Chroma-Q™
Color Split™

User Manual

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Software Version 4.0

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The Chroma-Q Color Split has been designed specifically for the professional entertainment lighting industry. Regular maintenance should be performed to ensure that the products perform well in the entertainment environment.

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1. Product overview

The Chroma-Q Color Split lighting fixture is designed specifically for professional entertainment lighting. The fixture's modular design shall be suitable for creating a wide range of fixture configurations, including battens, blinders, footlights, side fills, cyclorama floods, truss toners, discreet set piece lighting and interior architectural lighting.

Each Color Split fixture features 32 high power LEDs split into two cells which produce intense, powerful light and vibrant colours across the across the spectrum. A 5 degree diffusion film is integrated into one cell and a 20 degree diffusion film is integrated into the other cell.

A range of optical accessories are available to increase the flexibility of the fixture. Various diffusers can be utilised to adjust projected beam angles and create stunning visual effects.

Designed to be intelligent both inside and out, the modular blocks incorporate the latest Hue, Saturation and Intensity (HSI), RGB(A) with Magic amber, RGBA control modes. Variable Effects Engine is integrated in the software which gives the lighting designer full control over colour and effects combinations.

The products lightweight yet robust, heavy gauge aluminium extruded construction houses a discreet cable management system and additional protection is built around the LED lenses for a truly road proof fixture.

The Color Split has a built-in power supply with power input and through via PowerCon. The unit can be controlled remotely through ANSI E1.11 USITT DMX 512-A.


2. Operation

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2.1 Unpacking the unit

The Color Split package includes 1 unit Color Split fixture, 1 unit yoke, 2 pieces M10 x 16 knobs, 2 pieces fibre flat washers and 1 piece M10 flat washer.
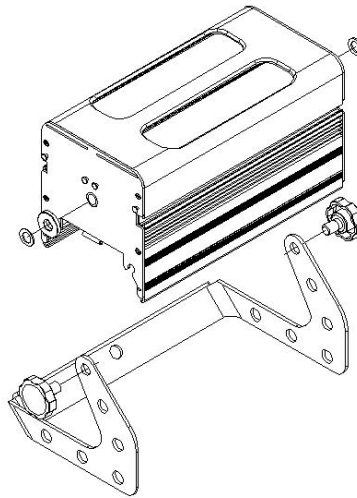
2.2 Control and Power Cables

The Color Split utilises a PowerCon cable system for power input and through and the XLR 5-pin cable system for ANSI E1.11 USITT DMX 512-A data signal input and through. The XLR 5-pin cables are wired pin to pin in the format shown in the table below. The chassis are ground bonded.

XLR 5-pin cable:

Pin #	Function	Minimum Cable size
1	Ground (-ve)	Screen
2	Control data minus (-)	0.35mm^2 (22 AWG)
3	Control data plus (+)	0.35mm^2 (22 AWG)
4	Spare data minus	0.35mm^2 (22 AWG)
5	Spare data plus	0.35mm^2 (22 AWG)

Power cable:

International Colour Code	North American Colour Code	Connections	
Green and Yellow	Green	Earth (E)	Ground (Green)
Blue	White	Neutral (N)	Neutral (Silver)
Brown	Black	Live (L)	Hot (Gold)

Important Notice: The use of an opto-splitter for DMX signal distribution is highly recommended when several fixture units are not plugged into the same power source.

It is recommended that a maximum of 10 Color Split fixtures can be linked together utilising the power input and through connections; data input and through connections as shown in the illustration below.
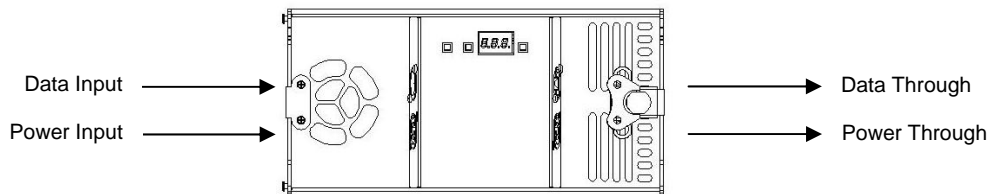
Data Input → Data Through
Power Input → Power Through

Important Notice: The use of an opto-splitter for DMX signal distribution is highly recommended when several fixture units are not plugged into the same power source.

