

Thank you for purchasing the futudent product.

Novocam Medical Innovations Oy (Novocam) is selling futudent for dental market.

These apparatuses are intended by the manufacturer to be used by qualified healthcare professionals to capture videos and pictures during dental and medical treatments for the purpose of documentation, providing additional information for diagnosis, following and evaluating changes of medical conditions and for educational purposes in dental and medical field.

Important Safety Information Warnings

- ! The device must only be used for the intended purpose described above only.
- ! The camera must not be connected to life-supporting computers or devices.
- ! Disassembling the device is prohibited.
- ! Do not make any changes, modifications or alterations to the device.
- ! Do not change lenses in vicinity of patients. If lens needs to be changed or focused make sure the camera is not above the patient due to the risk of lens drop.
- ! Do not leave loose cables on the floor. Cables on the floor should be protected by cable shields or otherwise sufficiently protected.
- ! Ensure all components or parts are attached before use:
 - Check that the camera lens is attached properly to the camera. Do not turn lens too much because it might fall out. The camera will be completely out of focus well before the lens detaches. If the lens is detached, insert it carefully so that the threads are not damaged.
 - Remove lens cover before attaching the camera to the overhead light or to the loupes.
 - Adjust the lens focus **before the operation / treatment**.
 - Make sure that the camera is attached firmly to the loupes, headband or overhead light with no wiggling.
 - When having camera mounted to the loupe, attach the cable spiral to the loupes before the operation.
 - Check that the device is clean. If not, clean the device carefully as described below.
 - The computer used for shooting videos must be placed at least 2m/7ft. from the patient.
 - If the device or its components function abnormally, stop using the device as soon as possible, and contact the seller or manufacturer.

Safety precautions

- ! Do not use the device outdoors.
- ! Protect the device from fluids.
- ! Do not use in direct sunlight, dust, salt, magnetic fields, chemicals, gases, radiation, electrostatic discharge, acceleration, thermal ignition sources or to adverse environmental conditions.
- ! Store the device in specified temperatures only.
- ! Keep cables away from fire or severe heat (over 70°C/158°F)
- ! Sometimes camera color settings are inaccurate, or monitors / screens are not presenting colors correctly and you need to adjust color settings.(see 7.5.)
- ! Camera's image quality can look low due to insufficient lighting conditions. Ensure sufficient amount of light. (see 7.6.)
- !

If you notice that device gets hot, has an odor, or changes color or shape, disconnect device immediately. **DO NOT USE THE DEVICE!**

Working condition precautions

- ! Do not use the device, when working temperature is above 30°C/86°F or when humidity is over 85 %.
- ! Do not handle the device by the cable.
- ! The camera must not be exposed to pressure, shock, vibration, or other mechanical stress.
- ! Do not use the camera with wet hands or wet gloves.
- ! Do not spray the device with water/detergent.
- ! Do not sink the device in any liquid.
- ! Do not use the device if the camera overheats (over 50°C/120°F), disconnect it from the computer and allow it to cool for one hour. If the device becomes hot again in a relatively short period (1-5min), do not use it and contact the seller or manufacturer.
- ! Check the cable visually from time to time. If the surface of the cable is damaged, contact the nearest local support or manufacturer.
- !

Storage condition precautions

- ! Keep the device in the temperature between 5° to 50°C (41F to 122°F).
- ! Keep the room relative humidity between 10% - 85% (non-condensing).

If Futulight is purchased (optional accessory)

- ! Do not use Futulight when it is connected to a power supply.
- ! Charge Futulight before the operation.

NOTE: It is advised that Futulight is not the primary light to use during the treatment / recording. An alternative light source is recommended in case the Futulight battery is running out.

- ! Do not charge Futulight battery on flammable materials, such as a bed, couch or on paper.
- ! Do not overcharge your device; unplug the device when fully charged.
- ! Never keep li-ion batteries near heat sources or in high temperatures, such as direct sunlight, radiators or laptops.
- ! Do not let battery get wet or to be exposed to liquids.
- ! Store the battery in a secure, dry, and cool place, and away from flammable materials. Keep batteries separate from metal objects.
- ! If you notice signs that the battery has a problem, such as overheating, odor, leaks, or change in color/shape, shut off the device and move it away from things that can catch fire and contact the seller or manufacturer..

