

LCD Monitor

Instructions for Use

Before operating the unit, please read this manual thoroughly and retain it for future reference.

LMD-XH320MT



Indications for Use/Intended Use

The LCD Monitor is intended to provide 4K3D and 2D color video displays of surgical and other medical images.

Notes

- This equipment is not intended for diagnostic use.
- This equipment is for medical professionals.
- This equipment is intended for use in medical environments, such as clinics, examination rooms, and operating rooms.

Warning

To reduce the risk of fire or electric shock, do not expose this equipment to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

No modification of this equipment is allowed.

Warning

To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

Warning

This unit has no power switch.

To disconnect the main power, unplug the power plug.

When installing the unit, incorporate a readily accessible disconnect device in the fixed wiring, or connect the power plug to an easily accessible socket-outlet near the unit.

Do not position the medical equipment where it is difficult to unplug the power plug.

If a fault should occur during operation of the unit, operate the disconnect device to switch the power supply off, or disconnect the power plug.

Symbols on the product



Safety sign

Follow the warnings in the instructions for use for parts of the unit on which this symbol appears.

NOTE Background color: Blue

Symbol: White



Consult the instructions for use

Follow the directions in the instructions for use for parts of the unit on which this symbol appears.



This symbol indicates the manufacturer, and appears next to the manufacturer's name and address.



This symbol indicates the Importer, and appears next to the Importer's name and registered office address.



This symbol indicates the European Community representative, and appears next to the European Community representative's name and address.



This symbol indicates the medical device in the European Community.



This symbol indicates the date of manufacture.



This symbol indicates the serial number.



This symbol indicates the Unique Device Identifier (UDI), and appears next to the bar code representation of the Unique Device Identification.



This symbol indicates the equipotential terminal which brings the various parts of a system to the same potential.



Storage and transport temperature

This symbol indicates the acceptable temperature range for storage and transport environments.



Storage and transport humidity

This symbol indicates the acceptable humidity range for storage and transport environments.



Storage and transport pressure

This symbol indicates the acceptable atmospheric pressure range for storage and transport environments.

For customers in the U.S.A.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of part 15 of FCC Rules.

If you have any questions about this product, you may call;

Sony Customer Information Service Center 1-800-222-7669 or <http://www.sony.com/>

Supplier's Declaration of Conformity

Trade Name	: SONY
Model	: LMD-XH320MT
Responsible party	: Sony Electronics Inc.
Address	: 16535 Via Esprillo, San Diego, CA 92127 U.S.A.
Telephone Number	: 858-942-2230

Caution

Federal law (United States of America) restricts this device to sale by or on the order of a licensed healthcare practitioner.

Rx
ONLY

For customers in Canada

This unit has been certified according to Standard CAN/CSA-C22.2 No. 60601-1.

Important safeguards and notices for use in the medical environments

1. All devices connected to the unit must be certified or compliant according to IEC 60601-1, IEC 60950-1, and IEC 60065 standards and other IEC/ISO standards applicable to the devices.
2. Furthermore, the system as a whole must comply with IEC 60601-1 standards. All peripheral devices connected to the signal input/output sections of the unit constitute the medical-use system, and therefore, the user is responsible for ensuring that the system as a whole complies with IEC 60601-1 standards. If in doubt, consult qualified Sony service personnel.
3. Connecting the unit to other devices may increase the leakage current.
4. For all peripheral devices connected to the unit that operate on commercial power supplies and do not comply with IEC 60601-1 standards, incorporate an isolation transformer that complies with IEC 60601-1 standards and connect to the commercial power supply via the transformer.
5. The unit generates, uses, and may radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause interference on other devices. If the unit causes interference (which can be determined by disconnecting the power cord from the unit), try the following.
 - Relocate the unit with respect to the affected devices.
 - Connect the unit and the affected devices to different branch circuits.For more information, consult qualified Sony service personnel.
(Applicable standard: IEC 60601-1-2)

Important EMC notices for use in medical environments

- The LMD-XH320MT needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in the instructions for use.
- The LMD-XH320MT is intended for use in a professional healthcare facility environment.
- Portable and mobile RF communications equipment, such as cellular phones, can affect the LMD-XH320MT.

Warning

- Portable RF communications equipment should be used no closer than 30 cm (12 inches) to any part of the LMD-XH320MT. Otherwise, degradation of the performance of this equipment could result.
- If the LMD-XH320MT will be used adjacent to or stacked with other equipment, normal operation of the LMD-XH320MT under such configurations should be verified via observation.
- The use of accessories and cables other than those specified, with the exception of replacement parts sold by Sony Corporation, may result in increased emissions or decreased immunity of the LMD-XH320MT.

Guidance and manufacturer's declaration – electromagnetic emissions		
The LMD-XH320MT is intended for use in the electromagnetic environment specified below. The customer or the user of the LMD-XH320MT should assure that it is used in such an environment.		
Emission test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11	Group 1	The LMD-XH320MT uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment. The LMD-XH320MT is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
RF emissions CISPR 11 CISPR 32	Class B	
Harmonic emissions IEC 61000-3-2	Class D (AC input) Not applicable (DC input)	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies (AC input) Not applicable (DC input)	

Guidance and manufacturer's declaration – electromagnetic immunity				
The LMD-XH320MT is intended for use in the electromagnetic environment specified below. The customer or the user of the LMD-XH320MT should assure that it is used in such an environment.				
Immunity test	IEC 60601 test level	Compliance level		Electromagnetic environment – guidance
		DC input	AC input	
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±15 kV air	±8 kV contact ±15 kV air	±8 kV contact ±15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, a relative humidity of at least 30% is recommended.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines		±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV line(s) to line(s) ±2 kV line(s) to earth	Not applicable	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0% U_T (100% dip in U_T) for 0.5/1 cycles ^a 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25/30 cycles ^a (for 0.5 sec) 0% U_T (100% dip in U_T) for 250/300 cycles ^a (for 5 sec)	Not applicable	0% U_T (100% dip in U_T) for 0.5/1 cycles ^a 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25/30 cycles ^a (for 0.5 sec) 0% U_T (100% dip in U_T) for 250/300 cycles ^a (for 5 sec)	Mains power quality should be that of a typical commercial or hospital environment. If the user of the LMD-XH320MT requires continued operation during power mains interruptions, it is recommended that the LMD-XH320MT be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE: U_T is the a.c. mains voltage prior to application of the test level.				
^a For example, 10/12 means 10 cycles at 50 Hz or 12 cycles at 60 Hz.				

Guidance and manufacturer's declaration – electromagnetic immunity

The LMD-XH320MT is intended for use in the electromagnetic environment specified below. The customer or the user of the LMD-XH320MT should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz outside ISM bands ^c	3 Vrms	Portable and mobile RF communications equipment should be used no closer to any part of the LMD-XH320MT, including cables, than the recommended separation distance calculated from the equation appliance to the frequency of the transmitter. Recommended separation distance $d = 1.2 \sqrt{P}$
	6 Vrms 150 kHz to 80 MHz in ISM bands ^c	6 Vrms	
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.7 GHz	3 V/m	IEC 60601-1-2: 2007 $d = 1.2 \sqrt{P}$ 80 MHz to 800 MHz $d = 2.3 \sqrt{P}$ 800 MHz to 2.5 GHz IEC 60601-1-2: 2014 $d = 2.0 \sqrt{P}$ 80 MHz to 2.7 GHz Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, ^a should be less than the compliance level in each frequency range. ^b Interference may occur in the vicinity of equipment marked with following symbol: 

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

- a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the LMD-XH320MT is used exceeds the applicable RF compliance level above, the LMD-XH320MT should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the LMD-XH320MT.
- b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.
- c The ISM (industrial, scientific and medical) bands between 150 kHz and 80 MHz are 6.765 MHz to 6.795 MHz; 13.553 MHz to 13.567 MHz; 26.957 MHz to 27.283 MHz; and 40.66 MHz to 40.70 MHz.

Recommended separation distances between portable and mobile RF communications equipment and the LMD-XH320MT

The LMD-XH320MT is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the LMD-XH320MT can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the LMD-XH320MT as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m				
	IEC 60601-1-2 : 2007			IEC 60601-1-2 : 2014	
	150 kHz to 80 MHz $d = 1.2 \sqrt{P}$	80 MHz to 800 MHz $d = 1.2 \sqrt{P}$	800 MHz to 2.5 GHz $d = 2.3 \sqrt{P}$	150 kHz to 80 MHz $d = 1.2 \sqrt{P}$	80 MHz to 2.7 GHz $d = 2.0 \sqrt{P}$
0.01	0.12	0.12	0.23	0.12	0.20
0.1	0.38	0.38	0.73	0.38	0.63
1	1.2	1.2	2.3	1.2	2.0
10	3.8	3.8	7.3	3.8	6.3
100	12	12	23	12	20

For transmitters rated a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Guidance and manufacturer's declaration – electromagnetic immunity

The LMD-XH320MT is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. Portable RF communications equipment should be used no closer than 30 cm (12 inches) to any part of the LMD-XH320MT. Otherwise, degradation of the performance of this equipment could result.

Immunity test	Band ^a	Service ^a	Modulation	IEC 60601 test level	Compliance level
Proximity fields from RF wireless communications equipment IEC 61000-4-3	380 – 390 MHz	TETRA 400	Pulse modulation 18 Hz	27 V/m	27 V/m
	430 – 470 MHz	GMRS 460 FRS 460	FM ±5 kHz deviation 1 kHz sine	28 V/m	28 V/m
	704 – 787 MHz	LTE Band 13, 17	Pulse modulation 217 Hz	9 V/m	9 V/m
	800 – 960 MHz	GSM 800/900 TETRA 800 iDEN 820 CDMA 850 LTE Band 5	Pulse modulation 18 Hz	28 V/m	28 V/m
	1,700 – 1,990 MHz	GSM 1800 CDMA 1900 GSM 1900 DECT LTE Band 1, 3, 4, 25 UMTS	Pulse modulation 217 Hz	28 V/m	28 V/m
	2,400 – 2,570 MHz	Bluetooth WLAN 802.11 b/g/n RFID 2450 LTE Band 7	Pulse modulation 217 Hz	28 V/m	28 V/m
	5,100 – 5,800 MHz	WLAN 802.11 a/n	Pulse modulation 217 Hz	9 V/m	9 V/m

NOTE: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

^a For some services, only the uplink frequencies are included.

Caution

When you dispose of the unit or accessories, you must obey the laws in the relative area or country and the regulations in the relative hospital regarding environmental pollution.



Warning on power connections

Use a proper power cord for your local power supply.

1. Use the approved Power Cord (3-core mains lead) / Appliance Connector / Plug with earthing-contacts that conforms to the safety regulations of each country if applicable.
2. Use the Power Cord (3-core mains lead) / Appliance Connector / Plug conforming to the proper ratings (Voltage, Ampere).

If you have questions on the use of the above Power Cord / Appliance Connector / Plug, please consult a qualified service personnel.



Warning on power connections for medical use

Customers in the U.S.A. and Canada should use the following type of power cord.
Customers in other countries or regions should use the power cord prescribed by their country or region.

	U.S.A. and Canada
Plug type	HOSPITAL GRADE*
Cord type	Min. Type SJT
	Min. 18 AWG
Minimum rating for plug and appliance couplers	10 A / 125 V
Safety approval	UL Listed and CSA

* Note: Grounding reliability can only be achieved when the equipment is connected to an equivalent receptacle marked "Hospital Only" or "Hospital Grade".

Warning

The apparatus shall not be exposed to dripping or splashing. No objects filled with liquids, such as vases, shall be placed on the apparatus.

Warning

Make sure the surface is wide enough so that this apparatus's width and depth don't exceed the surface's edges.

If not, this apparatus may lean or fall over and cause an injury.

Warning

To prevent injury, if mounting the unit using a mounting arm, wall fixture, or other mounting device prepared by the customer, mount the unit securely as described in the instruction manual provided with the mounting device.

Check beforehand that the mounting device used has sufficient strength to support the added weight of the unit.

