

# Operating instructions Tablet microscope camera

**KERN**

**ODC-25**

ODC 251

Version 1.0  
01/2025  
E





# KERN ODC-25

Version 1.0 01/2025

## Operating instructions

## Tablet microscope camera

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# 1 Declaration of conformity

The current EC/EU Declaration of Conformity can be found online at:  
<https://www.kern-sohn.com/shop/de/DOWNLOADS/>

## 2 Before commissioning

### 2.1 General information

Warnings are used in these operating instructions to warn you of possible personal injury or damage to property in certain situations.

#### Signal words and their description:

Signal word	Description
<b>DANGER</b>	Failure to observe the instructions will lead directly to serious injury, permanent impairment (e.g. loss of a limb) or death of the user or third parties.
<b>WARNING</b>	Failure to observe the instructions may result in serious injury, permanent impairment (e.g. loss of a limb) or death of the user or third parties.
<b>CAUTION</b>	Failure to observe the instructions may result in minor injuries or temporary damage to the user or third parties (e.g. minor cuts).
<b>NOTE</b>	Failure to observe the instructions may result in material damage.

#### Symbols, warnings and their meaning:

Icon	Meaning
<b>Warnings</b>	Warning signs warn you of dangers that could lead to injury. The symbol indicates the type of danger.
	Indicates general hazards or a danger point
	Warning of electrical voltage

Icon	Meaning
<b>Command character</b>	Mandatory signs prescribe measures that you must take to avoid personal injury or damage to property. The symbol indicates the actions or objects required to prevent damage.
	Designates a prescribed measure

## 2.2 Intended use

The tablet microscope camera enables a more convenient and effective way of microscopy by projecting the view of the sample onto a screen and providing the ability to measure, record and document.

## 2.3 Improper use

The 4K camera with HD touch display must not be used for medical purposes. Do not use the device in potentially explosive atmospheres or for measurements in liquids or on live parts. Unauthorized structural changes, attachments and conversions to the device are prohibited.

## 2.4 Guarantee

The warranty expires in the following cases:

- Non-compliance with our specifications in the operating instructions
- Use outside the described applications
- Modification or opening of the device
- Mechanical damage and damage caused by media, liquids, natural wear and tear
- Improper set-up or electrical installation
- Improper assembly or electrical installation

## 3 Basic warnings and safety instructions

### 3.1 Follow the instructions in the operating instructions

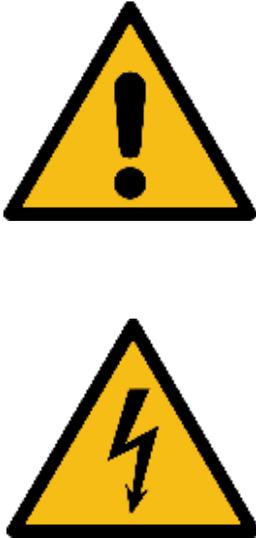


Read the operating instructions carefully before using the device, even if you already have experience with KERN products. Always keep the instructions in the immediate vicinity of the appliance.

### 3.2 Training of the user

The appliance may only be used by persons who have read and understood the operating instructions, particularly the chapter on safety.

### 3.3 Security

<b>⚠ WARNING</b>	
	<p><b>Read all safety information and instructions.</b> Failure to observe the safety information and instructions may result in electric shock, fire and/or serious injury.</p> <p><b>Keep all safety information and instructions for future reference.</b></p> <ul style="list-style-type: none"><li>• The packaging must be opened carefully to prevent the accessories inside from falling to the floor and being damaged. Avoid dirt or fingerprints on the camera's sensor, as in most cases this impairs the image quality.</li><li>• The sensors and electronics inside the camera are very sensitive to light. Therefore, never hold the camera in direct sunlight for a long period of time.</li><li>• Do not expose the appliance to strong vibrations.</li><li>• Do not use the appliance in a damp environment, do not place it under water and do not allow any liquids to penetrate the inside of the appliance.</li><li>• Do not operate the appliance in potentially explosive rooms or areas and do not install it there.</li><li>• Do not open the device and do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in a legible condition.</li></ul>

## 4 Transportation and storage

### Note

If you store or transport the device improperly, the device may be damaged. Observe the instructions for transporting and storing the appliance.

### Transportation

Use the original packaging when transporting the device to protect it from external influences.

