



Color Tools

Eos Family Expert Topics

Workbook

V2.5.0 Rev.A

www.etconnect.com/education

Released: 2017-07

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Purpose of the Class

The Eos Family Color Tools class will introduce many of the new tools provided in the software for selecting, mixing, and controlling color. This will include using a variety of color pickers from standard Hue-Saturation to a Color Spectrum display, assigning Color fades or paths to fixtures and cues as well as a simpler means to tweak color or make minor adjustments.

LEARNING OBJECTIVES:

After completing the Color Tools class, you should be able to:

- Understand the basic concepts of the Color Tools
- Utilize the Color Pickers and Gel Picker
- Utilize the Spectrum Tool for making minor adjustments
- Create and record Color Paths for fixtures and cues

WORKBOOK SYNTAX ANNOTATION

- **Bold** Browser menus
- **[Brackets]** Face panel buttons
- **{Braces}** Softkeys and direct selects
- **<Angle brackets>** Optional keys
- **[Next] & [Last]** Keys to be pressed & held simultaneously

HELP

Press and hold **[Help]** and press any key to see:

- the name of the key
- a description of what the key enables you to do
- syntax examples for using the key (if applicable)

As with hard keys, the “press and hold [Help]” action can be also used with softkeys and clickable buttons



Eos Family Color Tools

COLOR PICKERS

Add-a-Tab (the {+} sign) and select the Color Picker

The default layout is a CIE color space and the Gel Picker. Multiple color picker tabs can be opened and have different configurations for each.

Click on the gear icon (⚙️) in the left most tab on the display

Click on 'Gels'

Click on 'HS Wheel', 'HSB', 'RGB', 'CMY', 'CIE xy' and 'CIE u'v'

opens the Color Picker tab

Opens Display Configuration Tool

To hide or close that display

To open the other color spaces

ABSTRACT COLOR SPACES

There are 6 color spaces available. All spaces are connected. The console understands the relationship between the spaces. Regardless of which space you are in, these are just abstract values applied to the native parameters of the fixture that you are controlling.

HUE/SAT AND CIE SPACES

- **Hue-Saturation Wheel and Hue-Saturation-Brightness.** The third control (vertical encoder) of these spaces is always brightness.
- **CIE XY (1931) and CIE U'V' (1976).** These are color standards that exist outside of the lighting industry. They were developed for consistent communication of perceptual color information. Companies like Pantone and Rosco use CIE as a common color reference. The RGB triangle indicates the RGB space defined by PLASA standard E1.54. Fixtures that comply with this standard can achieve any color within this triangle. The vertical encoder of these spaces is always brightness.
- **RGB and CMY** – just additive or subtractive without consideration for brightness. When using RGB, you must have one of the values at full to make the brightest version of the desired color. In the CMY space, one value must be at zero to have the brightest version of the color.

CIE UV

Open the CIE U'V' color space

- The cross hair shows where the fixture is currently located.
- Conical space represents the visible spectrum or what humans are able to perceive.
- The triangular space indicates a PLASA standard representing a three-color mixing system or a true RGB system.
- All spaces are two-dimensional representations for color. The third axis on each color space varies. In each color space, there is a "?" below the vertical encoder to display the label of the third axis as well as the name of the color space that you are in currently.

Open the RGB color space

- In some color spaces, you can change what is on the three axis. The function of the vertical linear encoder can be changed by clicking on the head or label of each parameter bar. For example, clicking on the Green label turns the vertical linear encoder into the Green Control.



UI CONVENTIONS IN THE COLOR SPACES:

- When a fixture is in HS mode, the brightness control is not provided, since the intensity controls the brightness.
- Touching and holding within any of the spaces will provide relative offsets in the direction you move from that position. In the virtual encoders, touch and hold will fade toward your finger. If you double tap, it will jump to your finger.



GEL PICKER

Add the Gel Picker to your space

Gel dots only appear when the gel picker is opened. Those dots are representative of the gel of the manufacturer selected.

Hovering over the dot will show you the gel name and number. If multiple colors overlap the point, a list of gel names and numbers is provided.

[SORT BY HUE OR SORT BY GEL NUMBER](#)

Currently this is a toggle between Sort by Hue and alpha-numeric. An option to sort by Gel Book order will be coming.

[SIMILAR COLORS \(TOGGLE\)](#)

When a point is selected on the color picker, this option selects gels that are nearby to what you've chosen – based on the gel book selected. The first gel presented is always closest to your current selection.

[SHOW COLOR](#)

The static gels shown here are always derived from patch – either the gel field or scroller loads. You can also enter the gel numbers on your own - via the gel picker if the color tools are open and visible or via command line.