Check yearly that the mounting device is securely attached.

Caution

When installing, ensure the following space around the periphery of the unit, taking ventilation and servicing into consideration.

- Rear side: 10 cm (4 in.) or more
- Left/Right sides: 10 cm (4 in.) or more
- Bottom side: 5 cm (2 in.) or more
- Top side: 30 cm (11 ⁷/₈ in.) or more

Consult with Sony qualified personnel for the following types of installation location.

- Wall mount
- Mounting arm



Caution

Do not use the device in a MR (Magnetic Resonance) environment.

It may cause a malfunction, fire, and unwanted movement.

Caution

This monitor should only be used with the specified monitor stand.

For information on suitable stands, refer to "Specifications." Installation of the monitor on any other stands may result in instability, possibly leading to injury.

This equipment is not suitable for use in locations where children are likely to be present.

Disposal of Old Electrical & Electronic Equipment (Applicable in Republic of India)



This symbol and its variations indicate that this product and its components, consumables, parts or spares thereof shall not be treated as household waste and may not be dropped in garbage bins. Product owners are advised to deposit their product at the nearest collection point for the recycling of electrical and electronic equipment. Your co-operation shall facilitate proper disposal & help prevent potential negative consequences/hazards to the environment and human health, which could otherwise be caused by inappropriate waste disposal including improper handling, accidental breakage, damage and/ or improper recycling of e-waste. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, you may contact our company's toll free number and website in India for assistance.

Toll Free: 1800-103-7799

Visit: www.sony.co.in for product recycling

Reduction in the Use of Hazardous Substances in Electrical & Electronic Equipment (Applicable in Republic of India)

This product and its components, consumables, parts or spares comply with the hazardous substances restriction of India's E-Waste (Management) Rules. The maximum allowable concentrations of the restricted substances are 0.1% by weight in homogenous materials for Lead, Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB) and Polybrominated Diphenyl Ethers (PBDE), and 0.01% by weight in homogenous materials for Cadmium, except for the exemptions specified in Schedule II of the aforesaid Rules.

For the customers in the U.S.A.

SONY LIMITED WARRANTY - Please visit <http://www.sony.com/psa/warranty> for important information and complete terms and conditions of Sony's limited warranty applicable to this product.

For the customers in Canada

SONY LIMITED WARRANTY - Please visit <http://www.sonybiz.ca/pro/lang/en/ca/article/resources-warranty> for important information and complete terms and conditions of Sony's limited warranty applicable to this product.

For the customers in Europe

Sony Professional Solutions Europe - Standard Warranty and Exceptions on Standard Warranty. Please visit <https://pro.sony/support-services/primesupport/support-professional-solutions-europe-standard-product-warranty> for important information and complete terms and conditions.

For the customers in Korea

SONY LIMITED WARRANTY - Please visit <http://bpeng.sony.co.kr/handler/BPAS-Start> for important information and complete terms and conditions of Sony's limited warranty applicable to this product.

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The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries.

Precaution

On Safety

- Operate the unit only with a power source as specified in the “Specifications” section.
- The nameplate indicating operating voltage, etc. is located on the rear panel of monitor and the AC adaptor.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for several days or more.
- To disconnect the AC power cord, pull it out by grasping the plug. Never pull the cord itself.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.

On Installation

- Prevent internal heat build-up allowing adequate air circulation.
Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Do not place the monitor near equipment which generates magnetism, such as a transformer or high voltage power lines.

Safety precautions for using this unit

- Viewing images may result in eye strain, fatigue, nausea, or other symptoms of discomfort. It is best to take frequent breaks when viewing content. Because the length and frequency of breaks will differ from person to person, be sure to trust your instincts when deciding to take breaks from viewing. When feelings of discomfort occur, stop viewing the images until the symptoms subside, and consult with a specialist physician if necessary.
- Avoid using this unit while walking or exercising, or in areas that shake violently, as doing so can increase the chances of feelings of discomfort.

- When connecting the unit to medical equipment, refer to “Precautions when connecting this unit to medical equipment”.

Precautions when connecting this unit to medical equipment

- Before using this unit for medical purposes, be sure to confirm that use of this unit will not cause symptoms that may interfere with medical practice, such as eye strain, fatigue, and nausea, etc.
- Refrain from using this unit if symptoms occur that interfere with medical practice, or if such symptoms are likely to occur.
- Depending on the conditions of the video input to the unit (e.g., the steadiness, movement speed, and focus position of the video, the distance from subject, the area of the image the user is viewing) and the general health of the user, the user may experience visual fatigue, tiredness, and other discomfort.
- Before starting a medical procedure, make sure that the image from the connected device is displayed correctly on this unit.

To prolong the life of the unit

Turn off the power to preserve the performance when not in use for a prolonged time.

Cautions for RESPONSIBLE ORGANIZATION when connecting this equipment to IT-NETWORK

- connection of the PEMS to an IT-NETWORK that includes other equipment could result in previously unidentified RISKS to PATIENTS, OPERATORS or third parties;
- the RESPONSIBLE ORGANIZATION should identify, analyze, evaluate and control these RISKS;
- subsequent changes to the IT-NETWORK could introduce new RISKS and require additional analysis; and
- changes to the IT-NETWORK include:
 - changes in the IT-NETWORK configuration;
 - connection of additional items to the IT-NETWORK;
 - disconnecting items from the IT-NETWORK;

- update of equipment connected to the IT-NETWORK; and
- upgrade of equipment connected to the IT-NETWORK.

On simultaneous use with an electrosurgical knife, etc.

If this unit is used together with an electrosurgical knife, etc., the picture may be disturbed, warped or otherwise abnormal as a result of strong radio waves or voltages from the device. This is not a malfunction.

When you use this unit simultaneously with a device from which strong radio waves or voltages are emitted, confirm the effect of this before using such devices, and install this unit in a way that minimizes the effect of radio wave interference.

Recommendation to Use more than One Unit

As problems can occasionally occur for the monitor, when the monitor is used for safety control of personnel, assets or stable picture, or for emergencies, we strongly recommend you use more than one unit or prepare a spare unit.

About the Power Connection

Use the supplied power cord or optional AC adaptor.

Do not connect the power cord and optional Sony AC adaptor (AC-300MD) simultaneously.

LCD image display

Due the physical characteristics of LCD panels, there may be a decrease in brightness or change in color temperature over a long period of use. These problems are not a malfunction.

In addition, these occurrences will not affect recorded data.

About the LCD Display Panel

- The LCD panel fitted to this unit is manufactured with high precision technology, giving a functioning pixel ratio of at least

99.99%. Thus a very small proportion of pixels may be “stuck”, either always off (black), always on (red, green, or blue), or flashing. In addition, over a long period of use, because of the physical characteristics of the liquid crystal display, such “stuck” pixels may appear spontaneously. These problems are not a malfunction.

- Do not leave the LCD screen facing the sun as it can damage the LCD screen. Take care when you place the unit by a window.
- Do not push or scratch the LCD screen. Do not place a heavy object on the LCD screen. This may cause the screen to lose uniformity.
- If the unit is used in a cold place, a residual image may appear on the screen. This is not a malfunction. When the monitor becomes warm, the screen returns to normal.
- The screen and the cabinet become warm during operation. This is not a malfunction.

On a Long Period of Use

Due to the characteristics of LCD panel, displaying static images for extended periods, or using the unit repeatedly in a high temperature/high humidity environments may cause image smearing, burn-in, areas of which brightness is permanently changed, lines, or a decrease in overall brightness.

In particular, continued display of an image smaller than the monitor screen, such as in a different aspect ratio, may shorten the life of the unit.

Avoid displaying a still image for an extended period, or using the unit repeatedly in a high temperature/high humidity environment such as an airtight room, or around the outlet of an air conditioner.

To prevent any of the above issues, we recommend reducing brightness slightly, and to turn off the power whenever the unit is not in use.

On Burn-in

For LCD panel, permanent burn-in may occur if still images are displayed in the same position on the screen continuously, or repeatedly over extended periods.

Images that may cause burn-in

- Masked images with aspect ratios other than 16:9
- Color bars or images that remain static for a long time
- Character or message displays that indicate settings or the operating state

To reduce the risk of burn-in

- Turn off the character displays
Press the MENU button to turn off the character displays. To turn off the character displays of the connected equipment, operate the connected equipment accordingly. For details, refer to the operation manual of the connected equipment.
- Turn off the power when not in use
Turn off the power if the monitor is not to be used for a prolonged period of time.

Handling the 3D Glasses

- Be sure to use the 3D Glasses supplied with this unit or use the one in the optional accessories explained in this manual.
- For the method and cautions of handling the supplied 3D Eye Shield Kit (CFV-E30SK), see the instructions for use of CFV-E30SK.
- Do not touch the lens surface of the 3D glasses.
- Do not leave the 3D glasses in ambient high-temperature, such as near heating equipment or inside a car.
- Do not put extra pressure on the 3D glasses to avoid them becoming misshapen.
- Make sure hard accessories or buckles not to touch the lens surface of 3D glasses while holding or transporting.
- Avoid wearing the 3D glasses when they are aging, breaking or being damaged. Tiny scratches on the lens surface may interfere with your viewing enjoyment.
- Laying down or looking away from the screen will lessen the 3D effect or shifts image colors.

On Fan Error

The fan for cooling the unit is built in. When the fan error indication appears on the screen, turn off the power and contact an authorized Sony dealer.

On Temperature Error

When this unit is used in a high temperature environment and the internal temperature rises, a temperature error is displayed on the screen. When the temperature error is displayed, contact an authorized Sony dealer.

On condensation

If the unit is moved suddenly to a location with a different temperature or the ambient temperature changes suddenly, moisture may form on the outer surface of the unit and/or inside of the unit. This is known as condensation. If condensation occurs, turn off the unit and wait until the condensation clears before operating the unit. Operating the unit while condensation is present may damage the unit.

On Security

- SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND RESULTING FROM A FAILURE TO IMPLEMENT PROPER SECURITY MEASURES ON TRANSMISSION DEVICES, UNAVOIDABLE DATA LEAKS RESULTING FROM TRANSMISSION SPECIFICATIONS, OR SECURITY PROBLEMS OF ANY KIND.
- Depending on the operating environment, unauthorized third parties on the network may be able to access the unit. When connecting the unit to the network, be sure to confirm that the network is protected securely.
- This unit is equipped with a maintenance function performed via a network. Maintenance may be performed with your consent.
- This product is used with a leased line or intranet connection. Do not connect to an external network, as security issues may occur.

On Cleaning

Before cleaning

Be sure to disconnect the AC power cord from the AC outlet.

For the method and cautions of handling the supplied 3D Eye Shield Kit (CFV-E30SK), see the instructions for use of CFV-E30SK.

On cleaning the monitor

A material that withstands disinfection is used for the front protection plate of the medical use LCD monitor. The protection plate surface is specially treated to reduce reflection of light. When solvents such as benzene or thinner, or acid, alkaline or abrasive detergent, or chemical cleaning cloth are used for the protection plate surface/monitor surface, the performance of the monitor may be impaired or the finish of the surface may be damaged. Take care with respect to the following:

- Clean the protection plate surface/monitor surface with a 50 to 70 v/v% concentration of isopropyl alcohol or a 76.9 to 81.4 v/v% concentration of ethanol using a swab method. Wipe the protection plate surface gently (wipe using less than 1 N force).
- Stubborn stains may be removed with a soft cloth such as a cleaning cloth lightly dampened with mild detergent solution using a swab method and then clean using the above chemical solution.
Never use solvents such as benzene or thinner, or acid, alkaline or abrasive detergent, or chemical cleaning cloth for cleaning or disinfection, as they will damage the protection plate surface/monitor surface.
- Do not use unnecessary force to rub the protection plate surface/monitor surface with a stained cloth. The protection plate surface/monitor surface may be scratched.
- Do not keep the protection plate surface/monitor surface in contact with a rubber or vinyl resin product for a long period of time. The finish of the surface may deteriorate or the coating may come off.