Important

- If the camera **stops working** for any reason during the treatment, continue the treatment as you would do without the camera
- The device is not compatible with other devices that are not mentioned in this document. Connecting the device to any external device, such as electricity, gas or hydraulic and pneumatic source, is prohibited.
- Equipment must not be brought into contact with the patient or brought to the sterile area. **Do not touch the lens** during treatments in order to keep sterile.
- **Do not touch the camera** during the treatments

Liability notes

This instruction and the accompanying documents should be thoroughly read before using the device. Novocam Medical Innovations Oy is not responsible for any injury, damage or malfunction arising from the use or inability to use any information, apparatus, method or process disclosed in this document.

I. Know Your Device

I.1 Products Specification

proCam is the first miniature 4K (2160p) dental camera on the market and its 13-megapixel sensor captures both 4K video and hi-res still photos from either loupes or the overhead treatment light.

Technical specifications for proCam

- Resolution: 13 MPix / 4K & 1080p (video)
- Full aluminum body
- Weight: 29 grams (1.02 ounces)
- Dimensions: 32 x 23 x 29 mm (1.27 x 0.91 x 1.14 inches)
- Digital zoom (up to 3x)
- Optics changeable lenses with manual focus
- Hands free operations with USB foot pedal
- Mounting options:
 - Loupe mount (universal/loupe specific attachments)
 - Overhead light or Headband
 - Gooseneck/flexible arm
- USB 2 connection with detachable cable (USB micro connector)
- Camera is fully powered through USB
- Recording software: Win, Mac and Android
- 5 software licenses included/unit
- Regulatory compliance:
 - MDR 2017/745, classification I

eduCam - is a 1080p (fullHD) 30 FPS multi-mount camera designed for healthcare professionals.

Technical specifications for eduCam

- Resolution: 3.4MPix / Full HD (video)
- Full aluminum body
- Weight: 29 grams (1.02 ounces)
- Dimensions: 32 x 23 x 29 mm (1.27 x 0.91 x 1.14 inches)
- Digital zoom (up to 2.5x)
- Optics: Changeable lenses with manual focus
- Hands free operations with USB foot control
- Mounting options:
 - Loupe mount (universal/loupe specific attachment)
 - Overhead light or Headband
 - Gooseneck/flexible arm
- USB 2 with detachable cable (USB micro connector)
- Camera is fully powered through USB
- Recording software: Win, Mac and Android
- 5 software licenses included/unit
- Regulatory compliance:

- MDR 2017/745, classification I

microCam - is a miniature 1080p camera designed for loupe-mounting applications.

Technical specifications for microCam

- Resolution: 2.1 MPix / Full HD (video)
- Full aluminum body
- Weight: 18 grams (0.63 ounces)
- Dimensions: 30 x 20 x 20 mm (1.18 x 0.79 x 0.79 inches)
- SONY IMX sensor
- Optics: Changeable lenses with fixed focus
- Hands free operations with USB foot control
- Mounting options:
 - Loupe mount (universal/loupe specific mounts)
 - Overhead light or Headband
 - Gooseneck/flexible arm
- USB 2 with detachable cable (USB mini connector)
- Camera is fully powered through USB
- Recording software: Win, Mac and Android
- 5 software licenses included/unit
- Regulatory compliance:
 - MDR 2017/745, classification I

1.2 A complete sales unit include:

Cardboard camera case

- Camera (with 16mm or with 25mm lens)
- Camera box
- USB camera cable 1,5m
- Screwdriver
- Cloth clip
- Universal loupes clip
- Spiral Temple Clip
- System setup quick guide
- Focus assistant card

Installation Kit:

- 1pc universal overhead light attachment
- 1pc USB control pedal
- 1pc USB 5m camera cable
- 1pc 5m USB extension cables
- Cable clips:
 - 40 pc cable clips (15pcs flat cable clips, 15pcs curvy cable clips and 10pcs extension cable clips)
- Instructions for Use

2. Preparation

It is recommended to **test recording** prior the treatment to **ensure colors are acceptable for use**, see further instructions for color adjustment 7.5.

Ensure lighting conditions are sufficient and test the camera image before the treatment, see further instructions for sufficient lighting in 7.6

2.1 Camera Set up

2.1.1 Install on loupes

Loupe mounted filming provides the ultimate, unobstructed point-of-view (POV) angle of the procedure. Aligning the camera with the loupes and LED headlight makes it easy to work without focusing on filming. Simply work as usual, and everything seen through the loupes is being filmed in perfect focus and detail.

