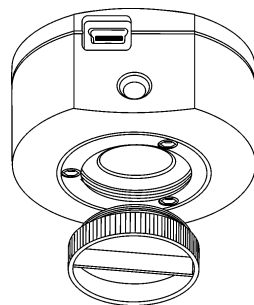


# OLYMPUS



User Manual

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CMOS color camera

# SC100

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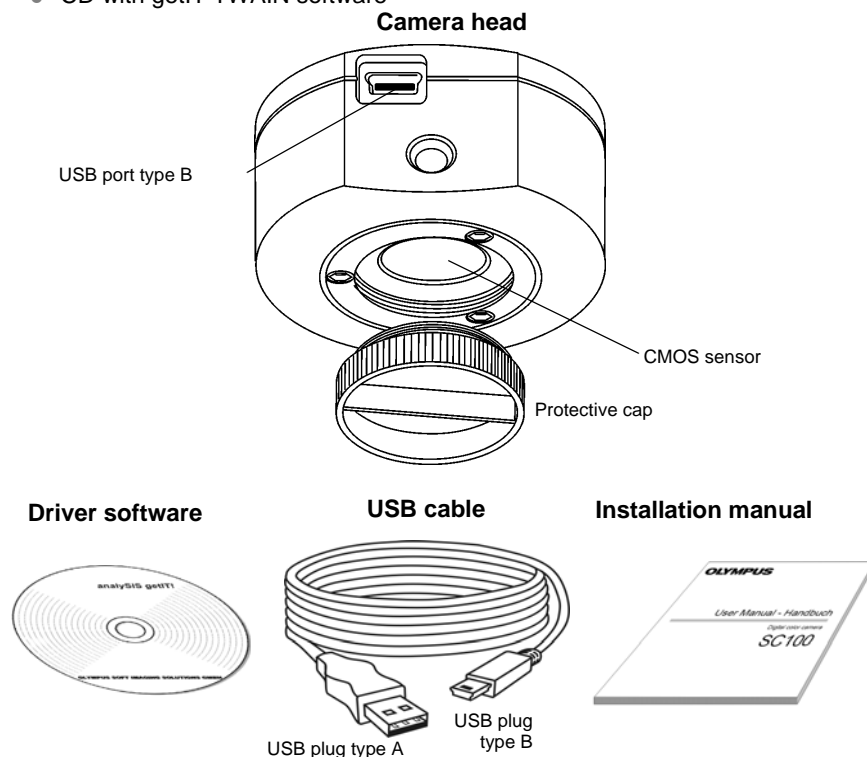
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# 1 The CMOS color camera SC100

## 1.1 Scope of supply

The SC100's scope of supply comprises:

- Camera head with protective cap
- USB cable
- Installation manual
- CD with getIT TWAIN software



*Other essential components*

To be able to use the SC100, you'll also need the following components:

- PC with MS-Windows operating system
- Light microscope with camera adaptor or something similar, for example a macro stand
- Software to operate the camera (see chapter 3.3 on page 12)

## 1.2 Specifications

*Properties of the SC100* The SC100 is a CMOS color camera with a very high resolution used for biomedical and material sciences applications. It was specially developed for acquisitions using light microscopy, is of a compact design and can be connected to all of the prevalent types of light microscope by a C-mount. The ICC profile technology guarantees an optimal color mapping.

Technical data	SC100
Chip type	CMOS
Chip size	Typ 1/2,3 Inch
Effective area (width x height)	6.12 mm x 4.59 mm
Pixel size	1.67 $\mu\text{m}$ x 1.67 $\mu\text{m}$
Maximum resolution	3840 pixels x 2748 pixels
Image type	24-bit color image (RGB)
Read-out speed	5 – 36 MHz
Interface	USB 2.0
Camera mount	Standard C-Mount

*Binning modes* The SC100 has two binning modes. In the binning mode, the camera's CMOS sensor combines neighboring pixels into pixel blocks. This results in a higher sensitivity and a shortened processing time but also a lower resolution.

Binning	Resolution	Max. frame rate	Exposure times
Maximum resolution	3840 x 2748 pixels	3.2 images per second	0.34 ms - 14.6 s
Binning 2x	1920 x 1374 pixels	12 images per second	0.19 ms - 3.6 s
Binning 4x*	960 x 686 pixels	42.5 images per second	0.12 ms - 3.4 s

\* Binning 4x is technically the same as binning 2x with an additional "subsampling". With "subsampling" the half of the image's pixel is ignored. As a consequence the sensitivity of both binning modes does not differ very much. The advantage of the "Binning 4x" mode is its high frame rate.

## 1.3 Operating and storage conditions

---

Please operate and store your camera in the following conditions:

- The maximum permissible range for the ambient temperature during camera operation is +0°C to +45°C.
- The maximum permissible relative humidity during camera operation is 80 % (condensation free).
- When the camera is stored or transported, the ambient temperature must be kept between -20°C and +60°C.

## 2 General safety instructions

---

The camera has been developed and produced on the basis of state-of-the-art technology and in conformity with recognized safety regulations. However, it is not possible to entirely rule out possible hazards for the user, damage to the camera and microscope or impairments of the camera's functionality. For this reason, always read and meticulously observe the general safety instructions and warnings before and during the installation.

**WARNING****Serious injuries can occur**

The warning sign and the word **WARNING** indicate dangerous situations that can lead to serious injuries or even death if ignored.

**CAUTION****Light injuries can occur**

The warning sign and the word **CAUTION** indicate dangerous situations that can lead to light injuries if ignored.

**Attention****Damage to devices can occur**

The exclamation mark and the word **Attention** indicate situations, where irreparable damage to the camera, microscope, or PC can occur if ignored.

**Reduced functionality can occur**

Notices only printed with an exclamation mark indicate that ignoring them can lead to a failure in, or a diminishing of, the camera's functionalities.

### 2.1 Avoiding personal injuries

---

**WARNING****Electric shock due to damaged cable!**

When a cable is frayed or damaged, a person touching it risks the danger of an electric shock.

Shut off the hardware and replace the cable immediately!

**WARNING**



**Poisoning due to toxic gases!**

In the case of a fire, the material of the camera can give off toxic gases. When these are inhaled, it can cause irritation of the respiratory passages and damage to them.

Wear respiratory protection when fighting the fire!

**CAUTION**



**Tripping hazard!**

Cables laid across a room can be a dangerous tripping hazard. This can cause injuries to people and damage to equipment.

Wherever possible, lay cables along the wall or behind furniture. Fix cables that run across the room into place!

## 2.2 Avoiding device damage

---

**Attention**



**Never open the camera housing!**

The camera's CMOS chip is extremely sensitive. Electrostatic discharge can permanently damage the camera.

Therefore, never, under any circumstances, open the camera housing!

**Attention**



**Avoid vibration shocks!**

Mechanical shocks and strong vibrations can damage the camera.

Don't drop the camera during installation. Make sure it is securely mounted on the microscope. When it's not in use, store it in a safe place!

**Attention**



**Secure microscopes with additional components!**

A top-heavy microscope can tip over or fall down and result in damage to both the camera and the microscope.

If the microscope is top-heavy or otherwise unstable, fix it to the wall!

