

PSM-5/-10



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Portable Microscope

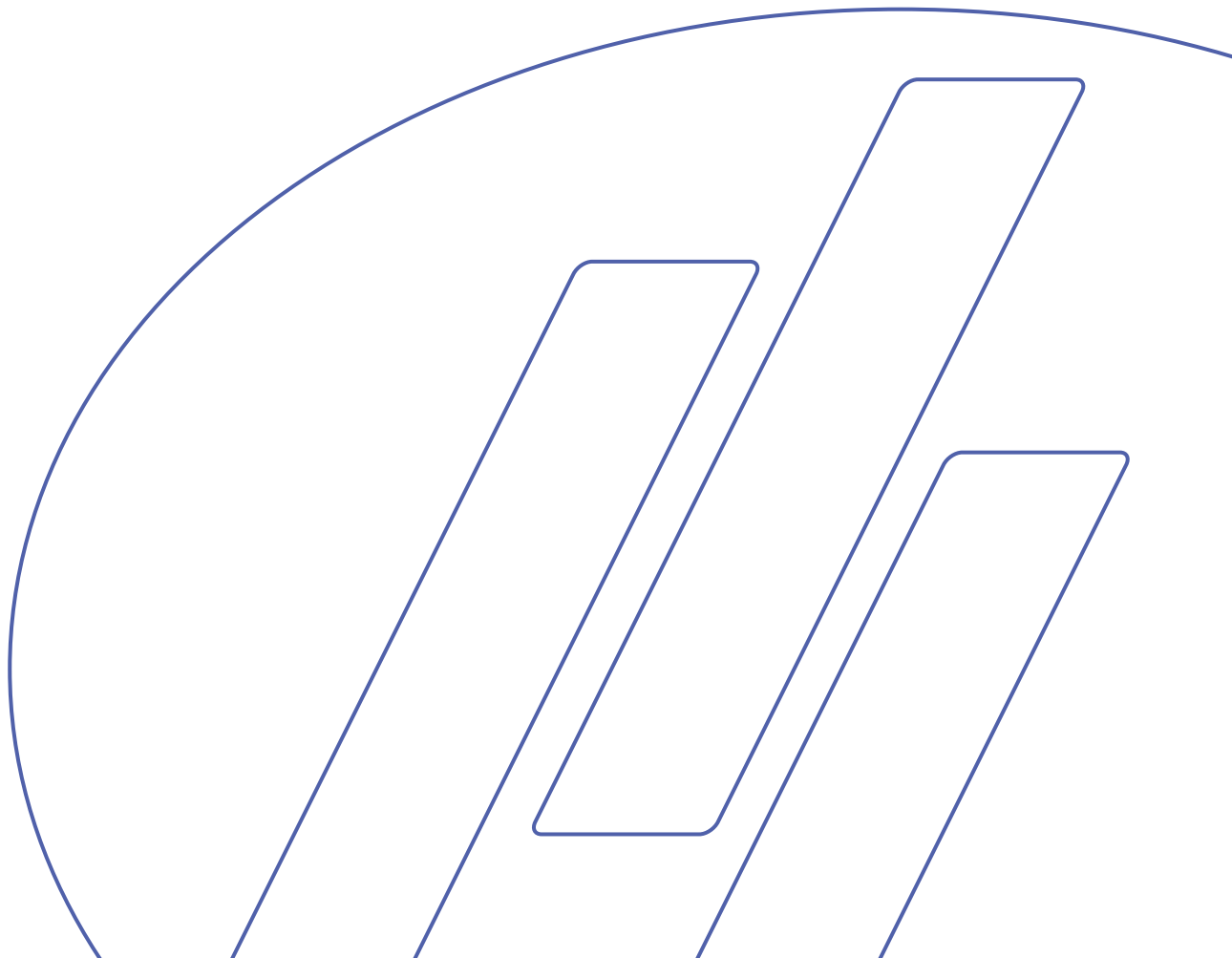
Instruction Manual

Tragbares Mikroskop

Gebrauchsanweisung

Microscope Portatif

Mode d'emploi



Instruction Manual

Always state *Serial No* and *Voltage/frequency* if you have technical questions or when ordering spare parts. You will find the *Serial No.* and *Voltage* on the type plate of the machine itself. We may also need the *Date* and *Article No* of the manual. This information is found on the front cover.

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Struers A/S
Pederstrupvej 84
DK-2750 Ballerup
Denmark
Telephone +45 44 600 800
Fax +45 44 600 801

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1. Getting Started

Checking the Contents of Packing

PSM-5

- 1 PSM-5 (Portable microscope)
- 1 Eyepiece 10x
- 1 Objective lens 10x
- 1 Allen key
- 1 LED light bulbs
- 1 Key (for removal of spacing ring)
- 2 Batteries (3V CR2025) (mounted)
- 1 Set of Instruction Manuals

PSM-10

- 1 PSM-10 (Portable microscope)
- 1 Eyepiece 10x
- 1 Objective lens 10x
- 2 Allen keys
- 1 LED light bulbs
- 1 Key (for removal of spacing ring)
- 2 Batteries (3V CR2025) (mounted)
- 1 Set of Instruction Manuals

Placing PSM-5 and PSM-10

PSM-5 and PSM-10 are designed for use in the field and are suited for on the spot examination of large objects during both the building and the operation processes. It can be used both on external surfaces and in corners, cavities and tubes.

