

OLYMPUS®

Your Vision, Our Future

EVIS EXERA III

EVIS EXERA III VIDEO SYSTEM CENTER

CV-190

Video processing for powering advanced endoscopy



Main Features

- NBI (Narrow Band Imaging) in EVIS EXERA III 190 Series scopes provides twice the viewable distance of EVIS EXERA II 180 Series scopes and offers significantly brighter images.
- CV-190 features the ability to switch the point of focus between 'near' and 'normal' with the push of a button.
- The newly designed, waterproof one-touch connector enables a one-step connection to the light source and does not require a separate scope cable for the video processor.
- New and improved image processing delivers sophisticated image quality via enhanced color reproduction, minimized image noise, and reduced halation.
- The pre-freeze function selects the clearest still image automatically, saving time.
- The CV-190 is compatible with EVIS 100/130/140/150 Series, EVIS EXERA 160 Series, EVIS EVERA II 180 Series, GI/BF/VISERA Series scopes, and EVIS EXERA III 190 Series.
- 16:9 and 16:10 outputs for a HDTV monitor are available. The system is compatible analog, HD-SDI, and DVI output.
- A link connection to peripheral devices avoids complicated cable connections and accelerates transmission speed.
- The Olympus documentation system enhances networking expandability.
- Picture-in-picture and index functions effectively enhance your observation.
- The system is compatible with portable memory, which is standard for data management; simply connect and upload.
- The CV-190 supports DV output to compatible documentation devices.



Specifications

Power Supply	Voltage	100-240 V AC (NTSC)/220-240 V AC (PAL); within $\pm 10\%$
	Frequency	50/60 Hz; within ± 1 Hz
	Consumption electric power	150 VA
Size	Dimensions (W x H x D)	370 x 85 x 455 mm; 382 x 91 x 489 mm (maximum)
	Weight	10.7 kg
Classification (medical electrical equipment)	Type of protection against electric shock	Class I
	Degree of protection against electric shock of applied part	Depends on applied part; see also applied part (camera head or videoscope)
	Degree of protection against explosion	The video system center should be kept away from flammable gases.
Observation	Analog HDTV signal output	Either RGB (1080/60i: NTSC)/(1080/50i: PAL) or YPbPr (1080/60i: NTSC)/(1080/50i: PAL) output can be selected.
	Analog SDTV signal output	VBS composite (480/60i: NTSC)/(576/50i: PAL); Y/C (480/60i: NTSC)/(576/50i: PAL); and RGB (480/60i: NTSC)/(576/50i: PAL); simultaneous outputs possible
	Digital signal output	HD-SDI (SMPTE 292M), SD-SDI (SMPTE 259M), DV (IEEE 1394), and DVI (WUXGA, 1080p or SXGA) can be selected.
	White balance adjustment	White balance adjustment is possible using the white balance button on the front panel.
	Standard color chart output	The "Color bar" or the "50% white" screen can be displayed.
	Color tone adjustment	The following color tone adjustments are possible using the color-tone-level adjustment button and color-tone selector button on the keyboard: • Red adjustment: ± 8 steps • Blue adjustment: ± 8 steps • Chroma adjustment: ± 8 steps
	Automatic gain control (AGC)	The image can be electronically amplified when the light is inadequate due to the distal end of the endoscope being too far from the object.
	Contrast	• N (Normal): Normal image • H (High): The dark areas are darker and the bright areas are brighter than in the normal image. • L (Low): The dark areas are brighter and bright areas are darker than in the normal image.
	Iris	The auto iris modes can be selected using the "iris mode" switch on the front panel. • Auto: The brightness is adjusted based on the brightest part of the central part and the average brightness of the periphery part. • Peak: The brightness is adjusted based on the brightest part of the endoscopic image. • Average: The brightness is adjusted based on the average brightness of the endoscopic image.
	Image enhancement setting	Fine patterns or edges in the endoscopic images can be enhanced electronically to increase the image sharpness. Either the structural enhancement or edge enhancement can be selected according to the user setup. • Structural enhancement: Enhancement of contrast of the fine patterns in the image • Edge enhancement: Enhancement of edges of the endoscopic image
	Switching the enhancement modes	The enhancement level can be selected from 4 levels (off, 1, 2, and 3) using the image enhancement mode button on the front panel.
	Image size selection	The size of the endoscopic image can be changed using the "IMAGE SIZE" key on the keyboard.
	Freeze	An endoscopic image is frozen using a "FREEZE" key on the endoscope or on the system keyboard.
	Switching the method of freezing the endoscopic image	Pre-freezing: The image with the least blur is selected and displayed from the images captured in the set time period before the freeze operation.
	Fog-free function	When a compatible endoscope is connected to the video system center, the fog-free function can be used.
	Endoscope's remote switches function	The functions of the remote switches on the endoscope can be set in the user settings.
Documentation	Reset to defaults	The following settings can be reset to their defaults using the reset button on the front panel: • Color tone • Iris mode • Image-enhancement mode • Color-enhancement mode • Optical-digital observation • Image size • Contrast • Freeze • Release index • Electronic zoom • Arrow pointer • Stopwatch • Characters on screen • PIP/POP
	Remote control	The following ancillary equipment can be controlled (specified models only): • Monitor • DVR • Video printer • Image filing system
	Patient data	The following data can be displayed on the monitor using the keyboard: • Patient ID • Patient name • Sex • Age • Date of birth • Date of recording (time, stopwatch) • Comments
	Displaying the record state	The recording state of the following ancillary equipment can be displayed on the monitor: • Portable memory and internal buffer • DVR • Video printer • Image filing system
	Displaying the image information	The following data can be displayed on the monitor: • Structure-enhancement level • Edge-enhancement level • Zoom ratio • Color mode • Focus
Portable Memory	Advance registration of patient data	Data for up to 50 patients can be registered, such as: • Patient ID • Patient name • Sex and age • Date of birth
	Media	MAJ-1925 (OLYMPUS)
	Recording format	• TIFF: no compression • JPEG (1/5): approx. 1/5 compression • JPEG (1/10): approx. 1/10 compression
Memory Backup	Number of recorded images	• TIFF: approx. 227 images • JPEG (1/5): approx. 1024 images • JPEG (1/10): approx. 2048 images
	User settings	Up to 20 user settings can be registered.
	Memorization of selected setting	The following settings are held in memory even after the video system center is turned off: • Color tone • Iris mode • Enhancement • Color-enhancement mode • Contrast • AGC • Color mode • White balance
	Lithium battery	Life: 5 years

