



Frontframe with Protection Screen for RadiForce LS560W FPP5600

Instruction Manual





**Surgical Monitor
Solutions
Accessories**

**Protection Screen
FPP5600**

for RadiForce LS560W




Instruction Manual

Introduction	1
Safety notes	2
Description	3
Application planning	4
Assembly	5
Service and maintenance	6
Technical specifications	7
Dimensional drawings	8
Appendix	A
List of abbreviations	B
Index	C

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
with a safety alert symbol, indicates that minor personal injury can result if proper precautions are not taken.
CAUTION
without a safety alert symbol, indicates that property damage can result if proper precautions are not taken.
NOTICE
indicates that an unintended result or situation can occur if the corresponding information is not taken into account.


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 for the specific task, 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.

Proper use of EIZO products

Note the following:

 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 adhered to. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of the EIZO GmbH. 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.

Table of contents

1	Introduction	7
1.1	Contents of this documentation	7
1.2	Additional documentation.....	7
2	Safety notes	9
2.1	General safety notes.....	9
2.2	Product specific safety notes	13
3	Description	15
3.1	Scope of delivery	15
3.2	Area of application	15
3.3	Important features	16
4	Application planning	17
4.1	Site	17
5	Assembly	19
5.1	Mounting the panel protector	19
6	Service and maintenance	23
6.1	Cleaning	23
7	Technical specifications	25
7.1	Optical characteristics.....	25
7.2	Durability	25
7.3	Mechanical design	25
7.4	Climatic conditions	26
7.5	Mechanical requirements.....	26
8	Dimensional drawings	27
8.1	Dimensions	27
A	Appendix	29
A.1	Warranty.....	29
A.2	Repairs.....	29
A.3	Environmental protection	29
A.4	Contact.....	29
A.1	China RoHS (Restriction of Hazardous Substances)	30
B	List of abbreviations	33
B.1	List of abbreviations / acronyms	33
C	Index	35
C.1	Index	35

Introduction

1.1 Contents of this documentation

This document explains the functionality and the approved application of the:

- **Protection Screen FPP5600 for RadiForce LS560W.**

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.

1.2 Additional documentation



More information


These instructions are available on the Internet page of EIZO GmbH: Internet
(<http://www.eizo.eu>)

Safety notes

2.1 General safety notes

Flawless, safe and reliable operation of the equipment assumes that it has been professionally transported, stored, mounted and installed as well as careful operator control and service. The units may only be used for applications for which monitors are normally used.

For safety reasons, the following precautions must be observed:

 DANGER
<p>There is a danger to life if warnings are not obeyed. Severe personal injury or damage to property may occur. Please observe all warning information present on the monitor and in the instruction manual.</p> <p>Do not open the monitor</p> <p>The monitor may only be opened by trained and qualified personnel. There is risk of an electric shock.</p> <p>Components inside the monitors are at high voltage. Touching these components is extremely dangerous!</p> <p>Servicing and maintenance must be carried out by qualified personnel only.</p> <p>No liability is accepted for damage to property or injury to persons if the monitor is opened by non-qualified personnel.</p> <p>Never use defective power cables</p> <p>A damaged power cable may result in fire or electric shock. Only use power cables approved by the manufacturer.</p> <p>When disconnecting the power supply cable, always do so by holding the plug. Ensure that your hands are dry.</p> <p>Route the cable such that it cannot be tripped over.</p> <p>Do not insert any objects into the housing</p> <p>Objects inserted into the housing may result in damage to the unit or personal injury.</p> <p>Do not place any objects on top of the unit</p> <p>Liquid entering the unit may result in fire or electric shock.</p> <p>Connecting</p> <p>There must be no contact to a patient when handling the connection cables.</p> <p>Overload</p> <p>Do not connect too many devices to one socket or extension cable since this could result in a fire or electric shock.</p> <p>Observe the information provided by the manufacturer.</p>

CAUTION

Improper installation may result in extensive damage to property.

Installation must be carried out by specialists.

