

# Chroma-Q<sup>®</sup>

## FxForce IR 12<sup>™</sup>

### User Manual



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

Version 1.1 OCTOBER 2018, Software Version 2.1

**Part Number:** (CHFXIR12, CHFXIR12W)  
**Model:** (621-3500, -621-3510)

## 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 labor 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 Chroma-Q warranty returns department, by the purchaser, at the purchaser's expense. If no fault is found, Chroma-Q 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.

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## 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.

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 FxForce range has 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:

Outside North America:  
Tel: +44 (0)1494 446000  
Fax: +44 (0)1494 461024  
[support@chroma-q.com](mailto:support@chroma-q.com)

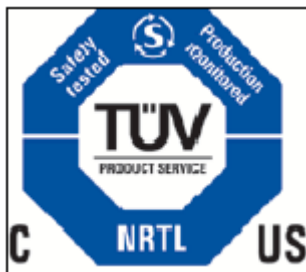
North America:  
Tel: 416-255-9494  
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For further information please visit the Chroma-Q website at [www.chroma-q.com](http://www.chroma-q.com).

Chroma-Q and FxForce IR 12 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/otpca/nrtl/> for information on the list of Nationally Recognized Testing Laboratories (NRTLs) and the scope of recognition.



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# Table of Contents

- Product overview ..... 4
- Unpacking the units ..... 4
- Cabling ..... 4
- Mounting ..... 5
- Optical Accessories ..... 5
- Control ..... 5
- DMX Protocol ..... 9
- Thermal Performance ..... 9
- Troubleshooting ..... 9
- Technical specifications ..... 10
- Drawings ..... 11
- Maintenance ..... 11

## Product overview

The Chroma-Q® FxForce™ IR 12 is an Infra-red lighting fixture which utilises the same core innovative LED technologies found in the Color Force™ range to provide a brilliant IR light ideal for infrared filming and night mode video. Successfully used in the Film & TV market, it can be used in many other applications including image capturing photography. Designed for practicality, the unit is equipped with a manual control mode, colour touch screen interface and a range of optional accessories.

The FxForce IR 12 features two light engines with 24 Infra-red LEDs each for a total of 48 Infra-red LEDs. 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 in remote DMX or standalone manual operation.

The product's robust anodised extruded aluminium construction houses a discreet cable management system with enhanced protection around the lenses. The adjustable yoke assembly features a hidden quick release fixing for fast and easy tilt adjustment.



## Unpacking the units

The package includes the FxForce IR 12 fixture, power connector (EU)/power cord (US) and a Quick Start Guide. We recommend that you keep the original packaging in case the item needs to be returned.

## Cabling

FxForce IR 12 power input and through connections are via 2 powerCon connectors. The DMX control data input and through connections from an external control console are via 2 XLR 5-pin connectors. The chassis are ground bonded.

**Note:** The maximum number of 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

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**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.

## Mounting

The FxForce IR 12 fixture is built with a yoke assembly 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.

## Optical Accessories

Slide-in optical accessories are available to adjust the beam angle of the fixture to suit a wide range of applications. 2 accessory slots and a swivel plate are included at the front and side of the fixture to hold and lock these slide-in accessories: cyc and border light lens, lightbank kit, egg crate louver, top hat, half top hat, barn door and diffuser box attachment accessories.

## Control

The FxForce IR 12 fixture can operate as a standalone unit or be controlled remotely via ANSI E1.11 USITT DMX512-A protocol. The control functions can be accessed through the LCD display at the rear of the fixture with 4 push buttons.

**Push button operation:**



**Power-Up Display:**

On power-up and home position, the LCD display shows the Main Menu screen with the model name, software version, the DMX address, current assigned mode and the number of assigned channels.