On Repacking

Do not throw away the carton and packing materials. They make an ideal container which to transport the unit.
If you have any questions about this unit, contact your authorized Sony dealer.

Features

This monitor displays color video images that are output from medical imaging systems on the LCD panel.

LCD panel consists of liquid crystal, color filters, and LED backlights.

The panel displays images by controlling the liquid crystal and backlights according to input signals.

Polarized filter is attached on the LCD panel, enabling a stereoscopic view with 3D glass.

Compliance with medical safety standards in U.S.A., Canada and Europe

IEC 60601-1 and product safety standards in the U.S.A., Canada and Europe have been obtained for this monitor.

The monitor is designed for use in the medical treatment field, with the sheet switch, screen protect panel, etc.

High brightness/high-resolution 4K panel

A 4K high-resolution (3840 × 2160) panel and wide field of view technology enables you to use the monitor under various lighting conditions and in numerous ways (installing on the wall, using several monitors to view an image, etc.). Because a color filter with wide-color reproduction and LCD materials with high response speed are used, the motion picture of the video signal is displayed more clearly.

A.I.M.E. function ¹⁾

This function sharpens images. You can select the mode best suited for the resolution of the equipment used.

- 1) A.I.M.E. is a registered trademark of Sony Corporation.

Control panel

Assigns functions frequently used during an operation to buttons on the front surface of the monitor. The panel provides an user interface superior in operability through navigation by luminescent colors and status of the buttons.

3D

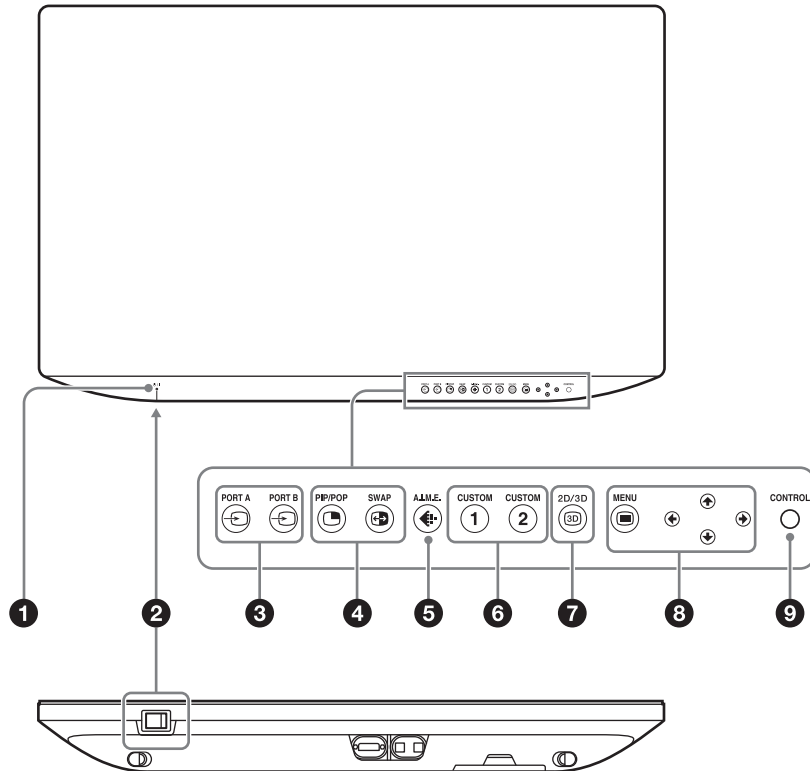
This unit is a high definition and high performance multi-format LCD monitor compatible with the micro-polarizer 3D. Exclusive 3D glasses optimized for this unit are supplied considering long-time work. You can use it for both 2D and 3D with the 2D/3D selection function.

Flat surface for better maintenance

The design allows the user to easily wipe liquids and gel off the LCD panel and control buttons – ensuring a high standard of disinfection and cleanliness.

Location and Function of Parts and Controls

Front Panel



1 Power indicator

Indicator	Operating State
Green	Power on
Flashes in Green	Power on with image displayed (reduced backlight due to high temperature)
Orange	Standby
Flashes in Orange	No image displayed (remote standby)

2 I (On)/Standby switch

Press the **I** side to turn the monitor on. Press the **Standby** side to switch the unit to standby state.

3 Input select buttons

PORT A/PORT B: Each input connector can be assigned for PORT A/B.

12G-SDI 1 is assigned for PORT A/B in the default setting.

When you press **PORT A** or **PORT B** when it is lit in green, a menu for selecting the input connector assigned to the PORT A/B is displayed.

When you press **PORT A** or **PORT B** when it is lit in white, an image from the input connector assigned to the PORT A/B is displayed.

4 2 or 3 screen display setting buttons

PIP/POP: For displaying the 2 or 3 screen display or switching the 2 or 3 screen display mode.

SWAP: For swapping between the main display and the sub display.

Note

If the combination of input signals assigned to each port is set to 12G-SDI 1 and 12G-SDI 2, or HDMI and Display Port, the 2 or 3 screen display is not available.

5 A.I.M.E. button

Press to select "Off," "On," or "Check Mode" for the A.I.M.E. setting.

Also, you can adjust A.I.M.E. Structure, A.I.M.E. Color, and A.I.M.E. Shadow.

⑥ CUSTOM buttons

Turns on or off the assigned function. You can adjust the assigned function by pressing the ◀/▶ buttons. (Refer to the Custom Button of the System Configuration menu on page 33 and of the Initial Setup menu on page 34.)

The following functions are assigned in the default setting.

CUSTOM 1: Brightness

CUSTOM 2: Contrast

⑦ 3D 2D/3D select button

Switches between 2D and 3D displays.

⑧ OSD menu operation buttons

▢ MENU button

Press to display the on-screen menu.

Press again to hide the menu.

▲/▼/◀/▶ buttons

Press to select the items and setting values.

⑨ ○ CONTROL button

Displays or hides the operation buttons on the front panel.

Selects the items depending on the menu types.

Input Signals and Adjustable/Setting Items

Item	Input signal							
	HDMI		Display Port		SDI		DVI-D	
	Video	PC	Video	PC	12G-SDI 1/2	3G-SDI	Video	PC
Gamma	○	○	○	○	○	○	○	○
Phase	○	○	○	○	○	○	○	○
Chroma	○	○	○	○	○	○	○	○
Brightness	○	○	○	○	○	○	○	○
Contrast	○	○	○	○	○	○	○	○
A.I.M.E.	○	○	○	○	○	○	○	○
A.I.M.E. Structure	○	○	○	○	○	○	○	○
A.I.M.E. Color	○	○	○	○	○	○	○	○
A.I.M.E. Shadow	○	○	○	○	○	○	○	○
Color Temperature	○	○	○	○	○	○	○	○
Gain R/G/B Offset	○	○	○	○	○	○	○	○
Bias R/G/B Offset	○	○	○	○	○	○	○	○
Mono	○	○	○	○	○	○	○	○
Sharpness H	○	○	○	○	○	○	○	○
Sharpness V	○	○	○	○	○	○	○	○
RGB Range	○	○	○	○	×	×	○	○
Color Space	○	○	○	○	○	○	○	○
4K Scan Size	○	○ 3)	○	○ 3)	○	×	×	×
HD Scan Size	○	○ 2)	○	○ 2)	○	○	○	○ 2)
SD Scan Size	○	○ 2)	○	○ 2)	×	○	○	○ 2)
4K Zoom	○	○	○	○	○	×	×	×
Flip Pattern	○	○	○	○	○	○	○	○
SD Aspect	○ 1)	○ 1)	○ 1)	○ 1)	×	○ 1)	○ 1)	○ 1)
Image Division	×	×	×	×	○	×	×	×
HDMI Signal Format	○	○	×	×	×	×	×	×
2D/3D Select	○	○	○	○	○	○	○	○
3D Signal Format	○	○	○	○	○	○	○	○
3D Disparity	○	○	○	○	○	○	○	○
L/R Priority	○	○	○	○	○	○	○	○

○ : Can be adjusted/set

× : Cannot be adjusted/set

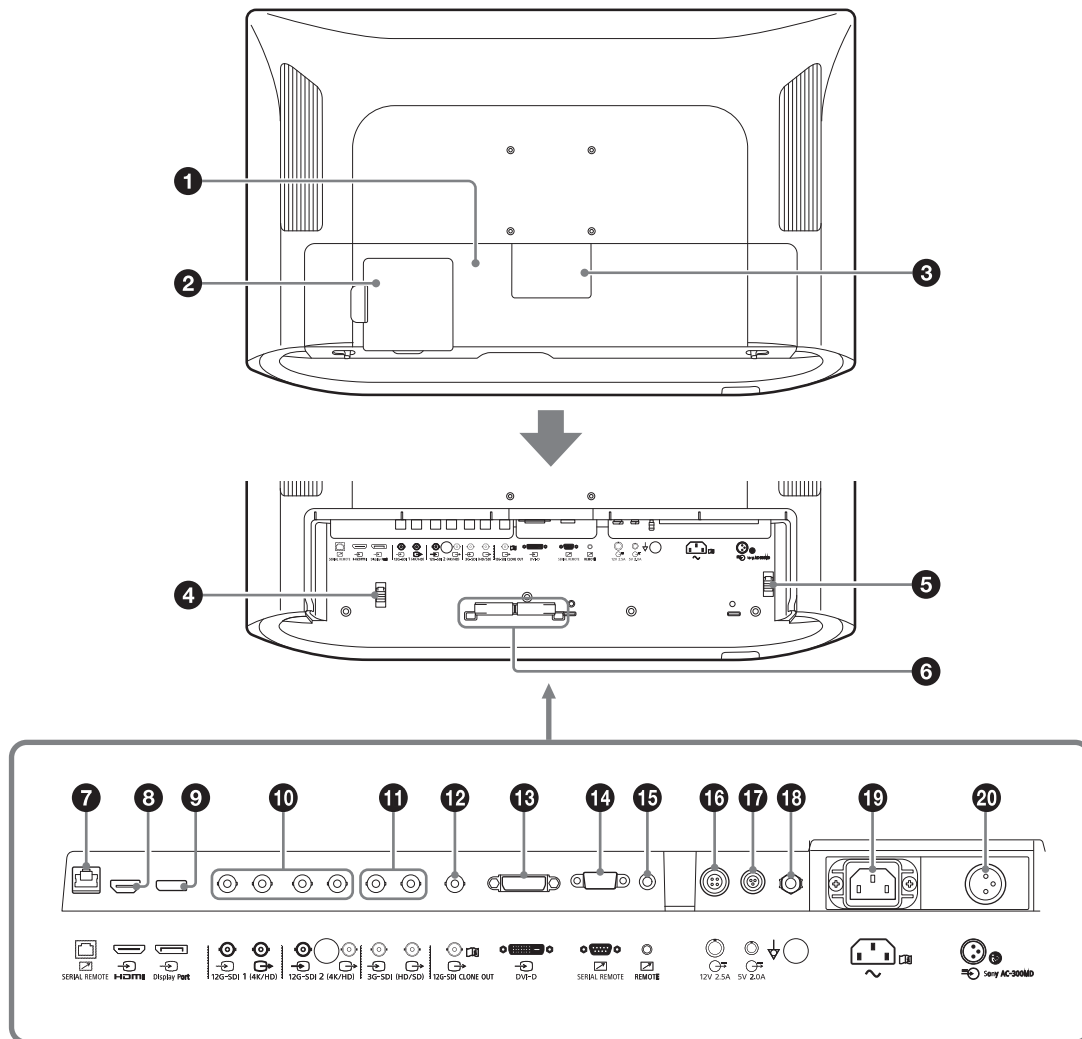
1) SD aspect is reflected to the screen only when the SD signal is input.

2) The setting value can be changed but is not applied to the screen when the PC signal is input.

3) The setting value can be changed but is not applied to the screen.

Rear Panel

To use the connectors on the rear panel, remove the cable cover. For details on the cable cover, see page 23.



① Cable cover (L)

When connecting or disconnecting the cable of the connector on the rear panel, remove this cover.

