

## MCC-500MD

Full HD surgical video camera  
with Exmor™ CMOS sensor.



### Overview

#### **Space-saving two-piece camera offers HD image quality and convenient integration with modern medical modality devices.**

This two-piece HD colour video camera consists of a light, compact camera head and separate CCU (Camera Control Unit). The complete system is designed for convenient integration with medical modality equipment such as slit lamps and surgical microscopes.

High quality image reproduction is enabled by latest-generation Exmor™ CMOS sensor technology, offering improved low-light sensitivity compared with traditional equivalent-sized image sensors.

Brightness and colour can be easily adjusted from the CCU front panel, while workflow is further enriched with a range of useful imaging features and shooting modes. Customised picture profiles can be stored and recalled instantly, reducing time-consuming set-up between procedures.

The complete camera system can optionally be controlled from an external host device such as a computer. In addition, the camera head can be sited as far as 20m from the CCU (requires optional cables) for greater operational and integration flexibility.

Full HD video images can be viewed on a connected monitor (not included), or recorded for subsequent sharing and analysis with a suitable video recorder such as the Sony HVO-3300MT.

## Features

### **Crisp, clear Full HD images**

The MCC-500MD is equipped with a 1/2.9-type single Exmor™ CMOS image sensor. Low-light sensitivity is improved compared with conventional equivalent-sized sensor technology, contributing to picture quality that approaches the performance of more costly three-chip cameras.

### **Small, light camera head with C-Mount**

Installation in space-constrained locations is simplified by the camera head's compact size and light weight. The lens mount part of the camera head is a C-mount type that's commonly used for surgical microscopes or slit lamp medical applications.

### **Support for wide range of HD and SD video formats**

The MCC-500MD supports both Full HD (1080 60p/50p) and Standard Definition video formats for greater operating versatility. This also offers the benefit of straightforward migration from SD to HD-based workflow as required.

### **Control camera head remotely from up to 20m**

For greater operating versatility, the camera head unit and camera control unit can be connected over distances up to 20m using an optional camera cable. Cables are available in 6m/10m/15m lengths, as well as an additional 5m extension cable.

### **Easily recall custom picture profiles**

Up to six different picture profiles – including exposure, sharpness, gamma, colour tuning and white balance – can be saved to memory. Custom settings can be instantly recalled from

the CCU front panel to suit various applications, including use of different lamp sources.

### **Image flip**

The camera output can be 'flipped' vertically, horizontally, or both vertically and horizontally. The flip function can also be activated by an optional foot switch for convenient hands-free operation.

### **Picture freeze**

Pressing the 'Freeze' button during normal operation causes the camera to output a still image.

### **Fluorescein Mode**

Clear images can be viewed during fluorescein shooting under green lighting, with no need to use a special yellow filter.

### **Versatile connection with wide range of interfaces**

The MCC-500MD is generously equipped with a variety of video and control interfaces. These include a 3G-SDI output, HDMI output supporting 1080/60P and 1080/50P, plus analogue composite and S-Video outputs. A D-sub 9-pin connector is provided for PC control of the camera via RS-232C, while two mini-jacks allow connection of optional foot switches.

### **Control by computer**

The MCC-500MD can be controlled from a computer via its standard RS-232C interface.

### **Two camera support for 3D shooting**

Images from two MCC-500MD units can be synchronised to allow acquisition of 3D video images. The two camera control units can be connected using an optional BNC cable via the CCU's 3D-SYNC IN/OUT connectors.

### **Colour bar for convenient set-up**

The camera can be switched from its normal output picture to a colour bar, assisting with easy connection checks during camera

installation.

### Direct AC power operation

The camera control unit is powered directly via a standard AC power cord, with no need for an external adaptor. This can save space when the unit is installed on a modality device or video cart.

### Compliance with medical standards

This product is distributed to the US and EU as a medical device and satisfies product safety standards (e.g. IEC 60601-1).

