



**Flanders
Scientific
Inc.**

FSI Calibration Guide

Using CR100 / LightSpace / BoxIO

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Begin by setting your FSI monitor to the default profile.

Menu > System > Load Profile > Default.

When prompted, confirm by selecting Yes.

Bypass the 3D LUT in the monitor's Color Management menu.

Color Management > LUT Bypass > 3D LUT.

Start LightSpace CMS.

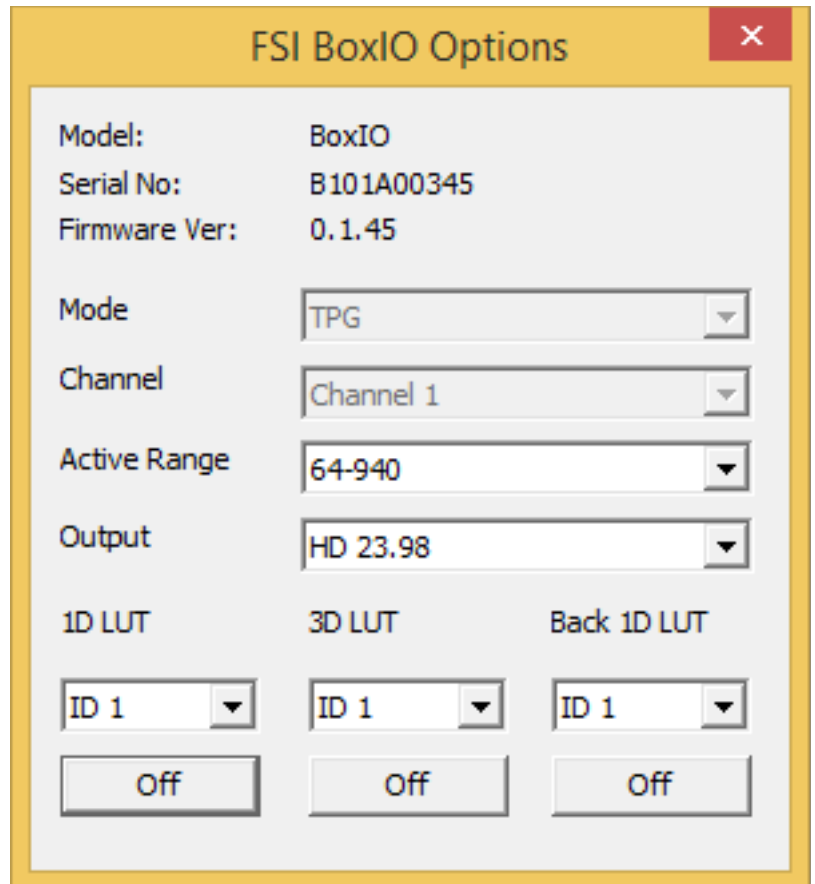
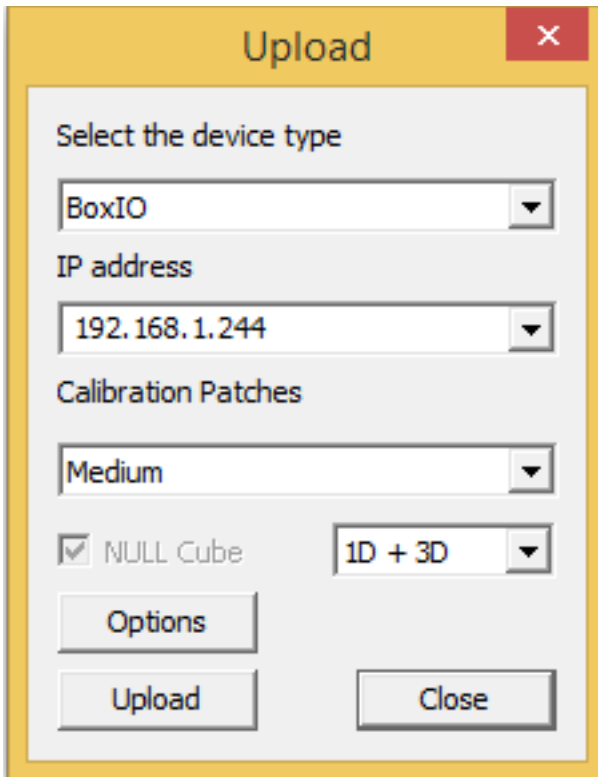
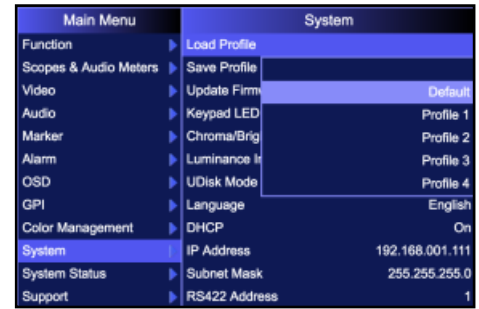
Navigate to File / Upload and select BoxIO from the 'Select the device type' drop-down window.

