

Test EIZO CS2740 - 4K monitor for creatives convinces

First CS Series 4K monitor offers extended colour gamut, hardware calibration and USC-C

07.07.2020, Manuel Findeis

Introduction

Many have been waiting a long time for a hardware-calibratable EIZO screen in the 27-inch class with 4K resolution. Interestingly, however, the manufacturer is launching 4K resolution first in the CS series with the EIZO CS2740.

The predecessor, the CS2730, which was introduced at the end of 2016, was already convincing in our test. It now has two successors in the form of the CS2731 and CS2740. While the EIZO CS2731 is basically a refresh of the predecessor that remains true to the WQHD resolution, the CS2740 also goes one step further in terms of resolution. This is especially interesting for videographers, because 4K resolution has actually been the standard there for a long time.

Both devices take into account the trend that many creatives use their mobile computer as their main computer not only on the road, but also in post-production at their fixed workstation. Thanks to USB-C, a separate docking station and an additional power supply become superfluous. Of course, other monitors can do the same. However, EIZO is currently the best at precise, loss-free hardware calibration.

As before, a 16-bit LUT (look-up table) with up to 10-bit colour reproduction ensures the highest colour precision. The wide colour gamut of the device is said to be able to cover 99 % of the Adobe RGB photo colour space as well as the ISO-Coated V2 CMYK print colour space.

The excellent EIZO ColorNavigator calibration software is still included free of charge. A light shield with simple, magnetic attachment is optionally available. As a downer, however, the price of the EIZO CS2740 also goes up considerably with the 4K resolution. At the time of testing, the retail price of 1,499 euros was still close to the manufacturer's RRP and could still go down a little. Nevertheless, the CS2740 is already on a par with a CG2730.

However, the value of the unchanged five-year warranty with on-site replacement service should not be forgotten when comparing prices.

For detailed information on the features and specifications, please refer to the [EIZO CS2740 data sheet](#).

Scope of delivery

In addition to the printed manual and the power cable, the hardware package also includes visibly high-quality cables for DisplayPort, USB-C and the USB 3.0 hub. However, we missed an HDMI cable - at least on our test device.

The ColorNavigator and the manual as a PDF version can be easily downloaded from the very good EIZO support pages on the web. However, a driver was not yet available there. But you only need it anyway so that the device is also displayed by name in the device manager instead of just as a PnP monitor.



Scope of delivery

Optics and mechanics

The EIZO CS2740 is already completely pre-assembled in the box. To put it into operation, you only have to lift it out, place it on the desk and remove the protective foils. If necessary, the pre-assembled stand can be easily detached from the display with a push button. If necessary, the round stand can also be removed from the stand without tools thanks to the proven bayonet lock.

Due to the quick and easy mounting/dismounting, the EIZO CS2740 is also well suited for use "on location". Alternative mounting systems are connected to the screen via the VESA 100 screw connection. The screws are included in the scope of delivery.



Assembly of the support leg

In terms of design, the CG2730 and CS2730 have already heralded a new monitor generation at EIZO. Compared to previous models, the edge of the housing has become approx. 46 % narrower, the depth of the housing approx. 30 %. Also new were the illuminated, electrostatic sensor keys, with which the monitor functions can be operated even in a dark environment.

Obviously, the discreet yet smart design was well received not only by us in the editorial team, but also by the buyers. Compared to its predecessor, the EIZO CS2730, there is hardly any difference on the outside. The newer CS2731 looks practically identical on the outside.



Front view in the highest position



Rear view in the highest position



Front view in the lowest position



Rear view in the lowest position

The robust plastic housing has a solid and high-quality finish and is also convincing from an aesthetic point of view. A recessed handle on the back under the EIZO logo also facilitates transport.



View 45° rotation to the left



View 45° rotation to the right

As usual from EIZO, the CS2740 also offers comprehensive ergonomic functions with the proven Flexstand system. The range of adjustment options can hardly be topped. The height adjustment is generous at 15.5 cm, offers a range of 3.4 to 18.9 cm from the table surface and is carried out in two stages. First, the lower part of the stand can be extended telescopically. In addition, the display can be moved further upwards in the upper area - directly at the connection between the screen and the support leg.

Hardly any other manufacturer offers a total rotation of 344 degrees. The tilt option is also very generous at -5 to +35°. The 90° swivel for working in portrait format is also a matter of course with EIZO.



Lateral view



Lateral view with maximum angle of inclination to the rear



View pivot sideways



Pivot view from the front

As before, however, the sluggishness of the height adjustment and the tilt is worthy of criticism. While the rotation is pleasantly easy, the height adjustment and tilt function quite strictly, at least on the brand-new unit. As soon as the pressure point is overcome with the appropriate amount of force, you quickly overshoot the target.

This is not least due to the two-stage height adjustment and the different amount of force required for each stage. When pulling the display down to a lower position, it is therefore better not to stand under the unit.



Support leg

Cable routing is solved with a small plastic ring that can be inserted into the turntable either perpendicularly or parallel to the stand. Of course, this may be cost-effective above all. In practice, however, one is grateful for this quick and yet effective solution - at least if the unit changes location frequently or the cabling is changed frequently.



Cable routing

The power supply unit of the EIZO CS2740 is housed in the casing and equipped with a dedicated on/off switch. The display has corresponding ventilation slots on the back for the waste heat. We could hardly notice any heating in the area of the vents. The cooling is purely passive. The area under the EIZO logo also serves as a practical transport handle.



Ventilation slots

Technology

Operating noise

We did not notice any operating noise with the EIZO CS2740. Both in standby and in operation, the monitor works completely noiselessly - regardless of the brightness setting. However, the noise development in particular can be subject to a certain series dispersion, which is why this assessment does not necessarily apply equally to all devices of a series.

Power consumption

	Manufacturer (in watts)	Measured (in watts)
Operation max.	168	59
Operation typical	36	-
140 cd/m ²	k. A.	40
Operation min.	k. A.	29
Energy saving mode (standby)	1	<0,5
Switched off (Soft-off)	1	<0,5
Switched off (mains switch)	0	0

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

EIZO states a maximum consumption of 168 watts in the data sheet. This will certainly only be reached when an external device is supplied with power via USB-C. Without a USB consumer, the maximum consumption at the highest brightness level and DUE Uniformity is 59 watts according to our measurements.

In standby, we measured a value of less than 0.5 watts, which cannot be reduced further by the soft-off button. If desired, the monitor can be completely disconnected from the mains with the dedicated power switch.

At 140 cd/m² at the workstation, the meter shows 40 watts, the efficiency at this brightness is calculated at 0.7 cd/W. This is a comparatively poor value, but quite normal for this performance class. This is a comparatively poor value, but quite normal for this performance class.

However, the comparison with the EIZO CS2731 is interesting. The otherwise practically identical monitor of the same generation consumes only 26.38 watts with WQHD resolution at 140 cd/m². With the 4K resolution of the EIZO CS2740, the consumption increases by 1.5 times. However, the current review sample is still more economical than the CS2730 from 2016, whose WQHD consumption we measured at just under 48 watts.

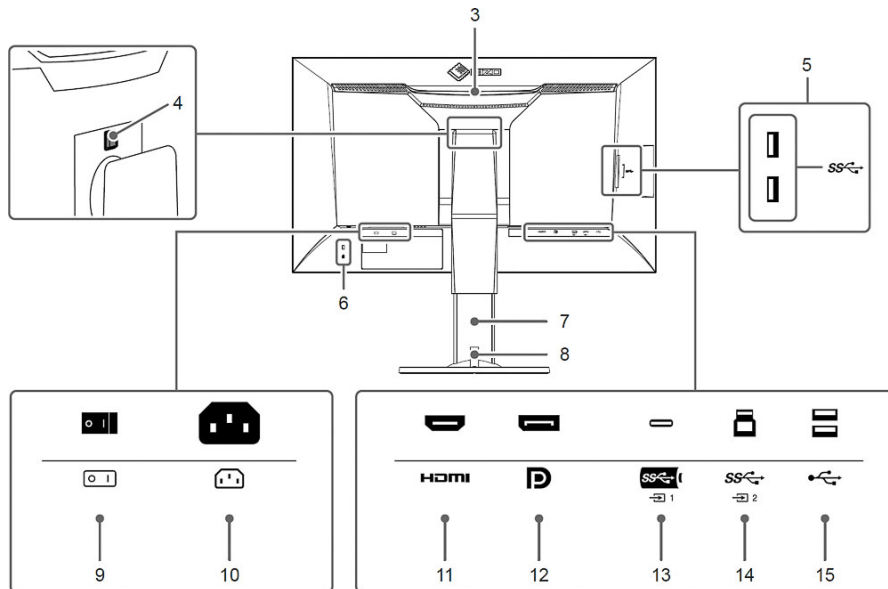
EIZO now seems to have found a permanent solution to the repeated criticism of standby power consumption. Practically all devices that came onto the market before the CG279X had an unnecessarily high power consumption of almost 10 watts in standby as soon as the USB hub cable was connected. But you actually want to keep it connected all the time. On the one hand, you can't use the USB downstream ports otherwise, and on the other hand, the connection is absolutely necessary for data exchange during hardware calibration.