**Attention**



**Don't touch the cover slip!**

The cover slip over the CMOS chip is extremely sensitive and must not come into contact with bare hands or any other objects, otherwise the acquisitions will be impaired by fingerprints or scratches.

Remove dust from the cover slip carefully with compressed air. For the removal of dust stuck due to static electricity, ionized air is recommended.



**Attention****Observe the operating conditions!**

Exposure to high temperatures or humidity can damage component parts of the camera.

Always observe the operating and storage conditions (see chapter 1.3 on page 6)!

**Attention****Don't expose the camera to strong light!**

Exposure to strong light can cause the camera to overheat, which may cause damage to its component parts.

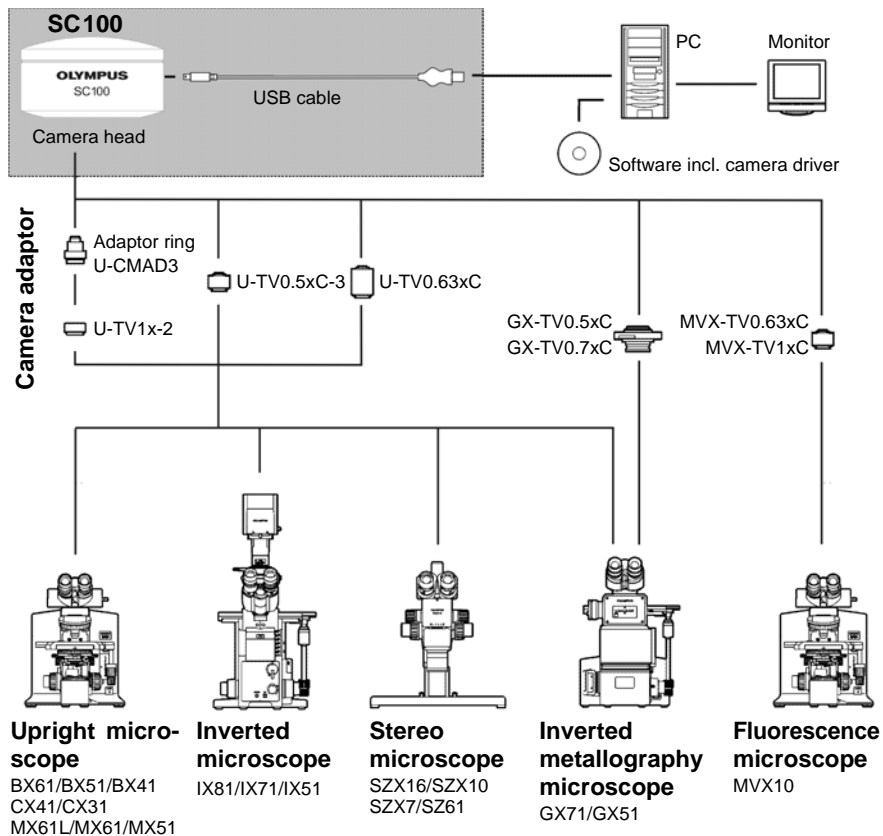
Do not expose the camera to strong light (sunlight) for long periods of time.

**Attention****Only use the USB cable that is delivered with your camera**

Operate the camera only with the USB cable that is part of the camera's scope of supply. This ensures that the EMC basic standards are fulfilled.

## 3 System environment

### 3.1 Microscope and camera adaptor



*Suitable camera adaptor*

The system table shows you the camera adaptors you can use to connect the SC100 to many available Olympus microscopes. Please note that you can also use microscopes that are not listed there. Basically, all of the camera adaptors with the magnification factor 0.5 or larger are suitable.

Should you require more detailed information, contact Olympus Soft Imaging Solutions Customer Service (see chapter 6.4.2 on page 34).

## 3.2 PC

---

### 3.2.1 System requirements for the PC

---

For optimal use, the system requirements listed in the table must be fulfilled.

	System requirements
<b>Processor</b>	Intel Pentium D 3.0 GHz, or better Intel Xenon (DP/MP), Intel Core™ Duo, or higher (SSE2 compatible)
<b>Hard disk</b>	at least 30GB free storage space
<b>RAM</b>	at least 512 MB
<b>Screen resolution</b>	at least 1280 pixels x 1024 pixels
<b>VGA board</b>	32-bit graphics card, at least 32 MB graphics memory
<b>Drive</b>	DVD-ROM drive
<b>Interfaces</b>	USB 2.0 with Intel® 82801FB/FBM USB2 Enhanced Host Controller
<b>Operating systems*</b>	<ul style="list-style-type: none"> <li>• MS-Windows 7 (32 Bit)</li> <li>• MS-Windows 7 (64 Bit)</li> <li>• MS-Windows XP Pro (32 Bit), Service Pack 2 or 3</li> <li>• MS-Windows Vista (32 Bit) Ultimate/Enterprise/Business/Home-Premium</li> </ul>
<b>Software</b>	Internet Explorer 6.0 or higher

\* Make sure that the software you want to operate the SC100 with supports one of the operating systems listed here.

### 3.2.2 Operating the camera with a laptop

---

Generally speaking, it is possible to operate the camera with a laptop. Owing to the variety of such products on the market, it isn't possible to make any generally valid statements about the technical prerequisites for this setup. It is possible that the power supply provided by the integrated USB interface won't be sufficient to operate the camera. Recommendation: Connect the camera to the laptop via an external USB bus with its own power supply.

Should you encounter any problems, contact Olympus Soft Imaging Solutions Customer Service (see chapter 6.4.2 on page 34).

## 3.3 Software

---

You'll need the appropriate software to acquire images with the camera. Here are some basic possibilities:

- You can operate the camera with software from Olympus Soft Imaging Solutions that came with the camera.
- You can operate your camera with an existing Olympus Soft Imaging Solutions software.
- You can operate the camera with TWAIN software.

### Installing an Olympus Soft Imaging Solutions software

*Optimal operating* You operate the camera optimally with Olympus Soft Imaging Solutions software. At the present time, the following software products support the SC100 camera:

- cellSens
- Stream
- GetIt

Information on how to make the installation can be found in the chapter 4.1 on page 13.

### Operating the camera with an already existing software

*Possible operation* Generally speaking, it's basically possible to operate the camera with software from Olympus Soft Imaging Solutions that you already have. To do so, you'll have to completely reinstall the software and if possible, choose the SC100 as camera. Depending on how old the software is, it may not be possible to retroactively install the camera driver. For this reason, we recommend that you acquire a current update for your software. Contact Customer Service (see chapter 6.4.2 on page 34), to find out whether your software version is sufficient for the operation of the camera.

### Operating the camera with TWAIN software

*Limited operation* Should you not want to operate the camera with software from Olympus Soft Imaging Solutions, you can also use another TWAIN software. A TWAIN interface is integrated in many programs (for example MS-Word). You will have to install the TWAIN driver in order to import images from the camera via the TWAIN interface. This is possible when you use the getIT CD that has been provided with your camera. Information on how to make the installation can be found in the chapter 4.1 on page 13.



#### Install the software first!

Connecting the camera to your PC before you've installed the software can result in problems with the camera driver.

