MCC-500MD

HD Medical Video Camera

SONY

Exmor™

The MCC-500MD medical video camera is the latest addition to Sony's comprehensive line-up. This affordably priced camera features latest-generation image sensor technology for better low light sensitivity than traditional equivalent-sized image sensor technology, and for good image reproduction capabilities. The camera consists of a compact camera control unit and one camera head with a 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 sensitivity of F5.6, a signal-to-noise ratio of 55 db, and a 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 high-speed frame rates when HDMI or HD-SDI is used – ideal for converting video to still image.

All of the camera's outputs are active simultaneously, so the MCC-500MD is ideal for use with a second monitor or even three monitors in the operating room.

Together with Sony's medical-grade recorders and monitors, the MCC-500MD is an ideal solution for capturing and recording microsurgery applications. Moreover, its compact and lightweight design allows the camera's C-mount head to be easily mounted on most existing surgical microscopes and slit lamps*.

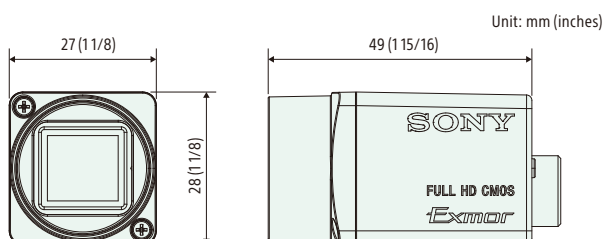* Slit lamp application is unavailable in the U.S. market.

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 latest-generation image sensor technology accumulated over decades of experience in the professional imaging business. Thanks to this advanced technology, the MCC-500MD provides sensitivity of F5.6, a signal-to-noise ratio of 55 dB, and a horizontal resolution of 900 TV lines or more.

Together with Sony's latest digital signal processing technology, the MCC-500MD delivers high-level color reproduction similar to that of a three-chip camera, despite having only a single chip.

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 27 x 28 x 49 mm (1 1/8 x 1 1/8 x 1 15/16 in), and weighs only 40 g (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 (6 m / 10 m / 15 m) and one extension cable (5 m) are available as options. The camera head unit can be installed at a cable length of up to 20 m (65.6 feet) from the CCU with the use of the 15 m camera cable and 5 m 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.

Unit: mm (inches)

27 (1 1/8)   49 (1 15/16)   28 (1 1/8)

SONY
FULL HD CMOS
Exmor

SONY
FULL HD CMOS
Exmor

Other Features

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

Freeze Function
For the camera to output a still image, the user simply presses the FREEZE button.

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.

Color Bar
For the camera to output a color bar, the user simply presses the BARS button. This is convenient when checking connection during camera installation*1.

*1 It cannot be used for image quality adjustment.

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.

