Contents

All data subject to change without notice.

1 Introduction

Brilliant images and blazing colours. That's what you get with the Philips USB PC Camera. Forget about installing grabber cards and separate power supplies. You don't need them. Power is supplied direct to the camera through the USB cable and the camera returns audio and video straight to your PC!

The USB PC Camera has several unique features:

- The universal camera base supports both free-standing and hanging use (for laptops), with perch included for stable footing on top of your monitor. It also features a 1/4" UNC screw thread for tripod mounting
- Voice-controlled snapshot: Say 'Cheese!' into the built-in camera microphone or use the snapshot button on top of the camera to take a picture
- Full Auto mode automatically optimizes your camera settings for you
- Option for high quality, full motion video at high frame rates (see **Technical Specifications** for details)
- Full Plug & Play use of the USB port
- High resolution streaming video images (see **Technical Specifications** for details)
- Detailed still images in even higher resolutions (see **Technical Specifications** for details)
- Several top-of-the-line software packages included on CD-ROM, so you can start using the camera straightaway

Congratulations on purchasing the Philips USB PC Camera. This new digital camera is the most advanced means of recording high quality movies or still pictures quickly and easily on your PC or laptop computer. After installation, the new camera can be used for all sorts of applications, such as:

- **Video e-mail / Video capture:** Create your own video presentations, video mail, product demonstrations, training videos, Internet clips, etc.
- **Webcam / web album:** Show yourself on the web. Be out there for everyone to see...
- **Snapshot images:** Use images in presentations, create postcards, or send them via e-mail or on diskette. The camera works with any application that uses the TWAIN or WIA interface to capture images.
- **Video Games:** Amazing gaming interaction using your camera as a game controller.
- **Video conferencing:** Use the camera for network video conferencing or Internet video conferencing.
- **Editing and special effects:** After recording the images with the Philips USB PC Camera, they can easily be edited using image or video editing programs.

The following sections of this manual give a step-by-step description of the installation process and explain how to use the USB PC Camera.

Visit our website at www.philips.com/pcstuff for new or updated information.

2

2 Preparation

This section describes how to install the hardware and software and how to get started in a few easy steps.

2.1 Getting started in five easy steps

The best way to quick results is as follows:

1. Unpack the box.
2. Unplug all your USB devices (except USB keyboard and USB mouse) before you start.
3. Place the Philips installation CD-ROM in your CD-ROM player, let the Philips installation program install the driver software and the application software, and connect the camera to the USB port (marked with the USB-logo:) when requested by the installation program.
4. Start the central camera application VLounge using its icon on your desktop.
5. Have fun!

2.2 Contents of the box

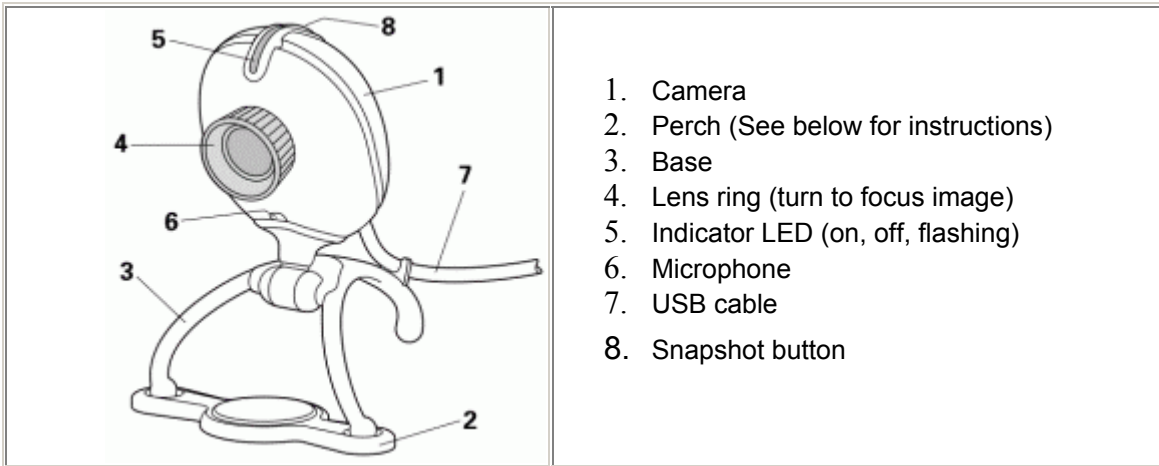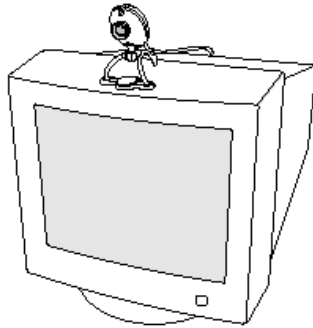Check that the box contains the following items:

*   The Philips USB PC Camera;
*   Base to support the camera on (including monitor perch);
*   PCVC740K **only!** : A pouch for easy transportation of the camera and its base;
*   A CD-ROM containing the Philips installation software, application software packages and electronic software manuals.

Contact your supplier immediately if any item is missing.

2.3 Parts of the camera

1. Camera
2. Perch (See below for instructions)
3. Base
4. Lens ring (turn to focus image)
5. Indicator LED (on, off, flashing)
6. Microphone
7. USB cable
8. Snapshot button

2.4 Use of the camera base and the perch

Place the camera on top of the monitor, or on a desk...

or suspend the camera from your laptop screen!
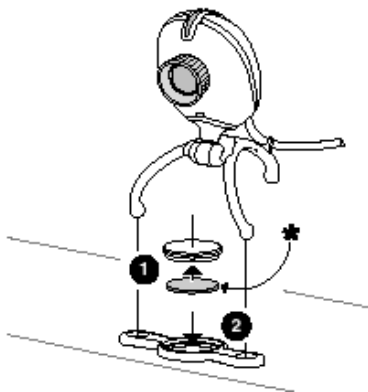
* = Sticky tape

« How to mount the perch:

(Ensure that the supporting surface is free of grease and dirt.)

1. Remove backing from adhesive tape.
2. Place perch on top of monitor.
3. Push disc with adhesive tape down through central perch hole.
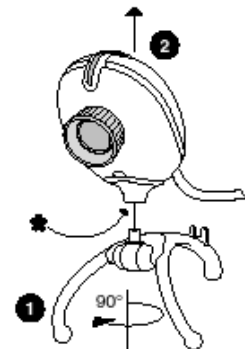
The camera base can be removed by turning it through 90 degrees (1) and pulling it down out of the camera (2).
* The camera features a 1/4" UNC screw thread for tripod mounting.

4

2.5 Use of the camera pouch

If you have purchased the PCVC740K, you will find a convenient carrying pouch included with the packaging. This is used as follows:

1. Fold camera base by rotating it along its length.
2. Run USB cable along camera, then wind cable around the camera.
3. Place camera in pouch sideways to ensure best fit.

