

CaIMAN Setup Guide

Klein K10-A Colorimeter



Rev. 1.1

Introduction

The K10-A is a reference class non-contact optical colorimeter with superb accuracy, the fastest read times available, superior performance at low light, and extremely high light level measurement capability (0.0002 to 10,000 cd/m²). The K10-A is unmatched in sensitivity, stability, and speed.

Klein K10-A Included Parts

The rubber lens hood (Figure 1) is to be used with the K10-A, or together with the extension tube (Figure 2), to make screen contact when measuring a flat panel display.



Figure 1. K10-A rubber lens hood.



Figure 2. K10-A extension tube.

The cosine diffuser (Figure 3) is to be used with the K10-A when pointed directly at a projector.



Figure 3. K10-A cosine diffuser.

CalMAN Required Version

- Any CalMAN version is acceptable.

USB Driver

The Klein K10-A uses the FTDI device driver.

- Included in CalMAN Device Driver Pack 2.4:
<http://www.spectracal.com/download.php?id=3>
- Or, single FTDI device driver:
<http://www.ftdichip.com/Drivers/VCP.htm>

USB Driver Install

1. Install the CalMAN [Device Driver Pack 2.4](#).
2. Plug the Klein K10-A into a USB port on your computer. Windows should automatically detect the K10-A device driver if you have installed the CalMAN Device Driver Kit.

If the USB driver does not install properly:

1. Right click on Computer/My Computer and select *Properties*. Or, go to the Control Panel and open Device Manager.
2. Open Device Manager. In the menu tree, you will see a USB serial device that is not working properly (yellow exclamation mark).
3. Right-click on the conflicted device and select *Update Driver*. Select *Install From A Specific Location*, then browse to the FTDI folder in the C:\Program Files (x86)\SpectraCal\Drivers directory. It may ask you to install the driver twice; this is normal. Go through the same process and the same location for the driver.

CalMAN Connection Procedure

To connect CalMAN to the Klein K10-A meter.

1. On the Meter Settings tab, click *Find Meter*.
2. On the *Find Meters* popup dialog:

- a. Select the Com Port associated with the K10-A in Device Manager, under Ports (COM & LPT).
- b. Enable the “Klein Instruments meters (RS-232, USB)” search option.
- c. Click *Search*

CalMAN Meter Settings

Meter Mode (Target Display Type)

- LCD (CCFL)
- LCD (LED)
- OLED
- CRT
- Plasma
- Rear Projector (CRT)
- Rear Projector (UHP)
- Front Projector – facing projector (CRT)
- Front Projector – facing screen (CRT)
- Front Projector – facing projector (UHP)
- Front Projector – facing screen (UHP)
- Front Projector – facing screen (LED)
- Ambient Light
- Calibration 0 – LCD (Klein)
- Calibration 1 – CRT/Plasma
- Calibration 2 - Diffuser
- Calibration 3 - LCD (SpectraCal)
- Calibration 4 – LED (SpectraCal)
- Calibration 5 – TVL XVM245 (Klein)
- Calibration 6 - UHP (SpectraCal)
- Calibration 7 – Klein Plasma (Klein)
- Calibration 8 – DLP Screen (Klein)

Select the Meter Mode that corresponds to the display backlight/pixel technology that you wish to measure or calibrate.

Standard Exposure Modes

- 1 Sample (default)
- 3 Samples (simple avg)
- 5 Samples (simple avg)
- 10 Samples (std deviation avg)
- 20 Samples (std deviation avg)
- 30 Samples (std deviation avg)
- 50 Samples (std deviation avg)

Low Light Handler

When enabled, averages multiple meter samples per measurement, when measuring light levels below the specified Low Light Trigger level.

Meter Positioning

Flat Panels / Rear Projectors

The K10-A ships with a rubber lens hood that can be used to position the K10-A right up against a display screen. The soft rubber hood will not damage the screen. Because it blocks all ambient light, the lens hood makes the K10-A ideal for measuring reflective displays such as plasmas.

Front Projectors

The K10-A should be placed along the line of sight from the main/central viewing location, pointed at the center of the projector screen. In other words, the K10-A should measure the screen from the same angle that the screen is normally viewed.

The K10-A should be placed close enough to the screen so that its measurement area is contained entirely within the screen test pattern area. This can be determined by enabling the meter LED pointers.

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.

Portrait Displays, an Intel Capital Portfolio company, is a private corporation with headquarters in Pleasanton, California, USA with representatives in Europe, Taiwan, China, Japan, and Korea.

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