It is extremely important that the software for your camera is installed **before** connecting the camera to your PC.

# 4 Installation

---

This chapter describes the installation of the camera and the software. Please be sure to follow the steps in the correct order for a proper installation.

- 1) Install the software
- 2) Connect the camera
- 3) Selecting the camera driver
- 4) Choosing the camera (only for MS-Windows XP)



### Install the software first!

Connecting the camera to your PC before you've installed the software can result in problems with the camera driver.

It is extremely important that the software for your camera is installed **before** connecting the camera to your PC.

## 4.1 Step 1: Installing the software

---

To operate the camera with your PC, the camera driver has to be installed. This is accomplished by installing the software with which you operate the camera (see chapter 3.3 on page 12).



### Log on as an administrator

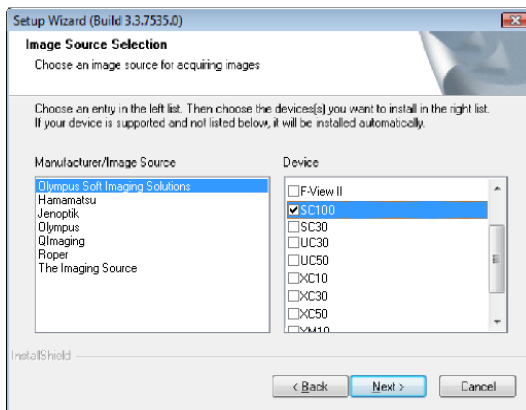
To be able to install software, you must log on to your PC as an administrator. Should you not possess administrator rights, contact your company's authorized IT specialist.

Do the following:

- 1) Close all running application programs, including the application programs that run in the background, for instance, an antivirus software.
- 2) Place the software DVD resp. CD, in the corresponding drive.
  - ▶ The installation program will start automatically.
- 3) Follow the instructions the installation wizard gives you and make the necessary entries. Then, click the **Next >** button each time to continue.
- 4) Should you be asked to choose the device you want to install (for instance with Stream), select the manufacturer **Olympus Soft Imaging Solutions** and the

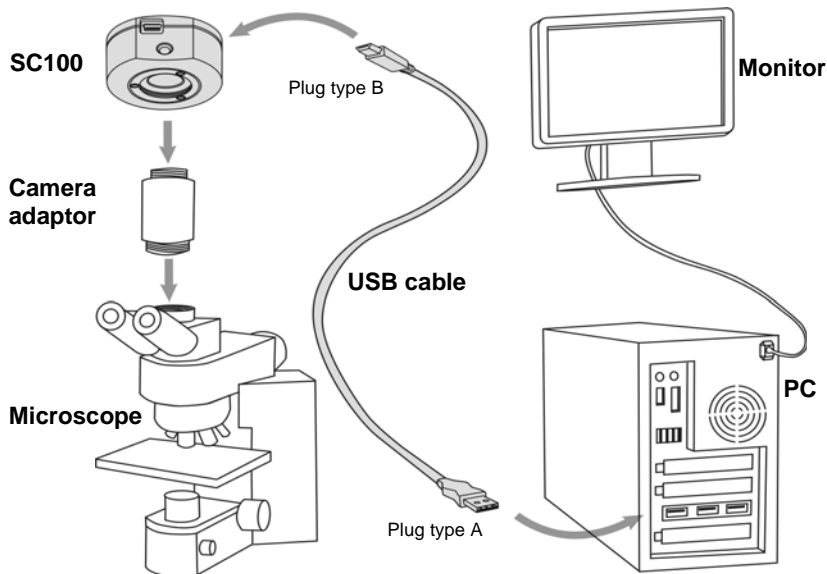
*Follow the instructions given you by the installation wizard.*

device SC100. With some software packages, it isn't necessary to select the camera since all of the available camera drivers are automatically installed.



- 5) At the end of the installation, the files are copied to the PC. You can then finalize the installation procedure.
  - ▶ The software and the camera driver have now been installed on your PC.

## 4.2 Step 2: Connecting the camera



You can connect the camera to the microscope and PC as soon as you've installed the software. Do the following:

- 1) Remove the SC100's protective cap.
- 2) Screw the camera onto the microscope's camera adaptor.
- 3) Plug the end of the USB cable with the type B plug into the camera socket.
- 4) Plug the end of the camera's USB cable with the type A plug into a free USB socket of your PC. Please note that it has to be a USB 2.0 socket. If you are not certain, try all suitable sockets, also located on your PC's back side, until the camera is recognized and the hardware wizard starts.



USB icon



#### **Make sure that the plug is the right way round**

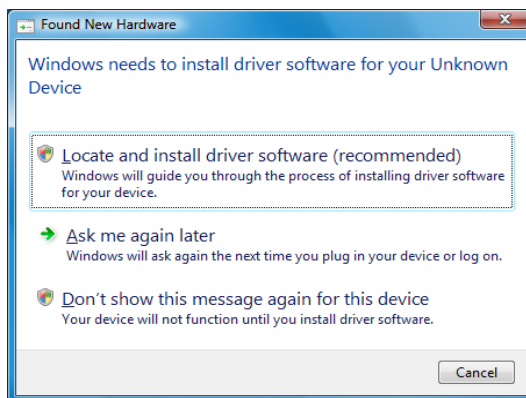
The USB plugs are not symmetrical. Make sure that the plugs are the right way round, when you plug them into the corresponding camera ports.

## 4.3 Step 3: Selecting the camera driver

When you've finished connecting the camera to your PC, the operating system automatically starts the *Found New Hardware Wizard*. There are different procedures for the installation of the camera driver, depending on which operation system you use. Simply follow the instructions for your operating system.

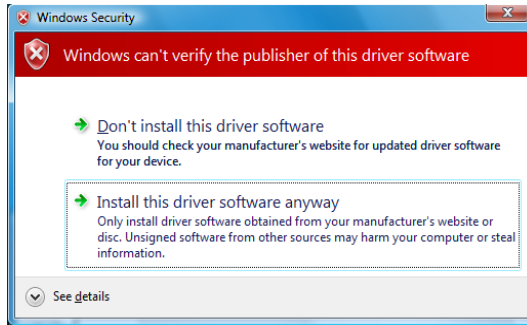
### 4.3.1 Operating system MS-Windows Vista

- 1) Click the *Locate and install driver software (recommended)* entry.



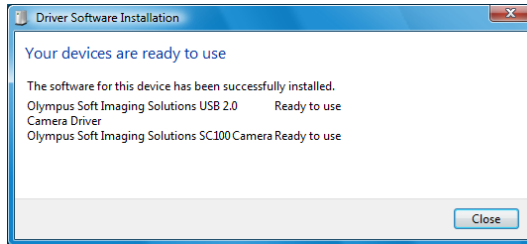
- ▶ MS-Windows Vista asks for permission to activate the device driver.
- 2) Confirm this by clicking the *Next >* button.

- 3) Wait until MS-Windows Vista displays the following message box.
- 4) Click the Install this driver software anyway entry.



*Confirm the Olympus Soft Imaging Solutions' camera driver.*

- 5) The following dialog box shows the correct camera driver Olympus Soft Imaging Solutions USB 2.0 Camera Driver and the installed camera Olympus Soft Imaging Solutions SC100 Camera. Click the Close button.



