FUSION by GLP

Creos

User Manual

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Fixture software version 0.2.2

GLP

Document revisions

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GLP® Fusion Creos User Manual

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1. Safety

Key to symbols

The following symbols are used in the product's user documentation:

	**Warning!** Safety hazard. Risk of severe injury or death.		**Warning!** Hazardous voltage. Risk of lethal or severe electric shock.
	**Warning!** See user documentation for important safety information.		**Warning!** Fire hazard.
	**Warning!** Risk of eye injury.		**Warning!** Hot surface. Risk of burn injury.

Warning! Read the Fusion Creos Quick Start and Safety Manual supplied with the fixture and available for download from www.glp.de before installing, operating or servicing the fixture. The Quick Start and Safety Manual contains important information for the safe use of Fusion Creos fixtures. If you fail to read that information you may create a safety hazard with a risk of serious or lethal injury or damage.

If you have any doubts or questions about how to use the GLP® Fusion Creos lighting fixture safely, contact your GLP supplier for assistance. Your GLP supplier will be happy to help.

The user documentation for Fusion Creos fixtures consists of three documents:

- The **Fusion Creos Quick Start and Safety Manual**, supplied with fixtures and available for download from www.glp.de. The Quick Start and Safety Manual contains important safety information and installation instructions that the installer and user must read. It also contains dimensions drawings and technical specifications for the fixture.
- The **Fusion Creos User Manual**, available for download from www.glp.de. The User Manual explains features and control of Fusion Creos fixtures.
- The **Fusion Creos DMX Channel Index**, available for download from www.glp.de. The Channel Index is a separate document containing the DMX control channel layout and DMX commands available in the fixture.

The Fusion Creos is intended for use by experienced professionals with the knowledge and skills to set up, operate, and maintain high-powered, remotely controlled lighting equipment safely and efficiently. These operations require expertise that may not be provided in this manual.

- Respect all warnings and directions given in the fixture's user documentation and on the fixture. Read the fixture's Quick Start and Safety Manual and familiarize yourself with the safety precautions that it contains. GLP and affiliated companies will take no responsibility for damage or injury resulting from disregard for the information in the user documentation.
- Check the GLP website at www.glp.de and make sure that you have the latest versions of the fixture's Quick Start and Safety Manual and this user manual.
- Check the fixture software version indicated on page 2 of this user manual and then use the fixture's control panel to check the version installed in the fixture. If the versions are not the same, the user manual may still cover the fixture, because software updates do not always affect the use of the fixture. However, it is possible that this manual does not match the fixture perfectly. Software release notes can help clarify this question. You can consult software release notes and download the correct version of this user manual on the GLP website if necessary.
- Make both the Quick Start and Safety Manual and this user manual available to all persons who will install, operate or service the fixture. Save both documents for future reference.
- If you have any questions about the safe operation of the fixture, please contact an authorized GLP distributor (see list of distributors at www.glp.de).

GLP Service and Support

Contact information for the nearest GLP Service and Support is available online at www.glp.de/en/service, by email at info@glp.de, or by telephone at the following numbers:

- GLP Germany: +49 (7248) 927 1955
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Avoiding damage to the fixture

The Quick Start and Safety Manual contains important information that is intended to help you avoid possible damage to the fixture from other light sources, during transportation, etc. Read that information before storing, transporting or using the fixture.

2. Fusion Creos overview

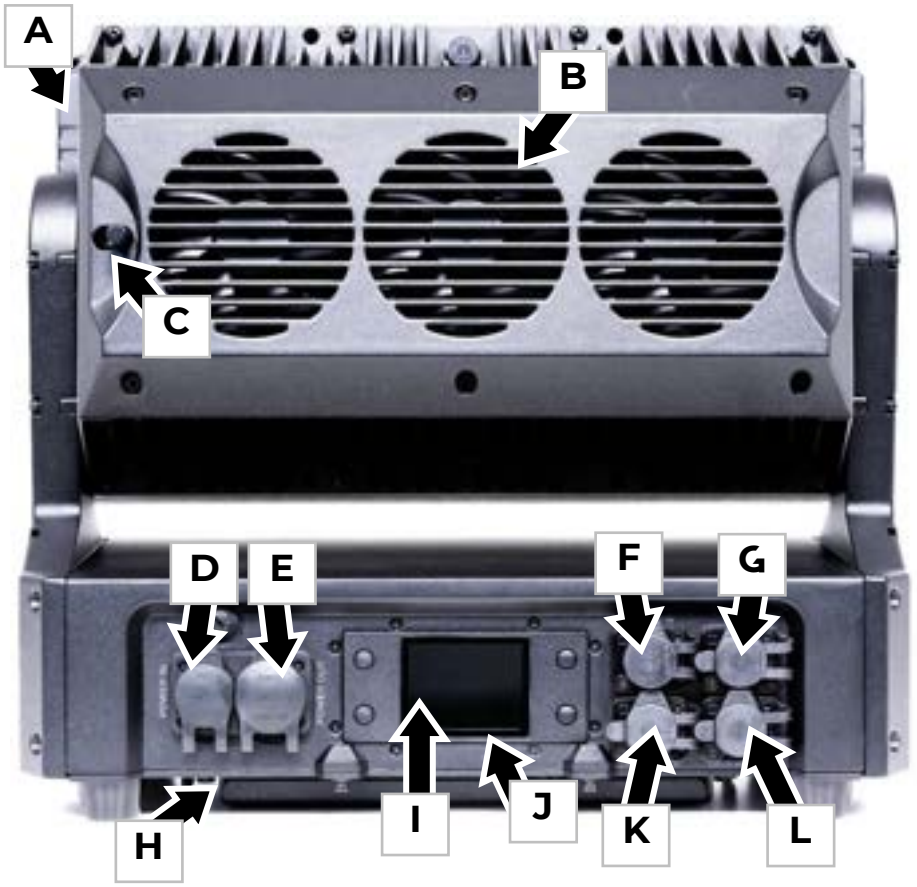


Figure 1. Fusion Creos overview

A - Head
B - Air vent (x 3)
C - Tilt Lock
D - AC mains power IN (powerCON TRUE1 TOP)
E - AC mains power THRU (powerCON TRUE1 TOP)
F - DMX IN (5-pin XLR)
G - DMX THRU/OUT (5-pin XLR)
H - Safety cable attachment points – on base
I - NFC Sensor (behind display)
J - Control panel with backlit display
K - etherCON port A ethernet connection, fail-safe
L - etherCON port B ethernet connection, fail-safe

3. Features

The FUSION Creos is an LED washlight with 18 x 40W RGBL LEDs arranged in three rows of 6 pixels each. The motorized 1:12 zoom provides a very powerful beam of 4.3° with up to 673 kcd and a total output of up to 7,600 lm. The motorized head allows 190° tilt. A particular highlight of the FUSION Creos is its clusterable design, which ensures a uniform and homogeneous pixel pitch across multiple devices.

The three LED rows can be seamlessly extended by linking several devices together. This in turn allows the construction of huge LED bars and correspondingly impressive light curtains.

The IP65-certified housing enables unlimited indoor and temporary outdoor use. FUSION CREOS is protected against wind and rain, but also against dust, dirt, fog fluid residue and confetti particles.

In addition to PowerCon True 1 In/Out and DMX 5pin In/Out, two fail-safe EtherNet ports, a LumenRadio CRMX module and the tried-and-tested GLP iQ.Mesh system are already integrated for particularly flexible use. At less than 20 kg, the fixture is compact and fitted for everyday use.

Control options

The Fusion Creos is compatible with DMX 512, RDM, Art-Net and sACN control protocols.

