

Camera series C-B / C-B+ / C-P / C-E

INSTRUCTION MANUAL

Model
C-B Series
C-B+ Series
C-P Series
C-P(Cooled) Series
C-E2 Series

Ver. 5.3 2023



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1. Warning

This camera is a scientific precision instrument designed to last for many years with a minimum of maintenance. It is built to high optical and mechanical standards and to withstand daily use. We remind you that this manual contains important information on safety and maintenance, and that it must therefore be made accessible to the instrument users. We decline any responsibility deriving from incorrect instrument use uses that does not comply with this manual.

2. Safety Information



Avoiding Electrical Shock

Before plugging in the power supply, make sure that the supplying voltage of your region matches with the operation voltage of the equipment and that the lamp switch is in off position. Users should observe all safety regulations of the region. The equipment has acquired the CE safety label. However, users have full responsibility to use this equipment safely. Please follow the guidelines below, and read this manual in its entirety to ensure safe operation of the unit.

3. Package content

3.1 C-B Series



- ① Camera
- ② Projection lens
- (C-B1 0.35x, all others C-B 0.5x)
- ③ Reduction ring 30.5 mm
- ④ Reduction ring 30 mm
- ⑤ Micrometric slide
- ⑥ USB2.0 cable

3.2 C-B+ Series



- ① Camera
- ② Projection lens
- ③ Reduction ring 30.5 mm
- ④ Reduction ring 30 mm
- ⑤ Micrometric slide
- ⑥ USB3.0 cable

3.3 C-P Series



- ① Camera
- ② USB3.0 cable

- ③ Micrometric slide

3.4 C-P (Cooled) Series



- ① Camera
- ② USB3.0 cable
- ③ Micrometric slide

- ④ Power supply + cable
- ⑤ Transport box

3.5 C-E Series



- ① Camera
- ② USB2.0 cable

- ③ Reduction ring 30.5 mm
- ④ Reduction ring 30 mm

4. Unpacking

The device is housed in a moulded Styrofoam container. Remove the tape from the edge of the container and lift the top half of the container. Take some care to avoid that the optical items fall out and get damaged.



Do not touch with bare hands optical surfaces such as lenses, filters or glasses. Traces of grease or other residuals may deteriorate the final image quality and corrode the optics surface in a short time.

5. Intended use

Standard models

For research and teaching use only. Not intended for any animal or human therapeutic or diagnostic use.

IVD Models

Also for diagnostic use, aimed at obtaining information on the physiological or pathological situation of the subject.

6. Symbols and conventions

The following chart is an illustrated glossary of the symbols that are used in this manual.



CAUTION

This symbol indicates a potential risk and alerts you to proceed with caution.