Using the pouch

5
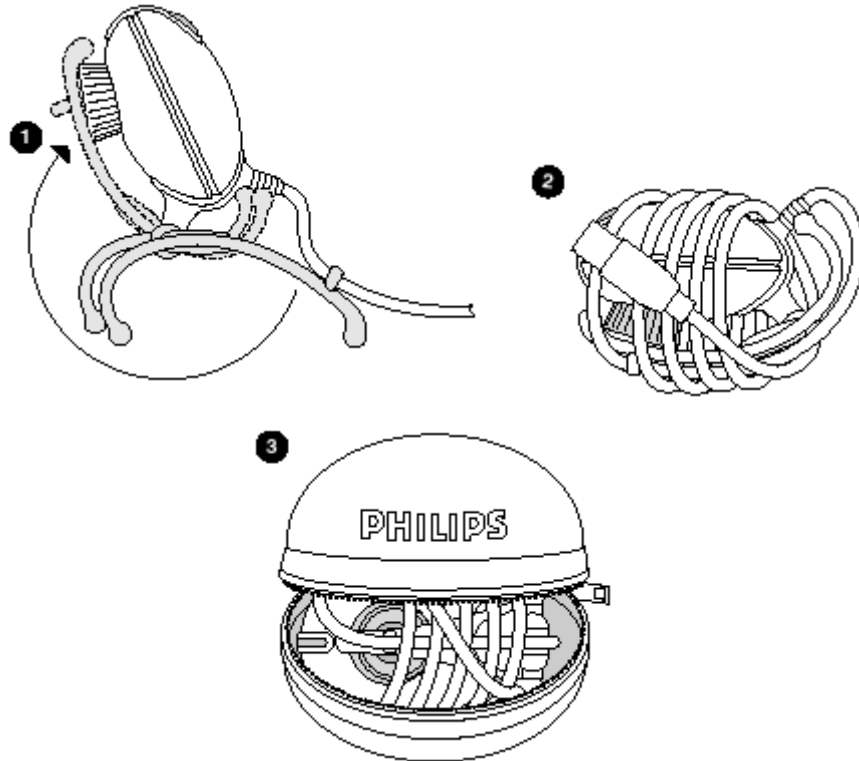
3 Camera and software installation

In order to maximize the video and audio performance offered by your camera, we have included a Philips installation program on CD-ROM. Please follow the directions for the camera installation exactly, and make sure that you have your Windows CD-ROM to hand.

1. **! Unplug all your USB devices (except USB keyboard and USB mouse) before you start.**
   ! Do not plug in your USB camera yet.
   **! Please follow the instructions as they appear on the screen.**
   ! You will have to restart your computer after installing new components.
2. Insert the Philips installation CD-ROM into the CD-ROM drive.
3. Setup should start automatically. If this does not happen: double-click the 'My Computer' icon in the top left corner of the screen (for Windows®XP: in the Start menu), then double-click the 'ToUcam' icon and double-click 'Setup.exe' to start installation.
4. Let the Philips installation program guide you through the setup procedure. Mark the different components you want to install (including the applications). You can always re-run this setup at a later time to add components to your installation or to re-install the camera drivers.
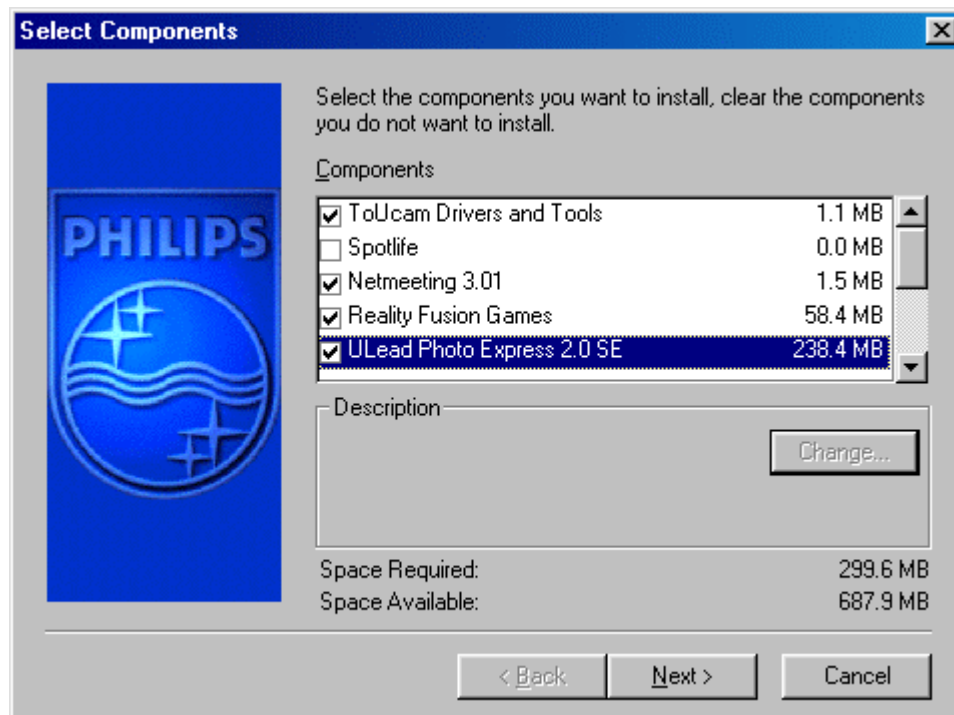
5. When asked for the Windows CD-ROM, insert it into the drive and click 'OK'. Exit the Windows Setup screen if it appears.
6. After copying the camera software and the application software to your hard disk, the installation program will install the selected applications and then launch the camera configuration program VCheck to install the camera drivers.

6
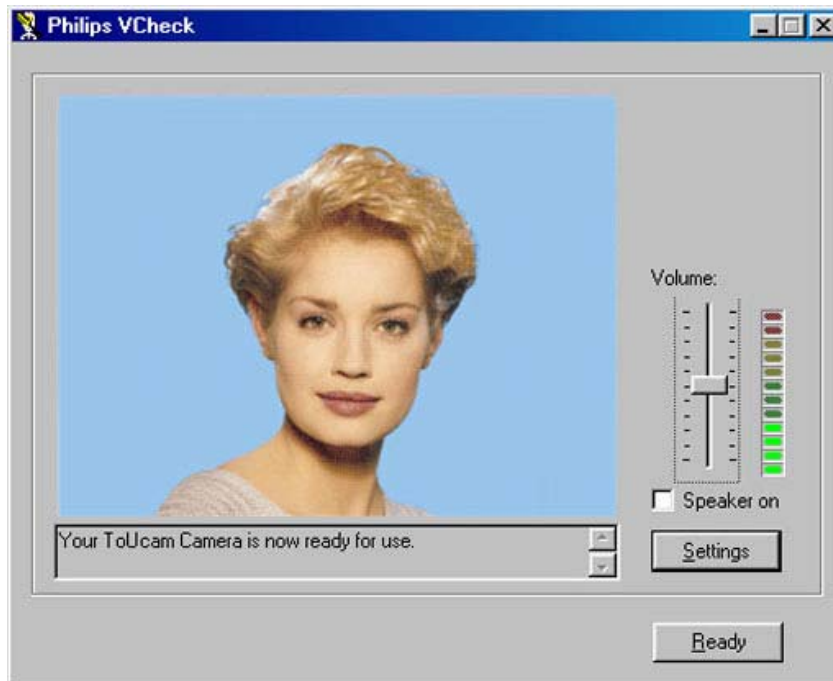
VCheck will ask you to connect the camera to the USB port at the appropriate time.
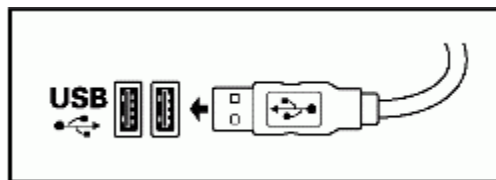
A test will then be performed. This test window confirms correct installation by showing you the first 'live' pictures and audio from your USB PC Camera. Adjust the microphone volume by moving the slider.

VCheck also gives tips for maximizing the camera's performance.

7. Exit VCheck. Restart your computer. You should now have:
   - Program Group called 'Philips ToUcam Camera' in the Windows Start menu.
   - A camera settings icon on the taskbar. (VProperty)
   - A VLounge icon on the Windows QuickLaunch menu on the taskbar. (Not on Windows 2000 and XP.)
   - A VLounge icon on the desktop.
   - Installed applications, as selected by the user during the installation procedure.
8. Plug in any USB devices that were disconnected during the first step of the installation.

You are now ready to start working with your Philips USB Camera. Go to the central camera application VLounge and... Have fun!

