# Element Console Programming

# Level 2: Enhanced Skills

# Workbook

V2.5.0 Rev. A

www.etcconnect.com/education

# Table of Contents

# 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 double-hit [Address/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 softkeys {Favorite}, {Manfctr}, and {Search} |
| **Find {High End Systems} and then  {Studio Color 575}** | fixture type added to command line and display |
| **[At] [2] [/] [1] [Enter]** | completes the patch |
| **[At] [Enter] [Enter]** | clears the patch |
| **[At] [2] [/] [1] {Offset} [20] [Enter]** | patches the fixtures with an easier starting number |

## Patch Exercise - see Appendix 1 & 2

### CLEAR PATCH FROM BROWSER

**[Displays]**, in the Browser, go to **Clear.** Select **Clear Patch** and then press **[Select]** 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] {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%.

| | |
|---|---|
| **Back in Patch, Attributes,  [1] {Proportion} [125] [Enter]** | applies a 125% proportion to channel |
| **[1] {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 (MV) 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] [0ut]** and Intensity Master operations. (not Park)

### {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 |

# 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

## Scroller Exercise - see Appendix 3

| | |
|---|---|
| **In Patch, [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.*

When done, go to Live and check your scroller.

## 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] [Enter]  {Attributes} {Gobo Wheel}** | selects channel and opens the Wheel Picker in the CIA for wheel selection |

### {SHUTTER ORDER}

Invert the shutter order or rotate the order using the arrow buttons. Only displayed if fixture has shutters.

| | |
|---|---|
| **{Shutter Order}** | opens the Shutter Order display |

### {COLOR WHEEL}

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

| | |
|---|---|
| **In [Patch]    [131] [Enter] {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. Selected items will turn gray.

**Merge Channels** - When selected, channels from cues, submasters, groups, and other channel targets are added to any existing channel targets of that same type. When not selected, those channels override any existing channels in the channel targets of the same type.

### 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).
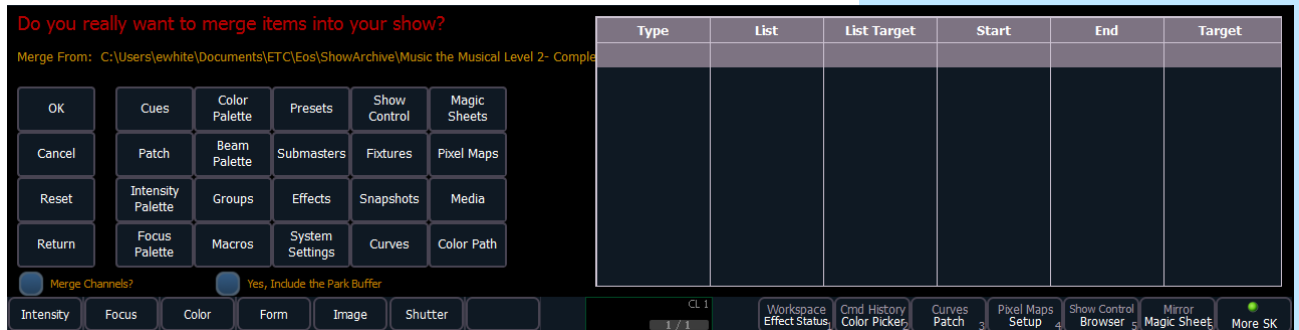


| {Groups} | selects what you want to merge |
|---|---|
| {Start} [1] | selects the starting number of the range from the stored show |
| [Page▶] to the End column, [8] | sets the ending number of the range |
| {Target} [101] | sets starting location in the current show - blank merges in as same numbers |
| {Groups} [12] [Page▶] [15]        or   {Groups} [12] [Thru] [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 - 3 to the target group |
| **OR   [Group] [Group]     [Group] [102] [Enter]   [4] [Thru] [9] [Enter]** | creates 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] [103] [Enter]** | creates group 103 |
| **[Shift]&[/] [11] [+] [12] [Shift]&[/]   [Shift]&[/] [13] [+] [14] [Shift]&[/] [Shift]&[/] [15] [+] [16] [Shift]&[/]  [Enter]** | puts sidelights in  sub groups |
| **[Live]       [Group] [103] [Full] {ChanCheck} [Enter]      [Next]…** | does a channel check with subgroups |