Benefits:

- Unobstructed point-of-view advantage
- Always in focus with the loupes
- No need to look at a screen to orient

2.1.2 Mount to the overhead light

Mounting a camera to the overhead light is an easy and effective way to integrate camera technology into every operator room. The overhead light is an ideal location for capturing images and videos without interrupting the procedure. Videos and pictures can be taken easily with the foot control. The camera is always available when connected to PC and SW is running, to get high quality documentation of any procedure the moment it's needed.

- Put the self-adhesive light connector in an optimal location aligned with the light. (NOTE: Do not stick on a surface heating over 50°C as it will melt the glue on the connector)
- Attach cables to the arm with the cable clips
- Reinstalling - removing cable clips and overhead light attachment (do not use sharp tools when reinstalling clips and attachment).

Benefits:

- Stable footage
- Always available
- Aimed with the light

2.1.3 Mount to the flexible arm (optional accessory)

Mounting the camera to a flexible arm provides a stable, close-up image for many applications like filming in labs, schools and training centers.

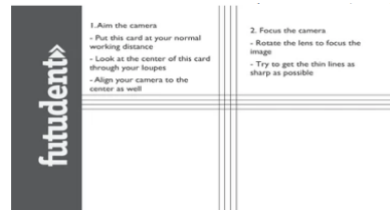
Benefits:

- Stable footage
- Always available
- Close ups and flexible aiming

2.1.4. Focusing the camera

When taking camera in use, camera needs to be focused based on **working distance**.

Find the Focus Card in the camera case



- Mount the camera as you intend to use it - on loupes or overhead light
- Place the focus card at your normal working distance
- Aim the camera
- **If using loupes**, look at the center of the focus card through your loupes
- Align the camera to the center of the focus card
- Focus the camera by carefully turning the lens
- Try to get the thin lines as sharp as possible

2.2 Install Futudent Recording Software

futudent recording software is for dental solutions including cloud service. It is applied for eduCam / microCam / proCam and it is available for Windows, Mac, and Android.

- Go to our website: <https://www.futudent.com/services/software>
- Log in or create a futudent account to access the download page.
- Download and run the installation file.

2.2.1 System requirement check

We recommend you check that your computer system meets the basic requirements before installing the Futudent recording software.

We strongly recommend regularly checking and installing updates for your operating system and applications.

All the requirements are available at:

<https://www.futudent.com/services/software#basic-system-requirements>

2.2.2 Hardware Requirement for Windows OS

- Personal computer (Windows 7 or later)
- NET Framework 4.5
- 4GB RAM or higher
- USB2 or USB3 port for the camera + additional USB port for foot control pedal

How to find your computer specifications Windows (Windows 10 similar process on Windows 7 & 8)

Check Windows version, processor, and RAM

- To open *System information*, right-click the Start icon and select *System*
- System specifications are displayed as below

Check your CPU rating

- Open www.cpubenchmark.net in a web browser
- Click on *Search for your CPU model*
- Use the search field to find your CPU model by entering your CPU model number (typically found under *System Information*) into the search field
- Your CPU rating is displayed in the *Passmark CPU mark* column

Check/change screen resolution

- To open *Advanced display settings*, Search for *screen resolution* from the *Start* menu and select *Change the screen resolution*.
- Check current screen resolution and change if necessary. Screen resolution of 1024x768 or higher is required.
- Click *Apply* to apply and save any changes.

Check USB port

- To open *Device Manager*, right-click the *Start* icon and select *Device Manager*.
- Expand the *Universal Serial Bus Controllers* option and check that you have either USB2 or USB3.

Check Graphic card

- To open *Device Manager*, right-click *Start* icon in the bottom left corner of screen and select *Device Manager*.
- Expand *Display adapters* to check if you have the Intel graphics card.

Minimum requirement for HD (720p) mode recording

- CPU rating over 3000
- Screen resolution of 1024x768 or higher

Minimum requirement for Full HD (1080p) mode recording

- Hardware encoding (QuickSync technology)
- Intel i5 or i7 (Ivy Bridge or newer) processor
- Intel graphics card
- CPU rating over 4000
- Without hardware encoding: CPU rating over 5000
- Screen resolution of 1024x768 or higher

Recommended for Full HD (1080p) mode recording

- Intel 5 or i7 (Broadwell or newer) processor
- CPU rating over 5000
- Screen resolution of 1920x1080 or higher

Minimum requirements for 4K (2160p) recording on Windows:

- Windows 10 computer, Intel i5/i7 7th generation processor with at least 6000 points in CPU benchmark.
- In order to see all the details in 4K videos, you need to have a 4K (3840x2160) capable screen.

