

PREPRESS

How to set up and
calibrate your EIZO





INTRODUCTION

Congratulations!

You've invested in an EIZO monitor.
You've gone through the exciting unboxing process.
Now what?

In this e-book, we will go through step-by-step how to set up
and calibrate your EIZO monitor.

By the end of this guide, you will know how to set up your
monitor, set up a universal "print preview" monitor target
and calibrate this target to create a monitor profile.

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PREPRESS VERSION

- 1 Choosing the right cables
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CHAPTER ONE

Choosing The Right Cables

1. Choosing The Right Cables

In this chapter, we'll look at the different cables needed to connect your computer to your EIZO monitor.

IMAGE SIGNAL CABLE

If you're using a Mac, you will have either a mini DisplayPort, HDMI or a USB Type-C port*

If you're using a PC, you will likely have at least one of the following ports: DVI, DisplayPort, Mini DisplayPort, HDMI, USB Type-C.

Mini DisplayPort to DisplayPort	USB-C to DisplayPort (Contact us for pre-tested brands)
	
USB-C to USB-C (@ May 2019 - CG279X only)	HDMI - HDMI Note - HDMI v1.4 can only comfortably handle 24" resolution. As of May 2019, only CG319x & CG3145 are HDMI v2.0
	

DVI Cable	Full size DisplayPort to DisplayPort
	

**If you're unsure, check your user manual to find out the ports available on your computer. Alternatively, you are welcome to take a photograph of your signal ports and email support@eizo.com.au to find out what cable or adapter would best suit.*

POWER AND USB

Next, connect your POWER CABLE and USB A to B CABLE* (the USB cable is required for calibration. Plug square end in to monitor.)

**USB A-B cable is NOT required when USB-C to USB-C cable is used - currently available with the CG279X only (May 2019).*

Power Cable (Included in the box)	USB A to B Cable For calibration (Included in the box)
	 <p style="text-align: center; color: red;">or</p>



CHAPTER TWO

Why Calibration Is Important

2. Why Calibration Is Important

Let's dive into why monitor calibration is important.

Maintaining a level of consistency is crucial in the creative work flow. Whether you're creating for yourself or for a client, you want to ensure what you see on your screen (that you're no doubt spending countless hours on), is what your client will experience.

The key benefits of monitor calibration and colour management are a significant increase in:

- **Accuracy (colour and detail)**
- **Consistency**
- **Cost savings**
- **Time savings**

Accuracy: By calibrating your monitor on a regular basis you can rest assured that the file in your computer is being displayed accurately on screen. No warm or cool hues, no overly bright and saturated image displays.

Consistency: Preventing on-screen colour drift, regular calibration and colour management ensures consistency throughout your workflow. No more working with a moving target!

Productivity: When you utilise colour management and monitor calibration together to create consistency, you will see an increase in productivity. With all devices from start to finish in synchronicity with each other, your trust in what you are creating and seeing will allow for efficiency in your workflow.

Save time and dollars by avoiding costly re-prints and booking couriers to send hard proofs between companies.

Accuracy, consistency, and productivity are a result of a colour managed workflow. Calibrating your monitor should be slotted into your calendar as a non-negotiable.

Remember, there will be discrepancies that will influence any colour managed workflow. But, with the right dose of understanding and diligence, managing them will be a piece of cake.



CHAPTER THREE

How To Calibrate Your EIZO Monitor

3. How To Calibrate Your EIZO Monitor

Whether you're using an EIZO that is five years old or two months old, EIZO ColorNavigator "hardware calibration" software is a must. ColorNavigator comes loaded with features that will add value and increase efficiency in your workflow. These include -

- Hardware calibration
- Creating an ICC profile
- Creating a print preview (softproof)
- Match other monitors
- Emulate digital devices (iPad etc)

To run ColorNavigator, connect the USB A-B cable to your computer and to the monitor (squarish end in to monitor).

The software is a free download from the EIZO Global website and can be accessed [here](#) .

Once you have installed the program onto your computer, you're ready to run your first calibration!



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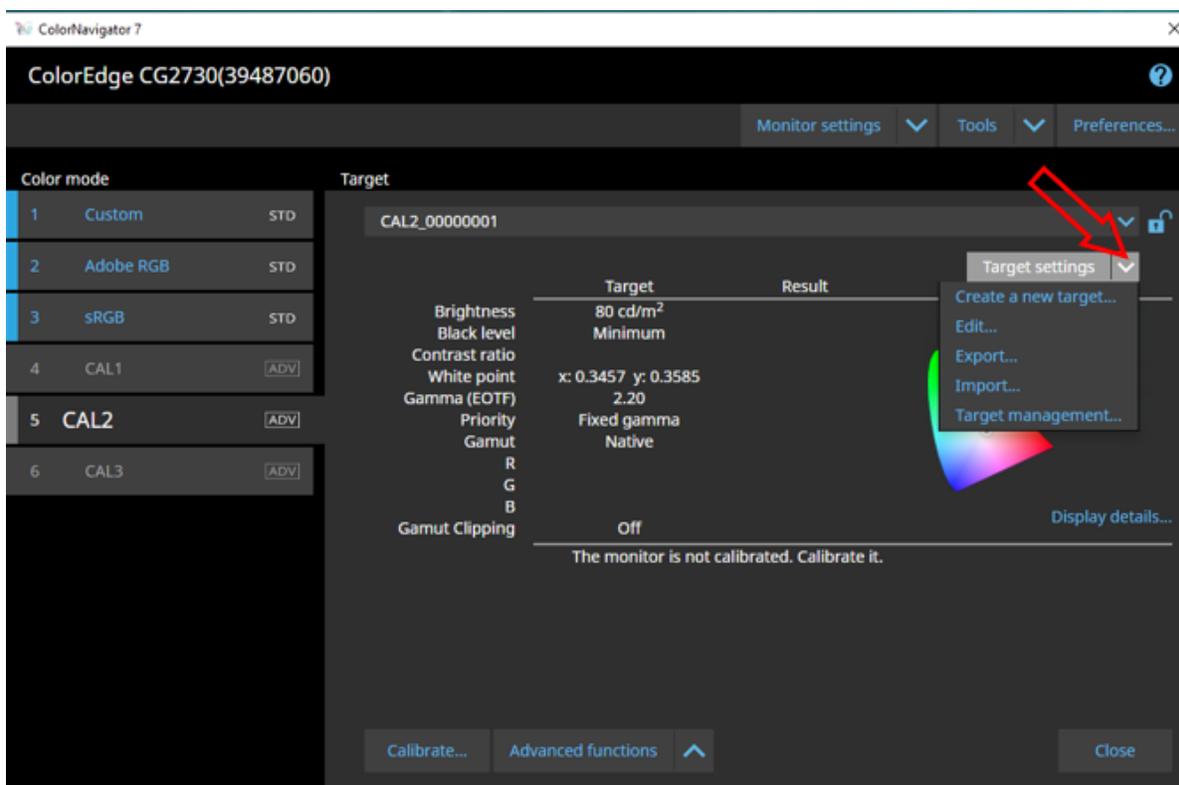
To begin your monitor calibration, launch *ColorNavigator7*.
(If it doesn't appear on screen after double-click, locate the butterfly icon in your dock (Mac) or task bar (PC), right click, start ColorNavigator).

3.1 - How to set up a Photographic Editing "Profile Target"

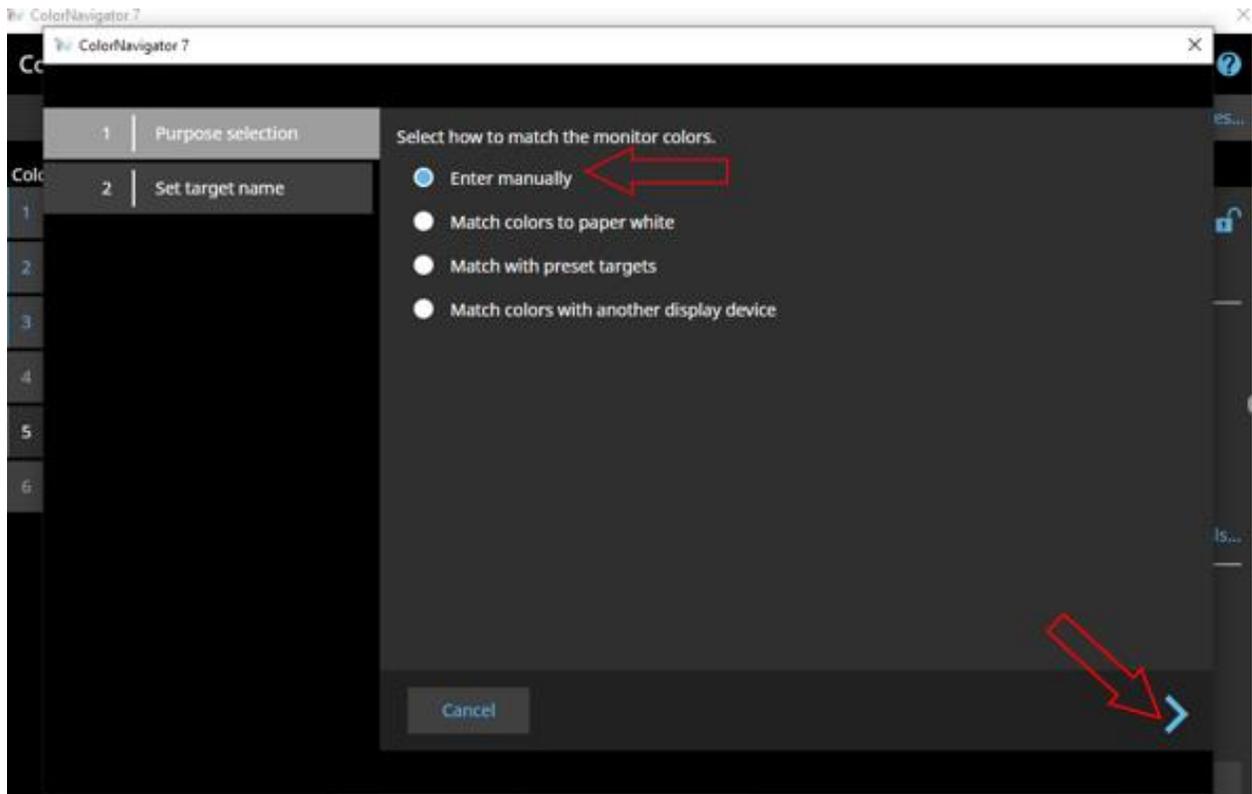
The following calibration will create a generic photography editing profile target based on ISO 3664 settings. This is the starting point for image editing. This profile is not referencing any output device, it is a screen based profile - serving up the truest most neutral view in to your image file. This is your 'go to' photo editing monitor mode.

