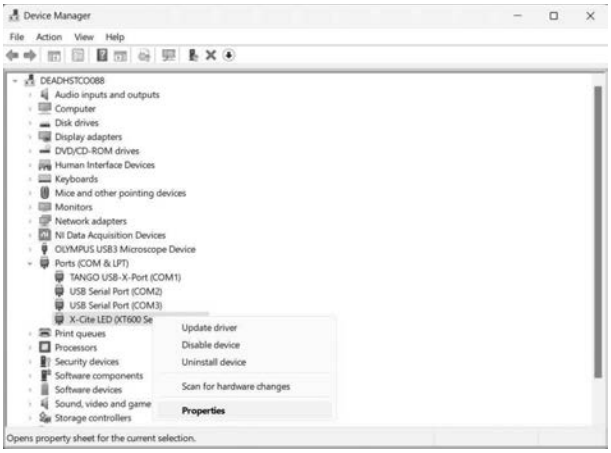
20 Adjusting WINDOWS COM ports

If your VS200 system kit contains the reflected illumination option, you have to set the COM port for the reflected illumination light source (KL2500 LED/U-LGPS/X-Cite XYLIS/X-Cite NOVEM).

It is a precondition that all devices have to be attached to the PC (see Cabling on page 82) and that the VS200 ASW software has to be installed prior to the adjustment of the COM ports.

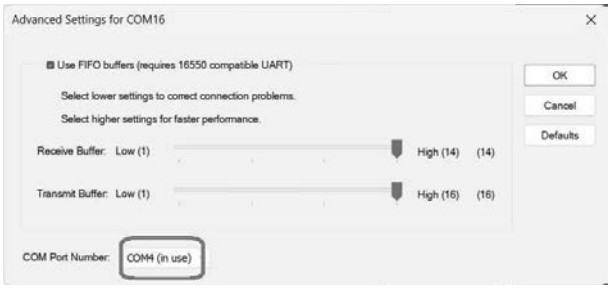
1. Close the VS200 ASW software.
2. Right click the [Start] icon of the Windows OS to open the [Device Manager] dialog box.

3. In the [Device Manager] dialog box select the light source (for example, KL2500 LED or U-LGPS or X-Cite). Right click the entry and select the [Properties] entry in the context menu.



4. Select the [Port Settings] tab and click the [Advanced] button.

5. Change the COM Port Number to 4 (even though it is listed as in use).



6. Confirm with [OK].

7. Select [Yes] if you get a message saying that the device is already being used by another device.

8. After this procedure the [Device Manager] dialog box should look like the following figure.

9. Restart the PC.

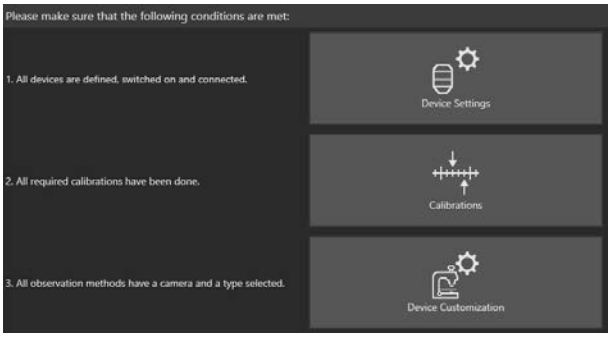
For the correct COM port assignement refer to the following table:

Device	COM port Nr.
TANGO USB-X-Port	COM1
Prolific USB-to-Serial Comm Port (OLYMPUS_ VS200)	COM2
USB Serial Port (ODB_NETWORK)	COM3

X-Cite LED (XT600 Series)	COM4
COM Port Liquid Dispenser	COM5
Cobolt Laser #1 to Cobolt Laser#6	COM10 to COM15