## CREATE GROUPS USING OFFSET

| | |
|---|---|
| **In [Live],   [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] Cyc In [Enter]** | |
| **[Group] [Group]     [Group] [20] [Copy to] [21] [Enter]** | in Group Display, copies the group |
| **{Reverse} [Enter]     [Label] Cyc 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 |
| 12 | VL3500 | 111 thru 115 |

| Group # | Label | Channels |
|---|---|---|
| 13 | VL2000 | 121 thru 124 |
| 14 | Mac 700 | 131 thru 134 |
| 16 | All movers | G11 thru G14 |
| | | |
| 20 | Cyc In | (51 67)(52 66)(53 65)(54 64)(55 63)(56 62)(57 61)(58 60)(59) |
| 21 | Cyc 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 | - | 4 thru 9 |
| 103 | - | (11+12) (13+14) (15+16) |
| | | |

# Non-Intensity Parameters

## NON INTENSITY PARAMETER CONTROL

Pressing **[ML Control]** will open up the ML Control display in the CIA. You will need to have a moving light selected to properly view this display. The display will change based on the device selected.

Keep in mind the NIPs (non-intensity parameters). They are divided into four major parameter categories (IFCB):

- **I = Intensity** . . . Level or output of fixture
- **F = Focus** . . . Pan and Tilt positioning
- **C = Color**. . . All color parameters
- **B = Beam** . . . Any 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]**

Multiple ways to change color:

- Select the frame desired from the scroller tiles
- Tap the header **{Color}** or the word **'Scroller'** – puts it on the command line – then press **[11]** for frame 11 and **[Enter]**
- To go to a particular frame – **[Frame] [5]** for frame 5
- Use the Color Picker – will get as close as it can with gels
- Use the parameter tile on the CIA, **{Scroller} [9] [Enter]**

## REVIEW COLOR SELECTION WITH LEDS

**[Group] [7] [Full] [Rem Dim] [Enter]**

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

## COLOR SELECTION WITH OTHER FIXTURES

**[Group] [14] [Full] [Rem Dim] [Enter]**

- Use the virtual 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
- Tap the Color or Color Select encoder label – **[Color Select] [5]***
- Use the Color Select tiles to select the color desired
- 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 |
| 4 | Rosco Other |
| 5 | Rosco Roscolux |
| 6 | Rosco |

# 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

| | |
|---|---|
| **[Live]    with ML Controls open** | |
| **[Group] [11] [Full] [Enter] , then [Focus]  and play with pan and tilt** | notice all six fixtures move as a group |

- Focus can be set manually be clicking on the gold dot in the middle of the Pan/Tilt graph and dragging it around.
- Notice all four fixtures move as a group

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

| | |
|---|---|
| **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 |

- For Coarse and Fine:  use the Virtual encoders (wheels). Click and hold close to the center line for slow movement, further away for faster movement.

### FLIP

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

| | |
|---|---|
| **[101] [Enter]  and pan all the way in one direction** | to reach the limits of the fixture |
| **Click or press {Flip}** | and watch the fixtures reset |
| **Click or 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 Tilt label,  {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 virtual encoder
- Use the encoder softkeys:  **{Min}, {Max}**
- Click on the Zoom label, **{Zoom} {35} [Enter]**
- Click on the home button under {**Zoom}**
  *Note Zoom is in degrees. Look at the display.*

#### IMAGE - GOBO SELECT

- Under Gobo Select, click on the desired pattern
- Click on the Gobo Select label, **[3] [Enter]**
- Under **{Mode}** select the desired 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 Gobo Index/Speed.

| | |
|---|---|
| **[Group] [12] {Image} [Home] [Enter]** | removes the form and image attributes |

#### SHUTTER

- Use the shutter encoders for Thrust and Angle
  - mapped based on Shutter Order in Patch Attributes
- Click on the Shutter label and specify specific angle, **[30] [Enter]**

### HOME

**{Home}** returns the selected target to its default position. On the ML Control Display, **{Home}** is a self-terminating command. No Enter required.

**[Clear] [Sneak] [Enter]**

| | |
|---|---|
| **[Group] [12] [Full] [Enter], tilt up on cyc, in orange, with gobo, zoom out** | set levels |
| **[111] [Home] [Enter]** | homes all non-intensity data for channel |
| **[112] [Shift]&[Focus] [Home] [Enter]** | homes just the focus data for channel |
| **[113] Shift]&[Form] [Home] [Enter]** | homes just the sub-category form (zoom) |
| **[114] {Gobo Select} [Home] [Enter]** | homes just the parameter 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 → action.

