



Ion Console Programming

Level 2: Enhanced Skills

V2.3.0 Rev. A

www.etconnect.com/education

Table of Contents

PURPOSE OF THE CLASS	2
REVIEW PATCH	3
DEVICE ATTRIBUTES	4
INDEXED PARAMETERS	5
MERGE	6
GROUPS	7
NON-INTENSITY PARAMETERS	7
NON INTENSITY PARAMETER CONTROL (FCB)	8
MOVING LIGHTS	9
SYNTAX AND COMMAND LINE FILTERING	11
PALETTES	12
DIRECT SELECTS	15
DISCRETE TIMING	15
MARK	17
REFERENCED MARKS	17
AUTO-MARK	18
UPDATE	19
EFFECTS	20
EFFECTS ATTRIBUTES	20
CREATING EFFECTS	21
MAGIC SHEETS	22
GETTING STARTED	22
MAGIC SHEET EDITING	26
NAVIGATION TOOLS	26
OVERVIEW OF THE SHELL	28
STARTING SCREEN	28
IMPORTANT CONCEPTS	29
PSD FLAGS	31
APPENDIX 1 – LEVEL 1 CHANNEL HOOKUP	32
APPENDIX 2 – LEVEL 2 HOOKUP ADDITIONS	34
APPENDIX 3 – SCROLL SETUP	35
APPENDIX 4 – SHOW FILE DATA	36

Purpose of the Class


The Enhanced Skills class will provide a more in-depth look at advanced operation and working with multi-parameter devices on an Eos family console.

LEARNING OBJECTIVES:

After completing this class, one should be able to:

- Patch moving lights and multi-parameter devices and edit device attributes
- Work with non-intensity parameters and their associated functions
- Record and recall palettes and presets
- Use Direct Select and ML Control Modules
- Take advantage of discrete timing
- Use Mark and/or Auto-Mark functions
- Understand Update and its styles and modifiers
- Create Relative and Absolute Effects
- Create and use a magic sheet

SYNTAX ANNOTATION

- **Bold** Browser menus
 - **[Brackets]** Face panel buttons
 - **{Braces}** Softkeys and direct selects
 - **<Angle brackets>** Optional keys
 - **[Next] & [Last]** Press & hold simultaneously
-
- **Play Icon**  Link to video on ETC's YouTube Channel - ETCVideoLibrary

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*

Review Patch

Begin in a new or untitled show.

REVIEW PATCHING CONVENTIONALS - BY CHANNEL CHANGED NUMBERS

[Displays] {Patch} or use Add-a-Tab (the {+} sign)

[1] [Thru] [10] [At] [51] [Enter]

selects channel 1 thru 10 and patches address 51 thru 60 to them

[11] [At] [71] [Thru] [75] [Enter]

selects channel 11 and patches addresses 71 thru 75 (in individual parts)

[21] [Thru] [32] [At] [81] {Offset} [3] [Enter]

allows for a three-circuit cyc light patch

[1] [Thru] [10] [Part] [2] [At] [121] [Enter]

creates a part 2 for channels 1 thru 10 and patches the outputs starting at 121

REVIEW PATCH A MULTI-PARAMETER DEVICE – BY CHANNEL

[101] [Thru] [105] [Enter]

selects channels 101 through 105

Click on {Type} in the CIA

notice the two softkeys {Favorite} and {Manfctr}

Click on {Manfctr}

2 left columns show manufacturers; selecting a manufacturer repaints the right columns with their devices

Click on {High End Systems} and then select {Studio Color 575}

fixture placed on the command line after channels

[At] [2] [/] [1] [Enter]

completes the patch

[At] [Enter] [Enter]

clears the patch

[At] [2] [/] [1] {Offset} [20] [Enter] [Enter]

patches the fixtures with an easier starting number

PATCH EXERCISE - SEE APPENDIX 1 & 2

Start a new show, [Displays], File> New> and press [Select] or double-click. Are you sure? [Enter] or press OK.

Now, go to Appendix 1 & 2 – Channel Hookup in the back of the book and patch the entire hookup.

CHANNEL CHECK:

[Live] [1] [at] [Full] [More SK] {Chan Check} [Enter]

puts the console in Chan Check mode

then [Next] ... [Next] ...

steps through all patched channels



DEVICE ATTRIBUTES

In Patch, {Attributes}

opens the Attributes module

{PREHEAT}

Specify an intensity value to preheat incandescent filaments. When a preheat flag is applied to a cue, any channels that are fading from zero to an active intensity and have been assigned a preheat value in Patch will preheat in the immediately preceding cue. **A two-step function**

Step 1 [1] {Preheat} [03] [Enter]

assigns a preheat value of 3% (if enter 30, get 30%)

Step 2 [Live] [Cue] [X] {Preheat} [Enter]

puts the Preheat flag on the cue

{PROPORTION}

Proportion is a mathematical modifier for recorded levels or intensities. This value is set numerically in a range of 0% to 200%.

[1] {Attributes} {Proportion} [125] [Enter]

applies a 125% proportion to channel

[1] {Attributes} {Proportion} [Enter]

removes the applied proportion

{CURVE} & {FAN CURVE}

A curves changes how a fade happens over time.

[Displays] [More SK] {Curves} or Add-a-Tab (the {+} sign) - #21

to view pre-programmed curves

The control input is what the console is telling the fixture to go to. The output is actual value that is being output via DMX.

Back in Patch, [1] {Curve} [905] [Enter]

applies curve 905 (Full at 1%) to the intensity parameter of channel 1

[1] {Curve} [Enter]

removes the curve

{LD FLAGS} – A TOGGLE

By default Live and Dark flags are enabled. If there is a Live or Dark move, an 'L' or 'D' will be displayed in the move flags column in the PSD. This can be disabled on a channel-per-channel basis.

[2] {LD Flags}

toggles the attribute - enabled/disabled

{GM EXEMPT} – A TOGGLE

A toggle state, if selected, channels are exempt from Grandmaster, Blackout, **[Rem Dim]**, **[Go To Cue]** **[Out]** and Intensity Master operations.

{INVERT PAN OR TILT} & {SWAP P/T}

A moving light attribute used to invert the output of pan, tilt, or both.

[Live]: [121] [Thru] [124] [Full] [Enter], tilt them down stage and then pan

note how they move – all together

Back in Patch: [121] [+] [122] {Attributes} {Invert Pan}

inverts the output of the pan parameter

Back to [Live]: [121] [Thru] [124] [Enter], and pan

note how they move now

In Patch: [121] {Swap P/T}

swaps the pan and tilt parameters



INDEXED PARAMETERS

CREATING A NEW CUSTOM SCROLL OR WHEEL

When using the editor, function keys are on the lower left side of the CIA, either mouse or touch selected. They change depending on device editing.

- **{Clear}** - clears the current wheel selection
- **{New}** - to create a new scroll or wheel
- **{Copy}** - copy an existing and then modify
- **{Edit}** - opens the editor to modify
- **{Delete}** - removes the selected device

[21] [Thru] [26] [Part] [2] [Enter] then press {Attributes} {Scroller}

Press {New} on lower left side of display or also a softkey	{new wheel#1} appears in list
[Label], [Label] to clear, then type 'Training' [Enter]	labels the new scroll
In Frame List on far left, press the gray box under 'C/G'	available color selections displayed
Press {Open Frame} softkey on lower left side of display	display returns to the new wheel frame list and adds 'Generic open open'
Press next gray box under 'C/G'	available color selections displayed
{Rosco} {Roscolux } and then {R010}	returns to the frame list and adds color
Press next gray box to continue	repeat process till scroll is complete
Press {Done}	completes the scroll, applies to fixture

When creating a gobo wheel: after you press the gray box in the C/G list, make sure that the softkey {Gobo} is selected.

SCROLLER EXERCISE - SEE APPENDIX 3

OTHER INDEXED PARAMETERS

All indexed parameters have the same editing experience.

{GOBO WHEEL}

An attribute used to change the gobo wheel loaded in a moving light.

In [Patch] [111] {Attributes} {Gobo Wheel}

selects channel and opens the Wheel Picker in the CIA for wheel selection

{COLOR WHEEL}

An attribute used to change the color wheel loaded in a moving light.

In [Patch] [131] {Attributes} {Color Wheel}

selects channel and opens the Wheel Picker in the CIA for wheel selection



Merge

Merging show files is different from opening show files. When you open a show file or any part of a show file, all other show info is cleared. When you do a merge, only the selected targets are overwritten.

COMPLETE TARGET LISTS

[Displays], {Browser}, File > Merge, select a show, and press [Select]

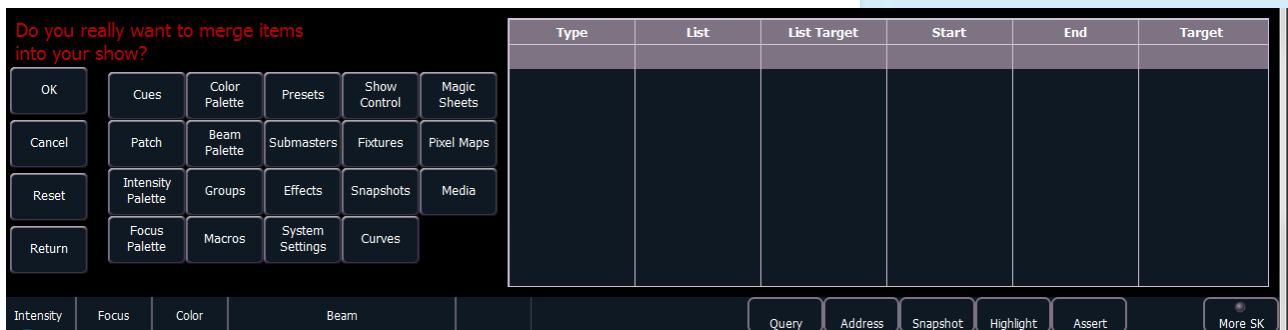
opens main Merge screen

By default all items are unselected (black). Selected items will turn gray.

