

# Chroma-Q™ Color Charge™

User Manual



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## 1. Product overview

The Color Charge battery powered LED fixture is an ultra portable, RGBA 600 hot lumen light source, which combines wireless control with an advanced feature set.

The Color Charge is powered by an internal rechargeable NiMH battery pack with an operating capacity of up to 30 hours, and a product life of up to 1000 battery recharges.

The Color Charge features an interchangeable head with a total of 12 high powered LED's (3 x RGBA) which produces an extremely bright output of 600 hot lumens, improved colour rendition and a wider colour range.

The Color Charge features wireless control capability, wireless syncing with other units, and stand-alone or remote control operation via ANSI E1.11 USITT DMX 512-A protocol.

The control options incorporate a choice of HSI (Hue, Saturation and Intensity), RGBA (Red, Green, Blue, Amber), RGB(A) (Red, Green, Blue, with \*Magic Amber), RGBI (Red, Green, Blue with \*Magic Amber and Intensity) control modes, and a dynamic Variable Effects Engine integrated in the software, which gives the lighting designer full control over colour and effects combinations.

The LED's are mounted on an interchangeable extruded aluminium head and the product's heavy gauge, powder coated steel chassis houses the battery pack and control electronics.

## 2. Operation

### 2.1 Unpacking the units

The Color Charge package includes 1 unit Color Charge fixture, power cord and a Quick Start Guide. We recommend that you keep the original packaging in case the item needs to be returned.

### 2.2 Cabling

The Color Charge utilises a male IEC connector for power input for charging, and 2 XLR 5-pin connectors for wired DMX control data input and through connections. The chassis are ground bonded.

XLR 5-pin Cable:

Pin#	Function
1	Ground (Screen)
2	Data Minus
3	Data Plus
4	Spare Data Minus
5	Spare Data Plus

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 (Color Punch, Color Split, Color Force and Color Charge) are not plugged into the same power source

### 2.3 Mounting

The Color Charge is designed primarily for floor mounting with an optional provision for truss mounting at the bottom of the chassis. For truss mounting, we recommend the use of a 1/2"-13UNC x 3/4" long bolt to avoid damage.

**Note:** Secure the fixture with a safety bond. A provision for a fixing hold is built into the chassis.

## 2.4 Power Switch

The Color Charge is equipped with an ON/OFF switch located at the side of the unit.

## 2.5 Battery

The Color Charge is charged through the male IEC connector. Charging a fully discharged Color Charge will take around 4 hours to complete (98-100%). The LCD display will light up when the unit is plugged into a power source. The display will show the battery capacity in percentage.

Battery voltage, current and temperature can be monitored through the 'Information' menu. In this menu, a fully charged battery will show voltage (BatV) – 14.1 - 14.9V, current (BatI) – 0.0A, and battery temperature (BatT) 23°C - 25°C not charging / 23°C - 40°C when charging.

The Color Charge wireless reception/transmission and light output will shut down when battery life is at 2%.

## 2.6 Control

The Color Charge can operate as a stand-alone unit or controlled remotely wired or wireless via ANSI E1.11 USITT DMX 512-A signal protocol. The control functions can be accessed through the LCD display on one side of the fixture with 4 push buttons.

### Push button operation:



Control	Function
Exit	Back to previous menu
Up Arrow	Increases (+) the mode level or value
Down Arrow	Decreases (-) the mode level or value
Back Arrow	(Enter) Stores the menu choice

Figure 1

### Charging Display:

The Color Charge display will show the battery capacity (%), the word 'CHARGE', control mode, DMX status, and DMX address.

### Power-Up Display:

On power-up the display shows the model name "Color Charge" and software version V### for 5 seconds, then proceed to the main menu or home position showing in Figure 1 - the battery capacity in percentage (100), length of battery life in number of days (07day) or hours and minutes (00h00), control mode (RGBA), DMX status (Wired/WirelessDMX On/Off), and DMX address (002).

### Display Mode:

The LCD is backlit when you access the menus. This will turn off when left undisturbed for 5 seconds.