7

4 Using the applications

This section gives a brief description of how to use the video software packages included on the CD-ROM. If you have not yet installed these applications, please read 'Camera and software installation' for installation instructions.

4.1 General

VLounge is the central application for easy access to your Philips USB PC Camera and the video applications installed during setup, together with access to one application of your choice. You can start VLounge using the Windows QuickLaunch menu on the taskbar, through the program group 'Philips ToUcam Camera', or by double-clicking the VLounge icon on the desktop.

The buttons to the right in the VLounge windows will start the applications. If you did not install all the applications, some of these buttons will be greyed out and will not activate when the cursor moves over them, indicating that the application is not available. Please re-run the Philips 'Setup' installation program from the CD-ROM to install any missing applications.

The other buttons and the menus offer access to other useful camera options.

Where to get help on the applications

For detailed information about the use of the software packages, please read the accompanying information for the relevant software. Each software package usually creates its own program group in the Windows Start menu, which is activated by clicking on the Windows Start button. These program groups contain the application program icon and other items (Help files, Electronic Manuals, Uninstall Wizards, Readme files, etc.) for the specific software package. All available information is accessible via the software's program group, or through the Help options within the program.

8

5 Settings

The camera properties (audio and video) can be changed from within an application, or independently by clicking the VProperty icon which can be found in the right hand part of the Windows taskbar at the bottom of your screen. Most applications can show a 'live preview' video image on your monitor. Always use this option to see the effect of changed settings on your screen. **NOTE:** Windows®XP may hide inactive icons. Hidden icons can be displayed by clicking the Unhide button on the taskbar.

5.1 Image Controls

The first property tab is marked 'Image Controls'.
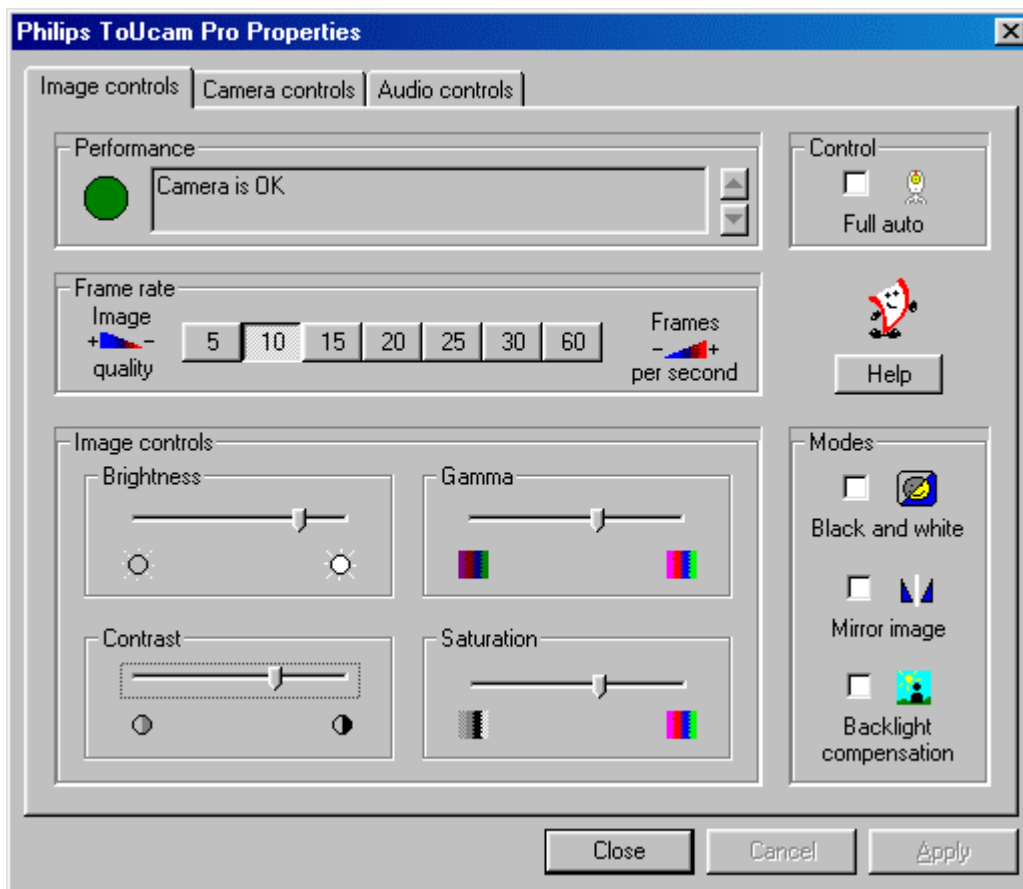
Performance
This text box is used to inform the user about camera settings, problems or special circumstances. Important messages will show a flashing icon. The same icon also appears in the 'Camera controls' tab to indicate that an important message is displayed in the Performance text box.

9

Control: Full Auto on/off
This Full Auto mode provides a very easy way to get the best out of your camera. Or you can choose to have maximum manual control over the camera settings by switching the Full Auto mode off. Full Auto 'on' is the preferred setting for normal use.
Functions activated in Full Auto mode are:
- Automatic exposure control and automatic white balance control, to provide the best video source signal possible.
- Dynamic Noise Reduction (DNR) and automatic frame rate selection for improved camera sensitivity in low lighting conditions.

Frame rate
The frame rate setting determines the number of images per second in the video stream.

The frame rate setting cannot be changed while Full Auto is on, as it provides automatic frame rate adaption. You will need to switch off Full Auto to change the frame rate manually.

The set of frame rates from which the user can choose depends on the currently selected video format (resolution) and the available bandwidth on the USB bus (the number of devices connected to your USB port and the amount of data they transport). Please see **Technical Specifications** for the maximum frame rates for your type of camera. The buttons for invalid frame rates will be greyed out automatically and cannot be selected. To enable higher frame rates choose a smaller video image format in your application. Applications will usually offer resolution switching (image format setting) under menu items within the applications themselves.

Image Controls
Here you will find the slider controls for brightness, contrast, gamma correction and saturation. Note that the contrast control is only available when the Auto Exposure setting is enabled on the other tab (marked Camera Controls).

Modes
The checkbox *'Black and white'* is used to switch from colour images to black & white and back.

By clicking the checkbox *'Mirror Image'*, the image flips horizontally. This feature can be applied in order to use the camera and monitor as a mirror, or for taking pictures of mirrored images.

Turn on the *backlight compensation* to improve the image quality when you have a scene where the background has a high level of illumination (for instance, when you are sitting in front of a bright light). Note that the backlight compensation option is only available when the Auto Exposure setting on the other tab is enabled.