Make sure to disconnect the power cord before connecting or disconnecting connectors.

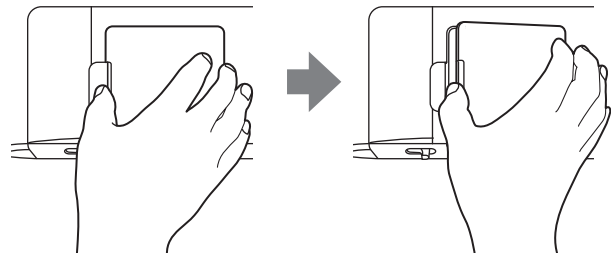
While the unit is operated, the temperature of the connectors may become high. Touching the connectors may burn your hand.

Before connecting or disconnecting connectors, disconnect the power cord, then wait until the unit cools down sufficiently.

② Cable cover (M)

This cover is specifically for the 12G-SDI 1 input/output connector. Pull the cover open with your finger hooked in the concave area near ▲ on the

cover while pressing the tab at the edge of the cover to the right. The cable of the 12G-SDI 1 input/output connector can be connected or disconnected without removing the cable cover (L).

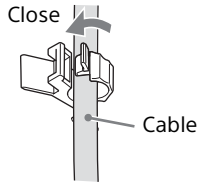


③ Cable cover (S)

Removing this cover makes a small opening on the cable cover (L) for the connection cable to pass through.

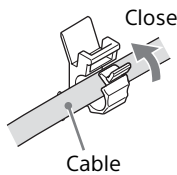
④ HDMI cable holder

Secures the HDMI cable (Ø7 mm or less).



⑤ AC power cord holder

Secures the AC power cord.



⑥ Cable holder

Secures the connected cables.

⑦ SERIAL REMOTE connector (RJ-45)

The monitor can be operated according to control commands sent from connected external equipment.

Connect to the LAN (10/100) connector of the network by using a 10BASE-T/100BASE-TX LAN cable (non-shielded type of category 5 or more, optional).

Note

Consult with Sony qualified personnel at using this connector.

Caution

For safety, do not connect the connector to peripheral device wiring that might have excessive voltage.

Follow the instructions for use for this port.



Caution

Do not touch this connector and a patient at the same time.

Doing so may result in a generation of voltage that can be harmful to patients if the unit is malfunctioning.

Always disconnect the power cord before connecting and disconnecting connectors.

Note

The connection speed may be affected by the network system. This unit does not guarantee the communication speed or quality of 10BASE-T/100BASE-TX.

⑧ HDMI input connector

Inputs the HDMI signals.

Use the Premium High Speed cable that is shorter than 3 m (meters) with the cable-type logo. (Cables manufactured by Sony are recommended.)

⑨ Display Port input connector

Inputs the Display Port signal.

Display Port is an interface developed by VESA that supports transfer of both video and audio digital signals on a single cable.

Use the DisplayPort standard version 1.2-certified cable.

Note

This monitor does not support Display Port audio signals.

⑩ 12G-SDI input/output connector (BNC type)

input connector (12G-SDI 1/2)

Input connector for serial digital component signals (4K/HD). SDI 1 and SDI 2 inputs are available.

output connector (12G-SDI 1/2)

Active through output connector for serial digital component signals (4K/HD). SDI 1 and SDI 2 outputs are available.

⑪ 3G-SDI input/output connector (BNC type)

input connector

Input connector for serial digital component signals (HD/SD).

output connector

Active through output connector for serial digital component signals (HD/SD).

Recommended cables

12G-SDI: Coaxial cable L-5.5CUHD manufactured by Canare Electric Co., Ltd. or an equivalent cable

3G-SDI: Coaxial cable L-5CFB manufactured by Canare Electric Co., Ltd. or an equivalent cable

HD-SDI: Coaxial cable L-5CFB manufactured by Canare Electric Co., Ltd. or an equivalent cable

SD-SDI: Coaxial cable L-5CFB manufactured by Canare Electric Co., Ltd. or an equivalent cable

Notes

- An SDI signal is output from the output connector only when the monitor is turned on. When the monitor is turned off, the signal is not output from the output connector.
- Be sure to connect equipment or cables specified by Instructions for Use of this monitor to the 12G-SDI/3G-SDI output connectors. If you connect unspecified equipment or cables, the monitor may affect the operation of the connected equipment.

12 **CLONE OUT connector (BNC type)**

Output connector for serial digital component signals of the recording equipment or monitor. Outputs the displayed picture on the panel.

Notes

- A signal is output from the CLONE OUT connector only when the monitor is turned on. When the monitor is turned off, the signal is not output from the CLONE OUT connector.
- Be sure to connect equipment or cables specified by Instructions for Use of this monitor to the CLONE OUT connector. If you connect unspecified equipment or cables, the monitor may affect the operation of the connected equipment.
- When using Clone Out in combination with the recording device, connect the video output of the recording device to the connector selected in "AUX IN Setting." If the video output is connected to another input connector, the video loops when selecting the connector connected to the recording device as a display image on the monitor.

13 **DVI-D input connector**

Input connector for DVI Rev.1.0 applicable digital signal.

Note

The HDMI input connector, Display Port input connector, and DVI-D input connector support HDCP, a copy protection technology that incorporates coding technology for digital video signals.

14 **SERIAL REMOTE (RS-232C) connector (D-sub 9-pin, female)**

Connect to the RS-232C control connector on the external equipment connected to the monitor. The monitor can be operated according to control commands sent from connected external equipment.

15 **REMOTE connector (Stereo mini jack)**

The monitor can be operated partially by connecting the optional Foot Switch FS-24.

16 **12V 2.5A (DC output) connector**

Outputs 12 volts for connected external equipment.

17 **5V 2.0A (DC output) connector**

Outputs 5 volts for connected external equipment.

18 **(Equipotential) terminal**

Connects the equipotential plug.

19 **~AC input connector 1)**

Connects the supplied AC power cord.

20 **(DC input) connector 1)**

Connect the DC connector of the optional AC adaptor.

- 1) Slide the shutter to select either one of the input connectors.



Warning

For the DC power supply, make sure to use the optional AC adaptor, AC-300MD. If another power supply is used, there is a risk of fire or electric shock.



Warning

Using this unit for medical purposes

The connectors on this unit are not isolated. Do not connect any device other than one which conforms to IEC 60601-1 standards. When an information technology device or AV device that uses an alternating current is connected, current leakage may result in an electric shock to the patient or operator. If use of such a device is unavoidable, isolate its power supply by connecting an isolation transformer, or by connecting an isolator between the connecting cables. After implementing these measures, confirm that the reduced risk now conforms to IEC 60601-1 standards.

Preparation

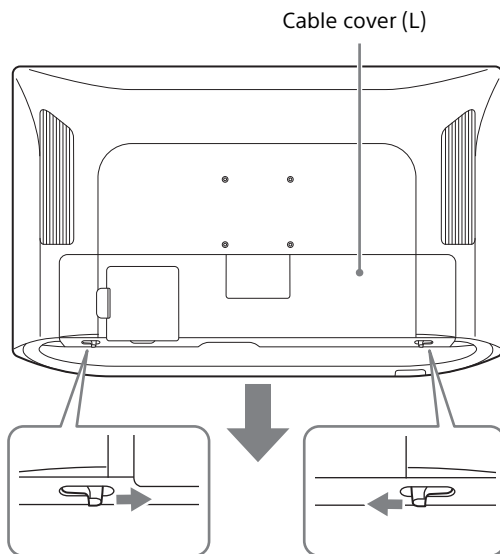
Connecting

Note

Avoid plugging the AC power cord into the AC input connector while connecting the optional Sony AC adaptor (AC-300MD) to the DC input connector.

- 1 Make sure that the I(On)/⏻ (Standby) switch is set to ⏻ (Standby).
- 2 Remove the cable cover (L).

Slide down the cable cover (L) while sliding the slide locks (2 pcs), which are located at the bottom of the monitor, in the direction of the arrow.

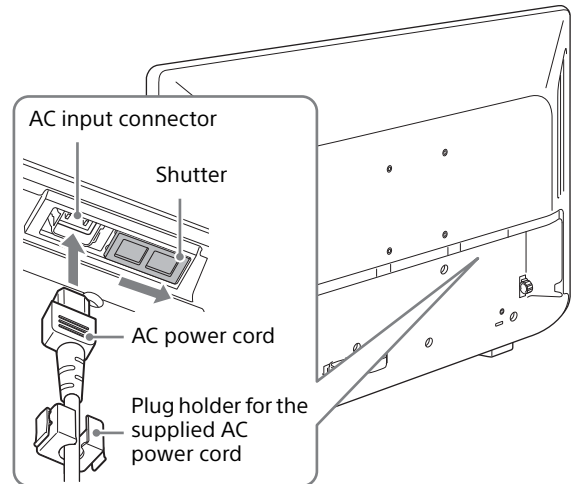


Note

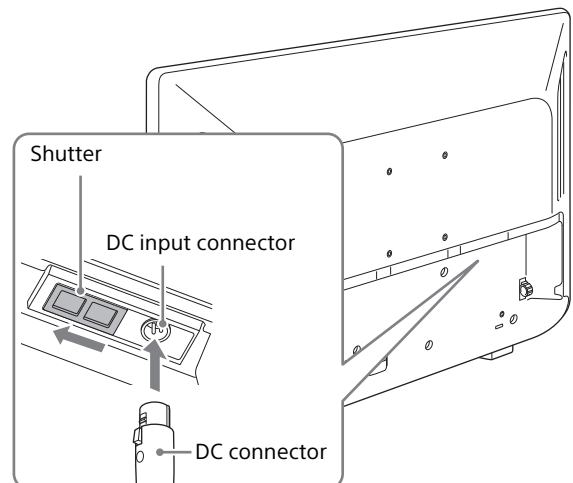
Do not forcibly pull cable covers. Otherwise, the cable covers may be damaged or the monitor may fall over.

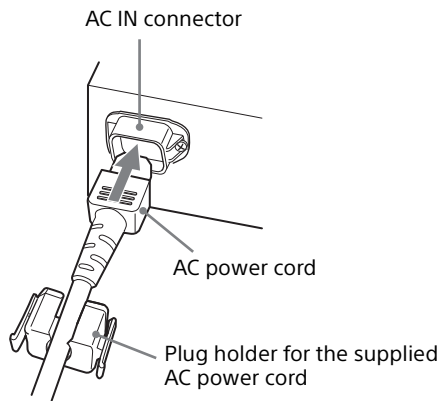
- 3 Connect the connection cable.
The connection cable should be wired with the cable holder.
- 4 Connect the AC power cord.

When using the supplied AC power cord
Slide the shutter of the AC power connector to show the AC input connector, and plug the AC power cord into the AC input connector.



When using the optional AC adaptor
Slide the shutter to show the DC input connector and insert the DC connector to the DC input connector until it locks. Then, plug the AC power cord into the optional AC adaptor.

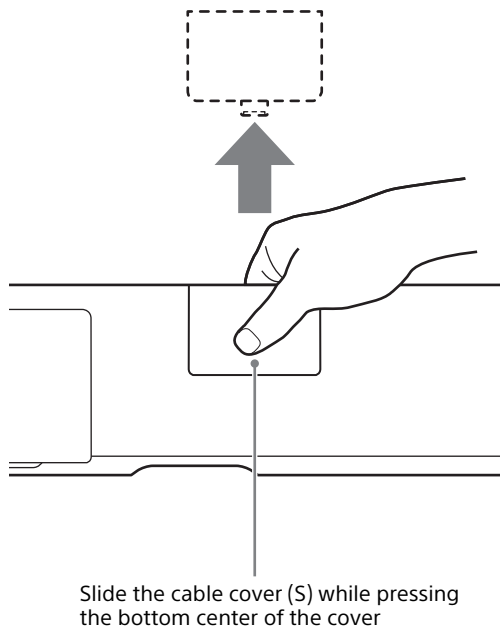




Note

When using the AC power cord, make sure to use the supplied plug holder for the AC power cord and insert it until the fixing lever locks. When using the AC adaptor, insert the DC connector into the monitor until it locks. Otherwise, the cable may fall out and the image may disappear.