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

In order to guarantee that the housing discharge current in the event of a first fault does not exceed 500 μ A, the monitor must be connected to an additional PE connection. The bracket of the monitor's support mechanism has its own grounding (PE conductor). This grounding together with the PE conductor of the monitor means that the housing discharge current always remains less than 500 μ A, even in the event of a first fault. The PE conductors of the monitor and of the separate PC are considered as a first fault event.

2. Use appropriate measures to ensure that the leakage currents in particular remain below the necessary limits:

Appropriate measures include:

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

3. Device and patient must never be touched simultaneously.

4. It must be specifically mentioned that the monitor is only suitable for a patient environment, but not for contact with a patient.

5. Only use video cables with BNC connectors and interface cables which are specified by the manufacturer.

The serial interface cable must have a female Sub-D connector at the computer end.

6. Use power cables with PE contacts. Only plug the device into sockets with protective grounding.

7. For certain applications, the video ground can be connected separately to the PE via the additional PE conductor in the connection panel. **Observe EN 60601-1-1 (IEC 60601-1-1).**

8. Close the connection panel using the cover provided, and secure with the screws.

9. **Note for users:**

The closed connection panel may only be opened by trained and qualified personnel.

10. **Servicing information:**

If housing parts have to be removed for servicing, this must not be carried out in the presence of the patient or user. Only connect monitors with a VESA connection on the rear panel to the power supply when the VESA plate is screwed on.

11. Important:

Note that monitors can fail and that the image properties such as brightness, contrast or color location can change with time.

Please ensure that all steps are taken to avoid injuries or incorrect diagnoses. Regular maintenance and calibration must be carried out. Observe all regulations of the country in which the monitor is used.

CAUTION**Failure to observe warnings may result in substantial damage to property****Ensure sufficient heat dissipation**

Ventilation slots are provided on the housing base, the top of the cover, the rear panel and the side panels. The permissible ambient temperature range (see manual) must not be violated.

- Installation on a desk:

Place the monitor on a hard, level surface at least 10 cm from the wall and 15 cm away from other devices.

- For ceiling suspension:

Distance from wall at least 10 cm. Several monitors can be mounted horizontally or vertically and directly adjacent to one another.

Avoid sources of heat

Do not install the monitor in the vicinity of sources of heat, e.g. radiators, heating appliances or other devices which can generate or emit heat.

Do not subject monitor to excessive shocks

Take care when transporting! **Use the original packaging, and transport correctly oriented!** Be sure to protect the LCD module in particular from shocks.

Care of monitor / Cleaning agents

- The screen surface (front panel) is extremely sensitive to mechanical damage. Absolutely avoid scratches, shocks etc.
- Remove water drops immediately; extended contact with water discolors the surface.
- Clean the screen and the housing using only the cleaning agents referred to in the manual.

2.1 General safety notes

<p>NOTICE</p> <p>Touching the screen surface can result in brief disturbances to the image Due to mechanical pressure or electrostatic discharging, touching the screen can result in brief disturbances to the image.</p> <p>Only switch on cold monitors following their adaptation to room temperature If the monitor is brought into a room with a higher or rising temperature, condensation is formed inside and outside the unit. In such a case, do not switch on the monitor until the condensation has evaporated. The monitor will otherwise be damaged.</p> <p>What to do if the monitor is faulty If the following conditions exist, the monitor must be disconnected from the power supply and checked by qualified personnel:</p> <ul style="list-style-type: none">• Damage to the plug or power cable.• Following the entry of liquid into the unit.• If the unit has been exposed to moisture.• If the unit does not function or if you cannot eliminate a fault using the manual.• If the unit has been dropped and/or the housing damaged.• If the unit smells of burning or produces peculiar noises. <p>Note for installation 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.</p> <p>Note for installation in China Only use the the power cables approved for China. These power cables are identified by the labels "CCC" or "CQC".</p>

See also

Cleaning (Page 23)

Safety regulations (Page 7)

2.2 Product specific safety notes

CAUTION
<ol style="list-style-type: none">1. The protection screen is made of glass, handle with care.2. Only trained persons are allowed to mount the protection screen to the monitor.3. Turn off power of the monitor before the panel protector is mounted.4. Persons who are mounting the panel protector must wear adequate protection to prevent injuries in case the panel protector is dropped.