Note that you can connect your PC to external 4K screen (even your computer screen is not a 4K resolution screen).

Recommended for 4K (2160p) recording

- CPU rating over 10000*
- Screen resolution of 1920x1080 or higher

2.2.3 Hardware requirements for Mac

- OS X version 10.13 (High Sierra) or newer
- Minimum 8GB RAM
- MacBook Air/Pro 2013 or newer
- USB port for the camera + additional USB port for remote control pedal

Minimum requirement for 720p mode

- (Macbook Pro/Air, iMac, Mac-mini) 2013 or later

Minimum requirement for 1080p mode

- (Macbook Pro/Air, iMac, Mac-mini) 2015 or later

Recommended for 2160p mode (proCam only)

- (Macbook Pro, iMac, Mac-mini) 2017 or later

How to find your Mac's system information

- Select *About this Mac* from the Apple Menu (top left corner)
- Mac OS version and other system information is displayed
- Select *Displays* to view screen resolution

2.2.4. Hardware requirements Android OS

- Android 9.0 (Pie) or later
- 64bit CPU
- 4GB RAM or higher
- OTG adaptor
- USB2 or USB3 port for the camera

2.2.5 Download the software to computer

Recording software is used for taking picture and recording videos during the treatments. Photos and videos are saved locally on your computer in the predefined folders. Photos and videos can also be uploaded to the Futudent cloud for secure sharing with patients or colleagues (futudent software). All videos are recorded in h.264 mp4 format. (Referring to 2.2)

2.2.6 Download the futudent App to Android mobile devices

- Search for "Futudent" in the App Store/Google Play Store
- Click install and follow the prompts to complete the installation.
- Connect the camera to your mobile device with an active USB cable and OTG (on-the-go) adapter.
- Start the Futudent app and grant all required permissions (only required first time app is run)
- Live feed from camera should now be visible - if not visible, disconnect camera and reconnect after a few seconds.

3. Using the device**3.1 Introduction of recording software**

After you have installed the device to light/loupe/flexible arm, connect the camera cable to the camera and plug foot pedal cable to your computer. If your set up needs an extension cable to reach the pc, use the provided active USB extension cable (5m long) to connect the camera to the pc. Open the Futudent recording software by double clicking the application icon.

In the software, you have following options:

Camera settings

- Select active camera and check resolution and frame rate for your camera.

Start / Stop Recording

- On-Screen - click the camera icon to take a still photo.
- Foot pedal - press the pedal for 3 (three) seconds to start or stop recording. To create a bookmark during recording press pedal briefly.
- Keyboard - press the F6 key for 3 (three) seconds to start or stop recording. To have a bookmark during recording press F6 key briefly.

Taking Photo

- On-screen - click the camera icon to take a photo
- Foot pedal - press the pedal briefly to take a photo
- Keyboard - press the F6 key briefly to take a photo.

Microphone

- A microphone is not integrated in the camera: Choose any microphone connected to the PC in the software.
- The microphone is on by default. The microphone can be muted/unmuted by clicking the microphone icon in the software.

Resolution, white-balance and brightness settings are available

- Automatic White balance can be selected from Camera settings in the software.
- White Balance locking for the **microCam**
- You can **lock the white balance setting**. This keeps colors constant during recording and eliminates fluctuation in white balance if the lighting is varying. Open **Camera settings** and select **Lock WB**.

Gallery

- Saved photos/recordings can be viewed, deleted and uploaded to cloud or shared with patients or colleagues.
- Photos are stored in JPG format in the **Futudent Photos** folder on the desktop (by default).
- Bookmarks are created by tapping the foot pedal or clicking the camera icon during recording. This allows finding specific moments easily, and you can move between bookmarks using up/down arrow keys. Further instructions or notes can be added to the bookmarks during replay, and additional bookmarks can be added by clicking the camera icon during video playback.
- Videos are h.264 mp4 format and editing videos can be done with third-party software.

3.2 Share videos from Futudent recording application over the cloud

Before applying the function, you would need to have a Futudent account.

