

# Test EIZO EV2740X: Reference for 4K business monitors

*27-inch 4K display delivers a convincing image representation with 100% sRGB as well as an IPS panel with excellent viewing angles and a contrast ratio of over 2000:1*

11.09.2023, Simon Blohm

## Introduction

EIZO has not focused on monitors with 4K resolution within the EV Office series so far. But this month, two new models were released: the EV2740X and the EV3240X. Both are available in black and white. The black models end with BK (black), while the white ones have the suffix WT (white). In our test, we will look at the EV2740X-BK.



*EIZO novelties in two color variants: EV2740X-BK and EV2740X-WT*

What innovations have the monitors received? The most striking feature is certainly the new twisted stand, whose design can be considered particularly creative for EIZO. We were thrilled by the new look in any case. The FlexStand arm also now allows height adjustment with two instead of three elements, which we think also benefits the looks. The USB-C port has also received an update and now offers a power supply with 94 watts.

Otherwise, the EIZO EV2740X features a 27-inch display with IPS technology, a contrast of 2000:1, and a native 4K resolution of 3840 × 2160 pixels (163 ppi). The manufacturer specifies a maximum brightness of 350 cd/m<sup>2</sup>, and the sRGB color space is supposed to be covered by 100%.

With the Picture-by-Picture mode, the docking station including LAN port as well as numerous ergonomic features and energy-saving functions, the EIZO FlexScan EV2740X is ideally suited for use in the business environment or home office.

If you want to learn more about the product range and the features of the EIZO office monitors of the EV series, you can find information in our report "[Excellent ergonomic monitors](#)". In addition, we recommend our article "[Are 4K monitors without an alternative in the desktop sector?](#)"

The 27-incher is available in stores for around 1,000 Euros. Detailed information about the features and specifications can be found in the [data sheet of the EIZO EV2740X-BK](#).

## Scope of delivery

The scope of delivery might look a bit sparse for a 1,000 euro monitor at first glance. Besides a printed setup guide, only cables for power and USB-C are included. At least one additional cable, whether DisplayPort or HDMI, would have been desirable.

However, you should not forget the five-year warranty with on-site replacement service, which alone represents a considerable monetary value. This also includes a support that is not only available, but may even take care of problems very persistently.



*Scope of delivery*

The PDF manual can be easily downloaded from the product website. EIZO is one of the few manufacturers that still publish manuals that really deserve this name.

Furthermore, the useful additional software should be mentioned. With Screen InStyle, power consumption, color, brightness and other settings can be easily managed. With Screen InStyle Server, system administrators can control monitors and PCs connected in the network. Drivers and color profiles were not yet available at the time of testing. However, color profiles for 6500 K and 5000 K exist and should be available soon.

## Optics and mechanics

The display and accessories are securely packed in the carton. EIZO already uses 100% recycled material for packaging and transport padding. The transport padding is reminiscent of an oversized egg carton. The contents can be conveniently removed via the wide opening of the carton. The screen is encased in a protective sleeve and still needs to be connected to the stand. It is connected to the stylish stand without tools with two wing screws. We were thrilled by the curved look of the stand in any case; it is a visual upgrade.



*Stand from below*  
*Stylish stand for a secure hold*

The stand is then pushed into place on the back of the display. To do this, the upper part of the stand is placed flat and then pushed slightly upwards until it locks into place. To keep the screen stably in place, rubber studs are attached to the bottom of the stand. They prevent the screen from slipping when turned sideways and allow safe and comfortable handling with only one hand.



Connection of stand leg and display The stand leg can be conveniently released again by pressing the button

The installation of a VESA mount with 100 x 100 mm is also provided. The necessary mounting holes are directly accessible after dismantling the stand.



*Standing leg from behind*  
*Standing leg from front*

With a total of 8.2 kg, the EIZO EV2740X is relatively heavy. This also applies to the display without the stand at 5.5 kg. Although weight alone is not a criterion for quality, it gives the current review sample a positive impression of high quality. The slim screen looks seamless and already conveys a feeling of value during handling during assembly. There are no creaking or groaning noises perceptible. In addition, the display is perfectly stabilized and does not wobble even when operating the OSD. That's exactly how it should be!



*Front view in the highest position  
Rear view in the highest position*

The frame is 1 mm at the sides and top. In the lower part, the height is about 7 mm to provide enough space for the electrostatic controls. The additional frame, which is visible during operation due to the unused display area, has a width of approximately 6 mm, while it is 8 mm at the bottom.

Thanks to the now two-stage design, the stand leg can be adjusted in height by 19 cm and lowered all the way to the foot. The distance to the table surface is 1.5 cm. The two-stage design is not noticeable in handling. Height adjustment is possible from the very bottom to the very top in a single fluid motion, although it is a bit more sluggish in the lower range.



*Front view in lowest position  
Rear view in lowest position*

EIZO once again presents an exemplary implementation of the other ergonomics features, both in terms of scope and mechanics. The tilt is flexibly adjustable from -5 to +35 degrees. The screen allows a lateral 90° rotation to the right and left. Furthermore, the 90° swivel into portrait mode (pivot) is also precise and only requires a small amount of force. The rotation is only possible to the right. Height adjustment is still possible by 6.5 cm in portrait mode.





*Maximum tilt angle to the front  
Maximum tilt angle to the rear*



*Pivot view from front  
Pivot view from rear*



*Maximum rotation to the left*



*Maximum rotation to the right*

The EIZO EV2740X has a cable holder so that the cables do not hang down haphazardly. It is already connected to the base unit and can be opened with a bit of lateral pressure. When closing, the plastic lug clicks back into place. The space for bundling the cables is generous.



*Cable management: cover open*



*Cable management: cover closed*

In the EIZO EV2740X, the power supply is integrated into the case and has a standalone power switch, which allows the device to be completely disconnected from the mains. Ventilation slots are found on the back below the EIZO logo. However, heating on the back is not noticeable even after a few hours of use.

The recess can simultaneously serve as a practical handle for transport and be used to operate the ergonomics functions.



*EIZO logo and ventilation slots on the back side*

## Technology

### Operating noise

We did not notice any operating noise with the EIZO EV2740X. The monitor is absolutely silent in standby mode as well as during operation, and that regardless of the brightness setting. However, it should be noted that the noise development might be subject to a certain series dispersion. Therefore, this assessment does not necessarily apply equally to all devices of the same series.

### Power consumption

	Manufacturer	Measured
Operation maximum	186 W	29,2 W
Operation minimum	k. A.	10,8 W
Operation typical	16 W	-
140 cd/m <sup>2</sup> (77 %)	k. A.	17,2 W
Energy saving mode (standby)	0,35 W	0,4 W
Switched off (Soft-off)	0,3	0,3 W
Switched off (power switch)	k. A.	0 W

*Measured values without additional consumers (loudspeaker and USB)*

EIZO states a maximum consumption of 186 watts in the spec sheet. This is a very honest value since it refers to the demand at maximum brightness and the operation of all signal and USB ports.

However, according to our measurements, the power consumption at maximum brightness level is only 29.2 watts. The effect of the soft-off button is only minor. We already measure a consumption of 0.4 watts in standby. Thanks to the dedicated power switch, the power consumption can also be capped completely.

At 140 cd/m<sup>2</sup> at the workstation, the meter displays 17.2 watts. The efficiency at this brightness calculates to an excellent 1.6 cd/W.

## Connections

In terms of signal inputs, the EIZO EV2740X can boast two HDMI inputs, one DisplayPort and one USB-C port (with DisplayPort Alternate Mode). All interfaces support HDCP 2.3. The USB-C port also serves as a data upstream and for powering external devices with 94 watts. A maximum of 4K (3840 x 2160) with 59.997 Hz can be displayed via DisplayPort and USB-C, while 60 Hz is achieved via HDMI. Furthermore, a LAN port (RJ-45) and three USB ports are available, including one USB-B (upstream) and two USB-A 3 (downstream) with 5 Gbps.



### *Connections*

On the left side, there is another USB-C port (with DisplayPort alternate mode and 15 Watts PD), an additional USB-A port (downstream) with 5 Gbps as well as a headphone jack and a stereo mini-jack for connecting external speakers.



*Other connections laterally in the bay window*

## Operation

The EIZO EV2740X has electrostatic controls for control. The speakers and brightness sensor are also integrated into the slim front bezel. However, it is important to be careful



when operating them, as you may accidentally touch the display surface with your finger, which can leave unsightly fingerprints. However, this may be the trade-off made for a screen with an almost bezel-less design, which is ideal for multi-screen systems. Furthermore, the software offers a convenient way to control the OSD.