PSM-5 and PSM-10 can also be used to control structural impressions, carried out with Transcopy or RepliSet.

Transportation

The microscopes are supplied with a sturdy aluminium transport case.

Keep the parts safe in the case when not in use.

Keep the delicate objective lenses in their special carrying case when not in use.

Use the protective caps supplied with the microscope when not in use.

**Getting Acquainted with
PSM-5 and PSM-10**

PSM-5

Take a moment to familiarise yourself with the location and names of the components.



- ① Eyepiece 10x in the eyepiece port
- ② Focus locking ring
- ③ Focussing knob
- ④ On/ Off switch for lamp
- ⑤ Lamp housing (LED light bulb and battery)
- ⑥ Objective lens 10x

PSM-10



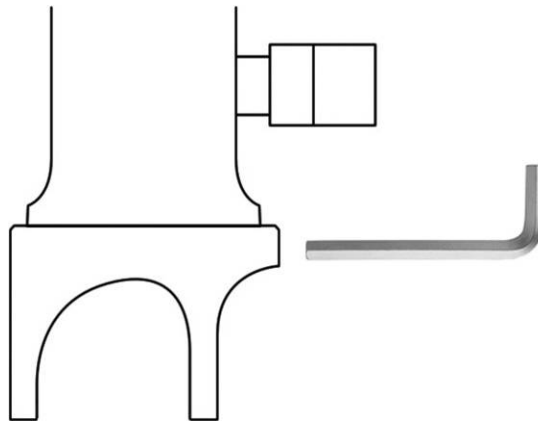
- ① Eyepiece 10x in the eyepiece port
- ② Focussing ring
- ③ On/ Off switch for lamp
- ④ Lamp housing (LED light bulb and battery)
- ⑤ Tripod base – Low (standard)
- ⑥ Objective lens 10x

PSM-10 Mounting the Tripod Base

PSM-10 is supplied with a tripod base mounted. A Tripod base for curved surfaces, a round base for use on flat surfaces and a magnetic cross table with magnetic clamps are available as accessories.

To replace the base:

- Loosen the 3 Allen screws securing the base and remove the base.
- Fix the new base in position using the Allen screws.



NB:

When holding the microscope, take care that the eyepiece doesn't fall out if the microscope is tipped.

Mounting the Objective

- Remove the protective cap from the objective port.
- Insert the objective lens and screw firmly into place. Take care not to touch the lens with your fingers.

Mounting the Eyepiece

- Remove the protective cap from the eyepiece port.
- Insert the eyepiece into the eyepiece port.
- Take care not to touch the lens with your fingers.
- Secure the eyepiece by tightening the eyepiece locking screw (PSM-10).

2. Operation

- Place the microscope over the point of interest.
- Switch on the lamp.
- Move the microscope until the spot of light illuminates where required.
- Use the focusing ring to focus on the point of interest.
(PSM-5 - use the screw to lock the focusing ring so as not to damage the objective or prevent the position slipping).

NB

Take care that the objective is not damaged by touching the sample.

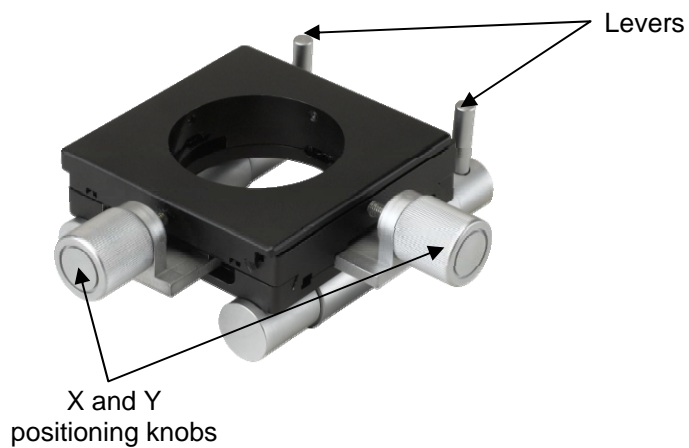
Remember...

Switch off the lamp after use.

Using the Magnetic Cross Table (Accessory)

With the magnetic cross table secured on the PSM-10:

- Place the table in position on the surface.
- Flip the levers on the magnetic cross table down; this will engage the magnetism.



- Use the X and Y positioning knobs to position the field of view directly over the point of interest.
- Flip the levers on the magnetic cross table up; this will release the magnetism.

To release the X/Y table:

Examining Replicas

If the microscope is to be used for examination of structural impressions (e.g. Replicas made using Struers' Transcopy or RepliSet), these must be glued onto a slide and then placed on a table with the structural surface uppermost. The microscope is positioned above the replica, which can be moved for viewing.

