Instructions for Use

CuratOR LX3240-MR

8 MP 32" LCD Monitor

Important

Please read the safety information and all information delivered with the product carefully to familiarize yourself with safe and effective usage.

EIZO®

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ **DANGER**
indicates that death or severe personal injury **will** result if proper precautions are not taken.

⚠ **WARNING**
indicates that death or severe personal injury **may** result if proper precautions are not taken.

⚠ **CAUTION**
indicates that minor personal injury can result if proper precautions are not taken.

NOTICE
indicates that material damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Use of EIZO products

⚠ **WARNING**
EIZO products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by EIZO. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of their respective owners. Please refer to the trademarks listed in the appendix. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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1 Introduction

1.1 Contents of this document

This document explains the functionality and the approved use of the CuratOR LX3240-MR. To ensure clarity, it does not contain all detailed information on this product.

The contents of this document are neither part of a previous or existing agreement, commitment or legal relationship, nor does it modify such.

Note
This documentation is available in electronic format only. It can be found on the CD-ROM provided and can be downloaded from www.eizo-or.com.

1.2 Intended use

Intended purpose

The CuratOR LX3240-MR is intended for the display of still images and moving images from various commercially available devices commonly used in a medical environment, in particular radiology. The monitor is optimized for the reproduction of grayscale X-ray images. The monitor is not suitable for mammography.

Intended patient population and medical conditions

The LX3240-MR can be used for the intended purpose irrespective of age, body weight and gender.

The LX3240-MR is intended to be used in combination with or mounted on medical devices. The monitor therefore has no direct contact with the patient.

The LX3240-MR is intended to display still images and moving images from various commercially available (medical) devices commonly used in a medical environment. The monitor cannot be used for direct diagnosis and as main device for monitoring live support equipment.

Intended users

The intended users for the LX3240-MR are qualified healthcare professionals.

Intended environment

The LX3240-MR is intended to be used in professional healthcare facilities such as clinics and hospitals. The monitor can be used in operating rooms (OR) or near patients, but is not limited to them. The monitor is not intended for direct patient contact!

The LX3240-MR is not suited for the following environments:

- Home-based healthcare facilities.
- Near short-wave therapy devices.
- Built into vehicles, including ambulances.

Note
Serious incident Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.

1.3 User groups

User

In the following, healthcare personnel such as surgeons or medical technicians are referred to as the "user".

Service / service personnel

"Service" or "Service personnel" identifies authorized personnel with knowledge of medical imaging technology, local standards for image quality requirements, and safety of medical products, for example a hospital technician or manufacturer of medical devices.

Cleaning staff

"Cleaning staff" refers to personnel responsible for cleaning medical devices.

2 Safety information

2.1 General safety instructions

Correct and safe operation of EIZO devices assume professional transport, storage, installation, and connection, as well as careful operation and service.

The devices may only be used for applications for which they are intended.

For safety reasons, the following precautions must be observed:

⚠ **DANGER**

Please observe all warning information present on the device and in the instructions for use.

There is a danger to life if warnings are not obeyed. Severe personal injury or damage to property may occur.

Observe the safety requirements of EN 60601-1 (IEC 60601-1)

To prevent injury to patients and users, connect the electrical system in accordance with the safety requirements of EN 60601-1 (IEC 60601-1) for "Safety requirements for medical electrical systems".

Connecting the protective earth conductor

If the device is connected to line power, the device must be connected to a protective ground conductor. This is the only way to ensure that the touch leakage current in a first fault event does not exceed 500 µA.
The interruption of the device's protective conductor is considered a first fault event in accordance with EN 60601-1.

Use the following measures to ensure that the leakage currents remain below the specified limits:

- Separators for signal input unit or signal output unit
- Use of a safety isolating transformer
- Use of the additional protective ground terminal

Mounting of the monitor: The monitor's suspension arm must have its own protective ground conductor. This protective ground conductor guarantees, together with the protective ground conductor of the monitor, that the housing leakage current always remains less than 500 µA, even in the event of a single fault condition.

No unauthorized opening of the device / no unauthorized service or maintenance work

The device may only be opened by qualified personnel. Likewise, service or maintenance work may only be carried out by qualified personnel. There is a risk of electric shock.

No liability is accepted for death and injury to persons or damage to property resulting from work carried out by non-qualified personnel.

Do not touch components in the device

If the device is connected to the line power, components in the device are subjected to high voltages. Touching the components may be fatal.

No contact between device and patients

The device is not suitable for direct contact with a patient. The device and patient must never be touched simultaneously. Otherwise there is a danger to life and limb.

⚠ DANGER

Please observe all warning information present on the device and in the instructions for use.

There is a danger to life if warnings are not obeyed. Severe personal injury or damage to property may occur.

Never use defective power cables

If a damaged or unsuitable power cable is used, it could result in a fire or electric shock. Only use power cables with PE contacts approved by the manufacturer.

Disconnect the power cable correctly

When disconnecting the power cable, always do so by holding the plug. Ensure that your hands are dry. There is a risk of electric shock.

Do not insert any objects into the housing

Objects inserted into the housing may result in an electric shock or damage to the device.

Do not place any objects on top of the device

If you place objects on top of the device, this can lead to overheating and fire.

Avoid penetration of liquid

Liquids seeping into the device may result in electric shock or device failure.

⚠ CAUTION

Extensive damage to property may result if the device is not connected correctly

That is why you should observe the warning information:

Connection must be carried out by specialists

Please ensure that all steps are taken to avoid injuries or incorrect diagnoses.

- Only use the video cables specified by the manufacturer for the connection.
- Only use power cables with PE contacts.
- Only use power outlets with PE contacts.
- Do not connect too many devices to a power outlet or extension cable.
- Observe the information provided by the respective manufacturer.
- If required by the application or local regulations, QA software must be used for quality control and documentation.

Connection in the USA and Canada

Molded power supply plugs must comply with the requirements for "hospital grade attachments" CSA Std. C22.2 No. 21 and UL 498.

Connection in China

Only use power cables approved for China. These power cables are identified by the labels "CCC" or "CQC".

Observe the country-specific regulations

Observe all regulations of the country in which the device is used.

NOTICE

Extensive damage to property may result if the device is not connected correctly

That is why you should observe the warning information:

- Desktop installation:
  Place the device on a solid and level surface. The attached stand, as well as the installation surface, must be suitable for the weight of the device.
- For mounting on a wall or ceiling suspension:
  The mount unit must be suitable for the weight of the device.
- For installation in a rack:
  Observe the installation sequence, and provide ventilation for the device.

Provide adequate air circulation

When installing the device, ensure that there is adequate air circulation for operation. The permissible ambient temperature range must not be violated. Otherwise, the device could be destroyed by overheating.

Avoid sources of heat

Do not install the device in the vicinity of sources of heat, such as radiators, heating appliances or other devices that can generate or emit heat.

Do not subject the device to jolting or shocks

The device contains sensitive electronic components that could be damaged by jolting or shocks.

Only switch on a cold device following adaptation to room temperature

If the device is brought into a room with a higher or rising temperature, condensed water will form in and on the device. Do not switch on the device until the condensed water has evaporated. Otherwise, the device could be damaged.

NOTICE

Extensive damage to property may result if the device is not connected correctly

That is why you should observe the warning information:

Transportation only in original packaging

Use the original packaging for transportation, and transport in the correct shipping position. Be sure in particular to protect the monitor LCD modules from shocks.

Care of device / cleaning agents

- Remove water drops immediately; extended contact with water discolors the surface.
- Only clean the surfaces using the cleaning agents referred to in the Instructions for Use.
- Monitor: The screen is extremely sensitive to mechanical damage. Absolutely avoid scratches, shocks, etc.

What to do if the device is faulty

If the following conditions exist, the device must be disconnected from the line power supply and checked by qualified personnel:

- Damage to the plug or power cable.
- After liquid seeps into the device.
- If the device has been exposed to moisture.
- If the device does not function or if a fault cannot be eliminated using the Instructions for Use.
- If the device has been dropped and/or the housing damaged.
- If the device smells of burning or makes peculiar noises.

Be aware of the monitors aging

Note that monitors can fail as a result of aging, and that image properties such as brightness, contrast,and color value can change.

Do not touch the monitor screen

Due to mechanical pressure or electrostatic discharges, touching the screen can result in brief disturbances to the image.

2.2 Product-specific safety instructions

NOTICE
Medical System Do not connect devices which are not part of the medical system.

NOTICE
Radio interference This is a Class B device. The device may cause radio interference or interfere with the operation of other devices in close proximity. In this case the user is encouraged to perform appropriate measures to correct the interference.

Note
No zero error rate LCD monitors do not have a zero error rate. For this reason, the image parameters can change over time, e.g. reduced luminance or changing/fading colors.

Note
Image quality To maintain constant image quality, EIZO recommends cleaning the monitor on a regular basis and checking image properties in accordance with all applicable local regulations.

2.2.1 MRI Safety CuratOR LX3240-MR

MRI Safety Information

The monitor CuratOR LX3240-MR may be safely used in the MR environment under the following conditions. Failure to follow these conditions may result in injury.

Name/Identification of medical device	CuratOR LX3240-MR Order number: 6GF62006CB01
Maximum static magnetic filed [mT] and [gauss]	Do not exceed 100 mT (1000 gauss)
Instructions to be followed before and/or after the MR exam	
Additional instructions or information essential for safe use in the MR environment	The device is a projectile hazard. Equipment operation may be impacted, do not exceed 100 mT (1000 gauss). Tether and fasten the monitor against unintended movement in the vicinity of the magnet.

2.2.2 MRI Safety PSU CuratOR LX3240-MR

MRI Safety Information

The power supply unit PSU CuratOR LX3240-MR may be safely used in the MR environment under the following conditions. Failure to follow these conditions may result in injury.

