



Thermo Scientific

# HAAKE RheoWin

## User Guide

Camera installation

006-xxxx Version 2.2

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July 2014: Updated to version 2.0, adapted to RheoWin 4.50.00xx

August 2014: Added information on Firewire card

February 2015: Small changes on the installation of the Windows XP Imaging.dll patch

Software-Requirements: HAAKE RheoWin 4.50.0003 or newer







# HAAKE RheoWin - Camera driver installation

This document describes which IEEE 1394 Firewire cameras are compatible with the HAAKE RheoWin software under various versions of the Microsoft Windows operating system and which drivers need to be installed for those cameras.

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## RheoWin versions

The content of this document is valid for RheoWin version 4.50.0003 and newer only.

RheoWin version 4.41.0019 and all older versions are *not* compatible with the FGcontrol driver software. These older RheoWin versions are only compatible with the FOcontrol 4.0.5.1 driver software for the Foculus 323TB and 323TC cameras and the IC Image Control 3.0 driver software for the Sony XCD-X710 camera and under Windows XP 32-bit only.

## Camera driver and Windows version compatibility

In order for a certain camera to be able to work with HAAKE RheoWin, driver software must be installed first. This driver software is delivered by the camera manufacturer. Unfortunately camera manufacturers do not always deliver (updated) driver software for the latest Windows operating system version for (older) camera models. [Table 1](#) lists the available driver software for the current Foculus 323TB and 323TC cameras as well as the older Sony XCD-X710 camera for the various Windows versions.

**Table 1.** Camera driver and Windows version compatibility list

Windows version	Foculus 323TB and Foculus 323TC	Sony XCD-X710
Windows 8.1 32-bit	FGcontrol 2.3.3.1	no driver available
Windows 8.1 64-bit	FGcontrol 2.3.3.1	no driver available
Windows 8 32-bit	FGcontrol 2.3.3.1	no driver available
Windows 8 64-bit	FGcontrol 2.3.3.1	no driver available
Windows 7 32-bit	FGcontrol 2.3.3.1	no driver available
Windows 7 64-bit	FGcontrol 2.3.3.1	no driver available
Windows Vista 32-bit <sup>a</sup>	not tested	not tested
Windows Vista 64-bit <sup>a</sup>	not tested	not tested
Windows XP 32-bit	FOcontrol 4.0.5.1	IC Image Control 3.0
Windows XP 64-bit <sup>a</sup>	not tested	not tested

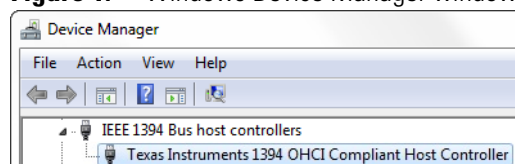
<sup>a</sup> This Window version is not supported by HAAKE RheoWin.

## Hardware requirements

Since the Foculus 323TB and 323TC cameras as well as the Sony XCD-X710 camera are equipped with an IEEE 1394 Firewire interface, the PC on which HAAKE RheoWin is installed must be equipped with such a Firewire interface also. Although the Firewire interface is a clearly specified standard interface, it is our experience that not all Firewire PC interfaces work reliable.

In our experience IEEE 1394 Firewire cards based on a Texas Instrument chip work reliable (with the FGcontrol driver software). Firewire cards are easily identified in the Windows Device Manager window, see [Figure 1](#). In our experience cards based on a VIA chip do *not* work reliable (with the FGcontrol driver software). We have no experience with cards based on other chips from other manufacturers like LSI or Ricoh, etc.

**Figure 1.** Windows Device Manager window



We strongly recommend the use of the Firewire interface card which is available, as an accessory (order no. 222-2189), from Thermo Scientific.

**Note** A Firewire camera will not work from a 4-pin (mini) Firewire port as found on notebooks since these ports do not include the electrical power supply the camera needs for operation.

