Chroma-Q®

COLOR FORCE 3™ 72/ 48/ 12

USER MANUAL

PART NUMBERS: CQ1530-1200, CQ1530-1201, CQ1530-1205, CQ1530-1206, CQ1530-4800, CQ1530-4801,

Chroma-Q®
BRILLIANT SOLUTIONS

CQ1530-4805, CQ1530-4806, CQ1530-7200, CQ1530-7201, CQ1530-7205, CQ1530-7206

MODEL: 1530-1200, 1530-1201, 1530-1205, 1530-1206, 1530-4800, 1530-4801, 1530-4805, 1530-4806, 1530-7200, 1530-7201, 1530-7205, 1530-7206

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WARNING!

Read the safety precautions in this section before installing, powering, operating or servicing this product.

Warning!

Safety Hazard.

Risk of severe injury or death.

Warning!

Fire Hazard.

Warning!

Hazardous Voltage.

Risk of severe lethal electric shock.

Warning!

Refer to User manual.

WARNING!

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- PROVIDE A MEANS OF LOCKING OUT AC MAINS POWER THAT ALLOWS POWER TO THE INSTALLATION TO BE SHUT DOWN AND MADE IMPOSSIBLE TO REAPPLY, EVEN ACCIDENTALLY, DURING WORK ON THE INSTALLATION.
- SHUT DOWN POWER TO THE INSTALLATION DURING SERVICE AND WHEN IT IS NOT IN USE.
- BEFORE APPLYING POWER TO THE INSTALLATION, CHECK THAT ALL POWER DISTRIBUTION EQUIPMENT AND CABLES ARE IN PERFECT CONDITION AND RATED FOR THE CURRENT REQUIREMENTS OF ALL CONNECTED DEVICES.
- ISOLATE THE INSTALLATION FROM POWER IMMEDIATELY IF ANY PRODUCT, POWER CABLE OR POWER PLUG IS IN ANY WAY DAMAGED, DEFECTIVE OR WET, OR IF IT SHOWS SIGNS OF OVERHEATING.
- ALTHOUGH THE COLOR FORCE 3 IS IP65 RATED, DO NOT IMMERSE THE FIXTURE OR EXPOSE IT TO WATER PRESSURE BEYOND ITS RATING. ENSURE ALL COVERS, CONNECTORS, AND SEALS ARE PROPERLY CLOSED BEFORE EXPOSURE TO WATER .

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- THE COLOR FORCE 3 IS COOLED ACTIVELY WITH FANS. PROVIDE ADEQUATE CLEARANCE FOR AIRFLOW AROUND THE DEVICE.
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4 PRODUCT OVERVIEW

Color Force 3™ — Raising the Bar for Theatre, Touring & Event Lighting

Building on over 15 years of Color Force ™ innovation, the new Color Force 3™ delivers higher output, deeper calibration, and smoother control that inspire lighting designers. Powered by the ColorSure 3™ engine, it produces rich primary colors, delicate pastels, and pure whites from 2 000 K to 7 100 K, with advanced thermal management ensuring consistent performance in any environment. Every cue benefits from SilkMotion... 20-bit internal dimming for flawless low-intensity fades and instant snaps, while FlexOptics™ lenses and high-CCT accent emitters unlock creative textural effects. A fully sealed IP65 chassis, NF-Q™ app setup via integrated NFC access points, touchscreen control, and Art-Net / sACN / RDM connectivity make it ready for any stage or tour — delivering flawless colour, seamless fades, and rock-solid reliability show after show.

4.1 Fixture Models

Color Force 3 ™ - Fixture Variants			
Model	Length	# of Cells	# of SparQle LEDs
CF3-12	~12″	4	8
CF3-48	~48″	16	32
CF3-72	~72″	24	48

5 INSTALLATION & MOUNTING

5.1 Unpacking the Units

Color Force 3™ package includes the fixture, power cord, mounting brackets and a Quick Start Guide. We recommend that you keep the original packaging in case the item needs to be returned.

5.2 Cabling

Ensure a minimum clearance of 6 inches (15 cm) on the front, long sides and rear for proper airflow. The Color Force 3™ utilizes Neutrik powerCon true1 connectors for power input and through. The DMX control data input and through connections from an external control console are via two Neutrik XLR 5-pin connectors. The chassis are ground bonded.

Note: To avoid overloading the input cable, the maximum length of Color Force 3™ fixtures for a single power cable run is 3.6m (12') at 110VAC or 7.2m (24') at 220VAC.

5.2.1 XLR 5-pin Cable: DMX Data connections

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

5.2.2 RJ-45 Cable: Network connections

CaT5E or better cables, maximum length is 100m

Internal relay will bypass the fixture if unpowered

5.2.3 Power Cable:

International Color Code	Connections	North American Color Code
Green and Yellow	Earth (E)	Green
Blue	Neutral (N)	White
Brown	Live (L)	Black

5.2.4 Maximum Number of fixtures connected in a series:

Important Notice: Actual number of fixtures connected in series may be lower based on your branch circuit inrush rating.

Fixture	Wattage	@110V	@220V
CF3 72	1100W	1 x CF 3 72	2 x CF3 72
CF3 48	700W	2 x CF 3 48	4 x CF3 48
CF3 12	180W	8 x CF 3 12	16 x CF3 12

5.3 Mounting

The Color Force 3™ fixtures are designed for flexible installation in floor, wall, and truss-mounted applications. Each fixture is equipped with robust mechanical features to ensure safe and reliable operation in any orientation.

5.3.1 Built-In Mounting Brackets / Trunnions

All Color Force 3 ™ models include built-in mounting brackets (trunnions) for:

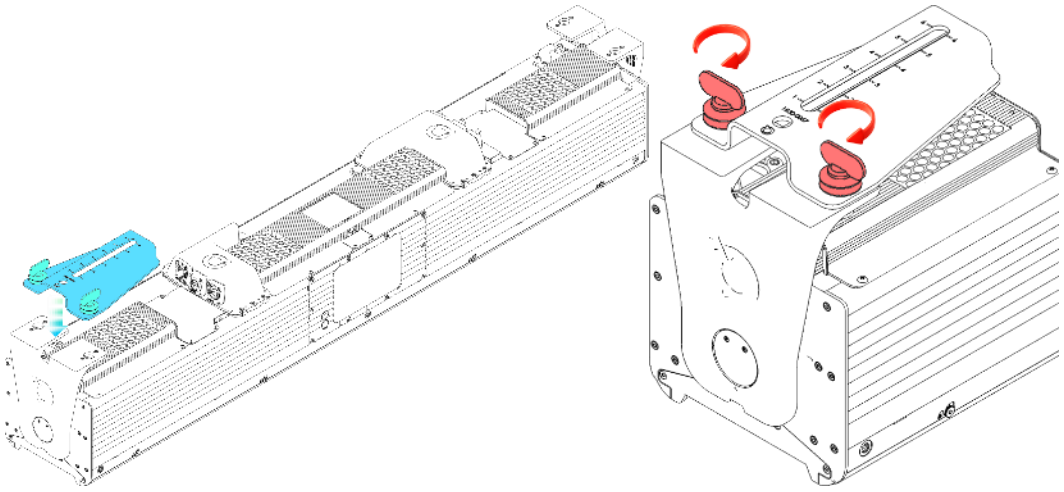
- Floor mounting
- Ground stacking
- Surface placement

Each trunnion arm features quick-release tilt levers, allowing fast and tool-free angle adjustment.
Tighten both levers fully before operating or suspending the fixture.

5.3.2 Omega Brackets for Truss Mounting

The fixture ships with two Omega brackets fitted with ¼-turn locks for use on truss or pipe grids.

- Both Omega brackets must be used at all times when the fixture is suspended — either horizontally or vertically.
- Using fewer than two Omega brackets, or attaching them incorrectly, may result in fixture damage or unsafe conditions.



5.3.3 Safety Cable Requirements

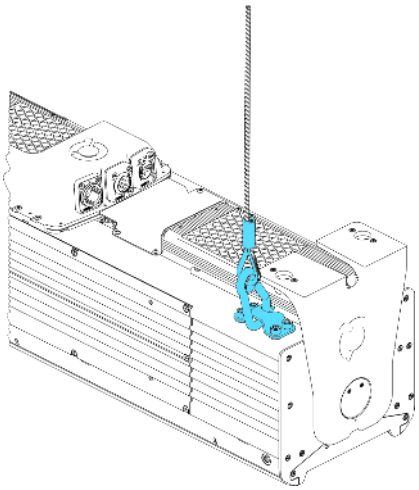
For overhead mounting, it is essential to secure the fixture using two independent safety cables.

Color Force 3™ fixtures include:

- Two dedicated safety-attachment brackets, located on the mounting structure
- Designed to accept standard industry safety cables or chains

Always attach both safety cables to these points before lifting, rigging, or energizing the fixture.

Failure to properly secure the fixture with both safety attachments may result in property damage, equipment failure, or personal injury.



5.3.4 Additional Mounting Notes

- Wall and truss installations may require additional hardware (clamps, adapters, couplers) not included with the fixture.
- Ensure that all rigging equipment is rated for the fixture's weight and installation method.
- Maintain clear airflow around vents and avoid blocking drain holes when installing outdoors.
- When tilting on trunnions, ensure the cables have sufficient slack to prevent strain.

5.3.5 Tilt Angle Degree Dials

Each end of the fixture features a degree reference dial marked in degrees, allowing precise and repeatable tilt positioning.

The dial provides a clear indication of the fixture's angle relative to 0°, which represents the lens aiming straight up or straight down, depending on mounting orientation.

These dials are useful for:

- Matching tilt angles across multiple fixtures
- Recreating previous focus notes
- Documenting aiming for touring or rental workflows
- Restoring exact positions after transport or service

6 LENS INSTALLATION & REMOVAL

Each Color Force 3™ fixture ships with its front lens pre-installed. The lens assembly is designed to optimize the fixture's cyc performance and beam quality. For proper optical orientation, the side of the lens that must face the cyc is located on the display side of the fixture.

Therefore, the display should naturally face the cyc for standard cyc-lighting applications.

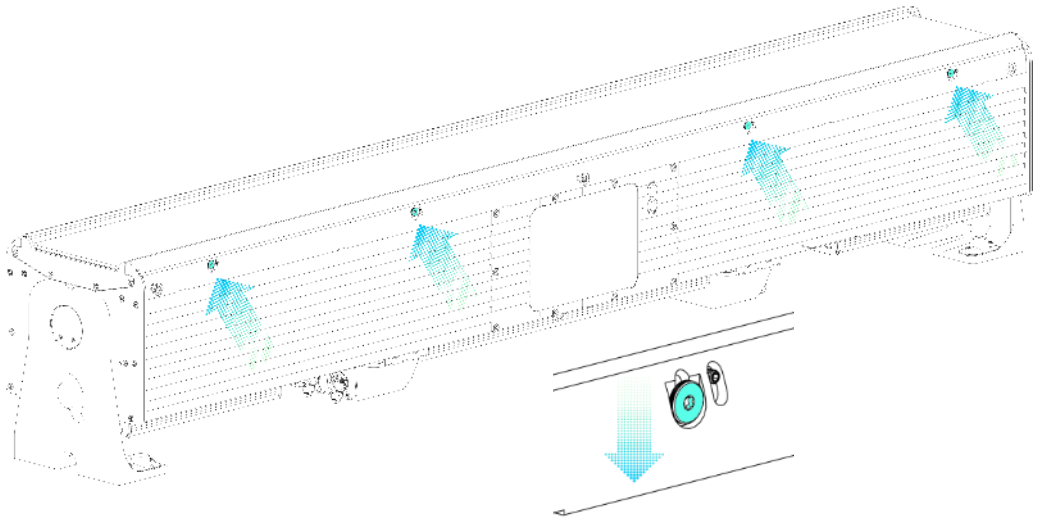
It is also possible to remove the lens entirely to achieve a different visual effect or a native "raw LED" output.

6.1 Removing the Lens

Before removing the lens:

- Remove any installed accessories
  (diffusion filters, ND filters, barndoors, top hats, etc.)
- Open the sliding rail
- On the display side, unlock and slide the top rail outward.
- The rail will travel approximately 10 mm to expose the lens retention points.
- Release the lens holders
- Under the movable rail, you will see three lens holders per lens section.
- Using a flat screwdriver, gently push each holder backwards to disengage it from the lens.
- Lift the lens out
- With a flat tool or your fingers, carefully lift the lens upward once the holders are released.
- Move slowly to avoid flexing the lens or damaging the holders.

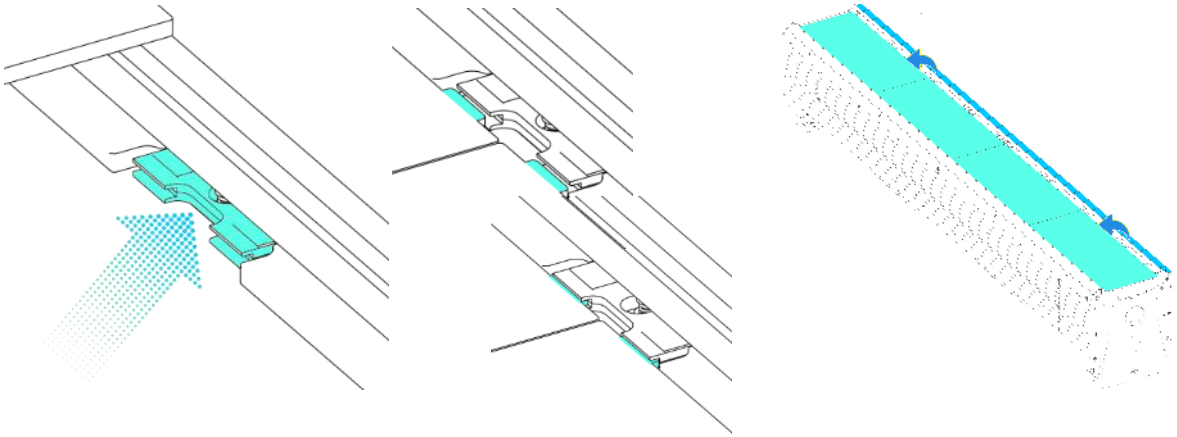
The lens will now be free from the fixture.



6.2 Installing the Lens

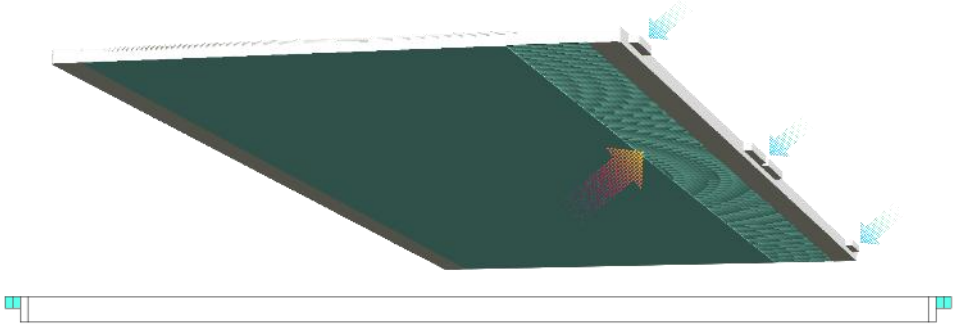
To reinstall:

- Ensure the lens holders are pushed back
- All three holders must be fully retracted before placing the lens.
- Place the lens into position
- The side with the Fresnel teeth must always face up.
- The smooth side should face downward toward the LEDs.
- Close the sliding rail
- Slide the display-side rail back into its locked position.
- Closing the rail will automatically push the lens holders forward to secure the lens.
- OR
- Use a flat tool to push each lens holder forward individually to lock the lens in place.



Orientation of Lens

The extensions are positioned on the upper half of the lens, and the deviation strip should face toward the Cyc (display side).



6.3 Important Notes

- If the rail does not close properly:
  → The lens is likely installed upside down, with the Fresnel pattern facing down.
  Correct the orientation and try again.
- Do not force the lens or holders. They will seat naturally when aligned correctly.
- Always ensure the lens is fully locked before transporting or rigging the fixture.

7 INSTALLATION OF ACCESSORIES

The Color Force 3™ includes two front accessory slots, allowing a wide range of optical and mechanical accessories to be installed quickly and securely.

7.1 Accessory Slots

7.1.1 1. Front (Lens-Side) Slot – Diffusion / Clear / ND

The slot closest to the front lens is designed for:

- Linear diffusion lens, border diffusion lens, clear protective plates, and Neutral Density (ND) filters.

This slot holds any accessory that modifies the optical output or provides front protection.

7.1.2 2. Outer Slot – Barndoors / Top Hats / Other Light-Shaping Accessories

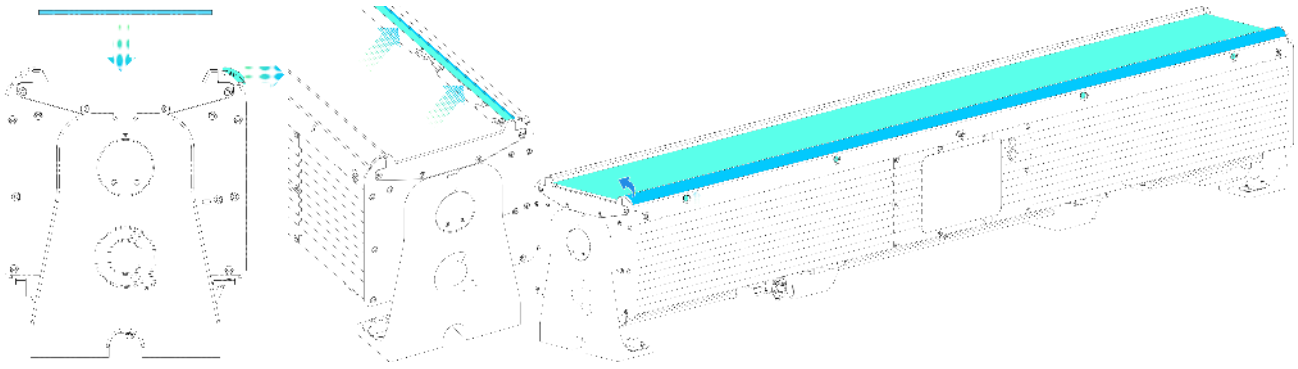
The second slot, located further from the lens, is intended for:

- Barndoors (CF3-12 only)
- Top hats (CF3-12 only)
- Snoots (CF3-12 only)
- Anti-glare and spill-control accessories (CF3-12 only)
- Other mechanical light-shaping tools

This slot accepts accessories that attach externally and do not interfere with the front diffusion.