### Storage

Observe the following storage conditions when the device is not in use:

- Dry and protected from frost and heat
- The ideal temperature range is between 0 and 40 °C and a relative humidity of 85 % should not be exceeded
- Protected against the ingress of dust

## **Packaging/return transportation**

Returns are only possible within the framework of the general terms and conditions. Keep all parts of the original packaging for any necessary return transportation

- Only use the original packaging for return transportation
- Disconnect all connected cables and loose/movable parts before shipping
- Reattach any existing transport locks
- Secure all parts against slipping and damage

## **5 Scope of delivery**



In the event of a return shipment, please observe the instructions in the chapter "Packaging/return transportation".

On receipt of the device, you should first check whether any damage has occurred during transportation, whether the outer packaging, the housing, other parts or even the device itself have been damaged. If any damage is apparent, please notify KERN & SOHN GmbH immediately.

### **5.1 Scope of delivery**

- Tablet microscope camera
- Plug-in power supply 12 V / 2 A
- Calibration scale with multi-micrometer
- Operating instructions



Before installing the display, make sure that all listed parts are included in the packaging.

## 6 Technical data and specifications

Model	ODC 251
Category	All-in-one tablet camera
Sensor	1/1.8" CMOS
Effective pixels	8 MP, 4K
Pixel size	2.0 $\mu\text{m}$ $\times$ 2.0 $\mu\text{m}$
Screen	10.5" touchscreen
Resolution	1920 $\times$ 1280 (Full HD)
Frames per second (FPS)	30 FPS at 3840 $\times$ 2158
CPU	Rockchip RK3568 Quad-Core
Operating system	Android 11
WLAN	2.4 GHz / 5 GHz, supports Wi-Fi 6
Bluetooth	5.0
Interfaces	USB 3.0, USB 2.0, HDMI, Gigabit LAN
Input voltage	12 V DC / 2 A (no battery operation)
Measuring software	S-EYE 2.0
Functions	Image adjustments, length measurement, geometric measurements, user interface supported
Image / video recording	8 MP / 1080 P
Image / video format	JPG / MP4
Measurement table format	XLS
Frame rate	30 FPS @ 1920 $\times$ 1080
Internal memory for image and video recordings	16 GB
Languages	German, English
Firmware software update	Made possible by KERN service
Connection type to the microscope	C-mount adapter
Overall dimensions	235 $\times$ 190 $\times$ 56 mm
Net weight	0.7 kg

## 7 Nomenclature



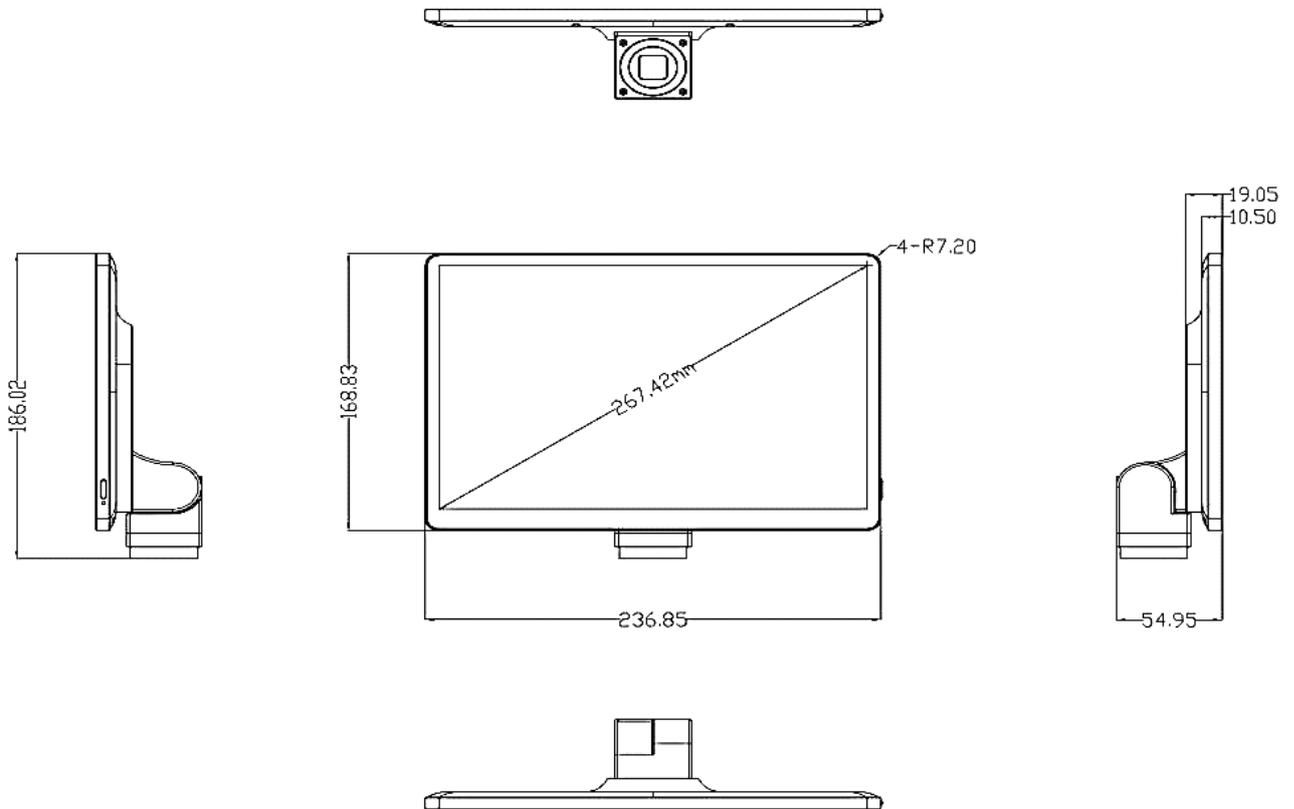
Pos. no.	Description
1	Tablet / touch display
2	Camera housing with C-mount