- 6) Start the software that has already been installed.
- 7) The SC100 has now been registered as a device and is ready for use.

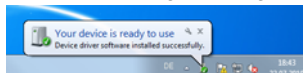
### 4.3.2

## Operating system MS-Windows 7

- ▶ When you've finished connecting the camera to your PC, MS-Windows 7 automatically installs the camera driver. In the status bar, you will receive a corresponding message.



- 1) Wait until the installation of the camera driver has been finished. In the status bar, you will receive a corresponding message.



- 2) Start the software that has already been installed.
- 3) The SC100 has now been registered as a device and is ready for use.

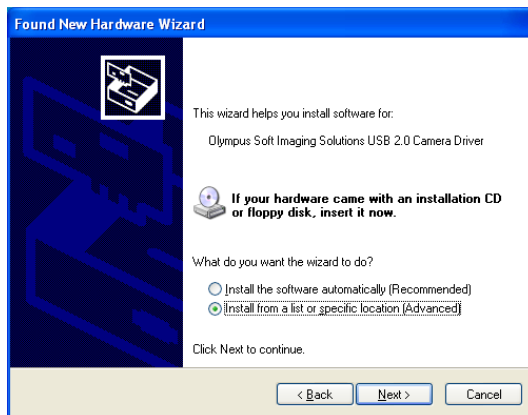


### 4.3.3 Operating system MS-Windows XP

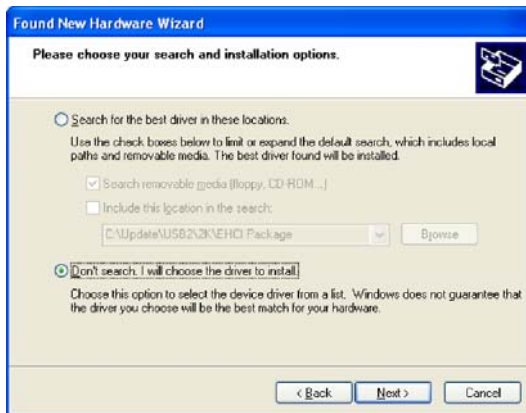
- 1) In the Found New Hardware Wizard dialog box, select the answer No, not this time. Then, click the Next > button.



- 2) In the dialog box that follows, select the Install from a list or specific location (Advanced) option. Then, click the Next > button.

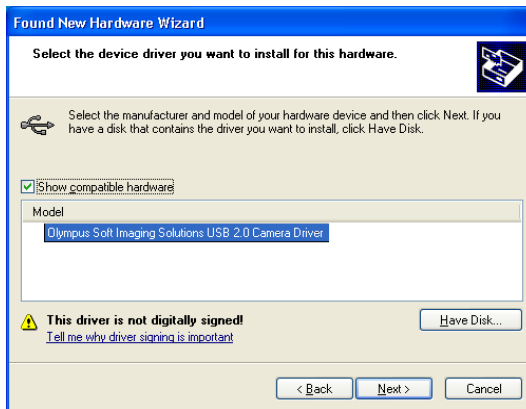


- 3) In the following dialog box, select the Don't search. I will choose the driver to install. option. Then, click the Next > button.



*Confirm the Olympus Soft Imaging Solutions' camera driver.*

- 4) The following dialog box displays the correct camera driver Olympus Soft Imaging Solutions USB 2.0 Camera Driver. Select this entry. Then, click the Next > button.



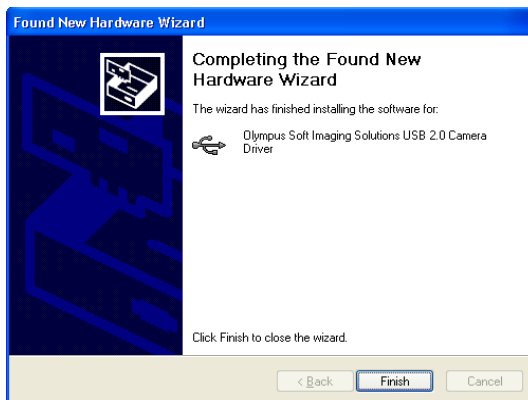
- 5) Wait until the wizard has loaded the camera driver.

*Continue with the installation.*

- 6) It's possible that the Hardware Installation dialog box will open. Ignore the information in this dialog box and click the Continue Anyway button.



- The Hardware Installation dialog box will be closed and the installation of the camera driver will start.
- 7) When the camera driver has been installed the next dialog box opens. Click the Finish button, to finish the Found New Hardware Wizard.



- Your camera driver is now correctly installed. Then, only the camera has to be selected. To do so, follow step 4 of the installation instructions.

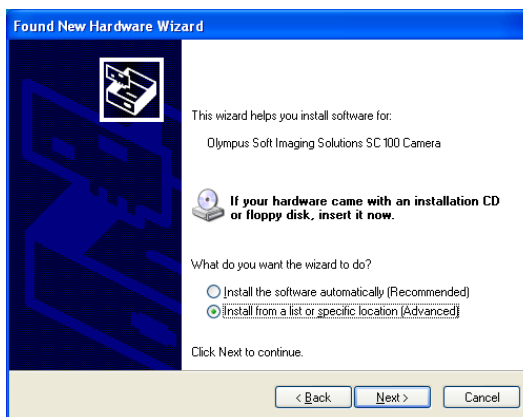
## 4.4 Step 4: Selecting the camera

After you have selected the camera driver, you have to choose the camera for the MS-Windows XP operating system. This fourth installation step is similar to step 3, but instead of the USB 2.0 Camera driver the camera SC100 is shown. The MS-Windows XP operating system automatically starts the Found New Hardware wizard again.

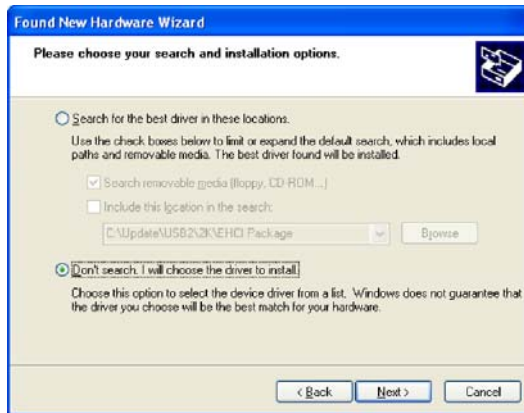
- 1) Select the option No, not this time in the dialog box. Then, click the Next > button.



- 2) In the dialog box that follows, select the Install from a list or specific location (Advanced) option. Then, click the Next > button.

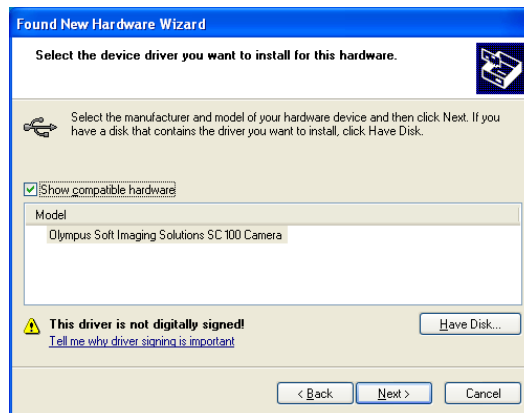


- 3) In the following dialog box, select the Don't search. I will choose the driver to install. option. Then, click the Next > button.



