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SAFETY INSTRUCTIONS

Before you start using your camera you should have read and understood the following safety instructions. Ensure that you always use the camera in a correct manner. The safety instructions will explain how to use your camera and accessories correctly and safely. This will help you to avoid damage to the device or injuries to yourself or others. On the following pages the word "device" refers principally to the camera and power supply accessories.

WARNINGS!

To avoid injury please note the following warnings when using the this product.

• **Never point the viewfinder at the sun or other very bright light sources.**
  Viewing the sun through the viewfinder can cause damage to the eyes.

• **Do not use the flash up close to anyone's eyes.**
  If you use the flash too close to the eyes of a person you are photographing you could damage their eyes. Therefore always maintain a minimum distance of at least one metre when using the flash – especially with small children.

• **Do not place the camera strap around your throat.**
  You could strangle yourself in an adverse situation.

• **Do not open up or dismantle the device.**
  Dismantling the device could lead to an electric shock. Internal checks, rebuilds and repairs to the device should only be carried out by qualified customer service technicians. If the device malfunctions, have it checked by an authorised customer service centre.

• **Switch the device off if it is malfunctioning.**
  If you notice an unusual small or smoke coming from the device, pull out the mains plug immediately and then remove the batteries. Carry this out quickly, but carefully to avoid burns. Have the device checked by an authorised customer service centre.
• **Always remove the mains plug when the camera is not in use.**

If you run the camera from the mains you should always remove the mains plug when the camera is not in use to avoid the risk of fire and other risks. Prolonged use can lead to overheating, deformation of the plastic housing and fire risk.

**BATTERIES**

For the batteries in use in this device please note the following instructions. Improper use of batteries can cause them to leak or even explode.

☐ Only recharge lithium-ion batteries. Attempting to charge normal batteries can cause them to leak or explode.

☐ Please note the polarity when inserting the batteries. Do not attempt to insert the batteries the wrong way round.

☐ Batteries should never be cut up or short-circuited.

☐ Do not incinerate batteries and avoid extreme heat.

☐ Do not immerse batteries in water and avoid letting them come into contact with water or other liquids.

☐ Take out the batteries immediately if you notice deformations or discolorations.

☐ Do not store or transport batteries together with metallic objects, e.g. coins, keys or hairpins.

☐ Store the batteries out of reach of children. If a child swallows a battery, seek medical help immediately.

**PRECAUTIONARY MEASURES**

Please note the following precautionary measures to avoid damage to your camera and to keep it in good condition.

• **Protect from damp.**

This camera is not waterproof and can be damaged if it is immersed in water or if liquids get into the interior of the camera.
• **Avoid exposure to damp, salt and dust.**
  Wipe off salt or dust with a moistened, soft cloth if you have used your camera at the beach or near the sea. Dry the camera carefully afterwards.

• **Avoid strong magnetic fields.**
  Keep the camera away from devices which create a strong magnetic field, e.g. electric motors. Strong electromagnetic fields can cause the camera to malfunction or corrupt data.

• **Avoid strong heat**
  Do not use or store your camera in direct sunlight or in high temperatures otherwise there is a danger of the batteries leaking or the housing melting.

• **Avoid drastic temperature changes**
  If the device is brought from the cold into the warm condensation may form inside and out. To avoid this condensation, keep the device in its protective case or in a plastic bag before exposing it to strong temperature changes.

• **Do not drop**
  Blows or concussion caused by dropping can lead to malfunctions. Place the carrying strap around your wrist when you are carrying the camera with you.

• **Do not interrupt the power supply or remove the battery when data is being processed.**
  An interruption to the power supply while pictures are being stored onto or deleted from the memory card can lead to lost data and damage to the camera or memory card.

• **Treat the lens and all moving parts carefully**
  Do not touch the lens or lens mounting. Be careful when handling the memory card and batteries. These parts are not designed to withstand forces over and above those of normal use.

• **Battery**
  At low temperatures the capacity of the battery can be drastically reduced due to the slowing down of the chemical reactions. When taking pictures in cold weather keep a second battery ready in a warm place. Clean the battery connections if necessary with a clean, dry cloth or an eraser.
Memory card

Turn off the device before you insert or remove the card, otherwise data could be lost. Memory cards may become warm during use. Therefore, take care when removing them from the camera.

This symbol on the camera certifies that the device complies with EU guidelines on electromagnetic interference. CE stands for Conformité Européenne (European conformity).

This device corresponds to part 15 of the FCC provisions. Use is subject to the following conditions: (1) This device may not produce dangerous interference; (2) this device must accept all received interference, including interference which can lead to undesired results. This is a class B digital device and corresponds to the Canadian guideline ICES-003

Under no circumstances remove the ferrite core from the cable.

FOR HOME OR OFFICE USE
FIRST STEPS

Components of the camera

Familiarise yourself with the components of the camera before using the camera. This will make using the camera much easier.
Inserting the batteries

Use two AAA batteries (microbatteries).

• Slide the cover of the battery compartment in the direction indicated to open the compartment.
• Open the battery compartment.
• Insert the batteries in battery compartment, noting the correct polarity of the batteries. Close the battery compartment and slide the cover back into place.