Pos. no.	Description
3	On / Off button
4	Power connection
5	HDMI
6	USB 2.0

Pos. no.	Description
7	USB 3.0 (2x)
8	Gigabit LAN
9	Loudspeaker
10	Tilt adjustment

## 8 Dimensions



## 9 Assembly

1. Remove the tablet camera and the power adapter from the packaging.
2. Remove the protective film from the display.
3. Unscrew the camera cover on the underside and remove the protective film from the sensor there too.
4. Screw the tablet onto the \*C-mount adapter on the trinocular connection of the microscope (see illustration on page 11).
5. Establish the power supply using the 12 V DC plug-in power supply unit supplied. The socket for the power connection is located on the back of the tablet.

*\*Not included in the scope of delivery*



### **Warning:**

Disconnect the appliance from the power supply if it will not be used for a long period of time.

**Tablet-Camera**



**C-Mount-Adapter**



**Microscope**



## 10 Introduction to the S-EYE camera software

### 10.1 Software features

The tablet camera can be connected to an external (larger) monitor via the HDMI port to obtain a synchronized real-time image from the camera.

Photos or videos can be taken via the touchscreen by touching the surface. It is also possible to use a (wireless) USB mouse via the USB 2.0 interface.

Image and video files are stored on the internal 16 GB memory. Using an external hard disk is also no problem. Simply connect it to one of the two USB 3.0 ports.

To copy files to a PC, establish a connection via the USB 3.0 or Gigabit LAN interface.

