SpectraCal

CM CalMAN Setup Guide

Colorimetry Research CR-100 Colorimeter

Rev. 1.1

PORTRAIT
DISPLAYS

Introduction

The CR-100 is a rugged, sensitive, fast colorimeter that is powered directly from the connected USB port.

CalMAN Required Version

- Version 5.4.0 or later

Meter USB Driver

- Available at
http://www.colorimetryresearch.com/downloads/#firmware

USB Driver Installation

The CRI meter USB driver should be installed before the meter is connected to a computer USB port for the first time.

Windows 7

1. Install the CRI meter USB driver, available for download from the Colorimetry Research site:
http://www.colorimetryresearch.com/downloads/#firmware

Windows 8 or Windows 10

The Colorimetry Research USB driver is unsigned, requiring the following procedure for Windows 8 or Windows 10:

Windows 8.0

2. Open Settings (move your mouse to the top or bottom right corner of the screen and wait for the charm bar to appear, then click the Gear icon)

3. Click *Change PC Settings.*

4. Click *General*.

5. Scroll down and click *Restart Now* under *Advanced Startup*.

6. Click *Troubleshoot*.

7. Click *Advanced Options*.

8. Click *Windows Startup Settings*.

9. Click *Restart*.

10. When the computer restarts, select "Disable Driver Signature Enforcement" from the list.

You can now load the unsigned driver(s).

After restarting the computer, any drivers that were installed will continue to function properly.

Note: This may need to be repeated each time you update your graphics driver

Windows 8.1, Windows 10

11. While holding down the Shift key, go to Settings\Power\Restart

12. On shutdown, you will be presented a list of Options. Select *Troubleshoot*.

13. On the Troubleshoot menu, select *Advanced Options*.

14. On Advanced Options, select *Startup Settings*.

15. Click *Restart* - Machine will reboot.

16. This will bring you to *Startup Settings*. Select *7* (Disable driver signature enforcement).

When Windows starts, Driver Signature Enforcement is disabled.

You can now load the unsigned driver(s).

After a normal reboot, Driver Signature Enforcement will re-enable. All drivers installed while it was disabled will continue to function properly.

To check the USB driver installation:

1. Connect the CRI meter to a USB port on the computer.

2. Open Device Manager from the Control Panel (or click the Start button and type "device manager").

3. On the Device Manager window, check that, under "Ports (COM & LPT)," there is a listing for "Colorimetry Research, Inc. Meter (COMx)."

Calibration Matrices

CalMAN is able to access any meter calibration matrices in the CRI meter's internal user memory. As supplied from the factory, there are calibration matrices in the factory memory, but none in the user memory (Figure 1). Before using the meter with CalMAN, you need to copy any of the calibration matrices that you wish to use from the factory memory to the user memory. You need to check this by running the "Colorimeter Utility," supplied by CRI.
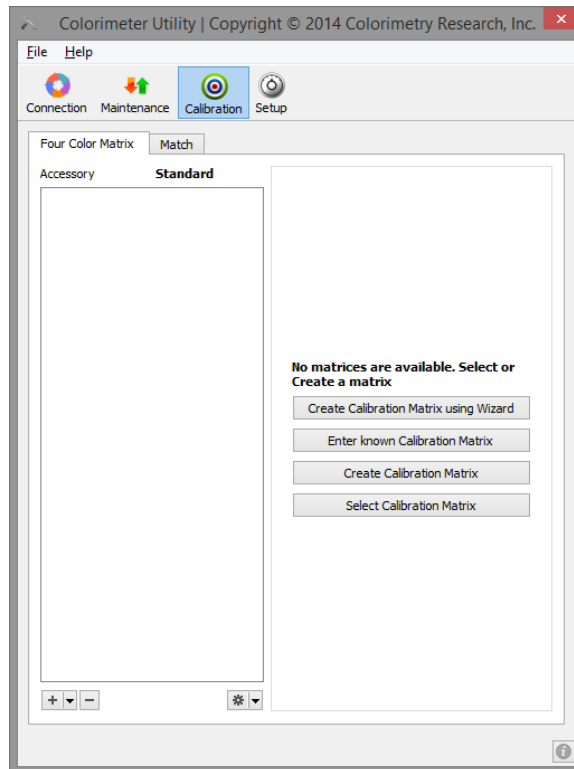

Figure 1: The Calibration tab on the Colorimeter Utility software shows any calibration matrices that are loaded in the meter's user memory.

To copy calibration matrices from the meter's factory memory to the user memory:

1. In the Colorimeter Utility software, on the Calibration tab, click the Select Calibration Matrix button, to the lower right (Figure 1).
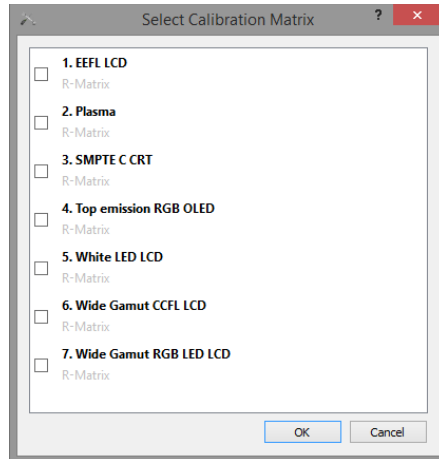
Figure 2: Select any or all of the calibration matrices that you may wish to use with the CRI meter.

2. On the Select Calibration Matrix dialog that opens (Figure 2), select any or all of the calibration matrices that you may wish to use with the CRI meter.