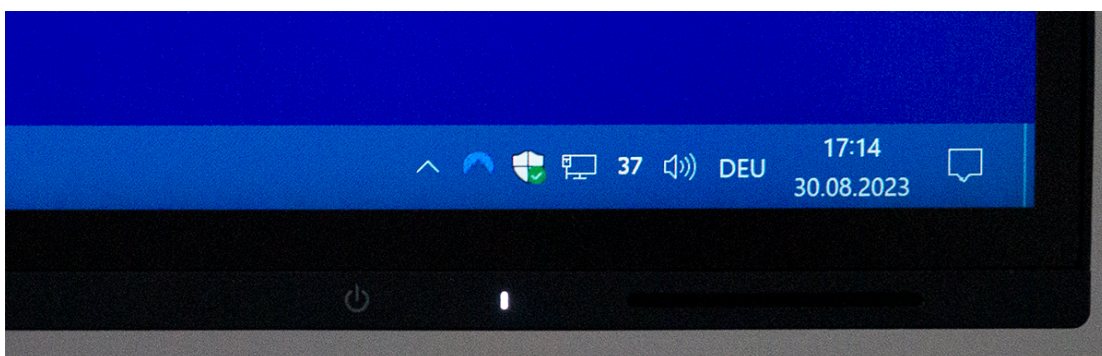
#### *Electrostatic controls*

Otherwise, the operation with the touch keys is also good. They are very responsive and can be operated comfortably and reliably. There is no acoustic feedback. The small, stroke-like elevations are hardly recognizable. However, it is enough to touch any control element, which causes the individual functions to be displayed on the screen surface. EIZO remains true to the tried and tested operating concept. However, we now find the operation via 5-way joystick a bit more pleasant.



#### *Speaker and sensor*

The very discreet power LED is located to the right of the power button. When the monitor is in use, the LED glows white; in idle mode, the color changes to orange. If the LED illumination bothers you, you can deactivate it completely in the OSD.



*White illuminated LED in operating mode*

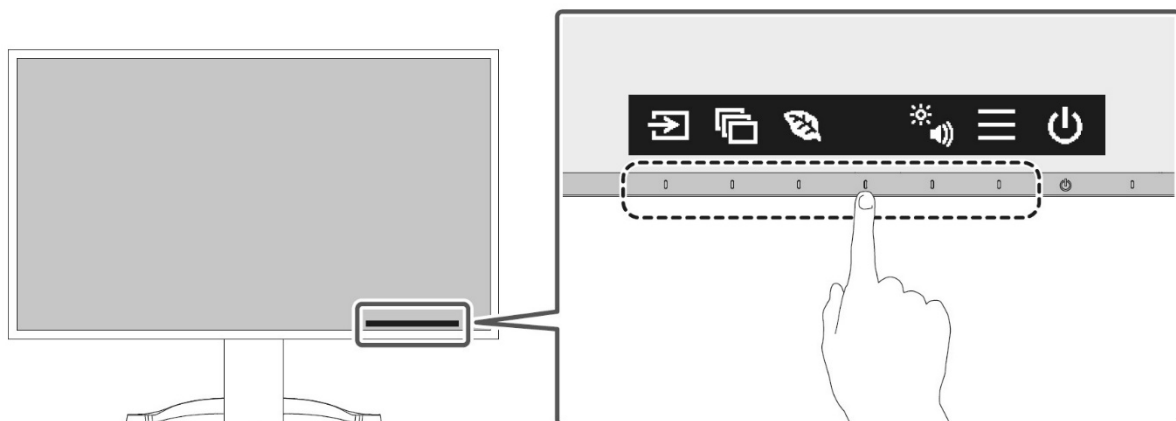


*In idle mode, the color changes to orange*

## OSD

You can first call up a quick selection with any keystroke. Signal source, display modes, EcoView and volume/brightness can be accessed without a detour via the menu. The "Menu" key takes you directly to the main menu, which only has five levels.

The display duration of the OSD cannot be adjusted. After about 40 seconds, the OSD closes automatically.



*Menu entry and quick selection (Screenshot: EIZO manual)*

The functions offered are clearly and simply structured for a business monitor and are equally professional and user-friendly. With many manufacturers, the functions that are available as direct keys are also found in the actual main menu. EIZO goes its own way here. Only the brightness and the user mode can also be set in the main menu under "Color". This makes sense because you would otherwise always have to go back to the quick selection first.

All important settings for software calibration, including color temperature and gamma controls with exact numerical values, are available. Above all, the set values actually deliver what they claim to in our measurements.

**Signal source:** Here you can choose between USB-C, DisplayPort, HDMI 1, HDMI 2 and PbP.

**Color modes:** User1, User2, sRGB, Paper, Movie and DICOM are available. The User modes are used to set a user-specific screen mode, and DICOM can display digital

images for medical purposes based on DICOM Part 14. However, the EIZO EV2740X is not intended for diagnostic purposes.

**EcoView settings:** The power saving option, CO2 reduction and eco power level are checked here. Auto EcoView can be turned on and off. The ambient light sensor automatically detects the ambient brightness and adjusts the screen brightness automatically. EcoView Optimizer 2 can be turned on and off. Here, the monitor automatically adjusts the screen brightness - according to the white level of the input signal.

The ergonomics of the EIZO EV2740X are not only supported by the mechanics, but also by the electronic components. A sensor continuously measures the changes in ambient light and optimizes the screen's brightness accordingly. It also takes the user preference into account, which is available in the form of the set brightness value. This serves as a starting point for adjusting the luminance almost unnoticed when the ambient light changes. This offers the dual benefit of relieving eye strain while saving energy and costs. EIZO even integrates subtle color changes into the OSD to show the energy savings achieved.

**Brightness and volume:** Under this menu item, the brightness can be adjusted from 0 to 100. The volume of the speakers or headphones can be adjusted from 0 to 30.

**Menu:** The key takes you to the main menu, which contains five levels.



*OSD: Main menu (Screenshot: EIZO manual)*

**Color:** Under this menu item, brightness (0 to 100), contrast (0 to 100), color temperature ("Off" or from 4000 K to 10 000 K in steps of 500 K, including 9300 K), gamma (1.8, 2.0, 2.2 and 2.4), overdrive ("Enhanced", "Standard" and "Off"), hue (-50 to 50), saturation (-50 to 50) and gain settings (RGB values from 0 to 100) can be made. At the same time, it is possible to reset the stored values for each mode. Not all menu items are available for every mode. For example, in DICOM nothing can be changed at all, and in sRGB only the brightness value can be set. In the two modes "User1" and "User2", on the other hand, all values are adjustable.

EIZO almost manages a precision landing with the preset gamma values, but measurement tolerances are of course possible as well. Here are the default values and our measurement results behind them in brackets: 1.8 (1.79), 2.0 (1.99), 2.2 (2.19) and 2.4 (2.39). These are excellent results!

**Signal:** "Window selection" refers to the page on which the signal is to be displayed in PbP. Under "Image Expansion", the scaling ("Automatic", "Full Screen", "Aspect Ratio" and "Point by Point") can be set, whereby the automatic only works on the HDMI inputs.

With "Sharpness" (-2 to 2) it is possible to optimize the font sharpness. However, this function is disabled in the native resolution because nothing has to be optimized here. In addition, the input color space ("Automatic", "YUV 4:2:2", "YUV 4:4:4", "YUV" or "RGB") and the input range ("Automatic", "Total" and "Limited") can be set.

**Settings:** This item offers options for menu rotation (0° and 90°) and energy saving (On and Off) - the latter should be set to "On" because otherwise the monitor will not switch to standby mode and will stay on. Then, information is displayed in the upper right corner that there is no signal. On top of that, there are power control LEDs ("On" and "Off"), USB selection for DisplayPort as well as HDMI 1 and HDMI 2 (USB-C or USB-B) and sound selection PbP (left and right). Furthermore, the monitor can be reset to factory settings here.

**Languages:** A total of nine languages are available (English, German, French, Spanish, Italian, Swedish, Japanese, Simplified Chinese and Traditional Chinese).

**Information:** In this menu item, you can check the model name, serial number, firmware version, usage time and input signal information.

### **Administrator Settings**

Pressing the power button and the left button simultaneously for two seconds during power-on opens the "Administrator Settings" menu. Further settings are available here. This menu is only available in English, no matter which language setting was selected in the OSD.

**Auto Input Detection:** When the monitor is connected to multiple PCs and a particular PC enters power saving mode or no signals are received from the monitor, it automatically switches to the port through which signals are received. The function can be turned on or off. By default, it is turned off and also does not work in PbP mode.

**Compatibility Mode:** This can be turned on or off. By default, it is deactivated and can be activated, for example, when the positions of windows and icons change, when the monitor is switched on or off, or after exiting the energy-saving mode. Even if the mouse or keyboard does not activate the PC from sleep mode, "Compatibility Mode" should be switched on.

**USB:** "On" enables the USB port for displaying video signals via USB-C, the docking station function, USB Power Delivery and Screen InStyle (monitor control). "Off" disables the USB port so that no USB peripherals can be used.