We recommend using rechargeable 1.2V NiMH batteries, as these last longer.

You can also 1.5V alkaline batteries.

Please note the section "Battery tips" on Seite 45 with tips on battery life.
Inserting and removing the SD/MMC card

You can use SD or MMC cards to expand the storage capacity of your camera. Turn off the camera before you remove or insert the card. Insert the card as follows (photos, audio and video recordings will now be stored on the card not in the internal memory).

**Inserting the card**

- Open the cover of the card slot.
- Slide the card into the slot until it clicks into place.
- Close the cover of the card slot.

**Removing the card**

Open the cover of the card slot. Press the card into its slot a short way to unlock. Remove or change the card and close the cover of the card slot.
Attaching the carry strap

For ease of handling and increased security attach the carrying strap to the camera.

- Feed the strap through the eye, as shown in the diagram.
- Pull the other end of the carrying strap through the thin loop of the strap and pull tight.

Do not hang the camera on the carrying strap around your neck as this could be dangerous. This applies especially to children.

If you carry the camera by the carrying strap ensure that the camera does not bang into anything.

While you are attaching the carrying strap place the camera on a stable surface so it cannot fall down and get broken.
BASIC FUNCTIONS

Turning the camera on and off

**Turning the camera on**

Press the ON/OFF button for 1 to 2 seconds to turn on the camera. If the camera does not turn on, check the polarity of the batteries and make sure they are charged.

**Turning the camera off**

Hold down the main switch for a few seconds to turn the camera off. The LCD monitor will switch off.

If the camera is not used for more than three minutes it will turn itself off to save batteries. Press the ON/OFF button for 1 to 2 seconds to turn the camera back on.

This automatic deactivation is not available in the USB or record modes.
Using the mode button

The camera has five operational modes.

- Photo mode – for taking digital pictures/photos
- Video mode – for recording top quality videos with sound
- Recording mode – for crystal clear audio recordings
- Playback mode – for reviewing/listening to your recordings
- Configuration mode – for setting up your operating preferences

When the camera is switched on it switches automatically into photo mode.
Press the following mode keys to enter the desired mode.

- Press the set button to activate the configuration mode.
- Press the button to return to photo mode.
- Press the button again to switch between video and audio recording mode.

If the camera is in photo mode, press the set button to activate the configuration mode.
When the camera is in configuration mode or in one of the other modes, press the set button to return to photo mode.
Press the button again to switch between video and audio recording mode.
Taking photos

Information on the LCD monitor

Status display in photo mode

<table>
<thead>
<tr>
<th>0/7</th>
<th>Number of photographs taken, number of photographs available</th>
<th>0.5M</th>
<th>0.5 megapixel image mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>🌡️</td>
<td>Battery status</td>
<td>2.0M</td>
<td>2.0 megapixel image mode</td>
</tr>
<tr>
<td>📷</td>
<td>Single shot mode</td>
<td>3.0M</td>
<td>3.0 megapixel image mode</td>
</tr>
<tr>
<td>🎥</td>
<td>Burst mode</td>
<td>4.0M</td>
<td>4.0 megapixel image mode</td>
</tr>
<tr>
<td>🕒</td>
<td>Self-timer mode</td>
<td>5.0M</td>
<td>5.0 megapixel image mode</td>
</tr>
<tr>
<td>⏯️</td>
<td>Automatic flash</td>
<td>8.0M</td>
<td>8.0 megapixel image mode</td>
</tr>
<tr>
<td>🔌️</td>
<td>Flash always on</td>
<td>AWB</td>
<td>Automatic white balance</td>
</tr>
<tr>
<td>🔌️</td>
<td>Flash off</td>
<td>![Sun]</td>
<td>Daylight white balance</td>
</tr>
<tr>
<td>***</td>
<td>Best image quality</td>
<td>![Tungsten]</td>
<td>Tungsten white balance</td>
</tr>
<tr>
<td>++</td>
<td>Medium image quality</td>
<td>![Fluorescent]</td>
<td>Fluorescent white balance</td>
</tr>
<tr>
<td>*</td>
<td>Standard image quality</td>
<td>![Cloudy]</td>
<td>Cloudy white balance</td>
</tr>
<tr>
<td></td>
<td>Using external memory card</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The external SD card is write-protected (locked)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Snapshot

Press the ON/OFF button to turn on the camera.

1. Choose single shot mode

When the camera is switched on it switches automatically into photo mode. If this is not the case, press the \( \text{SET} \) button to select photo mode. Photo mode is active when the \( \text{Camera} \) symbol appears in the LCD display.

2. Digital enlargement or reduction

View a picture on the LCD monitor and press up button to enlarge it or the down button to reduce it.

3. LCD monitor

Now you can see the picture on the LCD monitor. The meaning of the status displays on the LCD monitor are explained in the table on page Seite 12.

4. Taking a photo

Press the shutter button the whole way down to take a photo.

A tone signalises that the photos has been taken.

