3.7 Device Emulation

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:

Would you like to set up a colour mode in your EIZO ColorEdge monitor, to match e.g. a laptop screen, tablet device or mobile phone? This will let you preview your content / see how it will look on these devices.

You will need:

1. An EIZO current ColorEdge monitor connected to a computer with ColorNavigator 6 or 7 running.

2. An external sensor – E.g. X-Rite i1Pro / Pro2 / Monitor, X-Rite ColorMunki, Klein K-10, Photo Research PR-655 / PR-680, Konica Minolta CS-1000 / CS-1000A / CS-2000 / CS-2000A, Colorimetry Research CR-250

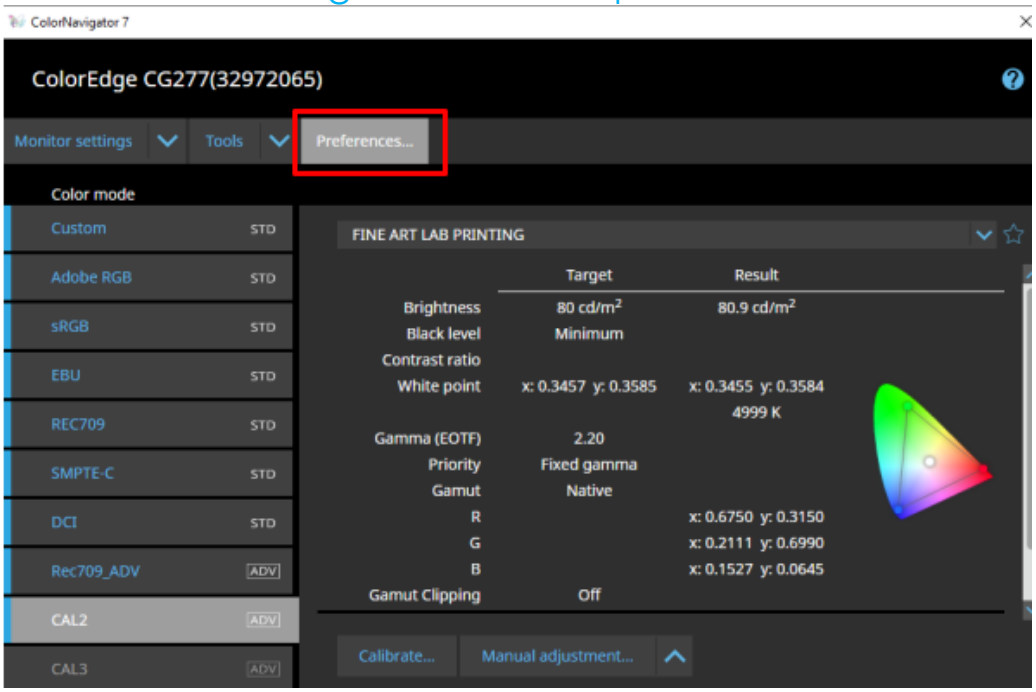
3. The device you want to measure and emulate: Any monitor or mobile media device, that has connectivity to the internet and a web browser installed.

HOW TO RUN MEDIA DEVICE MEASUREMENT AND EMULATION

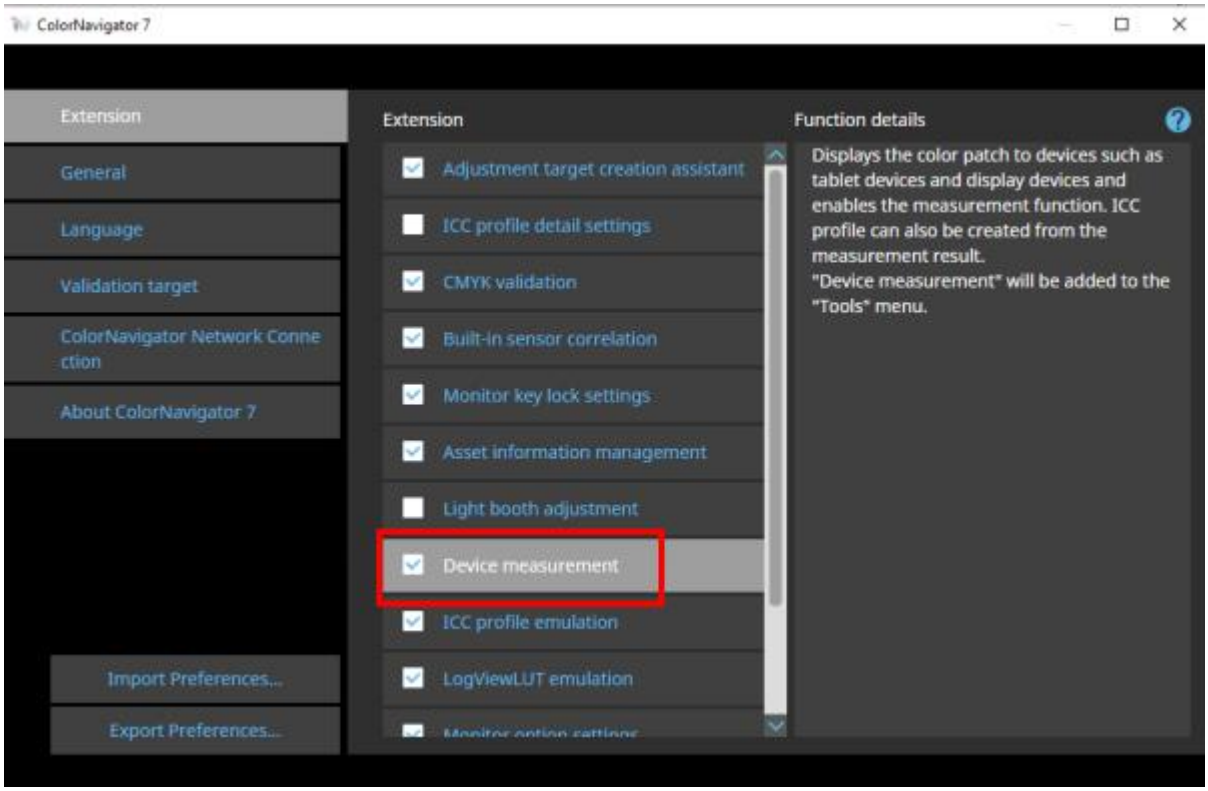
The long way (visit the end of this doc for the quick way)

FIRST – MEASURE THE DEVICE

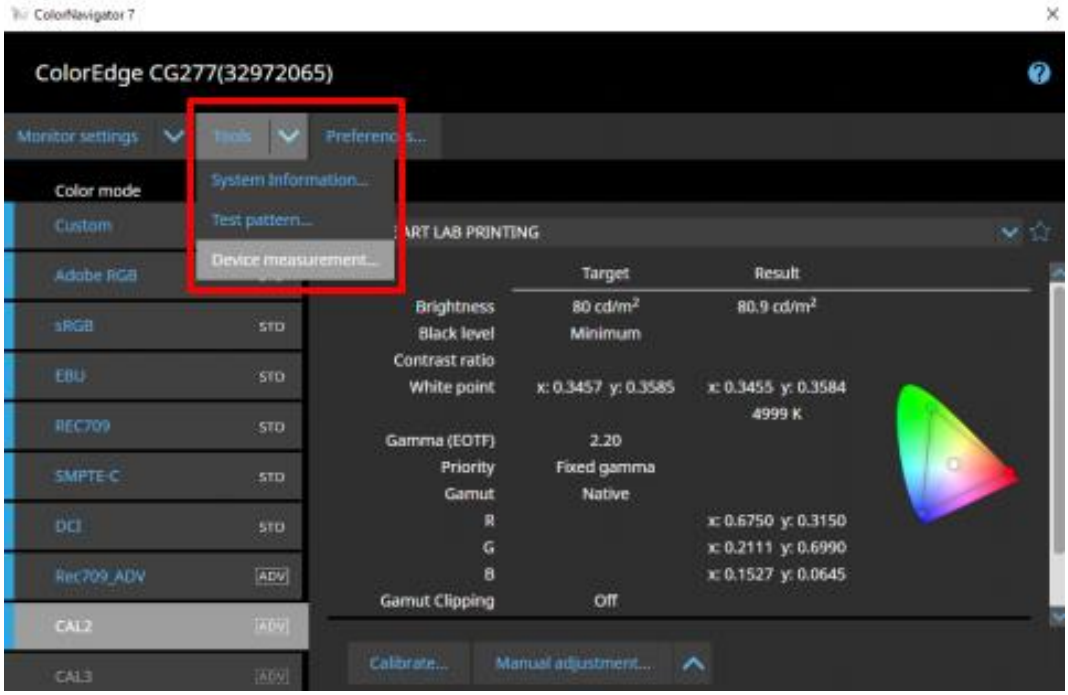
Launch ColorNavigator >> Select preferences



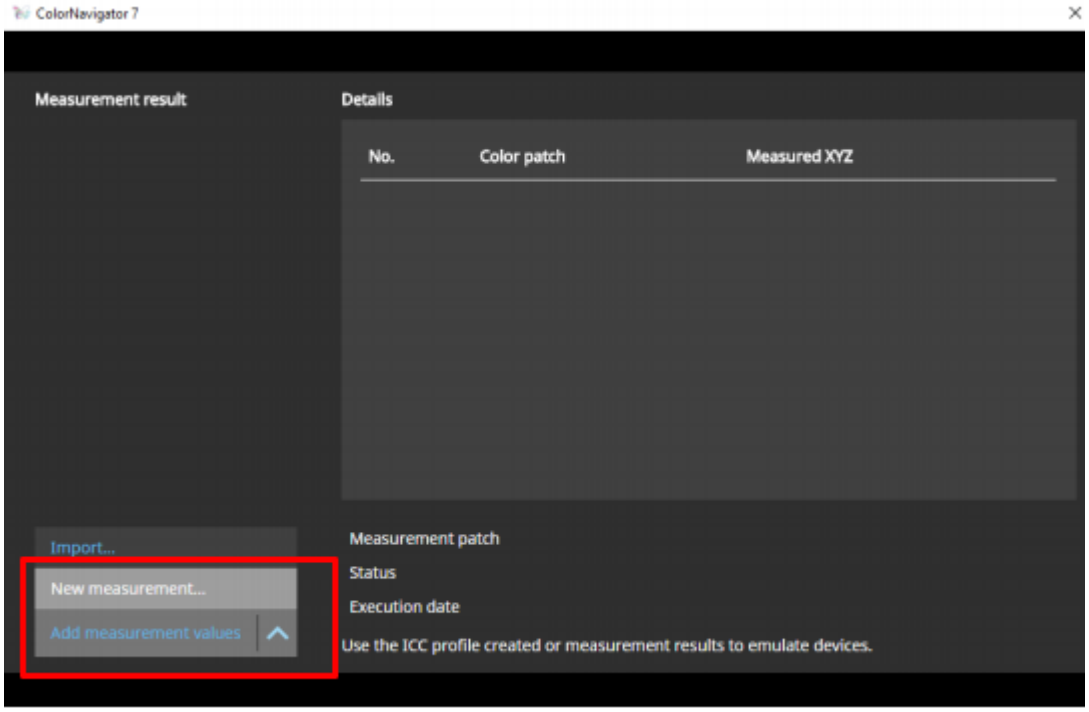
Select Device Measurement , then close the window



Go to Tools and select Device Measurement



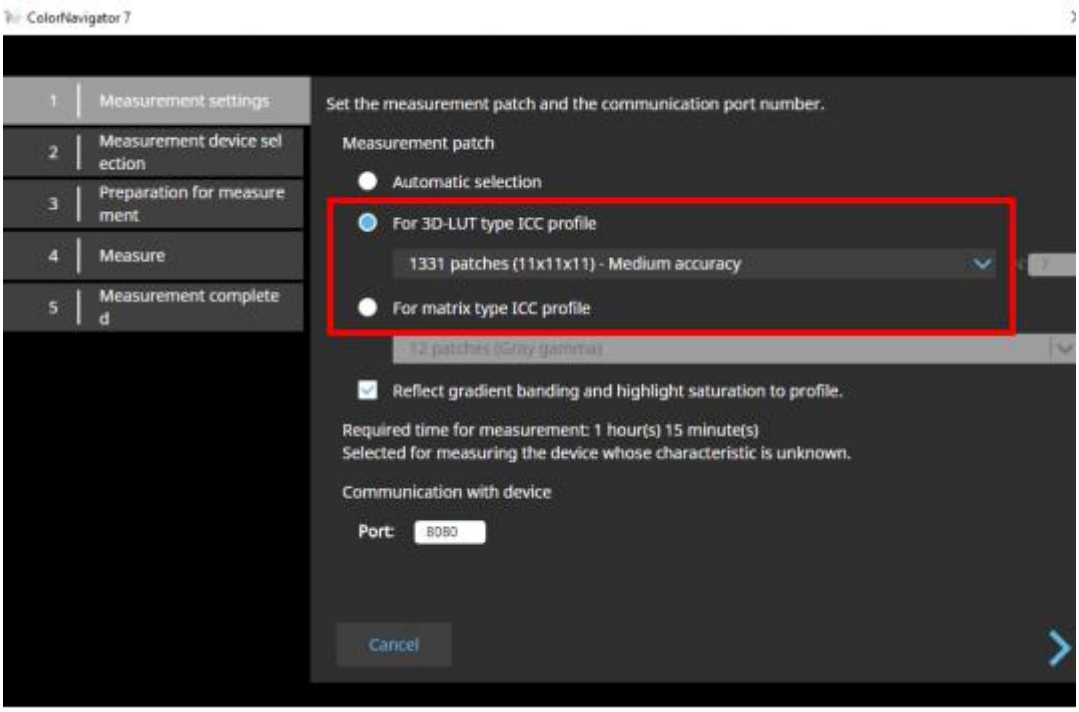
Select New measurement



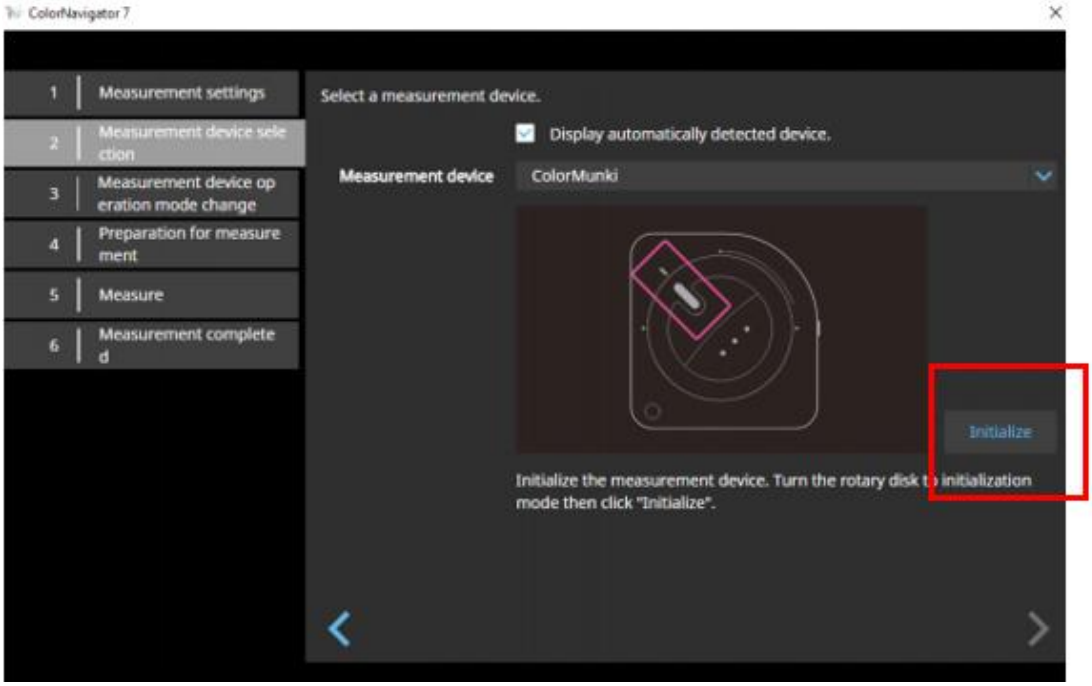
ColorMunki, i1 Pro, I Pro 2 and Monitor (XRGA) can measure up to 1331 (11 x 11 x 11) patches.