2.3 Diffusion Film

The Color Split has a 5 degree diffusion film integrated into one cell and a 20 degree diffusion film integrated into the other cell.

Printed at the bottom plate are "chevrons" that indicate the side with the 20 degree diffusion film.

5° Diffusion Film on this side

20° Diffusion Film on this side

2.4 Fixing

The Color Split is supplied with a detachable yoke for a single fixture which can be used for floor mounting, direct wall mounting and truss mounting.

The Color Split features an integral connection system to enable up to 3 units locked together as a batten or strip. Integral M10 clinch nuts are built into each end of the fixture which can be used to attach the fixture to a standard hook clamp or the wide range of Color Split mounting accessories.
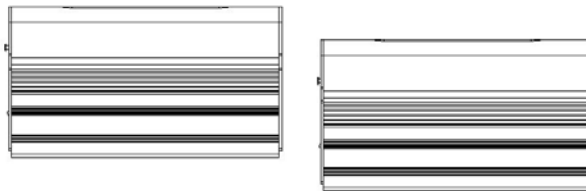
Note:
- For the M10 nuts, ensure that the bolt is not too long to avoid damage.
- Secure each fixture with the safety bond. Provision for a fixing hold is built into the end plate of each fixture for secondary fixings.
- Ensure adequate ventilation to the rear of all Color Split fixtures. Avoid placing the fixtures directly on the floor pointing upwards which leaves very little space for ventilation.

Integrated Connection System
One end plate of the Color Split fixture features two protruding locating pins and a catch plate, and the other end plate of each fixture has two keyhole slots and a butterfly latch.
1.   To connect two fixtures together, firstly mate the four protruding pins from one fixture into the keyhole slots of the other fixture.

2.   Then slide the fixtures together so that they are aligned correctly, taking care to get past the extended catch plate.
       Note: This will be stiff on new fixtures and a twisting action may ease assembly.
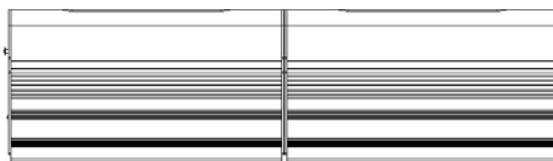
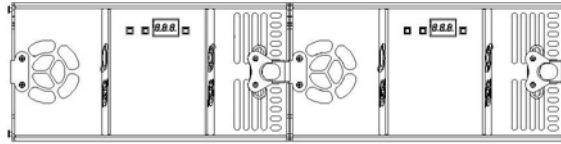3.   Finally, use the butterfly latch to secure the fixtures together tightly (maximum of 3 units together).

Yoke Kit
The Color Split fixture is supplied with a detachable yoke kit for a single fixture with fibre washers and thumb wheels. An M10 flat washer is provided as a spacer for the side with protruding pins. The yoke kit can be used for floor mounting, direct wall mounting and truss mounting when used with hook clamps or half couplers.

Note: See Drawing on page 12.

2.5 Operating the Unit
The Color Split is controlled via a built-in addressable ANSI E1.11 USITT DMX 512-A power supply. Control functions are accessed through the LCD display at the rear plate with 3 push-button switches.

Push button operation:

| Control	Function
Red Button	Mode access, enter and record
Black Button	Down - Decreases (-) the mode level or value
Blue Button	Up - Increases (+) the mode level or value
3 digit display	Displays mode, monitor or blank display

Display operation:
Power-Up Display
On power-up, the display shows the software version 'u04' and the DMX address.