3. Measuring with PSM-5/-10

Using the Measuring eyepiece (Accessory)

The graduations on the measuring eyepiece should be calibrated for each objective lens using a Plate micrometer (accessory).

Calibration

- Remove the eyepiece and replace with the measuring eyepiece.
- Place the Plate micrometer under the microscope and position so that the text on the plate is directly under the spot of light.
- Use the focusing ring to focus on the text.
- Move the Plate micrometer so that the graduation scale is centred in the field of view.
- Turn the measuring eyepiece until the graduations are lined up with those on the plate.
- Measure the distance between the graduations on the eyepiece (the distance between the graduations on the Plate micrometer is 0.01mm).

Measuring

- Remove the Plate micrometer and position the microscope over the point of interest.
- Measure the distance of interest using the graduations on the measuring eyepiece.

The distance between the measuring eyepiece graduations should be re-measured whenever the objective lens is exchanged.

4. Taking Photographs

Mounting a Digital Camera with C-mount (Accessory)

Please refer to the [LCD Digital Microscope Camera](#) Instruction Manual to familiarise yourself with the camera and its operation.

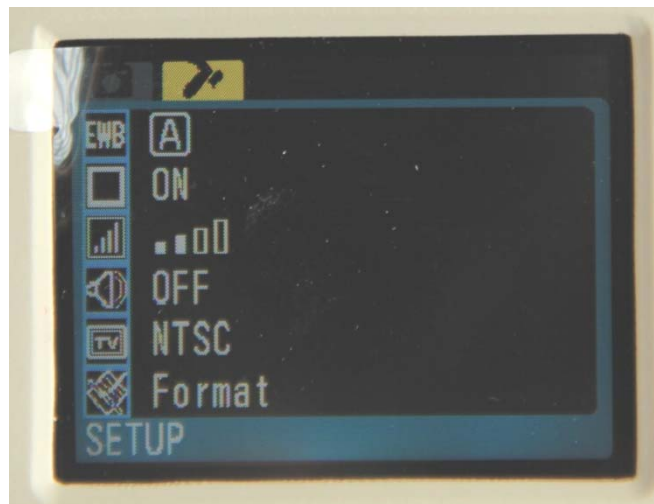
Camera Settings

- In the *SETUP* menu, set the *Exposure and White Balance [EWB]* to Auto [A].

Photo menu



Setup menu



- Fit the adaptor onto the camera.
- Remove the eyepiece from the microscope and slot the adaptor into the eyepiece port.
- Secure the adaptor to the microscope with the locking screw.

Tip

The microscope will be top-heavy with a camera mounted.
Take care that it doesn't tip or fall over.



- Connect the power supply (AC power adapter or Movipol-5/Transpol-5 battery pack) to DC IN on the right side of the camera.
- Insert an SD card.
- Press the POWER button.
- Press the On/ Off switch on PSM to turn on the lamp.
- Focus on the point of interest using the focussing ring.
- Press the SNAP button to capture an image.

Tip:

Use the USB Shutter Cable and the remote controller supplied with the camera to eliminate vibration of the camera/ PSM whilst capturing images.

Adjusting the Colour Balance

Tip:

In some cases, the image will appear bluish.
To avoid this problem:

- Press the MENU button to enter the *SETUP* menu, then select *Exposure and White Balance [EWB]*.
- Press the RIGHT button to enter the submenu.
- Select *Manual white balance* and press the *Confirm* button.
- Press the MENU button again to exit.
4 sliders (green, blue, red and white) will be displayed.
- Select the blue slider. Use the LEFT or RIGHT buttons to manually adjust the blue colour balance.
- When the desired setting is achieved, return to the *SETUP* menu and set the *Exposure and White Balance* to *AUTO*.

Calculating the Magnification of the Camera Adapter

To ensure correct measurements using the Struers camera option, the magnification of the camera adapter must be known. It can be calculated with the use of a plate micrometer and a reference microscope.

- Capture an image of a plate micrometer using the 10x objective lens.
- Import the photo using Spatial Calibration in the Scentis software (or equivalent calibration software).
- Measure the pixel equivalent of one millimeter to obtain value "A".
- Use a reference microscope with known magnification e.g. 100x to capture an image of the plate micrometer.
- Import the second photo to the calibration software.
- Measure pixel equivalent of one millimeter to obtain value "B".
- Use the reference microscope with a 50x magnification¹, to obtain the pixel equivalent of one millimeter at 50x magnification, value "C".
- Insert "A", "B" and "C" in the following formulae:
$$A \times 100 / B = D1,$$
$$A \times 50 / C = D2$$
- The average of D1 and D2 is the magnification of the camera adapter² (this value will be approx. 6.5).

¹ Going from 100x to 50x magnification does not exactly halve the number of pixels. Thus, to balance the deviation, a calibration is performed at both magnifications on the reference microscope.