As with the CG279X, you can now hear a relay click on the EIZO CS2740 when switching to standby. However, this requires the correct settings in the OSD. To do this, you have to switch off the option "Compatibility mode" in the Admin menu. In our experience, this usually has no negative effects, even in multi-screen operation. The option that is active ex works should rarely offer an advantage. If you don't deactivate it, the standby consumption of the EIZO CS2740 is also just under 10 watts.

Connections

The connections are located to the left and right of the stand and are labelled in an exemplary manner. With DisplayPort, HDMI, DVI and USB-C, practically all common digital inputs are available, but only once each.

The integrated USB 3.0 hub provides four downstream ports. Two of them are located on the back with the other connections. However, only USB 2.0 speed is offered here.



Connections (Screenshot: EIZO manual)

Two more are hidden in a bay behind the left edge of the screen. As before, they are quite easy to reach and are also suitable for the fast connection of USB sticks. Previously, there were three USB 3.0 ports there, but now there is a total of one more downstream port available.



Two easy-to-reach side USB 3.0 ports

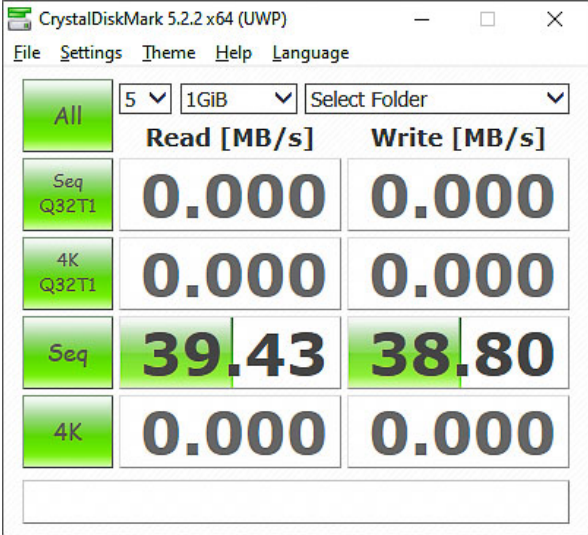
Of course, the USB-C port also serves as a second upstream port. This allows hard drives, mouse and keyboard as well as other peripherals such as memory card readers to be connected directly to the monitor. The user then only needs to connect the laptop to the CS2740 via a single USB-C cable to integrate their mobile computer into the complete workflow and supply it with up to 60 watts of power. A separate docking station or additional power supply is no longer required.

The presence of two upstream ports also enables simultaneous connection to two computers. When the input signal is changed, the mouse and keyboard, for example, are also transferred from one computer to the other.

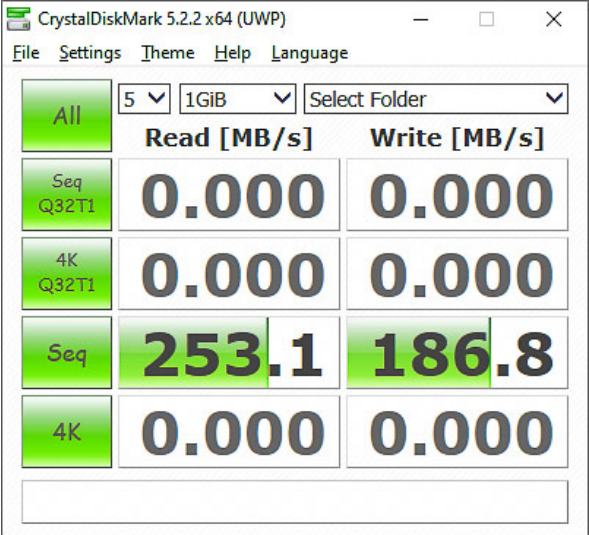
The topic of USB-C is, of course, first and foremost interesting for notebook owners. Today, however, we are also increasingly encountering graphics cards for the desktop that have a USB-C output. But what happens to the USB hub? Unfortunately, the graphics card manufacturers often do not provide any information on this in the technical data.

We tried it out for our readers with an ASUS ROG Strix RTX 2070S A8G. As expected, the transmission of the video signal works perfectly. But the USB hub is also recognised immediately. The fact that the graphics card also offers a USB connection here is not a matter of course.

Disillusionment then comes with the short test of the data transfer. We connected a fast USB 3.0 stick to a side USB port and measured the sequential data transfer with CrystalDiskMark.



Sequential data transfer, graphics card with USB-C



Sequential data transmission, USB hub type B

Via the USB-C connection, the data rate remains in the range of USB 2.0. We assume that this is due to the graphics card and not the monitor. When connected with the USB hub cable, the data transfer is in the USB 3.0 range, as expected.

Operation

Operation is via very reliably responding multifunction touch keys. The soft-off button is now also electrostatic. The feedback is further improved by a signal tone that can be switched off. As soon as a key is touched, a bar with the respective functions appears on the screen directly above it.

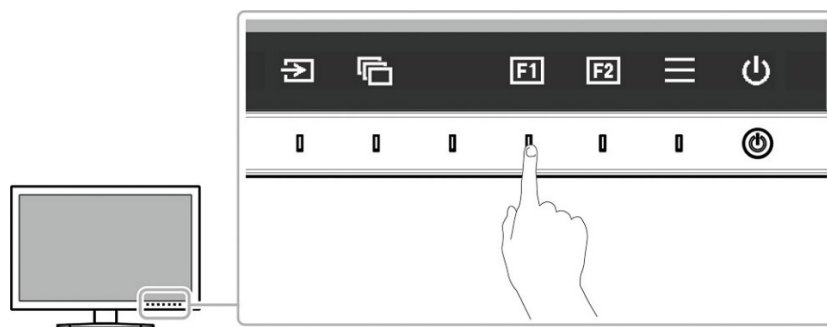


Modern and reliable touch keys

The keys are illuminated with white LEDs and are therefore easy to find even in the dark. We never found the illumination disturbing during image editing. However, the brightness can be adjusted if necessary.

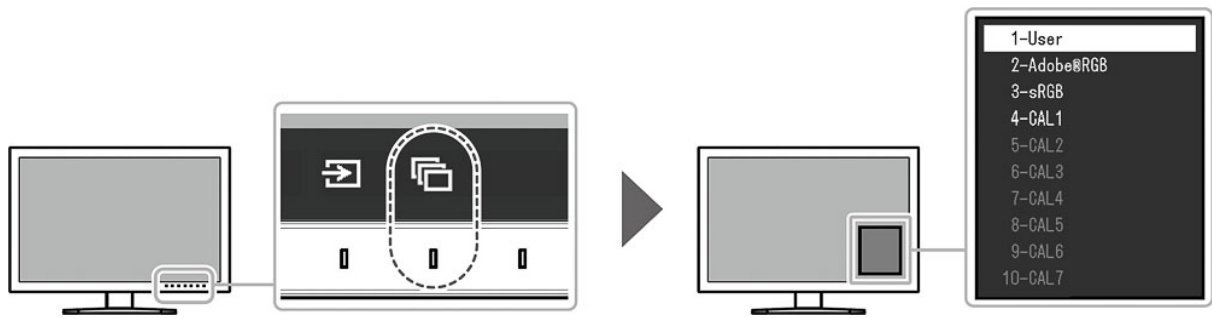
OSD

Fine tuning can also be seen in the OSD. As before, the signal source and colour mode can be adjusted directly via the quick selection. Instead of the brightness control, however, we now find two function keys that can be freely assigned to other functions instead.



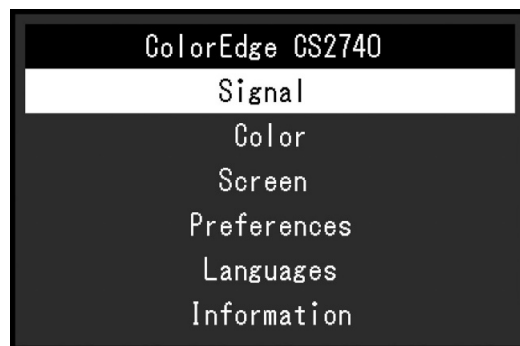
OSD: Operating help (Screenshot: EIZO manual)

With the EIZO CG279X, the new main version 7 of the ColorNavigator was also introduced at the beginning of 2019. The EIZO CS2740 also takes this into account and offers a whole seven memory locations that can be filled with your own and freely nameable calibration targets. Strictly speaking, there are even ten, because the presets can also be used for other purposes. This really leaves nothing to be desired.



OSD: Plenty of memory for hardware calibration (Screenshot: EIZO manual)

The main menu now consists of six main levels. The option to scale input signals that deviate from the native resolution as desired is no longer located under "Signal", but has unnecessarily been given its own, otherwise empty menu item under "Screen".