3. Click OK.

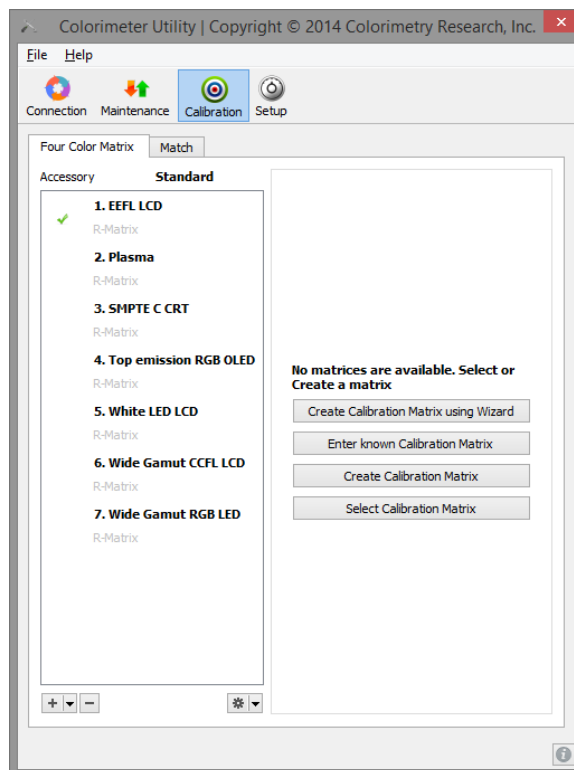4. The Calibration tab should now show the calibration matrices that you selected (Figure 3).

Figure 3: The Calibration tab on the Colorimeter Utility software shows the calibration matrices that you loaded to the meter's user memory.

CalMAN Meter Connection Procedure

1. On the Meter Settings tab, click *Find Meter*.

2. On the *Find Meters* popup dialog:

   a. Leave Com Port set to *auto*, or, select the com port that was assigned to the meter (shown in Device Manager, under *Ports (com &LPT)*).

   b. Check the box for "Colorimetry Research Inc Meters (USB)."

   c. Click *Search.*

Figure 4. CalMAN Meter Settings tab for CalMAN meter handling options.

3. On the Meter Settings tab (Figure 4):

   a. Select the *Meter Mode* for your target display type.

   b. Select the *Sync Mode* that produces the most consistent measurements on the target display (check with Read Continuous on 100% White).

i. **Off**: The default sync mode for the CRI meter. This is the fastest mode of meter operation, but may not provide consistent measurements on some display types.

ii. **On**: Takes one sync measurement to synchronize the meter with the display refresh rate, then performs all of the series or continuous data measurements. This is only slightly slower, but may not provide optimum sync with displays that have different refresh rates at lower luminance levels.

iii. **Auto**: Takes a sync measurement prior to each data measurement. This is slower yet, but provides optimum sync with all display types, at all luminance levels.

c. If you wish to use the extended exposure settings available in the CRI measurement application (Figure 5), make your settings in the CRI app. Then, on the CalMAN Meter Settings tab (Figure 4), select "User Mode" for the CalMAN exposure mode.

Your main use of this capability might be to take have the CR-100 take multiple readings and average them (setting the Exposure Multiplier) before sending the results to CalMAN, as this is much faster than having CalMAN take multiple averaged readings. This might be done to improve the continuous reading stability on displays such as plasma.
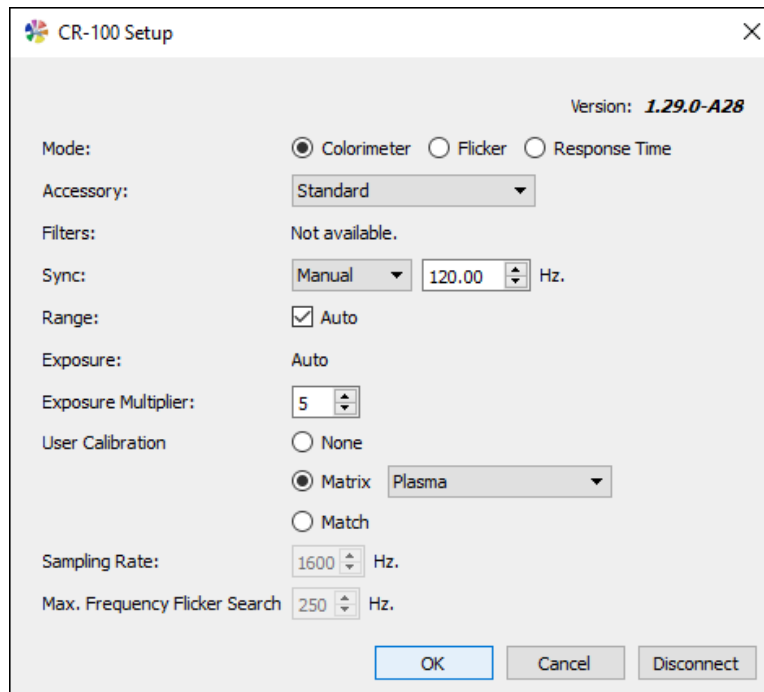

Figure 5. CR-100 Setup dialog for setting internal meter options.

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About Portrait Displays

Portrait Displays, Inc., since 1993, is a leading application software provider (ASP) for PC, smartphone, and tablet displays. The Portrait Displays team now includes **SpectraCal**, the world's leading provider of video display calibration software. The combined companies offer value-added, feature-rich solutions to both OEM display manufacturers and end users seeking improved accuracy and manageability of their displays.

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