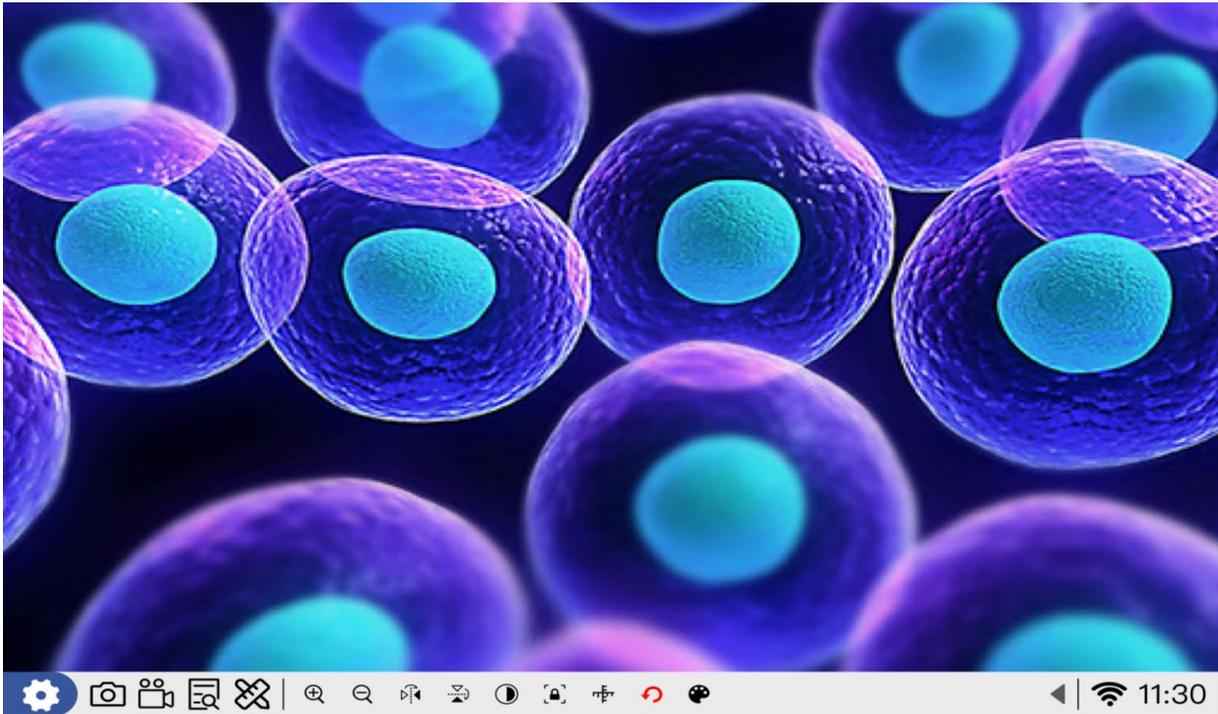
### 10.2 Switching on the tablet camera

Press the on/off button and hold it down for 2 seconds. The tablet camera must be permanently connected to the power supply for this, as **battery operation is not possible**.

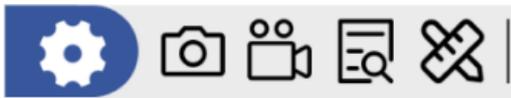
The Android 11 operating system then starts and automatically switches to the S-EYE 2.0 camera software. If this does not happen, start S-EYE manually. You can find the app on the Android  start page.

## 11 Operating the camera software

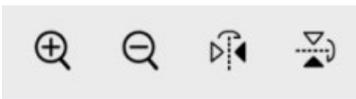
## 11.1 Home page



## 11.2 Basic symbols and their function



Setting, photo recording, video recording, preview, measurement



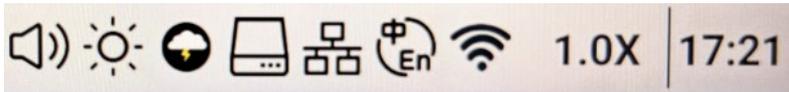
Digital zoom in / zoom out (1x~16x), flip image vertically, flip image horizontally



Black and white mode, freeze image, scale change, focus value (FV), adjust colour and line thickness, parameter reset