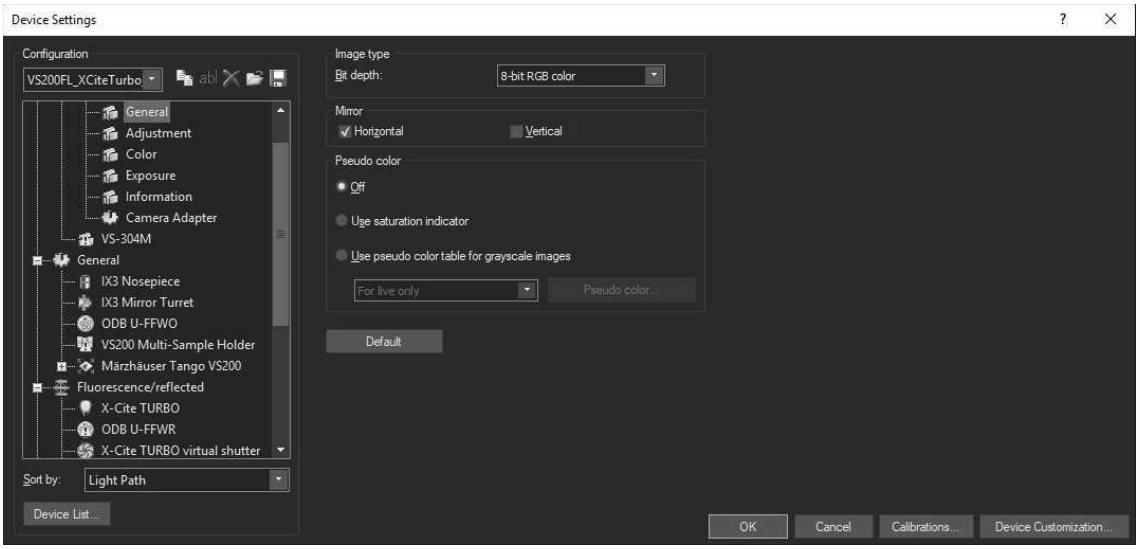
21 VS200 device configuration

1. On the start page of the software click the [Device Settings] button.

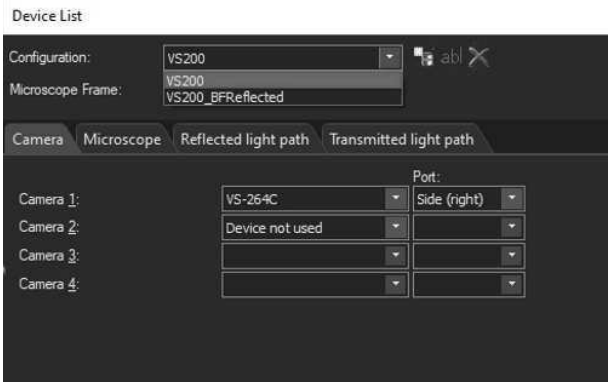


   » The software will automatically switch to the [Manual Control] layout and open the [Device Settings] dialog box.

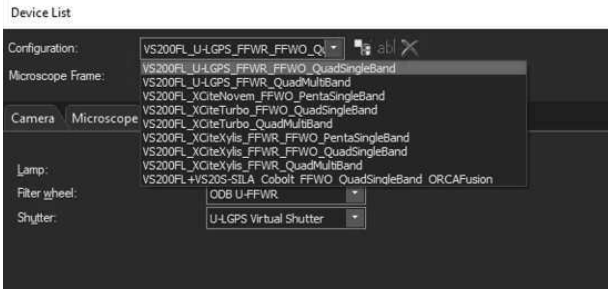
2. In the [Device Settings] dialog box click on the [Device List] button to open the [Device List] dialog box.