7.2 Installing a Diffusion or Accessory

- On the display side of the fixture, unlock the top sliding rail.
- Slide the rail backward approximately 10 mm to open the accessory channel.
- Place the diffusion filter or accessory into the fixed rail on the opposite side.
- Slide the moveable rail forward until it fully closes and locks into place.
- Ensure the accessory is properly seated and secure before powering the fixture or hanging it.



7.2.1 Notes

- Accessories must be installed one per slot.
- Do not force accessories that exceed the width or thickness limits of the slot.
- Always verify that the sliding rail has fully locked before rigging or transporting the fixture.

8 MENU SYSTEM

8.1 Power-up Screen:

During the short time while the fixture powers on, you can see the firmware version.

The firmware version is also viewable from the Main and Setup Menu.

No Power Menu Access: Press and hold the second button next to the touchscreen for a few seconds to turn on the display and configure the fixture when it is not connected to line power.

8.2 Display Rotation & Auto-Rotation

The Color Force 3™ includes an internal orientation sensor that detects whether the fixture is upright or inverted. The touchscreen can automatically rotate between 0° and 180°, ensuring the display remains readable regardless of how the fixture is mounted.

Rotation settings are accessible directly on the Home Screen. 

8.3 Auto Rotation

When Auto is enabled, the touchscreen automatically flips between 0° and 180° based on the fixture's orientation.

- The display updates immediately when the fixture is inverted.
- This guarantees readable text during rigging, focusing, and servicing.

When Auto Rotation is active, the Manual Rotation button is disabled.

8.4 Manual Rotation

When Auto Rotation is disabled, a manual Rotate button becomes available.

- Tapping this button toggles the display between 0° and 180°.
- This allows you to force the preferred viewing angle regardless of the fixture's physical orientation.

8.5 Manual rotation is useful when:

- A fixture is mounted in a static position and you want consistent orientation across multiple units
- Auto-rotation is not desired for an installation or permanent rig
- The fixture is positioned in a way where auto flipping would be disruptive.

8.6 Main Menu

The Main Menu is the primary status screen of the Color Force 3 ™. It provides a complete overview of the fixture's configuration, addressing, active control sources, engine details, and system information. This screen also serves as a central navigation point: the display is fully touch-enabled, and several elements on this page act as direct shortcuts to deeper configuration menus.

The Main Menu appears automatically when the fixture is powered on and no submenus are open.

8.7 Engine Status Panels

The screen is divided into two main sections displaying the configuration of each engine:

8.8 Main Engine (Top Panel)

Shows essential parameters for the primary color-mixing engine:

- Universe (U): Current universe assigned
- Address (A): DMX start address
- Footprint: DMX channel count
- Personality: Selected Control mode
- Grouping: Cell grouping method
- Freq: Active PWM frequency

8.9 SparQle Engine (Bottom Panel)

Displays equivalent information for the SparQle engine (when enabled):

- Universe and Address
- Footprint
- SparQle personality
- Grouping
- PWM frequency

8.9.1 System Information

The lower section provides global fixture information:

- FW: Firmware version
- IP: Current IP address
- Sub: Subnet mask
- MAC: MAC address
- Cntrl Ch.: Control channel (address & status)
- Smoothing: Current smoothing mode
- Curve: Current dimmer curve

8.9.2 Touch Shortcuts (Interactive Elements)

The Main Menu is not just informational — it also acts as a shortcut hub. The following areas are touch-active:

8.9.3 Address & Universe Fields

Touching any U: or A: value opens the Addressing Menu for the corresponding engine.

- Main Engine → Main Address Settings
- SparQle Engine → SparQle Address Settings

8.9.4 IP Address & Subnet Mask

Touching the IP or Sub field opens the Ethernet Settings menu.

8.9.5 Connection Status Icons (Right Column)

Touch any of the three connection indicators:

- DMX
- Ethernet (Art-Net / sACN)
- Wireless DMX

This opens the DMX Source menu, allowing you to change priority or select the active control source.

8.9.6 Smoothing Field

Touch Smoothing to jump directly to the Smoothing menu.

8.9.7 Dimmer Curve Field

Touch **Curve** to go directly to the Dimmer Curve menu.

8.9.8 Bottom Navigation Bar

The buttons along the bottom provide direct access to key menu groups:

- DMX (Main and SparQle Addressing)
- Personality (DMX Mode, Grouping)
- Home (return to Main Menu)
- Settings (system setup)
- Looks (Manual control and pre-recorded presets)

8.9.9 Purpose of the Main Menu

This screen allows technicians to immediately:

- Verify DMX patch configuration
- Confirm that the fixture is receiving valid control data
- Review PWM, smoothing, and dimmer curve settings
- Check firmware and IP information
- Diagnose communication issues
- Jump directly to commonly used configuration menus with a single touch

The Main Menu is designed to be both informative and highly efficient for workflow, reducing the number of steps required to access commonly adjusted settings.

8.9.10 Touchscreen Lock (Home Screen)

When the fixture is on the Home Screen (Main Menu), the Home button in the bottom navigation bar changes into a Lock icon. This feature prevents accidental changes during handling, focusing, transport, or live operation.

8.9.10.1 To Lock the Touchscreen

- Press and hold the Lock icon for 1 second.
- The touchscreen will lock and become unresponsive to all inputs.

8.9.10.2 To Unlock the Touchscreen

- Press and hold the same Lock area for 3 seconds.
- The touchscreen will unlock and return to normal operation.

This lock can only be activated or released from the Home Screen, ensuring it cannot be triggered accidentally while navigating through menus.

8.10 Set DMX Address

The Set DMX Address screen allows you to configure the Universe and DMX Start Address for both the Main Engine and the SparQle Engine, as well as the optional Control Channel.
The factory default settings are:

- Main: Universe 1, Address 001
- SparQle: Address 0
  Note: When SparQle address is set to 0, it is in auto-follow mode, meaning that it will follow the next address after the main cells.
- Control Channel: By default is Off and address is (000)
- Note: When Control Channel address is set to 0, it is in auto-follow mode.

The current universe and address for each engine are shown at the top of the screen.

8.10.1 Changing the DMX Address or Universe

Open the Address Menu

From the Main Menu, press DMX,
or tap directly on any address/universe field on the main screen.

You will enter the Set DMX Address screen.

Select the Field to Edit

Tap the Main, SparQle, or Control Channel field you want to modify.
The selected field will highlight.

Enter the New Value

Use the on-screen numeric keypad (0–9) to enter the new universe or address.

Example: press 3 twice to enter 33.

Repeat for any other field as needed.
You may set all fields before saving.

Apply or Cancel

- Press ✔ Apply to save all changes and return to the Main Menu.
- Press ✖ Cancel to exit without saving.

8.10.2 Addressing Notes

8.10.2.1 SparQle Auto-follow (Address = 0)

Setting the SparQle DMX start address to 0 places the SparQle channels automatically after the Main fixture footprint, based on the fixture's current stack order.

Example:

- Main engine set to RGBA – Group All uses 4 DMX channels

- SparQle address = 0 → SparQle automatically begins at the next available DMX channel.

This is the factory default and is recommended for quick setup.

8.10.3 Effects Controls

If Effects Control is enabled, 10 channels are automatically assigned to the next available channels after the Main Cells.

8.10.4 Control Channel Auto-Assign (Address = 0)

If the Control Channel is enabled and its address is set to 0, it is automatically assigned to the next available channel after the Main Cells and Effects Control, if Effects Control is enabled.

- When set manually (1–512), multiple fixtures may share the same Control Channel.
- The Control Channel always resides on the same universe as the Main Engine.

8.10.5 Valid Ranges

- Universe: 1–32,767
- DMX Address: 1–512

Invalid values are rejected and highlighted on-screen.

8.11 DMX Footprint Stack Order

When channels are set to auto-follow, the fixture footprint is arranged in the following order:

1. Main Cells
2. Effects Control — if enabled
3. Control Channel — if enabled and set to auto-follow
4. SparQle — if set to auto-follow

If SparQle is assigned to a different address or universe, it is removed from the Main fixture footprint. In that case, the stack order becomes:

1. Main Cells
2. Effects Control — if enabled
3. Control Channel — if enabled and set to auto-follow

8.11.1 Example 1

A Color Force 3™ 72 is set to:

- Main Personality: RGB
- Grouping: All
- Resolution: 8-bit

In this configuration, the 24 Main cells are controlled together and require only 3 DMX channels:

- Channel 1: Red
- Channel 2: Green
- Channel 3: Blue

If SparQle is set to 8-bit, by 1, with the address set to 0 (AUTO-FOLLOW), then 48 additional channels are required to control each SparQle individually.

With no Effects Control and no Control Channel:

- Channels 1 to 3: Main Cells
- Channels 4 to 51: SparQle

If the Control Channel is enabled and also set to auto-follow:

- Channels 1 to 3: Main Cells

- Channel 4: Control Channel
- Channels 5 to 52: SparQle

If Effects Control is also enabled:

- Channels 1 to 3: Main Cells
- Channels 4 to 13: Effects Control
- Channel 14: Control Channel
- Channels 15 to 62: SparQle

8.11.2 Example 2

A Color Force 3 ™ 48 is set to:

- Main Personality: RGBA Extended
- Grouping: By 1
- Resolution: 8-bit

In this configuration, each of the 16 Main Cells is controlled individually. Each cell requires 8 channels:

- Intensity
- Red
- Green
- Blue
- Amber
- Saturation
- CCT
- Tint

This results in:

- 16 × 8 = 128 DMX channels for the Main Cells

Since SparQle is assigned to a different address and/or universe, it is not included in the Main fixture footprint.

Main Fixture Footprint

- Channels 1 to 128: Main Cells

If Effects Control is enabled, it is placed immediately after the Main Cells:

Channels 129 to 138: Effects Control

If the Control Channel is enabled and set to auto-follow, it is placed after Effects Control:

- Channel 139: Control Channel

SparQle — Separate Address / Universe

Because SparQle is assigned to a separate address or universe:

- It is controlled independently from the Main Cells.
- It does not affect the Main fixture footprint.
- Its channel count depends on its selected personality and grouping.

For example, if SparQle is set to 8-bit, By 1, it requires 32 channels on a CF3 48, starting at its own assigned address.

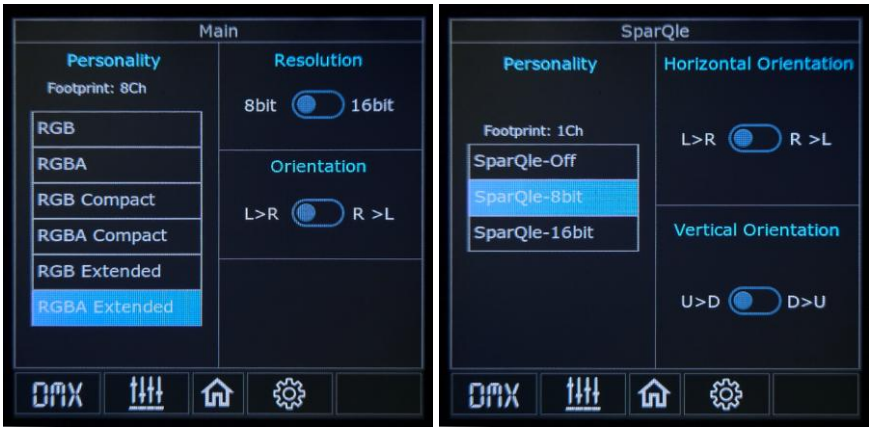
8.11.3 Key Takeaway

When SparQle is patched separately, the Main Cells, Effects Control, and Control Channel remain grouped together in one footprint, while SparQle can be controlled independently on its own address or universe.

8.12 Personalities

8.12.1 Personality Select Options

Personality Name	Description
RGB - 8 bit	RGB+magic amber 8 bit
RGB - 16 bit	RGB+magic amber 16 bit
RGBA - 8 bit	RGBA 8 bit
RGBA - 16 bit	RGBA 16 bit
RGB Compact - 8 bit	Global Intensity, CTC and Tint, RGB+magic amber 8 bit
RGB Compact - 16 bit	Global Intensity, CTC and Tint, RGB+magic amber 16 bit
RGBA Compact - 8 bit	Global Intensity, CTC and Tint, RGBA, 8 bit
RGBA Compact - 16 bit	Global Intensity, CTC and Tint, RGBA, 16 bit
RGB Extended - 8 bit	Intensity, RGB+magic amber, Saturation, CCT, Tint 8 bit
RGB Extended - 16 bit	Intensity, RGB+magic amber, Saturation, CCT, Tint 16 bit
RGBA Extended - 8 bit	Intensity, RGBA, Saturation, CCT, Tint 8 bit
RGBA Extended - 16 bit	Intensity, RGBA, Saturation, CCT, Tint 16 bit
SparQle Disabled	The SparQles are not assigned to any DMX channels
SparQle 8 bit	SparQle 8 bit
SparQle 16 bit	SparQle 16bit
**Effects control (8 bit)	Effects Control, 10 channels (future firmware)
***Control channel (8 bit)	Control channel for various settings from DMX control



8.12.2 Grouping & Orientation Options

The fixture supports multiple grouping configurations that define how color cells are combined and controlled over DMX.
These options affect how many DMX channels are used and how finely each section can be controlled.

8.12.3 Grouping Options

By 1 – Each color cell operates independently, providing the highest level of control and pixel detail. Ideal for dynamic effects, gradients, or pixel-mapped content.

By 4 – Cells are grouped in sets of four, sharing the same color and intensity control.
This personality reduces the channel count while maintaining good visual segmentation for most cyc and wall-wash applications.

All – All color cells are linked together as one uniform group, acting as a single powerful source. Best suited when individual cell control is not needed or to reduce the channel count to a minimum.

8.12.4 Main Color Section (Cells) direction

L → R (Left to Right) – Default. Maps control from the leftmost cell to the rightmost.

R → L (Right to Left) – Reverses the mapping (rightmost to leftmost).

8.12.5 SparQle Section direction (White emitters above/below cells)

L → R (Left to Right) – Leftmost SparQle to rightmost.

R → L (Right to Left) – Rightmost to leftmost.

T → B (Top to Bottom) – Top row first, then bottom row.

B → T (Bottom to Top) – Bottom row first, then top row.

8.12.6 Behavior & Configuration

These options are selectable from the fixture menu or via RDM.

8.12.7 RGBA Calibration

In RGBA Calibrated mode, the fixture uses an internal algorithm to calculate the optimal mix of Red, Green, Blue, and Amber to create accurate, repeatable colours.
For example:

- Red + Blue at full
- Calibrated: produces the CORRECT magenta chosen by Chroma-Q's ColorSure 3™ colour science
- Uncalibrated: simply outputs the Red and Blue LEDs at 100%, which often results in a more purple tone

The same applies to all colour combinations, including whites:

RGBA at full

- Calibrated: produces a balanced white point
- Uncalibrated: produces a raw "RGBA white," which may look tinted or uneven

Calibration ensures the fixture always hits the intended colour point, independent of LED binning or brightness level.

8.12.8 Uncalibrated Mode

Uncalibrated output is only available in RGBA personality modes.

In this mode, the fixture does no correction—each LED simply outputs exactly the level you send. This can be useful when:

- An external system expects the LEDs to behave purely linearly
- A media server or pixel mapper wants raw control without internal colour shaping

Uncalibrated mode is not recommended for theatrical or camera-critical work, but it is valuable for certain creative or technical applications.

8.13 Settings Menu

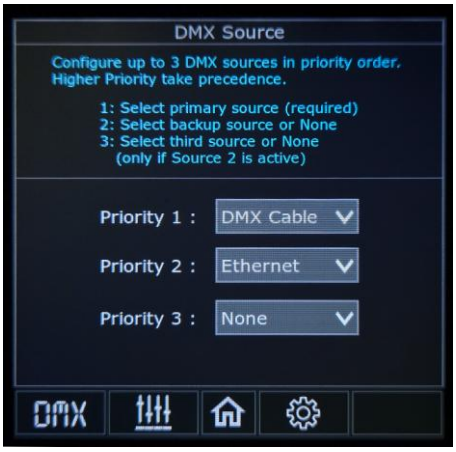
Color Force 3 ™ technical operation can be changed and viewed using the Setup menu options.