### Wired DMX:

The Color Charge display will automatically show 'WiredDMX On' when connected to an external DMX control console via XLR5 cable, which enables wired DMX control.

### Control Options:

**3 channel HSI** (Hue, Saturation and Intensity) provides 2 colour channels for hue and saturation and a separate intensity channel. 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.

**3 channel RGB** (Red, Green, Blue with \*Magic Amber) is the more traditional way of controlling colour changing LED fixtures. Each of the three control channels directly affects the intensity of the corresponding LED. Colour is mixed by adjusting the levels of the three primary colours. White is achieved with all channels at full including \*Magic Amber.

**3 channel RGB(A) + 1 intensity channel** (Red, Green, Blue with \*Magic Amber and Intensity) gives 3 control channels directly affecting the intensity of the corresponding LED – Red, Green, Blue with \*Magic Amber, and 1 channel affecting the intensity of all RGB(A) channels.

**4 channel RGBA** (Red, Green, Blue and Amber) 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.

**Internal FX engine:** there are 2 modes that incorporate a comprehensive internal FX engine with the following parameters:

**Colour Speed** - variable speed of colour scrolling

**Colour Fan** - variable fan of colour between / within groups

\* Magic Amber is the term used for the unit's ability to bring in amber when mixing only RGB.

**Control Menu**

Use the push buttons (up/down arrows) to scroll through the control menu positions:

➔ **Home / Main Menu / DMX Address**

To set the DMX start address, press Exit or wait for main menu display and press Enter, press Up/Down buttons to adjust DMX start address, press Enter for 2 seconds to save settings. Press Exit to go back to the main menu display.

➔ **Control Mode**

The Color Charge can be set to operate in 7 DMX controlled modes with 5 control options: HSIFx, HSI, RGB (with \*Magic Amber), RGBA, RGBI (with \*Magic Amber), pre-programmed looks and standalone effects. Refer to the list below for details. From the main menu, press the Up button to access Control Mode, press Enter and Up/Down buttons to select the mode, press Enter for 2 seconds to save control mode settings and Exit to the main menu.

Control Mode	Ch	Description
RGB [3ch]	3	RGB
Fx HSI [5ch]	5	HSI + 2Fx
StRGBI [5ch]	5	RGBI (with *Magic Amber) + Intensity Fx
Standalon Master / Slave A / Slave B	-	Stand-alone Master / Slave A / Slave B
DEMO	-	Demo
DMX1 Look Select	1	1 DMX channel Look Select
RGBA [4ch]	4	RGBA

To setup Stand-alone Master unit:

From the 'Control Mode' menu press Up/Down to access 'Standalon Master', press Enter, then Up/Down to select 'Master', press Enter for 2 seconds to save settings.

To setup Slave unit:

From the 'Control Mode' menu press Up/Down to access 'Standalon Master', press Enter, then Up/Down to select 'SlaveA' or 'SlaveB', press Enter for 2 seconds to save the settings. The output of the 'SlaveA' unit will be identical to the Master unit while the output of the 'SlaveB' unit will be the same effects/mode but running opposite of the sequence direction.

Configure the 'Output' of the Master unit for stand-alone operation. The display will indicate output assigned and intensity level.

➔ **Output**

For stand-alone operation and if DMX is not detected various output options can be selected: Press Up/Down buttons and press Enter to select 'Output', press Up/Down to select from the options listed below. Press Enter for 2 seconds to save and Exit to the main menu.

Off – snap to off

Hold – hold the last valid DMX state

Effect 1-99 – snap to the **Effect** of your Choice  
Look 1-20 – snap to the **Look** of your choice  
Chase 1-10 – snap to the **Chase** of your Choice

There are 99 pre-programmed Fx's in Color Charge. These programmed effects/looks are not editable.



### **Look Store**

There are 20 internal pre-programmed Fx Looks for stand-alone operation. To preview a Look, press Up/Down buttons to select Look Store, press Enter, press Up/Down buttons to select the desired Look. Configure the 'Output' to select and replay the desired Look.