The fixture also features GLP iQ.Mesh and a LumenRadio CRMX module supplied installed in the fixture as standard. The GLP iQ.Mesh Module allows easy configuration, control, service and maintenance via the GLP iQ.Service App. Other FPO modules can be supplied on request – GLP Service can give details.

Powering on

When power is applied to the fixture and no valid DMX signal is present, the head moves automatically to its home position (tilt center).

Tilt

The Fusion Creos has motorized tilt movement with coarse and fine control channels.

Direction of tilt movement

With the fixture standing on the ground, increasing the tilt DMX value moves the head towards the front from its home position. Tilt direction can be reversed using the **Fixture Settings → Tilt Invert** setting (see 'Tilt invert' on page 27) or via DMX on the Special/Control channel. This can be useful when setting up symmetrical movement in multiple fixtures.

Tilt position feedback and self-correction

The fixture has a tilt position feedback and self-correction system that brings the head back to its correct position if it was unintentionally moved. When correcting tilt, the fixture at first tries twice to move to the correct position. If it cannot move to this position, it waits for a short period and then tries again. Position feedback is automatically disabled for a short time if you press one of the control panel buttons. This feature lets an operator move the head manually. Tilt remains disabled while you are using the fixture's control panel.

Position feedback can also be set to constantly disabled using the Fixture Settings options. See 'Position feedback' on page 27.

Fixture performance and speed options

You can adjust the speed (and noise level) of tilt and zoom movement by selecting from three different performance options (see 'Performance modes' on page 26).

Zoom

The Fusion Creos has motorized zoom control that lets you vary the beam angle from spot to flood as the DMX value increases.

You can adjust the speed (and noise level) of zoom movement, as well as the speed of all other mechanical effects, by selecting from three different performance options (see 'Performance modes' on page 26).

Main and Sub modules (Main and Sub fixtures)

Some control modes divide the fixture into two or more modules (Main module and Sub modules). For example, Control Modes 2-4 divide the fixture into:

- Main module (Layer 1 = one RGB(L) Wash fixture)
- Sub module (Layer 2 = pattern engine with segment or individual pixel control).

The Sub module has its own intensity and shutter channels. Professional controllers will handle this setup in a smart multi-fixture profile.

The **Sub fixture mode** setting lets you decide whether the Sub module should be subordinate to or independent of the Main module (see 'Sub module mode / Sub fixture mode' on page 25). There are two possible settings:

Normal: all Sub Fixture Channels (Sub Modules) are subordinate to the Main Fixture channels. This means that the intensity and shutter of the Main Module act as Master intensity and Master shutter for the Sub Modules.

Independent: the Sub Modules can be controlled independently of the Main Module and are not affected by the intensity and shutter of the main module.

Individual segment or pixel control

The Fusion Creos provides eighteen individually controllable pixels. Each pixel cell houses a 40 W RGBL LED that can be controlled individually in intensity and color to create dynamic effects and pixel mapping.

The fixture's different DMX control modes offer different options for working with the individual segments or pixels.

In nearly all DMX modes, the Main module gives color mixing control of all eighteen pixels together as one segment.

- **Mode 1 (Basic)** provides a Main module with color mixing control of all pixels together as one segment.
- **Mode 2 (Normal)** adds a Sub module as a second layer with pattern effects and color mixing of all pixels as one segment.

- **Mode 3 (Segment 3)** adds Sub modules as a second layer with pattern effects and color mixing of three segments: the top, middle and bottom rows.
- **Mode 4 (Segment 6)** adds Sub modules as a second layer with pattern effects and color mixing of six segments: the six pixel columns in the fixture.
- **Mode 5 (Multipix Advanced)** adds Sub modules as a second layer with pattern effects and RGB color mixing of each individual pixel.
- **Mode 6 (Multipix Compressed RGB)** is a pixel mapping mode which offers the main overall control options plus RGB color mixing of each individual pixel.
- **Mode 7 (Multipix Compressed RGBL)** is a pixel mapping mode which offers the main overall control options plus RGBL color mixing of each individual pixel.

Figure 2. Pixel numbers for 3 segment, 6 segment and Multipix modes

Color mixing

The fixture's Main module features 16-bit color mixing with RGB, RGBL or x;y (CIE 1931) Color Mix control options.

Note: The Color Mix mode of the Sub module(s) is always RGB.

iQ.Gamut

iQ.Gamut is a new LED calibration technology from GLP that defines the color gamut for the color mix channels. You can select one of a range of calibrated iQ.Gamuts for the fixture to work within. This feature can be useful if you want to reproduce correct colors or avoid TV camera clipping. See 'iQ.Gamut' on page 24.

Mix Priority

The Mix Priority channel defines how the color mixing output of the Main module (Layer 1) and the color mixing output of the Sub module(s) (Layer 2) are merged together – or which value has higher priority. This lets you switch between the layers or create special effects using both layers.

The Mix Priority channel gives the following options:

- **Main + Sub (HTP)** – The fixture takes whichever color value of the Main module or Sub module is highest and uses that value to determine the output color (Highest Takes Priority).

- **Main Only** – The Sub module color value is ignored. The fixture uses the color value of the Main module.
- **Sub Only** – The Main module color value is ignored. The fixture uses the color value of the Sub module.
- **Main + Sub additive** – The Sub module color value is added to the Main module color value. The fixture uses the sum of both values.
- **Main - Sub subtractive** – The Sub module color value is subtracted from the Main module color value.
- **Sub - Main subtractive** – The Main module color value is subtracted from the Sub module color value.
- **TrueColor Main over Sub Snap –** Sub module color stays in the background. Main module color has higher priority and will not mix with Sub module color. As soon the Main module color value is greater than zero, Sub module color blacks out and the fixture uses the Main module color.
- **TrueColor Sub over Main Snap –** Main module color stays in the background. Sub module color has higher priority and will not mix with the Main module color. As soon as Sub module color value is greater than zero, Main module color blacks out and the fixture uses Sub module color.
- **TrueColor Main over Sub Crossfade –** Sub module color stays in the background. Main module color has higher priority**.** If you fade in a Main module color, Sub module color will crossfade to the Main module color.
- **TrueColor Sub over Main Crossfade** – Main module color stays in the background. Sub module color has higher priority. If you fade in a Main module color, Sub module color will crossfade to the Main module color.
- **Main to Sub Crossfade –** Manually crossfading from Main module color only → Main and Sub module color (HTP) → Sub module color only.

White Point

The white point is the default white that is obtained when the shutter is opened. The Fusion Creos offers a choice of fixed white points in RGB Color Mix Mode, allowing convenient use in different environments. For details of setting the white point, see ‘White Point’ on page 23.

Color temperature control (CTC)

In addition to the choice of default fixed white point, the fixture offers Color Temperature Correction (CTC) in all three color mixing control modes (RGB, RGBL and x;y). The CTC Channel allows a temporary change of white point and offers a smooth shift between whites from 10.000 K to 2500 K following the black body line.

Depending on the selected Color Mix Mode (RGB, RGBL or x;y), if you select a color temperature on the CTC channel, the fixture will no longer use the specific open color and will instead use the selected color temperature.

If you select a color temperature on the CTC channel, it is still possible to manipulate the color temperature using the RGB and RGBL channels.

Note: To obtain the desired color temperature on the CTC channel, you must set all Color Mix channels to 100%. If they are not at 100%, the system will mix color relative to the selected white point of the CTC channel.

The CTC channel affects all the fixture's modules. Setting the CTC channel to a specific color temperature will affect the open white of the Main module and Sub modules.