Photos taken by the camera are stored as JPEG files.
If you press the menu button in photo mode you can choose from the following menu functions:

* Picture mode
* Flash
* Resolution
* Photo quality
* Photo effect
* WB
* EV

In the menu "Picture mode" you can choose between three picture modes:

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>When you press the shutter a photo is taken.</td>
</tr>
<tr>
<td>Self-timer</td>
<td>The photo is taken 10 seconds after pressing the shutter.</td>
</tr>
<tr>
<td>Series</td>
<td>When you press the shutter three photos are taken in series.</td>
</tr>
</tbody>
</table>

The standard photo mode is set to single shot. The LCD monitor can be switched off with the sleep button (LCD on/off) to save power.
Audio recording

Press the button twice in order to activate digital recording. The symbol is displayed on the LCD monitor. Before the recording the information shown here left appears on the screen. Press the shutter button once to start the audio recording.

The information shown here left appear on the screen after recording has been started with the shutter button. Press the shutter button again to stop the audio recording.

The audio is saved as a WAV file. The maximum length of the recording is dependent on the amount of storage memory available.

The LCD monitor can be switched off with the sleep button (LCD on/off) to save power.
Creating video sequences

Information on the LCD monitor

The elapsed time is shown on the upper right-hand side. The remaining time is shown on the lower left-hand side.

- Recording time elapsed
- Maximum video length
- Battery status

During the recording no image is shown on the monitor. The display is not updated until the recording is finished.

Creating a video sequence

- Switch the camera on.
- Press the button for video mode. Video mode is active when the symbol appears in the LCD display.
- Press the shutter button once to start the video recording. Press the shutter button again to stop the recording. During the video recording the information shown here on the right will be displayed on the monitor.
- Press the up button to digitally enlarge the pictures or press the down button to reduce it.

The audio is saved as a AVI file (with sound).
Playback of pictures, audio and video

Information on the LCD monitor

Status display in playback mode

Current system time

07 Number of saved photos/total number of photos

Photo is protected

Photo is not protected

Current file is a photo (jpg)

Current file is a video (avi)

Current file is a audio recording (wav)

Displaying photos, videos and listening to audio recordings

Press the button to activate this playback mode. You can now play back photos, videos and audio recordings. The symbol is displayed on the LCD monitor.

While in playback mode you can browse through the photos/videos/audio recordings with the following buttons:

OK starts/stops the thumbnail view.

calls up the previous photo, video or audio recording (highlighted by a frame).

calls up the next photo, video or audio recording.

Press "OK" and then the shutter button to start the playback of videos or audio recordings in the thumbnail picture view. Press the shutter button again to stop the playback.
**Thumbnail picture view**

During the playback of photos, videos and audio recordings you can open the thumbnail view by pressing "OK". In this mode you can display several photos, videos or audio recordings simultaneously.

Choose a file using the control buttons ◀, ▲, ▼ and ► and press "OK" to play back the file.

There are three thumbnail picture modes: 2x2, 3x3 and 4x4. In other words, you will see either four, nine or sixteen thumbnails on the screen.

(Choose "Playback mode" > Press the MENU button Choose > "Thumbnail")
Deleting photos

You can delete photos, videos and audio recordings that you no longer wish to keep. You can either delete individual pictures or all pictures. To do this, playback mode must be activated.

Deleting a single picture

In playback mode select the picture to be deleted. Then press the menu button and choose "Delete" as well as "Current". Press "OK" to delete the picture.

Deleting all photos

To delete all photos press the menu button and choose "Delete" as well as "All". Press "OK". All photos will be deleted.
Formatting the memory

You may want to format the storage memory to restore the original data structure of the internal memory or the external card. Please note that by the formatting with delete all data.

Press the SET button to activate the configuration mode. Select "Format", press "OK" and choose "Yes" to start formatting. When formatting is completed the menu will reappear.

The above procedure can also be used to deleted videos and audio recordings.

Protected data will not be deleted, but can, however, be formatted.

On Seite 30 you will find instructions on protecting files and removing file protection.

SD cards can be protected by means of an integrated write protection. The current status of the SD card is displayed with a symbol on the LCD monitor. If the SD card is write-protected it will not be possible to save photos, videos or audio recordings on the card, delete existing files or format the card. The files can only be played back.
ADVANCED FUNCTIONS

Using the flash

If the light is insufficient to taking a photo the integrated will provide the required extra light.

• Switch on the camera and choose photo mode (single shot or self-timer modes).
• You can set the flash to "Auto", "Always on" or "Off" by pressing the right button in single shot or self-timer mode.

The appropriate symbol is displayed on the LCD monitor.

If there is not enough light the flash will be activated automatically when the flash mode is set to "Auto". If "Always on" is set, then the flash will go off every time. If "Off" is set, the flash is deactivated.

The flash only works in single shot and self-timer mode. It can not be used in burst mode or video mode.

Using the flash increases battery usage.

Using the direct access buttons

Direct selection of photo mode

In photo mode you can activate the "Single shot "", "Self-timer " and "Burst " by pressing the left button repeatedly. The appropriate symbol is displayed in the upper left-hand corner of the LCD monitor.

Direct selection of the resolution

While in photo mode you can select various resolutions using the "OK" button. The current resolution is displayed in the low left-hand corner of the LCD monitor. The display in the upper right-hand corner shows the amount of photos that you can make at the current resolution.

