

## Chroma-Q Studio Force II 48 Specification

### COLOUR MIXING VARIABLE WHITE LIGHT LED BATTEN FIXTURE

#### A. General

1. The fixture shall be a full spectrum colour mixing fixture employing Red, Green, Blue, White LED engines. The fixture shall be a Studio Force II 48 unit by Chroma-Q or approved equal.
2. The fixture shall incorporate fully homogenized colour mixing optics to eliminate the projection of multiple unsightly colour separation shadows from the different colour sources in the fixture.
3. The fixture shall be suitable for television broadcast and film applications, thus providing tuneable white light, plus/minus green shift control and variable color temperature control.
4. The fixture shall be UL 1573 listed for stage and studio use.
5. The fixture shall comply with the ANSI E1.11 USITT DMX 512-A control standard.
6. The fixture shall be capable of wireless control via LumenRadio connection when using optional radio module.
7. The colour rendering index of the fixture shall be 94 CRI.
8. The hot lumen output (combined) of the fixture shall be 24,000 lumens.
9. Fixture colour temperature (CCT) shall be adjustable between 2,800° and 6,500° Kelvin.
10. The LED lamp life of the fixture shall be a minimum of 50,000 hours (L70 rating).
11. Fixtures shall be factory calibrated to ensure all units output the same exact colour.
12. Fixtures which do not comply with this specification shall not be accepted.

#### B. Physical

1. The fixture housing shall be constructed of robust anodised extruded aluminium and shall be free of pits and burrs.
2. The fixture shall provide for mounting of cyc lens and border lens optical accessories for beam angle adjustment.
3. The fixture housing shall be available in black or white colour.

## Chroma-Q Studio Force II 48 Specification

4. Power supply, cooling and electronics shall be integral to each unit.
5. Fixture net weight shall be 18kg (40lb).
6. Fixture net dimensions shall be (L x H x D) 1181mm x 191mm x 165mm (46.5" x 7.5" x 6.5").
7. The fixture shall include a built-in quick release lever for tilt adjustment.

### C. Agency Compliance and Environmental

1. The fixture shall be UL Listed and shall be so labeled.
2. The fixture Approvals shall include the following: 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.
3. The IP rating of the fixture shall be IP20 for dry location use.

### D. Thermal

1. The fixture shall be forced cooled via two internal fans with four fan speeds available.
2. The fixture shall operate in an ambient temperature range of 0°C (32°F) minimum, to 40° C (104°F) maximum ambient temperature.
3. If the internal temperature exceeds 75°C the output of the fixture will be reduced for automatic protection.

### E. Electrical

1. The fixture shall be equipped with a 100V to 240V 50/60Hz 550VA internal power supply.
2. The power supply of the fixture shall have a power factor of 0.97 @ 120V AC, 0.92 @ 240V AC.
3. The maximum power consumption shall not exceed 550W @ 120V AC, 550W @ 240V AC.
4. The idle power consumption shall be 27W @ 120V AC, 30W @ 240V AC.
5. Fixture In/Out power shall be via Neutrik powerCON TRUE1 connectors.
6. The fixture requires power from a constant non-dim power source.

## Chroma-Q Studio Force II 48 Specification

### F. Optical

1. The fixture shall provide a fully homogenised and uniform colour-mixed output.
2. The fixture beam angle shall be 22° (approx.).
3. The fixture beam angle with optional cyc lens optic shall be 80° x 35° (approx.).
4. The fixture beam angle with optional border lens optic shall be 43° (approx.).

### G. Light Emitting Diodes

1. The fixture shall be equipped with 16 high output RGBA cells (pixels).
2. LEDs shall be rated for a 50,000-hour LED life to 70% intensity (L70).
3. All LEDs used in the fixture shall be high brightness and proven quality from reputable LED manufacturers.
4. LED systems manufacturers shall utilize an advanced production LED binning process to maintain LED color consistency.

### H. Dimming

1. The LED system shall be digitally driven using high-speed pulse width modulation (PWM).
2. The fixture shall offer six LED scan rate (PWM) frequency modes for compatibility with video broadcast equipment in order to avoid a flickering effect.
3. The dimming curve shall be of theatrical grade for smooth dimming over longer timed fades and at low intensities.

### I. Control and User Interface

1. The fixture shall be equipped with two 5-Pin XLR connectors (In and Out) for data control via ANSI E1.11 USITT DMX512-A protocol.
2. The fixture shall be capable of wireless DMX512-A control via LumenRadio connection when using optional radio module.
3. The fixture shall be equipped with a touchscreen LCD display for accessing control and configuration functions.
4. The fixture shall offer the following control modes to include:

## Chroma-Q Studio Force II 48 Specification

- a. KHi – 3 channel DMX mode providing each cell group with three channels for Kelvin, Hue ( $\pm$ Green), Intensity control.
  - b. Cine-Q – (Intensity Kelvin, Hue, Red, Green, Blue, White, Crossfade) 8 or 9 channel DMX mode providing a combination of KHi and RGBW modes for each cell group, with the ability to crossfade between either mode (8 channels for 8-bit crossfade, 9 channels for 16-bit crossfade).
  - c. RGBW – 4 channel DMX mode providing each cell group with four channels for Red, Green, Blue, White control.
  - d. RGB – 3 channel DMX mode providing each cell group with three channels for Red, Green, Blue control. White automatically mixed in when all three colour parameters are engaged.
  - e. HSI – 3 channel DMX mode providing each cell group with three channels for Hue, Saturation, Intensity control.
  - f. Extended mode – 1 DMX channel added at end to above modes providing control from DMX console of fan speed, PWM frequency and DMX lost state functions. Overrides touchscreen menu settings of same functions.
  - g. HSi Legacy hue mode – Option providing current generation Studio Force fixtures to match HSi pattern with previous generation Chroma-Q HSi mode enabled fixtures.
5. The fixture shall offer configuration and control options including but not limited to:
- a. Selection of programmed looks (31 looks total).
  - b. Recording of looks via external DMX control console.
  - c. Fixture cell (pixel) grouping option selection: x16(All), x4, x1, Odd/Even.
  - d. Fixture starting address location selection (pixel order flip left/right).
  - e. DMX data display of DMX channel values.
  - f. Fan speed selection:
    - 1) Quiet
    - 2) Studio
    - 3) Live
    - 4) Live-Quiet
  - g. Rotate touchscreen display 180 degrees option.
  - h. LED scan rate (PWM) frequency mode selection:
    - 1) 750 Hz
    - 2) 1500 Hz
    - 3) 3000 Hz
    - 4) 6000 Hz
    - 5) 12000 Hz
    - 6) 24000 Hz

## Chroma-Q Studio Force II 48 Specification

- i. Selection options for loss of DMX data behaviors:
  - 1) Output snap to off
  - 2) Output last valid DMX state
  - 3) Output programmed look (01-31)
- j. Temperature of LED engines display.

END SPECIFICATION