Flanders Scientific Inc.

ColourSpace DPS for Display Validation

Using ColourSpace DPS & Resolve as a Calibration Validation Tool

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ColourSpace DPS is an affordable license level of ColourSpace that can be used as a calibration validation tool. This license level provides detailed measurement, graphing, and reporting capabilities, but does not offer any LUT export capabilities. As such, this license level is most useful as a validation tool to customers using DM or XMP series monitors from FSI featuring GaiaColor Direct Connect Volumetric AutoCal so that they can generate validation reports for any given display configuration. If you instead need to generate and export LUTs to others series of FSI monitors or simply prefer to do a 3rd party LUT based calibration on a DM or XMP series monitor then please consider a ColourSpace LTE or higher license level to gain LUT export capabilities.

Monitor Settings
To start first set your monitor to the configuration you wish to validate. For example, if validating a typical SDR configuration you may wish to configure settings for Rec709, Extended Range (64-1019), Gamma 2.4, 6500K CCT, and LUM 100.

Warm-up
Preferred warm-up routines may vary by monitor technology type, but all monitors will benefit from some degree of warmup and stabilization before validating calibration. For example, on QD-OLED monitors a warm-up period of 10 minutes is suggested for both probe and monitor before starting calibration. For proper warm-up on QD-OLED we suggest an average picture level around 100nits. Some LCD monitors may required longer warm-up and stabilization periods. If you have questions about ideal warmup routines contact our support team for further guidance.

General work-flow notes before you get started
ColourSpace is a very flexible system with a large number of potential user defined variables and validation options. This guide will step through a very basic and efficient QC option, but feel free to experiment with the numerous options available. Extensive additional details can be found on LightIllusion's website.

Connecting to Resolve as your test pattern generator
Start DaVinci Resolve and create a new timeline. There must be content in your timeline before starting validation. Next, within Resolve click on File -> Project Settings -> Master Settings and then verify Data Levels are set to FULL. Note: Resolve will be set to FULL whether you are calibrating for Video, Extended, or Full Ranges as the test patch range will instead be controlled from ColourSpace directly. Setting Resolve to Video and ColourSpace to Video as well will cause double scaling of test patch sets so make sure Resolve is instead set to FULL even if you are not doing a Full Range calibration.

Verify that the monitor is receiving a signal from Resolve then click on the Color Tab in Resolve. Click on the Workspace menu in Resolve. Select Monitor Calibration. Select Light Illusion. A pop-up dialog in Resolve will request an IP address, which can be found once you start ColourSpace.
Start ColourSpace and click on the profiling icon. Set the patch scale to match your display operating range (e.g. Video, **Extended**, or Full), this is a critical step so make sure not to skip it. From the profiling window select the Hardware Options tab. From the Hardware drop-down menu select Network Server and click connect. Below the connect button you will see a drop-down menu labeled calibration patches, set this option to Automatic. Take note of the IP address listed in the Network Server Options area. Enter this IP address in Resolve and press Connect. Do not close the Calibration network connection window in Resolve as this will terminate your connection. Return to ColourSpace and click on the Manual Measure icon and move the sliders to ensure test patterns are being properly generated, leave the sliders set to 128,128,128 to display grey on screen. Now click on the settings icon from the Profiling Window and set your desired patch size, we suggest using 3% area for the XMP310 and L20 for all other 21.5" and larger monitors. For smaller monitors like the DM160 you may want to use L32 or larger patches to provide a sufficient spot size for your measurement device.

Connecting your probe

ColourSpace DPS is compatible with most probes. For this example workflow we will use the CR100. If you have questions regarding optimal use of other probes contact our support team for further assistance.

With the CR100 plugged into your computer click on the Probe Options icon in ColourSpace.

From the Probes menu select Colorimetry Research CR100. Select Rescan if no active com ports are shown. Then press connect. Once connected verify you have the correct matrix active on the probe for the display you wish to measure. Set extra delay to at least 0.25 seconds, 0.5 seconds may be needed with some systems. Next, ensuring that grey is still being displayed on your monitor and the probe is positioned in front of the screen, click on *Sync: Read* to establish probe sync.

Profiling the monitor

Next, from the profiling window in ColourSpace click on the Display Characterization icon, then select a desired profiling mode. A very quick and efficient profiling selection that still offers some level of detail is the Memory Colours RGB option so this is what we'd suggest as a good option if you are short on time. Once selected press start to begin the profiling process. Once profiling is complete you can switch between the different graph views to see your validation results. You can also export your profiles using the reporting capabilities in ColourSpace, see LightIllusion.com for details.

Questions? E-mail: Support@FlandersScientific.com or Call: +1.678.835.4934