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

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

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

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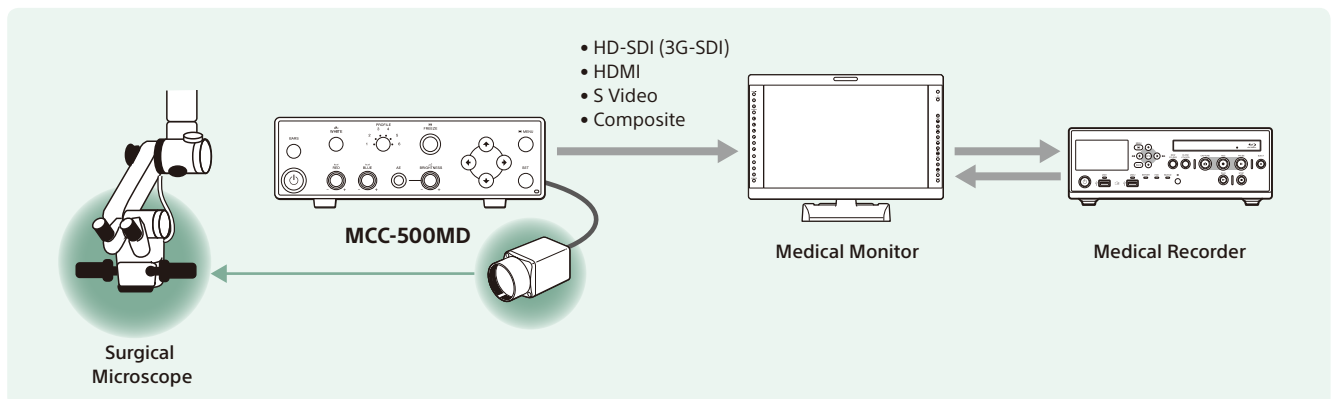
Front Panel
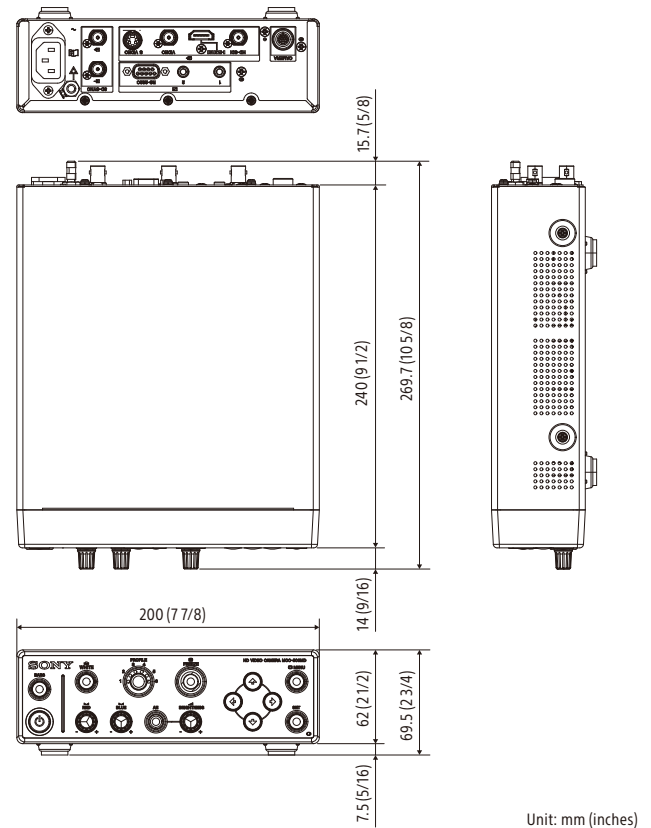
Rear Panel

System Configuration

- HD-SDI (3G-SDI)
- HDMI
- S Video
- Composite

MCC-500MD

Surgical Microscope

Medical Monitor

Medical Recorder

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: 40 g (1.4 oz) Camera control unit: 2.3 kg (5 lb 1.1 oz)
Dimensions (W x H x D)*1	Camera head: 27 x 28 x 49 mm (1 1/8 x 1 1/8 x 1 15/16 in.) excluding longest protrusions Camera control unit: 200 x 62 x 240 mm (7 7/8 x 2 1/2 x 9 1/2 in.) excluding longest protrusions
Power Requirements	100 to 240 V AC, 50/60 Hz
Input Current	0.27 A - 0.18 A
Operational Temperature	0°C to 40°C (32°F to 104°F)
Operational Humidity	20% to 80% (no condensation allowed)
Operational Pressure	700 hPa to 1060 hPa
Storage and Transport Temperature	-20°C to 60°C (-4°F to 140°F)
Storage and Transport Humidity	20% to 90% (no condensation allowed)
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 The values for dimension are approximate.
This product is distributed to US and EU as a medical device. It satisfies product safety standards (e.g. IEC 60601-1).
For more details, please contact your nearest Sony sales office or an authorized dealer.

Dimensions

200 (7 7/8)
15.7 (5/8)
240 (9 1/2)
269.7 (10 5/8)
14 (9/16)
62 (2 1/2)
69.5 (2 3/4)
7.5 (5/16)

Unit: mm (inches)

Optional Accessories

Camera Cable
CCMC-SA06: 6 m (19.6 ft.)
CCMC-SA10: 10 m (32.8 ft.)
CCMC-SA15: 15 m (49.2 ft.)

Extension Cable
CCMC-EA05: 5 m (16.4 ft.)

Foot Switch
FS-24*

Related Products

LCD Monitor
LMD-2451MD

3D HD Video Recorder
HVO-3300MT

HD Video Recorder
HVO-550MD

* The FS-24 has an ingress protection rating of IPx3 and therefore should not be operated in environments liable to liquid splashes (e.g., a surgical operating room). For safety, devices with a rating of IPx6 or higher should be selected for that type of environment.

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