

ED.3000

BlueLine Series



Contents

Introduction	2
Notes on handling and safety	3
Component	4
Maintenance	5
Operation	5
Operating steps	5
Technical data	5
Function Menu	6
Main features:	6
Interface setting	6
Interface icons	7
Mouse and dongle	8

Introduction

Thank you for purchasing the Euromex ED.3000

The ED.3000 type microscopes are developed for use at schools and laboratories. Specific attention to production methods resulted also in an excellent price/performance ratio

Please read this manual carefully before using this product to ensure correct and safe usage

- The content of this manual is subject to change without notice
- The appearance of the actual product can differ from the models described in this manual
- Not all equipment mentioned in this manual has to be part of the set you have purchased
- All optics are anti-fungus treated and anti-reflection coated for maximum light throughput

Notes on handling and safety

Handle with care

- This product is a high quality optical instrument. Delicate handling is required
- Avoid subjecting it to sudden shocks and impacts
- Impacts, even small ones, can affect the precision of the objective

Handling the LED

Note: Always disconnect the power cord from your microscope before handling the LED bulb and power unit and allow the system approximately 35 minutes to cool down to avoid burns

- Never touch the LED with your bare hands
- Dirt or fingerprints will reduce the life span and can result in uneven illumination lowering the optical performance
- Use only Euromex original replacement LEDs
- Use of other products may cause malfunctions and will void warranty
- During use of the microscope, the power unit will get hot, never touch it while in operation and allow the system approximately 35 minutes to cool down to avoid burns

Dirt on the lenses

- Dirt on or inside the optical components, such as eyepieces, lenses, etc., affect the image quality of your system negatively
- Always try to prevent your microscope from getting dirty by using the dust cover
- Prevent leaving fingerprints on the lenses and clean the outer surface of the lens regularly
- Cleaning optical components is a delicate matter. Please read the cleaning instructions in this manual carefully

Environment, storage and use

- This product is a precision instrument and it should be used in a proper environment for optimal use
- Install your product indoors on a stable, vibration free and level surface
- Do not place the product in direct sunlight
- The ambient temperature should be between 5 to +40°C and humidity is maximum 80% at 31 degrees decreasing linearly to 50% at 40 degrees. Although the system is anti-mold treated, installing this product in a hot, humid location may still result in the formation of mold or condensation on lenses, impairing performance or causing malfunctions
- Never turn the right and left focus knobs in opposite directions at the same time or turn the coarse focus knob past its farthest point, this will damage the microscope
- Never use undue force when turning the knobs
- Make sure that the microscope system can dissipate its heat
- Keep the microscope approximately 15 cm free from walls and obstructions
- Never turn the microscope on when the dust cover is in place or when items are placed on the microscope
- Keep flammable fluids, fabric etc. well out of the way

Disconnect power

- Always disconnect your microscope from power before doing any maintenance, cleaning, assembling or replacing LEDs to prevent electric shocks