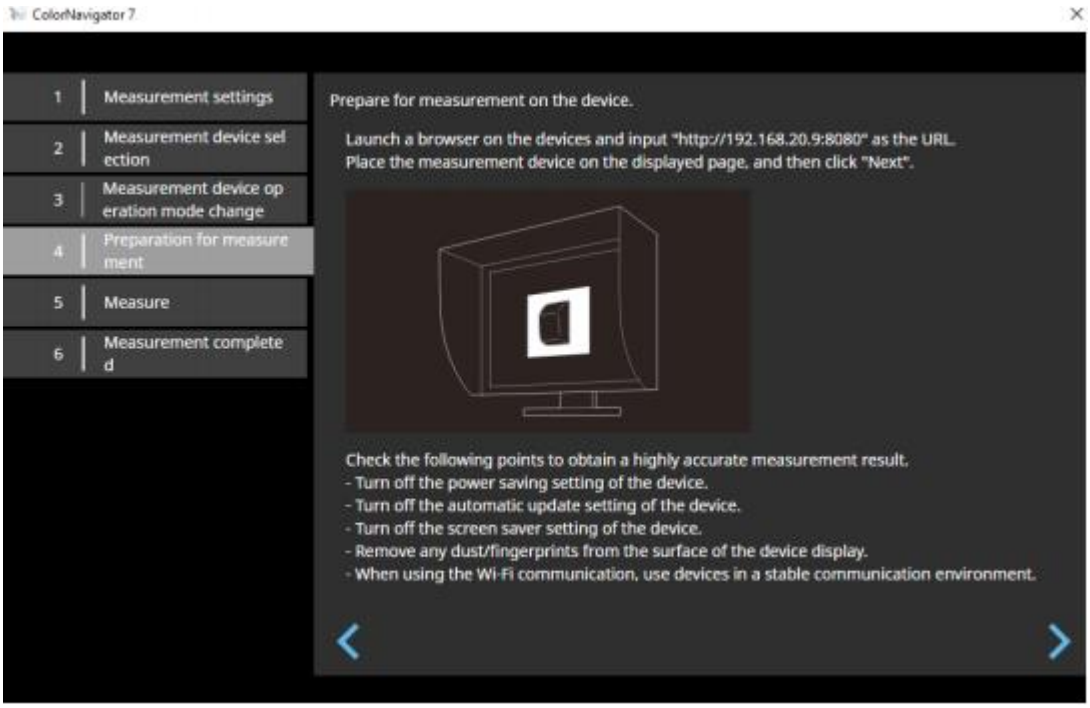
I am using a ColorMunki for this guide, on a CGX monitor.

Select 3D-LUT type ICC Profile, 1331 patches

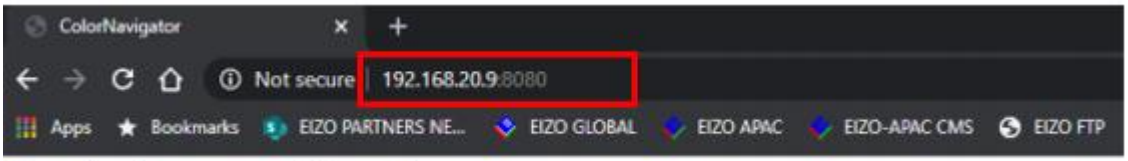


Initialise the sensor



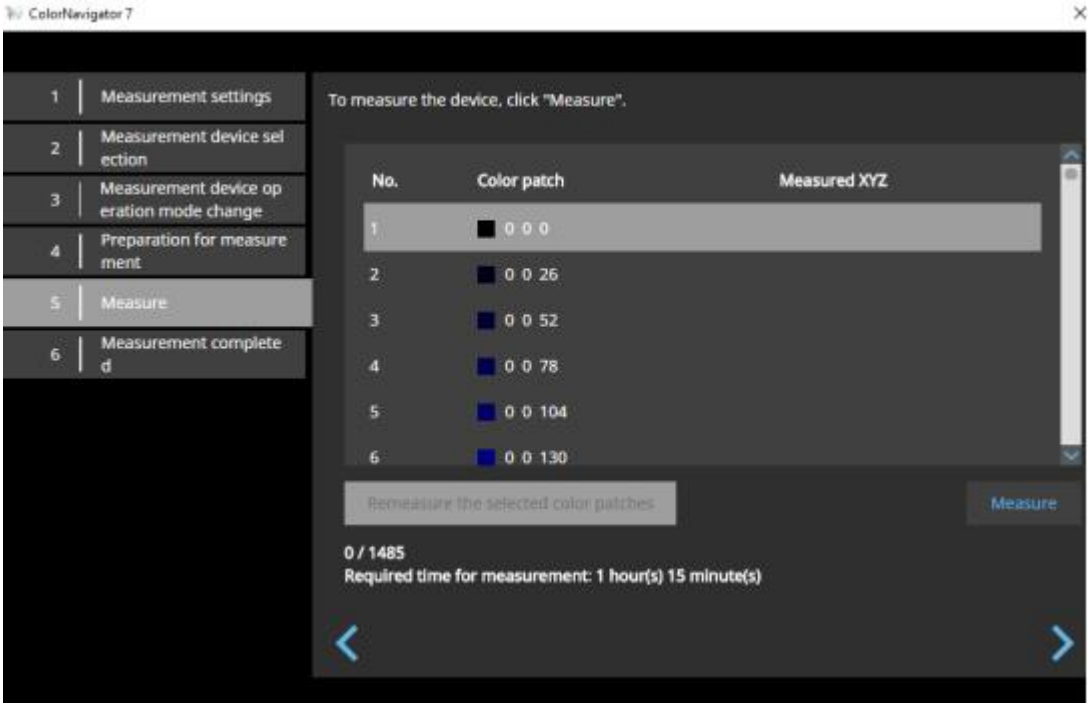


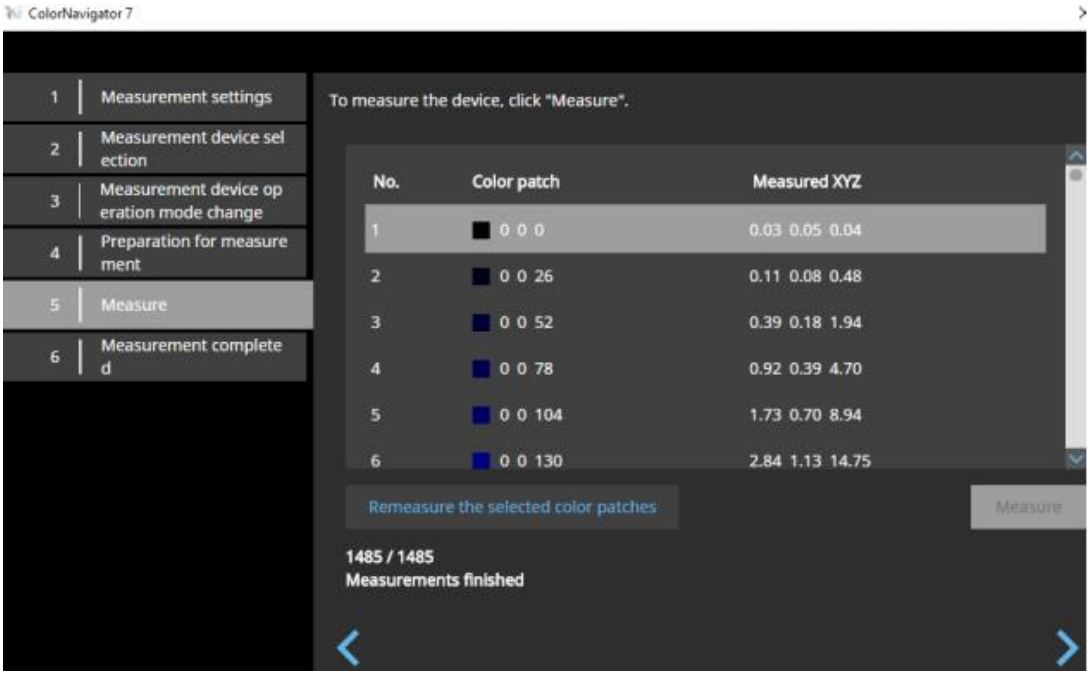
Go to the device (I am using my laptop screen for this guide). Launch a browser window, and enter the above mentioned URL

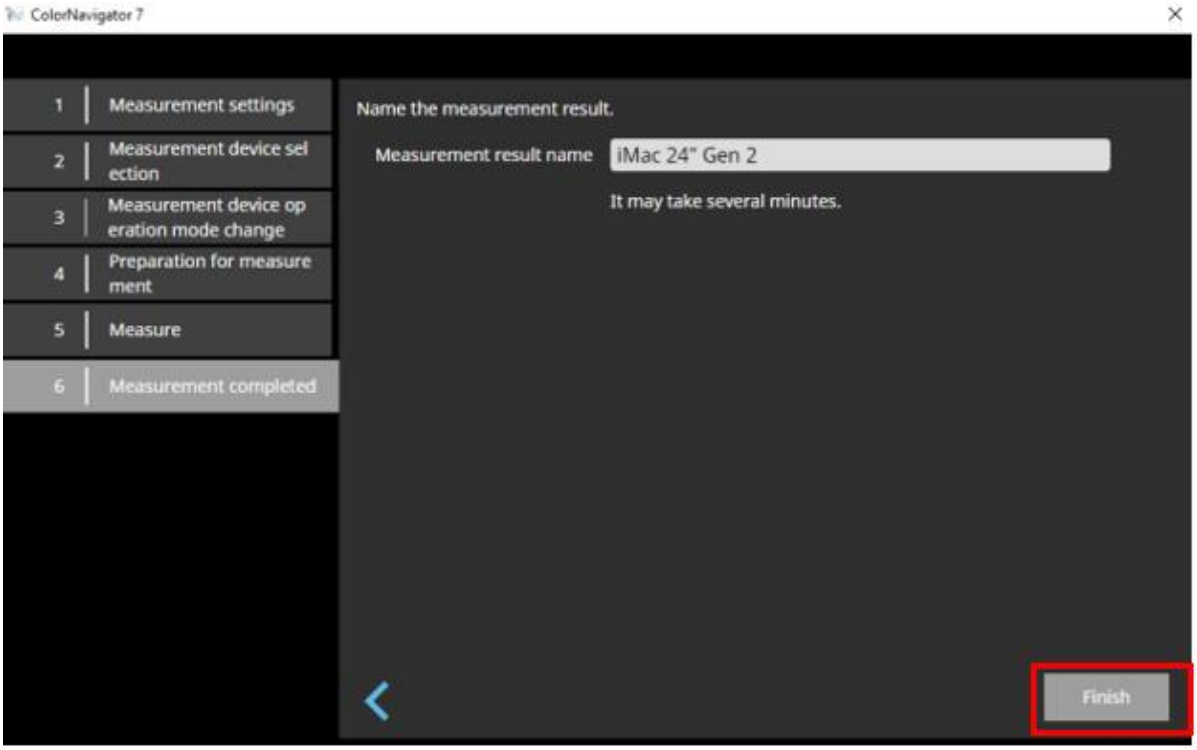


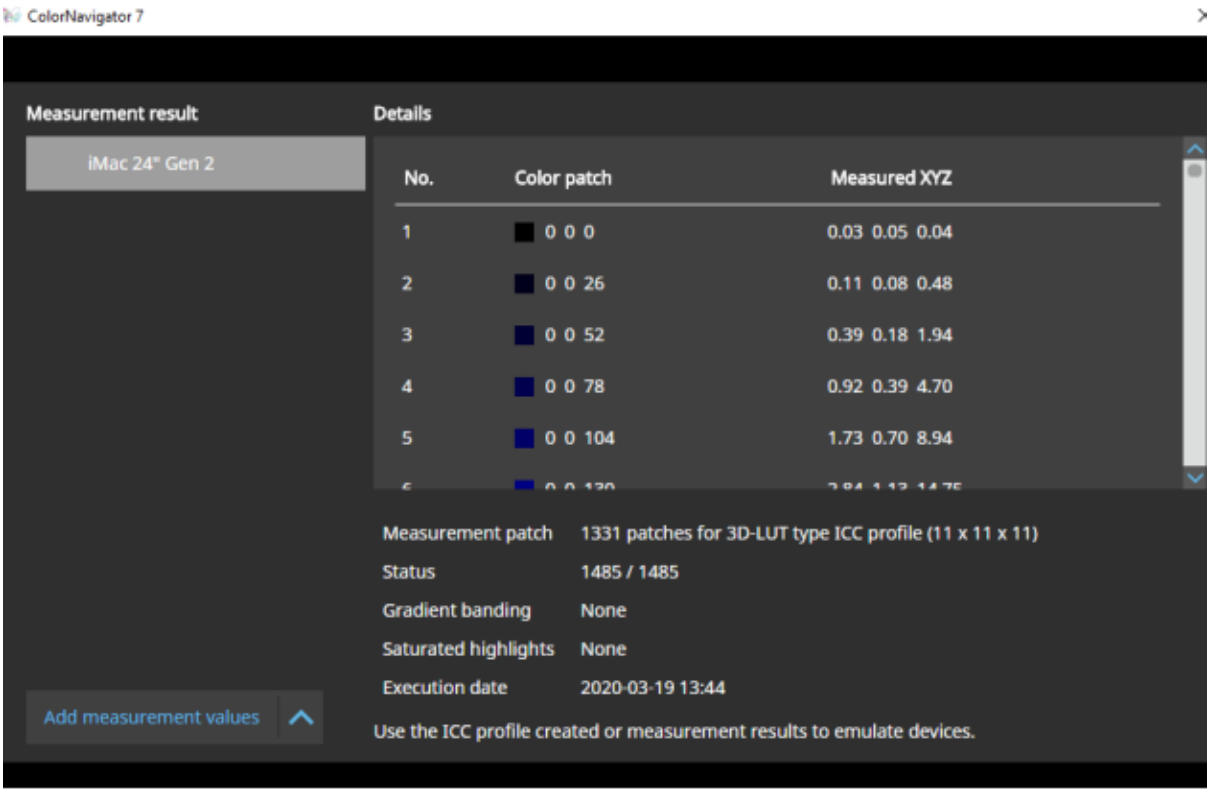
De-activate any power savings settings on the device's OS, place the measurement device (eg, ColorMunki) on the screen, then click the Measure button in CN.