Please note also the table in the appendix: "Memory requirements"
Changing the menu options

The camera has picture, playback and configuration menus. Press the menu button to select these menus when in photo or playback mode. To open the configuration menu press the SET button. Press the ▲ and ▼ buttons to select the option you require. Confirm your selection with "OK".

The selected option is highlighted in colour.
**List of menu options**

The content of the menus changes depending on the operating mode. The menus can contain various function according to the model of camera. More details on this can be found in "Technical data" on Seite 38.

**Photo mode**

<table>
<thead>
<tr>
<th>Menu</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture Mode</td>
<td>Single</td>
<td>For taking a single photo</td>
</tr>
<tr>
<td></td>
<td>Self-timer</td>
<td>10 second self-timer</td>
</tr>
<tr>
<td></td>
<td>Sequence</td>
<td>For taking a series of three photos</td>
</tr>
<tr>
<td>Strobe</td>
<td>AUTO</td>
<td>Further details on this setting can be found on page</td>
</tr>
<tr>
<td></td>
<td>Force</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Forbidden</td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>8 mega</td>
<td>8 million pixels</td>
</tr>
<tr>
<td></td>
<td>5 mega</td>
<td>5 million pixels</td>
</tr>
<tr>
<td></td>
<td>4 mega</td>
<td>4 million pixels</td>
</tr>
<tr>
<td></td>
<td>3 mega</td>
<td>3 million pixels (standard setting for this camera)</td>
</tr>
<tr>
<td></td>
<td>2 mega</td>
<td>2 million pixels</td>
</tr>
<tr>
<td></td>
<td>0.5 mega</td>
<td>0.5 million pixels</td>
</tr>
<tr>
<td>Photo Quality</td>
<td>Superfine</td>
<td>Best picture quality</td>
</tr>
<tr>
<td></td>
<td>Fine</td>
<td>Medium picture quality</td>
</tr>
<tr>
<td></td>
<td>Economy</td>
<td>Normal picture quality</td>
</tr>
<tr>
<td>Photo Effect</td>
<td>Normal</td>
<td>Normal photo mode</td>
</tr>
<tr>
<td>--------------</td>
<td>--------</td>
<td>-------------------</td>
</tr>
<tr>
<td></td>
<td>B/W</td>
<td>Black and white</td>
</tr>
<tr>
<td></td>
<td>Sepia</td>
<td>Photos with a nostalgic sepia effect</td>
</tr>
<tr>
<td>WB</td>
<td>Auto</td>
<td>Automatic white balance</td>
</tr>
<tr>
<td></td>
<td>Daylight</td>
<td>White balance for daylight</td>
</tr>
<tr>
<td></td>
<td>Tungsten</td>
<td>White balance for artificial (tungsten) light</td>
</tr>
<tr>
<td></td>
<td>Fluorescent</td>
<td>White balance for fluorescent light</td>
</tr>
<tr>
<td></td>
<td>Cloudy</td>
<td>White balance for &quot;Cloudy&quot; mode</td>
</tr>
<tr>
<td>EV</td>
<td>-2.0 EV to +2.0 EV</td>
<td>Exposure correction in nine steps</td>
</tr>
</tbody>
</table>
## Playback mode

<table>
<thead>
<tr>
<th>Menu</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protect</td>
<td>Lock Current</td>
<td>Protect current photo to prevent accidental deletion</td>
</tr>
<tr>
<td></td>
<td>Unlock Current</td>
<td>Remove protection for current photo</td>
</tr>
<tr>
<td></td>
<td>Lock All</td>
<td>Protect all photos to prevent accidental deletion</td>
</tr>
<tr>
<td></td>
<td>Unlock All</td>
<td>Remove protection for all photos</td>
</tr>
<tr>
<td>Delete</td>
<td>Current</td>
<td>Delete current photo</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>Delete all photos</td>
</tr>
<tr>
<td>Thumbnail</td>
<td>2 x 2</td>
<td>Show 4 thumbnails simultaneously</td>
</tr>
<tr>
<td></td>
<td>3 x 3</td>
<td>Show 9 thumbnails simultaneously</td>
</tr>
<tr>
<td></td>
<td>4 x 4</td>
<td>Show 16 thumbnails simultaneously</td>
</tr>
<tr>
<td>Set Logo</td>
<td>Use current photo as start-up picture</td>
<td></td>
</tr>
<tr>
<td>Play Logo</td>
<td>Enable</td>
<td>Use current photo as start-up picture</td>
</tr>
<tr>
<td></td>
<td>Disable</td>
<td>Use standard picture as start-up picture</td>
</tr>
</tbody>
</table>
### Configuration mode

