

# Installation Manual

## CuratOR EX5841

4K UHD 58" Monitor

### **Important**

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



## 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.

 <b>DANGER</b>
indicates that death or severe personal injury <b>will</b> result if proper precautions are not taken.
 <b>WARNING</b>
indicates that death or severe personal injury <b>may</b> result if proper precautions are not taken.
 <b>CAUTION</b>
indicates that minor personal injury can result if proper precautions are not taken.
<b>NOTICE</b>
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

 <b>WARNING</b>
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.

# Table of contents

<b>Legal information</b> .....	<b>2</b>
<b>1 Introduction</b> .....	<b>4</b>
1.1 Contents of this document .....	4
1.2 Intended use .....	4
1.3 User .....	5
<b>2 Commissioning</b> .....	<b>6</b>
2.1 Avoiding image sticking .....	6
2.2 Check for pixel defects .....	6
2.3 Locking or unlocking the OSD menu .....	7
2.4 Overview of the OSD menu .....	7
2.5 "Preset" key .....	9
2.6 Display menu .....	9
2.7 Picture Layout menu .....	12
2.7.1 Window Configuration menu .....	13
2.8 Power Manager menu .....	15
2.9 Other Options menu .....	16
2.10 Information menu .....	18
2.11 Signal menu .....	18
<b>3 Service work</b> .....	<b>19</b>
3.1 Check the settings .....	19
<b>4 Technical specifications</b> .....	<b>20</b>
4.1 Supported timing.....	20
4.1.1 SDI input .....	20
4.1.2 DVI input .....	20
4.1.3 HDMI input .....	21
4.1.4 DisplayPort Input.....	23
4.2 Factory Preset .....	24

# 1 Introduction

## 1.1 Contents of this document

This installation manual explains the start-up and adjustment of the CuratOR EX5841. To ensure clarity, it does not contain all detailed information on this product.

The documentation is intended for service personnel.

You are additionally advised that the contents of this document are neither part of a previous or existing agreement, commitment or legal relationship, nor does it modify such.

Note
<ul style="list-style-type: none"><li>Information regarding functionality and intended use of the device can be found in the Instructions for Use.</li><li>This documentation is available in electronic format only. It can be found on the CD-ROM provided and can be downloaded from <a href="http://www.eizo-or.com">www.eizo-or.com</a>.</li></ul>



## 1.2 Intended use

### Intended purpose

The CuratOR EX5841 is intended for the display of still images and moving images from various commercially available devices commonly used in a medical environment, in particular endoscopic. The monitor is optimized for the reproduction of colour images. The monitor is not suitable for mammography.

### Intended patient population and medical conditions

The EX5841 can be used for the intended purpose irrespective of age, body weight and gender.

The EX5841 is intended to be used in combination with or mounted on medical devices. The monitor therefore has no direct contact with the patient.

The EX5841 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 EX5841 are qualified healthcare professionals.

### Intended environment

The EX5841 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 EX5841 is not suited for the following environments:

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

<b>Note</b>
<b>Serious incident</b>
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

### 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 electrical and signal connection, 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 Commissioning

<b>Note</b>
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<b>Factory settings</b>
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All monitors are optimally preset in the factory, such that changes are not usually required.
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### 2.1 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.

<b>Note</b>
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<b>Energy saving (Power Management)</b>
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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.
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Also observe the operating system manufacturer's instructions regarding power management settings.
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### 2.2 Check for pixel defects

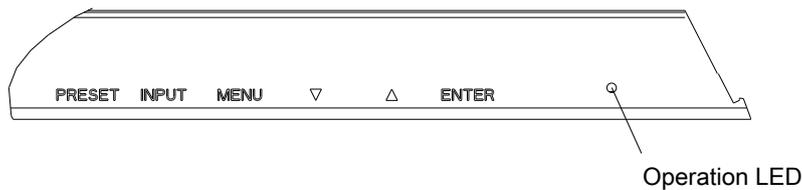
Pixel defects (small bright or dark dots) can occur in LCD monitors. During the manufacturing process, all monitors are checked for the permitted number of defective pixels.

Defective pixels cannot be corrected.

## 2.3 Locking or unlocking the OSD menu

<b>! CAUTION</b>
<b>Locking and unlocking the OSD menu</b> <ul style="list-style-type: none"><li>• Only authorized service personnel may lock or unlock the OSD menu.</li><li>• The OSD must be locked if inappropriate operation by the user can impact the intended use of the monitor.</li></ul>

