Medical Catalogue

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GLOBAL TRADE

Recognised for quality

Committed to innovation

At Sony we're proud of our heritage in providing a clearer picture for medical practitioners.

For more than thirty years we've led the way with innovative, easy to use quality medical printers to support the work of clinical staff.

Over the last decade Sony has pioneered the evolution from Standard Definition to High Definition imaging in medical environments. And today we're constantly redefining clarity right across the hospital workflow – from High Definition cameras and recorders to monitors and printers for use in medical environments.

Our imaging, recording and networked sharing tools integrate seamlessly with a wide range of modern modalities in today's operating room and beyond. Just as importantly, they're designed for smooth interworking with legacy medical products and systems from Sony and other manufacturers.

We've always got an eye on the future. And now we're innovating further with an exciting new generation of tools that deliver a 4K workflow from image acquisition to display.

Sony's breadth of experience in developing cutting edge imaging technologies is second to none, spanning television broadcasting, digital cinematography and advanced medical vision applications.

Refining this unique insight through constant dialogue with healthcare professionals worldwide, we create medical products and solutions that offer dependable performance in modern clinical environments.

contents

Cameras – capturing clarity

Application-specific HD medical cameras

We're continually challenging the boundaries of medical imaging technology.

Sony's range of HD colour video cameras helps clinicians capture medical 2D and 3D content with clarity and precision.

We offer a range of application-specific cameras which provide a secondary view from the microscope for a diverse range of challenging fields including ophthalmology, neurosurgery, pathology, biomedical research, veterinary science and teaching.

MCC-3000MT

1/2 inch 3CMOS 3D Full HD Colour Video Camera

Suitable for: Surgical Microscopy

Separate 3D video camera with twin camera heads and single CCU for operating microscopes, delivering high-precision 3D images of operating field.

- Quality stereoscopic 3D HD and 2D HD images
- C-mount compatible compact and lightweight camera head
- Easy parameter adjustment (including colour matching and white balance) with single CCU

Features

- Simultaneous control of left and right camera heads
- Incorporates 3-chip 1/2-inch Exmor Full HD CMOS sensor
- HD-SDI outputs

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

PMW-10MD

1/2 inch 3CMOS Full HD Colour Video Camera

Suitable for: Surgical Microscopy

An ideal solution for microscopic applications, the PMW-10MD with its 2-piece design captures crisp HD images.

- High sensitivity delivers detail in low light environments
- Small, lightweight C-mount camera head for easy integration
- On-board HD recording capability

Features

- Incorporates 3-chip 1/2-inch Exmor Full HD CMOS sensor
- SDI and HD-SDI outputs
- Two SxS Memory card slots

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

MCC-500MD

1/3 inch Full HD single CMOS Colour Video Camera

Suitable for: Surgical Microscopy

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

- C-mount small and light weight camera head
- Wide Variety of Video Formats – from SD to Full HD (1080/60p)
- Picture Profiles allow you to easily call up customized picture-tonal settings

Features

- 1/2.9-inch single Exmor™ CMOS image sensor
- SDI, HD-SDI and HDMI outputs

MCC-500MD

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

*Registration status as a medical device may vary, depending on country.
For more details, please contact your nearest Sony office or an authorized dealer.

Video Recorders – a lasting image

Versatile recording and storage solutions for efficient workflow

Sony understands the clinician's needs for records in review and training for both surgical applications as well as for radiology and ultrasound. With recording solutions from Sony you can rely on the clarity and integrity of medical images for years to come.

Every product supports efficient workflows with powerful random access storage.

HVO-3000MT

HVO-3000MT

3D & 2D Full HD Medical Video Recorder

Suitable for: Surgical Microscopy, Surgical Endoscopy, Robotic-Assisted Surgery in 3D

Designed specifically for recording long-playing 3D and 2D HD images from OR medical cameras and simultaneous patient monitor information.

- Can record and playback high quality 3D and 2D video with simple operation
- Accept 3D HD video input from HD-SDI and DVI sources with high resolution of 1080 vertical lines up to 60 progressive frames per second
- Simultaneous recording on internal hard drive, DVD/ Bluray Blu-ray Disc™ and USB slot

Features

- Real-time distribution with a streaming function
- Broad Support of media for data exchange
- High quality HD recording (MPEG-4 AVC/H.264 compression)
- Large capacity hard disc for long recording capability
- Wide range of Interfaces
- Network data transmission through FTP or CIFS
- Pre-installed Sony USB printer drivers
- Still and motion image capture

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

HVO-1000MD

Full HD Medical Video Recorder

Suitable for: Surgical Microscopy, Endoscopy, Ultrasound, Radiology

To make efficient use of the operating theatre and to drastically improve the way doctors use surgical images, the HVO-1000MD offers many recording advantages and makes a significant contribution to effective hospital data management.

- High quality HD recording
- Simultaneous recording on internal hard drive, DVD/Blu-ray Disc™ drive and USB slot
- Easy to use operation via menu or external touchscreen

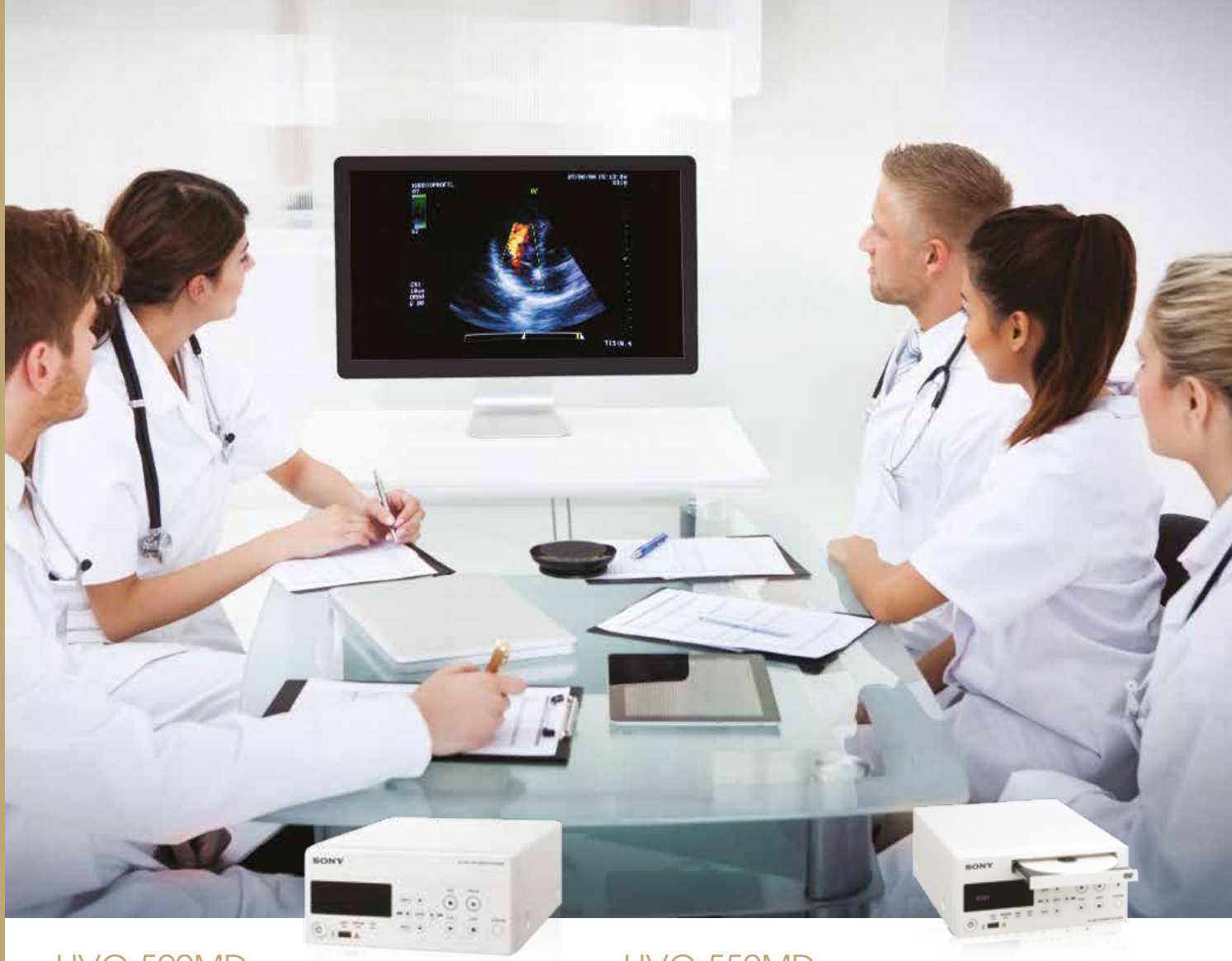
Features

- Real-time distribution with a streaming function
- Broad Support of media for data exchange
- High quality HD recording (MPEG-4 AVC/H.264 compression)
- Large capacity hard disc for long recording capability
- Wide range of Interfaces
- Network data transmission through FTP or CIFS
- Pre-installed Sony USB printer drivers
- Still and motion image capture

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

*Registration status as a medical device may vary, depending on country. For more details, please contact your nearest Sony office or



HVO-500MD

HD Medical Recorder, USB/NAS

Suitable for Ultrasound, Radiology

This High Definition Video recorder is designed to support modern workflows with HDD/USB/NAS recording. The compact design allows for easy integration in ultrasound systems or mobile C-Arm systems.

- Pre-recording function not to miss any important moments
- Simultaneous recording on internal HDD and external storage media (USB device or NAS).
- Easy integration thanks to various remote control interfaces

Features

- Extensive digital and analog video interfaces to be compatible from SD to the latest HD modalities
- Supports Full HD-video input through DVI & HDMI as well as standard SD-video-interfaces
- HD (720p) and SD (576i/480i) recording resolutions
- Remote interfaces : USB, RS-232C, Footswitch and Monitor remote
- Compact, lightweight and silent design

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

HVO-550MD

HD Medical Recorder, DVD/USB/NAS

Suitable for Ultrasound, Radiology

This High Definition Video recorder is designed to support modern workflows with HDD/USB/NAS recording as well as DVD disc. The compact design allows for easy integration in ultrasound systems or mobile C-Arm systems.

- Digital recording on DVD-R
- Pre-recording function not to miss any important moments
- Simultaneous recording on internal HDD and external storage media (DVD, USB device or NAS).
- Easy integration thanks to various remote control interfaces

Features

- Extensive digital and analog video interfaces to be compatible from SD to the latest HD modalities
- Supports Full HD-video input through DVI & HDMI as well as standard SD-video-interfaces
- HD (720p) and SD (576i/480i) recording resolutions
- Remote interfaces : USB, RS-232C, Footswitch and Monitor remote
- Compact, lightweight and silent design

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

*Registration status as a medical device may vary, depending on country.
For more details, please contact your nearest Sony office or an authorized dealer.

HVO-500MD (Full HD Version)

Full HD Medical Recorder, USB/NAS

Suitable for Ultrasound, Radiology

This High Definition Video recorder is designed to support modern workflows with HDD/USB/NAS recording. The compact design allows for easy integration in ultrasound systems or mobile C-Arm systems.

- Pre-recording function not to miss any important moments
- Simultaneous recording on internal HDD and external storage media (USB device or NAS).
- Easy integration thanks to various remote control interfaces

Features

- Extensive digital and analog video interfaces to be compatible from SD to the latest HD modalities
- Supports Full HD-video input through DVI & HDMI as well as standard SD-video-interfaces
- HD (1080i/720p) and SD (576i/480i) recording resolutions
- Remote interfaces : USB, RS-232C, Footswitch and Monitor remote
- Compact, lightweight and silent design

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

HVO-550MD (Full HD Version)

Full HD Medical Recorder, DVD/USB/NAS

Suitable for Ultrasound, Radiology

This High Definition Video recorder is designed to support modern workflows with HDD/USB/NAS recording as well as DVD disc. The compact design allows for easy integration in ultrasound systems or mobile C-Arm systems.

- Digital recording on DVD-R
- Pre-recording function not to miss any important moments
- Simultaneous recording on internal HDD and external storage media (DVD, USB device or NAS).
- Easy integration thanks to various remote control interfaces

Features

- Extensive digital and analog video interfaces to be compatible from SD to the latest HD modalities
- Supports Full HD-video input through DVI & HDMI as well as standard SD-video-interfaces
- HD (1080i/720p) and SD (576i/480i) recording resolutions
- Remote interfaces : USB, RS-232C, Footswitch and Monitor remote
- Compact, lightweight and silent design

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

HVO-500MD (Surgical Version)

Full HD Medical USB recorder

Suitable for Surgical Microscopy and Endoscopy applications

This Full HD video recorder is designed to meet modern OR workflows with HDD/USB/NAS recording. The compact design allows for easy integration into surgical cart systems

- Simultaneous recording on internal HDD and one external storage media
- Still and motion image capture
- Pre-installed printer driver for Sony UP-DR80MD
- Easy to use operation via menu

Features

- Supports Full-HD video input through DVI and HDMI as well as standard SD video interfaces
- HD (1080i/720p) and SD (576i/480i) recording resolutions
- High Quality HD recording
- Network data transmission via CIFS only
- Remote interfaces: USB, Footswitch
- Compact, lightweight and silent design

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

HVO-500MD (Surgical Version)

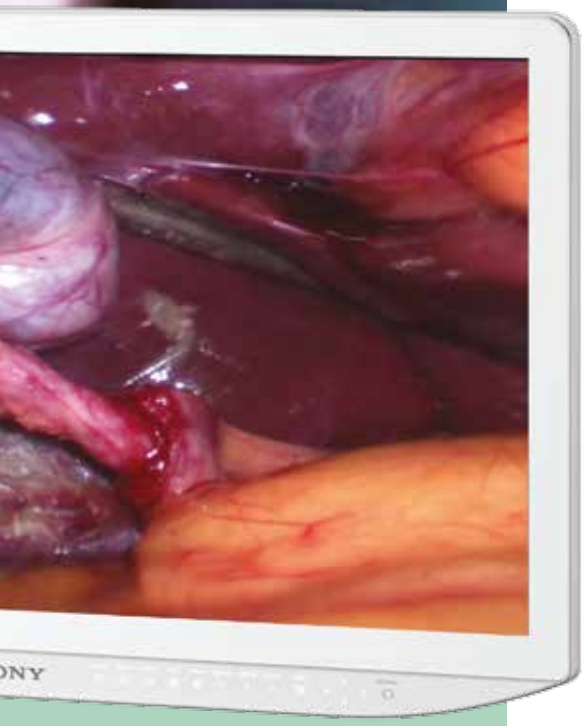
The HVO-500MD (Full HD version) and HVO-550MD (Full HD version) are the same product as HVO-500MD and HVO-550MD respectively, but are upgraded to record in Full HD. The HVO-500MD (Surgical Version) is the same product as HVO-500MD but is upgraded version to record still image and motion images in Full HD, as well as supporting printing to the Sony UP-DR80MD medical colour printer.

The order codes for HVO-500MD (Full HD Version) is HVO-500MD/FHD and HVO-550MD (Full HD Version) is HVO-550MD/FHD.
The order codes for HVO-500MD (Surgical Version) is HVO-500MD/SUR. Please contact your local Sony representative for details.