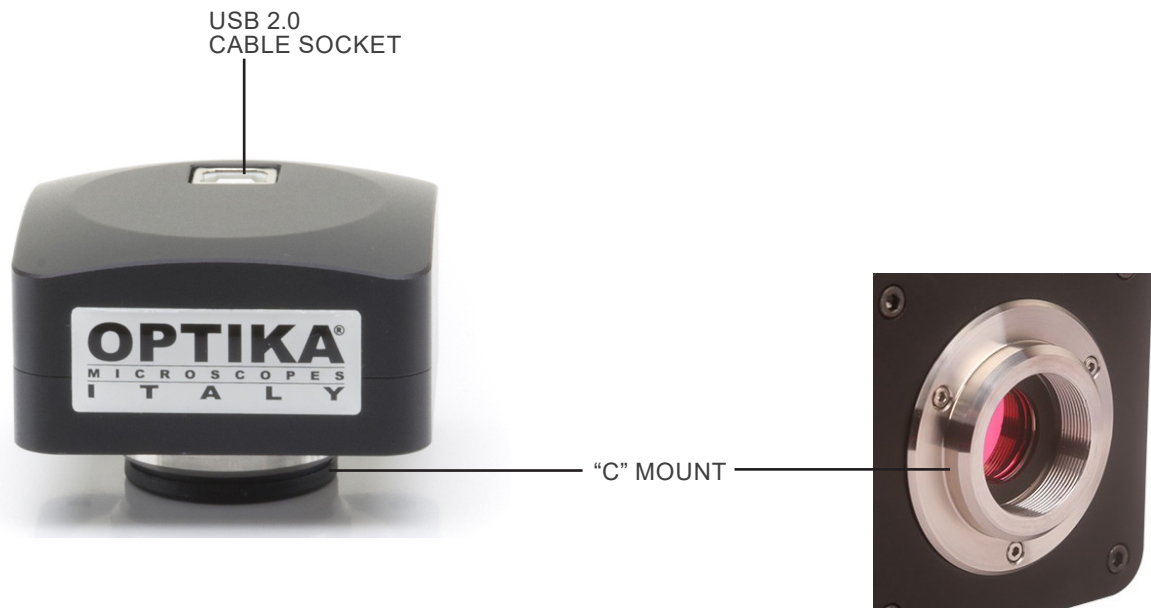


ELECTRICAL SHOCK

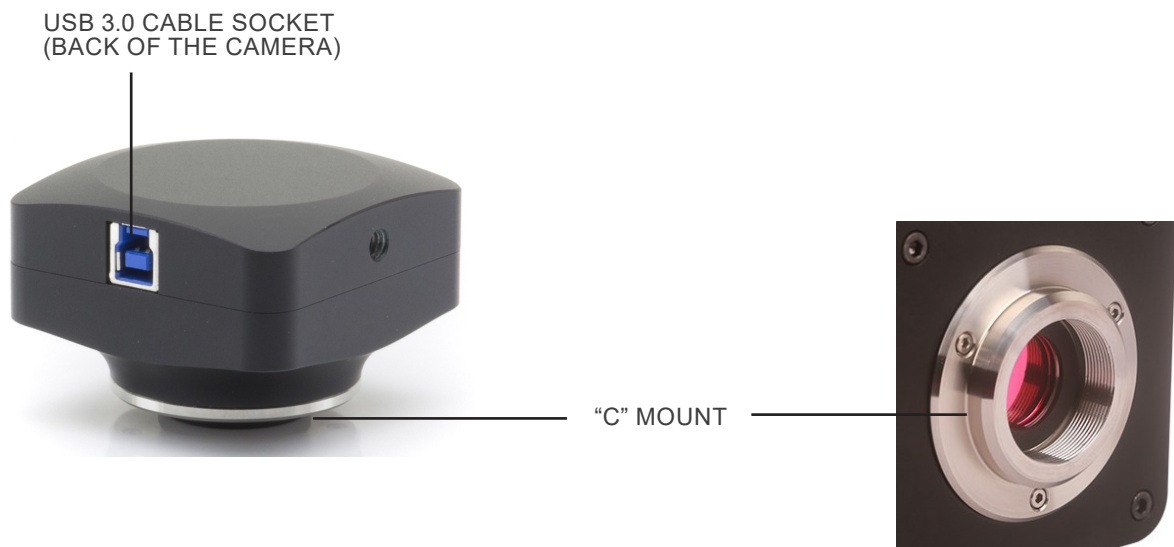
This symbol indicates a risk of electrical shock.

7. Instrument description

7.1 C-B Series



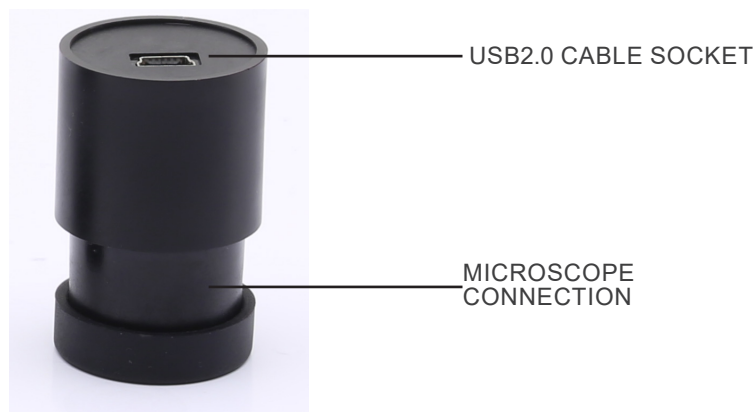
7.2 C-B+ / C-P Series



7.3 C-P (Cooled)



7.4 C-E Series



8. Assembling

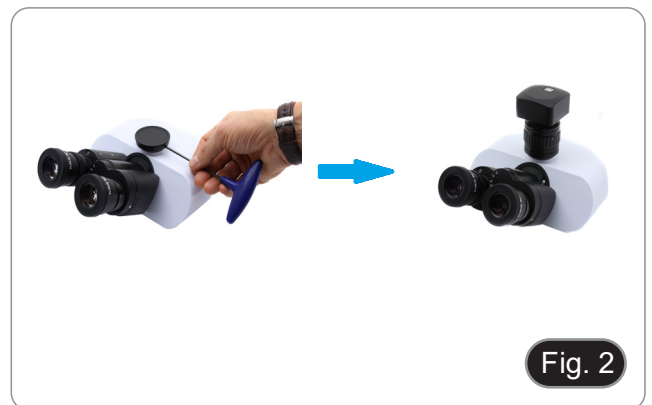
8.1 Assembling on microscope

8.1.1 Trinocular port with focusable "C" mount adapter

1. Remove the dust cover from camera and from "C" mount adapter.
2. Screw the "C" mount adapter to the camera's thread. (Fig. 1)