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



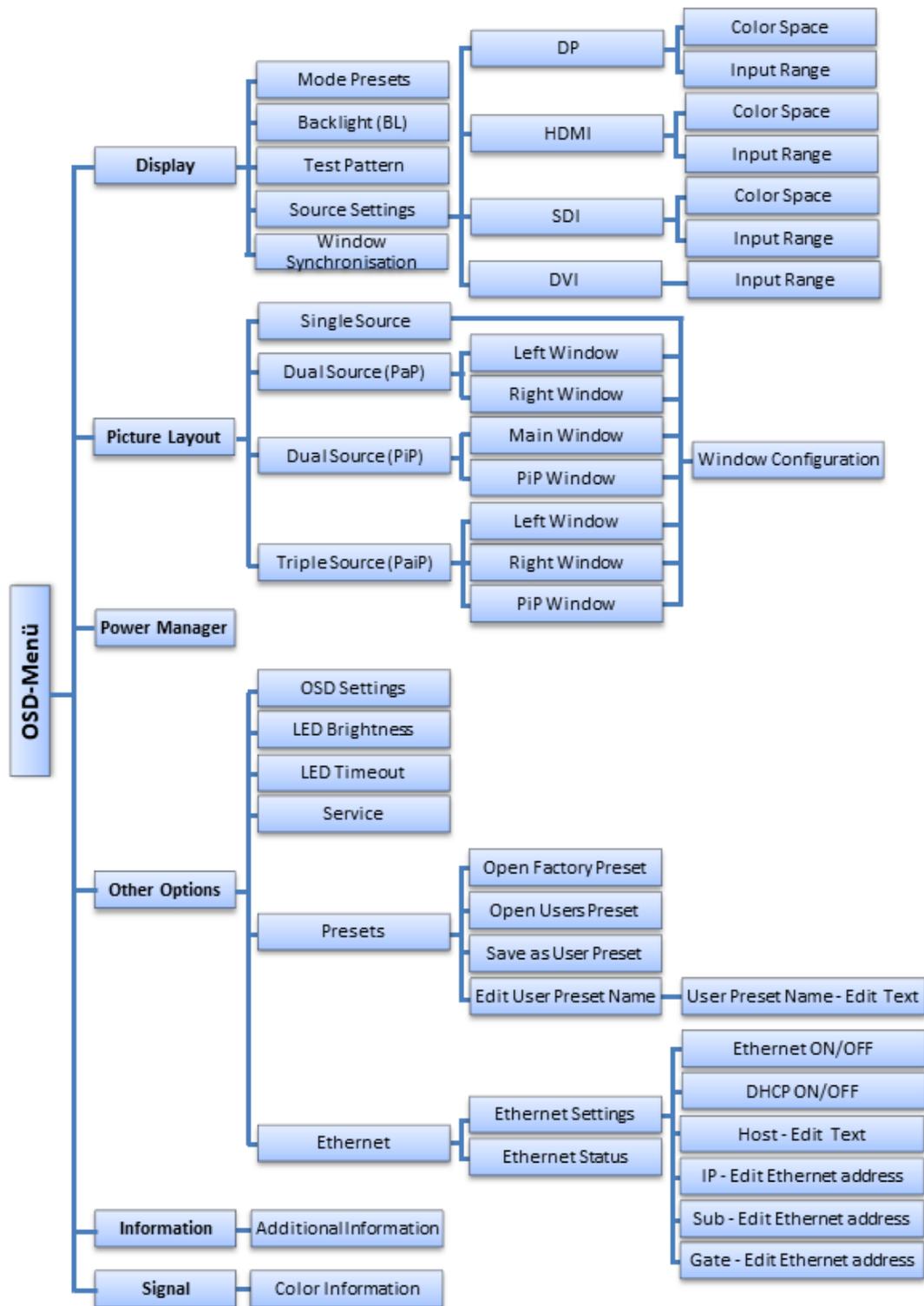
1. Press the "Enter" key on the control panel once.
2. Then press the "Down" key three times.

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

## 2.4 Overview of the OSD menu

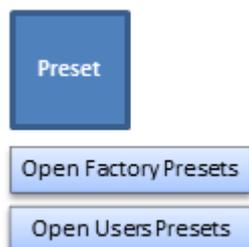
The OSD menu is used to make settings for operation of the monitor.

<b>Note</b>
<b>Dynamic OSD</b> <p>The OSD Menu is dynamic in nature. Depending on the active signal and user settings, some functions are hidden.</p>



## 2.5 "Preset" key

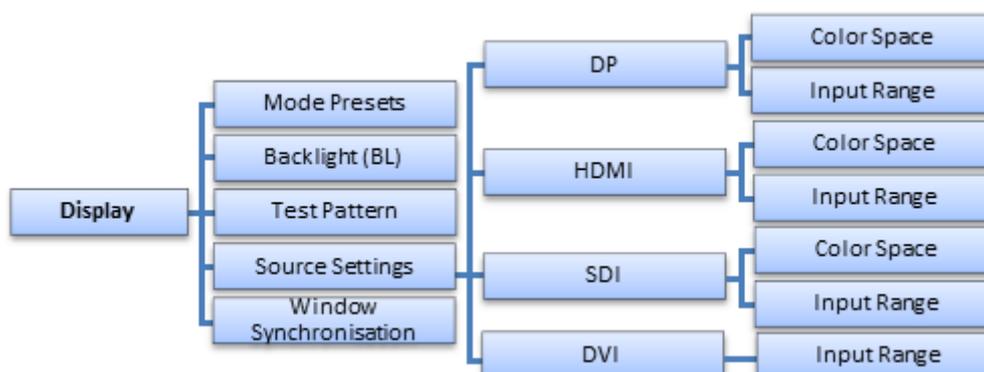
Use the "Preset" key on the control panel to open the menu for selecting a preset.