## Driver installation: Windows 7, Windows 8 and Windows 8.1

Under the Windows 7, 8 and 8.1 32-bit and 64-bit operating systems only the (current) FOculus 323TB and 323Tc cameras can be used with RheoWin 4.50.0003, older cameras like the Sony XCD-X710 are not supported.

The FGcontrol 2.3.3.1 driver software for the NET GmbH FOculus 323TB and 323TC cameras for Windows 7, 8 and 8.1 is available on the RheoWin installation CD in the FGControl directory. The driver software can also be downloaded (as a zip file) from the [www.rheowin.com/rheowin45.htm](http://www.rheowin.com/rheowin45.htm) web-page. For the 64-bit versions of Windows 7, 8 and 8.1 both the file FGControl\_Install\_V2331\_x86.zip and the file FGControl\_Driver\_Win7\_64.zip are needed, for the 32-bit versions of Windows 7, 8 and 8.1 only the first file is needed.

**Note** Only use the FGcontrol 2.3.3.1 driver software, i.e. do *not* use the older FOControl software since that software is *not* compatible with RheoWin 4.50.000x under Windows 7, 8 and 8.1.

**Note** Windows administrator privileges are needed to install the driver software.

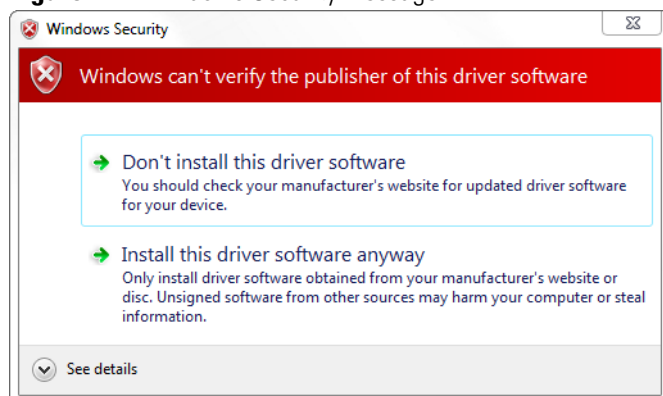
## Windows 32-bit and 64 bit versions

Since RheoWin is a 32-bit program, the 32-bit version of the FGcontrol driver software must be installed under both the 32-bit and 64-bit version of Windows 7, 8 and 8.1.

### ❖ To install the FGcontrol 2.3.3.1 driver software

1. Start the FGControl\_Install\_V2331\_x86.exe installation program and follow the instructions of the FGcontrol - Installshield Wizard.
2. On the Welcome page of the wizard click **Next**.
3. On the Customer Information page of the wizard enter a **User Name** and a **Company Name**, then click **Next**.
4. On the Setup Type page of the wizard select the **Complete** option, then click **Next**.
5. On the Ready to Install the Program page of the wizard click **Install**.
6. In the Windows Security dialog (see [Figure 2](#)) select the **Install driver software anyway** option, this will also close the dialog.

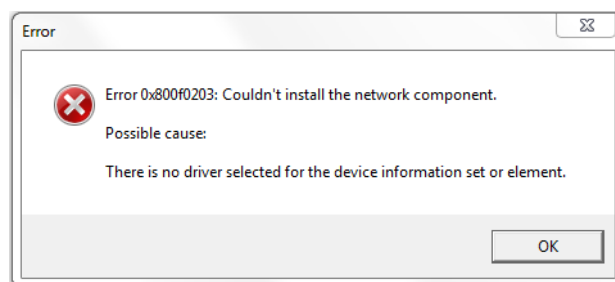
**Figure 2.** Windows Security message



On some PCs the error message as shown in [Figure 3](#) may popup. Since the camera driver network component is not needed, this message can be ignored.

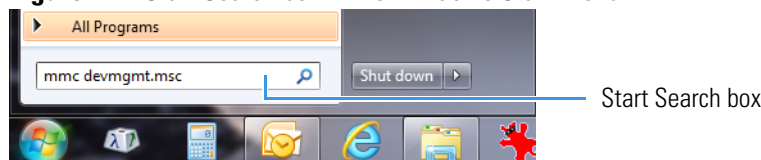
7. In the Error message window click **Ok** to close the message window (see [Figure 3](#)).