To replay a Look with a DMX console, press Up/Down buttons to 'DMX1 Look Select' Control Mode, and press Enter for 2 seconds. Use the console with the assigned channel to playback the various looks stored. (1-20 looks in 1 single channel)

**Note:** DMX has priority over internal Looks. Please refer to the List of pre-programmed Looks on page 8.

Looks can be recorded to the internal flash memory by users and will be preserved on power down. However, looks will be returned to default setting if menu 'Reset to Default' is performed. There are two ways to record a look:

#### **Simple, with DMX console.**

Set the Color Charge to the desired 'DMX1 Look Select'. Use a DMX console to adjust channel levels and create the desired look or effect.

Press Up/Down buttons to access Look Store and press Enter.

Press Up/Down buttons to select the desired Look number and press Enter.

Press Enter again for 2 seconds to save Look and Exit to the main menu.

#### **Advanced, stand-alone. (DMX is unplugged)**

Press Up/Down buttons to access the Look Store, press Enter, press Up/Down button to select the desired Look and press Enter to access the memory data. The data is presented to you with DMX channel on the left and the attribute level on the right. The attribute may change depending on what mode you are in. Pressing the Up or Down button to the far end will show the Mode at which the selected Look was programmed.

To edit the Mode of a selected Look:

Press Up/Down buttons to Look Store.

Press Enter and Up/Down to select the desired Look.

Press Enter to access the memory data.

Press Up/Down buttons up to the far end until mode 'Md' is shown on the left and mode selection on the right, and press Enter.

Press Up/Down buttons to select the desired mode.

Press Enter to toggle back to the DMX channel 'Md' on the left.

To edit the channel and attribute levels of a selected Look:

Press Up/Down buttons to the Look Store.

Press Enter and Up/Down to the desired Look.

Press Enter to access the memory data.

Press Up/Down buttons and select the channel.

To edit the channel attribute level press Enter and use the Up/Down buttons to adjust the level (shown as 0-255).

Press Enter to toggle back to the channel.

When the desired effect is created press Enter for 2 seconds to save Look.



### **Chase Store**

The Looks stored can be linked together in a Chase.

Press Enter to access Chase Store, press Enter, then Up/Down to select the desired Chase number and press Enter to select the Start look.

Press Enter and then the UP or DOWN arrow to select the Start look number.  
 Press Enter to confirm and then press the UP arrow to select End look.  
 Press Enter and then the UP or DOWN arrow to select the End look.  
 Press Enter to confirm and the UP arrow to select the next option of Delay.  
 Press Enter and the UP or DOWN arrow to select the delay in seconds.  
 Press Enter to confirm and then the UP arrow to select the next option of crossfade  
 'XFade' in seconds.  
 Press Enter to confirm and the UP arrow to set the XFade.  
 Press Enter to confirm.

→ **DMX Levels**

This menu indicates the level of DMX data signal reception from an external source through wireless connection or cable. Press Up/Down to access 'DMX Levels' then press Enter to display the Channel Number, level (0-255), colour or 'off'.

→ **Information**

This menu indicates the voltage (BatV), current (BatI) and temperature (BatT) of the internal battery pack and control system. Press Up/Down to access 'Information', then press enter to display the corresponding values.

→ **Wireless W-DMX**

This menu shows the model name of the DMX receiving card in use with the unit. From the main menu, press Up/Down to access 'Wireless W-DMX', press Enter then Up/Down to select from either 'Off', 'Receiver' or 'Transmitter'.