Color Quality Control (CQC)

The CQC channel lets you modify the spectral mix of the white output in order to achieve a balance between better color rendering or higher output intensity. The following options are available:

- **High Quality (HQ)** deploys multiple LEDs to create a richer light spectrum that gives improved color rendering but also slightly lower output. Color is mixed with priority given to the best white color rendering quality. Saturated colors will have maximum saturation at DMX 000 and will smoothly become unsaturated until they reach 0% saturation (= white) at DMX value 127.
- **High Output (HO)** gives higher output intensity but reduced color rendering performance. Color is mixed with priority given to the highest output in white. Saturated colors will have maximum saturation at DMX 255 and will smoothly become unsaturated until they reach 0% saturation (= white) at DMX value 128.

While using white light, the CQC channel lets you change between white with priority on high-quality color rendering and white with priority on highest output. Additionally, the CQC channel lets you smoothly desaturate colors. If you have set a saturated color in the color mix, the CQC channel lets you smoothly desaturate the color from saturated to fully unsaturated (i.e. white).

Note: The CQC channel affects all the fixture's modules. Setting the CQC channel to a specific value will affect the colors of the Main module and Sub modules.

*Note: In RGBL color mix mode the **HO** and **HQ** CQC options set set smooth (HQ) or aggressive (HO) dimmer curves.*

Magenta/Green Shift (M/G Shift)

The Magenta/Green Shift channel lets you move the color coordinate of a white point, a mixed color or a selected CTC color along a vertical line on the color temperature curve in all three Color Mix modes. The corresponding white point is either shifted towards Green or Magenta.

If M/G Shift is enabled, it immediately affects all mixed colors as well as the color temperature that is selected on the CTC channel. It has no effect on the colors of the virtual color wheel.

Note: The M/G Shift channel affects the entire fixture. Setting the M/G Shift channel to a specific value will affect the output of the Main module and Sub modules.

Color wheel

The Fusion Creos features a virtual color wheel channel that gives quick access to a wide range of LEE-referenced colors in all three Color Mix modes. Color wheel color presets are always mixed with the best available spectrum. Color filter color coordinates are based on a Source C (daylight) light source.

Besides static color presets, the color wheel channel also offers continuous color scrolling through HSI colors. When set to HSI Scroll, the fixture runs through saturated HSI colors with variable speed from slow to fast.

The crossfade time of a color change is relative to the speed: at slow speeds colors crossfade smoothly and at fast speeds colors snap.

If a color coordinate is outside the possible color gamut of the light source, the fixture tries to match the target color as closely as possible.

Note: Color wheel color presets have higher priority than the Color Mix, CTO and M/G Shift channels.

The virtual color wheel channel must be set to DMX 000 in order to use normal RGB, RGBL or x:y color mixing.

Tungsten simulation

When a tungsten lamp is dimmed, there is a small delay in intensity changes and there is a color shift along the black body line. The tungsten simulation channel allows the user to select between different tungsten options in all three Color Mix modes.

The first part of the Tungsten channel offers standard tungsten features with fixed color temperature, red shift and delayed intensity changes. The color temperature as well as the color shift and inertia of the selected light source are fully simulated. Tungsten mode has higher priority than the color wheel or CTC.

The second part of the Tungsten channel lets you apply one of the corresponding tungsten effects (inertia and intensity) to the currently set mixed color or currently selected color temperature on the CTC channel.

Note: The Tungsten simulation channel affects the entire fixture. Setting the Tungsten channel to a specific value will affect the output of the Main module and Sub module.

Shutter

The fixture's shutter channel offers continuous blackout, continuous open and a range of intensity effects.

Depending on the selected Sub Module Mode, the shutter channel of the Main module channel group acts as either a master shutter or as the shutter channel of the Main module independently of the Sub module.

The following shutter effects are available:

- **Single flash** performs exactly one single flash with each value change within this DMX value slot.
- **Pulse** dims up and down smoothly with the same fade-in and fade-out times. Speed can be adjusted from slow to fast.
- **Pulse open** fades in and then snaps to blackout. Speed can be adjusted from slow to fast.
- **Pulse close** fades out and then snaps to full. Speed can be adjusted from slow to fast.
- **Strobe double flash** provides a quick double flash. Speed can be adjusted from slow to fast.

- **Strobe pixel random** (only available when the fixture is set to a DMX mode with individual pixel control) strobes individual pixels at random to give a kind of sparkling effect. Speed can be adjusted from slow to fast.
- **Strobe random** strobes all of one fixture's pixels together at random intervals, allowing a random strobe between multiple fixtures. Speed can be adjusted from slow to fast. *Note that the random effect across multiple fixtures really is random!*
- **Strobe** strobes all of one fixture's pixels together and also perfectly synchronizes the strobe in multiple fixtures so that all the fixtures flash at exactly the same time. Speed can be adjusted from slow to fast.

Note: Depending on the selected Sub Module Mode, the dimmer and shutter channels of the Sub modules can operate independently of or subordinately to the dimmer and shutter channels of the Main module.

Dimmer

The electronic dimming effect provides smooth 16-bit dimming of the Main module and Sub module. Three dimming curves with different dimming characteristics are available. See 'Dimming curves' on page 24.

Pattern control

The Fusion Creos offers a wide range of static and dynamic pre-programmed FX patterns on the Sub modules. The Sub module color control channels define the color of the pattern effects.

A static pattern is a fixed pattern with only one pattern step. This allows you a very quick selection of a non-dynamic effect. It has active and inactive pixels. Each active pixel shows the selected pattern color while each inactive pixel is fully transparent.

A dynamic pattern is a sequence of multiple pattern steps and has active and inactive pixels. Each active pixel shows the selected pattern color while each inactive pixel is fully transparent. You can set pattern steps to automatically change continuously (Pattern Speed) or you can directly select pattern steps (Pattern Index).

Note: The Mix Priority channel lets you decide how the output of the Main module and the Sub module (pattern or pixel mapping) should be merged.

Pattern selection

The pattern selection channel offers a choice of 59 static patterns, 50 dynamic patterns and 11 special patterns. The dynamic patterns offer multiple pattern steps for individual step selection or continuous pattern step chasers.

Pattern 0 (DMX 000) is the idle pattern and just sets all pixels to active.

The Random Pixel FX pattern at the end of the Pattern Select channel randomly selects pixels to create an attractive sparkle effect.

Pattern speed/index

As a dynamic pattern is a sequence of multiple pattern steps, you can select either:

- an automatic clockwise or counterclockwise continuous run-through of the pattern steps with different speeds (dynamic speed control = DMX values 002 ... 127), or
- one of the available specific pattern steps (static indexing = DMX values 128 ... 255).

Note: Bear in mind that different patterns can have a different number of pattern steps. This can affect synchronization between fixtures, for example, if you run different patterns in multiple fixtures.

Pattern step crossfading

The Pattern Step Crossfading channel lets you choose how one step in a pattern should change into the next step. This change can be a snap, a normal crossfade or a fade with tail (quick fade in and variable long fade out).

Pattern transition

The Pattern Transition channel lets you choose how Pattern A should change into Pattern B. This change can be a snap, a soft crossfade, a Fade Over Blackout (FOB) or Fade Over Full (FOF).

Fixture total number and fixture position

The Fixture Total Number (or Fixture Quantity) and Fixture Position channels let you set up FX pattern chases and synchronized pattern action in multiple fixtures when you activate dynamic FX. The Fusion Creos can manage patterns in fixture groups containing up to 255 fixtures. The DMX value 0-255 directly sets the number of fixtures (for example DMX 20 sets a total of 20 fixtures).