Function	Values	Description
Presets	Open Factory Presets	Select one of the eight factory presets for operation. See also <a href="#">Factory Preset [▶ 24]</a> .
	Open User Presets	Select one of the eight user presets for operation.

Up to eight presets can be stored in the monitor. The video input, input range, the LUT used, and optionally the OSD position are stored.

## 2.6 Display menu



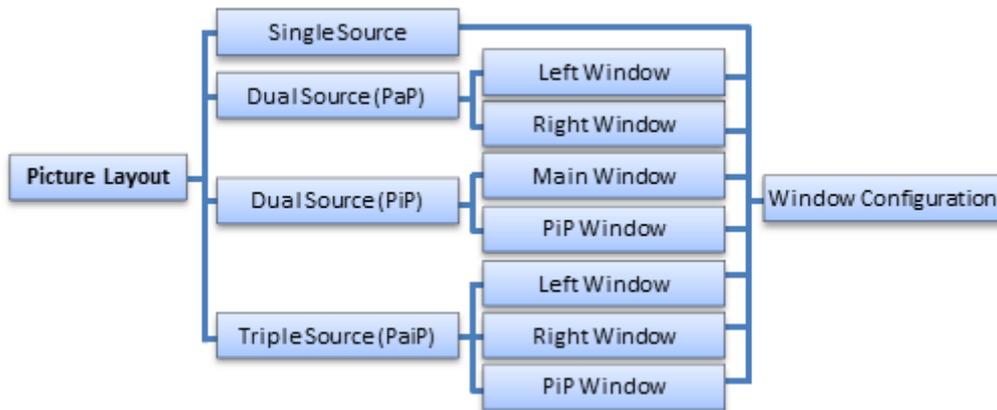
Function	Values	Description
Mode Presets	"0" or "1" per LUT <i>Default: "1" for every LUT.</i>	<p><b>Setting the Mode Preset</b></p> <p>This function enables you to make any LUT settings in the "CAL Switch" function selectable (1) or non-selectable (0).</p> <p>The names of the selectable LUT settings are taken from the "CAL Switch" function.</p> <p><b>Note:</b> The active LUT cannot be set to "0".</p>

Commissioning  
2.6 Display menu

Function	Values	Description
<b>Backlight (BL)</b>	LUT BL Active	<b>Backlight command</b> If the setting is marked, the brightness is determined by the active LUT. This ensures that the maximum brightness fits with the gamma curve.
	BL Regulation	Reserved for future use.
	BL Brightness 0...1023	<b>Changing the brightness of the backlight</b> If you select this setting, the "LUT BL Active" setting is disabled. <b>CAUTION:</b> 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.
<b>Test Pattern</b>	None MEASURE GRAYBARS CROSS PIXEL_ON_OFF_HORI GRAY RAMP TG18-OIQ <i>Default: None</i>	<b>Select and display test patterns</b> The monitor contains an internal test pattern generator that can create various test patterns to enable visual checks of the device without software. <b>CAUTION:</b> Only use the test patterns during service activities. The PiP functions are deactivated when a test pattern is displayed. <b>Note:</b> After selecting a test pattern, select "None" in order to display the video signals of the connected system again.
<b>Source Settings</b>	SDI HDMI DP DVI	Select the video source in order to set the "Color Space" and "Input Range".
<b>Color Space</b>	BT.709 BT.601 BT.2020 <i>Default: depends on the selected preset</i>	Establish the conversion standards for the color format of the selected video source. <b>Note:</b> <ul style="list-style-type: none"> <li>Color Space settings only impact a YCbCr signal.</li> <li>Not available for DVI.</li> </ul>
<b>Input Range</b>	0-255 16-235 16-255 <i>Default: depends on the selected preset</i>	Establish the dynamic range of the selected video source. <b>Note:</b> Not available for DVI.

Function	Values	Description										
<b>Window Synchronisation</b>	For display only	Information table for synchronizing the signal in the active window.										
		<table border="1"> <thead> <tr> <th>Window</th> <th>Synchronization</th> </tr> </thead> <tbody> <tr> <td>Main</td> <td>&lt;synchronised / framebuff.2/.3&gt;</td> </tr> <tr> <td>PiP</td> <td>&lt;synchronised / framebuff.2/.3&gt;</td> </tr> <tr> <td>Left</td> <td>&lt;synchronised / framebuff.2/.3&gt;</td> </tr> <tr> <td>Right</td> <td>&lt;synchronised / framebuff.2/.3&gt;</td> </tr> </tbody> </table>	Window	Synchronization	Main	<synchronised / framebuff.2/.3>	PiP	<synchronised / framebuff.2/.3>	Left	<synchronised / framebuff.2/.3>	Right	<synchronised / framebuff.2/.3>
		Window	Synchronization									
		Main	<synchronised / framebuff.2/.3>									
		PiP	<synchronised / framebuff.2/.3>									
		Left	<synchronised / framebuff.2/.3>									
Right	<synchronised / framebuff.2/.3>											
"synchronised" means that the signal is displayed without latency.												
"framebuff.2" identifies the Double Buffer Mode, and the signal is displayed with a latency of 1 frame.												
"framebuff.3" identifies the Triple Buffer Mode. The signal is displayed with a latency of 1 to 2 frames.												
The monitor analyzes the applied signal and automatically selects the best suited synchronization mode.												
<b>Note:</b> When using multiple windows, the signal in the left window or main window determines the synchronization mode. The same synchronization mode is then used in the other windows (right window and/or PiP window).												
<b>Note:</b> Timings with the native panel resolution and the Full HD timings stored in the EDID of the monitor are displayed in "synchronised" mode. Other timings are shown in "framebuff.2" or "framebuff.3" mode.												