**Figure 3.** Error message



8. When the wizard has installed FGcontrol click **Finish** to close the wizard.
9. Open the Windows Device Manager from the Windows Control Panel or by entering the command `mmc devmgmt.msc` in the Start Search box in the Windows Start Menu, see [Figure 4](#).

**Figure 4.** Start Search box in the Windows Start Menu



10. Connect the FOculus 323TB or 323TC camera to an IEEE1394 Firewire port on the PC.

There are two small LEDs (one green, one orange/red) on the back of the camera. Directly after connecting the camera with the PC both LEDs will light up, after a few seconds the green LED will extinct, the orange/red LED will stay on.

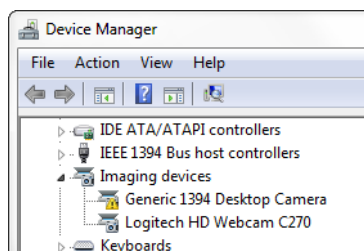
Starting from here the installation procedures for the 32-bit and the 64-bit versions of windows differ. For 32-bit windows continue with [“To complete the installation for Windows 32-bit versions,”](#) for 64-bit windows continue with [“To complete the installation for Windows 64-bit versions,”](#) in the following sections.



## Windows 32-bit versions only

After installing the driver software (see “[Driver installation: Windows 7, Windows 8 and Windows 8.1](#)” on [page 5](#)) and connecting the camera to the PC, the camera driver will be installed automatically. In the list of devices in the Device Manager, the item Generic 1394 Desktop Camera (see [Figure 5](#)) will appear with a yellow exclamation mark on the little icon in front of the item text. This means that the driver is not correctly installed. To correct this follow the procedure below.

**Figure 5.** Device Manager dialog with incorrectly installed camera



### ❖ To complete the installation for Windows 32-bit versions

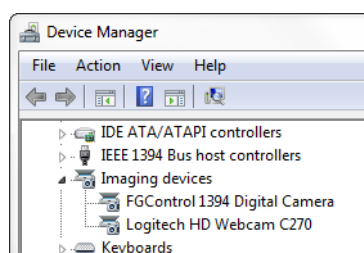
1. Using the Windows Explorer navigate to the directory  
C: \Program Files\NET GmbH\FGControl \Driver and run the program  
FGControl 1394Drv\_Install.exe.

During the installation, commands will be executed in a command prompt window (with a black background), this window is closed automatically.

2. In the Windows Security dialog (see [Figure 2](#)) select the **Install driver software anyway** option, this will also close the dialog.

When the installation of the driver is finished the camera should be listed as FGControl 1394 Digital Camera in the list of devices in the Device Manager (see [Figure 6](#)).

**Figure 6.** Device Manager dialog with correctly installed camera

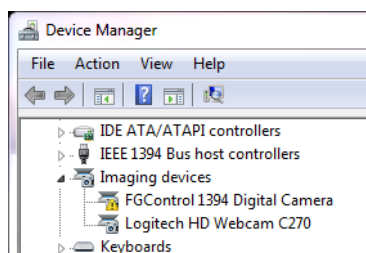


3. Check whether the camera is working properly by following the procedure “[To check whether the camera is working properly,](#)” in “[Testing the camera \(Windows 32-bit and 64-bit\).](#)”

## Window 64-bit versions only

After installing the driver software (see “[Driver installation: Windows 7, Windows 8 and Windows 8.1](#)” on [page 5](#)) and connecting the camera to the PC the camera driver will be installed automatically. In the list of devices in the Device Manager, the item FGControl 1394 Digital Camera (see [Figure 7](#)) or the item Generic 1394 Desktop Camera (see [Figure 5](#)) will appear with a yellow exclamation mark on the little icon in front of the item text. This means that the driver is not correctly installed. To correct this follow the procedure below.