3. Loosen the clamping screw on the trinocular port of the microscope, remove the dust cover and install the camera "C" mount unit previously assembled. (Fig. 2)

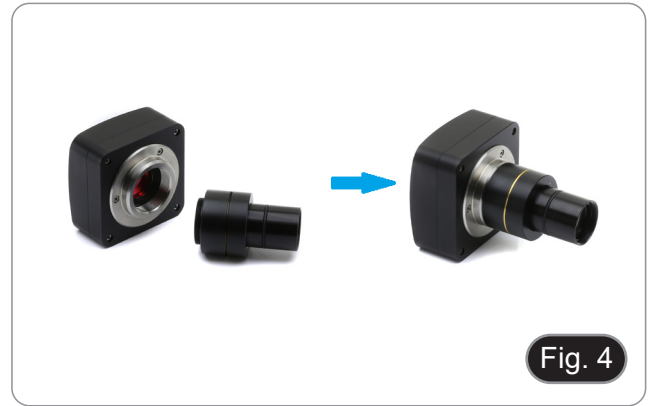


4. Tighten the clamping screw firmly. (Fig. 3)



8.1.2 Trinocular port with projection lens

1. Remove the dust cover from camera and from projection lens.
2. Screw the projection lens to the camera's thread. (Fig. 4)



- **Installing on biological microscopes**

3. Insert the final part of the projection lens into the empty hole of the photo tube. (Fig. 5)



- **Installing on stereomicroscopes**

4. Insert the final part of the projection lens into the empty hole of the photo tube. (Fig. 6)



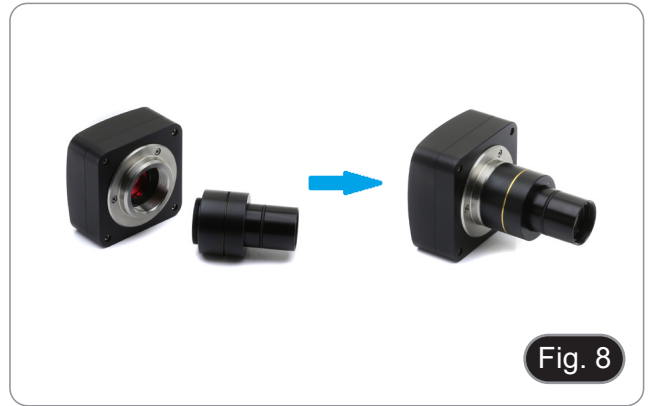
- **Installing C-E2 camera**

5. Insert the microscope connector in the empty hole of the photo tube. (Fig. 7)



8.1.3 Binocular or monocular head

- Any OPTIKA monocular or binocular microscope/stereomicroscope.
 - Any non-OPTIKA monocular or binocular microscope/stereomicroscope.
1. Remove the dust cover from camera and from projection lens.
 2. Screw the projection lens to the camera's thread. (Fig. 8)



3. Remove one eyepiece from the observation head. (Fig. 9)



4. Insert the final part of the projection lens into the empty eyepiece sleeve. (Fig. 10)

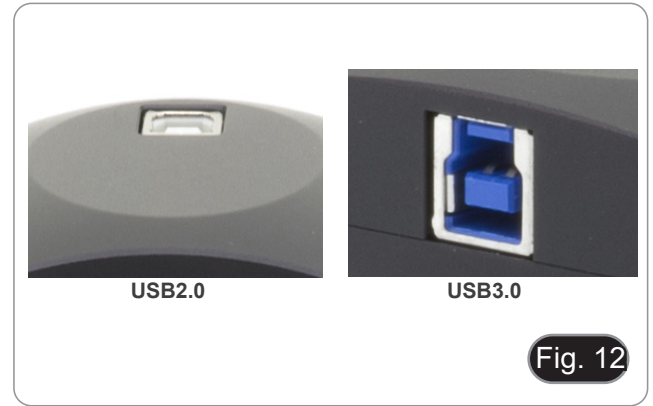


5. In case of eyepiece sleeve with diameter 30 or 30.5 mm use the adapter rings. (Fig. 11)



8.2 Connecting camera to PC

1. Connect one terminal of the USB cable to the camera connector and the other terminal to a USB port on the computer. (Fig. 12)
- NOTE: USB3.0 cameras can be connected to a USB2.0 port. The camera will operate normally, with some limitations due to improper power supply to the camera.
 - The SW in any case will warn that the USB3.0 camera works in 2.0 mode indicating next to the camera name “(USB2.0)”