Monitor Display
If control buttons are left undisturbed for 5-7 seconds, the display will revert to 'Monitor Mode'
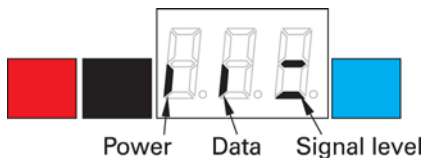
The first vertical bar indicates that there is DC power unit.
The second vertical bar indicates that there is Data (DMX).
The horizontal bars indicate the Data Signal Level of first DMX channel:

0 - 24%	No bars
25 – 49%	1 Bar
50 – 74%	2 Bars
75 – 100%	3 Bars

Display Mode
The display can be set to auto-blackout 5 seconds after it goes to 'Monitor Mode'. Press ENTER (red) and UP (blue) or DOWN (black) buttons to select 'dP' mode, then select 'dp1' to turn ON the auto-blackout or 'dP0' to turn OFF the auto-blackout.

Default Settings:
'Factory' default settings
Reset
Press and hold for 1 second, the UP (blue) and DOWN (black) buttons to reset the unit to the factory default settings. The display will show 'rSt' when UP and DOWN buttons are pressed and after 1 second it changes to 'don'.

The Factory default settings put the unit in its normal operating mode.

DMX Address = 001
Display = dP0
Mode = oP1
Effects = F05, c26

'User' default settings
Each time the RED record button is pressed, the unit will save that change and these 'user defaults' will take precedence on the next power cycle.

2.6 Modes of operation
The Color Split fixture features 32 high power LEDs divided into 2 separate cells of 16 LEDs each. The LEDs in both cells can be controlled together as one (single control) and individually as two separate cells (dual control).

Note: *Magic Amber is the term used for the unit's ability to be controlled with 3 channels and include Amber when mixing the colours.

a. Control Modes
Mode 1 'oP1': Single control (for 2 cells x 16 LEDs) in 3 channel RGB(A) (with *Magic Amber) is the traditional way of controlling intensity channels of the fixture. Each of the 3 control channels directly affects the intensity of the corresponding LED – Red, Green and Blue (with Magic amber). Colour is mixed by adjusting the levels of the three primary colours. White is achieved with all channels at full.

Mode 2 'oP2': Single control (for 2 cells x 16 LEDs) in 4 channel RGBA: gives 4 control channels directly affecting the intensity of the corresponding LED – Red, Green, Blue and Amber. Colour is mixed by adjusting the levels of each of the four colours. White is achieved with all channels at full.

Mode 3 'oP3': Single control (for 2 cells x 16 LEDs) in 3 channel HSI (Hue, Saturation and Intensity) and 2 channels for Effects: gives 2 colour channels for hue and saturation, 1 separate intensity channel, 1 channel for colour roll speed and 1 channel for colour range. A separate definable intensity channel is particularly useful when creating intensity chases or when the grand master is used. The hue channel has 255 different colours available and the saturation channel specifies the saturation level of that colour. The saturation channel is fully saturated at full. White is achieved with the intensity channel to full and the saturation channel at zero.
Colour Roll Speed: 0% - Off; 100% - Fastest
Colour Range: 0% - Full Colour Spectrum; 67% - 1/3 Colour Spectrum

Mode 4 'oP4': Single control (for 2 cells x 16 LEDs) in 3 channel RGB(A) (with *Magic Amber), 1 channel for Master Intensity and 1 channels for Effects: gives 3 control channels directly affecting the intensity of the corresponding LED – Red, Green, Blue (with Magic Amber), 1 channel for intensity effects and 1 channel for master intensity control.
The first channel sets intensity effect and speed:
0-24%   fade on/fade off
25-49%   fade on/snap off
50-74%   snap on/fade off
75-100%   strobe

Mode 5 'oP5': Dual control (for 2 cells x 16 LEDs) in 6 channel RGB(A) (with *Magic Amber): gives 2 sets of the 3 control channels for each cell directly affecting the intensity of the corresponding LEDs – Red, Green and Blue (with Magic amber). Colour is mixed by adjusting the levels of the three primary colours. White is achieved with all channels at full.