Name/Identification of medical device	PSU CuratOR LX3240-MR Order number: 6GF62006CB010AA0
Maximum static magnetic filed [mT] and [gauss]	Do not exceed 3 mT (30 gauss)
Instructions to be followed before and/or after the MR exam	
Additional instructions or information essential for safe use in the MR environment	The power supply unit is a projectile hazard. Equipment operation may be impacted, do not exceed 3 mT (30 gauss). Tether and fasten the power supply unit against unintended movement in the vicinity of the magnet.

3 Description

3.1 Scope of delivery

The device and various components are included in the scope of delivery. After unpacking, check the scope of delivery for correctness and completeness.

Note
Keep the packaging material for subsequent transport of the device.

Device

The 8MP 32" LCD Monitor is a CuratOR LX3240-MR. The monitor can be installed on a ceiling suspension, wall mount, or mobile medical system.

Product	**Order number**
CuratOR LX3240-MR	6GF62006CB01

Components

The following components are included in the scope of delivery:

- External 24 VDC power supply unit including a 15 m cable (DC):
  PSU CuratOR LX3240-MR (Order number 6GF62006CB010AA0)
- Safety information
- CD-ROM with the documentation

3.2 Monitor performance features

The CuratOR LX3240-MR has the following features that permit a wide range of applications:

Perfect picture reproduction

The TFT panel used with the LX3240-MR enables a very large viewing angle and high luminance.

The LX3240-MR provides a flicker-free picture, even at low refresh rates. The monitor thus meets the strictest ergonomic requirements.

Fully Automated Stability

The LX3240-MR has a Fully Automated Stability system that keeps luminance constant in accordance with medical standards such as DICOM or Gamma 2.2, for example. The integrated stability system ensures constant luminance using a built-in light sensor in the center of the backlight.

MR compatibility

The LX3240-MR uses a special material to minimize the impacts on magnetic fields and resonators. In addition, the monitor is shielded against strong magnetic environments up to 100 Millatesla (mT). As such, the monitor can be placed in the vicinity of an MR scanner.

The LX3240-MR is a conditionally MR safe medical device. It was only tested for MR compatibility against a 1,5 T scanner, with a magnetic field of up to 100 mT for the monitor and up to 3 mT for the external power supply unit PSU CuratOR LX3240-MR .

Communication interface

As communication interface the DisplayPort or USB connection is available. The operating states of the monitor can be read and switched via the interface, e.g. in Power Safe Mode. In particular, the monitor functionality can be queried using the interface.

Flexible connection and operating options

The LX3240-MR has flexible options for connection and operation:

- One DisplayPort 1.2 input (UHD)
- One DisplayPort 1.1 input (FHD upscaled to UHD)
- Two DVI inputs with HDMI connectors (FHD upscaled to UHD).

Preset Look Up Tables

The LX3240-MR is precalibrated at the factory. A total of five practice oriented Look Up Tables (LUTs) have been preset. This calibration data makes installation and maintenance easier. As such, the monitor can be easily adapted to the respective application and local lighting conditions.

In addition, special application requests from service personnel can be taken into account, such as changing the color location or adapting to ambient brightness.

All Look Up Tables are color matched ex-factory, so that the color impression remains the same across all gray scale levels.

4 Setup and installation

⚠CAUTION

Changes to device

Do not make any mechanical or electric changes to the device. Otherwise the device warranty becomes invalid.

The manufacturer is not liable for changes made to the device.

4.1 Installation site

NOTICE

The power switch and connections must be accessible at all times

When installing and connecting the monitor, ensure that the power switch and the connections are accessible at all times.

NOTICE

Condensation

If the device is brought into a warm environment from a cold one, condensation may form in the device. This could result in a short circuit when switching on the device, damaging it.

- Wait until the condensed water has evaporated, including that inside the device, before you switch it on. This can take several hours.

NOTICE

Overheating

Ventilation holes are located on the rear of the housing.

If the ventilation holes are covered or closed, the heat generated in the monitor will not be dissipated sufficiently.

- Do not cover the ventilation holes.
- Do not close the ventilation holes.
- The minimum distance from the back and side of the monitor to the wall must be 10 cm, and at least 15 cm from other devices.
- The ambient temperature of the monitor must be in the acceptable range of 5 °C ~ 40 °C.
- The ambient temperature of the power supply unit must be in the acceptable range of 5 °C ~ 35 °C.

NOTICE

Dusty environment

The monitor is intended for use in the clean environment of medical diagnostics. In dusty environments, ventilation holes in the back can allow dust to penetrate into the monitor.

In the worst case, deposits are possible which become evident as dark spots in a white picture and result in deterioration of the luminance.

- Protect the monitor from dust, for example through appropriate construction measures at the installation site.

NOTICE

Magnetic environment

The monitor is intended for use in the medical MRI diagnostic environment. The strong magnetic fields generated here can result in malfunctions, personal injuries, and material damage. Please note the following safety measures:

- The monitor and external power supply must be installed in areas with maximum 100 mT (monitor) and maximum 3 mT (external power supply).
- Do not move the monitor or external power supply into areas with higher magnetic fields.
- Secure the monitor and power supply unit against unintended movement in the vicinity of the magnet.

Note

Reflections on the screen

The monitor has an anti-glare surface that is only effective if the screen is clean and grease-free.

- Comply with the specifications for cleaning.
- Position the monitor to avoid reflections on the display area.
  Reflections can be caused by lights, windows, furniture with shiny surfaces, or light-colored walls.
- In order to reduce reflections on the monitor, only use non-dazzling reflector bulbs for the ceiling lighting.

Note

Shocks and impacts

The monitor is sensitive to mechanical influences. Shocks and impacts on the panel surface can lead to total failure.

- Ensure that such mechanical influences at the installation site are avoided.

Note

Movable installation

If the monitor is installed such that it can move, make sure that persons or objects in the facility are not endangered by the monitor's range of movement.

Note

During transport, use the original packaging or service packaging.

4.2 Mounting the monitor

⚠CAUTION

Installation

- To enable an even load distribution, all screws have to be inserted and tightened before placing the screws under load.
- Exceeding the maximum torque for attachment on the holder can cause irreparable damage to the monitor.
- Using screws that are too long or too short can result in instability or damage the monitor.

⚠CAUTION

Holders

- Mounts must be tested and approved by the manufacturer for the weight to be supported.

The monitor has a VESA 100 x 100 or VESA 200 x 100 mounting interface and can be installed in a suitable ceiling suspension or wall mount or a mobile medical system.

Note the following during installation:

- The maximum torque for attaching to the holder is 3 Nm.
- The screws used for attaching to the holder must meet the following requirements:

No.	4
Thread	M4
Strength	8.8 in accordance with ISO 898-1
Insertion depth	5 mm ~ 10 mm

5 Connecting

5.1 Safety information for connection

All safety information and warnings for the device must be observed to ensure danger-free operation.

⚠CAUTION

Changes to device

Do not make any mechanical or electric changes to the device. Otherwise the device warranty becomes invalid.

The manufacturer is not liable for changes made to the device.

⚠CAUTION

Shielding measures

Follow all shielding measures in accordance with local EMC directives. If these guidelines are not observed, device malfunction may result.

⚠CAUTION

Grounding

The permissible leakage current is not exceeded during the first fault event in accordance with EN60601-1. The device is grounded with an additional protective conductor to ensure the greatest possible electric safety.

⚠CAUTION

Excessive currents, short circuits, and ground faults

In accordance with national standards and regulations, protection against excessive currents, short circuits, and ground faults must be incorporated into the building installation.

NOTICE

Changes to device settings

Device settings may only be adjusted by service personnel.

NOTICE

Disconnecting from line power

Always set the power switch to "Off" before disconnecting the device from power. Otherwise the device could be destroyed.

NOTICE
Cable installation Observe the following instructions: • Only shielded cables are to be used for all signal connections. • The connecting cables must not be kinked. • The minimum bending radius of a connecting cable generally equals five times the cable diameter. • Do not route signal cables and power cables next to one another. Otherwise, line power subject to heavy interference could result in reversible pixel errors. • The device must not share a line power supply with motors or valves (interference!). • Externally connected cables can represent a trip hazard. Make sure that all incoming cables are safely routed. • If the device offers strain relief mechanisms for the cables, use them to prevent unintended loosening of connected cables.

5.2 Device connectors

5.2.1 Connector locations

The connectors are located in the connection panel behind a cover on the back of the monitor. The power switch is not covered and is freely accessible.

NOTICE
Isolating the device from mains supply Means of isolating the device from mains supply is by disconnecting the AC power line. • Make sure that the AC power line is easily accessible.