Thin is in

Introducing the next generation of surgical monitor

The new face of surgical monitors from Sony offers users a larger on-screen image with the added benefit of anti-reflective OptiContrast™ panel technology, boosting image contrast under the glare of direct lighting in the OR. All this takes place within a slender chassis with a minimal bezel, delivering the user a bigger picture on existing carts and boom arms used for 26-inch (66cm) models.



LMD-2760MD

Full HD 27 inch (69 cm) LCD* monitor

Suitable for: Microscopy, Endoscopy, Neurology and Ophthalmology

The robust, high brightness 27" (69cm) LCD panel features an advanced anti-reflective panel technology and allows Surgeons and operating room staff to view Full HD images from a wide range of digital medical imaging systems with this high quality LCD monitor.

Features

- Digital connectivity only
- High Brightness 1000cd/m2 LED backlit LCD panel
- Anti-reflective OptiContrast™ panel technology
- Choice of PiP/PoP picture modes and image flip function
- Powerful AIME image enhancement
- VESA mounting standard (100 x 100 mm/200 x 100 mm)

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

LMD-2765MD

Full HD 27 inch (69 cm) LCD* monitor

Suitable for: Microscopy, Endoscopy, Neurology and Ophthalmology

The robust, high brightness 27" (69cm) LCD panel features an advanced anti-reflective panel technology and allows Surgeons and operating room staff to view Full HD images from a wide range of digital and analogue medical imaging systems with this high quality LCD monitor.

Features

- Digital and analogue connectivity
- High Brightness 1000cd/m2 LED backlit LCD panel
- Anti-reflective OptiContrast™ panel technology
- Choice of PiP/PoP picture modes and image flip function
- Powerful AIME image enhancement
- VESA mounting standard (100 x 100 mm/200 x 100 mm)

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

* Measured diagonally

*Registration status as a medical device may vary, depending on country. For more details, please contact your nearest Sony office or an authorized dealer.

Monitors – displaying the detail

Medical monitors that deliver outstanding image quality

The clarity and resolution of medical imaging is becoming increasingly lifelike. And as it does, the role of the medical monitor in supporting critical decisions is more crucial than ever. An obvious example is in surgery, where a surgeon's ability to distinguish clearly between different tissue types before making an incision is paramount.

"Monitors are shown with optional display stand."

PVM-2551MD

24.5-inch Full HD Medical OLED Monitor

Suitable for: Microscopy, Endoscopy

The Sony PVM-2551MD is the first medical monitor with OLED technology and displays sharp images with in-depth detail.

- Wide dynamic range – accurate colour reproduction in dark areas of the displayed image
- Quick response – virtually no motion blur
- Wide colour gamut – reproduces small differences in colour

Features

- Panel Resolution Full HD (1920 x 1080 pixels)
- Variety of Gamma curve settings
- Direct input selection
- Key inhibit function
- Easy-clean flat-surface panel
- Installation-friendly cabling
- VESA mounting standard (100 x 100 mm/200 x 100 mm)

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

LMD-2451MD

24-inch Medical Full HD LCD Monitor

Suitable for: Microscopy, Endoscopy

The innovative LMD-2451MD has Advanced Image Processing Technology and enables physicians to see still and moving images with accurate, HD clarity and-pinpoint precision.

- HD monitor with high resolution
- Original ChromaTRU colour processing technology
- Quality WUXGA panel
- DVI loopthrough possible with BKM-256DD board

Features

- Panel Resolution WUXGA (1920 x 1200 pixels)
- Accepts almost any signal from SD to HD video
- Multi-input capability (HD and SD signals from both analogue and digital sources)
- Selectable Gamma curves
- Key inhibit function
- VESA mounting standard (100 x 100 mm/200 x 100 mm)

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

LMD-2110MD

21.5-inch Full HD Medical LCD Monitor

Suitable for: Microscopy, Endoscopy

Offering superb picture quality, the feature-rich LMD-2110MD is ideal for video endoscope cart installation.

- Versatile Video and PC inputs ranging from SD to HD
- Two types of interpolation methods for high-quality image reproduction
- Improved picture stability when exposed to high electromagnetic fields in medical environments, i.e. electrical knife

Features

- Panel Resolution Full HD (1920 x 1080 pixels)
- Accepts signals ranging from SD to HD video, analogue VGA to SXGA PC input, as well as HDMI input
- HD-SDI input available by optional adaptor
- Parallel and serial remote control ports as standard
- User memory provides the capability of saving 20 patterns of memory settings
- VESA mounting standard (100 x 100 mm)

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

LMD-1951MD

19-inch SXGA Medical LCD Monitor

Suitable for: Microscopy, Endoscopy

This high resolution LCD monitor with superb picture quality and DC power supply is ideal for surgery arm mount and trolley based applications.

- LED backlight for high contrast and brightness
- Power via AC adaptor or direct DC in
- 10 bit signal processing for enhanced picture quality

Features

- Panel Resolution SXGA (1280X1024 pixels)
- Accepts signals ranging from SD to HD video, analogue VGA to SXGA PC input, as well as DVI-D input
- 5 types of optional input adaptors are offered for use in two rear slots
- Parallel and serial remote control ports as standard
- User Memory provides the capability of saving 20 patterns of memory settings
- VESA mounting standard (100 x 100 mm)

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

LMD-1530MD

15.3-inch WXGA Medical LCD Monitor

Suitable for: Microscopy, Endoscopy

This high resolution LCD monitor with superb picture quality and DC power supply is ideal for Surgery Arm Mount applications.

- Full range of SD inputs & HDMI
- IPS LCD panel
- Wide viewing angle

Features

- Panel Resolution WXGA (1280 x 768 pixels)
- Anti-reflection (AR) coated protection panel
- Parallel control interface
- VESA mounting standard (100 x 100 mm)

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

*Registration status as a medical device may vary, depending on country.
For more details, please contact your nearest Sony office or an authorized dealer.

HMS-3000MT

HMS-3000MT

2D/3D Head Mounted Display System

Suitable for: Endoscopic Surgery, Education, Training

The Sony HMS-3000MT is a personal viewing system that provides a 3D colour video display of images from 3D surgical endoscopic/laparoscopic camera systems and other compatible 3D medical imaging systems.

- The system consists of the HMI-3000MT image processor unit plus HMM-3000MT Head Mounted Monitor.
- Connect a second headset to the camera control unit for simultaneous viewing by a second user.

Features

- Video input signals can be either 2D or 3D
- Image FLIP function in both landscape or portrait mode
- Image manipulation in both landscape or portrait
- Picture in picture mode for simultaneous display of a secondary image in a smaller inset window
- Range of image adjustment functions
- 1280x720 resolution from the two 0.7 inch OLED panels
- SDI/HD-SDI,DVI-D and HMM outputs for viewing on an external monitor

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

LMD-2451MT **LMD-3251MT**

LMD-2451MT

24-inch WUXGA 3D Medical LCD Monitor

Suitable for: Endoscopic Surgery, Conferences, Education, Training

With the introduction of the LMD-2451MT, Sony brings the third dimension back into operating theaters. With it's circular polarized technology and multiple input possibilities it's a great choice for medical 3D imaging.

- Delivers a stress-free viewing experience of natural depth with smooth, uninterrupted viewing of multiple monitors and flicker-free 3D images
- Optional BKM-250TGM 3G-SDI input adaptor enables a variety of 3D display functions to support optimum 3D settings and adjustments
- Also features 2D monitor functionality

Features

- Panel Resolution WUXGA (1920 x 1200 pixels) with pioneering 3D technology
- Multiple 3D formats
- Features unique ChromaTRU colour matching technology
- Superb brightness and contrast
- Natural gradation and accurate colour reproduction
- Gamma curve selection
- Multiple display modes available
- Mirror image function
- Protected controls functionality
- Key Inhibit function
- VESA mounting standard (100 x 100 mm/200 x 100 mm)

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

LMD-3251MT

32-inch Full HD 3D Medical LCD Monitor

Suitable for: Endoscopic Surgery, Conferences, Education, Training

With the introduction of the LMD-3251MT, Sony expands the range of 3D monitors available for operating theatres.

- Delivers a stress-free viewing experience of natural depth with smooth, uninterrupted viewing of multiple monitors and flicker-free 3D images
- Optional BKM-250TG 3G-SDI input adaptor enables a variety of 3D
- Also features 2D monitor functionality

Features

- Panel Resolution Full HD (1920 x 1080 pixels) with 3D pioneering technology
- Features unique ChromaTRU colour matching technology
- Gamma curve selection and multiple display modes
- Multiple 3D formats
- Impressive brightness and contrast
- Protected controls functionality
- VESA mounting standard (400 x 200 mm)

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

*Registration status as a medical device may vary, depending on country.
For more details, please contact your nearest Sony office or an authorized dealer.

Leading the way in 4K
4K surgical monitors

LMD-X310MD

31-inch 4K 2D LCD medical monitor

Suitable for: Microscopy, Endoscopy

Displaying four times the detail of Full HD, this monitor delivers detail when it matters most. The new 31" 4K monitor features a unique slender chassis, an edge-to-edge easy to clean, splashproof glass protection screen, thin bezel and also OptiContrast panel™ technology to provide high contrast with minimal glare.

Features

- Ultra HD resolution, with four times the detail of Full HD
- Wider colour gamut for a greater depth of colour
- A.I.M.E.™ (Advanced Image Multiple Enhancer) – real-time Image processing technology to accentuate the colour and the structure of the video image independently.
- A choice of display formats with Multi-image display - including picture-in-picture, picture-out-picture with 2 or 3 screen display
- Quad-split picture display of 4 separate HD image sources
- Installation friendly with removeable rear cable cover

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

LMD-X550MD

55-inch 4K 2D LCD medical monitor

Suitable for: Microscopy, Endoscopy

Displaying four times the detail of Full HD, this monitor delivers detail when it matters most. The new 55" 4K monitor features a unique slender chassis, an edge-to-edge easy to clean, splashproof glass protection screen, thin bezel and also OptiContrast panel™ technology to provide high contrast with minimal glare.

Features

- Ultra HD resolution, with four times the detail of Full HD
- Wider colour gamut for a greater depth of colour
- A.I.M.E.™ (Advanced Image Multiple Enhancer) – real-time Image processing technology to accentuate the colour and the structure of the video image independently.
- A choice of display formats with Multi-image display - including picture-in-picture, picture-out-picture with 2 or 3 screen display
- Quad-split picture display of 4 separate HD image sources
- Installation friendly with removeable rear cable cover

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

Professional display solutions

Our range of superior quality public display screens and projectors, highly creative video walls and digital signage software enable a hospital to maximise visitor engagement and content sharing like never before.

From our Professional BRAIVA displays designed to work 24/7 delivering messages to patients waiting to be seen by a doctor, through to large scale auditorium projectors in a university hospital lecture theatre, we have a display solution to suit.

BRAVIA Professional Displays
Sony Professional BRAVIA displays come in a range of sizes, from 40" up to 85" offering either Full HD or 4K screen resolutions. Integration of these slim and attractive displays is simple, with flexible mounting and versatile control options.

With support for HTML5 built in, BRAVIA offers a complete entry-level networked digital signage solution with no extra boxes or player hardware needed.

View the latest range at **pro.sony.eu/BRAVIA**

Projection
Sony offers a range of projectors to suite a variety of requirements. Small portable models for offices through to larger installation models, complete with lamp free, laser technology.

Whatever your lighting conditions or content, expect outstanding quality with a compellingly low total cost of ownership from Sony projectors.

View the latest range at **pro.sony.eu/projectors**

Printers – documenting the detail

Dedicated medical printers for every application

Sony print technologies – direct thermal printing for black and white images, and dye sublimation printing for colour images – provide accurate reproduction of grey levels and colour tints, together with good resistance to fading.

Kinder on the environment

The entire range of Sony medical printers employs an advanced, environmentally-friendly printing system. No liquid chemicals are used in the printing process, and no chemical waste is produced after printing. In addition, our thermal blue film does not contain any metal components such as silver. This means that all Sony medical print media can be treated as household waste for disposal and recycling purposes, rather than as industrial waste.

Print Media:

UPC-R80MD

UP-DR80MD

A4 Digital Colour Printer

Suitable for: Endoscopy, Ophthalmology, Ultrasound, Microsurgery, Microscopy,Pathology

Compact and stylish A4 dye-sublimation colour printer with easy to use front operation.

- A4 colour
- USB 2.0 interface
- High resolution Photo quality
- Long term durability of print out thanks to the lamination

Features

- Superior self laminating roll media
- Compact design for trolley applications
- A4 size colour print in approximately 76 seconds
- Advanced grey balance and colour balance adjustment

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

Print Media:

UPC-21S	UPC-21L
UPC-24SA	UPC-24LA

UP-D25MD

A6 Digital Colour Printer

Suitable for: Endoscopy, Microsurgery, Microscopy, Pathology, Ophthalmology, Ultrasound

Compact and lightweight in design, this printer is perfectly designed to be integrated and used in a wide range of medical applications.

- A6 colour
- USB 2.0 interface
- Compact size

Features

- Photo-realistic quality prints with Sony dye sublimation printing technology
- Resolution of 423 dpi for high picture quality
- A6 size colour print in approximately 19 seconds
- Supports both self-laminating UPC-24 SA/LA and non-laminating UPC-21 S/L media
- Advanced grey balance and HSV-colour balance adjustment, including preview window in driver

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

Print Media:

UPC-55

UP-55MD

A5 Colour Video Printer

Suitable for: Endoscopy, Microsurgery, Microscopy, Pathology, Ultrasound

Designed for heavy-duty use, offering superb reliability and durability, this colour video printer is ideal for a host of medical applications.

- Easy image storage of printed images on USB flash memory
- A5 colour
- RGB, Video & S-Video interfaces
- Ultra compact
- Multiple print modes; standard and 2, 4 and 8 split print of different images

Features

- HD television signal support accepting both 1080i and 720p signal types
- Resolution of 379 dpi for photo-quality prints
- A5 size print in approximately 20 seconds
- Compact size and simple front operation

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

Print Media:

UPC-21S	UPC-21L
UPC-24SA	UPC-24LA

UP-25MD

A6 Colour Video Printer

Suitable for: Ultrasound, Endoscopy, Microsurgery, Microscopy, Pathology,

Compact and lightweight in design, this printer is perfectly designed to be integrated and used in a wide range of medical applications.

- A6 colour
- RGB, S-Video & Video interfaces
- Compact size

Features

- HD television signal support accepting both 1080i and 720p signal types
- Photo-realistic quality prints with Sony dye sublimation printing technology
- Resolution of 423 dpi for high picture quality
- A6 size colour print in approximately 19 seconds
- Supports both self-laminating UPC-24 SA/LA and non-laminating UPC-21 S/L media
- RGB and advanced HSV-colour balance adjustment features

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

*Registration status as a medical device may vary, depending on country.
For more details, please contact your nearest Sony office or an authorized dealer.

Black and white printers

Print Media:

UPP-84HG	UPP-84S

UP-D711MD

A7 Black & White Digital Printer

Suitable for: Ultrasound

The one of the smallest Medical Printer in its class is the ideal solution for all portable medical diagnostic equipment, such as ultrasound systems.