ADVANCED

{Advanced} allows you to select specific ranges of the targets and place them where you want them in the current show file.

- **Start** - The first in a range of components (such as a range of groups).
- **End** - The last in a range of components.
- **Target** - The desired location of the components in the new show file (for ranges, this will be the location in the new show of the first component in the range. The others will follow in order).



{Groups}

selects what you want to merge

{Start} [1]

selects the starting number of the range from the stored show

[Page ►] to the End column, [8]

sets the ending number of the range

{Target} [101]

sets starting location in the current show - blank merges in as same numbers

{Groups} [12] [Page ►] [15]

multiple ranges of the same targets

{Return}

to go back to main Merge screen.

Do not hit **{OK}**!

TO MERGE GROUPS INTO THE SHOW

{Groups} {Ok}

merges groups into current show

[Group] [Group]

to verify groups have merged

Groups

REVIEW RECORDING GROUPS

[Live] [Clear] [Sneak] [Enter] [1] [Thru] [3] [Record] [Group] [101] [Enter]	records channels 1 - 4 to the target group
OR [Group] [Group] [Group] [101] [Enter] [1] [Thru] [3] [Enter]	creates same group in Group List (Blind)



SUBGROUPS

You can create subsets of channels within a group that are treated as a single channel in group/channel selection and in effects.

[Group] [Group]	opens the Group List (blind)
[Group] [102] [Enter]	creates group 102
[Shift]&[/] [11] [+] [12] [Shift]&[/] [Shift]&[/] [13] [+] [14] [Shift]&[/] [Shift]&[/] [15] [+] [16] [Shift]&[/] [Enter]	puts sidelights in sub groups
[Live] [Group] [102] [Full] {ChanCheck} [Enter] [Next]...	does a channel check with subgroups



OFFSET - SELECTION TOOL TO CREATE GROUPS

[Clear] [110] [Thru] [120] {Offset}	new display in CIA area
{Chan per Group} [4] ... [Clear] Then [5]	watch channel display line for differences
{Interleave}...[Clear]	note first channel of each subgroup
{Jump} [3]	notice the gap between the subgroups
[Shift]&[Clear]	clears the command line
[51] [Thru] [67] {Offset} {Mirror In} [Record] [Group] [20] [Label] Cyps In [Enter]	
[Group] [Group] [Group] [20] [Copy to] [21] [Enter]	in Group Display, copies the group
{Reverse} [Enter] [Label] Cyps out [Enter]	watch the channel sequence...

GROUP EXERCISE

Build groups 9, 13, 14, and 16 in Live or in the Group List Display.

All other Groups should be in the show after the merge or added thru the exercises above.

Group #	Label	Channels
1	Specials	1 thru 3
2	Band	4 thru 9
3	Blue Sides	11 + 12
4	Pink Sides	13 + 14
5	Yellow Sides	15 + 16
6	Texture	21 thru 26
7	Top Lights	31 thru 45
8	LED Cyc Top	51 thru 67
9	LED Cyc Bottom	71 thru 87
11	Robin 300s	101 thru 106

Group #	Label	Channels
12	VL3500	111 thru 115
13	VL2000	121 thru 124
14	Mac 700	131 thru 134
16	All movers	G11 thru G14
20	Cyps In	(51 67)(52 66)(53 65)(54 64)(55 63)(56 62)(57 61)(58 60)(59)
21	Cyps Out	(59) (58 60)(57 61)(56 62)(55 63)(54 64)(53 65)(52 66)(51 67)
30	Effect 1	1, 4, 2, 5, 3
101	-	1 thru 3
102	-	(11+12) (13+14) (15+16)

Non-Intensity Parameters

NON INTENSITY PARAMETER CONTROL (FCB)

Four major parameter categories:

- **Intensity** . . . Intensity
- **Focus** . . . Pan and Tilt
- **Color**. . . All color parameters
- **Beam** . . . All other parameters, divided into sub-categories:
 - **Form** - includes parameters that affect the quality or size of the light output, such as edge, zoom, iris, IMF, frost, etc.
 - **Image** - includes anything that drops into the gate and interrupts the beam of light, such as gobos, effects wheels, etc.
 - **Shutter** - includes all of the framing devices for the luminaire



REVIEW COLOR SELECTION WITH SCROLLERS

[Group] [6] [Full] [Enter] [Encoder Display] [Color]

Multiple ways to change color:

- Use the encoder to dial to the frame desired
- Use the encoder softkeys **{Next}**, **{Last}**
- Hold **[Shift]** and dial the encoder – see the '+/-' for split frames
- To go to a particular frame – **[Shift]&{Color} [5]** for frame 5



REVIEW COLOR SELECTION WITH LEDs

[Group] [7] [Full] [Enter] [Encoder Display] [Color]

- Use the encoders to mix the color desired – i.e. R, G, B
- Use the encoder softkeys: **{Min}**, **{Max}**
- Tap the color encoder – **{Green} [50] [Enter]**
- Use the Color Picker – **[Displays] {Color Picker}**
 - Remember the line limits
- Use the Gel Library
- To go to a particular gel color – **[Shift]&{Color} [5][/][27]**
- Use the parameter tiles on the CIA display



COLOR SELECTION WITH OTHER FIXTURES

[Group] [14] [Full] [Enter] [Encoder Display] [Color]

- Use the Color Select encoder to dial to the color desired
 - Use the encoder softkeys: **{Next}**, **{Last}**
- Use the encoders to dial to the color desired– i.e. C, M, Y
 - Use the encoder softkeys: **{Min}**, **{Max}**
- Use the Color Picker and Gel Picker
 - To go to a particular gel color – **{Color} [5][/][339]**
- Tap the Color Select encoder – **{Color Select} [5]***
- Use the parameter tiles on the CIA display – **{Cyan} [75] or {Color Select} [3]**

* If you leave Color Select in a frame other than open, when you go to the gel color, you'll have a weird color (wheel plus CMY). Will need to do a **{Color Select} {Home} {Enter}**

Gel Library

1	Apollo Gel
2	GAM GamColor
3	Lee
5	Rosco Roscolux
6	Rosco SuperGel
7	Rosco E Color
8	TokyoBS Poly

MOVING LIGHTS

LAMP CONTROLS

Lamp controls allow you to execute control functions of selected fixtures such as calibrate, douse lamp, strike lamp, and reset. Each fixture type has its own set of lamp control options which are available to you when you select the fixture from Live.

[Clear] [Sneak] [Enter] [Group] [12] [Enter] [About] channel selection on command line

Lower right hand corner of CIA area – Lamp Controls

[Group] [14] [Enter] note different lamp controls

FOCUS

[Group] [11] [Full] [Enter] , then [Focus] and play with encoders notice all four fixtures move as a group

Hold [Shift] while using the encoders puts the encoder in Fine mode

Press [Next], tilt, [Next], tilt, [Next], tilt able to work with each light individually

[Select Last] to reselect group and pan now back as a group

FLIP

{Flip} is used to spin the unit into its exact same position, but from the other direction (long path versus short path).

**REMEMBER: TILT FIRST!!
OR YOU ARE JUST SPINNING IN PLACE!**

Press {Flip} on Tilt encoder and watch the fixtures reset

Press {Flip} again and watch the fixtures reset

Flip results in a manual value. Don't forget to update if in a cue!

HOME

Under Tilt, press {Home} [Enter] returns parameter to 50/50 or Home position

ALWAYS ANOTHER WAY TO DO THINGS

Tap the encoder, {Tilt} [-30] [Enter] places the Tilt parameter at -30°

[Displays], press the {Tilt} parameter tile, [Home] [Enter] ... or homes the tilt parameter





BEAM

Remember: divided into sub-categories: Form, Image, and Shutter!

[Clear] [Sneak] [Enter] **[Group] [12] [Full] [Enter]** and tilt up on stage

Just like Color and Focus, multiple ways of doing the same thing

FORM - ZOOM

- Use the Zoom encoder
- Use the encoder softkeys: **{Min}**, **{Max}**
- Tap the Zoom encoder, **[35] [Enter]**
- Notice Shutter Strobe - **{Expand}** to see modes

IMAGE - GOBO SELECT

- Use the Gobo Select encoder, indexed – feel the clutch
- Use the encoder softkeys: **{Home}**, **{Next}**, **{Last}** and **{Mode}**
- Tap the Gobo Select encoder, **[3] [Enter]**
- Press the tile, **[4] [Enter]**
- **{Mode}** selects additional functions for the parameter such as rotate, index, or special effects. **{Mode}** affects the scale of **Gobo Index/Speed**. Change the mode, notice the scale options below the Gobo Index/Speed encoder

SHUTTER

- Use the shutter encoders for In and Angle
 - opposing shutters are mapped on the display
- Tap the encoder and specify specific angle, **[30] [Enter]**
- Use the encoder softkeys: **{Home}**, **{Next}**, **{Last}** and **{Mode}**

PAGING ENCODERS

[Shutter], [Shutter], [Shutter] or **[Shutter] & [3]**

Page number is displayed in softkey in the lower left corner of the display

takes you to third page of shutter category



HOME

[Home] or **{Home}** returns the selected target to its default position.

[Clear] [Sneak] [Enter]

[Group] [14] [Full] [Enter], tilt up on cyc, in orange, with gobo, sharp, zoom out

set levels

[131] [Home] [Enter]

homes all non-intensity data for channel

[132] [Shift]&[Focus] [Home] [Enter]

homes just the focus data for channel

[133] {Gobo Select} [Home] [Enter]

homes just the gobo for channel



SYNTAX AND COMMAND LINE FILTERING

Console has an expectation of the order of information given on the command line:

Channel selection → categories and parameters → modifiers → target.