The Fixture Total Number channel lets you define the total number of fixtures in the fixture group that the pattern should run on.

The Fixture Position channel lets you define the fixture's position in the fixture group.

Special/Control DMX channel

The Special/Control DMX channel lets you change fixture settings and perform a fixture reset from the control desk (a possibility that can be very useful during a show or for a specific scene). To apply a command on the Special/Control channel, you must hold the command for the time indicated in the DMX channel index section at the end of this user manual.

To trigger a reset using the Special/Control channel, you must send the DMX value for this function for 3 seconds. If you want to trigger an additional reset using the Special/Control channel, you must first move away from the Reset DMX value and then return to this value. This requirement to change DMX values eliminates the risk of the fixture entering an unwanted Reset loop if it is patched wrongly.

Note: Most of the fixture settings available in the fixture's control menus or on the Special/Control DMX channel are also available via RDM.

4. Control panel

Warning! DMX control is disabled when the control menus are active. Be prepared for the head to move as soon as you exit the control menus.

The control panel and backlit graphic LCD display with self-charging battery allow you to change fixture settings, view readouts and use utilities quickly and intuitively, even when the fixture is disconnected from power.

To allow comfortable use of the control panel, tilt is automatically disabled for a few seconds if you press any button on the control panel. Tilt remains disabled for as long you are working in the control panel. If no button is pressed for a few seconds, head movement is re-enabled with tilt correction applied.

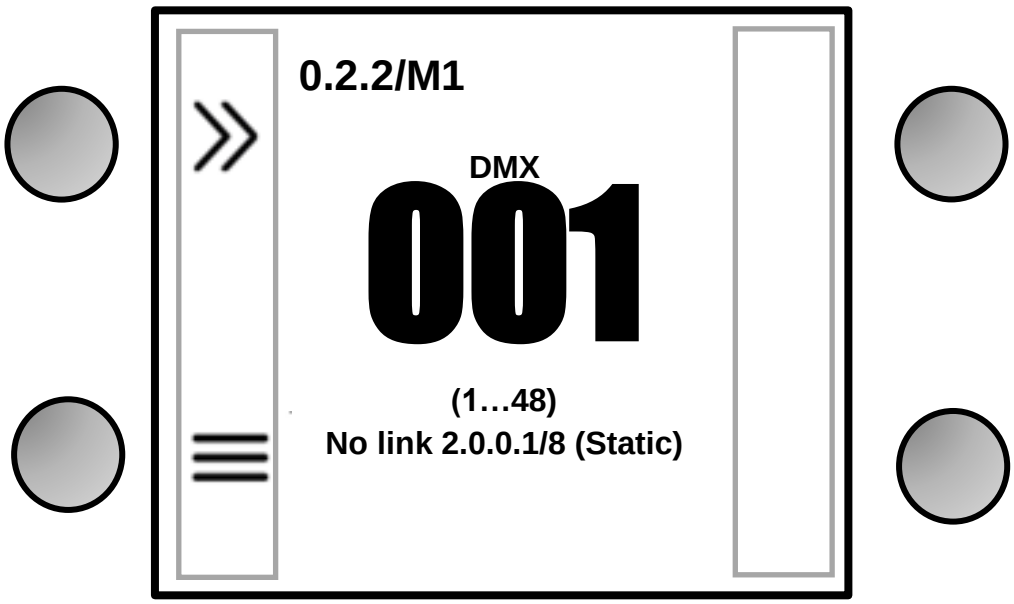


Figure 3. Default information screen

Default information screen

When power is applied, the fixture performs a reset. After the reset has completed, the default information screen appears in the control panel display on the side of the yoke.

At any other time, you can press any key to unlock the control panel. Doing this also calls up the default information screen in the control panel display.

See Figure 3. The top line of the default information screen consists of, from left to right:

- Main CPU firmware version
- DMX Mode

The center of the screen shows the following information:

- Signal source.
- Fixture's current DMX address in large characters. If the fixture's self-diagnosis system detects an error, the fixture will flash an error message alternately with the DMX address. This lets you see the DMX address and error message at a distance from the fixture.
- If the fixture detects a valid, active network at one of the fixture's etherCON ports, the default screen will show a network icon to the left or right of the DMX address:
  - Icon on left = data at Port A (on left of fixture when facing control panel)
  - Icon on right = data at Port B (on right of fixture when facing control panel)

  The fixture displays network speed below the network icon.

  If the fixture does not detect a network at one of the ports, it displays NO LINK instead of the network icon for that port.
- Below the current DMX address, the fixture displays in smaller characters the DMX channels that the fixture is currently using.

In the example shown in Figure 3:

- The fixture is running CPU software version 0.2.2
- The fixture is set to DMX Mode 1
- The fixture is set to receive data via ArtNet
- The fixture's DMX start address is 001
- The fixture is using DMX channels 1 to 48.

Using the control panel

The four control panel buttons around the display have the following functions indicated by icons next to them on the display.

In the main screen:

QUICK MENU – Activates the Quick Menu

UP/DOWN – Press three times to open the live diagnostic tool

MENU – Activates the control panel if it is in sleep mode, then opens the main menu

When navigating through the menus:

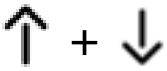
BACK – Goes back one level towards the top of the menu

UP – Scrolls up or increments a number

DOWN – Scrolls down or decreases a number

ENTER – Confirms a setting or implements a command

At any time:



UP and DOWN at the same time – Temporarily rotates the display 180°

Control button shortcuts

Battery Eco Mode (available in Battery Mode only)

When the fixture is running on battery power, holding MENU and ENTER together for 10 seconds activates Battery Eco Mode. This switches off the display completely to avoid any unwanted discharge of the battery and can be very useful when a fixture is put into long-term storage.

Live Diagnostics

Pressing UP or DOWN three times calls up an overview of all main fixture information, signal quality and settings. This can be useful if you are troubleshooting or if you are in contact with GLP Service.

Toggle Display Orientation

Pressing and releasing UP and DOWN together rotates the display through 180°.

*Note: If Display Orientation is set to **Auto**, changing the display orientation by pressing UP and DOWN at the same time will only change the display orientation until the next power cycle. To change the display orientation permanently, go to **Fixture Settings → Display Orientation** in the control panel menus.*

Error Messages

If the fixture detects an error, it displays an error message in the display. The Error is 'sticky' and will continue to be shown in the display until the next power cycle or reset. To get details of the error message, follow the information in the display. These details are important if you talk to GLP service.

- Pressing ✕ ignores the error message and exits the error display.
- Pressing ✓ shows information about the error.

Note: Make a note of any error message displayed. You may need these details for error diagnosis. Please be ready to give them to GLP Service if necessary.

Certain critical error messages are permanently stored in the display. In this case, please contact your GLP service agent.

When restarting the fixture or sending a RESET command, the fixture performs an initialization process to test all functions and sensors. The fixture also continuously checks itself for correct operation.

Loss of DMX signal

The display flashes if the DMX signal is lost (the fixture will then behave according to its No Signal setting – see 'No signal' on page 27).

Service and maintenance

See the separate *Fusion Creos Quick Start and Safety Manual* supplied with the fixture and available for download from www.glp.de for information on service and maintenance.

5. Fixture Settings

The settings described in this chapter let you customize the Fusion Creos. Settings can be made from the control panel, via DMX and/or via RDM.

DMX Address

Allows you to set the DMX Start Address of the fixture.

If the up or down button is pressed continuously, the values will scroll continuously to the end of range. To jump back to the other end of the range the button needs to be released before starting continuous scrolling again.