- Open www.futudent.com in a web browser and select *Register* in the top right corner of the page. Follow prompts to set up your Futudent account.
- If you already have a Futudent account, please select *Login* and enter your login details.

3.2.1 Send to the patient via application

- Start the Futudent recording application and log into your Futudent account to view recordings in your gallery.
- A login window is automatically opened when the recording application is launched.
- Alternatively, log in by clicking on the *Gallery* button in the bottom left corner of the application and then *Login* button in the top left corner of the gallery panel.
- Select *Save and Share* after making a new recording or click on the video you wish to share in the gallery and select *Upload / Send*.
- On the "Send to Patient" tab, fill in the following fields:
 - Patient's email address
 - Subject
 - Personal Message
 - You can share additional files as follows:
 - Click "Add file".
 - Select the files from your computer and click "Open".
 - Click "Send".
- Patient will receive a link to the shared recording by email. They will need to log in/Register to view video(s).
- Videos shared to patients automatically creates a free user account on mydentalbook.com for the patient.
- The mydentalbook.com secure cloud platform can be used in communication with patient.

3.2.2 Send to the colleagues via application

- Start the Futudent recording application and log into your Futudent account to view recordings in your gallery. A login window is automatically opened when the recording application is launched.
- Alternatively, log in by clicking on the *Gallery* button in the bottom left corner of the application and then *Login* button in the top left corner of the gallery panel.
- Select *Save and Share* after making a new recording or click on the video you wish to share in the gallery and select *Upload / Send*.
- On the "Send to Colleague" tab, fill in the following fields:
 - Colleague's email address
 - Subject
 - Personal Message
 - You can share additional files as follows:
 - Click "Add file".
 - Select the files from your computer, and click "Open".
 - Click "Send".
- Colleague will receive a link to the recording on the futudent.com secure dental professional cloud platform by email. They will need to log in/create a Futudent account to view case(s).

3.3 Share via the Futudent Cloud Service

3.3.1 Uploading recordings to Futudent cloud via recording software

- Log in to your Futudent account.
- Start the Futudent recording application and log into your Futudent account to view recordings in your gallery. A login window is automatically opened when the recording application is launched.
- Alternatively, log in by clicking on the *Gallery* button in the bottom left corner of the application and then *Login* button in the top left corner.
- Select *Save and Share* after making a new recording or click on the video you wish to share in the gallery and select "Upload / Send".
- Select the "Upload" tab and click the Upload button to begin upload.
- Log in to your Futudent cloud account from www.futudent.com to view uploaded videos.

Uploading recordings to Futudent cloud via web browser

- Open www.futudent.com and log in to your Futudent account. If you do not have a Futudent account, select *Register* in the top of the webpage and follow the prompts to set up your Futudent account.
- Click "Upload" button in the top right corner of your Futudent homepage.
- Fill in the Title, Description (optional), and Category of the recording you wish to upload.
- Click "Choose file" to browse your computer and select the file you wish to upload.
- Click "Upload".

3.3.2 Share recordings to the colleague via Cloud

- Open www.futudent.com and sign in to your Futudent cloud account.
- From the Tasks menu on the left, click *Add Case*
- Enter the case title and description
- Enter an email you would like to share your case with and click *Add User*. You can do this for as many people as you would like to add.
- *Media* icon to select a recording from your Futudent cloud account or upload a new recording from your computer.

4. Maintenance and Disposal

4.1 Cleaning

With proper care, your camera and its optical-electrical parts will have a long life. Cleaning and disinfection recommended being made as follows:

- Disinfecting can be done using low-alcohol disinfectant.
- Use a wipe to clean the device.
- Remember to squeeze excess fluid out of the cloth/wipe before cleaning the device.

When cleaning:

- Do not directly spray any liquid onto the device.
- Do not sink the device into the water or put it under running water.
- Never spray the device with detergent or any other liquid.
- Do not use autoclave for the device.
- Do not use a cleaning detergent with alcohol concentration more than 70%.

4.2 Service

It is recommended always to check the camera and accessories before the operation:

- Check all the parts are tightly attached
- Check the cables are not worn or damaged and not left on the floor.
- Make sure User Instructions are available for users.
- Futulight (if purchased) battery is charged.

4.3 Annual check

It is also recommended to make annual check for cameras as follows:

- Inspect that all hardware (camera and accessories) is in good and clean condition, no external damages to be seen.
- Instructions are available.
- Check that you are using the latest software version, if not, update the latest version of the software.