² Multiply this by 10 (10x objective lens on the portable microscope) to calculate the total magnification of microscope + adapter.

5. Maintenance

Daily

- Clean the body of the microscope with a soft, dry cloth.
- Should the body of the microscope become dirty, clean with a soft cloth moistened with mild soap solution.
- Do not touch the lenses with your fingers. Should the lenses become dusty or dirty, clean with lens tissue paper and a small amount of Ethanol or Propanol.

Replacing the bulb/ batteries

- Remove the lamp housing.
- Carefully remove the battery, unscrew the spacing ring (insert the special key to fit onto the slots of the spacing ring, and turn) and remove the bulb.
- Insert a new bulb, holding the bulb with a piece of lens tissue paper.
- Replace the spacing ring and the battery (with the text on the battery facing outwards).
- Finally replace the lamp housing and screw securely into place.

Storage

- Store the microscope in the transportation case and keep in a cool and dry place.

Important

DO NOT disassemble the microscope or the lenses.
Service and repair of the microscope should always be performed by a qualified technician

6. Technical Data

Please see the brochure for [Non-destructive Preparation](#) for details.

7. Accessories

Please see the brochure for [Non-destructive Preparation](#) for details of the range available.

PSM-5-10

Spare Parts and Diagrams



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Spare Parts

Description	Spare Parts No.
Eyepiece, 10x.....	14282910
Adaptor - Eyepiece port	14282916
Objective lens, 10x.....	14282911
LED lamp housing.....	14282912
LED lamp	14282913
Locking knob (for locking ring on PSM-5)	14282914
Friction ring (rubber ring on base of PSM-5).....	14282915

LCD Digital Microscope Camera

Model Number: DC3

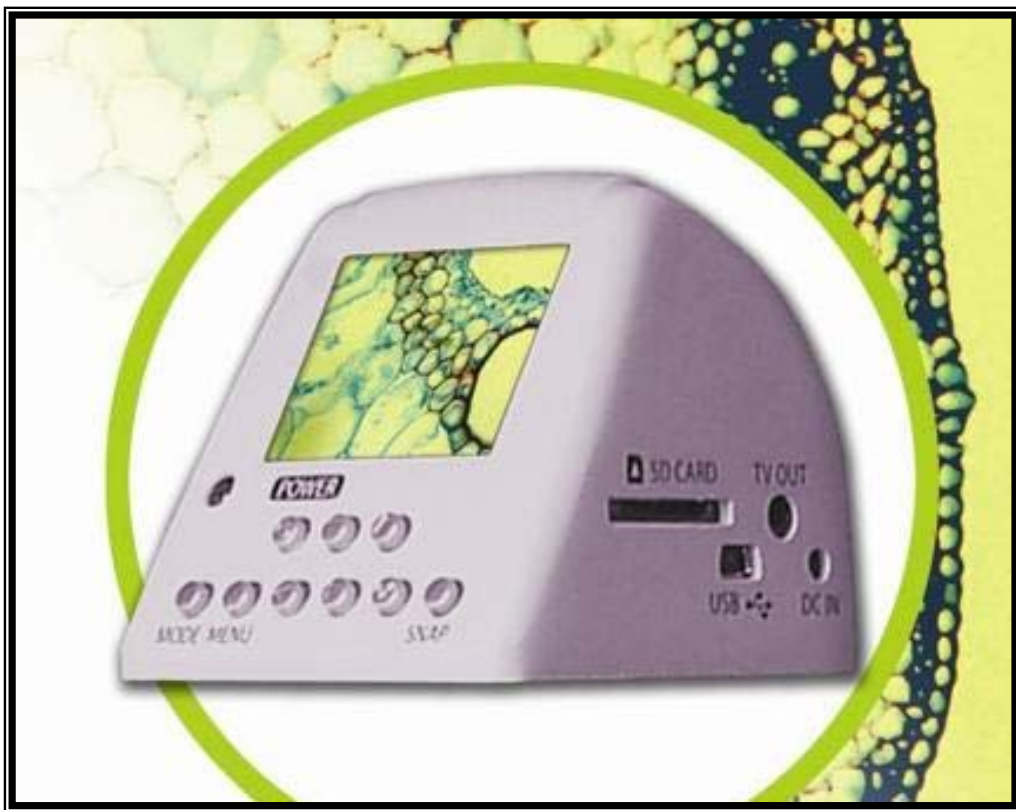


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Appendix : Adjust white balance settings

Chapter 1. Safety Precautions Notice

➤ Security Notice

- ◆ To maintain high quality measurement, do not drop or disassemble the camera
- ◆ Keep the camera away from sharp objects
- ◆ Do not twine the power cable or data cable around people's body
- ◆ Keep the small items like SD card and remote control away from children

➤ Precautions Notice

- ◆ Before using the camera with other equipment, make sure that the equipment are properly installed
- ◆ To prevent electric shocks and fire hazards, do NOT use any other power source and ONLY use the power supply accessories provided
- ◆ When the camera is not in use, unplug the power cable
- ◆ Do not use the power cable provided for other purposes
- ◆ The plastic bags and boxes protecting the camera need to be disposed properly if the protection is no longer required
- ◆ The camera has advanced technology and high levels of functionality. To operate this instrument safely users should read the instruction fully and be aware of the safety hazards.