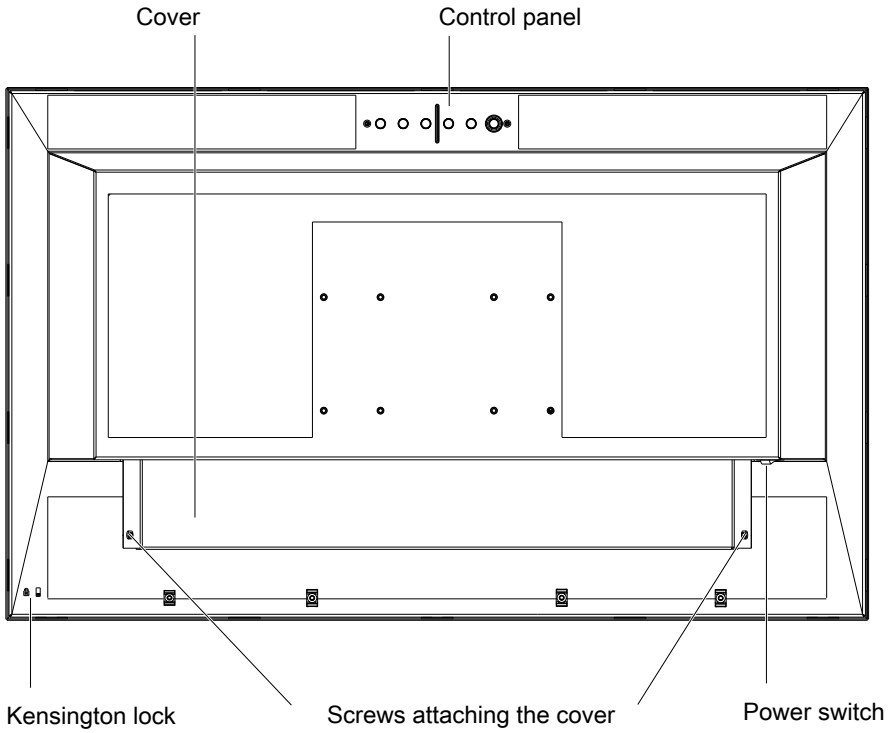


Fig.: Rear view with cover

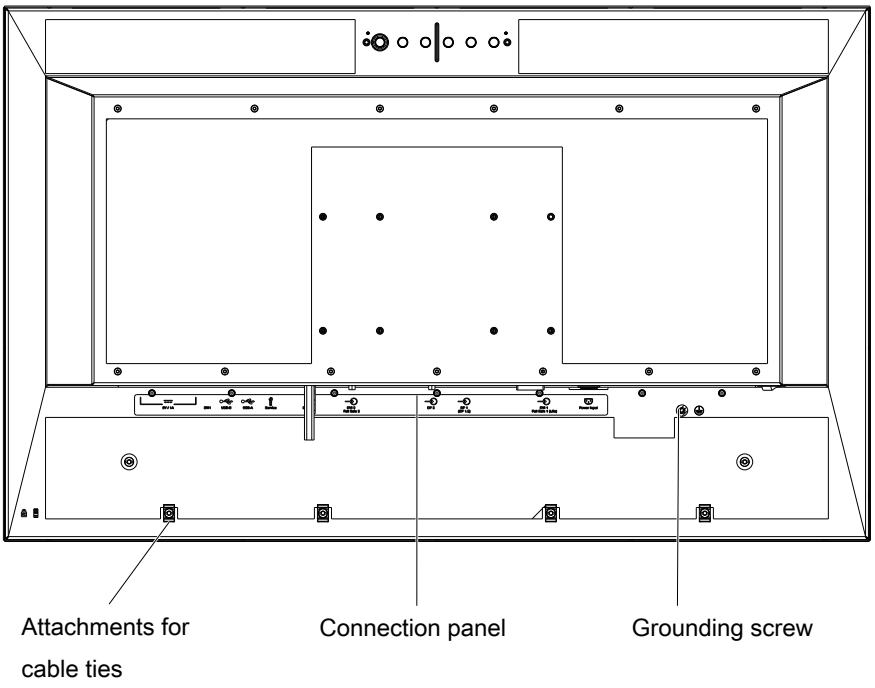


Fig.: Rear view without cover

5.2.2 Connection panel

⚠CAUTION
Opening the connection panel cover • Only service may open the connection panel cover. • The screw torque may not exceed 0.75 Nm +/- 0.05 Nm. • Patients must not be present when the cover is open.

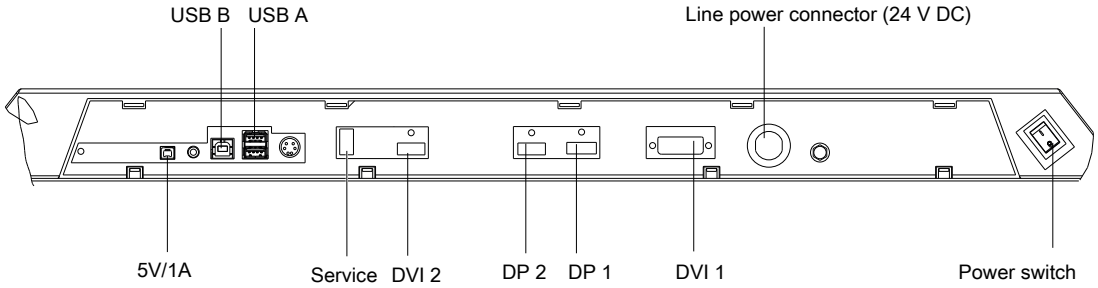


Fig.: LX3240-MR connection panel

5 V Anschluss

The monitor has one 5 V output that can be used to supply one external device.

Service

The type A USB port is used by Service for software updates with a USB storage medium.

USB upstream (type B) and downstream (type A) ports

"USB B" and "USB A" are the connectors of the integrated USB hub. The USB downstream ports (type A) enable communication with external devices. The USB upstream port (type B) enables communication between the monitor and a connected PC.

In addition, "USB A" provides a 5 V power supply that can be used, for example, to charge mobile devices.

Note
"USB A" provides the 5 V power supply even without an active host connection.

DisplayPort and DVI

The monitor has two DisplayPort and two DVI connectors (HDMI connectors) for processing digital input signals.

The DP1 connector is a DP1.2 input for processing signals with a maximum resolution of 3840 x 2160 (UHD). The other inputs upscale FHD signals to UHD.

Line power connector (24 V DC)

24 VDC power is supplied to the device via a four-pin round plug from the external power supply unit included with the delivery.

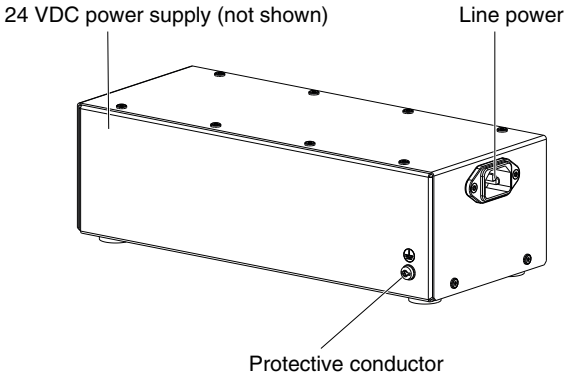


Fig.: External power supply unit (6F62006CB010AA0)

5.2.3 Power connector

⚠CAUTION

Connecting to line power

- The power supply unit may only be used by service personnel.
- The power supply unit must be placed sufficiently away from the monitor.
- To avoid risk of electric shock, this device must only be connected to line power with a protective conductor.
  The power supply unit included with the delivery is designed for line power with a protective conductor.
- Contact the responsible building technician or a qualified electrician if you are uncertain whether the line power is equipped with a protective conductor.
- The power supply cabinet must not be accessible to the user and must be installed in a location whose temperature is below 35°.
- After starting up the monitor, the entire system must fulfill the specifications regarding means of patient protection (MOPP).

⚠CAUTION

Risk of damage to the device

- Only use power cables equipped with a protective conductor and an appliance plug in accordance with DIN 49547, IEC 60320 (max. cable length 3 m, cable type e.g. H05VV-F 3 x 1.0 mm^2). The cable must comply with the safety regulations of the respective country.

⚠CAUTION

Connection in the USA and Canada

Molded power plugs must comply with the requirements for "hospital grade attachments" CSA Std. C22.2 No. 21 and UL 498.

⚠CAUTION

Connection in China

Only use power cables approved for China. These power cables are identified by the labels "CCC" or "CQC".

The power supply connector is located in the monitor's connection panel. Use the external power supply unit included with the delivery as a power supply.

5.3 Connection procedure

⚠CAUTION

Opening the connection panel cover

- Only service may open the connection panel cover.
- The screw torque may not exceed 0.75 Nm +/- 0.05 Nm.
- Patients must not be present when the cover is open.

⚠CAUTION

Connector

Connectors may only be plugged in or removed by Service when the device is switched off.

NOTICE

Do not kink the connecting cables

The connecting cables must not be kinked. The minimum bending radius of the cable generally equals five times the cable diameter.

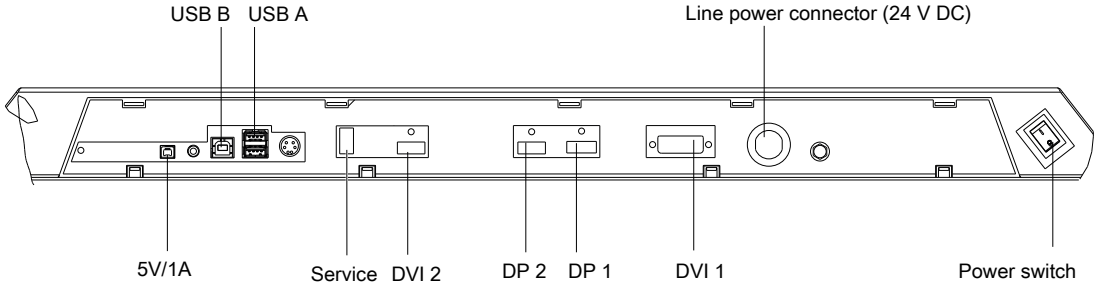
Note

Attachments for cable ties

Use the attachments on the back of the device to secure cables or modules to the device with a cable tie, for example.

Prerequisite

The monitor connection panel must be freely accessible and the monitor must be in a stable installation position.



Procedure

Proceed as follows to connect the monitor:

1. Connect the external power supply unit included with the delivery to the (24 VDC) “line power connector”.

1. Based on the video sources present, connect the signal cables to DisplayPort and DVI inputs.

2. If you want to use the USB hub function: Connect the USB host to the USB-B port and the USB devices to the USB A inputs.