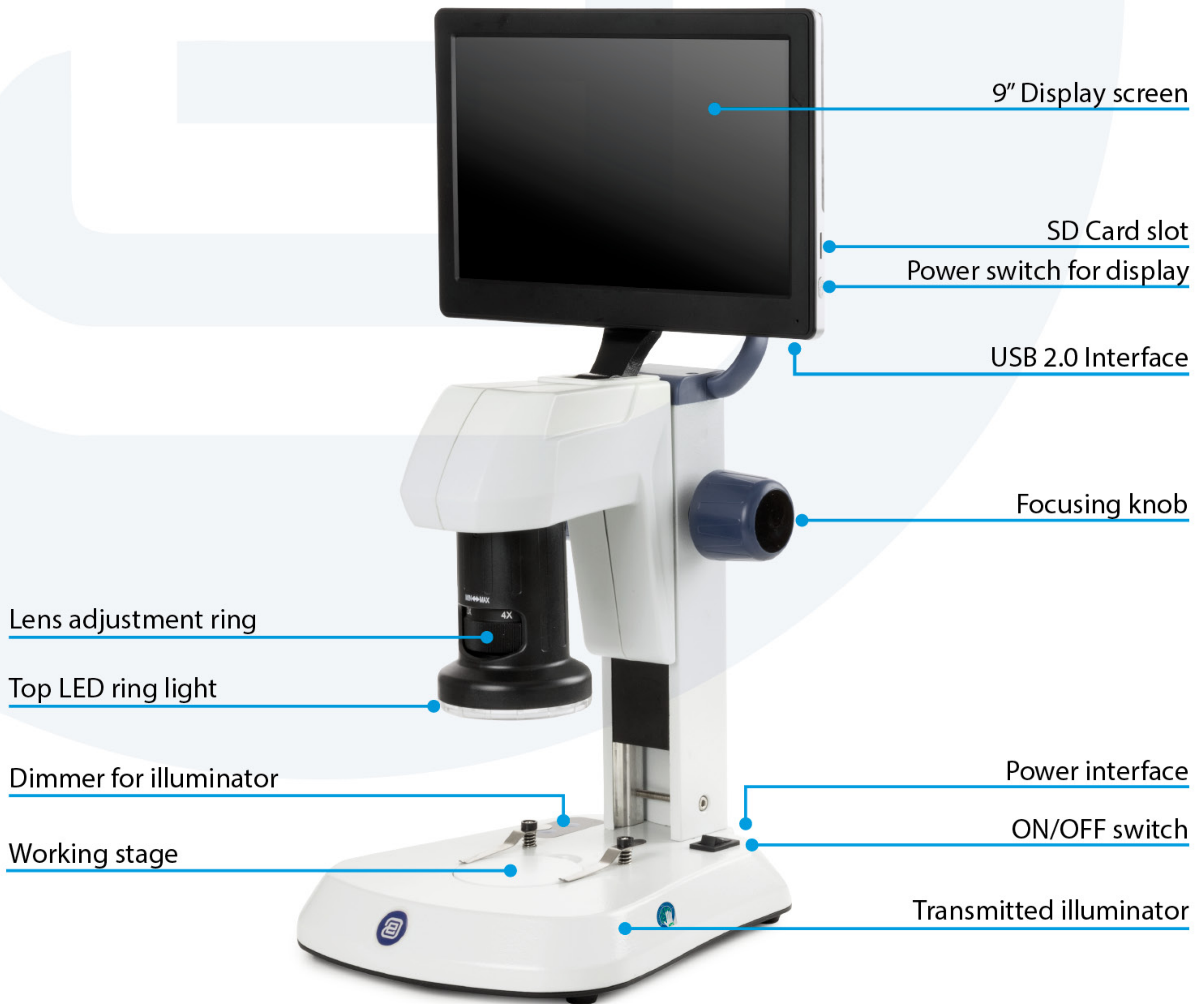
Prevent contact with water and other fluids

- Never allow water or other fluids to come in contact your microscope, this can cause short circuiting your device, causing malfunction and damage on your system

Moving and assembling

- The ED.3000 microscope is a relatively heavy system. Consider this when moving and installing the system
- Always lift the microscope by holding the main body and base of the microscope
- Never lift or move the microscope by its focusing knobs, stage or head
- When needed, move the microscope with two persons instead of one

Component



Maintenance

- All lens surfaces should be kept clean. It can be lightly wiped off by cotton cloth to remove. And it can be gently wiped with a neutral detergent or Euromex cleaning agent if dirt or fingerprints are present
- Organic substances should not be used
- Optical parts should be cleaned with dedicated cleaning agents only. No parts of the microscope should be taken apart
- When the microscope is not in use, use a dust cover

Operation

Operating environment

Room temperature at -5°C to +40°C.

Relative humidity is from 45% to 85%

Choose the working stage

The ED.3000 comes with a black/white stage as an accessory. When you want to use it, loosen the fixing screw, remove the glass table, replace it by the black/white stage. Finally tighten the fixing screw. Usually the white side of the black/white stage is upward. If the sample is white or has another light color, the black side of the black/white stage is upward to increase the image contrast. Incident light is needed in this case

Operating steps

- After putting the microscope on a stable table, turn the 9" display screen from a horizontal to a vertical position. Tear off the protective film. Insert SD card if you need to take photos or take a video. Finally connect the mouse to the USB 2.0 interface
- Connect the power of 100V~240V / 12V 1A, turn on the ON/OFF switch for microscope and display screen to "ON". Then adjust the light intensity for incident and transmitted light if needed
- Put the sample in the center of working stage, rotate the lens adjustment ring to the minimum position of 1X, then turn the focusing knob slowly until you can see a clear image on the display screen; If the magnification needs to be changed, you can rotate the lens adjustment ring, it can be changed from 1x to 4x

Technical data

Objective Lens:	1x~4x
Reduction lens:	0.3x
Fixed working distance:	90.5 mm
Image sensor:	1/3", 3 MP
White balance:	auto or one push white balance
Resolution:	2592 x 1944 / 60 fps
Pixel size:	2.75 x 2.75 μm
Singal/noise ratio:	above 65 DB
Optical zoom:	8.1x - 32.4x
Digital zoom:	1x - 10x
Function:	capture and take videos
Output:	USB2.0 interface
Power adapter:	100V - 240V / 12V 1A
Illumination:	- Incident illumination 21 x 20 mA LED ring light, - transmitted illumination 7x 20 mA LED both are adjustable via touchable switch
Calculation of total magnification:	Objective magnification x (25.4x size of monitor in inch ÷ diagonal line of CMOS) x magnification of reduced lens