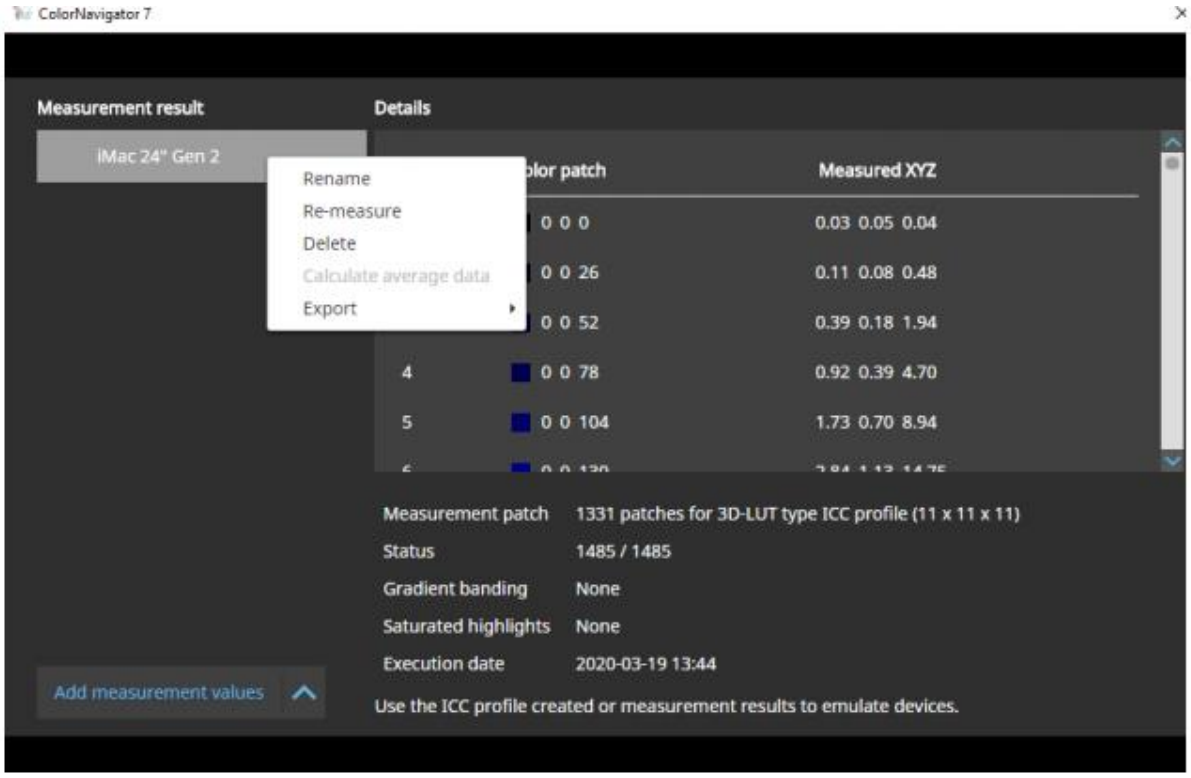
The browser will display each colour patch, and you will be able to follow which patch is being measured via the ColorNavigator window (estimated time for medium level 3D LUT measurement is 1h 15 mins).

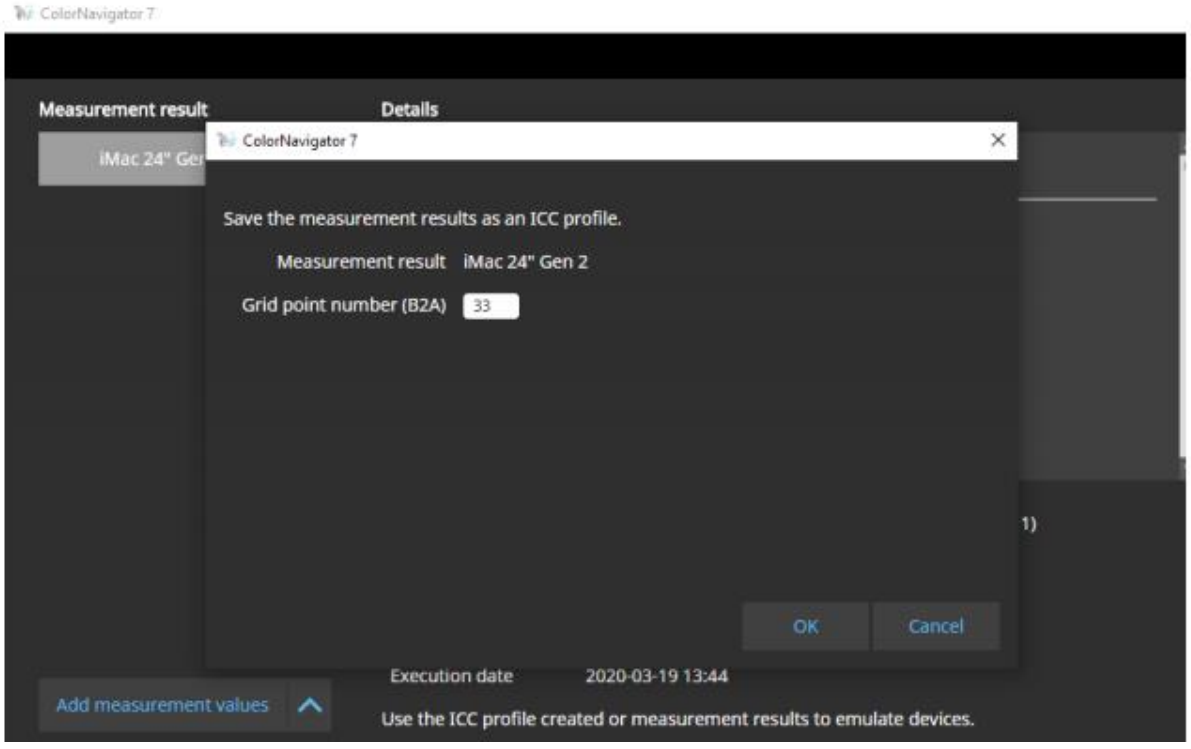


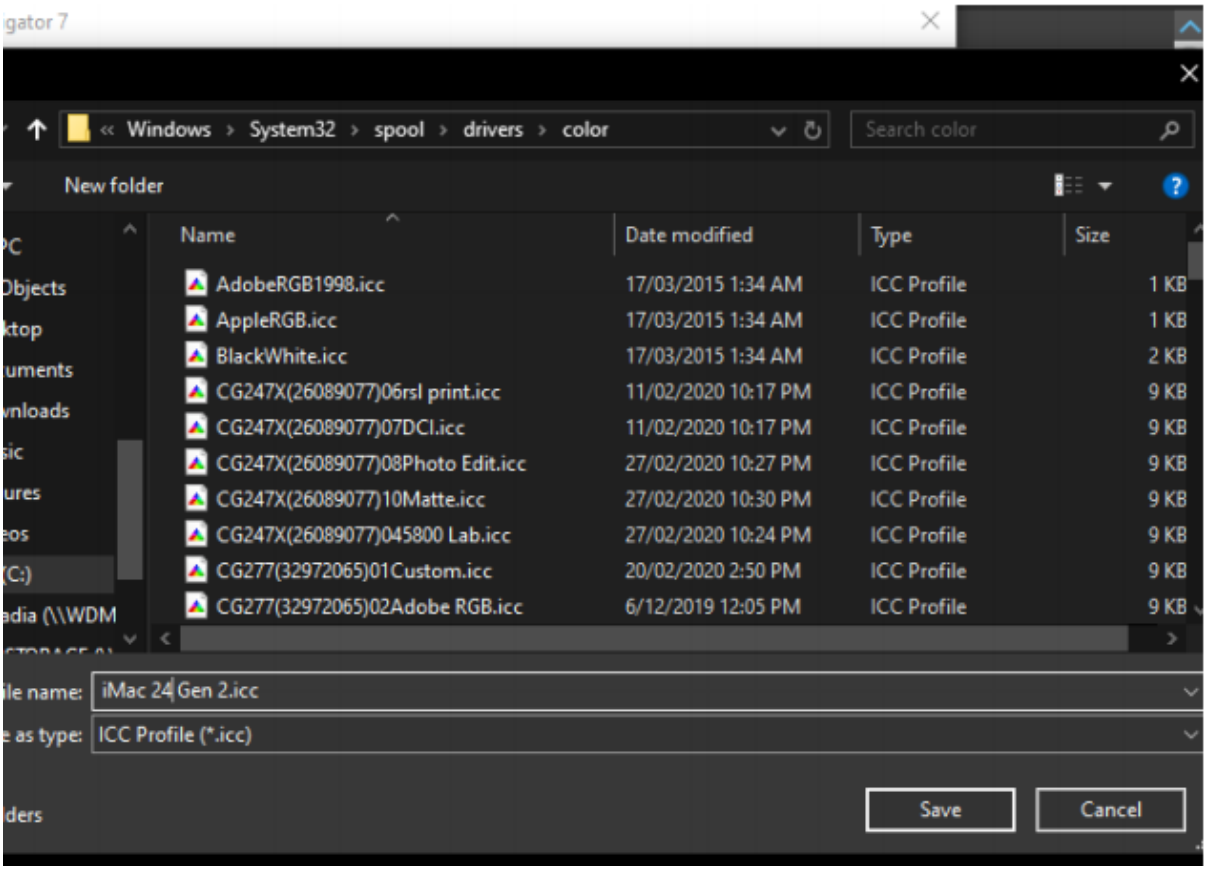



ColorNavigator 7
1 Measurement settings
2 Measurement device selection
3 Measurement device operation mode change
4 Preparation for measurement
5 Measure
6 Measurement completed
Name the measurement result.
Measurement result name
iMac 24" Gen 2
It may take several minutes.
Finish


ColorNavigator 7
Measurement result
iMac 24" Gen 2
Details
No.
Color patch
Measured XYZ
1 0 0 0 0.03 0.05 0.04
2 0 0 26 0.11 0.08 0.48
3 0 0 52 0.39 0.18 1.94
4 0 0 78 0.92 0.39 4.70
5 0 0 104 1.73 0.70 8.94
Measurement patch 1331 patches for 3D-LUT type ICC profile (11 x 11 x 11)
Status 1485 / 1485
Gradient banding None
Saturated highlights None
Execution date 2020-03-19 13:44
Add measurement values
Use the ICC profile created or measurement results to emulate devices.


ColorNavigator 7
Measurement result
Details
iMac 24" Gen 2
Rename
Re-measure
Delete
Calculate average data
Export
olor patch
Measured XYZ
0 0 0
0.03 0.05 0.04
0 0 26
0.11 0.08 0.48
0 0 52
0.39 0.18 1.94
4
0 0 78
0.92 0.39 4.70
5
0 0 104
1.73 0.70 8.94
Measurement patch
1331 patches for 3D-LUT type ICC profile (11 x 11 x 11)
Status
1485 / 1485
Gradient banding
None
Saturated highlights
None
Execution date
2020-03-19 13:44
Add measurement values
Use the ICC profile created or measurement results to emulate devices.

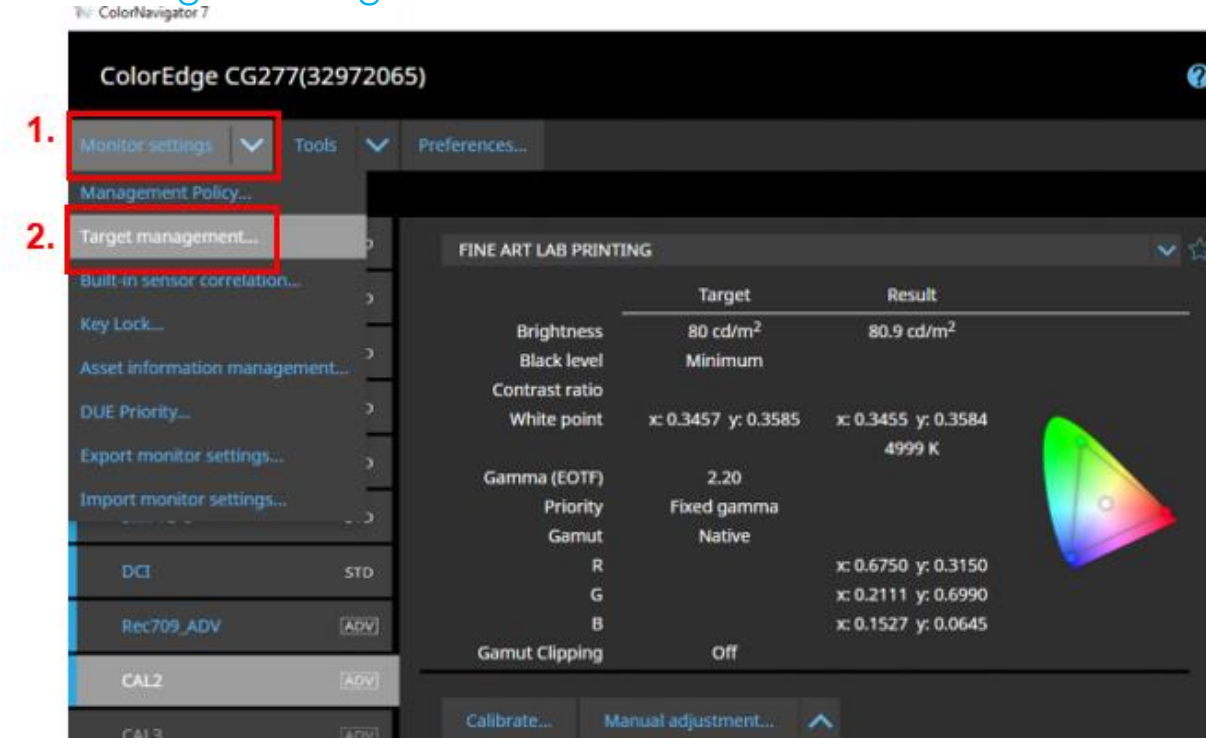

ColorNavigator 7
Measurement result
Details
ColorNavigator 7
Save the measurement results as an ICC profile.
Measurement result
iMac 24" Gen 2
Grid point number (B2A)
33
OK
Cancel
Execution date
2020-03-19 13:44
Add measurement values
Use the ICC profile created or measurement results to emulate devices.