## 2.7 Picture Layout menu



With the EX5841 you can simultaneously display up to three different video sources on the monitor.

<b>Note</b>
<b>HDMI and DP signals</b> HDMI and DP signals cannot be displayed simultaneously.

<b>Note</b>
<b>"Configuration Conflict" message</b> If an SDI signal was selected for the PiP window and the "Configuration Conflict" message is displayed, error-free display is not possible. To eliminate the message, select one of the following actions:
<ul style="list-style-type: none"> <li>• Set the native resolution for the Main Window.</li> <li>• Set another image source for the PiP window.</li> <li>• Set another function for the picture layout, such as Dual Source (PaP).</li> </ul>

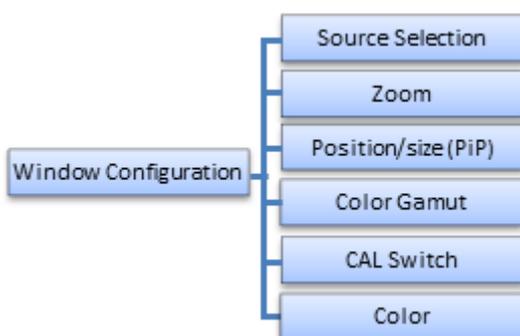
Function	Values	Description
<b>Single Source</b>		<b>A single video source is displayed full screen</b> Open the "Window Configuration" menu to change the video source or display size.
<b>Dual Source (PaP)</b>	Left Window Right Window	<b>Display in two windows of equal size next to one another</b> Two video sources are displayed in two windows of equal size next to one another. Open the "Window Configuration" menu for the respective window to change the video source or display size.
<b>Dual Source (PiP)</b>	Main Window PiP Window	<b>Display of a main window with a superimposed window</b> Two video sources are displayed in two windows one on top of the other. Open the "Window Configuration" menu for the respective window to change the video source or display size.

Function	Values	Description
<b>Triple Source (PaIP)</b>	Left Window Right Window PiP Window	<b>Display in two windows of equal size next to one another and a superimposed window</b>  In Triple Source mode, three signal sources are displayed on the screen. In this case, an additional display window is superimposed on the PaP display.  Open the "Window Configuration" menu for the respective window to change the video source or display size.

### 2.7.1 Window Configuration menu

The settings for each window of the corresponding "Picture Layout" are established in the "Window Configuration" menu.

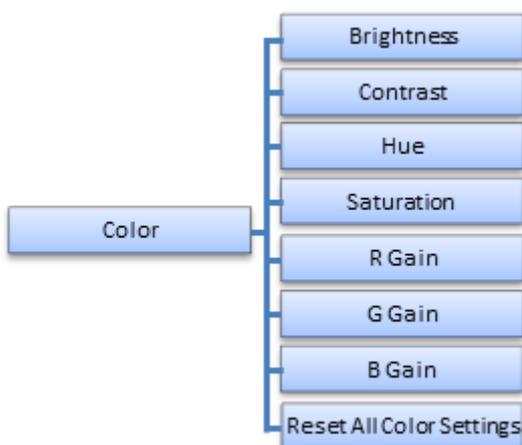
Note
The menu can also be opened directly for the displayed window arrangement using the "Input" operating key.



Function	Values	Description
<b>Source Selection</b>	SDI HDMI DP DVI	<b>Selecting the video source</b>  Here you set which video source should be displayed in the selected window.  The setting remains even if you shut down and switch on the system again.
<b>Zoom</b>	1:1 Set To Aspect Fill All (PiP only) <i>Default: 1:1</i>	<b>Establishing image magnification</b> <ul style="list-style-type: none"> <li>1:1: The picture is displayed in the window in its original size.</li> <li>Set To Aspect: The picture is zoomed to the maximum window area with retention of the aspect ratio.</li> <li>Fill All: The image fills the entire area of the PiP window. The aspect ratio can change.</li> </ul>

Function	Values	Description
<b>Position / Size (PiP)</b>	H-Position <i>Default: 80</i> V-Position <i>Default: 93</i> H-Size <i>Default: 103</i> V-Size <i>Default: 125</i>	<b>Establishing PiP window geometry</b> <b>Note:</b> The function is displayed only when a PiP window is selected. You set the position and size of the picture-in-picture display here. The zero position is the upper left corner of the window.
<b>Color Gamut</b>	Native sRGB BT.2020 Emulation <i>Default: depends on the selected preset</i>	Sets the active color gamut.
<b>CAL Switch</b>	Gamma 2.0 Gamma 2.2 Gamma 2.4 nat Gamma 2.4 DICOM <i>Default: Gamma 2.4 nat or depending on the selected preset</i>	<b>Selecting the Look Up Table (LUT)</b> The LUT determines the gamma curve of the selected window. 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. <b>Note:</b> Select the DICOM LUT to view radiographic images.