You may prefer to skip this one if you do not plan to edit images.
Launch ColorNavigator, then:

[>Target settings > Create a new target...](#)



>Enter manually > Proceed with arrow



Terminology:

Mode name - There are 6 to 10 programmable colour modes to choose from (depending on your monitor model). There can be many profile targets saved to a mode but only one can be active at a time. Modes can be accessed by pressing the MODE button on the front of the monitor (usually the 2nd button from the left).

Color mode type - this is the profile target (ie, the file that contains the monitor calibration settings - colour temperature, gamma, brightness, black point, gamut etc). We calibrate to a target, thus an ICC profile is created and automatically saved to your system folder.

Color mode type - example name: Photo Editing ISO3664

Set mode name - example name: Photo Edit

(Ensure that the "Set mode name" checkbox is ticked)

Run through the settings as outlined in the following screen shots (don't forget to scroll down or increase window size to select all relevant settings).

Note:

- 1) **BRIGHTNESS**: While we recommend 120cd/m² for most office environments, if you edit your images in a slightly darkened room (recommended for photo editing), set your brightness to 80cd/m² - 100cd/m². Rule of thumb: the monitor must be the brightest point in the room but only just.
- 2) **BLACK LEVEL**: If you always **print** your images, elevate your black point to 0.4cd/m² (this lightens the black point a little bit, allowing your monitor screen to emulate the correct contrast of a print)

Enter both the [Target name](#), and [Color mode name](#).

ColorNavigator 7

Target name Set color mode name

Preset target

Brightness Standard Input

80 cd/m²

Manual cd/m²

Minimum

Maximum

Black level Minimum

Manual cd/m²

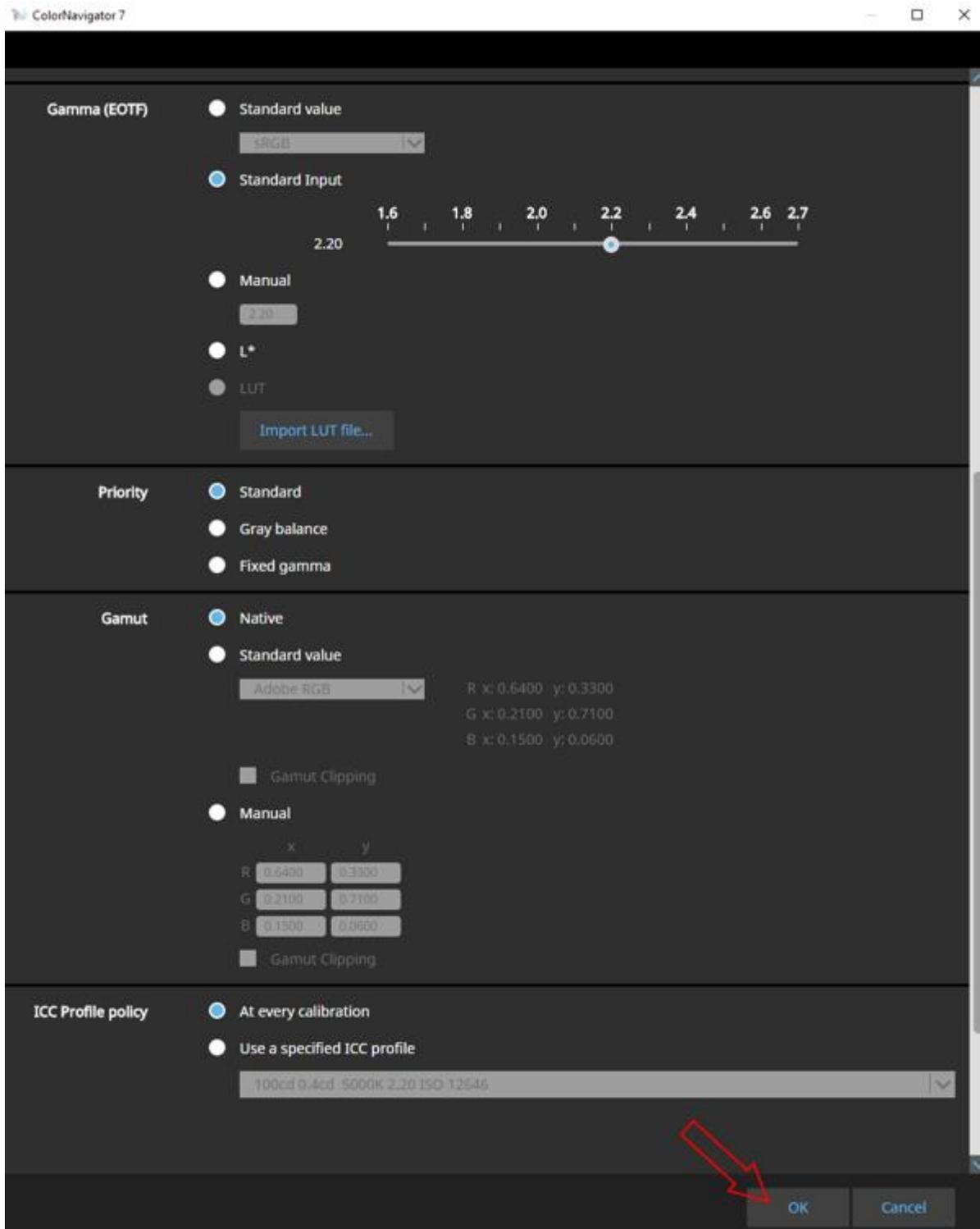
White point Standard value x: 0.3140 y: 0.3510