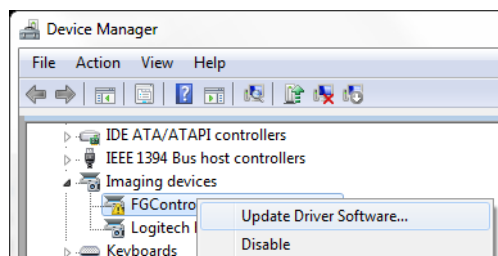
**Figure 7.** Device Manager dialog with incorrectly installed camera



## ❖ To complete the installation for Windows 64-bit versions

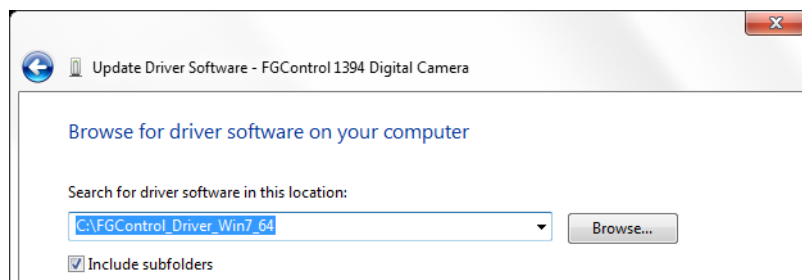
1. Unzip the content of the file FGControl \_Dri ver \_Wi n7\_64. zi p in a new and empty directory, for example in c: \FGControl \_Dri ver \_Wi n7\_64.
2. Right click on the item **FGControl 1394 Digital Camera** or the item **Generic 1394 Desktop Camera** to open a context menu, see [Figure 8](#).

**Figure 8.** Device Manager dialog with incorrectly installed camera plus context menu



3. In the context menu choose **Update Driver** to open the Update Driver Software wizard.
4. In the Update Driver Software dialog select the **Browse my computer for driver software** option.
5. On the next page of the wizard click **Browse** (see [Figure 9](#)) to select the directory in which the contents of the file FGControl \_Dri ver \_Wi n7\_64. zi p was unzipped, see [step 1](#) of this procedure.

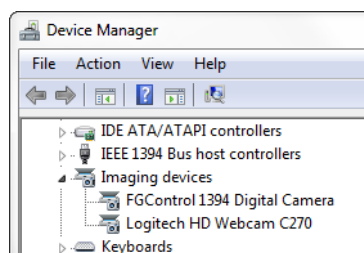
**Figure 9.** Update Driver Software wizard, select location



6. In the Windows Security dialog (see [Figure 2](#)) select the **Install driver software anyway** option, this will also close the dialog.
7. On the next page of the wizard click **Finish** to close the wizard.

When the installation of the driver is finished the camera should be listed as FGControl 1394 Digital Camera in the list of devices in the Device Manager (see [Figure 10](#)).

**Figure 10.** Device Manager dialog with correctly installed camera



8. Check whether the camera is working properly by following the procedure “[To check whether the camera is working properly,](#)” in “[Testing the camera \(Windows 32-bit and 64-bit\).](#)”

## Testing the camera (Windows 32-bit and 64-bit)

After installing the driver software the functionality of the camera driver software should be checked using the FGcontrol software before setting up the camera in HAAKE RheoWin.