- A7 monochrome
- Very compact: 12.5 cm deep
- Low Power consumption
- USB 2.0 interface
- DC input : 12 to 24V

Features

- Photo quality print out with the UPP-84HG high glossy paper
- AC-adaptor available as optional accessory
- Various Print modes
- Paper saving mode

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

Print Media:

UPP-110HG	UPP-110HD
UPP-110S	

UP-D898MD

A6 Black & White Digital Printer

Suitable for: Ultrasound, C-Arm, Dental, Electrophoresis, Echo-endoscopy

The Sony UP-D898MD thermal printer is the ideal choice for digital ultrasound systems

- A6 monochrome
- USB 2.0 interface
- Photo quality print out with UPP-110HG high glossy paper

Features

- High picture quality with high resolution (325 dpi) and accurate gray scale reproduction (8bits/ 256 levels)
- High speed printing in approximately 1.9 seconds
- Multiple print modes available for a variety of applications
- Compact and lightweight design

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

Print Media:	
UPP-110HG	UPP-110HD
UPP-110S	

UP-X898MD

A6 Black & White Hybrid Printer

Suitable for: Ultrasound, C-Arm, Echo-endoscopy

The Sony UP-X898MD thermal printer is the full-feature model offering hybrid interfaces and still image capture for easy use and smooth integration into medical equipments

- Image storage onto USB flash drive
- A6 monochrome
- Hybrid interfaces : USB 2.0 and video composite
- Photo quality print out with UPP-110HG high glossy paper

Features

- High picture quality with high resolution (325 dpi) and accurate gray scale reproduction (8bits/ 256 levels)
- High speed printing in approximately 1.9 seconds in standard mode
- Multiple print modes available for a variety of applications
- Compact and lightweight design

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

Print Media:	
UPT-735BL	UPP-725

UP-D72XR

8x10" Black & White Digital Film & Paper Imager

Suitable for: C-Arm, Dental X-Ray, Ultrasound, Veterinary

The UP-D72XR provides photo-quality output and has been specifically designed for use with X-ray systems, such as mobile C-arm units and dental X-ray systems.

- 8"x10" monochrome
- USB Interface
- Thermal paper and Blue Film

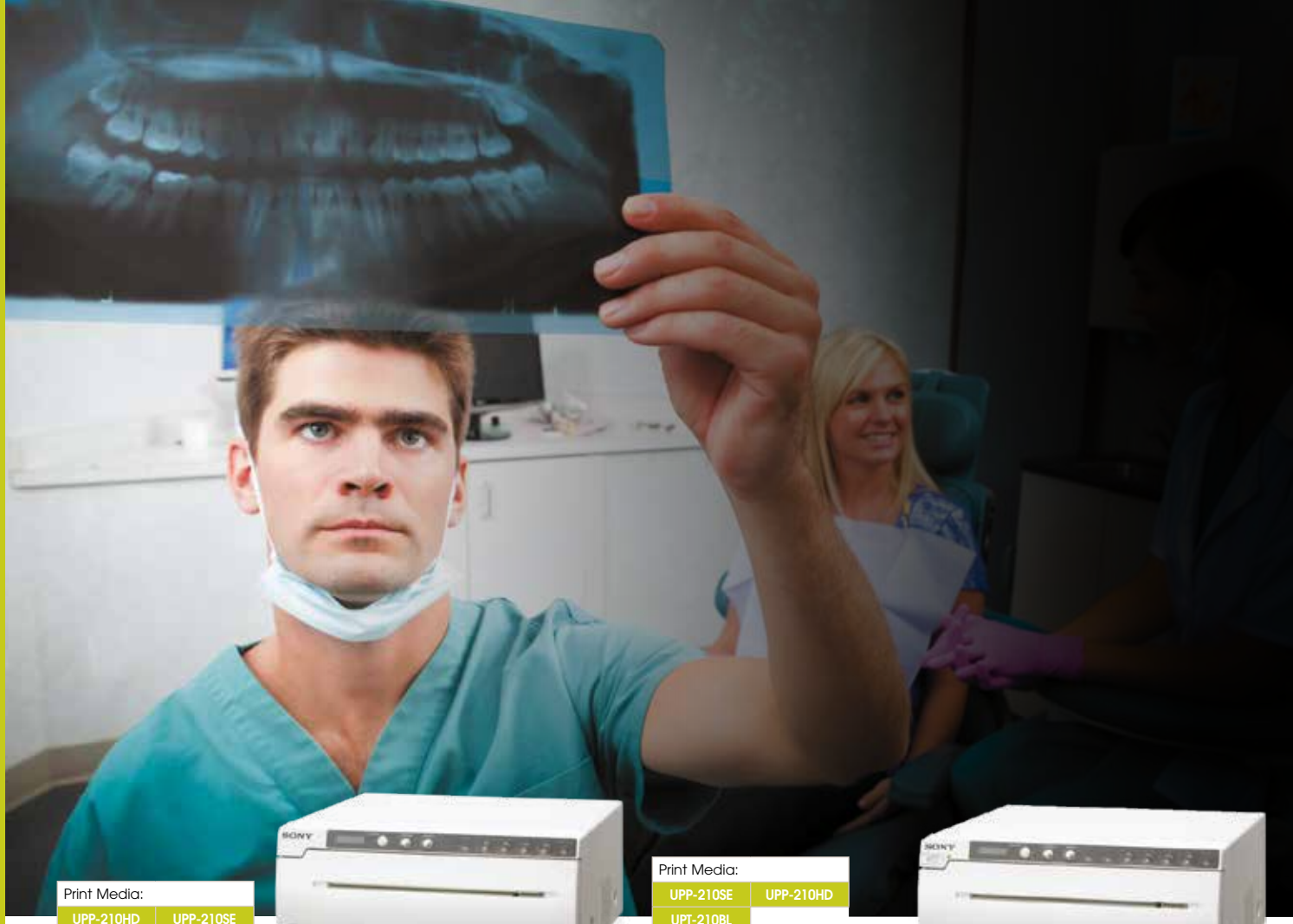
Features

- High resolution of 300 dpi
- Photo-quality prints with Sony direct thermal printing technology
- High-speed printing of approximately 45 seconds
- Precise Gamma-curve-adjustment capability

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

*Registration status as a medical device may vary, depending on country.
For more details, please contact your nearest Sony office or an authorized dealer.



Print Media:

UPP-210HD	UPP-210SE

UP-971AD

A4 Black & White Hybrid Printer

Suitable for: C-Arm, Ultrasound

The UP-971AD is a compact printer integrated by all major C-arm manufacturers offering x-ray images on thermal paper.

- A4 monochrome
- Thermal paper only
- Hybrid interfaces : USB 2.0 and video composite

Features

- Long print up to 60 cm
- Easy access to multiple print modes available via front panel
- More compact in depth and lighter compared to predecessor model
- High picture quality with high resolution (325 dpi) and High speed printing in approximately 8 seconds

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

Print Media:

UPP-210SE	UPP-210HD
UPT-210BL	

UP-991AD

A4 Black & White Hybrid Printer

Suitable for: C-Arm, Dental, Ultrasound, Veterinary

The UP-991AD is a compact printer integrated by all major C-arm manufacturers offering x-ray images on blue film or thermal paper.

- Image storage onto USB flash drive
- A4 monochrome
- Thermal paper and Blue Film
- Hybrid interfaces : USB 2.0 and video composite

Features

- Edge to edge printing on blue film
- Long print up to 60 cm
- Easy access to multiple print modes available via front panel
- More compact in depth and lighter compared to predecessor model
- High picture quality with high resolution (325 dpi) and High speed printing in approximately 8 seconds

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

Radiology Diagnostic Imagers

UP-DF550

UP-DF750

Print Media:	
UPT-517BL	UPT-514BL
UPT-512BL	UPT-510BL

Print Media:	
UPT-517BL	UPT-514BL
UPT-512BL	UPT-510BL
UPT-M712BL	UPT-M710BL

UP-DF550

Multi-format Diagnostic DICOM Film Imager

Suitable for: Computed Tomography, Magnetic Resonance, CR/DR

Digital Film Imager for all DICOM compliant general radiology applications.

- Multi-format Diagnostic Film Imager
- DICOM interface
- Very small footprint in its class

Features

- Support for 14" x 17", 11"x14", 10"x12" and 8"x10" Sony Blue Thermal Film
- High resolution of 320 dpi and 12 bit processing
- High-speed printing at a rate of up to 85 sheets of film per hour (8"x10")
- Vertical installation capability for saving space
- 20 Gamma curves for advanced image quality adjustment
- Quick warm-up time of less than 2 minutes

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

UP-DF750

High resolution Diagnostic DICOM Film Imager

Suitable for: Mammography, CR/DR, Computed Tomography, Magnetic Resonance

The UP-DF750 Digital Film Imager features superior image quality through high resolution and high density printing.

- Suitable for Mammography
- DICOM interface
- World's smallest footprint in its class

Features

- Superior image quality through 604 dpi resolution and 14 bit processing
- Support for 10"x12" and 8"x10" Sony Mammography Blue Film (Dmax=3.8)
- Support for 14"x17", 11"x14", 10"x12" and 8"x10" Sony Blue Thermal Film (Dmax=3.2)
- High-speed imaging at a rate of up to 90 sheets of film per hour (8"x10")
- Fully flexible film trays accept any film size and type
- Large 3.8" graphic display with adjustable orientation
- Vertical installation capability for saving space
- Quick warm-up time of less than 2 minutes
- 40 Gamma curves for accurate greyscale reproduction
- New advanced parameterised magnification types and DICOM configuration utility

Compliance with Medical Safety Standards*
This device is compliant and certified for IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe.

MDD Approved

*Registration status as a medical device may vary, depending on country.
For more details, please contact your nearest Sony office or an authorized dealer.

Thermal Print Media

The Sony difference

Here's a guide to the unique features that make Sony medical print media significantly superior when used with our medical printers.

The quality of printed images, now and over time, is determined by the performance of the printer itself. But choosing the print media is equally vital to achieve long-term quality and durability of images that's crucial in medical applications.

Selecting the right print media can also ensure trouble-free printing, reducing the risk of sudden problems at a critical moment. Because it's designed to match the mechanical characteristics of our medical printers, Sony print media ensures you can depend on the worry-free delivery of high quality images – today and tomorrow.

High water resistance

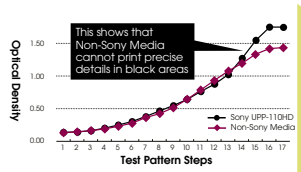
Our high-glossy layer prevents smudging from water and fingerprints and increases storage stability. [1]

Head-matching performance

Designed to optimally match our printer heads, the top coat layer of Sony print media supports continual consistent printing.

Impressive print quality

Our rigorous application of pressure control ensures that the thermal coat layer delivers high-quality colouring properties. The Y curve and Dmax are adjusted to ensure the stable provision of consistent, optimal image quality.



High humidity and heat resistance

High humidity can cause a significant loss of print density. Such degradation is much less marked with Sony print media, which is designed to maintain picture durability.

Minimal curling

Enabling hassle-free filing, our print media minimises curling to ensure reliable, smooth throughput.

Advanced tearing properties

The base material of Sony print media uses a dedicated substrate that matches the thermal specifications of our printers, and applies a special process to improve coating properties. This prevents cutting in the machine direction, whilst ensuring excellent cutting properties in the cross direction.

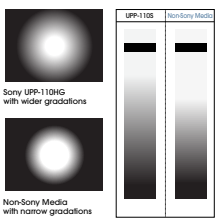
Anti-electrostatic layer

The electrostatic energy that builds up during printing can cause sparking which destroys vital printer components, particulary in the thermal head. Our built-in antistatic layer acts effectively against this build-up.

[1] Applies to UPP-110HG and UPP-84HG

Excellent Grey scale reproduction

Sony video printers and print media are developed together, ensuring accurately matched grey scale characteristics that help to ensure the best possible image transfer quality.



Print media at a glance

The Sony range

Size	Description	Comments	Model	Prints per pack or length	Printers					Number of rolls or packs	
Colour printing for reference					**UP-DR80MD**	UP-D77MD	UP-D75MD			Per subcarton	Per mastercarton
A4	Self-laminating Colour Printing Pack		UPC-R80MD	100 (50x2)	●						4
A4	Self-laminating Colour Printing Pack		UPC-770	72		●	●				5
					UP-55MD	UP-D55					
A5	Colour Printing Pack		UPC-55	200 (2x100)	●	●					5
					UP-25MD	**UP-D25MD**	UP-20/21MD	UP-D23MD			
A6	Colour Printing Pack		UPC-21L	200 (50x4)	●	●	●	●			6
A7	Colour Printing Pack		UPC-21S	240 (80x3)	●	●	●	●			6
Black & white printing for reference					**UP-D72XR**	UP-D74XRD					
8x10"	Blue Thermal Film		UPT-736BL	100		●					5
8x10"	Blue Thermal Film		UPT-735BL	100	●						5
8x10"	Thermal Print Media		UPP-725	100	●	●					5
					UP-991AD	UP-990AD	**UP-971AD**	UP-970AD			
A4	Thermal Print Media	(Type II: High Density)	UPP-210HD	25m	●	●	●	●		5	20
A4	Thermal Print Media	(Type I: High Quality)	UPP-210SE	25m	●	●	●	●		5	20
A4	Blue Thermal Film	(Type III)	UPT-210BL	12.5m	●	●				5	20
					UP-X898MD	**UP-D898MD**	UP-897 series	UP-895 series	UPP-890 series		
A6	Thermal Print Media	(Type V: High Glossy)	UPP-110HG	18m	●	●	●	●		10	100
A6	Thermal Print Media	(Type IV: Superior Density)	UPP-110HA	18m					●	10	100
A6	Thermal Print Media	(Type II: High Density)	UPP-110HD	20m	●	●	●	●	●	10	100
A6	Thermal Print Media	(Type I: High Quality)	UPP-110S	20m	●	●	●	●	●	10	100
					UP-D711MD						
A7	Thermal Print Media	(Type HG: High Glossy)	UPP-84HG	12.5 m	●					10	100
A7	Thermal Print Media	(Type S: High Quality)	UPP-84S	12.5 m	●					10	100
Black & white printing for diagnosis					**UP-DF750**	**UP-DF550**	UP-DF500				
14x17"	Blue Thermal Film	For general Radiology	UPT-517BL	125	●	●	●				4
11x14"	Blue Thermal Film		UPT-514BL	125	●	●					4
10x12"	Blue Thermal Film		UPT-512BL	125	●	●					4
8x10"	Blue Thermal Film		UPT-510BL	125	●	●					4
10x12"	Blue Thermal High density Film	For Mammography application	UPT-M712BL	125	●						4
8x10"	Blue Thermal High density Film		UPT-M710BL	125	●						4

Printer models in Bold are available printers, other models are discontinued.

How to identify genuine Sony Print Media

Sony's print media is developed with patented technologies exclusively alongside Sony's printers, to ensure they complement each other.

When purchasing print media look for the Sony logo in the top left to identify a genuine product.

Solutions – supporting the medical workflow

Hardware and software that supports efficient content management

At Sony Healthcare, we are able to draw upon Sony expertise across numerous sectors to develop technology that underpins business and organisational efficiency and productivity.

Applying such expertise to hospitals and other medical facilities has enabled us to create hardware and software that support workflows through highly efficient content management.

