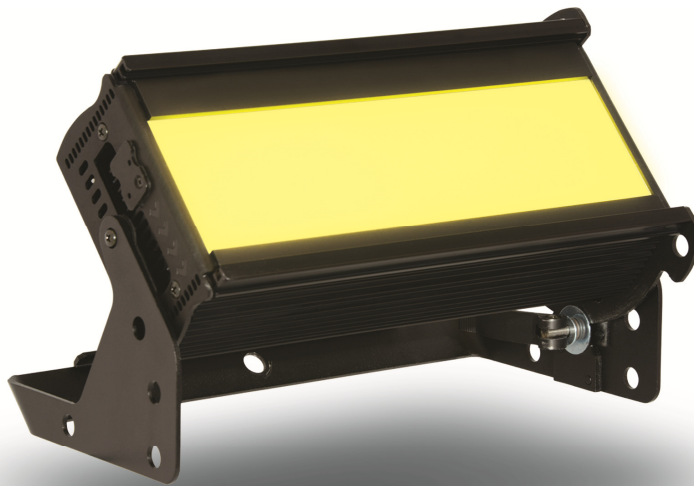


# Chroma-Q<sup>®</sup>

## Studio Force<sup>™</sup> V

### Phosphor

User Manual



**Chroma-Q<sup>™</sup>**  
BRILLIANT SOLUTIONS

Version 1.5 December 2014, Software Version 1.07

PN: 634-0500

## Warranty Statement

Chroma-Q warrants to the original purchaser, with proof of purchase, that its delivered products shall be free from defects in material and workmanship under normal use for a period of 12 months from date of shipment.

Chroma-Q will repair, or at its option, provide an equivalent item or replace, the defective product during the stated warranty period. This warranty applies only to the repair or replacement of the product and only when the product is properly handled, installed and maintained according to Chroma-Q instructions. This warranty excludes defects resulting from improper handling, storage, installation, acts of God, fire, vandalism or civil disturbances. Purchaser must notify Chroma-Q in writing within 14 days of noticing the defect. This warranty excludes field labour or service charges related to the repair or replacement of the product.

The warranty contained herein shall not extend to any finished goods or spare parts from which any serial number has been removed or which have been damaged or rendered defective (a) as a result of normal wear and tear, willful or accidental damage, negligence, misuse or abuse; (b) due to water or moisture, lightning, windstorm, abnormal voltage, harmonic distortion, dust, dirt, corrosion or other external causes; (c) by operation outside the specifications contained in the user documentation; (d) by the use of spare parts not manufactured or sold by Chroma-Q or by the connection or integration of other equipment or software not approved by Chroma-Q unless the Customer provides acceptable proof to Chroma-Q that the defect or damage was not caused by the above; (e) by modification, repair or service by anyone other than Chroma-Q, who has not applied for and been approved by Chroma-Q to do such modification, repair or service unless the Customer provides acceptable proof to Chroma-Q that the defect or damage was not caused by the above; (f) due to procedures, deviating from procedures specified by Chroma-Q or (g) due to failure to store, install, test, commission, maintain, operate or use finished goods and spare parts in a safe and reasonable manner and in accordance with Chroma-Q's instructions (h) by repair or replacement of engines without factory training.

The warranty contained herein shall not apply to finished goods or spare parts which are sold "as is", as "second-hand", as used", as "demo" or under similar qualifications or to Consumables ("Consumables" is defined as any part(s) of goods or part(s) for use with goods, which part(s) of goods or part(s) for use with goods are consumed during the operation of the goods and which part(s) of goods or part(s) for use with goods require replacement from time to time by a user such as, but not limited to, light bulbs).

The warranty contained herein shall not apply, unless the total purchase price for the defective finished goods or spare parts has been paid by the due date for payment.

The warranty contained herein applies only to the original purchaser and are not assignable or transferable to any subsequent purchaser or end-user.

This warranty is subject to the shipment of the goods, within the warranty period, to the ChromaQ warranty returns department, by the purchaser, at the purchasers expense. If no fault is found, ChromaQ will charge the purchaser for the subsequent return of the goods.

Chroma-Q reserves the right to change the warranty period without prior notice and without incurring obligation and expressly disclaims all warranties not stated in this limited warranty.

## Disclaimer

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that Chroma-Q products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent. Chroma-Q sole warranty is that the product will meet the sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. – See full warranty details on next page.

Chroma-Q reserves the right to change or make alteration to devices and their functionality without notice due to our on going research and development.