5.2 Camera Controls

The next tab is marked 'Camera Controls'.
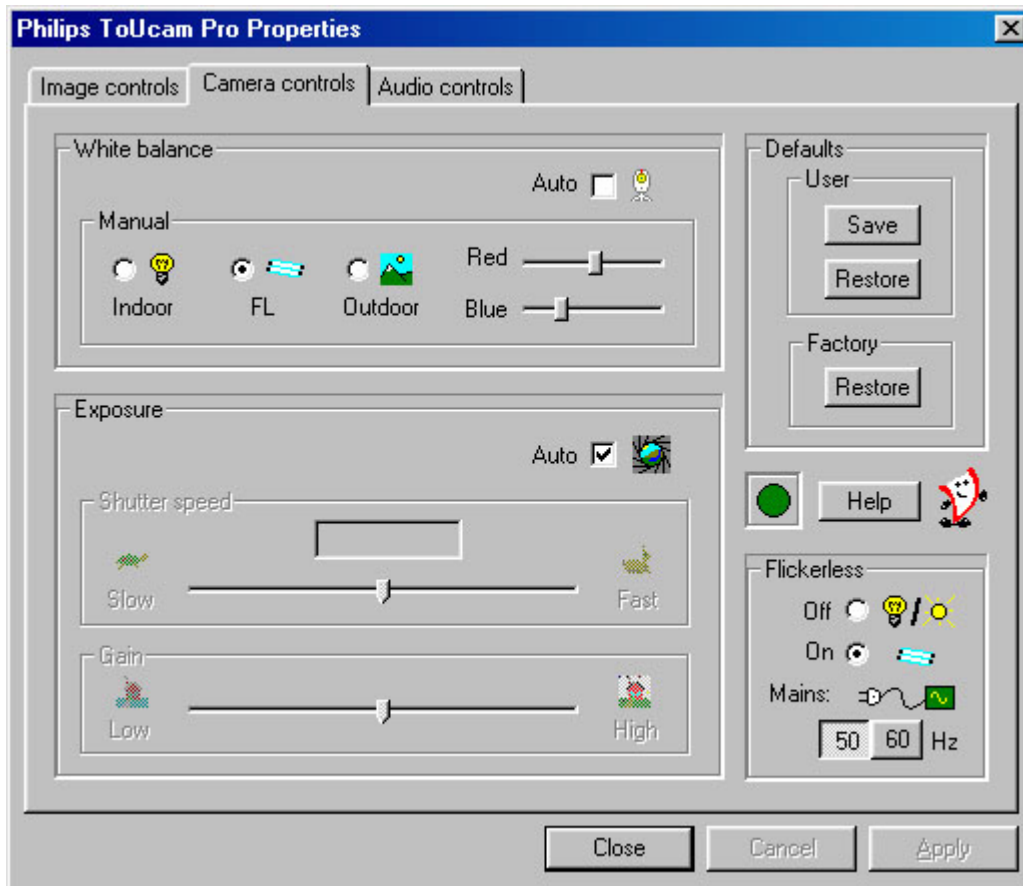
White Balance
In Auto mode the camera automatically controls the different colour components in the picture to obtain the most natural colour reproduction. This setting is the preferred setting for normal use.

The white balance settings cannot be changed without first switching off Full Auto in the 'Image controls' tab.

Switch off the automatic white balance control to enable Manual control. The current colour setting will remain frozen and will not be influenced by the camera's internal controls. Put the white balance setting in Manual mode when you have a colourful scene and stable lighting conditions.

Indoor / FL / Outdoor: These settings compensate for the specific colour spectrum of these types of lighting. However, these compensations are fixed, so under changing lighting conditions it is better to use the Auto setting. Use the 'Red' and 'Blue' sliders to control the white balance manually referencing to a fixed green setting.

11

Exposure

The exposure setting determines the amount of light that will fall onto the video sensor chip by controlling the gain and shutter speed.

In Auto exposure mode the camera automatically adjusts the gain and shutter speed.

The exposure settings cannot be changed without first switching off Full Auto in the 'Image controls' tab.

In manual mode (no check mark in the Auto checkbox) you can control the gain and shutter speed settings manually. The manual exposure mode disables the controls for contrast and backlight compensation in the other property tab (marked Image Controls) and the flickerless control in this tab.

Defaults

If you like a particular setting for particular lighting conditions, you can use the Save and Restore buttons to save and restore this preferred setting. Should you wish to restore all standard settings, then click on the Restore button under Factory. The default values apply to both the 'Image controls' tab and the 'Camera controls' tab.

Performance icon

The Performance text box on the 'Image Controls' tab is used to inform the user about camera settings, problems or special circumstances. Important messages will show a flashing icon. The same icon also appears in the 'Camera Controls' tab to indicate that an important message is being displayed in the Performance text box on the 'Image Controls' tab.

Flickerless

The Flickerless option should only be used under flickering 50/60 Hz light conditions (e.g. fluorescent or neon lamps) to prevent flickering or strangely coloured video images. If this option is used under normal lighting conditions the video image will tend to be overexposed. Note that the flickerless control is only available when the Auto Exposure setting is enabled on this tab. Please indicate under Mains whether your mains power frequency is 50 Hz (Europe) or 60 Hz (USA) so that the Flickerless control will work correctly.

12

5.3 Audio Controls

The third tab is marked 'Audio Controls'.
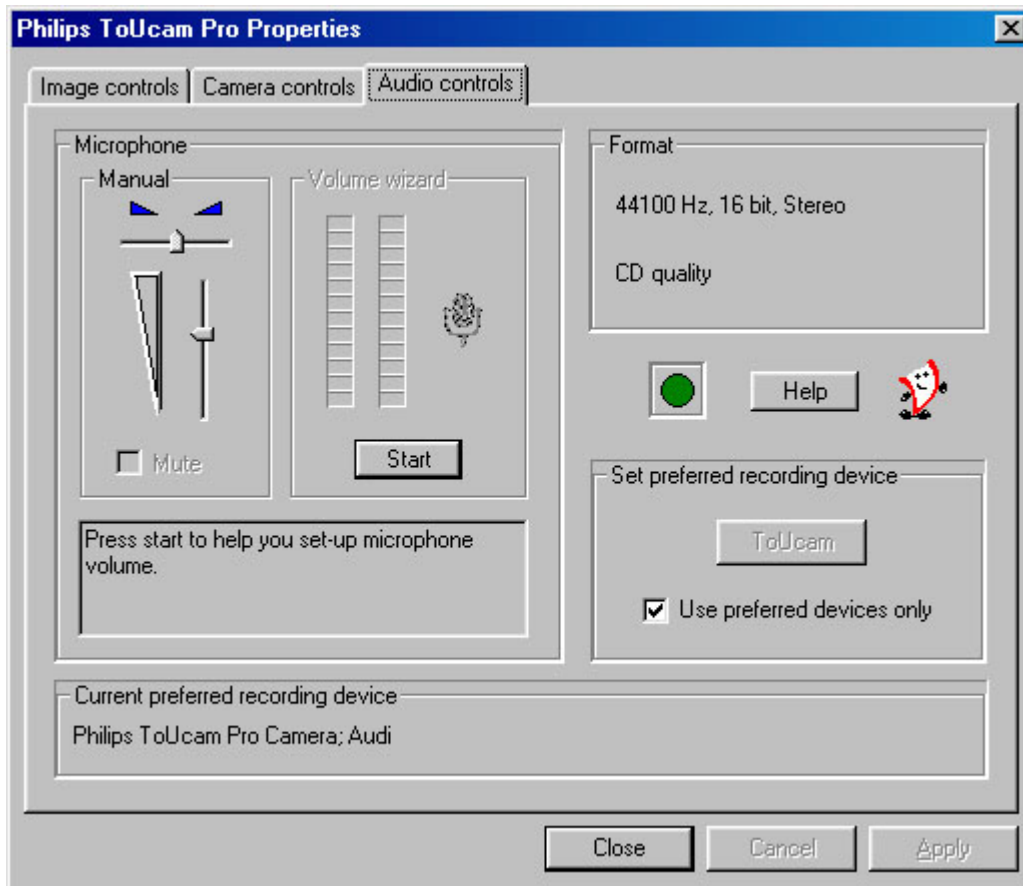
Volume slider
This slider provides manual control over the microphone volume. The 'Volume Wizard' helps you
to select the correct sound level setting for the slider control.

Balance slider
Not implemented since the camera microphone itself produces a mono audio signal.

Mute
Shuts off the microphone completely. This option will be greyed out and cannot be used if it is not
available.

Volume Wizard (Automatic volume setting)
By pressing the 'Volume Wizard' start button, an Automatic Gain Control cycle is started for the
camera microphone to determine the optimum volume setting. Speak into the microphone until
the Volume Wizard stops or until you press Cancel.

Audio Format
Audio format shows the parameters of the audio data. You can change these parameters in your
application in the same way as the resolution setting, for example.