Content Editing Solutions

Vegas Pro 13

Professional Video, Audio, and Blu-ray Disc™ Creation

The Vegas™ Pro 13 collection is an integrated production environment. Combining a familiar track-based timeline with hundreds of thoughtful workflow innovations, Vegas Pro 13 simplifies the editing process while offering the professional performance and more creative control.

- Precise editing tools
- Superior audio control with Dolby® Digital Professional Encoder
- Powerful Blu-ray Disc™ authoring

Features

- Device explorer window
- Improved interface and 3D editing functions
- Enhanced window trimmer
- Choice of layout
- Pre-built templates
- 3D capability

This product is for general purpose only and is not compliant with the technical standards under the medical device directive. GENERAL PURPOSE

Movie Studio 13 Suite

HD video editing, DVD creation, and more.

Movie Studio 13 Suite brings four impressive Sony applications together to produce a comprehensive multimedia experience. The software allows creation of video in beautiful 4K XAVC S or AVCHD™, development of original music, and enhanced multichannel audio.

Features

- Jump Start Tutorials provide a quick overview of the Movie Studio 13 workflow
- Powerful Blu-ray Disc™ authoring
- Sound Forge™ Audio Studio software
- 3D capability

This product is for general purpose only and is not compliant with the technical standards under the medical device directive. GENERAL PURPOSE

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Vision Presenter

Presentation Solutions

PWA-VP100

Vision Presenter

Suitable for: Clinical review teaching and environments

Sony's PWA-VP100 Vision Presenter brings together a wide range of multimedia sources to create a big, bold, dynamic presentations or training solutions that you control with simplicity. In one view you can connect as many as ten different input sources simultaneously; such as Live cameras, PCs, Videoconferencing systems, Monitoring stations, USB flash drives, as well as file based content. 17 different design layouts are provided as default, allowing you to create, manage and build multiple templates all connecting with different content or source material Effortlessly arrange multiple types of content into one presentation. Blend live camera sources, PowerPoint presentations, web content, movies files, videoconferencing systems and more to boost audience engagement or enhance learning. Vision Presenter handles just about any kind of content, including 4K video, with simultaneous playback of up to five HD video sources.

- Inputs: PCI board (x2), e.g., 3G-SDI (x4) + HDMI*2 (x2) or HDMI*2 (x2) + HDMI*2 (x2)
- SDI/HDMI embedded audio

Features

- Playback 5 pieces of Full HD video content simultaneously
- Control via wired/wireless mouse or Tablet Control (Android, iOS)

This product is for general purpose only and is not compliant with the technical standards under the medical device directive. GENERAL PURPOSE

*Optional upgrade

Video Conferencing Solutions

PCS-XC1

Full-HD Videoconferencing system

Suitable for: Peer to peer patient discussion, medical communications, remote learning

Hold high-quality videoconferences, easily, wherever there's a network connection available with the PCS-XC1. This portable videoconferencing system with colour video PTZ camera and optional wireless capability (license required) enhances collaboration so medical practitioners can communicate more effectively.

- Full HD 1080p video at 60 frames per second*
- Wireless network connection

Features

- Compact, highly portable
- Live data-sharing and video annotation
- Supports Microsoft Lync**

This product is for general purpose only and is not compliant with the technical standards under the medical device directive. GENERAL PURPOSE

Video Security Solutions

The Sony portfolio of products also extends to a market leading range of professional video security solutions. Our range of network-based products for surveillance applications includes IP cameras, network recorders, accessories, and encoders, providing integrated solutions ideal for keeping staff, patients and property protected.

The range offers both indoor and outdoor cameras, with models such as the 360 degree view SNC-HM662 camera for a great overall view of corridors and waiting rooms, and the market leading SNC-VB632D dual-light model which can watch over entrances and delivery bays day and night with its unique functionality.

This product is for general purpose only and is not compliant with the technical standards under the medical device directive. GENERAL PURPOSE

Technology - advanced innovation

Bringing medical imaging innovations to life

As a pioneer with a heritage of visual technology breakthroughs, we continue to champion new solutions that support diagnostic and surgical success.

Having created our leading HD medical workflow range – from image capture, display and recording through editing and storage to distribution and print – we have pioneered OLED and 3D technology and most recently introduced 4K image clarity to medical environments.

From our latest 4K medical monitor to harnessing the clarity of precise perceived depth and spatial orientation with our 3D medical monitors, cameras and recorders, we translate the latest technological innovations into dedicated medical imaging solutions.

OLED technology

Wide dynamic range

Accurate colour reproduction in dark areas of the displayed image

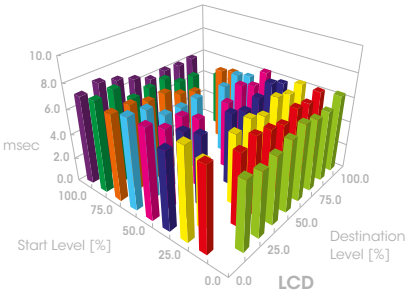
Thanks to TRIMASTER EL technology, Sony OLED monitors are capable of reproducing pure black levels that are faithful to the source signal. They also provide excellent colour reproduction, especially for dark images.

This can assist medical professionals with observing subtle details – such as faint colour differences of tissue such as blood vessels, membrane and fat under low-light conditions.

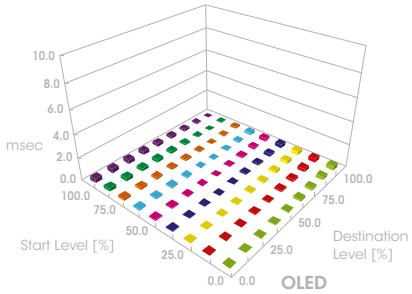
Quick response

Virtually no motion blur

The OLED electroluminescent layer responds almost instantly to changes in electrical current input, achieving superb response performance for blur-free reproduction of fast-moving images. This is beneficial for a variety of critical medical applications, such as rigid endoscopic surgery and flexible endoscope investigation.



LCD screen image



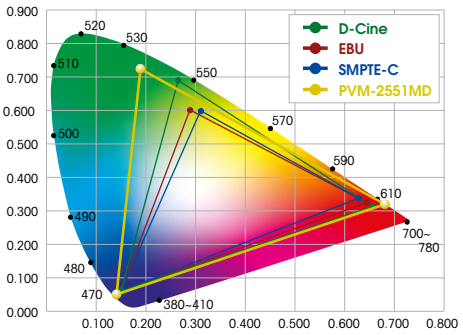
Sony OLED screen image

Wide colour gamut

Reproduces small differences in colour

OLED exceeds the colour range of any previous Sony monitor technology. The advanced micro-cavity structure uses an optical resonance effect in combination with accurate colour filters to calibrate and stabilise RGB colour accuracy.

This combination is also effective in reducing ambient light reflection. Consequently deep colour reproduction can be achieved with virtually no degradation, particularly in bright environments



Sony OLED Technology

PVM-2551MD Medical OLED Monitor

The PVM-2551MD features the newly developed dedicated OLED processor and establishes a new, improved standard of critical-image monitoring. Sony innovative OLED technology delivers deep black, high-contrast, accurate colour reproduction and quick response times with virtually no motion blur.

HMS-3000MT Head Mounted Display

The Sony Head Mounted Display uses OLED panels for detailed image representation of the viewed area. Two 18mm (diagonal) panels positioned inside the monitor, one in front of each eye. Independent HD images are displayed on the left and right panels respectively with no crosstalk.

Case Study

La Sapienza University of Rome holds study to evaluate the Sony HMS-3000MT 3D medical head mount display

The evaluation study took place as part of the Master's Course in Technological Innovations in Advanced Laparoscopic Surgery, at the Institute of Orthopaedic Trauma Surgery (ICOT), Rome.

Application: Laparoscopic surgery
Company: La Sapienza University
Country: Italy

Background

The Master's Course in Technological Innovations in Advanced Laparoscopic Surgery from the Sapienza University of Rome is focused on teaching the most recent technological innovations in laparoscopic and endoscopic surgery. The course participants are all urologists with experience in laparoscopic and endoscopic surgery, who attend surgical operations at the Complex Operative Unit of Urology at the Pontino Centre. As part of the course, a study was launched to evaluate the Sony HMS-3000MT 3D medical head mount display system, involving 12 of the course participants. All operative procedures were carried out with the assistance of Sony's 3D technology and the HMS-3000MT system.

Challenges

Laparoscopic surgery is widely used for the treatment of cancer and many other diseases. The precise identification of dissection planes and anatomical structures, as well as the magnification of certain anatomical details, is crucial. The availability of advanced image viewing systems therefore plays a fundamental role in surgery, in order to optimise the safety and success of operations. In recent years, attention has been focused on improving the comfort of the surgeons themselves. Traditional video systems impose physical disadvantages upon surgeons, requiring them to alternate their view between their equipment and a separate monitor. Consequently, in lengthy and demanding procedures, premature fatigue may affect the safety of the surgical procedure.

"This system allows you to dramatically improve the surgeon's posture during surgical procedures, making operations easier for the entire surgical team"

Antonio Carbone, Director of the Complex Operative Unit, Urology, La Sapienza University of Rome

"The advantages of this system, in terms of diagnostic potential, are excellent."

Dr Giovanni Palleschi

Sony Solution

3D HD viewing in laparoscopy can contribute significantly to recognising dissection planes and anatomical structures by providing surgeons with greater visual clarity and effective ergonomic support.
The Sony HMS-3000MT device is a personal viewing system that allows surgeons to view images from 3D and 2D colour surgical camera systems. The system consists of the HMI-3000MT image processor unit, which receives the video image from the surgical camera, processes it, and sends it to the HMM-3000MT head mount monitor that provides stereoscopic visualisation.

The head mount monitor is adjustable for increased comfort during extended wear, and also allows a 'look down' view of the operating site for the surgeon. Unlike passive (circular polarised) 3D systems, the dual-panel design uses two independent OLED panels to display separate images for the wearer's left and right eye. This makes it possible to obtain smooth, natural stereoscopic images, free of ´ghosting´ and crosstalk.

The HMI-3000MT image processor unit accepts video input signals in many common 3D and 2D formats from surgical camera systems. Video images can be flipped or rotated for a more convenient viewpoint and can also be output for viewing on an external 3D monitor. A second head mounted monitor can be connected to the image processor unit, allowing a second user to view the images simultaneously.

The result

On days when a large number of surgical procedures are taking place, a system such as the HMS-3000MT provides significant advantages in terms of reducing muscular fatigue and eye strain according to the feedback from surgeons so far.
The HMS-3000MT is a product specifically designed to minimize physical exertion, improve posture and help to reduce eye movement from monitor to patient. It also offers high quality 3D viewing which represents a huge advance in terms of depth of surgical field, manoeuvrability, image detail and suture times.

"This system allows you to dramatically improve the surgeon's posture during surgical procedures, making operations easier for the entire surgical team. The 3D visual optimisation is significant in both endoscopic and laparoscopic surgery" commented Professor Antonio Carbone, Director of the Complex Operative Unit, Urology, Sapienza University of Rome.

"The advantages of this system, in terms of diagnostic potential, are excellent. The HMS-3000MT, which uses OLED technology, offers the ability to recognise really exceptional dissection plans, allowing you to obtain excellent results, especially during operations that aim to accurately remove cancerous tumours without damaging healthy tissue to preserve the important body and organ functions. The ability to view multiple image sources at once, and therefore view radiology images (as a sub picture) within the Head Mount Monitor without being distracted from the operation is a further advantage of this technology," explained Dr Giovanni Palleschi.

Why Sony was selected

Thanks to the increased development of cutting edge imaging technologies, Sony offers a wide range of market leading products in Surgical, Radiology and Ultrasound fields. In the surgical field, the aim of Sony Medical is to provide endoscopic surgeons a better view inside the human body, while innovations such as OLED, as well as the complete 3D medical workflow, offer considerable advantages and new techniques for improved treatment and patient care.

3D viewing is one of the advantages of robot-assisted laparoscopic surgery that has enabled surgical techniques to evolve. However, the financial commitment involved in purchasing and maintaining a robotic system can be difficult to justify for many hospitals. The availability of 3D viewing systems such as Sony's HMS-3000MT can be used in many types of laparoscopic surgery and represents a cost-effective and innovative solution.

3D technology

Surgical certainty

Sony 3D technology represents a major breakthrough in medical precision and development, enabling surgeons to gain detailed insights and spatial orientation during complicated operations. The delivery of-pin-sharp images is achieved by combining our 3D technology with Sony advanced LCD displays. All our monitors undergo a multistage calibration process, which ensures a true-to-original reproduction of the object under examination. This is indispensable not only for high precision but also for uniformity between monitors. Before shipping monitors, Sony Medical calibrates each individual panel to ensure that the RGB coordinates are identical.

A further calibration ensures that the white balance has a consistent colour temperature across all greyscales. Sony 3D monitors process different 3D signal formats such as 3G-SDI, dual stream left and right and field mode, as well as Side-by-Side HD SDI and DVI-D line-interleave mode (line-by-line).

The display can process numerous signals, ranging from practically all SD and HD video signals, to computer signals that are fed in via the DVI-D or HD15 connection.

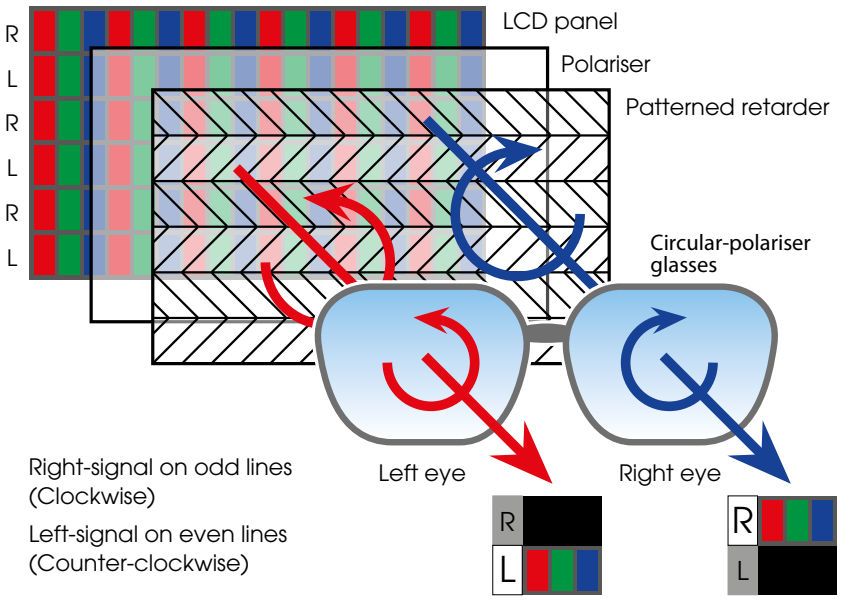
BKM-30GM
3D glasses

Delivering clear 3D Images for precise perceived depth and spatial orientation

With the aid of lightweight, easy-to-wear 3D polarisation glasses, users can also view several monitors seamlessly and without interruption.

To provide a three-dimensional image during surgery or for transmission for educational or in-service training purposes, users can attach the Sony MCC-3000MT camera with two camera heads to an operating microscope and show the images on compatible Sony 3D monitors, such as the LMD-3251MT or HMS-3000MT.