2.2 Product specific safety notes

Description

3.1 Scope of delivery

Frontframe with Protection Screen, 8 screws M4 x 12 1 Warning Sticker	Order no.: 6GF6200-8AA01-0AA0
---	-------------------------------

3.2 Area of application

This Protection Screen is used to prevent mechanical damage of the LCD-panel on the RadiForce LS560W monitor.

Supported models:

6GF6200-8AA00

6GF6200-8AA01

6GF6200-8AA02

6GF6200-8AA03

3.3 Important features

3.3 Important features

Optical properties

The glass of the panel protector is antireflective coated to avoid reflections on the monitor screen.

Glass has high translucence for high brightness.

Mechanical properties

The panel protector frame is designed to be mounted directly to the monitor without removing the existing front frame of the monitor. Please note, that the weight of the system is increased by approximately 13.5 kg.

Specially for use on the 8 MegaPixel Monitor RadiForce LS560W

The panel protector is specially designed for use on the Radiforce LS560W monitor from EIZO. It protects the monitor from mechanical damage.

Application planning

4.1 Site

Before mounting the panel protector to the monitor check that the following recommendations are fulfilled.

Change of environment

If the unit is brought into a warm environment from a cold one, condensation may form in the unit. The unit should not be switched on until all the condensed water has evaporated, including that inside the unit. This may take several hours, depending on the conditions.

Check if the additional weight is allowed

The panel protector has a weight of approximately 13.5 kg. Ensure that the holder of the monitor is strong enough for this additional weight. Especially ceiling suspensions have to be adjusted to the additional weight.

Clean surface of panel and inside of the protection screen

To avoid foreign objects between monitor panel and glass of the protection screen clean the surface of the monitor panel and the glass of the protection screen. Only use cleaning agents which are allowed.

See also

General safety notes (Page 9)

Cleaning (Page 23)

4.1 Site

Assembly

5.1 Mounting the panel protector

Installation

Before mounting the panel protector to the monitor check if the surface of the monitor panel and the inside of the protection screen is clean. It is recommended to clean the surface of the monitor and the inner side of the protection screen to avoid foreign objects between panel and glass. Only use the cleaning material listed in chapter 6.1.

CAUTION

Two persons are recommended for mounting the panel protector on the monitor.
Wear appropriate protection shoes to prevent injury by dropping the panel protector.
Take care that the monitor panel is not touched during the mounting process.
If the monitor is mounted on a ceiling suspension the ceiling suspension should be placed into a fixed position, so that the monitor can not move during mounting procedure of the Frame with Protection Screen.

When the monitor is mounted on a ceiling suspension the additional weight of the frame with panel protection has to be taken into account. The ceiling suspension has to be adjusted to the new weight.
Weight of the Frame with Protection Screen is 13.5 ± 1 kg.

If the monitor mounted in a ceiling suspension needs to be replaced, the frame with panel protection has to be dismantled before the monitor is removed from the ceiling suspension if the lifting tools have a maximum load of 50 kg.

5.1 Mounting the panel protector

Step 1:

First remove the screws off the monitor as shown in picture 5.1.1. Other screws must remain in the original housing of the monitor.