The Chroma-Q Studio Force Phosphor range have been designed specifically for the lighting industry. Regular maintenance should be performed to ensure that the products perform well in the entertainment environment.

If you experience any difficulties with any Chroma-Q products please contact your selling dealer. If your selling dealer is unable to help please contact [support@chroma-q.com](mailto:support@chroma-q.com). If the selling dealer is unable to satisfy your servicing needs, please contact the following, for full factory service:

<b>Outside North America:</b>	<b>North America:</b>
Tel: +44 (0)1494 446000	Tel: 416-255-9494
Fax: +44 (0)1494 461024	Fax: 416-255-3514
<a href="mailto:support@chroma-q.com">support@chroma-q.com</a>	<a href="mailto:support@chroma-q.com">support@chroma-q.com</a>

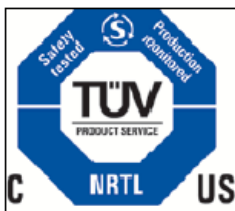
For further information please visit the Chroma-Q website at [www.chroma-q.com](http://www.chroma-q.com).

Chroma-Q and Studio Force are trademarks, for more information on this visit [www.chroma-q.com/trademarks](http://www.chroma-q.com/trademarks).

The rights and ownership of all trademarks are recognised.

**Important Notice:**

As per the requirements in the Occupational Safety and Health Administration standards for product approval, please refer to the OSHA web pages <http://www.osha.gov/dts/otpc/nrtl/> for information on the list of Nationally Recognized Testing Laboratories (NRTLs) and the scope of recognition.



# Table of Contents

<b>1.</b>	<b>Product Overview</b> .....	<b>4</b>
<b>2.</b>	<b>Operation</b> .....	<b>5</b>
2.1	Unpacking the Units .....	5
2.2	Cabling .....	5
2.3	Mounting.....	5
2.4	Optical Accessories .....	5
2.5	Control .....	6
2.6	DMX Protocol – Studio Force V Phosphor.....	16
2.7	Thermal Performance.....	16
<b>3.</b>	<b>Troubleshooting</b> .....	<b>16</b>
<b>4.</b>	<b>Specification</b> .....	<b>17</b>
4.1	Technical Specifications.....	17
4.2	Drawings - Dimensions .....	18
4.3	Accessories.....	18
<b>5.</b>	<b>Maintenance</b> .....	<b>18</b>

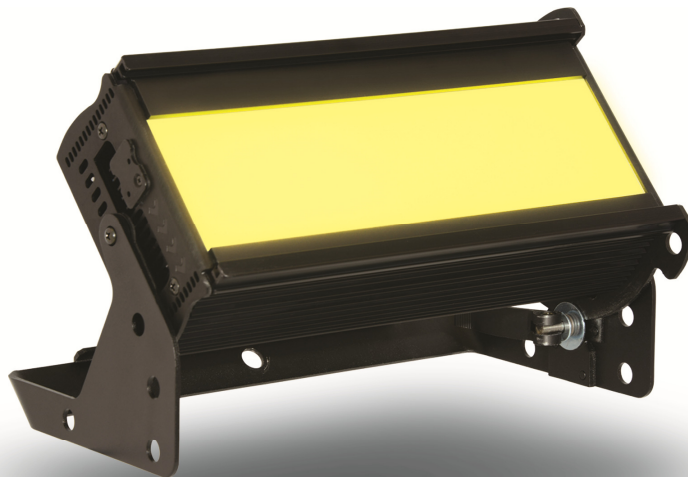
## 1. Product Overview

The new **Chroma-Q® Studio Force V Phosphor™** is a 3,200 - 5,600K CCT, variable white fixture which utilises innovative LED technologies found in the Studio Force™ range to provide an equivalent soft edge output to a fluorescent fixture - up to 4,200 lumens @ 5,600K; 1,750 lumens @ 3,200K - developed specifically for use in TV, film and broadcast studio environments. Other features include fine-tuning of the green & magenta tints and frequency for camera, an extremely smooth uniform wash, extra soft beam, theatrical grade dimming and laboratory calibration to match Black Body Locus. Designed for practicality, the unit is equipped with a manual control mode, colour touch screen interface, fanless, studio & full modes for maximum control of the units and a range of optional accessories.

The **Studio Force V Phosphor** features two light engines with 30 LEDs each (6 red, 6 green, 12 blue, and 6 amber), for a total of 60 high powered LEDs.