### ❖ To check whether the camera is working properly

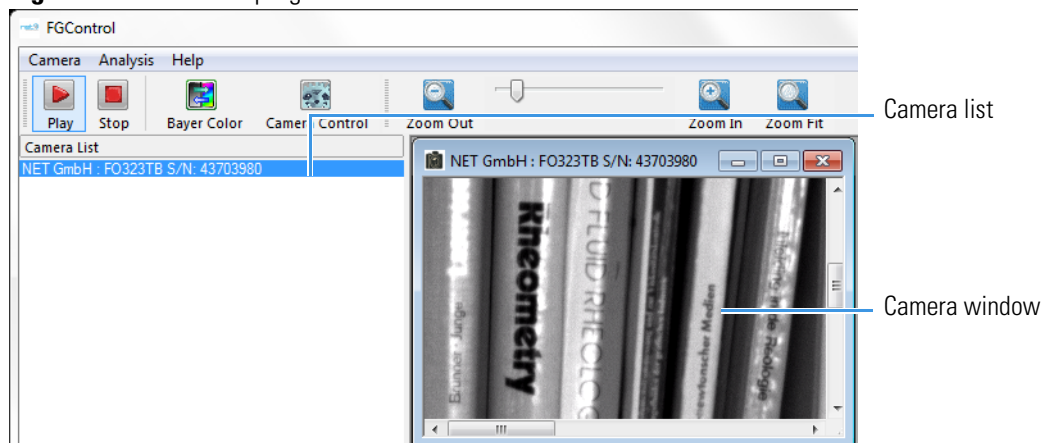
1. Start the FGcontrol program, by clicking on the shortcut to the program on the PC desktop.

In the FGcontrol program main window the camera should now be listed in the camera list below the main menu, see [Figure 11](#).

2. Double click on the camera name in the camera list to open (an empty) camera window.
3. Click **Play** to start the image acquisition.

An image should now be visible in the camera window, see [Figure 11](#).

**Figure 11.** FGControl program main window



## Driver installation: Windows XP 32-bit

Under the Windows XP 32-bit operating system the (current) FOculus 323TB and 323TC cameras as well as the (older) Sony XCD-X710 camera can be used with RheoWin 4.50.0003.

## FOculus 323TB and 323TC cameras

The FOcontrol 4.0.5.1 driver software for the NET GmbH FOculus 323TB and 323TC camera for Windows XP 32-bit is available on the RheoWin installation CD in the FOControl directory. The driver software can also be downloaded (as a zip file) from the [www.rheowin.com/rheowin45.htm](http://www.rheowin.com/rheowin45.htm) web-page.

**Note** Only use the FOcontrol 4.0.5.1 driver software, i.e. do *not* use an older version from the small CD which is delivered with camera and also do *not* install the newer FGControl software since that software is *not* compatible with RheoWin 4.50.000x under Windows XP.

**Note** Windows administrator privileges are needed to install the driver software.

### ❖ To install the FOcontrol 4.0.5.1 driver software

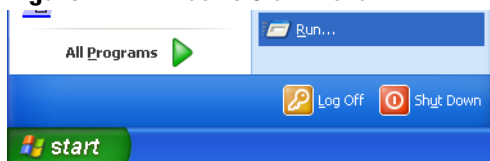
1. Start the FOcontrol\_Install\_4.0.5.1.exe installation program and follow the instructions of the FOcontrol - Installshield Wizard.
2. On the Welcome page of the wizard click **Next**.
3. On the License Agreement page of the wizard select the **I accept the terms of the license agreement** option and then click **Next**.
4. On the Customer Information page of the wizard enter a **User Name** and a **Company Name** and then click **Next**.
5. On the Setup Type page of the wizard select the **Complete** option and then click **Next**.
6. On the Ready to Install the Program page of the wizard click **Install**.
7. When the wizard has installed FOcontrol click **Finish** to close the wizard.
8. Connect the FOculus 323TB or 323TC camera to an IEEE1394 Firewire port on the PC.

There are two small LEDs (one green, one orange/red) on the back of the camera. Directly after connecting the camera with the PC both LEDs will light up, after a few seconds the green LED will extinct, the orange/red LED will stay on.

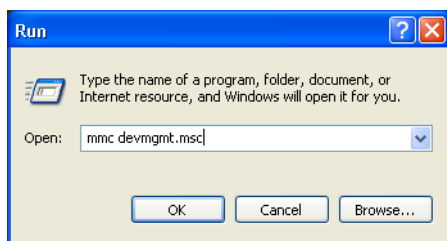
At this point the Found New Hardware Wizard dialog should popup. If this is the case continue with [step 12](#) of this procedure. If this *not* the case continue with [step 9](#).