Control Mode

Allows you to select one of the different DMX Control Modes.

Mode 1: Basic

Main Functions with low DMX Footprint for max. quantity of fixtures in a DMX Universe.

Provides one Main Module with 16-bit control of tilt and 16 bit dimming with separate shutter effect channel. The Control/Settings channel lets you configure the fixture remotely via DMX. Color Temperature Control, a virtual color wheel (color presets), Color Quality Control and 16 bit RGB/RGBL/x;y color mixing is also available.

Mode 2: Normal (Default)

This is the default control mode and provides a Main Module (Layer 1) with RGB(L) color mix and advanced color adjustment options.

This mode is intended to give a full feature package with a balanced DMX footprint and double layer control.

An additional second Sub Module (Layer 2) provides Pattern Effects and Colormix. All 18 Pixels of the second layer act as one single group.

This control mode offers 16-bit control of tilt and 16 bit dimming with separate shutter effect channel. The Control/Settings channel lets you configure the fixture remotely via DMX. Color Temperature Control, a virtual color wheel (color presets), Color Quality Control, Tungsten Effects, Magenta-Green-Correction and a 16 bit RGB/RGBL/x;y color mixing is also available.

There is also a dynamic pattern effect engine available in the Sub Module to select static pattern or create dynamic effects with index and speed control.

Mode 3: Segment 3

As Mode 2, but the Sub Module (layer 2) allows separate control of 3 segments (the 3 rows of pixels).

Mode 4: Segment 6

As Mode 2, but the Sub Module (layer 2) allows separate control of 6 segments (the 6 columns of pixels).

Mode 5: Multipix Advanced

As Mode 2, but the Sub Module (layer 2) allows independent control of all 18 pixels. This mode has the highest DMX channel count.

Mode 6: Multipix Compressed RGB

Reduced Feature package with Main Module with the most important features and 18 Sub Modules for individual Pixel Control. This mode is intended for individual pixel control for pixel mapping applications with a lower DMX Channel Footprint

This control mode provides a reduced main DMX Channel group (Main Module) and 18 additional DMX Channel group (Sub Modules). In this control mode the 18 pixels of the subfixture can be individual controlled in 8bit RGB control.

This control mode offers 16-bit control of pan and tilt and 16 bit dimming with separate shutter effect channel. The Control/Settings channel lets you configure the fixture remotely via DMX. Color Temperature Control, a virtual color wheel (color presets), Color Quality Control are also available.

Pattern Effects, Tungsten Effects, Magenta-Green-Correction and a 16 bit RGB/RGBL/x;y color mixing are not available to save channels.

Mode 7: Multipix Compressed RGBL

As mode 6 but the 18 pixels of the subfixture are controlled in 8bit RGBL mode instead of RGB.

Protocol Setup

Allows you to set what type of control will be used with the fixture.

DMX

This is the default setting. The fixture is set up for control via a standard DMX 5-pin XLR cable.

Art-Net

Allows you to control the fixture by Art-Net. It is necessary to set up an Ethernet network. Use CAT 6 or higher Ethernet cable to link multiple fixtures. To configure the fixture to receive control data via Art-Net, you need to set an IP Address, IP Subnet and Art-Net port/universe (See Ethernet Config).

- Note: it is possible to transmit Art-Net data as broadcast or unicast packets. If a large number of universes (more than 30) is broadcast, data loss can occur. If you suspect that this is happening, configure your console to unicast Art-Net DMX to fixtures or switch to sACN.

sACN

Allows you to control the fixture by sACN. It is necessary to set up an Ethernet network. Use CAT 6 or higher Ethernet cable to link multiple fixtures. To configure the fixture to receive control data via sACN, you may need to set an IP Address, IP Subnet and sACN universe (See Ethernet Config)

LumenRadio CRMX

A LumenRadio CRMX module is installed as standard at the Fusion Creos's FPO port when the fixture is supplied. It is necessary to set up a CRMX link (see Linking Options).

Data Out

Using this setting will allow the user to convert a received Art-Net or sACN Signal to output it on another protocol.

- **Disabled**: Received ArtNet-, sACN-Data, CRMX or DoP Data will not be convert to DMX-Output.
- **DMX (XLR)**: Received ArtNet-, sACN-Data, CRMX, iQ.DMX or DoP Data will be convert to DMX-Outputs.

Ethernet Config

These settings configure the network options of the fixture if controlling it by Art-Net or sACN.

Addressing Mode

Sets how the fixture will get its IP Address.

Auto 2.x.x.x.

The fixture will generate its own IP address from the range 2.x.x.x (Art-Net specification)

Auto 10.x.x.x.

The fixture will generate its own IP address from the range 10.x.x.x (Art-Net specification)

DHCP

The fixture will acquire IP address automatically by DHCP

Custom IP

The fixture will use a fixed IP address (see Custom IP Address and Custom IP Subnet).

Custom IP Address

Sets IP Address if the Addressing Mode is set to Custom IP.

Custom IP Subnet

Sets Subnet Mask if the Addressing Mode is set to Custom IP.

ArtNet Port

Selects the Art-Net port/universe from 00000 (Network 0 / Subnet 0 / Universe 0) to 32767 (Network 7 / Subnet 15 / Universe 255).

sACN Universe

Selects the sACN universe from 00001 to 63999.

Fixture Settings

Color Mix modes

The Color Mix Mode setting offers three different options for color mixing:

RGB Mode

RGB Mode mixes color of the main and sub module(s) using Red, Green and Blue channels. The Lime LED is mixed automatically using the fixture's internal GLP iQ.Gamut algorithm.

RGB Mode offers a clean default white light at open which is considered to be the white point (RGB at 100%).

RGBL Mode

RGBL Mode mixes color of the main module using Red, Green, Blue and Lime channels. The colors of the Sub module(s) are mixed with RGB only - always without Lime. The color gamut is still calibrated to the X5 range, but the white point (open) is not adjusted to the black body line and will show a white that is mixed using 100% RGBL. The CTC Channel quickly allows you to change to any white on the Black Body Line and also M/G-correction is available.

*Note: In RGBL mode the **HQ** and **HO** CQC options set smooth (HQ) or aggressive (HO) dimmer curves.*

x:y Mode

x;y Mode lets you send x;y color coordinates to the fixture via DMX. The internal color algorithm mixes the four LED colors perfectly to match the x:y color coordinates.

In x:y Mode, white point setting is disabled. CTC channel values overwrite x;y values.

White point

The white point is the default white that is obtained when the shutter is opened. The Fusion Creos offers a choice of fixed white points in RGB Color Mix Mode, allowing convenient use in different environments. The following fixed white points (color temperatures) are available:

8000 K (effect light)

6500 K (daylight – default)

5600 K (TV and studio)

4200 K (CDM)

3200 K (tungsten)

If a fixed white point is enabled, the fixture mixes colors with reference to it. GLP iQ.Gamut navigates through the color space using the preferred Color Mode color mixing method.

Note: Fixed white point settings are only valid for RGB mode using the iQ.Gamut FULL. If any of the other defined color gamuts is selected, the defined white point of the selected color gamut is applied.

iQ.Gamut

iQ.Gamut is a new LED calibration technology from GLP that defines the color gamut for the color mixing channels. You can select one of a range of calibrated iQ.Gamuts for the fixture to work within. This feature can be useful if you want to reproduce correct colors or avoid TV camera clipping. The iQ.Gamut setting will only affect the color mix if the fixture is in **RGB** Color Mix Mode. In all other Color Mix modes this setting has no effect.