“Color” Menu



**Note**  
The “Color” menu settings can be saved separately for each window.

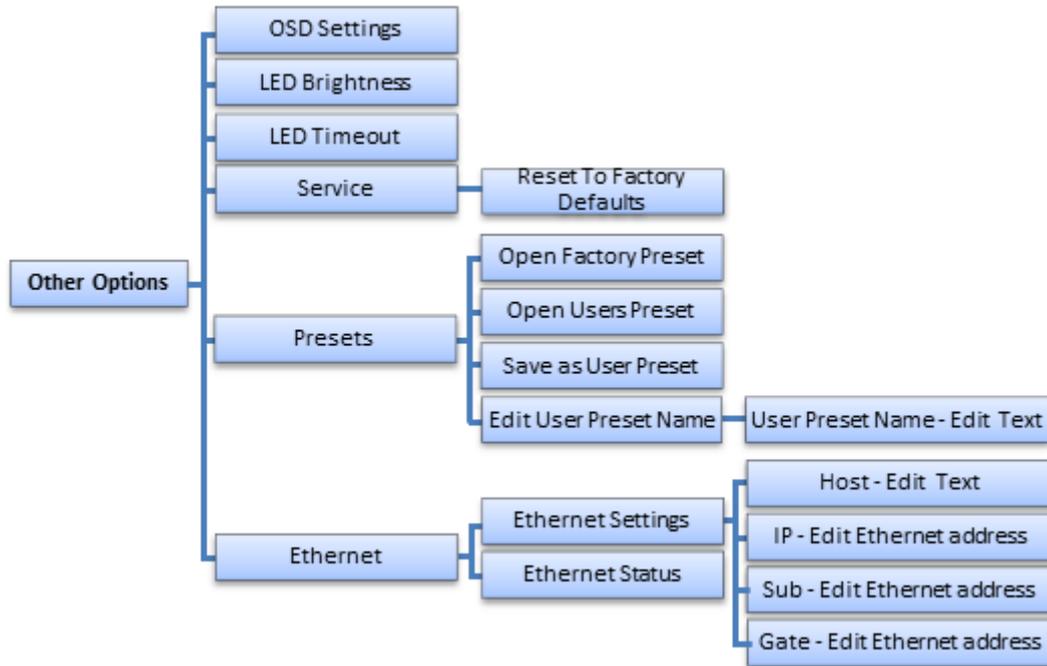
Function	Values	Description
<b>Brightness</b>	0 - 100 <i>Default: 50</i>	<b>Set brightness</b> This function can be used to change brightness, for example, to adapt the black value of the display.

Function	Values	Description
<b>Contrast</b>	0 - 100 <i>Default: 50</i>	<b>Set contrast</b> This function sets the relative maximum brightness differences between black and white.
<b>Hue</b>	- 100 - 100 <i>Default: 0</i>	<b>Set color value</b> If the setting for hue is adjusted in direction - 100, the color red changes to the color blue. If the setting for hue is adjusted in direction + 100, the color red changes to the color green.
<b>Saturation</b>	- 100 - 100 <i>Default: 0</i>	<b>Set color saturation</b> If the setting for saturation is adjusted in direction - 100, the color red becomes increasingly duller, ending with black and white. If the setting for saturation is adjusted in direction + 100, the color red becomes increasingly stronger. An adjustment of saturation acts on other colors the same as for red. Generally though, colors can only become stronger if they are not already fully saturated.
<b>R Gain</b> <b>G Gain</b> <b>B Gain</b>	0 - 255 <i>Default: 127</i>	<b>Set color gain</b> Use the "R Gain", "G Gain", and "B Gain" functions to change the gain for colors red, blue, and green. If the settings are adjusted to 0, the respective color is filtered out of the image. <b>Examples:</b> <ul style="list-style-type: none"> <li>• R Gain adjusted to 0, G Gain and B gain adjusted to 255 results in the gray image areas displaying in turquoise.</li> <li>• G Gain adjusted to 0, R Gain and B gain adjusted to 255 results in the gray image areas displaying in violet.</li> <li>• B Gain adjusted to 0, R Gain and G gain adjusted to 255 results in the gray image areas displaying in yellow.</li> </ul>
<b>Reset All Color Settings</b>		Resets all "Color" menu settings to their defaults.