9. Open the Windows Device Manager dialog from the Windows Control Panel, or by clicking **Run** in the Windows Start Menu (see [Figure 12](#)) and entering the command `mmc devmgmt.msc` in the Run dialog see [Figure 13](#).

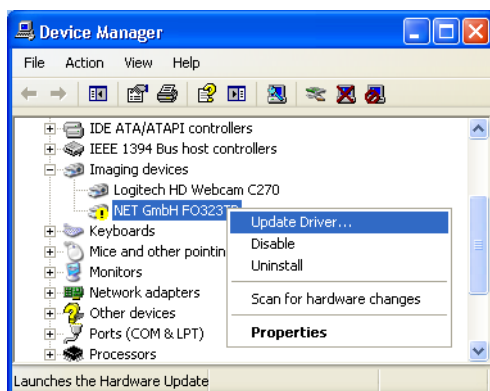
**Figure 12.** Windows Start Menu



**Figure 13.** Run dialog



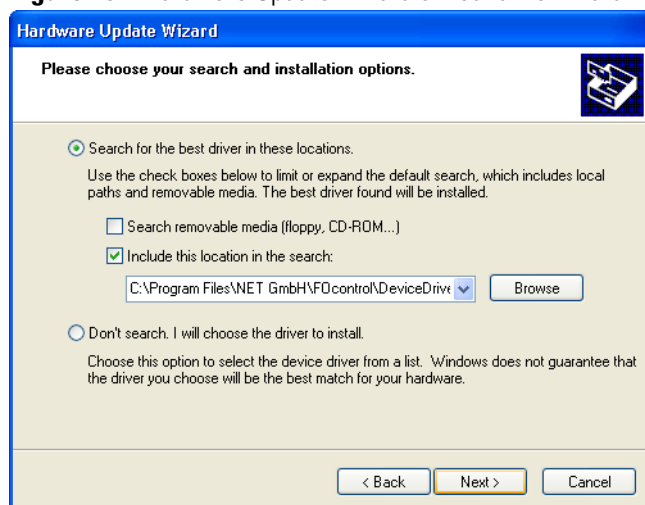
**Figure 14.** Windows Device Manager dialog



In the list of devices in the Device Manager (see [Figure 14](#)), the item **NET GmbH FO323TB** should now be visible under the Imaging devices or the Other devices category with an yellow exclamation mark on the little icon. The yellow exclamation indicates that something is wrong with the installation of the device.

10. Right click on the item **NET GmbH FO323TB** to open a context menu, see [Figure 14](#).
11. In the context menu choose **Update Driver** to open the Hardware Wizard Update dialog, see [Figure 14](#).
12. In the Hardware Wizard Update dialog or the Found New Hardware Wizard dialog (these dialogs are identical apart from the title) select the **No, not this time** option and then click **Next**.
13. On the next page of the wizard select the **Install from a list or specific location (Advanced)** option and then click **Next**.
14. On the next page of the wizard (see [Figure 15](#)) select the **Search for the best drivers in these locations** option and then select the **Include this location in the search** check box, clear the **Search removable media (Floppy, CD-ROM...)** check box and then click **Browse** to select the following path C: \Program Files\NET GmbH\F0control\DeviceDrive.

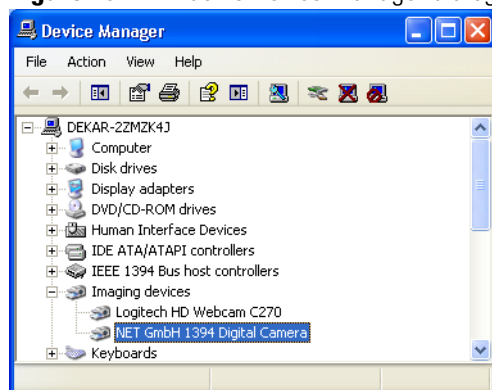
**Figure 15.** Hardware Update Wizard or Found New Hardware Wizard dialog



15. After selecting the correct path click **Next** to install the driver software.
16. In the Hardware Installation dialog, which warns for installing this driver, click **Continue Anyway**.
17. On the next page of the wizard click **Finish** to close the wizard.