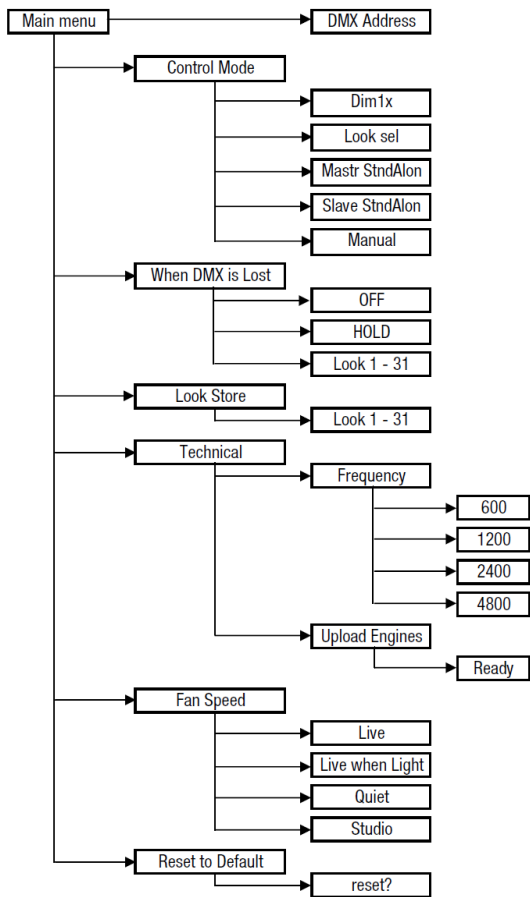
**Display Mode:**

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

**Control Modes:**

Mode No.	Display	Ch	Description
1	Dim1x	1	1 DMX channel directly affecting the intensity of all the LEDs.
11	Look sel	1	1 DMX channel assigned to select from all the Looks stored in Look Store.
12	Mastr StndAlon		The fixture is set as the Master unit.
13	Slave StndAlon		The fixture is set as the Slave unit. Units set as slave follow the control modes set with the Master unit.
	Manual		Use of the Up and Down buttons to increase and decrease the intensity of all the LEDs in standalone operation.

## Control Menu



1. From the Main Menu, press the Up or Down buttons to scroll through the control menu options.
  2. Press the Enter button to select a control menu option.
  3. Use the Up and Down buttons to scroll through the settings available.
  4. Press the Enter button for 2 seconds to select and save a setting.
- The screen goes back to the Main Menu.

The Exit button can be pressed at any time and the screen goes back to the previous menu.

### Main Menu / DMX Address

To set the DMX start address,

1. Press Enter
2. Press Up or Down to adjust the DMX start address
3. Press Enter for 2 seconds to save

The display goes back to the Main Menu.



### Control Mode

The fixture can be set to operate in 2 DMX controlled modes and 3 standalone modes.

Mode	Name	Ch	Description
1	Dim1x	1	All LEDs
11	Look sel	1	Look Select
12	Mastr StndAlon		Standalone Master
13	Slave StndAlon		Standalone Master
	Manual		Manual

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Manual:

In this mode, the intensity level "Intensity" can be set and adjusted in standalone operation.

To adjust the Intensity levels,

1. In Manual mode, press Enter once, "00%" level will flash.
2. Press Up or Down to adjust the value.
3. Press Enter for 2 seconds to save.

The display goes back to the Main Menu.



When DMX is Lost

If DMX is not detected various output options can be selected:

Option	Function
Off	will snap to off
Hold	will hold the last valid DMX state
Look 1-31	will snap to the Look of your choice



Look Store

In this mode, 31 looks can be stored for standalone operation.

To replay a Look in standalone operation,

1. From the Main Menu, scroll and select Look Store.
2. In Look Store, scroll and select the desired look.
3. Press Enter for 2 seconds to save.

To replay a Look with a DMX console,

1. From the Main Menu, scroll and select Look sel.
2. Press Enter for 2 seconds to save.
3. Use the DMX console with the assigned channel to playback the various looks stored. (1-31 looks in 1 single channel)

Note: DMX has priority over internal Looks

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 Reset is performed. There are two ways to record a look:

Simple, create and save a look with a DMX console:

1. Set the fixture to the desired Control Mode.
2. Use a DMX console to adjust channel levels and create the desired look or effect.
3. From the Main Menu, scroll and select Look Store.
4. Scroll and select the Look Store number.
5. Press Enter for 2 seconds to save the Look.

Advanced, create and save a look in standalone (DMX is unplugged)

1. From the Main Menu, scroll and select Look Store.
2. Scroll and select a Look Store number.
3. Press Enter to access the memory data. The data is presented as two numbers separated by a letter "c". The number to the left of the "c" is the channel number and to the right is the channel level. Pressing Up/Down up to the far end will show the Mode at which the selected Look was programmed.