13

Performance icon
The Performance text box on the 'Image Controls' tab is used to inform the user about camera settings, problems or special circumstances. Important messages will show a flashing icon. The same icon also appears in the 'Audio Controls' tab to indicate that an important message is being displayed in the Performance text box on the 'Image Controls' tab.

Set preferred recording device
Clicking this button makes the Philips ToUcam camera the preferred recording device. This button will be disabled if the Philips ToUcam audio device is already selected as your preferred recording device. Windows stores the user's preferred recording device in its multimedia settings. Applications can use this setting for selecting a user-preferred audio source.

Use preferred devices only
Use this option to enforce or stop using the preferred device only. For most camera applications it is preferable to check this option.

5.4 Capture Source

Some applications may offer you a fourth tab called 'Capture Source'. Usually this setting has only one option when the USB PC Camera is the only video source connected to your computer. However, if more than one video source is connected to your system, you can switch between them here. Applications that do not show this fourth tab will offer video source switching under a different menu item within the application itself.

NOTE: If you have two or more Philips USB cameras connected to your computer, they can only be used one at a time.

14

6 TWAIN applications

Use the camera's voice control feature (say 'Cheese') to be sure to capture an image of you smiling. The Philips USB PC Camera is TWAIN-compatible (like a scanner), so you can use the camera as an input device for any application software that uses TWAIN as a data source (e.g. photo editing software).

IMPORTANT NOTE: Windows®XP might start a generic WIA interface (Windows Image Acquisition) when you choose the camera device name with the WIA prefix as your source device for image capture, instead of the TWAIN View Finder depicted below. This Microsoft® WIA interface allows you to capture still images with your camera, but without the advanced capabilities of the TWAIN software described below (e.g. no voice control feature). Please select the ***'Philips ToUcam Camera'*** as your TWAIN source device for acquiring still images with your camera.

6.1 Capturing images from within applications

In TWAIN-compatible applications you will see the Philips USB PC Camera listed as an available TWAIN data source among your other TWAIN sources (e.g. scanners). Just pick the USB PC Camera as your source, to capture camera pictures directly into your application. Then choose 'Acquire' to launch the camera viewfinder, which displays the moving video picture.
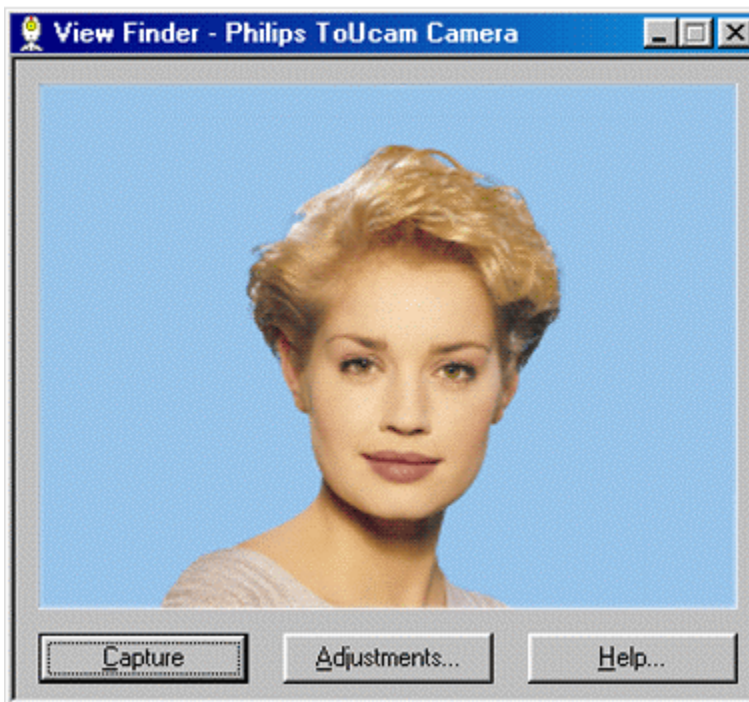
To capture a still image, say 'Cheese', click on the 'Capture' option under the viewfinder, or push the snapshot button on top of the camera.

15

6.2 Capture settings

To the right of the 'Capture' button you will find the 'Adjustments...' button, which is used to change the settings. Clicking the 'Adjustments...' button will bring up the following window.
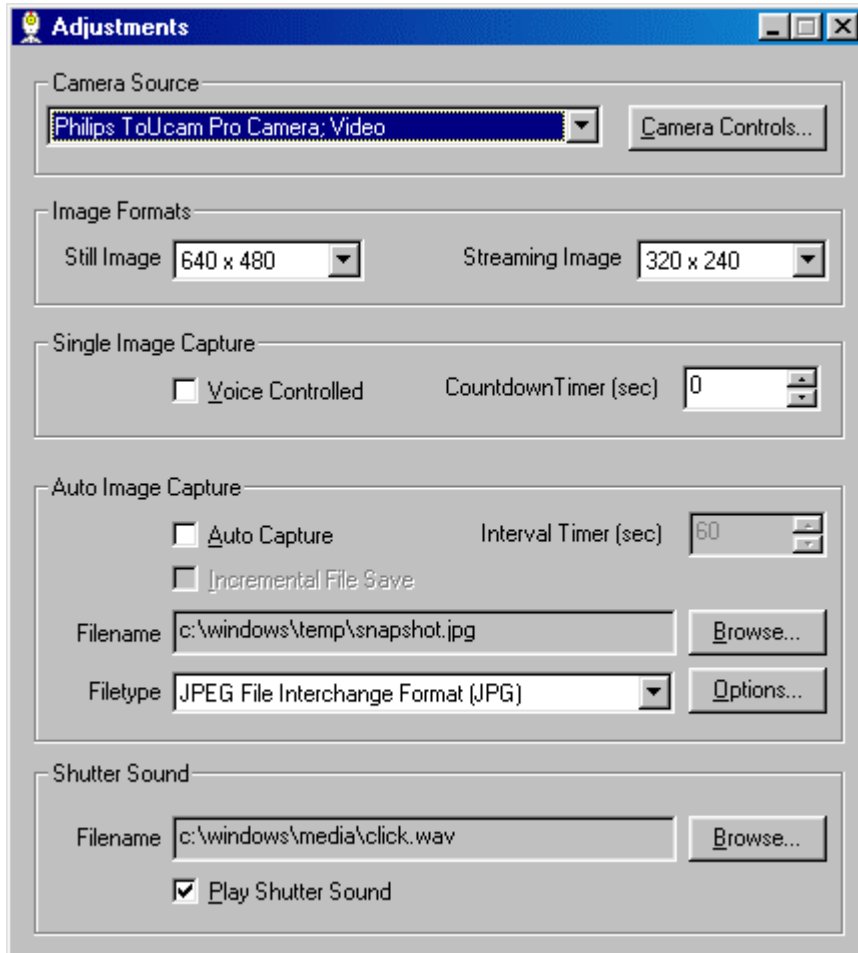
Camera source
Usually this setting features only one option when the USB PC Camera is the only video source connected to your computer. However, if more than one video source is connected to your system, this is where you switch between them.

The 'Camera Controls' button will bring up the other camera setting tabs as described under 'Camera Settings'.

Image formats
Here you can select the size of the still image to be captured. To the right of the still image format the streaming image format indicates the size of the preview window independently of the still image format.

16

Single Image Capture - 'Voice Controlled' snapshot
(This option will be disabled (greyed out) when Auto Image Capturing is enabled)
The 'Voice Controlled' check box disables/enables voice controlled capturing. If this function has been enabled the user can start capturing by saying *'Cheese'* (or pushing the 'Capture' button in the Viewfinder or pressing the camera's Snapshot button).

The countdown timer selection box sets the capture delay time between triggering the capture (pressing the 'Capture' button, the camera Snapshot button or saying 'Cheese') and the actual capture of a still image. During countdown, a countdown timer will be visible and the camera indicator LED will start flashing.

