



EIZO CS230

23" ColorEdge LCD monitor

The 23-inch ColorEdge LCD from EIZO does not forget subtle colour nuances. It reproduces colour tones precisely thanks to the 16-bit look-up table and up to 10-bit colour reproduction. Its gamut almost entirely corresponds to the sRGB gamut as it can be recorded by many HD cameras. HDMI signals for video or photo can be viewed directly on the CS230 via HDMI and Mini DisplayPort. The screen achieves stable colours thanks to its integrated measurement device and automatic self-correction. The IPS-LCD module of the CS230 guarantees contrast and colour tones that are independent of the viewing angle. The backlight is achieved by using state-of-the-art, energy-saving LED technology.

- ◆ Widescreen LCD, contrast 1000:1, brightness 300 cd/m²
- ◆ Integrated measurement device and fully automatic self-correction
- ◆ Colour precision with 16-bit look-up table and up to 10-bit colour reproduction
- ◆ Digital Uniformity Equalizer for perfect luminance distribution and colour purity
- ◆ Temperature-controlled adjustment of colour drift and brightness
- ◆ Optional hardware calibration of brightness, white balance and gamma
- ◆ DisplayPort, DVI-I and HDMI inputs for digital and analogue port
- ◆ Recommended optional accessories: EIZO ColorNavigator and measurement device used for monitor calibration



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Features

Outstanding image quality The CS230 gleams with clear graphics and structures as well as sharp text contours. Its IPS-LCD module guarantees contrast and colour tones that are independent of the viewing angle. The backlight is achieved by using state-of-the-art, energy-saving LED technology.

High-resolution look-up table Thanks to its 16-bit look-up table, the CS230 can resolve image signals with an accuracy of 1/65 thousandths. Colour nuances and image structure are not lost, particularly in the case of dark hues.

Consistent hue curve and colour The brightness level of LCDs varies from module to module in relation to the image signal and the colour mix (addition) of red, green and blue. This can only be precisely recorded and controlled using special measurement devices. EIZO therefore configures each CS230 at the factory with its colours and hue curve at 343 grid points and in every primary colour. Therefore, a consistent colour temperature is attained over the entire grey value scale. Colour deviations usually amount to just 0.34 ΔE on average. The result is that the colour reproduction is balanced, precise and reliable for the CS230.

Integrated measuring device and self-correction The CS230 achieves stable colours thanks to its integrated measurement device. The monitor is adjusted beforehand with a conventional handheld measurement device. The sensor then uses adjustment measurements to automatically readjust the colours, thus ensuring stable colours. The user can determine the adjustment intervals. The adjustment is either triggered manually or programmed via ColorNavigator. The CS230 automatically starts the adjustment after the programmed monitor usage time elapses. The integrated sensor automatically positions itself for the measurement and hides away in the housing until the next adjustment.

Digital Uniformity Equalizer (DUE) The DUE in the CS230 ensures colour purity and even brightness distribution across the entire display surface. A chip automatically adjusts for irregularities. While conventional LCDs are optimised at best for homogeneity of a white surface, every hue looks the same across the entire screen with EIZO. The DUE ensures precisely matching colours from the centre right to the outermost edge of the screen. The DUE priority function allows the user to freely choose whether to prioritise maximum homogeneity or maximum brightness.

Exact calibration The ColorNavigator software (optionally included in the CS230) has direct access to the monitor's look-up table during calibration. In the process, the user can freely determine colour temperature, brightness, black level and hue curve according to their requirements. The calibration is based on the default setting and is therefore unique in its precision and speed. An optional handheld measurement device is necessary for monitor calibration.

Colour drift correction Temperature deviations in LCDs can also lead to imprecise colour reproduction, for example, when warming up the monitor. Colour deviations of more than 2 ΔE often arise, especially when the room temperature is unstable. The CS230 has an internal thermometer to eliminate these inaccuracies. It controls and reduces the colour drift fully automatically.

Brightness stabilisation Balanced brightness is crucial for brilliant colour reproduction. Conventional LCD monitors need one to two hours to level off their brightness. Indeed, they then react sensitively to temperature changes. The patented electronics of the CS230 therefore regulates the backlight. It automatically ensures constant brightness – regardless of the service life and temperature.

Overdrive The CS230 processes moving images by projection and overdrive in such a way that fast video sequences are displayed without any annoying delays.

Digital and analogue inputs DisplayPort, HDMI and DVI-I ports allow up to three computers to be connected at the same time. Users can switch either automatically or manually. HDMI signals from HD cameras can be displayed directly on the CS230 via HDMI and DisplayPort.

USB hub An integrated USB hub enables the connection of peripheral devices. For example, a keyboard and mouse can be connected to the monitor. The CS230 has two upstream ports. Therefore, devices connected to the monitor can be used alternatively with two computers.