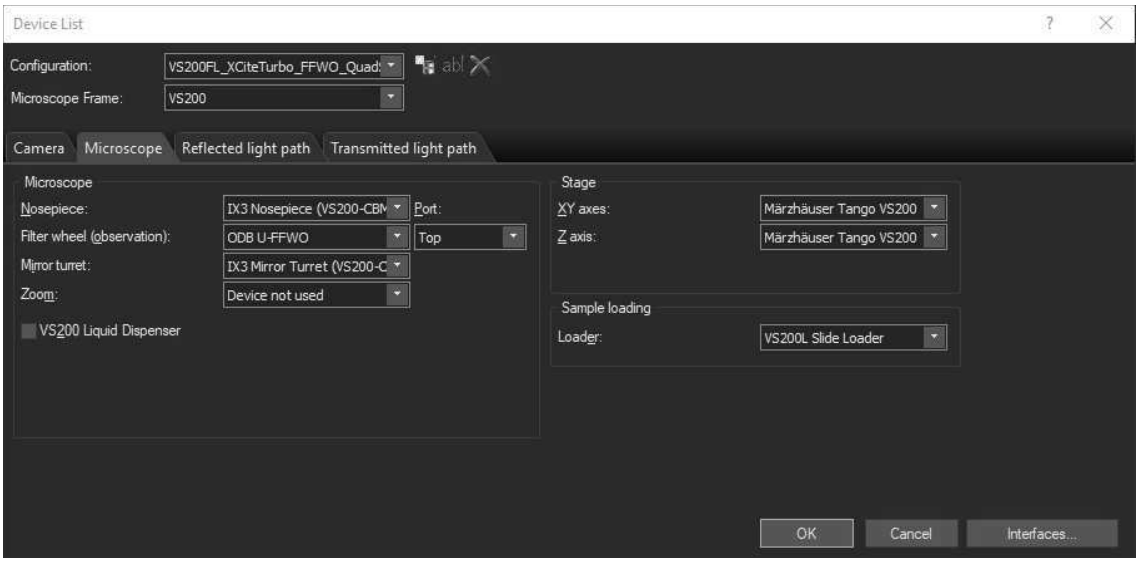
3. VS200 ASW offers predefined device configurations to choose from. For BF only systems, you can choose between transmitted BF or transmitted + reflected BF.



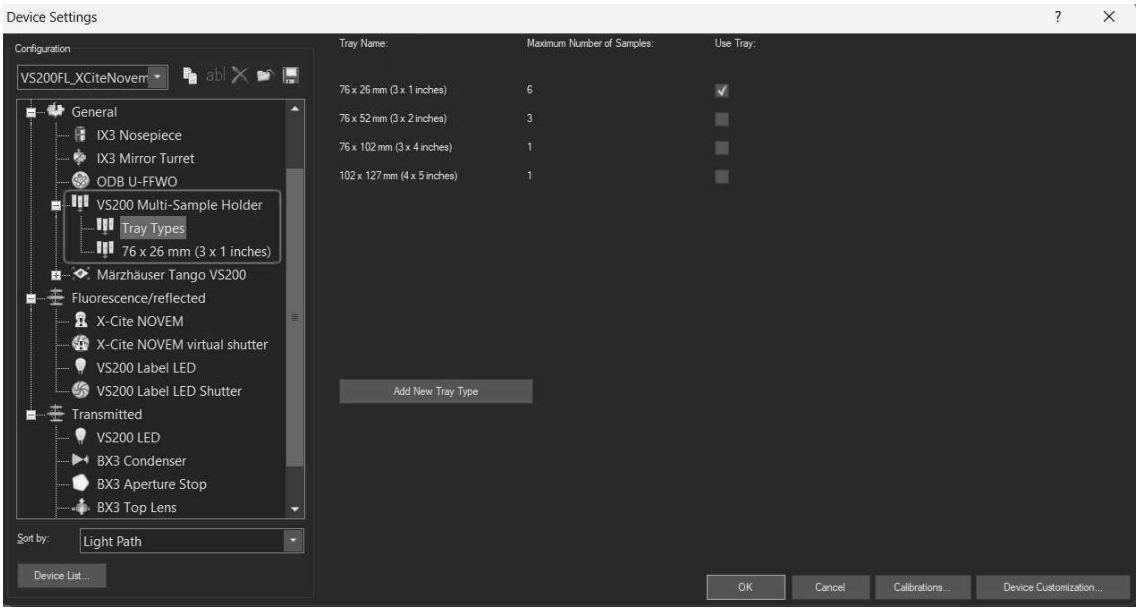
For FL systems there are predefined configurations. Select the correct configuration depending on your FL light source, fast filter wheels and filter set.



4. If you are using the VS200 loader select the [Microscope] tab and select in the [Sample loading] list the [VS200L Slide Loader] entry.



5. If you are using a tray with special dimensions, it needs to be activated in the [Device Settings] dialog box. To do so, click on the [VS200 Multi-Sample Holder] entry in the [Device Setting] dialog box.



