

SONY



**MAXIMUM *image* QUALITY
for MICROSURGERY.**



Actual size

MCC-500MD HD Medical Video Camera

Exmor™

The MCC-500MD medical video camera is the latest addition to Sony's comprehensive line-up. This affordably priced camera features the latest generation image sensor technology for better low-light sensitivity than traditional 1/3 sized image sensor technology for superb image reproduction capability. It consists of a compact camera control unit and one camera head with 1/2.9-type single (1920 x 1080) Exmor™ CMOS sensor, featuring 2.07 million pixels. By combining the Exmor image sensor with Sony's image processing technologies, the MCC-500MD provides an excellent sensitivity of F5.6, a remarkable signal-to-noise ratio of 55db, and a high horizontal resolution of 900 TV lines or more.

The MCC-500MD has enough output flexibility to fit a range of medical environments, with HDMI, HD-SDI (3G-SDI), S Video, and Composite video connectivity. Furthermore, Full HD (1920 x 1080) quality 60-fps progressive scan technology results in smooth images with reduced blur when HDMI or 3G is used – ideal for viewing fast-moving images.

All of the camera's outputs are active simultaneously, so it is ideal for use with second or third monitors in the operating room.

Together with Sony's medical-grade recorders and monitors, the MCC-500MD is the ideal solution for capturing and recording microsurgery applications.

The MCC-500MD's compact and lightweight design allows the camera's C-mount head to be easily mounted on most existing surgical microscopes.

KEY FEATURES

1/2.9-type Exmor Full HD Image Sensor

The MCC-500MD is equipped with a single chip 1/2.9-type Exmor Full HD CMOS image sensor, with an effective pixel count of 1920(H) x 1080(V), to deliver high-quality images. This image sensor employs Sony's highly acclaimed latest generation image sensor technology accumulated over decades of experience in the professional imaging business. Thanks to this advanced technology, the MCC-500MD provides an excellent sensitivity of F5.6, a remarkable signal-to-noise ratio of 55 dB, and a high horizontal resolution of 900 TV lines or more.

Compact and Lightweight Camera Head Unit

The camera head unit is compatible with the C-mount, which is commonly used for microscopes in medical applications. It measures 1 1/8 x 1 1/8 x 1 15/16 in, and weighs only 1.4 oz. Thanks to its compact size and light weight, the camera head unit can be installed easily in space-constrained locations.

Wide Variety of Video Formats – from SD to Full HD (1080/60p)

The MCC-500MD offers both HD and SD video formats, providing users with a flexible solution.

Flexible Choice of Camera Cable Length

The length of camera cable can be selected depending on the application environment. Three types of camera cable (19.7 ft / 32.8 ft / 49.2 ft) and one extension cable (16.4 ft) are available as options. The camera head unit can be installed at a cable length of up to 65.6 ft from the CCU with the use of the 49.2 ft camera cable and 16.4 ft extension cable.

Picture Profile

The Picture Profile feature allows you to easily call up customized picture-tonal settings to suit particular shooting conditions at the touch of a button via the front panel. Up to six different settings (such as parameters including exposure, sharpness, gamma, and white balance) can be saved/loaded into the camera memory.



Picture Flip

The image output can be flipped either horizontally or vertically or both horizontally and vertically.

Color Bar

The camera can output a color bar by simply pressing the BARS button. This is convenient when checking connection during camera installation¹.

Variety of White Balance Modes

Various white balance modes can be selected depending on the light source such as Xenon Lamp mode, Halogen Bulb mode, White LED mode, and Auto-Tracing White Balance mode.

Compliance with Medical Safety Standards

This camera is compliant with and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada, and Europe².

Freeze Function

A still image can be displayed by simply pressing the FREEZE button.

Fluorescein Mode

By activating fluorescein mode, users can obtain the same images as those achieved using an optical yellow filter.

Intuitive Front Panel Operation

The brightness, red, and blue controls on the front panel allow intuitive picture adjustment.

AC Power Operation

The camera control unit fits easily into a space-constrained area such as a cart without needing an AC power adaptor.