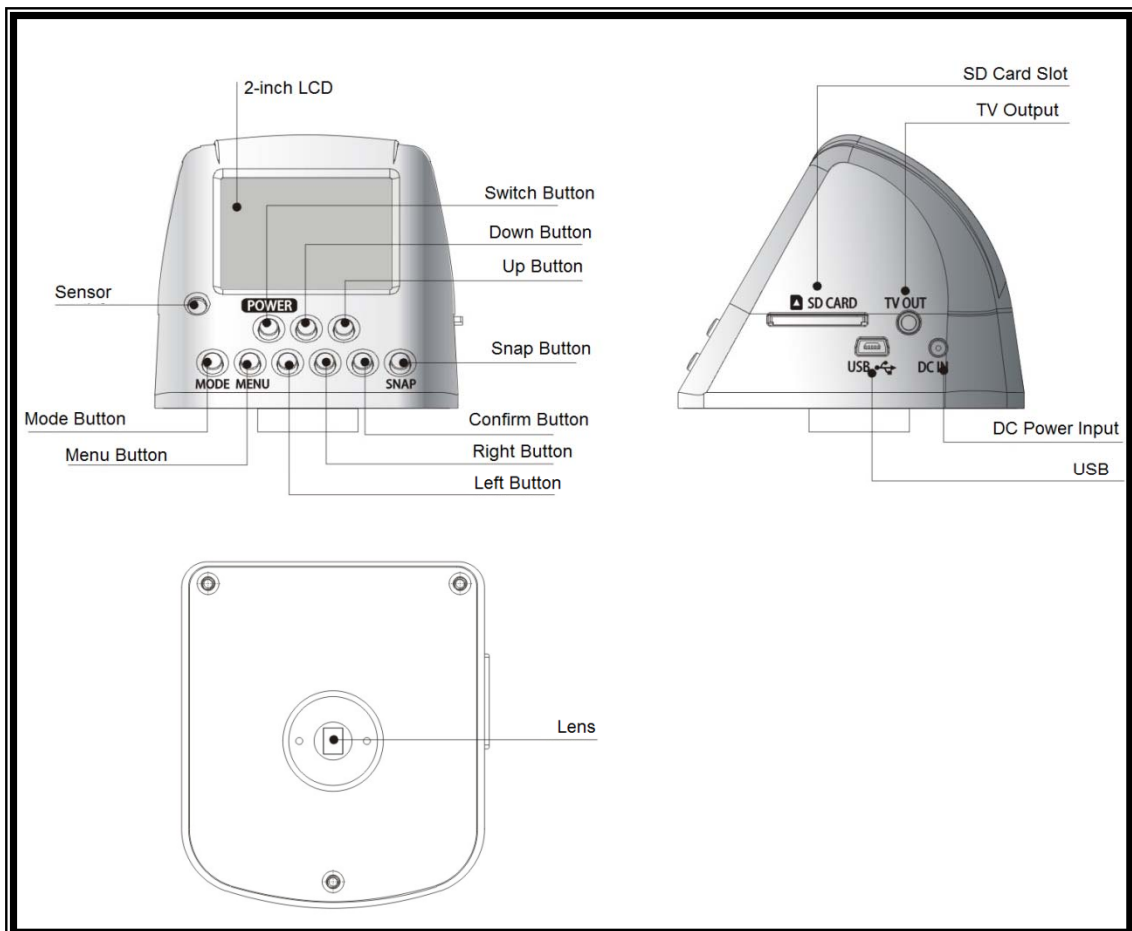
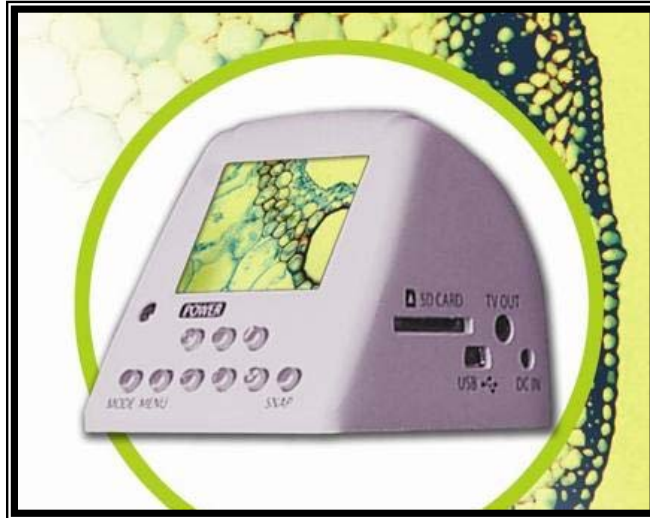
➤ Caution

