



**endoscopy  
support  
services, inc.**

®

# ESS 61D

**Endoscopic Digital Video Camera System**



# USER MANUAL

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# 1. PRESENTATION OF THE CAMERA

It is a color micro camera with deported electronic, designed for endoscopies. Its ultra-light sensor, its auto-shutter, its performances in terms of sensitivity, resolution as well as its fidelity in the respect of colors make of it the ideal medical tool.

It includes:

- A Control unit;
- A 1/3" sensor with a F22 integrated lens or a 1/3" sensor with C-Mount at the end of a 3,25 m cable.
- A Power cable,
- A BNC cable,
- A Y/C cable,
- A User Manual.

This equipment was delivered in a pasteboard wrapping. You must keep this element for further transport.

We propose a whole list of accessories complementary to the camera itself.

You will mainly find their light sources, other kinds of cameras, lenses of different focal, diverse instruments holders, and couplers for fibroscope...

For more information on these products, please refer to our catalogue or phone to our commercial department.

# 2. PRECAUTIONS FOR USE

- We comply with all the requirements in terms of electromagnetic compatibility (EMC) during the development of this camera. Nevertheless, some devices can disturb the quality of the image if their working frequency is close the camera's one (14,1875 MHz and 28,375 MHz). We advise you to keep these devices far from the camera.
- The sensor of the camera and its connector being at the same potential, it is strictly forbidden to place the sensor on the patient if the connector is not linked to the CCU. This one must be grounded thanks to the mains cable.
- Do not expose the CCU to waterfalls and do not storage it in damp places (risk of electrocution).
- Put the CCU in a clean, dry and well-ventilated place.
- Do not put the CCU on textile surfaces (carpet, blankets, etc.).
- Disconnect the CCU from the mains if you do not use it for several days. Do not draw on the cable.
- Never crunch, pinch or cut the cable linking the sensor to the control unit.
- Never expose the product to severe vibrations.
- Do not drop the CCU or the sensor.
- This camera and its accessories require no special maintenance when no longer used.

# 3. INSTALLATION

Put the control unit on your video furniture or on a table and take the different accessories necessary to its functioning.

## 3.1. CONNECTION OF THE BACK PANEL

- Connect the power supply cable to the mains plug of the camera and a video cable to one of the video outputs (Preferably one of the Y/C outputs).
- Plug the other end of this video cable into the video input of your monitor.

## 3.2. STARTING

- Plug the connector of the sensor on the front panel of the control unit.
- Screw the ring of the connector on the base.
- If you select a C-Mount sensor, check it is equipped with an objective. If you did not buy any objective or if you already have C-Mounted ones, think to screw it on the sensor.
- Power the monitor and camera thanks to the general switch located on the front panel.  
The camera is ON (The green led of the switch as well as the displayer must be lighted).

You can then make sure that the camera works properly and that you are entirely satisfied with the adjustments of your monitor concerning brightness as well as color.

Take good note on this matter that the median positions of the adjustments of the monitor do not always give the best image.

Before connecting your endoscope or fibroscope on the lens of the camera, you must check its condition (clean distal lens, correct focus if necessary) and link it to your light source.

Then check if the image produced with such a configuration is good. To do so, you just have to power your light source and to place the extremity of your endoscope in the palm of your hand, thus simulating the basic conditions of endoscopy (Beware of the working distance “shooting object-Endoscope” which must be similar to reality, ie some centimeters).

If you obtain a fuzzy image, modify the focus of the lens and if necessary of the endoscope. Check also if there is neither blur nor dust on your lens.

# 4. USER ADJUSTMENTS

This camera is equipped with an Auto-Shutter. This electronic device allows you to change the exposure time of the CCD like on a camera. The longer the exposure time is, the more energy the CCD gets and the clearer the image is.

The camera adjusts itself the optimum exposure time according to the analysed image. Thus, if the shooted scene suddenly darkens, the camera is going to increase itself its exposure time until it gets a correct luminosity image. On the opposite, if the luminosity of the shooted scene increases, the exposure time decreases.

## 4.1. WHITE BALANCE

A button allows you to initialise the White Balance. You must proceed as follows:

- Shoot at a white surface (beware the produced image is clear)
- Press on the “A” (AWB) button of the white balance (WHITE BALANCING is displayed)
- Do not move any longer until BALANCE OK is displayed (several seconds) significative to the end of the white balance. You can then check if the shooted surface appears very white on your monitor.