Confirm the Olympus Soft Imaging Solutions' camera driver.

- 4) The following dialog box displays the correct camera driver Olympus Soft Imaging Solutions SC100 Camera. Select this entry. Then, click the Next > button.



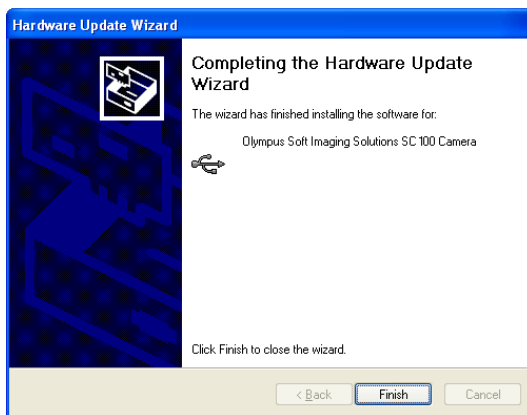
- 5) Wait until the wizard has loaded the camera driver.

Continue with the installation.

- 6) It's possible that the Hardware Installation dialog box will open. Ignore the information in this dialog box and click the Continue Anyway button.



- ▶ The Hardware Installation dialog box will be closed and the installation of the camera software will be loaded.
- 7) When the camera driver has been selected the next dialog box opens. Click the Finish button, to finish the Found New Hardware Wizard.



- ▶ The SC100 has now been registered as a device and is ready for use.

# 5 Care and maintenance

---

When correctly handled, the SC100 camera has a long life span and is to a large extent maintenance-free. The full functionality is assured when you observe the care instructions.

## Cleaning the protective glass

To clean the camera's protective glass use a commercially available blower bulb to blow dust away and wipe it gently with cleaning paper (or clean gauze).

In the case of fingerprints, oil smudges or the like on the protective glass, wipe it with clean gauze moistened with pure alcohol.

### WARNING



#### Danger of fire when using alcohol!

Alcohol is highly flammable and can cause fires.

Make absolutely sure that the alcohol doesn't come into contact with open flames or electric components.

## Cleaning the housing

Parts other than the glass components should be cleaned by wiping with a clean cloth. Do not use organic solvents to remove major stains. Use a soft cloth moistened with a neutral detergent solution.

### Attention



#### Do not dismantle any parts!

The camera is made up of parts that are easily damaged and their disassembly can quickly cause a malfunction or reduced performance.

Therefore, do not dismantle any parts of the camera.

## 6 Solving problems

---

Should any problems occur while you are installing the camera, try some of the solutions described in this chapter. Look for the description that corresponds to your problem, then go to the corresponding page to solve the problem. Here is an overview of the problems handled there:

**The installation program won't start, page 24**

**The camera can't be found, page 25**

- The connection is faulty
- The camera driver hasn't been correctly selected
- The correct camera driver is not available
- The camera was not selected
- The operating system is not suitable

**A faulty image appears, page 32**

- The color depth has been incorrectly set
- The graphic card's driver is too old
- The power saving mode makes the acquisition impossible

If your problem isn't addressed in this manual, contact Olympus Soft Imaging Solutions Customer Service. Information on how to do that can be found in the chapter 6.4.2 on page 34.

### 6.1 The installation program won't start

---

**Problem description:** You have placed the software DVD in the drive but the installation program doesn't start automatically.

**Possible problem:** Your PC's autorun function has been switched off.

**Solution:** Start the installation manually. Do the following:

- 1) In the Start menu, click the **Computer** entry (MS-Windows Vista, MS-Windows 7), or the **My Computer** entry (MS-Windows XP).
  - ▶ All of the available drives are displayed.
- 2) Your DVD drive appears under **Devices with Removable Storage**. Doubleclick the DVD icon.
  - ▶ The contents of the software DVD are displayed.
- 3) Doubleclick the file with the name **setup.exe**.
  - ▶ Now, the installation program starts.

*Open the **setup.exe** file on the DVD.*



## 6.2 The camera can't be found

---

**Problem description:** You have successfully installed the software with which you want to operate the camera and have connected the camera to your PC. However, the wizard doesn't start or your software can't acquire any images from the camera.

Possible problems:

- The connection is faulty
- The camera driver hasn't been correctly selected
- The correct camera driver is not available
- The camera was not selected
- The operating system is not suitable

**Solution:** Verify the possible problems listed here.

### 6.2.1 The connection is faulty

---

**Problem:** The connection between the camera and the PC has been interrupted because a cable isn't properly plugged in, because an unsuited USB port was selected, or because a cable, a plug or a port is defect.

**Solution:** Check the connections. Do the following:

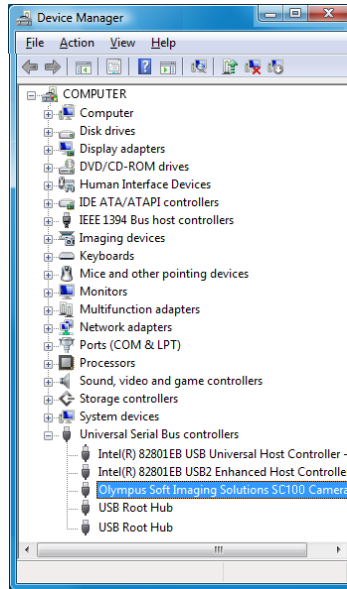
*Check the cable connections.*

- 1) Check the USB cable's port in the camera and at the PC. Check whether you have connected the camera to an USB 2.0 port. You can find additional information about this in your PC's manual. If you are not certain, try all suitable sockets, also located on your PC's back side. When the hardware wizard starts the camera will be recognized. Then, follow the instructions in chapter 4.3 on page 15.
- 2) Otherwise, open the Device Manager. Follow the instructions according to the operating system in use.
  - **MS-Windows 7:**  
In the Start menu, click the **Control Panel** entry. In the **Control Panel** dialog box, click on the **Hardware and Sound** entry. Doubleclick the **Device Manager** icon.
  - **MS-Windows Vista:**  
In the Start menu, click the **Control Panel** entry. On the top left of the **Control Panel** dialog box, select the **Classic View** setting. Doubleclick the **Device Manager** icon.
  - **MS-Windows XP:**  
In the Start menu, click with the right mouse button the **My Computer** entry. Select the entry **Properties** from the context menu. The **System Properties** dialog box opens. Select the **Hardware** tab, then, click the **Device Manager** button.
    - ▶ The **Device Manager** dialog box opens.
- 3) Doubleclick the **USB Controller** entry.
  - ▶ Some sub-entries will appear.