For more details, please contact your nearest Sony sales office or an authorized dealer.

## Specifications

### Camera Head

Image Device	1/2.9 type "Exmor" CMOS image sensor, single chip type
Effective Pixels	1920 (H) x 1080(V)
Lens Mount	C-mount
Sensitivity	F5.6 (Typical) (At 1080/59.94i, 89.9% reflections, 2000 lx)
Picture S/N	55dB (Y) (Typical)
Horizontal Resolution	900TV lines or more
Gain	0dB to 27dB

Shutter Speed	1/60 to 1/10000
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Camera Cable Connector	20-pin, round
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## Camera Features

HD-SDI Video Format	1080/60P, 1080/60i, 1080/30P 1080/50P, 1080/50i, 1080/25P
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HDMI Video Format	1080/60P, 1080/60i, 1080/30P, 480/60P 1080/50P, 1080/50i, 1080/25P, 576/50P
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DVI Video Format	No
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Picture Profile	Yes (Six settings)
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Picture Flip	Yes
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Freeze Function	Yes (outputting a still image)
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Color Bar	Yes It cannot be used for image quality adjustment.
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Camera Synchronization for 3D-shooting	Yes
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Fluorescein Mode	Yes
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AC Power Operation      Yes

## Connectors

Input Connectors      Remote contact switch 1, 2 (Stereo mini jack)

Output Connectors      VIDEO OUT (x1) (BNC)  
S VIDEO OUT (x1) (4-pin mini DIN connector)  
HDMI OUT (x1) (HDMI connector)  
HD-SDI OUT (x1)

Input/Output Connectors      CAMERA (x1) (20-pin, round)  
RS-232C (x1) (D-sub 9-pin)  
3D SYNC IN (x1), OUT(x1) (BNC)

Other Connector      Equipotential ground connector(x1)

## General

Power Requirements      100 to 240V AC, 50/60Hz

Input current      0.27A - 0.18A

Operating Temperature      0°C to 40° C  
32°F to 104°F

Operating Humidity      20% to 80% (without condensation)

Operating 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% (without condensation)
Storage and transport pressure	700 hPa to 1060 hPa
Mass (Camera Head)	approx. 40 g approx. 1.4 oz
Mass (Camera control unit)	approx. 2.3 kg approx. 5 lb. 1.1 oz
Dimensions (Camera Head) (WHD, excluding longest protrusions)	approx. 27 x 28 x 49 mm approx. 1 1/8 x 1 1/8 x 1 15/16 in.
Dimensions (Camera control unit) (WHD, excluding longest protrusions)	approx. 200 x 62 x 240 mm approx. 7 7/8 x 2 1/2 x 9 1/2 in.
	AC power cord (x1) Tripod adaptor (x1) Tripod adaptor locking screws (x2) Lens mount cap (x1)

## Supplied Items

Before Using This Unit (x1)  
 CD-ROM (Instruction for Use in PDF format (x1)  
 Warranty Booklet (x1)  
 Service Contact List (x1)

## Separately-Sold Accessories

Camera Cable  
 CCMC-SA06 (standard 6m (19.6ft))  
 CCMC-SA10 (standard 10m (32.8ft))  
 CCMC-SA15 (standard 15m (49.2ft))  
 CCMC-EA05 (extension 5m (16.4ft))  
 Foot Switch (FS-24)  
 The FS-24 has an Ingress Protection rating of IPx3. Therefore, do not operate it environments exposed to splashing liquids (e.g., surgical operating rooms). For safety, use a device with a rating of IPx6 or higher when operating in such environments.

## Related products



**LMD-2451MD**  
 24-inch HD 2D LCD Medical Monitor



**HVO-3300MT**  
 Full HD 2D/3D medical recorder



**HVO-550MD**  
 HD Medical Video Recorder,



**NUCLeUS**  
 The smart digital imaging platform for medical environments





## Gallery