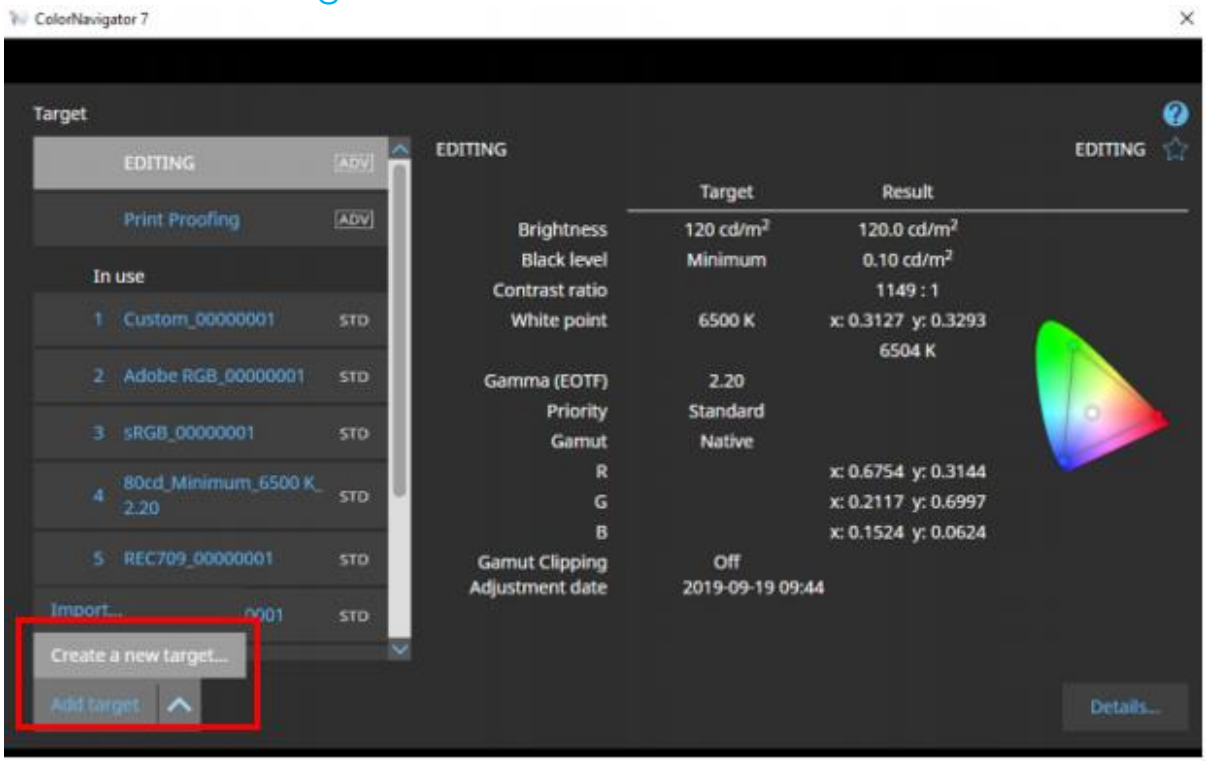
Please also leave a copy of your profile on your desktop, otherwise you won't be able to access it later.

SECOND – SET UP THE TARGET

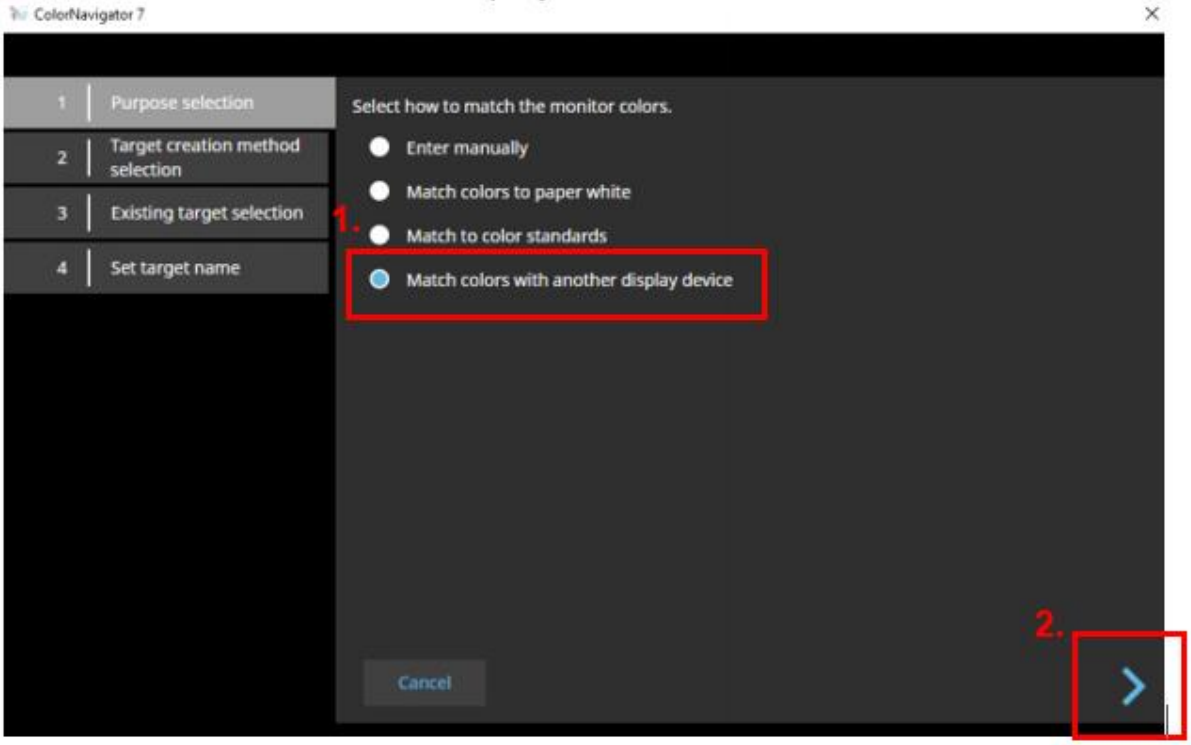
Select Target Management



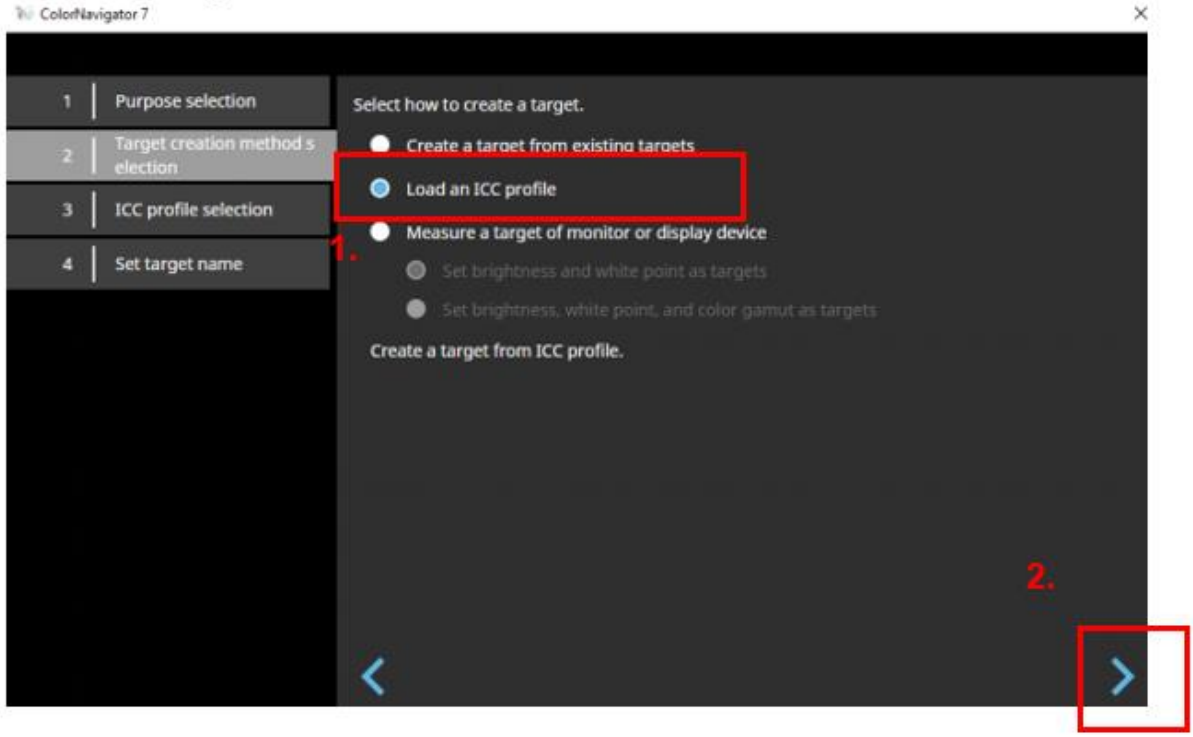
Create a new target



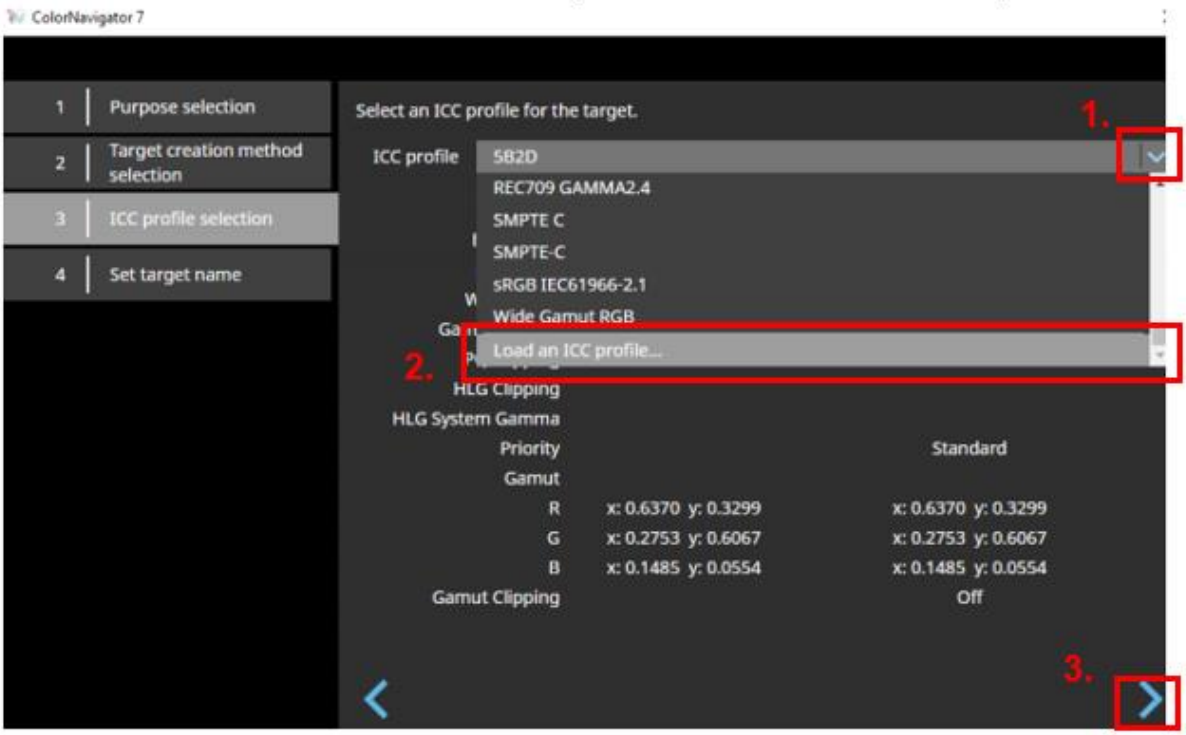
Match colours with another display device