USING SNEAK

[134] [Copy To] [131] [Thru] [133] [Enter]	resets all fixtures to same place
[131] [Sneak] [Enter]	sneaks all parameters back to default
[132] [Shift]&[Focus] &[Color]&[Beam]* [Sneak] [Enter]	everything but intensity sneaks
[133] [-] [Shift]&[Intensity] [Sneak] [Enter]	same results using subtractive syntax
[134] [Shift]&[Beam] [-] [Gobo Select] [Sneak] [Enter]	specific category with exceptions

* To put Beam on the command line, hit any Beam sub- category (Form, Image or Shutter) twice.



COPY TO AND RECALL FROM

[Copy To] takes the information here and copies it over there.

[Recall From] takes the information from over there and copies it here.

[Clear] [Sneak] [Enter]	
[131] [Full] [Enter], tilt upstage, zoom out, in orange, add gobo and sharpen	set levels
[131] [Copy To] [132] [Thru] [134] [Enter]	copies all values to other channels
[132] [Thru] [134] [-] [Shift]&[Intensity] [Sneak] [Enter]	
[132] [Thru] [134] [Recall From] [131] [Enter]	copies all info from one channel to other channels
[Select Last] [-] [Shift]&[Intensity] [Sneak] [Enter]	
[131] [Shift]&[Intensity] &[Focus] [Copy to] [132] [Enter]	copies just intensity and focus

[-] [Shift]&[Intensity] [Sneak] [Enter] can also be done with [Sneak] [Sneak].

Palettes

REFERENCED DATA

Eos family consoles support up to 1,000 palettes of each type: Intensity, Focus, Color, and Beam (=IFCB). Palettes are referenced data. This means that changes to the palette are propagated into all of the places the palette is stored (in presets, cues, or effects). Except for Intensity Palettes, Palettes ignore conventional or single parameter devices.

*If you need to create a reference that will include a mix of IFCB information, use **Presets**.*

INTENSITY PALETTES

[Clear] [Sneak] [Enter] [1] [Thru] [135] [Full] [Enter]	set levels
[Record] [Intensity Palette] [1] [Label] 100% [Enter]	records active channels at 100% in IP1
[Clear] [Sneak] [Enter] [Group] [20] [At] [10] [Thru] [100] [Enter]	set levels using intensity fan (gradient)
[Group] [20] [Record] [Intensity Palette] [2] [Label] Hot Cyc Cntr [Enter]	records active channels in IP2
[Clear] [Sneak] [Enter] [Group] [20] [IP] [1] [Enter]	brings back the levels recorded in IP1
[Select Last] [IP] [2] [Enter]	brings back the levels recorded in IP2
[Clear] [Sneak] [Enter] [Group] [20] [Recall From] [IP] [2] [Enter]	brings back the absolute data – no ref

COLOR PALETTES

[Clear] [Sneak] [Enter]	clears the stage
[Group] [7] [+] [Group] [8] [+] [Group] [11] [Thru] [14] [Record] [Group] [25] [Enter]	sets up a group for use with color palettes
[Group] [25] [Full] [Enter] {Color Picker} and select a red	notice not all the same
[Group] [25] [Record] [Color Palette] [1] [Label] Red [Enter]	records CP1
[Clear] [Sneak] [Enter] [Group] [8] [Full] [Full] [CP1] [Enter]	the whole cyc goes to red
[Group] [25] [Full] [Enter] {Color Picker} and select an orange	
[Select Last] [Record] [Color Palette] [2] [Label] Orange [Enter]	records CP2

Record five more Color Palettes using Group 25:

CP1	Red
CP2	Orange
CP3	Yellow
CP4	Green
CP5	Lt blue
CP6	Dk blue
CP7	Magenta



FOCUS PALETTES

[Clear] [Sneak] [Enter]

[Group] [12] [Full] [Enter]

brings up FOH lights

[Next]...[Next] and focus each light on the DSR Desk

[Select Last] [Record] [Focus Palette] [1] [Label] Desk [Enter]

records FP1

[Clear] [Sneak] [Enter] [Group] [12] [Full] [Enter] [FP1] [Enter]

all lights go to the desk

USING HIGHLIGHT MODE

Highlight is very useful to isolate and adjust individual fixtures.

[Clear] [Sneak] [Enter]

{Highlight} [Enter]

enters Highlight mode – look at command line

[Group] [12] [Enter] ... then [Next]

selects first channel in a recorded group, turns others off and advances thru group

[Next]...[Next] and focus each light up stage center

notice yellow HL on each channel

[Select Last] [Enter]

look at all channels together

[Select Last] [Record] [Focus Palette] [2] [Label] USC [Enter]

records FP2

{Highlight} <[Enter]>

exits Highlight mode

Clear the command line before hitting Highlight to exit the mode.

Record three more Focus Palettes using Group 12:

FP1	DSR Desk
FP2	USC Solo
FP3	DSL Study
FP4	Vocals (USR Platform)
FP5	Guitar (USL Platform)



BEAM PALETTES

[Clear] [Sneak] [Enter] [Group] [12] [Full] [Enter] Tilt on stage	make sure you are in Live Table View
{Form} {Zoom} {Max} {Image} {Gobo Select} [5] [Enter]	zoom fixtures full and in colored dots
[Select Last] [Record] [Beam Palette] [1] [Enter]	records BP info for all beam parameters

Notice that all parameters in the Beam category have been recorded into the Beam Palette. Not just zoom and gobo select.

USING COMMAND LINE FILTERING

[Clear] [Sneak] [Enter] [Group] [12] [Full] [Full] Tilt on stage	put the lights back on stage
{Form} {Zoom} {Max} {Image} {Gobo Select} [5] [Enter]	zoom fixtures full and in colored dots
[Select Last] {Gobo Select} [Record] [Beam Palette] [2] [Enter]	records BP info for Gobo only
[Blind] [Beam Palette] [1] [Enter]	shows data stored in all parameters
[Beam Palette] [2] [Enter]	shows only Gobo Select stored
[Live]	
[Group] [12] {Zoom} [Record] [Beam Palette] [3] [Enter]	records BP info for just the selected channels and selected parameter

Notice now that BP2 only shows in Gobo Select parameter and BP3 only shows in the Zoom parameter.



PRESETS – ALL PALETTES

Presets can collect all data for a given channel (intensity, focus, color, and beam palettes as well as absolute data) rather than just one parameter type like with a palette.

[Clear] [Sneak] [Enter]	
[Group] [12] [IP1] [CP1] [FP2] [BP2] [Enter]	put the lights back on stage
[Record] [Preset] [1] [Label] USC Red [Enter]	records all parameter data for all channels and adds a label to preset 1
Press and hold [Data]	to view referenced palettes
[Clear] [Sneak] [Enter]	
[Group] [12] [Full] [Enter] [CP2] [Enter] manually set focus, tilt up	put the lights back on stage
[Select Last] [-] [Intensity] [Record] [Preset] [5] [Enter]	records cue with referenced data – presets and palettes – selective (without intensity)
Press and hold [Data]	see Pan & Tilt have absolute data

MAKE ABSOLUTE

[Group] [12] [CP2] [Enter]	put the lights back on stage
[Select Last] {Make Abs} [Enter]	converts values to stored values
[Select Last] {Color} [Focus] [Record] [Preset] [6] [Enter]	records cue without intensity or beam values



Direct Selects

TO OPEN DIRECT SELECTS:

Click on **Add-a-Tab** (the **{+}** sign)

DS -- Direct Select Module Classic

DS-x25 Direct Select Module

Under Controls, two Direct Select Options

opens Direct Select Standard display

opens Direct Select 25 display

CLASSIC (STANDARD) LAYOUT

Press **{1x/2x}**

to change display from 2 blocks of 25 tiles to 1 block of 25 tiles

Click **{Select}**

displays the target choices

You will be offered the following target choices to view: Channels, Groups, Intensity, Focus, Color, and Beam Palettes, Presets, Macros, Effects, Snapshots, and Magic Sheets.

SHOW FLEXI

Flexi mode hides unused Direct Select tiles that do not have targets but leaves a single empty tile between non-sequential Direct Selects.

Click **{Show Flexi}**

hides unused Direct Select tiles

Click **{Color Palettes}**

displays the target choices

Using page buttons: **{{Δ}, {∇}}**

to view subsequent pages

Press **{20/50}**

to change from one target type of 50 tiles to 2 target types of 20 tiles

Click **{Select}** on the second group and click **{Groups}**

displays the target choices

Toggle **{Expand}**

to fill a full screen (Century mode) with one particular target or to return to previous

Notes: With channel or group selections on the command line, direct selects are highlighted to show which blocks have recorded data for those channels.