GEL MATCH OPTIONS

[31] [Full] [Enter]

Touch R05

- **Brightest:** based on the brightest chromaticity of the gel
- **Spectral:** based on closest spectral match to the gel based on a 575W Long Life HPL in a Source Four.
This is mathematically correct, but perhaps dim for some applications.
- **Hybrid:** half-way between the brightest and best spectral.

You can use the **[Shift]** key and touching the gel tile to toggle through these three match options, without changing the mode in the gel picker itself

[Shift] & touch R05

[Shift] & touch R05

[Shift] & touch R05

[Shift] & touch R05

Best spectral match and hybrid can only be applied to systems with more than 3 colors, for example the X7 color system, RBGA, RGBW, RGBWA.

Gel Library

- 1 Apollo Gel
- 2 GAM GamColor
- 3 Lee
- 4 Rosco Other
- 5 Rosco Roscolux
- 6 Rosco SuperGel
- 7 Rosco E Color
- 8 TokyoBS Poly
- 9 Lee CL

Also Standard Colors

Takes to brightest match of that gel



to toggle, no indicators - Brightest

to toggle, single dot - Spectral

to toggle, two dots - Hybrid

to toggle back to the Brightest match

STANDARD COLORS

This display offers you the ranges of white points from 2700K to 6500K. It also shows even numbered percentages around the corners of the triangle, at 25% increments around and within the space. The whites are along the black body curve.



TINTING TOOL

Click on the gear icon (⚙️) in the left most tab on the display

Click on 'Tint'

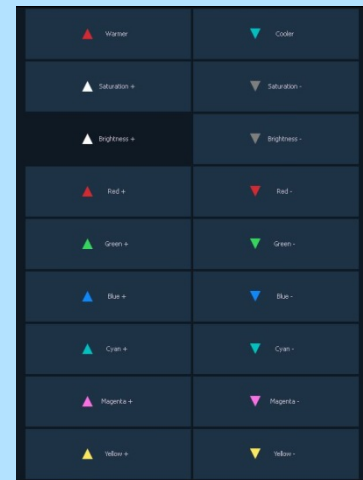
The tinting tool is a tool created for relative adjustments to color, or the tools used for “designer speak.”

Regardless of the parameters of the fixture - RGB, CMY, X7 - small adjustments such as making it a little cooler, adjusting the saturation up or down, or simply pulling some magenta out can be made quickly and easily.

The tinting tool allows control of the color in the abstract.

Opens Display Configuration Tool

To change the color picker options





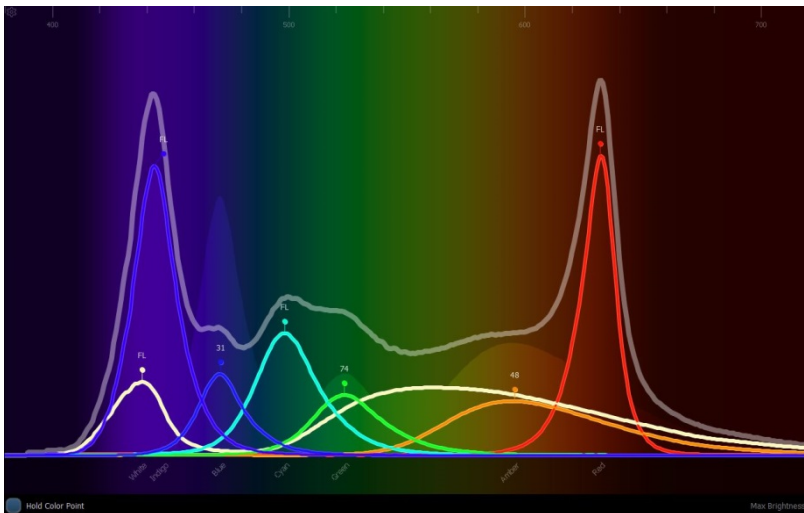
SPECTRUM TOOL

Click on the gear icon (⚙️) in the left most tab on the display

Clear all the other options and click on 'Spectrum'

Opens Display Configuration Tool

To change the color picker options



SPECTRUM

This tool lays out the color parameter across the spectrum and allows you to adjust each individual parameter in a more graphical view.

The grey line is the composite color of the selected channel. If you have different channels selected, we show the first channel in the list.

Add the Gel Picker to your space

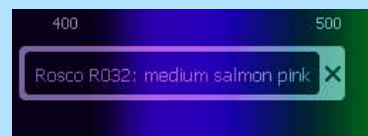
Press and hold R32

When you pick a gel from the gel picker, you will see a dotted line, which shows the transmission of the gel chosen – and the gel name is identified in the upper left corner of the spectrum tool. The dotted line represents the transmission of an HPL 575 120v long life lamp through the selected gel. This allows you to compare the color mix to the spectral distribution of that gel without actually setting the color. When you don't want to see the comparison anymore, just click or tap on the gel name.