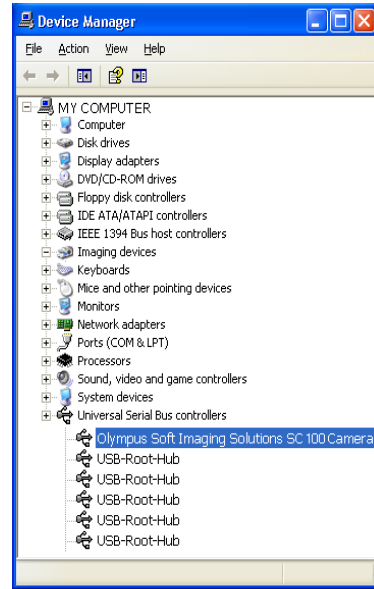
*Check the entries in the Device Manager:*

*This is what the SC100 looks like in the Device Manager.*

**MS-Windows Vista  
MS-Window 7**



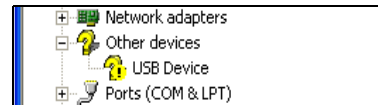
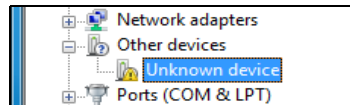
**MS-Windows XP**



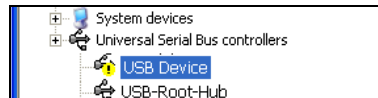
4) Check whether the Olympus Soft Imaging Solutions SC100 Camera entry is displayed.

*An exclamation mark highlighted in yellow appears if the installation went wrong.*

- If this entry appears, proceed to the next problem description.



- In case only the Other devices entry appears, the camera driver has not been correctly installed. Follow the instructions in chapter 6.2.2 on page 27.



- With the MS-Windows XP operating system, a sub-entry USB Device might appear below the USB Controller entry, indicated with an exclamation mark that is highlighted in yellow. In this case, the camera has not been correctly installed. Follow the instructions in chapter 6.2.4 on page 30.
- In case no suitable entry appears, unplug the USB cable and, after waiting a little while, connect the USB cable with your PC again. Check whether a new entry will appear below the USB controller entry. If this is not the

case the cable, or one of the plugs, or sockets is defect. Connect the camera with another USB port and check the entries in the Device Manager again.

## 6.2.2 The camera driver hasn't been correctly selected

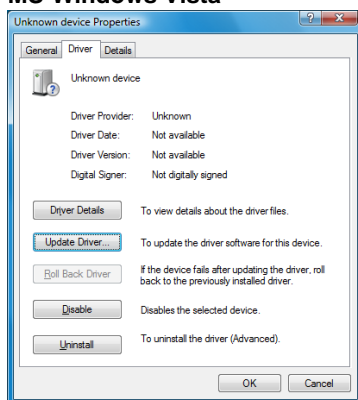
**Problem:** In the Device Manager, the entry **Other Devices** appears with a similar sub-entry. The camera driver hasn't been correctly installed. It may be that you've connected the camera with your PC before the software was installed.

**Solution:** Reload the camera driver. Do the following:

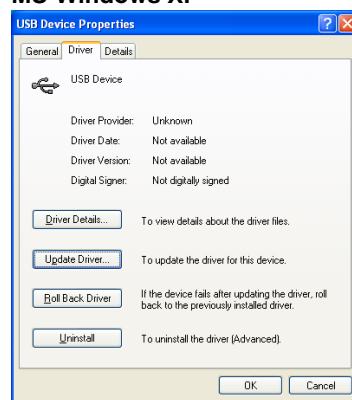
*Doubleclick the entry with the yellow warning sign.*

- 1) In the Device Manager, doubleclick the sub-entry below the **Other Devices** entry.
  - ▶ A dialog box containing the driver's properties opens.
- 2) Click the **Driver** tab.

### MS-Windows Vista



### MS-Windows XP

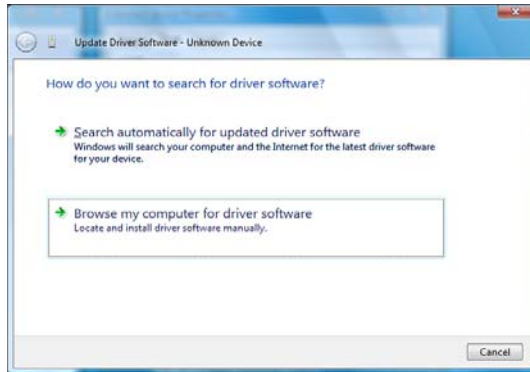


- 3) Proceed according to your operating system as follows:

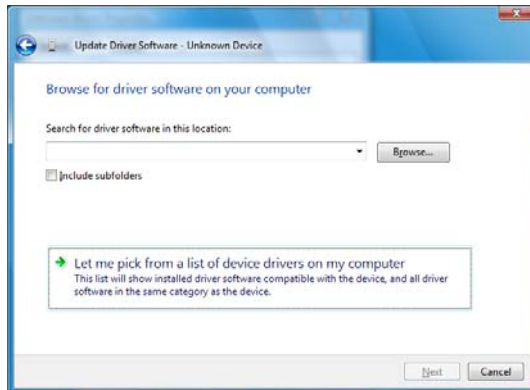
## MS-Windows Vista:

*Load the camera driver as described in step 3 of the installation instructions.*

- 1) Click the Update Driver button.
  - ▶ A dialog box will open.
- 2) Select the Browse for driver software on your computer option.

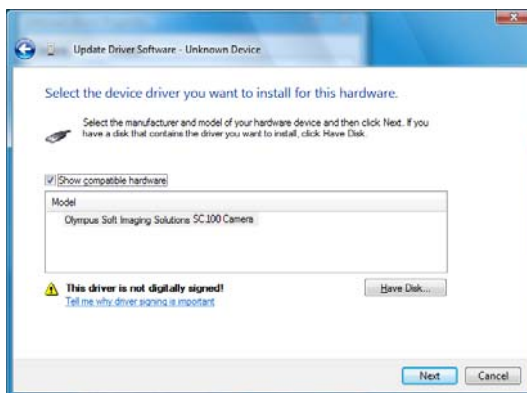


- 3) In the following dialog box select the option Let me pick from a list of device drivers on my computer.



- 4) The following dialog box displays the correct camera driver Olympus Soft Imaging Solutions SC100 Camera. Click the Next > button.

- In case the correct camera driver is not displayed, it is not yet available on your PC. In this case, follow the instructions in chapter 6.2.4 on page 30. .



- ▶ The Windows Security dialog box will be opened.
- 5) In the dialog box, click the **Install this driver software anyway** entry.
  - ▶ A dialog box will open that confirms the installation of the camera driver.
- 6) Click the **Close** button.
- 7) Close the dialog box containing the driver's properties.
  - ▶ Now the correct camera driver appears in the Device Manager.

### MS-Windows XP:

*Load the camera driver as described in step 3 and 4 of the installation instructions.*

- 1) Click the **Update** button.
  - ▶ The **Found New Hardware Wizard** dialog box will open.
- 2) Follow the steps 3 and 4 of the installation instructions described on page 17.
  - In case the correct camera driver is not displayed during the installation, it is not yet available on your PC. In this case, follow the instructions in chapter 6.2.4 on page 30.

## 6.2.3 The correct camera driver is not available

**Problem:** During the installation of the camera driver, the correct entry Olympus Soft Imaging Solutions SC100 Camera does not appear. The correct camera driver is not yet available on your PC.