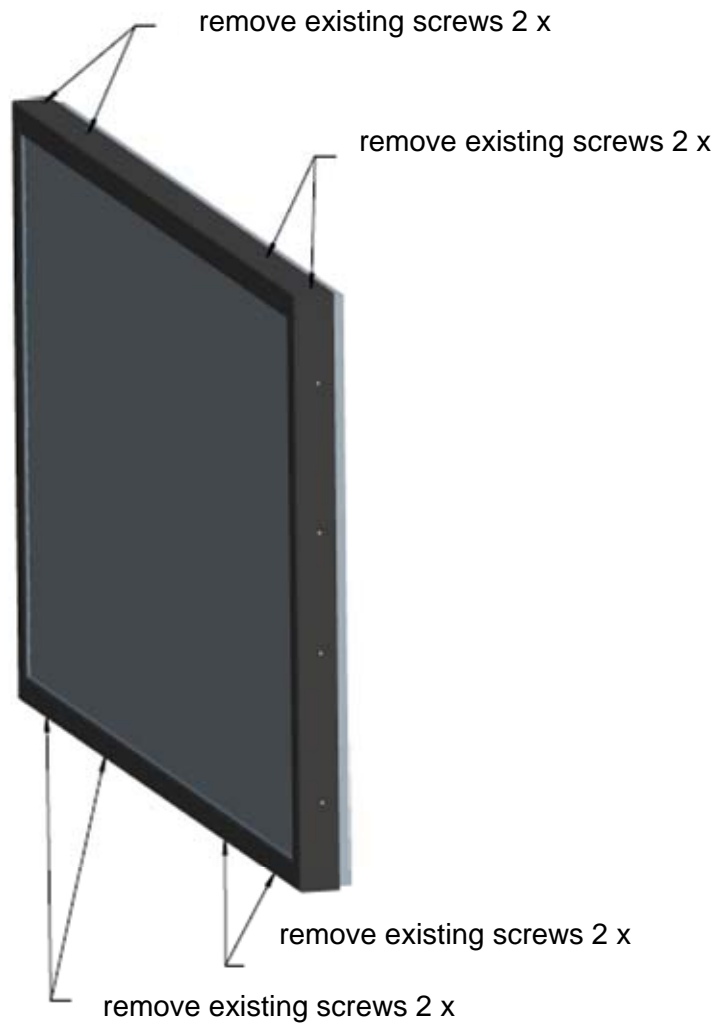
Step 2:

Apply the panel protector to the monitor (picture 5.1.2). Secure the panel protector from dropping until the screws are applied.

Step 3:

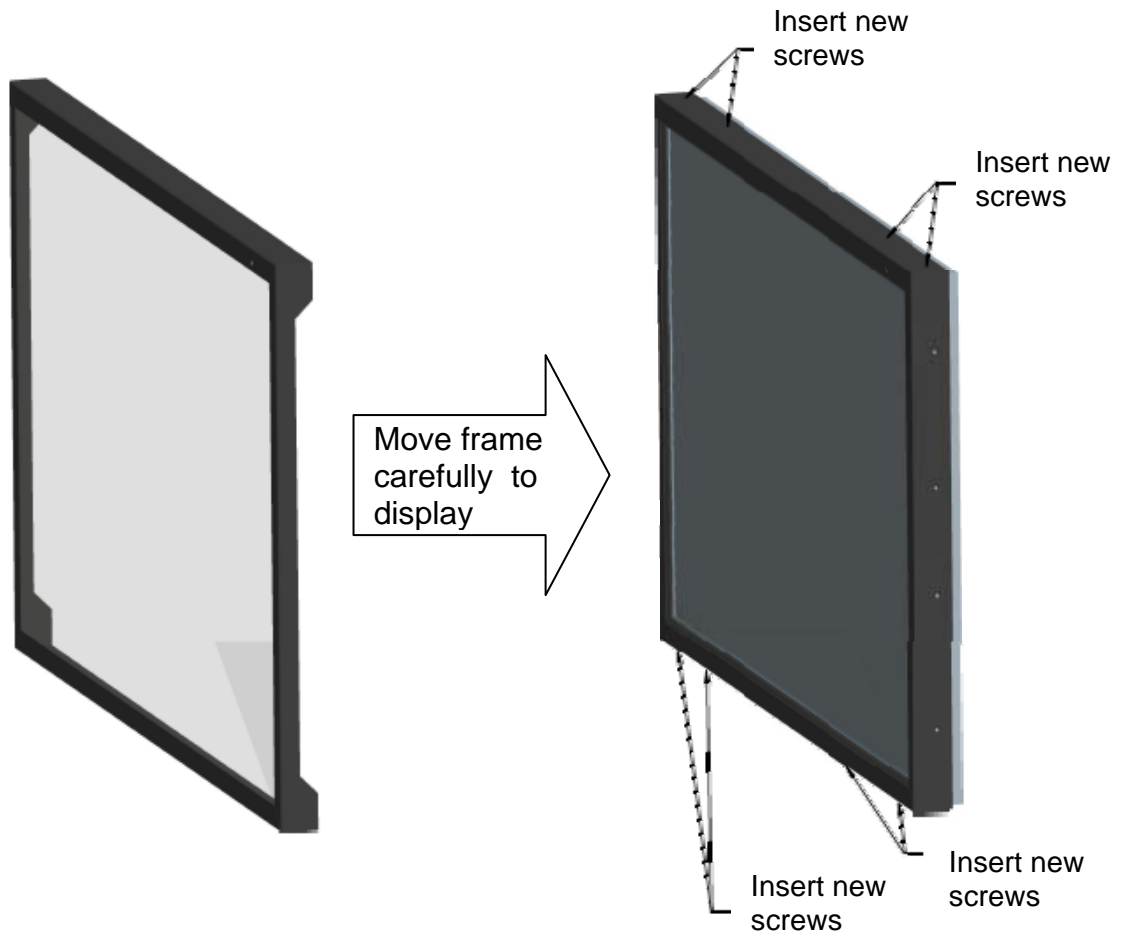
Insert the new screws which are coming with the panel protector and fasten the screws (picture 5.1.3).