OSD: Main menu (Screenshot: EIZO manual)

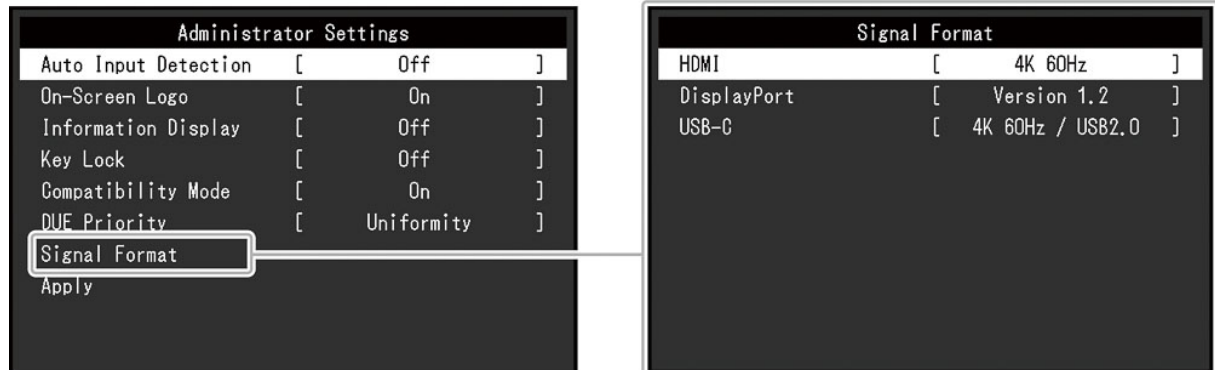
Otherwise, the functional scope of the individual menu items is as usual logical and self-explanatory. Every input is executed promptly and without any delay. This is especially true for switching between different colour modes or colour space emulations. This makes OSD operation really fun. However, you will rarely need it, because switching between colour modes or different calibration targets can now also be done completely via the ColorNavigator.



OSD: Picture settings (Screenshot: EIZO manual)

The Admin menu can only be accessed via a special key combination when the device is switched on. Two settings are particularly important here. One is the priority of the

"Digital Uniformity Equalizer" (DUE), which can be set to either homogeneity or brightness. Secondly - as already mentioned - the compatibility mode, which decides whether the unit consumes almost 10 watts in standby or not. However, the DUE priority can also be set via software without detouring via the Admin menu in ColorNavigator.



OSD: Administrator menu (Screenshot: EIZO manual)

Picture quality

The panel frame and the surface of the panel are matt and effectively anti-reflective. Light falling from the side or even a viewer wearing light-coloured clothing creates only weak reflections on the screen.

At reset, the monitor sets the following values:

Factory settings	
Picture mode:	User
Brightness:	100 cd/m ²
Contrast:	k. A.
Gamma:	2,2
Colour temperature:	6500 K
RGB:	k. A.
Colour Gamut:	Native
DUE Priority	Uniformity
Sharpness:	n. v.
Response time:	n. v.

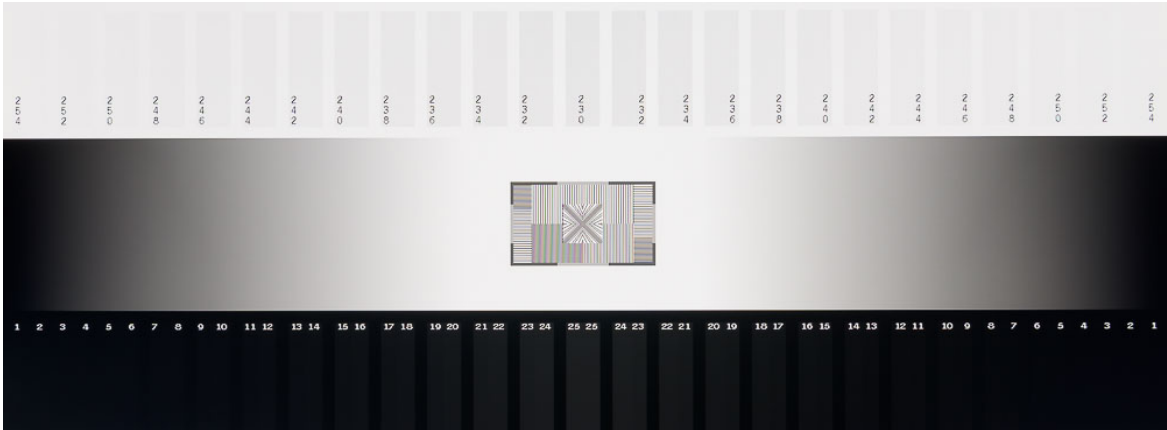
These values were used for the following assessment at factory setting.

Grayscale

Subjectively, the greyscales and the grey gradient already make a perfect impression in the factory setting. They appear very neutral and coherent. In the grey levels, the lightest gradations are completely visible and the darkest up to and including level 6. Colour shimmer and banding effects were generally not observed.

However, even with the CS2740, which has become considerably more expensive, you can see the difference to the CG models. However, this primarily concerns the viewing angle neutrality and the illumination in the corners. Since the viewing angle-related brightening is already noticeable in dark areas, it is also associated with a certain loss of definition in the darkest areas at more extreme viewing angles.

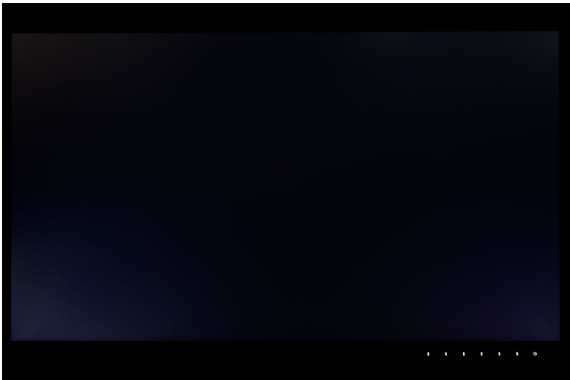
However, when compared with common all-rounders, the CS series also stands out clearly. Especially in fine grey and colour gradients as well as in homogeneous surfaces, the difference is immediately noticeable even without a trained eye.



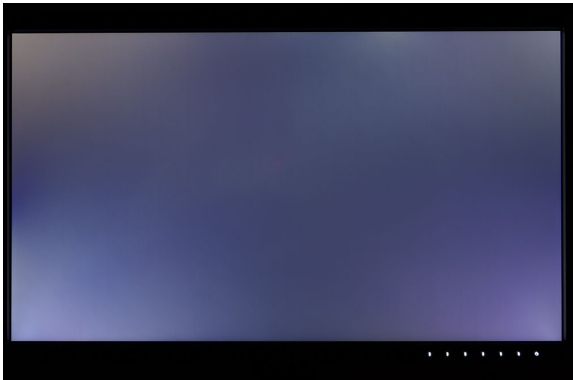
Grayscale

Illumination

The left photo shows a completely black image approximately as one sees it 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

In the black screen test, we could not detect any edge bleeding or any edge irradiation. However, viewing-angle-related brightening in the corners is already perceptible even when sitting in a central position. Fortunately, they are largely colour-neutral and disappear completely when the corners are viewed vertically.

If you deviate from the central sitting position, the clear brightening of the entire display, which is usual with IPS panels, becomes visible. However, it is very even and remains completely colour-neutral. With other screens, colour clouds can often be observed here, but not at all with the CS2740.

Compared to other monitors in our test, the illumination of the EIZO CS2740 is very good overall. However, it does not reach the level of the CG series with its True Black panel.

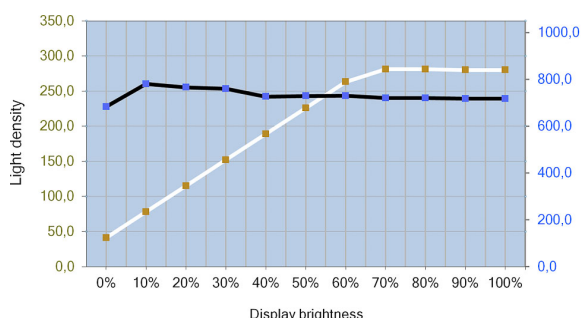
Brightness, black level and contrast

Measurements are taken after calibration to D65 as the 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.

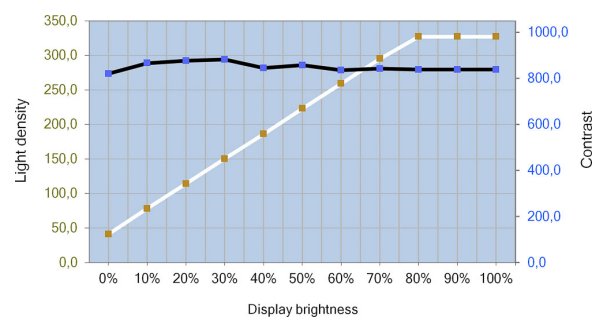
The measuring window is not surrounded by a black border. The values can therefore be compared more with ANSI contrast and reflect real-world situations much better than measurements of flat white and black images.

All ColorEdge devices from EIZO (also the CS series) have a special function for uniformity optimisation with the "Digital Uniformity Equalizer" (DUE). With the "DUE Priority" option, priority can be given either to the most uniform illumination possible (uniformity) or to high brightness and contrast values.

The option must be changed in the administrator settings or via the ColorNavigator software and then remains unaffected by the reset to factory settings. The hardware calibration is always dependent on this option. If you change it, the unit must also be recalibrated.



Brightness and contrast curve of the EIZO CS2740 - "DUE Uniformity"



Brightness and contrast curve of the EIZO CS2740 - "DUE Brightness"

The brightness of the EIZO CS2740 is no longer set in steps from 0 to 100, as is usually the case, but in concrete cd/m² values. This makes it much easier to set the desired target brightness. The controller positions are also relatively reliable and correspond

reasonably accurately with our measurements. Furthermore, the control range can be adjusted much more finely than is usually the case.