The following iQ.Gamut settings are available:

FULL (default) – Color mixing is calibrated to the X5 color gamut and referenced to the selected fixed white point. This setting gives the best results with applications where deep saturated colors are needed.

Rec.709 – Color mixing is matched to the defined Rec.709 gamut including its white point. This setting gives best results for HD TV applications and avoids color clipping.

Rec.2020 – Color mixing is matched to the defined Rec.2020 gamut including its white point. This setting gives best results for UHD TV applications and avoids color clipping.

Dimming curves

The electronic dimming effect provides smooth 16-bit dimming of the Main module and Sub modules. The following three dimming curves are available:

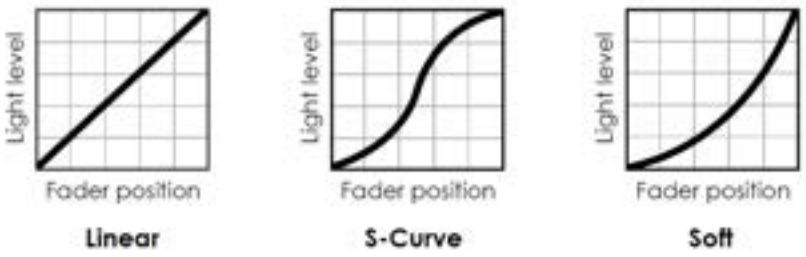


Figure 4. Dimming curves

Linear setting gives a dimming curve that the eye perceives as linear.

Square (Soft) setting gives finer control at lower light levels, where the eye is most sensitive to changes in light intensity, and coarser control at higher light levels.

S-Curve setting gives finer control at lower light levels and at higher light levels, with coarser control at medium light levels.

Note: Depending on the selected Subfixture Mode, the dimmer and shutter channels of the Sub modules can operate independently of or subordinately to the dimmer and shutter channels of the Main module.

Fan modes

Five cooling fan modes let you give priority to lowest fan noise or most powerful cooling:

Regulated mode gives priority to light output and only operates fans as necessary. If the fixture is blacked out, fans run at minimum speed. When light

output intensity is increased, temperature regulation increases fan speed to the level necessary to keep the fixture at optimum temperature.

If light output is set to maximum intensity but the fans can keep the fixture at optimum temperature, there is no regulation of light intensity. If the fixture begins to exceed optimum temperature and the fans are running at maximum speed, light intensity is limited until optimum temperature can be maintained.

High mode sets the fixture to give maximum light output and suits operation in high ambient temperatures. Fans are set to constant operation at high speed. Light output intensity is limited smoothly if it becomes necessary in order to keep fixture temperature at optimum level.

You can also use High mode to cool down a fixture quickly after a period of operation or to help remove dust from cooling fans.

Medium mode sets fans to constant operation at medium speed. Light output intensity is reduced to a level where it will normally remain constant at ambient temperatures of up to 45° C (113° F). Intensity is smoothly limited further if it becomes necessary in order to keep fixture temperature at optimum level.

Low mode sets fans to constant operation at low speed and is optimized for minimum noise. Light output intensity is reduced to a level where it will normally remain constant at ambient temperatures of up to 30° C (86° F). Intensity is smoothly limited further if it becomes necessary in order to keep fixture temperature at optimum level.

Off sets the fixture to disable all fans which are not essential to cool important components. Essential fans will rotate as slowly as possible to reduce the noise level to a minimum. Light output intensity is reduced as much as it is needed.

Note: In all fan modes, if fixture temperature reaches a dangerous level, the LEDs are shut down for a period until the fans have brought the temperature down to a safe level.

Sub module mode / Sub fixture mode

The Fusion Creos offers two options for controlling the Main module and Sub modules:

Normal – In this mode, all Sub module channels are subordinate to the Main module channel group. This means that the intensity and shutter of the Main module act as master intensity and master shutter for the whole fixture.

Independent – In this mode, the Sub module channel group can be controlled independently of the Main module channel group and acts as an independent fixture.

Note that no matter which Sub module mode setting you select:

The **Mix Priority** channel is still active and will affect how the two dependent or independent fixtures are mixed. Some of the general color management channels of the Main module such as CTC, CQC, M/G-Shift and Tungsten simulation will still affect the Sub module.

Performance modes

You can select between three different settings for the movement speed of the fixture's tilt movement and zoom effect:

Normal sets movement to give an optimum balance between speed, quietness and smoothness. **Normal** is the default setting.

Fast sets movement to maximum speed. This setting gives very fast movement but can result in higher noise levels.

Smooth optimizes the smoothness of the effects and gives lowest-noise performance. This setting gives extremely low noise and smooth performance, but movement will be slower than in **Normal** mode.

PWM frequency

This setting lets you select between different LED PWM frequencies for different applications and adjust frequencies to give the best results at different camera shutter frequencies. Changing the PWM frequency can improve dimming performance or help avoid flicker and beat frequencies in video images.

The following PWM settings are available:

Optimum (default) – PWM frequency is set to a level which offers a good compromise between best dimming results and avoiding flicker (approx. 3000Hz).

High1 – PWM frequency is set to a higher level (approx. 4800Hz).

High2 – PWM frequency is set to a higher level (approx. 9600Hz).

Max – PWM frequency is set to the highest possible level. Use this setting for slow motion video or high speed camera applications. Dimming resolution at this setting is not as good as the other PWM settings.

Note: A higher PWM frequency may affect dimming performance. The PWM frequency setting is stored in the fixture and is not affected by cycling power off and on. However, it will be affected if you use the Factory Defaults command in the control menus. As a rule, you should set all the fixtures in an installation to the same PWM frequency in order to ensure the same performance.

Pixel mirror

The **Pixel mirror** setting lets you flip the fixture's pixel layout:

Off gives the standard pixel layout (see 'Figure 2' on page 10).

```
01 – 02 – 03 – 04 – 05 – 06
07 – 08 – 09 – 10 – 11 – 12
13 – 14 – 15 – 16 – 17 – 18
```

x-mirror flips the pixel layout over the x-axis (left-right flip).

```
06 – 05 – 04 – 03 – 02 – 01
12 – 11 – 10 – 09 – 08 – 07
18 – 17 – 16 – 15 – 14 – 13
```

y-mirror flips the pixel layout over the y-axis. (top-bottom flip).

```
13 – 14 – 15 – 16 – 17 – 18
07 – 08 – 09 – 10 – 11 – 12
01 – 02 – 03 – 04 – 05 – 06
```

x-y-mirror flips the pixel layout over both axes (left right and top bottom flip).

```
18 - 17 - 16 - 15 - 14 - 13
12 - 11 - 10 - 09 - 08 - 07
06 - 05 - 04 - 03 - 02 - 01
```

No signal

The **No signal** settings let you manage how the fixture behaves if no DMX signal is present (if the fixture is being controlled by DMX but the DMX signal stops, or if you apply power to the fixture when no DMX signal is present):

Blackout sets the fixture to black out whenever it is not receiving a DMX signal. This is the default setting.

Hold sets the fixture to continue using the last DMX values it received.

Scene (Stand-alone) sets the fixture to play its stored stand-alone scene (see **Capture DMX Values** below) when the fixture is not receiving a DMX signal. If no stand-alone scene is stored in memory, the fixture will black out.

If the fixture is set to **Scene (Stand-alone)** and if a stand-alone scene has been stored in its memory using the **Capture DMX Values** command, it will display its stand-alone scene at all times when it is powered on but not receiving a DMX signal. You can therefore use this setting if you want fixtures to automatically start stand-alone operation when you apply power to them.