To edit the Mode of a selected Look:

1. From the Main Menu, scroll and select Look Store.
2. Scroll and select a Look Store number.
3. Press Enter to access the memory data.



4. Press the Up/Down buttons up to the far end until the Control Mode number is shown then press Enter.
5. Press the Up/Down buttons to adjust the Mode number.
6. Press Enter to toggle back to the channel numbers.

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

1. From the Main Menu, scroll and select Look Store.
2. Scroll and select a Look Store number.
3. Press Enter to access the memory data.
4. Press the Up/Down buttons and select the channel number.
5. To edit the channel level, press Enter and use the Up/Down buttons to adjust the level (shown as 0-255).
6. Press Enter to toggle back to the channel number. When the desired effect is created press Enter for 2 seconds to save the edited Look.



#### Technical

In this mode,

- Frequency settings of the fixture can be changed.
- Software updates for the LED engines can be uploaded.

#### Frequency:

The fixture has four frequency settings available to allow for the LED scan rate to be synchronised with the video camera and avoid a flickering effect.

- 600
- 1200
- 2400
- 4800

#### Upload Engines:

Software updates for the LED engines can be uploaded to the fixture from the Chroma-Q Uploader:

To set the fixture for engine upload,

1. From the Main Menu, scroll and select Technical.
2. In Technical, select Upload Engines.
3. Press Enter, and the display shows "Ready".

Proceed to execute uploading:

1. Connect an XLR 5-pin cable from the Uploader to the unit.
2. Power-up the Uploader - display shows the file name, and "Ready".
3. On the Uploader, press the "GO" button once to execute the uploading - red indicator light on the "GO" button blinks. The Uploader display shows a simulated arrow moving from left to right indicating the uploading process. All the LEDs of the fixture lights up (low intensity) to indicate completion of a successful upload and the Uploader display shows "DONE".
4. Power-cycle the unit.

(See Quick Start Guide of the Chroma-Q Uploader)



#### Fan Speed

The fixture is built with an internal fan with 4 speed options to regulate noise levels and the cooling process.

Live	High velocity
Live when Light	Live mode is activated when the fixture LEDs are on
Studio	Low velocity
Quiet	Off



### Reset to Default

The fixture can be reset to factory default settings:

DMX address	001
Control Mode	Dim1x
When DMX is Lost	Hold
Looks	01
Frequency	600
Fan Speed	Live

## DMX Protocol

### DMX Personality

<b>FxForce IR 12 V2.1</b>	<b>Control Mode 1 Dim1x [1ch]</b>	<b>Control Mode 11 Look sel [1ch]</b>
Channel 1	All LEDs	Look 1 - 31
<b>Total</b>	<b>1 DMX channel</b>	<b>1 DMX channel</b>

## Thermal Performance

The FxForce IR 12 fixture is equipped with an internal fan to drive the internal cooling system. When the internal temperature of the fixture exceeds 75°C the output is reduced 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.

## 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 support and/or parts, please contact your selling dealer or the offices listed in this manual.