### USING SNEAK

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

*To put categories on the command line, use either the labels in the ML Control or the tiles in the CIA area.*

## ▶ COPY TO AND RECALL FROM

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

| | |
|---|---|
| **[Clear] [Sneak] [Enter]** | |
| **[131] [Full] [Enter], tilt upstage, zoom out, in orange, add gobo and zoom out** | set levels |
| **[131] [Copy To] [132] [Thru] [134] [Enter]** | copies all values to other channels |
| **[132] [Thru] [134] [-] [Intensity] [Sneak] [Enter]** | |

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

| | |
|---|---|
| **[132] [Thru] [134] [Recall From] [131] [Enter]** | copies all info from one channel to other channels |
| **[Select Last] [Home] [Enter]** | |
| **[131] [Shift]&[Intensity] &[Focus] [Copy to] [132] [Enter]** | copies just intensity and focus |

# Palettes

## REFERENCED DATA

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.

### 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 |
| Press & Hold [Data] | to see actual values 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] [Thru][Group] [9] [+] [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] [Frame] [Frame] [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] [Frame] [Frame] [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 |

Remember: to view reference labels, right click or tap on the display tab, select the bottom option, and then check the Show Reference Labels option.

**[Shift]&[Label] -** (a maintained press) - toggles between default view of referenced data and alternate view. Keep **[Shift]** depressed to page.

**[Shift]&[Label] [Shift]&[Label]** - double press to lock reference labels on. Press **[Shift] + [Label]** again to unlock.

## Focus Palette Exercise

Record three more Focus Palettes using Group 12:

| FP1 | DSR Desk |
|---|---|
| FP2 | USC Lead |
| 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 |
| **{Zoom} {Max}      {Gobo Select} [5] [Enter]** | zoom fixtures full and in colored dots |
| **[Clear] {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 |
| **{Zoom} {Max}      {Gobo Select} [5] [Enter]** | zoom fixtures full and in colored dots |
| **[Clear] {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.

# ▶ Direct Selects

## To open direct selects:

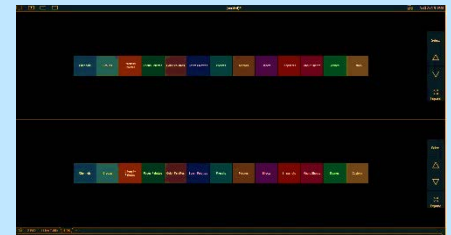**Click on Add-a-Tab (the {+} sign), then on the DS Direct Select Module**    opens Direct Select display

## DS Layout

When open, there are two banks of targets by default.

**Hit {Color Palettes} and {Presets}**

These may all be configured from the Configuration Menu.

**Right click on the tab or press the Gear tab all the way to the left**

### Configuration Menu Options

**# of Banks** – select a number of different target banks

**Current Bank** – which bank are you editing

**Layout** – select banks of 25, 50, 100, or 200

- **Custom Rows/Columns** – can add rows or columns

**Control Buttons -** select which buttons are displayed on the screen

- **Position** – where do you want to place the control buttons
- **Use Record** - displays the **{Record}** button
- **Use Select** - displays the **{Select}** button on the tab
  - **Select** – to change the Direct Select target from this window
- **Use Flexi** - displays the **{Flexi}** button on the tab
  - **Flexi** – toggles Flexi on and off from this window
- **Use Expand** - displays the **{Expand}** button
- **Use Arrows** - displays the page up and down arrows
- **Use Millennial Buttons** - displays the 100 and 1000 target buttons

**Other**

- **Increment** – display targets by whole number, tenths or hundredths
- **Skip Empty Flexi Space** – shows a visual break instead of a full button space between recorded targets
- **Use Color Swatch** - displays a color tag that previews the color recorded in the Color Palette
- **Maximize Button Size** – similar to Fit to Screen – depending on layout, allows buttons to expand to fill the screen

**Defaults**

You can save your settings as a default state. The default is identified with parentheses.

