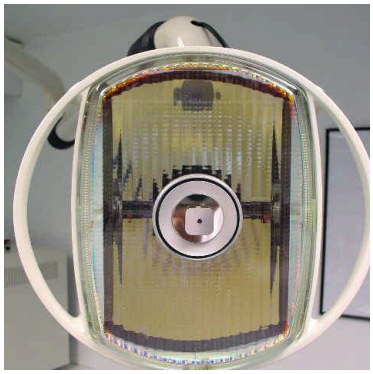
ThirdEye evo

evolution

full-hd video
18 mp photo
auto focus
optical zoom
wireless

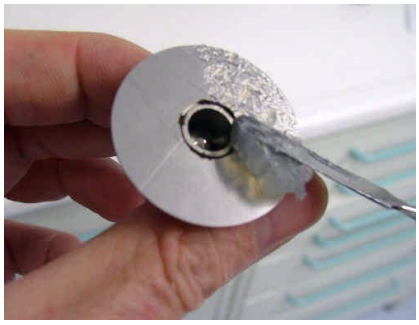
Mounting the miniature camera stand

Independently of the type of dental light the miniature stand is mounted in the center of the dental light front.



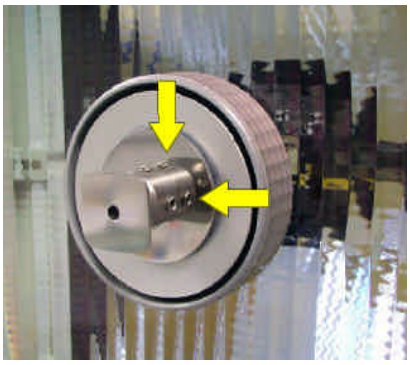
Before glueing the miniature camera stand to your dental light all the adhesive surfaces of the light and stand baseplate must be cleaned and degreased with alcohol and a clean cloth.

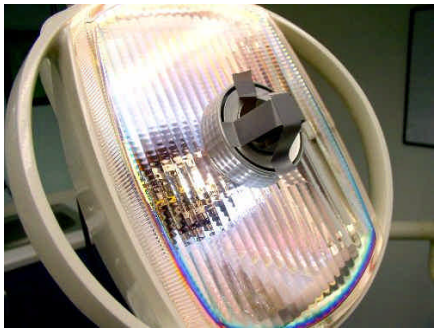
For the later adjustment of the camera stand on the dental light a cross from adhesive tape is stuck on the camera plate of the stand, so that all free ends of the tape exceed at least one centimeter over the stand baseplate.



With a cement spatula a thin layer of Hylosil® silicone glue is spread onto the surface of the stand baseplate. For dental lights with a relief on their front side (e.g. Siemens M1, Sirona E, Pelton Crane etc.) the silicone layer must be somewhat thicker. The stand fed with silicone adhesive is put on the center of the light front and pressed on slightly, until some silicone outpours the baseplate at the edges.

It is important to fix the stand in the correct positioning, so that the fixing screws are well attainable afterwards. For right handed persons the screws should show to the right and upward (with the view of the light front side)
Now the ends of the tapes are fixed at the light and the light screen is turned upward.





The curing of the silicone takes 4-12 hours depending upon thickness of the silicone joint (the more thickly the joint, the longer the hardening by precipitation phase). The hardening by precipitation can be accelerated however by warmth. For this reason the light should remain switched on for 3-4 hours. We recommend hardening time of at least 12 hours overnight.

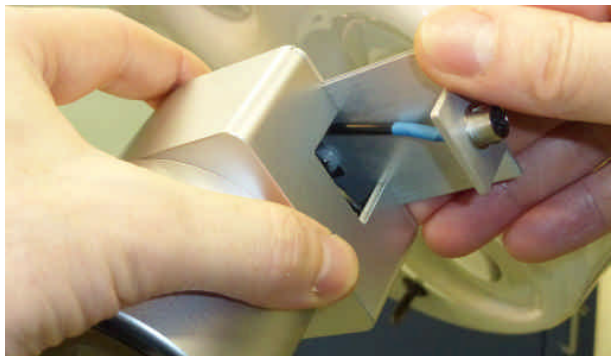
Changing batteries or using the power supply

Using ThirdEye^{evo} you can either use battery operation or the power supply, that is up to you. For this reason we deliver to different back covers, one for battery operation and the other one for using the camera with the power supply.