**Ethernet:** The LAN socket can be activated or deactivated here.

**Signal Format:** The type of signal that can be displayed on the monitor can be changed. The default setting is "HBR3/USB 3.2 Gen 1" (the maximum USB transfer speed is 5 Gbps). When connecting to a computer that does not support HBR3, the setting can be "HBR2/USB 2.0" (the maximum USB transfer speed is 480 Mbps).

It is also possible to select version 1.2 or 1.4 for DisplayPort. For HDMI 1 and 2, the setting "4K UHD 60 Hz" or "4K UHD 30 Hz" is available.

**On-Screen Logo:** Here you can select whether the EIZO logo should be displayed at startup.



**Key Lock:** To prevent changes to the settings, the control switches on the front of the monitor can be locked. The options are "Off", "Menu" and "All".

**Apply:** The settings are applied and the Administrator Settings menu is closed.

## Image quality

The panel bezel and the surface of the panel are matte and effectively anti-reflective. However, light from the side or even a viewer wearing light-colored clothing creates clearly visible reflections on the screen with very dark screen content. The surface looks reflective from an extremely lateral position.

During reset (factory settings), the EIZO EV2740X sets the following values:

Image mode:	User1
Brightness:	86
Contrast:	50
Gamma:	2,2
Color temperature:	6500 K
RGB:	97/100/91

The Auto EcoView and EcoView Optimizer 2 energy-saving options have been disabled. These values were used for the following assessment at factory settings.

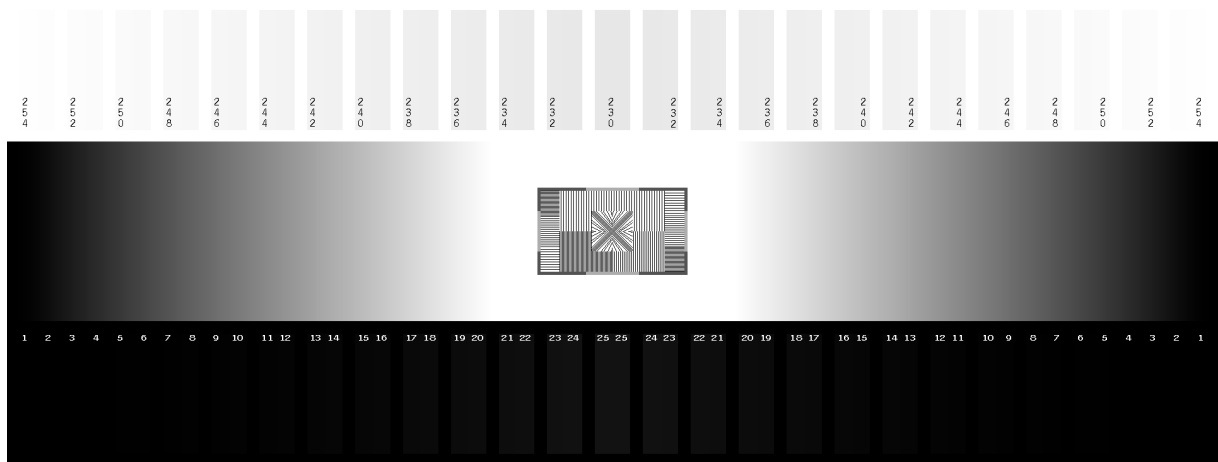
## Resolution

The 4K resolution (3840 x 2160 pixels) is distributed over 27 inches and thus offers 163 ppi. The term ppi stands for "pixel per inch". This unit of measurement describes the resolution of an image, but does not provide information about the output size.

In the native resolution, the font display is too small. Windows recommends scaling to 150%, which is about 109 ppi and a font size like a 27-inch WQHD monitor (2560 x 1440). If you find the font too small, you can go to 175% with 93 ppi, which roughly corresponds to a 24-inch display with Full HD resolution (1920 x 1080). The font display is sharp and can still be adjusted to the user's needs via ClearType under Windows if necessary.

## Grayscale

The gray balance of the EIZO EV2740X already makes an excellent impression ex-works. The grayscale levels look completely neutral. The brightest levels can be distinguished completely and the darkest up to and including level 5. Both halves of the screen look completely identical.



### *Test image grayscale display*

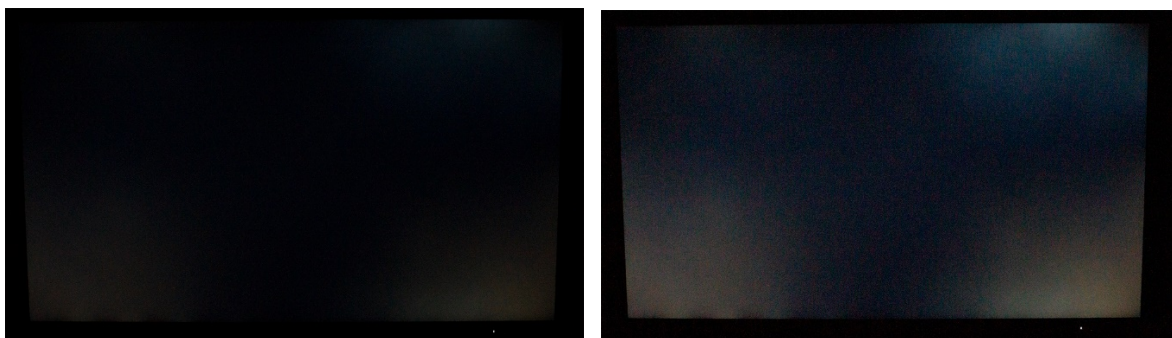
Even the finest gray gradients are reproduced extremely precisely and seamlessly. No color distortions or banding effects are visible. The EIZO EV2740X certainly owes this outstanding result to the use of a 14-bit LUT (look-up table) for internal processing. This corresponds to an actual display of 1.06 billion color gradations. In other screens, the specification is often based on an 8-bit calculation that is upgraded by FRC ("Frame Rate Control").

In contrast to EIZO's CG series monitors, only an 8-bit signal can be set in the graphics card driver on the output side of the EV2740X. Nevertheless, the higher internal precision proves to be advantageous when processing fine gray and color gradients.

The screen already shows excellent viewing angle stability in the grayscale. It is particularly impressive horizontally. The display remains virtually unchanged in both the brightest and darkest areas. The usually occurring strong brightening in dark areas is not observed here.

### **Illumination**

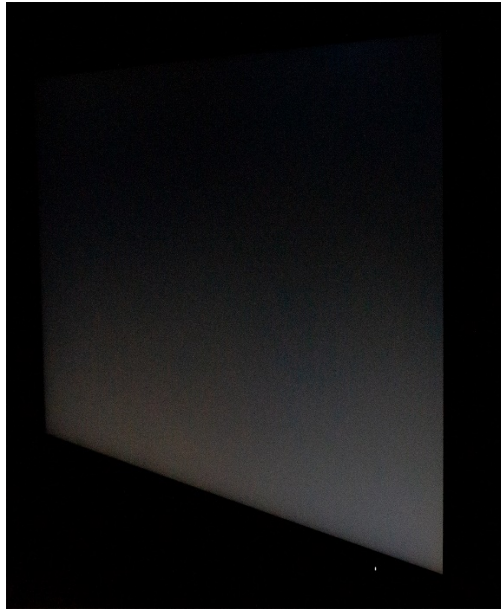
The left photo shows a completely black image roughly as seen with the naked eye in a completely darkened room; here the noticeable weaknesses become visible. The right photo with a longer exposure time, on the other hand, highlights the problem areas and only serves to show them more clearly.



*Illumination with normal exposure*

*Illumination with extended exposure*

When looking from the center, brightenings can be seen in the corners, but they are very subtle here. They also seem to be purely caused by the viewing angle, since they completely disappear when the affected areas are viewed vertically.



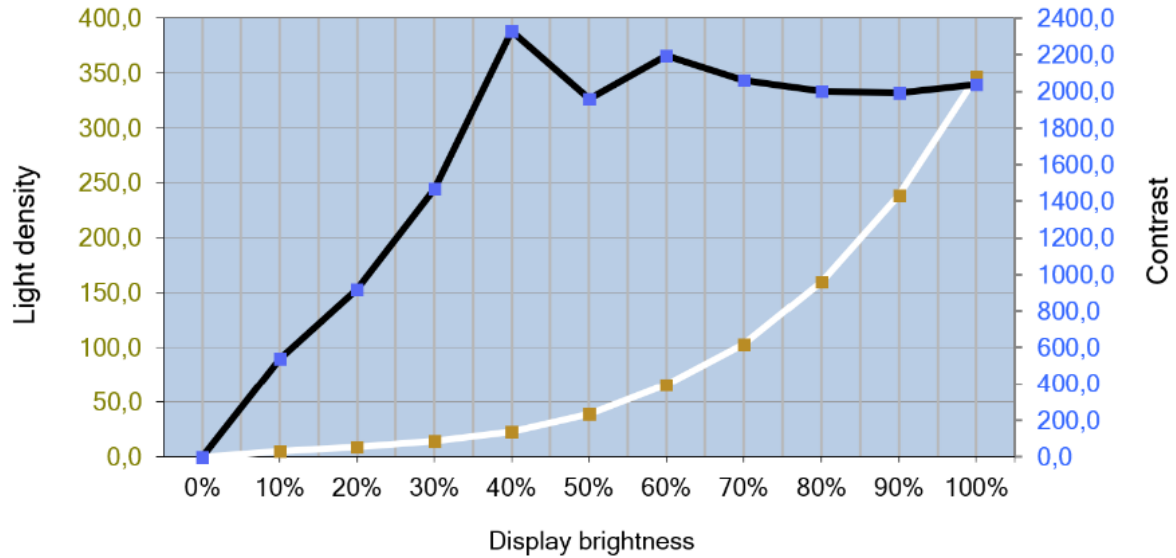
*Glow effect horizontal*

Moving further away from the central seating position, the usual effect of the IPS gloss becomes visible, being most noticeable at diagonal viewing angles. This is a typical behavior of an IPS panel.