**Solution:** Install your software again. Do the following:

*Install the software again.*

- 1) Disconnect the camera and the PC by pulling out the USB plug.
- 2) Repeat steps 1 to 3 (MS-Windows Vista), or 1 bis 4 (MS-Windows XP) of the installation instructions. To do this, follow the instructions on page 13. Please be sure that you select the manufacturer Olympus Soft Imaging Solutions and the SC100 camera in the Image Source Selection dialog box.

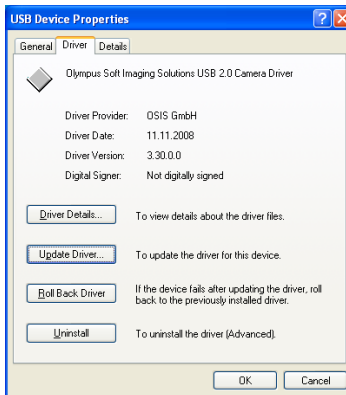
## 6.2.4 The camera was not selected

**Problem:** With the MS-Windows XP operating system, a sub-entry USB Device that is highlighted in yellow appears in the Device Manager below the USB Controller entry. The camera driver has been correctly installed, but the camera was not selected.

**Solution:** Select the camera. Do the following:

*Select the camera as described in step 4 of the installation instructions.*

- 1) Doubleclick the USB Device entry in the Device Manager.
  - ▶ A dialog box containing the driver's properties opens.



- 2) Click on the Driver tab, then, click the Update button.
  - ▶ The hardware wizard will be opened.
- 3) Now, follow the step-by-step-instructions in chapter 4.4 on page 20.
- 4) Close the dialog box containing the driver's properties.
  - ▶ In the Device Manager, the correct camera Olympus Soft Imaging Solutions SC100 Camera will now appear as a sub-entry below the USB Controller.

## 6.2.5 The operating system is not suitable

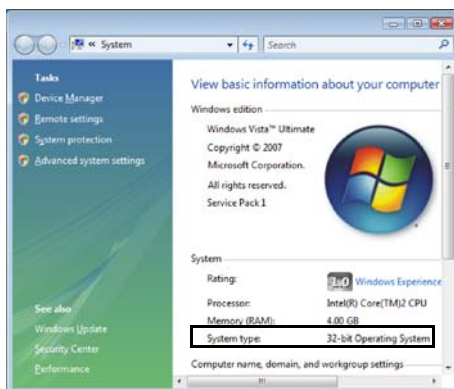
**Problem:** You can't operate the camera with your operating system.

**Solution:** Check which operating system your PC works with. Do the following:

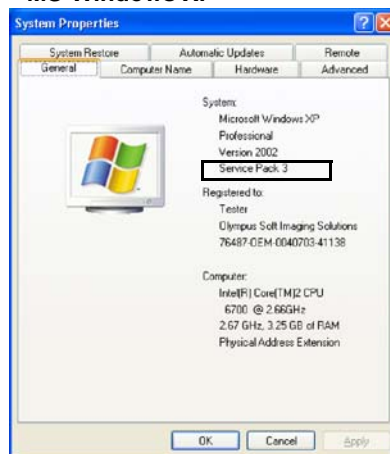
- 1) In the Start menu, rightclick on the **Computer** entry (MS-Windows Vista), or on the **My Computer** entry (MS-Windows XP).
  - ▶ A context menu opens.
- 2) Select the **Properties** entry.
  - ▶ A dialog box containing the operating system's properties opens.
- 3) Check whether your PC's operating system supports the camera.
  - With MS-Windows Vista, the **32-bit-Operating System** must be installed. The 64-bit operating system isn't supported.
  - With MS-Windows XP, the **Service Pack 2** or **3** must be installed. Service Pack 1 and 64-bit operating systems are not supported.

*Check the operating system's properties.*

### MS-Windows Vista



### MS-Windows XP



- 4) Should the operating system not support the camera, install the camera on another PC.



### Only change the operating system after consultation!

The installation of a new operating system can lead to the loss of data and is therefore not recommended until all other possibilities have been entirely eliminated.

Should you encounter any further problems, contact Olympus Soft Imaging Solutions Customer Service (see chapter 6.4.2 on page 34).

## 6.3 A faulty image appears

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**Problem description:** You have started the software and can activate the camera. However, no image is displayed, or there are stripes in the image. Possible problems:

- The color depth has been incorrectly set
- The graphic card's driver is too old
- The power saving mode makes the acquisition impossible

**Solution:** Verify the possible problems listed here.

### 6.3.1 The color depth has been incorrectly set

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**Problem:** The color depth on your monitor has been incorrectly set.

*Set the monitor's display to a color depth of 32 bit.*

**Solution:** Check that with the monitor's display a color depth of 32 bit has been set. Proceed according to your operating system as follows:

#### **MS-Windows Vista:**

- 1) In the Start menu, click the Control Panel entry.
  - ▶ The Control Panel dialog box opens.
- 2) Click the Classic View entry, should it appear on the left.
- 3) Doubleclick the Personalization icon.
  - ▶ The Personalize appearance and sound dialog box opens.
- 4) In it, click the lowermost entry Display Settings.
  - ▶ The Display Settings dialog box opens.
- 5) Under color depth, select the Highest (32 bit) option.
- 6) Click the OK button to confirm this.



**MS-Windows XP:**

- 1) In the Start menu, click the Control Panel entry.
- 2) Click the Switch to Classic view entry, should it appear on the left.
- 3) Doubleclick the Display icon.
  - ▶ The Display Properties dialog box opens.
- 4) Click the Settings tab.
- 5) In the color quality dialog field, click the Highest (32 bit) option.
- 6) Click the OK button to confirm this.

**6.3.2****The graphic card's driver is too old**

**Problem:** The graphic card's driver is too old.

**Solution:** Check your graphic card's driver in the Device Manager and install an update if it's too old. Do the following:

- 1) Open the Device Manager as described in the chapter 6.2.1 on page 25.
- 2) Doubleclick the Display adapters entry.
  - ▶ Under it, an entry with your graphic card's label appears.
- 3) Doubleclick this entry.
  - ▶ A dialog box containing the graphic card's properties opens.
- 4) Click the Driver tab.
  - ▶ In the window, the driver type, the provider and the driver date, appear.
- 5) We recommend that you run an update if your driver is more than two years old. Find a suitable download in the Internet.
  - ▶ Should you have a graphic card from NVIDIA, look under [www.nvidia.com](http://www.nvidia.com)
  - ▶ Should you have a graphic card from ATI, look under [www.ati.com](http://www.ati.com) Make sure that you download the driver together with a catalyst.
  - ▶ Should you have a graphic card from another manufacturer, search for the address in the Internet.

*Load an update of the graphic card driver from the Internet.*

**6.3.3****The power saving mode makes the acquisition impossible**

**Problem:** A power saving mode has been switched on and this makes the transmission of the image data from the camera impossible.

**Changes in the BIOS only by authorized and qualified personnel**

Changes in the BIOS (Basic Input Output System) can have a negative effect on the way your PC operates.

Let only an administrator with corresponding qualifications make changes on the settings in the BIOS.