## 2.8 Power Manager menu

Function	Values	Description
<b>DMPM ...</b>	DMPM External Power On DMPM Disabled	<b>Setting the DMPM mode</b> The set DMPM mode is active when there is no video signal on any input. <ul style="list-style-type: none"> <li>• DMPM External Power On: The backlight has been turned off. The power supply to external devices remains switched on.</li> <li>• DMPM Disabled: DMPM signals are ignored. The monitor does not change to an energy saving mode.</li> </ul>

## 2.9 Other Options menu



Function	Values	Description
<b>OSD Settings</b>	Horizontal 0 - 219 Vertical 0 - 57 Transparency 64 - 255 <i>Default:</i> <i>Horizontal 206</i> <i>Vertical 55</i> <i>Transparency 255</i>	<b>Setting the position and transparency of the OSD menu</b> Horizontal and vertical coordinates establish the position of the OSD menu. Use "Transparency" to change the transparency of the OSD background. <b>Note:</b> Individual OSD settings can be saved for every preset.
<b>LED Brightness</b>	Bright Dimmed <i>Default: Dimmed</i>	<b>Set the brightness of the operation LED.</b> You can lower the brightness of the operation LED to prevent interfering stray light. <b>Note:</b> 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.
<b>LED Timeout</b>	No Timeout Timeout (min) 1 <i>Default: No Timeout</i>	<b>Setting the operation LED timeout</b> You can set a set wait time (in minutes) after which the operation LED is switched off to prevent interfering stray light. <b>Note:</b> 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.

Function	Values	Description
<b>Service</b>	Backlight Sensor Test Reset to Factory Defaults	<p><b>Backlight Sensor Test</b> When you select this function, a series of brightness settings is checked using the internal sensor.</p> <p><b>Reset to Factory Defaults</b> Selecting this function opens a dialog box where you can reset the device to the factory settings.</p>
<b>Presets</b>	Open Factory Preset Open User Preset Save as User Preset Edit User Preset Name	<p><b>Open Factory Preset</b> Select one of the saved factory presets for operation.</p> <p><b>Open User Preset</b> Select one of the user presets for operation.</p> <p><b>Save as User Preset</b> The following settings are saved in the user preset:</p> <ul style="list-style-type: none"> <li>• Name User Preset</li> <li>• Source, Color Space, and Input Range for each video input</li> <li>• LUT for each window</li> <li>• Color Gamut and Zoom</li> <li>• OSD position (optional)</li> </ul> <p><b>Edit User Preset Name</b> Change the name of a user preset.</p>
<b>Ethernet</b>		
Ethernet Settings	Ethernet <on/off> DHCP <on/off> Host <Name> IP <IP Address> Sub <IP Address> Gate <IP Address>  <i>Default:</i> Ethernet <off> DHCP <on> Host <EIZO> IP <000.000.000.000 > Sub <255.255.255.000> Gate <192.168.000.001>	<p><b>Ethernet settings for monitor system mode</b></p> <p>With "Ethernet" you switch remote access on or off.</p> <p>You establish the access data for remote access with "DHCP", "Host", and the addresses for IP, Sub, and Gate.</p>
Ethernet Status	For display only	<p><b>Information regarding Ethernet connection and MAX address</b></p> <ul style="list-style-type: none"> <li>• Bitrate [Mbit] 10 / 100</li> <li>• Duplex Full / Half</li> <li>• MAC-Address: 00:90:93:2D:xx:xx</li> </ul> <p><b>Note:</b> The MAC address of the monitor is established during calibration ex-factory. It is in the range 00:90:93:2D:xx:xx, where xx = 00:00 – FF:FF.</p>

## 2.10 Information menu

Selecting this menu displays the following information regarding the monitor:

Display (Example)	Description
P/N <Value> S/N <Value> AN <Value> Firmware <Value> Main FPGA <Value> Front FPGA <Value> OSD <Value>	<ul style="list-style-type: none"> <li>• Product number P/N</li> <li>• Serial number S/N</li> <li>• Asset number A/N</li> <li>• Installed firmware, FPGA, and OSD versions.</li> </ul>
Additional Information	
Working Hours <Value> Temperature (°C) <Value>	<ul style="list-style-type: none"> <li>• Operating hours</li> <li>• Temperature in the device</li> </ul>

## 2.11 Signal menu

Selecting this menu displays information regarding the video signals at the selected inputs.

Display of video signals (Example)	Description
HDMI 1920x1080@60 DVI 1920x1080@50 SDI 3840x2160@50	Display of the connected signals with the following information: <ul style="list-style-type: none"> <li>• Video input</li> <li>• Resolution Horizontal x Vertical@Frequency</li> </ul>
Display of color information (Example)	Description
HDMI 8 bit RGB DVI 8 bit RGB SDI 10 bit 4:2:2	Display of the color information with the following information: <ul style="list-style-type: none"> <li>• Video input</li> <li>• Hue</li> <li>• Color space or sub-sample</li> </ul>

## 3 Service work

### 3.1 Check the settings

 <b>CAUTION</b>
<b>Checking the settings</b>
The settings must not be set in the presence of patients.

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.