Color Temperature

6500 K

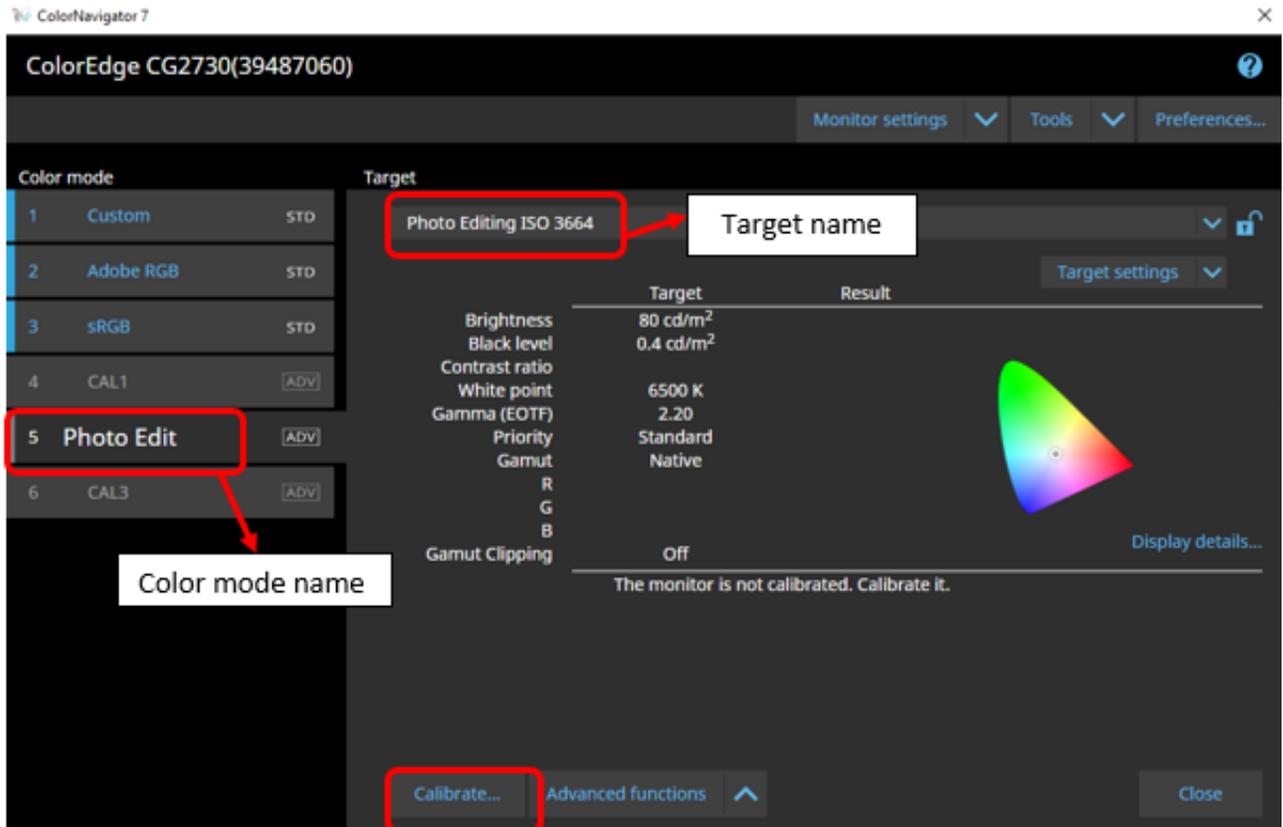
Coordinate

Gamma (EOTF) Standard value



>OK

>ColorNavigator will return to the home page, showing your new target.
You will see your mode name and the associated profile target.
You are now ready to >Calibrate



Whether you have decided to utilize your own external sensor, or the sensor built in to the monitor, your sensor should appear in the following list. If it does not appear, uncheck the box, and click in the sensor selection field. All compatible sensors will appear. Select yours.

Troubleshooting tip -

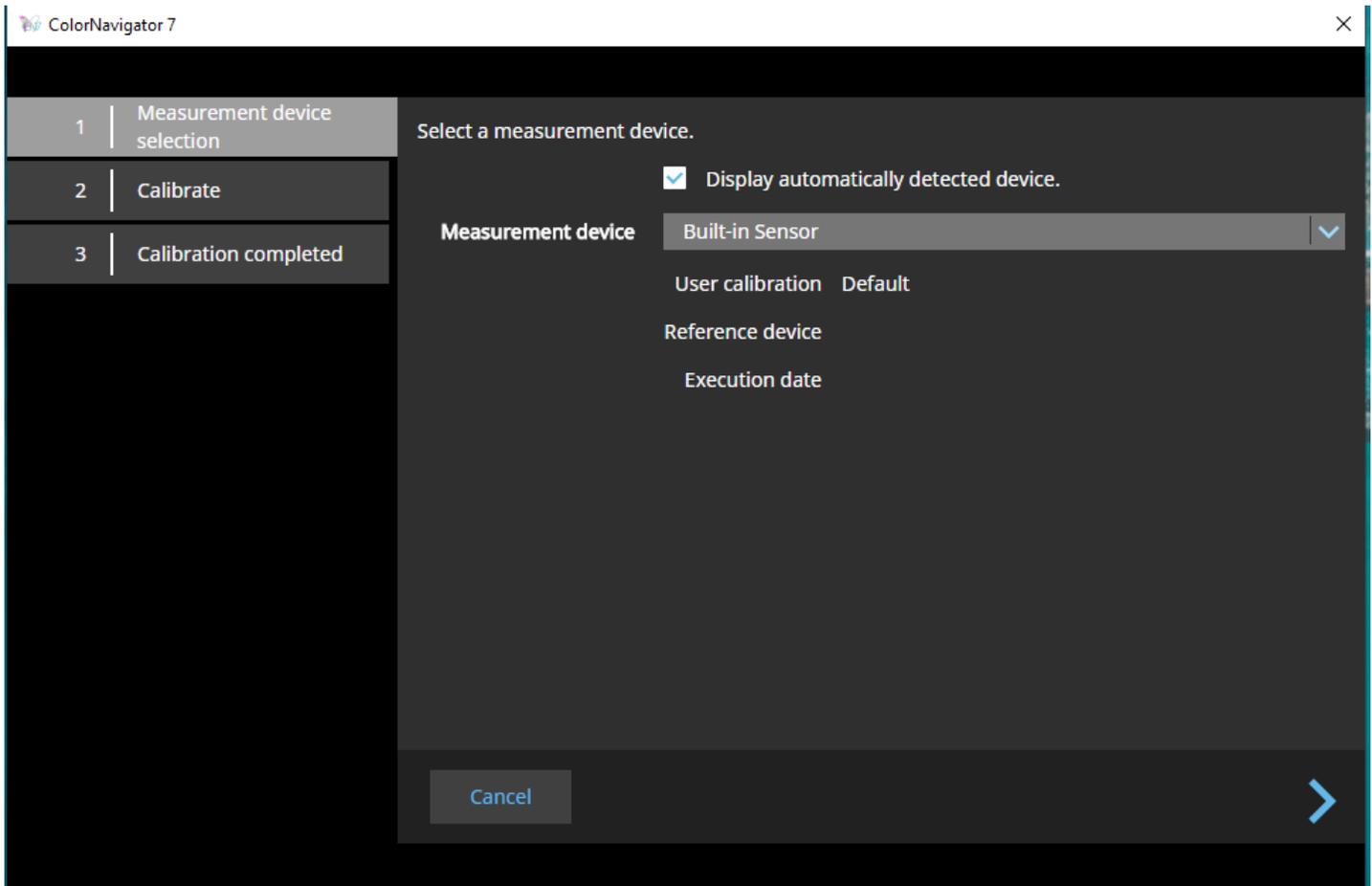
If your sensor does not appear or connect

(a) is your PC and EIZO connected via the USB cable?

(b) is your sensor plugged in to the USB port in your EIZO?

(c) Quit CN, switch off your monitor at the wall & wait for 1 minute, switch the monitor back on, plug in your sensor, launch CN.

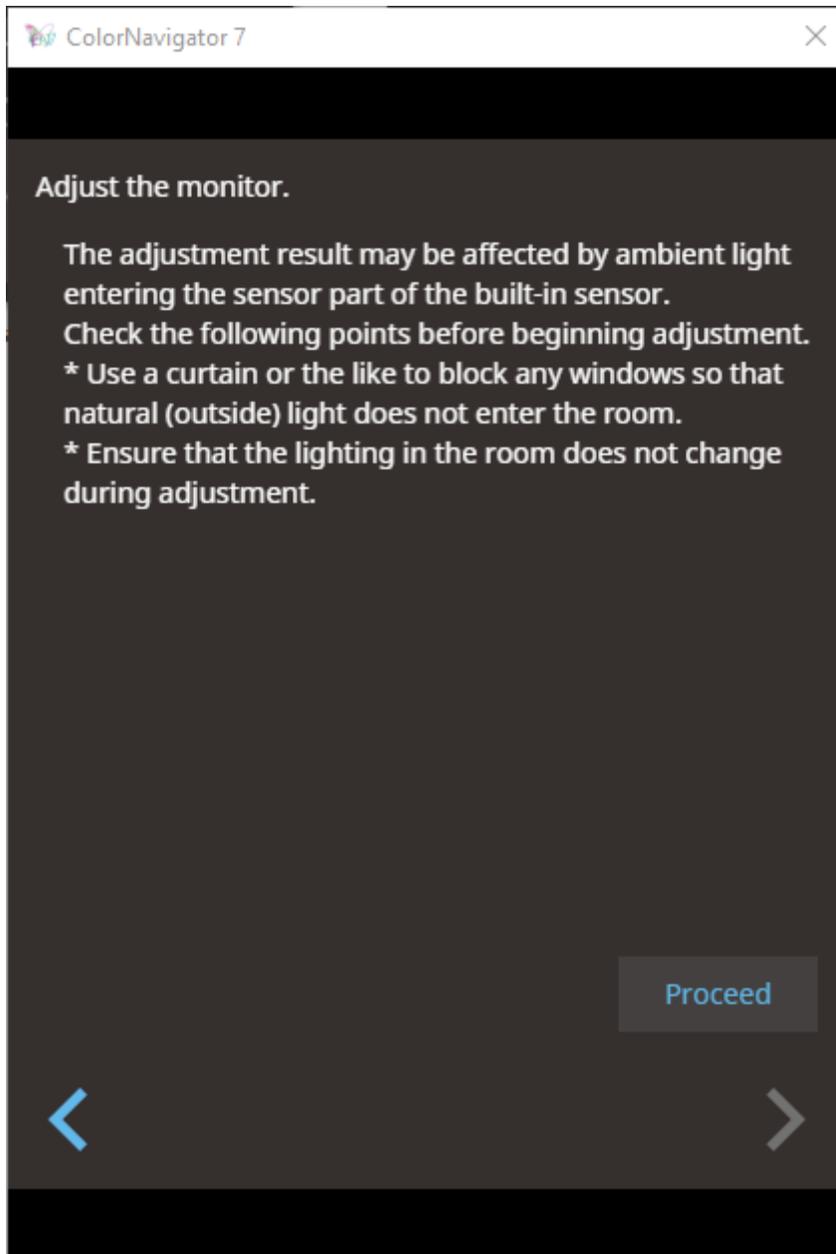
(d) Uninstall and re-download/ install CN.