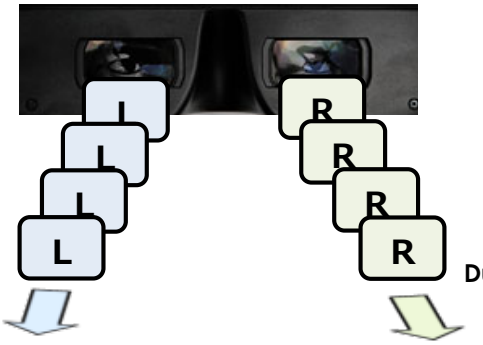
To complete the 3D workflow, the Sony HVO-3000MT 3D HD recorder can record outstanding 3D videos and stills.



Principle of 3D Circular-polariser

Principle of Full Frame 3D

HMM-3000MT adopts the 'Dual Panel 3D Method' which uses independent panels to display dedicated 3D images for the left and rights eyes. HMM-3000MT delivers brighter, more natural and pure 3D images in HD (high definition) compared with other 3D methods without cross-talk phenomenon (image ghosting) and without losing resolution and brightness unlike other 3D methods.



Dual Panel 3D method

3D workflow

1. Capture

2. Display

3. Record

4. Edit

5. Preview

6. Playback

7. Present

The Sony 3D workflow helps surgeons and other medical staff benefit from a truer visual experience that's closer to natural sight than 2D imaging.

Capture

For microscopic surgery applications, for example, the MCC-3000MT is the first 3D medical-grade Full HD video camera with twin camera heads and a single camera control unit (CCU). Combining ease of adjustment with high precision and high resolution, this 3D video camera attaches to the operating microscope to deliver precise imaging in all three dimensions – recording the same view that the surgeon sees through the microscope.

Display

3D stereoscopic images can be shared with other medical staff via a 3D medical-grade monitor such as the LMD-2451MT. Surgeons benefit from a smooth, uninterrupted view of multiple monitors whilst wearing light, comfortable polarised glasses.

Record

3D images can also be recorded using the HVO-3000MT 3D medical-grade HD video recorder. Providing exceptional picture quality for both 3D and 2D video recording and playback, it records high-quality images onto the internal hard disk drive and a variety of removable media.

Edit and present

Sony's 3D workflow extends from recording to editing with Sony Vegas Pro software and multi-viewer presentation, with Full HD 3D projectors such as the VPL-HW55ES With Sony, surgeons can enhance communication with patients and fellow clinicians by integrating 3D images into every phase of their workflow.

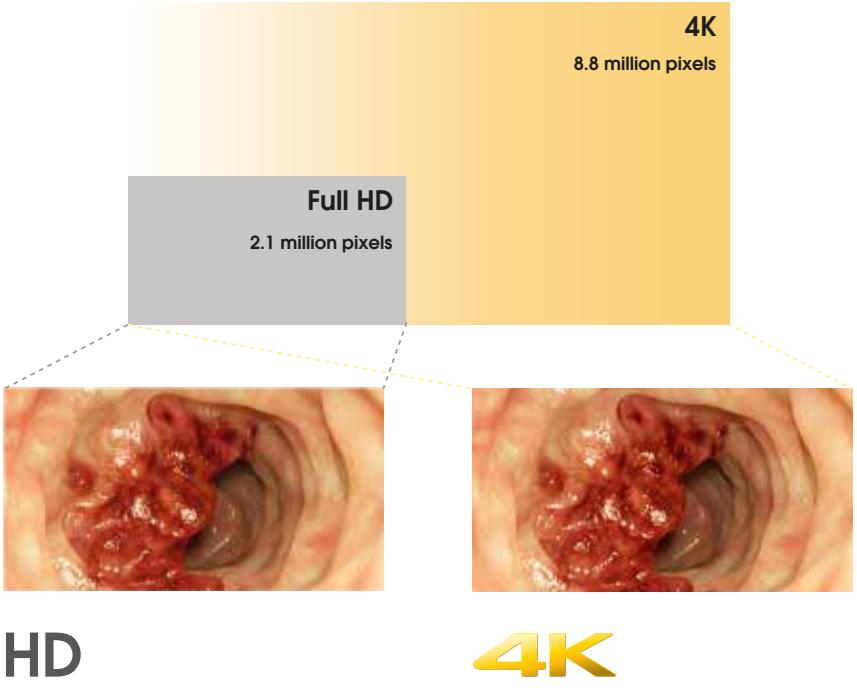
4K – the ultimate definition

Detail when it matters most

What is 4K?

4K means detail and lots of it. It's the description given for any still image, video or digital cinematographic material which delivers a resolution of 3840 x 2160 pixels, four times the quality of Full HD definition.

The benefit of the increased pixel count found in a 4K image can be easily explained when looking at the same still image in both Full HD and 4K. The increased number of pixels provides a greater level of detail, giving more definition to the entire image and clear detail when zooming in to a smaller section of an image. Where the Full HD content will begin to blur, the detail will remain in the 4K image, making it easier for the viewer to identify structure and details within it.



Leading the way in 4K

A market-leader in 4K innovation, we have championed 4K definition across a huge number of product applications.

From Sony F65 4K broadcast live system capturing the latest movie footage, Sony 4K Digital Cinema projectors distributing the content in crisp 4K into cinema screens – through to a 4K Bravia TV you can buy for your home. We've also announced the world's first true 4K smartphone.

4K technology is becoming widely accepted as the new resolution – for the ultimate in clarity. And we have the expertise to revolutionise the way you work.

Introducing 4K to healthcare

We continue to build on our long and unique history of developing technologies used in products throughout the world, and are pleased to introduce image sensor and camera module technology which now offers the healthcare market the opportunity to capture surgical procedures in 4K.

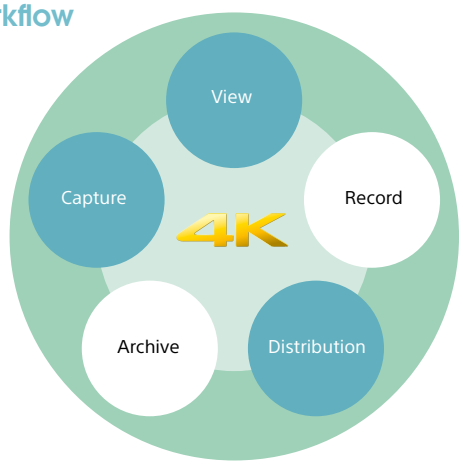
In fact we are developing a 4K workflow which makes it possible for any hospital to upgrade to the latest in imaging technology. With our 4K workflow, designed to work over IP across your existing network we can provide you with detail when it matters most. From the image sensors inside the latest 4K endoscopy cameras and the images they capture shown on our latest 4K surgical monitors, to a 4K recorder*, whose content can then be distributed over the network to content management systems, or one of our 4K displays for post-surgical review or teaching – we've got it covered.

Setting a standard

Our products and workflow are designed to work with different modalities; our IP Converter will allow a hospital to share 4K content across an open platform. We are standardising technology to make sure we are providing vendor neutral technology to the market, there is no proprietary technology to worry about.

*Note: 4K Recording solution not currently medically certified, and not ready for commercial sale.

4K Workflow



Accessories

RM-C950

Remote Control Unit

DXC-C33P	

RM-91

Remote Control Unit

Connector: Stereo mini
Cable length: 5 m
Mass: 80 g (3 oz)
Supplied accessory:
Operation manual

Remote control	
UP-25MD	UP-55MD
UP-X898MD	UP-971AD
UP-991AD	HVO-500MD
HVO-550MD	HVO-1000MD
HVO-3000MT	

FS-24

Foot Switch

Connector:
Stereo Mini Jack
Cable Length: 5 m
Water proofing: IPX3

Remote control	
UP-25MD	UP-55MD
UP-X898MD	UP-971AD
UP-991AD	HVO-500MD
HVO-550MD	HVO-1000MD
HVO-3000MT	

Cables

Model	Length	In	Out	DXC-C33P	PMW-10MD	MCC-500MD	MDD Approved
CCMC-T	05/10/15/20	20-pin	36-pin		•		•
CCMC-SA	06/10/15	20-pin	20-pin			•	•
CCMC-EA05	5	20-pin	20-pin			•	•

UPA-500

Cleaning Kit

Contents:
Cleaning roller x 5
Cleaning paper x 5
Head lapping film x 1

Cleaning Kit	
UP-DF750	UP-DF550
UP-DF500	

BKM-220D

SDI 4:2:2 Input Adaptor

LMD-1951MD	LMD-2451MD
LMD-2451MT	PVM-2551MD
LMD-4251TD	

BKM-227W

Composite and S-Video (Y/C) Input Adaptor

LMD-1951MD	LMD-2451MD
LMD-2451MT	PVM-2551MD
LMD-4251TD	

BKM-229X

Analogue Component Input Adaptor

LMD-1951MD	LMD-2451MD
LMD-2451MT	PVM-2551MD
LMD-4251TD	

BKM-243HSM

HD SDI&SDI Input Adaptor

LMD-1951MD	LMD-2451MD
LMD-2451MT	PVM-2551MD
LMD-3251MT	LMD-4251TD

SMF-405

Component RGB to D-sub 15-pin Signal Cable

LMD-2765MD	

All products on this page are MDD Compliant.

BKM-256DD

DVI Input Expansion Board

LMD-1951MD	LMD-2451MD
LMD-2451MT	PVM-2551MD
LMD-3251MT	

BKM-250TGM

3G/HD/SD-SDI Input Adaptor

LMD-1951MD	LMD-2451MD
LMD-2451MT	LMD-4251TD
PVM-2551MD	LMD-3251MT

BKM-341HS

HD-SDI Adaptor

LMD-2110MD	LMD-1530MD

SU-560

Display Stand

LMD-1951MD	PVM-2551MD
LMD-2451MD	LMD-2451MT
LMD-2110MD	LMD-2760MD
LMD-2765MD	

SU-32FW

Display Stand

LMD-3251MT	

AC-110MD

AC Adaptor for LMD Monitors

LMD-1951MD	LMD-2451MD
PVM-2551MD	LMD-2451MT
LMD-3251MT	

BKM-30GM

Circular-polariser 3D Glasses

LMD-2451MT	LMD-4251TD
LMD-3251MT	

BKM-31GM

Clip-on Type
Circular-polariser 3D Glasses

LMD-2451MT	LMD-4251TD
LMD-3251MT	

Various*

Protective 3D / 2D Eye Shields and Frame

*Refer to website for details

CFV-E20SK	CFV-E20D
CFV-B100	CFV-E30D
CFV-E30SK	

HMM-3000MT

3D Head Mounted Monitor

HMS-3000MT

HMO-CA50M

Head Mounted Display Cable

HMM-3000MT

AC-80MD

AC Adaptor for Printer, 3D camera and Head Mount Display

UP-D711MD	MCC-3000MT
HMS-3000MT	

All products on this page are MDD Compliant.

Black & white media for reference

UPT-736BL

Blue Thermal Film

Contents:
100 sheets
Paper size:
203 x 254mm
(8 x 10 inches)

Size: 8 x 10
UP-D74XRD

UPT-735BL

Blue Thermal Film

Contents:
100 sheets
Paper size:
203 x 254mm
(8 x 10 inches)

Size: 8 x 10
UP-D72XR

UPP-725

Thermal Print Media

Contents:
100 sheets of print media
Paper size:
203 x 254mm
(8 x 10 inches)

Size: 8 x 10	
UP-D74XRD	UP-D72XR

UPP-210HD

Thermal Print Media

Print quantity:
139/A4 prints
Paper size:
210mm (W) x 25 m

Size: A4	
UP-990AD	UP-970AD
UP-991AD	UP-971AD

UPP-210SE

Thermal Print Media

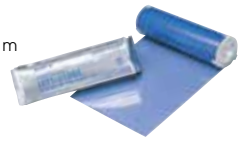
Print quantity:
139/A4 prints
Paper size:
210mm (W) x 25 m

Size: A4	
UP-990AD	UP-970AD
UP-991AD	UP-971AD

UPT-210BL

Blue Thermal Transparent Film (Type III)

Print quantity:
42 prints (6-split)
Paper size:
210mm (W) x 12.5 m



Size: A4	
UP-990AD	UP-991AD

UPP-110HG

Thermal Print Media

Print quantity:
193 prints/A6 prints
Paper size:
110mm (W) x 18 m

Size: A6	
UP-897MD	UP-D897
UP-X898MD	UP-D898MD

UPP-110HD

Thermal Print Media

Print quantity:
215 prints/A6 prints
Paper size:
110mm (W) x 20 m

Size: A6	
UP-897MD	UP-D897
UP-X898MD	UP-D898MD

UPP-110S

Thermal Print Media

Print quantity:
215 prints/A6 prints
Paper size:
110mm (W) x 20 m

Size: A6	
UP-897MD	UP-D897
UP-X898MD	UP-D898MD

UPP-84HG

Thermal Print Media

Print quantity:
104 prints/A7prints
Paper size:
84 mm (W) x 12,5m

Size: A7
UP-D711MD

UPP-84S

Thermal Print Media

Print quantity:
112 prints/A7 prints
Paper size:
84 mm (W) x 13,5m

Size: A7
UP-D711MD

GLOBAL TRADE

MDD Approved All products on this page are MDD Compliant.

Thermal film for diagnosis

UPT-517BL

Blue Thermal Film

Contents:
125 sheets
Paper size:
354 x 430mm
(14 x 17 inches)

Size: 14 x 17	UP-DF500
UP-DF750	UP-DF550

UPT-514BL

Blue Thermal Film

Contents:
125 sheets
Paper size:
279 x 354mm
(11 x 14 inches)

Size: 11 x 14	
UP-DF750	UP-DF550

UPT-512BL

Blue Thermal Film

Contents:
125 sheets
Paper size:
253 x 304mm
(10 x 12 inches)

Size: 10 x 12	
UP-DF750	UP-DF550

UPT-510BL

Blue Thermal Film

Contents:
125 sheets
Paper size:
202 x 253mm
(8 x 10 inches)

Size: 8 x 10	
UP-DF750	UP-DF550

UPT-M712BL

Blue Thermal High density Film

Contents:
125 sheets
Paper size:
253 x 304mm
(10 x 12 inches)

Size: 10 x 12
UP-DF750

UPT-M710BL

Blue High density Film

Contents:
125 sheets
Paper size:
202 x 253mm
(8 x 10 inches)

Size: 8 x 10
UP-DF750

Colour media for reference

UPC-770

Self-laminating Colour Printing Pack

Contents:
72 sheets of print paper
a roll of ink ribbon
Paper size:
210 x 298mm
(8 3/8 x 11 3/4 inches)

Size: A4	
UP-D77MD	UP-D75MD

UPC-R80MD

Self-laminating Colour Printing Pack

Contents:
2x 50 sheet print paper
roll for 100 prints
2x ink ribbon
Paper size:
210mm (W) x 16m

Size: A4
UP-DR80MD

UPC-55

Colour Printing Pack

2x 100 sheets of paper
2x ink ribbon
Paper size:
178mmx152mm

Size: A5	
UP-D55	UP-55MD

UPC-21L

Colour Printing Pack

Contents:
200 sheets of print paper
4 rolls of ink ribbon
Paper size:
144 x 100mm
(5 3/4 x 4 inches)

Size: A6	
UP-25MD	UP-D25MD
UP-20	UP-21MD
UP-D23MD	

UPC-21S

Colour Printing Pack

Contents:
240 sheets of print paper
3 rolls of ink ribbon
Paper size:
100 x 90mm
(4 x 3 5/8 inches)

Size: A6	
UP-25MD	UP-D25MD
UP-20	UP-21MD
UP-D23MD	

UPC-24LA

Self-laminated Colour Printing Pack

Contents (large size):
160 sheets of print paper
(40 sheets x 4 packs)
4 rolls of ink ribbon

Size: A6	
UP-25MD	UP-D25MD

UPC-24SA

Self-laminated Colour Printing Pack

Contents (small size):
180 sheets of print paper
(60 sheets x 3 packs)
3 rolls of ink ribbon

Size: A6	
UP-25MD	UP-D25MD

MDD Approved

All products on this page are MDD Compliant.