- ◆ Only operate the camera under the temperature between 0°C and 40°C
- ◆ Do NOT expose the camera to the following environment
 - high temperature or moisture
 - where it is close to heat source
 - places not steady
 - direct sunshine
- ◆ The camera on this microscope is not waterproof, please keep it away from water or rain. In cases when water is spilled on the appliance, use dry water-absorbent cloth to clean the water
- ◆ Saltwater or seawater may malfunction the camera

- ◆ Do NOT clean the camera with volatile fluid such as alcohol
- ◆ Only use dry soft clothes to clean the spots on camera lens or LCD.
- ◆ Do NOT touch any optical components directly with fingers.
- ◆ Rain or moisture could cause faults to the camera, only keep the camera in dry place
- ◆ Do NOT use the camera outdoor in rainy or snowing weather
- ◆ If anything that may cause danger to the camera, such as water, enters inside the camera, switch off the power source immediately and unplug all the cables connected to the camera.
- ◆ It is recommended to use a hard drive in a computer to store the recorded images other than the SD card in the camera.

- ◆ Notices when using the LCD
 - To avoid scratching the LCD surface, keep the camera away from sharp objects.
 - The LCD may display some unexpected black or red spots, this is a normal phenomenon for an LCD, even it is manufactured with advanced technologies.
 - The unexpected spots displayed on the LCD will not affect the quality of the image stored in the memory card.
 - The deformation of the surface may cause malfunction of the LCD, so do NOT press or bend the LCD.

Chapter 2. Components



Chapter 3. Operation

Precautions Notice

- ★ To avoid falling down, the DC3 camera must be placed in safe and steady place such as desk.
- ★ Check that the DC3 camera is properly connected to the C-mount port of microscope and the connecting screws are installed properly.

The User of the microscope with DC3 camera can take a snapshot image or video images by following the operation procedures below

➤ **Starting procedures**

- ◆ Place the microscope on a stable table; attach the lens onto the microscope stand if they are not already fitted to it.
- ◆ Attach the DC3 camera to the C-mount port of the microscope. Tighten the screws to avoid dropping.
- ◆ Place the target onto the stage.
- ◆ Set light dimmer control to lowest intensity and switch on the power, increasing slowly to desired level.
- ◆ Plug in the power cable into the DC IN on DC3 camera
- ◆ Switch on the DC3 camera by pressing the 「POWER」 button for 1 second, and the LCD will display the starting interface.
- ◆ Insert the SD card into the camera (the images taken must be stored on the SD card)

➤ **Adjustment of Exposure and Colour**

The LCD will display four lines, representing the brightness of the colors G, B, R and W respectively after just switching on the camera. Use LEFT of RIGHT buttons to adjust their brightness. Press OK button to choose different color lines and turn off the control line displaying. In this way, the observation can be adjusted to the optimum status.

When the microscope is changed to a different magnification, the observation setting will be changed and should be readjusted to optimum.

The number in the rectangle located in the centre of the LCD is the focusing parameter; the bigger value of this parameter represents a better focusing quality.

➤ **Snapshot**

Now the microscope is ready to take microscopic images. However, the focus point and the brightness setting need to be adjusted according to the sample under observation. When everything is ready, press 「**SNAP**」 to record an image, and it will be stored on the SD card. To avoid vibrations during recording, it is highly recommended to use the remote control or USB control to take snapshot.

➤ **Camera Modes**

DC3 camera has three different operation modes, which are '**Camera**', '**Video**' and '**Play**' mode respectively. The initial mode when the camera is just switched on is '**Camera**', and it can be changed to other modes by the following steps:

- ◆ First of all, make sure that no menu function is selected
- ◆ Press 「**MODE**」 button once and the LCD will display three mode options. You can change to other modes by continuing to press 「**MODE**」. Press 「**OK**」 button to select the mode or wait for 2 seconds to select the mode automatically.
- ◆ Press 「**UP**」 to change to 「**Camera**」 mode, and 「**OK**」 to select, or wait for 2 seconds.
- ◆ Press 「**LEFT**」 to change to 「**VIDEO**」 mode, and 「**OK**」 to select, or wait for 2 seconds.
- ◆ Press 「**RIGHT**」 to change to 「**PLAYBACK**」 mode, and 「**OK**」 to select, or wait for 2 seconds.

➤ **Snapshot and Video**

In 「**VIDEO**」 mode, video images can be recorded on the SD card, but it is recommended to use a big memory SD card.

➤ **Play back images and video**

In 「**PLAY**」 mode, the recorded images and video can be displayed on the LCD.

➤ **Switch off the camera**

To switch off the camera, press the 「**POWER**」 button for 1second, and the illumination of microscope should also be switched off.

➤ **Install and remove the SD card**

◆ **Install the SD card**

- Insert the SD card into the slot along the arrow and ‘click’ into position.
- The camera will sounds and displays an SD card picture, showing that the SD card is installed properly.

◆ **Remove the SD card**

- Press the SD card into the slot until you hear a ‘click’ and release, the SD card can now be removed from the camera.
- The camera will sounds a warning and the SD card shown on the LCD will disappears.