<table>
<thead>
<tr>
<th>Menu</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date/Time</td>
<td></td>
<td>Set the date and time for the current photo</td>
</tr>
<tr>
<td>Status Icon</td>
<td>On:</td>
<td>Show symbol for current status</td>
</tr>
<tr>
<td>Status Icon</td>
<td>OFF</td>
<td>Hide symbol for current status</td>
</tr>
<tr>
<td>NTSC/PAL</td>
<td>NTSC</td>
<td>Set video output to NTSC</td>
</tr>
<tr>
<td>NTSC/PAL</td>
<td>PAL</td>
<td>Set video output to PAL</td>
</tr>
<tr>
<td>Format</td>
<td>Yes</td>
<td>Format internal/external memory</td>
</tr>
<tr>
<td>Format</td>
<td>No</td>
<td>Cancel formatting</td>
</tr>
<tr>
<td>Factory Reset</td>
<td>Yes</td>
<td>Reset to factory settings</td>
</tr>
<tr>
<td>Factory Reset</td>
<td>No</td>
<td>Cancel reset to factory settings</td>
</tr>
<tr>
<td>Driver Type</td>
<td>TWAIN</td>
<td>Set camera to TWAIN mode, use as a webcam</td>
</tr>
<tr>
<td>Driver Type</td>
<td>MASS</td>
<td>Setting camera to MASS mode In this mode you can use functions like download, copy and cut.</td>
</tr>
<tr>
<td>Language</td>
<td></td>
<td>Choose menu language (menu content can vary depending on model)</td>
</tr>
</tbody>
</table>
Exposure correction

By correcting the exposure values (EV, exposure value) you can adjust pictures that are too dark or too light.

Select picture mode

- Press the menu button while in photo mode

Selecting EV (exposure value)

- Choose the option "EV" in the menu and press the "OK" to open the exposure options.

Selecting an EV

- Press ▲ or ▼ to select an appropriate exposure correction and confirm your choice with "OK". The value can be set in nine steps between -2.0 EV and +2.0 EV.

The exposure correction can be very helpful. Use a positive value when light conditions are poor and a negative value in strong light. Do not use the exposure correction when the subject is in a very bright or very dark area or if you are using the flash.

Choose language

When you use the camera for the first time the text on the LCD monitor may not be in your language. You can, however, easily change the language.

- Press the  button to open the configuration menu.
- Select the “Language” option and press the “OK” button.
- Select the desired language.
Setting the picture resolution

The standard setting for picture resolution is 3.0 megapixels.

- In photo mode press the **MENU** button.
- Press ▲ or ▼ to select the option "Resolution" and confirm your choice with "**OK**".

You can choose between six resolutions:
8.0 megapixels, 5.0 megapixels, 4.0 megapixels, 3.0 megapixels, 2.0 megapixels and 0.5 megapixels. At 5.0 and 8.0 megapixels the pixels are interpolated. At these resolutions you cannot take any picture series.

Setting the picture quality

When you switch on the camera the standard picture quality is "**Fine**".

- In photo mode press the **MENU** button.
- Select the "Photo quality" option and press the "**OK**" button.
- Press the up and down buttons to select the option "Picture quality" and confirm this with "**OK**".

"Superfine" is the best quality uses the most storage space.
"Fine" is medium quality and uses a medium amount of storage space.
"Normal" is normal quality and uses less storage space.
Setting picture effects

When you switch on the camera the standard picture effect is "Normal".

- Press the SET button to switch to photo mode and press the MENU button.
- Select the "Photo effect" option and press the "OK" button.
- Press the up and down buttons to select the option for the desired photo effect and confirm this with "OK".

"Normal" No special photo effects

"Black and white" Pictures are taken in black and white.

"Sepia" Pictures are taken in a nostalgic sepia tone.

Sepia: The brown and amber tones are simulated like those in old photos, which are caused by the oxidation of certain chemical constituents of the photograph. With "Sepia" the colour tones of the digital picture are shifted into the brown spectrum to create the impression of an old photo.

Setting up the driver

The standard driver setting is MASS (see table "Configuration Mode" on Page).

- Press the SET button to open the configuration menu.
- Select the option "Driver Type" in the menu and press "OK".
- Press ▲ or ▼ to select the required driver type and confirm this with "OK".
Protecting photos from accidental deletion

This camera has a protect function that prevents pictures from being inadvertently deleted.

• Press the button to start the playback mode. Open the photo to be protected. Press the MENU button and select the option "Protect".
• Select the desired option from the displayed list. The list includes four options: "Protect current", "Release current", "Protect all", "Release all" (see also the list of menu options on Seite 23).

The symbol will be displayed with the picture on the LCD monitor if the picture is protected against accidental deletion. The symbol is displayed if the photo protection is cancelled.

Protected photos cannot be deleted, but they can be formatted.

Displaying pictures on a television set

• Connect the video output of the camera to the video input of the television set using the included cable.
• Connect the audio input of the television set to the headphones socket of the camera. The camera detects the television set automatically and changes to TV mode.

If still pictures are displayed on a television set, the pictures may be surrounded by a frame of black pixels (depending on format).
Set the date and time

The digital camera is able to store the date and time together with the individual photos. This information is displayed in the playback mode. You must set the date and time for the camera in advance.

- Press the button to open the configuration menu.
- Select the option "Date & Time" in the menu and press "OK".
- Now change the time setting. Select the desired setting with the control buttons. Then change the value with the control buttons.

- Press "OK" to confirm the chosen values.

The camera can only display the date and time in the playback mode. This information cannot be printed.

The time settings are stored by an internal battery. The settings will not be lost if both of the replaceable AAA batteries are removed. The settings are only lost if the internal battery is depleted.
Setting the logo

The logo is the start-up picture that is displayed on the monitor when the camera is switched on. You may select individual pictures for this.