8.13.1 Settings Menu Descriptions

Menu	Description
DMX Source	Select DMX, Ethernet, or Wireless as the control source and set priority.
DMX Lost	Choose the fixture's behavior when DMX signal is lost.
Ethernet	Configure IP address, protocol settings, and network parameters.
Protocol Selection	Choose between Art-Net or sACN as the primary Ethernet protocol.
Wireless DMX	Access settings for the optional wireless module.
PWM Frequency	Select LED scan-rate frequency for Main and SparQle engines.
Smoothing	Adjust DMX response filtering for smooth or fast operation.
Dimmer Curve	Select the desired dimming response curve.
White Points	Adjust CCT and Tint white-point calibration.
DMX Monitor	View real-time incoming DMX channel values.
Temp. Monitor	Display current and highest engine temperatures.
Cooling	Set fan speed for noise/performance balance.
Main Display	Configure display sleep mode, brightness, and lock options.
E-Ink Display	Select what information appears on the E-Ink display.
NFC	Enable NFC and set auto-off timing.
LED Test	Test individual LED engines and tuned color points.

8.14 DMX Source

The DMX Source menu allows you to select which control input the fixture listens to and to set the priority between multiple available sources. The Color Force 3 ™ can receive control data from DMX, Ethernet (Art-Net/sACN), and Wireless DMX (when the optional module is installed).



8.14.1 Available Sources

- DMX – Standard wired DMX512 control via XLR5.
- Ethernet – Art-Net or sACN control over the network port.
- Wireless – Wireless DMX input when a wireless module is installed.

8.14.2 Source Priority

When more than one source is available, the fixture determines which one to follow based on the priority settings configured in this menu. The highest-priority source with valid data becomes the active control source.

8.14.3 Wireless Visibility

If the fixture does not have a wireless DMX module installed, the Wireless option will not appear in the menu.

8.15 DMX Lost menu

This menu defines how the fixture behaves if it stops receiving a valid DMX signal. You can select the fallback action the Color Force 3 ™ will take and set the delay before that action is activated. These settings ensure consistent and predictable operation in any live environment.

8.15.1 Fallback Actions

Choose what the fixture should do when DMX is lost:

- Full On White – Outputs full-intensity white light.
- 50% White – Outputs a half-intensity white.
- Black Out – Turns the fixture off.
- Hold Last Data – Freezes the last valid DMX levels received, including Main, SparQle, and Control channels.
- Recorded Scene – Plays back the dedicated Failsafe Scene recorded on this screen.
- Look 1 / Look 2 / Look 3 – Recalls one of the user-stored Looks created in the Looks menu.

8.15.2 Delay

The fixture will wait the selected amount of time before triggering the chosen fallback action. Available delays:

- 5 Seconds
- 30 Seconds
- 2 Minutes
- 10 Minutes
- The delay applies to all fallback modes, including Hold Last Data.

8.15.3 Record Failsafe Scene

Press Record Failsafe Scene to store the fixture's current output as the fallback state used when RECORDED SCENE is selected. This Failsafe Scene is independent from Look 1–3.

8.16 Ethernet

The Ethernet menu provides all configuration options for controlling the Color Force 3 ™ over a network using Art-Net or sACN. These settings determine the fixture's network identity, the DMX universe it listens to, and how it handles multiple controllers.

8.16.1 Available Settings

- IP Address / Subnet / Gateway
  Configure the fixture's network identity. These settings must match the addressing scheme of the lighting network.

8.16.2 Network Addressing

- IP Address / Subnet Mask / Gateway
- Define the network settings for the fixture.
  These must match the addressing scheme of the lighting system.
- Static IP (Recommended) – Ensures predictable addressing in lighting networks.
- DHCP (If available) – Automatically assigns an IP address from a DHCP server. Only recommended if the network is managed.
- For most lighting applications, a static IP ensures stability and easy troubleshooting.

8.16.3 Link Requirements

- A valid Ethernet connection is required for network control.
- After changing IP settings, the fixture may need a moment to re-establish network communication.

8.16.4 Recommended Configuration

- Use static IP for predictable fixture addressing.
- Keep lighting devices on a dedicated lighting network separate from general data traffic.
- Use sACN for larger systems or installations requiring redundancy.
- Use Art-Net for simple point-to-point or smaller networks.

8.17 Protocol Selection

8.17.1.1 Art-Net

- A widely used lighting-over-Ethernet protocol.
- Uses IP ranges typically in 2.x.x.x or 10.x.x.x networks.
- Universe numbering follows Subnet / Universe structure.
- Works well in simple and large lighting systems.

8.17.1.2 sACN (E1.31)

- A multicast/unicast protocol designed for large lighting networks.
- Uses priority values to resolve conflicts between controllers.
- Efficient for many fixtures across multiple universes.
- Ideal for mixed-environment control (media servers, consoles, architectural systems).
- You may select either protocol depending on the primary controller used.

8.17.2 sACN Priority

- When multiple controllers send data on the same universe, the fixture uses the priority value to choose which controller to follow.
- Higher number = higher priority
- Default: 100
- Useful for backup consoles or multi-source environments.

8.18 Wireless DMX

The Wireless DMX menu is used when the fixture is equipped with a LumenRadio TiMo wireless DMX transceiver module. This screen provides real-time status information and allows you to link or unlink the fixture from a compatible LumenRadio transmitter.

If no TiMo module is installed, the fixture displays:

“Timo not detected.”

8.18.1 Module Information

When a TiMo module is present, the following information is shown:

Hardware Version – The hardware revision of the LumenRadio TiMo module.
Driver Version – The installed driver/firmware version for the wireless subsystem.

8.18.2 Status Indicators

These indicators show the current state of the wireless connection:

- Linked – Indicates whether the fixture is paired with a LumenRadio transmitter.
- RF Link – Shows if a valid radio connection is established.
- DMX – Confirms that valid DMX data is being received wirelessly.
- Link Quality – Represents signal quality (0–100), useful for diagnosing interference or weak reception.

8.18.3 Linking TiMo

- To link: Put transmitter in Link Mode → press Link on fixture.

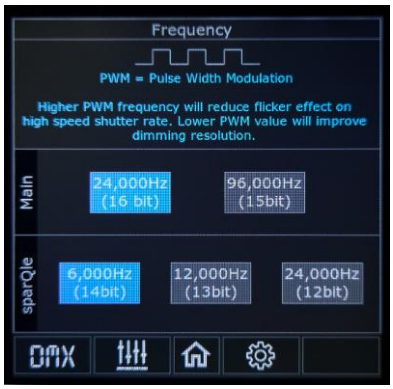
8.18.4 Unlink TiMo

Selecting Unlink TiMo disconnects the fixture from the current LumenRadio network, returning the module to an unlinked state. This allows re-pairing with another transmitter or a different LumenRadio network.

8.19 PWM Frequency

The Color Force 3™ provides four selectable PWM (Pulse Width Modulation) frequency settings: 6,000 Hz, 12,000 Hz, 24,000 Hz, and 96,000 Hz. PWM determines how quickly the LEDs are switched on and off during dimming. Although this switching happens faster than the human eye can detect, it can become visible to cameras under certain shooting conditions.

Selecting the appropriate PWM frequency allows the fixture's LED scan rate to synchronize with professional video and film cameras, preventing flicker, banding, or rolling bars that may appear when a camera's shutter speed or frame rate conflicts with the LED refresh rate.



8.19.1 Main Engine PWM

At frequencies up to 24,000 Hz, the Main engine delivers a full 16-bit dimming curve. At 96,000 Hz, the dimming resolution is reduced to 14-bit, and this mode should be used only for specialized high-speed shooting (e.g., ≥5,000 fps). For concerts, broadcast, and most film applications, 6,000 Hz is typically sufficient.

8.19.2 SparQle Engine PWM

The SparQle engine uses an independent PWM system with three selectable frequency modes: 6,000 Hz, 12,000 Hz, and 24,000 Hz.

At 6,000 Hz, SparQle operates at 14-bit resolution.
At 24,000 Hz, SparQle operates at 12-bit resolution.

8.19.3 Choosing a PWM Frequency for Cameras

For the best on-camera performance, the selected PWM frequency should ideally be a multiple or a divisor of the camera's shutter speed or frame sampling rate. When these two rates align mathematically, the camera captures each frame during a consistent portion of the LED's PWM cycle. This prevents the camera from "sampling" the LED while it is switching on and off, which eliminates visible flicker, rolling bands, or brightness pulsing.

8.19.4 Why Multiples and Divisors Matter

LEDs using PWM turn on and off extremely quickly.
A camera shutter also opens and closes at a predictable rate.

If these two rates line up in a stable relationship—such as:

PWM frequency = 2×, 4×, 8× the shutter speed

—then each camera exposure occurs at a consistent part of the PWM cycle.
The result:

- No flicker
- No visible banding
- Smooth exposure across the entire frame

When the shutter speed and PWM frequency are unrelated (for example, both at odd or conflicting timing intervals), the camera may capture different parts of the PWM waveform between frames, creating visible artifacts.

8.19.5 Practical Examples

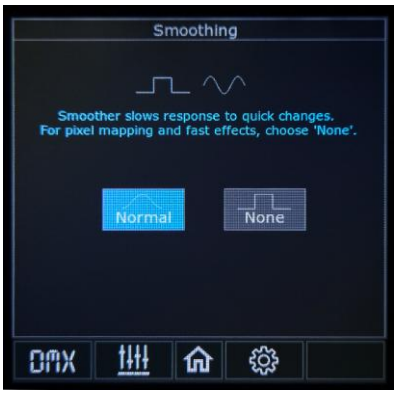
- A shutter at 1/120 sec works cleanly with PWM frequencies such as:
  6,000 Hz (exact multiple), 12,000 Hz, 24,000 Hz, 96,000 Hz
- A high-speed camera shooting at 1/1000 sec benefits from higher PWM frequencies like:
  24,000 Hz or 96,000 Hz
- Extreme high-speed (e.g., 5,000+ fps) often requires:
  96,000 Hz PWM to avoid flicker.

8.19.6 General Guidance

- For standard video, broadcast, and cinema, 6,000 Hz usually synchronizes well.
- For mid-range high-speed work, 12,000 Hz or 24,000 Hz is recommended.
- For ultra-slow motion, use 96,000 Hz.

8.20 Smoothing

The Smoothing menu allows you to adjust how quickly the fixture responds to incoming DMX level changes. Smoothing acts as a small, selectable filtering process that softens rapid transitions. This can help eliminate unwanted stepping or abrupt visual jumps when cues fade in or out.



8.20.1 Modes

8.20.1.1 Normal

Applies a gentle smoothing filter to all DMX channels.

- Produces natural, fluid fades.
- Ideal for theatre, broadcast, architectural, and general operation.
- Reduces visible stepping, especially at low intensities.

8.20.1.2 None

Disables smoothing for an immediate response to DMX input.

- Recommended for pixel mapping, chases, strobe effects, and any fast-moving content.
- Ensures the fixture follows precise frame-by-frame DMX updates without interpolation.

8.20.2 How Smoothing Works

Smoothing slightly delays and blends incoming DMX values, similar to a low-pass filter.
This helps remove:

- Abrupt jumps from coarse DMX data
- Stepping in fades caused by 8-bit controllers
- Shimmering during slow transitions

When smoothing is set to None, the fixture outputs exactly what it receives, as fast as DMX can update—ideal when artistic intent depends on sharp timing.

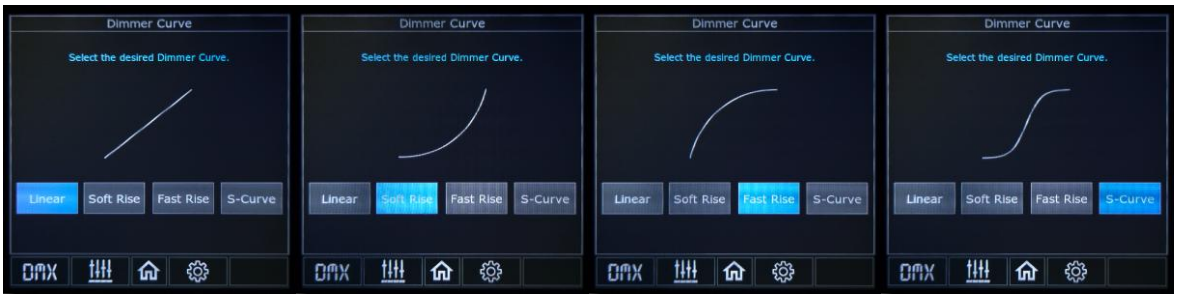
8.20.3 When to Use Each Mode

Application	Recommended Setting
Theatre fades	Normal
TV / Film soft transitions	Normal
Slow color sweeps	Normal
Pixel mapping	None
High-speed chases	None
Audio-reactive content	None

8.21 Dimmer Curve

The Dimmer Curve menu allows you to choose how the fixture interprets DMX intensity values. Each curve affects the response of the LEDs at different parts of the fade, giving you the flexibility to match consoles, harmonize with other fixture types, or achieve a desired visual style.

Dimmer curves shape the relationship between the DMX value and the perceived light output, optimizing fades for different applications.



8.21.1 Available Curves

8.21.1.1 Linear

Provides a direct 1:1 response between DMX values and LED output.

- Most precise representation of DMX input
- Ideal for pixel mapping and console effects
- Matches digital media workflows

8.21.1.2 Soft Rise

Gentle acceleration at the low end, producing smoother, more gradual fades when increasing intensity.

- Reduces visible stepping at low levels
- Useful in theatre and architectural applications

8.21.1.3 Fast Rise

Faster response at low intensities, giving a more “punchy” feel at the start of the fade.

- Good for live events or cues where quick visibility is needed

8.21.1.4 S-Curve (Default)

Slower response at the beginning and end of the fade, with a faster response in the middle.

- Creates smooth, natural-looking transitions
- Matches traditional incandescent/tungsten fade behavior
- Preferred for theatre and film

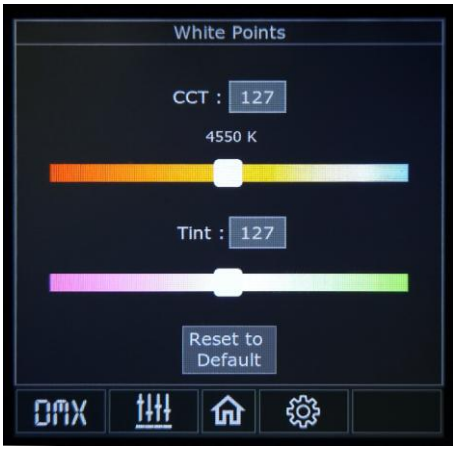
8.21.1.5 Technical Note

Regardless of the selected curve, all dimming is performed internally at high resolution (up to 20-bit depending on PWM frequency), ensuring smooth and consistent output across all modes.

8.22 White Point

The White Point menu allows you to adjust the fixture's internal white calibration when using control personalities that do not include CCT or Tint channels—such as RGB, RGBA, or similar modes. In these personalities, the console cannot modify color temperature or tint, so the fixture provides its own internal controls for balancing white output.

These settings ensure consistent, visually accurate white when working in non-CCT personalities.



8.22.1 CCT (Correlated Color Temperature, 2000 to 7100K)

Adjusts the warmth or coolness of the internal white reference:

Lower values → warmer, more amber

Higher values → cooler, more blue

Useful when matching the fixture to ambient lighting or other fixture types.

8.22.2 Tint (Green / Magenta Shift, +/- 2)

Adjusts the green–magenta balance of the internal white calibration:

Shift toward Green (+) for LED or fluorescent environments

Shift toward Magenta (–) for tungsten or camera-balanced whites

Helpful for eliminating green spikes on camera or blending with mixed fixture types.

8.22.3 Reset to Default

Restores both CCT and Tint to their factory calibration values for the fixture.

8.22.4 Important Notes

White Point has no effect in personalities that ALREADY provide CCT and/or Tint through DMX.

All White Point adjustments are internal; they do not alter the DMX footprint or control channels.

Adjustments apply only to the white reference, not to general color mixing.

8.23 DMX Monitor

The DMX Monitor menu displays the live DMX values being received by the fixture. This tool is useful for verifying control data, troubleshooting patching issues, and confirming that the fixture is receiving the correct information from the console or network.

DMX Monitor
Shows up to 100 values at a time
Columns 0 to 9
Row 0 to 9

Next Page / Previous Page
Select Main or SparQle monitoring

Menu selection

8.23.1 What the Screen Shows

DMX Start Address – The first channel assigned to the fixture.

Incoming DMX Values – A real-time list of the DMX levels for each channel in the active fixture personality.

Updates in Real Time – All values refresh continuously while DMX is present.

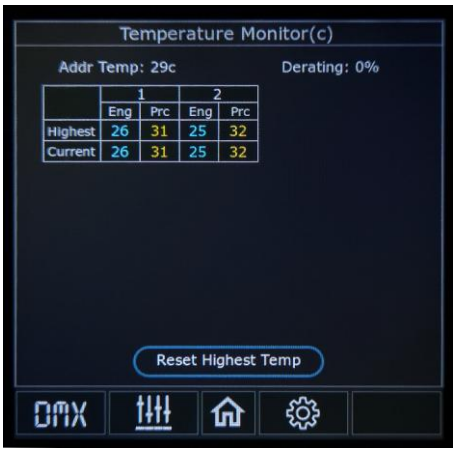
The values appear exactly as the fixture receives them, making it easy to identify incorrect patching, missing data, or unexpected channel behavior.

8.23.2 Typical Uses

- Confirming that the console is transmitting on the correct universe and address
- Checking whether the fixture is receiving valid DMX or Ethernet data
- Diagnosing wiring or network issues
- Verifying that channels react as expected in custom personalities or multi-engine modes

8.24 Temperature Monitor

The Temperature Monitor screen provides real-time diagnostics for all thermal components inside the Color Force 3™. This menu helps verify that the fixture is operating within safe temperature limits and provides useful information for troubleshooting, rigging decisions, and high-output applications.