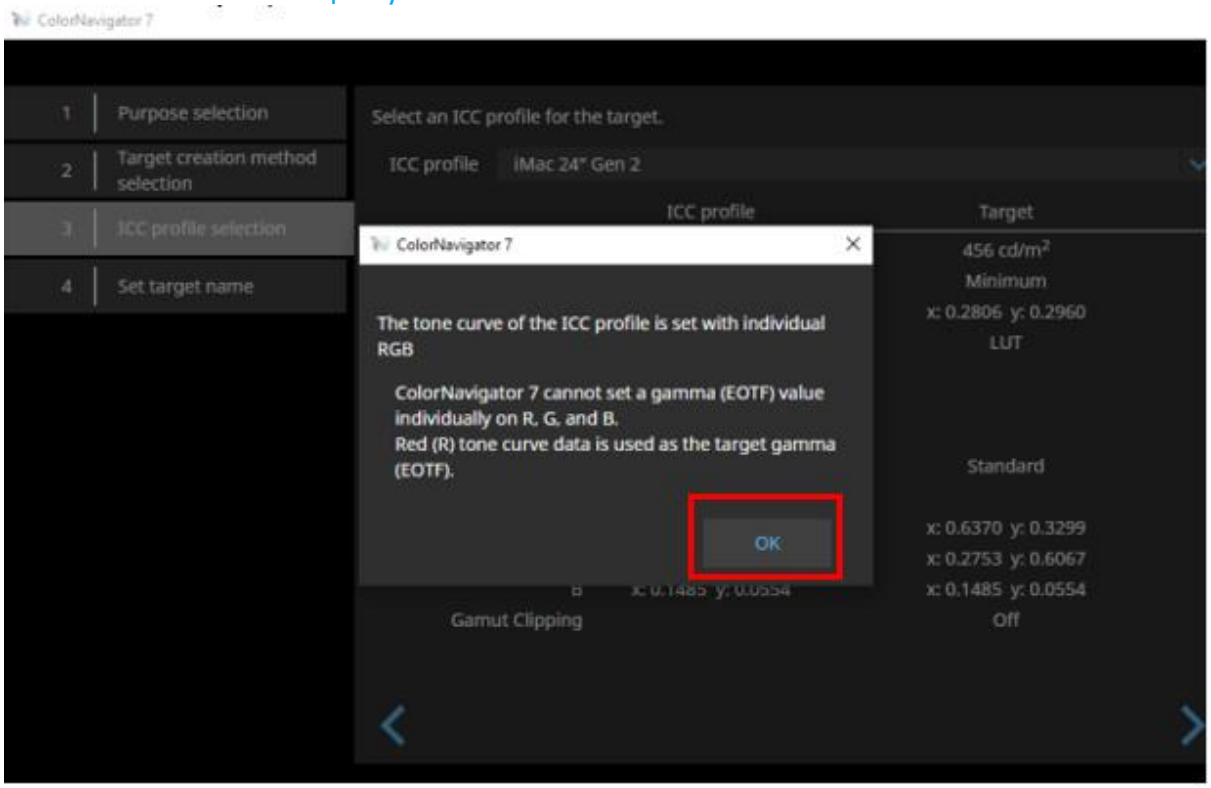
Load an ICC profile



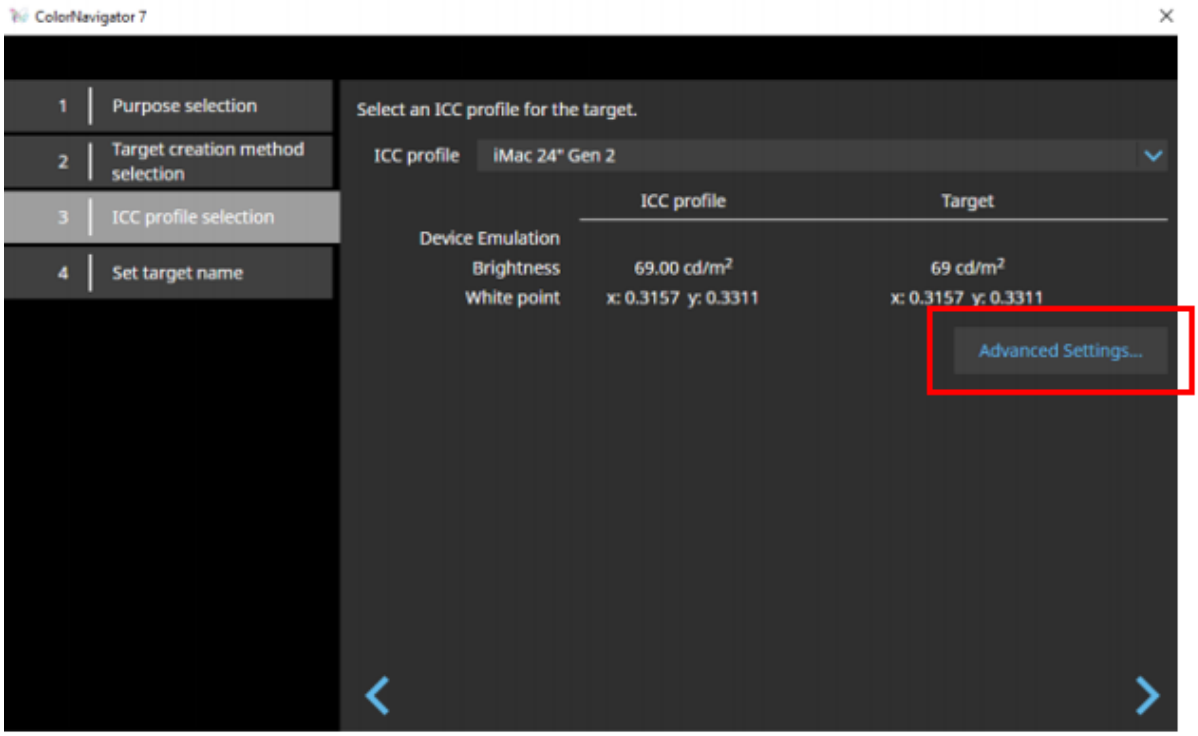
Scroll down to the bottom of the drop down box: Loan an ICC profile

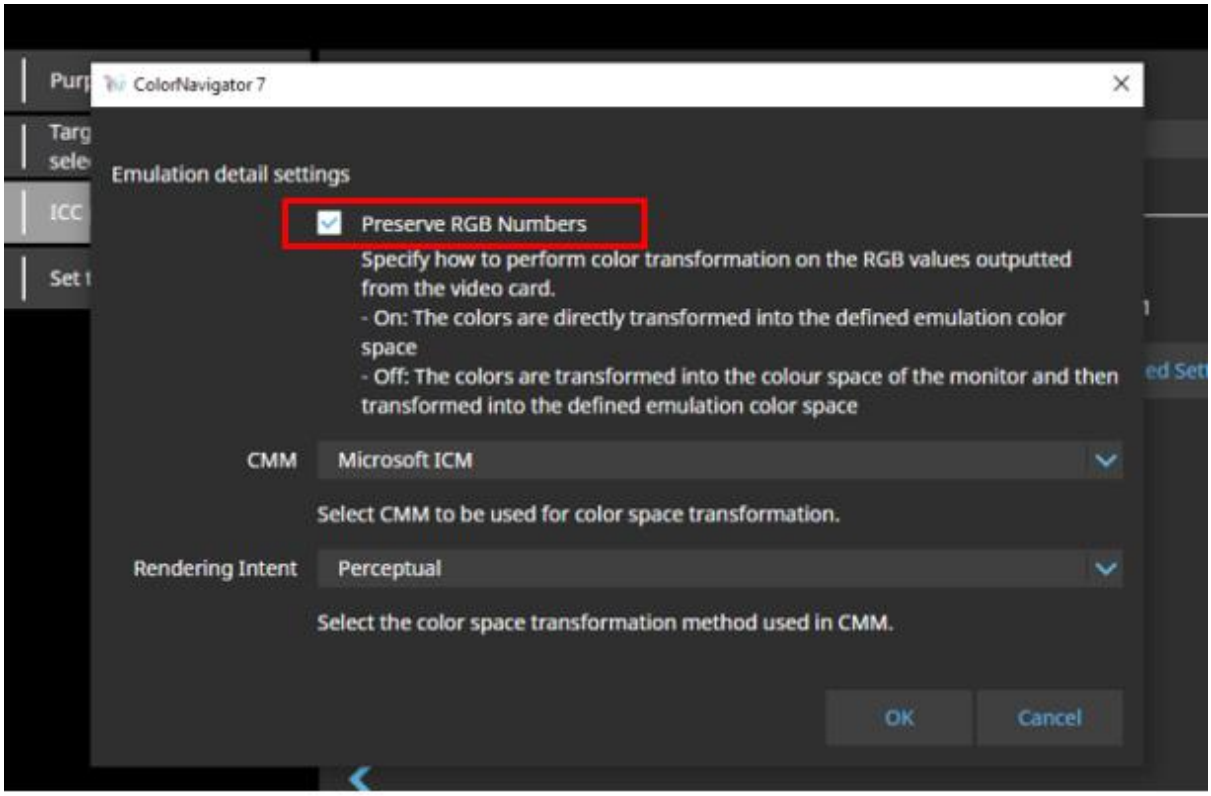


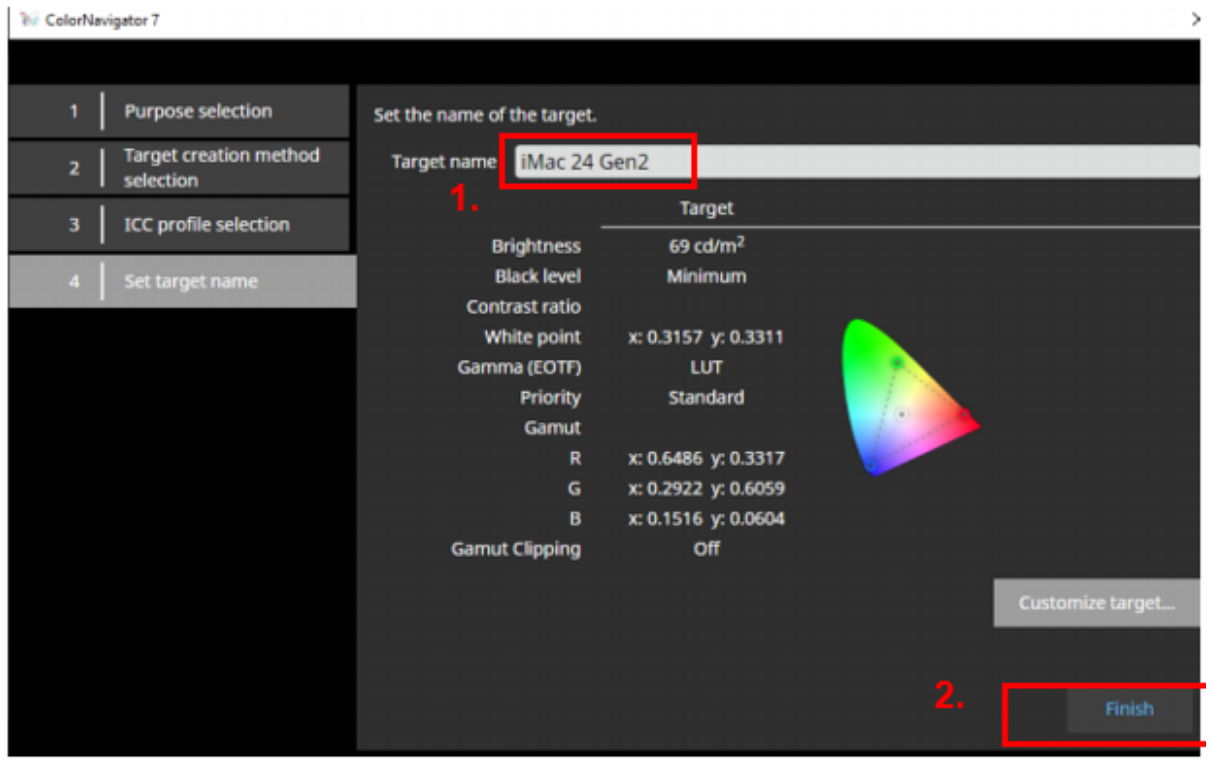
Navigate to your desktop and select your profile (eg, iMac 24 Gen 2.icc for this example) >> Click OK