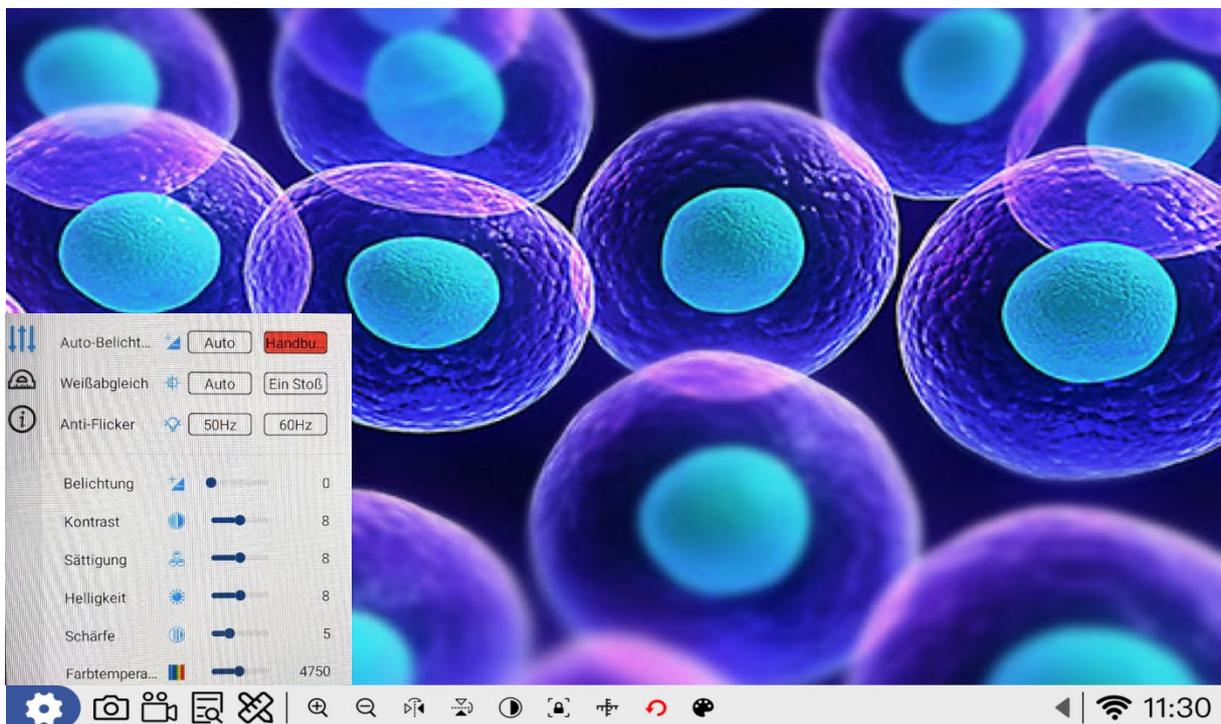


Click on the arrow to display further settings



Volume, brightness, browser, explorer, LAN, language, WLAN, magnification, time setting

### 11.3 Adjust image parameters



Click on the button  to open the settings menu as shown above and adjust the image parameters as required.

#### Automatic exposure

Manual setting and automatic setting (default).

#### White balance

Automatic (default) and one-touch set. Under the standard colour temperature click one-touch button, when the lens with standard light or white paper, the camera will automatically load parameters according to the current state to achieve the correct white balance.

#### Anti-flicker

The system offers 50 Hz and 60 Hz as an option.

### Exposure

Adjust the camera's exposure time as required.

### Contrast

Adjust the image contrast as required.

### Saturation

Adjust the saturation of the image as required.

### Brightness

Adjust the picture brightness as required

### Sharpness

Adjust the sharpness of the image as required

### Colour temperature

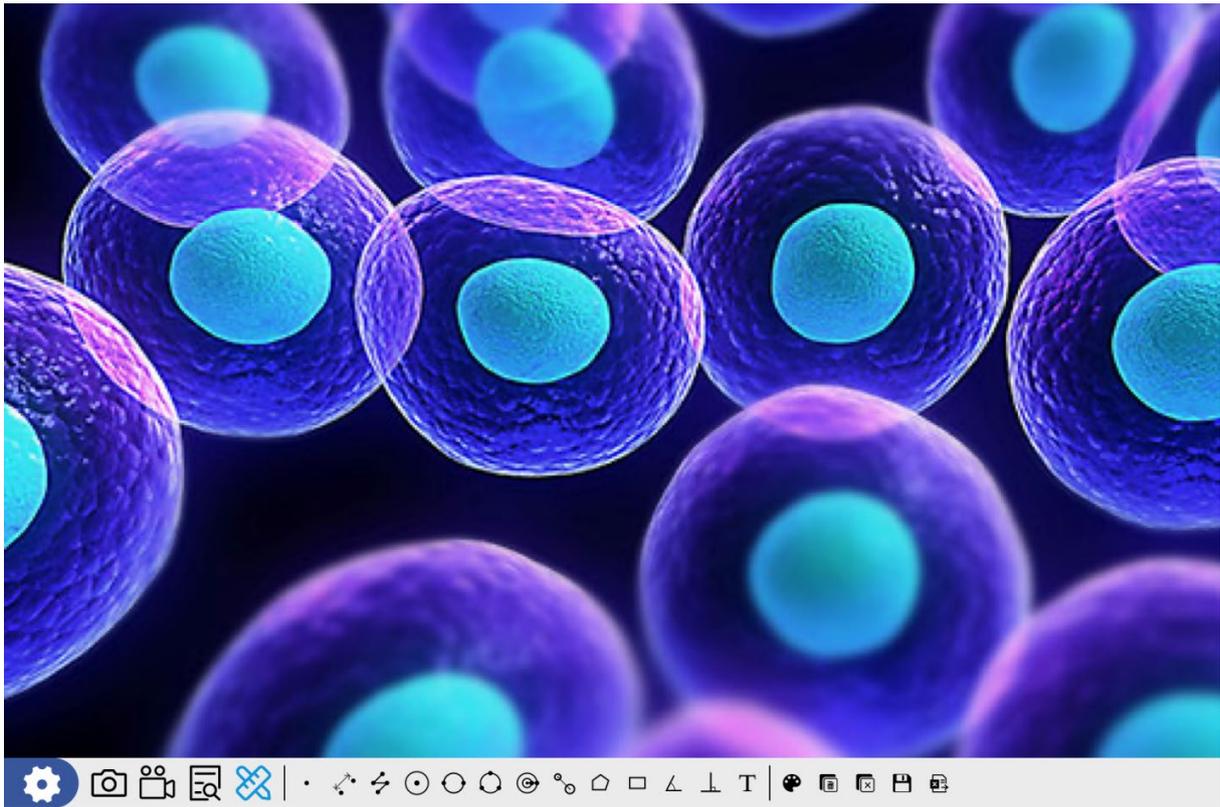
Adjust the colour temperature of the image as required.