HDMI The monitor offers conventional resolutions and image refresh rates for video production. HDMI signals (YUV and RGB) are supported with the refresh rates of 60, 50, 30, 25 and 24 Hz. The monitor also features I/P conversion. The CS230 can be conveniently used in video editing and animation systems, too.

Reliable and energy-efficient LED backlight, power-off timer and PowerManager are among the energy-saving features. Protect the environment and save energy when the user is not currently using the computer. The power-off timer and PowerManager are particularly useful as they reduce the aging of the LCD backlight and luminance distribution. Brightness and homogeneity can be maintained for longer.

10-bit colour depth The CS230 has a Mini DisplayPort in addition to DVI interfaces. The port has a 10-bit colour resolution in combination with the frame rate control (FRC). This means the screen can display even the finest of colour gradations with a billion colours. However, you need to have the corresponding software and graphics board with 10-bit support.

FlexStand



This enables turning and tilting as well as operation in portrait and landscape format. The continuous height adjustment starts very low on the base and has a range of 16 centimetres. This guarantees optimal ergonomics, regardless of whether the user is sitting or standing in front of the screen. The FlexStand base is always fully stable, despite its maximum range of movement.

Test marks



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Specifications

Diagonal	58 cm (23 inches) TFT LCD
Visible image size	510 mm (width) x 287 mm (height)
Visible diagonal	584 mm
Ideal and recommended resolution	1920 pixels x 1080 lines
Dot pitch	0.265 mm x 0.265 mm
Displayed colours	1 billion (10-bit) DisplayPort 16.7 million (8-bit) DVI and analogue
Colour control	16-bit look-up table 48-bit (3 x 16-bit) approx. 278 billion colour tones
Max. colour range	AdobeRGB: 75% ISO-coated V2: 87% sRGB: 97%, DCI: 75%
Max. brightness	300 cd/m ²
Max. dark room contrast	1000:1
Max. viewing angle	Horizontal: 178°; vertical: 178°
LCD technology	IPS
Typical mid-tone reaction time	10.5 ms
Typical reaction time, rise/fall	7/8 ms, black-white change
Features	Hardware calibration of brightness, white balance and gamma adjustment with optional measurement device, integrated measurement device for self-correction, 16-bit look-up table (48-bit R+G+B), Digital Uniformity Equalizer, temperature-controlled colour drift adjustment, overdrive, noise reduction (HDMI), RGB gamut emulation, Color Universal Design mode (simulating colour blindness), HDCP decoder, USB V2.0, powered hub
Configuration options	Brightness, contrast, gamma 1 to 2.6 in steps of 0.1, colour saturation (gain) for RGBCMY, colour temperature 4,000–10,000 K, gamut clipping, DUE priority, power-off timer, OSD language (DE, UK, FR, SE, ES, IT)
Resolutions	Max. 1920 x 1080 full image 1:1, HDMI 60 Hz: VGA, 480i, 480p, 1080i, 720p, 1080p HDMI 50 Hz: 576i, 576p, 1080i, 720p, 1080p HDMI 30 Hz/25 Hz/24 Hz: 1080p
Horizontal frequency	Analogue: 26–68 kHz/ 15–68 kHz (HDMI) (Digital: 26–68 kHz)
Vertical frequency	47.5–86 Hz (Digital: 23.75–63 Hz)
Video bandwidth	Analogue: 149 MHz (Digital: 149 MHz/149 MHz (HDMI))
Graphic signals	DisplayPort, DVI (TMDS), RGB analogue, HDMI (YUV and RGB)
Signal inputs	DisplayPort, DVI-I, HDMI
Plug & Play	VESA DDC CI
Power management	VESA DPMS, DVI-DMPM

Power consumption	Max.* 54 watts Typical power consumption of 21 watts, max. 0.5 watts in OFF mode 0 watts when the power switch is OFF
Dimensions (WxHxD)	54 cm x (37–53) x 25 cm
Weight	7.5 kg
Test marks	CE, TÜV GS, TÜV certified ergonomics, ISO 9241-307 pixel fault class 1
Flexibility	172° right/left, 30° to the back, 90° rotatable, 16 cm height adjustment
USB hub	2 upstream/2 downstream, rev. 2.0
Accessories included	Included: Manual in German, English and French, power, USB and signal cable for DVI-D
Optional accessories	EIZO ColorNavigator, light protection shields (CH6), i1display pro
Service***	Five-year on-site replacement service
Errors excepted 08/12	

* at maximum brightness, as well as two signal inputs and USB hub in operation

** The duration of the warranty for the LCD module is five years from the date of purchase or a monitor usage time of 30,000 hours, whichever occurs first. The warranty also extends to normal wear and tear of the backlight if this is operated at a recommended brightness level of 120 cd/m² and a white balance of between 5,000 K and 6,500 K. EIZO guarantees this brightness for three years from the date of purchase or a monitor usage time of 10,000 hours, whichever occurs first.



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