8.24.1 Displays the current temperature of all major components, including:

- Main Engine
- SparQle Engine
- LED Drivers / Bricks
- MCU (Main Control Unit)

Values update every 5 seconds.

8.24.2 Highest Recorded Temperatures

Shows the maximum temperature reached since the last reset.
Use this to evaluate thermal performance over time or after long periods of continuous output.

8.24.3 Derating Indicator

Indicates the fixture's thermal performance level from 0% to 100%.

- 100% – Fixture is operating at full, unrestricted output.
- Below 100% – Output is being reduced to protect the fixture from excessive temperature.
- Example:
  - 75% means the fixture is currently limited to 75% of its maximum output due to temperature.
  - 50% means the fixture is heavily thermally limited.
  - Derating automatically returns to 100% once temperatures fall back to safe operating levels.

8.25 Reset Highest Temp

Clears all peak temperature values.
Use this before a show, test session, or long filming period to monitor temperatures from a known baseline.

8.26 Typical Use Cases

- Ensuring fixtures have sufficient ventilation
- Diagnosing heat buildup in enclosed or architectural spaces
- Verifying safe operation before a broadcast or film shoot
- Monitoring derating when running the fixture at high output for extended durations
- Comparing thermal performance across multiple fixtures in a rig

8.27 Cooling

The Cooling menu allows you to select the operating mode for the fixture's internal fans. These settings let you balance acoustic noise with cooling performance, depending on the requirements of your environment. Regardless of the mode selected, the Color Force 3™ is continuously temperature-protected and will automatically derate if necessary to maintain safe operating conditions.

8.27.1 Fan Modes

- Silent
  - Runs the fans at the lowest possible speed to minimize noise.
  - Intended for noise-critical environments such as studio dialogue, theatre, or close-mic filming.
- Quiet
  - Fans run at a low speed.
  - Provides a balance between reduced fan noise and effective cooling.
  - Suitable for most theatre and studio applications.
- Normal
  - Fans operate at medium speed.
  - Standard operating mode for general use.
  - Allows full output with stable thermal performance at higher ambiance.
- Live
  - Fans run at maximum speed.
  - Provides the highest cooling performance.
  - Recommended for concerts, outdoor shows, or any application where maximum output is required under high ambient conditions or direct sunlight.

8.27.2 Important Notes

- The fixture will always protect itself from overheating, regardless of the selected fan mode.
- In spaces with restricted airflow or high ambient temperature, using Normal or Live is recommended to maintain full intensity.
- When derating occurs, increasing fan mode may help the fixture return to 100% performance.

8.28 Main Display

The Main Display menu allows you to configure how the touchscreen behaves during operation, including sleep timing, brightness handling, and automatic locking. These settings help balance visibility, power consumption, and accidental-touch prevention, depending on your working environment.

8.28.1 Sleep Timer

Determines how long the touchscreen remains active when no interaction is detected.
Options typically include:

- 30 seconds
- 1 minute
- 2 minutes
- Always On

8.28.2 Sleep Style

Defines how the display behaves once the sleep timer expires:

- Blackout – The screen turns completely off for minimal distraction and power usage.
- Dim 25% – The display remains visible but at a reduced brightness level to avoid glare.

8.28.3 Wakeup on Warning

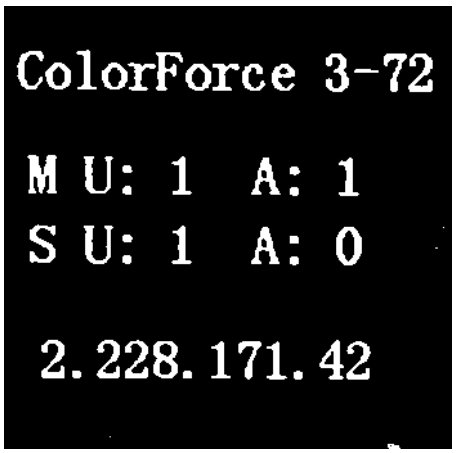
When enabled, the display will automatically wake up if the fixture detects a warning condition (e.g., thermal derating, missing DMX signal).
This ensures that important alerts are visible even when the screen is asleep.

8.28.4 Auto Lock

- Automatically locks the touchscreen after a short period of inactivity.
- Prevents accidental parameter changes during handling, focusing, or transport
- Unlocking requires a deliberate user input, ensuring menu interactions are intentional

8.29 E-Ink Display

The E-Ink Display menu allows you to configure what information is shown on the fixture's E-Ink label when the unit is powered off or when the main touchscreen is asleep. The E-Ink display is always visible, consumes no power, and provides essential identification and patch information for rigging, service, and large-scale installations. (Not all options will be available in early firmware version)



This menu determines what data is displayed and how it is organized.

DMX Address Only
Shows the fixture's DMX start address in large, high-contrast text.

DMX + Mode
Shows DMX start address and selected control personality.

Fixture ID
Shows the user-assigned Fixture ID (useful for consoles, rigs, or addressing plans).

Network Info
Shows the fixture's IP address and universe (only shown if Ethernet control is enabled).

Custom Label
Displays a user-entered label (e.g., "CYCS 1–4 Left", "Stage Right Top", "Studio 3 Wash").
Text entered on the touchscreen appears permanently on the E-Ink screen.

Full Summary
Shows DMX Address, Mode, Fixture ID, and Network Info.
Good for rentals and pre-rigs where techs need all information at a glance.

8.29.1 Refresh E-Ink Display

Forces the E-Ink panel to refresh immediately.
Useful after address changes, personality changes, or label edits.

8.29.2 Contrast / Inversion (Optional)

Normal – Dark text on light background

Inverted – Light text on dark background

8.29.3 Reset to Default

Restores the E-Ink display to the factory default layout:
DMX Address + Mode

8.30 NFC

Note: Chroma-Q NF-Q app might not yet be available for download, if not, it will be in a near future.

The NFC menu controls the Near Field Communication features used by the Color Force 3 ™ for quick setup, labeling, and configuration via the Chroma-Q NF-Q mobile app. NFC communication works even when the fixture is powered off, allowing you to read or write configuration data without powering the unit.

NF-Q Apple Store

NF-Q Android App Store

The CF3-12 includes one NFC reader located on the display side.
The CF3-48 and CF3-72 include two NFC readers:

- one on the display side
- one on the back under the serial label, allowing convenient access when the unit is hung or laid flat.

This menu allows you to enable or disable NFC functionality and define how long the NFC interface remains active.

8.30.1 Enable NFC

Turns the NFC interface ON or OFF.

- When ON, the fixture can communicate with the NF-Q app for reading and writing configuration data.
- When OFF, NFC is disabled to prevent accidental interactions or unauthorized access.

Note: NFC communication works even when the fixture is powered off, as long as NFC is enabled.

8.30.2 NFC Active Duration

Allows you to set how long NFC remains active after the fixture is powered or after the screen wakes up.
Options may include:

- 30 seconds
- 1 minute
- 5 minutes
- Always Enabled

Shorter activation times help prevent unwanted scans in busy environments such as rental houses, touring prep, or festival stages.

8.30.3 Typical Uses

- Quickly setting DMX address, mode, or label from a phone
- Loading or saving fixture profiles without powering the unit
- Reading diagnostic data from a powered-down fixture
- Streamlining rig prep or inventory workflows
- Securely limiting NFC access when needed

8.31 LED Test

The LED Test menu allows you to verify the operation of all LED engines and tuned color points without using a console. This tool is useful for on-site troubleshooting, QC inspections, and confirming that the fixture's color-mixing system and SparQle engine are functioning correctly.

The fixture outputs light directly from internal test patterns, independent of incoming DMX or network data.

8.31.1 Intensity

A slider used to adjust the overall output level of the LED Test.

- Allows comfortable testing in both bright and dark environments
- Helps identify dead pixels, color imbalance, or engine inconsistencies
- Does not affect normal operation—only the test output

8.31.2 Tuned Points

A scrollable list of color points the fixture can output for testing.
Examples include:

- RED, GREEN, BLUE, AMBER
- Mixed points such as RG, RB, GB, and White CCT points
- SparQle as well

Selecting an item immediately outputs that tuned color on the fixture.

These tuned points correspond to the fixture's calibrated ColorSure 3™ system, allowing you to verify color consistency across multiple units.

8.31.3 Mode

Determines how the test sequence behaves:

- Manual
  The fixture displays only the currently selected tuned point.
  Use arrow buttons to step through colors one at a time.
- Auto
  The fixture automatically cycles through all tuned points.
  Useful for burn-in tests, quick functional checks, or visual comparisons across multiple fixtures.

8.31.4 Speed (Auto Mode Only)

Selects the speed of the automatic color-cycling sequence:

- Fast – Short dwell time per color (1.5 sec)
- Slow – Longer dwell time per color (5 sec)

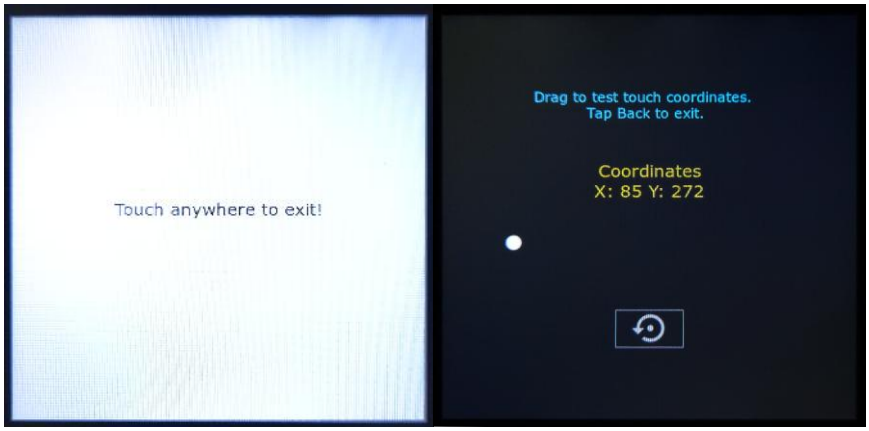
8.31.5 Start / Stop

- Start begins the LED Test sequence (Manual or Auto depending on selection).
- Stop immediately returns the fixture to normal operation.

When LED Test is active, all external control (DMX, Ethernet, Wireless) is temporarily ignored until the test is stopped.

8.31.6 Typical Uses

- Verifying that all LED engines are operational
- Checking brightness uniformity between units
- Identifying failed pixels or color channels
- Testing calibration consistency after service or maintenance



9 THERMAL PERFORMANCE

The Color Force 3™ 12, 48 & 72 fixtures feature internal fans that control the internal cooling.

If the internal temperature of the Color Force 3™ exceeds 80ºC the output of the fixture will be reduced for automatic protection. This happens on rare and extreme conditions when ambient temperature is over 35ºC or the internal fans are blocked or damaged.

The airflow to and from the fan must not be constricted to maintain the maximum light output of the Color Force 3.

See Maintenance section for more details/troubleshooting

10 COLOR CONTROL

Chroma-Q Gen3 Color Engine

The Color Force 3™ is powered by the latest Chroma-Q Gen3 Color Engine software.
In this advanced engine, color control is fully abstracted from direct LED drive management.

Rather than directly controlling individual LED emitters, the Red, Green, and Blue controls define a color point within the fixture's calibrated color space.
Behind the scenes, the Color Force 3™ algorithm intelligently determines the optimal balance of all four LED sources — Red, Green, Blue, and Amber — to achieve the desired color or white point.

This architecture allows users to achieve accurate, consistent, and repeatable color and white output simply by adjusting the RGB controls, without needing to manually balance Amber or compensate for LED spectral variations.

10.1 DMX Control

Color Force 3™ fixtures can operate as stand-alone units or be controlled remotely using industry-standard lighting protocols. The fixture supports ANSI E1.11 USITT DMX512-A, Art-Net, sACN, and RDM (Remote Device Management). All control, addressing, and communication settings can be accessed and configured through the touchscreen LCD interface located on the side of the fixture.

11 DMX CHARTS

11.1 Chroma-Q Color Force 3 ™ – RGB Mode (magic amber)

8 bit	Value	Function	Fade Status	Default Value
1		Red Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
2		Green Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
3		Blue Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
...				
CF3 12: 10 CF3 48: 46 CF3 72: 70		Red Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 11 CF3 48: 47 CF3 72: 71		Green Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 12 CF3 48: 48 CF3 72: 72		Blue Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0

16 bit	Value	Function		
1-2		Red Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
3-4		Green Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
5-6		Blue Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
...				
CF3 12: 19-20 CF3 48: 91-92 CF3 72: 139-140		Red Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 21-22 CF3 48: 93-94 CF3 72: 141-142		Green Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 23-24 CF3 48: 95-96 CF3 72: 143-144		Blue Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0

Notes:

Color Mixing and White Point

When Red, Green, and Blue values are greater than zero, the Amber channel is gradually blended into the mix, enriching the spectrum and improving color rendering.

The white point—which defines the fixture's reference balance when R, G, and B are all set to 255—can be configured from the fixture menu or via RDM. Refer to the RDM Tab for detailed parameter descriptions and adjustment instructions.

Fixed Point Controls

Fixed Point CCT: 0–255 (default 180, equivalent to ≈5600 K)

Fixed Point Tint: 0–255 (default 127, Neutral)

CCT adjusts the warm-to-cool balance of the output (from warm tungsten to cool daylight), while Tint fine-tunes the green–magenta axis to achieve precise white-point alignment or compensate for ambient light conditions.

11.2 Chroma-Q Color Force 3 ™ – RGBA Mode

8 bit	Value	Function	Fade Status	Default Value
1		Red Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
2		Green Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
3		Blue Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
4		Amber Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
...				
CF3 12: 13 CF3 48: 61 CF3 72: 93		Red Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 14 CF3 48: 62 CF3 72: 94		Green Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 15 CF3 48: 63 CF3 72: 95		Blue Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 16 CF3 48: 64 CF3 72: 96		Amber Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0

16 bit	Value	Function		
1-2		Red Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
3-4		Green Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
5-6		Blue Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
7-8		Amber Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
...				
CF3 12: 25-26 CF3 48: 121-122 CF3 72: 185-186		Red Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 27-28 CF3 48: 123-124 CF3 72: 187-188		Green Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 29-30 CF3 48: 125-126 CF3 72: 189-190		Blue Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 31-32 CF3 48: 127-128 CF3 72: 191-192		Amber Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0

Notes:
Color Mixing and White Point

When Red, Green, Blue, and Amber values are all greater than zero, the color mix will gradually shift toward white, ensuring a smooth and natural transition across the full spectrum.

The white point—defined when R, G, B, and A are all set to 255—can be configured from the fixture menu or via RDM using the following parameters.
Refer to the RDM Tab for more details on adjustment and calibration.

Fixed Point Controls

Fixed Point CCT: 0–255 (default 180, equivalent to ≈5600 K)

Fixed Point Tint: 0–255 (default 127, Neutral)

CCT adjusts the warm-to-cool balance of the output (from warm tungsten to cool daylight), while Tint fine-tunes the green–magenta axis to achieve precise white-point alignment or compensate for ambient light conditions.

11.3 Chroma-Q Color Force 3 ™ – RGB Compact Mode (magic amber)

8 bit	Value	Function	Fade Status	Default Value
1		Global Intensity		
	0 - 255	Minimum → Maximum Intensity	Fade	0
2		Global CCT		
	0 - 255	Minimum 2000K → Maximum 7100K	Fade	127
3		Global Tint		
	0 - 255	Minimum Minus Green → Maximum Plus Green	Fade	127
4		Red Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
5		Green Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
6		Blue Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0

...

CF3 12: 13 CF3 48: 49 CF3 72: 73		Red Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 14 CF3 48: 50 CF3 72: 74		Green Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 15 CF3 48: 51 CF3 72: 75		Blue Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
16 bit	Value	Function		
1-2		Global Intensity		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
3-4		Global CCT		
	0 - 65535	Minimum 2000K → Maximum 7100K	Fade	32767
5-6		Global Tint		
	0 - 65535	Minimum Minus Green → Maximum Plus Green	Fade	32767
7-8		Red Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
9-10		Green Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
11-12		Blue Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0

...

CF3 12: 25-26 CF3 48: 97-98 CF3 72: 145-146		Red Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 27-28 CF3 48: 99-100 CF3 72: 147-148		Green Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 29-30 CF3 48: 101-102 CF3 72: 149-150		Blue Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0

Notes:

Compact Mode – Color Mixing

When Red, Green, and Blue values are greater than zero, the Amber channel is gradually blended into the mix to enhance color rendering and extend the white spectrum.

The white point, defined when R, G, and B are all set to 255, is determined by the global CCT and Tint controls.
These parameters allow fine adjustment of the overall color temperature and tint balance for the entire fixture.

11.4 Chroma-Q Color Force 3 ™ – RGBA Compact Mode

8 bit	Value	Function	Fade Status	Default Value
1		Global Intensity		
	0 - 255	Minimum → Maximum Intensity	Fade	0
2		Global CCT		
	0 - 255	Minimum 2000K → Maximum 7100K	Fade	127
3		Global Tint		
	0 - 255	Minimum Minus Green → Maximum Plus Green	Fade	127
4		Red Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
5		Green Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
6		Blue Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
7		Amber Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0

...

CF3 12: 16 CF3 48: 64 CF3 72: 96		Red Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 17 CF3 48: 65 CF3 72: 97		Green Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 18 CF3 48: 66 CF3 72: 98		Blue Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 19 CF3 48: 67 CF3 72: 99		Amber Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
16 bit	Value	Function		
1-2		Global Intensity		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
3-4		Global CCT		
	0 - 65535	Minimum 2000K → Maximum 7100K	Fade	32767
5-6		Global Tint		
	0 - 65535	Minimum Minus Green → Maximum Plus Green	Fade	32767
7-8		Red Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
9-10		Green Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
11-12		Blue Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
13-14		Amber Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0

...