It is easy to change batteries. Just slide the back cover downwards and replace the battery. Please take care, that battery contacts are in right position !

It is a little be more tricky to use the power supply. First of all slide the back cover downwards. Take out the battery and put the black power adapter in the right position (see contacts) in the battery holder.

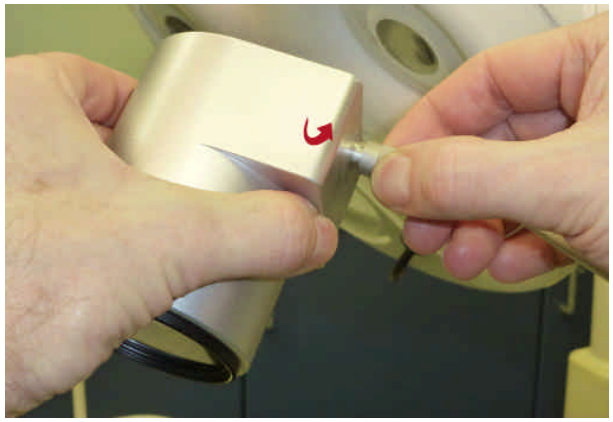
See, that there is no cable jam when sliding back cover onto groove of camera housing.



To close the back cover press lightly on the spring steel locking device till the cover engages

Now take the back cover (with the 4pin plug) and guide the cover gently upwards preventing the black power cable being jammed.
(please also see video on our website)

The back cover of the power supply being in place you can connect the white power supply cable to the camera.
Hold the camera in one hand and the cable plug in the other hand. Now turn the plug against the socket till it engages.



Removing the power plug from the camera
only pull the silver ring of the HIROSE plug.
Never pull the black protective rubber sleeve !

Laying of the cable of the power supply

A power cable only is needed, if you intend to use the camera all day long. Without the power supply - using an internal Li-Ion battery - you can shoot up to 220 photos or you can record about **one hour** of video continuously. Recording videos requires a micro-SD card class 10 put in the microSD card slot of the camera. For using the camera with the external power supply we supply a white 4m power cable, that enables you to fix the power supply on the light tubing behind your tablet/Ipad mounted to the dental light.
(please ask for longer power cable, if needed)

Please notice: For laying any cable inside the inner tube of the dental light one has to drill a small hole (diameter 11,8mm) into the front side of the dental light tube (often plastic parts). This bore hole will lead your dental light to lose its registration and warranty (medical products law). We leave it up to you to drill this hole by yourself or have a technician from your dental supplier drill this hole and lay the cable for you.
A more comfortable, but maybe less attractive way to lay the power cable is by the use of cable clamps, cable tunnels* or adhesive tape stuck to the outside of the dental light tubes.
* we can recommend you very nice miniature white cable tunnels, please ask.

Important:
In order to ensure the full mobility of the light head, a cable reserve must be present. The best way to test the length of the necessary cable reserve is to attach the camera to the stand, connect the cable plug to the camera socket and hold the camera cable to that point, where the cable is to be laid into the light tube. Now move the light head to any possible direction. The cable should not be strained in any position or be in contact to hot surfaces of the dental light.

Note: The power cable may be broken when squeezed or be laid in to very close bends.

Connecting your Android tablet/Android cellphone or your Ipad/Iphone

ThirdEye^{evo}
can be wirelessly connected to any Android mobile phone or Android tablet as well as to your Ipad or Iphone.

Download free **playmemories-mobile** camera software app from Sony or itunes

Go to the Google Play Store
https://play.google.com/store/apps/details?id=com.sony.playmemories.mobile&hl=de

or go to Apple´s Itunes Shop
https://itunes.apple.com/de/app/playmemories-mobile/id489191124?mt=8

After installing playmemories-mobile software on your mobile phone or tablet you can switch on the camera, providing there is a fully charged battery in it or you have connected the power supply.