- **Reset to Default** - restores the settings to the default state.
- **Set Current as Default** - uses the current settings to create a default state.
- **Reset to Eos Default** - Restores the settings to Eos factory defaults.
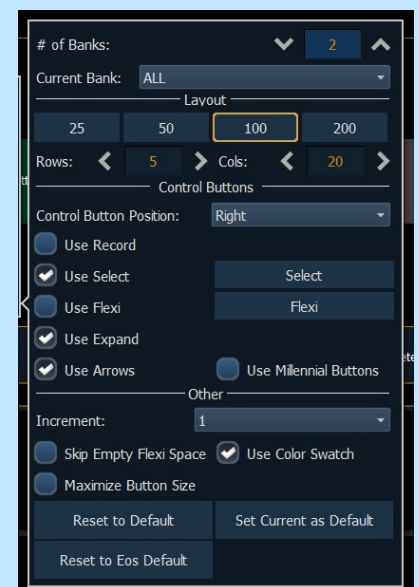
# ▶ Auto-Mark

Sometimes referred to as Move while Dark or Move before Bright, AutoMark is a default function of the console. Non-intensity parameter transitions will occur in the cue *immediately preceding* the cue in which the changes are stored.
Auto-Marks will execute using the time of the cue in which the moves occur.  On a "per-channel" basis, an AutoMark does not occur until:

- Any parameter delay time has elapsed and
- The intensity has reached zero and the parameter has completed any previous movement.

Auto-Marked cues are indicated by an "M" in the flag column of the playback status display

| | |
|---|---|
| **[Go To Cue] [Out]        [Clear] [Sneak] [Enter]        [Record] [10] [Enter]** | |
| **[Group] [1] [Full] [Enter]    [Record] [Next] [Enter]** | turns specials on |
| **[Group] [12] [Full] [Enter]  [FP3] [Enter]        [Record] [Next] [Enter]** | inserts a mark for the movers in cue before, notice 'M' |
| **[Go To Cue] [Out], run the cues and watch the movers** | note where the movers pan and tilt |

*\* Notice the green 'MK' on the channel intensity in the marked cues*

## ▶ TURN OFF AUTOMARK ON A PER-CUE BASIS

It is possible to override AutoMark on a per-cue (or cue part) basis. A "D" is displayed when AutoMark has been disabled.

| | |
|---|---|
| **[Cue] [12] {AutoMark Off} [Enter]** | turns Auto-Mark off for cue 12, notice 'D' and 'L' in Flags columns |
| **[Go To Cue] [Out], run the cues again and …** | now you see a live move |

This is a toggled state, and to turn AutoMark back on for that cue, hit **{AutoMark off}** again.

| | |
|---|---|
| **[Cue] [12] {AutoMark Off} [Enter]** | turns Auto-Mark on, notice 'M' |

## 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 [15] [Enter]** | notice new duration on cue 11 |

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

When you enter a Mark Time in Setup, all NPs that are marked through Auto-Mark will use this time.

# CUE ATTRIBUTES

## NEW CUE SOFTKEYS

When **[Cue]** is pressed, a softkey called **{Attributes}** will display. There are several new softkeys. Let's look at **{Scene}** and **{Note}**.

## SCENE

Scenes are a cue organization tool that provide a visual identifier for breaks in the show. Scenes allow for quick cue list navigation without needing to remember a cue.

### CREATING A SCENE BREAK

| | |
|---|---|
| **[Cue] [1] {Attribute} {Scene}** | |
| **The virtual alphanumeric keyboard opens:     Act 1 [Enter]** | adds a Scene marker to Cue 1 |

### SCENE END

| | |
|---|---|
| **[Cue] [4] {Attribute} {Scene End} [Enter]** | adds an End of Scene marker to Cue 4 |

Notice as you page up and down on the cue list (PSD), the scene break will stay locked as long the cue list is in that scene. Brackets around the label show that the console is not actually seeing the cue that scene is attached to.

### CUE RANGE SCENE

| | |
|---|---|
| **[Cue] [5] [Thru] [10] {Attribute} {Scene}  Act 2 [Enter]** | |
| **Notice the line above Cue 5 and below Cue 10** | |
| **[Cue] [12] [Thru] [14] {Attribute} {Scene}  Act 3 [Enter]** | |

### NAVIGATION TO SCENE

| | |
|---|---|
| **[Go To Cue] {Scene}* {Act 2} [Enter]** | goes to cue at the top of that scene |

\*    The CIA opens and shows all of the different scene breaks created.

### REMOVE A SCENE BREAK

| | |
|---|---|
| **[Cue] [5] {Attribute} {Scene} [Label]  [Enter]** | to remove a scene |
| **[Cue] [10] {Attribute} {Scene End} [Enter]** | to remove a scene end |

### UPDATING A SCENE

The {Scene End} softkey can also be used when updating the cues in a scene. For example, [Update] <Cue> [1] [Thru] {Scene End} will put the last cue of that scene on the command line.

## NOTES

Cues can have notes attached to them. This is more of a long form phrase instead of a label which is generally a short reminder of what a cue is doing.

| | |
|---|---|
| **[Cue] [5]  {Attribute} {Note}    Carol walks in USL   [Enter]** | to add a note |

Notice in the label field of the PSD, a little plus (+) mark has appeared. Hover over that label field to see the note as a floating dialog box.