Camera Synchronization for 3D Shooting

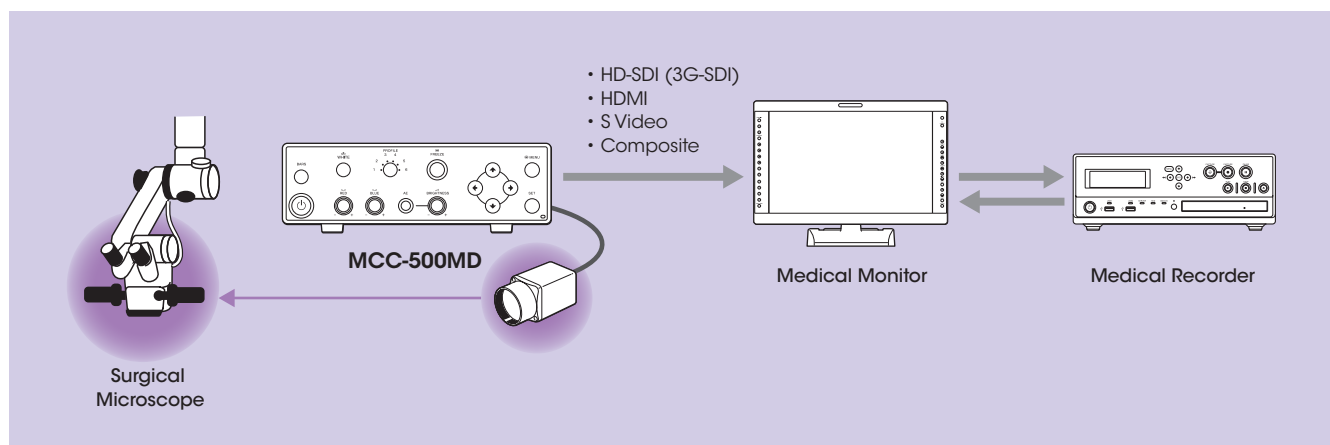
By connecting 3D-SYNC IN/OUT with a BNC cable, two cameras can be synchronized for shooting 3D images.



RS-232C Interface

The MCC-500MD is equipped with an RS-232C connector to enable control from an external host device such as a computer.

SYSTEM CONFIGURATION



SPECIFICATIONS

MCC-500MD	
Camera Head	
Image Device	1/2.9 type, "Exmor" CMOS image sensor, single chip type
Lens Mount	C-mount
Sensitivity	F5.6 (Typical) (At 1080/59.94i, 89.9% reflection, 2000lx)
Picture S/N	55 dB (Y) (Typical)
Horizontal Resolution	900 TV lines or more
Gain	0 dB to 27 dB
Shutter Speed	1/60 to 1/10000
Camera Cable Connector	20 pin, round
Camera Control Unit	
Input Connectors	
Remote Contact Switch 1, 2	Stereo mini jack
Output Connectors	
VIDEO OUT	BNC, 1.0 Vp-p, 75 Ω, unbalanced
S VIDEO OUT	4-pin mini DIN connector Y: 1.0 Vp-p, 75 Ω, unbalanced C (BURST): 0.286 Vp-p, 75 Ω (NTSC) C (BURST): 0.3 Vp-p, 75 Ω (PAL)
HDMI OUT	HDMI connector
HD-SDI OUT	BNC, HD/3G: 0.8 Vp-p, 75 Ω HD: Conforms to SMPTE 292M 3G: Conforms to SMPTE 424M
Input/Output Connectors	
Camera	20 pin, round
RS-232C	D-sub 9 pin
3D SYNC IN, OUT	BNC
Other Connectors	
	Equipotential ground connector
General	
Mass	Camera head: 1.4 oz (40 g) Camera control unit: 5 lb 1.1 oz (2.3 kg)
Dimensions (W x H x D)	Camera head: 1 1/8 x 1 1/8 x 1 15/16 in. (27 x 28 x 49 mm) excluding longest protrusions Camera control unit: 7 7/8 x 2 1/2 x 9 1/2 in. (200 x 62 x 240 mm) excluding longest protrusions
Power Requirements	100 to 240 V AC, 50/60 Hz
Input Current	0.27 A - 0.18 A
Operational Temperature	32°F to 104°F (0°C to 40°C)
Operational Humidity	20% to 80% (without condensation)
Operational Pressure	700 hPa to 1060 hPa
Storage and Transport Temperature	-4°F to 140°F (-20°C to 60°C)
Storage and Transport Humidity	20% to 90% (without condensation)
Storage and Transport Pressure	700 hPa to 1060 hPa
Supplied Accessories	AC power cord (1) Tripod adapter (1) Tripod adapter locking screws (2) Lens mount cap (1) Before Using This Unit (1) CD-ROM (Operating Instructions in PDF format) (1) Warranty Booklet (1) Service Contact List (1)