The control range of the EIZO CS2740 extends from 40 to 400 cd/m² and thus exceeds the manufacturer's specification for maximum brightness of 350 cd/m².

Nevertheless, we have measured over the entire range of values. As a result, there is a kink in the curve of the brightness curve in the graphics above from a certain position of the brightness control. When this happens depends on the DUE mode and also on the set colour temperature. The EIZO CS2740 knows itself quite well and warns at this point with a purple colouring of the brightness control.

EIZO specifies the contrast ratio of the IPS Wide Gamut panel at 1000:1 and the maximum brightness at 350 cd/m². With the "DUE Brightness" option, the CS2740 achieves a good contrast ratio of 849:1. We measured the maximum brightness at 327 cd/m².

As a rule, however, the EIZO CS2740 will be operated with the "DUE Uniformity" option - i.e. optimal picture homogeneity. Here, the maximum brightness drops to a still completely adequate 280 cd/m². The contrast ratio drops to 732:1, making the difference to the CG series obvious. Nevertheless, this is a satisfactory value that is usually quite sufficient. The luminance can be turned down to a minimum of 41 cd/m² in both modes.

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 %.

+2.19%	+0.76%	+0.86%	+2.65%	+2.18%	1.2	0.91	0.46	0.41	0.15
+0.52%	-0.79%	0.0%	+0.81%	-0.73%	1.28	0.68	0.0	0.46	0.19
+1.44%	-0.66%	+0.07%	-1.39%	+0.96%	2.01	1.06	0.96	1.09	0.74

Brightness distribution of the white test pattern

Colour homogeneity in the white test pattern

Unfortunately, all too often other manufacturers conceal pseudo-functions behind functions to improve uniformity, some of which do more harm than good.

The DUE ("Digital Uniformity Equalizer") from EIZO plays in a completely different league here. You don't have to make any concessions in the CS series either. The display is extremely uniform over the entire panel surface. Brightness and colour deviations are

neither visible to the naked eye nor can they be detected by measurement. By the way, this is already pleasantly noticeable during everyday work with office documents, even if this precision is of course not absolutely necessary here.

The brightness distribution is first-class with an average value of 1.14%, and the maximum deviation of 2.65% is also excellent. The EIZO CS2740 also performs fantastically in terms of colour homogeneity. We find the maximum deviation in the bottom left corner with a Delta C of 2. The average value only reaches 0.83%.

-5.93%	+0.85%	+0.82%	+2.17%	-6.64%
-8.47%	-3.35%	0.0%	-3.39%	-7.96%
-1.22%	-1.7%	-0.96%	-1.47%	+0.73%

Brightness distribution of the white test pattern

0.99	0.72	0.37	0.29	0.43
1.13	0.62	0.0	0.17	0.81
1.76	0.8	0.69	0.77	0.52

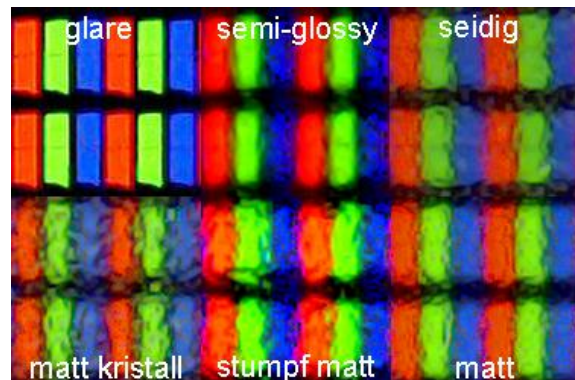
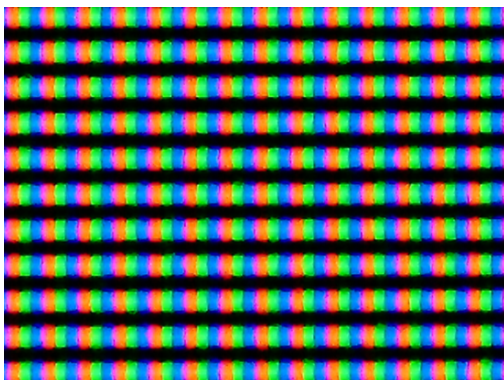
Colour homogeneity in the white test pattern

If you want the best possible contrast or need an even higher maximum brightness, set the DUE to "Brightness". We have already shown the resulting improvements above. Surprisingly, the first-class colour purity even improves somewhat. Although the brightness distribution deteriorates considerably in terms of measurement, it still only just misses the mark of "very good" in terms of the average value.

While we normally recommend working with the "DUE Uniformity" option on ColorEdge devices without any ifs and buts, the "Brightness" option on the EIZO CS2740 is well worth considering. The contrast is significantly improved, while the image homogeneity can still be described as very good.

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.



Microscopic view of the subpixels, with focus on the screen surface: The EIZO CS2740 has a dull matte surface with microscopically visible pits for diffusion.

Viewpoint

The factory specification for the maximum viewing angle is 178 degrees horizontally and vertically. These are typical values for modern IPS and VA panels.

The photo shows the screen at horizontal viewing angles of +/-60 degrees and vertical viewing angles of +45 and -30 degrees. Except for the slight drawing loss in dark areas, the viewing angle neutrality of the EIZO CS2740 is first class. However, these are only noticeable at unnaturally extreme viewing angles.

The viewing angle neutrality of the colours is extremely good. The colour temperature does not change at all. Losses in brightness and contrast, which are common at wider viewing angles, are also very slight on the EIZO CS2740. Compared to other IPS panels, which are known to always perform well in this area, the viewing angle neutrality of the current review sample is therefore easily noticeable as above average.

As expected, the EIZO CS2740 is very well suited for large-scale editing or reproduction of colour-critical content. However, one should keep in mind the viewing angle-related brightening in the corners when editing critical shadow areas.

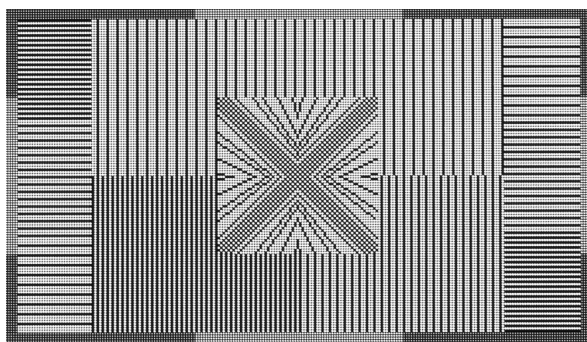


Horizontal and vertical viewing angles

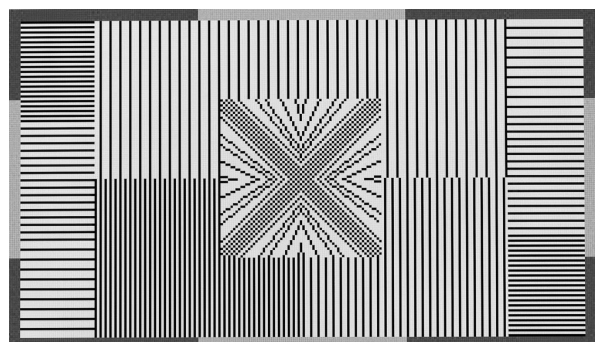
Interpolation

EIZO does without a separate sharpness control, which in most implementations, however, only achieves questionable improvements anyway. For input signals that deviate from the native resolution, the EIZO CS2740 offers the options "full screen" (distorted if necessary), "aspect ratio" (undistorted) and also a pixel-precise 1:1 display.

However, it is incomprehensible that the EIZO CS2740 again shows the same error at 720p as we had already complained about with the EIZO CS2730 and EIZO CS2731. On the DisplayPort, the scaling of the 720p resolution (1280 x 720 pixels) is neither correct with the option "full screen" nor with "aspect ratio". Due to the integer divider, this would actually be an easy task. At the HDMI port, on the other hand, it works without a problem.



Test graphic native, full screen



Test graphic 1280 x 720, full screen



Text reproduction native, full screen



Text reproduction 1280 x 720, full screen

The interpolation capabilities of the EIZO CS2740 are nevertheless excellent overall. At native resolution, the sharpness is very good, as expected. At HD resolution, you can see that the necessary pixel enlargement is mainly caused by additionally inserted grey pixels. This leads to somewhat bolder contours with a slight impression of blurriness. Colour fringing does not occur.

In all interpolated resolutions, the readability of texts and the reproduction of the test graphics are - according to the degree of scaling - good to very good. The unavoidable

interpolation artefacts are low. Even texts with bold letters remain legible. Apart from 480p, a distortion-free, maximally area-filling display is possible in all tested resolutions without any problems. That is more than most monitors can manage.

Signal	Distortion-free, maximum area-filling reproduction	Unscaled playback
SD (480p)	Not distortion free	Yes
SD (576p)	Yes	Not adjustable
HD (720p)	HDMI yes DP + USB-C no	Yes
HD (1080p)	Yes	Yes
PC (5:4)	Yes	Yes
PC (4:3)	Yes	Yes
PC (16:10)	Distortion-free, but not maximum	Yes
PC (16:9)	yes	Yes

Colour rendering

In the case of monitors for the graphics sector, we first test the colour reproduction in the factory setting after the reset and - if available - in an sRGB and Adobe RGB mode. Then the test person is calibrated with Quato iColor Display. If the screen has a full hardware calibration, this is used instead in conjunction with the manufacturer's software.