To activate wireless DMX connection between generic transceiver unit as the Transmitter and the Color Charge unit as the Receiver:

- A. Setup the Color Charge as the Receiver unit:
  - From the main menu, press Up/Down to access 'Wireless W-DMX'.
  - Press Enter, then press Up/Down to select 'Receiver'.
  - Press Enter for 2 seconds to save and display will show 'Wireless-DMX'.
  - Press Enter, display will show 'Receiver'.
  - Press Enter, display will show 'Unlink frm Trnsm'.
  - Press Enter, 'Unlink frm Trnsm' will blink for a few seconds until the display goes back to the previous menu and then the main menu. This will unlink previous signal connections.
  - Proceed to setup transmitter unit.
  - Upon completion of a successful link with the transmitter unit, the main menu displays 'Wireless On' and the DMX signal level is indicated by the horizontal bars beside it (4 bars maximum).
- B. Setup external Wireless DMX Transmitter/Transceiver:
  - Connect DMX control to the generic DMX transmitter.
  - Configure the wireless DMX transceiver to transmitter mode.
  - Unlink the transmitter to clear previous wireless connections.
  - Initiate signal/link search after the Color Charge receiver unit is set.

To activate the wireless DMX connection between a Color Charge unit as the Transmitter and the next Color Charge unit as the Receiver:

- A. Setup the Color Charge as the Receiver unit:
  - From the main menu, press Up/Down to access 'Wireless W-DMX'.
  - Press Enter, then press Up/Down to select 'Receiver'.
  - Press Enter for 2 seconds to save and display will show 'Wireless-DMX'.
  - Press Enter, display will show 'Receiver'.
  - Press Enter, display will show 'Unlink frm Trnsm'.
  - Press Enter, 'Unlink frm Trnsm' will blink for a few seconds until the display goes back to the previous menu and then the main menu. This will unlink previous signal connections.
  - Proceed to setup next Color Charge as the transmitter unit.
  - Upon completion of a successful link with the transmitter unit, the main menu



displays 'Wireless On' and the DMX signal level is indicated by the horizontal bars beside it (4 bars maximum).

- B. Setup the Color Charge as the Transmitter unit:  
Connect DMX control to the Color Charge unit via XLR5 cable.  
From the main menu, press Up/Down to access 'Wireless W-DMX'.  
Press Enter and press Up/Down to select 'Transmitter'.  
Press Enter for 2 seconds to save and display will show 'Wireless W-DMX'.  
Press Enter, display will show 'Transmitter'.  
Press Enter, display will show 'Add Receivers'.  
Press Enter, 'Add Receivers' will blink for a few seconds until the display goes back to the previous menu and then the main menu. The unit is initiating signal/link search.  
Note: The Color Charge transmitter unit that is not connected to DMX control console continues to send wireless signal link to the Color Charge receiver units. The display of the receiver units will show 'Wireless On' and the horizontal bars beside it (4 bars maximum).
- C. To unlink receivers from the Color Charge transmitter unit:  
From the main menu of the Color Charge transmitter unit:  
Press Up/Down to access 'Wireless W-DMX'.  
Press Enter and display shows 'Transmitter'.  
Press Enter and Up/Down to select 'Unlink Receivers'.  
Press Enter, 'Unlink Receivers' will blink for a few seconds until the display goes back to the previous menu and then the main menu.



**Reset to Default**

Press enter and then the DOWN button to select Yes.  
Press Enter and hold for 2 seconds to reset all menu items to factory defaults:  
DMX address = 001, Control Mode = RGB, Output = Hold, Looks = 20,  
Chase = 01, Wireless = off.

## 2.7 DMX Protocol

### Color Charge DMX Personality

Color Charge (v1.5)	Control Mode RGB [3ch] (with *Magic Amber)	Control Mode Fx HSI [5ch]	Control Mode StRGBI [5ch] (with *Magic Amber)
Channel 1	Red	<b>Colour Speed</b> 0-255 Variable speed of colour scrolling. From static at 0 to maximum at 255.	<b>Intensity Effects</b> <b>0</b> Static <b>1-63</b> Fade on, fade off. Variable range, 63 the fastest <b>64-127</b> Fade on, snap off. Variable range, 127 the fastest <b>128-191</b> Snap on, fade off. Variable range, 191 the fastest. <b>192-255</b> Snap on, snap off (strobe). Variable range, <b>255</b> the fastest.
Channel 2	Green	<b>Colour Fan</b> 0-255 Variable fan of colour between / within groups. All units are the same colour at 0.	Red
Channel 3	Blue	Hue	Green
Channel 4		Saturation	Blue
Channel 5		Intensity	Intensity
<b>Total</b>	<b>3 DMX channels</b>	<b>5 DMX channels</b>	<b>5 DMX channels</b>