The camera should now be listed in the Device Manager under the Imaging Devices category with the name NET GmbH 1394 Digital Camera, see [Figure 16](#).

**Figure 16.** Windows Device Manager dialog



18. Close the Device Manager dialog.

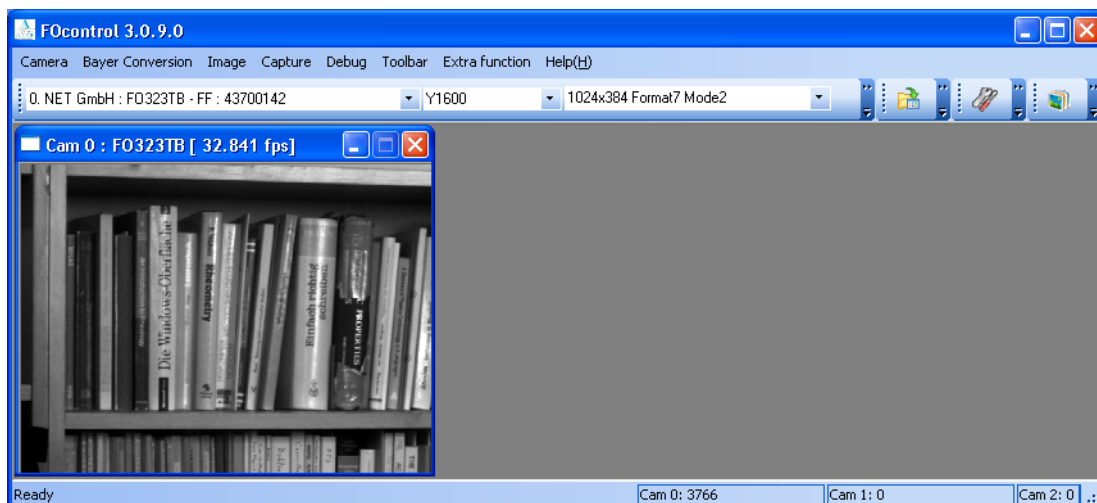
The camera now should work. The easiest way to check this is to run the FOcontrol 3.0.9.0 program (a shortcut to the program is installed on the PC desktop) which is part of the software installation.

#### ❖ To check whether the camera is working properly

1. Start the FOcontrol 3.0.9.0 program, for example by clicking on the shortcut to the program on the PC desktop.

In the FOcontrol program main window the camera should now be listed in the field just below the main menu, see [Figure 17](#).

**Figure 17.** FOcontrol program main window



2. Choose **Camera > Start** from the main menu to open a window with the current camera image, see Figure 17.

In case the text **No Camera Connected!** is displayed in the field below the main menu (instead of the camera type), the camera was either not connected to an IEEE1394 Firewire port on PC or the driver for the camera was not installed correctly. In the first case connect the camera, in the second case make sure that the camera is correctly installed and listed in the Windows Device Manager as seen in Figure 16 that is, not as in Figure 14.

## Sony XCD-X710 camera

The installation software for the Sony XCD-X710 driver software is available on the HAAKE RheoWin CD in the **IC Image Control 3.0 Driver CD for Sony XCD-X710** directory. This driver is compatible with Windows XP 32-bit only.

### ❖ To install the IC Image Control 3.0 driver software

1. Start the **Setup.exe** program and follow the instructions.

After installing the IC Image Control 3.0 driver some RheoWin files must be replaced by applying a software patch. The software patch is available on the HAAKE RheoWin CD in the **Windows XP Imaging DLL Patch** directory. The software patch can also be downloaded (as a zip file) from the [www.rheowin.com/rheowin45.htm](http://www.rheowin.com/rheowin45.htm) web-page.