>

Ensure that there is no light shining directly on to the screen.

Proceed



1 | Measurement device selection
2 | Calibrate
3 | Calibration completed

Monitor calibration has completed.

	Target	Result
Brightness	80 cd/m ²	80.1 cd/m ²
Black level	0.4 cd/m ²	0.36 cd/m ²
Contrast ratio		219 : 1
White point	6500 K	x: 0.3129 y: 0.3292 6496 K
Gamma (EOTF)	2.20	
Priority	Standard	
Gamut	Native	
R		x: 0.6797 y: 0.3109
G		x: 0.2165 y: 0.7225
B		x: 0.1523 y: 0.0481
Gamut Clipping	Off	



<
Finish

>Finish

3.2 Set up your SoftProofing (print proofing) "Profile Target"

Use this colour mode when doing your layouts, pre-press checks and any final edits before print. The following settings are based on ISO recommended settings, adjusted to suit our experience of real world set-ups. You may adjust our recommended settings shown in the screen shots to your ambient environment, as follows.

White point: While ISO 12646 dictates D50 (5000k), we have found it really depends on your ambient environment. Many people find that D65 (6500k) or D60 (6000k) is visually, a closer match. **We recommend trying 6000k first.**

Brightness: We recommend maximum 120cd/m² to maintain the brightness warranty of the LCD panel for the stated 10,000h.

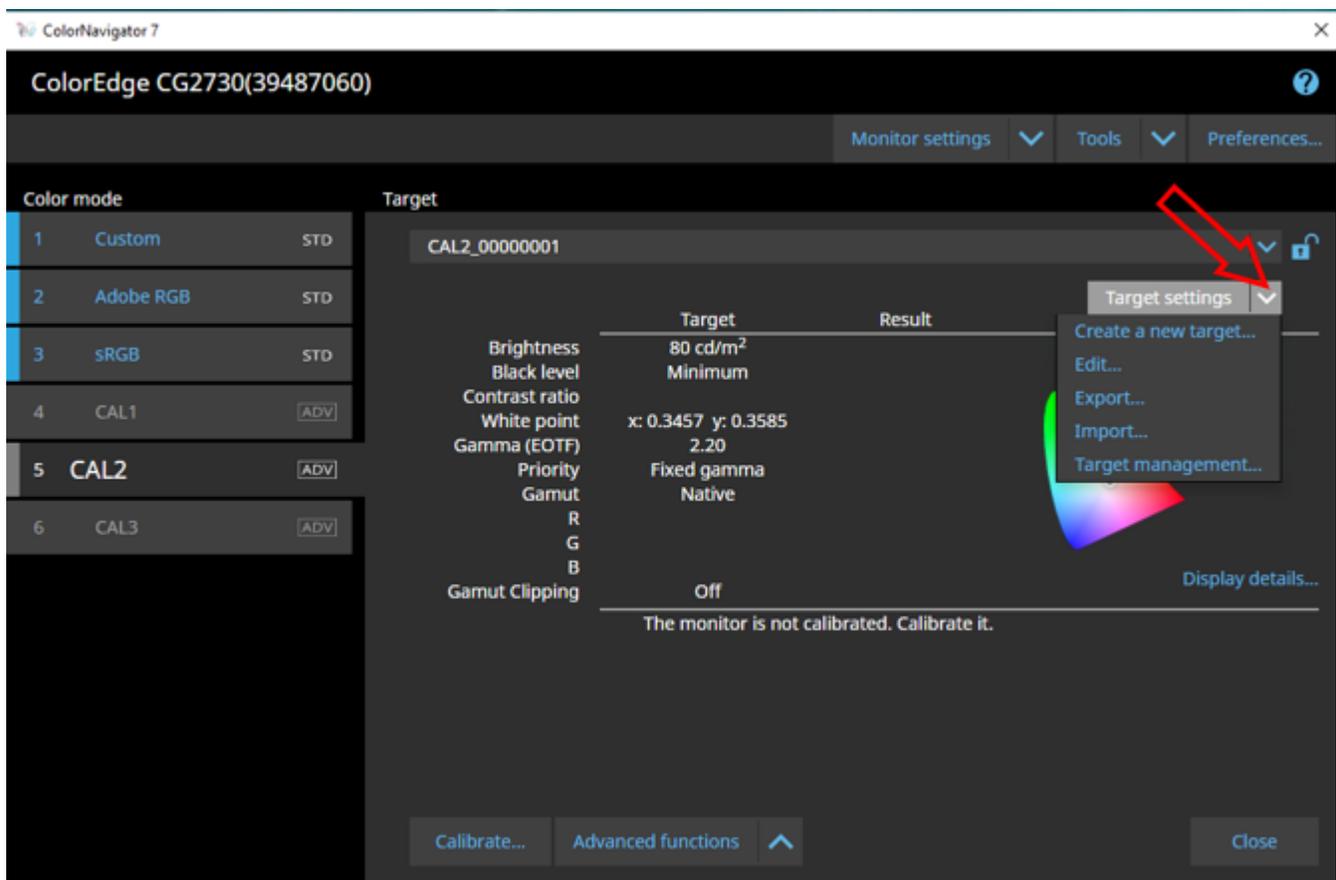
120cd/m² brightness allows the monitor to cover the gamut of most cmyk press profiles, although, if you are located in a very brightly lit room or use a bright light box to evaluate your proofs, you may find that 120cd/m² may not represent some of the brightest pantone colours in full saturation to our human eyes.

We have found a way around that, by 'pushing' the monitor a little bit further. 160cd/m² will deliver a closer colour match to some of the brighter spot Pantone colours. At 160cd/m², please be aware that you are pushing the backlight beyond it's warranted setting. [Brightness warranty coverage for selected CG models](#): is up to 120cd/m². This means that we guarantee that the monitor will be able to maintain/ reach 120cd/m² for a period of 5y or 10,000h whichever comes first (and depending on your ColorEdge model). [Visit eizoglobal.com or click on this text for further details.](#)

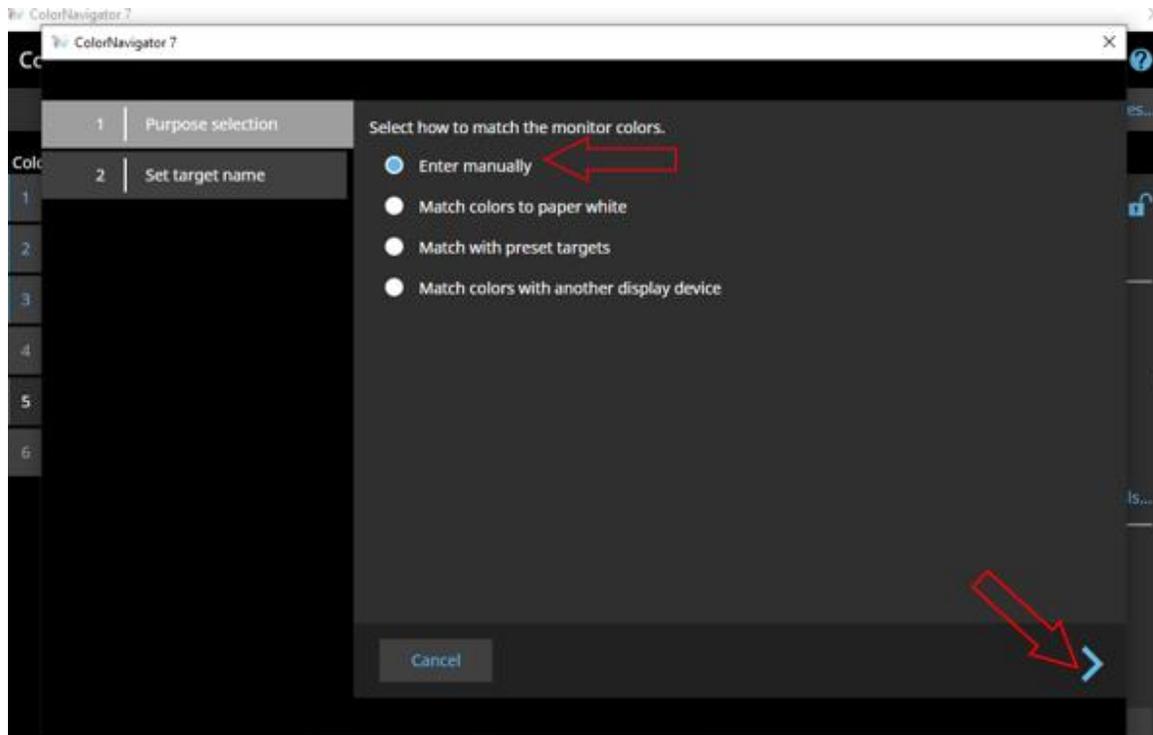
Tip: always switch off your EIZO when not in use to preserve the backlight.