The torque for fastening the screws should not be stronger than 1.6 Nm!



Picture 5.1.1

5.1 Mounting the panel protector



Picture 5.1.2

Picture 5.1.3

Screw Type: flat head M4 x 12
 Max torque: 1.6 Nm

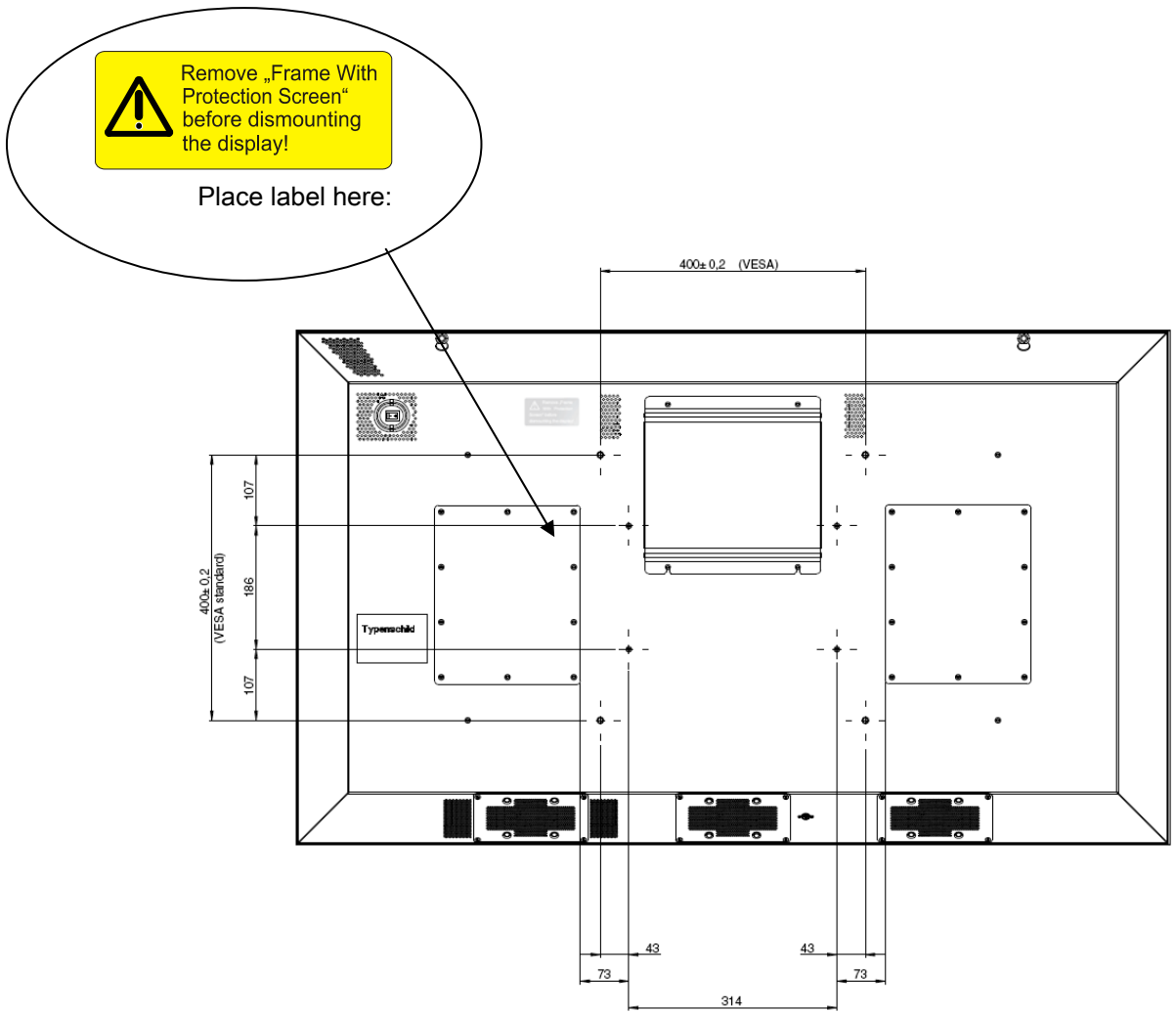
NOTICE

The installation of the Protection Screen FP5600 will reduce the brightness of the monitor by approximately 7%.
 This value has to be taken into account if the monitor will be recalibrated. The maximum brightness with protection screen is 280 cd/m².
 Recalibration to a higher value will decrease life time of the monitor.

5.1 Mounting the panel protector

Step 4 (optional)

If the monitor is mounted in a ceiling suspension the warning label which is delivered with the panel protector has to be placed near the VESA 400 mount, see picture 5.1.4.



Picture 5.1.4

Service and maintenance

6.1 Cleaning

CAUTION
Please note with device maintenance, cleaning and disinfecting Liquid must not penetrate the device. Remove dust from the device using a dry cloth.

List of approved cleaning and disinfection agents:

Cleaning / Disinfection agent	Max. dwell time
1. Terralin protect; 2 % (by volume)	15 min
2. Meliseptol rapid; direct applicated	60 min
3. Microbac ® Tissues; direct applicated	30 min
4. Incidin PLUS; 8 Vol. %	15 min
5. Melsitt, 10 Vol.%	120 min
6. Incidur-Spray, undelated	120 min
7. Perform, 3 .% (bz weight)	120 min
8. Lysoformin, 2 % (by volume)	120 min
9. Spray Activ, undelated	120 min
10. Terralin, 0.5 Vol. %	120 min
11. Ethylalcohol, 96%	180 min
13. Standard household washing-up liquid: Tempo	120 min
15. Distilled water	120 min
16. Spray disinfection with Nocospray / Nocolyse	15 min spray duration 60 min residence time

See also

General safety notes (Page 9)

6.1 Cleaning

Technical specifications

7.1 Optical characteristics

Glass	<ul style="list-style-type: none"> Laminated glass
Spectral transmission	<ul style="list-style-type: none"> >98% (at 575 nm wavelength)
Residual reflection	<ul style="list-style-type: none"> < 1% (at 575 nm wavelength)
Dimensions (W x H x D) in mm	<ul style="list-style-type: none"> 1325 x 783 x 53 mm
Surface imperfection	<ul style="list-style-type: none"> DIN 10110-7 5/1x0,63 (100 x 100 mm)