### **Brightness, black level and contrast**

The measurements are performed after a calibration to D65 as white point. If possible, all dynamic controls are deactivated. Due to the necessary adjustments, the results are lower than when performing the test series with native white point.

The measurement window is not surrounded by a black border. The values can therefore be compared more with ANSI contrast and reflect real-world situations much better than measurements of flat white and black images.



### *Brightness and contrast gradient*

With native white point, we achieve a maximum brightness of about 347 cd/m<sup>2</sup>, which corresponds to the manufacturer's specified mark of 350 cd/m<sup>2</sup>. However, the luminance can be reduced so much that you effectively cannot see anything on the monitor anymore and our measuring device cannot determine any values. A sensible use of the brightness control usually only starts from a value of 40% (23 cd/m<sup>2</sup>). The graphic shows the entire brightness range. We only considered the contrast values from 10% in the average calculation.

As with virtually all devices in the EV series, the brightness increase of the EIZO EV2740X is not linear as usual, but progressive. The maximum brightness is completely sufficient in any case. However, usual working brightness levels are only reached from settings above the 70% mark.

The manufacturer specifies the contrast ratio of the IPS panel with 2000:1. According to our measurements, it is a very good 2286:1 after calibration. The average value of our measurements is 1751:1 and the maximum value is 2330:1. This is an outstanding value for an IPS panel.

### **Image homogeneity**

We examine the image homogeneity on the basis of four test images (white, neutral tones with 75 %, 50 %, 25 % brightness), which we measure at 15 points. This results in the averaged brightness deviation in % and the likewise averaged delta C (i.e. the chromaticity difference) in relation to the respective centrally measured value. The perception threshold for brightness differences is about 10 %.



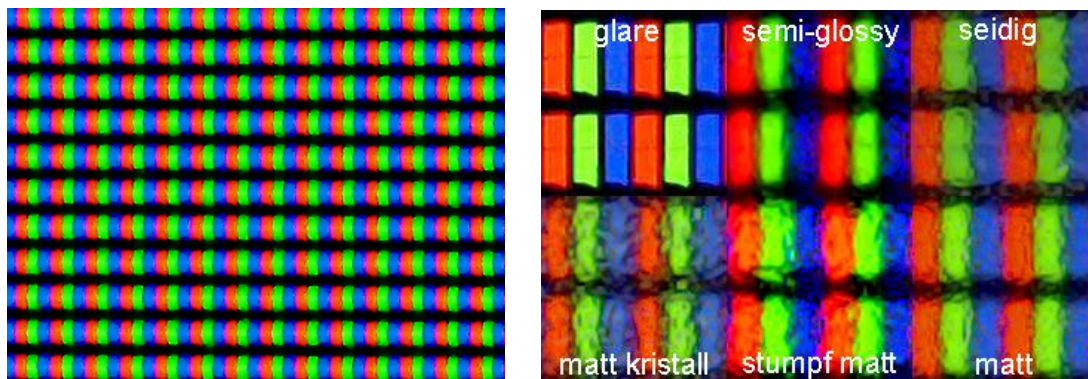
-0.97%	-1.92%	-6.4%	-4.61%	-6.93%	0.56	0.54	0.59	1.33	1.48
-4.45%	-0.49%	0.0%	-3.55%	-6.61%	0.41	0.56	0.0	1.19	0.29
-9.99%	-7.05%	-7.28%	-5.08%	-8.83%	0.37	0.99	0.92	1.48	0.65

*Brightness distribution in %*  
*Color homogeneity in Delta C*

In terms of color homogeneity, the EIZO EV2740X performs first-rate on average as well as in terms of maximum deviation (delta C average: 0.81, delta C maximum: 1.48). The maximum deviation of 10% in the brightness distribution is also very good. On average, the brightness distribution is 5.3%, which is still a hair's breadth away from a good result.

## Coating

The surface coating of the panel has a great influence on the visual assessment of image sharpness, contrast and sensitivity to ambient light. We examine the coating with the microscope and show the surface of the panel (foremost film) in extreme magnification.



*Coating of the EIZO EV2740X*  
*Coating reference image*

Microscopic view of the subpixels, with focus on the screen surface: The EIZO EV2740X has a matte surface with subtle microscopically visible indentations for diffusion.

## Viewpoint

The manufacturer's specification for the maximum viewing angle is 178 degrees horizontally and vertically. These are the typical values for modern IPS and VA panels. The photo shows the screen of the EIZO EV2740X at horizontal viewing angles of  $\pm 60$  degrees and vertical ones of  $+45$  and  $-30$  degrees.



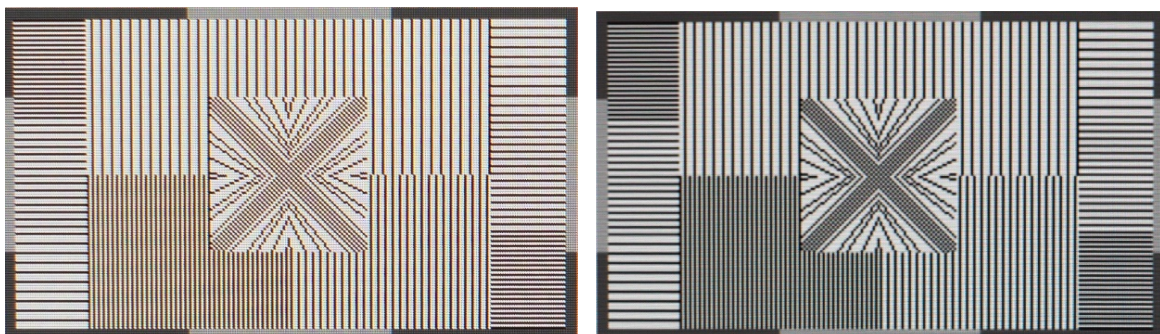
### *Horizontal and vertical viewing angles*

IPS panels are generally characterized by excellent viewing angle stability. However, the EIZO EV2740X shows a remarkable performance even within IPS technology. The viewing angle can only be described as perfect in both horizontal and vertical directions. Colors and color saturation remain unchanged from all viewing angles.

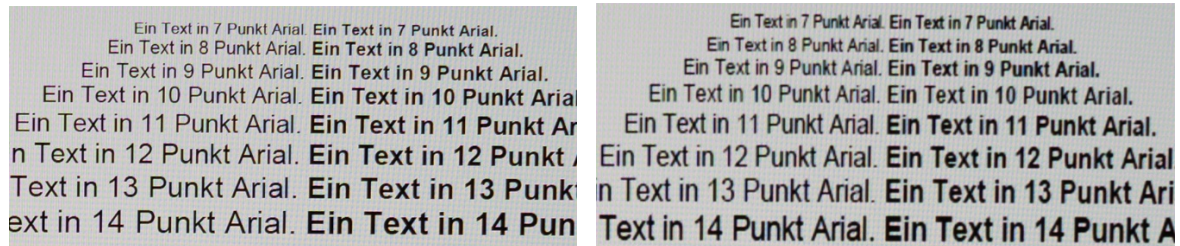
## **Interpolation**

A sharpness slider is present in the OSD under "Signal", but it is disabled in the native resolution, which is completely correct. The sharpness can be changed in interpolated resolutions to improve the writing sharpness. In our estimation, this is also the only sensible application purpose for a sharpness control.

For input signals that deviate from the native resolution, the device offers the options "Full screen" (distorted if necessary), "Fixed aspect ratio" (undistorted) and also a pixel-precise 1:1 display. However, the "Automatic" setting can only be used with the HDMI inputs.



*Test graphics native, full screen*  
*Test graphics 1920 x 1080, full screen*



*Text rendering native, full screen*  
*Text rendering 1920 x 1080, full screen*

The interpolation capabilities of the EIZO EV2740X are excellent. This applies to the scaling options as well as the implementation. Sharpness at native resolution is very good, as expected. At 1920 x 1080, you can see that the font is displayed bolder. Color fringing does not occur.