The following calibration will create an offset press softproofing monitor profile target based on ISO 12646 settings, although with a more realistic white point of 6000k.

>Target management > Add Target > Create a new target...



>Enter manually > Proceed with arrow



Enter both the **Target name**, and **Color Mode name**.

Target name - example name: Softproofing ISO12646

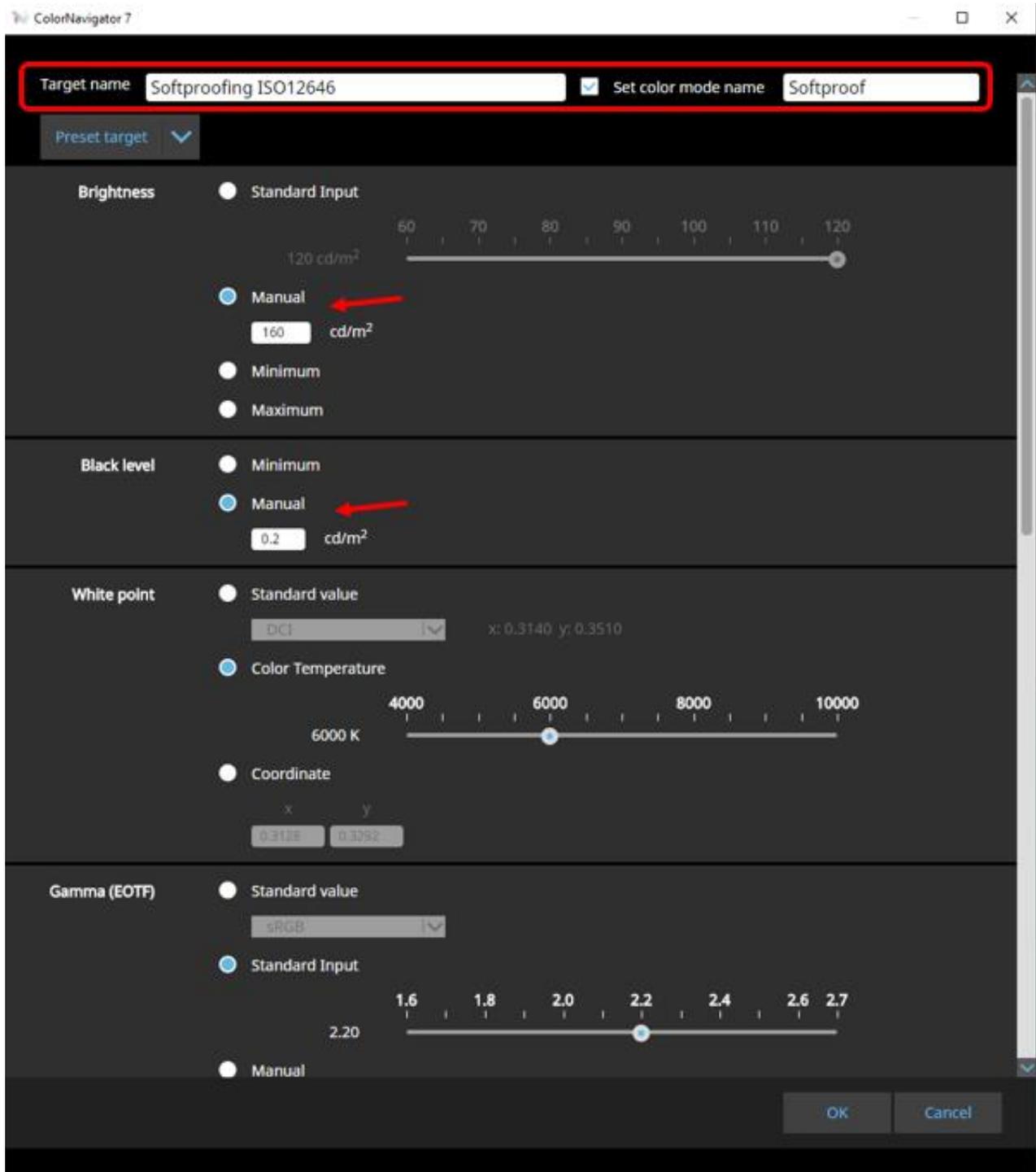
Color mode name -example name: Softproof

(Ensure that the "Set mode name" checkbox is ticked)

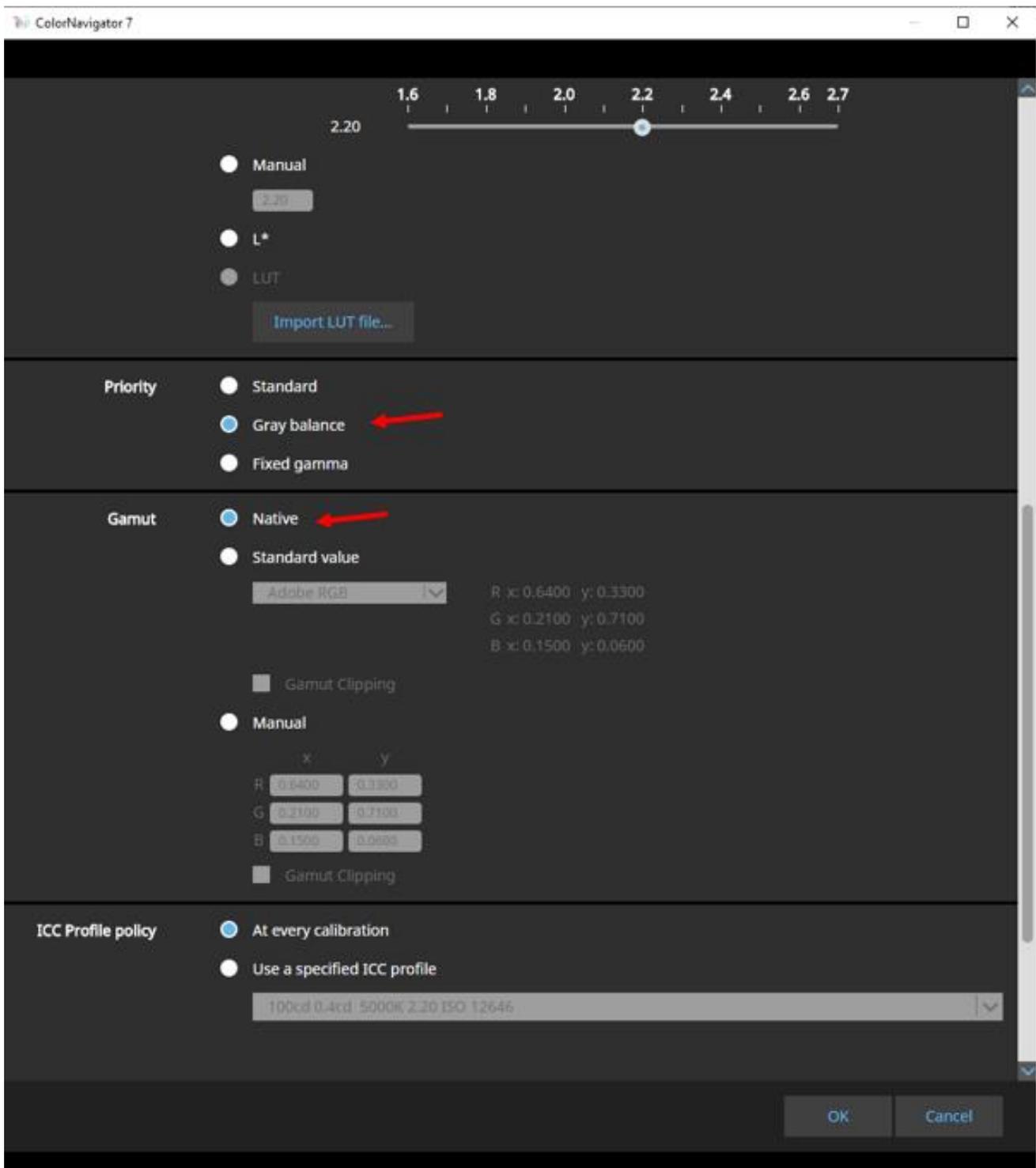
Run through the settings as outlined below

Two disclaimers:

- 1) Brightness: If you are in a dully lit room, try set to 120cd brightness. If you are in a very bright room, try 160cd/m2 (taking in to advisement about the warranty limitations on previous pages)
- 2) White point: Try 6000k first. Compare to your paper white (printed proof). If you find that the paper white is not close, adjust the white point to anywhere between 5000 (warmer) and 6500 (cooler).