Colour space comparison in CIELAB (D50)

The following illustrations are based on the colourimetric data after a calibration to D65 as white point. The reference white for the preparation in CIELAB is D50 (adapted with Bradford).

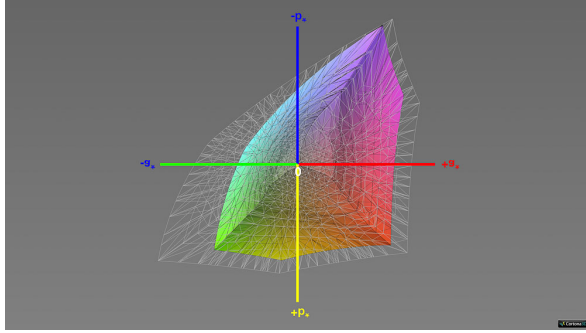
White volume: Screen colour space

Black volume: Reference colour space

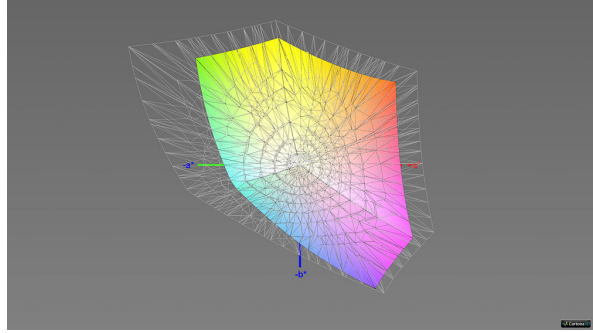
Coloured volume: Intersection

Comparison targets: sRGB, Adobe RGB, DCI-P3, ECI-RGB v2

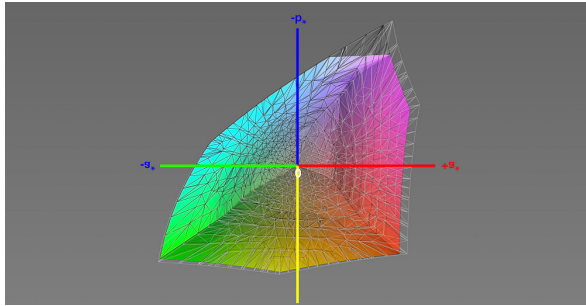
The graphs show the colour space coverage after hardware calibration:



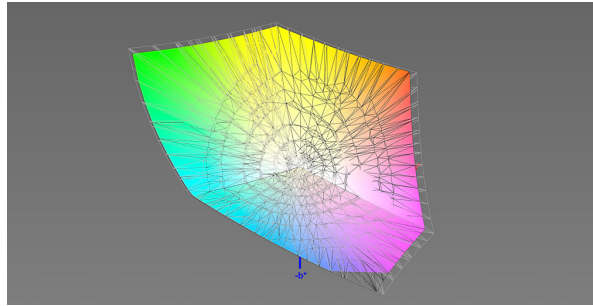
Coverage of the sRGB colour space, 3D slice 1



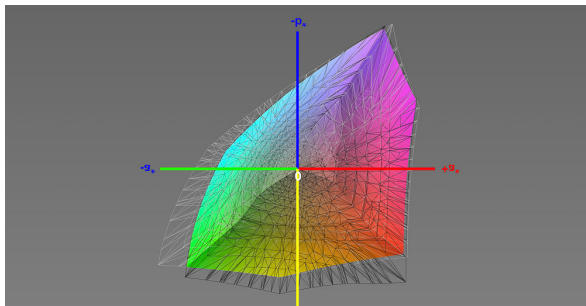
Coverage of the sRGB colour space, 3D slice 2



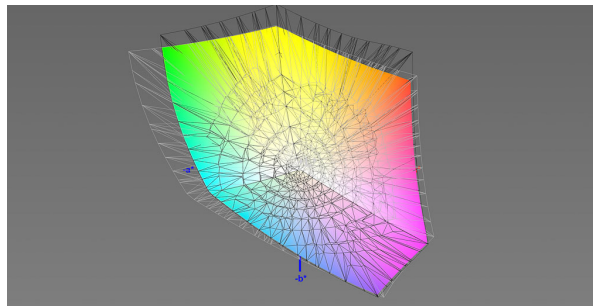
Adobe RGB colour space coverage, 3D cut 1



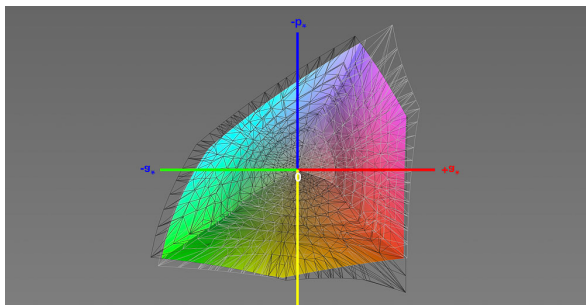
Adobe RGB colour space coverage, 3D cut 2



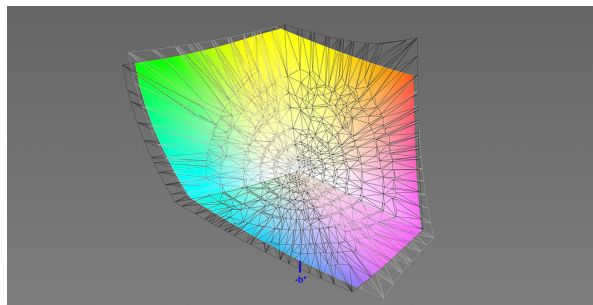
Adobe RGB colour space coverage, 3D cut 1



Adobe RGB colour space coverage, 3D cut 2



Coverage of the ECI RGB v2 colour space, 3D cut 1



Coverage of the ECI RGB v2 colour space, 3D slice 2

EIZO has not promised too much. The sRGB and Adobe RGB colour spaces are practically completely covered. The same applies to the CMYK print colour space ISO-Coated V2.

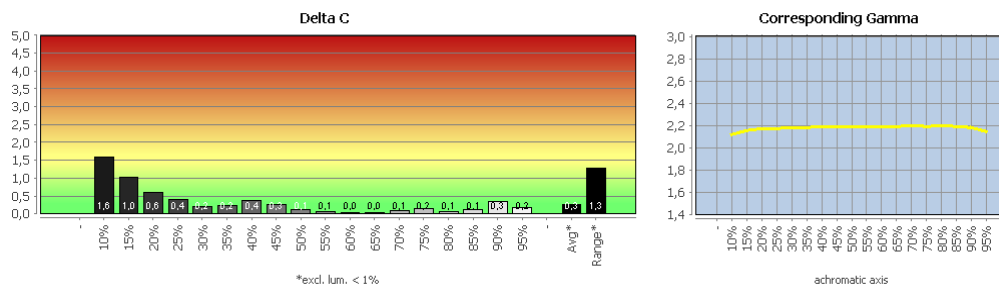
Coverage of the DCI-P3 colour space, on the other hand, is just about satisfactory. Even the coverage of the very large ECI RGB v2 colour space comes close to the limit. The native colour space of the EIZO CS2731 is enormous and in other places goes well beyond the mentioned comparison colour spaces.

The following table summarises the results for the factory preset and after hardware calibration with ColorNavigator:

Colour space	Cover in factory preset	Coverage after calibration
sRGB	97 %	99 %
Adobe RGB	97 %	98 %
ECI-RGB v2	-	88 %
DCI-P3 RGB	-	90 %
ISO Coated v2 (FOGRA39L)	-	99 %

Colour mode: Custom (factory setting)

We have summarised the explanations for the following charts for you: Delta E deviation for colour values and white point, Delta C deviation for grey values, and gradation.

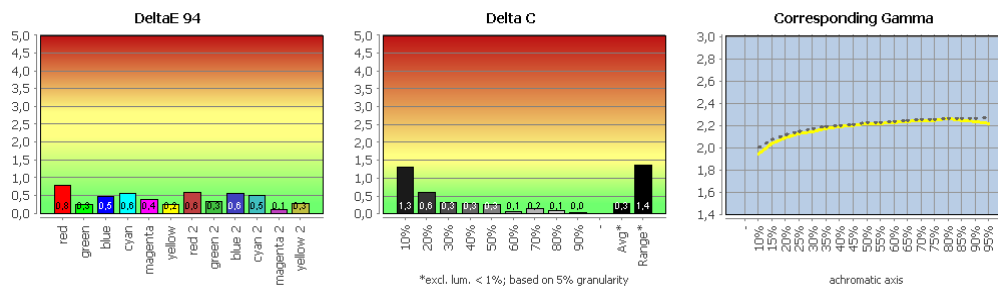


Grey balance in the factory setting, "User" picture mode

Our measurements confirm the very positive subjective impression. The EIZO CS2740 can already convince with an excellent grey balance ex works. All other parameters we measured correlate well with the respective settings in the OSD. The gamma curve is almost linear.

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

[Comparison sRGB mode with sRGB working colour space](#)



Colour reproduction in the factory setting, picture mode "sRGB

The EIZO CS2740 comes with factory presets for the sRGB and Adobe RGB colour spaces. The colour space coverage and the deviation in the chromatic colours are both excellent. This also applies to the average delta C for the greyscales. Here it is only the delta C range that, strictly speaking, only comes very close to a very good result. This is also the case with the grey balance in user mode.