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EVIS EXERA III

EVIS EXERA III VIDEO XENON LIGHT SOURCE

CLV-190

One-touch access to HDTV and NBI



Main Features

- NBI (Narrow Band Imaging) in EVIS EXERA III 190 Series scopes provides twice the viewable distance and a significantly brighter image, thanks to an improved lamp design and signal processing.
- The newly designed, waterproof one-touch connector allows a one-step connection to the light source and does not require a scope cable.
- Considerable reduction in operating noise, thanks to redesigned fan.
- Link connection to peripheral devices avoids complicated cable connections and accelerates transmission speed.
- Automatic light adjustment to achieve the ideal illumination for observation with each scope.



Specifications

Power Supply	Voltage	100–240 V AC; within $\pm 10\%$
	Frequency	50/60 Hz; within ± 3 Hz
	Consumption electric power	600 VA
Size	Dimensions (W x H x D)	370 x 150 x 476 mm (standard) 390 x 162 x 551 mm (maximum)
	Weight	19 kg
Illumination	Examination lamp	Xenon short-arc lamp (ozone-free) 300 W
	Average lamp life	Approximately 500 hours of continuous use (With intermittent use, the lamp life may vary slightly.)
	Ignition method	Switching regulator
	Brightness adjustment	Light-path diaphragm control
	Cooling	Forced-air cooling
	Intensity mode	Normal or high intensity
	NBI observation	Available
	Color conversion	Possible using special-purpose filter
	Emergency lamp	Halogen lamp (within mirror) 12 V 35 W
	Average emergency lamp life	Approximately 500 hours
Automatic Brightness Adjustment	Automatic brightness adjustment method	Servo-diaphragm method
	Automatic exposure	17 steps
Air Feeding	Pump	Diaphragm-type pump
	Pressure switching	4 levels available (off, low, medium, high)
Water Feeding	Method	Feeds water by pressurizing the detachable water container with air
Indicators on Front Panel	Emergency lamp	Indicates absence of emergency lamp, disconnection, and use of emergency lamp
	NBI	When NBI observation is enabled, the NBI indicator lights up.
Setting Memory		Settings (except filter setting) are stored even when the light source is off.
Classification (medical electrical equipment)	Type of protection against electric shock	Class I
	Degree of protection against electric shock of applied part	Depends on applied part; see also applied part (camera head or videoscope)
	Degree of protection against explosion	This instrument should be kept away from flammable gases.

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EVIS EXERA III

EVIS EXERA III GASTROINTESTINAL VIDEOSCOPE

GIF-H190

Significantly slimmer design with amazing HDTV clarity



HDTV Image Quality

HDTV image quality delivers high-definition observation capabilities, even in a new, slimmer scope design.

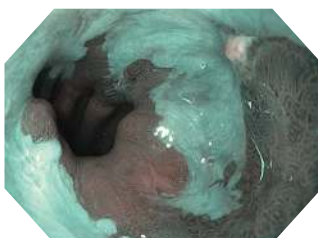


NBI (Narrow Band Imaging)

NBI in EVIS EXERA III 190 Series scopes provides twice the viewable distance of EVIS EXERA II 180 Series scopes. HD NBI provides contrast, which may aid in the interpretation of mucosal morphology, vascular patterns, and blood vessel appearance in patients with Barrett's esophagus.