DS-x25 LAYOUT

Click **{Select}** and hit **{Presets}**

displays the target choices

Press **{+ Array} {- Array}**

to add or delete blocks of Direct Selects

CONFIGURATION MENU OPTIONS

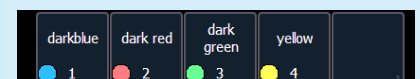
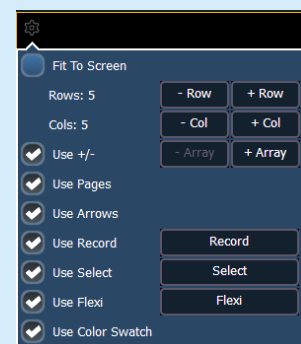
Fit to Screen - direct selects fill the screen as much as possible

Rows - select the number of rows in the arrays

Columns - select the number of columns in the array

Use Buttons - select which buttons are displayed on the screen

- **Use +/-** - displays the **{+ Array} {- Array}** buttons
- **Use Pages** - displays the page # buttons
- **Use Arrows** - displays the page up and down arrows
- **Use Record** - displays the **{Record}** button
- **Use Select** - displays the **{Select}** button
- **Use Flexi** - displays the **{Flexi}** button
- **Use Color Swatch** - displays a round color swatch in the lower left corner of a color palette direct select



Discrete Timing



SIMPLE CHANNEL TIMING

[Group] [1] [Full] [Enter] [Record] [1] [Enter]	set levels and record initial cue
[Group] [1] [Out] [Record] [2] [Enter]	set levels for fade out cue
[2] [Time] [15] [Enter]* [Update] [Enter]	records a time of 15 for channel 2 in cue 2
[Stop/Back] to cue 1 [Go] and watch the timing	watch the fade

* Notice small red "t" displayed with the channel. Reminder to record! When this is done, the "t" is displayed in blue. A '+' is also displayed in the cue column on the Playback Status display.

Hold the Displays [Time] button on the right hand side of the board or hold [Shift]&[Time] to see the time displayed on the channel. Time displayed as 'D/T' where D is the Delay time and T is the Channel Time.



FAN TIMING

[Group] [8] [Full] [Full] [Record] [3] [Enter]	set levels and record initial cue
[Group] [8] [Out] [Record] [4] [Enter]	set levels for following cue
[Group] [8] [Time] [0] [Thru] [8] [Enter] [Update] [Enter]	adds a distributed timing of 0 to 8 seconds across the channel list
[Stop/Back] and hit [Go]	watch the fade

Fan Time of 0 thru 8 – the fades start all at the same time but take different lengths to complete.

FAN TIMING WITH DELAY

[Group] [20] [Full] [Enter] [CP1] [Enter] [Record] [5] [Enter]	set levels and record initial cue
[Group] [20] [Delay] [0] [Thru] [8] [Enter] [Update] [Enter]	adds a timing of 8 seconds to the color parameters of the channel list
[Stop/Back] and hit [Go] – watch the timing	watch the fade

Fan Time of Delay 0 thru 8 – each channel starts at a different time, but fades in using the default cue time of 5 seconds.



DISCRETE TIMING BY PARAMETER

[111] [Thru] [115] [Full] [Enter] [FP2] [Enter] [Record] [7] [Enter]	set levels and record initial cue
[Select Last] {Pan} [Delay] [6] [Enter] [Update] [Enter]	adds a delays of 4 seconds to the pan parameters of the channel list
[Stop/Back] and hit [Go]	watch the fade
[Group] [12] [Full] [Enter], [FP4], {Zoom} {Max}	set levels and record initial cue
{Zoom} [Time] [8] [Enter] [Record] [8] [Enter]	discrete time on zoom attribute only
[Stop/Back] and hit [Go]	watch the fade



CLEAR DISCRETE TIMING

In Cue 2, [2] [Time] [Enter] [Update] [Enter]	removes the channel timing
---	----------------------------

Mark



REFERENCED MARKS

{Mark} automates the process of presetting moving lights to their required state in a cue, prior to fading intensity up (Also referred to as move while dark/move before bright). All move info about a marked cue is stored in the reference or source cue.

CREATE A MARK

[Go To Cue] [8] [Enter] [Select All] [Out] [Record] [10] [Enter]	records fade to black - homes NPs
[Group] [12] [Full] [Enter] [FP2] [Enter] {Zoom} smaller, [Record] [Next] [Enter]	records cue 11
[Group] [12] [Out] [Record] [Next] [Enter]	records cue 12
[Record] [13] [Enter]	records a blank cue 13
[Group] [12] [Full] [Enter] [FP3] [Enter] [Record] [14] [Enter]	
[Go To Cue] [10] [Enter] and run the cues	in Cue 14, see a live move
[Group] [12] [Mark] <Cue> [12] [Enter]* [Update] [Enter]	inserts a mark for the movers in cue, notice 'M' and 'R' in cue list after Update
<i>* Notice the little red 'm' on the channels</i>	
[Go To Cue] [10] [Enter], Run the cues, watch the fades	notice green levels in cue 12 for marking



DISCRETE TIMING ON MARKS

To change the mark time to a different time from that in the marked cue (M), use a discrete time in the reference cue (R).

[Cue] [14] [Enter] [111] [Thru] [115] [-] {Intensity} [Time] [2] [Enter]	notice red 't's
[Update] [Enter]	notice discrete time flags
[Go To Cue] [11] [Enter], Run the cues, watch the fades	



REMOVE A MARK

[111] [Mark] [Enter] [Update] [Enter]	removes the mark from that channel only
---------------------------------------	---

MARK TIME

Mark Time is a setup option which allows you to set the time that mark instructions will use.

(Setup >Show >Show Settings >Mark Time)

When **{Mark Time}** is disabled, which is the default, mark instructions use cue timing unless overridden with discrete timing.

When you enter a Mark Time in Setup, all NPs that mark (either through referenced marking or Auto-Mark) use this time. The only way to override setup mark time is to use discrete timing.



AUTO-MARK

A system default setting, turned on or off at a global level.

When AutoMark is enabled, non-intensity parameter transitions will occur in the cue *immediately preceding* the cue in which the changes are stored, if intensity in that cue is zero or moving to zero. Marked cues are indicated by an “M” in the Flags column of the playback status display.

[Displays] {Setup} {Show} {Show Settings}

Click on Automark and watch the cue list

shows Automark Enabled - notice the ‘R’ is gone on cue 14; an ‘M’ flag is now in cue 13

[Live], [Go To Cue] [Out] and run thru the cues again.

NOTE If you build cues using referenced marks, and then enable Auto-Mark, all of the referenced marks in the show are moved to the cue preceding the move instruction.

If you begin programming with Auto-Mark enabled, and then disable the feature, all of the Auto-Marks in the show are converted to referenced marks.



ALLOW A LIVE MOVE

When you want to see a live move on stage, but the Show Settings AutoMark is enabled, you can disable AutoMark for an individual cue.

[Displays] {Setup} {Show} {Show Settings} Click on Automark.

shows Automark Enabled

[Live]

[Cue] [14] {AutoMark Off} [Enter]

notice the ‘D’ in the flags column

[Go To Cue] [11] [Enter]

[Go] Cue 12

lights fade out in cue 12

[Go] Cue 13

where lights used to mark, nothing happens

[Go] Cue 14

notice the live move on stage

Update

Update is a 'save changes' tool. It only pertains to values that are red or modified – values that have been changed. Update saves manual changes back to targets such as cues, palettes, presets and submasters.

UPDATE STYLES

[Go To Cue] [Out] and be in Live Table View	
[Group] [12] [Preset] [1] [Enter]	plays back the preset recorded earlier
[Record] [100] [Enter]	records the look as a cue
[111] {Color} [At] [50]	makes a manual change to the look – note the red R's in the table view
[Update] Notice default Make Absolute style [Enter]	absolute data is now stored in cue
[Undo]	brings back modified cue
[Update] {All} [Enter]	changed all the way to the palette
Press & hold [Data]	values modified at palette level
[Undo]	brings back modified cue
[Update] {Ref Only} [Enter]	changed in preset and palette, not cue
UPDATE MODIFIERS	
[Undo]	brings back modified cue
[Update] {All} {Break Nested} [Enter]	changes in preset and cue, not palette
Press & hold [Data]	values modified at preset level, palette unaffected
[Group] [8] [Full] [Enter] [CP1]	
[Record] [Next] [Enter]	records the look as a cue
[51] [CP2] [Enter] {Color} [At] [50] [Enter]	manually brought CP2 up in a cue that has CP1 stored, then change level
[Update] {All} [Enter]	channel 51 with changes stored in CP1
[Undo]	brings back modified cue
[52] [CP2] [Enter] {Color} [At] [50] [Enter]	same manual changes
[Update] {All} {Last Ref} [Enter]	channel 52 with changes stored in CP2

Effects



EFFECTS ATTRIBUTES

[Effect] [Effect] or use Add-a-Tab (the {+} sign)

to view the effect list

Effects 901 – 918 are preprogrammed effects

LET'S PLAY WITH A PREPROGRAMMED EFFECT

[Live] [Go To Cue] [Out] [Enter] [Group] [14] [Full] [Enter], Tilt up on cyc

[Effect] [901] [Enter]

applies a circle effect to channels

[Effect] [Effect]

to edit the effect in Blind

Effect properties include: **{Type}**, **{Scale}**, **{Cycle Time}**, **{Duration/Cycle}**, **{Parameters}**, **{Attributes}** as well as **{Entry} & {Exit} Methods**, **{Time}**, **{Grouping}** and **{Trail}**.

ATTRIBUTES

{Scale} - Size (default 25)

{Shape/Form} – Default horizontal, press and hold **[Shift]** for vertical

{Axis} – Rotates the shape (Watch the graph as well)

{Cycle Time} – Speed of the effect

GROUPING

{Grouping} determines how channels currently running the effect will be distributed throughout the pattern. Grouping defaults to **{Spread}**.

Every light runs individually, based on the channel order, cycle time, and trail times. A grouping of 2 means every other light will move together. Grouping of three means every third light, and so on.

TRAIL

{Trail} determines how channels are to follow each other through the effect; it is a percentage of the cycle time. Trail can be any value from 0-100%, even, or solo. The default is even.

- **{Even}** – the groups will be distributed evenly throughout the path. This is calculated by dividing the cycle time of the effect by the number of groups of channels.
- **{Solo}** – the first group will execute the entire path. When done, the second group will execute the entire path.
- **{10%} - {90%}** – when the first group is 10% through the effect, the second group will start the effect, and so on through the remaining groups. Therefore, the groups will trail n% behind each other, as a percentage of the cycle time.