For the overall rating, however, we have turned a blind eye in each case and awarded a very good grade. The decisive factor is not only the positive subjective overall impression. Since ColorNavigator 7.0 it has been possible to regularly update the factory calibration of the presets in just one pass. Since the CG series has built-in measuring probes and these are therefore part of the scope of delivery, we also use this option before our measurements. The CS series, on the other hand, does not, as the colourimeter has to be purchased separately.

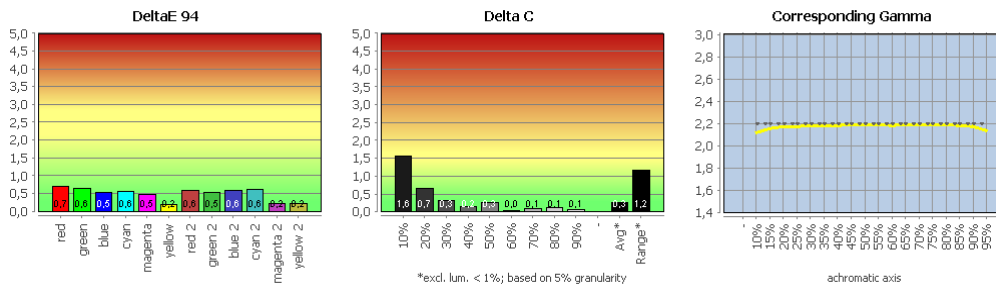
However, it makes no sense to spend a lot of money on a hardware-calibratable monitor and then forego the purchase of a colourimeter. Since the factory presets of the EIZO models can be readjusted or calibrated independently, and since the image quality of the ColorEdge devices is also immediately apparent subjectively, a "merely good" rating - based solely on the range - would not do the device justice.

Nevertheless, you can see a difference here - at least in terms of measurement - compared to the CG series, which is even better at this. In the sRGB preset, the gamma curve is perfectly adapted to the standard curve. On average, the gamma is 2.18. The colour temperature of 6600 K is also almost spot on.

As explained, the grey balance is very good (Delta-C-Average: 0.29, Delta-C-Range: 1.38). The deviations in the chromatic colours are also beyond reproach with an average Delta E94 of 0.46. It is particularly worth mentioning that the colour space boundaries are also perfectly tailored to the sRGB colour space and we can see practically no overlapping.

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

[Comparison Adobe RGB mode with Adobe RGB working colour space](#)



Colour reproduction in the factory setting, "Adobe RGB" picture mode

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

We find practically the same picture in the Adobe RGB preset. Only the gamma curve is now linear as desired. All other measured values are just as first-class as in the sRGB preset. Here, too, the colour space boundaries are perfectly tailored to the Adobe RGB colour space, except for a minimal undercoverage. Conversely, we do not find any overcoverage.

Measurements after calibration and profiling

Hardware calibration

In contrast to standard monitors, professional displays from EIZO offer the possibility of hardware calibration. The software required for this is called ColorNavigator by the manufacturer and is included in the scope of delivery.

This is a powerful calibration tool that meets professional demands and is still easy to use. Having experienced the software solutions of other manufacturers, ColorNavigator is in itself a decisive reason to reach for an EIZO monitor.

With hardware calibration, the calibration settings are made directly in the monitor via USB connection. Therefore, the subsequently measured profile does not contain any calibration data, which are written to the LUT of the graphics card at every system start in the case of a software calibration. A hardware calibration, on the other hand, is completely independent of the computer and graphics card.

This enables a significantly higher precision in the calibration and at the same time avoids the undesired clipping of colour gradations. Whereas with a software calibration the number of possible colour values is cut by the RGB adjustment via the RGB gain control of the OSD, with a hardware calibration the maximum possible 256 colour levels per colour channel are fully preserved.

In addition to the corresponding hardware requirements in the monitor itself, manufacturer-specific software is also necessary for this. The application that comes with the colourimeters is usually not capable of doing this.

The necessary interaction of hardware and software is therefore a very important quality criterion for a graphics monitor.

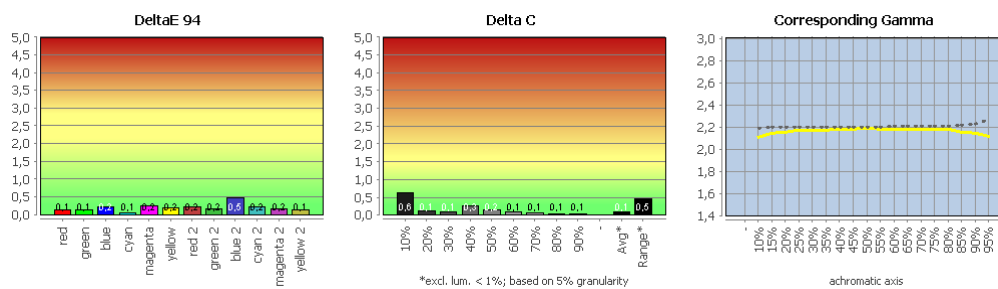
Together with the EIZO CG279X, a new main version of ColorNavigator was introduced with version 7. It brought a whole series of improvements and also works without problems with older devices, but the EIZO CS2740 is already designed for this from the ground up.

We have already described the software procedure in great detail in the test of the EIZO CG279X and the EIZO CG319X. Anyone who wants to look at it in detail can read it there. In addition, we presented the software in the report "[New version EIZO ColorNavigator 7 convinces](#)".

For the following measurements, the EIZO CS2740 was calibrated from ColorNavigator (colour gamut "native", gamma 2.2, colour temperature 6500 K, DUE "uniformity") and profiled.

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

Profile validation

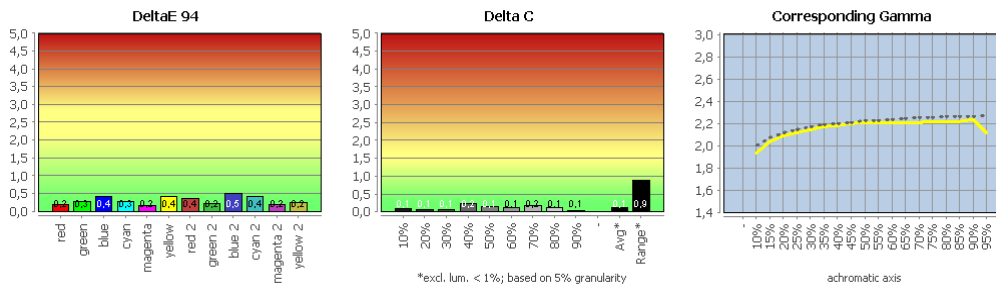


Profile validation

The EIZO CS2740 shows no noticeable drifts or unsightly non-linearities. The matrix profile describes its condition very accurately. A repetition of the profile validation after 24 hours showed no significantly increased deviations. All calibration targets were met. The grey balance and colour values are very good.

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

Comparison with sRGB (colour transformed)



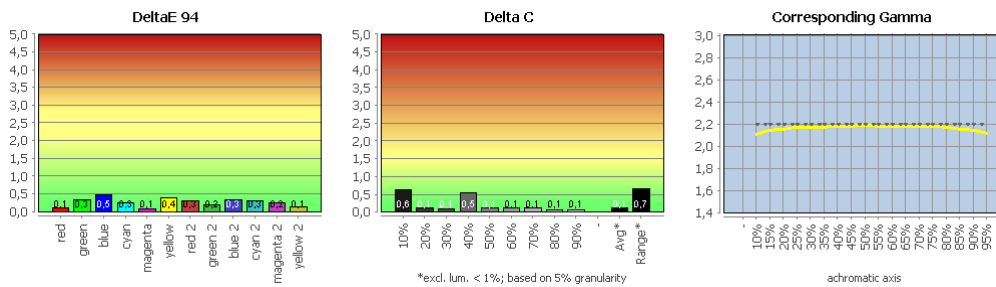
Comparison with sRGB (colour transformed)

Our CMM takes into account the working colour space and screen profile and performs the necessary colour space transformations with colourimetric rendering intent on this basis.

The graphics speak for themselves. Overall, the result is excellent for both colour and greyscale values. The range for the greyscales now also delivers a very good value without a doubt (Delta-C-Range: 0.88).

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

Comparison with Adobe RGB (colour transformed)

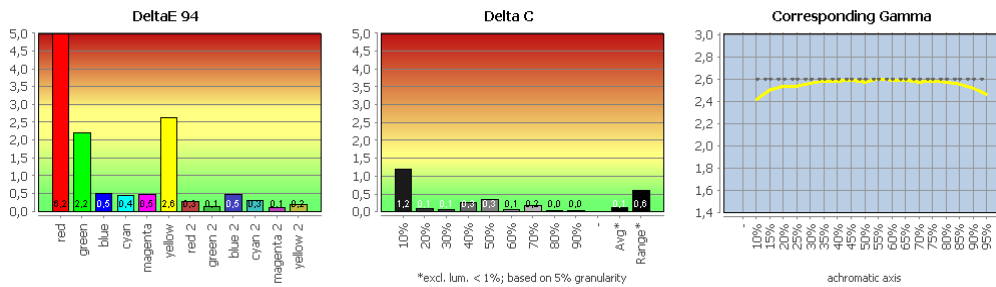


Comparison with Adobe RGB (colour transformed)

The graphics in comparison with the Adobe RGB colour space do not really need any further comment either - a first-class and precise result in every respect.