Specifications

	Full HD Colour Video Cameras	
	MCC-3000MT	PMW-10MD
		
System		
Image device	3-chip 1/2 inch Exmor CMOS (x2)	3-chip 1/2 inch Exmor CMOS
Effective picture elements	1920 × 1080	
Scanning system	1080i50/i59,94	
Sync system	External with BNC (x1)	
Horizontal resolution	1000 TV lines	
Lens mount	Cmount (x2)	C-mount
Flange back	17.526mm	
Sensitivity	F10 typical (in 1920 x 1080/59.94i mode)	
Minimum illumination	9 lx (in 1920 x 1080/59.94i mode, F2.2, +21 dB gain)	0.14 lx (in 1920 x 1080/59.94i mode, F2.2, +21 dB gain, with 64-frame slow shutter)
S/N ratio	54 dB (Y) (typical)	
Gain	0 to 21 dB	
Shutter speed	60i: 1/60, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, 1/20000 50i: 1/60, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, 1/16000	
Electronic shutter	Off/speed/ECS/SLS/EXSLS	
Iris	Manual	
AE area	Multi/Large/Medium/Spot/Slit Selectable	
AE speed	-99 to +99	
AE detect	Backlight, Standard, Spotlight	
Knee point	Auto, Point, Slope, Manual	
Black stretch	Variable Black max / Black min	
Gamma	Variable	
Pedestal	Master, R/B Manual	
Black balance	-99 to +99	
White balance	Preset/Memory/ATW	
ATW area	Normal/manual selectable	
ATW speed	1 (slow) - 5 (fast) selectable	
Detail level	-99 to +99	
Detail frequency	-99 to +99	
Linear matrix mode	ALL/Target/OFF/Select	
Partial enhance	-99 to +99, Type1-Type4	
CCD integration mode	G-B, B-G, G-R, R-G, R-B, B-R	
Baud rate	Manual	
Sync	Up to 38400	
Trigger	CMOS/ Open Collector ext Sync BNC	
Strobe	Slave	
Scene file	Profile 1 - Profile 6 (selectable)	
Output signals	HD-SDI, Composite	HD-SDI, Composite, S-Video (Y/C), Y,Pb,Pr, DVI-D
Serial data	RS-232C	
Connectors (on Camera Control Side)	Composite output BNC (x1), HD-SDI output BNC for A and B (2x), Ext Sync input BNC (x1), Remote D-sub 9-pin (x1)	Camera input: 36-pin (x1), MIC input: Stereo mini-jack (x1), Composite output: BNC (x1), S-Video output: mini DIN 4-pin (x1) Component output: D-Sub 15-pin (x 1), DVI-D output: DVI connector 19-pin (x1), HD SDI output: BNC (x 2), EXT SYNC input: BNC (x1), FS,TRIG IO: Stereo mini-jack (x1), Remote: D-sub 9-pin (x1)
Measurements		
Dimensions	CHU : 35 × 45 × 50 mm (1 7/16 × 13/16 × 2 inches) without projection CCU : 200 × 88 × 341mm (7 7/8 × 3 1/2 × 13 1/2 inches) without projection	CHU : 35 x 45 x 50mm (1 7/16 x 1 13/16 x 2 inches) without projection CCU : 200 x 88 x 240mm (7 7/8 x 3 1/2 x 9 1/2 inches) without projection
Mass	CHU : 90 g (3.2 oz) (x2) CCU : 4.5 kg (9 lb 15 oz)	CHU : Approx. 90 g (3.2 oz) CCU : Approx. 2.8 kg (6 lb 3 oz)
Power		
Requirements	DC 24 V	AC 100 to 240 V, 50/60 Hz
Consumption	1.5 A (inrush: 3.0 A)	0.6-0.36 A
Operating conditions		
Temperature	0 to +40 °C (+32 to +104 °F)	
Storage/Transporting conditions		
Temperature	-20°C to 60°C (-4°F to 140°F)	

	Full HD Colour Video Cameras
	MCC-500MD
	
System	
Image device	single chip 1/3 inch type Exmor CMOS
Effective picture elements	1920 × 1080
Scanning system	1080i50/I59.94/P50/P60
Sync system	External with BNC (x1)
Horizontal resolution	above 900TV lines
Lens mount	C-mount
Flange back	17.526mm
Sensitivity	F5.6 (Typical) (At 1080/59.94i)
S/N ratio	55db (Y) (typical)
Gain	0dB to 27dB
Shutter speed	1/60 to 1/10000
Electronic shutter	Auto/manual (semi/full)
AE detect	Slow/Normal/Fast
Gamma	Normal/medium/dynamic range
White balance	Auto/Xenon/Halogen/White Led
Scene file	Profile 1 - Profile 6 (selectable)
Output signals	HDMI, HD-SDI, S-Video (Y/C), Composite
Serial data	RS-232C
Connectors (on Camera Control Side)	HDMI (x1), HD-SDI output on BNC (x1), S-Video output: mini DIN 4-pin (x1), Composite output BNC (x1), 3D SYNC on BNC (x2) Input: FS TRIG IO: Stereo mini-jack (x2) Remote:D-sub 9-pin (x1)
Measurements	
Dimensions	CHU:27 x 28 x 49 mm (1 1/8 x 1 1/8 x 1 15/16 inches) CCU:200 x 62 x 240mm (7 7/8 x 2 1/2 x 9 1/2 inches)
Mass	camera head: approx. 40 g/approx. 1.4 oz camera camera control unit: approx. 2.3 kg/approx. 5 lb. 1.1 oz
Power	
Requirements	100 to 240V AC, 50/60Hz
Consumption	AC 100 to 240V, 50/60Hz
Operating conditions	
Temperature	0 to +40 °C (+32 to +104 °F)
Storage/Transporting conditions	
Temperature	-20°C to 60°C (-4°F to 140°F)

	3D HD Video Recorder	HD Video Recorder
	HVO-3000MT	HVO-1000MD
		
Recording devices		
Internal hard disk drive	500 GB	320 GB
Blu-ray Disc/DVD drive (1)	Compatible media: BD-RE (single or dual layer), BD-R(single or dual layer), DVD-R (single layer)	
Input connnectors		
S-Video in	Mini DIN 4-pin type (x1) Y: 1.0 Vp-p (75 Ω) Sync negative C (BURST): 0.286 Vp-p (75 Ω) (NTSC) C (BURST): 0.3 Vp-p (75 Ω) (PAL)	
Video in	BNC (x1), Composite 1.0 Vp-p (75 Ω), Sync negative	
DVI-D in	DVI-D (x2), TMDS 1 channel (single link)	DVI-D (x1), TMDS 1 channel (single link)
RGB in	D-sub 15-pin (x1), 0.7 vp-p/with synce on green G: 1.0 Vp-p 75 Ω	
HD-SDI in	SD: SMPTE259M HD: SMPTE292M	
Audio line in	Stereo mini jack (x1), 1.4 Vrms (full bit), input impedance, 10 k Ω or higher, unbalanced	
Output connectors		
S-Video out	Mini DIN 4-pin type (x1) Y:1,0Vp-p(75Ω)Sync negative, C(Burst): 0.286Vp-p(75Ω)/NTSC, 0,3Vp-p(75Ω)/PAL)	
Video out	BNC (x1) Composite 1.0 Vp-p (75 Ω), Sync negative	
DVI-D out	(x1), TMDS 1 channel (single link)	
HD-SDI out	BNC (x2), SD: SMPTE256M, HD: SMPTE292M, 3G: SMPTE424M compliant (75W)	BNC (x1,) SD: SMPTE256M HD: SMPTE292M
Audio out	3G: SMPTE424M compliant (75W)	
Other interfaces		
USB	USB 2.0 (x4)	
Network	RJ-45 (x1), 1000Base-T/100Base-TX	
Remote RS 232C	D-sub 9-pin (x2)	
Remote contact switch	Stereo mini jack (x4)	
Remote monitor	RJ-45 type (x1)	
Menu monitor	D-sub 15-pin (1x)	
Other		
Supplied accessories	Before Using this Unit (x1), CD-ROM (Instructions For Use, PROTOCOL MANUAL) (x1), Warranty booklet (x1), Infared remote control unit (x1)	
General		
Power requirements	100V to 240V AC. 50 Hz/60 Hz	
Input current	1.9 A to 0.8 A	
Operating temperature	5 to 40° C (41 to 104° F)	
Operating humidity	20% to 80% 30° C (86° F) (no condensation)	
Operating pressure	700 hPa to 1,040 hPa	
Temperature range for storage	-20° C to +60° C (-4° F to +140° F)	
Humidity range for storage	20% to 90% 30° C (86° F)	
Storage and transport pressure	700 hPa to 1,040 hPa	
Mass	8.4kg (18.5lb.)	
Dimensions	305 x 410 x 115.5mm (12 1/8 x 16 1/4 x 4 5/8 in.) including protrusions	

	HD Video Recorder				
	HVO-500MD	HVO-500MD (Full HD Version)	HVO-550MD	HVO-550MD (Full HD Version)	HVO-500MD (Surgical Version)
					
Recording Features					
Recording Video Format	MPEG-4 AVC/H.264				
Recording Audio Format	AC-3/AAC LC				AAC
Recording File Format	AC-3/AAC LC				LPCM
Recording Media	Internal HDD (500GB), External USB Storage, Network (CIFS)		Internal HDD (500GB), DVD-R External USB Storage Network (CIFS)		Internal HDD (500GB), External USB Storage, Network (CIFS)
Recording Resolution	1280 × 720/59.94p, 1280 × 720/50p, 720 × 480/59.94i, 720 × 576/50i	1920x1080/59.94i, 1920x1080/50i, 1280 × 720/59.94p, 1280 × 720/50p, 720 × 480/59.94i, 720 × 576/50i	1280 × 720/59.94p, 1280 × 720/50p, 720 × 480/59.94i, 720 × 576/50i	1920x1080/59.94i, 1920x1080/50i, 1280 × 720/59.94p, 1280 × 720/50p, 720 × 480/59.94i, 720 × 576/50i	1920 x1080/59.94i, 1920x1080/50i, 1280x720/59,94p, 1280x720/50p, 720x480/59,94i, 720x576/50i
Recording Bit Rate	14Mbps (Best), 8Mbps (High), 4Mbps (Standard)				20Mbps (Best),12Mbps(High), 6Mbps(Standard),
Recording Bit Rate	(SD) 5Mbps (Best), 3Mbps (High), 2Mbps (Standard)				(SD)6Mbps (Best), 4Mbps(High), 2Mbps(Standard)
Connectors					
Input Connectors	HDMI (Type A) (1), DVI-D (DVI 19-pin) (1), S VIDEO (Mini DIN 4-pin type) (1), VIDEO (BNC type) (1)				
AUDIO	(Stereo mini jack) (1), also via HDMI				
DC IN	(DIN 3-pin)				
Output Connectors	HDMI (Type A) (1), DVI-D (DVI 19-pin) (1), S VIDEO (Mini DIN 4-pin type) (1), VIDEO (BNC type) (1)				
AUDIO	(Stereo mini jack) (1), also via HDMI				
Other Interfaces	"USB (Type A) (3), USB (Type B) (1), Network (RJ-45, 1000 Base-T/100 Base-TX) (1)), REMOTE RS-232C* (D-sub 9-pin) (1), REMOTE contact switch (stereo mini jack) (2) REMOTE MONITOR (RJ-45) (1), Equipotential"				
General					
Power Requirements	+12 V to +24 V DC (supply from AC-80MD AC adapter)				
Input current	3.2 A to 1.6 A		3.5 A to 1.8 A		
Operating Temperature	5°C to 40°C (41°F to 104°F)				
Operating Humidity	20% to 80% (Maximum wet-bulb temperature: 30°C (86°F)) (no condensation)				
Operating Pressure 700 hPa to 1060 hPa	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% (Maximum wet-bulb temperature: 30°C (86°F)) (no condensation)				
Storage and transport pressure	700 hPa to 1060 hPa				
Mass	2.9 kg (6 lb. 6.3 oz.)		3.2 kg (7 lb. 0.88 oz.)		2,9Kg
Dimensions (including longest protrusions)	212.0 × 287.7 × 105.5 mm (8 3/8 × 11 3/8 × 4 1/4 in.)				
Supplied Items	"Before Using This Unit (1), CD-ROM (Instructions for Use, PROTOCOL MANUAL*) (1), Warranty booklet (1), AC-80MD AC adapter (1), AC-80MD Instructions for Use (1), Service Contact List (1)"				

The HVO-500MD (Full HD Version), HVO-500MD (Surgical Version) and HVO-550MD (Full HD Version) models are the same product as HVO-500MD and HVO-550MD respectively,but are upgraded versions to record in full HD.