Notice: SD card must be installed before recording. If no SD card installed, the camera can still display live image, but cannot record images or video.

Chapter 4. Camera Mode Setting and Menu Options

DC3 camera can work in three modes, 'Camera', 'Video', and 'Play'

➤ **Taking snapshot image in 'Camera' mode**

- ◆ In 'Camera' mode the image can be recorded with different resolutions. The lowest resolution is 0.35M-pixel VGA (640 x 480), the highest resolution is 3M-pixel. After the digital processing, the highest output resolution is 8M-pixel (3264x2448).

➤ **Recording video in 'Video' mode**

- ◆ In 'Video' mode the video can be recorded in MPEG4 format with the resolutions of 640x48-pixel or 320x240-pixel optional.

➤ **Playing back the recorded data: Play mode**

- ◆ You can play back the recorded images or video, or delete the recorded data.
- ◆ The TV OUT cable included can be connected to TV, and play back the recorded images or video on TV. You can also play back the recorded data on a PC.

DC3 camera setting and menu operations

➤ **Options in 「CAMERA」 mode**

◆ **Snapshot options**

- Delay shutter ==== setting the delayed shutter release time
 - Press **MENU** button to activate the snapshot option
 - Press **DOWN** button once, it will display 'Time delay'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to set the time and press **OK** to confirm
 - Press **MENU** button again to go back to 「CAMERA」 mode
- Auxiliary cable ==== Enable/Disable the screen auxiliary cable
 - Press **MENU** button to activate the snapshot option
 - Press **DOWN** button twice, it will display 'Auxiliary cable'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to set the type of auxiliary cable

- and press **OK** to confirm
- Press **MENU** button again to go back to 「 **CAMERA** 」 mode
 - Image size ==== Setting the image size
 - Press **MENU** button to activate the snapshot option
 - Press **DOWN** button three times, it will display 'Size'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to change the size and press **OK** to confirm
 - Press **MENU** button again to go back to 「 **CAMERA** 」 mode
 - Quality ==== Setting the image quality
 - Press **MENU** button to activate the snapshot option
 - Press **DOWN** button four times, it will display 'Quality'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to change the quality and press **OK** to confirm
 - Press **MENU** button again to go back to 「 **CAMERA** 」 mode
 - Sharpness ==== Setting the image sharpness
 - Press **MENU** button to activate the snapshot option
 - Press **DOWN** button five times, it will display 'Sharpness'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to set the sharpness and press **OK** to confirm
 - Press **MENU** button again to go back to 「 **CAMERA** 」 mode
 - ◆ **Setting options**
 - Exposure and balance ==== Setting auto or manual exposure and white balance
 - Press **MENU** button and then **RIGHT** button once to activate the setting option
 - Press **DOWN** button once, it will display 'Exposure and white balance'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to change to use auto or manual mode and press **OK** to confirm
 - Press **MENU** button again to go back to 「 **CAMERA** 」

mode

- Text display ==== Setting the text display on and off
 - Press **MENU** button and then **RIGHT** button once to activate the setting option
 - Press **DOWN** button twice, it will display 'Text display'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to set the text display on or off and press **OK** to confirm
 - Press **MENU** button again to go back to 「 **CAMERA** 」 mode
- Brightness ==== Setting the LCD brightness
 - Press **MENU** button and then **RIGHT** button once to activate the setting option
 - Press **DOWN** button three times, it will display 'Brightness'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to change the brightness and press **OK** to confirm
 - Press **MENU** button again to go back to 「 **CAMERA** 」 mode
- Camera voice ==== Setting the camera voice
 - Press **MENU** button and then **RIGHT** button once to activate the setting option
 - Press **DOWN** button four times, it will display 'Voice'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to set the voice on or off and press **OK** to confirm
 - Press **MENU** button again to go back to 「 **CAMERA** 」 mode
- Video output ==== Setting the type of video output
 - Press **MENU** button and then **RIGHT** button once to activate the setting option
 - Press **DOWN** button five times, it will display 'Video output'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to choose the type of video output and press **OK** to confirm
 - Press **MENU** button again to go back to 「 **CAMERA** 」 mode

- Formatting ==== Format the SD memory card
 - Press **MENU** button and then **RIGHT** button once to activate the setting option
 - Press **DOWN** button six times, it will display 'Formatting'
 - Press **RIGHT** button to go to the sub-menu, the memory card must be inserted into the slot
 - Use **UP / DOWN** buttons to choose to format or not and press **OK** to confirm
 - Press **MENU** button again to go back to 「 **CAMERA** 」 mode
- Reset ==== Reset the camera to the factory setting
 - Press **MENU** button and then **RIGHT** button once to activate the setting option
 - Press **DOWN** button seven times, it will display 'Reset'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to choose to reset or not and press **OK** to confirm
 - Press **MENU** button again to go back to 「 **CAMERA** 」 mode
- Language ==== Setting the interface language
 - Press **MENU** button and then **RIGHT** button once to activate the setting option
 - Press **DOWN** button eight times, it will display 'Language'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to choose to choose the language and press **OK** to confirm, there are seven languages to choose
 - Press **MENU** button again to go back to 「 **CAMERA** 」 mode
- Reset number ==== Resetting the image number
 - Press **MENU** button and then **RIGHT** button once to activate the setting option
 - Press **DOWN** button nine times, it will display 'Numbering'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to choose to reset the image number or not and press **OK** to confirm
 - Press **MENU** button again to go back to 「 **CAMERA** 」 mode