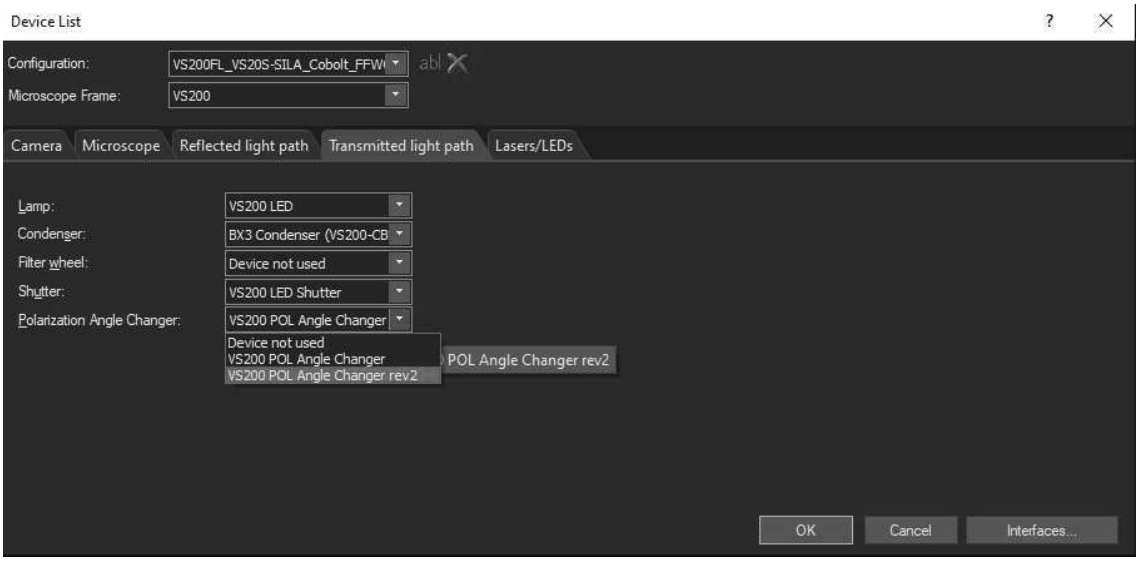
6. Select the check box of the relevant tray.
7. Click [OK] to confirm the selection.

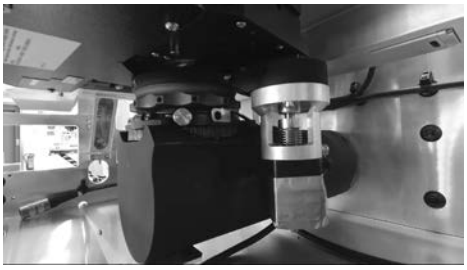
21.1 Activate the motorized polarizer

All VS200 systems are equipped with a polarization angle changer. By default the functionality of the motorized polarizer is switched off.

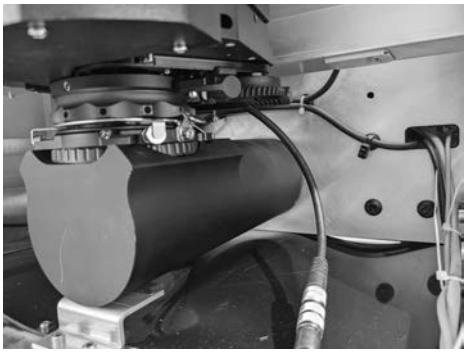
1. Use the [Acquire] > [Devices] > [Device List] command to open the [Device List] dialog box.
2. Select the [Transmitted light path] tab and select from the [Polarization Angle Changer] list the corresponding installed version of the polarization

angle changer.