3. If external devices need to be supplied with 5 V voltage and up to 1 A, connect them to the "5V/1A" outputs using suitable cables.

4. Connect the (24 V DC) external power supply unit to the line power.

⇨ The monitor can now be switched on.

6 Commissioning

Note
Factory settings All monitors are optimally preset in the factory, such that changes are not usually required.

6.1 Switching on the monitor and video source

Note
To obtain the best possible results, the video source should support communication via the Auxiliary (AUX) Channel of the DisplayPort.

The monitor and video source can be switched on in any order.

Switching on the monitor before the video source

✓ The video source and power supply are connected correctly.

1. Switch on the monitor.
   ⇨ The operation LED lights up yellow.
2. Switch on the video source.

⇨ If the connected signal can be displayed on the monitor, the operation LED will light green.

Switching on the video source before the monitor

✓ The video source and power supply are connected correctly.

1. Switch on the video source.
2. Switch on the monitor.

⇨ If the connected signal can be displayed on the monitor, the operation LED will light green.

⚠ **CAUTION**
Operation LED does not light green? If the operation LED does not light green after the equipment has been switched on and a video signal has been applied: • check the system for basic connection and operating errors before contacting service personnel.

6.2 Avoiding image sticking

Image sticking may occur with LCD monitors. Image sticking is an effect whereby a faint image of the previous screen contents can be seen after the display contents have changed.

The following measures can reduce or prevent image sticking:

- Use a screen saver with regularly changing images
- Switch off the monitor when it is no longer needed.
- The monitor has an energy saving mode:
  If the application in use supports the energy saving mode, activate it.

Note
Energy saving (Power Management) The monitor supports various energy saving settings, called Power Management (PM). When PM is active, the monitor backlight switches off automatically for example, if the monitor is without a video signal for an extended period. Also observe the operating system manufacturer's instructions regarding power management settings.

6.3 Check for pixel defects

Pixel defects (small bright or dark dots) can occur in LCD monitors. During the manufacturing process, all monitors are checked for the permitted number of defective pixels.

Defective pixels cannot be corrected.

7 Operation

Once installed, operating the monitor consists mainly of switching the power on and off.

After switching on the monitor, the operation LED is lit green continuously. If the LED lights up with another color, the monitor is not operating within normal operation.

Note
Switching off the monitor When the monitor is switched off, the counter for the warm-up time is reset. To ensure stable brightness, a warm-up time of 20 to 30 minutes is recommended, even if the monitor is switched off for a short period of time.

Measures in the event of a failure

Note
Device malfunction in operation If the device is not working properly, check the system for basic connection and operating errors before contacting service personnel.

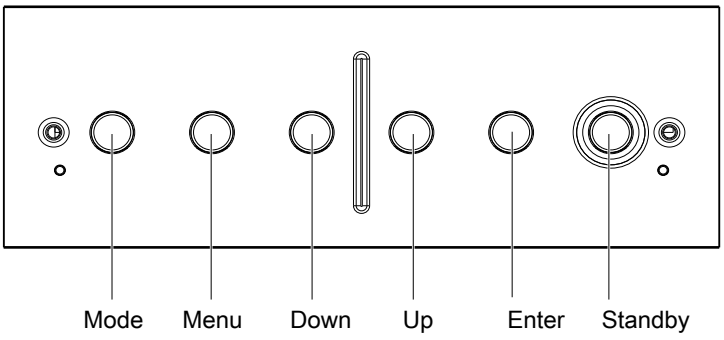
7.1 Operator controls

Note
OSD menu locked The OSD menu can only be opened when it is unlocked. See also Locking or unlocking the OSD menu [▶ 28].

Control panel

The control panel with the keys can be found top center on the back of the housing frame.

Key assignment



Use the keys to select the OSD menu functions:

Key	Action
Standby	• When the OSD is locked no action is possible. When the OSD is unlocked, standby is switched on and off.
Enter	• Opens the next submenu. • Jumps to the element to the right. • Performs the selected function.
Up	• Scroll up in the menu. • Enlarge the selected entry.
Down	• Scroll down in the menu. • Reduce the selected entry.
Menu	• Opens the main menu. • Returns to the higher level menu or closes the top OSD menu. • Jumps to the element to the left.
Mode	• Opens the CAL Switch. • Selects LUT.

7.2 Locking or unlocking the OSD menu

⚠CAUTION

Locking and unlocking the OSD menu

- Only authorized service personnel may lock or unlock the OSD menu.
- The OSD must be locked if inappropriate operation by the user can impact the intended use of the monitor.

To lock or unlock the OSD menu, proceed as follows:

1. Press the "Enter" key once.
2. Then press the "Down" key three times.

The OSD menu is now locked or unlocked, depending on its initial state.

7.3 Description of OSD menu

The OSD menu is used to make settings for operation of the monitor with up to three video sources.

Note
Changing the settings in the OSD menu If you change settings in the OSD menu, the changes are applied immediately and saved. • You can undo the changes when exiting the OSD menu. • If you switch off the monitor with the OSD menu open or switch to standby, any changes made are saved.

The layout of the OSD menu is shown in the following diagram.

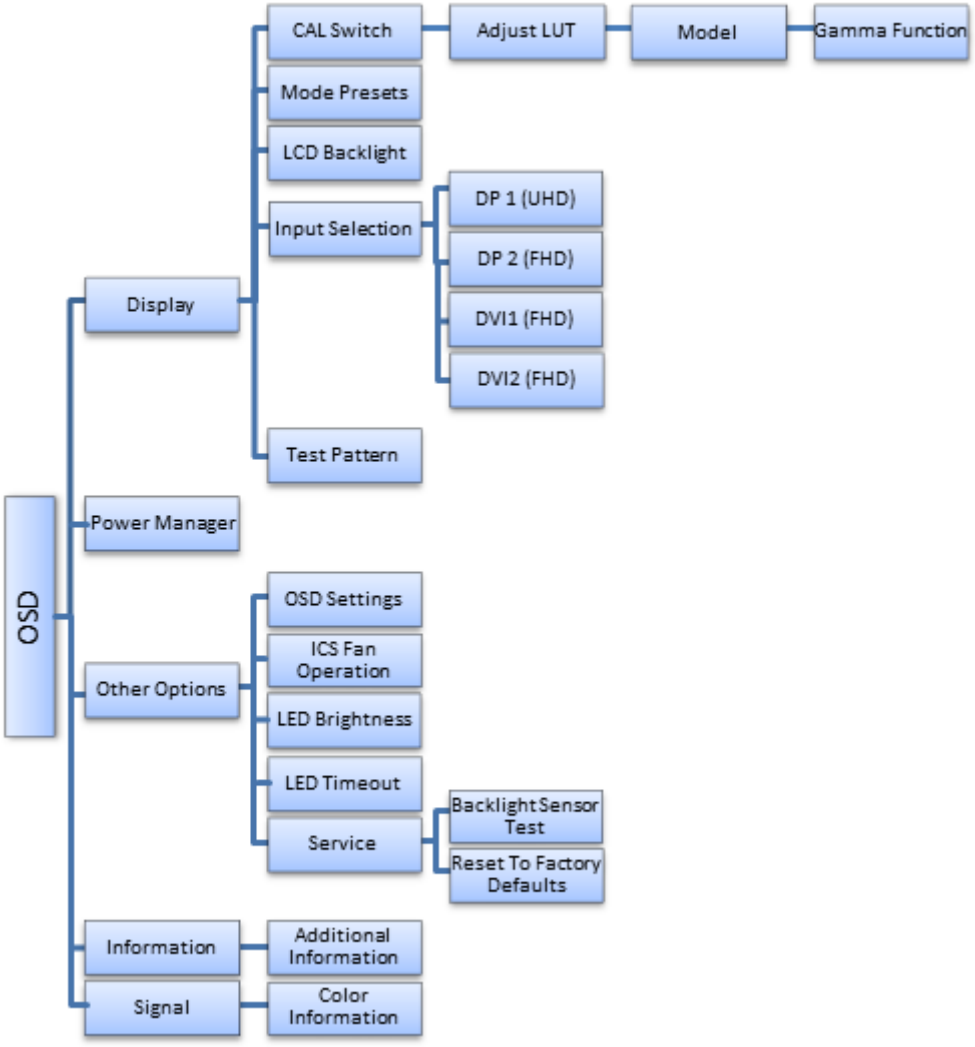


Fig.: OSD menu layout

7.3.1 Display menu

Function	Values	Description
CAL Switch	LUT 1 to LUT 5	**Select the Look Up Table (LUT)** The LUT determines the monitor's gamma curve. By using a different LUT for example, you can highlight specific grayscale levels. The LUT names displayed provide a brief description of the model for which the LUT is valid. **Note:** Select a DICOM LUT to view radiographic images.
Adjust LUT **Note:** Open the function by selecting a LUT under "CAL Switch" and pressing "Enter".	Model Lum Max [cd/m^2] Lum Min [cd/m^2] Lum Ambient [cd/m^2] Color Calibration X Y	**Adjust LUT** Here you can adjust the model and the color and brightness settings of the selected LUT. **CAUTION:** All values may only be changed by trained service personnel. Otherwise, the intended use of the device is no longer ensured. • Lum Max: Set brightness for fully white. • Lum Min: Set value for black. • Lum Ambient: Set value for ambient brightness. • Color Calibration: Cannot be changed. Set to Yes. • X, Y: Color coordinate setting. These coordinates can be changed incrementally. **Note**: After each parameter change, the LUT in the device is immediately recalculated.
Model	CIE1976 / CIE (DIN 6174) / CRT / DICOM / Gamma Function / Log.Lum.Linear / Native	**Set the gamma model** The gamma model, which serves as the basis for recalculating the LUT, can be set here.
Gamma Function	2.0 / 2.2 / 2.5 / 2.7 / 3.0 / 3.3	**Select the gamma function**
Mode Presets	"0" or "1 per LUT"	**Setting the Mode Preset** This function enables you to make any LUT settings in the "CAL Switch" function selectable (1) or non-selectable (0). The names of the selectable LUT settings are taken from the "CAL Switch" function. **Note:** An active LUT setting cannot be replaced.