8.2.1 Only for cooled versions

Connect the supplied power adapter to the connector ① to power the camera cooling system. (Fig. 13)



8.3 Parfocality adjustment

In order to have the same focus when observing the specimen through the eyepieces and on the screen/monitor, please check that the microscope is properly installed and follow the instructions below.

8.3.1 Biological microscope

1. Use a low power objective and focus the specimen.
2. Switch to the highest dry objective available on the microscope (40x or 60x) and focus the specimen again.
3. Turn on the live-view on the camera, without changing the focus on the microscope.
4. While observing the image on the screen/monitor, adjust the focus by turning the knurled knob on the C-mount adapter. (Fig. 14)



8.3.2 Stereomicroscope with “C” mount adapter

1. Use a low power magnification and focus the specimen.
2. Reach the highest magnification available using the zoom knob and then focus the specimen again.
3. Turn on the live-view on the camera, without changing the focus on the microscope.
4. While observing the image on the screen/monitor, adjust the focus by turning the knurled knob on the C-mount adapter. (Fig. 14)

8.3.3 Stereomicroscope with projection lens

1. Use a low power magnification and focus the specimen.
2. Reach the highest magnification available using the zoom knob and then focus the specimen again.
3. Turn on the live-view on the camera, without changing the focus on the microscope.
4. While observing the image on the screen/monitor, unscrew the fixing knob ① of the trinocular port (Fig. 15) and move up or down the movable part of the adapter ② until the focus is achieved on the camera. (Fig. 16)
5. Lock the fixing knob ①. (Fig. 15)

The proper parfocality adjustment is obtained when the same focus is reached when looking into the eyepieces and on the screen/monitor.



9. Use of camera

The camera is driven by a software.
Two levels of software are available: PROVIEW and LITEVIEW.

Inside the package is enclosed a Function Table showing the several software functions.
It will be the user's responsibility to decide which level of software best meets his needs.

The software can be downloaded from the site:
<http://www.optikamicroscopes.com/optikamicroscopes/optika-support/download-drivers-softwares/>

You will have to register to download the .zip file.

Once the file has been downloaded, you will have to run the setup.exe file.
At the end of the installation it is possible to start the software.

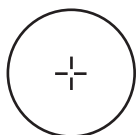
- **NOTE: no driver installation is required for the cameras. The software setup procedure automatically installs all the needed drivers for the correct operation of the camera.**

The software's User Manual is available in PDF format within the application itself and can be opened using the "F1" function key.
You must have Acrobat Reader installed to view the manual.

The manual contains all the operating instructions for using the camera and for the various functions of the software.

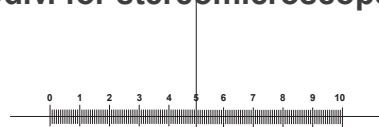
10. Micrometric Slide M-005

**Micrometric slide, 26x76mm, with 2 scales
(1mm/100div. for biological microscopes / 10mm/100div. for stereomicroscopes)**



1 DIV=0.01mm

For biological microscopes calibration



1 DIV=0.1mm

For stereo microscopes calibration

Equipment disposal

Art.13 Dlsg 25 July 2005 N°151. "According to directives 2002/95/EC, 2002/96/EC and 2003/108/EC relating to the reduction in the use of hazardous substances in electrical and electronic equipment and waste disposal."



The basket symbol on equipment or on its box indicates that the product at the end of its useful life should be collected separately from other waste. The separate collection of this equipment at the end of its lifetime is organized and managed by the producer. The user will have to contact the manufacturer and follow the rules that he adopted for end-of-life equipment collection. The collection of the equipment for recycling, treatment and environmentally compatible disposal, helps to prevent possible adverse effects on the environment and health and promotes reuse and/or recycling of materials of the equipment. Improper disposal of the product involves the application of administrative penalties as provided by the laws in force.