The fixture is equipped with a built-in power supply unit. The fixture can operate as a standalone unit or controlled remotely through the ANSI E1.11 USITT DMX 512-A protocol. The control modes incorporate intensity control, green & magenta tint and color temperature adjustment in remote DMX or standalone manual operation.

The product's robust anodised aluminium extruded construction houses a discreet cable management system. Additional protection is built around the lenses for a truly road proof fixture.



### Note: HANDHELD COLOUR METERS

Handheld Colour Meters provide a very limited measuring range for LED fixtures, which results in inconsistent and unreliable data.

All photometric values listed in this document are based on testing and measurements conducted by certified independent laboratories with reference to the IES standards.

## 2. Operation

### 2.1 Unpacking the Units

Each of the Studio Force V Phosphor package includes 1 fixture unit, a power cord, connector 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 Studio Force V Phosphor fixture is built with powerCON connectors for power input and through. The DMX control data input and through connections from an external control console are via two XLR 5-pin connectors. The chassis are ground bonded.

**Note:** The maximum number of Studio Force V Phosphor fixtures running off a single power input cable is 10 at 120V AC or 20 at 240V AC. Please refer to ANSI and AWG standards for the maximum data and power cable lengths.

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 are not plugged into the same power source.

### 2.3 Mounting

The Studio Force V Phosphor fixture is built with a mounting yoke for floor, wall and truss mounting applications. The yoke assembly features a hidden quick release fixing for fast and easy tilt adjustment.

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

### 2.4 Optical Accessories

Slide-in optical accessories are available to adjust the beam angle of the Studio Force V Phosphor fixtures. One accessory slot and a swivel plate are available at the front and side of the fixture to hold and lock the slide-in accessories such as cyc and border light lens, lightbank kit, egg crate louver, top hat, half top hat, barn door and diffuser box attachment accessories.

## 2.5 Control

The Studio Force V Phosphor fixture can operate as a standalone unit or remotely controlled via ANSI E1.11 USITT DMX512-A protocol. The control functions can be accessed through the Touch Screen LCD display at the rear of the fixture.

### Opening Screen on Power On:



- Brand Name
- Fixture Name & Firmware Version Number
- Display On Pinhole

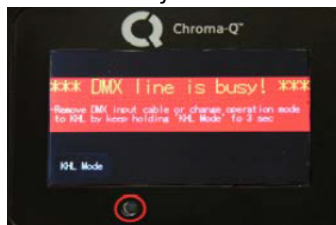
### Main Screen:



- Fixture Name
- \*Data Signal Indicator
- Control Information
- Command Buttons

*Data Signal Indicator:	Shows the presence and status of DMX signal.
No Data	- appears when the fixture is set at KHL or RGBW mode and not connected to an external DMX control console.
>>>DMX	- appears when the fixture is set at KHL or RGBW mode and DMX signal from an external DMX control console is present.
DMX >>>	-appears when the fixture is set at Manual and also the source of the DMX data signal.

### DMX line is busy!



**When the warning screen appears, follow the display text prompts.**

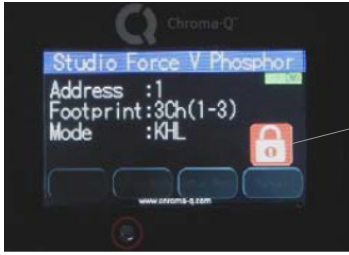
The warning screen appears when a DMX signal from an external control console is plugged into the fixture set on Manual.

- Press and hold the **KHL Mode** command button to change the mode.

The warning screen appears when the fixture is set to Manual with a DMX signal still present.

- Remove the DMX cable.
- Change the mode to Manual.

Locked:



Display Lock Icon

**Note:**

The Lock Icon turns green when tapped.

**Display On/Off & Locked/Unlocked:**

Factory default sets the display screen of the fixture to turn off and lock when untouched for 30 seconds. (To disable this feature, see Control Menu below.)

To activate the screen,

1. Tap the screen.
2. Press and hold for 5 seconds the lock symbol on the screen. Follow the text prompt that appears on the screen "Keep holding for 5sec to unlock."

The lock symbol disappears and the screen is active.