### Color Charge DMX Personality

Color Charge (v1.5)	Control Mode DMX1 Look Select						Control Mode RGBA [4ch]
	Channel Level %	Look	Channel Level %	Look	Channel Level %	Look	
Channel 1	0	OFF	31-35	7	66-70	14	Red
	1-5	1	36-40	8	71-75	15	
	6-10	2	41-45	9	76-80	16	
	11-15	3	46-50	10	81-85	17	
	16-20	4	51-55	11	86-90	18	
	21-25	5	56-60	12	91-95	19	
	26-30	6	61-65	13	96-100	20	
Channel 2							Green
Channel 3							Blue
Channel 4							Amber
<b>Total</b>	<b>1 DMX channel</b>						<b>4 DMX channels</b>

## 2.8 Pre-Programmed Looks

The Color Charge has 20 internal pre-programmed looks that are set as default. They can be modified and overwritten in the Look Store menu. Reset to Defaults menu will restore the looks.

Look 1	Blackout	Look 11	Fast pastel roll
Look 2	White	Look 12	Slow rainbow roll
Look 3	Red	Look 13	Medium rainbow roll
Look 4	Yellow	Look 14	Fast rainbow roll
Look 5	Green	Look 15	32k White
Look 6	Cyan	Look 16	56k White
Look 7	Blue	Look 17	Red-Blue roll
Look 8	Magenta	Look 18	Blue-Green roll
Look 9	Slow pastel roll	Look 19	Cyan-Magenta roll
Look 10	Medium pastel roll	Look 20	Magenta-Yellow step

### 3. Troubleshooting

Troubleshooting is a process of elimination. First, rule out the other field factors (i.e. bad connections, faulty cables and power supplies). For technical advice and/or parts, please contact your selling dealer or the offices listed in this manual.

Symptom	Possible Cause	Solution
Fixture does not respond to DMX control.	Set to wrong or different DMX address. No/poor wireless DMX connection. WiredDMX menu is off. Wired-Wireless menu is off. Bad cable connecting DMX control and fixture. Bad in/through connection between adjacent fixtures. Bad connection between DMX control and transceiver unit.	Check DMX address and Mode settings. Reset wireless DMX station. Repeat wireless link search. Repeat "Wireless DMX" activation. Repeat "Wired-Wireless" menu. Check/replace DMX run from the console.
Intensity levels of LED are fluctuating.	Signal deterioration wireless distance. Cable lengths connecting adjacent fixtures are too long.	Check wireless distance, interference or the cable length and configuration.
Power and display is 'on' but there LED's are off.	LED head cable or connector.	Check that LED head cable is connected and properly latched. Check DMX signal level and connection.
Fixture is not charging.	Connection to power source.	Check IEC plug and connector. Check/replace fuse.