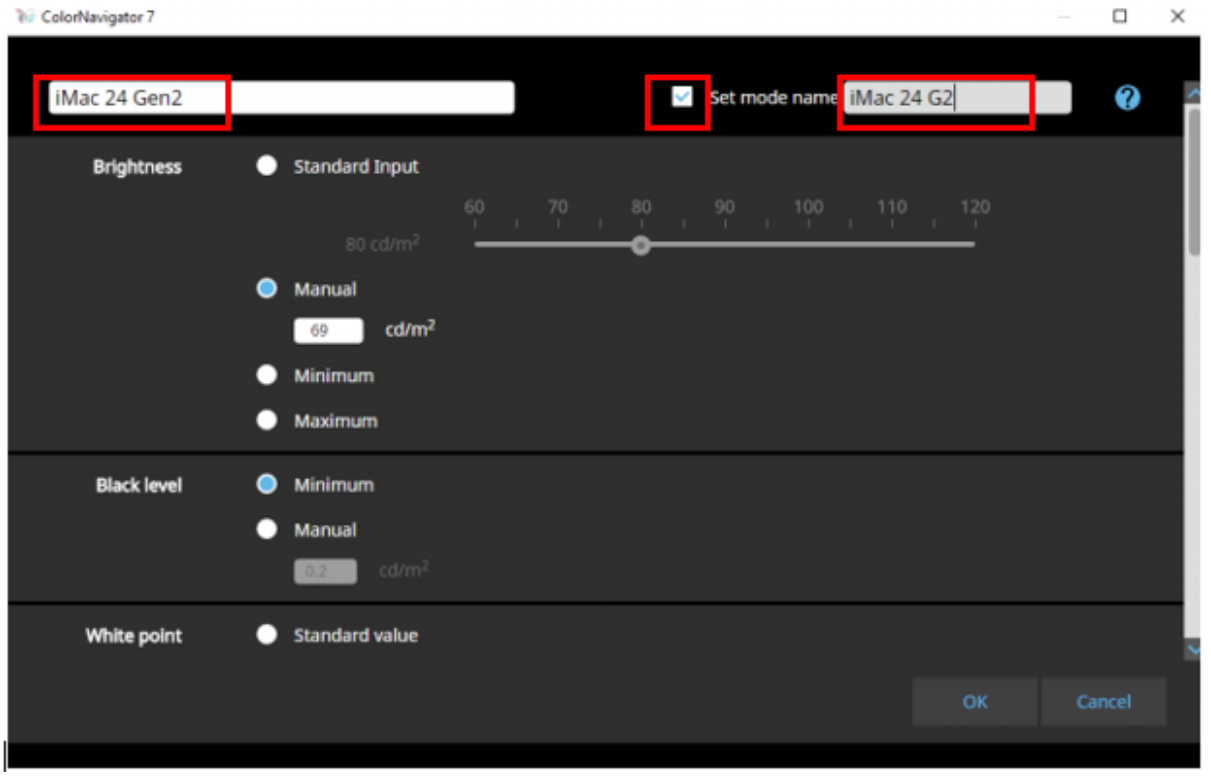


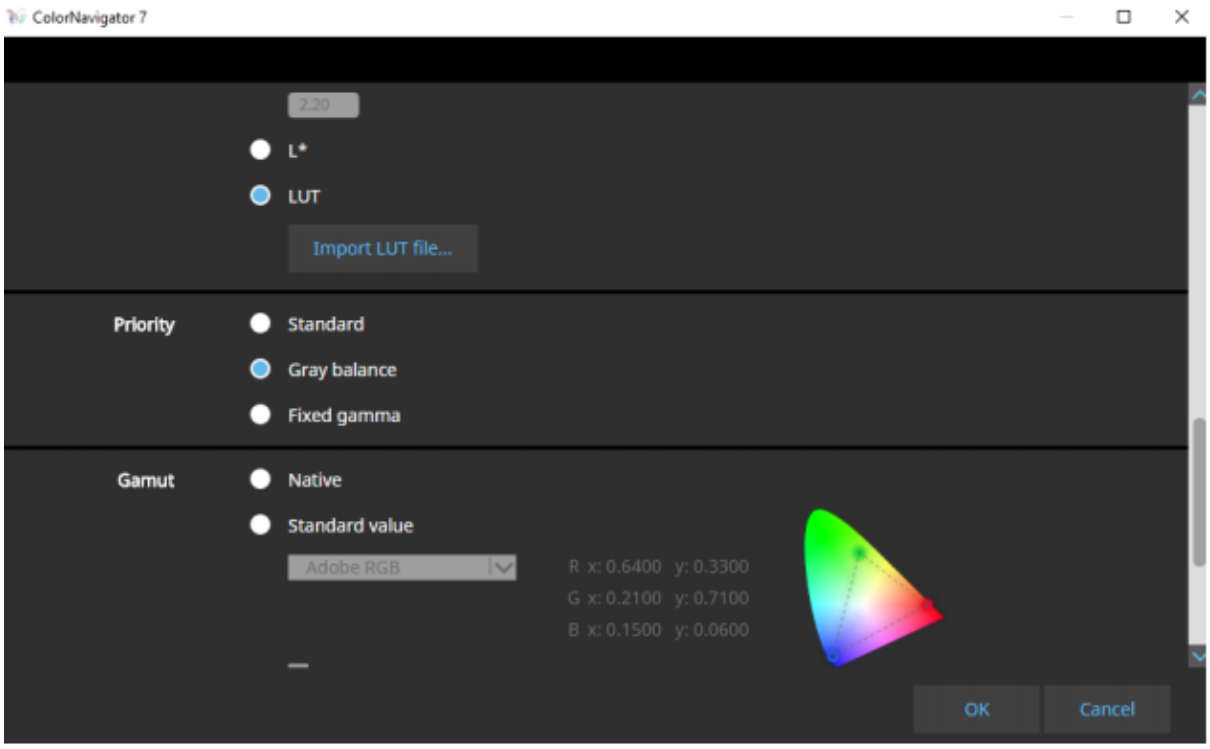
Click Advanced Settings…

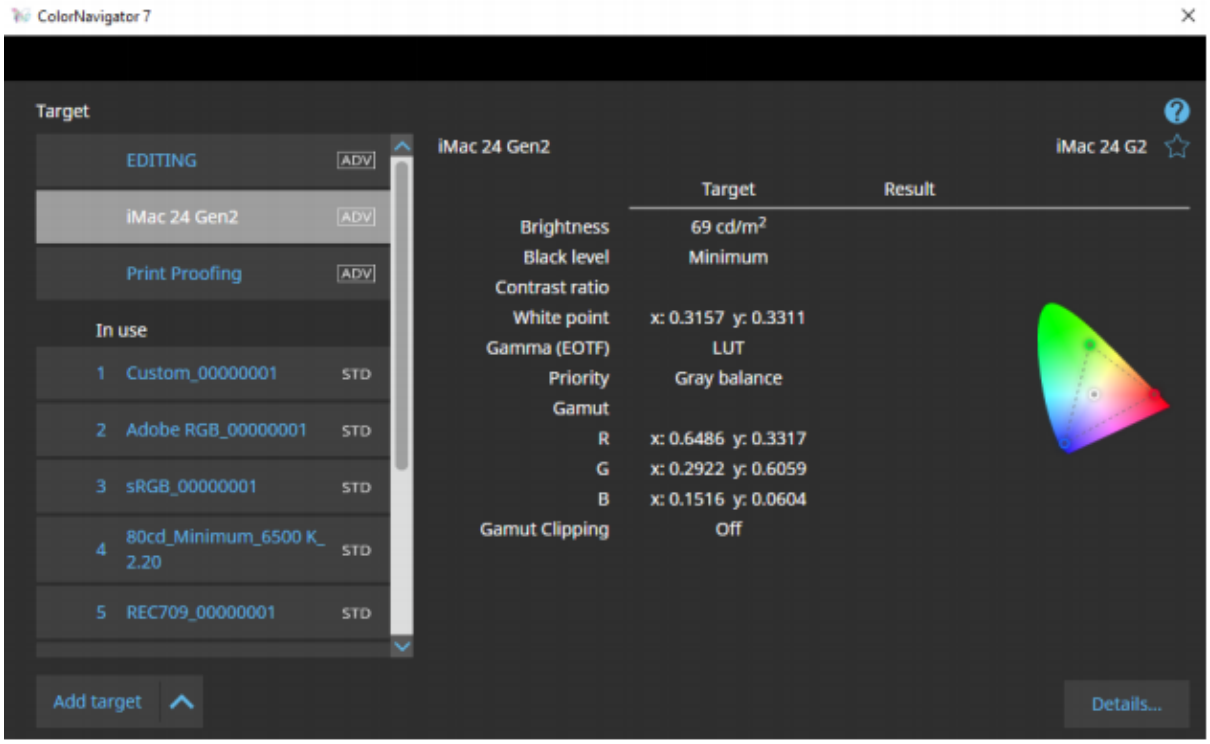




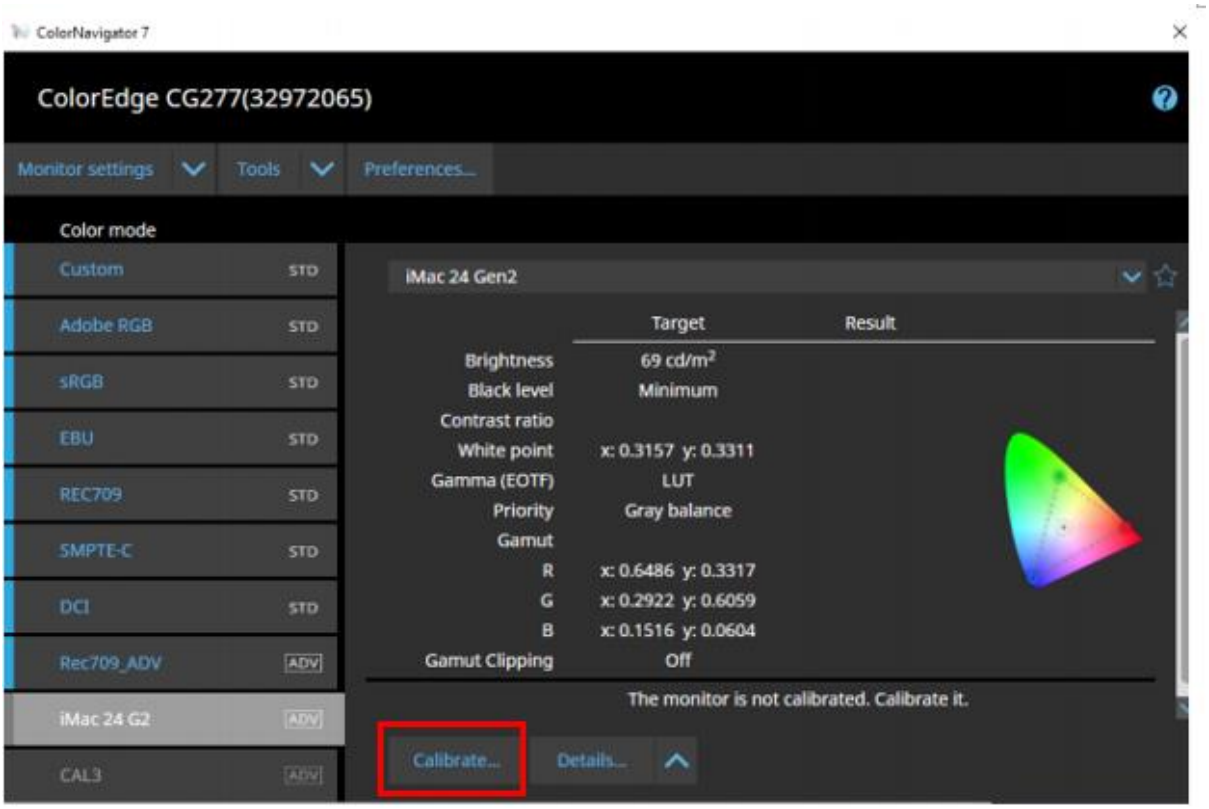

ColorNavigator 7
1 Purpose selection
2 Target creation method selection
3 ICC profile selection
4 Set target name
Set the name of the target.
Target name
iMac 24 Gen2
1.
Target
Brightness 69 cd/m²
Black level Minimum
Contrast ratio
White point x: 0.3157 y: 0.3311
Gamma (EOTF) LUT
Priority Standard
Gamut
R x: 0.6486 y: 0.3317
G x: 0.2922 y: 0.6059
B x: 0.1516 y: 0.0604
Gamut Clipping Off
Customize target...
2.
Finish


ColorNavigator 7
iMac 24 Gen2
Set mode name
iMac 24 G2
Brightness
Standard Input
60 70 80 90 100 110 120
80 cd/m²
Manual
69 cd/m²
Minimum
Maximum
Black level
Minimum
Manual
0.2 cd/m²
White point
Standard value
OK
Cancel





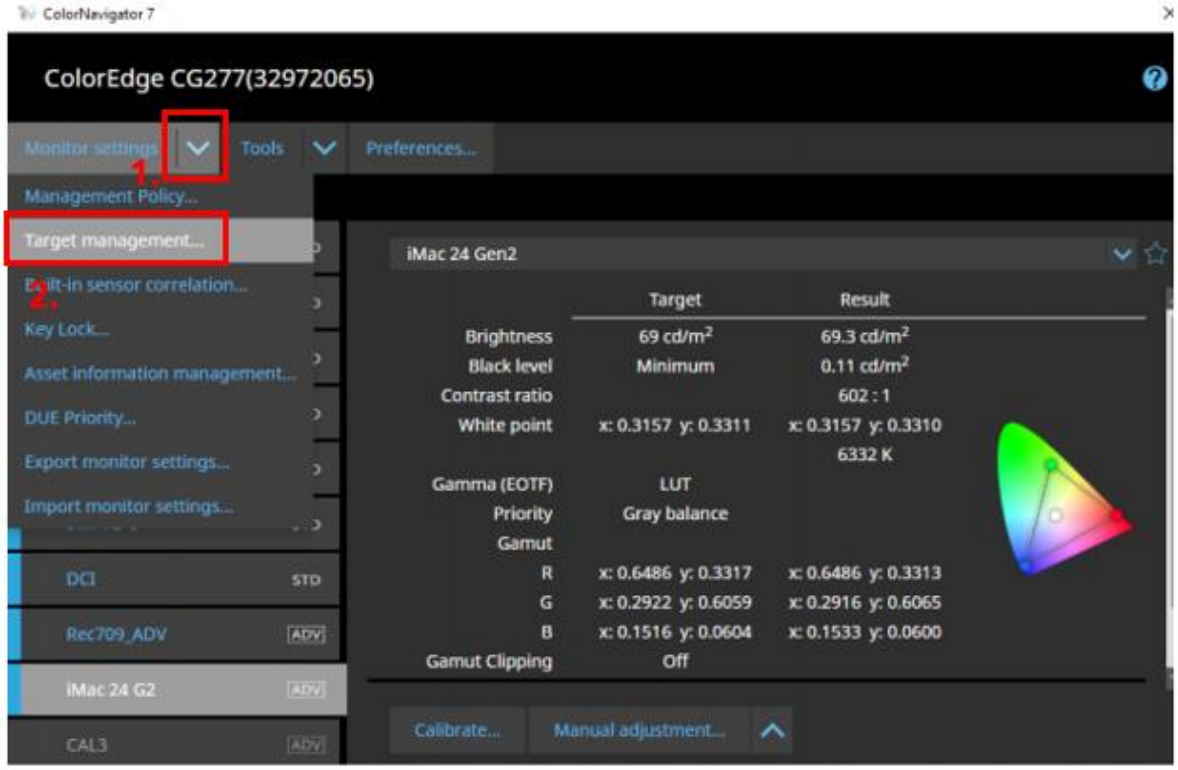
Back to home screen. Select a Color Mode bucket, then select iMac Gen2. The Color Mode name will change.

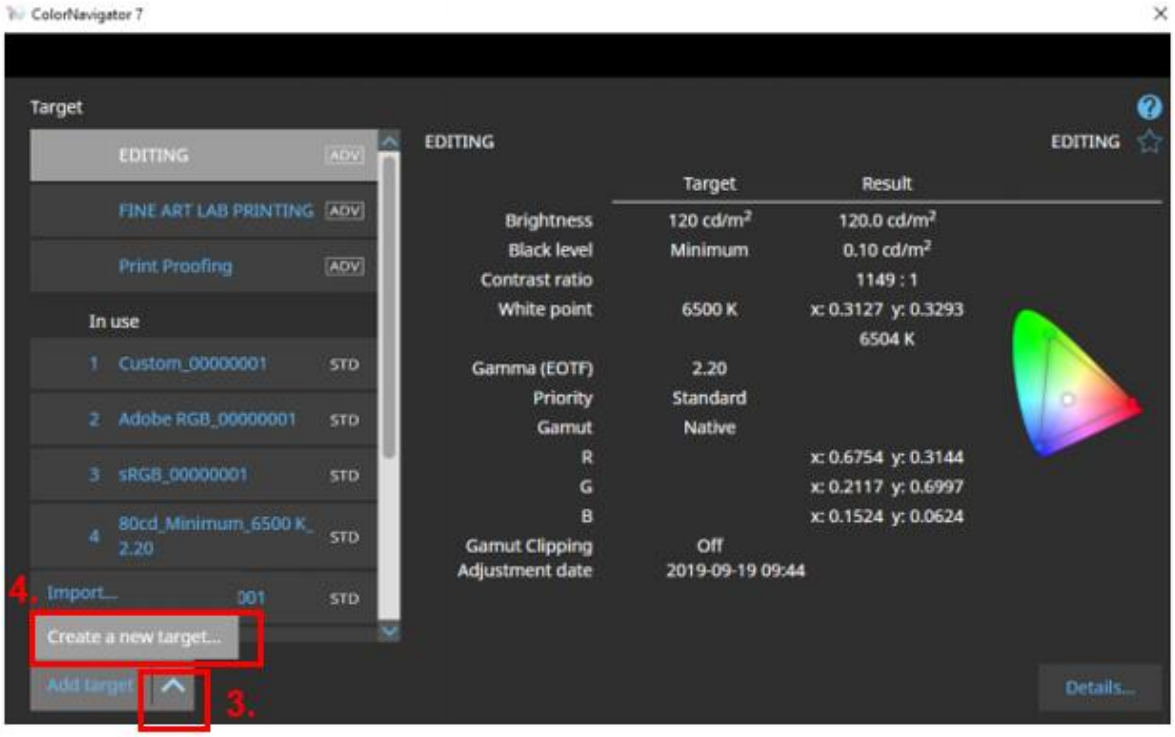


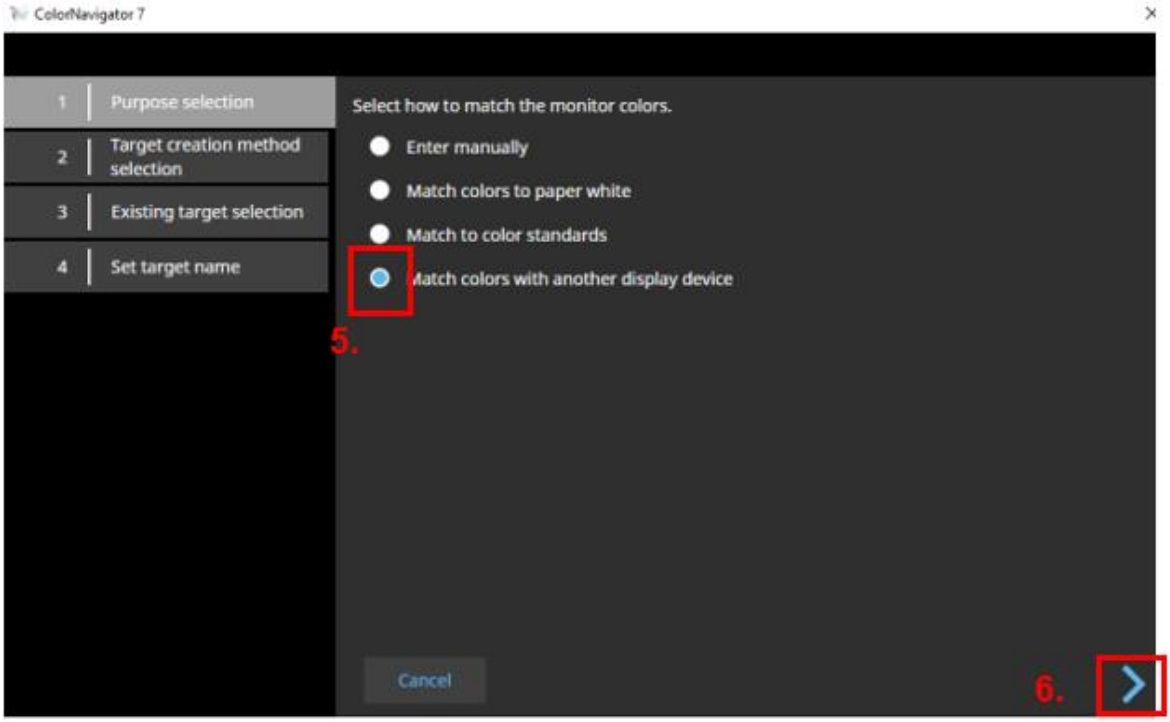
Go ahead and calibrate. Use the same device from which you made the initial measurement.