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

Comparison with DCI-P3 (colour transformed)



Comparison with DCI-P3 (colour transformed)

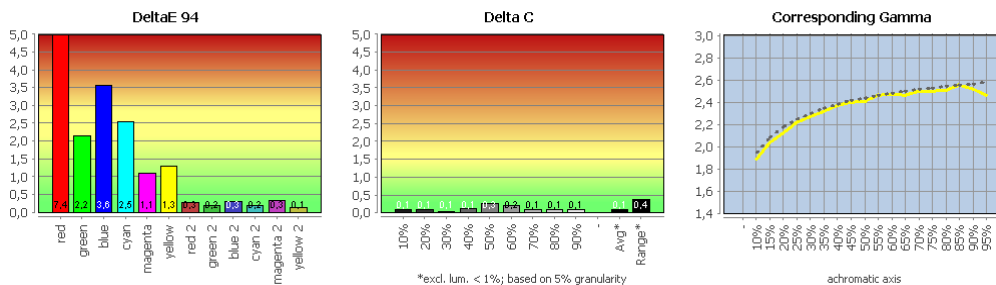
In comparison with the DCI-P3 colour space, on the other hand, we see somewhat higher fluctuations in the colours in the graphics, especially in red. The colour space coverage of 90% is only just good.

Therefore, very saturated colours can partly only be represented by an image on the colour space boundary. The deviations in the chromatic colours are still good with an average Delta E94 of 0.99. However, at least in two places the delta E limit of 5 is exceeded, so that the deviation becomes perceptible in any case.

The grey balance, on the other hand, is excellent as usual.

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

Comparison with ECI-RGB 2.0 (colour transformed)



Comparison with ECI-RGB 2.0 (colour transformed)

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

The comparison with the very large ECI-RGB colour space is similar, although the EIZO CS2740 should actually no longer have to face this due to the manufacturer's specifications. While the EIZO CS2731 does surprisingly well here, the current review sample does somewhat worse in terms of colour space coverage and only achieves a satisfactory result here.

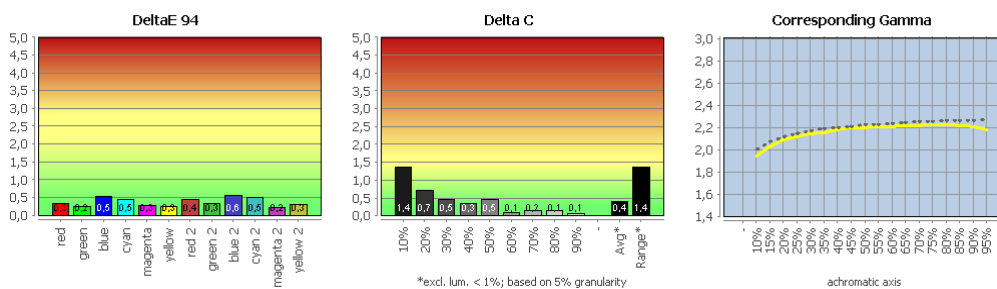
Some saturated tonal values in ECI-RGB v2, on the other hand, can only be approximated by mapping to the colour space boundary. This also increases the risk of tonal value breaks in these areas.

Colour space emulations

Colour space emulations serve to limit the colour space of the monitor to a desired target colour space. This is always necessary when accurate colour reproduction is required but the applications or signal sources used do not support colour management. This would be, for example, office applications, most internet browsers or external signal sources such as BD players.

With the factory presets for sRGB and Adobe RGB, the EIZO CS2740 practically comes with two colour space emulations ex works. We tested below whether these can be improved even further with the help of ColorNavigator.

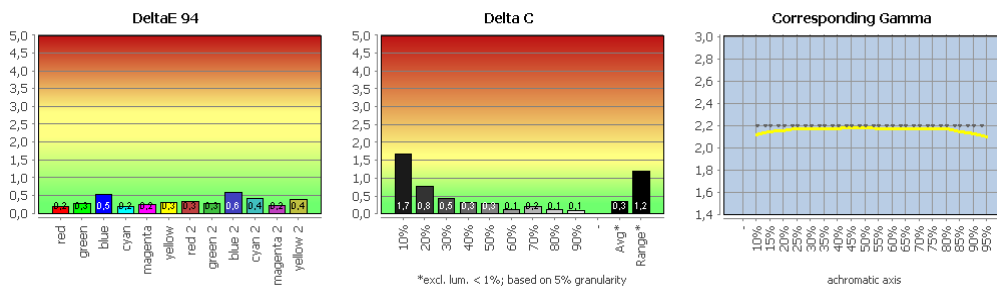
Comparison of sRGB emulation with sRGB - standard calibration



Comparison of sRGB emulation with sRGB

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

Comparison of Adobe RGB emulation with Adobe RGB - standard calibration



Comparison of Adobe RGB emulation with Adobe RGB

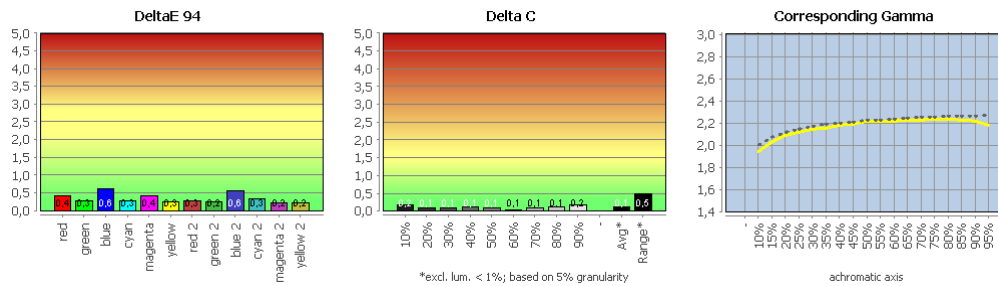
The detailed test results can be downloaded as a [PDF file](#).

Both factory presets were already very good. Only the range was only close to the border of "very good". Since ColorNavigator version 7 it is possible to calibrate these factory presets. If you choose the standard mode, only certain parameters of the factory

calibration are adjusted. The advantage: All standard targets are calibrated in just one pass. As you can see, we did not succeed in improving this.

The advanced mode, on the other hand, is more precise. Here, a complete measurement and calibration are carried out. However, as usual, this must be done separately for each advanced calibration target. On the other hand, we also succeeded in bringing the grey balance to an excellent level in every respect.

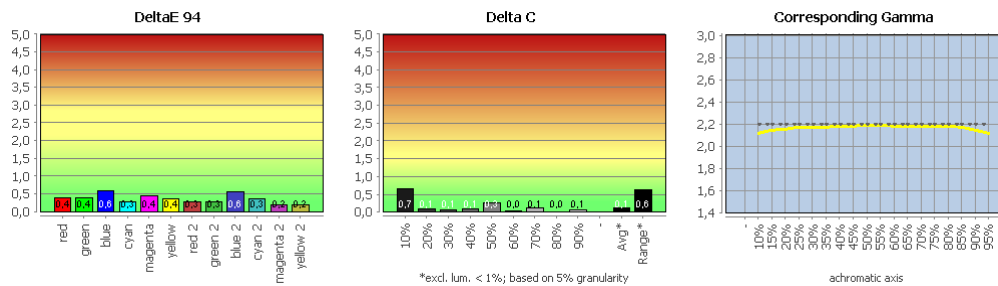
Comparison of sRGB emulation with sRGB - Advanced Calibration



Comparison of sRGB emulation with sRGB

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

Comparison of Adobe RGB emulation with Adobe RGB - Advanced calibration



Comparison of Adobe RGB emulation with Adobe RGB

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

Reaction behaviour

We tested the EIZO CS2740 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 behaviour

We determine the image build-up time for the black to white change and the best grey to grey change. In addition, we give the average value for our 15 measuring points.

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

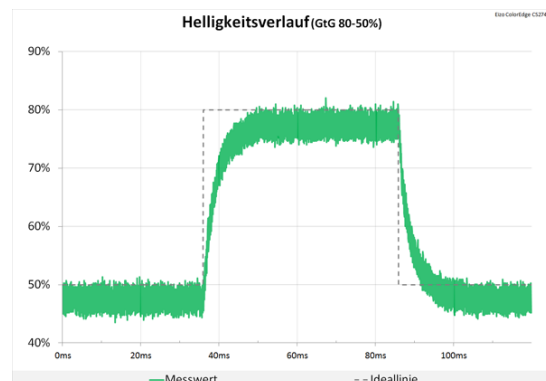
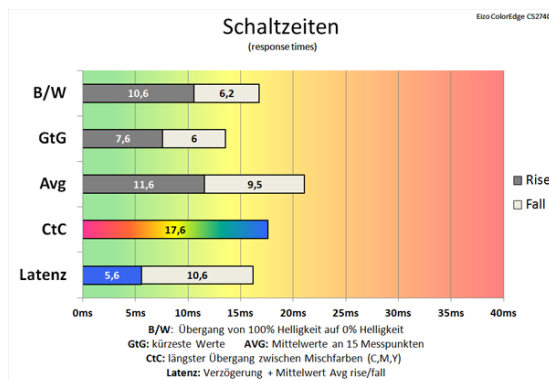
The data sheet states a response time of 10 ms for GtG. As expected, the graphics monitor does not have special gaming features such as a switchable overdrive.