Mode 6 'oP6': Dual control (for 2 cells x 16 LEDs) in 8 channel RGBA: gives 2 sets of 4 control channels for each cell directly affecting the intensity of the corresponding LED – Red, Green, Blue and Amber. Colour is mixed by adjusting the levels of each of the four colours. White is achieved with all channels at full.

Mode 7 'oP7': Dual control (for 2 cells x 16 LEDs) in 6 channel HSI and 2 channel for Effects: gives 2 sets of 2 colour channels for hue and saturation, 2 sets of separate intensity channels, 1 channel for colour roll speed and 1 channel for colour range.

Colour Roll Speed: 0% - Off; 100% - Fastest

Colour Range: 0% - Full Colour Spectrum; 67% - 1/3 Colour Spectrum

In this mode, various split colour wave effects can be created within a selected range of colours. Set DMX-Ch2 @ any value greater than 0, and set DMX-Ch3 @ 0 or greater than DMX-Ch6 to create two cells rolling in the opposite direction and therefore creating colour waves in the assigned range of colours.

Example:

To create a blue to green wave effect: set DMX-Ch2 @ 67%, DMX-Ch3 @ 0%, and DMX-Ch6 @ 33%, set desired speed on DMX-Ch1 and set DMX-Ch4, Ch5, Ch6, Ch7,Ch8 @ 100%.

Mode 8 'oP8': Dual control (for 2 cells x 16 LEDs) in 6 channel RGB(A) (with *Magic Amber), 2 channel for Master Intensity and 1 channels for effects: gives 2 sets of 3 control channels directly affecting the intensity of the corresponding LED – Red, Green, Blue (with Magic amber), 1 channel for intensity effects and 2 channels for master intensity control.

The first channel sets intensity effect and speed:

0-24%	fade on/fade off
25-49%	fade on/snap off
50-74%	snap on/fade off
75-100%	strobe and speed

Mode 9 'oP9': Stand-alone provides 'F00 –F99' steps for variable selection of pre-programmed effects. The 'F' setting is accessible only in 'oP9'.

'F00-F09'	10 speeds full colour roll
'F10-F19'	10 speeds cold colour roll
'F20-F29'	10 speeds warm colour roll
'F30-F39'	10 speeds magenta colour roll
'F40-F45'	6 fixed split colours
'F46-F69'	24 fixed solid colours, 4 levels of saturation for each colour: blue, cyan, green, yellow, red and magenta
'F70-F79'	10 fixed white colours: 2600K, 3200K, 3600K, 4100K, 5000K, 5600K, 6500K, 7000K, 7500K, 8000K
'F80-F84'	5 speeds fade on/fade off
'F85-F89'	5 speeds fade on/snap off
'F90-F94'	5 speeds snap on/fade off
'F95-F99'	5 speeds strobe

Colour Selection of intensity effects 'c00 to c29' is accessed when value is between F80 – F99.

Note: In this mode, the DMX level indicator stays off.

Demo Mode 'oP-': is a pre-programmed sequence of the following (5 seconds for each interval):

Start with 3 solid colours: cyan, yellow and magenta;

3 split colours are added;

Partial colour rolls start from the split colours;

Full colour roll;

Cold colour roll;

Warm colour roll;

Fade on/fade off;

Fade on/snap off;

Medium strobe;

Fast strobe.

Note: In this mode, the DMX level indicator stays off.

b. Control Menu

Note: Press the ENTER (red) and UP (blue) or DOWN (black) button to move between modes and press ENTER to record any changes made.