- 5 Slide the cable cover (S) in the direction of the arrow to remove it.



Notes

- When the cable cover (S) is removed, it can be used as a cable outlet for the connection cable and AC power cord.
- To prevent losing the removed cable covers, store them appropriately.
- To attach the cable covers, slide the covers in the opposite direction from when you removed them.

- 6 Attach the cable cover (L).

Slide the cable cover (L), while sliding the slide locks (2 pcs), which are located at the bottom of the monitor, in the reverse direction of step2.

Notes

- After attaching the cable cover (L), check that the slide locks (2 pcs) return to the original position. The cable cover (L) may fall off if it is improperly locked.
- If you use a connection cable that is bigger than the cable holder or cable cover and it cannot be fit in, do not secure it in the cable holder and use the cable with the cable cover removed.



Caution

This unit with the cable covers attached conforms to the waterproofed standard. (See page 37)

Be sure not to use the unit with the cable covers removed since waterproofed performance is not guaranteed.

Cautions for splash-proof performance

Splash-proof test has been conducted only on water.

Splash-proof performance against liquids such as drugs and body fluids is not ensured.

If liquids that are assumed to cause risks such as an infection have entered the unit, dispose of the unit according to the regulations of the country, region, and hospital.

To unplug the AC power cord

Press the I (On)/⏻ (Standby) switch to the ⏻ (Standby) side to set the unit to the standby state, then unplug the AC power cord from the AC power plug holder by holding both sides of the fixing levers of the holder to release the lock. When the optional AC adaptor is used, set the unit to the standby state, then unplug the AC power cord from the AC adaptor before disconnecting the DC connector from the unit.

Turning on the Monitor/Switching Input Settings

- 1 Connect the plug of the AC power cord to an AC outlet.
- 2 Press the I (On)/⏻ (Standby) switch to the I (On) side to turn on the monitor.

The power indicator on the front panel lights in green.

- 3 Switch the input settings.

If the desired image is not displayed, press the CONTROL button to show the operation buttons on the front panel, then press ⏮ PORT A or ⏭ PORT B.

Note

For details on switching the input settings, refer to "Location and Function of Parts and Controls" on page 17 or "Input/Output Configuration menu" on page 31.

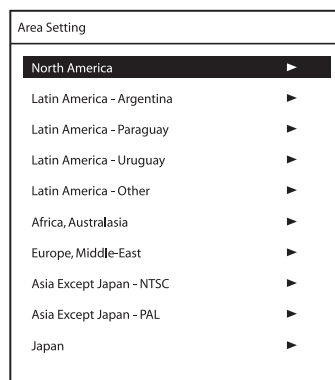
Initial Setting

When you turn on the unit for the first time after purchasing it, select the area and language where you intend to use this unit.

To set the using area

- 1 Turn on the unit.

The Area Setting screen appears.



- 2 Press the CONTROL button.
- 3 Press the ⬆ or ⬇ button to select the area where you intend to use the unit and press the ➡ button.
- 4 When the confirmation screen is displayed, press the ⬅ or ➡ button to select Yes and press the CONTROL button.

The Area Setting screen disappears and the Language Setting screen appears.

The following item in the menu is automatically applied to the value corresponding to the selected area.

Area	Color Temperature
North America	D65
Latin America - Argentina	
Latin America - Paraguay	
Latin America - Uruguay	
Latin America - Other	
Africa, Australasia	
Europe, Middle-East	
Asia Except Japan - NTSC	
Asia Except Japan - PAL	
Japan	D93

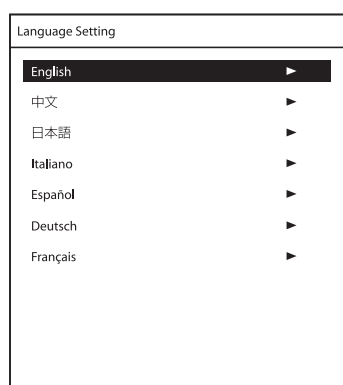
Note

If you have selected the wrong area, change the Color Temperature setting (page 29).

To set the using language

You can select one of seven languages (English, Chinese, Japanese, Italian, Spanish, German, and French) for display on the menu and other on-screen displays. The default menu language is set to "English."

- 1 On the Language Setting screen, press the **▲** or **▼** button to select the desired language and press the **▶** button.



- 2 When the confirmation screen is displayed, press the **◀** or **▶** button to select Yes and press the CONTROL button.

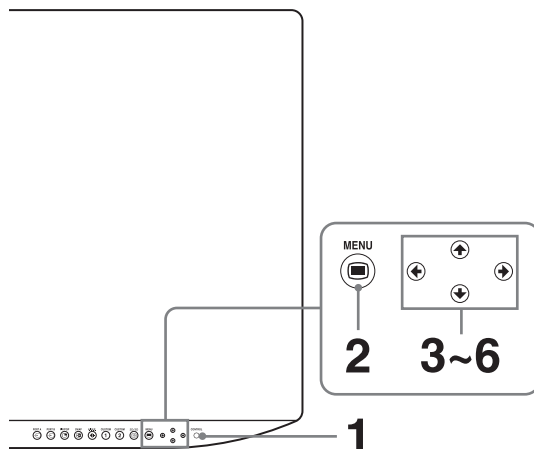
The menu changes to the selected language.

To change the menu language

Change the menu language on the menu screen. For details, refer to "Language" (page 33) in the "System Configuration" menu.

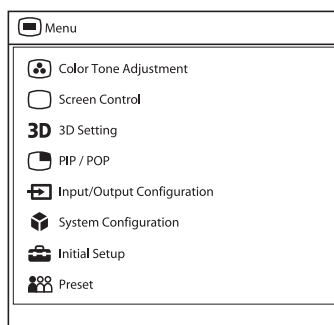
Using the Menu

The unit is equipped with an on-screen menu for making various adjustments and settings such as picture control, input setting, setting change, etc.



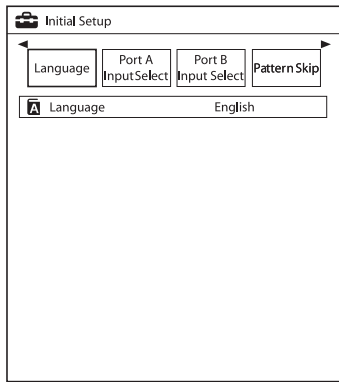
- 1 Press the CONTROL button.
The operation buttons are displayed.

- 2 Press the MENU button.
The menu-selecting screen appears.
The menu presently selected is shown in blue.



- 3 Press the **▲/▼** button to select a menu.

When you press the **▶** or CONTROL button, the selected menu appears and setting items of the selected tab are displayed.



About the control navigation

Depending on the state, the operation buttons of the unit light as shown below:

White light: Operable state.

Green light: Operating state.

Off: Unable to operate.

- 4** Press the ◀/▶ button to select the tab.

The selected tab is shown in blue, and setting items of the selected tab appear.

- 5** Select an item.

Press the ▲/▼ button to select the item.
The item to be changed is displayed in blue.

- 6** Make the setting or adjustment on an item.

When changing the adjustment level:

To increase the number, press the ▶ button.

To decrease the number, press the ◀ button.

When selecting the setting:

Press the ◀/▶ button to select the setting.

Note

If the Control Lock is set to "On," the setting cannot be changed.

For details about Control Lock, see page 32.

To hide the menu

Press the MENU button.

The menu disappears automatically if a button is not pressed for one minute.

To hide the operation buttons

Press the CONTROL button.

About the storage of the settings

The adjusted settings are automatically stored in the monitor memory.

For details on settings for the next power-on, refer to "Power On Setting" (page 33) in the System Configuration menu.

Adjustment Using the Menus

Items

The screen menu of this monitor consists of the following items.

Color Tone Adjustment (page 28)

- Gamma
- Phase
- Chroma
- Brightness
- Contrast
- A.I.M.E.
- A.I.M.E. Structure
- A.I.M.E. Color
- A.I.M.E. Shadow
- Color Temperature
- Gain R Offset
- Gain G Offset
- Gain B Offset
- Bias R Offset
- Bias G Offset
- Bias B Offset
- Mono
- Sharpness H
- Sharpness V
- RGB Range
- Color Space

Screen Control (page 29)

- 4K Scan Size
- HD Scan Size
- SD Scan Size
- 4K Zoom
- Flip Pattern
- SD Aspect
- Image Division
- HDMI Signal Format

3D 3D Setting (page 30)

- 2D/3D Select
- 3D Signal Format
- 3D Disparity
- L/R Priority

PIP / POP (page 30)

- 3 Screen Display
- Clipping Size
- Sub Screen Position

Pattern Skip

Input/Output Configuration (page 31)

- Clone Out
- Port A Input Select
- Port B Input Select
- Input Name
- AUX IN Setting
- Power Supply

System Configuration (page 32)

- Control Lock
- OSD Setting
- Power On Setting
- Power Save
- Serial Remote
- Remote
- Ethernet Setting
- Custom Button
- Panel Display
- A.I.M.E. Setting
- Monitor Information

Initial Setup (page 34)

- Language
- Port A Input Select
- Port B Input Select
- Pattern Skip
- PIP / POP
- Custom Button

Preset (page 34)

- Load User Setting
- Save User Setting
- User Name
- Load Default

Adjusting and Changing the Settings

Color Tone Adjustment menu

The Color Tone Adjustment menu is used to adjust picture quality for each input. You need to use the measurement instrument to adjust the color temperature. Recommended: Konica Minolta color analyzer CA-310 or equivalent

Menu	Setting
Gamma	Select the appropriate gamma mode from "1.8," "2.0," "2.2," "2.4," "2.6," "DICOM," "Highlight," "HLG," or "Auto." "DICOM" is for reference, not for diagnostic purposes. Select "HLG" when the input signal is HDR-HLG.
Phase	Adjusts color tones. The higher the setting, the more greenish the picture. The lower the setting, the more purplish the picture.
Chroma	Adjusts color intensity. The higher the setting, the greater the intensity. The lower the setting, the lower the intensity.
Brightness	Adjusts brightness.
Contrast	Adjusts contrast.
A.I.M.E.	Select the A.I.M.E. ¹⁾ function from "Off," "On," or "Check Mode." When you select "Check Mode," both images of A.I.M.E. "Off" / "On" are displayed. Identical images are displayed side by side in 2D, and the A.I.M.E. function is applied to the image on the right. A single image is divided and displayed side by side in 3D, and the A.I.M.E. function is applied to the image on the right. 1) A.I.M.E.: Enables better image reproduction and display.
Notes - The A.I.M.E. Logo is displayed on the Status Display when the A.I.M.E. function is activated. - The NR setting is applied when the A.I.M.E. function is activated. (page 34) - When the PIP/POP view is set, the A.I.M.E. setting is applied only to the input connector selected on the main display.	
A.I.M.E. Structure	Adjusts contrast enhancement.
A.I.M.E. Color	Adjusts color enhancement.
A.I.M.E. Shadow	Adjusts visibility of the dark area.
Color Temperature	Select the color temperature from "D93," or "D65."
Note If the setting is changed, Gain R/G/B Offset and Bias R/G/B Offset are restored to 0 respectively.	
Gain R Offset Gain G Offset Gain B Offset	Adjust color temperature in detail, and color balance (Gain).
Bias R Offset Bias G Offset Bias B Offset	Adjust color temperature in detail, and color balance (Bias).

Menu	Setting
Mono	Sets the display to a monochrome picture. Set to "On" for a monochrome picture, set to "Off" for a normal (chromatic) picture.
Sharpness H	Adjusts the horizontal sharpness. The higher the setting, the sharper the picture. The lower the setting, the softer the picture.
Sharpness V	Adjusts the vertical sharpness. The higher the setting, the sharper the picture. The lower the setting, the softer the picture.
RGB Range	Select the RGB signal range from "Auto," "Limited," or "Full." If you set to "Auto," this item is set to "Limited" when inputting video signals, and "Full" when inputting PC signals.
Color Space	Select the color gamut from "Auto," "BT.709," or "BT.2020." "Auto" is available only for the 12G-SDI input connector, 3G-SDI input connector, and HDMI input connector.