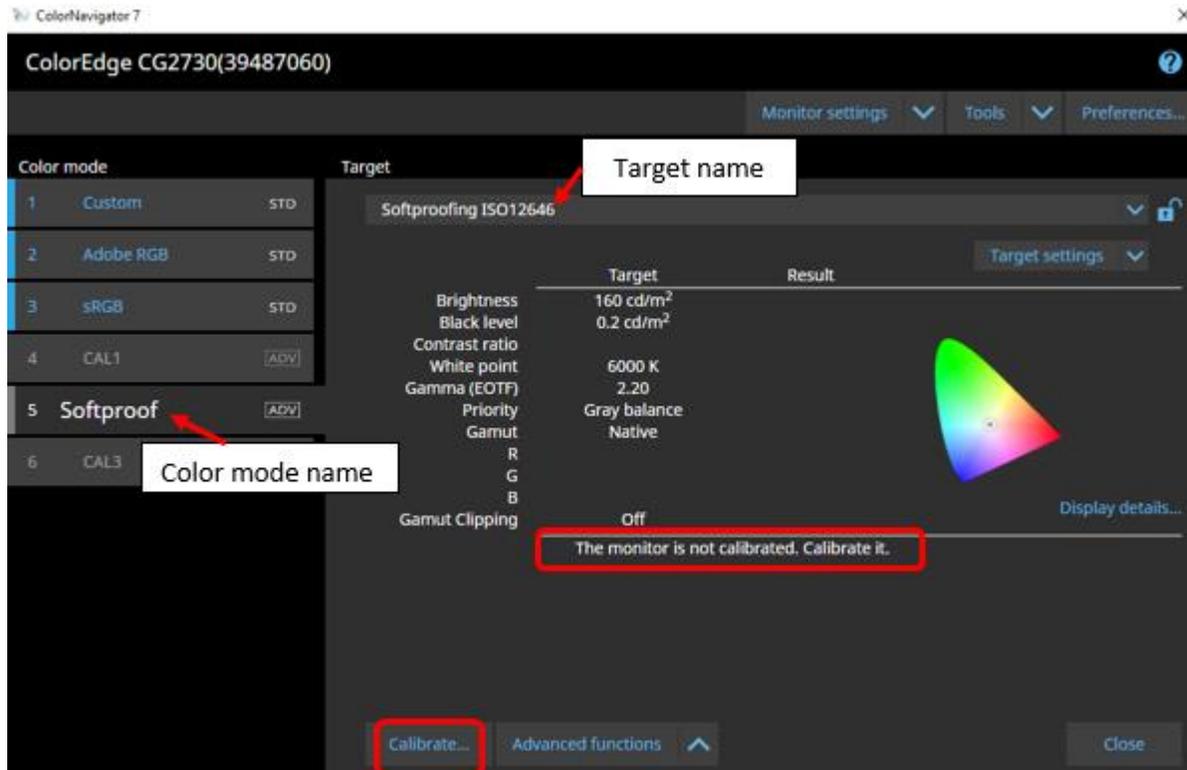


Remember to scroll down to complete all profile target settings.

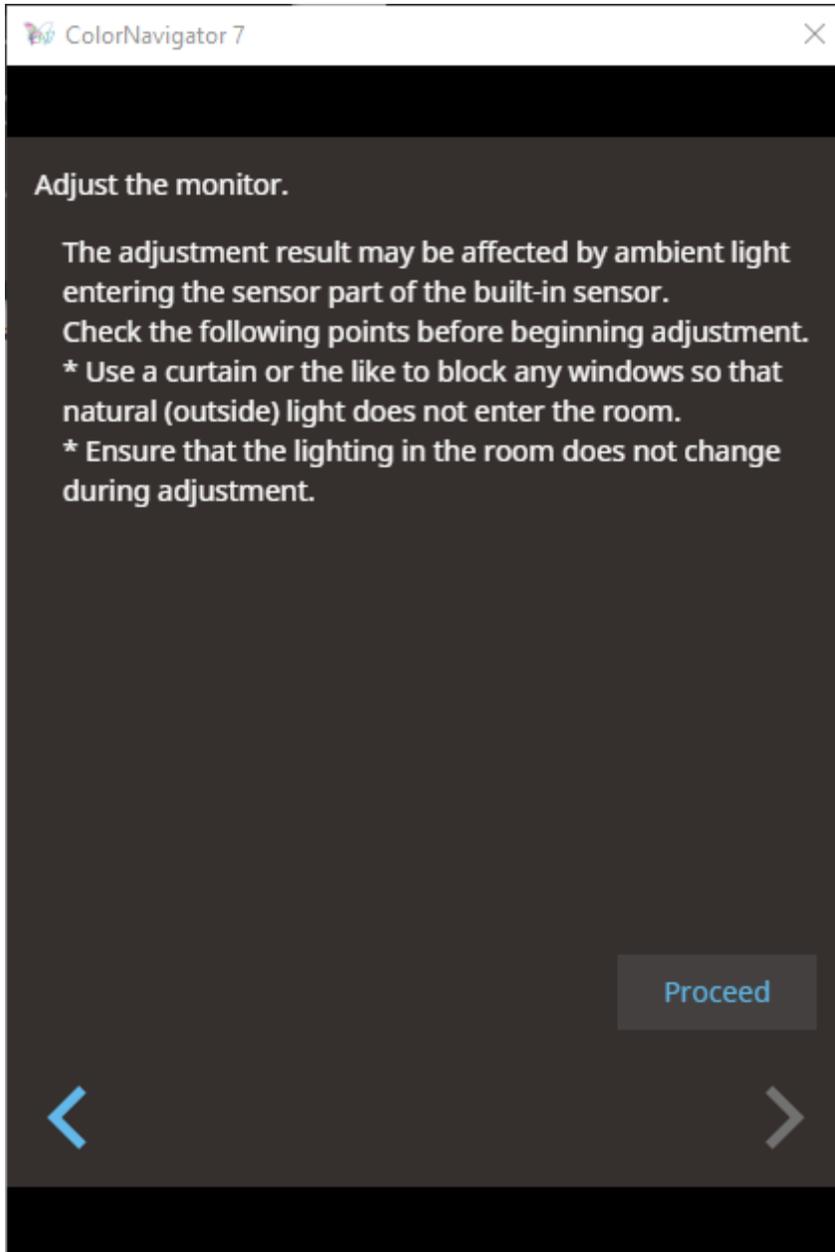


>OK > Finish

> ColorNavigator will return to the home page, showing your new target. You will see your mode name and the associated profile target. You are now ready to >Calibrate



> Ensure that there is no light shining directly on to the monitors face. Proceed



1	Measurement device selection
2	Calibrate
3	Calibration completed

Monitor calibration has completed.

	Target	Result
Brightness	160 cd/m ²	159.4 cd/m ²
Black level	0.2 cd/m ²	0.15 cd/m ²
Contrast ratio		1020 : 1
White point	6000 K	x: 0.3216 y: 0.3377 6000 K
Gamma (EOTF)	2.20	
Priority	Gray balance	
Gamut	Native	
R		x: 0.6837 y: 0.3114
G		x: 0.2155 y: 0.7253
B		x: 0.1510 y: 0.0458
Gamut Clipping	Off	



←
Finish

>Finish

ColorNavigator 7

ColorEdge CG2730(39487060)

Monitor settings | Tools | Preferences...

Color mode

- 1 Custom STD
- 2 Adobe RGB STD
- 3 sRGB STD
- 4 CAL1 [ADV]
- 5 **Softproof** [ADV]
- 6 CAL3 [ADV]