Function	Values	Description
LCD Backlight	LUT BL Command Active	**Backlight Command Control** If the command is marked, the brightness control based on the gamma curve is active. This means the maximum value of the gamma curve is set in accordance with the values calibrated at the factory. This ensures that the maximum brightness fits with the gamma curve.
	Backlight 0 - 1023	**Changing the brightness of the backlight** **CAUTION:** If you adjust brightness, the gray scale values no longer correspond to the set gamma curve (LUT). As a result, the calibrated values cannot be guaranteed and there could be a loss of information in the displayed images.
Input Selection	DP1 (via DP1.2) DP2 (via DP1.1) DVI1 DVI2	**Selecting the signal input** A signal with 3840 x 2160 resolution can be connected to DP1. FHD signals can be connected to all other inputs. During display, the signals are upscaled to UHD.
Test Pattern	None <Test Pattern selection>	**Select and display test patterns** The monitor contains an internal test pattern generator that can create various test patterns to enable visual checks of the device without software. **CAUTION:** Only use the test patterns during maintenance. **Note:** After selecting a test pattern, select "None" in order to display the video signals of the connected system again.

7.3.2 Power Manager menu

Function	Values	Description
DMPM …	DMPM Enabled DMPM Disabled	**Setting the DMPM mode** The set DMPM mode is active when there is no video signal at the DP and DVI inputs. • Enabled: The backlight is turned off. • Disabled: DMPM signals are ignored. The monitor does not change to energy saving mode.

7.3.3 Other Options menu

Function	Values	Description
OSD Settings	Horizontal 0 - 214 Vertical 0 - 58 Transparency 64 - 255	**Setting the position and transparency of the OSD menu** Horizontal and vertical coordinates establish the position of the OSD menu. Use "Transparency" to change the transparency of the OSD background.
ICS Fan Operation	Standard Operating Room	**Fan control** • In standard mode, the fans run temperature controlled. Above a specific ambient temperature, the fans run at full speed. • The fans are switched off in Operating Room mode. Above a specific ambient temperature, brightness is reduced by half.
LED Brightness	Bright Dimmed	**Set the brightness of the operation LED.** You can lower the brightness of the operation LED to prevent interfering stray light. **Note:** The brightness of the operation LED increases again automatically when an error occurs in the monitor. The color of the operation LED then indicates a possible cause of the error.
LED Timeout	No Timeout Timeout (min) 1	**Setting the operation LED timeout** You can set a set wait time (in minutes) after which the operation LED is switched off to prevent interfering stray light. **Note:** The operation LED switches on again automatically when an error occurs in the monitor. The color of the operation LED then indicates a possible cause of the error.
Service	Backlight Sensor Test Reset to Factory Defaults	**Backlight Sensor Test** When you select this function, a series of brightness settings is checked using the internal sensor. • The these values differ from the defaults, the message "Check with QA SW" is displayed. You can recalibrate the sensor using the QA software. • If the values do not differ from the defaults, "Normal" status is displayed. **Reset to Factory Defaults** Selecting this function opens a dialog box where you can reset the device to the factory settings.

7.3.4 Information menu

Function	Values	Description
(only for display)	Example: P/N 6GF62006CB01 S/N 1000000#### AN ######## Firmware 8.146 Main-FPGA 1.009 Front FPGA 1.005 OSD 3.010	This menu displays the following information regarding the monitor: • Product number P/N • Serial number S/N • Asset number A/N • Installed firmware, FPGA, and OSD versions
Additional Information	Example: Working Hours 151 Temperature (°C) 25	This function displays the following additional information regarding the monitor: • Operating hours • Temperature in the device

7.3.5 Signal menu

<table>
<tr><th>Function</th><th colspan="3">Values</th><th>Description</th></tr>
<tr><td rowspan="4">(only for display)</td><td colspan="3">Example:</td><td rowspan="4">This menu displays information regarding the video signals at the selected inputs. The inputs currently selected by the monitor are shown in inverse color display.
Note: The selected inputs are established either in the "Other Options" -> "Service" -> "System Mode" menu or in the "Display" -> "Input Selection" menu.</td></tr>
<tr><td>Input</td><td>Width</td><td>Height</td></tr>
<tr><td>DP 1</td><td>3840</td><td>2160</td></tr>
<tr><td>DP 2</td><td>1920</td><td>2160</td></tr>
<tr><td rowspan="3">Color Information</td><td colspan="3">Example:</td><td rowspan="3">This function displays information on the color hues and color space.</td></tr>
<tr><td>DP 1</td><td>10 bits</td><td>4:2:2</td></tr>
<tr><td>DP 2</td><td>10 bits</td><td>4:2:2</td></tr>
</table>

7.4 Import updates

Updates can be imported from a USB stick with released update software.

NOTICE
Update requirements • Ensure that the power supply to the monitor is not interrupted during the updates. An interrupted update can result in device failure. • Only use updates released by EIZO to ensure proper function of the device. • The OSD menu must be closed.

Note
New factory defaults The settings saved before an update are set as factory defaults after the update.

To update the firmware, proceed as follows:

1. Connect the USB stick to the Service interface (USB A) in the connection panel.
2. The update software is checked.
   ⇨ If the update software is valid, a start window is displayed.
3. Start the update.
4. Confirm the update.
   ⇨ The approximate duration of the update and a progress bar are displayed.
5. If the message “Pull Stick to finish Updates” is displayed, remove the USB stick from the USB port.

⇨ The monitor automatically restarts once the updates have completed.

8 Cleaning and check settings

8.1 Cleaning

NOTICE
Device maintenance, cleaning and disinfecting • Make sure liquids do not seep into the device. Liquids that seep into the device may result in an electric shock or failure of the device. • The screen is extremely sensitive to mechanical influences. Absolutely avoid scratches, shocks, etc. for this reason. • Clean the screen when dirty using a microfiber cloth and, if necessary, a recommended cleaning agent. Clean the housing parts with a recommended cleaning agent. • Use only tested disinfectants. • If a cleaning agent is sprayed directly onto the screen surface, use a microfiber cloth to remove drops which run down before they reach the edge of the panel. • Remove drops of liquid from the device immediately. Contact with liquids over a longer period can cause discoloration or allow calcium deposits to form on the surface.

Recommended cleaning agents and disinfectants

⚠**CAUTION**
Use of cleaning agents and disinfectants When handling the recommended cleaning agents and disinfectants, observe the information in the respective safety data sheet.

Agent class	Tested cleaning agents and disinfectants	Further examples
Alcohol	Ethyl alcohol, 96% by vol. Mikrozid Liquid, undiluted	Hospiset cloth Meliseptol Rapid Isopropyl alcohol (Isopropanol), 70 %
Aldehyde	Melsitt 10% by vol. Cidex, undiluted	Aldasan 2000 Kohsolin Gigasept FF
Chlorine derivatives	Terrain 0.5% by vol.	Quartamon Med
Disinfectants	Perform 3% by weight Morning Mist (1:64) Terralin Protect 2% by vol. Melisepton rapid; direct Microbac Tissues	
Glucoprotamine	Incidin Plus 8% by vol.	
Guanidine derivatives	Lysoformin 2% by vol.	

Agent class	Tested cleaning agents and disinfectants	Further examples
Quaternary compounds	Incidur spray, undiluted Mikrozid Sensitive Liquid, undiluted	
Standard household washing-up liquid	Tempo	Fairy Ultra, Pril, Palmolive
Pyridine derivatives	Activ spray, undiluted	
Organic acids	Bio-AntiBact med	
Water	Tap water Distilled water	
Spray disinfectant	Nocospray / Nocolyse	

Prohibited cleaning agents and disinfectants

After extended use, the cleaning agents and disinfectants listed can lighten the paint or damage the polarizer.

Agent class	Tested cleaning agents and disinfectants	Further examples
Light gasoline	Cleaning solvent, petroleum spirit close to boiling	Petroleum ether

Note
Cleaning other components Information on cleaning or disinfection of other system components can be obtained from the respective instructions for use.

8.2 Check the settings

⚠CAUTION

Checking the settings

- The settings may only be checked by service personnel.
- The settings must not be checked in the presence of patients.

Check the settings on a regular basis

The picture quality of the monitor changes due to aging of the LCD unit and the backlight.

- Check the monitor settings at regular intervals in accordance with the local guidelines.
- Correct the settings if necessary.

Checking, changing, and calibrating settings

You can change the monitor settings with suitable software and check or calibrate them if necessary using a photometer. For the use of a photometer, the monitor has a serial interface with a 6-pin mini-DIN socket.

Confirming the image quality visually after calibrating the monitor

After calibration, the monitor must be visually inspected to verify successful and correct completion of the calibration procedure. Various test patterns are stored in the monitor and can be activated in the OSD; for example, Measure, Graybars, Cross, Pixel on off, Grayramp, TG18-OIQ.

9 Troubleshooting

The operation LED continuously lights up green when operating normally. In the event of a fault, localize it as follows, based on the screen display and the operation LED.

1. Check the device for the possible causes listed in the following.
2. Carry out the remedial measures before contacting service personnel.