Screen Control menu

The Screen Control menu is used to set the image display setting for each input.

Menu	Setting
4K Scan Size	Select the scan size for the display of the 4K equivalent signal from "Off," "Mode7," or "Mode8."
HD Scan Size	Select the scan size for the HD signal display from "Off," "Mode2" to "Mode6."
SD Scan Size	Select the scan size for the SD signal display from "Off," or "Mode1."
4K Zoom	Select the display magnification of video signals from "Off," "x1.2," "x1.5," or "x2.0."
Notes - Zoom is available only for the 4K equivalent signal. - When displaying 2 or 3 screen display, zoom is available only in the main screen of PIP view. "4K Scan Size" is not available while displaying with 4K Zoom.	
Flip Pattern	Select the pattern which flips and displays the image from "Off" or "Rotation."
SD Aspect	Select the aspect ratio of the SD signal display from "4:3," or "16:9."
Image Division	Set the image division of the SDI 4K equivalent signal. Select "2S1" to receive images of the 2 sample Interleave system. Select "Square" to receive images of the Square system.

Menu	Setting
HDMI Signal Format	Select the HDMI signal format from "Standard Format," or "Enhanced Format." - Standard Format: Select to use for a standard HDMI format signal. - Enhanced Format: Select to use for a high-resolution HDMI format signal ¹⁾ or HDR-compatible HDMI format signal. 1) Signals in resolutions of 3840 × 2160 or 4096 × 2160 are listed below: 4:4:4 RGB/YCbCr-50P/60P-8bit signals 4:2:2 YCbCr-50P/60P-12bit signals 4:4:4 RGB/YCbCr-25P/30P-10bit signals
Notes - Images may not be output correctly with "Enhanced Format." In that case, select "Standard Format." - To display the corresponding signal with "Enhanced Format," use a Premium High-Speed HDMI cable within a length of 3 meters (Sony product recommended).	

3D 3D Setting menu

Menu	Setting
2D/3D Select	Switches between 2D and 3D displays. 2D: Select to display input signals in 2D. 3D: Select to display input signals in 3D. 3D to 2D Convert: Select to display input signals of 3D in 2D.
Notes - For 3D signal input, set to "3D" or "3D to 2D Convert." - When displaying 2 or 3 screen display, the sub screen displays in 2D.	

Menu	Setting
3D Signal Format	Select the 3D signal format. - Single Cable DS: Select to display signals of the 3G Level-B Dual Stream system in 3D. Use a single SDI cable. - Dual Cable DS: Select to display signals of the Dual Stream system in 3D. Input signals to the 12G-SDI 1/2 connectors by using two SDI cables. - Side by Side: Select to display signals of the Side by Side system in 3D. - Top & Bottom: Select to display signals of the Top & Bottom system in 3D. - Line by Line: Select to display signals of the Line by Line system in 3D. - Auto: Switches automatically among displays of 2D or 3D according to the channel assign information when 3G-SDI signals of the 3G Level-B system are input. When "2D/3D Select" is set to "2D," images are always displayed in 2D.
Notes - For the 4K equivalent signal, signals of the Dual Stream system are not displayed. - For the Interlace and YUV420 signals, "Line by Line" is not available.	
3D Disparity	Sets the setting of the 3D Disparity adjustment.
L/R Priority	Sets the channel displayed in the top of the screen of an effective display. Select "L Line First" or "R Line First."
Note When the setting is wrong, the screens for left eye and right eye are displayed conversely.	

PIP / POP menu

The PIP / POP menu is used to set the display mode for the 2 or 3 screens display and for each input.

Note

3D is not available for the sub display.

Menu	Setting
3 Screen Display	
Port C Display	Sets the display of the sub screen for the third screen. Select "On" or "Off."

Menu	Setting
Port C Input	Sets the input connector for the third screen. Select from among "12G-SDI 1," "12G-SDI 2," "3G-SDI," "Display Port," "HDMI," "DVI-D."
Notes - When inputting the 4K equivalent signal to the main or sub screen, the screen is not displayed even though the 4K equivalent signal is input to the third screen. - When the main screen displays in "3D" or "3D to 2D Convert" for "2D/3D Select," the third screen is not displayed even though "Port C Display" is set to "On."	
Clipping Size	The clipping size can be set when using 2 or 3 screen-display. - HD signal: Select from "Normal," "4:3," "5:4," or "V Full." 4K equivalent signal: Select from "Normal" or "V Full."
Note "V Full" is applied to the main/sub screen of POP1 for 2 screen-display and to the main screen of POP1 for 3 screen-display.	
Sub Screen Position	
PIP	Sets the sub screen position for the 2 or 3 screens display (PIP).
POP	Sets the sub screen position for the 2 or 3 screens display (POP).
Pattern Skip	Sets the pattern that is skipped when changing the displaying pattern by pressing the PIP/POP button on the front panel or the Foot Switch while displaying 2 or 3 screen displays. Set to "Not Skip" or "Skip" for the PIP1, PIP2, POP1, or POP2 pattern.

Input/Output Configuration menu

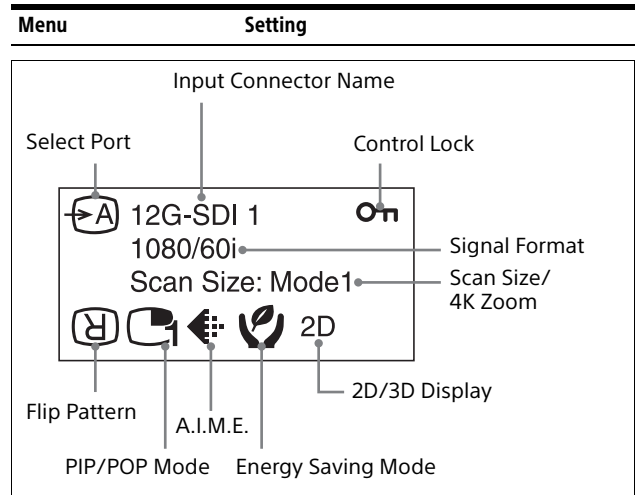
Menu	Setting
Clone Out	
Format	Select the signal format for clone out (SDI signal) from "3840×2160" or "1920×1080."
Frame Rate	Select the frame rate for clone out (SDI signal) from "60Hz" or "50Hz." When "60Hz" is selected, clone out (SDI signal) is output at 59.94 Hz.

Menu	Setting
Color Space	Select the color gamut from "Auto," "BT.709," or "BT.2020." When "Auto" is selected, the color gamut changes according to the resolution set in "Format." When "3840×2160" is selected, clone out (SDI signal) is output with the "BT.2020" setting. When "1920×1080" is selected, it is output with the "BT.709" setting.
2D/3D Output	Select 2D or 3D output mode. 2D: Outputs a 2D image. 3D: Outputs a 3D (Line by Line) image. - Auto: Automatically switches the output mode depending on the display settings of the monitor. 2D images are output when "2D/3D Select" is set to "2D" or "3D to 2D Convert" in the "3D Setting" menu, and 3D images are output when setting to "3D."
L/R Priority	Select the first line when 3D (Line by Line) signals are output. - L Line First: Outputs an L image in the first line. - R Line First: Outputs an R image in the first line.
Note Set this according to the destination 3D monitor. Wrong settings display images for left and right eyes conversely.	
Transmission Gamma	Select the transmission gamma setting for output. - SDR: Outputs with "2.2." - HLG: Outputs with "HLG." - Auto: Outputs an image according to the monitor gamma settings of the main screen. It outputs with HLG when "Gamma" is set to "HLG" in the "Color Tone Adjustment" menu, and outputs with SDR when other settings are selected.
Port A Input Select	Sets the input connector that is skipped when changing the input signal by pressing the PORT A button. Set to "Not Skip" or "Skip" for the 12G-SDI 1, 12G-SDI 2, 3G-SDI, Display Port, HDMI, DVI-D input connector.
Port B Input Select	Sets the input connector that is skipped when changing the input signal by pressing the PORT B button. Set to "Not Skip" or "Skip" for the 12G-SDI 1, 12G-SDI 2, 3G-SDI, Display Port, HDMI, DVI-D input connector.

Menu	Setting
Input Name	Set the name of the 12G-SDI 1, 12G-SDI 2, 3G-SDI, Display Port, HDMI, DVI-D input connector. • Endoscope • Laparoscope • Ultrasound • Recorder • Printer • PACS • C-arm • Room Camera • Surgical Camera • Microscope • Vital Device
AUX IN Setting	
Input Select	Select the connector to input the AUX IN signal from "12G-SDI 1," "12G-SDI 2," "3G-SDI," "Display Port," "HDMI," or "DVI-D."
Power Supply	
DC Output Select	Select the connector for DC output from "Off," "5V OUT," or "12V OUT."
Power Supply Port Select	When the 5 V output power of the DVI-D input connector is output, select "DVI-D." When the 3.3 V output power of the Display Port input connector is output, select "Display Port." When both of them are not output, select "Off."

System Configuration menu

Menu	Setting
Control Lock	
Control Lock	Set when you want to limit the operation of the control panel. Set to "Off" for no limit, "On" to limit.
Lock Mode	Sets the range to limit the operation of the control panel. This setting is available when "Control Lock" is set to "On." • Menu: Limits the menu operations other than the control lock setting. • Menu&Button: Limits all operations other than the control lock setting.
OSD Setting	
Menu Position	Sets the screen position for the OSD menu.
Status Display	Select Port, Input Connector Name, Control Lock, Signal Format, Scan Size, 4K Zoom, Flip Pattern, PIP/POP Mode, A.I.M.E., Energy Saving Mode, and 2D/3D Display are displayed.



- **Auto:**
The format and scan mode are displayed temporarily when the content of Status Display is changed.
- **On:**
The format and scan mode are always displayed.
- **Off:**
The format and scan mode are not displayed.

Notes

- Even if "Status Display" is set to "Auto" or "Off," the flip pattern is always displayed.



- For details about the signal format, refer to no signal and non compatible signal displays.

Input	Signal format display
No signal	No Sync
Non compatible signal (except for DVI-D)	Unknown
Non compatible signal (DVI-D)	Out Of Range

2D/3D Display

Select the display method of OSD to show the currently set display method from among 2D, 3D, or 3D to 2D Convert.

- **Auto:**
The method is displayed for about 3 seconds after the status of 2D, 3D, or 3D to 2D Convert is changed, or when Status Display is displayed.
- **On:**
The method is always displayed.
- **Off:**
The method is not displayed.

Menu	Setting
A.I.M.E. Display	- On: Always displayed while the A.I.M.E. function is activated. - Off: Not displayed.
Language	You can select the menu or message language from the following languages. - English: English - 中文: Chinese - 日本語: Japanese - Italiano: Italian - Español: Spanish - Deutsch: German - Français: French
Power On Setting	
Power On Mode	Select the setting when the monitor is turned on from the following settings. - Last: The setting when the monitor was last turned off. - Default Setting: The setting that is set in the default setting. - User1 - 20: The selected user setting.
Logo	Select the logo display when the power turns on, from "Off," "On - 5sec," or "On - 10sec."
A.I.M.E. Boot	Select the A.I.M.E. setting configured when the monitor is turned on from the following. - Off: The monitor is turned on with the A.I.M.E. setting "Off." - Last: The setting when the monitor was last turned off.
Power Save	
Energy Saving Mode	Select the energy saving mode from the following options. - Off: Turns the energy saving mode off. - On: Dims the backlight.
Sleep Mode	Sets the sleep mode to "Off" or "On." When you set to "On," the monitor enters into power saving mode by turning off the backlight if there is no input signal from the selected connector for more than 1 minute.
Serial Remote	
Serial Remote	Selects the using mode. - Off: Inactivates the serial remote function. - RS-232C: Controls this unit via RS-232C command. - Ethernet: Controls this unit via Ethernet command.