*RS232C Protocol is not supported for HVO-500MD (Surgical version)

	LCD Monitor		
	LMD-1530MD	LMD-1951MD	LMD-2110MD
			
Panel			
LCD Panel Type	a-Si TFT Active Matrix LCD with anti reflection (AR) coated protection panel		a-Si TFT Active Matrix LCD
Resolution	1280 x 768 pixels (WXGA)	1280 x 1024 pixels (SXGA)	1920 x 1080 pixels (Full HD)
Effective picture size (WxH)	334 x 200mm (13 1/4 x 7 7/8 inches)	376 x 301mm (14 7/8 x 11 7/8 inches)	477 x 268mm (18 7/9 x 10 5/9 inches)
Diagonal	390mm (15 3/8 inches)	481.84mm (19 inches)	547mm (21 5/9 inches)
Aspect	15:9	5:4	16:9
Viewing Angle	176°	178°	170/160°, Typical.
Input			
RGB Component	BNC (x3) RGB: 0,7Vp-p +- 3dB (Sync on Green, 0,3Vp-p sync negative) Component: 0,7Vp-p (75% chrominance standard colour bar signal)		
External Sync	BNC (x1)		
Y/C	4-pinMini DIN x 1 Y:1,0Vp-p +-3dB sync negative C: 0,268Vp-p +- 3dB (NTSC burst signal level), 0,3Vp-p +-3dB (PAL burst signal level) (Line A)		
Composite	BNC (x1) 1,0Vp-p +-3dB, sync negative (NTSC/PAL) (Line A)		
SD/HD - SDI	Yes, with adaptor	Yes (x2 with optional board)	Yes, with adaptor
Audio	Phono jack (x1) -5dBu >47KOhms		Phono jack (x1) -5dBu >47KOhms
Computer input			
Analogue HD-15		D-sub 15-pin (x1), R/G/B: 0.7 Vp-p sync positive (Sync On Green, 0.3 Vp-p sync negative) Sync: TTL level (polarity free, H/V separate sync)	
HDMI	HDMI input		HDMI input
Output			
RGB Component	BNC (x3) loop through with 75Ohms automatic terminal function		
Y/C	4-pinMiniDIN (x1) loop through with 75 Ohms automatic terminal function		
Composite	BNC (x1) loop through with 75 Ohms automatic terminal function		
Audio	built-in speaker 0,5W (x1 Mono), phono jack (x1) loop through with 75Ohms terminal function		built-in speaker 0,5W (x1 Mono), phono jack (x1) loop through with 75Ohms terminal function
Computer Output			
DVI-D		TMDS single link (x1)	
Other			
Remote	Parallel 8pin modular	Parallel 8pin modular Serial RS-232C 9-pinD-sub RJ-45 modular connector (ETHERNET)	Parallel 8pin modular
Stand	Supplied 100 x 100mm VESA mount	Optional SU-560 100 x 100mm VESA mount	Supplied 100 x 100mm VESA mount
Measurements			
Dimensions W x H x D	372 x 336 x 264mm (14 3/4 x 13 3/8 x 10 1/2 inches)	455.8 x 368.3 x 101.7mm (18 x 14 5/8 x 4 1/8 inches) (without a stand) 455.8 x 435.7 x 302mm (18 x 17 1/4 x 12 inches) (with SU-560 optional stand)	505 x 444 x 119mm (20 x 17 5/8 x 4 3/4 inches)
Mass	6,2Kg	6.7 kg (14 lb 12 oz) 7.1 kg (15 lb 10 oz) (with two BKM-229X installed)	8.6 kg (18 lb 15 oz)
Power			
Requirements	AC 100V - 240V, 50/60Hz	AC 100-240 V, 50/60 Hz, 0.92 A-0.40 A DC IN: 24 V 3.5 A 5 V 0.030 A (Supplied from AC adaptor) AC Adaptor (Sony, AC-110MD) (optional) AC IN: 100 V-240 V, 50/60 Hz, 1.53 A-0.58 A DC OUT: 24 V 5.0 A 5 V 0.060 A	AC 100 V- 240V, 50/60Hz
Consumption	40W	Maximum: approx. 85 W (when two BKM-229X are installed)	100W
Operating conditions			
Temperature	0 to 35°C (32 to 95°F)		
Humidity	30 to 85 % (no condensation)		
Storage conditions			
Temperature	-20 to +60 °C (-4 to +140 °F)		
Humidity	0 to 90 % (no condensation)		
Pressure	700 to 1060 hPa		

	LCD Monitor	OLED	LCD Monitor	
	LMD-2451MD	PVM-2551MD	LMD-2760MD	LMD-2765MD
				
Panel				
Panel Type	LCD a-Si TFT Active Matrix LCD with anti reflection (AR) coated protection panel	OLED (Organic Light Emitting Diode) with anti reflection film (AG-AR) coated protection panel	a Si TFT Active Matrix LCD with OptiContrast and anti reflection (AR) coated protection panel	
Resolution	1920 x 1200 pixels (WUXGA)	1920 x 1080 pixels (Full HD)	1920 x 1080 pixels (Full HD)	
Effective picture size (WxH)	518 x 324mm (20 1/2 x 12 7/8 inches)	543.4 x 305.6mm (21 1/2 x 12 1/8 inches)	597.9 x 336.3 mm 23 5/8 x 14 1/2 inches	
Diagonal	609mm (24 inches)	623.4mm (24 5/8 inches)	686 mm 27 inches	
Aspect	16:10	16:9	16:9	16:9
Viewing Angle	178°		89°/89°/89°/89° (typical)	
Input				
RGB Component	BNC type (x3), RGB: 0.7 Vp-p ±3 dB (Sync On Green, 0.3 Vp-p sync negative) Component: 0.7 Vp-p ±3 dB (75% chrominance standard colour bar signal)			RGB: Via HD-15 connector (D-sub 15-pin) * 0.7 Vp-p (75 Ω) (when Sync On Green, 0.3 Vp-p sync) *Needs SMF-405 sold separately Component: Via HD-15 connector (D-sub 15-pin) * Y: 1.0 Vp-p (75 Ω) (including 0.3 Vp-p sync) Pb: 0.7 Vp-p (75 Ω), Pr: 0.7 Vp-p (75 Ω) *Needs SMF-405 sold separately
External Sync	BNC (x1)			Via HD-15 connector (D-sub 15-pin) *Needs SMF-405 sold separately 0.3 Vp-p to 4.0 Vp-p (75 Ω)
Y/C	4-pinMini DIN x 1 Y:1,0Vp-p +-3dB sync negative C: 0,286Vp-p +- 3dB (NTSC burst signal level), 0,3Vp-p +-3dB (PAL burst signal level)			Mini-DIN 4-pin (x1) Y: 1.0 Vp-p (75 Ω) C: 0.286 Vp-p (75 Ω, NTSC burst) 0.3 Vp-p (75 Ω, PAL burst)
Composite	BNC (x1) 1,0Vp-p +-3dB, sync negative (NTSC/PAL)			BNC (x1)
SD/HD - SDI	Yes (x2 with optional board)		BNC (x2) 3G/HD/SD-SDI	
Computer input				
Analogue HD-15	D-sub 15-pin (x1) R/G/B: 0.7 Vp-p, sync positive (Sync On Green, 0.3 Vp-p sync negative) Sync: TTL level (polarity free, H/V separate sync) Plug & Play function: corresponds to DDC2B			
DVI-D	TMDS single link (x1)		(x2) TMDS single link for both models	
Output				
RGB Component	BNC (x3) loop through with 75Ohms automatic terminal function			
Y/C	Mini-DIN 4-pin (x1), Loop-through, with 75 ohms automatic terminal function			
Composite	BNC (x1) loop through with 75 Ohms automatic terminal function			
SD/HD-SDI	TMDS single link (x1 with optional board)		BNC (x1)	
Computer Output				
DVI-D	TMDS single link (x1 with optional board)		DVI-D (x1)	
Other				
Remote	Parallel 8pin modular Serial RS-232C 9-pinD-sub serial ETHERNET RJ-45		Serial RS-232C 9-pin D-sub connector, serial ETHERNET RJ-45' for both models	
Stand	Optional SU-560100 x 100mm VESA mount		Optional SU-560, 100mm x 100mm VESA mount	
Measurements				
Dimensions W x H x D	602 x 386 x 110mm (23 3/4 x 15 1/4 x 4 3/8 inches)	618.4 x 376 x 102.1mm (24 3/8 x 14 7/8 x 4 1/8 inches)	650 x 419 x 58 (Slimmest D 29mm) 650 x 474 x 302 mm (with SU-560 optional stand) 25 5/8 x 16 1/2 x 2 3/8 inches 25 5/8 x 18 3/4x 12 inches (with SU-560 optional stand)	
Mass	8,7Kg (with 2 x BKM-229X installed)	8.1 kg (17 lb 14 oz)	Approx. 8.5 kg Approx. 18.75 lb	
Power				
Requirements	AC 100V - 240V, 50/60Hz DC 24V 3,5A; DC 5V 0,03A	AC 100V - 240V, 50/60Hz DC 24 V/5.0 A, 5 V/0.060 A	LCD monitor DC Input: 24 V/ 6,25 A (supplied from AC Adapter) AC adapter: 85 (W) x 170 (L) x 40 (H) mm AC IN: 100 V - 240 V, 50/60 Hz, 2.5 A - 1 A	
Consumption	115W	135W	Approx. 102 W (max.)	
Operating conditions				
Temperature	0 to 35°C (32 to 95°F)		0°C to 35°C (Recommended: 20°C to 30°C) 32°F to 95°F (Recommended: 68°F to 86°F)	
Humidity	30% to 85 % (no condensation)		30% to 85% (no condensation)	
Storage conditions				
Temperature	-20 to +60°C (-4 to 140°F)		-20°C to +60°C -4°F to +140°F	
Humidity	0 to 90 % (no condensation)		0% to 90%	
Pressure	700 to 1060 hPa		700 hPa to 1060 hPa	

* Needs optional accessory cable SMF-405

	3D LCD Monitor	
	LMD-3251MT	LMD-2451MT
		
Panel		
LCD Panel Type	a-Si TFT Active Matrix LCD with anti refelection (AR) coated protection panel	LCD a-Si TFT Active Matrix LCD with anti reflection (AR) coated protection panel
Resolution	1920 x 1080 pixels (Full HD)	1920 x 1200 pixels (WUXGA)
Effective picture size (H x W)	698.4 x 392.9 mm 27 1/2 x 15 1/2 inches	518.4 x 324.0 mm (20 1/2 x 12 7/8 inches)
Effective picture size (diagonal)	801.3 mm, 31 5/8 inches	613.2 mm (24 1/4 inches)
Aspect	16:9	16:10
Viewing angle (3D)	35° at a viewing distance more than 620 mm, crosstalk less than 7% (typical)	50° at a viewing distance more than 300 mm, crosstalk less than 7% (typical)
Viewing angle (2D)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)
Colours	Approx. 16.7 million colours	
Input		
Composite	BNC (x1), 1.0 Vp-p ±3dB sync negative	
Y/C	Mini DIN 4-pin (x1) Y:1,0Vp-p +-3dB sync negative, C(Burst):0,268Vp-p/NTSC 0,3Vp-p/PAL	
RGB, Component	BNC (x3) RGB: 0,7Vp-p +- 3dB (Sync on Green, 0,3Vp-p sync negative) Component: 0,7Vp-p (75% chrominance standard colour bar signal)	
DVI-D	DVI-D (x1) TMDS single link	
HD15	D-sub 15-pin (x1),R/G/B: 0.7 Vp-p sync positive (Sync On Green, 0.3 Vp-p sync negative)Sync: Total level (polarity free, H/V separate sync)wPlug & Play function: corresponds to DDC2B	
External Sync	BNC (x1), 0.3 Vp-p to 4.0 Vp-p ± bipolarity ternary or negative polarity binary	
Option slot	Two (2) ports, Signal format: H: 15 kHz to 45 kHz, V: 48 Hz to 60 Hz	
SD/HD/3G-SDI	Yes (2 x with optional boards)	
Dual HD-SDI (3D)	Yes (2 x with optional boards)	
Parallel remote	Modular connector 8-pin (x1) (Pin-assignable)	
Serial remote	D-sub 9-pin (RS-232C) (x1), RJ-45 modular connector (Ethernet) (x1) (10BASE-T/100BASE-TX)	
Output		
Composite	BNC (x1), Loop-through, with 75 ohms automatic termination	
Y/C	Mini DIN 4-pin (x1), Loop-through, with 75 ohms automatic termination	
RGB, Component	BNC (x3), Loop-through, with 75 ohms automatic termination	
External sync	BNC (x1), Loop-through, with 75 ohms automatic termination	
SD/HD/3G-SDI	Yes (2 x with optional boards)	
Dual HD-SDI (3D)	Yes (2 x with optional boards)	
Audio monitor out	Phono jack (x2) (L, R)	
Output	DVI-D TMDS single link (x1 with optional board)	
Measurements		
Dimensions (W x H x D)	783 x 479.2 x 124.3 mm, 783 x 582.8 x 229 mm (with SU-32FW optional stand) 30 7/8 x 18 7/8 x 5 inches, 30 7/8 x 23 x 9 1/8 inches (with SU-32FW optional stand)	602.4 x 386.2 x 110 mm (23 3/4 x 15 1/4 x 4 3/8 inches) (including projections)
Mass (with options)	13.8 kg (when 2x BKM-229X installed) 30 lb 7 oz (when 2x BKM-229X installed)	8,7Kg (with 2 x BKM-229X installed)
Power		
Requirements	AC 100V - 240V, 50/60Hz DC 24V 3,5A; DC 5V 0,03A	
Consumption	Approx. 100 W (max.) (with 2 x BKM-229X)	135W
Operating conditions		
Humidity	30% to 85% (no condensation)	30% to 85 % (no condensation)
Storage/Transporting conditions		
Temperature	-20°C to +60°C (-4°F to +140°F)	
Humidity	0% to 90% (no condensation)	
Pressure	700 hPa to 1060 hPa	

	Head Mount display
	HMS-3000MT
	
Panel	
Panel	Active Matrix OLED
Picture Size (Diagonal)	0.7-inch
Effective Picture Size (H x V)	15.6 x 8.88 mm
Pixel pitch	12µm
Resolution (H x V)	1280x720
Aspect	16:9
Colour Display	256 levels processing (8 bits) each for Red, Green and Blue
SDI, DVI-D	SDI/HD-SDI (x2), DVI-D (x2), TMDS Single link
SDI Output, DVI-D Output, HMM Output	SDI/HD-SDI (x2) (Through), DVI-D (x2) (Through), HMM (x2)
Power Requirements	HMI-3000MT : DC IN: 24 V/1.5A (Supplied from AC adaptor), AC Adaptor (Sony, AC-80MD): AC IN: 100-240 V, 50/60 Hz, 1.0-0.5A DC OUT: 24 V/3.3A
Power Consumption	36W
Supplied Accessories	Before Using this Unit (1), CD-ROM (Instructions for Use) (1), AC-80MD AC adaptor (1), AC-80MD Instructions for Use (1), Service Contact List (1) HMM-3000MT head mounted monitor(1), HMO-CA50M head mounted display cable (x1, 5m)
Optional Accessories	An additional HMM-3000MT Head Mounted Monitor and an additional HMO-CA50M Head mount display cable can be added so that a total of 2 Head Mount displays can be used per system.