To have the camera´s password ready for first time installation, please write the password down.
You can find your personal **password beneath the battery**.

Start **playmemories-mobile** app on your tablet or mobile phone. You will get the info, that your camera has been found by your tablet/mobile phone as wireless device.
Now you are prompted to enter the camera´s password below.
The password you´ll find on the bottom of the battery holder of your **ThirdEye^{evo}** dental camera.

password

Another word to tablets or mobile phones:
We strongly recommend using android tablets with full-HD display.
If you want to show camera images or live video on a large tv monitor we recommend using an MHL cable which can be connected to your mobile phone and via HDMI out to your tv-monitor.
New smart-TV´s can connect to your tablet or cell phone wirelessly using **screen mirror**ing function on both cell phone/tablet and smart-tv.

Attachment of the camera on miniature camera mount

If you favor to use the power supply, please connect the 4pin power connector of the power supply cable to the 4pin power socket of the camera.
Now the camera with the groove on its rear side can be slided onto the disk of the miniature stand. Secure the position of the light´s head with your index finger.
Switch the camera on (pushing the black power button on top of the camera)

connecting the cable of the power supply

sliding the camera on the camera mount

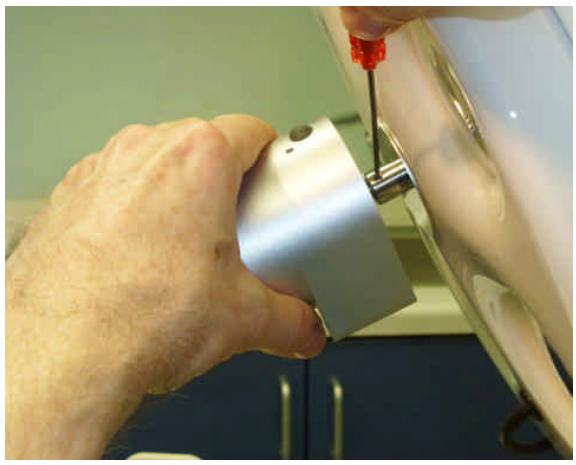
.

Adjustment of the camera optics

To get perfect illuminated and brilliant images it is crucial that the optical axis of the camera lens being perfectly aligned to the central beam of the dental light.

Guide the camera with your left hand till the coin appears in the center of the light beam on the monitor. If the coin appears both in the centre of the light beam and in the center of the monitor tighten the fixing screws of the miniature camera stand with your right hand with the allen screw driver *(this explanation is for right-handed dentists only)*

Place a coin on the dental chair (or it´s neck restraint). Switch the dental light on and direct the light beam of the dental light towards the coin. Zoom-in (tele-shot) the camera so that all the monitor image is within the borders of the light beam. The coin should be in the centre of the light beam. Loosen the M2 fixing screws of the miniature camera mount with the enclosed Allen screw driver.



To prevent dazzling of your patient the coin should be placed something *above* the center of the light beam.
Check the stability of the camera by shaking the camera a bit. The image on the monitor always should remain fixed in the centre of the light beam of the dental light !

Finished!

Shooting photos

ThirdEye-EVO can shoot photos with 18megapixels resolution. To shoot a photo, just push the photo button. Always check the focus before shooting a photo or select the focus area with your finger tips

Recording videos

To record full-HD videos you have to change to film mode. Please see, that overall magnification is about 30% larger in film mode than in photo mode, because only parts (2 megapixels) of the 18mp CCD chip are read out.