STOPPING AN EFFECT

[Live] [Group] [14] [At] [Enter] or [Effect] [Enter]

stops effect 901 from running

OR [Effect] [901] [At] [Enter]

stops effect 901

OR [Stop Effect] [Enter]

stops all effects

CREATING EFFECTS



CREATE AN ABSOLUTE EFFECT

[Effect] [Effect]

[Effect] [11] [Enter]

creates a new effect

<Type> {Absolute}

selects Absolute and changes display

{Action} [Page▶] to {Level} column, then [Color Palette] [1] [Enter]

enters CP1 as the first action

[Page ▼] [Color Palette] [2] [Enter]

enters CP2 as the second action

[Page ▼] [Color Palette] [3] [Enter]

enters CP3 as the next action

[Page ▼] [Color Palette] [4] [Enter]

enters CP4 as the last action

[Page ▼] [Color Palette] [5] [Enter]

enters CP5 as the last action

[Page ▼] [Color Palette] [6] [Enter]

enters CP6 as the last action

[Page ▼] [Color Palette] [7] [Enter]

enters CP7 as the last action

[Live] [Group] [14] [Full] [Enter] [Effect] [11] [Enter]

plays effect

Play with grouping on this effect – note that a grouping of 1 will do a solid color change of the whole cyc.

Watch the effect on the color picker display too!

[Group] [8] [Full] [Enter] [Effect] [11] [Enter]

plays effect across cyc

[Group] [20] [Effect] [11] [Enter]

plays effect running in toward center

[Group] [21] [Effect] [11] [Enter]

plays effect running out from center

[Clear] [Sneak] [Enter]



CREATE A RELATIVE EFFECT

Relative effects are mathematical based effect that can run on any fixture that has the same parameters. A focus effect can be run on any fixtures that have pan and tilt parameters.

FOCUS EFFECT

[Effect] [Effect]

[Effect] [12] [Enter] {Focus}

creates a new focus effect

Graph: X is Pan, Y is Tilt; center is where the light is focused when effect starts.

{Edit}, then {Clear}, left click on the grid, drag to create a closed path

draw something – a triangle

Don't forget to hit {Apply}!

{Grouping} {1}

easier to see them all move as one

[Live] [131] [Thru] [134] [Full] [Enter] Tilt them up on the cyc

[Effect] [12] [Enter]



Magic Sheets

Magic Sheets is a tool that allows you to create a custom layout to display and to interact with your console functions in different ways.

OPEN A NEW OR BLANK MAGIC SHEET

Use Add-a-Tab (the {+} sign)

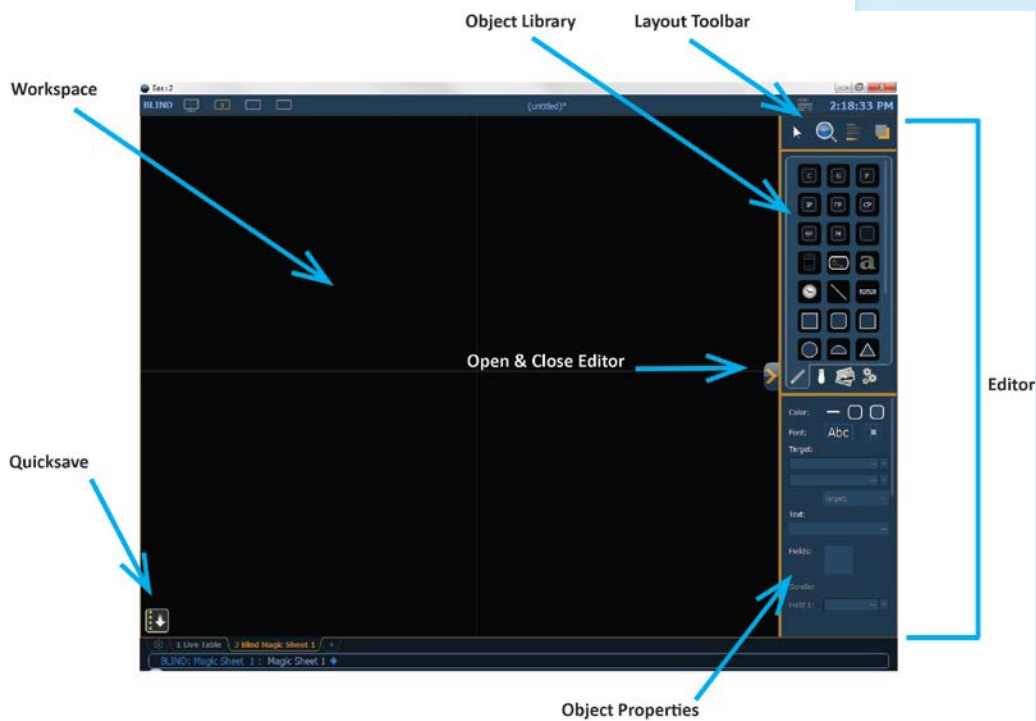
[Displays] {Magic Sheet} [Enter]

Click or touch "create a new Magic Sheet..."

[Displays] {Magic Sheet} [1] [Enter]

GETTING STARTED

Clicking on the Edit button (⌵) on the right hand side of the magic sheet display will open the editing tools.



QUICK SAVE

Clicking on the **{Quick Save}** button allows you to save a restore point for the magic sheet you are working on. Once saved, a green check mark will temporarily appear next to the **{Quick Save}** button.

NOTE: If no restore points are saved, [Undo] [Enter] will delete the magic sheet.



SIMPLE TOOLS

Click in the Object Library on the rectangle – 6th down on right side

Drag and drop it on the worksheet

- Green Handle for proportional stretch
- Blue handles for edge stretch
- White dot handle for rotate
- Pink handles for individual point move

OBJECT PROPERTIES

COLOR PROPERTIES

- Outline line weight
- Outline color
- Object fill color
 - Brightness (saturation) bar on right side
 - X is the no fill or clear.

Select a line weight and a fill color

TARGET ASSIGNMENT

- Beam Palette
- Color Palette
- Focus Palette
- Intensity Palette
- Preset
- Submaster
- Macro Magic Sheet
- Console Button *
- Zoom - when clicked, the view will zoom in to show all objects within that object's group.
- Selection - when clicked, all other objects within that object's group will be selected.
- Channel (default)
- Cue
- Effect
- Group
- Pixel Map
- Snapshot
- User

Make the target 'Group' and start at number 8

FIELD SELECTION

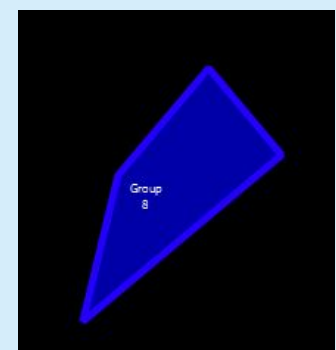
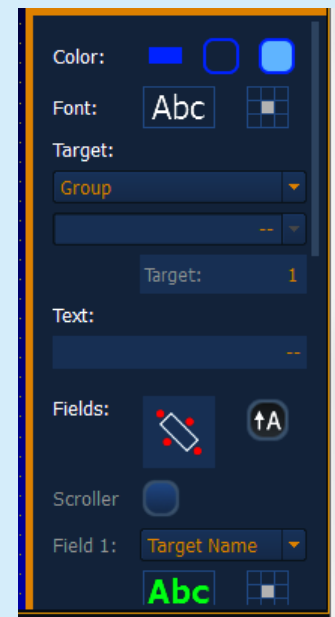
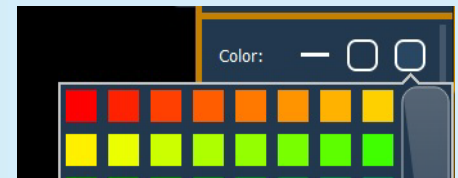
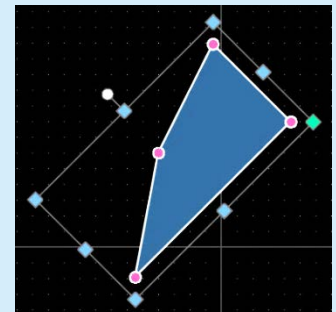
Up to six different fields of custom information can be displayed

- Target ID
- Target Name
- Text 1-4
- Intensity Bar
- Summary
- Color
- Status
- Fixture Type
- Label
- Intensity
- Color Swatch
- Focus
- Beam
- Prev Move
- Next Move

- **Abc or Font icon** - adjust the font type, size, color and style (bold, italic, underline)
- **Alignment icon** - position of the field

Make Field 1 the Target Name and make Field 2 the Target ID

The object might look something like the image to the right.



MOUSE NAVIGATION TOOLS

Use your mouse wheel

to zoom in and out

Right click and hold

to pan or drag the display

CTRL+C and CTRL+V

to copy and paste

Control and multiple clicks

to select multiple objects

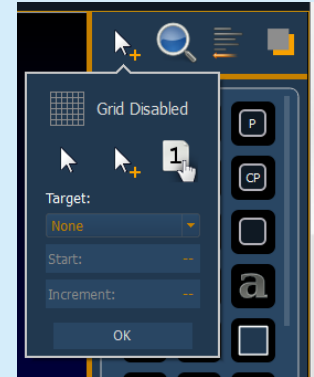
Zoom out to have more room

LAYOUT TOOL BAR

On the Layout Toolbar, click on the Pointer

Click on the Quick Layout Tool (arrow with a plus sign)

Target should be Channel and Start = 56, Increment = 1



OBJECT LIBRARY

Click on the Fixtures Library tab

Select the Selador – 3rd down on right side

On the workspace, click and drop 7 Seladors - preferably horizontally

Click on the red Done icon when finished

Back on Layout Toolbar, change back to Normal pointer (simple arrow)

ALIGNMENT

Click and drag to select all the Selador fixtures

Back on the Layout Toolbar, click on the Align tool

Select Align Middle and then select Distribute Horizontally

BACK TO OBJECT PROPERTIES

Click on the Object Fill Color icon

Click on both Link to Channel Color and Link to Channel Intensity

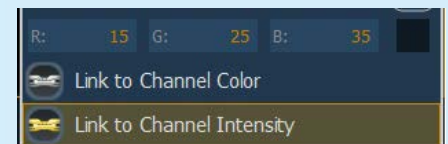


IMAGE LIBRARY TAB

Images can be imported into magic sheets for two different purposes: background images or as icons.