### ❖ To apply the Imaging.dll software patch


1. Start the Update4.exe file, this will automatically apply the patch.

## Testing the camera in RheoWin

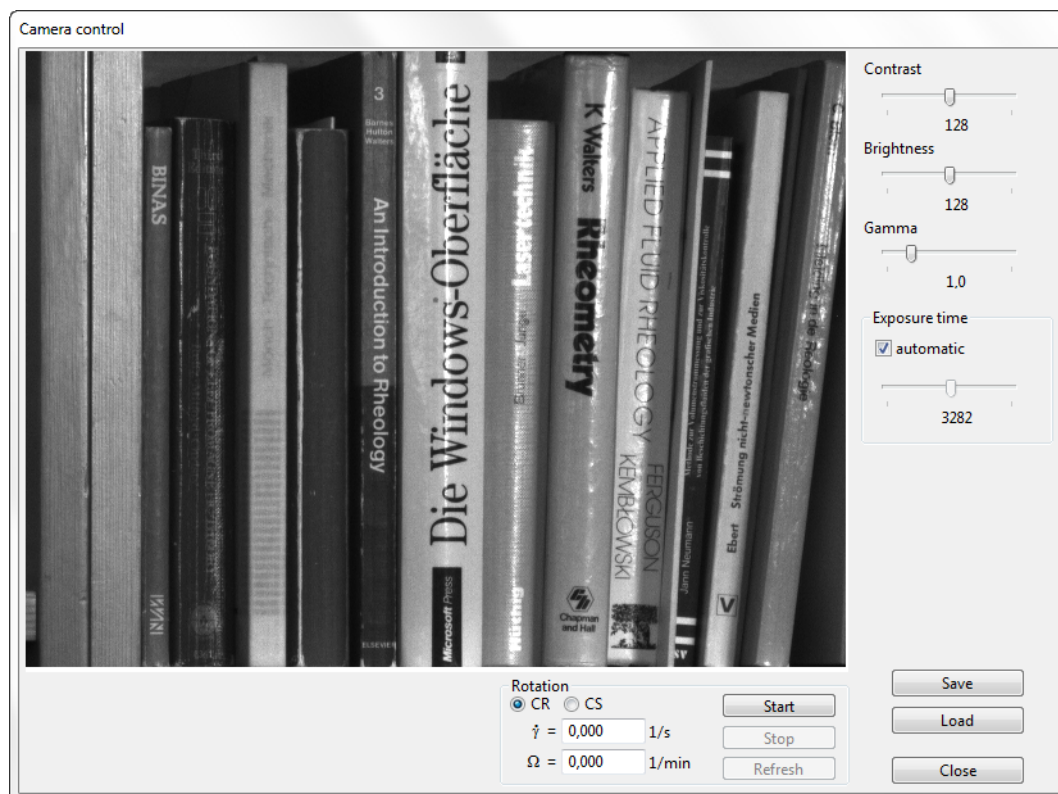
Before using the camera in a RheoWin Job for a serious measurement check whether the camera is working properly in the RheoWin Camera control dialog using the Simulator device instead of a real rheometer.



❖ **To check whether the camera is working properly in RheoWin**

1. In RheoWin JobManager choose **Configuration > Device Manager** to open the RheoWin Device Manager dialog.
2. In the list of Rheometers / Viscometers select **Simulator** and click **Edit**.
3. On the General page of the Properties of 'Simulator' dialog select the **NET GmbH: FO323TB** or **NET GmbH: FO323TC** or **Sony XCD-X710** camera from the Camera name list in the Additional data area.
4. Click **Ok** to close the dialog.
5. In RheoWin JobManager choose **File > New Job** to open the Job templates dialog.
6. In the Job templates dialog select **#NEW empty job** from the list and click **Ok** to open the Job Editor dialog.
7. In the Job Editor dialog select **Simulator** from the list of Rheometer.
8. Click **Manual control** to open the Monitor dialog.
9. In the Monitor dialog click the **Camera**  icon in the lower left corner of the window to open the Camera control dialog.

**Figure 18.** Camera control dialog



10. In the Camera control dialog (see [Figure 18](#)), in the Exposure time area, activate the **Automatic** option to optimize the camera image.