**Change DMX Address screen:**



Screen Title

Control Information

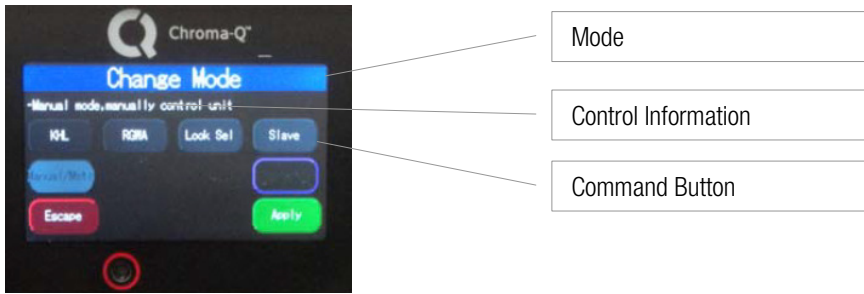
Command Buttons

The screen shows the current DMX start address and the new DMX start address. In the screen, the numeric command buttons can be tapped to set the new DMX start address.

Command Button	Description
0 – 9	Button numbers 0 to 9 for typing the new DMX start address.
Apply	Save the new DMX address.
Escape	Exit the screen without saving.



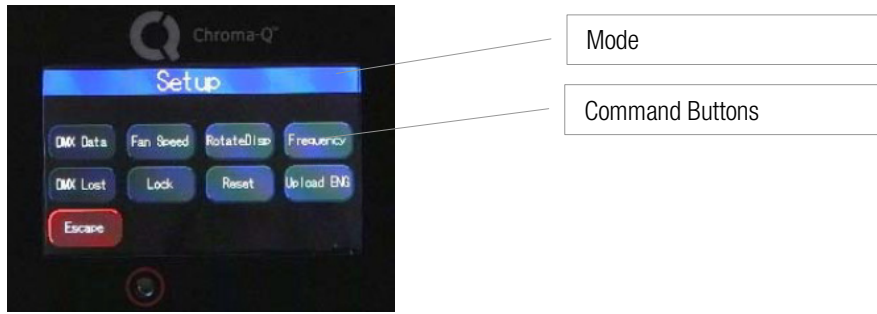
Change Mode screen:



The table shows the control options available in the Change Mode screen:

Command Button	Description
KHL	3 channels to set Kelvin, Hue, Level: <ul style="list-style-type: none"> <li>• K (Kelvin) - 1 channel to set the color temperature</li> <li>• H (Hue) - 1 channel to set the hue</li> <li>• L (Level) - 1 channel to set the intensity level</li> </ul>
RGWA	4 channels to set the intensity of each corresponding LED circuit: Red, Green, White and Amber
Look Sel	1 channel to select from the user programmed internal effects.
LookStore	Programmed internal effects and looks are accessed and stored through the Look Store screen. A total of 32 looks can be stored in the fixture's internal memory.
Manual/Mstr	The fixture is set as the Master unit for Manual control. Manual control of the fixture's color temperature (Kelvin), hue (Hue) and intensity (Level) is accessed through the Manual Mode Setting screen.
Slave	The fixture is set as the Slave unit in stand-alone operation. The fixture set as slave unit follows the control modes set with the Master unit.
Apply	Save the settings.
Escape	Exit the screen without saving.

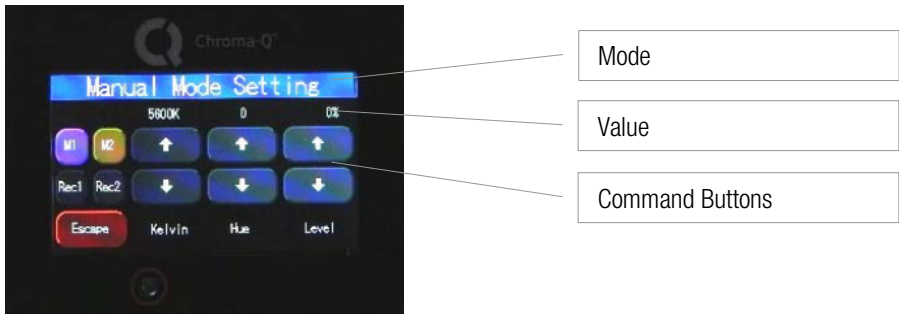
Setup screen:



The table shows the fixture setup options available in the Setup screen:

Command Button	Description
DMX Data	Displays DMX start address and the levels for all the channels assigned.
Fan Speed	4 Fan Speed options are accessed through the Fan Speed screen: <ul style="list-style-type: none"> <li>• <b>Quiet</b> – internal fan is off. (Intensity reduced to 80%)</li> <li>• <b>Studio</b> – internal fan is at low speed.</li> <li>• <b>Live</b> – internal fan is on.</li> <li>• <b>Live-Quiet</b> – internal fan is automatically switched on when light output is on and automatically switched off when light output is off.</li> </ul>
RotateDisp	The button rotates the orientation of the Touch Screen Display
Frequency	4 frequency options are accessed through the PWM Frequency screen: 1200Hz, 2400Hz, 4800Hz, 9600Hz
DMX Lost	The fixture can be set with 2 options when DMX data is lost: <ul style="list-style-type: none"> <li>• <b>Last data</b> – holds the last valid DMX state</li> <li>• <b>No Output</b> – the fixture switches to off</li> </ul>
Lock	The Touch Screen Display can be set to lock or unlock in the Lock Future screen.
Reset	Reset Settings options are accessed through the Reset Setting screen: <ul style="list-style-type: none"> <li>• <b>Default</b> – Factory default settings</li> <li>• <b>User</b> – User defined settings</li> </ul>
Upload ENG	The fixture can be set for software uploads through the Engine Upload screen.
Escape	Exit the screen without saving.

Manual Mode Setting screen:



The table shows the control options available in the Manual Mode Setting screen:

Command Button	Description
Up Arrow	Increase Kelvin level - (corresponding Value shown above)
Down Arrow	Decrease Kelvin level - (corresponding Value shown above)
Up Arrow	Increase Hue level.
Down Arrow	Decrease Hue level.
Up Arrow	Increase intensity Level.
Down Arrow	Decrease intensity Level.
<b>M1</b>	Playback the look recorded on <b>Rec1</b> .
<b>M2</b>	Playback the look recorded on <b>Rec2</b> .
<b>Rec1</b>	Save a look for <b>M1</b> .
<b>Rec2</b>	Save a look for <b>M2</b> .
<b>Escape</b>	Exit the screen.

## Control Menu

The control menu options are accessed through the touch-screen display at the rear of the Studio Force V Phosphor fixture.

## Main Menu

The Main Menu displays the fixture name, control information (current assigned DMX address, Footprint, Mode), and the 4 command buttons: **Change Add**, **Change Mode**, **Setup Menu** and **Manual**.

Select and press a command button to access each of the main control options available.

### → Change Add

To set the DMX start address,

1. On the Main Menu screen, tap **Change Add**.
2. Using the buttons, type the desired number.
3. Tap **Apply** to save.

The display goes back to the **Main Menu** with the new DMX address.

### → Change Mode

In this menu, the Studio Force V Phosphor can be set to operate in various DMX controlled and standalone modes.

KHL
RGWA
Look Sel
LookStore
Manual/Mstr
Slave

### → KHL

This mode assigns 3 DMX channels to set color temperature adjustment (Kelvin), hue adjustment (Hue) and intensity level adjustment (Level).

To set the **KHL** mode,

1. On the Main Menu, tap **Change Mode**.
2. On the Change Mode screen, tap **KHL**.
3. Tap **Apply** to save or **Escape** to cancel.

The display goes back to the **Main Menu** showing:

**Address** : (assigned DMX number)

**Footprint** : **3Ch** (assigned channels)

**Mode** : **KHL**

### → RGWA

This mode assigns 4 DMX channels to set Red, Green, White and Amber.

To set the **RGWA** mode,

1. On the Main Menu, tap **Change Mode**.
2. On the Change Mode screen, tap **RGWA**.
3. Tap **Apply** to save or **Escape** to cancel.

The display goes back to the Main Menu showing:

**Address** : (assigned DMX number)

**Footprint** : **4Ch** (assigned channels)

**Mode** : **RGWA**

### → Look Sel

This mode assigns 1 DMX channel to access all the 32 saved Looks.

To access a look from the **Look Sel** mode,

1. On the Main Menu, tap **Change Mode**.
2. On the Change Mode screen, tap **Look Sel**.
3. Tap **Apply** to save or **Escape** to cancel.
4. Scroll through the Looks using the assigned channel on the external DMX console which is connected to the fixture. Access to the 32 stored Looks corresponds to the channel level from 0% to 100%.

### → LookStore

In this mode, Looks created from an external DMX console can be captured and stored in the internal memory of the fixture.

To capture a Look,

1. On the **Main Menu**, tap **Change Mode**.
2. On the Change Mode screen, tap **KHL**. The **Look Store** button appears only when **KHL** is the assigned mode.
3. Create your Looks through the external DMX console using the assigned **KHL** channels.
4. On the Change Mode screen, tap **Look Store**.
5. On the Look Store screen, tap the up or down arrows to select which Look number to store the created Look.
6. Then tap **CaptureDMX** to assign the Look number.
7. Repeat steps 3 to 6 to create and capture other Looks.