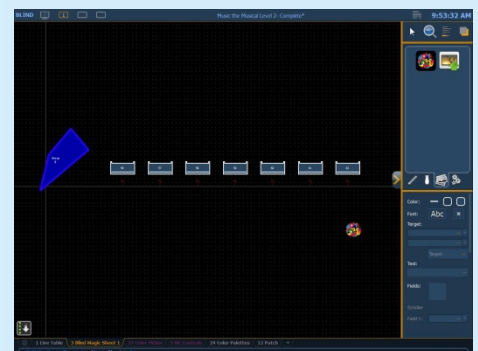
- **[Gobo]** – a direct link to the console gobo library
- Accepted image formats: .bmp, .gif, .ico, .jpg, .pbm, .pgm, .png, .ppm, .svg, .svgz, .tga, .tiff, .xbm, and .xpm.
- The maximum image size allowed is 1920 x 1920

Click in the Images Library

Select your favorite gobo from the gobo library to add to the Image Library

Click on it and add it to the Magic Sheet

The magic sheet might look something like the image to the right.



DISPLAY BEHAVIOR

Determines how the magic Sheet tab interacts with display functions

- **Normal Display** – takes focus like any Display Tab.
- **Channel Display** – uses **[Shift] & [Live]** to navigate to the tab.
- **Control** - will not take focus unless it is double-clicked.

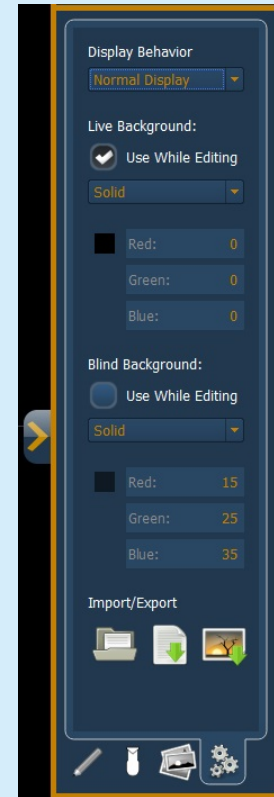
LIVE AND BLIND BACKGROUND SETTINGS

You can select Live and Blind backgrounds for magic sheets. To select the background to be used when editing, check the **{Use While Editing}** box.

- **Solid** – use Red, Green and Blue to select a color or click on the small square next to 'Red' to open a color picker, complete with saturation bar on the right. Note the X closes the color picker
- **Gradient** – select top and bottom colors and display will scale between the two colors
- **Image** -- click on the image icon to select a background image, set width, height and opacity, options for inverted or normal
 - Currently accepts image files: jpg, tif, bmp, png

Select Gradient in the pull-down menu

Choose a top color and a bottom color



LET'S ADD SOME OTHER OBJECTS

Click in the Object Library on the round rectangle – 6th down center

Drag and drop it on the worksheet, stretch it out longer

Make the target Color Palette 1

Make Field 1 the Target Name, font size to 20

Make Field 2 the Target ID, font size to 20

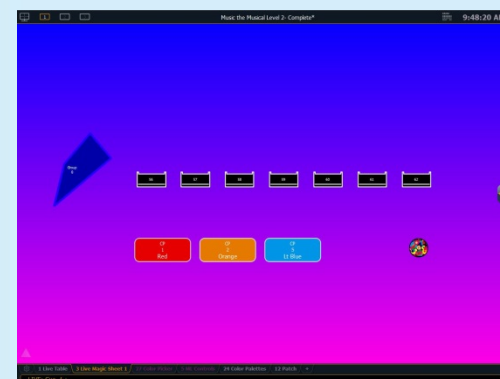
Make Field 3 the Label, font size to 25

Make the fill color red

CTRL+C and then CTRL+V twice

Make the copies: Color Palette 2 (Orange) and Color Palette 5 (Lt Blue)

The magic sheet might look something like the image to the right.



HOW IT WORKS IN LIVE

Close the Editor

Click on Group 8 object. **[Full] [Enter]**

Click on the Color Palette objects - red, orange, lt. blue

Roll down intensity wheel

now in Live

to bring cyc lights up

cyc changes color – also notice channel objects are changing color

channel objects slowly fade to black.



MAGIC SHEET EDITING

LET'S ADD AN EFFECT OBJECT

Open the Editor

Add a circle to the workspace – 7th down on left in Object Library

Make the fill color green

Make the target Effect 11

Make Field 1 the Target Name, font color black, bold and size to 20

Make Field 2 the Target ID, font color black, bold and size to 20

The magic sheet might look something like the image below.

Close the Editor

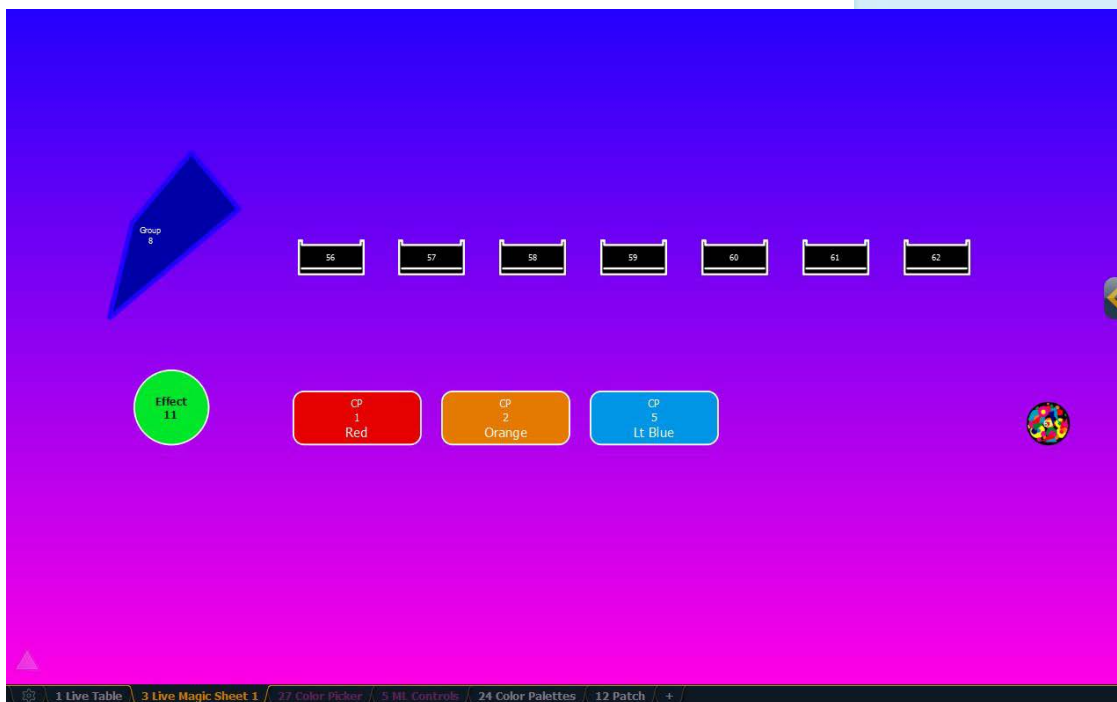
Click on Group 8 and roll to full

Click on the Effect object

now in Live

to bring cyc lights up

channels start running the color effect





NAVIGATION TOOLS

DISPLAY TOOLS

Click on the triangle in the lower left of the display

to open Magic Sheet navigation window

- **< ■ Add View >** – for each magic sheet, multiple views may be created, < and > allow for scrolling through the views.
- **Save Screenshot** – saves a png screenshot to a USB
- **Magic Sheet Browser** – opens a browser of thumbnail images to scroll through.
- **Lock / Unlock** – locks the magic sheet so it cannot be zoomed or panned. Note that the triangle turns into a lock.
- **Zoom to all** – zooms to show all objects
- **Zoom to selection** – zooms to show all selected objects
- **Center to selection** – centers the display on the selected objects without changing the zoom

Click on Zoom to all

Click on ■ Add View

zooms out to show all objects in MS1

Select Ellipsoidal, then click on Zoom to selection Click on ■ Add View

zooms in to show only selected item

Zoom to all

zooms out to show all objects

Select the Group Array and Zoom to selection Click on ■ Add View

Now use the < > to scroll through the 3 views

COMMAND-LINE NAVIGATION

{Magic Sheet} [1] [/] [2] [Enter] or {Magic Sheet} [1] [Part] [2] [Enter]

to go to a specific view - Magic Sheet 1, View 2

[Displays] {Magic Sheet} {1} [Enter]

command-line navigation

MULTI-TOUCH GESTURES

The following multi-touch gestures can be used with an external multi-touch touchscreen or the onboard monitors on Eos Ti and Gio. Multi-touch is not available on the on-board monitors of Eos.