To do so, proceed as follows:

- Press the button to start the playback mode. Open the desired photo.
- Press the menu button and select the option "Select logo".
- After the logo is selected, select the option "Display logo" in the playback mode menu. There are two options:
  "Activate": The picture selected by the user is used as start-up picture.
  "Deactivate": The preinstalled picture is the start-up picture.

The start-up picture is not deleted when pictures are deleted or when the memory is formatted. To set a different start-up picture, you must repeat the above described procedure.
INSTALLING THE SOFTWARE

Supported operating systems

Windows 98 SE
Windows Me
Windows 2000
Windows XP

The Microsoft Windows 98, Windows 98 SE, Windows Me, Windows 2000 professional or Windows XP operating systems are preinstalled.

Installing the driver

The driver installation for the various Windows systems essentially occurs in the same way. When specifying a path, you must select the driver from the CD ROM drive.

The camera has two USB driver modes. TWAIN and MASS. MASS is the standard setting. The installation of the driver for both modes is explained in the following.

Installing the driver in MASS mode

If the camera is in MASS mode, it is automatically detected by Windows Me, Windows 2000 and Windows XP and it is not necessary to install a driver. The description of the driver installation applies to Windows 98 SE.

1. If the camera is connected to the computer in MASS mode, the assistant for finding new hardware is displayed on the computer monitor. Click on "Continue" to open the next window.
2. Select "Find the best driver for the device" and click on "Continue".

3. Select "Specify memory location" and click "Search". Specify the drive where the driver CD is located.

4. Then click on "Continue". The driver is installed by the system and the following window is displayed.

5. Click on "Complete" to complete the installation.

During the installation, you may be prompted to insert the Windows 98 CD.
Installing the driver in TWAIN mode

- Connect the camera to the computer. The system should automatically detect that a new device was connected.
- The driver must be installed for all systems in the TWAIN mode. The procedure essentially corresponds to that of the MASS mode.
- Under Windows 2000 you might be queried for the digital signature of the driver. Click "Yes" to install the driver.

- When installing the driver under Windows XP, the Assistant for finding new hardware will be displayed. Select "Automatically install software (recommended)".

- The following window might be displayed. Click "Continue installation" and wait until the installation is completed.

The installation procedure under Windows Me is similar.
One of the two driver modes can be selected for the camera.

In the TWAIN mode the video components are used for the computer (Webcam).

In the MASS mode the internal memory is used as mobile memory. It then functions like a hard disk. You can copy, delete, cut and download photos and videos from the camera.

Index of drivers on the CD:

(Example: The CD-ROM drive has the letter "F:/").

F:\Driver\mass-storage\Win98: MASS driver for Windows 98
F:\Driver\Twain\win98_2k: TWAIN driver for Windows 98/2000
F:\Driver\Twain\winMe_XP: TWAIN driver for Windows Me/XP

Photos must be downloaded directly in MASS mode. If you would like to select the correct driver mode before installing the driver, then press the button to open the menu. Select the corresponding mode using the option "Driver Type".
TRANSFERRING FILES TO THE COMPUTER

After the installation of the driver you can transfer photos, videos and audio recordings to the computer using the USB cable and display, play back and edit them on the computer. The camera switches to USB mode.

- Switch your computer on. If necessary, set the driver mode of the camera to MASS (see page).
- Connect the digital camera to the computer by inserting one end of the included USB cable into the USB connection of the computer and the other end of the USB cable into the USB connection of the camera.
- If the driver has been installed correctly, the computer will recognise the camera as a mass storage device (removable media).
  Under Windows XP you can immediately access the content of the camera memory. For other Windows versions, open the Windows Explorer or double-click the "Desktop". Double-click on the media icon for the camera and on the contained folders, if necessary, to display the files.
- Press down the left mouse button and drag the desired files (picture, audio or video file) to a suitable folder on the computer, e.g. in the folder "My Files". You can also mark the files and use the Windows commands "Copy" and "Paste".
  The files are transferred to the computer and stored there. You can display and process the files with a suitable application software.

USB power supply and Webcam function

The camera is supplied with power through the USB connection. By using the USB cable, you can transfer data from the camera to the computer, even if there are no batteries in the camera.