CF3 12: 31-32 CF3 48: 127-128 CF3 72: 191-192		Red Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 33-34 CF3 48: 129-130 CF3 72: 193-194		Green Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 35-36 CF3 48: 131-132 CF3 72: 195-196		Blue Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 37-38 CF3 48: 133-134 CF3 72: 197-198		Amber Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0

Notes:

RGBA Compact Mode – Color Mixing

When Red, Green, Blue, and Amber values are all greater than zero, the color mix will gradually transition toward white, ensuring smooth spectral blending and natural progression through the color space.

The white point, defined when R, G, B, and A are all set to 255, is determined by the global CCT and Tint controls.
These parameters allow precise adjustment of the fixture's overall color temperature and tint balance.

11.5 Chroma-Q Color Force 3 ™ – RGB Extended Mode (magic amber)

8 bit	Value	Function	Fade Status	Default Value
1		Intensity Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
2		Red Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
3		Green Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
4		Blue Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
5		Saturation Cell 1		
	0 - 255	Saturated → Desaturated	Fade	0
6		CCT Cell 1		
	0 - 255	Minimum 2000K → Maximum 7100K	Fade	127
7		Tint Cell 1		
	0 - 255	Minimum Minus Green → Maximum Plus Green	Fade	127

...

CF3 12: 22 CF3 48: 106 CF3 72: 162		Intensity Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 23 CF3 48: 107 CF3 72: 163		Red Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 24 CF3 48: 108 CF3 72: 164		Green Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 25 CF3 48: 109 CF3 72: 165		Blue Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 26 CF3 48: 110 CF3 72: 166		Saturation Cell, 4 , 16 or 24		
	0 - 255	Saturated → Desaturated	Fade	0
CF3 12: 27 CF3 48: 111 CF3 72: 167		CCT Cell, 4 , 16 or 24		
	0 - 255	Minimum 2000K → Maximum 7100K	Fade	127
CF3 12: 28 CF3 48: 112 CF3 72: 168		Tint Cell, 4 , 16 or 24		
	0 - 255	Minimum Minus Green → Maximum Plus Green	Fade	127
16 bit	Value	Function		
1-2		Intensity Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
3-4		Red Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
5-6		Green Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
7-8		Blue Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
9-10		Saturation Cell 1		
	0 - 65535	Saturated → Desaturated	Fade	0
11-12		CCT Cell 1		
	0 - 65535	Minimum 2000K → Maximum 7100K	Fade	32767

13-14		Tint Cell 1		
	0 - 65535	Minimum Minus Green → Maximum Plus Green	Fade	32767

...

CF3 12: 43-44 CF3 48: 121-122 CF3 72: 211-212		Intensity Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 45-46 CF3 48: 123-124 CF3 72: 213-214		Red Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 47-48 CF3 48: 125-126 CF3 72: 215-216		Green Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 49-50 CF3 48: 121-122 CF3 72: 217-218		Blue Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 51-52 CF3 48: 123-124 CF3 72: 219-220		Saturation Cell, 4 , 16 or 24		
	0 - 65535	Saturated → Desaturated	Fade	0
CF3 12: 53-54 CF3 48: 125-126 CF3 72: 221-222		CCT Cell, 4 , 16 or 24		
	0 - 65535	Minimum 2000K → Maximum 7100K	Fade	32767
CF3 12: 55-56 CF3 48: 127-128 CF3 72: 223-224		Tint Cell, 4 , 16 or 24		
	0 - 65535	Minimum Minus Green → Maximum Plus Green	Fade	32767

Notes:

RGB Extended Mode – Color Mixing

When Red, Green, and Blue values are greater than zero, the Amber channel is gradually blended into the mix, enhancing color rendering and extending the fixture's white spectrum.

The white point, defined when R, G, and B are all set to 255, is determined by the CCT and Tint controls. These parameters allow precise adjustment of the output's color temperature and tint balance.

The Saturation channel defines the mix between full color and white:

0 = Fully saturated (maximum color intensity)

255 = Fully desaturated (pure white output)

11.6 Chroma-Q Color Force 3 ™ – RGBA Extended Mode

8 bit	Value	Function	Fade Status	Default Value
1		Intensity Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
2		Red Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
3		Green Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
4		Blue Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
5		Amber Cell 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
6		Saturation Cell 1		
	0 - 255	Saturated → Desaturated	Fade	0
7		CCT Cell 1		
	0 - 255	Minimum 2000K → Maximum 7100K	Fade	127
8		Tint Cell 1		
	0 - 255	Minimum Minus Green → Maximum Plus Green	Fade	127

...

CF3 12: 25 CF3 48: 121 CF3 72: 185		Intensity Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 26 CF3 48: 122 CF3 72: 186		Red Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 27 CF3 48: 123 CF3 72: 187		Green Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 28 CF3 48: 124 CF3 72: 188		Blue Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 29 CF3 48: 125 CF3 72: 189		Amber Cell, 4 , 16 or 24		
	0 - 255	Minimum → Maximum Intensity	Fade	0
CF3 12: 30 CF3 48: 126 CF3 72: 190		Saturation Cell, 4 , 16 or 24		
	0 - 255	Saturated → Desaturated	Fade	0
CF3 12: 31 CF3 48: 127 CF3 72: 191		CCT Cell, 4 , 16 or 24		
	0 - 255	Minimum 2000K → Maximum 7100K	Fade	127
CF3 12: 32 CF3 48: 128 CF3 72: 192		Tint Cell, 4 , 16 or 24		
	0 - 255	Minimum Minus Green → Maximum Plus Green	Fade	127
16 bit	Value	Function		
1-2		Intensity Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
3-4		Red Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
5-6		Green Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
7-8		Blue Cell 1		

	0 - 65535	Minimum → Maximum Intensity	Fade	0
9-10		Amber Cell 1		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
11-12		Saturation Cell 1		
	0 - 65535	Saturated → Desaturated	Fade	0
13-14		CCT Cell 1		
	0 - 65535	Minimum 2000K → Maximum 7100K	Fade	32767
15-16		Tint Cell 1		
	0 - 65535	Minimum Minus Green → Maximum Plus Green	Fade	32767

...

CF3 12: 49-50 CF3 48: 241-242 CF3 72: 369-370		Intensity Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 51-52 CF3 48: 243-244 CF3 72: 371-372		Red Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 53-54 CF3 48: 245-246 CF3 72: 373-374		Green Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 55-56 CF3 48: 247-248 CF3 72: 375-376		Blue Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 57-58 CF3 48: 249-250 CF3 72: 377-378		Amber Cell, 4 , 16 or 24		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
CF3 12: 59-60 CF3 48: 251-252 CF3 72: 379-380		Saturation Cell, 4 , 16 or 24		
	0 - 65535	Saturated → Desaturated	Fade	0
CF3 12: 61-62 CF3 48: 253-254 CF3 72: 381-382		CCT Cell, 4 , 16 or 24		
	0 - 65535	Minimum 2000K → Maximum 7100K	Fade	32767
CF3 12: 63-64 CF3 48: 255-256 CF3 72: 383-384		Tint Cell, 4 , 16 or 24		
	0 - 65535	Minimum Minus Green → Maximum Plus Green	Fade	32767

Notes:

RGBA Extended Mode – Color Mixing

When Red, Green, Blue, and Amber values are all greater than zero, the color mix will gradually transition toward white, ensuring smooth spectral blending and consistent color progression.

The white point, defined when R, G, B, and A are all set to 255, is determined by the CCT and Tint controls. These parameters allow precise adjustment of the fixture's overall color temperature and tint balance.

The Saturation channel defines the balance between full color and white output:

0 = Fully saturated (maximum color intensity)

255 = Fully desaturated (pure white output)

11.7 Chroma-Q Color Force 3 ™ – SparQle Control

8 bit	Value	Function	Fade Status	Default Value
1 to 24		SparQle 1 to 24 Top Row Left to Right		
	0 - 255	Minimum → Maximum Intensity	Fade	0
25 to 48		SparQle 25 to 48 Bottom Row Left to Right		
	0 - 255	Minimum → Maximum Intensity	Fade	0

16 bit	Value	Function		
1 to 48		SparQle 1 to 24 Top Row Left to Right		
	0 - 65535	Minimum → Maximum Intensity	Fade	0
49 to 96		SparQle 25 to 48 Bottom Row Left to Right		
	0 - 65535	Minimum → Maximum Intensity	Fade	0

Notes:

SparQle Control — Notes
General Description:
SparQle LEDs are dedicated white emitters positioned above and below each color cell, designed to create sparkle, shimmer, or highlight effects.
Depending on the addressing setup, they can either operate independently (with their own DMX address/universe) or mirror the main color section when configured in follow mode (address = 0).

Address and Universe Configuration:
The SparQle section can be assigned to a different DMX address and universe from the main color section, allowing it to be controlled as a separate fixture instance.
This provides maximum flexibility for programming independent effects or layering visual textures over the main RGBA output.

Address = 0 Behavior:
If the SparQle start address is set to 0, the SparQle channels are automatically placed at the next available position according to the fixture's current DMX stack order. When Effects Control and/or the Control Channel are enabled in Auto-Follow, those sections are placed before the SparQle channels.

Channel Mapping (8-bit):

Top Row: Channels 1–24 (left → right) — 0–255 = Minimum → Maximum Intensity Fade Default 0

Bottom Row: Channels 25–48 (left → right) — 0–255 = Minimum → Maximum Intensity Fade Default 0

Channel Mapping (16-bit):

Top Row: Channels 1–48 (24 cells × 2 channels coarse/fine) — 0–65,535 = Minimum → Maximum Intensity Fade Default 0

Bottom Row: Channels 49–96 (24 cells × 2 channels coarse/fine) — 0–65,535 = Minimum → Maximum Intensity Fade Default 0

Orientation Options:
The SparQle output order can be adjusted from the fixture menu or via RDM to match fixture orientation and design intent:

L → R: Left to Right

R → L: Right to Left

T → B: Top to Bottom

B → T: Bottom to Top

11.8 Color Force 3 ™ – Total DMX Channel Count (Main + SparQle Auto-Follow)

Assumptions									
SparQle is enabled in Auto-Follow and uses the same grouping mode as Main Cells.									
8-bit columns assume SparQle 8-bit; 16-bit columns assume SparQle 16-bit.									
Effects Control adds 10 channels when enabled.									
Control Channel adds 1 channel when enabled.									
Personality	Group-ings	Effects	Control	CF3 12 8-bit	CF3 12 16-bit	CF3 48 8-bit	CF3 48 16-bit	CF3 72 8-bit	CF3 72 16-bit
RGB + SparQle	All	Off	Off	5	10	5	10	5	10
RGB + Control + SparQle	All	Off	On	6	11	6	11	6	11
RGB + Effect + SparQle	All	On	Off	15	20	15	20	15	20
RGB + Effect + Control + SparQle	All	On	On	16	21	16	21	16	21
RGB + SparQle	By 4	Off	Off	5	10	20	40	30	60
RGB + Control + SparQle	By 4	Off	On	6	11	21	41	31	61
RGB + Effect + SparQle	By 4	On	Off	15	20	30	50	40	70
RGB + Effect + Control + SparQle	By 4	On	On	16	21	31	51	41	71
RGB + SparQle	By 1	Off	Off	20	40	80	160	120	240
RGB + Control + SparQle	By 1	Off	On	21	41	81	161	121	241
RGB + Effect + SparQle	By 1	On	Off	30	50	90	170	130	250
RGB + Effect + Control + SparQle	By 1	On	On	31	51	91	171	131	251
RGBA + SparQle	All	Off	Off	6	12	6	12	6	12
RGBA + Control + SparQle	All	Off	On	7	13	7	13	7	13
RGBA + Effect + SparQle	All	On	Off	16	22	16	22	16	22
RGBA + Effect + Control + SparQle	All	On	On	17	23	17	23	17	23
RGBA + SparQle	By 4	Off	Off	6	12	24	48	36	72
RGBA + Control + SparQle	By 4	Off	On	7	13	25	49	37	73
RGBA + Effect + SparQle	By 4	On	Off	16	22	34	58	46	82
RGBA + Effect + Control + SparQle	By 4	On	On	17	23	35	59	47	83
RGBA + SparQle	By 1	Off	Off	24	48	96	192	144	288
RGBA + Control + SparQle	By 1	Off	On	25	49	97	193	145	289
RGBA + Effect + SparQle	By 1	On	Off	34	58	106	202	154	298
RGBA + Effect + Control + SparQle	By 1	On	On	35	59	107	203	155	299
RGB Compact + SparQle	All	Off	Off	8	16	8	16	8	16
RGB Compact + Control + SparQle	All	Off	On	9	17	9	17	9	17
RGB Compact + Effect + SparQle	All	On	Off	18	26	18	26	18	26
RGB Compact + Effect + Control + SparQle	All	On	On	19	27	19	27	19	27
RGB Compact + SparQle	By 4	Off	Off	8	16	23	46	33	66
RGB Compact + Control + SparQle	By 4	Off	On	9	17	24	47	34	67
RGB Compact + Effect + SparQle	By 4	On	Off	18	26	33	56	43	76
RGB Compact + Effect + Control + SparQle	By 4	On	On	19	27	34	57	44	77
RGB Compact + SparQle	By 1	Off	Off	23	46	83	166	123	246
RGB Compact + Control + SparQle	By 1	Off	On	24	47	84	167	124	247
RGB Compact + Effect + SparQle	By 1	On	Off	33	56	93	176	133	256
RGB Compact + Effect + Control + SparQle	By 1	On	On	34	57	94	177	134	257
RGBA Compact + SparQle	All	Off	Off	9	18	9	18	9	18
RGBA Compact + Control + SparQle	All	Off	On	10	19	10	19	10	19

RGBA Compact + Effect + SparQle	All	On	Off	19	28	19	28	19	28
Personality	Group-ings	Effects	Control	CF3 12 8-bit	CF3 12 16-bit	CF3 48 8-bit	CF3 48 16-bit	CF3 72 8-bit	CF3 72 16-bit
RGBA Compact + Effect + Control + SparQle	All	On	On	20	29	20	29	20	29
RGBA Compact + SparQle	By 4	Off	Off	9	18	27	54	39	78
RGBA Compact + Control + SparQle	By 4	Off	On	10	19	28	55	40	79
RGBA Compact + Effect + SparQle	By 4	On	Off	19	28	37	64	49	88
RGBA Compact + Effect + Control + SparQle	By 4	On	On	20	29	38	65	50	89
RGBA Compact + SparQle	By 1	Off	Off	27	54	99	198	147	294
RGBA Compact + Control + SparQle	By 1	Off	On	28	55	100	199	148	295
RGBA Compact + Effect + SparQle	By 1	On	Off	37	64	109	208	157	304
RGBA Compact + Effect + Control + SparQle	By 1	On	On	38	65	110	209	158	305
RGB Extended + SparQle	All	Off	Off	9	18	9	18	9	18
RGB Extended + Control + SparQle	All	Off	On	10	19	10	19	10	19
RGB Extended + Effect + SparQle	All	On	Off	19	28	19	28	19	28
RGB Extended + Effect + Control + SparQle	All	On	On	20	29	20	29	20	29
RGB Extended + SparQle	By 4	Off	Off	9	18	36	72	54	108
RGB Extended + Control + SparQle	By 4	Off	On	10	19	37	73	55	109
RGB Extended + Effect + SparQle	By 4	On	Off	19	28	46	82	64	118
RGB Extended + Effect + Control + SparQle	By 4	On	On	20	29	47	83	65	119
RGB Extended + SparQle	By 1	Off	Off	36	72	144	288	216	432
RGB Extended + Control + SparQle	By 1	Off	On	37	73	145	289	217	433
RGB Extended + Effect + SparQle	By 1	On	Off	46	82	154	298	226	442
RGB Extended + Effect + Control + SparQle	By 1	On	On	47	83	155	299	227	443
RGBA Extended + SparQle	All	Off	Off	10	20	10	20	10	20
RGBA Extended + Control + SparQle	All	Off	On	11	21	11	21	11	21
RGBA Extended + Effect + SparQle	All	On	Off	20	30	20	30	20	30
RGBA Extended + Effect + Control + SparQle	All	On	On	21	31	21	31	21	31
RGBA Extended + SparQle	By 4	Off	Off	10	20	40	80	60	120
RGBA Extended + Control + SparQle	By 4	Off	On	11	21	41	81	61	121
RGBA Extended + Effect + SparQle	By 4	On	Off	20	30	50	90	70	130
RGBA Extended + Effect + Control + SparQle	By 4	On	On	21	31	51	91	71	131
RGBA Extended + SparQle	By 1	Off	Off	40	80	160	320	240	480
RGBA Extended + Control + SparQle	By 1	Off	On	41	81	161	321	241	481
RGBA Extended + Effect + SparQle	By 1	On	Off	50	90	170	330	250	490
RGBA Extended + Effect + Control + SparQle	By 1	On	On	51	91	171	331	251	491