Remark:

A: 25.4 x size of monitor (mm): 1 inch = 25.4 mm

B: Diagonal line of CCD: 1/3" CMOS: 6 mm, 1/2" CMOS: 8 mm, 2/3" CMOS: 11 mm

For example: when the objective magnification is 1x, the reduced lens magnification is 0.3x, CCD is 1/3", LCD size is 9", then: total magnification is: $1x (25.4x 9/6) x 0.3 = 11.43x$

Function Menu

Move the mouse to top right of the display, the function menu will show up

Main features:

- Image capture:** Click and capture image
- Video Taking:** Click and record video
- Preview:** Click and view the captured image and video

Interface setting

Move the mouse to the right side of the display to bring up the interface setup menu (see image on the right)

The screenshot shows a camera's function menu with the following settings and controls:

- Auto Exposure:** Includes a plus icon, a checkmark, and a red 'R' logo.
- AE:** Shows a 'Time' slider set to 30.
- White balance:** Includes 'AWB', 'Auto' (checked), and 'One Push' (unchecked).
- Flicker:** Includes a waveform icon, '50HZ' (checked), and '60HZ' (unchecked).
- Contrast:** Slider set to 55.
- Saturation:** Slider set to 50.
- Brightness:** Slider set to 45.
- Sharpness:** Slider set to Auto.
- Denoise:** Slider set to Auto.
- Red:** Slider set to 256.
- Blue:** Slider set to 256.
- Color Temp:** Slider set to 5000.

Below the sliders is a 'Setting' section with a clock icon and a time display: `□ - □ - □ □ : □ : □`.

The bottom section contains a grid of icons for various functions:

- Row 1: Magnify (+), Histogram, Contrast, HDR.
- Row 2: Magnify (-), Histogram, Lock, Crop.
- Row 3: #A, +/+, RET, +/.
- Row 4: |1, ON, a red square, and a minus sign.

Interface icons



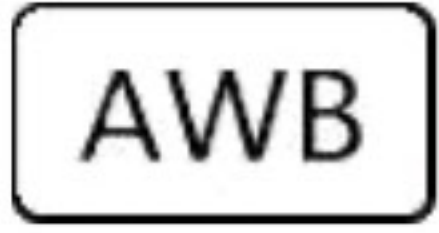
Automatic exposure:

Click to automatically set the shutter speed and aperture value



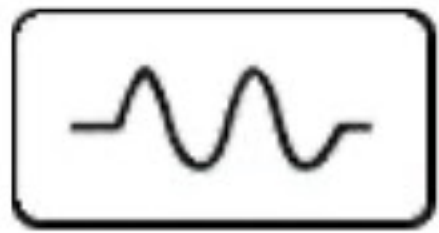
Exposure:

To adjust the shutter speed



White balance:

Auto or one push white balance



Anti-scintillation:

Based on the local frequency, choosing 50Hz or 60Hz



Reset:

To set the page setting back to default



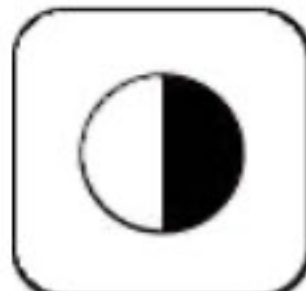
Contrast:

To adjust the brightness of the white screen to increase contrast



Saturation:

To adjust the richness of the colors



Brightness:

To adjust the clarity of the image



Sharpness:

To adjust the contrast of the image edge, the leftmost is automatic



Noise reduction:

To adjust the image noise, the leftmost is automatic



Red:

To adjust the value of the primary color red in the image



Blue:

To adjust the value of the blue color in the image



Color temperature:

To adjust the temperature of the emitted light color



Zoom in:

To zoom in on the image



Horizontal mirror:

To flip the image horizontally



Monochrome image:

For conversion of the color image to high-quality black and white images



HDR:

To open the high dynamic range image mode

**Zoom out:**

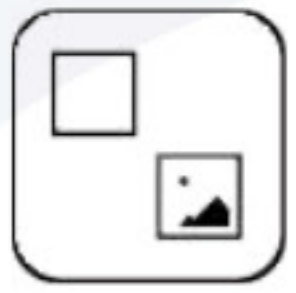
To zoom out the image

**Vertical mirror:**

To flip the image vertically

**Freeze:**

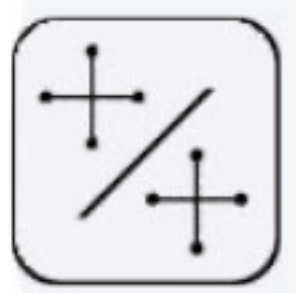
To freeze the image

**Image contrast:**

For comparison between live image and captured image

**Grid:**

For selection of grid layer, 8 layers are available

**Grid switch:**

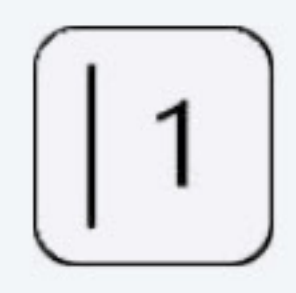
To turn on/off the grid

**Reset grid:**

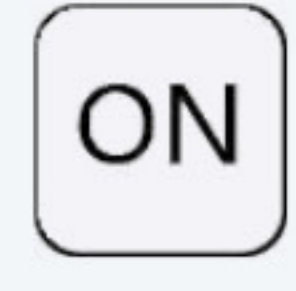
To reset current grid line

**Save grid:**

To save the current grid

**Grid line selection:**

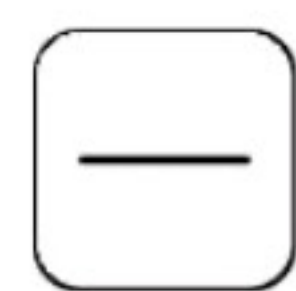
To select grid line, 8 vertical lines, 8 horizontal lines. 16 lines are available

**Line switch:**

To turn on/off grid line

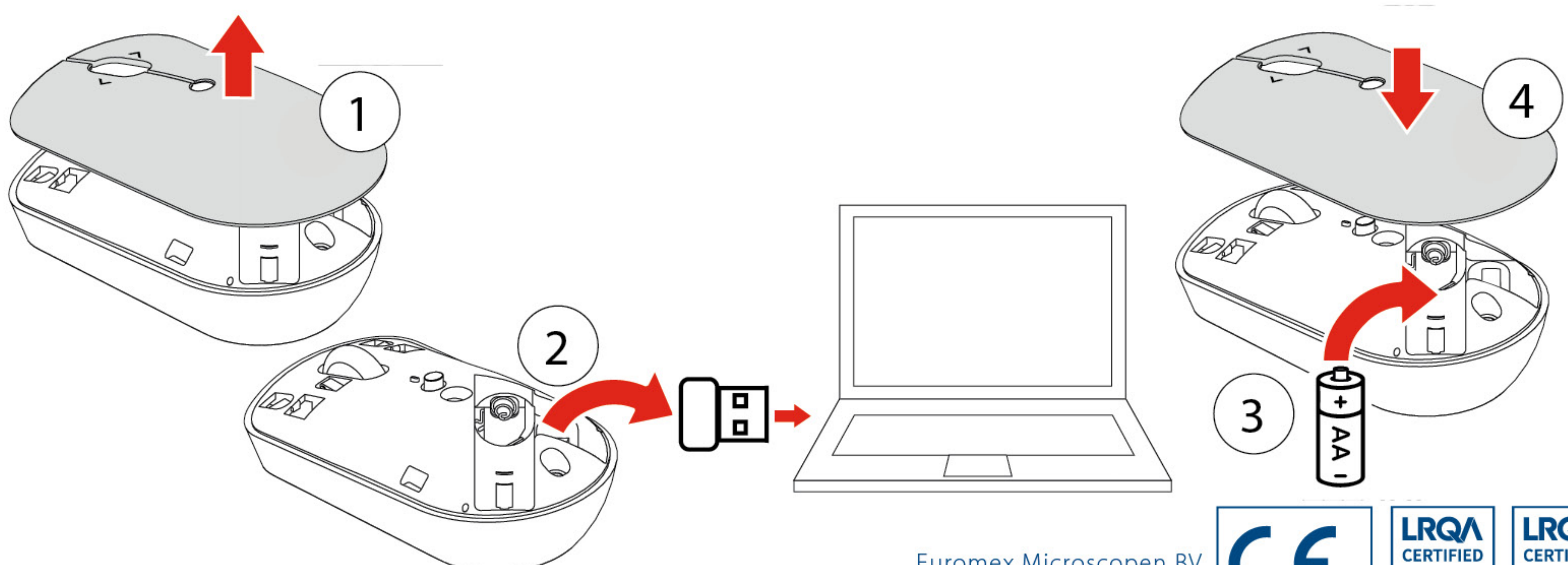
**Line color:**

To change the selected line color, 9 colors are available

**Line width:**

To change the selected line size, 4 sizes are available

Mouse and dongle



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