4.4 Disposal instruction

Dispose the camera according to the rules defined in your country. Generally, the device must be brought to an appropriate collection point for electronic waste, such as a home appliance dealer or an official electronic waste collection point. The device may also be sent back to the seller or manufacturer.

Never throw Futulight li-ion batteries in the trash. This causes pollution and can be a fire hazard. To properly dispose li-ion batteries, take them to a battery recycling location or contact your local waste management service provider for disposal instructions. Put batteries in a sealed metal container before recycling them.

5. Warranty

5.1 Warranty period

The standard limited warranty for Novocam Products is two (2) years from the date of original purchase, with the following exceptions: 1. Accessories are covered by a standard one (1) year warranty 2. Software incorporated in the Products is covered by End User License Agreement (EULA) and its warranty terms. Up-to date EULA is made available <https://www.futudent.com/contact/about/terms-of-service> which EULA must be accepted prior or during Software installation. Warranty period starts when the product is delivered and/or given to the Buyer.

This limited warranty covers defects in materials and workmanship in the Products and Accessories.

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from any unauthorized tampering with the Product or Accessory, any repairs attempted by anyone not authorized by Novocam Medical Innovations Oy to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of the Product or Accessory.

This limited warranty is void if (i) the label bearing the serial number of the Product and/or Accessory has been removed or defaced, (ii) the Product and/or Accessory is not distributed by Novocam or (iii) the Product and/or Accessory is not purchased from an authorized Novocam distributor. Your rights under the limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. Operator may not be held liable for defects or dysfunction of the Software and/or the Service due to (i) lack of qualification and competence on the part of the persons using it, and/or (ii) changes made by the Licensee, a third party other than Operator or not previously certified in writing by Operator, and/or (iii) software and/or equipment is not supplied and installed by Operator or its authorized distributor.

5.2 Remedy

Novocam will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

Elect to repair of any defective part within a reasonable period of time, free of any charge for needed parts and labor to complete the repair and restore the Product and/or Accessory to its proper operating condition. Novocam will also pay the shipping costs necessary to return the Products and accessory once the repair is complete.

- Replace the Products and/or Accessory with a direct replacement or with a similar product deemed by Novocam to perform substantially the same function as the original Product and/or Accessory.
- Issue a refund of the original purchase price less depreciation to be determined based on the age of the Product and/or Accessory at the time remedy is sought under this limited warranty.
- If this Product and/or Accessory is returned to Novocam or the authorized distributor from which it was purchased, or any other party authorized to repair Novocam products, The Product and/or accessory must be insured during shipment, with the insurance and shipping charges prepaid by Buyer. If the Product and/or Accessory is returned uninsured, Buyer assumes all risks of loss or damage during shipment.

5.3 How to obtain remedy

To obtain a remedy under this limited warranty, Buyer must contact either the authorized Novocam distributor whom the Product and/or Accessory was purchased from Novocam. In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Novocam distributor. If the Product and/or Accessory is returned under this limited warranty, a return authorization will be required from Novocam, Buyer may also be directed to an authorized distributor or a person authorized by Novocam to repair the Products and/or Accessory. If it is decided that the Products and/or Accessory should be returned directly to Novocam, the Product and/or Accessory should be properly packed for shipping.

6. Available accessories

Novocam provides also following futudent optional accessories. They are available at our company web shop:
<https://www.futudent.com/shop>

6.1 Camera Lenses

Lenses are designed to be used in operatory rooms and they offer exceptional depth of view.

Available lenses:

- 8mm lens, UHD 5MP, 1-1.5X magnification, wide angle
- 16mm lens, UHD 5MP, 2X magnification, optimal for loupe/gooseneck mounting
- 25mm lens, UHD 5MP, 4X magnification, optimal for light mount

6.2 Futulight

Futulight is a LED headlight designed for futudent cameras and it provides optimal image quality for videos and still photos.
 Technical specifications:

- Charger: 110V-220VAC, 50-60Hz
- Battery capacity: 3,7V 4400mAh
- Battery life: With full intensity about 9h, with 50% intensity about 13h
- Charging time to reach full charge: 10h
- Max output: 32 000LUX, linearly adjustable
- Color temperature: ~6500K Light spot size: Approximately 7cm diameter from 25cm distance

6.3 Installation kit

Installation kit contains accessories needed to install a camera for an operatory room, content described in 1.2.