7.2 Durability

Abrasion resistance (glass only)	According DIN 58 196-5: 50 strokes
Adhesion test (glass only)	According DIN 58 196-6-K2 and MIL-C-48497
Salt spray (glass only)	According DIN EN ISO 9227 CASS: 24h

7.3 Mechanical design

Housing components	<ul style="list-style-type: none"> Liquid-coated metal parts
Degree of protection	<ul style="list-style-type: none"> IP20 in accordance with DIN 40050
Weight	<ul style="list-style-type: none"> 13.5 kg ± 1 kg
Dimensions (W x H x D) in mm	<ul style="list-style-type: none"> 1325 x 783 x 53 mm

7.4 Climatic conditions

Operation

Temperature range	5 °C ... 40 °C ambient temperature
Temperature gradient	5°C/h max., no condensation
Air pressure	700 ... 1060 hPa

Transport and storage (packed)

Temperature range	-20°C ... +60°C ambient temperature
Temperature gradient	5°C/h max., no condensation
Air pressure	500 ... 1060 hPa

7.5 Mechanical requirements

Operation

Vibrations	To EN 60068-2-6
	To EN 60721-3-3
Shock	To EN 60068-2-27 (single impact)
	To EN 60721-3-3 Class 3M2 (single impact)
	To EN 60068-2-29 (permanent impact)
	To EN 60721-3-3 Class 3M2 (permanent impact)