## 4 Technical specifications

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

### 4.1 Supported timing

#### 4.1.1 SDI input

Resolution	H active x V active	Aspect ratio	Frame rate (Hz)	Pixel frequency (MHz)	Color hues (Bit)	Color space	Sub-Sample	Comment
UHD	3840 x 2160	16:9	60	594.000	10	YCbCr	4:2:2	12G-SDI 2 Sample Interleaved
			59.94	593.400	10	YCbCr	4:2:2	12G-SDI 2 Sample Interleaved
			50	594.000	10	YCbCr	4:2:2	12G-SDI 2 Sample Interleaved
FHD	1920 x 1080	16:9	60	148.50	10	YCbCr	4:2:2	3G-SDI Level A
			59.94	148.35	10	YCbCr	4:2:2	3G-SDI Level A
			50	148.50	10	YCbCr	4:2:2	3G-SDI Level A

#### 4.1.2 DVI input

Resolution	H active x V active	Aspect ratio	Frame rate (Hz)	Pixel frequency (MHz)	Color hues (Bit)	Color space
FHD	1920 x 1080	16:9	60	148.50	8	RGB
			59.94	148.35	8	RGB
			50	148.50	8	RGB

### 4.1.3 HDMI input

Resolution	H active x V active	Aspect ratio	Frame rate (Hz)	Pixel frequency (MHz)	Color hues (Bit)	Color space	Sub-Sample
UHD	3840 x 2160	16:9	60	594.000	8	RGB	N/A
					8	YCbCr	4:4:4
					8 / 10	YCbCr	4:2:2
					8 / 10	YCbCr	4:2:0
			59.94	593.400	8	RGB	N/A
					8	YCbCr	4:4:4
					8 / 10	YCbCr	4:2:2
					8 / 10	YCbCr	4:2:0
			50	594.000	8	RGB	N/A
					8	YCbCr	4:4:4
					8 / 10	YCbCr	4:2:2
					8 / 10	YCbCr	4:2:0
			30	297.000	8 / 10	RGB	N/A
					8 / 10	YCbCr	4:4:4
					8 / 10	YCbCr	4:2:2
					8 / 10	YCbCr	4:2:0
29.97	296.703	8	RGB	N/A			
		8 / 10	YCbCr	4:4:4			
		8 / 10	YCbCr	4:2:2			
		8 / 10	YCbCr	4:2:0			

Technical specifications

4.1 Supported timing

Resolution	H active x V active	Aspect ratio	Frame rate (Hz)	Pixel frequency (MHz)	Color hues (Bit)	Color space	Sub-Sample
FHD	1920 x 1080	16:9	60	148.500	8 / 10	RGB	N/A
					8 / 10	YCbCr	4:4:4
					8 / 10	YCbCr	4:2:2
					8 / 10	YCbCr	4:2:0
			59.94	148.350	8 / 10	RGB	N/A
					8 / 10	YCbCr	4:4:4
					8 / 10	YCbCr	4:2:2
					8 / 10	YCbCr	4:2:0
			50	148.500	8 / 10	RGB	N/A
					8 / 10	YCbCr	4:4:4
					8 / 10	YCbCr	4:2:2
					8 / 10	YCbCr	4:2:0
			30	74.250	8 / 10	RGB	N/A
					8 / 10	YCbCr	4:4:4
					8 / 10	YCbCr	4:2:2
					8 / 10	YCbCr	4:2:0
29.97	74.176	8 / 10	RGB	N/A			
		8 / 10	YCbCr	4:4:4			
		8 / 10	YCbCr	4:2:2			
		8 / 10	YCbCr	4:2:0			
HD	1280 x 720	16:9	30	74.250	8 / 10	RGB	N/A
					8 / 10	YCbCr	4:4:4
					8 / 10	YCbCr	4:2:2
					8 / 10	YCbCr	4:2:0
			29.97	74.176	8 / 10	RGB	N/A
					8 / 10	YCbCr	4:4:4
					8 / 10	YCbCr	4:2:2
					8 / 10	YCbCr	4:2:0
4K DCI*	4096 x 2160	256:135	60	594.000	8	RGB	N/A
			59.94	593.400	8	RGB	N/A
			50	594.000	8	RGB	N/A
					8	YCbCr	4:4:4
					12	YCbCr	4:2:2

\*4K-DCI timings can either be shown zoomed, with a black border above and below, or truncated.

#### 4.1.4 DisplayPort Input

Resolution	H active x V active	Aspect ratio	Frame rate (Hz)	Pixel frequency (MHz)	Color hues (Bit)	Color space	Sub-Sample	
UHD	3840 x 2160	16:9	60	594.000	8	RGB	N/A	
					8	YCbCr	4:4:4	
					8 / 10	YCbCr	4:2:2	
			59.94	593.400	8	RGB	N/A	
					8	YCbCr	4:4:4	
					8 / 10	YCbCr	4:2:2	
			50	594.000	8	RGB	N/A	
					8	YCbCr	4:4:4	
					8 / 10	YCbCr	4:2:2	
			30	593.400	8 / 10	RGB	N/A	
						YCbCr	4:4:4	
						YCbCr	4:2:2	
			29.97	296.703	8 / 10	RGB	N/A	
						YCbCr	4:4:4	
						YCbCr	4:2:2	
FHD	1920 x 1080	16:9	60	148.50	8 / 10	RGB	N/A	
					8 / 10	YCbCr	4:4:4	
					8 / 10	YCbCr	4:2:2	
			59.94	148.35	8 / 10	RGB	N/A	
						8 / 10	YCbCr	4:4:4
						8 / 10	YCbCr	4:2:2
			50	148.50	8 / 10	RGB	N/A	
						8 / 10	YCbCr	4:4:4
						8 / 10	YCbCr	4:2:2
			30	74.250	8 / 10	RGB	N/A	
						8 / 10	YCbCr	4:4:4
						8 / 10	YCbCr	4:2:2
			29,97	74.176	8 / 10	RGB	N/A	
						8 / 10	YCbCr	4:4:4
						8 / 10	YCbCr	4:2:2