In the PSD configuration menu, you can also add notes as a column in the PSD.  Or check the display notes option and a dialog box appears near the bottom of your PSD which shows the notes of the current cue.

# ▶ 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, and submasters.

### UPDATE

| | |
|---|---|
| **[Go To Cue] [Out]    and be in Live Table View** | |
| **[Group] [12] [IP1] [FP1] [CP1] [BP1]** | sets levels |
| **[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]    Note the prompt above the command line      [Enter]** | updates the cue and all references stored to that cue – CP1 has been modified |

### MAKE ABSOLUTE – A {SOFTKEY}

If you want to record your changes to the cue without updating the references, **{Make Absolute}** updates the background cue and converts all levels to absolute values, thereby removing any references.

| | |
|---|---|
| **[Undo]** | brings back modified cue |
| **[Update]   {Make Abs}  [Enter]** | changes in cue, not palette |
| **Press & hold [Data]** | values modified at cue level, palette unaffected |

### OTHER UPDATE EXAMPLES

| | |
|---|---|
| **[Update] {Trace} [Enter]** | tracks current levels backward until initial move is found, changes from that point |
| *Trace softkey appears after you press [Update]* | |
| **[Update] <Cue> [x] [Cue Only/Track] [Enter]** | updates changes in specified cue only and creates move instructions if needed in next cue |
| **[Update] <Cue> [x] {Trace} [Cue Only/Track] [Enter]** | updates the selected cue and tracks changes backward until initial move is found |
| **[Update] [Sub] [x] [Enter]** | updates sub to include changes in live output only for channels already in sub |
| **<Channel list> [Update] [Sub] [x] [Enter]** | adds only specified channels to sub |

**[Shift]&[Clear]** will clear the command line.
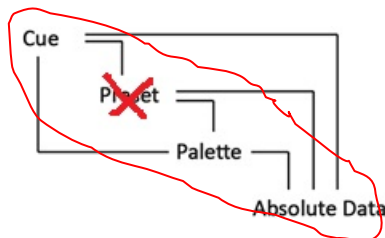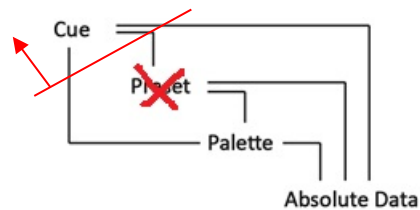
Update All                              Update Make Absolute

# 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)

**{Cycle Time}** – time to complete one full iteration of an effect, modifying the cycle time changes the timing values proportionally within the effect itself

### 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     [Fader Controls] [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} [1] [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