11.9 Color Force 3 ™ — Main Footprint Only

Assumptions									
This table excludes SparQle from the Main fixture footprint.									
Use this version when SparQle is assigned to a separate DMX address and/or universe.									
Effects Control adds 10 channels when enabled.									
Control Channel adds 1 channel when enabled.									
Personality	Grouping	Effects	Control	CF3 12 8-bit	CF3 12 16-bit	CF3 48 8-bit	CF3 48 16-bit	CF3 72 8-bit	CF3 72 16-bit
RGB	All	Off	Off	3	6	3	6	3	6
RGB + Control	All	Off	On	4	7	4	7	4	7
RGB + Effect	All	On	Off	13	16	13	16	13	16
RGB + Effect + Control	All	On	On	14	17	14	17	14	17
RGB	By 4	Off	Off	3	6	12	24	18	36
RGB + Control	By 4	Off	On	4	7	13	25	19	37
RGB + Effect	By 4	On	Off	13	16	22	34	28	46
RGB + Effect + Control	By 4	On	On	14	17	23	35	29	47
RGB	By 1	Off	Off	12	24	48	96	72	144
RGB + Control	By 1	Off	On	13	25	49	97	73	145
RGB + Effect	By 1	On	Off	22	34	58	106	82	154
RGB + Effect + Control	By 1	On	On	23	35	59	107	83	155
RGBA	All	Off	Off	4	8	4	8	4	8
RGBA + Control	All	Off	On	5	9	5	9	5	9
RGBA + Effect	All	On	Off	14	18	14	18	14	18
RGBA + Effect + Control	All	On	On	15	19	15	19	15	19
RGBA	By 4	Off	Off	4	8	16	32	24	48
RGBA + Control	By 4	Off	On	5	9	17	33	25	49
RGBA + Effect	By 4	On	Off	14	18	26	42	34	58
RGBA + Effect + Control	By 4	On	On	15	19	27	43	35	59
RGBA	By 1	Off	Off	16	32	64	128	96	192
RGBA + Control	By 1	Off	On	17	33	65	129	97	193
RGBA + Effect	By 1	On	Off	26	42	74	138	106	202
RGBA + Effect + Control	By 1	On	On	27	43	75	139	107	203
RGB Compact	All	Off	Off	6	12	6	12	6	12
RGB Compact + Control	All	Off	On	7	13	7	13	7	13
RGB Compact + Effect	All	On	Off	16	22	16	22	16	22
RGB Compact + Effect + Control	All	On	On	17	23	17	23	17	23
RGB Compact	By 4	Off	Off	6	12	15	30	21	42
RGB Compact + Control	By 4	Off	On	7	13	16	31	22	43
RGB Compact + Effect	By 4	On	Off	16	22	25	40	31	52
RGB Compact + Effect + Control	By 4	On	On	17	23	26	41	32	53
RGB Compact	By 1	Off	Off	15	30	51	102	75	150
RGB Compact + Control	By 1	Off	On	16	31	52	103	76	151
RGB Compact + Effect	By 1	On	Off	25	40	61	112	85	160
RGB Compact + Effect + Control	By 1	On	On	26	41	62	113	86	161
RGBA Compact	All	Off	Off	7	14	7	14	7	14
RGBA Compact + Control	All	Off	On	8	15	8	15	8	15
RGBA Compact + Effect	All	On	Off	17	24	17	24	17	24
RGBA Compact + Effect + Control	All	On	On	18	25	18	25	18	25

Personality	Grouping	Effects	Control	CF3 12 8-bit	CF3 12 16-bit	CF3 48 8-bit	CF3 48 16-bit	CF3 72 8-bit	CF3 72 16-bit
RGBA Compact	By 4	Off	Off	7	14	19	38	27	54
RGBA Compact + Control	By 4	Off	On	8	15	20	39	28	55
RGBA Compact + Effect	By 4	On	Off	17	24	29	48	37	64
RGBA Compact + Effect + Control	By 4	On	On	18	25	30	49	38	65
RGBA Compact	By 1	Off	Off	19	38	67	134	99	198
RGBA Compact + Control	By 1	Off	On	20	39	68	135	100	199
RGBA Compact + Effect	By 1	On	Off	29	48	77	144	109	208
RGBA Compact + Effect + Control	By 1	On	On	30	49	78	145	110	209
RGB Extended	All	Off	Off	7	14	7	14	7	14
RGB Extended + Control	All	Off	On	8	15	8	15	8	15
RGB Extended + Effect	All	On	Off	17	24	17	24	17	24
RGB Extended + Effect + Control	All	On	On	18	25	18	25	18	25
RGB Extended	By 4	Off	Off	7	14	28	56	42	84
RGB Extended + Control	By 4	Off	On	8	15	29	57	43	85
RGB Extended + Effect	By 4	On	Off	17	24	38	66	52	94
RGB Extended + Effect + Control	By 4	On	On	18	25	39	67	53	95
RGB Extended	By 1	Off	Off	28	56	112	224	168	336
RGB Extended + Control	By 1	Off	On	29	57	113	225	169	337
RGB Extended + Effect	By 1	On	Off	38	66	122	234	178	346
RGB Extended + Effect + Control	By 1	On	On	39	67	123	235	179	347
RGBA Extended	All	Off	Off	8	16	8	16	8	16
RGBA Extended + Control	All	Off	On	9	17	9	17	9	17
RGBA Extended + Effect	All	On	Off	18	26	18	26	18	26
RGBA Extended + Effect + Control	All	On	On	19	27	19	27	19	27
RGBA Extended	By 4	Off	Off	8	16	32	64	48	96
RGBA Extended + Control	By 4	Off	On	9	17	33	65	49	97
RGBA Extended + Effect	By 4	On	Off	18	26	42	74	58	106
RGBA Extended + Effect + Control	By 4	On	On	19	27	43	75	59	107
RGBA Extended	By 1	Off	Off	32	64	128	256	192	384
RGBA Extended + Control	By 1	Off	On	33	65	129	257	193	385
RGBA Extended + Effect	By 1	On	Off	42	74	138	266	202	394
RGBA Extended + Effect + Control	By 1	On	On	43	75	139	267	203	395

11.10 Color Force 3 ™ — SparQle Footprint Table

Assumptions							
This table shows SparQle only, patched on its own separate address and/or universe.							
Grouping here is applied to the SparQle channels themselves.							
No Effects Control or Control Channel is included in this table.							
For CF3 12, Group by All and Group By 4 is the same.							
Personality	Grouping	CF3 12 8-bit	CF3 12 16-bit	CF3 48 8-bit	CF3 48 16-bit	CF3 72 8-bit	CF3 72 16-bit
SparQle 8-bit	All	2		2		2	
SparQle 8-bit	By 4	2		8		12	
SparQle 8-bit	By 1	8		32		48	
SparQle 16-bit	All		4		4		4
SparQle 16-bit	By 4		4		16		24
SparQle 16-bit	By 1		16		64		96

11.11 Chroma-Q Color Force 3™ **(CTRL) Control channel

Function name	Activation delay ms	Default	Range start	Range end	Description
					Values must be held for 2 sec before the function is activated **
Control channel					** Some functions require more or less time
No Function			0	2	
Dimmer Curve					
Dimmer curve Linear	2000		3	3	Linear
Dimmer curve Square Law	2000	X	4	4	This curve gives more resolution in the 0-20% and accelerate after
Dimmer curve Inv Square Law	2000		5	5	Faster ramp up
Dimmer curve S-curve	2000		6	6	This curve gives more resolution in the 0-20% and 80%-100%
Power mode					
Low Power Mode	2000		7	7	Engine in Low current
High Power Mode	2000		8	8	Engine in High current
Auto Power Mode	2000		9	9	Engine in Auto current switch
No Function			10	10	
DMX Smoothing					
DMX Smoothing Off (hold 1 sec to change)	1000		11	12	No DMX interpolations performed, very dynamic reaction for pixel mapping
DMX Smoothing Normal (hold 1 sec to change)	1000	X	13	14	Ensure that fades are smooth and even
DMX Smoothing Ultra smooth (hold 1 sec to change)	1000		15	16	Super smooth dimming for use with manual faders
No Function			17	19	
Emulation					
Tungsten Decay/Fade-to-Warm Disabled	2000	X	21	22	No Tungsten emulation
Tungsten Decay On	2000		23	24	Emulate a tungsten intensity decay when fixture jump from/to values
Tungsten Fade-to-Warm On	2000		25	26	Emulate a tungsten warm shift when dimming down
Tungsten Decay and Fade-to-Warm On	2000		27	28	Emulate a tungsten warm shift when dimming down and the slow decay.
No Function			29	36	
Color Calibration					
RGBA Mode ColorSure 3™ Calibrated	2000	X	37	38	In this mode, the LED engine is using calibrated points for colors and CCT points
RGBA Mode Uncalibrated	2000		39	40	In this mode the LED engine is not using calibration (Only works in RGBA mode)
Cooling					
Fan Speed Minimum	2000		41	41	Fan will run at very low speed virtually silent
Fan Speed Low	2000		42	42	Slow fan speed (fixture output can be reduced or limited)
Fan Speed Medium	2000		43	43	Medium fan speed (fixture output can be reduced or limited)
Fixed fan speed = full	2000		44	44	Maximum speed on fan

Fixed fan speed = low, regulated light output intensity	2000		45	45	Low speed on fan but only when needed (max output can be reduced if too hot)
Function name	Activation delay ms	Default	Range start	Range end	Description
Fixed fan speed = medium, regulated light output intensity	2000	X	46	46	Medium speed on fan but only when needed
Fixed fan speed = full, regulated light output intensity	2000		47	47	Maximum speed on fan but only when needed
No Function			48	60	
Display					
Turn on control panel display	2000		61	62	Turn On display on fixture
Auto control panel display	2000	X	63	64	Display only turn on when its being used or when errors happen
Turn off control panel display	2000		65	66	Turn Off display on fixture no error gets displayed
No Function			67	70	
PWM Frequency					
Main Cells PWM 24,000hz	2000	X	71	72	Set PWM rate at 24,000hz
Main Cells PWM 96,000hz	2000		73	74	Set PWM rate 96,000hz
No Function			75	89	
SparQle PWM 6000hz	2000	X	90	90	SparQle PWM 6000hz
SparQle PWM 12,000hz	2000		91	91	SparQle PWM 12,000hz
SparQle PWM 24,000hz	2000		92	92	SparQle PWM 24,000hz
No Function			93	130	
Orientation					
Main Cells Orientation L>R	2000	X	131	131	Set the direction of the Main cells from left to Right
Main Cells Orientation R>L	2000		132	132	Set the direction of the Main cells from Right to Left
SparQle Orientation L>R	2000	X	135	135	Set the direction of the SparQle from left to Right
SparQle Orientation R>L	2000		136	136	Set the direction of the SparQle from Right to Left
SparQle Orientation T>B	2000	X	137	137	Set the direction of the SparQle from Top to Bottom
SparQle Orientation B>T	2000		138	138	Set the direction of the SparQle from Bottom to Top
No Function			139	144	
Wireless					
Wireless LINK	2000		145	146	Enable Link to WIRELESS
Wireless UNLINK	2000		147	148	Unlink WIRELESS
No Function			149	150	
DMX Lost					
DMX Lost default Fixture stay to the last state	2000	X	151	152	

DMX Lost default Fixture goes black (after delay)	2000		153	154	Default delay is 5 seconds, can be changed in menu
Function name	Activation delay ms	Default	Range start	Range end	Description
DMX Lost default Fixture goes to full (after delay)	2000		155	156	Default delay is 5 seconds, can be changed in menu, full means a white output according to the DMX mode
DMX Lost default fixture to save look (after delay)	2000		157	158	Default delay is 5 seconds, can be changed in menu
No Function			159	160	
Default white point					For mode where there are no CCT control
Fixture programmed point	2000		161	161	Uses the set fixed point from menu/RDM
CCT 2800, Tint Neutral	2000		162	162	Override the set point with a white at 2800K, and tint is neutral at 127
CCT 3200, Tint Neutral	2000		163	163	Override the set point with a white at 3200K, and tint is neutral at 127
CCT 4400, Tint Neutral	2000		164	164	Override the set point with a white at 4400K, and tint is neutral at 127
CCT 5600, Tint Neutral	2000		165	165	Override the set point with a white at 5600K, and tint is neutral at 127
CCT 6500, Tint Neutral	2000		166	166	Override the set point with a white at 6500K, and tint is neutral at 127
No Function			167	232	
RDM					
Enable RDM	2000	X	233	233	Enable RDM transmission
Disable RDM	2000		234	234	Disable RDM transmission
No Function			235	235	
Store Looks	5000		236	237	Uses the FX parameter to select the look to store, then leave CTRL channel on this value for 5 seconds
No Function			238	238	
Reset	5000		239	240	Force a fixture reboot
No Function			241	243	
Default					
Save as User Defaults	5000		244	245	Take the current settings and make it the new default (except DMX address and DMX mode)
Restore User Defaults	5000		246	247	Restore setting to user default (except DMX address and DMX mode)
Restore Factory Defaults	5000		248	249	Restore setting to factory default (except DMX address and DMX mode)
No Function			250	255	This range will never have functions for safety reasons

Effects Controls (Future firmware)

8 bit	Value	Function	Fade Status	Default Value
1		Intensity 1		
	0 - 255	Minimum → Maximum Intensity	Fade	0
2		Effect Selection 1		
	0 - 255	0: OFF, 1 to 255, 254 effects	Snap	0
3		Speed 1		
	0 - 255	0 Stop, 1 to 127 Slow to fast CCW, 128 to 254 Fast to Slow CW, 255 Stop	Fade	0
4		Modifier 1		
	0 - 255	0 to 255 affect the behavior of each effect	Fade	0
5		Sync 1		
	0 - 255	0 to 255 Delay the start of the effect across the fixture cells or SparQle	Fade	0
6		Intensity 2		
	0 - 255	Minimum → Maximum Intensity	Fade	0
7		Effect Selection 2		
	0 - 255	0: OFF, 1 to 255, 254 effects	Snap	0
8		Speed 2		
	0 - 255	0 Stop, 1 to 127 Slow to fast CCW, 128 to 254 Fast to Slow CW, 255 Stop	Fade	0
9		Modifier 2		
	0 - 255	0 to 255 affect the behavior of each effect	Fade	0
10		Sync 2		
	0 - 255	0 to 255 Delay the start of the effect across the fixture cells or SparQle	Fade	0

Notes:
Effect Control Notes *(Future firmware)*

Effect Control must be enabled in the fixture's settings or via RDM before the DMX channels become active.

When enabled, the Effect Control channels are positioned immediately after the last Main Cell channel. If the Control Channel is enabled, it is placed after the Effect Control channels. If SparQle is set to Auto-Follow, the SparQle channels are placed after the Effect Control and Control Channel sections.

.

The fixture supports two simultaneous effects.

Effect 1 runs as the base layer.

Effect 2 can operate concurrently and takes precedence over Effect 1 where both target the same parameter (e.g., color, intensity, or tint).

This structure allows independent or layered effect programming without altering the core color or intensity data.

11.11.1 Effects Table *(Future firmware)*

DMX value	Name	Description
0	No effect	Stop effect
1	Effect 1	*Descriptions will come when the firmware that included effects is released*
2	Effect 2	
3	Effect 3	
4	Effect 4	
5	Effect 5	
6	Effect 6	
7	Effect 7	
8	Effect 8	
9	Effect 9	
10	Effect 10	
11	Effect 11	
12	Effect 12	
13	Effect 13	
14	Effect 14	
15	Effect 15	
16	Effect 16	
17	Effect 17	
18	Effect 18	
19	Effect 19	
20	Effect 20	
...		
255	Effect 255	

12 RDM SETTINGS *(Subject to change)*

Supported RDM parameters:	Definitions
DEVICE_INFO	
IDENTIFY_DEVICE	When Enabled the fixture will blink
DMX_START_ADDRESS	Display the current DMX address
SOFTWARE_VERSION_LABEL	Display the current firmware version
DEVICE_LABEL	User definable label
SENSOR_DEFINITION	
PARAMETER_DESCRIPTION	
DMX_PERSONALITY	
DMX_PERSONALITY_DESCRIPTION	
DEVICE_MODEL_DESCRIPTION	Color Force 3 ™ 12, 48 or 72
MANUFACTURER_LABEL	Chroma-Q
DEVICE_LABEL	
SENSOR_DEFINITION	
SENSOR_VALUE	
RESET_DEVICE	
IP Address	Display current fixture IP address
MAC Address	Display current fixture MAC address
UID	Display ArtNet UID
Software version	Display the current firmware version
Start address	Display Current Start
Identify device: Off	
Footprint	Display the current footprint of the fixture
Personality: X of 17	
	RGB - 8 bit
	RGB - 16 bit
	RGBA - 8 bit
	RGBA - 16 bit
	RGB Compact - 8 bit
	RGB Compact - 16 bit
	RGBA Compact - 8 bit
	RGBA Compact - 16 bit
	RGB Extended - 8 bit
	RGB Extended - 16 bit
Default	RGBA Extended - 8 bit
	RGBA Extended - 16 bit
Default	SparQle 8 bit
	SparQle 16bit