Capture DMX Values takes a snapshot of the DMX values that are currently being received and stores them in the fixture's memory as its captured scene. The fixture will display this scene if it is set to **Scene (Stand-alone)** (see above) and is not receiving a DMX signal.

Tilt invert

Increasing the tilt DMX value moves the head from its home position towards the front of the fixture.

Changing the Tilt invert setting to ON inverts the tilt direction so that increasing the tilt value turns the head towards the back of the fixture.

Position feedback

Tilt auto-correction (position feedback) is normally enabled (ON). Changing this setting to OFF will disable the position feedback and auto-correction. If you need to return tilt to its correct position, you must perform a reset.

Display Mode

Gives different behavior options for the display in the fixture's control panel. This can be helpful in case of errors or during service operations. Three settings are available:

Auto (default): the display automatically switches off after a few seconds if the fixture is receiving a valid control signal and has not detected an error. If the fixture is not receiving a valid control signal, the display will flash. If the fixture has detected an error, the display remains constantly on and shows the error.

On: The display stays on constantly. This setting can be useful if you are configuring or servicing the fixture.

Off: The display will automatically switch off after a few seconds even if the fixture is not receiving a valid control signal or if it has detected an error. Pressing any button turns on the display again.

Display Orientation

Lets you select **Normal**, **Upside-down** or **Auto** control panel display orientation.

If **Display Orientation** is set to **Auto**, changing the display orientation by pressing UP and DOWN at the same time will only change the display orientation until the next power cycle.

Hibernation

Lets you put the fixture into energy-saving mode and disables all electronic components apart from the DMX receiving module.

You can take the fixture out of hibernation mode with a power off/on cycle, via RDM or using the Special / Control DMX channel. If you do this, the fixture will perform a fixture reset before returning to normal operation.

Load User Settings

Lets you load different custom fixture configurations or return the fixture to the default fixture settings.

*To save a custom setting preset from 1 to 3, see **Service → Advanced → Save_Settings**.*

Load User Settings 1 to **3** loads one of three specific custom fixture settings. You must confirm the function for 3 seconds before the new settings are loaded.

Default Settings Loads default fixture settings. You must confirm the function for 3 seconds before the new settings are loaded.

*Note: The **Load User Setting Presets** and **Load User Setting Defaults** commands will only affect settings in the **Fixture Settings** group and will not affect DMX Address, Control Mode, Protocol Type, IP Settings, etc. This helps avoid loss of communication with the controller.*

Information

The **Information** submenu provides readouts of all relevant information such as the error list if any errors have been detected, the fixture's serial number, firmware version, device info, device hours counter, power cycles counter, DMX input monitor, signal quality etc.

Manual Control

This submenu gives different options for resetting the fixture manually. It can be helpful for service or stand-alone issues.

Reset All

Performs a full fixture reset to initialize all features and effects.

Reset Tilt

Resets tilt only to initialize the tilt position.

Reset Head

Resets all the features in the head.

Manual DMX

Gives individual control of the fixture using the fixture user interface. The menu timeout function is disabled as long this menu is open. This menu overrides External DMX signal.

Manual Control: Manually sets a DMX value for each function.

Load No-Signal Scene: Loads the values of the stores captured scene from the No-Signal feature.

Save as No-Signal Scene: Saves the current manual control values as the captured scene from the No-Signal feature.

Capture DMX values: Captures the current external DMX Signal values and use them as manual control values.

Reset Manual values: Resets all manual control values to default.

Note: When entering manual control, be prepared for the fixture to start moving.

Service

The **Service** menu is split into two levels: **Service** and **Service Advanced**. The **Service Advanced** level is for trained technicians only. Read the information below carefully before entering this level.

The Service menu contains the following items:

Live Diagnostic: Calls up an overview of all main fixture information, signal quality and settings. This can be helpful while troubleshooting or talking to GLP Service.

iQ.Service Connect: Wakes up the integrated GLP iQ.Mesh Module for 5 minutes and enables connectivity to the GLP iQ.Service App.

Test All: Runs a test sequence of all LEDs for a quick test of the fixture. Press BACK to stop the test sequence.

Test Tilt: Runs a test sequence of tilt movement only. Press BACK to stop the test sequence.

Test LED: Runs a test sequence of the LED pixel only. Press BACK to stop the test sequence.

Test Zoom: Runs a test sequence of Zoom functionality only. Press BACK to stop the test sequence.

Test Fans: Starts a fan self-test. Use Up/Down buttons to select the fan to be tested.

Advanced Service

The **Advanced Service** level is for trained technicians only. Read the information below carefully before entering this level. You must confirm by pressing and holding ENTER for 3 seconds before you can enter this level.

The **Advanced Service** level contains the following items:

Service Mode: Disables tilt and all display timeouts to make servicing the fixture head easier. This mode is automatically disabled after a power cycle.

Job Offset: Lets you set +/- offsets on mechanical effects. Custom job offsets let you adjust fixtures in multiple installations (to compensate for the different positions of fixtures in a rig, for example).

Any custom job offsets that you create here will not affect the fixture's effect calibration.

All custom job offsets created here are deleted if you apply a **Load Factory Defaults** command.

Reset Counters: Resets the different resettable fixture counters.
Device counters are not reset by a **Load Factory Backup** command.

Save Settings: Lets you save the current fixture settings to one of the three user settings presets. You can load a user settings preset that you have saved with a Load User Settings command (see **Fixture Settings → Load User Settings**). The default fixture preset cannot be changed.

This command only saves fixture settings (Fan Mode, Color Mix etc.). It does not save fixture configuration information such as DMX address and DMX mode.

Load Factory Defaults

Reloads all factory defaults over the entire fixture and brings the fixture into standard show condition.

You must confirm the function for 3 seconds before the default settings are loaded.

Important! *The factory default settings that are reloaded with this command include all data and network configuration parameters such as DMX start address, IP configuration etc. You may therefore lose communication with your controller.*

*The **Load Factory Defaults** command does not affect device counters and calibration.*

Factory Menu

Important! Do not enter the Factory Menu if you are not a trained service professional with service documentation or clear instructions from GLP Service. Read the user and service documentation carefully before entering this menu. In the Factory Menu you can apply critical settings which can damage the fixture.

The Factory Menu is a hidden menu for the manufacturer or professional service technicians only. This special menu allows fixture calibration and the adjustment of all mechanical features following the manufacturer's instructions.

To enable the Factory Menu, apply power to the fixture and press the ENTER and BACK buttons together while the pre-boot screen is being displayed. You can release the buttons as soon as FACTORY MODE appears in the black display. After doing this, **Factory Menu** is visible as the last item in the main menu. The Factory Menu will remain available until the next power cycle. While the Factory Menu is enabled, all display timeouts are disabled to make working on the fixture easier and a Factory symbol is visible in the main screen.

6. Control menu structure

Quick menu

The control panel's Quick Menu gives you quick access to the most frequently used commands. To open the Quick Menu, press the left-hand control button » marked when the display is showing the default information screen.

The Quick Menu contains the following items:

Menus			***Notes***
Reset All			*Resets the entire fixture (takes a few seconds).*
Live Diagnostic			*Calls up overview of all main fixture information, signal quality and settings.*
iQ.Service Connect	>>>Connect<<<		*Enables connectivity to the GLP iQ.Service App for 5 minutes.*
Load User Settings	User Setting Preset 1	>>>Confirm<<<	*Loads custom user settings*
	User Setting Preset 2	>>>Confirm<<<	
	User Setting Preset 3	>>>Confirm<<<	
	Setting Defaults	>>>Confirm<<<	*Returns fixture to default settings (not including DMX address, protocol type, Ethernet / CRMX configuration, user offsets, user presets and counters).*
Load Factory Defaults (!)	*Displays Message: Fixture may lose connection to controller* >>>Confirm<<<		*Restores all factory default settings (including DMX address, protocol type, Ethernet / CRMX configuration, user offsets and user presets).* ***Important! The fixture may lose contact with the controller!***

Main menu

The following menus and commands are available in the Fusion Creos control panel.