Each balance is memorised. Thus, the next time you power the camera (and if no parameters of your image chain was modified); you will find the same colors.

You could be led to start again this procedure if:

- You change the type of light source;
- You change your lamp (new one);
- You change the optics;
- You change the light cable;
- You change the CCD sensor;
- You not satisfied with the reproduction of the colors.

Note: If you are not satisfied with the quality of the colors, think to check the adjustments of your monitor (Chroma, contrast...) Some monitors are equipped on the rear panel with commutators allowing to select a color temperature and thus to favor a color rather than an other.

## 4.2. ADJUSTMENT PARAMETERS

The user can modify different parameters. Here is explained how to do it:

The SELECT “S” button displays the parameters that can be modified.

Thus, a first push on this button will make appear: “BRIGHTNESS X (Value)”, indicating that the Brightness parameter is selected and then ready to be modified thanks to the adjustments buttons (See hereafter). Another push on this button will activate the next parameter and so on. Thus, we can perform the following adjustments:

(Brightness)	BRIGHTNESS X (0 to 9)	
(Window)	WINDOW	(SMALL - MEDIUM - LARGE) it is figured on your screen by a white square and modifies the working windows of the shutter.
(Enhancer)	APERTURE	X (SOFT-MEDIUM-HIGH) frame enhancement of your image.
(Language)	LANG.	X (ENGLISH - FRENCH - GERMAN) modifies the language of the menu.
(Color Hue)	COLOR SHIFT	X (-19 to +19) allows one to modify the red Hue.

The two “+” and “-” buttons allow to modify the value of the selected parameter. Thus, if the BRIGHTNESS parameter is selected, these 2 buttons will allow you to position its value between 0 and 9.

Each modified value of a parameter is automatically memorised.

# 5. DESCRIPTION OF THE BACK PANEL

## 5.1. MAINS PLUG

The electric power supply of the camera is done through a plug, which must be linked to the local supply circuit thanks to the electric cable delivered with the system. This plug includes a mains filter, a fuses-trap and the general power switch. The two fuses used are of type T800mA - 250V.

During a changing of fuses, it is peremptory to disconnect the camera from the mains and to use fuses of the same kind. The T of "T800mA" means, "temporised".

## 5.2. VIDEO OUTPUTS

2 independent video outputs are available on this camera. A composite and A Y/C. One of these 2 outputs must be linked to the video input of your monitor (Preferably a Y/C)

## 5.3. DATA

Exclusively reserved to technical services.

## 5.4. IDENTIFICATION REFILL

The indications mentioned in the refill allow one to identify the camera in conformity with the International standard IEC 601-1.



Video Outputs



Type B equipment



Fuse



Alternating current



Equipotentiality

The apparatus that are connected to the "video out" plug must comply with the CEI 950 standard.

# 6. RECOMMENDED PROCEDURE FOR DECONTAMINATION

**BEWARE: You must respect this procedure only if the sensor of your camera is waterproof. Check if the sleeve, which is located at the level of the sensor, is equipped with a blue ring.**

If such is the case, the camera sensor and the lens are designed for a cold decontamination by immersion (Cidex, Stéránios...) or by cold gas like Aldylene or by U.V. All other methods of decontamination are prohibited. The damages due to these other methods could not be taken over by us.

**The camera connector cannot be immersed. It is peremptory to leave it outside of the bath of decontamination. We advise you to immerse the C-Mount sensor with its objective screwed on it.**

It is peremptory to respect the procedure consisting in cleaning the parts to immerse before decontamination and after decontamination, to rinse carefully with sterile water all the parts that have been in contact with the decontaminant.

Two cautions will help you to avoid the problems of blur which sometimes occur:

- During the preparation of the instrumentation table, start with the camera and the endoscope so that their temperature reaches the surrounding one.
- Before placing your endoscope in the trocar, clean its distal end with Mercryl (or similar).

## **B E W A R E !**

- **It is peremptory to rinse abundantly the parts that have been in contact with the decontaminant.**
- **Use unweaved compresses for the drying of the distal lens not to scratch it.**
- **The procedures described in this chapter are given to you as pieces of advice. The responsibility, in matter of decontamination, remains entirely linked to the product, methods or tools you have selected. The soaking duration is given in the User Manual of the products you select.**

# 7. AFTER SALE SERVICE

No special maintenance is necessary on the camera. However, due to the possible move of the camera from one office to another, or from one operator to another, or due to a change of staff, here is a list of common problems that are easy to troubleshoot.