Supported RDM parameters:	Definitions
Device model description:	Color Force 3 ™ XXX
Manufacturer label:	Chroma-Q
Main Cells Grouping	0- All, 1=by 1, 2=By 4
Engine PWM Frequency (Hz)	0=6000, 1=12000, 2= 24000, 3= 96000 Hz internal 20-bit dimming at 24,000 Hz or below, 18 bit at 96,000 Hz
Dimmer Curve	0=Linear, 1=Soft Rise ,2=Fast Rise, 3=S Curve (default=1) Select the desired dimmer curve
Fan Speed	0=Silent, 1=Quiet, 2= Normal, 3= Full
Reboot device	
Device hours	Display how many hours the fixture was powered up
Control Channel	0=Off, 1=Enabled When enabled, an extra DMX channel is added at the end. See DMX Extended Control
Effects controls* *To be implemented in future firmware*	0=Off, 1=Enabled 10 extra DMX channels are added at the end, before control channel if the latter is enabled See DMX Effects Control
Smoothing	0=Off, 1=Normal When off, the fixture is quicker to react to DMX changes, but not as smooth in slow transition Quicker reaction time can be useful for certain dynamic effects such a pixel mapping
Fixed Point CCT	0-255 (default 127) Set the color temperature value for personalities that don't have a CCT control
Fixed Point Tint	0-255 (default 127) Set the tint value for personalities that don't have a Tint control
SparQle Start Address	SparQle Start Address: 0 to 512. When set to 0, the SparQle channels are placed according to the fixture's current DMX stack order.
SparQle Footprint	Show how many channels the SparQle will occupy (read only)
SparQle Personalities	0=8bit, 1 = 16 bit
SparQle Grouping	0- All, 1=by 1, 2=By 4
SparQle PWM Frequency (Hz)	0=6000, 1=12000, 2= 24000hz
Load Defaults settings	0 = factory, 1= User
Store User Default Settings	1= User 1
Sensors:	
Sensor 1: Engine Temp. = 28 Degrees Centigrade	LED Engine temperature
	Valid range: 0 to 100 Degrees Centigrade
	Normal operation range: 0 to 85 Degrees Centigrade
Sensor 2: Output De-Rating % = 100	If the internal fixture temperature goes too high, the fixture will limit its output gradually until an equilibrium is reached.
	Valid range: 0 to 100
	Normal operation range: 0 to 100
Sensor 6: Processor Temp. = 36 Degrees Centigrade	Valid range: 0 to 100 Degrees Centigrade
	Normal operation range: 0 to 85 Degrees Centigrade
Sensor 7: Relative Humidity = 26	
	Valid range: 0 to 100
	Normal operation range: 0 to 100

12.1 CCT Table

Chroma-Q Color Force 3 ™ CCT control
For Compact and Extended Modes *(Values can vary up to 200-400 Kelvin)*

DMX 8bit	16 bit	Kelvin	DMX 8bit	16 bit	Kelvin	DMX 8bit	16 bit	Kelvin	DMX 8bit	16 bit	Kelvin
0	0	2000	64	16384	3280	128	32768	4560	192	49152	5840
1	256	2020	65	16640	3300	129	33024	4580	193	49408	5860
2	512	2040	66	16896	3320	130	33280	4600	194	49664	5880
3	768	2060	67	17152	3340	131	33536	4620	195	49920	5900
4	1024	2080	68	17408	3360	132	33792	4640	196	50176	5920
5	1280	2100	69	17664	3380	133	34048	4660	197	50432	5940
6	1536	2120	70	17920	3400	134	34304	4680	198	50688	5960
7	1792	2140	71	18176	3420	135	34560	4700	199	50944	5980
8	2048	2160	72	18432	3440	136	34816	4720	200	51200	6000
9	2304	2180	73	18688	3460	137	35072	4740	201	51456	6020
10	2560	2200	74	18944	3480	138	35328	4760	202	51712	6040
11	2816	2220	75	19200	3500	139	35584	4780	203	51968	6060
12	3072	2240	76	19456	3520	140	35840	4800	204	52224	6080
13	3328	2260	77	19712	3540	141	36096	4820	205	52480	6100
14	3584	2280	78	19968	3560	142	36352	4840	206	52736	6120
15	3840	2300	79	20224	3580	143	36608	4860	207	52992	6140
16	4096	2320	80	20480	3600	144	36864	4880	208	53248	6160
17	4352	2340	81	20736	3620	145	37120	4900	209	53504	6180
18	4608	2360	82	20992	3640	146	37376	4920	210	53760	6200
19	4864	2380	83	21248	3660	147	37632	4940	211	54016	6220
20	5120	2400	84	21504	3680	148	37888	4960	212	54272	6240
21	5376	2420	85	21760	3700	149	38144	4980	213	54528	6260
22	5632	2440	86	22016	3720	150	38400	5000	214	54784	6280
23	5888	2460	87	22272	3740	151	38656	5020	215	55040	6300
24	6144	2480	88	22528	3760	152	38912	5040	216	55296	6320
25	6400	2500	89	22784	3780	153	39168	5060	217	55552	6340
26	6656	2520	90	23040	3800	154	39424	5080	218	55808	6360
27	6912	2540	91	23296	3820	155	39680	5100	219	56064	6380
28	7168	2560	92	23552	3840	156	39936	5120	220	56320	6400
29	7424	2580	93	23808	3860	157	40192	5140	221	56576	6420
30	7680	2600	94	24064	3880	158	40448	5160	222	56832	6440
31	7936	2620	95	24320	3900	159	40704	5180	223	57088	6460
32	8192	2640	96	24576	3920	160	40960	5200	224	57344	6480
33	8448	2660	97	24832	3940	161	41216	5220	225	57600	6500
34	8704	2680	98	25088	3960	162	41472	5240	226	57856	6520
35	8960	2700	99	25344	3980	163	41728	5260	227	58112	6540
36	9216	2720	100	25600	4000	164	41984	5280	228	58368	6560
37	9472	2740	101	25856	4020	165	42240	5300	229	58624	6580
38	9728	2760	102	26112	4040	166	42496	5320	230	58880	6600
39	9984	2780	103	26368	4060	167	42752	5340	231	59136	6620
40	10240	2800	104	26624	4080	168	43008	5360	232	59392	6640
41	10496	2820	105	26880	4100	169	43264	5380	233	59648	6660
42	10752	2840	106	27136	4120	170	43520	5400	234	59904	6680
43	11008	2860	107	27392	4140	171	43776	5420	235	60160	6700
44	11264	2880	108	27648	4160	172	44032	5440	236	60416	6720
45	11520	2900	109	27904	4180	173	44288	5460	237	60672	6740
46	11776	2920	110	28160	4200	174	44544	5480	238	60928	6760
47	12032	2940	111	28416	4220	175	44800	5500	239	61184	6780
48	12288	2960	112	28672	4240	176	45056	5520	240	61440	6800
49	12544	2980	113	28928	4260	177	45312	5540	241	61696	6820
50	12800	3000	114	29184	4280	178	45568	5560	242	61952	6840
51	13056	3020	115	29440	4300	179	45824	5580	243	62208	6860
52	13312	3040	116	29696	4320	180	46080	5600	244	62464	6880
53	13568	3060	117	29952	4340	181	46336	5620	245	62720	6900
54	13824	3080	118	30208	4360	182	46592	5640	246	62976	6920
55	14080	3100	119	30464	4380	183	46848	5660	247	63232	6940
56	14336	3120	120	30720	4400	184	47104	5680	248	63488	6960
57	14592	3140	121	30976	4420	185	47360	5700	249	63744	6980
58	14848	3160	122	31232	4440	186	47616	5720	250	64000	7000
59	15104	3180	123	31488	4460	187	47872	5740	251	64256	7020
60	15360	3200	124	31744	4480	188	48128	5760	252	64512	7040
61	15616	3220	125	32000	4500	189	48384	5780	253	64768	7060
62	15872	3240	126	32256	4520	190	48640	5800	254	65024	7080
63	16128	3260	127	32512	4540	191	48896	5820	255	65280	7100

13 TROUBLESHOOTING

Troubleshooting the Color Force 3™ is best approached as a process of elimination, starting with the simplest external factors and working inward.
Before assuming fixture failure, always check:

- Power and data connections
- Fixture addressing and personality settings
- Network configuration (Universe, IP, sACN/Art-Net priority)
- DMX or Ethernet cabling
- Control Channel behavior
- Presence of SparQle auto-addressing
- Cooling and ventilation conditions

If issues persist, contact your selling dealer or an authorized Chroma-Q service center.

13.1 Troubleshooting Guide

Below is a more complete troubleshooting table tailored to the CF3 hardware and software system:

13.2 Fixture does not respond to DMX control

POSSIBLE CAUSE	SOLUTION
WRONG DMX ADDRESS, UNIVERSE, OR PERSONALITY	Verify Universe and Address on the Home Screen. Confirm Personality and Grouping are correct.
CONSOLE PATCH DOES NOT MATCH FIXTURE FOOTPRINT	Ensure the console personality matches: Main Engine + SparQle + Control Channel layout.
SPARQLE OR CONTROL CHANNEL AUTO-ADDRESSING MISUNDERSTOOD	If SparQle or Control Channel are set to 0, they will auto-place at the end of the footprint. Confirm this placement.
DMX CABLE FAULT OR INCORRECT TERMINATION	Test with known-good DMX cable; add/review DMX terminator.
INCORRECT DATA SOURCE PRIORITY	Check DMX Source menu: DMX / Ethernet / Wireless priority.
NO DATA FROM CONSOLE	Use DMX Monitor to verify incoming channel values.
WIRELESS DMX NOT LINKED	Check Wireless DMX menu (TiMo link status, signal quality).
ART-NET OR SACN NOT CONFIGURED	Confirm IP / Subnet Mask, Universe, and protocol settings.

13.3 Fixture does not respond over Ethernet (Art-Net / sACN)

POSSIBLE CAUSE	SOLUTION
INCORRECT IP ADDRESS OR SUBNET	Verify IP and Subnet Mask on the Home Screen.
WRONG ART-NET UNIVERSE OR SACN UNIVERSE	Ensure the console matches the fixture's configuration.
MIXED UNICAST/MULTICAST MODE ISSUES	Confirm network mode and router/switch behavior.
DUPLICATE IP ADDRESS ON NETWORK	Assign a unique IP.
INCORRECT SOURCE PRIORITY (SACN)	Check DMX Source priority settings.
RDM CONFLICT	Disable or verify RDM settings if flickering or intermittent control occurs.

13.4 Fixture outputs wrong color or behaves inconsistently

POSSIBLE CAUSE	SOLUTION
USING UNCALIBRATED RGBA MODE	Switch to RGBA Calibrated if accurate colors are required.
WHITE POINT ADJUSTMENTS ACTIVE	Check White Point menu (CCT & Tint).
DIMMER CURVE OR SMOOTHING NOT EXPECTED	Verify active Dimmer Curve and Smoothing settings.
PWM FREQUENCY INCOMPATIBILITY WITH CAMERA	Adjust PWM Frequency (e.g., 6 kHz, 12 kHz, 24 kHz, 96 kHz).
BAD DMX OR NETWORK DATA	Check DMX Monitor for unexpected values.

13.5 SparQle engine issues

POSSIBLE CAUSE	SOLUTION
SPARQLE NOT RESPONDING, ADDRESS SET INCORRECTLY	If SparQle address = 0, it auto-assigns to the end of the Main footprint. Confirm final address.
SPARQLE DMX PERSONALITY MISMATCHED	Check the Personality menu.
SPARQLE PWM FREQUENCY MISMATCH FLICKERING ON CAMERA	Confirm SparQle-specific PWM frequency (6 kHz / 12 kHz / 24 kHz).
SPARQLE INTENTIONALLY DISABLED IN PERSONALITY	Verify mode selection.

13.6 Low LED output or unexpected dimming

POSSIBLE CAUSE	SOLUTION
FIXTURE IS THERMAL DERATED	Check Temperature Monitor. If derating < 100%, cooling or ambient temperature must be corrected.
FAN MODE SET TO SILENT OR QUIET	Switch to Normal or Live for maximum output.
FANS NOT WORKING OR BLOCKED AIR INTAKES	Inspect and clean fans and air intakes
AMBIENT TEMPERATURE TOO HIGH	Improve airflow or reduce intensity.

13.7 Noise from fixture

POSSIBLE CAUSE	SOLUTION
FAN MALFUNCTION	Check fan operation in Cooling menu or visually inspect airflow.
FAN MODE SET TO LIVE	Switch to Normal, Quiet, or Silent.
INTERNAL OBSTRUCTION	Inspect vents, drain holes, and fan paths for debris.
EXTREMELY HIGH AMBIENT TEMPERATURE	Improve venue ventilation.

13.8 Fixture flickers on camera

POSSIBLE CAUSE	SOLUTION
PWM FREQUENCY MISMATCH	Set PWM to 6 kHz, 12 kHz, 24 kHz, or 96 kHz, matching camera shutter/recording rate.
HIGH-SPEED FILMING	Use 96,000 Hz.
MIXED FIXTURE TYPES WITH DIFFERENT PWM FREQUENCIES	Standardize PWM across rig.
CONSOLE SENDING UNSTABLE DMX OR ETHERNET DATA	Verify data monitoring on Home Screen and DMX Monitor.

13.9 Fixture will not update firmware

POSSIBLE CAUSE	SOLUTION
INCORRECT UPDATE FILE	Ensure the file is for the Color Force 3.
UPDATE INTERRUPTED	Never remove power during update; restart update.
NETWORK PATH BLOCKED	For Ethernet updates, ensure the fixture is reachable (ping/IP).
DMX UPDATE CABLE ISSUE	Try another DMX line or update over Ethernet.

13.10 Touchscreen does not respond

POSSIBLE CAUSE	SOLUTION
TOUCHSCREEN IS LOCKED	Hold the lock icon for 3 seconds to unlock.
SCREEN SLEEPING OR DIMMED	Tap screen or adjust Main Display settings.
DISPLAY ROTATION INCORRECT	Check Auto Rotation or Manual Rotation.
TEMPERATURE TOO HIGH	Fixture may be limiting non-essential functions; check Temp Monitor.

13.11 NFC not working

POSSIBLE CAUSE	SOLUTION
NFC DISABLED	Enable NFC in the NFC menu.
NFC TIMEOUT EXPIRED	Increase NFC Active Duration.
WRONG SCAN LOCATION	CF3-12 has one reader on display side; CF3-48/72 have two readers: one on the display side and one on the rear behind the serial number label.
DEVICE CASE INTERFERING	Try removing phone case or repositioning device.

14 FIRMWARE UPDATE

Firmware updates for the Color Force 3™ are performed over Ethernet or DMX using the official Chroma-Q update tool. Each firmware package includes both the addressing board firmware and the LED engine firmware, and the fixture automatically updates both in sequence.

The update process runs in two stages, with clear visual feedback from the LED cells to indicate progress.

14.1 Stage 1 — Addressing Board Update

- The addressing board receives the new firmware.
- The board validates the file and begins updating itself.
- During this phase, all LED cells blink Magenta to show that the addressing board is being programmed.

Once complete, the addressing board will reboot automatically.

14.2 Stage 2 — LED Engine Update

- After rebooting, the fixture immediately begins updating the LED engines.
- During this phase, the LED engines blink Blue to indicate active updating.
- When the update is complete, all LED engines turn solid Green to confirm success.

The fixture performs one final automatic reboot.

14.3 Completion

After the second reboot, the fixture returns to normal operation and is ready for use with the new firmware.

15 MAINTENANCE

With proper care, the Color Force 3™ requires very little routine maintenance. The fixture is designed for high reliability in demanding environments and is rated IP65, making it suitable for indoor and outdoor use. Periodic inspection is still recommended to ensure optimal performance and long-term protection of the fixture.

15.1 Cleaning and Surface Care

Because the fixture is IP65 rated, it is safe to spray water directly onto the exterior for cleaning. However:

- Do not use solvents, corrosive chemicals, alcohol-based cleaners, or abrasive products.
- Such substances can damage the gaskets, seals, paint finish, and front glass coating.
- Always rinse with clean water if residue is present.

For routine cleaning:

- Use fresh water or a soft damp cloth with mild detergent.
- Dry with a lint-free cloth when finished.

15.2 Air Vents and Drain Holes

The Color Force 3™ includes several features that ensure proper ventilation and water management. These must remain clean and unobstructed:

15.2.1 Air Vents

Located near the connection box on the rear of the fixture.
These vents allow internal pressure equalization and help maintain proper thermal performance.

- Ensure vents are clean, unobstructed, and undamaged.
- Remove dust or debris with a soft brush or gentle water flow.

15.2.2 Drain Holes

Multiple drain points are integrated into the fixture housing.

- These prevent water from pooling on or inside the enclosure.
- Regularly inspect and clear any debris, dirt, or buildup that may block drainage.

15.3 Internal Inspection

Even with IP65 protection, fixtures used in environments with haze, dust, or oil-based atmospherics may require periodic internal inspection.

If internal service is required:

- Disconnect power before opening the unit.
- Only qualified technicians or authorized service personnel should access internal components.
- Remove dust using compressed air or a soft brush.
- Inspect seals for wear or contamination.

Improper opening of the fixture may compromise the IP65 seal and void warranty protection.

15.4 Preventive Maintenance Tips

- Keep air vents and drain holes clear at all times.
- Avoid mounting where water can be forced upward into vents (e.g., from pressure washers).
- Do not block airflow around the fixture.
- Store in a dry environment when not in use.
- Inspect exterior gaskets during routine service intervals.
- If you plan on doing Pressure Test on the fixtures, you should not go above 3 PSI.

16 TECHNICAL SPECIFICATIONS

16.1 Physical

Net Dimensions

- 12: 325mm x 180mm x 215mm (12.8″ x 7.1″ x 8.5″)
- 48: 1200mm x 180mm x 215mm (47.3″ x 7.1″ x 8.5″)
- 72: 1785mm x 180mm x 215mm (70.3″ x 7.1″ x 8.5″)

Net Weight

- 12: 6.7kg / 15.3lb
- 48: 23.5kg / 51.8lb
- 72: 35kg / 77.1lb

16.2 Connections

Power Connections In/Out

- Neutrik powerCON TRUE1 in and out

Data Connectors In/Out

- XLR 5-pin in and out Ethernet in and out

Wireless Connections

- Optional LumenRadio Module

NFC Reader

- 12: One on the Display side.
- 48 and 72: One on the Display side and one on the back under the serial label.