6.4 Flexible arm / Gooseneck

The flexible arm can be mounted on tables, chairs, light fixtures and other fixed positions. Base with clamp is 60cm, extension part 50cm.

6.5 Headband

The lightweight headband for mounting the camera. The cables can be integrated within the soft padding.

6.6 Light and Loupe Attachments

Novocam has wide library of attachments available for various loupes and headlights. Novocam continuously develops the attachment library based on customer requests.

6.7 Wireless pedal

You can buy optional wireless pedal to your device. Plug the wireless USB receiver into a free USB port in your computer or USB host device. You can now check the successful operation of the devices by pressing and releasing the pedal – an LED on the USB receiver will briefly flash every time the pedal is pressed. The wireless pedal can now be positioned up to 10 meters from the USB receiver.

6.8 Isolator

The camera is connected to a computer via USB. However, if electrocautery/surgery devices are used or if the computer used is not medical grade in a medical environment, an isolator needs to be used to ensure conformity. If you need to purchase an isolator, please contact futudent support.

6.9 Other Attachments

- Overhead light attachment
 - Cable clips, curved, flat, extension cable clips
- Take special attention when unpacking to verify all components listed in the packing list are present.

7. Trouble shoot

7.1 Camera stops functioning

Electrocautery or electrosurgery device is taken in use while the camera is attached to the loupes. Several cases have been noted where the camera stops functioning which seems to be connected to a leakage current / interference conducting through the USB cables.

A solution: USB isolator should to be taken in use between the camera and the computer when using electrocautery or electrosurgery device (see also 6.8.).

7.2 Futudent recording software cannot open or frozen frequently

If recording software do not open after software installation on the computer / mobile device or software is not operational.

A solution: Futudent recording software are hardware and software dependent, we strongly recommend reading the system requirements list (section 2.2.1) before installing. Update your PCs, mobile devices and software regularly.

7.3. Camera is not detected

After installing the software and connecting the camera to the PC, the software screen still shows "camera not detected!", clicking the "refresh" button does not seem help.

A solution (Windows):

- Go to "control panel" -> " Device Manager" or search "Device manager" by clicking on the "camera" button. Right click on camera name (eduCam, proCam or microCam) to do the uninstallation and

installation it again. After that try "refresh" button on software screen.

- If the camera cannot be found in "Device manager -> Camera" list, please try with other available devices. If the camera still cannot be detected, we would suggest trying with other connecting cables. If this does not help, contact your local support point or manufacturer.

7.4. Camera signal is not stable

The camera connecting signal is unstable, recording cannot continue.

A solution: Double check that all USB ports and joints are fatigued. Carefully check that all cables are integrated. *Note: If several extension cables are used at the same time, it may affect the performance of the camera. Try using a shorter extension cable.*

If you want to learn more about the device, we kindly recommend that you read the "Futudent user guide" page in relevant topics. This page can be found on our website: <https://www.futudent.com/support/user-guide>

7.5 The camera's color representation differs from human perception

Sometimes camera color settings are inaccurate, or monitors / screens are not presenting colors correctly.

A solution: Following procedures can be done to correct colors:

- for adjusting color settings, test color palette can be used for comparison purpose.
- camera color adjustments (brightness, contrast, hue, saturation, white balance) can be done in the camera control panel in the software.
- color adjustment to monitors can be adjusted on the monitor or operating system.
- Reference color samples are recommended to be used to ensure color accuracy.

7.6 Camera's image quality is low

Camera's image quality can look low due to insufficient lighting conditions.

A solution: In general, good quality recordings can be achieved when sufficient quality of light is available.

- Ensure the light intensity (recommendation more than 10 000 lux) and color spectrum of light (recommended CRI is over 80) is sufficient for using the device.

8. Support and contact

8.1. Contact local partner

Our devices have been distributed by our partners in each country worldwide. We would advise you to contact your local reseller where you have purchased the device as first help. They may help you directly and immediately.

8.2. Contact Futudent support

You always can reach our support team by visiting our website <https://www.futudent.com/support>

You may

- Submit a ticket
- Call us directly by the numbers:
Europe and Rest of the World: +358 50 3880008
North America (24/7): +1 (888)-539-3828
- Request set a remote support session
- Send an email support@futudent.com

8.3. Contact manufacturer

You are welcome to contact by filling the General contact form on our website either via www.futudent.com or via email info@futudent.com

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