To save all the captured Looks,

8. Press and hold **SaveLooks**, then follow the text prompt which appears on the screen - **>Hold SaveLooks**, then **>Looks Saved**.

The screen goes back to the Main Menu after 30 seconds or you may tap the **Escape** button to go to the Main Menu.

### → Slave

In this mode, the fixture is set as the slave unit when connected to other units. The settings of the master unit will be automatically applied to all the slave units.

To set the fixture as the slave unit,

1. On the Main Menu, tap **Change Mode**.
2. On the Change Mode screen, tap **Slave**, and then tap **Apply**.

The screen goes back to the Main Menu showing Mode: Slave.

### → Manual/Mstr

In this mode, the fixture is set as the Master standalone unit. Kelvin (color temperature), Hue and Level (intensity) are set in the Manual Mode Settings screen. (See Manual Mode Setting below.)

To access **Manual/Mstr** mode,

1. From the Main Menu, tap **Change Mode**.
2. From the Change Mode screen, tap **Manual/Mstr**, and then tap **Apply**.

The screen goes back to the Main Menu showing Mode: Manual and fixture output goes to the manual settings set previously.

Go back to the Main Menu and tap Manual to access the Manual Mode settings.

### → Setup Menu

In this menu, internal settings of the Studio Force V Phosphor can be re-configured.

DMX Data
Fan Speed
RotateDisp
Frequency
DMX Lost
Lock
Reset
Upload ENG

- **DMX Data**  
 The screen shows the DMX start address, and the equivalent value for each of the DMX channels assigned to the fixture.  
 To show DMX Data,
1. On the **Main Menu**, tap **Setup Menu**.
  2. On the Setup screen, tap **DMX Data**.
  3. Tap **Escape** to go to the Setup screen.

- **Fan Speed**  
 The internal fan of the fixture can be set to four speed options to regulate noise levels and the cooling process.  
 Fan Speed options:

<b>Quiet</b>	Internal fan is off. (Intensity reduced to 80%)
<b>Studio</b>	Internal fan is on at low speed.
<b>Live</b>	Internal fan is on.
<b>Live-Quiet</b>	Internal fan is on when DMX signal is present.

- To set the Fan Speed,
1. On the Main Menu, tap **Setup Menu**.
  2. On the Setup screen, tap **Fan Speed**.
  3. On the Fan Speed screen, select and tap a Fan Speed option, and then tap **Apply** to save.

The screen goes to the Setup screen.

- **Rotate Display**  
 This command rotates the display screen by 180 degrees.  
 To rotate the display screen,
1. On the Main Menu, tap **Setup Menu**.
  2. On the Setup screen, tap **RotateDisp**.
- The display screen rotates by 180 degrees.

- **Frequency**  
 In this menu, the fixture can be set to four frequency options. The LED scan rate can be synchronised with the video camera to avoid a flickering effect.  
 Frequency options:

1200 Hz
2400 Hz
4800 Hz
9600 Hz

- To set the Frequency,
1. On the Main Menu, tap **Setup Menu**
  2. On the Setup screen, tap **Frequency**

3. On the Frequency screen, select and tap a Frequency option, then tap **Apply** to save. The screen goes to the Setup screen.



### DMX Lost

In this menu, 2 output options can be selected if the fixture does not detect DMX signal:  
Output options:

Last data	Fixture holds the last valid DMX state.
No output	Fixture output is off.

To set DMX Lost,

1. On the Main Menu, tap **Setup Menu**.
2. On the Setup screen, tap **DMX Lost**.
3. On the When DMX Lost screen, select and tap an output option, then tap **Apply** to save.

The screen goes to the Setup screen.



### Lock

Factory default sets the display screen to turn off and lock when untouched for 30 seconds. A lock symbol appears on the screen when touched.

To disable or enable the lock,

1. On the Main Menu, tap **Setup Menu**.
2. On the Setup screen, tap **Lock**.
3. On the **Lock Future** screen, tap **Enable** or **Disable**, then tap **Apply** to save.

The screen goes to Setup screen.



### Reset

In this menu,

- Current user settings can be saved.
- The fixture can be reset to the saved user settings.
- The fixture can be reset to the factory default settings. All recorded Looks are erased.

To save the current user settings,

1. Review all settings.
2. On the Main Menu, tap **Setup Menu**.
3. On the Setup screen, tap **Reset**.
4. On the Reset Setting screen, press and hold **Save User** for 10 seconds to save the current settings. (Follow the text prompt that appears on the screen.)