Enter the IP address of your BoxIO Unit.

Set Calibration Patch Size to Medium.

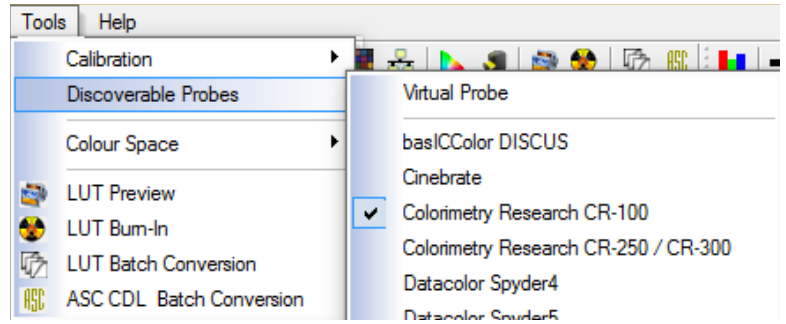
Go to Options and ensure that LUT positions are Off.

Close the options menu and click Upload. Close the Upload Menu.

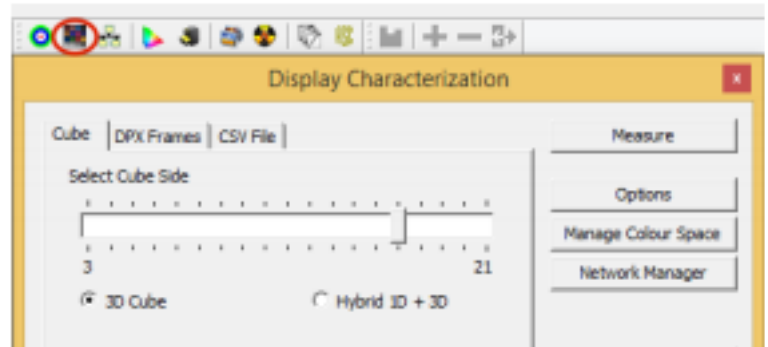


Connect the CR100.

Select Discoverable Probes and click on Colorimetry Research CR-100 as your calibration probe. Make sure that Virtual Probe is not selected.