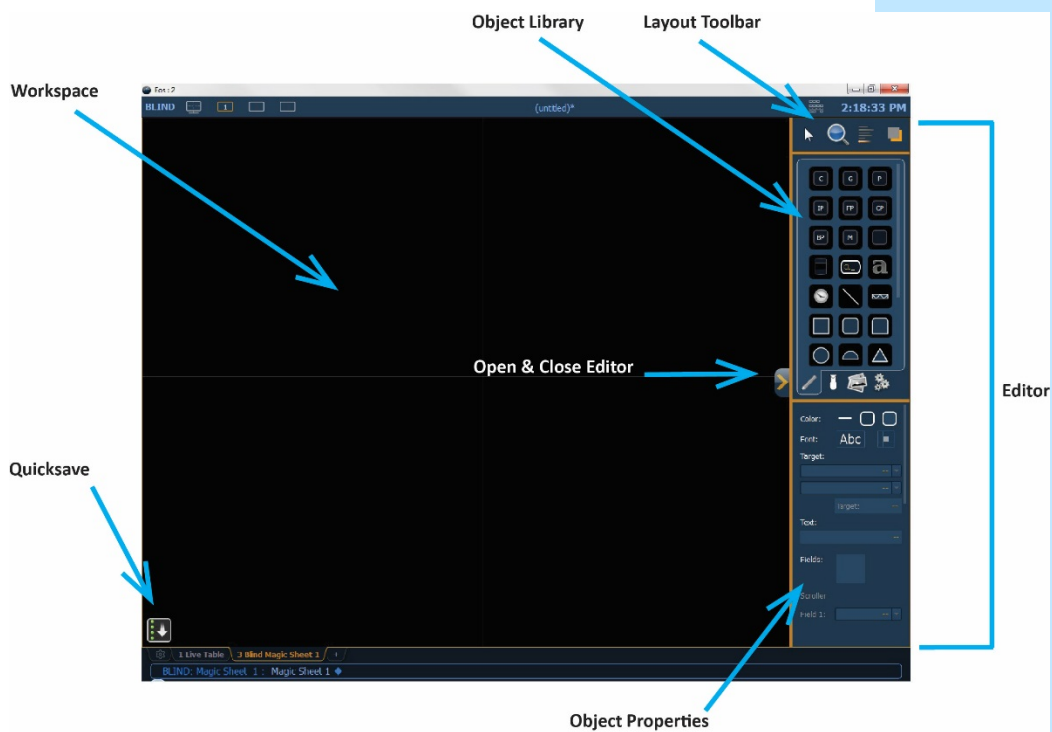**Use Add-a-Tab (the {+} sign)**

---

**[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.

Object Library    Layout Toolbar

Workspace

Open & Close Editor

Editor

Quicksave

Object Properties

### 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**

**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

- Address
- Channel (default)
- Cue
- Fader
- Group
- Macro
- Pixel Map
- Snapshot
- User
- Beam Palette
- Color Palette
- Effect
- Focus Palette
- Intensity Palette
- Magic Sheet
- Preset
- Submaster
- 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.

**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 1-10, Text Gel
- Color Swatch
- Focus
- Beam
- Prev Move / Next Move
- Port Offset
- Fixture Type
- Label
- Intensity/ Intensity Bar
- Summary
- Color
- Status
- Channel /Address
- DMX /DMX Bar

- **Abc or Font icon** - adjust the font type, size, color and style (bold, italic)
- **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.
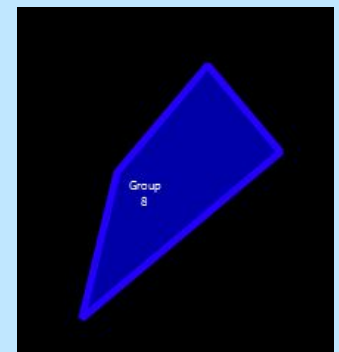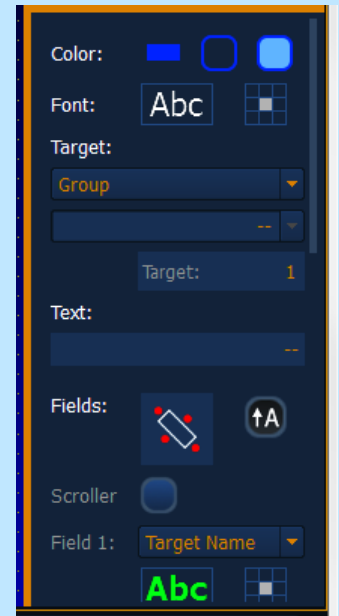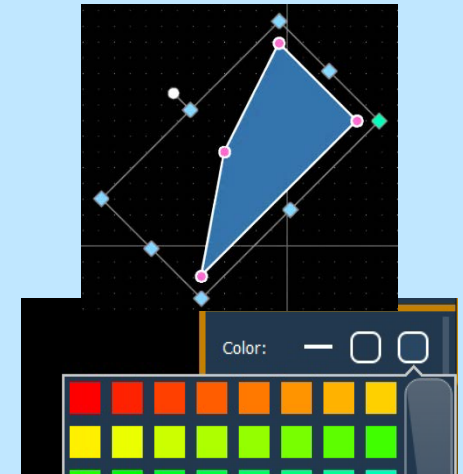
## MOUSE NAVIGATION TOOLS

| | |
|---|---|
| **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 |
| **Left click and hold   - left to right or right to left** | 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)**
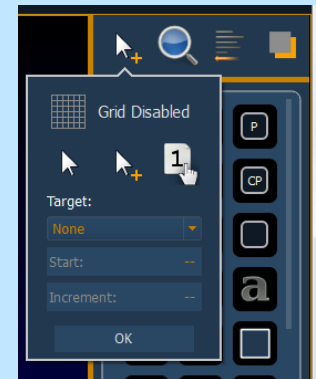
## ALIGNMENT

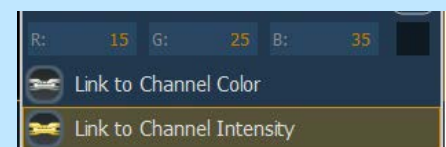**Click and drag to select all the Selador fixtures**