The screen goes to the Setup screen.

To reset the fixture to the saved user settings,

1. On the Main Menu, tap **Setup Menu**.
2. On the Setup screen, tap **Reset**.
3. On the Reset Setting screen, tap **User**.
4. Press and hold **Apply** for 3 seconds to restore the saved user settings.

The screen reboots to the opening screen and Main Menu.

To reset the fixture to the factory default settings,

1. On the Main Menu, tap **Setup Menu**.
2. On the Setup screen, tap **Reset**.
3. On the Reset Setting screen, tap **Default**.
4. Press and hold **Apply** for 3 seconds to restore the factory default settings.

The screen reboots to the opening screen and Main Menu.

Factory Default Settings:

DMX Address	1
Mode	KHL
Lock	Enabled
DMX Lost	Last data
Fan Speed	Live-Quiet
Frequency	1200Hz
Reset	Default



**Upload ENG**

LED Engine software can be uploaded to the fixture from an external source by activating this menu.

To activate Upload ENG,

1. On the Main menu, tap **Setup Menu**.
2. On the Setup screen, tap **Upload ENG**.
3. Connect the fixture to an external uploader.
  - Initiate the uploading process from the external uploader.
  - Follow the display prompts from the external uploader and the fixture.
4. Tap the screen to exit.



**Manual**

In this mode, the fixture is set as a standalone unit. Kelvin (color temperature), Hue and Level (intensity) are set in the Manual Mode Settings screen.

To adjust the Kelvin, Hue and Level,

1. On the Main Menu, tap **Manual**.
2. On the Manual Mode Setting screen,
  - Tap the Up or Down arrows to increase or decrease the color temperature value. The corresponding value is indicated above the arrows 3200K – 5600K.
  - Tap the Up or Down arrows to increase or decrease the hue value. The corresponding value is indicated above the arrows: 0 to +128M, 0 to +127G.
  - Tap the Up or Down arrows to increase or decrease the intensity level. The corresponding value is indicated above the arrows: 0% - 100%.
3. Tap **Escape** to exit and go back to the Main Menu.

In this mode, two manual settings can be recorded and played back.

To record a manual setting,

1. On the Main Menu, tap **Manual**.
2. Set the Kelvin, Hue and Level.
3. Press and hold **Rec1** to record in memory 1 (**M1**), or press and hold **Rec2** to record in memory 2 (**M2**). Follow the text prompt that appears on the screen: >Hold Rec1, >M1 Saved or >Hold Rec2, >M2 Saved.

To play back the recorded setting,

1. On the Main Menu, tap **Manual**.
2. On the Manual Mode Setting screen, tap **M1** or **M2**.

The fixture goes to the previously recorded state.



## 2.6 DMX Protocol – Studio Force V Phosphor

Studio Force V Phosphor - DMX Personality

Studio Force V Phosphor v1.06	KHL [3ch]	RGWA [4ch]	Look Sel [1ch]
Channel 1	Kelvin	Red	Look 1 – 32 (Playback)
Channel 2	Hue	Green	
Channel 3	Level	White	
Channel 4		Amber	
<b>Total</b>	<b>3 DMX channels</b>	<b>4 DMX channels</b>	<b>1 DMX channel</b>

## 2.7 Thermal Performance

The Studio Force V Phosphor is built with an internal fan for internal cooling. The fixture output is automatically reduced when internal temperature exceeds 75°C for automatic protection. This happens on rare and extreme conditions when ambient temperature is over 35°C or the internal fans are blocked or damaged.

The airflow to and from the fan must not be constricted to maintain the maximum operating capacity of the Studio Force V Phosphor fixtures.

## 3. Troubleshooting

Check and eliminate the possible external field factors such as bad connections, faulty cables, damaged power supplies, bad control, etc. The items in the table below are basic guidelines for quick troubleshooting. For technical support 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. Bad cable connecting DMX control and fixture. Bad in/through connection between adjacent fixtures.	Check DMX address and Mode settings. Check/replace DMX run from the console. Check/replace DMX runs between fixtures.
Noise from fixture unit.	Fan malfunction.	Check fan.
Low LED output.	Internal temperature is over the limit. Fan is not working.	Check "Fan Control" mode. Check fan. Check for airflow - to and from the internal fan. Check area ventilation.