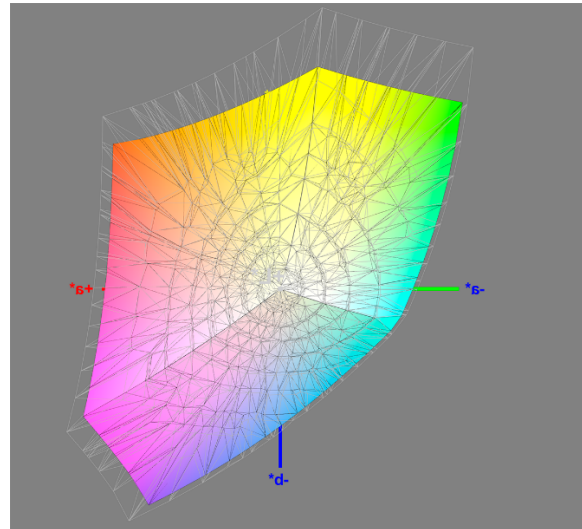
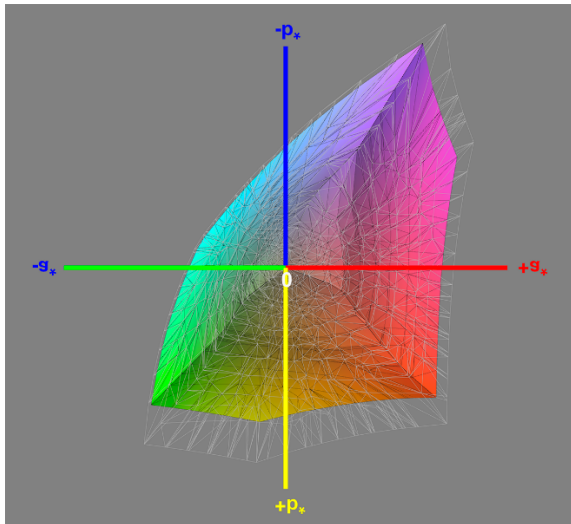
In all interpolated resolutions, the readability of texts and the reproduction of the test graphics are - according to the scaling level - good to very good. The unavoidable interpolation artifacts are low. Even texts with bold letters remain legible.

<b>Signal</b>	<b>Distortion-free, maximum area-filling reproduction</b>	<b>Unscaled playback</b>
SD (480p)	Yes	Yes
SD (576p)	Yes (PC), No (Chromecast)	Yes
HD (720p)	Yes	Yes
HD (1080p)	Yes	Yes
Ultra HD, 4K	Yes	Yes
PC (5:4)	Yes	Yes
PC (4:3)	Yes	Yes
PC (16:10)	Yes	Yes
PC (16:9)	Yes	Yes

## **Color rendering**

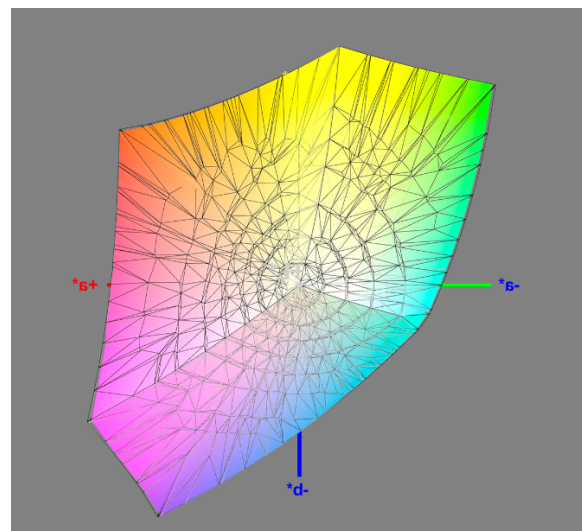
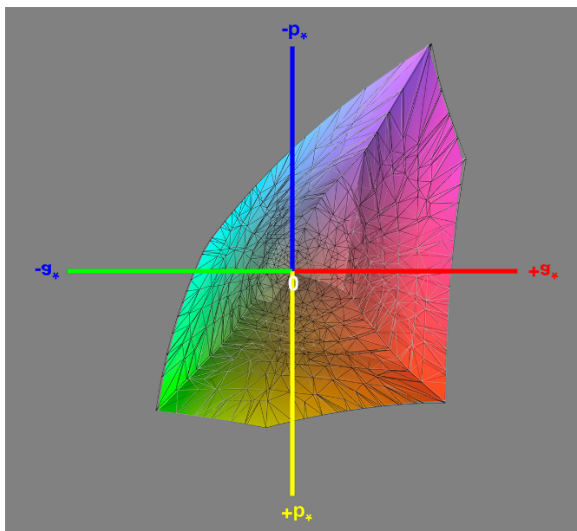
EIZO promises 100% sRGB color space coverage for the EV2740X. The following graphics show the color space coverage in User1 mode (6500 K) after the software calibration. It is clearly visible that the sRGB color space is covered by 100%. However, the color gamut strongly exceeds the sRGB color space. A missing color gamut is indicated by a black grid, a larger coverage by a light gray grid.





Coverage of sRGB color space, 3D slice 1  
Coverage of sRGB color space, 3D slice 2

The EIZO EV2740X also has an sRGB mode, which should ideally limit the somewhat extended color space accordingly. As can be seen in the following graphics, this succeeds exceptionally well. The sRGB color space coverage is 98%.



Coverage of sRGB color space in sRGB preset, 3D slice 1  
Coverage of sRGB color space in sRGB preset, 3D slice 2

The following table summarizes the results for the factory preset and after software calibration.

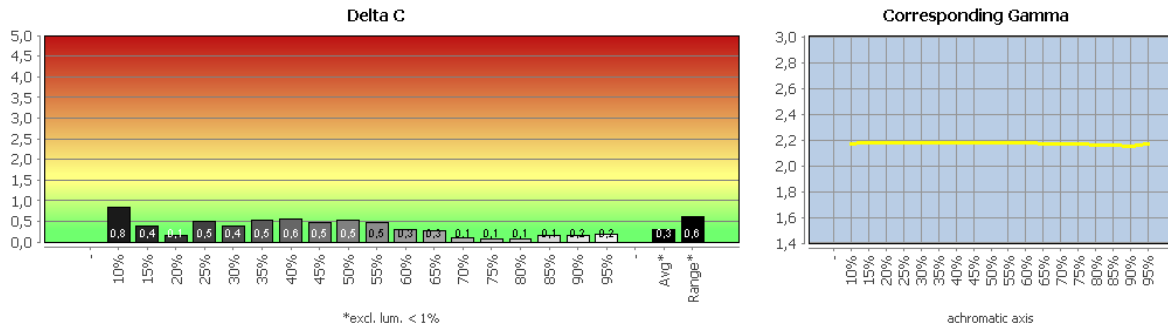
Color space	Cover in factory preset	Coverage after calibration
sRGB	99 %	100 %
Adobe RGB	-	74 %
ECI-RGB v2	-	67 %
DCI-P3 RGB	-	82 %
ISO Coated v2 (FOGRA39L)	-	91 %



## Measurements before calibration and profiling

### Color mode: Custom (factory default)

We have summarized the explanations for the following charts for you: Delta E deviation for color values and white point, Delta C deviation for gray values, and gradation.

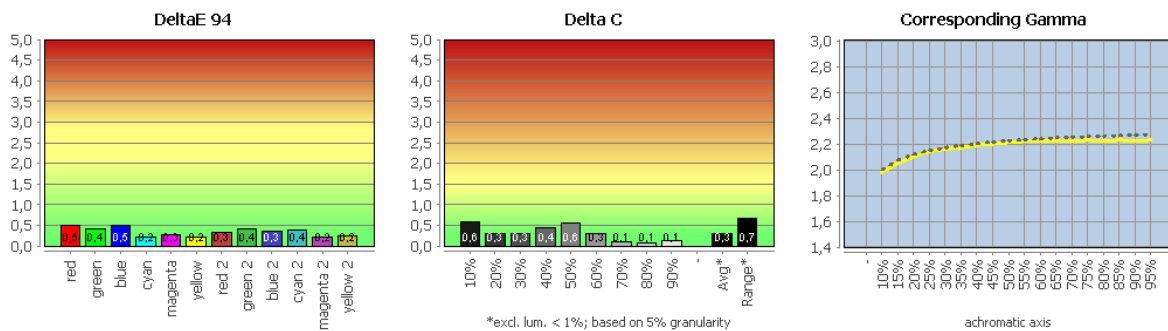


### Gray balance in factory setting, "User1" picture mode

This result can be used as a reference and is impressive for a business monitor. The gray balance of the EIZO EV2740X is already very good ex-works. The color temperature of 6400 K is just below the default of 6500 K. The gamma (average: 2.17) is practically exactly at the target. The gamma curve is perfect.