For all other cases, contact our Maintenance Service that will help you in best delay. We remind you that the mishandlings are not guaranteed.

## **7.1. THE ON/OFF LED DOES NOT LIGHT WHEN YOU POWER THE CAMERA.**

- Check if the mains plug on the rear panel of the camera is well connected to the mains.
- Check the good state of the fuses (use only fuses of the kind of those specified on the rear face: T800 mA 250V).

## **7.2. THE ON/OFF LED LIGHTS BUT THERE IS NO IMAGE ON THE MONITOR.**

- Check if the sensor is well connected to the front panel and that it shoots a workable image.
- Check if the camera is well connected to the monitor.
- If your video chain holds several elements, try to connect directly the camera to the monitor in order to validate that the problem is not located at the level of one of your peripherals.
- Check if the monitor is well powered, switched on the good video input and if the images adjustments are in middle position (color, light and contrast).
- Check your light source, your light cable and optic.

## **7.3. THE IMAGE IS FUZZY, UNIFORMLY WHITE.**

- Check if there is no blur or finger print on the lens.
- Check to see if the camera sensor is aimed an over lighted object.
- Check the focus of the lens.

## **7.4. THE IMAGE IS TOO CLEAR OR TOO DARK.**

- Check if the "BRIGHTNESS" parameter is not at its maximum or minimum.

If the problem remains and if you are led to send us back the light source be careful to do it in its original wrapping. Likewise, you must send us the whole system (control unit, sensor, lenses, cables). Be kind enough to join an explanatory note relative to the observed default to the expedition bill.

At the reception of your equipment, you will have to check its state and enter any reservations on the delivery bill if necessary. You will then have 48 hours to confirm them by recommended letter addressed to the carrier. Beyond this delay, the carrier may deny these reservations. In the case where equipment shipped by us suffer damages during the travel, the amount of the repairing will be charged whether to the carrier if the reservation were entered in the delays, or to the consignee in the contrary. Think to check rapidly the good functioning of the equipment, which has just travelled.

Any other interventions being performed by our After Sales Service, no Service Manuals will be supplied.

The control unit can be cleaned with a soft and wet duster.

**7.5 Sending unit for Service. To send you unit in for service please call Endoscopy Support Services, Inc. at 1-800-349-3636 or 845-277-1700.**



# 8. SPECIFICATIONS

- Class I, Type B
- Sensor : CCD 1/3"
- Resolution : (752 x 582) PAL ; (768 x 494) NTSC
- Definition : 470 lines
- Sensitivity : 2 lux
- Signal/Noise Ratio : 52 dB
- Electronic shutter : Automatic (1/50 to 1/100 000)
- Window size : 3 levels
- White Balance : Automatic
- Video enhancement
- Modification of the red phase
- Automatic detection of the color temperature according to the used light source
- Adjustments parameters display
- Automatic saving of the adjustments parameters
- Cable length : 3,25 meters
- Size of the control unit : W : 205mm; D : 210mm; H : 55 mm
- Weight of the control unit : 900 g
- 1 composite video output (1 Vcc / 75  $\Omega$ )
- 1 Y/C video output (1 Vcc & 0,3 Vcc / 75  $\Omega$ )
- Power supply : (230 V~ ; 50 Hz) PAL ; (115 V~ ; 60 Hz) NTSC
- Scanning : (625 lines / 50 Hz) PAL ; (525 lines / 60 Hz) NTSC
- Power consumption: 25 VA
- 2 T 800 mA - 250 V Fuses
- Continuous Service
- Working Temperature: +10°C / +40°C
- Shipment and storage Temperature: -20°C / +40°C
- Relative Humidity: 10 to 90 %
- Not protected against waterfalls (IPXO)
- Not adapted to a use close to a mixture of inflammable anaesthetic with air or oxygen or nitrous oxide.
- **CE** Comply with the European Directive 93/42/CEE.

## **FEATURES OF THE SELECTED CAMERA HEAD:**

- F22 integrated with focus  
Dimensions of the sensor: L = 80mm,  $\varnothing$  = 23 mm  
Weight of the sensor: 110 g
- C-Mount:  
Dimensions of the sensor: L = 42mm;  $\varnothing$  = 28 mm  
Weight of the sensor: 37 g