**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.
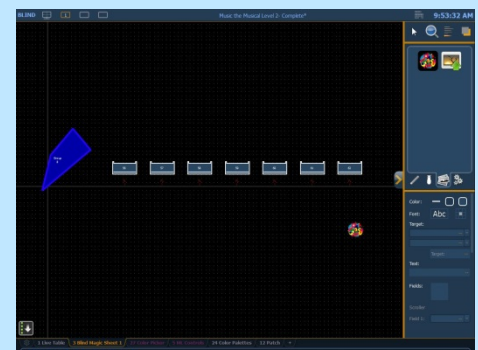
### DISPLAY BEHAVIOR

Determines how the magic Sheet tab interacts with display functions

- **Normal Display** – takes focus like any Display Tab**.**
- **Channel Display** – uses **[Shift] & [Live]** to toggle to just Live tabs.
- **Control** (Control Tab) – 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**
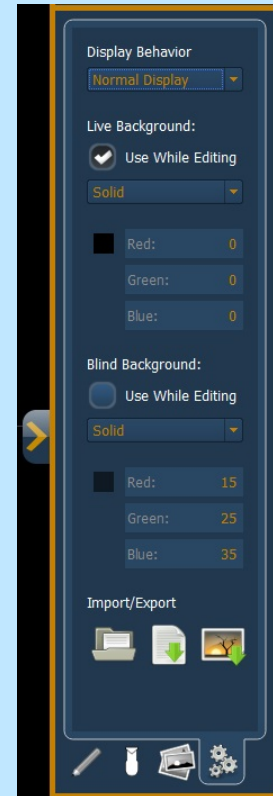
### LET'S ADD SOME OTHER OBJECTS

**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**

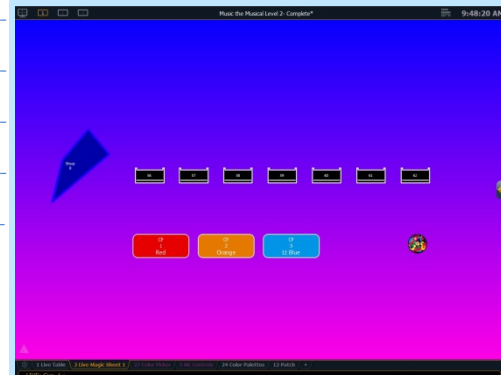**Make Field 2 the Target ID, font size to 20**

**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** | now in Live |
| **Click on Group 8 object.    [Full] [Enter]** | to bring cyc lights up |
| **Click on the Color Palette objects -  red, orange, lt. blue** | cyc changes color – also notice channel objects are changing color |
| **Roll down intensity wheel** | 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**

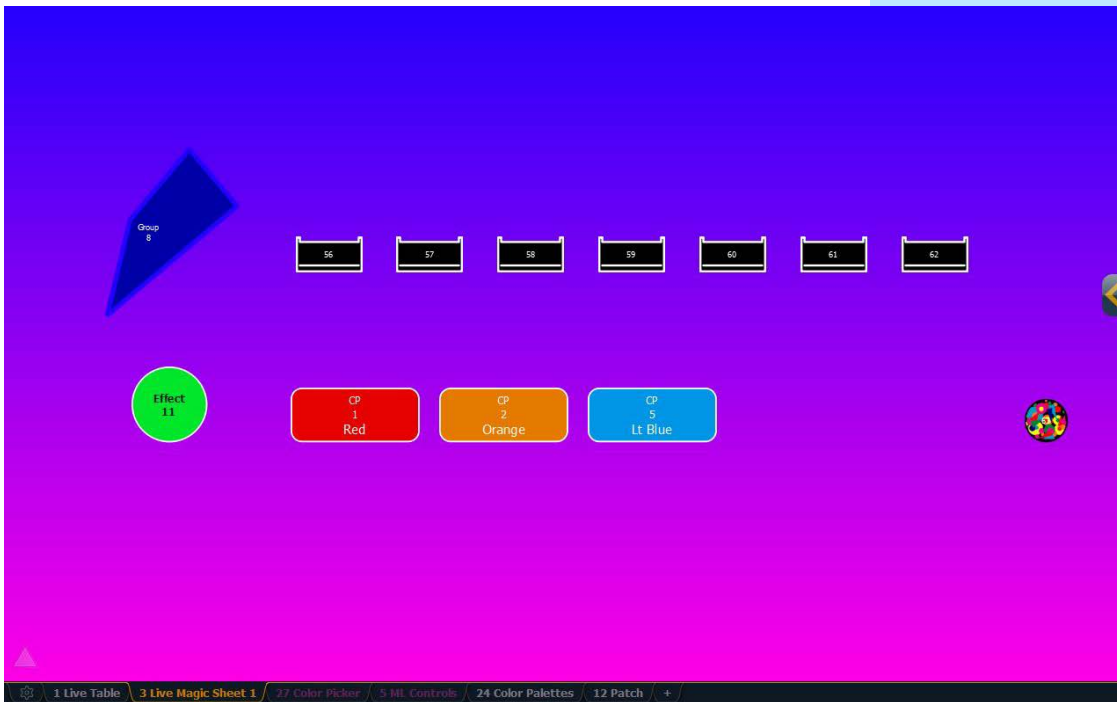The magic sheet might look something like the image below.