You can use the camera as a Webcam if you install TWAIN as the driver type for the camera. You can use functions such as video recording, video monitoring or Internet Video Conferencing (Netmeeting).
**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>Sensor</th>
<th>1/1.8 inch CMOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pixel</td>
<td>5.1 million pixels</td>
</tr>
<tr>
<td>Effective resolution</td>
<td>2560x1920, 2304x1728, 2048x1536, 1600x1200, 800x600</td>
</tr>
<tr>
<td>Interpolated resolution</td>
<td>2816x2112</td>
</tr>
<tr>
<td>File format</td>
<td>Photo: JPEG (EXIF 2.1)</td>
</tr>
<tr>
<td></td>
<td>Video: AVI/Motion JPEG 640*480</td>
</tr>
<tr>
<td></td>
<td>Audio: WAV format</td>
</tr>
<tr>
<td>Special effects</td>
<td>Standard black and white and sepia mode</td>
</tr>
<tr>
<td>Zoom factor</td>
<td>8-fold digital zoom</td>
</tr>
<tr>
<td>LCD monitor</td>
<td>1.5 inch TFT monitor</td>
</tr>
<tr>
<td>Compatible systems</td>
<td>Windows 98SE/Me/2000/XP</td>
</tr>
<tr>
<td>Focal distance</td>
<td>F = 8.7 mm</td>
</tr>
<tr>
<td>Aperture</td>
<td>F2.8</td>
</tr>
<tr>
<td>Focal distance range</td>
<td>1 m to infinite</td>
</tr>
<tr>
<td>Exposure</td>
<td>Automatic and manual</td>
</tr>
<tr>
<td>Exposure correction</td>
<td>-2.0 EV to +2.0 EV in nine steps</td>
</tr>
<tr>
<td>Data connection</td>
<td>Mini USB connection, two driver modes: MASS and TWAIN</td>
</tr>
<tr>
<td>Flash</td>
<td>Integrated wide-angle flash with three modes: automatic, always on and off</td>
</tr>
<tr>
<td>Flash range</td>
<td>2 m</td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>White balance</td>
<td>Automatic white balance and four manual modes: daylight, artificial (tungsten) light, fluorescent light, cloudy</td>
</tr>
<tr>
<td>Burst mode</td>
<td>Series of three photos</td>
</tr>
<tr>
<td>Self-timer</td>
<td>10 seconds</td>
</tr>
<tr>
<td>Video output</td>
<td>NTSC and PAL</td>
</tr>
<tr>
<td></td>
<td>TV output signal</td>
</tr>
<tr>
<td>Additional functions</td>
<td>Crystal clear audio recording</td>
</tr>
<tr>
<td></td>
<td>Memory can be expanded</td>
</tr>
<tr>
<td></td>
<td>Webcam for Internet chat and conferencing</td>
</tr>
<tr>
<td></td>
<td>Adjustable start-up picture</td>
</tr>
<tr>
<td></td>
<td>Power supply via USB connection</td>
</tr>
<tr>
<td>Storage medium</td>
<td>32 MB internal (including system memory), SD or MMC card</td>
</tr>
</tbody>
</table>
## MEMORY REQUIREMENT

<table>
<thead>
<tr>
<th>Resolution PIXEL</th>
<th>Quality</th>
<th>Picture size in KB (internal memory)</th>
<th>32 MB</th>
<th>256 MB</th>
<th>512 MB</th>
<th>1 GB</th>
</tr>
</thead>
<tbody>
<tr>
<td>2560×1920 5 MP</td>
<td>Superfine</td>
<td>approx. 830</td>
<td>16</td>
<td>128</td>
<td>256</td>
<td>512</td>
</tr>
<tr>
<td></td>
<td>Fine</td>
<td>approx. 600</td>
<td>20</td>
<td>160</td>
<td>320</td>
<td>640</td>
</tr>
<tr>
<td></td>
<td>Normal</td>
<td>approx. 510</td>
<td>24</td>
<td>192</td>
<td>384</td>
<td>768</td>
</tr>
<tr>
<td>2304×1728 4 MP</td>
<td>Superfine</td>
<td>approx. 620</td>
<td>20</td>
<td>160</td>
<td>320</td>
<td>640</td>
</tr>
<tr>
<td></td>
<td>Fine</td>
<td>approx. 480</td>
<td>28</td>
<td>224</td>
<td>448</td>
<td>896</td>
</tr>
<tr>
<td></td>
<td>Normal</td>
<td>approx. 400</td>
<td>32</td>
<td>256</td>
<td>512</td>
<td>1024</td>
</tr>
<tr>
<td>2048×1536 3 MP</td>
<td>Superfine</td>
<td>approx. 530</td>
<td>24</td>
<td>192</td>
<td>384</td>
<td>768</td>
</tr>
<tr>
<td></td>
<td>Fine</td>
<td>approx. 400</td>
<td>32</td>
<td>256</td>
<td>512</td>
<td>1024</td>
</tr>
<tr>
<td></td>
<td>Normal</td>
<td>approx. 310</td>
<td>40</td>
<td>320</td>
<td>640</td>
<td>1280</td>
</tr>
<tr>
<td>1600×1200 2 MP</td>
<td>Superfine</td>
<td>approx. 310</td>
<td>40</td>
<td>320</td>
<td>640</td>
<td>1280</td>
</tr>
<tr>
<td></td>
<td>Fine</td>
<td>approx. 250</td>
<td>56</td>
<td>448</td>
<td>896</td>
<td>1792</td>
</tr>
<tr>
<td></td>
<td>Normal</td>
<td>approx. 200</td>
<td>68</td>
<td>544</td>
<td>1088</td>
<td>2176</td>
</tr>
</tbody>
</table>
The actual number of stored pictures may vary (by up to +/- 30%) depending on the resolution and the number of colours.