Target

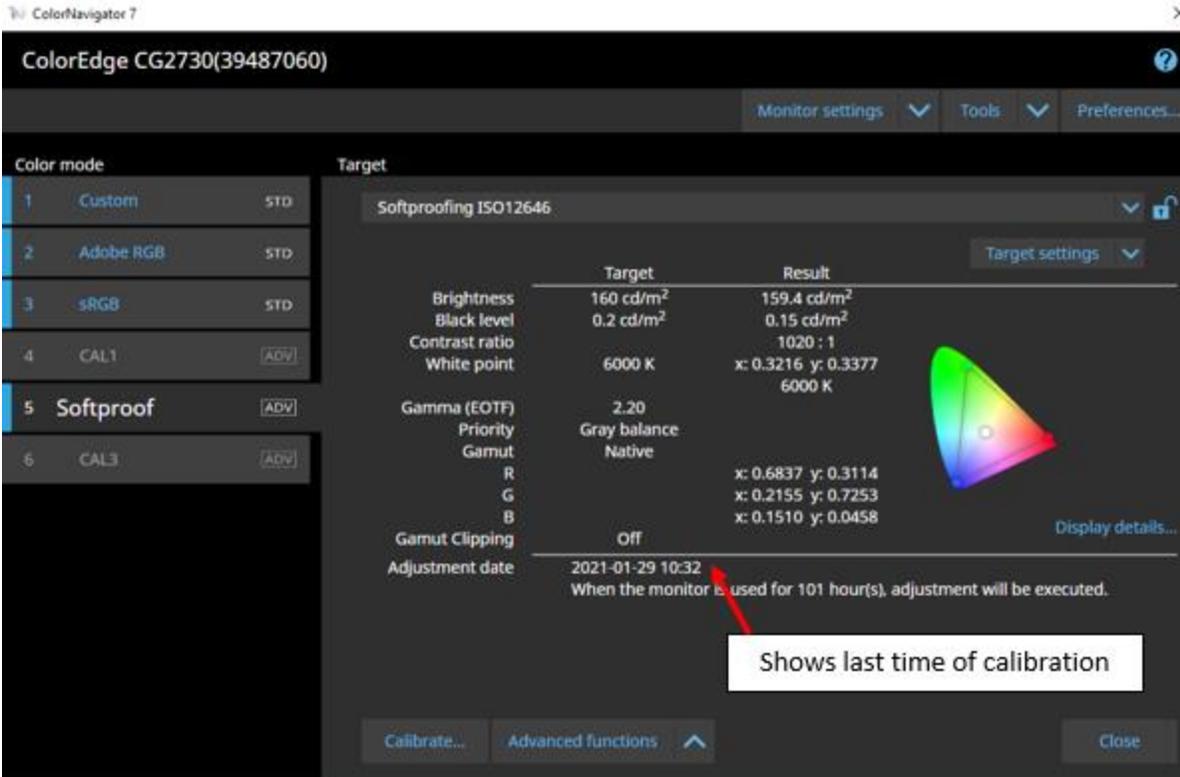
Softproofing ISO12646

	Target	Result
Brightness	160 cd/m ²	159.4 cd/m ²
Black level	0.2 cd/m ²	0.15 cd/m ²
Contrast ratio		1020 : 1
White point	6000 K	x: 0.3216 y: 0.3377 6000 K
Gamma (EOTF)	2.20	
Priority	Gray balance	
Gamut	Native	
R		x: 0.6837 y: 0.3114
G		x: 0.2155 y: 0.7253
B		x: 0.1510 y: 0.0458
Gamut Clipping	Off	
Adjustment date	2021-01-29 10:32	

When the monitor is used for 101 hour(s), adjustment will be executed.

Shows last time of calibration

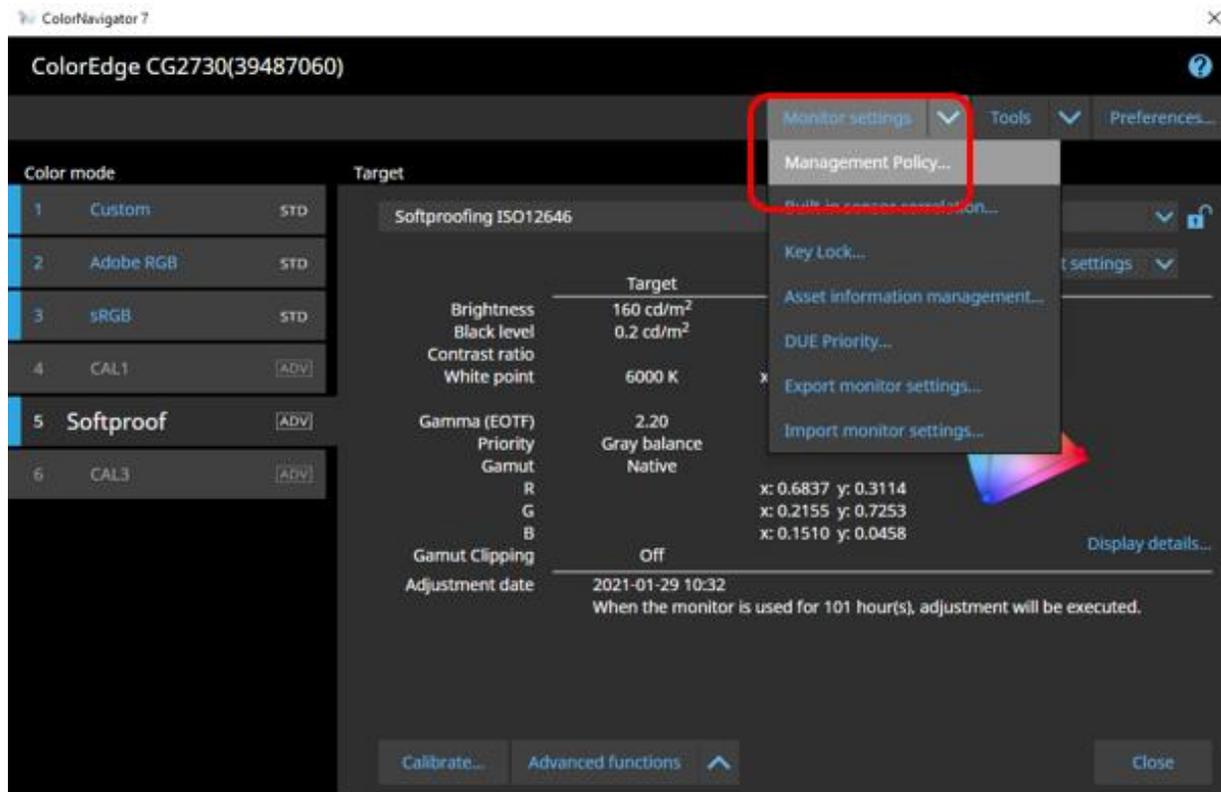
Calibrate... | Advanced functions | Close



Congratulations! You have now completed your monitor calibrations.

3.3 Schedule the Self-calibration

Don't forget to set your calibration schedule - we recommend monthly as a minimum. The monitor will switch itself on at the scheduled time, warm up, self-calibrate, then power back down. Settings as follows:



Management policy selection

- Periodic calibration
- Enable SelfCalibration
- None

Calibration will be performed periodically to maintain the condition of the monitor.

Check period setting

- Usage time
- Date

After the specified number of days (week, month) elapses, the next action will occur.
The monitor usage time until the next action will occur varies depending on the monitor usage.

Monthly

1st

Monday

5 : 0

Start timing

- Do not execute SelfCalibration while the monitor is in use
SelfCalibration starts when the monitor switches to power saving mode.

Reset settings

Resets the management policy settings to the default setting of ColorNavigator.

Reset

OK

Cancel

3.4 SoftProofing

We must point out that we are a hardware manufacturer not a colour workflow specialist. The following are general pointers only.

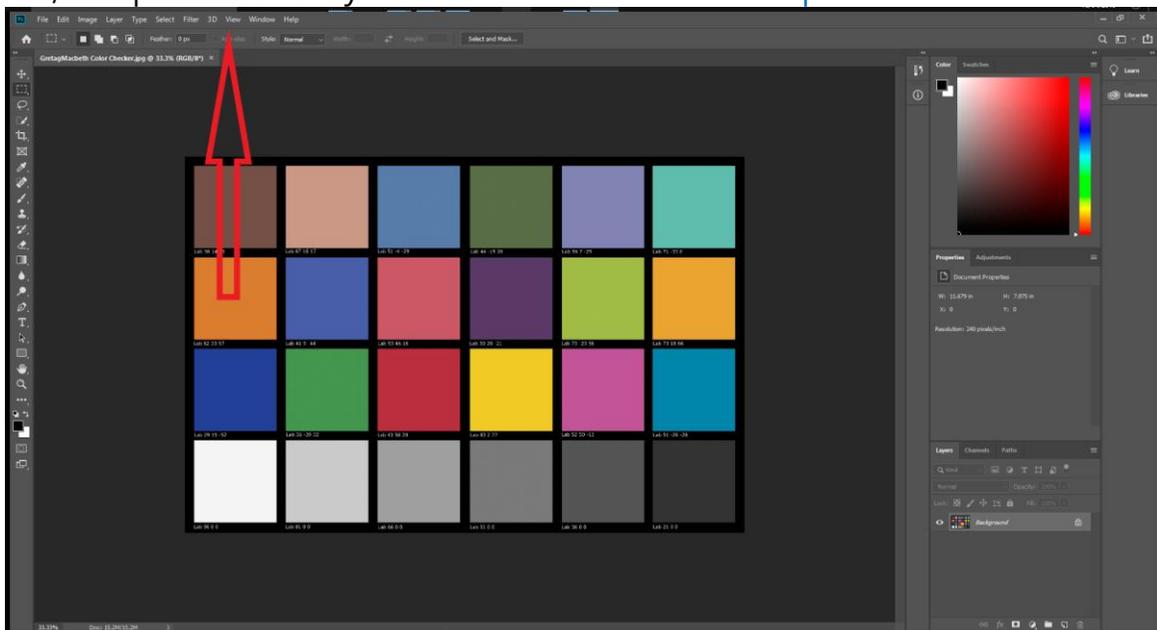
Now that the monitor has been set, you must view your content via the relevant printer profile.

Option 1 - invest in a good softproofing system such as [Veripress](#) for the nearest to perfect match. (We mention Veripress here because it has been integrated with EIZO monitors/ can run the EIZO built in sensor.) There are other systems on the market.

Option 2 - use Adobe software such as Photoshop or Acrobat. Note, without the appropriate plug-ins such as GMG Colour Plug-in, these softwares can struggle with special colours. Furthermore, they can struggle to emulate the paper white in your viewing environment *this is why we visually set the paper white in monitor.