**Close the Editor**                                  now in Live

**Click on Group 8 and roll to full**          to bring cyc lights up

**Click on the Effect object**                    channels start running the color effect

# NAVIGATION TOOLS

## DISPLAY TOOLS

| **Right click or tap on the Magic Sheet tab** | to see configuration settings |
|---|---|

You can also click on the Gear tab for the same options.

- **< ■ Add View >** – for each magic sheet, multiple views may be created, then < and > allow for scrolling through the views.
- **Save Screenshot** – saves a png screenshot to a USB
- **Magic Sheet Browser** – opens a filmstrip view of magic strips 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 on magic sheet
- **Zoom to selection** – zooms to show all selected objects
- **Center to selection** – centers the display on the selected objects without changing the zoom
- **Show Referenced Labels** - labels displayed rather than target number

| | |
|---|---|
| **Click on Zoom to all                                Click on ■ Add View** | zooms out to show all objects in MS1 |
| **Select Group 8 object, 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 3 Color Palette objects 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 other Eos family consoles.

- **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 [Enter], then {OK}, [Select] or [Enter].

## 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.
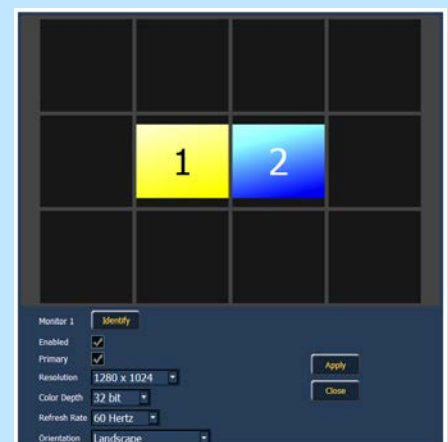
# Important Concepts

### 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.

### 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 family consoles support 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:

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", "Preheat - P", "Moves - MV" and 'Release – R."



> 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
>
> P - Preheat
>
> > P  A cue that is set for Preheating. The cue before it will use each channel's preheat value from patch.
>
> 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.
>
> R - Release
>
> > R  Release behaves like Make Null, but it also releases the channel and parameter data to its background state, if one is available, or fades out the intensity instead.

# 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 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 52 | 2 | 55 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 53 | 2 | 58 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 54 | 2 | 61 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 55 | 2 | 64 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 56 | 2 | 67 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 57 | 2 | 70 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 58 | 2 | 73 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 59 | 2 | 76 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 60 | 2 | 79 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 61 | 2 | 82 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 62 | 2 | 85 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 63 | 2 | 88 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 64 | 2 | 91 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 65 | 2 | 94 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 66 | 2 | 97 | Philips Color Kinetics | ColorBlast 12 | Cyc Top |
| 67 | 2 | 100 | Philips 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 |
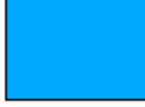
*  *Think Offset!!*

# Appendix 2 – Level 2 Hookup Additions

| Channel | Universe | Address | Manufacturer | Type | Focus/Notes |
|---|---|---|---|---|---|
| 71 | 2 | 1 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 72 | 2 | 4 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 73 | 2 | 7 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 74 | 2 | 10 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 75 | 2 | 13 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 76 | 2 | 16 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 77 | 2 | 19 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 78 | 2 | 22 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 79 | 2 | 25 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 80 | 2 | 28 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 81 | 2 | 31 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 82 | 2 | 34 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 83 | 2 | 37 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 84 | 2 | 40 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 85 | 2 | 43 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 86 | 2 | 46 | Philips Color Kinetics | ColorBlast 12 | Cyc Bottom |
| 87 | 2 | 49 | Philips 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 |