Very important:

Because of copyright law protection the camera has a built in time limit for video recordings. This limit is at 20-22 minutes of continuous video recording. If you plan to record a longer procedure, please stop the recording after 20 minutes and restart the video recording again (takes only 10 seconds)

Live video transmissions to large tv screens or video projectors

ThirdEye-EVO is a wireless camera, that *cannot* be operated cable bound.
Since it still is problematic to transfer full-HD video wirelessly, there might be some artefacts when connecting your Android phone/tablet or Ipad/Iphone wirelessly to a large monitor or video projector.
Both screen mirroring and Airplay (Apple) systems cannot secure a perfect image on large tv screens.
So we *do not recommend* ThirdEye-EVO for live transmission at events with large audiences !
If your main intention is **live video transmissions** we strongly recommend using our **ThirdEye-HD**, which is perfect for such applications as well as for **monitor controlled indirect treatments**

Operating the camera zoom

You can zoom the cameras lens by using **playmemories mobile** app and pushing **TELE** or **WIDE** buttons on the cell phone/Iphone or tablet/Ipad.

Using close-up lenses

Since the built-in camera only can focus in maximum telephoto mode at a distance of 150 cm, we need close-up lenses.

Without close-up lenses the camera wouldn´t be able to focus in extreme TELE photo shots in a distance closer than 150cm.

Which close-up lens to use depends on the size of your dental light and your preferred working distance.

The following table shows, which close-up lens to choose and the resulting object size and magnifications

WD = working distance
OS = object size, width of object in cm

close-up lens # 3

photo/video	minimum WD*	OS	maximum WD*	object size
photo	25cm	teeth 14-24	35cm	full arch
video	25cm	teeth 12-22	35cm	teeth 13-23

close-up lens # 2 (standard close-up lens)

photo/video	minimum WD*	OS	maximum WD*	object size
photo	35cm	full arch	60cm	full arch
video	35cm	teeth 13-23	60cm	full arch

close-up lens # 1

photo/video	minimum WD*	OS	maximum WD*	object size
photo	50cm	full arch	90cm	mouth corners
video	50cm	teeth 13-23	90cm	teeth 14-24

*distance between the front lens of the camera and the object (e.g. patient´s mouth).

Technical Data for ThirdEye evo

camera	
image sensor	1/2.3" CMOS Sony
photo resolution	18 mega pixel
video resolution	1.920x 1.080 (=full-hd)
frame rate fps	25 fps at HD-Video
(= frames per second)	
exposure	electronic shutter
white balance	automatic
power supply	3,6 volts Li-Ion battery or 4.2 volts DC power supply (4m cable)
colour (housing)	silver, stove enamel
material (housing)	aluminium anodized
dimensions	L: 85mm Dia.: 65mm
weight	230 grams (with battery)
zoom lens (built-in)	
focal length/zoom	4,45-44,5mm (= 10x zoom)
focussing	auto focus
working distance	25-80 cm (depending on close-up lens and zoom factor
depth-of focus	3- 8 cm (depending on zoom factor)
iris	auto iris
accessories	miniature camera mount software (for tablet/cell phone) power supply (cable 4m, white) silicon glue (high heat-resistant)
optional	close-up lenses #1, #2, #3 fast battery charter microSD card (minimum class10)

Regarding hygiene

ThirdEye-EVO is built for rough conditions in dental and surgical practices.
For this reason we use a solid protection lens in front of the zoom lens and a rugged anodised aluminium housing, which can be disinfected with all dental disinfectants. We recommend disinfection by wiping, but in case you sprayed the camera with disinfectant, that would not harm the camera either. Since there is a sensitive electronics inside,the

camera *cannot* be put in disinfection solution *nor can it* be autoclaved !!!

The front cover lens should be cleaned with water or alcohol (isopropylalcohol at best) only.

Declaration of Conformity

The manufacturer /importer

Dr. Benno Raddatz
Verlag Neue Medien
Grenzstr. 60
76448 Durmersheim
Germay

hereby declares, that the product

ThirdEye^{evo} **dental camera**

is in conformity with the protection requirements of the following EC Council Directives

89/336/EEC EMC directive
Elektromagnetic compatibility
73/23/EEC LVS directive
Low voltage safety

based upon compliance of the product with the following harmonized norms/standards:

EN 50081-1:1992
EN 50082-1:1997
EN 55022:1998
EN 55024:1998
EN 60950:2000

Manufacturer/Importer

Durmersheim, 01/03/2015 Dr. Benno Raddatz, C.E.O.