9.1 No image, or image visible in only one half of the monitor

LED	Cause	Remedy
Green	Video signal detected, but the monitor or graphics card is set up incorrectly	• Check the monitor settings (e.g. LUT, brightness, no test pattern, etc.). • Check and adapt the graphics card settings.
	Video signal detected but device defective	• Inform service department
	The DMPM (Digital Monitor Power Management) is active due to an interface command.	• The main computer ("Host") has to transmit a wake-up signal so that an image can be displayed.
Yellow	The video signal is detected, but the picture is only displayed in one half of the monitor.	• Is the "Input Selection" setting correct in the "Display" menu? • If "DP1 / DP2 (via DP1.1)" is set, both DP inputs have to be connected. • If "DP1 (via DP1.2)" is set, input DP1 has to be connected. • Check the signal cable used.
	No error: The "DMPM External Power on" Energy Saving mode set in the "Power Manager" OSD menu is enabled.	• Disable Energy Saving mode.
	No input signal	• Signal cable is not connected
	Incorrect timing is set	• Apply supported timing
Flashing yellow	No error: The "DMPM External Power off" Energy Saving mode set in the "Power Manager" OSD menu is enabled.	• Disable Energy Saving mode. **CAUTION:** Do not set "DMPM External Power off" if you are using the 5 V connectors or DVI receiver modules. The monitor cannot be awakened again when video signals are applied again. To put the monitor back into operation in this case, it has to be turned off at the main switch for approx. 10 seconds and then turned back on.
Red	Internal error	• Inform service department
Dark	Device is off	• Switch on power switch
	Power cable is not inserted or incorrectly inserted.	• Check the power cable
	Power cable is defective	• Replace power cable
	Blown fuse	• Inform service department

9.2 Complete picture visible

LED	Cause	Remedy
Green	No error, correct operating status	-
Flashing yellow	The monitor has not reached the stable luminance level.	• Select a lower brightness level for standard operation. • Inform service department
	Monitor has reached an initial critical temperature level. The nominal value for the backlight control is reduced by half. Brightness is reduced significantly to lower the temperature and avoid potential damage.	• Select a lower brightness level for standard operation. • Check the ventilation and improve conditions if necessary.
	Internal error	• Inform service department
Red	Overtemperature threshold exceeded.	• Switch off the monitor • Check the ventilation and improve conditions if necessary. • Select a lower brightness level for standard operation.
	Internal error	• Inform service department
Flashing green-yellow-red	No error: Update is executed.	
Dark	LED timeout activated	• No error • Switch off the LED timeout setting
	Operation LED is defective	• Inform service department

9.3 Messages during operation

The following messages can be displayed when operating the monitor:

Message	Description	Remedy
Check with QA SW	Error message after Backlight Sensor Test.	Contact service.
No Signal	No valid video signal.	Check the video source connector.
Operation Failed	Execution of the requested operation, for example, the update, was canceled.	Contact service.
Operation Rejected	The requested operation could not be executed.	Observe the requirements for executing the function.
Operation Successful	The update was performed.	-
OSD Locked	Attempts to open a locked OSD menu.	Locking or unlocking the OSD menu [▶ 28]
OSD Unlocked	Unlocking the OSD menu was successful.	-
Please close OSD first	A USB stick with update software was connected with the OSD open.	1. Remove the USB stick. 2. Close the OSD. 3. Connect the USB stick.
Processing … Please Wait	LUT data is being processed.	-
Sensor Status Normal	Message after Backlight Sensor Test without error.	-
Wrong OSD Version	Error message after an attempt is made to import the wrong OSD update.	Use the current OSD update

10 Technical specifications

Note
Applicability of technical specifications All technical specifications are valid after a warm-up period of 30 minutes.

10.1 Monitor characteristics

Feature	**Value**
Type	Color, TFT (IPS Pro)
Active Area	697.3 x 392.2 mm
Screen diagonal	800 mm (31.5")
Resolution	3840 x 2160 (4K UHD)
Refresh rate	60 Hz
Pixel arrangement	RGB vertical stripes
Pixel distance	0.18159 x 0.18159 mm
Contrast ratio	1300:1 typical; 910:1 minimal
Horizontal viewing angle	Typically 178°
Vertical viewing angle	Typically 178°
Backlight	LED
Screen brightness	1000 cd/m² (typically, uncontrolled) 400 cd/m² (calibrated, factory setting)

10.2 Power supply

Monitor CuratOR LX3240-MR

Power connector	24 V DC power supply socket
Line voltage	DC 24 V +/-15%
Current consumption	max. 6 A
Maximum current consumption	155 W
Energy saving mode (DMPM External Power Off)	20 W

External power supply unit PSU CuratOR LX3240-MR

Power connector	IEC 60320 C14 appliance plug
Line voltage (input)	100 V AC ... 240 V AC
Line frequency (input)	47 Hz - 63 Hz
Current consumption	max. 2.2 A - max. 0.9 A (depending on line voltage)
Line voltage (output)	24 V DC / max. 7.5 A, ODU MINI-SNAP L 4-pin
Power	180 W
Manufacturer	SINPRO
Model designation	HPU180A-108

10.3 Inputs / outputs in the connection panel

DP1	DisplayPort DP 1.2, resolution 3840 x 2160 at 60 Hz
DP2	One DisplayPort 1.1, FHD upscaled to UHD
DVI 1 / DVI 2	HDMI socket (transmits a DVI signal) FHD upscaled to UHD
6-pin mini-DIN socket (serial connection)	Communications interface
1 x USB Type A (Service)	For connecting a USB stick for updates
2 x USB Type A (Downstream)	For connecting external USB 2.0 devices
1 x USB Type B (upstream)	Communication with the host
1 x DC 5 V/max. 1 A	For connecting external devices

10.4 Mechanical design

Housing components	Metal
Ventilation openings	In rear panel
Degree of protection according to EN 60529	IP20
Connection panel	On rear panel, under cover
Weight	17.2 ± 1 kg
Dimensions (W x H x D) in mm	761 x 470 x 102

10.5 Climatic conditions

In operation	
Ambient temperature range (monitor)	5 °C ~ 40 °C
Ambient temperature range (power supply unit)	5 °C ~ 35 °C
Temperature gradient	Max. 6 °C/h, no condensation
Humidity	20 ~ 80 %, non condensing, at 25 °C
Air pressure	700 ~ 1060 hPa or up to 3000 m height

For transport and storage (packed)	
Ambient temperature range	-20 °C ~ +60 °C
Temperature gradient	Max. 6 °C/h, no condensation
Humidity	10 ~ 95%, non condensing, at 25 °C
Air pressure	500 ~ 1060 hPa or up to 5600 m height

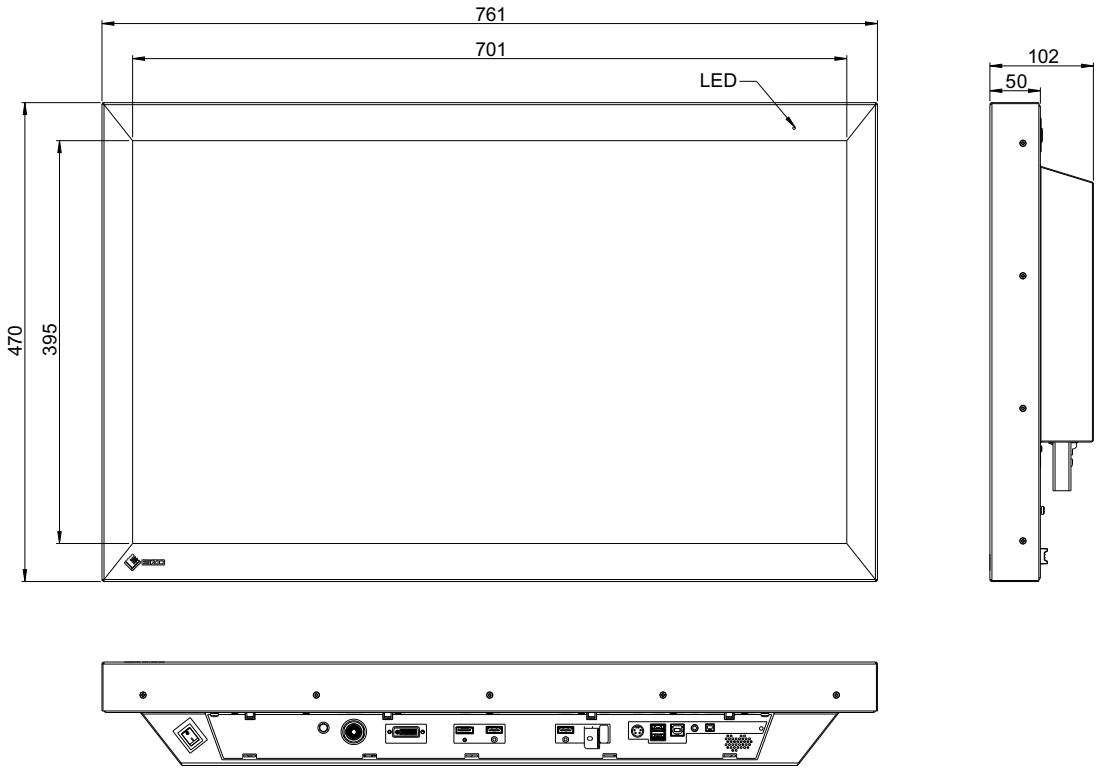
10.6 Safety regulations

Safety regulations	
Safety standards	• IEC/EN 60601-1 • CAN/CSA - C 22.2 No. 60601-1 • ANSI/AAMI ES60601-1
Protection class	Protection class I
Degree of protection	IP20
Medical device classification (EU)	Class I