Auto Image Capture

- In the 'Auto Image Capture' section you can enable the Auto Capture function together with an appropriate timer interval. This function triggers the capture of images at adjustable, regular intervals. The 'Capture' button in the View Finder changes to an 'Auto Start' button to indicate this selection, and the Voice Control option will become unavailable.
- Leave 'Incremental File Save' unchecked if you want to overwrite the previous image when capturing a new one. If you do check this box, the picture data is saved under the selected filename but extended with one or more digits. This digit is increased for each new image so that the previous images will not be overwritten.
- You can enter a name for the captured images at 'File Name', or browse until you find a suitable name to use. Use 'File Type' to choose between four supported file formats: BMP, TIF, JPG, or FlashPix. Use the Options button to define file type specific save options for the selected file type. (Only the file types BMP and JPG have options).

Shutter sound

- You can choose a sound file for the shutter sound when an image is captured. Normally this is a clicking sound resembling the sound of a camera shutter. Uncheck the Play Shutter Sound box to disable the shutter sound.

17

7 Tips and Frequently Asked Questions (FAQs)

7.1 Tips

Installing/uninstalling the camera

- Always use the Philips installation CD-ROM to install the correct camera drivers, as described below. <u>Do not</u> connect the camera to a USB port before installing the Philips drivers. If you do this, Windows will try to install its own drivers, which might be less compatible with the camera than the Philips drivers. You must have Windows running and have the Windows CD-ROM to hand.
- Your USB controller should be working correctly. You can check this in the Windows Device Manager (Click on the My Computer icon on your desktop, right-click Properties, then click on the Device Manager tab (for Windows®XP & 2000: Start / Control Panel / System / Hardware / Device Manager)). An icon with the name 'Universal serial bus controller' will now be visible. Click on this icon and Windows will tell you if this part of your computer system is operating correctly.
- Uninstall the driver software by using the Add/Remove option in the Start - Settings - Control Panel - Software window (for Windows®XP & 2000: Start / Control Panel / Software).

> **IMPORTANT NOTE:**
> If the installation program asks you to place a different CD-ROM in the CD-ROM drive, for instance the installation CD-ROM or the Windows CD-ROM, always wait until:
>
> - the 'busy' cursor icon (usually an hour-glass icon) has disappeared from your screen, and
> - the 'busy' LED on your CD-ROM drive extinguishes,
>
> before pressing the eject button on the CD-ROM drive.
> This will prevent a blue Windows Error message appearing, prompting you to reinsert the last CD-ROM into the drive.
> Should you encounter this Windows Error message, correct the error by reinserting the CD-ROM you removed and wait for Windows to finish reading from the CD-ROM.

Camera performance and system requirements
At its highest resolution, this digital USB PC Camera provides a very large data stream, which needs to be processed in real-time by the application you are using. Although the camera will perform satisfactorily on a Pentium II with 32 MB RAM at the lower resolutions, we recommend a more powerful computer for optimum performance at the highest resolution. We regret that optimum camera performance cannot be guaranteed if the computer only meets the minimum system requirements.

Using more than one camera
If two or more Philips cameras of the same type are connected to your computer, only one of the cameras can be used at any one time.

18

USB
You can connect the camera to any USB port on your computer. The computer does not have to be switched off. USB ports are 'hot-swappable', which means that you do not have to restart Windows every time you connect a new USB device. The USB driver will detect the camera as new hardware. It can be used within a few seconds, without the need to restart the computer.
If you unplug the camera while it is actively providing an audio or video stream to an application on your computer, the computer may crash. To avoid these problems, first close any applications using audio from the camera microphone or video from the camera before unplugging the Philips USB PC Camera.
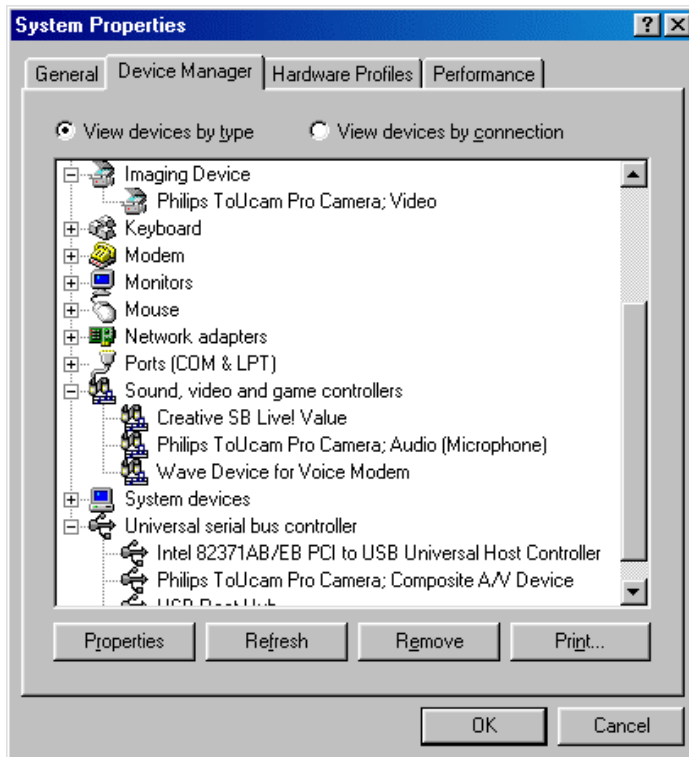
Driver software check
You can determine if the camera is installed correctly, and if it is being recognized by the operating system, by checking the Device Manager menu in System Properties.

1. Access this menu by right-clicking 'My Computer' in the top left-hand corner of the desktop (for Windows®XP: in the Start menu), and clicking Properties. Alternatively, click on Start / Settings / Control Panel, then double-click on System to access the menu (for Windows®XP: Start / Control Panel / System / Hardware).
2. Click on Device Manager to view the list of installed devices.

If the USB PC Camera has been installed correctly and it is plugged into a USB port, you will see the following devices in the list (double-click on the devices to see their specifications):
Imaging Device:
Philips ToUcam <XS, Fun or Pro> Camera; Video
Sound, video and game controllers:
Philips ToUcam <XS, Fun or Pro> Camera; Audio (Microphone)
Universal serial bus controller:
Philips ToUcam <XS, Fun or Pro> Camera; Composite A/V Device
If you unplug the camera from the USB port, these devices will disappear from the list (and can therefore not be used by any application on your computer until you reconnect the USB camera).

WEBSITE
If you have any questions or experience any problems with the camera, please visit our website at www.philips.com/pcstuff for new or updated information.

19

7.2 FAQs

Q: I can't control the volume of the camera audio device. There is no volume control visible in the Volume Control recording properties.
A: Double-click the camera icon on the Windows taskbar. If there is no camera icon on the taskbar, start VLounge and select 'Configuration - Icons', and enable 'Driver icon on taskbar', then click the camera icon on the taskbar. **NOTE:** Windows®XP may hide inactive icons. Hidden icons can be made visible by clicking the Unhide button on the taskbar. Go to the Audio tab and make sure the microphone volume has been turned up and that the camera microphone is the preferred recording device. See also 'Camera Settings – Audio'.

Q: Why can't I choose higher frame rates for the USB Camera?
A: As the digital camera is a USB device, it shares the bandwidth of the USB port with all the other USB peripherals. If these USB devices are active (speakers providing sound or scanners performing a scan), the remaining bandwidth may be restricted to frame rates lower than those listed in the 'Technical specifications' as the maximum frame rate for that resolution.