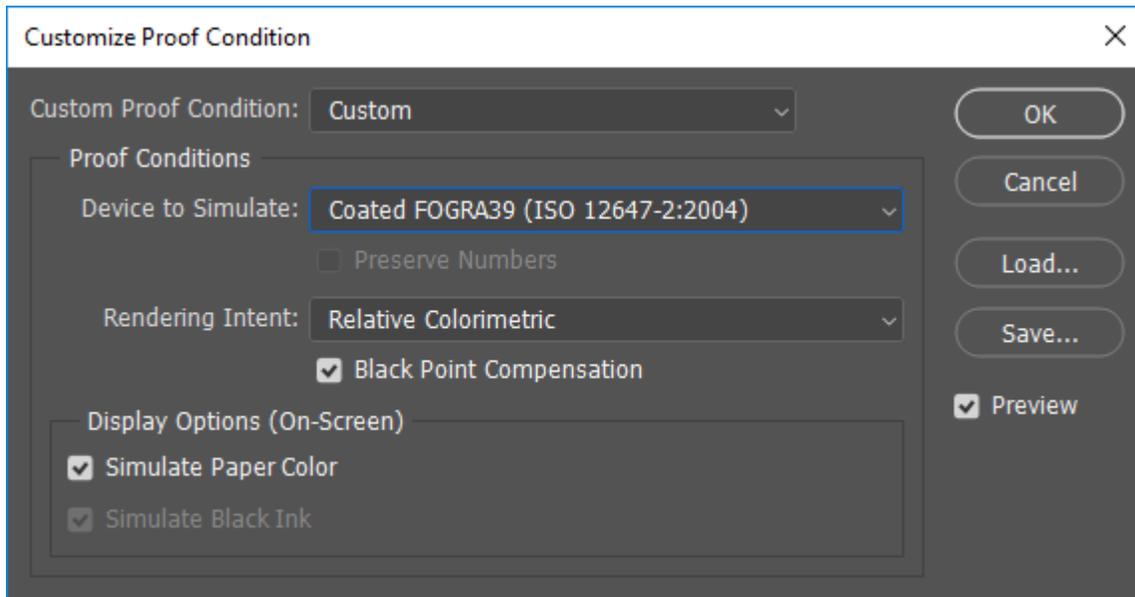
Photoshop - If you work with only one cmyk profile such as FOGRA 39L, you may prefer to set this up in the colour settings window (>edit > colour settings)

Or, softproof case by case: >View > Proof set-up > Custom



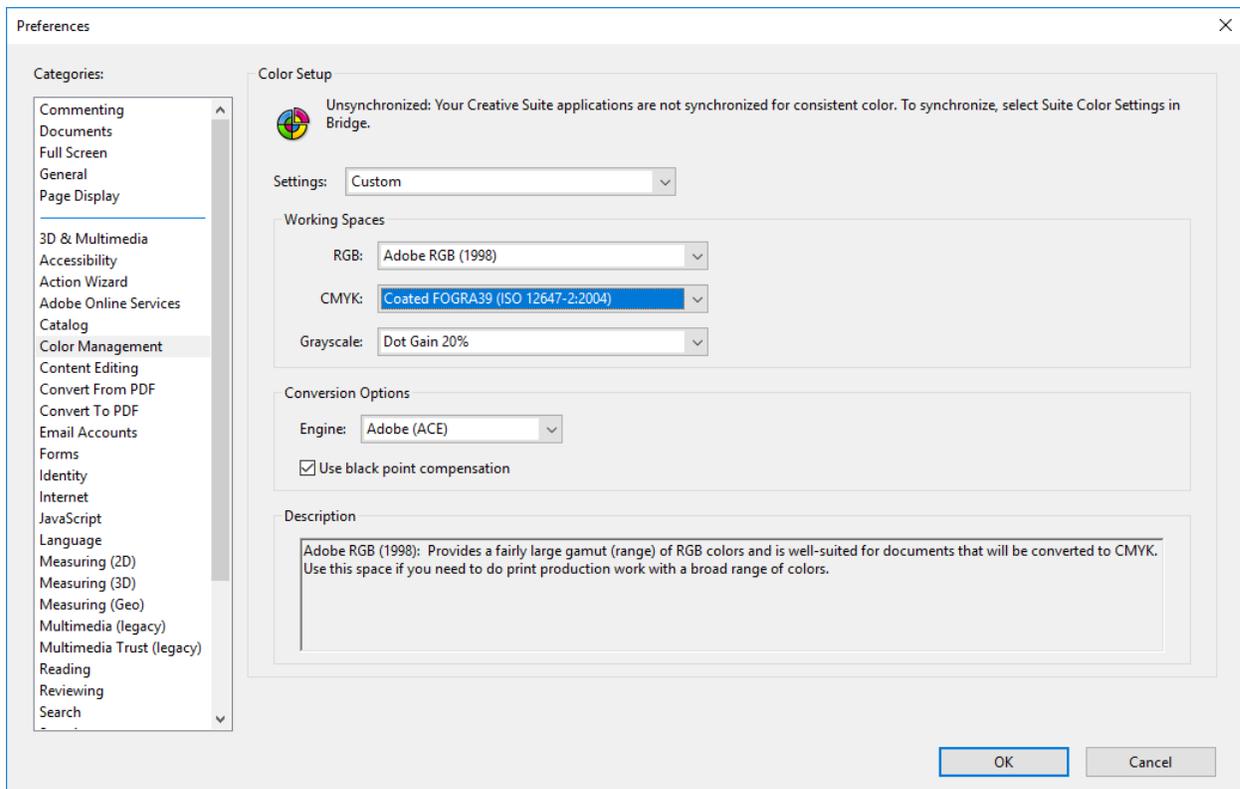
We have selected FOGRA39 (CMYK offset coated press profile).

Please request the relevant printer profile from your printer.



Acrobat:

Tools > Print Production > Output Preview



Ends. Please [contact us](#) if you would like us to recommend a local Colour Workflow Specialist contractor



CHAPTER FOUR

Frequently Asked Questions

4. Frequently Asked Questions

Q. Does the power ON/OFF operation shorten backlight life?

A. No, as long as the power ON/OFF operation does not exceed about 25 times per day, it does not affect backlight life.

Q. My monitor is set to ISO 3664 for editing and then I switch it to ISO 12646 when I am ready to print. When I switch to the ISO 12646 it then looks different because of the shift in white point. Does that mean I should then make the changes to the image? Or would you normally use 12646 profile to start with, if the image is to be printed?

A. ISO 12646 is the basis of your print profile. Yes, you're right. You will see a difference when you switch between the two profiles. The aim is to edit in ISO 3664 to make all of your main adjustments and manipulations in whatever program you chose to use. Once you're ready to print (if this is your final step and intention for your work), switch profiles to ISO 12646 (printing colour mode).

Q. I have my Mac connected to my EIZO and sometimes it looks like the quality of the screen isn't sharp or lacking saturation. This is always the case, it seems like it happens when I'm in Photoshop or sometimes it does it on its own!

A. Ensure that the EIZO monitor is set as the primary monitor (go to system preferences, displays, arrangement, and drag the white bar over to the EIZO monitor icon (if it isn't there already). Do this before you open your Adobe software. If you've set your Mac as your main monitor, it will keep reverting itself to display its preferred settings rather than reading the signal from the monitor. This can be changed in your System Preferences on your Mac.



Q. How often should I calibrate my monitor?

A. We recommend every 100 hours, or once a month.

Use this as a guideline, you can calibrate every day if you wanted to. Keep an eye on your environment and surroundings too. If you decide to move your monitor or desk to another room with different conditions or chose to edit in both direct light and dark rooms, have a separate profile for both as they are different lighting conditions.

Q. Can I calibrate my monitor without purchasing expensive equipment?

A. The CG models in the ColorEdge range are self-calibrating, so there is no need for a third party sensor. However, if you are using a CS model or an older EIZO without the self-calibration, you can invest in a calibration device

that range from few hundred dollars to over a thousand dollars. You can view the list of compatible sensors on our website.

Q. In some applications, tone characteristics and the color of the image are not displayed correctly causing low tones to appear lost.

A. This may be solved by changing the profile policy of ColorNavigator or the application's settings.

- If the application has Rendering Intent settings (e.g.:Photoshop (Adobe))

Choose 'Perceptual' or 'Relative' and uncheck 'Black Point Compensation' in the pull-down menu under Rendering Intent.

- If the application does not have Rendering Intent settings (e.g. Preview (Mac), Phocus (Hasselblad))

Uncheck 'Reflect black level in tone curve' in the profile policy setting menu.

Q. I edit photos in AdobeRGB & then change profile to sRGB before sending. Should the monitor be set as sRGB or AdobeRGB to edit?

A. If you're shooting in Adobe RGB and setting your Image Quality to RAW, you will want to maintain that consistency through to your monitor too. You can make your final changes such as file type, size, colour space etc. in your final output however, this is also entirely up to you. If you decide to have your monitor in sRGB, keep in mind that you will not have as many colours available to you as you would in Adobe RGB

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the latest updates and
exciting offers