Menu	Setting
Remote	
Remote Mode	Sets the remote function when the REMOTE connector is connected to the optional Foot Switch FS-24. - Off: Inactivates the remote function. - Port A/B: Switches between PORT A and PORT B. - PIP / POP: Switches between the single-image display and 2 or 3 screens display (PIP1/PIP2/POP1/POP2). - Flip Pattern: Switches the flip pattern between "Off" and "Rotation." 2D/3D Select: Switches between 2D and 3D displays. - A.I.M.E.: Switches between "On" and "Off" of the A.I.M.E. function.
Ethernet Setting	
	Sets the Ethernet. - IP Address: Sets the IP Address. - Subnet Mask: Sets the Subnet Mask. - Default Gateway: Sets "On" or "Off" of the Default Gateway. - Address: Sets the Default Gateway. - Save: Saves the confirmed setting. - Cancel: Returns to the previous setting from the confirmed setting.
Custom Button	
	Assigns the function to the CUSTOM 1 or CUSTOM 2 button on the front panel, and can set the following functions to on or off. - No Setting - Scan Size 4K Zoom - Flip Pattern - POP Sub Screen Position - Gamma - Mono - Contrast - Brightness - Chroma - Phase - Clone Out Format - AUX IN 3D Signal Format 3D Disparity - Port C Display
Panel Display	
Backlight	Adjusts the brightness of the display. A higher setting increases the brightness of the display, and a lower setting darkens the display.

Menu	Setting
Backlight Control	- Off: Turns off backlight control. - Standard: Sets the backlight to standard brightness mode. - High: Sets the backlight to high brightness mode. - Auto: Automatically switches between "Standard" and "High" according to the gamma settings.
3D Color Temp Offset	Select the mode to reflect color temperature correction while using 3D glasses. - Auto: Applies the correction value for 3D display. The correction value is not applied for 2D or 3D to 2D Convert display. - On: Applies the correction value regardless of 2D, 3D, or 3D to 2D Convert display. - Off: Does not apply the correction value regardless of 2D, 3D, or 3D to 2D Convert display.
3D R Offset 3D G Offset 3D B Offset	Finely adjusts color temperature correction. Adjusts color bias (gain).
A.I.M.E. Setting	
NR	Sets a noise reduction level of an image when the A.I.M.E. function is activated. A higher setting increases the noise reduction level. For details on the A.I.M.E. function, see page 29.
Monitor Information	
Software Version	Displays the software version.

Initial Setup menu

The Initial Setup menu is used to make the basic settings to use the unit.

Menu	Setting
Language	You can select the menu or message language from the following languages. - English: English - 中文: Chinese - 日本語: Japanese - Italiano: Italian - Español: Spanish - Deutsch: German - Français: French
Port A Input Select	Sets the input connector that is skipped when changing the input signal by pressing the PORT A button. Set to "Not Skip" or "Skip" for the 12G-SDI 1, 12G-SDI 2, 3G-SDI, Display Port, HDMI, DVI-D connector.

Menu	Setting
Port B Input Select	Sets the input connector that is skipped when changing the input signal by pressing the PORT B button. Set to "Not Skip" or "Skip" for the 12G-SDI 1, 12G-SDI 2, 3G-SDI, Display Port, HDMI, DVI-D connector.
Pattern Skip	Sets the pattern that is skipped when changing the displaying pattern by pressing the PIP/POP button on the front panel while using 2 or 3 screens display. Set to "Not Skip" or "Skip" for the PIP1, PIP2, POP1, or POP2 pattern.
PIP / POP	
PIP Sub Screen Position	Sets the sub screen position for the 2 or 3 screens display (PIP).
POP Sub Screen Position	Sets the sub screen position for the 2 or 3 screens display (POP).
PORT A HD Clipping Size/ PORT B HD Clipping Size	Select the clipping size of the HD signal from "Normal," "4:3," "5:4," or "V Full" when displaying 2 or 3 screen displays.
Custom Button	Assigns the function to the CUSTOM 1 or CUSTOM 2 button on the front panel, and can set the following functions to on or off. - No Setting - Scan Size 4K Zoom - Flip Pattern - POP Sub Screen Position - Gamma - Mono - Contrast - Brightness - Chroma - Phase - Clone Out Format - AUX IN 3D Signal Format 3D Disparity - Port C Display

Preset menu

The Preset menu is used to set the User1 to 20 preset setting.

Menu	Setting
Load User Setting	Loads the settings that are stored User1 to 20.
Save User Setting	Stores the current settings to User1 to 20.
User Name	Registers the user names to User1 to 20.
Load Default	Loads the setting data that is set for the default preset settings.

Troubleshooting

This section may help you isolate the cause of a problem and as a result, eliminate the need to contact technical support.

- **“Unknown” or “Out Of Range” is displayed.**
→ Input the supported signal (page 39).
- **The monitor cannot be operated even when you press the buttons.**
The monitor settings cannot be changed.
The monitor cannot be remotely operated.
→ The key protection function is enabled. Set the Control Lock setting to “Off” (page 32).
- **Menu operations and/or input switching cannot be performed while monitoring the signal with AUX IN.** → Stop monitoring the signal.
- **The black bars appear at the upper and lower positions of the display** → When the signal aspect ratio is different from that of the panel, the black bars appear. This is not a failure of the unit.
- **While the logo is displayed, the operation buttons do not operate when pushed.**
→ While the logo is displayed, the operation buttons do not operate. After the logo disappears, the operation buttons can be operated. The logo display time can be set in the menu (page 33).
- **The display is dark.** → When the unit is used in a high temperature environment, the brightness of the display backlight is reduced to lower the temperature inside the unit. When this function is activated, the power indicator flashes in green.

Error Messages

When the following messages appear on the screen, turn off the power and contact an authorized Sony dealer.

Messages	Description
Fan Error	A malfunction occurs in the fan.
Temperature Error	The temperature of this unit has increased.

Specifications

Picture performance

LCD panel	TFT Active Matrix
Pixel efficiency	99.99%
Viewing angle (panel specification)	89°/89°/89°/89° (typical) (up/down/left/right, contrast > 10:1)
Efficient picture size	697.92 × 392.58, 800.757 mm (w/h, dia) (27 1/2 × 15 1/2, 31 5/8 inches)
Resolution	H 3 840 dots, V 2 160 lines
Aspect ratio	16:9

Input

Display Port input connector	Display Port connector (1) SST, HDCP1.3 correspondence
HDMI input connector	HDMI connector (1) HDCP2.3 correspondence
DVI-D input connector	DVI-D connector (1) TMDS single link, HDCP1.4 correspondence
3G-SDI input connector	BNC type (1) SD: SMPTE ST 259 compliant HD: SMPTE ST 292-1 compliant 3G: SMPTE ST 424 compliant
12G-SDI 1/2 input connector	BNC type (2) HD: SMPTE ST 292-1 compliant 3G: SMPTE ST 424 compliant 12G: SMPTE ST 2082-1 compliant
Remote connector	Serial remote D-sub 9-pin (RS-232C) (1) RJ-45 modular connector (ETHERNET) (1)
	Remote Stereo mini jack (1)
AC input connector	100 V to 240 V, 50/60 Hz
DC input connector	DC 26 V

Output

3G-SDI output connector	BNC type (1) Active-through
12G-SDI 1/2 output connector	BNC type (2) Active-through
CLONE OUT connector	BNC type (1)
DC 5V OUT	Round type pin (female) (1)
DC 12V OUT	Round type pin (female) (1)

General

Power	AC IN: 100 V - 240 V, 50/60 Hz, 2.4 A - 1.1 A DC IN: 26 V, 8.8 A (Supplied from AC adaptor)
Power consumption	Maximum: approx. 230 W
Operating conditions	Temperature 0 °C to 40 °C (32 °F to 104 °F) Humidity 30% to 85% (no condensation allowed) Pressure 700 hPa to 1 060 hPa
Storage and transport conditions	Temperature -20 °C to +60 °C (-4 °F to +140 °F) Humidity 20% to 90% Pressure 700 hPa to 1 060 hPa
Accessories supplied	3D Eye Shield Kit (CFV-E30SK) (1) • Frame (1) • 3D shield (3) AC power cord (1) Plug holder for the supplied AC power cord (2) Before Using This Unit (1) Instructions for Use of the 3D Eye Shield Kit (1) CD-ROM (including the Instructions for Use) (1) Service Contact List (1) Information for Customers in Europe (1) M4 × 12 screws (4)
Optional accessories	AC adaptor AC-300MD Monitor Stand SU-600MD 3D Eye Shield Kit CFV-E30SK

2D Eye Shield Kit
CFV-E20SK
Shield Frame
CFV-B100
3D Eye Shield
CFV-E30D
2D Eye Shield
CFV-E20D
Foot Switch
FS-24
Shield Cover
CFV-50SC

Caution

- AC-300MD does not conform to the drip-proof level of protection. Do not operate the unit in a place exposed to liquids, such as a floor in a surgical operating room.
- Do not use the FS-24 in a place (such as an operating room) exposed to liquids, etc., since the FS-24 conforms to IPX3 waterproof Ingress Protection Rating.
In such a place, use a product which conforms to IPX6 or higher.

Medical Specifications

Protection against electric shock:

Class I

Protection against dust penetration and harmful ingress of water:

Only the front side (symbol: **FR**) IP45

Other sides (symbol: **OTH**) IP32

(Only when all the cable covers are attached)

Degree of safety in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide:

Not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide

Mode of operation:

Continuous

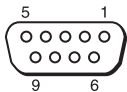
Design and specifications are subject to change without notice.

Notes

- Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.
- SONY WILL NOT BE LIABLE FOR CLAIMS OF ANY KIND MADE BY USERS OF THIS UNIT OR MADE BY THIRD PARTIES.
- SONY WILL NOT BE LIABLE FOR THE TERMINATION OR DISCONTINUATION OF ANY SERVICES RELATED TO THIS UNIT THAT MAY RESULT DUE TO CIRCUMSTANCES OF ANY KIND.

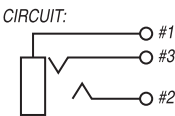
Pin assignment

SERIAL REMOTE (RS-232C) connector
D-sub 9-pin, female



Pin number	Signal
1	NC
2	RX
3	TX
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

REMOTE (stereo mini jack) connector



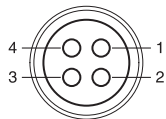
Pin number	Signal
1	GND
2	On (short to sleeve) Off (open)
3	NC

5V 2.0A (DC output) connector



Pin number	Signal
1	5 V
2	NC
3	GND

12V 2.5A (DC output) connector



Pin number	Signal
1	GND
2	NC
3	12 V
4	NC

Available signal formats

The unit is compatible with the signal systems shown below:

Signal format			12G-SDI 1	12G-SDI 2	3G-SDI
SDI Single Link					
SD-SDI					
720×487/59.94j ²⁾	4 : 2 : 2 YCbCr 10bit		×	×	○
720×576/50i	4 : 2 : 2 YCbCr 10bit		×	×	○
HD-SDI					
1920×1080/30p ¹⁾	4 : 2 : 2 YCbCr 10bit		○	○	○
1920×1080/25p	4 : 2 : 2 YCbCr 10bit		○	○	○
1920×1080/24p ¹⁾	4 : 2 : 2 YCbCr 10bit		○	○	○
1920×1080/60i ¹⁾	4 : 2 : 2 YCbCr 10bit		○	○	○
1920×1080/50i	4 : 2 : 2 YCbCr 10bit		○	○	○
1280×720/30p ¹⁾	4 : 2 : 2 YCbCr 10bit		○	○	○
1280×720/25p	4 : 2 : 2 YCbCr 10bit		○	○	○
1280×720/24p ¹⁾	4 : 2 : 2 YCbCr 10bit		○	○	○
1280×720/60p ¹⁾	4 : 2 : 2 YCbCr 10bit		○	○	○
1280×720/50p	4 : 2 : 2 YCbCr 10bit		○	○	○
3G-SDI					
1920×1080/60p ¹⁾	4 : 2 : 2 YCbCr 10bit	Level A / Level B-DL	○	○	○
1920×1080/50p	4 : 2 : 2 YCbCr 10bit	Level A / Level B-DL	○	○	○
1920×1080/60i ¹⁾	4 : 2 : 2 YCbCr 10bit	Level B-DS	○	○	○
1920×1080/50i	4 : 2 : 2 YCbCr 10bit	Level B-DS	○	○	○
1280×720/60p ¹⁾	4 : 2 : 2 YCbCr 10bit	Level B-DS	○	○	○
1280×720/50p	4 : 2 : 2 YCbCr 10bit	Level B-DS	○	○	○
12G-SDI					
3840×2160/60p ^{1) 3)}	4 : 2 : 2 YCbCr 10bit	Mode 1	○	○	×
3840×2160/50p ³⁾	4 : 2 : 2 YCbCr 10bit	Mode 1	○	○	×
4096×2160/60p ^{1) 3)}	4 : 2 : 2 YCbCr 10bit	Mode 1	○	○	×
4096×2160/50p ³⁾	4 : 2 : 2 YCbCr 10bit	Mode 1	○	○	×
SDI Dual Link ⁴⁾					
HD-SDI					
1280×720/60p ¹⁾	4 : 2 : 2 YCbCr 10bit		○	○	×
1280×720/50p	4 : 2 : 2 YCbCr 10bit		○	○	×
1920×1080/60i ¹⁾	4 : 2 : 2 YCbCr 10bit		○	○	×
1920×1080/50i	4 : 2 : 2 YCbCr 10bit		○	○	×
3G-SDI					
1920×1080/60p ¹⁾	4 : 2 : 2 YCbCr 10bit	Level A / Level B-DL	○	○	×
1920×1080/50p	4 : 2 : 2 YCbCr 10bit	Level A / Level B-DL	○	○	×

1) Also compatible with the frame rate 1/1.001.

2) The signal 720×487/60i is described as "480/60i" with the signal format of OSD menu in this manual.

3) This signal is described as "4K equivalent signal" in this manual.

4) Dual Link is enabled only for 3D. Input connector of 12G-SDI 1/2 is used.
Set to 3D Signal Format-Dual Cable DS.

Signal format		Display Port	HDMI	DVI ²⁾
640×480/60p ¹⁾	4 : 4 : 4 RGB 10bit/8bit	○	○	○
	4 : 4 : 4 YCbCr 10bit/8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×

Signal format		Display Port	HDMI	DVI ²⁾
720×480/60p ¹⁾	4 : 4 : 4 RGB 10bit/8bit	○	○	○
	4 : 4 : 4 YCbCr 10bit/8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
1280×720/60p ¹⁾	4 : 4 : 4 RGB 10bit/8bit	○	○	○
	4 : 4 : 4 YCbCr 10bit/8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
1920×1080/60i ¹⁾	4 : 4 : 4 RGB 10bit/8bit	○	○	○
	4 : 4 : 4 YCbCr 10bit/8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
720×576/50p	4 : 4 : 4 RGB 10bit/8bit	○	○	○
	4 : 4 : 4 YCbCr 10bit/8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
1280×720/50p	4 : 4 : 4 RGB 10bit/8bit	○	○	○
	4 : 4 : 4 YCbCr 10bit/8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
1920×1080/50i	4 : 4 : 4 RGB 10bit/8bit	○	○	○
	4 : 4 : 4 YCbCr 10bit/8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
1920×1080/60p ¹⁾	4 : 4 : 4 RGB 10bit/8bit	○	○	○
	4 : 4 : 4 YCbCr 10bit/8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
1920×1080/50p	4 : 4 : 4 RGB 10bit/8bit	○	○	○
	4 : 4 : 4 YCbCr 10bit/8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
3840×2160/60p ^{1) 3)}	4 : 4 : 4 RGB 8bit	○	○	×
	4 : 4 : 4 YCbCr 8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
	4 : 2 : 0 YCbCr 8bit	×	○	×
3840×2160/50p ³⁾	4 : 4 : 4 RGB 8bit	○	○	×
	4 : 4 : 4 YCbCr 8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
	4 : 2 : 0 YCbCr 8bit	×	○	×
3840×2160/30p ^{1) 3)}	4 : 4 : 4 RGB 10bit/8bit	○	○	×
	4 : 4 : 4 YCbCr 10bit/8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
3840×2160/25p ³⁾	4 : 4 : 4 RGB 10bit/8bit	○	○	×
	4 : 4 : 4 YCbCr 10bit/8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
4096×2160/60p ^{1) 3)}	4 : 4 : 4 RGB 8bit	○	○	×
	4 : 4 : 4 YCbCr 8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
	4 : 2 : 0 YCbCr 8bit	×	○	×

Signal format		Display Port	HDMI	DVI ²⁾
4096×2160/50p ³⁾	4 : 4 : 4 RGB 8bit	○	○	×
	4 : 4 : 4 YCbCr 8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
	4 : 2 : 0 YCbCr 8bit	×	○	×
4096×2160/30p ^{1) 3)}	4 : 4 : 4 RGB 10bit/8bit	○	○	×
	4 : 4 : 4 YCbCr 10bit/8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
4096×2160/25p ³⁾	4 : 4 : 4 RGB 10bit/8bit	○	○	×
	4 : 4 : 4 YCbCr 10bit/8bit	○	○	×
	4 : 2 : 2 YCbCr 12bit	×	○	×
800×600/60p ⁴⁾	4 : 4 : 4 RGB 10bit/8bit	○	○	○
1024×768/60p ⁴⁾	4 : 4 : 4 RGB 10bit/8bit	○	○	○
1280×768/60p ⁴⁾	4 : 4 : 4 RGB 10bit/8bit	○	○	○
1360×768/60p ⁴⁾	4 : 4 : 4 RGB 10bit/8bit	○	○	○
1600×1200/60p ⁴⁾	4 : 4 : 4 RGB 10bit/8bit	○	○	○
1920×1200/60p (RB) ⁴⁾	4 : 4 : 4 RGB 10bit/8bit	○	○	○
1920×1200/50p ⁴⁾	4 : 4 : 4 RGB 10bit/8bit	○	○	○
3840×2160/60p (RB) ³⁾	4 : 4 : 4 RGB 10bit/8bit	○	×	×

1) Also compatible with the frame rate 1/1.001.

2) DVI-D input is supported only for 8bit.

3) This signal is described as "4K equivalent signal" in this manual.

4) This signal is described as "Computer signal" in this manual.

PC signal (DVI)

Range of DVI input signal (Compatible with up to 1920 × 1080/60 Hz)

Vertical frequency: 50.0 Hz to 85.1 Hz

Horizontal frequency: 31.0 kHz to 75.0 kHz

Dot clock: 25.175 MHz to 148.5 MHz

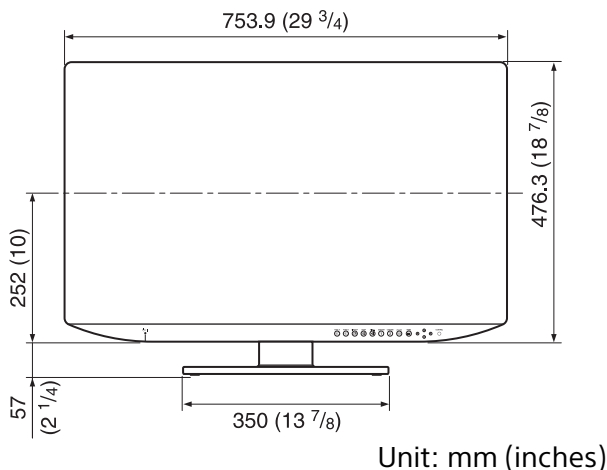
Picture size, phase: automatic discrimination by the DE (Data Enable) signal

Displays normally up to the maximum horizontal resolution 1920 dots.

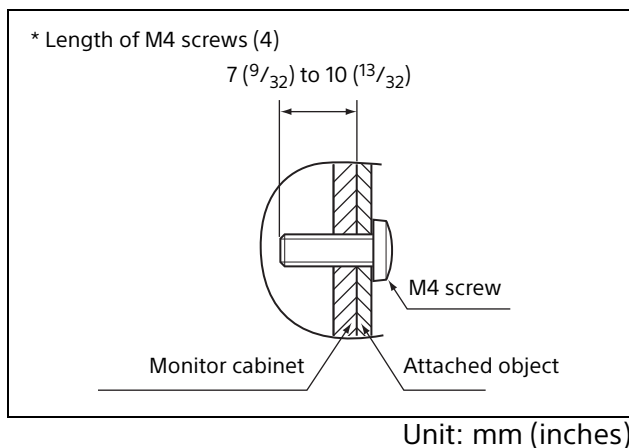
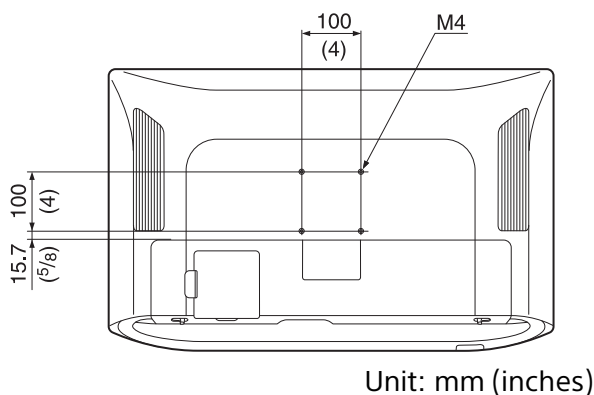
Dimensions

Front

When an optional stand SU-600MD is attached



Rear

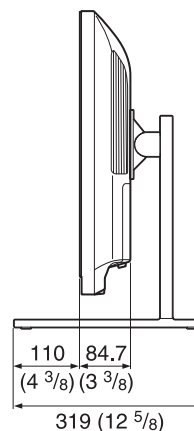


Warning

- Be sure to set the tightening torque value to the following value.
Torque value: 1.2±0.1 N·m
- Make sure the tightening torque value is at this value. If the torque value is not appropriate, the mounting part may become damaged or the screws may become loosened, and in the worst case, it may cause injury or damage to the unit due to the unit falling.
- The supplied screws are accommodated mounts with a thickness of 2 to 5 mm (3/32 to 7/32 inches). When securing them to other objects, refer to the figure shown above and use the screws recommended for the attached object.
- When mounting the unit to objects such as movable mounting arms, if excessive force is applied, the mounting part may become damaged, and in the worst case, it may cause injury or damage to the unit due to the unit falling. To use the monitor with the movable mounting arm, hold the handle of the mounting arm to move the monitor and avoid applying excessive force to the mounting part.

Side

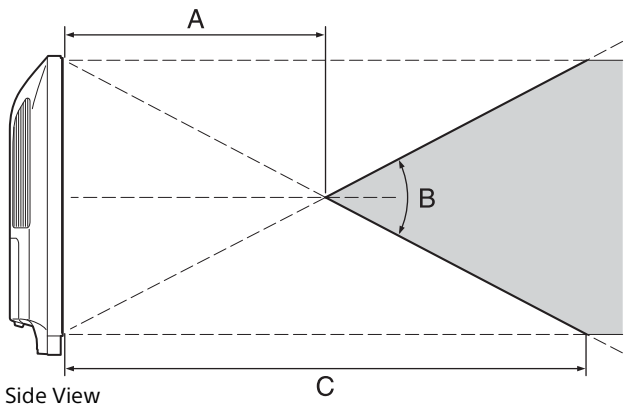
When an optional stand SU-600MD is attached



Mass:

Approx. 10.5 kg (23 lb 2.38 oz) (when the optional stand is not installed)

3D Viewing Angle (vertical)



3D Viewing Angle (vertical)

Crosstalk ratio $\leq 7\%$

A (Typical)	B (Typical)	C (Typical)
690 mm	32°	1 380 mm

Licenses

For details on the license, refer to "Software License Information" on the CD-ROM.



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