VS200 POL Angle Changer

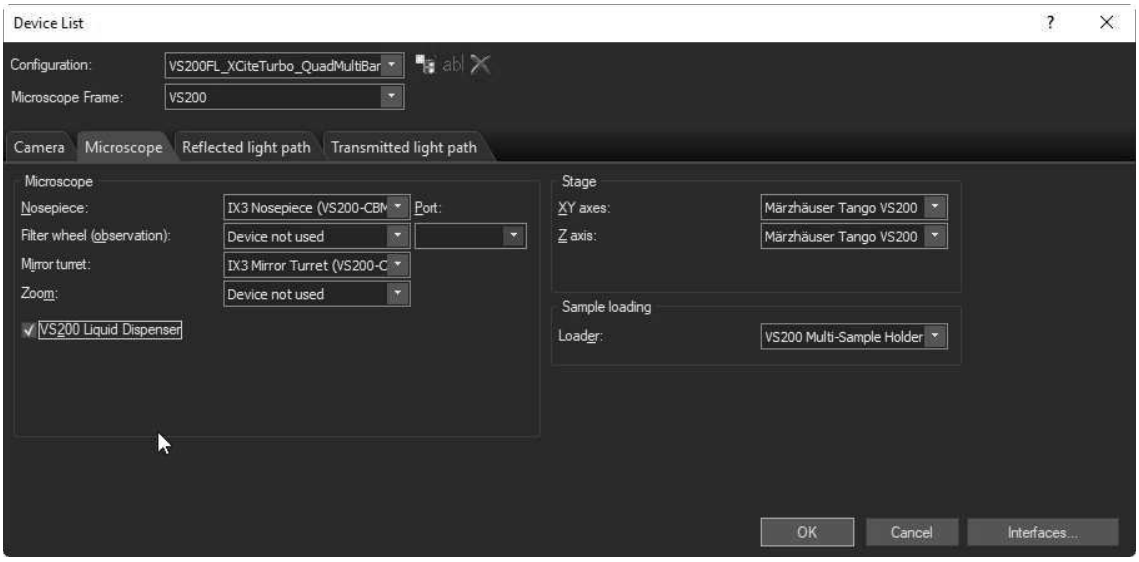


VS200 POL Angle Changer rev2

21.2 Activate the VS200 liquid dispenser

1. Use the [Acquire] > [Devices] > [Device List] command to open the [Device List] dialog box.
2. Select the [Microscope] tab.

3. Make sure that the check box [VS200 Liquid Dispenser] is selected.



21.3 Device settings - objectives

A VS200 system is supplied with a 2x and a 20x objective ex-works. However, the predefined device configuration already contains a 2x, 4x, 10x, 20x and 40x objective.

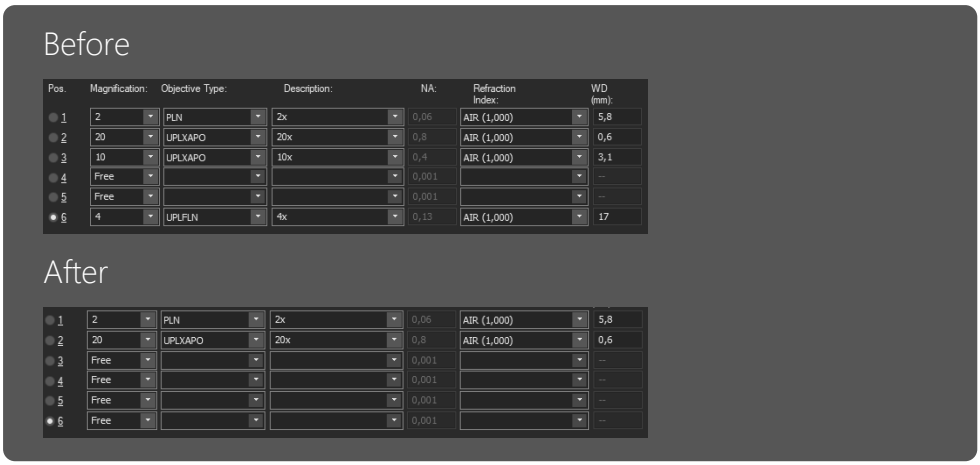
You need to delete the objectives that are not installed from the nosepiece settings in the [Device Settings] dialog box.