Switching times at 60 Hz

At 60 Hz and with the overdrive switched off, we measure the black/white change at 16.8 ms and the fastest grey change at 13.6 ms. The average value for our 15 measurement points is 21.1 ms and the CtC value is determined with 17.6 ms.

On the other hand, there are no overshoots in fine or coarse greyscale transitions. The tuning is very neutral. Critical colour transitions only reach their full level after a longer delay. Disturbing overshoots, however, do not occur.

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 what average reaction time can be assumed.



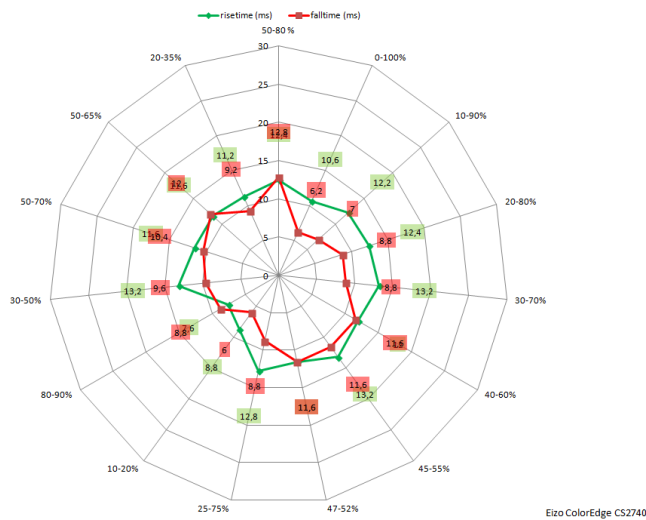
60 Hz (Overdrive "Off"): slow switching times

60 Hz (Overdrive "Off"): no overshoots

Network diagrams

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

Reaktionszeit bei verschiedenen Helligkeitsübergängen (grey-to-grey)



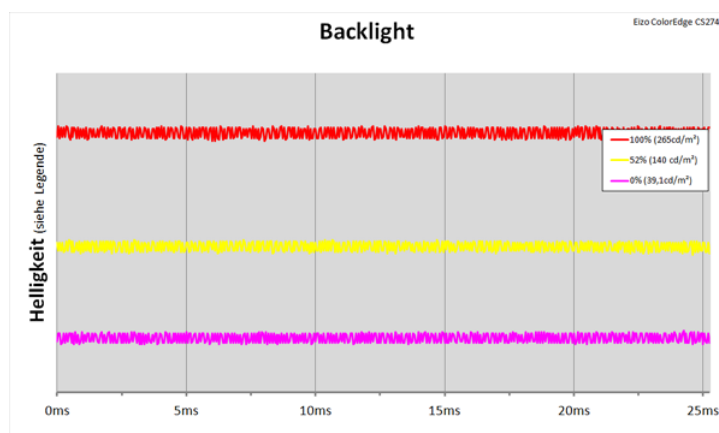
Mains diagram at 60 Hz

Latency

The latency is an important value for gamers, we determine it as the sum of the signal delay time and half the average picture change time. For a 60 Hz monitor, the signal delay of the EIZO CS2740 is very good at only 5.6 ms. The response times, on the other hand, are only average. We determined half the average picture change time with 10.6 ms. Overall, the latency is 16.2 ms. Due to the lack of overdrive, this value is achieved without affecting the maximum picture quality.

Backlight

The backlight of the monitor is not reduced by pulse width modulation (PWM), therefore there are no interruptions in the luminous flux (flickering). The comparison in the diagram shows: Both at full and reduced brightness settings, the luminous flux is not interrupted, as would be the case with PWM backlights. Thus, the screen is suitable for longer work even at reduced brightness.



LED backlight with continuous brightness control

Subjective assessment

The EIZO CS2740 is indisputably designed as a specialist for image and video editing and not as a gaming monitor. Where it matters - i.e. office applications, mouse movements, Photoshop and co - the response times are more than adequate.

Thanks to the low input lag of only 5.6 ms, the EIZO CS2740 can also hold its own in games surprisingly well and significantly better than some other representatives of the ColorEdge series. However, the device is not predestined for particularly fast titles, which can hardly be blamed on the professional graphics monitor.

Casual gamers should not be afraid to try a game on the EIZO CS2740, especially when it comes to titles where the response time is less important. In any case, you will be rewarded with an excellent picture quality and magnificent colour reproduction.

Sound

The CS2740 does have a small beeper on board, but it is only used for acoustic feedback when operating the touch keys. Otherwise, it has neither built-in speakers nor a headphone output. Consequently, it is not recognised as an audio output device on the DisplayPort. The splitting of image and sound must therefore be carried out before the image signals are transmitted to the display, otherwise the sound will be lost.

DVD and video

HD players such as Blu-ray players, HDTV receivers and game consoles can be connected directly to the HDMI socket of the EIZO CS2740. However, the sound signals must be disconnected from the input player and output elsewhere, as the monitor itself does not support any sound reproduction or sound forwarding.

The EIZO CS2740 processes digital RGB and YCbCr signals. An adjustment of the dynamic range is possible via the "Input Range" option. If desired, noise reduction can also be activated (only with HDMI).

Video playback for entertainment purposes is first-class, given the picture quality already described in detail, and needs no further comment. If desired, you can also enjoy an extended colour space that can be precisely adjusted to common standards.

The proband is also very well suited for video processing. For editing and rendering 4K material, the monitor does not necessarily have to have 4K resolution itself. With the EIZO CS2740, however, you are able to check the result with pixel accuracy. Furthermore, a colour-accurate display is possible even when working in applications that do not support colour management, as the native colour space of the screen can be precisely modelled for this purpose.

The scaling of important video resolutions - as already explained in the chapter "Interpolation" - also succeeded flawlessly. We also had no problems with smooth 24p playback in the native 4K resolution. The only thing that could be improved is the contrast, which is not quite as good. However, this can be increased with the EIZO CS2740 using the "DUE Brightness" option without much loss of image homogeneity.

Evaluation

Ergonomics:	5
Operation/OSD:	5
Energy consumption:	3
Noise generation:	5
Subjective image impression:	5
Viewing angle dependence:	5
Contrast:	4
Illumination (black image):	5
Image homogeneity (brightness distribution):	5
Image homogeneity (colour purity):	5
Colour space volume (sRGB; Adobe RGB):	5; 5
Before calibration (greyscale factory mode):	5
Before calibration (sRGB; Adobe RGB):	5; 5
After calibration (sRGB; Adobe RGB):	5; 5
After calibration (profile validation):	5
Interpolated image:	5
Suitable for casual players:	3
Suitable for hardcore players:	2
Suitable for DVD/Video (PC):	5
Suitable for DVD/video (external feed):	4
Price-performance ratio:	4
Price [incl. VAT in Euro]:	approx. 1,456 €
Overall ranking:	4.6 (VERY GOOD)

Conclusion

With the introduction of the CS2730 at the end of 2016, EIZO launched a hardware-calibratable graphics monitor in the 27-inch class that has been hard to beat in terms of price-performance ratio ever since. With the CS2731 and CS2740, two successors have now been introduced. While the CS2731 remains true to the WQHD resolution and the extremely good price-performance ratio, the EIZO CS2740 brings 4K resolution to the 27-inch ColorEdge devices for the first time.

Externally, the two new representatives of the CS series are like two peas in a pod. The snappy ColorEdge design is just as appealing as the high-quality workmanship. The range of ergonomic functions is exemplary, as usual from EIZO. Only the effort required for adjustment still leaves room for improvement.

Both displays also offer USB-C support as a novelty. This is primarily to accommodate notebook users who only need to connect their device with a single USB-C cable and can then save on a separate docking station. As we showed in the test, however, this also works quite well on a desktop computer with a corresponding graphics card.

In our measurements of picture quality, the EIZO CS2740 also delivers first-class values, as expected. However, it is noticeable that both the colour gamut and the contrast performance are somewhat lower than on the WQHD model.

The real downer, however, is the price for the 4K resolution. At around 1,500 euros at the time of testing, you also have to pay almost 1.5 times the price for a good 50 % more resolution. At the same time, the energy consumption during operation also increases by 1.5 times.

The EIZO CS2740 is thus on the same price level as the CG2730. Although it "only" has a WQHD resolution, it has the coveted True Black panel and a built-in calibration probe. In addition, the recommendable light shield is already included in the scope of delivery. To put it positively: you are now spoilt for choice between three - each in its own right - highly attractive devices.

In the end, it all comes down to how much you value 4K resolution for your personal work. If that's a major consideration, the EIZO CS2740 is an excellent choice that you won't regret.

Note: PRAD received the EV3895-BK on loan from EIZO for testing purposes. The manufacturer did not exert any influence on the test report, nor was there any obligation to publish it or any confidentiality agreement.



Link to the original test report: <https://www.prad.de/testberichte/test-eizo-cs2740-4k-monitor-fuer-kreative-ueberzeugt/>