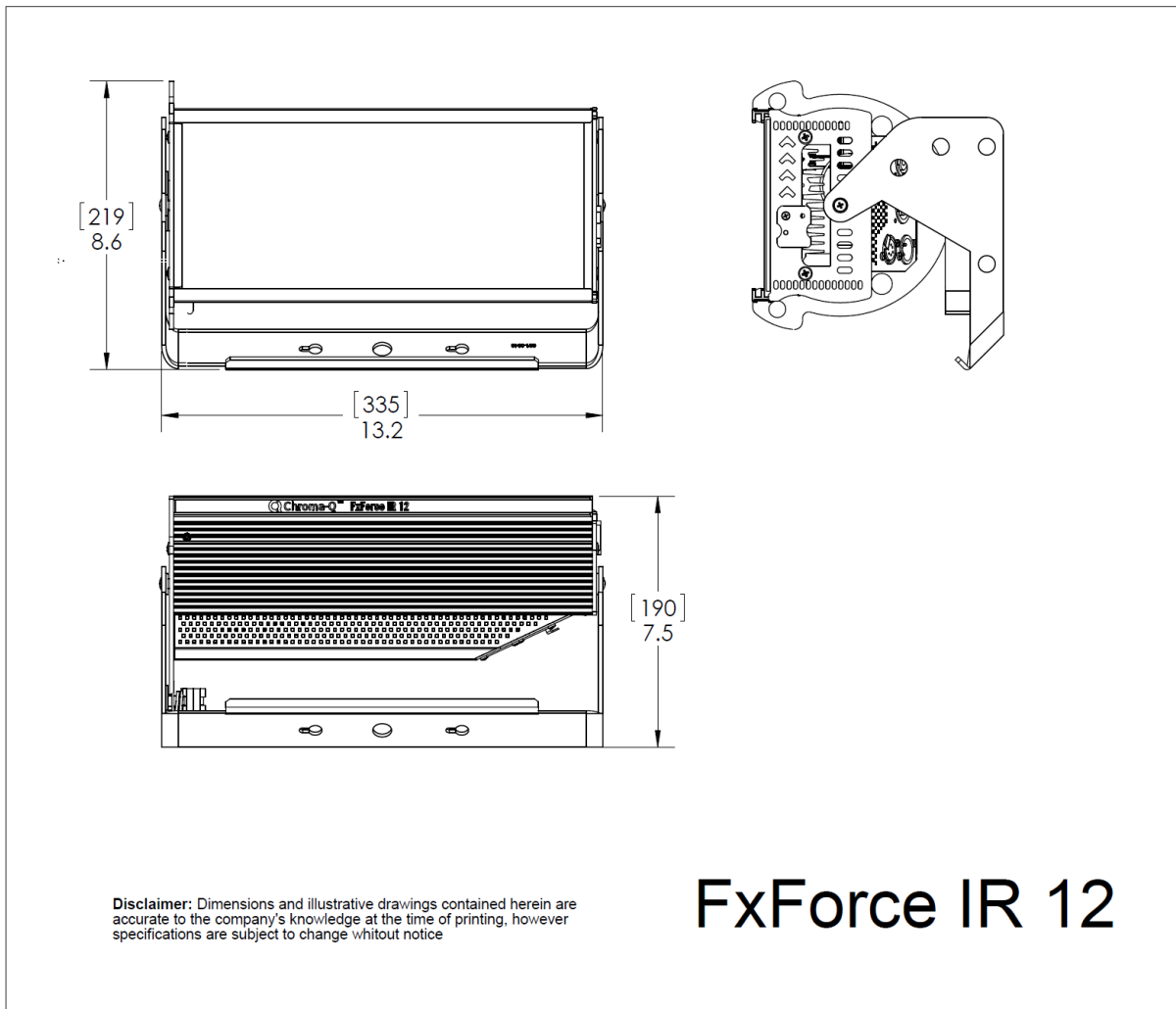
Symptom	Possible Cause	Solution
Fixture does not respond to DMX control.	Set to wrong or different DMX address. Bad cable connecting DMX control and fixture. Bad in/through connection between adjacent fixtures.	Check DMX address and Mode settings. Check/replace DMX cable.
Noise from fixture unit.	Fan malfunction.	Check fans.
Low LED output.	Internal temperature is over the limit. Fan is not working.	Check "Fan Control" mode. Check the fans and airflow - to and from the internal fan. Check area ventilation.

## Technical specifications

Product Code	CHFXIR12
Net Dimensions(Without Fixings) - Width x Height x Depth	335mm x 190mm x 219mm / 13.2" x 7.5" x 8.6"
Net Weight (Without Fixings)	4kgs / 9lbs
Shipping Dimensions - Width x Height x Depth	432mm x 343mm x 279mm / 17" x 13.5" x 11"
Shipping Weight	6kgs / 13lbs
Power & Connections	
Power Supply	Built-in
Power Input Rating	100-240V AC 50-60Hz 160VA
Power Factor	0.9
Power Consumption	110W (maximum intensity); 6W (stand-by)
Typical Power & Current	Measurements done with all LEDs at maximum intensity. Measurements made at nominal voltage. Allow for a deviation of +/- 10%.
Power Connectors 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	Black 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
Control & Photometric	
LED Engines	2
LEDs Per Engine	24 IR LEDs
Total LEDs	48 IR LEDs
Control Modes	1 channel Dim1x, 1 channel Look Select, Master Standalone, Slave Standalone, Manual
Lamp Life	L70 at 50,000 hours



## Drawings



## Maintenance

With care, the FxForce IR 12 requires 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.

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