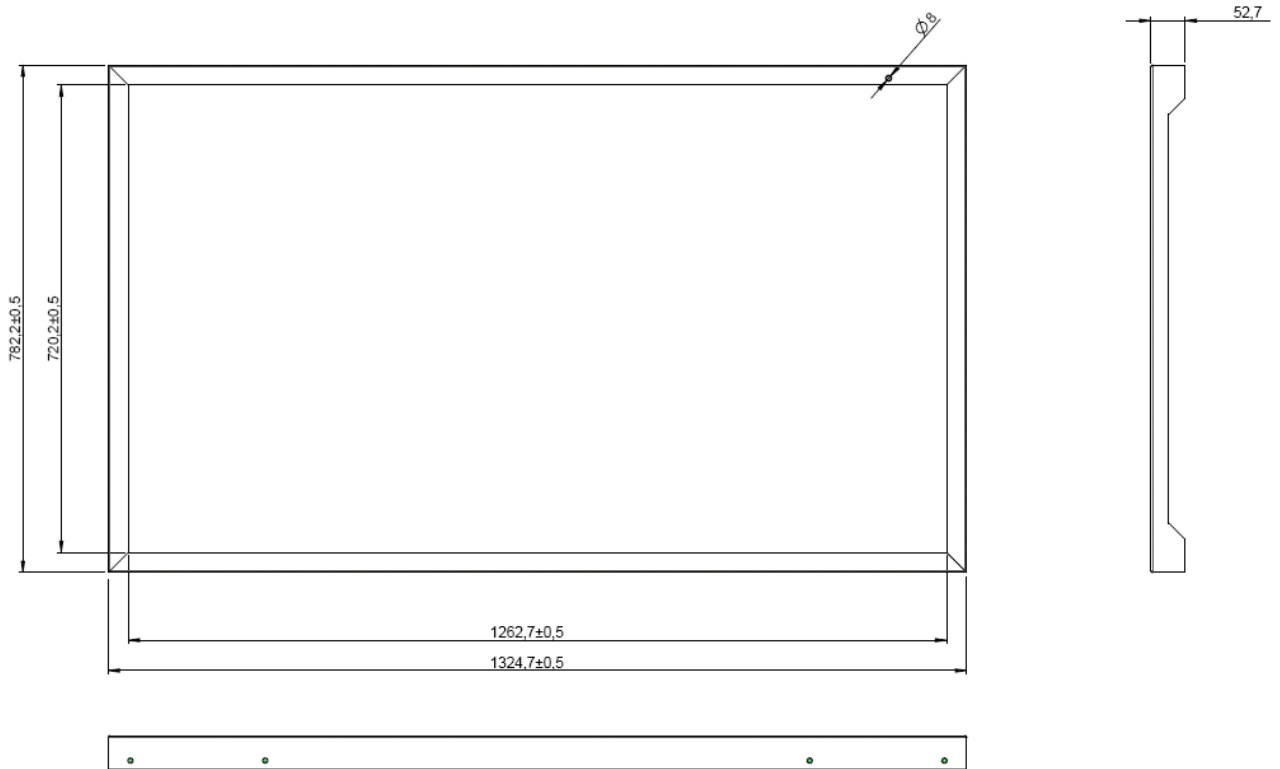
Packed unit

Vibrations	To EN 60068-2-6
	To EN 60721-3-2 Class 2M2
Shock	To EN 60068-2-27 (single impact)
	100 m/s ² , 16 ms (in storage packaging)
	To EN 60068-2-29 (continuous shocks)

Dimensional drawings

8.1 Dimensions

All dimensions in mm



8.1 Dimensions

A

Appendix

A.1 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.

A.2 Repairs

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

A.3 Environmental protection

Please observe all local requirements and laws pertaining to the disposal of monitors.

A.4 Contact

Support during installation and for technical questions:

<http://www.eizo.eu>

A.1 China RoHS (Restriction of Hazardous Substances)

LCD Monitor 液晶显示器

型号 Model: 6GF6200-8A\$0#-##\$# (#=0..1 ; \$=A..Z ; ##=00..99)

根据 SJ/T11364-2006 《电子信息产品污染控制标识要求》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/T11364-2006 Marking for Control of Pollution caused by Electronic Information Products.

电子信息产品污染控制标志说明 Explanation of Pollution Control Label



该标志表明本产品含有超过中国标准 SJ/T11363-2006 《电子信息产品中有毒有害物质的限量要求》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。

为保证所声明的环保使用期限，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，以保证所声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 SJ/T11363-2006 *Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information 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)
机架、底盘 Housing, Chassis	O	O	O	O	O	O

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下
X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 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毒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。

O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.