➤ **Options in 「Video」 mode**

◆ **Video options**

- Auxiliary cable ==== Enable/Disable the screen auxiliary cable
 - Press **MENU** button to activate the snapshot option
 - Press **DOWN** button once, it will display 'Auxiliary cable'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to set the type of auxiliary cable and press **OK** to confirm
 - Press **MENU** button again to go back to 「CAMERA」 mode

- Video mode ==== choose the output format of the video
 - Press **MENU** button to activate the menu
 - Press **DOWN** button twice, it will display 'Video mode'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to choose the output video format and press **OK** to confirm
 - Press **MENU** button again to go back to 「CAMERA」 mode

- Resolution ==== Choose the video resolution
 - Press **MENU** button to activate the menu
 - Press **DOWN** button three times, it will display 'Resolution'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to choose the output video resolution and press **OK** to confirm
 - Press **MENU** button again to go back to 「CAMERA」 mode

- Quality ==== Setting the recorded video quality
 - Press **MENU** button to activate the menu
 - Press **DOWN** button four times, it will display 'Quality'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to choose the video quality and press **OK** to confirm
 - Press **MENU** button again to go back to 「CAMERA」 mode

➤ 「PLAYBACK」 mode

In 「PLAYBACK」 mode you can play one recorded video or maximum nine videos continuously by pressing OK buttons. Use the UP / DOWN buttons you can zoom in or out the video images

◆ Play options

- Delete ===== Deleting one or more video
 - Press **MENU** button to activate the menu
 - Press **DOWN** button once, it will display 'Delete'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to choose to delete one or more or all videos and press **OK** to confirm
 - ✓ Delete one video ---- the screen displays the image and confirmation options, you can confirm to delete or cancel
 - ✓ Delete several videos ---- the screen displays the images in smaller size and highlights the selected video, you can choose the video and press **OK** to confirm
 - ✓ Delete all ---- the screen displays confirmation options, you can choose to confirm or cancel
 - Press **MENU** button again to go back to 「CAMERA」 mode
- Auto playback ===== Setting the time interval between two images during auto playback
 - Press **MENU** button to activate the menu
 - Press **DOWN** button twice, it will display 'Auto playback'
 - Press **RIGHT** button to go to the sub-menu
 - Use **UP / DOWN** buttons to choose the time interval and press **OK** to confirm, the camera will play back the recorded images automatically
 - During play back, press **OK** button to stop at the current image
 - Press **MENU** button again to go back to 「CAMERA」 mode
- Rotation ===== Setting the rotational orientation of the image
 - Press **MENU** button to activate the menu
 - Press **DOWN** button three times, it will display 'Rotation'

- Press **RIGHT** button to go to the sub-menu, there are three rotational angles to choose: 90°, 180°, and 270°
- Use **UP / DOWN** buttons to choose the orientation and press **OK** to confirm, and it will display the confirmation options asking whether to keep the rotated image or not, choose the right option and press **OK** to confirm
- Press **MENU** button again to go back to 「**CAMERA**」 mode
- Printing ==== Choose to print the recorded images, this camera supports DPOF format
 - Press **MENU** button to activate the menu
 - Press **DOWN** button four times, it will display 'Print'
 - Press **RIGHT** button to go to the sub-menu, you can choose to print a single or all the images
 - Use **UP / DOWN** buttons to choose the image and press **OK** to confirm
 - Press **MENU** button again to go back to 「**CAMERA**」 mode

ADJUST WHITE BALANCE SETTINGS

By default the camera white balance is set to automatic.

With some microscopes, you could get a bluish image.

To avoid this problem :

- ▶ Press **MENU** button and then **RIGHT** button once to activate the setup option.
- ▶ Press **DOWN** button once to activate "Exposure and white balance".
- ▶ Press **RIGHT** to go to the sub-menu (auto / manual).
- ▶ Use **DOWN** to select MANUAL white balance and press **OK** to confirm.
- ▶ Press **MENU** button to exit it.
- ▶ You can now adjust manually the blue level of the image
- ▶ 4 sliders (green, blue, red, white) are now displayed on the camera screen (if not press OK button to display it)
- ▶ Press **OK** several time in order to select the blue slider.
- ▶ Press **LEFT** or **RIGHT** to increase or decrease the blue level
- ▶ When the snapped image is correct, you can turn the white balance / Exposure settings to AUTO



Pederstrupvej 84
DK-2750 Ballerup
Denmark