## 11.4 Perform measurement calibration

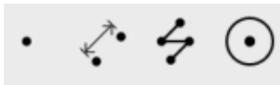
Click on the button  to enter the measurement calibration mode.

1. Select mode:  
The line calibration and circle calibration modes are available for calibration. After clicking on the symbol for line calibration, the preview interface directly displays the line segment. Depending on the position and length of the calibration scale, the line segment is moved with the mouse to the upper edge of the calibration scale in order to overlap with the corresponding scale. Specify the name, unit and accuracy and then click on the save icon to complete the calibration.
2. Delete:  
Click on the delete icon to delete unwanted calibration information.
3. Assign names:  
After drawing the line segment, the cursor jumps directly to this position. Enter the corresponding name and then select the unit, after you have confirmed, the cursor jumps to the next window
4. Specify accuracy:  
Once you have set the name and unit, you must set the appropriate number of decimal places to ensure measurement accuracy.
5. Switch scale on/off:  
This selection offers the option of switching the scale on or off

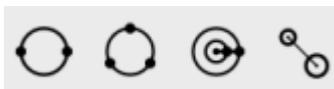
## 11.5 Measures



Click on  to enter the measurement mode. You can measure the objects and create a screenshot for a report.



Draw point coordinates, straight line, dashes (end of right mouse button), circle



2-point circle, 3-point circle, concentric circles, distance between circle centres



Polygon, rectangle, angle, point-line distance, text marker



Set colour and line thickness, delete last measurement, delete all measurements, screenshot measurement, export measurement results table (storage location: Measure)

## 12 Maintenance and cleaning



Disconnect the appliance from the power supply before carrying out maintenance and cleaning work.

### 12.1 Cleaning

Clean the device with a damp, soft, lint-free cloth. Make sure that no moisture penetrates the housing. Do not use sprays, solvents, alcohol-based cleaners or abrasive cleaners, but only clear water to moisten the cloth.

If handled correctly and checked regularly, the microscope camera should provide many years of good service.

### 12.2 Repair

Do not make any modifications to the appliance and do not install any spare parts. Contact your KERN & SOHN dealer or service department for repairs or to have the appliance checked.

## 13 Waste disposal



Old appliances and accessories must not be disposed of with household waste. The operator must dispose of the packaging and the appliance in accordance with the applicable national or regional legislation at the place of use.

The device consists of various components and materials, such as

- Electronic components (printed circuit boards, electrical cables)
- Plastic (housing)
- Metal (hook, housing)

Improper disposal of the appliance can have harmful effects on people and the environment.

Proper and environmentally friendly disposal can prevent harmful effects and recover raw materials.

## 14 Service

If, after reading the operating instructions, you still have questions about commissioning or using the tablet camera, or if unforeseen problems occur, please contact your KERN & SOHN dealer. The device may only be opened by trained service technicians authorized by KERN & SOHN.

## 15 Further information

The illustrations may differ slightly from the product.

The descriptions and illustrations in these operating instructions are subject to change without prior notice. Further developments to the device may lead to these changes.



All language versions contain a non-binding translation.  
The original German document is the binding version.



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