*Switch off the power saving mode.*

**Solution:** Switch off all hibernation modes in your operation system and in the BIOS of your PC. Contact your administrator if you can't make these settings yourself.

## 6.4 Another problem has cropped up

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Should your problem not have been addressed in this manual or the solutions suggested didn't solve the problem, you'll certainly be able to find a solution by contacting Olympus Soft Imaging Solutions Customer Service. There are two ways in which you can do this:

- Finding a solution on the Customer Service's Internet site
- Contacting the Customer Service

### 6.4.1 Finding a solution on the Customer Service's Internet site

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You'll find additional problem solutions on the Olympus Soft Imaging Solutions Customer Service Internet site. This Internet site contains questions that have frequently been asked and shows you solutions to other problems. Do the following:

- 1) Enter the following address in the Internet browser: [www.olympus-sis.com](http://www.olympus-sis.com)
  - ▶ In the browser, the Olympus Soft Imaging Solutions Internet site appears.
- 2) Click the **Customer Care** tab.
  - ▶ The Customer Service's Internet site appears in the browser.
- 3) In the **Customer Support Center** field, click the **FAQ's (Frequently Asked Questions)** entry.
  - ▶ In the browser, a list of solutions appears .
- 4) Click a solution that corresponds to your problem, then read the entry.

*Search for your problem on the Customer Service pages in the Internet.*

### 6.4.2 Contacting the Customer Service

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When questions or problems crop up that you can't solve with the help of this manual, the Olympus Soft Imaging Solutions Customer Service will be happy to help you. You can best contact them by e-mail.

#### **Contacting the Customer Service**

You can contact Olympus Soft Imaging Solutions Customer Service under:

Telephone: **(+ 49) 251-79800-6444**

Fax: **(+ 49) 251-79800-6445**

E-mail: **support.osis@olympus-sis.com**

To make it easier and quicker for them to assist you, you can best proceed as follows:

- 1) Please clarify beforehand when and under which circumstances the problem arose. The best way to do this, is if you can clearly reproduce the problem/error.
- 2) Tell them the operating system you use (see chapter 6.2.5 on page 31) and the software you want to operate your camera with.
- 3) Make screen shots of (error) messages that appear on your monitor or make a note of their exact wording.
  - To obtain a screen shot of the active MS-Windows window, use the keyboard shortcut [Alt+Print]. A copy of the window is then stored in the MS-Windows clipboard. You can insert this into an e-mail or an application program by using the shortcut [Ctrl+V].
- 4) Should problems with the image quality crop up, save an image on which the problem can clearly be seen, in TIF format. Insert this image in your e-mail to our Customer Service.
- 5) Send the e-mail with a description of your problem and the details about your software and operating system, along with possible attachments, to the e-mail address: [support.osis@olympus-sis.com](mailto:support.osis@olympus-sis.com)

# 7 Appendix

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## 7.1 Explanatory notes about conformity and disposal

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### 7.1.1 CE Conformity

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The Olympus Soft Imaging Solutions CMOS color camera SC100 conforms with the European Union guidelines for electromagnetic compatibility according to the EU Directive 2004/108/EG.

It conforms to the standard: EN 61326: 2006.

### 7.1.2 FCC-Conformity

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This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### 7.1.3 RoHS Conformity

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The CMOS color camera SC100 by Olympus Soft Imaging Solutions conforms with the European Union directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment 2002/95/EG.

It conforms to the ACPEIP standard SJ/T 11363 (2006) and also SJ/T 11364 (2006).

### 7.1.4 WEEE Declaration

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The CMOS SC100 color camera contains electronic components. In compliance with the European Directive 2002/96/EG concerning waste electrical and electronic equipment, this product may not be disposed of in municipal waste but must be separately collected. Contact your specialist dealer with regards to returning it.

## 7.2 Glossary

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### **Binning**

In the binning mode, the camera's sensor combines neighboring pixels into pixel blocks. This results in a higher sensitivity and a shortened processing time but also a lower resolution. Double binning (2x) reduces the number of pixels to a quarter.

### **CMOS**

CMOS (**C**omplementary **M**etal **O**xide **S**emiconductor) is a semiconductor component that can be used for circuits and also as a photo sensor. Using the CMOS technique, each pixel can be separately read out and amplified. The CMOS technique is characterized by its low power consumption and requires very little space.

### **C-Mount**

The C-mount is a connection with a standardized screw thread, for camera objectives. With this screw thread, the light microscope camera can be firmly attached to all commercially available microscopes.

### **DVD**

The **D**igital **V**ersatile **D**isc is a digital storage medium, similar to a CD (Compact Disc), but possessing a much higher storage capacity.

### **Device Manager**

The Device Manager is a part of the PC's control panel, in which the connected devices and their drivers are managed. In it, the available USB interfaces are listed, and also the connected cameras. You open the Device Manager by selecting the following menu points in your operating system one after the other: *Start > Control Panel (classic view) > Device Manager (MS-Windows Vista)*, or *Start > Control Panel (classic view) > System > Hardware > Device Manager (MS-Windows XP)*.

### **Hardware**

The PC itself and all physical components that are connected to it, i.e. the monitor, cables and printers, are considered to be hardware. Thus, a hardware defect is a physical problem, for instance, a defective device or a defective plug or socket.

### **ICC-Profile technology**

The International Color Consortium's profile technology provides an optimal color matching between different acquisition and output devices. The camera's CMOS sensors see colors in a different way to people and monitors, and in turn, they reproduce them differently. To achieve a consistent color reproduction that is optimized for human sight, a conversion is essential. The ICC profile technology guarantees an optimal color correction and in this way, reproduction of the acquired image.

### **Camera adaptor**

The camera adaptor is a connection between microscope and camera that bundles the light from the microscope and directs it onto the CMOS chip. For Olympus Soft Imaging Solutions light microscope cameras, camera adaptors with the factor 0.5 or larger are suitable.

### **Screen shot**

The term 'screen shot' stands for a monitor photo of the complete screen surface, or of a window, that can easily be created. You can make a screen shot of the complete screen by using the [Print] key. To make a screen shot of the active MS-Windows application window use the keyboard shortcut [Alt+Print]. The screen shot you've just created and can be inserted into a file from the clipboard by using the shortcut [Ctrl+V].

### **Driver**

To enable a PC to communicate with a connected device, a device driver is required. This driver's task is to interpret the signal sent. The drivers are chosen by the operating system and every device's driver is shown in the Device Manager. The camera only works when the correct driver has been activated.

### **TWAIN**

TWAIN is a standard for the exchange of data between image input devices, such as cameras and scanners, and image processing programs.

### **USB**

The **U**niversal **S**erial **B**us is a specification for the connection of the PC with external devices or storage media. It transfers data and supplies the devices with power. USB distinguishes itself by its high transmission reliability and velocity. The USB cameras by Olympus Soft Imaging Solutions use the USB 2.0-Standard with a transmission rate up to 480 Mbit/s (Enhanced Host Controller Interface (EHCI)). Ports for the USB 1.x-Standard can only transfer up to 12 Mbit/s and are not suitable. However, they are still available in many PCs to support older devices.

# **OLYMPUS**

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