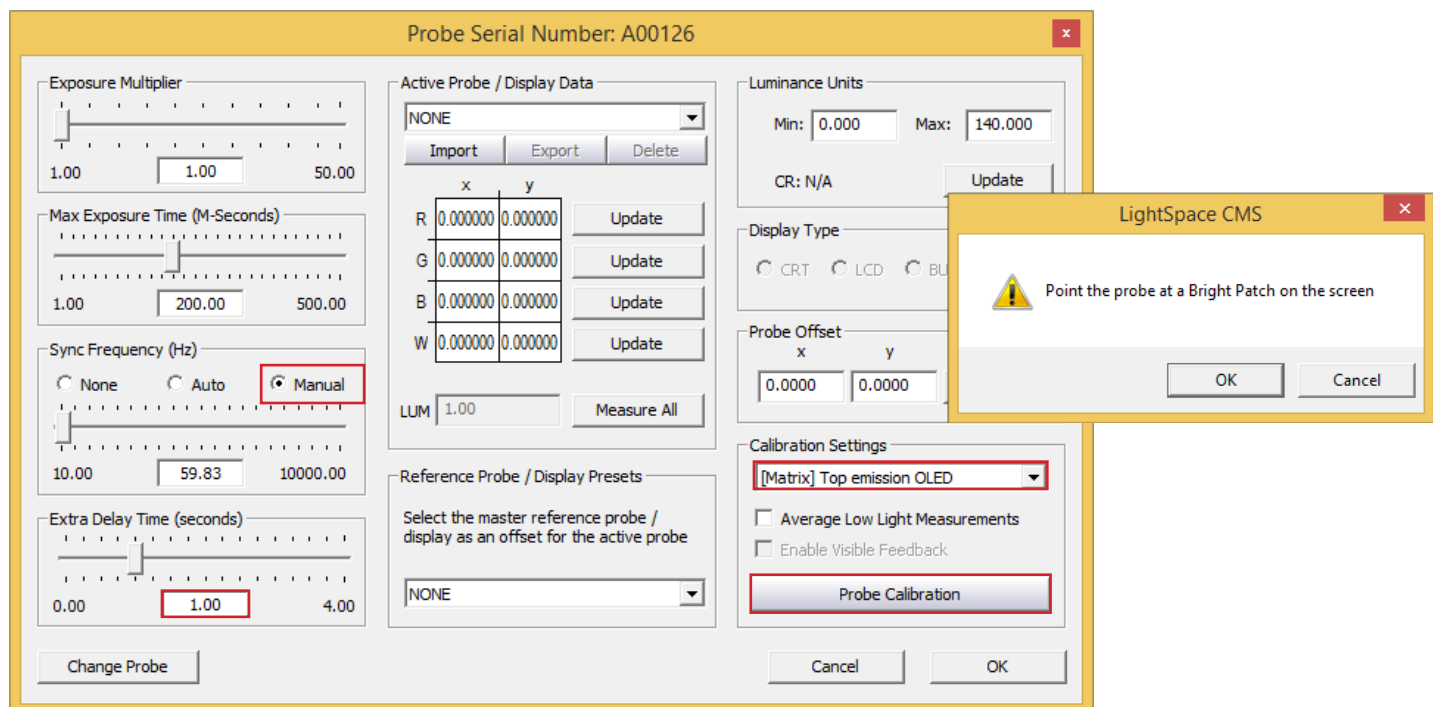
Next click on the Display Characterization icon in Lightspace . Then select 17x17x17 profile as your profile size. If you are short on time we suggest you use LightSpace’s Quick Profile capability instead of a smaller display characterization. See the appendix for more details.



In the Display Characterization window select Options. Make sure the CR100 serial number is listed at top of options window. Set Extra Delay Time to 1.0 Seconds.

To Sync CR100 set Sync Frequency to Manual and select Probe Calibration. Follow the prompt and click Ok.

Under Calibration Settings, select the correct calibration matrix that is stored on the CR100.