- **Scroll** - touch with two fingers to move around the page.
- **Zoom Out** - touch with two fingers and then move your fingers toward each other.
- **Zoom In** - touch with two fingers and then move your fingers away from each other.
- **Zoom to All** - double tap with two fingers.
- **Jump to Previous View** - use three fingers to swipe upwards or to the right.
- **Jump to Next View** - use three fingers to swipe downwards or to the left.
- **Magic Sheet Browser** - tap with three fingers to open the browser.



Overview of the Shell

[Displays], Exit> and [Select] or press {OK}.

STARTING SCREEN

PRIMARY OR BACKUP

Primary is a mode for using a single console on a network where the primary output of data is from that single console. **Backup** requires a primary console be online to synchronize. In the event the primary goes offline, the Backup will intake all show data for use that it needs to assume control of the lighting system.

CLIENT OR OFFLINE

A **Client** console acts as an extension of the primary console, more like a remote controller, remote video station, or an expensive keyboard for a system. Whereas **Offline** mode puts the software in a state where there is no network activity, no control, and no connections to other consoles or any other network devices.

SETTINGS

- **General** Device Name, Time/Date, Use Shift Key as Eos Shift, Monitor Arrangement, Software Update
- **Network** Online status, IP Address, Protocols, Advanced Features, Wi-Fi Remote Enable
- **Maintenance** Deep Clear, Save Logs, Backup Show Archive, File Manager, Face Panel Test
- **Buttons** RPU/RVI Button Setup, Eos Ti/Gio Facepanel Buttons
- **Local I/O** DMX Speeds for local DMX outputs, Show Control Settings, External Device (Gadget) Configuration
- **RFR** RFR Base Station Frequency and Network ID

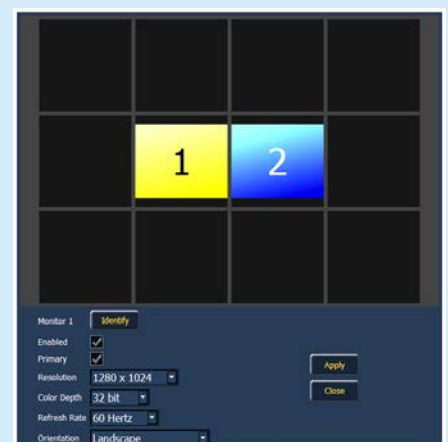
MONITOR ARRANGEMENT

The selected monitor will display in yellow. Monitors can be dragged to any of the surrounding black boxes to mimic actual monitor layout.

- **{Calibrate}** and **{Reset Calibration}** for the internal touchscreens
- **{Identify}** - displays the video port numbers that your monitors are connected to on the monitors to confirm where placement.
- **{Enabled}** - When checked, the monitor is available for use. Console displays the {Enabled} box checked for any monitors it recognizes.
- **{Primary}** - selects which monitor will display the Eos Configuration Utility and Central Information Area (CIA).
- **{Resolution}**, **{Color Depth}**, **{Refresh Rate}** and **{Orientation}** will help configure the monitors appropriately.
- **{Configure Touchscreens}** and **{ELO Settings}** for external touchscreens
- **{Apply}** - will save and use your settings.

SHUTDOWN

Clicking Shutdown will shut down the Eos console after a confirmation.



Important Concepts

CUE LIST OWNERSHIP

Eos family consoles support up to 999 cue lists, 200 of which can be active at a time. In a multiple-cue-list console, cue list ownership is an important concept and is determined by the cue from which a channel or parameter is currently receiving its value. In Live, a parameter is considered “owned” by a cue list when it is receiving its current value from that cue list.

When alternating playback between cue lists in sequential playback, a channel/parameter is “owned” by the last cue that provided it with a move instruction. For example, assume a channel is owned by cue list 1 and is at a tracked value. If a cue from another cue list is executed and provides a move instruction for the channel in the new cue, the channel is now owned by the second cue list. It will not return to cue list 1 until that cue list provides a move instruction for the channel.

This rule is not followed when executing an out-of-sequence cue. In general applications, the entire contents of the cue (both moves and tracks) will be asserted on an out-of-sequence cue. An out-of-sequence cue is any cue that is recalled via “Go To Cue”, a Link instruction, or manually changing the pending cue.

ASSERT

Assert is analogous to block, but is a Playback function - it defines how the cues interact with each other in regard to the concepts of Move Fade. Assert may be used to override this default behavior, allowing a cue list’s control over a channel to be restored, even when the channel’s data is tracked.

Assert is not only used in multiple cue list environments, it is useful in single list as well, as it is a way to force a tracked value to act as a move instruction on playback. Assert can be placed on a cue list, a cue, a channel or a parameter.

Example: Cue 10 is a blackout on a time of 0. Cue 9 starts some of the lights fading to zero. You run cue 10 before cue 9 is finished. Because some of the levels were already commanded to zero in cue 9, they will continue to run in cue 9’s time as they are not getting a new move instruction in cue 10. To get them to use cue 10’s time, you have to place an assert on cue 10 (blocking cue 10 will not do this).

REFERENCED DATA

Palettes are referenced data. This means that when included in presets, cues, or effects, changes to the contents of the palette are propagated into all of the places the palette is stored. Four types of palettes are available: Intensity, Focus, Color, and Beam.

Eos supports up to 1,000 palettes of each of the four types. Palettes can be recorded as decimal or whole numbers and are automatically filtered into IFCB categories. Color data cannot be placed in beam palettes, intensity cannot be included in focus palettes, and so forth. This makes the process of creating palettes easier, faster and less work. If you need to create a reference that will include a mix of IFCB information, presets can be used

UPDATE /TRACE

[Trace] works just as Track does, except it allows changes to be tracked backwards through the cue list, until it sees a move instruction. A trace will track into, but not beyond, a blocked instruction.

Following are some examples:

- **[Update] <Cue> [5] [Trace] [Enter]** -updates cue 5, and tracks changes backward until a move instruction is encountered. If the system is in track mode, the change will track forward in the cue list until the next move instruction or block. If in cue only mode, this has no impact on subsequent cues.
- **[Update] [Trace] [Cue Only/Track] [Enter]** - updates the selected cue and tracks changes backward until a move instruction is encountered. If the system is in track mode, the change is prohibited from tracking forward in the list. If in cue only mode, the change is allowed to track forward.

FILTERS

Filters can be used to modify what data is stored to a palette by a record action. The parameters that are active or filtered allow those parameters to be stored to record targets.

TO FILTER A PARAMETER:

Step 1: Press and hold the [Filter] button on the face panel.

Step 2: In the CIA, press the button for the parameter you wish to store.

Step 3: Release the [Filter] button. "Filter On" appears next to the parameter category button.

TO DETERMINE WHICH PARAMETER IS FILTERED IN THE CATEGORY:

Step 1: Press and hold the **[Filter]** button. All actively filtered parameters are highlighted in gray. You may need to press the arrow softkeys for that parameter category to page additional parameters in the category.

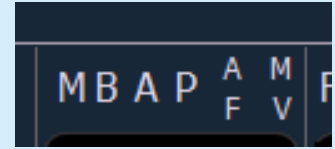
Filters are a toggle state. To remove filters, press and hold **[Filter]** and press the highlighted parameter buttons in the CIA to deactivate the filters, or use **{Clear Filters}**.

MAKE NULL

The **{Make Null}** softkey can be used to withhold parameter data from record or update actions in live, and remove parameter data from record targets in blind. **{Make Null}** is applied using channel selection and can impact entire channels, individual parameters, or parameter categories.

PSD FLAGS

Flags can be applied to cues to change specific behaviors. Flags can be set for “Mark - M”, “Block - B”, “Assert - A”, “Preheat - P”, “AllFade - AF” and “Moves - MV.”



M - Mark (Auto Mark Disabled)

- m A cue that has been set as a Mark cue, but has nothing marking in it.
- M A cue that has been set as a Mark cue, and has channels marking in it.
- R A Reference cue, which stores move instructions for channels that are being marked in a previous Mark cue.
- + A cue that is both a Mark cue (with or without marking channels) AND a Reference cue.
- x A broken Mark. Always appears in the cue directly before a Reference. A Mark gets broken when the channels become Active between their Mark cue and their Reference cue. When a Mark is broken, the software will use Auto Mark behavior to try to get the parameters marked in the cue immediately preceding the Reference cue.

M - Mark (Auto Mark Enabled)

- M A cue that the software is using for an Auto Mark, and has channels marking in it. The 'M' always appears in the cue directly before the Reference (which is not indicated when Auto Mark is enabled).
- D A cue where Auto Marks have been disabled, allowing live moves.

B - Block

- B Cue-Level Block
- b Discrete channel/parameter Blocks are present
- b Auto-Blocks are present
- I Intensity Block

A - Assert

- A Cue-Level Assert
- a Discrete channel/parameter Asserts are present

P - Preheat

- P A cue that is set for Preheating. The cue before it will use each channel's preheat value from patch.

AF - All Fade

- * Plays the cue in an All Fade mode, which sends any intensities that are not owned by the cue to zero.

MV - Moves

- D A cue with Dark Moves. There are channels that have an intensity of zero and non-intensity moves stored in this cue. This is where you might want to delete unnecessary moves.
- L A cue with Live Moves. There are channels that have an intensity of zero stored in the previous cue, and an intensity above zero and non-intensity moves stored in this cue. This is where you might want to Mark channels to a previous cue.
- + A cue where both Dark Moves and Live Moves are present.