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Superfine</th>
<th>1024x768</th>
<th>0.8 MP</th>
<th>104</th>
<th>864</th>
<th>1728</th>
<th>3456</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>approx. 150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fine</td>
<td>approx. 110</td>
<td></td>
<td></td>
<td>136</td>
<td>1088</td>
<td>2176</td>
<td>4352</td>
</tr>
<tr>
<td>Normal</td>
<td>approx. 90</td>
<td></td>
<td></td>
<td>172</td>
<td>1376</td>
<td>2752</td>
<td>5504</td>
</tr>
<tr>
<td>800x600/0.5 MP</td>
<td>Superfine</td>
<td>approx. 85</td>
<td></td>
<td>168</td>
<td>1344</td>
<td>2686</td>
<td>5376</td>
</tr>
<tr>
<td></td>
<td>approx. 70</td>
<td></td>
<td></td>
<td>216</td>
<td>1728</td>
<td>3456</td>
<td>6912</td>
</tr>
<tr>
<td></td>
<td>approx. 55</td>
<td></td>
<td></td>
<td>272</td>
<td>2176</td>
<td>4352</td>
<td>8704</td>
</tr>
</tbody>
</table>
# Troubleshooting

If the camera does not function properly, check the following points. If the problem remains, then consult your dealer.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause and solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Error A</strong></td>
<td><strong>Cause:</strong> Not enough light</td>
</tr>
<tr>
<td>Camera does not shoot any pictures</td>
<td><strong>Solution:</strong> Change the angle of the camera to pick up more light, or use the automatic flash.</td>
</tr>
<tr>
<td><strong>Error B</strong></td>
<td><strong>Cause:</strong> Weak batteries</td>
</tr>
<tr>
<td>The photos are not displayed on the LCD monitor after a time.</td>
<td><strong>Solution:</strong> Insert two fresh batteries.</td>
</tr>
<tr>
<td><strong>Error C</strong></td>
<td><strong>Cause:</strong> The computer does not have sufficient working memory</td>
</tr>
<tr>
<td>Not all pictures are downloaded on the computer</td>
<td><strong>Solution:</strong> Exit all other applications before downloading. If the problem persists, download the pictures individually to the computer, and save them before you transfer the next picture.</td>
</tr>
<tr>
<td><strong>Error D</strong></td>
<td><strong>Cause:</strong> Camera shuts down automatically.</td>
</tr>
<tr>
<td>Camera switches itself off after 5 minutes. LCD monitor switches off.</td>
<td><strong>Solution:</strong> Restart the camera.</td>
</tr>
<tr>
<td><strong>Error E</strong></td>
<td><strong>Cause:</strong> The USB connection of the computer is deactivated in the BIOS.</td>
</tr>
<tr>
<td>When the camera is connected to the computer for the first time, no new hardware is found</td>
<td><strong>Solution:</strong> Activate the port in the BIOS of the computer.</td>
</tr>
<tr>
<td><strong>Error F</strong></td>
<td><strong>Cause:</strong></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Solution:</strong></td>
<td>Change the angle of the camera, or improve the light conditions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Error G</strong></th>
<th><strong>Cause:</strong></th>
<th>The computer or the camera is busy and there is no connection between the two devices.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Solution:</strong></td>
<td>Remove the USB cable from the computer and check to see why the computer is busy. Then reconnect the cable.</td>
<td></td>
</tr>
</tbody>
</table>

Note: This table contains possible causes of error. Some of these points are normal occurrences.
ADDITIONAL INFORMATION

Maintenance and care

Clean the housing, the lens and the LCD monitor as follows:
Do not use thinners or cleaning solutions that contain oil. This could damage the camera.
Clean the camera housing using a soft cloth.
Lens: First remove the dust using a lens brush. Then clean the camera housing using a soft cloth.
Do not use strong cleaning solutions for the housing and the lens (contact your dealer if dirt cannot be removed).
Do not apply pressure to the LCD monitor and do not use hard objects for cleaning.

Photo tips

Please note the following tips for taking excellent quality photos:
Move the camera slowly so that the photos do not become fuzzy. The camera should not move when pressing the shutter release. Do not move the camera directly after pressing the shutter release. Wait until you hear the sound signal before you move the camera.
View the subject through the viewer before you press the shutter release.
Check the angle if the subject is lit from behind. Change your position to reduce the background lighting.
Use the flash or manual light setting for weak light conditions.
Pan the camera slowly to make a good video. If you pan too quickly, the video pictures will become fuzzy and blurred.
Battery tips

Through improper use the batteries could leak, overheat or explode.
Observe the following safety instructions:
Do not heat up the batteries and do not dispose of them in a fire.
Do not transport the batteries together with metal objects, as these could touch the battery poles and cause damage.
Do not expose the batteries to moisture. Always store them in a dry location.
Do not disassemble, deform or change the battery.
Never remove the casing of the battery.
Do not subject the batteries to hard impacts.
Never use leaky or damaged batteries.
Keep children away from the batteries.

Ensure the correct polarity when inserting the batteries in the camera.
The battery power is reduced in cold environments (>10°C or colder, applicable in particular for alkali type batteries).
Warm up the batteries before using them in cold environments (e.g. in your clothes pocket).
If you use a source of warmth, do not allow it to touch the batteries.
DISPOSAL

Packaging
Your camera is packaged to protect it from transportation damage. Packaging is raw material and can be reused or added to the recycling system.

Device
At the end of its life, the appliance should not be disposed of in household rubbish. Enquire about the options for environmentally-friendly disposal.

Batteries
Do not dispose of used batteries in the household rubbish. Batteries should be deposited at a collection point for used batteries.