The detailed test results can be downloaded as a [PDF file](#).

## Comparison sRGB mode with sRGB working color space



### Color reproduction in factory setting, picture mode "sRGB"

For the sRGB color space, we have already seen how perfectly EIZO restricts it in the sRGB preset. The results are also excellent in terms of gray balance (Delta C Average: 0.3; Delta C Range: 0.66) and color values (Delta E94 Average: 0.36). The gamma curve averages 2.18 and has a perfect gradient.

The detailed test results can be downloaded as a [PDF file](#).

## Measurements after calibration and profiling

For the following measurements, the device was calibrated and profiled from Quato iColor Display. The target brightness was 140 cd/m<sup>2</sup>. D65 was chosen as the white point.

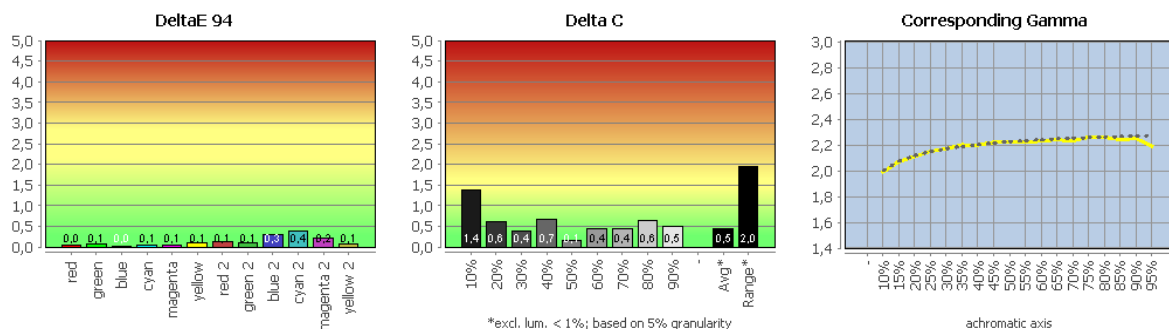
Neither represents a generally valid recommendation. This also applies to the choice of gradation, especially since the current characteristic is taken into account anyway as part of color management.

The following values were set for the calibration in the OSD:

Image mode:	User1
Brightness:	77
Contrast:	50
Gamma:	2.2
Color temperature:	From
RGB:	97/100/94

The necessary adjustments to the RGB gain control are thus minimal. EIZO has RGB values of 97, 100 and 91 in the "6500 K" mode. Only blei blue increased the value from 91 to 94.

## Profile validation

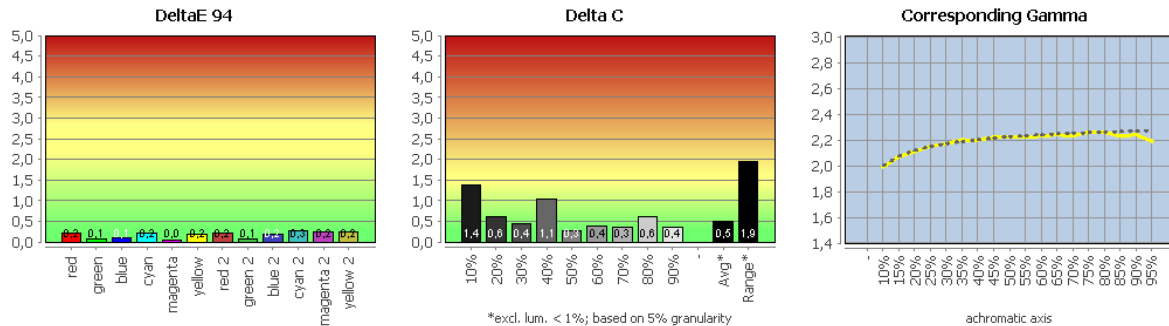


### Profile validation

The EIZO EV2740X does not show any noticeable drifts or unsightly non-linearities. The matrix profile describes its condition very accurately. A repetition of the profile validation after 24 hours did not reveal any significantly increased deviations. All calibration targets were met. The gray balance is very good (delta C average: 0.45), only the range is slightly increased with 1.96 delta C, which leads to a good score overall. The color values are very good (Delta-E94-Average: 0.16; Delta-E94-Maximum: 0.62).

The detailed test results can be downloaded as a [PDF file](#). (eizo-ev2740x-validation.pdf)

## Comparison with sRGB (color transformed)



## Comparison with sRGB (color transformed)

Our CMM considers the working color space and screen profile and performs the necessary color space transformations with colorimetric rendering intent on this basis. The gray balance is very good (Delta-C-Average: 0.49), only the range is slightly increased with 1.95 Delta C, which leads to a good score overall. The color values are very good (Delta-E94-Average: 0.22).

The "Range" in Delta C ( $\Delta C$ ) refers to the range or span of color differences between two colors or color values. Delta C is a metric used in color measurement and analysis to quantify the color difference between two color samples. It measures how much the colors differ from each other.

The detailed test results can be downloaded as a [PDF file](#).

## Reaction behavior

We examined the response behavior in native resolution at 60 Hz on the DisplayPort. The monitor was reset to the factory settings for the measurement.

## Image build-up time and acceleration behavior

We determine the image build-up time for the black to white change and the best gray to gray change. Additionally, we name the average value for our 15 measuring points.

The measurement value CtC (Color to Color) goes beyond the conventional measurements of pure brightness jumps - after all, one usually sees a colored image on the screen. This measurement therefore measures the longest period of time that the monitor needs to change from one mixed color to the other and stabilize its brightness. The mixed colors cyan, magenta and yellow are used - each with 50% signal brightness. In the CtC color change, therefore, not all three subpixels of a pixel switch in the same way, but different rise and fall times are combined.

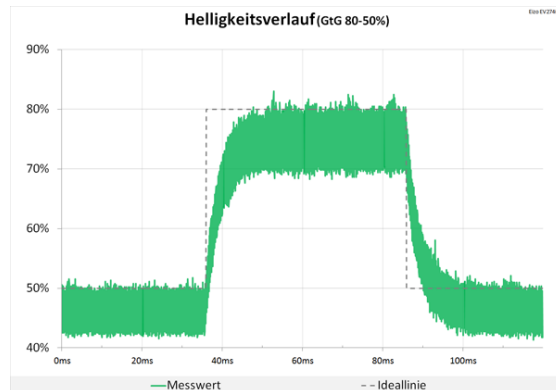
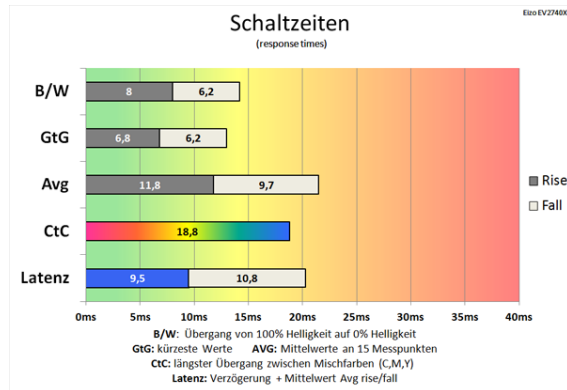
The data sheet states a response time of 5 ms for GtG. An acceleration option (overdrive) is available. There are the positions "Off", "Standard" and "Improved". Standard" is preset as the default value. The overdrive function can only be switched in the two modes "User1" and "User2".

## Overdrive, 60 Hz

### 60 Hz, Overdrive "Off"

At 60 Hz and with the overdrive turned off, we measure the black-white change at 14.2 ms and the fastest gray change at 13 ms. The average value for our 15 measuring points is 21.5 ms, and the CtC value is determined with 18.8 ms.

There are no overshoots to be observed, the tuning is very neutral. The switching time diagram shows, among other things, how different brightness jumps add up, how fast the monitor reacts in the factory setting in the best case, and which average response time can be assumed.