[111] [Enter]

[31] [Enter]

To select a gel to compare



To see the CMY version

Back to the X7 color version

The Hold Color Point tool allows you to adjust the individual emitters without changing the XY and chromaticity. As you adjust the individual emitter, the other colors adjust to hold that color point. If an emitter is adjusted too far, the console will tell you that a limit has been reached. That means you can't adjust that emitter any further without changing the XY or chromaticity.

The display tools in Spectrum are the same as manually controlling the color emitters with the encoders. If you want to hold the Color Point while working with the encoders, press and hold the Color page button and dial the encoders.

NOTE: Hold Color Point only works for color systems of 4 or more parameters.





FADE CONTROLS

Color Path is a new option for controlling color fades between cues. By default, color fades happen in the native space of the fixture. If you want a fade that resembles a fade in a different color space, you use color paths. There are eight preprogrammed color paths, and you can also record your own. Up to 1000 color paths are supported. Channels involved in the fade have to be selected before you can choose or modify a color path.

In Color Picker, suggest 'CIE uv', 'Gel' and 'Fade' displays are open

[31] [Thru] [45] [Full] [Enter], [Color] [5] [/] [23] or use the Color Picker (Roscolux R23)

Set channels at level and in color

Record Cue 101

Record a cue

[31] [Thru] [45] [Enter], [Color] [5] [/] [83] or use the Color Picker (Roscolux R83), and make a spectral match - [Shift]& Gel tile

Set channels in color

Record Cue 102

Record a cue

With channels selected, in the color space, the path is displayed that the colors are going to take. This is the native color fade – without any intervention from the color space.

COLOR PATHS

The color path display has a drop down list of the available paths, a color path preview bar, and control buttons.

Press the Fade Tool – where it says No Color Path

Opens the Color paths drop-down menu

Select the Hue Sat path

Notice the path changes

Select the Gel path

Notice the path changes

You'll see a representation of those changes in both the color path preview bar and in the color space. There are also individual control tools to adjust the fade.

- **Delay: 0%** – delays the in color.
- **Time: FL** – speed up the out color

[Update] [Enter]

Updates the cue

[31] [Thru] [45][Enter]

Reselect the channels

[Go]

Watch the cross fade.

- **Brightness** – to allow for a straight crossfade or for dipped crossfade

Whenever the information is recorded, it is stored in the destination cue as Absolute data. Any time there is a change in the color path information there is a red 'C' next to the channel numbers to indicate a change or modification.

[Update] [Enter]

To record the new changes to the cue

COLOR PATH TYPES

1	Native	5	RGB
2	Gel	6	CMY
3	Sat Adjust	7	Hue Sat
4	CIE xyY	8	Auto Dim

Additional controls may be available based on the color path selected. For example, Color Path 7 has additional controls for Hue, Saturation, and Brightness. You can move those controls to adjust the fade, and

Available control buttons are:

- **Q (#) I▶** - replays the color fade using the cue time.
- **GoToQ (#) I▶** - replays the color fade using the Go to Cue time
- **5 I▶** - replays the color fade in five seconds.
- **10 I▶** - replays the color fade in ten seconds.
- **II** - pauses the color fade.
- **▶** - plays / resumes the color fade.
- **▶I** - skips to the end of the color fade.

SAVE COLOR PATH

You can save changes to a new color path. That data will then be referenced, and any changes made to that path will be used anytime that path is used.

[31] [Record] [Path] / {Color Path} [101] [Enter]

Saves the color path - can be labeled

Press **[Shift] + [Path] / {Color Path}** to see the values behind the referenced data.

COLOR PATH DISPLAY LIST

[Path] [Path] / {Color Path}{Color Path}

Open the Color Path Display List

The other place to see path information is in the About window. The following information will be displayed when a color path is selected:

- The color path number
- Label (if any)
- Channels that use the color path
- Cues that have moves that use the color path
- Number of cue lists the color path is used in

ADDITIONAL NOTES

Want to learn more about color concepts? Additional reading here:

http://en.wikipedia.org/wiki/CIE_1931_color_space

<http://en.wikipedia.org/wiki/CIELUV>

The triangle in the CIE color picker conforms to the PLASA Standard for Color Communication.

http://tsp.plasa.org/tsp/documents/docs/BSR_E1-54-201x_21-Nov-2014.pdf



Corporate Headquarters ■ Middleton, Wisconsin, USA ■ Tel +608 831 4116 ■ Service (Americas) ■ service@etconnect.com

London, UK ■ Tel +44 (0)20 8896 1000 ■ Service: (UK) service@etceurope.com

Rome, IT ■ Tel +39 (06) 32 111 683 ■ Service: (UK) service@etceurope.com

Holzkirchen, DE ■ Tel +49 (80 24) 47 00-0 ■ Service: (DE) techserv-hoki@etconnect.com

Hong Kong ■ Tel +852 2799 1220 ■ Service: (Asia) service@etcasia.com

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