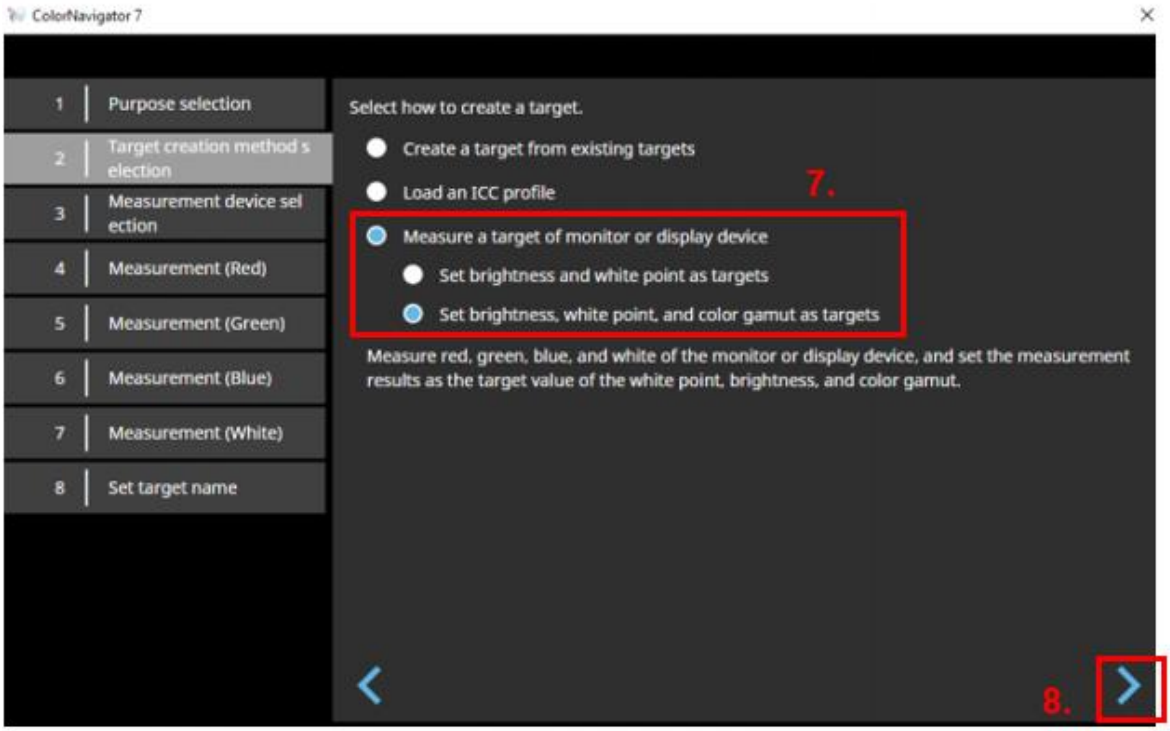
CHEATS VERSION – Quick way.

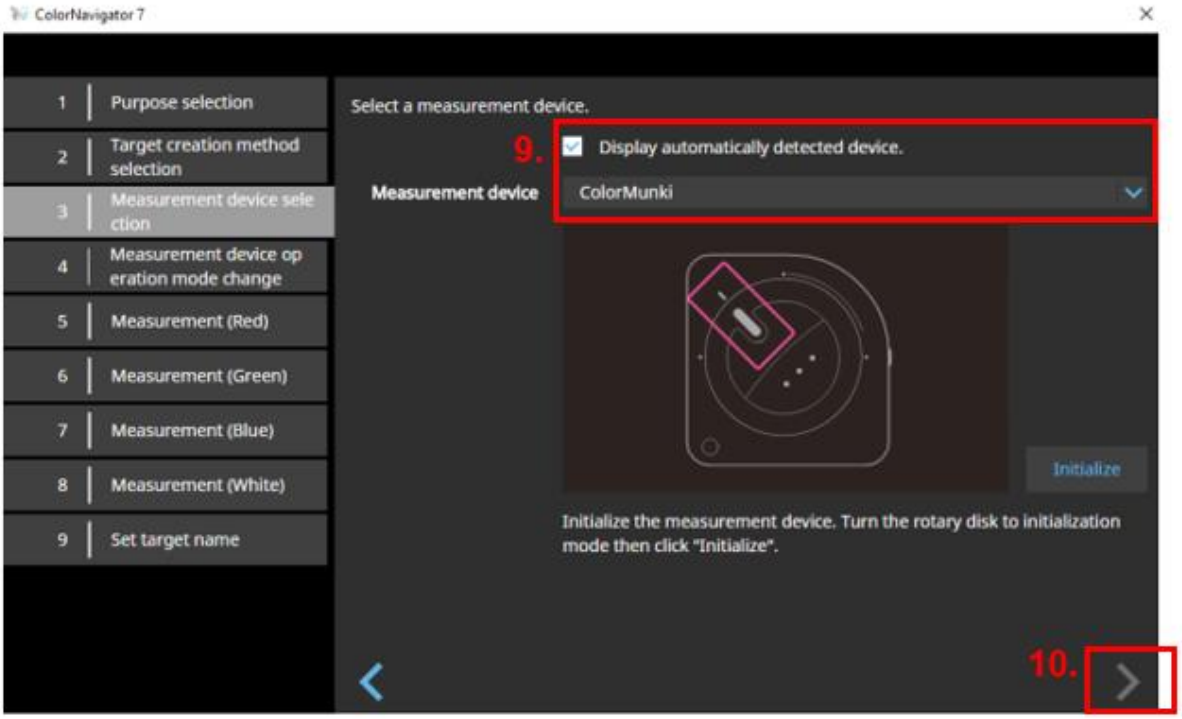
Not as perfect with all the individual patches, but still pretty good for a gamut/brightness emulation.

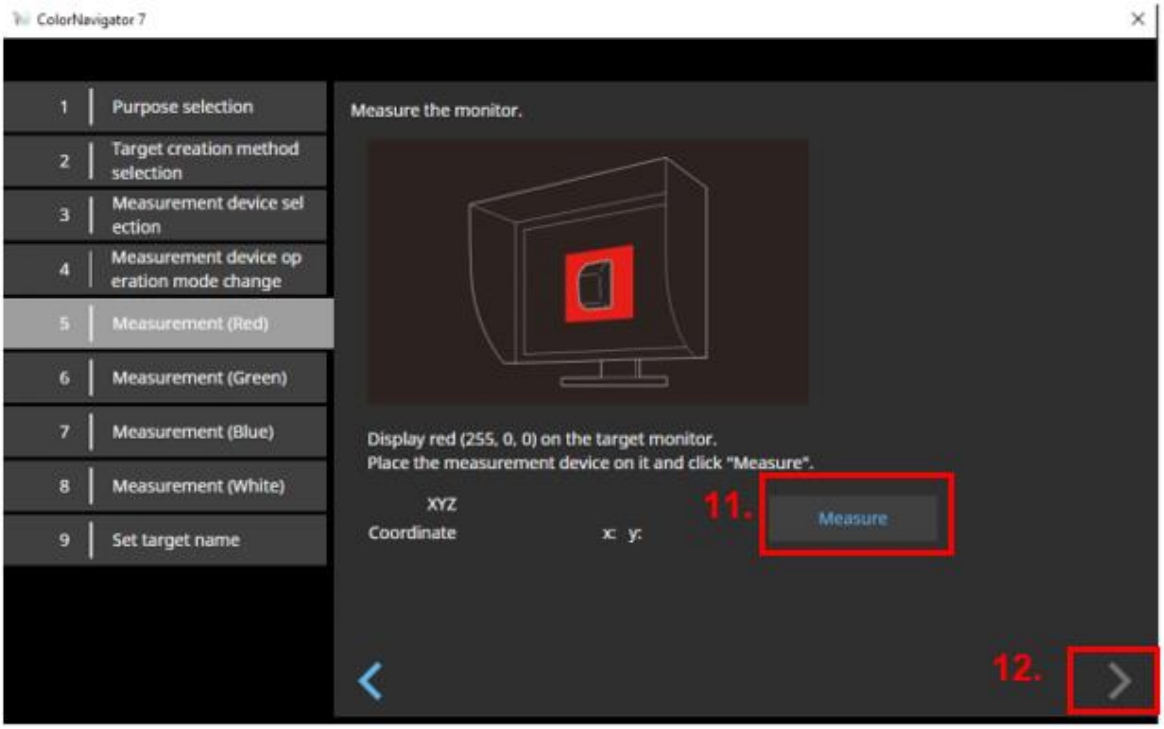




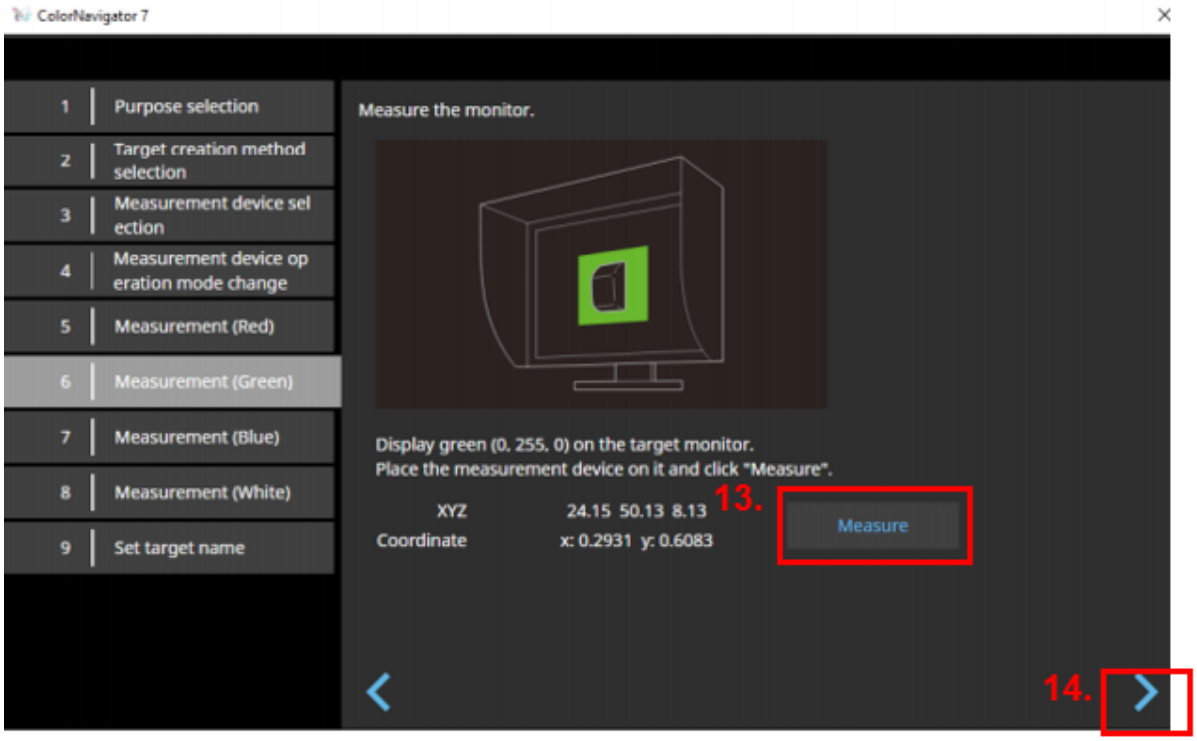

ColorNavigator 7
1 Purpose selection
2 Target creation method selection
3 Existing target selection
4 Set target name
Select how to match the monitor colors.
Enter manually
Match colors to paper white
Match to color standards
Match colors with another display device
5.
Cancel
6.

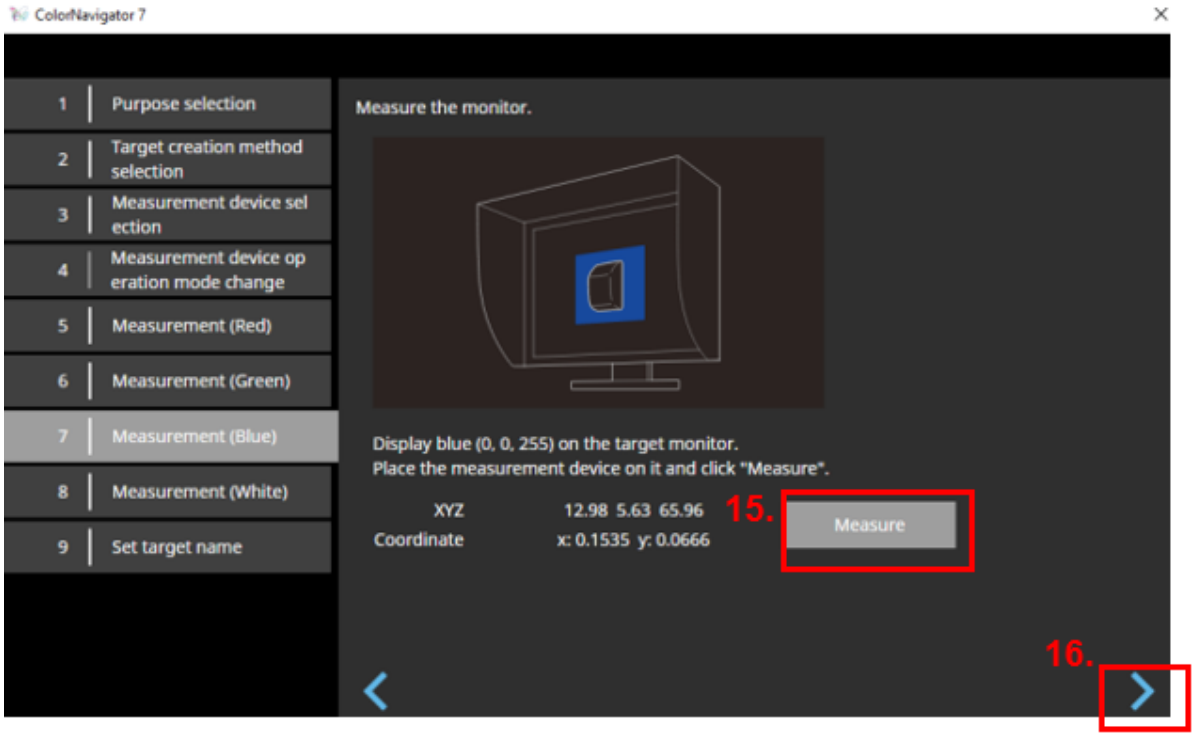

ColorNavigator 7
1 Purpose selection
2 Target creation method selection
3 Measurement device selection
4 Measurement (Red)
5 Measurement (Green)
6 Measurement (Blue)
7 Measurement (White)
8 Set target name
Select how to create a target.
Create a target from existing targets
Load an ICC profile
7.
Measure a target of monitor or display device
Set brightness and white point as targets
Set brightness, white point, and color gamut as targets
Measure red, green, blue, and white of the monitor or display device, and set the measurement results as the target value of the white point, brightness, and color gamut.
8.