Appendix 1 – Level 1 Channel Hookup

Channel	Universe	Address	Manufacturer	Type	Focus/Notes
1	1	1	Generic	Dimmer	Special - DSR Desk
2	1	2	Generic	Dimmer	Special - USC Solo
3	1	3	Generic	Dimmer	Special - DSL Study
4	1	4	Generic	Dimmer	Special - Piano
5	1	33	Generic	Dimmer	Special - Drums
6	1	31	Generic	Dimmer	Special - Vocals
7	1	32	Generic	Dimmer	Special - Guitar
8	1	35	Generic	Dimmer	Special - Piano Top Light
9	1	34	Generic	Dimmer	Special - Drums Top Light
11	1	5, 6, 7	Generic	Dimmer	High Side SR - Blue
12	1	8, 9, 10	Generic	Dimmer	High Side SL - Blue
13	1	11, 12, 13	Generic	Dimmer	High Side SR - Pink
14	1	14, 15, 16	Generic	Dimmer	High Side SL - Pink
15	1	17, 18, 19	Generic	Dimmer	High Side SR - Yellow
16	1	20, 21, 22	Generic	Dimmer	High Side SL - Yellow
21	1	23	Generic	Dimmer	Texture Wash
21 P2	1	71	Generic	Scroller	Scroller w/ custom load
22	1	24	Generic	Dimmer	Texture Wash
22 P2	1	72	Generic	Scroller	Scroller w/ custom load
23	1	25	Generic	Dimmer	Texture Wash
23 P2	1	73	Generic	Scroller	Scroller w/ custom load
24	1	26	Generic	Dimmer	Texture Wash
24 P2	1	74	Generic	Scroller	Scroller w/ custom load
25	1	27	Generic	Dimmer	Texture Wash
25 P2	1	75	Generic	Scroller	Scroller w/ custom load
26	1	28	Generic	Dimmer	Texture Wash
26 P2	1	76	Generic	Scroller	Scroller w/ custom load
31	1	101	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light
32	1	110	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light
33	1	119	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light
34	1	128	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light
35	1	137	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light
36	1	146	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light
37	1	155	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light
38	1	164	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light
39	1	173	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light
40	1	182	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light
41	1	191	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light
42	1	200	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light
43	1	209	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light
44	1	218	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light
45	1	227	ETC Fixtures	D40 Lustr+ – Direct Str	Top Light

Channel	Universe	Address	Manufacturer	Type	Focus/Notes
51	2	52	Color Kinetics	ColorBlast 12	Cyc Top
52	2	55	Color Kinetics	ColorBlast 12	Cyc Top
53	2	58	Color Kinetics	ColorBlast 12	Cyc Top
54	2	61	Color Kinetics	ColorBlast 12	Cyc Top
55	2	64	Color Kinetics	ColorBlast 12	Cyc Top
56	2	67	Color Kinetics	ColorBlast 12	Cyc Top
57	2	70	Color Kinetics	ColorBlast 12	Cyc Top
58	2	73	Color Kinetics	ColorBlast 12	Cyc Top
59	2	76	Color Kinetics	ColorBlast 12	Cyc Top
60	2	79	Color Kinetics	ColorBlast 12	Cyc Top
61	2	82	Color Kinetics	ColorBlast 12	Cyc Top
62	2	85	Color Kinetics	ColorBlast 12	Cyc Top
63	2	88	Color Kinetics	ColorBlast 12	Cyc Top
64	2	91	Color Kinetics	ColorBlast 12	Cyc Top
65	2	94	Color Kinetics	ColorBlast 12	Cyc Top
66	2	97	Color Kinetics	ColorBlast 12	Cyc Top
67	2	100	Color Kinetics	ColorBlast 12	Cyc Top
101	1	301*	Robe	Robin 300 LEDWash – M3	
102	1	321	Robe	Robin 300 LEDWash – M3	
103	1	341	Robe	Robin 300 LEDWash – M3	
104	1	361	Robe	Robin 300 LEDWash – M3	
105	1	381	Robe	Robin 300 LEDWash – M3	
106	1	401	Robe	Robin 300 LEDWash – M3	
111	3	1	VariLite	VL3500 Spot – VL3500 Spot	FOH
112	3	32	VariLite	VL3500 Spot – VL3500 Spot	FOH
113	3	63	VariLite	VL3500 Spot – VL3500 Spot	FOH
114	3	94	VariLite	VL3500 Spot – VL3500 Spot	FOH
115	3	125	VariLite	VL3500 Spot – VL3500 Spot	FOH









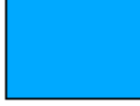


* Think Offset!!

Appendix 2 – Level 2 Hookup Additions

Channel	Universe	Address	Manufacturer	Type	Focus/Notes
71	2	1	Color Kinetics	ColorBlast 12	Cyc Bottom
72	2	4	Color Kinetics	ColorBlast 12	Cyc Bottom
73	2	7	Color Kinetics	ColorBlast 12	Cyc Bottom
74	2	10	Color Kinetics	ColorBlast 12	Cyc Bottom
75	2	13	Color Kinetics	ColorBlast 12	Cyc Bottom
76	2	16	Color Kinetics	ColorBlast 12	Cyc Bottom
77	2	19	Color Kinetics	ColorBlast 12	Cyc Bottom
78	2	22	Color Kinetics	ColorBlast 12	Cyc Bottom
79	2	25	Color Kinetics	ColorBlast 12	Cyc Bottom
80	2	28	Color Kinetics	ColorBlast 12	Cyc Bottom
81	2	31	Color Kinetics	ColorBlast 12	Cyc Bottom
82	2	34	Color Kinetics	ColorBlast 12	Cyc Bottom
83	2	37	Color Kinetics	ColorBlast 12	Cyc Bottom
84	2	40	Color Kinetics	ColorBlast 12	Cyc Bottom
85	2	43	Color Kinetics	ColorBlast 12	Cyc Bottom
86	2	46	Color Kinetics	ColorBlast 12	Cyc Bottom
87	2	49	Color Kinetics	ColorBlast 12	Cyc Bottom
121	2	351	VariLite	VL2000 Wash – Enhanced 16B	Over-stage
122	2	366	VariLite	VL2000 Wash – Enhanced 16B	Over-stage
123	2	381	VariLite	VL2000 Wash – Enhanced 16B	Over-stage
124	2	396	VariLite	VL2000 Wash – Enhanced 16B	Over-stage
131	2	201	Martin	Mac 700 Profile – Ext	Over-stage
132	2	232	Martin	Mac 700 Profile – Ext	Over-stage
133	2	263	Martin	Mac 700 Profile – Ext	Over-stage
134	2	294	Martin	Mac 700 Profile – Ext	Over-stage

Appendix 3 – Scroll Setup

Generic Scrolls (Channels 21 – 26)

1	Open Frame	
2	R10 – Medium Yellow	
3	R27 – Medium Red	
4	R339 – Broadway Pink	
5	R351 – Lavender Mist	
6	R359 – Medium Violet	
7	R370 – Italian Blue	
8	R38 – Light Rose	
9	R65 – Daylight Blue	
10	R85 – Deep Blue	
11	R90 – Dark Yellow Green	

Appendix 4 – Show File Data

Groups, Palettes and Presets are included in the show file:

Group #	Label	Channels
1	Specials	1 thru 3
2	Band	4 thru 9
3	Blue Sides	11 + 12
4	Pink Sides	13 + 14
5	Yellow Sides	15 + 16
6	Texture	21 thru 26
7	Top Lights	31 thru 45
8	LED Cyc Top	51 thru 67
9	LED Cyc Bottom	71 thru 87
11	Robin 300s	101 thru 106
12	VL3500s	111 thru 115
13	VL2000s	121 thru 124
14	Mac 700s	131 thru 134
16	All movers	G11 thru G14
20	Cyc In	Cyc In
21	Cyc Out	Cyc Out
25	CP Group	G7 + G8 + G11 thru G14
30	Area lights in a cross-stage order	1, 4, 2, 5, 3

Color Palette #	Label	Groups Used
1	Red	G25
2	Orange	G25
3	Yellow	G25
4	Green	G25
5	Light Blue	G25
6	Dark Blue	G25
7	Magenta	G25
Focus Palettes #	Label	
1	DSR Desk	G12
2	USC Solo	G12
3	DSL Study	G12
4	Vocals (USR Platform)	G12
5	Guitar (USL Platform)	G12
Beam Palettes #	Label	
1	All Beam parameters	G12
2	Just Gobo Select	G12
3	Just Zoom	G12
Preset #	Label	
1	USC Red (Solo In Color)	G12
5	Movers – Intensity	G12
6	Movers – Intensity and Beam	G12



Corporate Headquarters ■ 3031 Pleasant View Road, P.O. Box 620979, Middleton, Wisconsin 53562-0979 USA ■ Tel +608 831 4116 ■ Fax +608 836 1736
London, UK ■ Unit 26-28, Victoria Industrial Estate, Victoria Road, London W3 6UU, UK ■ Tel +44 (0)20 8896 1000 ■ Fax +44 (0)20 8896 2000
Rome, IT ■ Via Pieve Torina, 48, 00156 Rome, Italy ■ Tel +39 (06) 32 111 683 ■ Fax +44 (0) 20 8752 8486
Holzkirchen, DE ■ Ohmstrasse 3, 83607 Holzkirchen, Germany ■ Tel +49 (80 24) 47 00-0 ■ Fax +49 (80 24) 47 00-3 00
Hong Kong ■ Rm 1801, 18/F, Tower 1 Phase 1, Enterprise Square, 9 Sheung Yuet Road, Kowloon Bay, Kowloon, Hong Kong ■ Tel +852 2799 1220 ■ Fax +852 2799 9325
Service: (Americas) service@etcconnect.com ■ (UK) service@etceurope.com ■ (DE) techserv-hoki@etcconnect.com ■ (Asia) service@etcasia.com
Web: www.etcconnect.com ■ Copyright © 2015 ETC. All Rights Reserved. ■ Product information and specifications subject to change.
4310M4212-2.3.0 ■ Rev. A ■ Released 2015 ■ ETC intends this document to be provided in its entirety.