Resolution	H active x V active	Aspect ratio	Frame rate (Hz)	Pixel frequency (MHz)	Color hues (Bit)	Color space	Sub-Sample
HD	1280 x 720	16:9	30	74.250	8 / 10	RGB	N/A
						YCbCr	4:4:4
						YCbCr	4:2:2
			29,97	74.176	8 / 10	RGB	N/A
						YCbCr	4:4:4
						YCbCr	4:2:2

## 4.2 Factory Preset

Eight factory presets are set at the factory. The names of the presets, for example, have the following meanings:

- "1W\_4K\_YUV":
  - 1W = Display in a window.
  - 4K = optimized for 3840x2160 resolution.
  - YUV = optimized for a YCbCr input signal.
  - DP set as default input source.
- "1W\_4K\_RGB":
  - 1W = Display in a window.
  - 4K = optimized for 3840x2160 resolution.
  - RGB = optimized for an RGB input signal.
  - HDMI set as default input source.
- "2W\_YUV":
  - 2 W = Display in two windows.
  - YUV = optimized for a YCbCr input signal.
  - Optimized for resolutions <3840x2160 (such as FHD).
  - For Dual Source (PiP), DP is set as default in the main window and DVI is set as default in the PiP window.
  - For Dual Source (PaP), DP is set as default in the left window and SDI is set as default in the right window.

### Note

#### Delivery status

When the CuratOR EX5841 is delivered the "1W\_4K\_YUV" factory preset is the default. "Preset 7" and "Preset 8" are reserved for future use.

### Signal input settings

Preset	Signal input						
	DP		HDMI		SDI		DVI
	Input Range	Color space	Input Range	Color space	Input Range	Color space	Input Range
1W_4K_YUV	16-235	BT.2020	16-235	BT.2020	16-235	BT.2020	0-255
1W_4K_RGB	16-235	n/a	16-235	n/a	16-235	BT.2020	0-255
1W_RGB	16-235	n/a	16-235	n/a	16-235	BT.709	0-255
1W_SDI_3G_YUV	16-235	BT.709	16-235	BT.709	16-235	BT.709	0-255
2W_YUV	16-235	BT.2020	16-235	BT.2020	16-235	BT.2020	0-255
2W_RGB	16-235	n/a	16-235	n/a	16-235	BT.709	0-255

### Image reproduction settings

Preset	Main Window				PiP Window (display at upper right)			
	Source	Zoom	Color Gamut	LUT	Source	Zoom	Color Gamut	LUT
1W_4K_YUV	DP	1:1	BT.2020 emul.	Gamma 2.4 nat	DP	1:1	Native	Gamma 2.0
1W_4K_RGB	HDMI	1.1	BT.2020 emul.	Gamma 2.4 nat	DP	1:1	Native	Gamma 2.0
1W_RGB	DVI	Set to Aspect	sRGB	Gamma 2.4 nat	DP	1:1	Native	Gamma 2.0
1W_SDI_3G_YUV	SDI	Set to Aspect	sRGB	Gamma 2.4 nat	DP	1:1	Native	Gamma 2.0
2W_YUV	SDI	1:1	BT.2020 emul.	Gamma 2.4 nat	HDMI	Set to Aspect	BT.2020 emul.	Gamma 2.4 nat
2W_RGB	DP	1:1	BT.2020 emul.	Gamma 2.4 nat	DVI	1:1	sRGB	Gamma 2.4 nat

Preset	Left Window				Right Window			
	Source	Zoom	Color Gamut	LUT	Source	Zoom	Color Gamut	LUT
1W_4K_YUV	DP	1:1	Native	Gamma 2.0	DP	1:1	Native	Gamma 2.0
1W_4K_RGB	DP	1:1	Native	Gamma 2.0	DP	1:1	Native	Gamma 2.0
1W_RGB	DP	1:1	Native	Gamma 2.0	DP	1:1	Native	Gamma 2.0
1W_SDI_3G_YUV	DP	1:1	Native	Gamma 2.0	DP	1:1	Native	Gamma 2.0
2W_YUV	DP	Set to Aspect	BT.2020	Gamma 2.4 nat	SDI	Set to Aspect	BT2020. emul.	Gamma 2.4 nat
2W_RGB	HDMI	Set to Aspect	BT.2020	Gamma 2.4 nat	DVI	Set to Aspect	sRGB	Gamma 2.4 nat



**EIZO GmbH**  
Carl-Benz-Straße 3  
76761 Rülzheim  
Germany

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