## 4. Specification

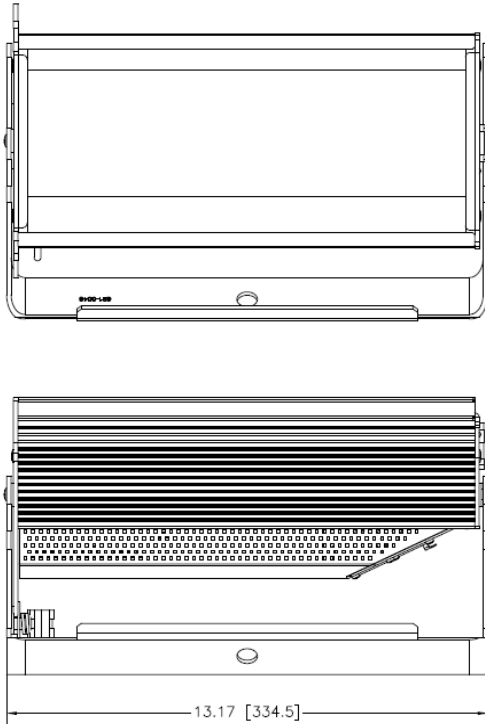
### 4.1 Technical Specifications

Studio Force V Phosphor	
Product Code	CHSFVP12
Dimensions**	335mm x 190mm x 218mm / 13.2" x 7.5" x 8.7"
Weight	4kgs / 9lbs
Power Supply	Built-in
Power Input Rating	100-240V AC, 50-60 Hz, 160VA
Power Factor	.9
Power Consumption	150W
Typical Power & Current	Measurements done with all LEDs at maximum intensity. Measurements made at nominal voltage. Allow for a deviation of +/- 10%.
Power Connector In/Out	powerCON
Data Connectors In/Out	XLR 5-pin
Control Protocol	ANSI E1.11 USITT DMX 512-A
Cooling System	Forced - 1 fan
Operating Temperature	0°C to 40°C
Construction	Anodised aluminium extrusion
Colour	Black
Built-In Hardware	Quick release lever for tilt adjustment
IP Rating	IP20
Approvals	CISPR 22 :2006/EN55022 :2006 & CISPR 24 :1997/EN55024 :1998, ICES-003 :2004 & FCC Part 15 Subpart B: 2007, CSA C22. No.166-M1983:R2008 UL 1573:2003; UL 8750
LED Engines	2
LEDs Per Engine	30 LEDs each (6 x RGA, 12 x B)
Total LEDs	60
Control Modes	3 channel KHL, 4 channel RGWA, 1 channel Look Sel, Manual/Mstr, Slave, Look Store
Dimming Curve	Theatrical
Variable Effects Engines	Yes
Effects Parameters	N/A
Hot Lumen Output (combined)	4,200 @ 5,600K; 1,750 @ 3,200K
Optics	Remote phosphor panel
Beam Distribution	Symmetrical direct illumination
CCT	3200K - 5600K (+/- 200K)
Color Gamut	Performance enhanced
CRI	Up to 91
Lamp Life	L70 at 50,000 hours

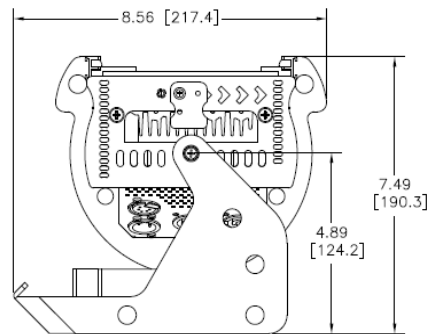
\*\*For exact measurements please refer to the line drawings below



## 4.2 Drawings - Dimensions



## STUDIO FORCE V PHOSPHOR



**DISCLAIMER:** Dimensions and illustrative drawings contained herein are accurate to the company's knowledge at the time of printing, however specifications are subject to change without notice

## 4.3 Accessories

- CHCFCL12 – Cyc Lens For Force 12
- CHCFBL12 – Border Light Lens For Force 12
- CHCFSA12 – Spigot Adaptor For Force 12
- CHCFECL12 – Egg Crate Louver For Force 12
- CHCFTH12 – Top Hat For Force 12
- CHCFH12 – Half Top Hat For Force 12
- CHCFBD12 – Barn Door For Force 12
- CHCFDBX – Diffuser Box For Force 12
- CHCFLBA12 – Lightbank Adaptor (Speedring) For Force 12
- CHCFLB12 – Lightbank For Force 12
- CHCFLBK-K – Lightbank Kit\* For Force 12 (consists of Lightbank Adaptor (Speedring) & Lightbank)

## 5. Maintenance

With care, the Studio Force V Phosphor fixtures 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.