Mode	Display	Name	Cell Control	DMX Ch	Channels
1	**oP1**	RGBhA	Single	3	Channel 1 = Red Channel 2 = Green Channel 3 = Blue
2	**oP2**	RGBA	Single	4	Channel 1 = Red Channel 2 = Green Channel 3 = Blue Channel 4 = Amber
3	**oP3**	HSlfx	Single	5	Channel 1 = Colour Roll Speed Channel 2 = Colour Range Channel 3 = Hue Channel 4 = Saturation Channel 5 = Intensity
4	**oP4**	RGBhAI	Single	5	Channel 1 = Intensity Effects and Speed Channel 2 = Red Channel 3 = Green Channel 4 = Blue Channel 5 = Master Intensity
5	**oP5**	RGBhA	Dual	6	Channel 1 = Red 1 Channel 2 = Green 1 Channel 3 = Blue 1 Channel 4 = Red 2 Channel 5 = Green 2 Channel 6 = Blue 2
6	**oP6**	RGBA	Dual	8	Channel 1 = Red 1 Channel 2 = Green 1 Channel 3 = Blue 1 Channel 4 = Amber 1 Channel 5 = Red 2 Channel 6 = Green 2 Channel 7 = Blue 2 Channel 8 = Amber 2
7	**oP7**	HSlfx	Dual	8	Channel 1 = Colour Roll Speed Channel 2 = Colour Range Channel 3 = Hue 1 Channel 4 = Saturation 1 Channel 5 = Intensity 1 Channel 6 = Hue 2 Channel 7 = Saturation 2 Channel 8 = Intensity 2
8	**oP8**	RGBhAI	Dual	9	Channel 1 = Intensity Effects and Speed Channel 2 = Red 1 Channel 3 = Green 1 Channel 4 = Blue 1 Channel 5 = Master Intensity 1 Channel 6 = Red 2 Channel 7 = Green 2 Channel 8 = Blue 2 Channel 9 = Master Intensity 2

| 9 | **oP9** | Stand-Alone
Press ENTER to access 'F00-F99' steps; press UP (blue) or DOWN (black) button to move between steps and press Enter to record any changes made.
The F setting is accessible only in 'oP9'.
'F00-F09'   10 speeds full colour roll
'F10-F19'   10 speeds cold colour roll
'F20-F29'   10 speeds warm colour roll
'F30-F39'   10 speeds magenta colour roll
'F40-F45'   6 fixed split colours
'F46-F69'   24 fixed solid colours, 4 levels of saturation for each colour: blue, cyan, green, yellow, red and magenta
'F70-F79'   10 fixed white colours: 2600K, 3200K, 3600K, 4100K, 5000K, 5600K, 6500K, 7000K, 7500K, 8000K
'F80-F84'   5 speeds fade on/fade off
'F85-F89'   5 speeds fade on/snap off
'F90-F94'   5 speeds snap on/fade off
'F95-F99'   5 speeds strobe
Press ENTER when in between values F80-F99 to access Colour Selection of intensity effects 'c00 to c29'; and UP (blue) or DOWN (black) button to move between colours and press Enter to record any changes made. |
| 10 | **oP-** | Demo Mode |

Note: The DMX level indicator stays off in modes 'oP9' and 'oP-'.

2.7 Technical specifications

Dimensions:	250mm x 136mm x 125mm
	9.8" x 5.3" x 4.9"
Weight:	2.38kg / 5.25 lbs
DMX protocol:	ANSI E1.11 USITT DMX 512-A
Working Voltage:	90 – 240V AC
Power consumption:	60W
Connectors:	XLR5 in/thru, PowerCon in/thru
Body material:	Aluminum extrusion
Body colour:	Black anodised
Cooling:	1 x fan
European approvals:	Pending
North American approvals:	Pending

$$C\mathcal{E}$$

2.8 Maintenance
With care, the Color Split fixture will require little maintenance. However, as the unit is likely to be used in a stage environment we recommend periodical internal inspection and cleaning of any resulting dust and cracked oil residue.

Do not spray liquids on the front or rear panel. If the front enclosure requires cleaning, wipe with a mild detergent on a damp cloth.

2.9 Accessories

CHCBBK20   20 degree beam kit for Color Block/Split
CHCBBK30   30 degree beam kit for Color Block/Split
CHCBBK3005   30 x 5 degree beam kit for Color Block/Split
CHCBBK6010   60 x 10 degree beam kit for Color Block/Split

3. Drawings
3.1 Outside dimensions