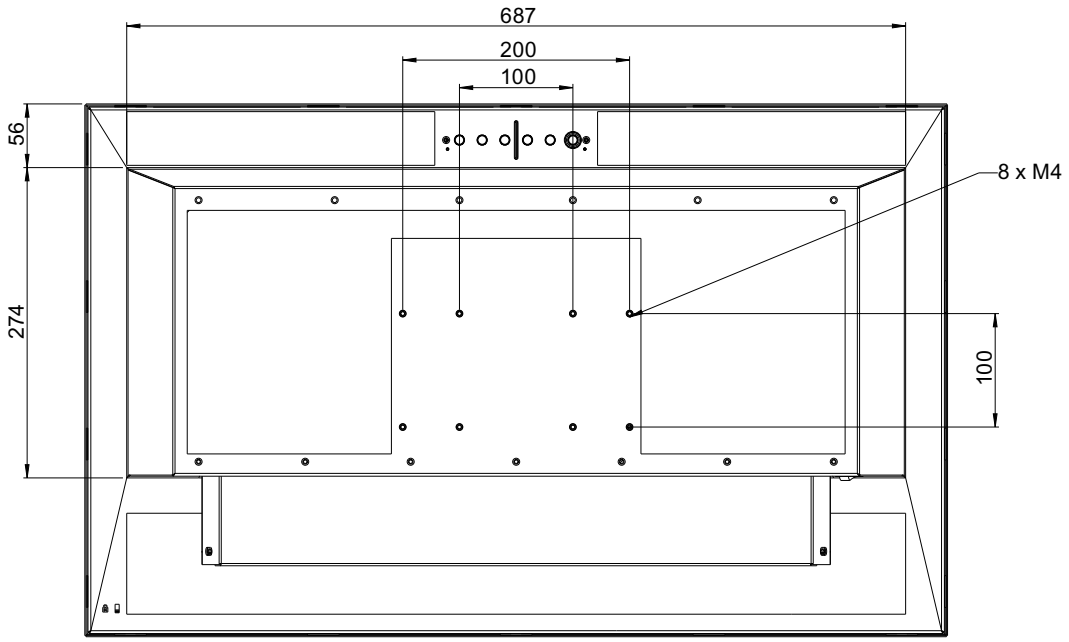
11 Dimension drawings

All dimensions in mm

11.1 View from front, top, and below



11.2 Rear view



11.3 External power supply unit 24 V DC

12 Appendix

12.1 Markings and symbols

Marking / symbol	Meaning
	Symbol for "Caution, observe accompanying documents".
	Symbol for "Dangerous voltage".
CE	CE marking (EU conformity mark).
UK CA	UKCA marking (UK conformity mark).
EU Medical Device	Medical device in accordance with the European medical device ordinance
Electrical Safety MET c us E113208	MET marking, in accordance with U.S. and Canadian national regulations.
	RCM marking for conformity with Australian and New Zealand EMC standards.
	CCC marking, in accordance with Chinese national regulations.
	BIS marking, in accordance with Indian national regulations.
FC	U.S. FCC marking for communication devices.
	Symbol for the manufacturer of medical devices, supplemented by the date of manufacture.
	WEEE marking: Product must be disposed of separately; materials may be recycled.
	Marking according to ACPEIP (China-RoHS).
IP20	Symbol for degree of protection according to DIN EN 60529.
	"On" symbol (voltage).
	“Off” symbol (voltage)
	Input for service calls.
	Symbol for USB.
	Symbol for signal input.
	Symbol for direct current.
	Symbol for "Comply with the instructions for use".
	“Conditionally MR safe” symbol as per IEC 62570

Marking / symbol	Meaning
UK Responsible Person	UK Responsible Person
CH REP	Swiss authorised representative (CH-REP)

12.2 Information on electromagnetic compatibility (EMC)

EIZO monitors were designed for the display of images and normal monitor operation.

⚠WARNING

Special EMC provisions are required for use of the CuratOR LX3240-MR. Installation, assembly, and use must take place in compliance with the following instructions.

- Only use the cables included in the scope of delivery or recommended by the manufacturer. The use of other cables can result in increased electromagnetic radiation and reduced electromagnetic interference immunity of the device, as well as improper use. Cable length: max. 3 m
- The monitor should not be placed on other devices or positioned in their immediate vicinity. If devices have to be operated on or in the immediate vicinity of one another, the monitor or system must be monitored to ensure proper operation for the defined configuration.
- When using a portable RF communications device, maintain a distance of at least 30 cm from all parts of the monitor, including cables. Otherwise, problem-free function of the device cannot be guaranteed.
- Persons connecting additional devices to the signal input or output when configuring a medical system are responsible for ensuring compliance with standard IEC/EN 60601-1-2.

Electromagnetic radiation

The CuratOR LX3240-MR is intended for use in the electromagnetic environments noted below.

Customers and users of the CuratOR LX3240-MR have to ensure that the device is used in such an environment.

Radiation test	Conformity	Information regarding the electromagnetic environment
RF radiation CISPR11/EN 55011	Group 1	The CuratOR LX3240-MR uses RF radiation for internal operation only. For this reason, the RF radiation is very low and is therefore unlikely that the monitor will cause interference in electronic devices in the immediate vicinity.
RF radiation CISPR11/EN 55011 GB9254	Class B	The CuratOR LX3240-MR is approved for use in a number of environments. This includes residential areas and areas connected directly to the public low-voltage grid, such as private homes.
Harmonic currents IEC/EN 61000-3-2 GB17625.1	Class D	
Voltage fluctuations/ flicker IEC/EN 61000-3-3	fulfilled	

Electromagnetic interference immunity			
The CuratOR LX3240-MR was tested with the following compliance levels in accordance with the test requirements for professional healthcare facilities, as established in IEC/EN 6061-1-2. Customers and users of the CuratOR LX3240-MR have to ensure that the monitor is used in such an environment.			
Interference immunity test	**Measurement level**	**Compliance level**	**Information regarding the electromagnetic environment**
Electrostatic discharge (ESD) IEC/EN 61000-4-2	±8 kV contact ±15 kV air	±8 kV contact ±15 kV air	It is recommended to use the device on wood, concrete, or ceramic floors. If the floor is made of synthetic material, the relative humidity should be at least 30%.
Fast transient electric disturbances (bursts) IEC/EN 61000-4-4	±2 kV power lines ±1 kV input / output lines	±3 kV power lines ±2 kV input / output lines	The power supply quality has to correspond to that of typical industrial environments or hospitals.
Surge voltage IEC/EN 61000-4-5	±1 kV line against line ±2 kV line against ground	±2 kV line against line ±4 kV line against ground	The power supply quality has to correspond to that of typical industrial environments or hospitals.
Voltage dips, brief interruptions, and fluctuations of power supply lines IEC/EN 61000-4-11	0 % V_T for 0.5 periods and 1 period 70 % V_T for 25 / 30 periods at 50 / 60 Hz 0 % V_T for 250 / 300 periods at 50 / 60Hz	0 % V_T for 0.5 periods and 1 period 70 % V_T for 25 periods at 50 Hz 0 % V_T for 250 periods at 50 Hz	The power supply quality has to correspond to that of typical industrial environments or hospitals. If the monitor has to continue operation even if the power supply is interrupted, it is recommended to connect the device to an uninterruptible power supply or battery.
Magnetic fields with energy technology frequencies IEC/EN 61000-4-8	30 A/m (50 / 60 Hz)	30 A/m (50 Hz)	The magnetic fields with energy technology frequencies must be in an area that is representative of a typical location in a typical industrial environment or hospitals. The product should be kept at least 15 cm away from the source of power frequency magnetic fields during use.
Note: V_T is the alternating current voltage before application of the measurement level.			

<table>
<tr><th colspan="4">Electromagnetic interference immunity</th></tr>
<tr><td colspan="4">The CuratOR LX3240-MR was tested with the following compliance levels in accordance with the test requirements for professional healthcare facilities, as established in IEC/EN 6061-1-2. Customers and users of the monitor have to ensure that the monitor is used in such an environment.</td></tr>
<tr><th>Interference immunity test</th><th>Measurement level</th><th>Compliance level</th><th>Information regarding the electromagnetic environment</th></tr>
<tr><td rowspan="2">Line-based disturbances caused by RF fields
IEC/EN 61000-4-6</td><td>3 V_{rms}
150 kHz to 80 MHz</td><td>6 V_{rms}</td><td rowspan="2">Portable and mobile RF communications devices may only be operated in the vicinity of the monitor and its components (including cables) when in compliance with the recommended minimum distance. It is determined using the formula for calculating the frequency of the transmitter.
Recommended minimum distance
d = 0.6 √P, 150 kHz to 80 MHz
d = 2 √P, ISM bands between 150 kHz and 80 MHz
d = 0.35 √P, 80 MHz to 800 MHz
d = 0.7 √P, 800 MHz to 2.7 GHz
In this case, "P" stands for the measured maximum nominal output power in watts (W) of the transmitter recommended by the transmitter manufacturer, and "d" for the recommended minimum distance in meters (m).
The field strengths of fixed transmitters according to electromagnetic location measurement[a)] have to be less than the compliance level in each individual frequency range.
Interference can occur when used in the vicinity of devices identified with the following symbol.
  </td></tr>
<tr><td>6 V_{rms}
ISM bands between 150 kHz and 80 MHz</td><td>6 V_{rms}</td></tr>
<tr><td>Electromagnetic RF fields
IEC/EN 61000-4-3</td><td>3 V/m
80 MHz to 2.7 GHz</td><td>10 V/m</td></tr>
<tr><td colspan="4">Note: The higher frequency range applies at 80 MHz and 800 MHz.
Note: Guidelines with respect to line-based interference due to RF fields or electromagnetic RF fields may not apply in all situations. Absorption and reflection by structures, objects, and people impact the propagation of electromagnetic waves. .</td></tr>
<tr><td colspan="4">[a)] The field strengths of fixed transmitters, for example the base station for cordless and mobile telephones, radio, land mobile radio, ham radio, and television cannot be determined precisely in advance. To evaluate the electromagnetic environment using fixed transmitters, an electromagnetic location measurement should be included. If the measured field strength in the environment where the device is used exceeds the applicable RF compliance level, observe the monitor to ensure its proper operation. If improper operation is observed, in some circumstances additional measures may be necessary, such as reorienting or repositioning the device.</td></tr>
</table>

Recommended minimum distance between portable or mobile RF communications devices and the CuratOR LX3240-MR

The CuratOR LX3240-MR is intended for use in an electromagnetic environment in which interference due to electromagnetic radiation is controlled. For other portable and mobile RF communication devices (transmitters), the recommended minimum distance between the portable and mobile RF communication devices (transmitters) and the monitor applies as listed below. This is based on the maximum output power of the communication device.