Opening the [Device Settings] dialog box

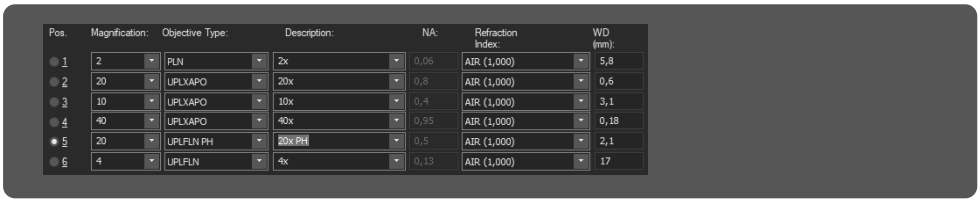
1. Use the [Additional layouts] button to go to a different layout. You can find the [Additional layouts] button at the top right in the navigation bar on the software's start page.
2. At the top right, on the menu bar click the [Manual Control] button.
3. Select the [Acquire] > [Devices] > [Device Settings] command to open the [Device Settings] dialog box.

Configuring objectives

1. Select the [IX3 nosepiece] entry on the left side and set all objectives that are not installed to the status [Free].

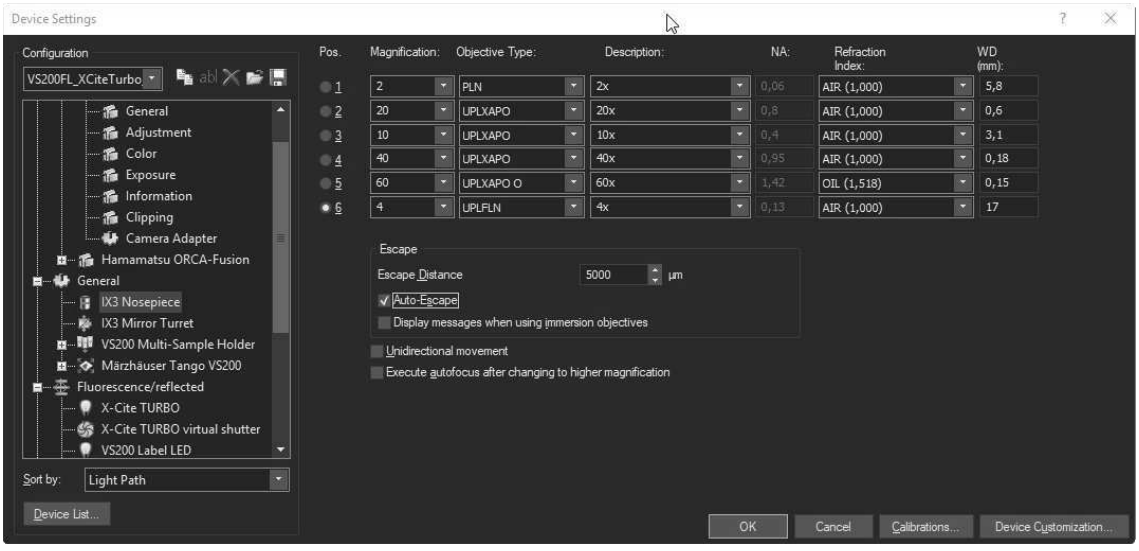


2. To add a phase contrast objective select the [Magnification] entry and the correct [Objective Type] entry for e.g. position 5 and add e.g. [PH] in the [Description] field to distinguish between 'normal' 20x and 'PH' 20x.



» Refer to chapter Setup phase contrast (PH) observation method on page 123 to adjust the [Device Customization] dialog box for phase contrast acquisition.

3. In case you want to install and configure an immersion objective please also check that the [Auto-Escape] function is checked.



4. In the [Device List] dialog box make sure that the [VS200 Liquid Dispenser] check box is selected. See Activate the VS200 liquid dispenser on page 115.

21.4 Device settings - filter

If you add new hardware, like a new fluorescence filter, to the VS200 system you need to configure it in the [Device Settings] dialog box.

Opening the [Device Settings] dialog box

1. Use the [Additional layouts] button to go to a different layout. You can find the [Additional layouts] button at the top right in the navigation bar on the VS200 ASW software's start page.
2. At the top right, on the menu bar click the [Manual Control] button.
3. Select the [Acquire] > [Devices] > [Device Settings] command to open the [Device Settings] dialog box.

Configuring filters

1. On the left of the tree structure, select the device into which you placed the filter.

   The following table shows the possible filter and device combinations.

Filter type	VS200 device
IX3 filter cube	IX3 Mirror turret
25 mm excitation filter	U-FFWR
25 mm emission filter	U-FFWO

2. In the [Pos.] options, select the position where you inserted the new filter.