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 SJ/T11363-2006

- Data listed in the table represents 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.

B

List of abbreviations

B.1 List of abbreviations / acronyms

C	
CRT	Cathode Ray Tube
D	
DDC	Display Data Channel
DIN	German Institute for Standardization
DPMS	Display Power Management Signaling
DVI	Digital Visual Interface
DVI-A	Digital Visual Interface - Analog
DVI-D	Digital Visual Interface - Digital
DVI-I	Digital Visual Interface - Integrated
I	
ESD	Electrostatic Discharge
EMC	Electromagnetic compatibility
EN	European standard
F	
FCC	Federal Communications Commission
H	
HF	High Frequency
L	
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LUT	Look Up Table
O	
OSD	On-screen display
S	

B.1 List of abbreviations / acronyms

SMPTE	Society for Motion Picture and Television Engineers
SVGA	Super Video Graphics Array
T	
TN-S mains	Terre Neutre–Separé
TFT	Thin Film Transistor
V	
VGA	Video Graphics Array
VESA	Video Electronics Standards Association
X	
XGA	Xtended Graphics Array
Units of measurement:	
Cd/m ²	Candela/m ² (photometric measurement for brightness)
ftL	3.426 cd/m ²
ftL	3.426 cd/m ²
ftL	3.426 cd/m ²
ftL	3.426 cd/m ²

Index

C.1 Index

A

- Ambient temperature
 - Operation, 26
 - Transport and storage (packed), 26

C

- Change of environment, 17
- Check if the additional weight is allowed, 17
- Contact, 29

D

- Dimensions, 27

F

- Front frame with protection screen
 - Weight, 25

G

- General safety notes, 9

O

- Order no.:
 - Frame with Protection Screen, 15

P

- Product disposal, 29
- Product-specific safety notes, 13

S

- Scope of delivery, 15
- Support
 - During installation and for technical questions, 29

T

- torque, 20

W

- Warranty, 29
- Warranty conditions, 29