Q: Why does my camera have trouble functioning in combination with an optical USB mouse?
A: USB bandwidth is limited and may not be sufficient to support both an optical mouse and the camera simultaneously. Several solutions are possible depending on your particular situation:

1. If your system is equipped with 2 or more USB host controllers, try connecting the camera and the optical mouse to different host controllers. (Most systems will only have one host controller.)
2. If the first solution is not possible and you have an external microphone available and connected to your sound card, change the audio device setting to 'Sound card audio' instead of 'USB audio' to save on USB bandwidth.
3. If the second solution does not work you can reduce the camera's USB bandwidth usage as follows:
    o Install ToUcamBW8.reg.
    o Acknowledge the registry update by answering 'Yes'.
    o Reboot your PC to allow the changed settings to take effect.

Q: My PC will not start when the camera is connected.
A: It is highly likely that your BIOS is not compatible with the USB standard. Contact your PC supplier for an updated BIOS.

Q: With additional USB peripherals installed my PC seems to be unstable (blue screens).
A: Check if Phoenix Plugworks is one of your applications. You need to have version 1.1 or higher for correct operation with Windows.

Q: No USB Device: My Windows Device Manager reports 'No USB device' even though I have a physical USB port. In the Windows Device Manager (right click on My Computer (for Windows®XP: in the Start menu), click on Properties, (and for Windows®XP & 2000 on the Hardware tab), then Device Manager), no section with the name 'Universal serial bus controller' is visible.
A: Check whether your BIOS enables the USB port as follows: reboot your computer, enter your BIOS setup and look for a text such as 'USB function'. This should be enabled.

Q: No Video: My application doesn't display any video.
A: There are several reasons for not having video:

1. Check whether the USB PC camera is connected to a USB port
2. Check whether 'Microsoft WDM Image Capture' is the current capture source. On systems with other devices, this other device may be the selected capture source.
3. If more than one USB capture device is connected to the PC, check whether the correct USB capture device has been selected.

Q: (Windows 98 only!) No 'Microsoft WDM Image Capture': 'Microsoft WDM Image Capture' is not available as image capture source.
A: All USB Image devices need 'Microsoft WDM Image Capture' as the capture source. Check whether this capture source is enabled. (Start, Settings, Control Panel, MultiMedia, Device tab, Video Capture Devices entry. Double-click the 'Microsoft WDM Image Capture' entry. A property page will pop up. The option 'Use the video capture device' should be selected).

Q: Why does my application crash when I unplug the camera from the USB port?
A: If you unplug the camera while it is providing an audio or video stream to an application on your computer, the computer may crash. To avoid problems always close applications that use audio from the camera microphone or video from the camera before unplugging your Philips USB PC Camera.

Q: The snapshot button on top of the camera does not function in Windows®XP.
A: For Windows®XP the snapshot button support has not yet been implemented in the TWAIN driver software. As an alternative for taking pictures, please use the voice-controlled snapshot option (Say '*Cheese!*') or click the capture button in the preview window of the application you are using.

The snapshot button issue will be resolved in due course. Please check www.philips.com/pcstuff for available updates. Selecting the camera device name with the WIA prefix will not solve this problem, because Microsoft's WIA image acquisition protocol does not support the camera's TWAIN functionality (such as the voice-controlled snapshot option or the snapshot button on top of the camera).

Q: Voice-controlled snapshot option (Say '*Cheese!*') does not function.
A: There are several reasons for not being able to use the voice-controlled snapshot option:

1. Incorrect audio recording settings. Solution: check your audio settings (see below in the next FAQ).
2. Incorrect TWAIN source selected in Windows®XP. Preferably, you should select the 'Philips ToUcam Camera' as your TWAIN source device for acquiring still images with your camera. Please do not select the camera device name with the WIA prefix, because Microsoft's WIA image acquisition protocol does not support the camera's TWAIN functionality (such as the voice-controlled snapshot option or the snapshot button on top of the camera).

21

Q: The video works, but no audio is recorded: My application doesn't produce any audio.
A: There are several reasons for not having audio:

1. Check whether audio recording has been enabled in your application.
2. Check whether the USB PC camera microphone is selected as the current recording device. (Start, Settings, Control Panel, MultiMedia (Sounds and Audio Devices for Windows®XP, or Sounds and Multimedia for Windows®Me and 2000), Audio tab. In the recording section, the 'Philips camera, Audio (Microphone)' should be selected).
3. Check camera properties. You may have muted the camera microphone. If so, enable the camera microphone volume.

Q: No audio (USB timer outside specification)
A: If you hear no audio, and have tried every troubleshooting tip in the user guide and the on-line help to no avail, the USB hardware in your computer may be the cause of the problem. This could particularly be the case if you are using an older type of motherboard. In most cases, the USB timer clock will not be stable enough for streaming audio applications.

Q: System lockup: My camera stops responding (black or frozen picture or LED off) for no obvious reason.
A: Switch off the Hardware Accelerator for your video card (right-click with your mouse on the Windows desktop and choose 'Properties' to open the desktop settings. Click the Settings tab, click Advanced and click the Troubleshooting tab (click the Performance tab for Windows®Me and 98). Set 'Hardware Acceleration' to 'None'). Contact your video display card manufacturer to obtain the latest video card drivers. See the video display card's documentation for more information.

Q: Picture Flicker: My video picture is flickering.
A: This may happen in office environments with 50 or 60 Hz fluorescent lighting when certain frame rates are used. There are two solutions:

1. Select the 'Flickerless' option. This option is located in the 'Image Controls' property page. This property page is accessible from within the application you are using.
2. Deselect the 'Flickerless' option. The frame rates '5', '10' and '20' are always flickerless in 50 Hz lighting environments. Only the frame rates 15, 25 and 30 are affected by the electronic 'Flickerless' control.

Q: 'Unable to draw this data format': The message 'Unable to draw this data format' appears.
A: This can happen when the selected data stream format could not be processed due to a missing codec. Re-install the camera driver software to install the missing codec.
Q: Why are frames dropped during the recording of a streaming video?
A: If a video clip is created at a high resolution and high frame rate, a tremendous amount of data is generated. For example, the amount of video data generated using VGA resolution at 30 fps with 24 bit full colour is 640x480x30x24 = 221,184,000 bits (221 Mbit) or 27.65 Mbyte per second. Audio adds even more data on top of this. Hardly any computer system and/or hard drive is capable of handling this kind of data stream. The result is that a number of frames are dropped in order to match the data stream with the capabilities of your computer. This effect can be reduced or completely eliminated by applying the following measures:

1. changing to a lower resolution such as 320x240 or lower
2. changing to a lower frame rate
3. putting the hard drive in DMA mode
4. using a new file instead of overwriting an existing one

Q: Why do I sometimes hear clicks in my audio during playback of a video clip?
A: During the recording phase the processor (CPU) has to process a lot of data and the processing capacity will be limited by the maximum computing speed of your processor. This also explains why the actual video result you can achieve strongly depends on the processor present in your computer. The processor also has to control the timing for the transmission of video data from the camera to your computer. This is done by giving the camera a command to send video data every millisecond. If the processor load is high, commands will sometimes be missed, resulting in gaps in the audio and video stream. With audio, this results in a 'click' sound. The higher the processor load, the more clicks may be generated. This effect can be minimized and even completely eliminated by reducing the processor load, for example by:

1. changing to a lower resolution, e.g. 320x240
2. changing to a lower frame rate
3. putting the hard drive in DMA mode
4. using a new file instead of overwriting an existing one

Please bear in mind that the majority of video applications do not require high resolutions in combination with high frame rates. In most cases, therefore, you will not encounter this phenomenon at all.

Visit our website at www.philips.com/pcstuff for new or updated information.