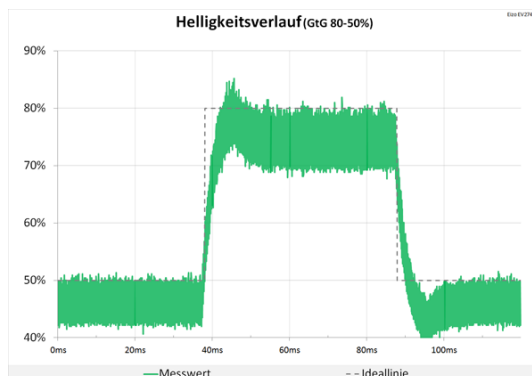
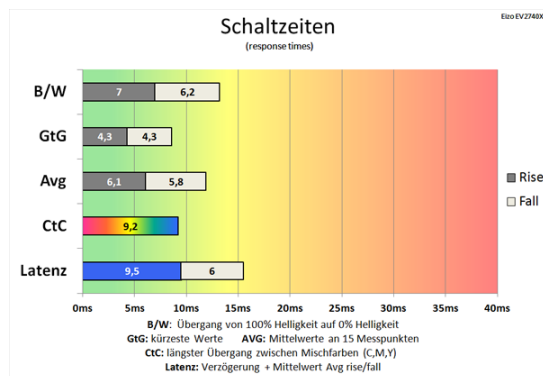


60 Hz (Overdrive "Off"): moderate switching times

60 Hz (Overdrive "Off"): no overshoots

### 60 Hz, Overdrive "Standard"

In the factory setting "Standard", the switching times are already visibly shortened - without producing annoying overshoots. The black/white change is reduced to 13.2 ms and the fastest gray change to 8.6 ms. The average value for our 15 measuring points is almost halved to 11.9 ms. The CtC value is now also good at 9.2 ms. The factory setting is also the optimal choice for everyday use. Minimal overshoots can be detected, but they do not lead to a deterioration of the image display.



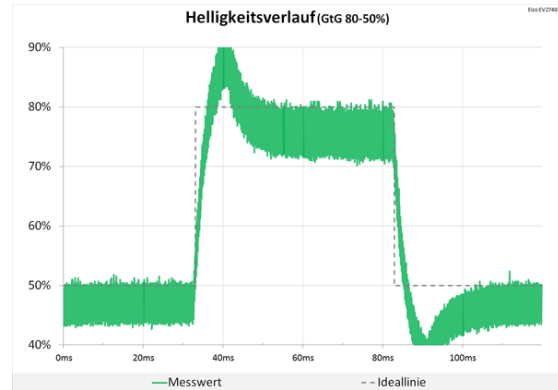
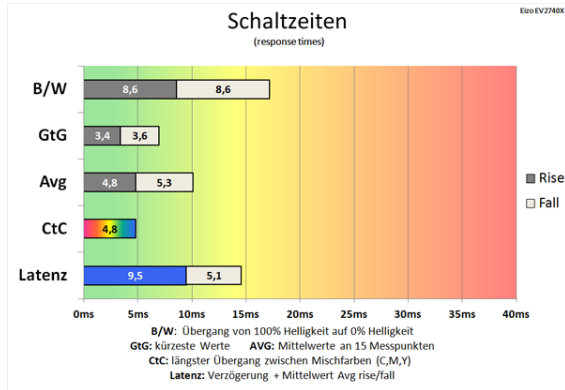
60 Hz (overdrive "standard"): good switching times

60 Hz (overdrive "standard"): minimal overshoot

### 60 Hz, Overdrive "Improved"



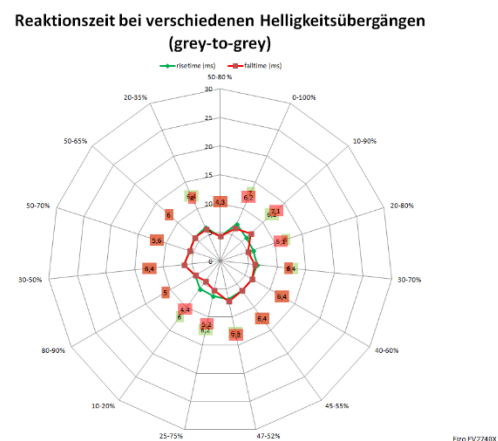
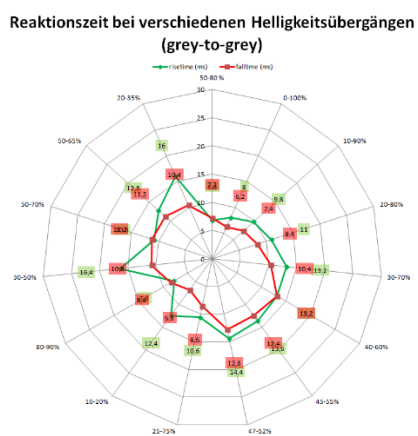
In the highest setting "Improved", the EIZO EV2740X can once again improve. Only the black/white change increases to 17.2 ms. However, we cannot complain about the fastest gray change with 7 ms. The same applies to the average value for our 15 measuring points, which is 10.1 ms. The CtC value of 4.8 is now very good. In this overdrive setting, the overshoots are very noticeable and even blow up our graph. The panel simply reaches its limits here.



60 Hz (Overdrive "Improved"): fast switching times  
 60 Hz (Overdrive "Improved"): acceptable overshoots

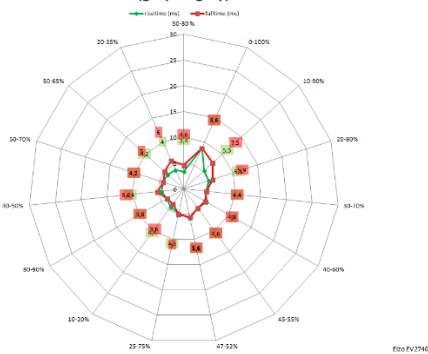
## Network diagrams

In the following network diagrams you can see an overview of all measured values for the different brightness jumps of our measurements. Ideally, the green and red lines would be close to the center. Each axis represents a brightness jump of the monitor defined in level and dynamics, measured via light sensor and oscilloscope.



60 Hz, Overdrive "Off"  
 60 Hz, Overdrive "Standard"

### Reaktionszeit bei verschiedenen Helligkeitsübergängen (grey-to-grey)



60 Hz, Overdrive "Improved"

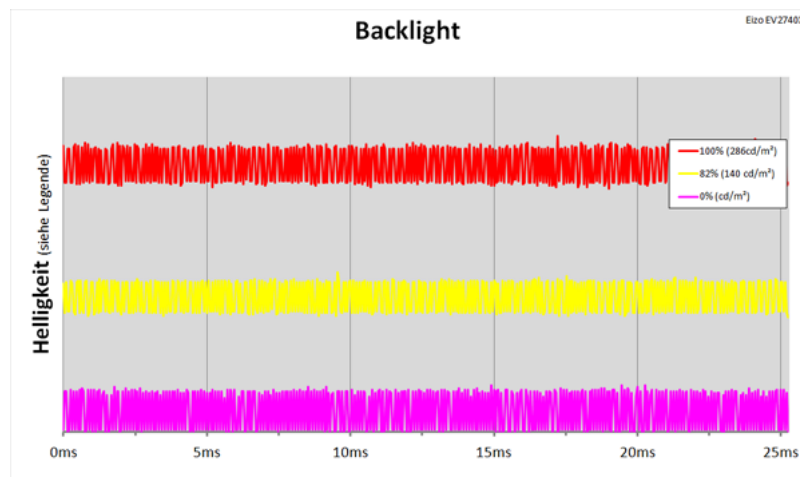
## Latency

Latency plays an important role for gamers because it determines the total delay between input and output. To determine the latency, we add the signal delay time to half the average frame rate. With a refresh rate of 60 Hz and the overdrive mode "Standard", we achieve the shortest total latency of 15.5 ms (consisting of 9.5 ms signal delay and half GtG time of 6 ms). In the "Enhanced" overdrive mode, the shortest total latency is 14.6 ms (consisting of 9.5 ms signal delay and half GtG time of 5.1 ms).

It should be taken into account that a display with a refresh rate of 60 Hz is technically not able to achieve a signal delay of 1 ms, as is possible with monitors with a refresh rate of 144 Hz or higher. Nevertheless, a latency of 14.6 ms for a 60 Hz screen is not a peak value either. However, this latency is perfectly acceptable for an office monitor.

## Backlight

The EIZO EV2740X is equipped with a continuous backlight. In comparison, the diagram shows that the luminous flux is not interrupted at both full and reduced brightness, as can be the case with PWM backlighting. This makes the screen ideal for prolonged work in front of it even at lower brightness, as the flickering of the backlight does not tire the eyes.

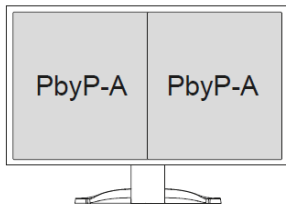


LED backlight with continuous brightness control

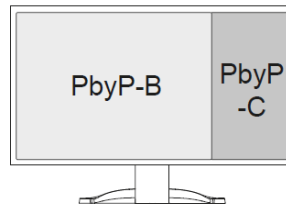
## PbP

PbP stands for "Picture by Picture" and refers to a feature that allows multiple sources to be displayed simultaneously on one monitor. When using PbP, the device divides the available screen space into separate sections and displays the content of different input sources side by side at the same time.

