
True Match® Firmware 4.0 (Camera)



Camera Overview

True Match® Firmware 4.0 (Camera)



This is the overview of the Firmware 4.0 (Camera) to be launched in September 2019.

For the existing functions that will be carried over, see the operation manual for [Firmware 3.0 \(Color\)](#).

Highlights of Firmware 4.0 (Camera)

- 1) **Camera LUT**
- 2) **Color Space**
- 3) **CIE xy Input Mode**
- 4) **FX (Effects) DMX control**
- 5) **Kelvin DMX 2500-9900 Linear**

Camera LUTs



Since digital cameras use different sensors in their image capture, there are differences between cameras on how they capture LED lighting. The **Camera LUT** is a way of harmonizing the Kino Flo LED light sources to the camera. Depending on the camera and the Kelvin setting, some differences are very subtle, while others can be more dramatic.

The corrections are applied as a CIE **xy** correction at each CCT (Kelvin) setting. The default setting is targeting the CIE XYZ response (human eye).

In this first firmware release, the **Camera LUT** only impacts the light output when setting the light using Kelvin and Green/Magenta. Later versions will apply the corrections throughout the entire color gamut.

Press the green menu button to the left of the display screen and scroll down to Camera LUT, then press the control knob. Menu with camera selection will be displayed.

Current Camera settings are:

- C1 Arri Alexa**
- C2 Sony Venice**
- C3 Panavision DXL**
- C4 Panasonic Varicam**

The camera code (C1 for Arri Alexa), for example, will appear on the main menu between **DIM** and **CCT** to designate that a camera setting has been activated.

Note: When the controller is reset, the camera settings will go to Kino Flo Default mode.

Color Space



Color Space defines the RGB color space and is only used in **RGB** mode and **Hue Angle/Saturation** mode. There are also a few instances in the **FX** (Effects) mode that are also affected when color is used. The color space setting is primarily presented as a means of matching color points between manufacturers.

The RGB color space defines the value of Red, Green, and Blue primaries (in CIE xy) and the white point is fixed at 6500 Kelvin. Exception being ESTA E1.54 which is a fixed point at 3200 Kelvin.

Press the green menu button to the left of the display screen and scroll down to **Color Space**, then press the control knob. Menu with color selection will be displayed.

The Color Space Options are:

rec 709 / sRGB
P3 D65
rec 2020
ESTA E1.54

The color spaces are listed from smaller (rec 709 / sRGB) to larger color space (ESTA E1.54).

Kino Flo LED products fully cover rec 709 / sRGB 100%. In color spaces larger than the Kino Flo LED gamut, colors outside the native Kino Flo gamut will be re-mapped.

The color space **rec 709 / sRGB** is commonly used on computer monitors, SDTV and HDTV television. There are slight gamma variations between rec 709 / sRGB, but not enough to separate into 2 color spaces.

The color space **P3 D65** is a common color space for digital movie projection.

The color space **rec 2020** is used in ultra high definition television (UHDTV).

The color space **ESTA E1.54** is the standard for color communication in entertainment lighting.

The color space is used when the controller is set to the RGB mode and when set to the Hue Angle/Saturation mode.

In **RGB** mode, the color space designation will be displayed at the top of the menu. When changing the Red, Blue or Green values, the Kelvin will be locked in at 6500 for all color spaces except for ESTA E1.54 which will be locked in at 3200. When the Kelvin is locked in, CCT will be displayed as CCT*. When using Green/Magenta the CCT value is unlocked and color space selection has no impact.

In **Hue Angle/Saturation** mode, the color space designation will be displayed on the Gel line. When changing the Hue Angle or Saturation values, the Kelvin will be locked in at 6500 for all color spaces except for ESTA E1.54 which will be locked in at 3200. When Kelvin is locked in, GEL line will be displayed as GEL* and CCT will be displayed as CCT*. The Color space will be displayed only when Hue Angle and Saturation are being used.

CIE xy Mode



The **CIE xy** mode determines the color displayed by its CIE xy coordinates. This mode is a means to adjust Kino Flo LED products to other manufacturers' lighting products that also have a CIE xy function or by using a color meter for comparison.

For example, use a color meter like the Sekonic C-800 or another handheld spectrometer to take a CIE xy reading of a light source, then use those values to input the CIE xy coordinates into the Kino Flo LED fixture and get an approximate match. Since there can be variation from fixture to fixture there will always be some degree of variation.

FX (Effects) - DMX control



Also, to be introduced with Firmware 4.0 will be DMX control for **FX (Effects)** menu. Below is the link to new DMX mapping table:

[DMX Mapping for Firmware 4.0 \(Camera\).](#)

Kelvin Linear

With Camera Firmware 4.0, Kelvin DMX settings from 2500 to 9900 is now Linear. (Prior Firmware 3.0 was non-Linear.)