8 Technical specifications

Optical

	PCVC720K ToUcam XS	PCVC730K ToUcam Fun	PCVC740K ToUcam Pro
Sensor	CMOS	CMOS	CCD
Pixels	352 (H) x 288 (V)	640 (H) x 480 (V)	640 (H) x 480 (V)
Still image resolution	640 (H) x 480 (V)	800 (H) x 600 (V)	1280 (H) x 960 (V)
Illumination	< 10 lux	< 5 lux	< 1 lux
Integrated lens	F2.0	F2.0	F2.0

Resolution/performance

Output resolution	Pixels (H x V)	Frame rate in frames/sec [fps]		
		PCVC720K	PCVC730K	PCVC740K
VGA	640 x 480	not available	Up to 30	Up to 30
CIF	352 x 288	Up to 30		
SIF	320 x 240			Up to 60
QCIF	176 x 144			
QSIF	160 x 120			

Data format

I420, IYUV

Camera adjustment parameters

Frame rate, contrast, brightness, gamma, saturation, colour on/off, mirror image, backlight compensation, white balance, exposure control

Interfacing

	PCVC720K / PCVC730K	PCVC740K
USB cable	2.0 m	2.95 m

24

Minimum system requirements

Processor	Pentium II 233 MHz
RAM	32 MB
OS	Windows 98, Windows 2000 or higher (not NT4)
CD-ROM drive	Required (for installation only)
USB interface	Required
Internet connection	
USB speakers or sound card with speakers	

Software

Windows drivers	by Philips
VRecord	by Philips
VideoLink Mail	by Smith Micro
NetMeeting	by Microsoft
Photo Explorer / Photo Express (PCVC740K only)	by Ulead
SpotLife	by SpotLife
GameCam	by Reality Fusion

Audio

Microphone	Integrated
Output	Digital via USB
Supported audio formats	mono, 16 bit, 8 / 11.025 / 22.05 / 44.1 kHz

Weight

110 g

Dimensions camera

84 x 67 x 47 mm (L x W x H)

Ambient temperature

Operating	0 to 45°C
Storage	-25 to 70°C

25

Power supply

NOTE: Should you wish to connect this camera to a USB hub instead of your computer's root hub, you will need to use a powered hub capable of delivering the operating power specified below.

Power	Supplied via the USB cable
Power compliance	General USB specifications 1.1 for power requirements
Three modes for power supply:	Suspend: max. 500 µA Power save: max. 40 mA Operating: max. 100 mA (PCVC720K) or max. 150 mA (PCVC730K) or max. 300 mA (PCVC740K)

9 Regulations, Warnings & Maintenance

9.1 FCC compliance

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.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any unauthorized modification to this equipment could result in the revocation of the authorization to operate the equipment.

9.2 Warnings & Maintenance
Observe the following guidelines to ensure that the camera will operate safely and to prevent defects.

- To ensure that your camera does not fall off the surface on which it is mounted - e.g. your monitor - always ensure that the adhesive tape for the camera perch is placed onto a clean surface.
- Clean the outside of the camera with a soft cloth.
- Do NOT use cleaning fluids based on alcohol, methylated spirit, ammonia, etc.
- Avoid direct contact between the camera and water.
- If the lens has to be cleaned, use a special lens-cleaning tissue, available at any camera store.
- The camera is for indoor use only.
- Protect the camera from oil, vapour, steam, moisture, and dust.
- Keep the camera away from sources of heat, bright lights and direct sunlight.
- Never point the camera lens at the sun.

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10 Glossary

Audio input device (recording device)
One of the Windows multimedia settings is the recording device setting. This setting determines which audio hardware is being used to provide audio signals to audio applications. This setting is accessible through: the Windows 'Start' menu, Settings, Control Panel, MultiMedia, Audio tab. In the recording section, the USB digital camera microphone should be selected. (This selection will only be available if the camera is connected to a USB port.)

AVI
The Microsoft standard file format for combined video and sound files on the PC. This is part of the Video for Windows standard.

BMP / JPG / TIFF / FlashPix
These are various file formats for images. BMP files are the largest since they do not use compression and retain full image quality. JPG uses 'lossy' compression, which dramatically reduces file size, but the original image quality can never be restored. TIFF can use a 'lossless' compression algorithm with less file size reduction, but retaining full image quality. FlashPix is a relatively new image format that uses minimal resolution within the application to speed up the image processing. All accepted changes are processed afterwards, before writing to disk.

Codec (COding & DECoding)
This refers to a compression format for creating sound and video streams on the computer.

Compression
Term used to describe a process of compacting or squeezing video and sound information into a smaller than normal size. For example, 2 to 1 compression would indicate that 2 pixels would now only occupy the space of 1 pixel.

DirectX
The latest standard developed primarily by Microsoft to help establish a common method for exchanging audio and video information between your hardware and software in the PC.

Frame
A single image in a video stream.

Frame Rate
Typically quoted in seconds (fps, frames per second), this refers to the number of single images that will be displayed or captured in a video stream.

Gamma Correction
The characteristics of displays which use phosphors (such as computer monitors with cathode ray tubes) are nonlinear. Nonlinear characteristics means that a small change in voltage, when the voltage level is low, produces a change in the brightness level of the output display, but this same small change in voltage at a high voltage level will not produce the same magnitude of change in the brightness output. This effect is known as gamma. Computers like to process with linear RGB data. Before being displayed, this linear RGB data will be processed (gamma corrected) to compensate for the gamma of the display.

28

Indicator LED
The LED on top of the camera will be illuminated when it is delivering video images to your computer, and not illuminated when it is not. It will flash before a timed snapshot is taken. One second before the snapshot countdown ends, it will flash more rapidly to warn you of the impending event.

Philips installation program
A standard installation program that runs from the CD-ROM. Normally, this program starts automatically after the installation CD-ROM has been inserted into the CD-ROM drive, and will guide you through the whole installation process. The program can be started manually by running 'setup.exe' from the CD-ROM drive.

Pixel
The smallest square or round element in an image. These are the 'building blocks' that are only one colour in their individual state, but combine with others to form complete images.

Plug & Play
An operating system principle for connecting hardware to your computer. The idea is to recognize the new hardware automatically and to load the appropriate drivers without restarting your computer. With USB devices this usually means that you will have to perform an installation procedure only once, i.e. the first time you connect the new hardware. After the initial set-up, you will not have to restart the computer when connecting the camera to the USB port. The USB driver will detect the camera as newly connected hardware. It can then be used within a few seconds without the need to restart the computer.

Preview Window
The window within the capture application that is used to display live, or moving, video.

Property page
A window with camera setting tabs that appears when you click on a setting menu item within an application. This setting menu item can have different names in different applications, but is usually called 'Settings', 'Preferences', 'Video settings' or similar.

Rebooting
Restarting your PC to initialize all original settings and finalize all settings changed during an installation procedure.

Resolution
Typically given in the context of pixels, this is used to describe overall video size. This is related to quality in that the higher the resolution, the better the quality and the more pixels.

Snapshot button
The hardware button on top of the camera which fulfils the same function as the software 'Capture' button in the TWAIN viewfinder window. If the viewfinder displays the camera's view on your screen in the TWAIN viewfinder window, pressing this button will capture a still image.

TWAIN
Standard software interface for imaging applications. If a hardware device has a TWAIN driver, it can be used as an image source for TWAIN-compatible imaging applications. Choose your TWAIN source in the imaging application itself. Then choose 'Acquire' to start the TWAIN driver for the TWAIN source.

USB
Universal Serial Bus, used for connecting external devices to the PC without having to restart your PC.

Video for Windows
Developed by Microsoft, this is a standard for displaying video on the Windows desktop. Windows has this built in. This standard has now been superseded by DirectShow, which is part of DirectX.

Video stream
A collection of images that combine to form motion - or moving - pictures (also known as movies or video clips).

WIA
WIA is short for Windows Image Acquisition. Windows®XP might start a generic WIA interface when you choose the camera device name with the WIA prefix as your source device for image capture, instead of the TWAIN View Finder. This Microsoft® WIA interface allows you to capture still images with your camera, but without the advanced capabilities of the TWAIN software. Preferably, you should select the *'Philips ToUcam Camera'* as your TWAIN source device for acquiring still images with your camera.

30

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