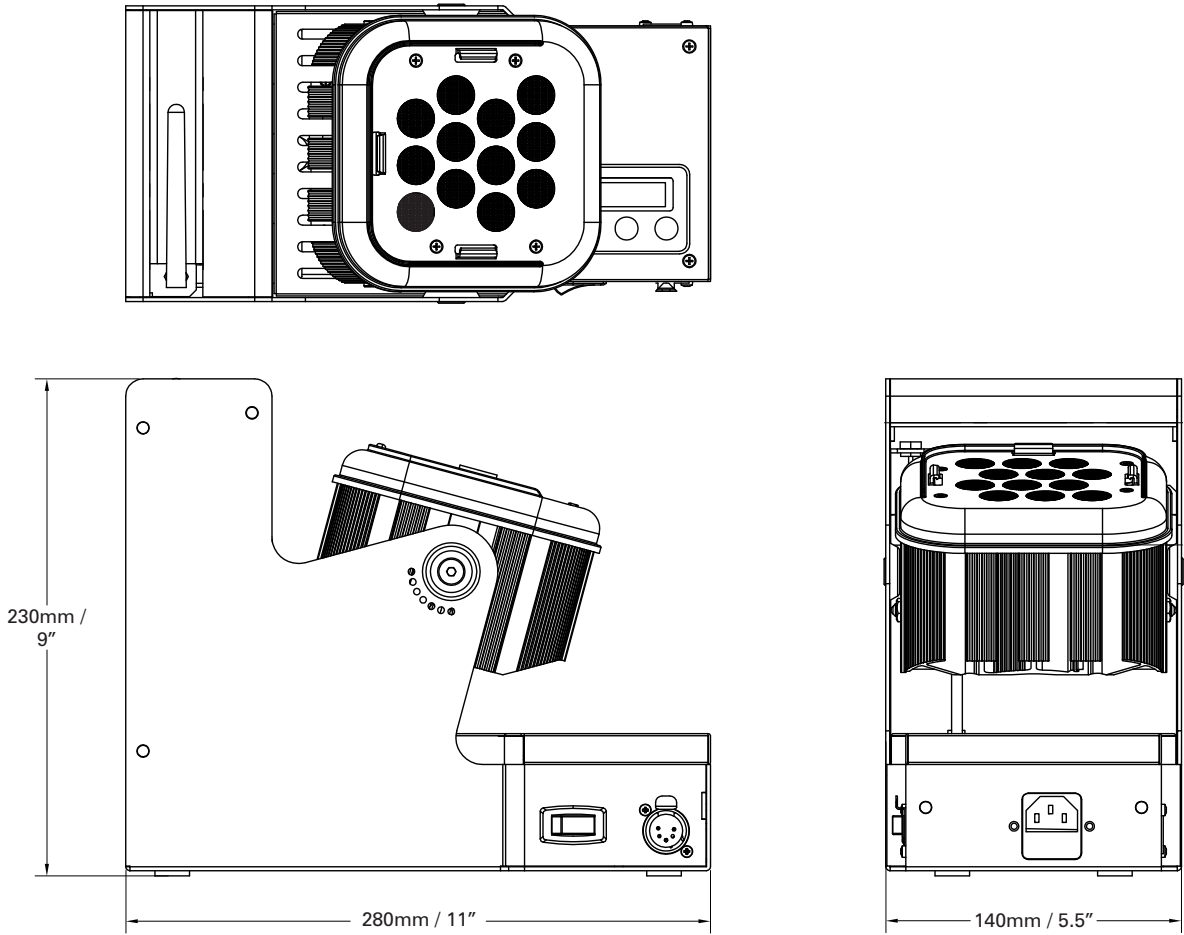
## 4. Specification

### 4.1 Technical specifications

Product Code:	CHCCRGBA
Dimensions:	140 mm x 230 mm x 280 mm / 5.5" x 9" x 11"
Weight:	7.5kg / 16lbs
Power input rating:	100-240VAC 50/60Hz 100W (auto-switching)
Power connector:	IEC Male chassis
Control protocol:	ANSI E1.11 USITT DMX 512-A, Wireless W-DMX
Connectors in/out:	XLR 5-Pin
Maximum wireless distance:	TBA
Cooling system:	Convection
Construction:	Anodised aluminium extrusion head, heavy gauge steel chassis
Colour:	Black
LED cells:	1
LED per cell:	12
Total LED:	12
Optics:	Specialised close focus lens
Beam angle:	22°
Beam dispersion:	Symmetrical direct illumination
CCT:	Adjustable 1000 – 10000K
CRI:	92
Lamp Life:	L70 up to 50,000 hours
IP Rating:	IP20
Operating temperature:	0° C to 40° C
Approvals:	CISPR 22:2006/EN55022:2006 (CLASS A) CISPR 24:1997/EN55024:1998 (+A1+A2) ICES-003:2004 & FCC Part 15 Subpart B:2007



## 4.2 Drawings Color Charge



## 5. Maintenance

With care, the Color Charge 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 unit. If the unit requires cleaning, wipe with a mild detergent on a damp cloth.