Menus		***Notes***
DMX Address		
001-512		*Set fixture's DMX start address. Highest possible address depends on control mode.*
Control Mode		
M1 Basic		*Set fixture's DMX control mode.*
M2 Normal		
M3 Segment 3		
M4 Segment 6		
M5 Multipix Advanced		
M6 Multipix Compressed RGB		
M7 Multipix Compressed RGBL		
Protocol Setup		
Data In	**DMX**	*Control via DMX protocol*
	Art-Net	*Control via Art-Net*
	sACN	*Control via sACN*
	CRMX	*Control via CRMX*
Data Out		
Disabled		*No incoming data is converted*
DMX (XLR)		*Incoming data will be output from the DMX XLRs*
Ethernet Config		
Addressing Mode	Auto 2.x.x.x	*Set addressing mode for ethernet protocols*
	Auto 10.x.x.x	
	DHCP	
	Custom IP	
Custom IP address		*IP address if Custom IP*
Custom IP subnet		*Subnet if Custom IP*
Artnet Port		
sACN Universe		
Fixture Settings		
Color Mix Mode	**RGB**	*Direct RGB control, Lime added automatically*
	RGBL	*Direct RGBL control*
	x;y	*x:y color co-ordinate control*
White Point	8000 K	*Set fixture white point when RGB is at 100% (RGB Color Mix Mode only)*
	6500 K	
	5600 K	
	4200 K	
	3200 K	
iQ.Gamut	**FULL**	*Maximum color gamut*
	Rec.709	*Color space defined to Rec.709 Gamut (RGB Color Mix Mode only)*

	Rec.2020		*Color space defined to Rec.2020 Gamut (RGB Color Mix Mode only)*
Dimmer Curve	Linear		*Linear dimming curve*
	Square (Soft)		*Soft (square law) dimming curve*
	S-Curve		*Finer dimming control at low and high intensity*
Fan Mode	**Regulated**		*Fan speed temperature-regulated*
	High		*Fan speed constant high*
	Medium		*Fan speed constant medium*
	Low		*Fan speed constant low*
	Off		*All fans off or at minimum speed*
Subfixture Mode	**Normal**		*Main module's dimmer and shutter channels act as global dimmer/shutter and affect Sub module output*
	Independent		*Sub module is independent of Main module*
Performance	Fast		*Mechanical effects speed optimized for speed*
	Normal		*Mechanical effects speed balanced for speed and smoothness*
	Smooth		*Mechanical effects speed limited for optimized smoothness and low noise*
PWM Frequency	**Optimum**		*Optimum dynamic frequency for best performance*
	High 1		*Fixed frequency at approx. 4800 Hz*
	High 2		*Fixed frequency at approx. 9600 Hz*
	Max		*Highest possible fixed Frequency at approx. 25 kHz*
Pixel Mirror	**Off**		*Normal pixel layout*
	x-mirror		*Left-right flip*
	y-mirror		*Top-bottom flip*
	x-y-mirror		*All flip*
No Signal	No Signal Mode	Blackout	*Fixture blacks out if no DMX signal received*
		Hold	*Fixture continues to display current effect if no DMX signal received*
		Scene	*Plays the stored captured scene (see next menu item) if no DMX signal received*
	Capture DMX Values	*>>>Confirm<<<*	*Captures current scene and stores it for use in **No Signal Mode → Scene***
Tilt Invert	**OFF**		*Reverse direction of tilt movement*
	ON		

Position feedback	OFF		*Enable/disable /tilt position correction*
	ON		
Display Mode	**Auto**		*Display dims after a short period of inactivity if no errors and valid DMX signal*
	On		*Display constantly on*
	Off		*Display dims even if there are errors / no DMX signal*
Display Orientation	**Auto**		*Display automatically inverts to match installation position*
	Normal		*Display normal (for use when fixture is standing)*
	Flip		*Display inverted (for use when fixture is flown head-down)*
Hibernation	ON		*Fixture enters energy saving mode, all electronics except DMX receiver are disabled. Cycling power off and on exits hibernation.*
Load User Settings	User Setting Preset 1	>>> Confirm<<<	*Apply a user preset to fixture settings*
	User Setting Preset 2	>>> Confirm<<<	
	User Setting Preset 3	>>> Confirm<<<	
	Setting Defaults	>>> Confirm<<<	*Return fixture to default settings (not including DMX address, protocol type, Ethernet / CRMX configuration, user offsets, user presets and counters)*
Information			
Live diagnostic			*Shows overview of fixture information*
Show errors			*Shows any stored errors*
Show temperature			*Shows fixture temperature*
Show fan status			*Shows current cooling fan status*
Show controllers info			*Shows controllers info*
Show iQ.Mesh status			*Shows current GLP iQ.Mesh status*
Show LED calibration			*Shows LED calibration information*
Show fixture counters			*Shows total device hours (non-resettable), resettable device hours, total power cycles (non-resettable), resettable power cycles, resettable air filter hours*
Show DMX input			*Shows DMX values being received*

Show DMX info			*Shows info about any lost DMX packages*
Manual Control			
Reset All			*Reset all effects*
Reset Tilt			*Reset tilt only*
Reset Head			*Reset all effects except tilt*
Manual DMX ***Warning! Fixture will start moving*** Press **Enter**	Tilt	001 - **128** - 255	*Manually control all effects*
	Intensity	000 - **255**	
	... *Scroll through all effects* ...		
	Blue - All Pixel	000 - **255**	
	Lime - All Pixel	000 - **255**	
	Reset Manual Values	Confirm for 3 seconds *(press Enter)*	*Reset all manually entered DMX values to zero*
Service			
Live diagnostic			*Shows overview of fixture information*
iQ.Service Connect		>>> Connect <<<	*Enables connectivity to the GLP iQ.Service app.*
Tests	Test All		*Run test sequence of all effects including tilt. Stop with BACK.*
	Test Tilt		*Run test sequence of tilt only. Stop with BACK.*
	Test LED		*Run test sequence of all LEDs. Stop with BACK.*
	Test Zoom		*Run test sequence of zoom effect. Stop with BACK.*
	Test Fans (Manual)		*Manually test fans one by one*

Advanced *(Press and hold for 3 secs.)*	Service Mode	**OFF**		*Normal operation*
		ON		*Disable tilt and display timeouts (exit by cycling power off and on.)*
	Job offsets	Tilt Zoom		*Create custom job offsets in home positions of all effects. Default offset = **0** Note: This function is not fixture calibration!*
	Reset counters	Lamp Hours	Confirm 2 seconds	*Reset to zero*
		Service Timer	Confirm 2 seconds	
		Air filter	Confirm 2 seconds	
	Save User Settings	User Setting Preset 1	Confirm 2 seconds	*Saves current fixture settings as user settings preset*
		User Setting Preset 2	Confirm 2 seconds	
		User Setting Preset 3	Confirm 2 seconds	
	Firmware push (Fixture2fixture)	>>> Confirm <<<		*Push fixture's firmware to all other fixtures of the same type over the DMX link*
Load factory defaults				
>>>Confirm<<<				*Reloads all factory default settings and default fixture configuration settings.* ***Important! Controller may lose connection to fixture!***

*Default settings are written in **BOLD type***


GLP