	4K LCD Surgical Monitor	
	LMD-X310MD	LMD-X550MD
		
Picture Performance		
Panel	a-Si TFT Active Matrix LCD	
Picture Size (Diagonal)	789.06 mm (31 1/8 inches)	1387.8 mm (54 3/4 inches)
Effective Picture Size (H x V)	698.0 x 368.1 mm (27 1/2 x 14 1/2 inches)	1209.6 x 680.4 mm (47 5/8 x 26 7/8 inches)
Pixel pitch	0.1704 x 0.1704 mm	0.315 x 0.315mm
Resolution (H x V)	4096 x 2160 pixels	3840 x 2160 pixels
Aspect	17 : 9	16 : 9
Pixel Efficiency	0.9999	
Backlight	LED	
Panel Technology	LCD with IPS	
Luminance (Panel Specification)	770 cd/m² (typical)	520 cd/m² (typical)
Contrast Ratio	1450 : 1	1400 : 1
Colors	Approx.1.073 billion colors	
Viewing Angle (Panel Specification)	89°/89°/89°/89° (typical)	
Gamma	1.8, 2.0, 2.2, 2.4, 2.6, DICOM, Highlight	
HDMI Input	HDMI (x1) (HDCP 1.4 correspondence)	
DVI-D Input	DVI-D (x1) (HDCP 1.4 correspondence) TMDS single link	
SDI Input	BNC (x5)	
	3G/HD/SD-SDI	
Serial Remote (LAN)	D-sub 9-pin (RS-232C) (x1), RJ-45 (x1) (Ethernet, 10BASE-T/100BASE-TX)	
DC Input	XLR-type 3-pin (male) (x1), 26 V DC (output impedance 0.005 ohms or less)	
DVI-D Output	DVI-D (x1) when HDCP disabling	
SDI Output	BNC (x5)	
DC 5 V/12 V Output	5 V Output (x1), 8 W 12 V Output (x1) 20 W max	
General		
Power Requirements	LCD monitor - DC Input: 26 V, 6.9 A AC adaptor (AC-300MD): 245 (W) x 150 (L) x 58 (H) mm AC adapter's AC IN: 100 V - 240 V, 50/60 Hz, 2.1 A – 1.0 A	LCD monitor AC IN: 100 V - 240 V, 50/60 Hz, 3.2 A - 1.3 A
Power Consumption	LCD monitor: Approx. 180 W (max.)	Approx. 290 W (max.)
Operating Temperature	0°C to 40°C (32°F to 104°F) (Recommended: 20°C to 30°C (68°F to 86°F))	
Operating Humidity	30% to 85% (no condensation)	
Storage/Transport Temperature	-20°C to +60°C (-4°F to +140°F)	
Storage/Transport Humidity	0% to 90%	
Operating/Storage/ Transport Pressure	700 hPa to 1060 hPa	
Dimensions (W x H x D)	753.8 x 456.4 x 69.3 mm (Slimmest D 28mm) (29 3/4 x 18 x 2 3/4 inches)	1264.6 x 771.5 x 85.5 mm (Slimmest D 33.9 mm) (49 7/8 x 30 3/8 x 3 3/8 inches)
Mass	Approx. 11.8 kg (Approx. 26 lb 0.23 oz)	Approx. 35.2 kg (Approx. 77 lb 9.6 oz)
Supplied Accessories	AC adapter: AC-300MD (1) AC power cord (1) Instructions for Use (CD-ROM) (1) Abridged edition of Instructions for Use (1) AC power plug holder (2) Instructions for Use of the AC adaptor (1) Service Contact List (1) M4 x 12 mm Screw (4)	AC power cord (1) Instructions for Use(CD-ROM) (1) Abridged edition of Instructions for Use (1) AC power plug holder (2) Service Contact List (1) M6 x 12mm Screw (4)

	Colour Printers		
	UP-25MD	UP-D25MD	UP-DR80MD
			
System	Analogue	Digital	Digital
Format	A6		A4
Printing system	Dye sublimation printing technology		
Resolution	Approx. 423 dpi		Approx. 301 dpi
Gradations	8bit (256 levels) processing each for Yellow, Magenta, Cyan		
Print matrix	UP-21L/24LA: 2,132 x 1,600 dots UP-21S/24SA: 1,600 x 1,260 dots	21L / 24LA : 2100x1600 dots 21S / 24SA : 1600x1200 dots	A4 size UPC-R80MD: 3400 x 2392 dots Letter size UPC-R81MD: 3192 x 2464 dots
Printable area	UP-21L/24LA: 127.9 x 96.0 mm (5 1/8 x 3 3/4 inches) UP-21S/24SA: 96.0 x 75.6 mm (3 3/4 x 3 inches)	21L / 24LA : 126 x 96mm (5 x 3 3/4 inches) 21S/ 24SA : 96 x 72 mm (3 3/4 x 2 7/8 inches)	A4 size: 3,400 x 2,392 pixes / Letter size: 3,192 x 2,464 pixes / A4 size:287x202mm / Letter size: 269x208mm
Memory	8 frame memories	NA	
Tray capacity	S Size tray: Max. 80 sheets L Size tray: Max 50 sheets		50 sheets
Printing time	UP-21L : approx. 29 seconds, UP-24LA : approx. 36 seconds, UP-21S : approx. 19 seconds, UP-24SA : approx. 25 seconds		A4 size: Approx. 76 seconds Letter size: Approx. 72 seconds
Inputs/outputs	Video, S-Video, RGB, SYNC, HDTV IN/OUT signals 1080i/59.94i, 1080/50i (2:1 interlace) 720/59.94p, 720/50p (progressive)	Hi-Speed USB (USB 2.0)	
Control connectors	Remote 1 (special mini jack) for optional RM-5500 (discontinued). Remote 2 (stereo mini jack) for optional RM-91 or FS-24. RS-232C interface port (D-sub 25-pin) for external computer	NA	
Measurements			
Dimensions	212 (W) x 98 (H) x 398 (D)mm, (8 3/8 x 3 7/8 x 15 5/8 inches)		Approx. 317(W) x 207(H) x 425(D)mm (12 1/2 (W) x 8 1/8 (H) x 16 3/4 (D) inches)
Mass	5.7 kg (12 lb 9 oz)	5.5 kg (12 lb 2 oz)	Approx. 11.5 kg (25.3 lbs)
Power			
Requirements	AC 100 V to 240 V, 50/60Hz		
Consumption	1.7 A to 1.0 A		AC 100 V to 240 V, 50/60Hz 3.4 to 1.4 A
Operating conditions			
Temperature	5 °C to 35 °C (41 °F to 95 °F)		
Humidity	20% to 80% (non condensing)		
Storage/Transporting conditions			
Temperature	-20 °C to 60 °C (-4 °F to 140 °F)		
Humidity	20% to 80% (non condensing)		
Other			
Supplied accessories	CD-ROM (1) (Printer Driver, Operating Instructions (PDF). Before Using this Printer (1), Paper Tray (1), Stopper (1), Cleaning Cartridge (1)	CD-ROM (1) (Operating Instructions (PDF). Before Using this Printer (1) , Paper Tray (1), Stopper (1), Cleaning Cartridge (1), USB Cable (1)	Power Cable (1), USB cable (1), CD ROM (1), Paper holder (2), Cleaning ribbon (1). Before using ths printer (1), Software license agreement

	Colour Printers
	UP-55MD
	
System	Analogue
Format	A5
Printing system	Dye sublimation printing
Resolution	Approx. 379 dpi
Gradations	8 bits (256 levels) processing each for Yellow, Magenta and Cyan
Print matrix	2528 x 1920 dots (full screen print)
Printable area	169 (W) x 129 (H) mm (6 3/4 x 5 1/8 inches)
Printing time	Approx. 20 seconds
Tray capacity	Max. 100 sheets
Memory	8 frame memories
Control connectors	Remote 1 (special mini) for optional RM-5500, Remote 2 (stereo mini) for optional RM-91, RS-232C interface port (D-sub 25-pin) for external computer
Inputs/outputs	IN/OUT : Video, S-Video, RGB SYNC OUT : USB host port for USB flash memory
Measurements	
Dimensions	Approx. 280 x 125 x 398mm (11 1/8 x 5 x 15 3/4 inches) excluding the projection parts
Mass	Approx. 9 kg (19 lb 13 oz)
Power	
Requirements	AC 100 to 120 V, 50/60 Hz, AC 220 to 240 V, 50/60 Hz
Consumption	100 to 120 V: Max.2.8 A / 220 to 240 V: Max.1.2 A
Operating conditions	
Temperature	5 °C to 35 °C (41 °F to 95 °F)
Humidity	20% to 80% (non condensing)
Storage/Transporting conditions	
Temperature	-20 °C to 60 °C (-4 °F to 140 °F)
Humidity	20% to 90% (non condensing)
Other	
Supplied accessories	Paper tray (1), Ink ribbon holder (1), Before using printer" document (1), Instruction for use (1), AC power cord (1), CD-ROM with PDF files of multi-language usage instructions) (1)

	Black & White Printers		
	UP-D711MD	UP-D898MD	UP-X898MD
			
System	Digital	Digital	Analogue / Digital
Format	A7/A8	A6	
Printing system	Thermal Printing Technology	Direct thermal printing	
Resolution	301 dpi	325 dpi	
Gradations	256 levels (8-bits processing)		
Print matrix	2688x896 dots	4096x1280 dots	
Printing time	Approx 5 sec. (High Speed & standard image mode) Approx 8 sec. (Normal Speed & standard image mode)	High-speed mode: Approx. 1.9 seconds/image (960 x 1,280 dots) Normal speed mode: Approx. 3.3 seconds/image (960 x 1,280 dots)	High-speed mode: Approx. 1.9 seconds/image (at standard setting) Normal speed mode: Approx. 3.3 seconds/image (at standard setting)
Tray capacity	12,5 m (UPP-84HG), 13,5 m (UPP-84S)	20 m (UPP-110HG, UPP-110S), 18 m (UPP-110HG)	
Memory	896 × 2688 pixels max	Digital: 4,096 x 1,280 x 8 (bit)	Digital: 4,096 x 1,280 x 8 (bit) Video: 10 frame memories (850 k x 8 bits per frame)
Inputs/outputs	Hi-Speed USB (USB 2.0)		Digital: Hi-Speed USB (USB 2.0) Analogue: Video IN/OUT (BNC type) EIA/CCIR composite video signals (automatic detection)
Measurements			
Media Size	Roll width of 84 mm	Roll width of 110mm	
Print size	50,4 mm x 75,7 mm 56,8 mm x 75,7 mm 75,7 mm x 75,7 mm 75,7 mm x 101,1 mm 75.7 mm × 227.1 mm	320 x 100 mm	Digital : 320 x 100 mm STD Video PAL 94 x 71 mm (WIDE 1) SIDE Video PAL 127 x 96 mm (WIDE 1) STD Video NTSC 94 x 73 mm (WIDE 1) SIDE Video NTSC 124 x 96 mm (WIDE 1)
Dimensions	140 × 70 × 125 mm (5 5/8 × 2 7/8 × 5 inches)	154 x 88 x 240mm (6 1/6 x 3 1/2 x 9 1/2 inches)	
Mass	Approx. 1kg	2.5 kg (5 lb 8 oz)	
Power			
Requirements	DC 12V to 24V	AC 100 V TO 240 V, 50/60 Hz	
Consumption	6 A to 3 A	1,3A TO 0,6A	
Operating conditions			
Temperature	5 °C to 35 °C (41 °F to 95 °F)	5°C TO 40°C (41°F TO 104°F)	
Humidity	20% to 80% (no condensation allowed)		
Storage/Transporting conditions			
Temperature	-20 °C to 60 °C (-4 °F to 140 °F) 20% to 80% (no condensation allowed)		
Humidity			
Other			
Supplied accessories	Thermal head cleaning sheet (4-419-859) (1) CD-ROM (including multi-lingual operating instructions, Readme and printer driver) (1) Before Using this Printer (1)	Thermal head cleaning sheet (1) CD-ROM (1), Before Using this Printer (1) Service Contact List (1)	Thermal head cleaning sheet (1) CD-ROM (1) Before Using this Printer (1) Service Contact List (1) USB Flash Drive Ex. Cable Print media (UPP-110HG)

	Black & White Printers		
	UP-D72XR	UP-991AD	UP-971AD
			
System	Digital	Analogue & Digital	
Format	8" x 10" (20 x 25 cm)	A4	
Printing system	Thermal Printing Technology	Direct thermal printing	
Resolution	300 dpi	325 dpi	
Gradations	512 grey levels (9 bit)	8-bit (256 levels) processing	
Print matrix	2743 x 2320 dots	7680 x 2560 dots	
Throughput	Approx. 40 seconds	Approx. 8 sec	
Tray capacity	Paper: 100 sheets / Film: 100 sheets	25 m (UPP-210HD, UPP-210SE), 12,5 m (UPT-210BL)	
Memory	16 MB	Digital: 2816 x 7680 x 8 bits Video: 6 frames (720 x 608 x 8 bits for one frame)	
Inputs/outputs	USB connector x 1	Digital: Hi-Speed USB (USB 2.0) Analogue: Video IN/OUT (BNC type) EIA/CCIR composite video signals (automatic detection)	
Measurements			
Media Size	Sheet of 8» x 10» (20 x 25 cm)	Paper width of 210 mm (8 1/4 inches)	
Print size	232.2 x 196.4mm (9 1/4 x 7 3/4 inches)	DIGITAL: 600 x 200 mm (23 5/8 x 7 7/8 inch) (Max) VIDEO: STD NTSC: 182 x 144 mm PAL: 188 x 140 mm SIDE NTSC: 244 x 184 mm PAL: 244 x 183 mm	
Dimensions	412 x 210 x 431mm (16 1/4 x 8 3/8 x 17 inches)	316 x 132.5 x 265 mm (12 1/2 x 5 1/4 x 10 1/2 inch)	
Mass	Approx. 15.5 kg (34 lb 3 oz)	7 kg (15lb 7oz)	
Power			
Requirements	AC 100 to 240 V, 50/60 Hz	AC 100 V to 240 V, 50/60 Hz	
Consumption	Standby: 12.6 W (actual measurement) Black printing: 190 W (actual measurement) Max: 270 W	2,9 A to 1,2 A	
Operating conditions			
Temperature	10 °C to 30 °C (50 °F to 86 °F)	5°C to 35°C (41°F to 95°F)	
Humidity	20% to 80% (no condensation allowed)		
Storage/Transporting conditions			
Temperature	-20°C to +60°C (-4°F to +140°F)		
Humidity	20% to 80% (no condensation allowed)		
Other			
Supplied accessories	Paper tray (1), Thermal Head Cleaning Kit (1), Cleaning Sheets (2), Tray guide cover (1), Connection cable (1), Operation guide (1), CD-ROM (operation manual) (1),	Print Media (1) Thermal head cleaning sheet (1) CD-ROM (1) Before Using this Printer (1) Service Contact List (1)	

	Diagnostic Film Imagers	
	UP-DF550	UP-DF750
		
System		
Printing system	Direct Thermal Printing	
Resolution	320DPI	604 dpi
Gradations	12 bit	14 bit processing
Print matrix	5232 x 4360 dots (for 14 x 17 inch film)	8,256 x 9,888 dots (for 14 x 17 inch film)
Throughput	Approx. 64 sheets (per hour for 14 x 17 inch film) Approx. 85 sheets (per hour for 8 x 10 inch film)	Approx. 75 prints (per hour for 14 x 17 inch film) Approx. 90 prints (per hour for 8 x 10 inch film)
Film supply tray	Two trays	
Tray capacity	125 sheets (max.)	
Maximum density	UPT-517BL, UPT514BL, UPT-512BL, UPT-510BL: 3.2	UPT-M710BL, UPT-M712BL: 3.8 UPT-517BL, UPT514BL, UPT-512BL, UPT-510BL: 3.2
Inputs/outputs	DICOM port x 1 (RJ-45 Modular jack)	
Measurements		
Media size	354 x 430mm (14 x 17 inches), 279 x 354mm (11x 14 inches), 253 x 304mm (10 x 12 inches), 202 x 253mm (8 x 10 inches)	
Dimensions	600 x 316 x 686mm (23 5/8 x 12 1/2 x 27 1/8 inches)	
Mass	Approx. 63 kg (138 lb 14 oz)	Approx. 67 kg (147 lb 11 oz)
Power		
Requirements	AC 100 TO 240 V, 50/60 Hz	AC 100-120 V/ AC 200-240 V, 50/60 Hz
Consumption	4.4 TO 1.8 A	4.4 to 2.4 A
Operating conditions		
Temperature	10 °C to 30 °C (50 °F to 86 °F)	
Humidity	20% to 80% (non-condensing)	
Storage/Transporting conditions		
Temperature	-20 °C to 60 °C (-4 °F to 140 °F)	
Humidity	20% to 80% (non-condensing)	

SONY

Medical Catalogue EN_02/11/15

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