Maximum nominal output power of the transmitter (W)	**Recommended minimum distance according to the frequency of the transmitter (m)**		
	150 kHz to 80 MHz $d = 0.6 \sqrt{P}$	80 MHz to 800 MHz $d = 0.35 \sqrt{P}$	800 MHz to 2.7 GHz $d = 0.7 \sqrt{P}$
0.01	0.06	0.04	0.07
0.1	0.19	0.11	0.22
1	0.60	0.35	0.70
10	1.90	1.11	2.21
100	6.00	3.50	7.00

For transmitters whose maximum nominal output power is not shown above, the recommended minimum distance "d" in meters (m) can be determined using the formula for calculating the frequency of the transmitter. "P" here stands for the transmitter's maximum measured nominal output power in watts (W), as recommended by the transmitter's manufacturer.

Note: For 80 MHz and 800 MHz, the recommended minimum distance for the higher frequency range applies.
Note: This information may not be applicable in all situations. Absorption and reflection by structures, objects, and people impact the propagation of electromagnetic waves.

Recommended minimum distance between portable or mobile RF communications devices and the CuratOR LX3240-MR

The CuratOR LX3240-MR is intended for use in an electromagnetic environment in which interference due to electromagnetic radiation is controlled. The customer or user of the monitor can help prevent electromagnetic interference by maintaining the recommended minimum distance between portable and mobile RF communications devices (transmitters) and the monitor.
The interference immunity regarding adjacent fields has been confirmed for the following wireless RF communications devices:

Test frequency (MHz)	**Bandwidth[a] (MHz)**	**Service[a]**	**Modulation[b]**	**Maximum power (W)**	**Minimum distance (m)**	**Measurement level (V/m)**	**Compliance level (V/m)**
385	380 - 390	TETRA 400	Pulse modulation[b] 18 Hz	1.8	0.3	27	27
450	430 - 470	GMRS 460 FRS 460	FM ±5 kHz deviation 1 kHz sine	2	0.3	28	28
710	704 - 787	LTE band 13, 17	Pulse modulation[b] 217 Hz	0.2	0.3	9	9
745							
780							
810	800 - 960	GSM 800/900 TETRA 800 iDEN 820 CDMA 850 LTE band 5	Pulse modulation[b] 18 Hz	2	0.3	28	28
870							
930							
1720	1700 - 1990	GSM 1800; CDMA 1900 GSM 1900 DECT LTE band 1, 3, 4, 25 UMTS	Pulse modulation[b] 217 Hz	2	0.3	28	28
1845							
1970							
2450	2400 - 2570	Bluetooth WLAN 802.11 b/g/n RFID 2450 LTE band 7	Pulse modulation[b] 217 Hz	2	0.3	28	28
5240	5100 - 5800	WLAN 802.11 a/n	Pulse modulation[b] 217 Hz	0.2	0.3	9	9
5500							
5785							

[a] For some radio services, only the frequencies for the radio contact from the mobile communications device to the base station (uplink) is included in the table.
[b] The carrier is modulated by a square wave with 50 % duty cycle.

12.3 FCC Declaration of Conformity

For U.S.A. , Canada, etc. (rated 100-120 Vac) Only

FCC Declaration of Conformity

We, the Responsible Party

EIZO Inc.

5710 Warland Drive, Cypress, CA 90630

Phone: +1 (562) 4 31 50 11

declare that the product

- Trade name: EIZO
- Model: CuratOR LX3240-MR

is in conformity with Part 15 of the FCC Rules. Operation of this product is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note

Use the specified cable below or EIZO signal cable with this monitor so as to keep interference within the limits of a Class B digital device.

- AC Cord
- Shielded Signal Cable

Canadian Notice

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est comforme à la norme NMB-003 du Canada.

12.4 China RoHS (Restriction of Hazardous Substances)

液晶显示器 LCD Monitor
型号 Model: 6GF62006C$## ($ = A...Z; ## = 00…99)

根据SJ/T11364-2014《电子电气产品有害物质限制使用标识要求》特提供如下有关污染控制方面的信息。
The following product pollution control information is provided according to SJ/T11364-2014 Marking for the restriction of the use of hazardous substances in electrical and electronic product.

电子电气产品有害物质限制使用标志说明
Explanation of Marking for Restriction of Hazardous Substances

该标志表明本产品含有超过中国标准GB/T26572-2011《电子电气产品中限用物质的限量要求》中限量的有毒有害物质。标志中的数字为本产品的环保使用期，表明本产品在正常使用的条件下，有毒有害物质不会发生外泄或突变，用户使用本产品不会对环境造成严重污染或对其人身、财产造成严重损害的期限。单位为年。

为保证所申明的环保使用期限，应按产品手册中所规定的环境条件和方法进行正常使用，并严格遵守产品维修手册中规定的定期维修和保养要求。

产品中的消耗件和某些零部件可能有其单独的环保使用期限标志，并且其环保使用期限有可能比整个产品本身的环保使用期限短。应到期按产品维修程序更换那些消耗件和零部件，以保证所申明的整个产品的环保使用期限。

本产品在使用寿命结束时不可作为普通生活垃圾处理，应被单独收集妥善处理。

This symbol indicates the product contains hazardous materials in excess of the limits established by the Chinese standard GB/T26572-2011 Requirements of concentration limits for certain restricted substances in electrical and electronic products. The number in the symbol is the Environment-friendly Use Period (EFUP), which indicates the period during which the toxic or hazardous substances or elements contained in electronic information products will not leak or mutate under normal operating conditions so that the use of such electronic information products will not result in any severe environmental pollution, any bodily injury or damage to any assets. The unit of the period is "Year".

In order to maintain the declared EFUP, the product shall be operated normally according to the instructions and environmental conditions as defined in the product manual, and periodic maintenance schedules specified in Product Maintenance Procedures shall be followed strictly.

Consumables or certain parts may have their own label with an EFUP value less than the product. Periodic replacement of those consumables or parts to maintain the declared EFUP shall be done in accordance with the Product Maintenance Procedures.

This product must not be disposed of as unsorted municipal waste, and must be collected separately and handled properly after decommissioning.

有毒有害物质或元素的名称及含量 Name and Concentration of Hazardous Substances

部件名称 Component Name	有毒有害物质或元素 Hazardous substances' name					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
液晶纯平屏幕 LCD Flat Screen	O	O	O	O	O	O
控制板 Controller Board	O	O	O	O	O	O
电源 Power Supply	X	O	O	O	O	O
其他 电路板 Other Circuit Boards	O	O	O	O	O	O
其他（电缆等） Others (cables, etc.)	O	O	O	O	O	O
机架、底盘 Housing, Chassis	O	O	O	O	O	O
附件（信号电缆、输电线等） Accessories (signal cable, power line, etc.)	O	O	O	O	O	O

本表格依据SJ/T 11364 的规定编制。
O: 表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572 标准规定的限量要求以下
X: 表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572 标准规定的限量要求

- 此表所列数据为发布时所能获得的最佳信息.
- 由于缺少经济上或技术上合理可行的替代物质或方案，此医疗设备运用以上一些有害物质来实现设备的预期临床功能，或给人员或环境提供更好的保护效果。

This list is based on SJ/T 11364.
O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572.
X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T 26572.

- Data listed in the table represents the best information available at the time of publication.
- Applications of hazardous substances in this medical device are required to achieve its intended clinical uses, and/or to provide better protection to human beings and/or to environment, due to lack of reasonably (economically or technically) available substitutes.

产品中有毒有害物质或元素的名称及含量 Table of hazardous substances' name and concentration.

12.5 Declaration of compliance with India RoHS

We, EIZO Corporation, hereby declare and guarantee that this product has been designed and manufactured in compliance with the E-Waste management rule 2016 which prohibit the inclusion of the following substances except for the exemptions listed in schedule II.

- Lead, Mercury, Hexavalent Chromium, Polybrominated Biphenyls or Polybrominated Diphenyl Ethers exceeding a concentration of 0.1% by weight in homogeneous materials
- Cadmium exceeding a concentration of 0.01% by weight in homogeneous materials

For information on proper disposal and recycling of the product, please refer to the following website.
eizo.co.in/e-waste.php

12.6 Environmental protection

Comply with all local requirements and laws pertaining to the disposal of devices.

The device is in compliance with directive 2011/65/EU for limiting the use of specific hazardous materials in electric and electronic devices.

12.7 Warranty

Opening of the housing, or electrical or mechanical changes on or in the device, result in cancellation of the warranty. For warranty details, please contact the sales partner from whom you purchased the product. These warranty conditions are neither extended nor limited by the contents of this instruction manual.

12.8 Additional devices

Connected devices such as PCs must meet the relevant safety standards.

12.9 Repairs

Please contact the sales partner from whom you purchased the product.

12.10 Trademarks

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Instructions for Use, 06/2022
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1083692-002