16.3 Construction

Construction

- Powder coated aluminum extrusion

Colour (RAL)

- Black RAL 9005/ White RAL 9016

Protection Rating

- IP 65

Built-In Hardware

- Tilt-Lock, 2 accessory slots, safety bracket(s), Quarter Turn Receptacle

16.4 Optics

Optics

- Fully homogenised lenses

Beam Distribution

- Standard asymmetrical for wall wash or optional symmetrical direct illumination

Color Engine

- RGBA ColorSure3™ calibrated engine using latest CQ3 Color science control

CCT (kelvin)

- Adjustable 2000K - 7100K (Extended 1,000K - 10,000K)

Color Gamut

- Greater than REC. 709

Product LED Lifetime (hours)

- L70 at 50,000 hours* *Measured under manufacturer's test conditions

16.5 Thermal

Cooling System

- Combined convection and forced air

Maximum Surface Temperature

- Ta=26°C: (54° C, 130° F)

Operating Temperature

- 0°C to 40°C (32 °F to 104 °F)

Total Heat Dissipation (Calculated, +/- 10%)

- 12: 615 BTU/hr.
- 48: 2730 BTU/hr.
- 72: 3755 BTU/hr.

16.6 Regulatory Compliance & Certifications

The Color Force 3™ is certified and compliant with applicable safety, EMC, environmental, ingress protection, and photobiological safety requirements, including:

North America

- UL 1573
- UL 8750
- CSA C22.2 No. 166
- CSA C22.2 No. 250.13
- FCC Part 15 Class A
- ICES-005 Class A

Europe / International

- EN 60598-2-17
- EN 62031
- IEC 60529 (IP65)
- IEC 62471
- EN 55015
- EN 61547 / EN IEC 61547
- EN 55011
- EN 55016
- EN 61000-3 Series
- EN 61000-4 Series

Australia / New Zealand

- RCM Requirements

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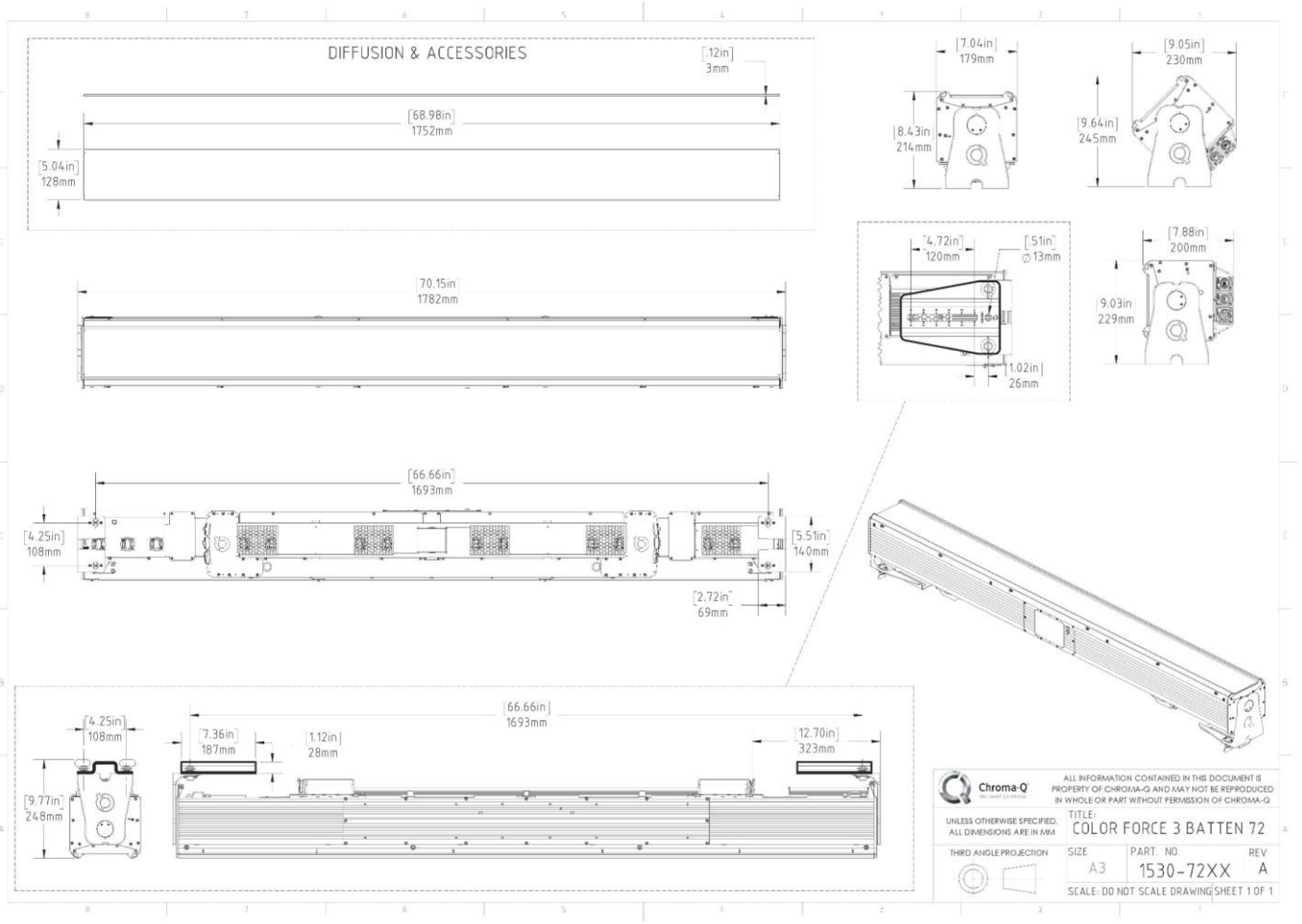
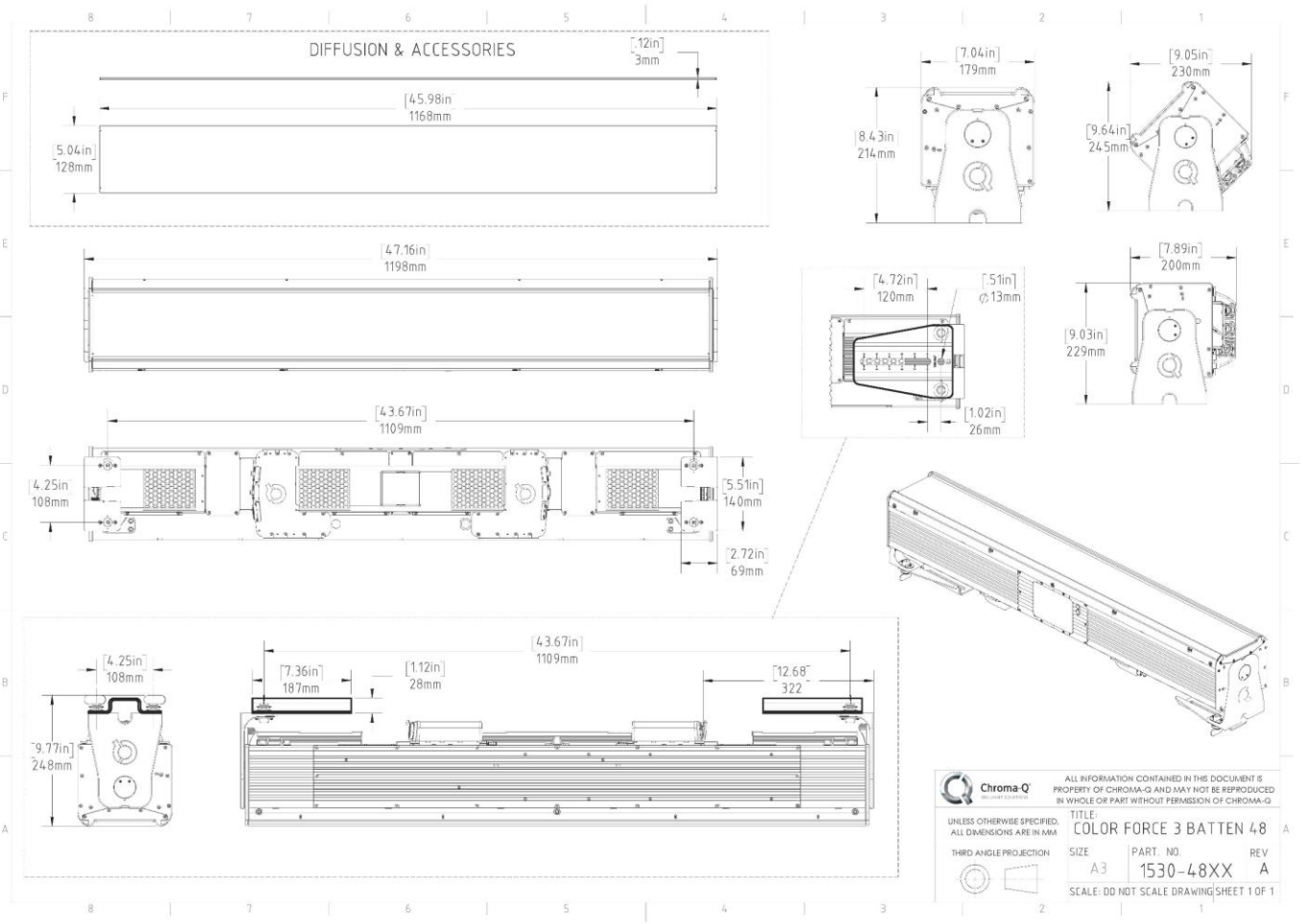
17 TECHNICAL DRAWINGS

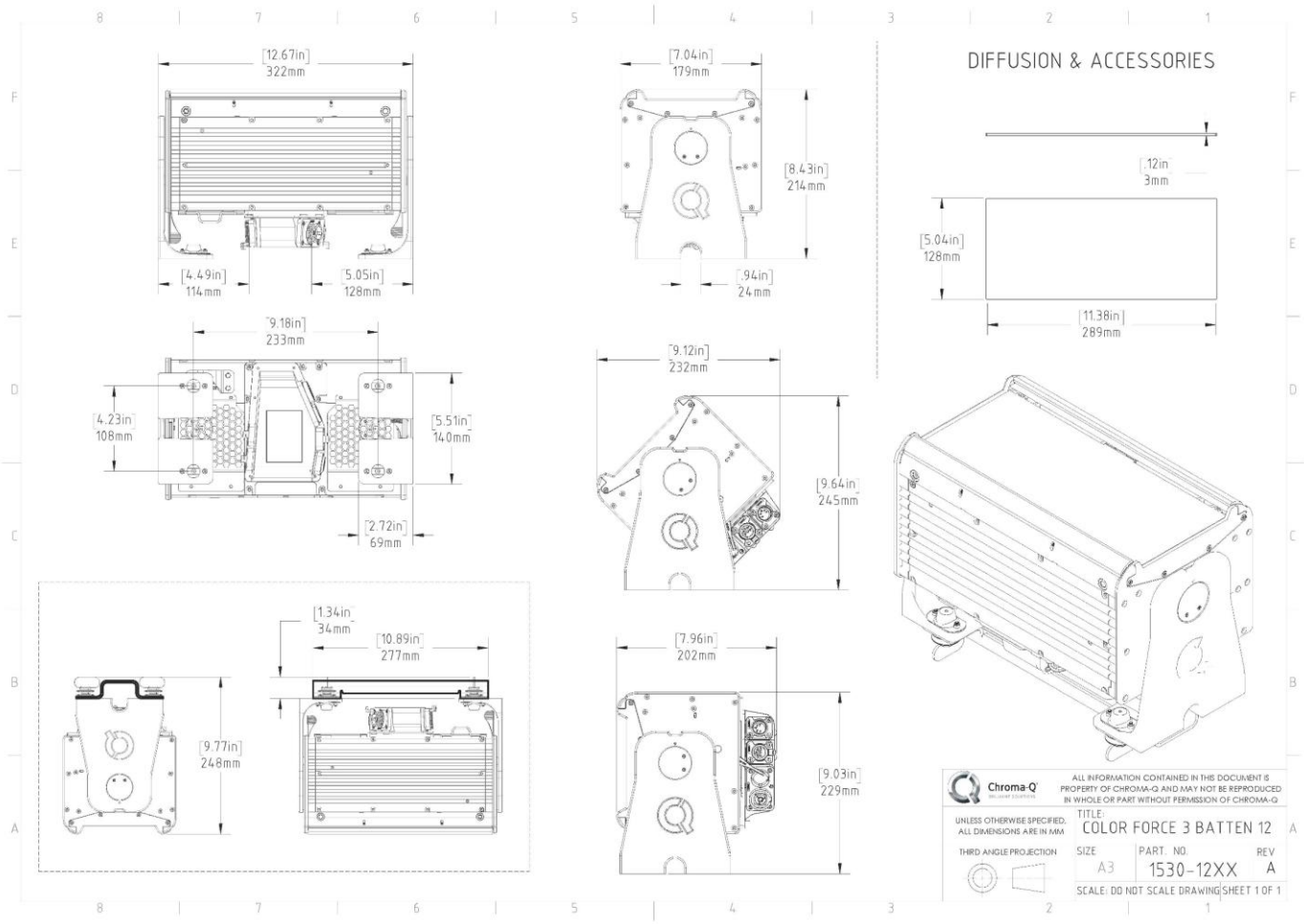
17.1 Color Force 3 72™



17.2 Color Force 3 48™



17.3 Color Force 3 12™



18 ACCESSORIES

Color Force 3™ 12	
CHCFBD12	Barndoor, black
CHCFBD12W	Barndoor, white
CHCFECL12	Egg crate louvre, black
CHCFH12	Top hat, black
CHCFZH12	Zip hood
CHCFDBX	Diffuser box, black
CHCFDBXW	Diffuser box, white
All Models	
CF3 12: 1530-9030 CF3 48: 1530-9040 CF3 72: 1530-9050	Border lens
CF3 12: 1530-9031 CF3 48: 1530-9041 CF3 72: 1530-9051	Cyc lens
CF3 12: 1530-9032 CF3 48: 1530-9042 CF3 72: 1530-9052	Clear lens
CF3 12: 1530-9033 CF3 48: 1530-9043 CF3 72: 1530-9053	Stealth lens
CF3 12: 1530-9034 CF3 48: 1530-9044 CF3 72: 1530-9054	Lightshield
1530-9020	LumenRadio kit option

19 QUICK REFERENCE

19.1 Power & Startup

- Fixture boots to Home Screen
- Lock Screen:
- Hold 1s → Lock
- Hold 3s → Unlock
- Auto Rotation:
- Auto = automatic 0°/180°
- Manual = tap to flip (Auto OFF required)

19.2 DMX Addressing

- Tap DMX address on Home Screen → opens Set Address
- Tap DMX (bottom bar) → same
- Set Universe + Address → ✔ Apply
- Numeric keypad: tap digits directly (e.g., 3-3 for 33)

19.2.1 Special Addressing

- SparQle = 0 → auto-follow after Main footprint
- Control Ch. = 0 → auto-follow after full fixture footprint
- Both always follow the Main Universe

19.3 Color Behavior

- RGBA Calibrated → Optimal colour points
- Uncalibrated (RGBA Only) → Direct LED drive (linear)
- White Point → Affects only modes without CCT/Tint channels

19.4 Dimmer & Smoothing

- Tap Smoothing → Smoothing menu
- Tap Curve → Dimmer Curve menu
- Curves: Linear, Soft Rise, Fast Rise, S-Curve
- Smoothing: Normal (soft fades) / None (pixel mapping)

19.5 PWM Frequency (Flicker Control)

- Main Engine: 6 kHz / 12 kHz / 24 kHz / 96 kHz
- 6/12/24 kHz → 20-bit internal dimming
- 96 kHz → 18-bit internal dimming (for ultra high-speed cameras)
- SparQle: 6 kHz / 12 kHz / 24 kHz

Match PWM to multiples/divisors of camera shutter speed to eliminate flicker.

19.6 SparQle Engine Quick Rules

- Separate Universe/Address
- Separate PWM
- Appears only when enabled in Personality
- Auto-assigned when set to 0

19.7 Diagnostics

19.7.1 LED Test

- Tools → LED Test
- Manual/Auto modes
- Auto cycle: quick health check
- During firmware update:
- Magenta blink → Address board updating
- Blue blink → Engine updating
- Green solid → Update completed

19.7.2 DMX Monitor

- Shows live DMX per channel
- Arrow keys = page
- Main / SparQle buttons separate the views

19.8 Cooling & Power

19.8.1 Fan Modes

- Silent → minimum noise, max 50% output
- Quiet → low fan
- Normal → standard
- Live → max cooling/output

19.9 Temperature / Derating

- 100% = full performance
- <100% = thermal limiting
- Tools → Temperature Monitor
- Live temps
- Highest recorded
- Reset peak values

19.10 Control Protocols

Supported:

- DMX512-A
- Art-Net
- sACN
- RDM

Tap DMX / Network / Wireless icons on the right side of the Home Screen to open DMX Source and change priority.

19.11 NFC

- Works even when powered off
- CF3-12 → 1 reader (display side)

- CF3-48 / CF3-72 → 2 readers (display + one on the back under the serial label.)
- Enable/Disable + Active Duration via NFC menu

19.12IP65 Care

- Safe to spray with clean water
- No solvents, corrosive chemicals, or ammonia
- Keep air vents (rear) and drain holes clean
- Do not block airflow around fixture

19.13Fast Troubleshooting

19.13.1 No DMX?

- Check Address / Universe
- Check DMX Source priority
- Check DMX Monitor
- Replace cable / check terminator

19.13.2 Low Output?

- Check Fan Mode
- Check Power Mode
- Check Temperature for derating

19.13.3 Wrong Color?

- Verify RGBA Calibrated vs Uncalibrated
- Check White Point
- Confirm personality