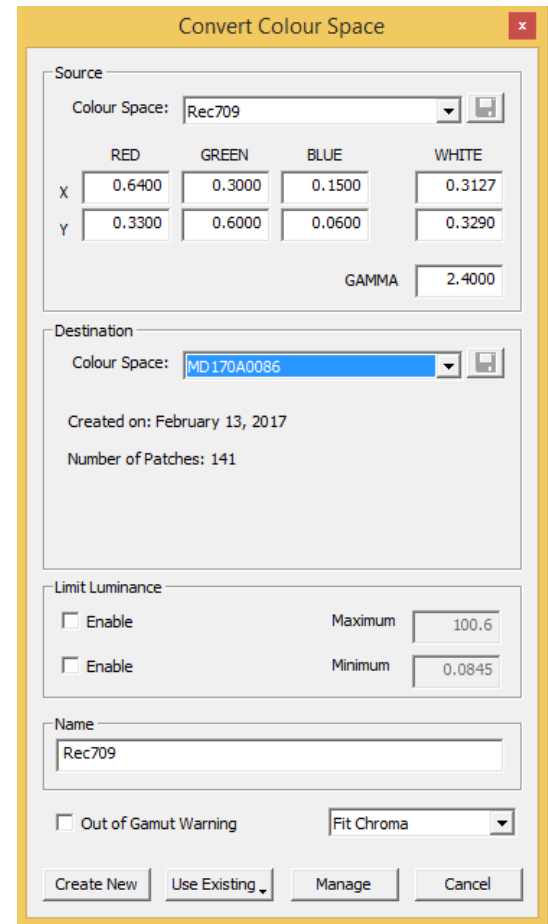
Next place your CR100 probe at the center of the monitor and press the Measure button in the Display Characterization window. A dialog window will ask you to give your profile a name, select something easily identifiable and press OK to begin the profiling process.

Once your profile completes select the Convert Colour Space icon.

In the Convert Colour Space window enter your monitor model in the NAME field.

From the source dialog select your target colour space from the colour space dropdown menu (e.g. Rec709, BT.1886, etc.). From the destination dialog select your calibration profile name entered in step 10. Then click create new to generate your calibration LUT.

Click on File -> Export and select FlandersScientific17.cfe as your export format, then click export. Once your file is saved change the name to the user1.cfe, user2.cfe, or user3.cfe.



Copy this LUT file. Finally plug the provided update cable into your computer and monitor, paste the file onto the monitor (shown as mass storage device when connected), and Select Update LUT (or Update CFE) from the Color Management (or Display Alignment menu) on your monitor.

When the LUT update is complete set LUT Bypass back to None on the monitor and then select your corresponding LUT position from the Color Management / Display Alignment menu to activate your LUT.

Appendix: Tips and Tricks

Short on Time?

If you have time and want to generate optimal results a 17x17x17 display characterization is advisable. However, LightSpace's QuickProfiles can generate extremely good calibration results very quickly. If using Quick Profiles we suggest the following selections:

OLED

Grey Scale Only. This profile measures 21 points along grey scale as well as R, G, and B primaries. The very linear nature of OLED response lends itself well to this quick calibration method.

LCD

Primary and Secondary. This profile measures 141 test patches and generates exceptional results on just about all FSI LCD models.

DCI P3 Calibration

If calibrating to a P3 target please note that the P3 setting on the monitor activates a unique gamma and white balance response separate from the standard settings. One of the two methods below may be used for accurate P3 calibration:

1. You can follow the standard procedure outlined above and save your custom P3 calibration to one of the USER positions on the monitor (e.g. user1, user2, or user3). If using this method do not save to the P3 position on the monitor as you will get a poor result.
2. The monitor may be placed in P3 mode and a unity LUT can be loaded to the P3 position. Then you will profile without bypassing the 3D LUT (bypass LUT set to none). When complete you will override the unity LUT loaded into the P3 position with your new 3D LUT.

OLED Black Level Setup and BT.1886 Calibration

The default black level of OLED monitors is effectively 0 nits (cd/m²), which is well below the accurate or repeatable thresholds of most measuring devices. A BT.1886 EOTF on a display with a black level of 0 nits is actually equal to a 2.4 gamma response. For both of these reasons it is advisable to calibrate to a target of 2.4 gamma when calibrating an OLED with black at 0 nits so that noise or junk readings are not being factored into your calibration's EOTF. Once calibration is complete you can use the "bright" knob/key on the monitor to adjust your black level higher if desired. When calibrated to a target of 2.4 with black at 0 the brightness rotary knob control maintains a BT.1886 response for any given black level. The appropriate black level is a function of both viewing environment and personal preference, but a range of 0 nits to no more than 0.05 nits is generally advisable.