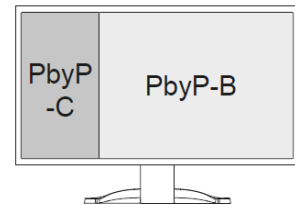
Layout 1



Layout 2

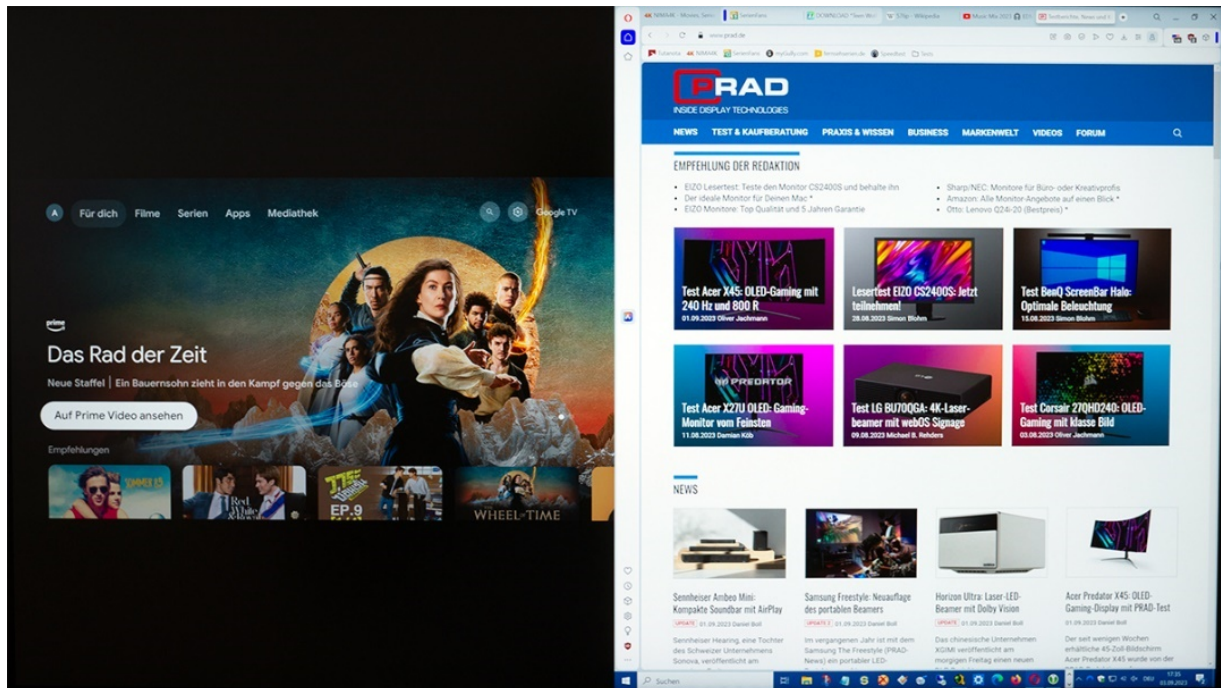


Layout 3



*PbP: Available layouts (Screenshot: EIZO manual)*

This can be especially useful when you connect multiple devices - such as a second computer or a laptop - to the EIZO EV2740X and want to keep an eye on the content of each source simultaneously. Each section of the display then shows the content of a specific source.



*PbP in PbP-A/PbP-A layout*

In the case of the EIZO EV2740X, there are the options (layout 1 to 3) PbP-A/PbP-A, PbP-B/PbP-C and PbP-C/PbP-B. Thus, two sources can be viewed simultaneously. All four signal inputs can be defined as main or sub input in the OSD. With a click of a button in the OSD, it is possible to swap the displayed image sources from left to right. The same applies to the assignment of the sound to the respective source. For each source, you can decide whether the display is "automatic", "full screen", "aspect ratio" or "dot by dot". Not every constellation is possible. All working combinations are mentioned in the manual.

In our example, the Chromecast's resolution (on the left) is 1920 x 1080 pixels (Full HD), while on the right, Windows' recommended resolution is 1920 x 2160 pixels. The Windows recommended scaling is 150%.

## **Docking station**

The EIZO EV2740X is equipped with a LAN port and a USB hub for use as a docking station. By connecting a USB-C cable, a network environment can be created, especially for notebook PCs or tablets that are not equipped with LAN jacks. Furthermore, peripherals that support USB can be used and smartphones can be charged. The USB-C cable included in the scope of delivery should be used for this. Keyboard and mouse are connected directly to the monitor in this case.

Even when the monitor is in power-saving mode, devices connected to the USB downstream port can be operated. Therefore, the power consumption of the monitor varies even in power-saving mode, depending on the connected devices. A device connected to the display's USB downstream port will not operate if the monitor's main power switch is turned off.

## **Loudspeaker**

The EIZO EV2740 also has two built-in speakers with 2 watts of output power each. Narrow slots of just under 5 cm are set into the bottom bezel at the sides in the corners. The device processes sound signals on all signal inputs or via stereo mini jack. The volume and the sound quality of the integrated speakers are acceptable, but of course they can't compete with external speakers. How could they? There is simply a lack of sound volume. We had set the volume to the maximum value of 30 and then adjusted the volume via Windows. The speakers at least do much better than many devices available on the market. We were positively surprised by the quality in any case. And those who like to get a better sound can use the headphone jack.

## **DVD and video**

The test device has two HDMI interfaces for HD players. The sound is routed to the speakers or the headphone jack if it is occupied. We connected a Google Chromecast via HDMI cable for the following tests. We selected the "Aspect Ratio" setting. The EIZO EV2740X does not support HDR.

## **Scaling and frame rates**

For the evaluation, we play picture signals in 480p, 576p, 720p, 1080p and 3840 x 2160. 16:9, 21:9 or 4:3 picture material was rendered exactly as expected, without distortions and in each case with borders on the top and bottom or on the sides. Only 576p was rendered distorted at the HDMI input. Playback with 30, 50 or 60 Hz delivered flawless results. Playback with 24p is unfortunately not possible.

Three settings are available for the video level. A content-controlled, i.e. automatic display can be selected, or alternatively between "Total" and "Limited". The color space can also be adjusted manually. The options "Automatic", "YUV 4:2:2", "YUV 4:4:4", "YUV" and "RGB" are available, whereby "YUV 4:2:2" and "YUV 4:4:4" can only be selected under HDMI and only "YUV" under DisplayPort and USB-C.

## Rating

Housing processing/mechanics:	5
Ergonomics:	5
Operation/OSD:	5
Energy consumption:	5
Noise generation:	5
Subjective image impression:	5
Viewing angle dependence:	5
Contrast:	5
Illumination (black image):	4
Image homogeneity (brightness distribution):	4
Image homogeneity (color purity):	5
Color space volume (sRGB)	5
Before calibration (Gray. Factory mode):	5
Before calibration (sRGB):	5
After calibration (sRGB):	4
After calibration (profile validation):	4
Interpolated image:	4
Suitable for casual players:	3
Suitable for hardcore players:	2
Suitable for DVD/Video (PC):	4
Suitable for DVD/Video (external feed):	4
Price-performance ratio:	5
Price [incl. VAT in Euro]:	

## Conclusion

With the EV2740X, EIZO presents a 4K business monitor in perfection. More is not really possible. Besides design improvements, the USB-C connectivity in particular is brought up to date. With a power supply of 94 watts, external devices can now be operated much more efficiently. The already extensive ergonomic features are improved even more with the latest FlexStand, including a new stylish stand.

EIZO's image quality is usually convincing, but what the EV2740X delivers can really only be described as perfect, at least if you keep in mind that this is a business monitor. The sRGB mode narrows down the color space accordingly, and the measurement results are excellent. The image homogeneity is also convincing. A static contrast of more than 2000:1 for an IPS panel is exceptional. However, color reproduction and viewing angles also deliver top rates.

The response times of the EIZO EV2740X are good for a business monitor, but are less suitable for playing fast gaming titles with the screen. The review sample was primarily designed for the office - regardless of whether it is used as a standalone device or in combination with multi-screen solutions. Especially the excellent features to save energy are an important factor in this day and age. The energy consumption is low and achieves a very good result.



The EIZO EV2740X retails for just under 1,000 Euros. Manufacturers usually offer a warranty of two to three years. EIZO offers a five-year warranty including on-site replacement service. One year warranty can be calculated with about 100 Euros. Furthermore, the company additionally grants a zero pixel defect warranty for six months from the purchase date in case of not fully illuminated subpixels (partial picture elements ISO 9241-307). There are many 4K office displays on the market that are significantly cheaper. However, according to our research, no model comes close to those. We find the price justified for the performance shown.

For this reason, we can give the EIZO EV2740X an unqualified buy recommendation. In this quality, the manufacturer sets the bar enormously high and can be considered the reference in the field of 4K business monitors.



*Note on our own behalf:* PRAD received the EV2740X on loan from EIZO for testing purposes. There was no influence on the test report from the manufacturer, nor was there an obligation to publish or a non-disclosure agreement.

Link to original test report: <https://www.prad.de/testberichte/test-eizo-ev2740x-referenz-bei-4k-business-monitoren/>