White Light



NBI

Slim Design

This scope offers an excellent balance of size and performance, with HDTV image quality in a slim 9.2 mm diameter size.

Water Jet

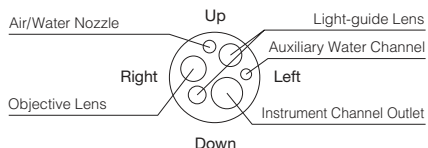
EVIS EXERA III 190 Series scopes' forward water jet function is standard on all routine gastroscopes.



Waterproof One-touch Connector

A new connector design minimizes the effort required for setup prior to and in between cases. In addition, it is fully submersible and eliminates the need for a water-resistant cap and the associated risk of an expensive repair due to accidental immersion.



Optical System	Field of view	140°
	Direction of view	Forward viewing
	Depth of field	2-100 mm
	Distal end outer diameter	9.2 mm
Insertion Section	Distal end enlarged	
		
	Insertion tube outer diameter	9.2 mm
	Working length	1030 mm


Instrument Channel	Channel inner diameter	2.8 mm
	Minimum visible distance	3.0 mm from the distal end
Bending Section	Direction from which endotherapy accessories enter and exit the endoscopic image	
		Up 210°
		Down 90°
		Right 100°
Total Length	1350 mm	
	Compatible EVIS EXERA System	
Video System Center OLYMPUS CV-190	Xenon Light Source OLYMPUS CLV-190	

Image courtesy of Roy Soetikno, MD.

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EVIS EXERA III

EVIS EXERA III COLONOVideoscope

CF-HQ190L/I

Amazing image quality and handling for colonoscopy





Dual Focus

Dual Focus, a unique Olympus optical innovation, allows the user to select between two focus settings. With the simple push of a scope button, the desired depth of field for observation can be optimized to either the near field or normal field.



Normal-focus mode



Near-focus mode

NBI (Narrow Band Imaging)

NBI in EVIS EXERA III 190 Series scopes provides twice the viewable distance of EVIS EXERA II 180 Series scopes.



RIT (Responsive Insertion Technology)

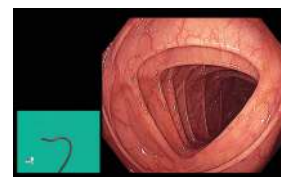
RIT combines three proprietary insertion tube technologies: HFT (High Force Transmission), PB (Passive Bending), and variable stiffness. These technologies are designed to facilitate complete colonoscopies by improving scope handling, insertability, and ergonomics. PB helps EVIS EXERA III 190 Series scopes move through acute bends in the colon. HFT provides improved operator control for both pushing and twisting maneuvers. Variable stiffness allows the physician to adjust the rigidity of Olympus scopes as needed by simply turning an adjustment ring on the scope's control section.

Enhanced Image Quality

An enhanced level of resolving power is achieved owing to a new optical system. Significantly less halation and noise is visible on screen. Improved optics, a brighter image, increased contrast, reduced noise, and reduced halation are the result of a new CCD available in the EVIS EXERA III, providing superior image quality even during electronic zoom.

ScopeGuide

ScopeGuide is an integrated technology in EVIS EXERA III 190 Series HQ colonoscopes. ScopeGuide provides real-time 3D visualization of scope position and configuration. This new level of visualization provides physicians with the ability to recognize loops as they form, potentially leading to shorter insertion time and less patient discomfort.



Waterproof One-touch Connector

A new connector design minimizes the effort required for setup prior to and in between cases. In addition, it is fully submersible and eliminates the need for a water-resistant cap and the associated risk of an expensive repair due to accidental immersion.



Optical System	Field of view	Normal 170° Near 160°
	Direction of view	Forward viewing
	Depth of field	Normal 5-100 mm Near 2-6 mm
Insertion Section	Distal end outer diameter	13.2 mm
	Distal end enlarged	
	Insertion tube outer diameter	12.8 mm
	Working length	L: 1680 mm I: 1330 mm

Instrument Channel	Channel inner diameter	3.7 mm
	Minimum visible distance	4.0 mm (Normal) from the distal end
	Direction from which endotherapy accessories enter and exit the endoscopic image	
Bending Section	Angulation range	Up 180°
		Down 180°
		Right 160°
		Left 160°
Total Length	L: 2005 mm I: 1655 mm	
Compatible EVIS EXERA System	Video System Center OLYMPUS CV-190 Xenon Light Source OLYMPUS CLV-190	

Image courtesy of Roy Soetikno, MD.

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