*1 It cannot be used for image quality adjustment.

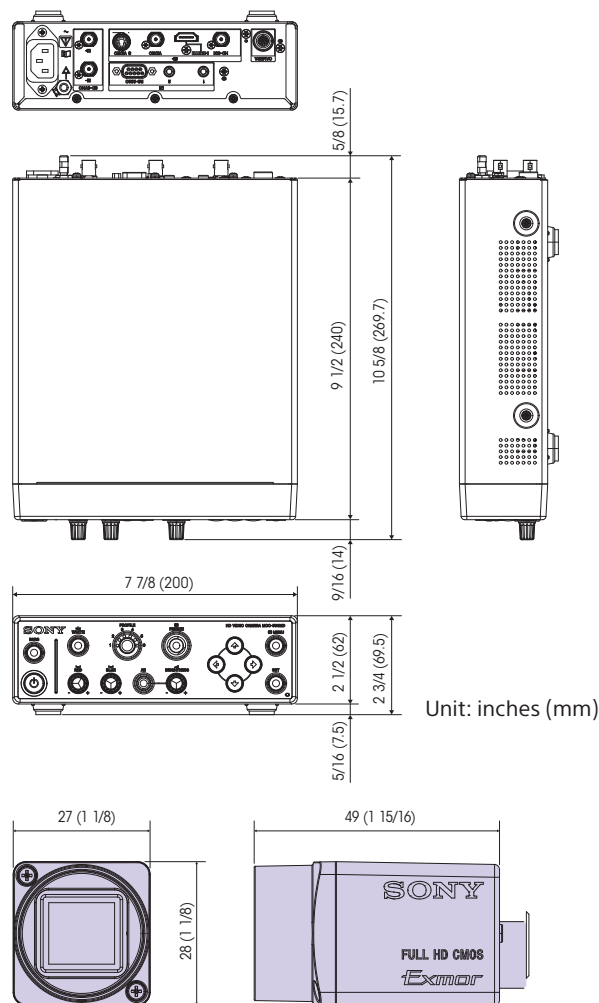
*2 The FS-24 has an Ingress Protection rating of IPX3.

Therefore, do not operate in environments exposed to splashing liquids (e.g., surgical operating room).

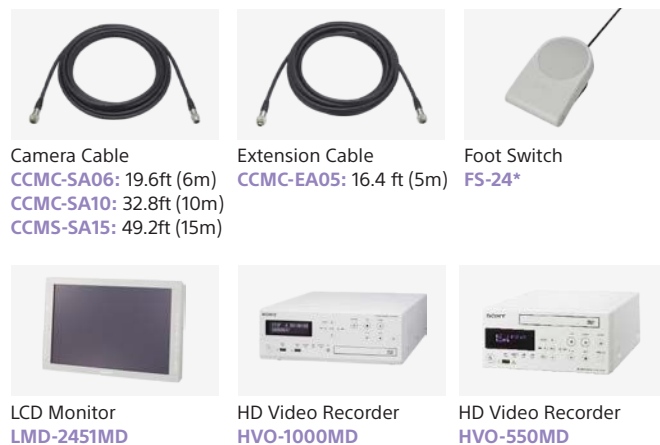
For safety, use a device with a rating of IPX6 or higher when operating in such environments.

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DIMENSIONS



OPTIONAL ACCESSORIES



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CAUTION: Federal (USA) law restricts this device to sale by or on the order of a physician or other appropriately licensed medical professional.

CAUTION: See product labeling for indications, contraindications, warnings, cautions, and directions for use.