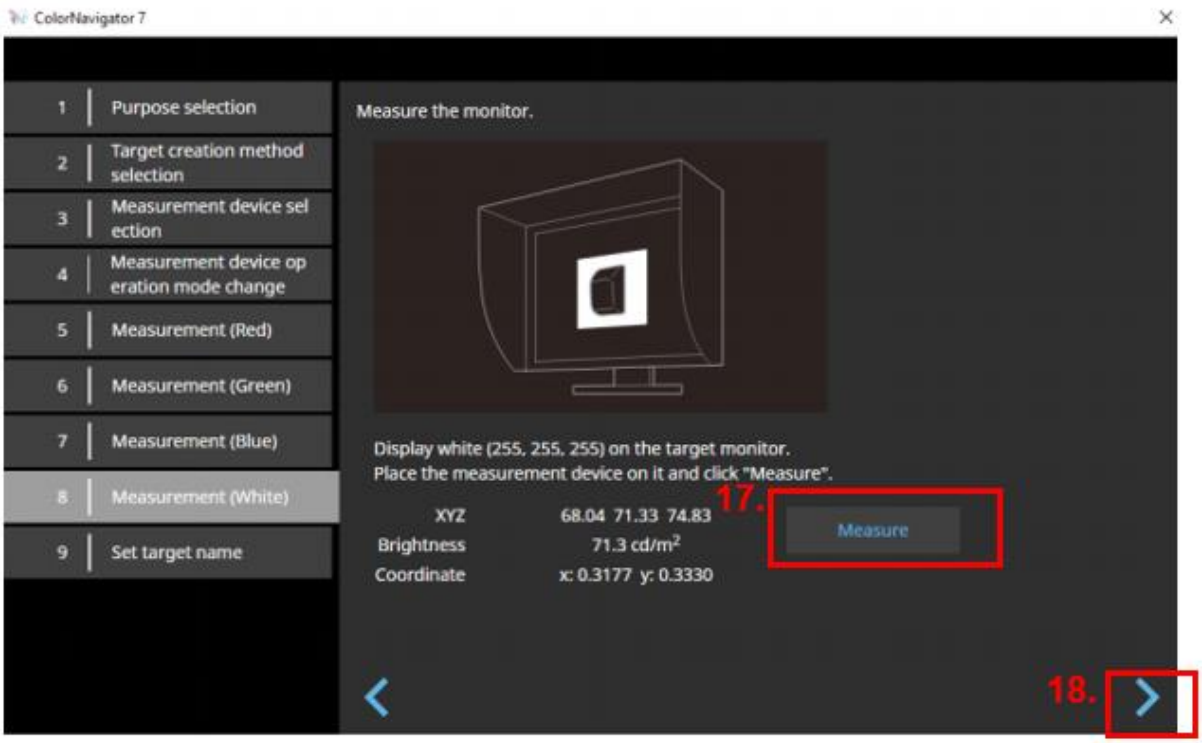


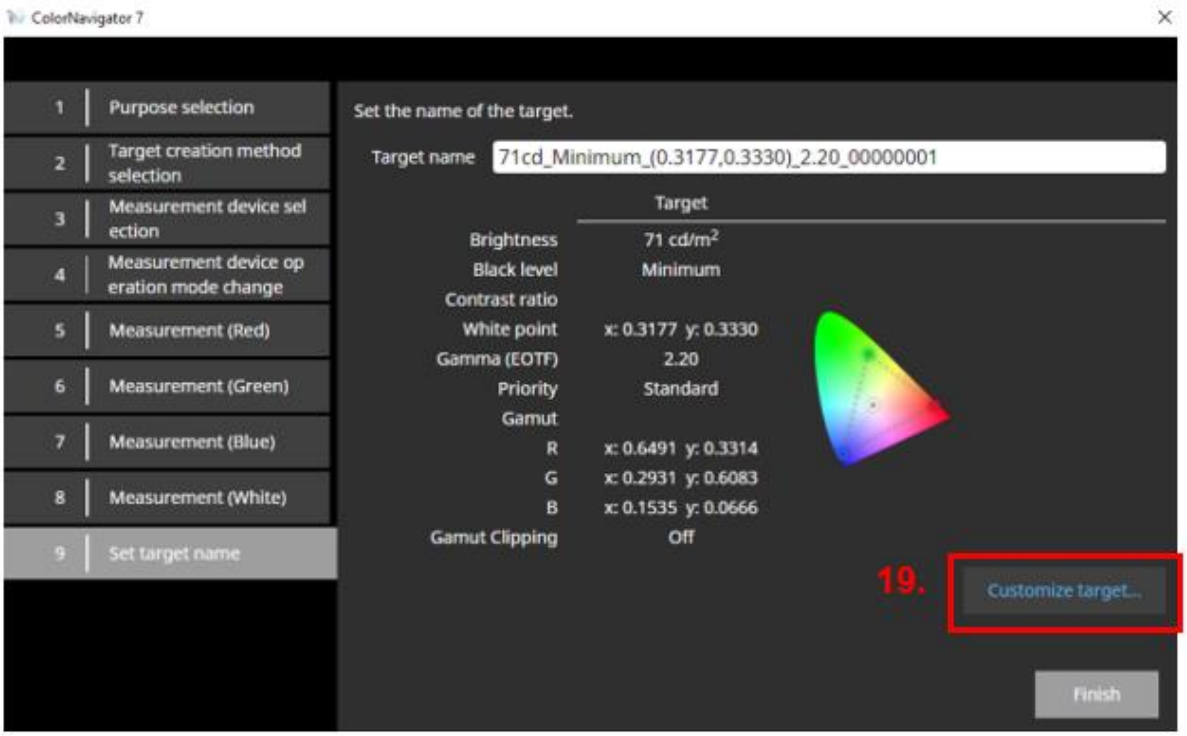


☐ Open Photoshop and Display colours as directed

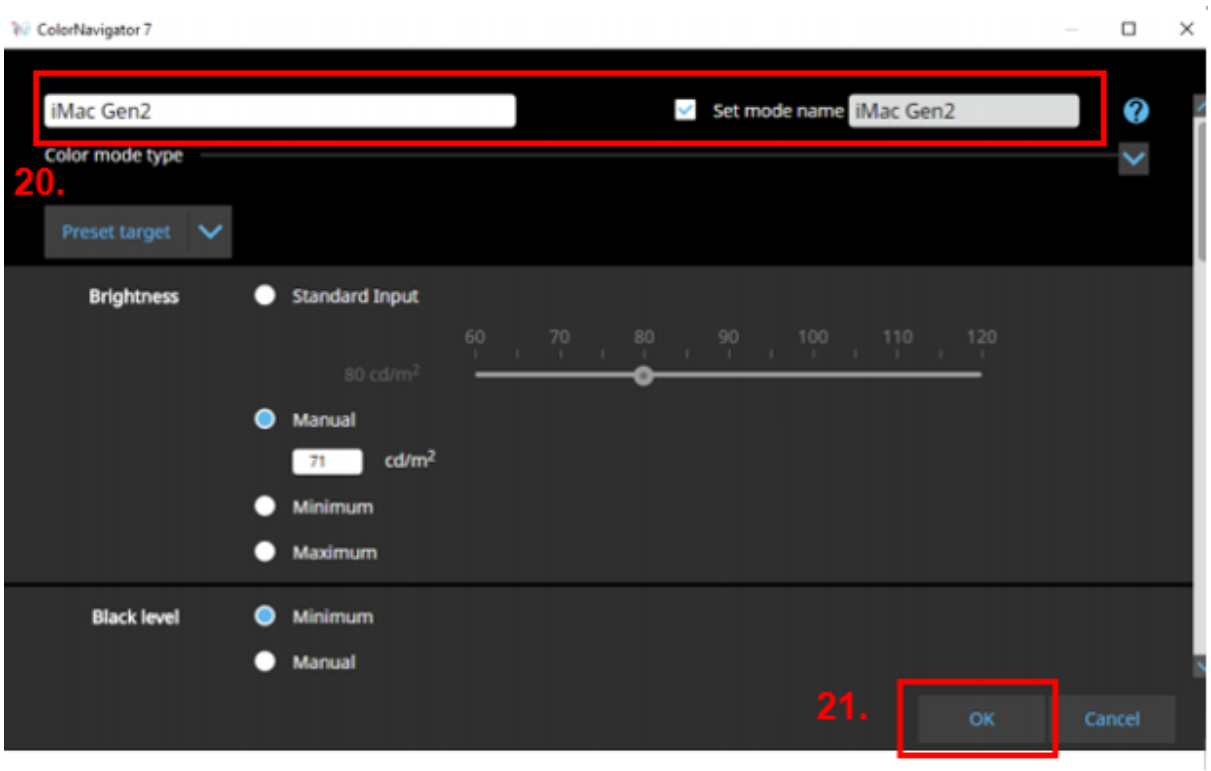

ColorNavigator 7
1 Purpose selection
2 Target creation method selection
3 Measurement device selection
4 Measurement device operation mode change
5 Measurement (Red)
6 Measurement (Green)
7 Measurement (Blue)
8 Measurement (White)
9 Set target name
Measure the monitor.
Display green (0, 255, 0) on the target monitor.
Place the measurement device on it and click "Measure".
XYZ 24.15 50.13 8.13
Coordinate x: 0.2931 y: 0.6083
13.
Measure
14.


ColorNavigator 7
1 Purpose selection
2 Target creation method selection
3 Measurement device selection
4 Measurement device operation mode change
5 Measurement (Red)
6 Measurement (Green)
7 Measurement (Blue)
8 Measurement (White)
9 Set target name
Measure the monitor.
Display blue (0, 0, 255) on the target monitor.
Place the measurement device on it and click "Measure".
XYZ 12.98 5.63 65.96
Coordinate x: 0.1535 y: 0.0666
15.
Measure
16.





Customize Target so that you can name both the target and the colour mode something meaningful.

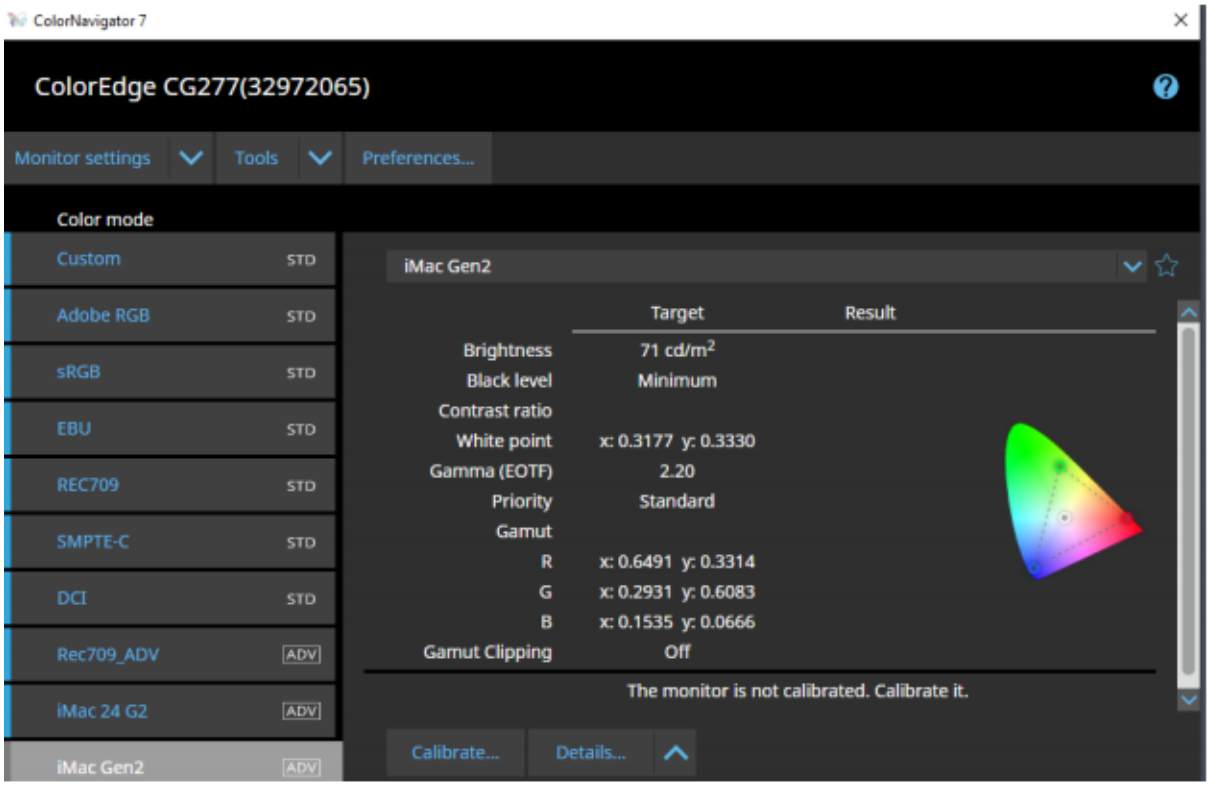


Click OK, close the windows and return to the home screen.

Allocate the new target to one of the color mode buckets, then calibrate as usual.

I used the built in sensor to calibrate, and then I used the ColorMunki to calibrate.

I found that the built in sensor gave me a better result (slightly closer match). Go figure.


ColorNavigator 7
ColorEdge CG277(32972065)
Monitor settings
Tools
Preferences...
Color mode
Custom STD
Adobe RGB STD
sRGB STD
EBU STD
REC709 STD
SMPTE-C STD
DCI STD
Rec709_ADV ADV
iMac 24 G2 ADV
iMac Gen2 ADV
iMac Gen2
Target
Result
Brightness 71 cd/m2
Black level Minimum
Contrast ratio
White point x: 0.3177 y: 0.3330
Gamma (EOTF) 2.20
Priority Standard
Gamut
R x: 0.6491 y: 0.3314
G x: 0.2931 y: 0.6083
B x: 0.1535 y: 0.0666
Gamut Clipping Off
The monitor is not calibrated. Calibrate it.
Calibrate...
Details...