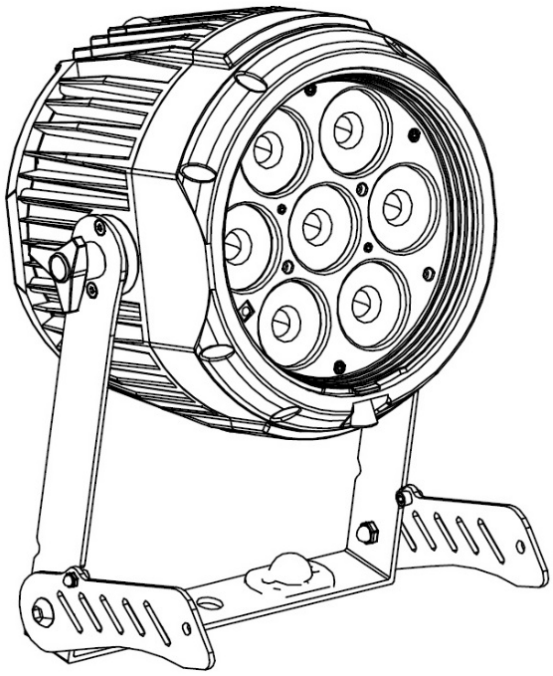
FUSION by GLP

Fusion Par FP7

User Manual



Software version 1.0.0.4

GLP

GLP® Fusion Par FP7 User Manual – Revision A

This document covers fixture software version 1.0.0.4

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1. Safety

Key to symbols

The following symbols are used in the Fusion Stick FP7 lighting fixture'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 manual for important safety information.

Warning! Fire hazard.

Warning! Risk of eye injury.

Warning! Read the precautions in this user manual before installing, operating or servicing the fixture. If you fail to read this information you may create a safety hazard with a risk of injury, death or damage.

This user manual is supplied with products and available for download from the GLP® website at www.glp.de. It contains important safety information and installation instructions that the installer and user must read. It also contains dimensions drawings and technical specifications and it explains features and control of FP7 fixtures.

The DMX control channel index tables included in this user manual are also available as a separate file: the **FP7 DMX Channel Index**, that is also available for download from www.glp.de.

The FP7 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 this user manual and on the fixture. Read and familiarize yourself with the safety precautions in this chapter before installing, using or servicing the fixture. 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 this user manual.

- Check the fixture software (firmware) 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 this user manual available to all persons who will install, operate or service the fixture. Save this user manual 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:

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General safety information

Read this section carefully before installing or using the product. If you have any doubts or questions about how to use the product safely, contact your GLP® supplier for assistance. Your GLP supplier will be happy to help.

The FP7 and this user manual are 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 this user manual and on the product. Read this manual and familiarize yourself with the safety precautions it contains before installing or using the product. The manufacturer will take no responsibility for damages or harm resulting from disregard for the information in this manual.
- Check the GLP website at www.glp.de and make sure that you have the latest version of this user manual. Check also that the software version indicated on page 2 of the user manual matches the version installed in the product. You can download the correct version of this user manual if necessary.
- Make the user manual available to all installers and operators and save the manual for future reference.
- If you have questions about the safe operation of the FP7, please contact an authorized GLP distributor (see list of distributors at www.glp.de).
- Use the product only as directed in this user manual. Observe all markings in this user manual and on the product.
- The product does not contain any user-serviceable parts. Refer any service operation not described in this manual and refer all repairs to a technician authorized by GLP.
- The light source in this product must not be changed by the end user.
- Read and follow the user documentation for all additional equipment.

Electrical safety

- Use only a source of AC mains power that complies with local building and electrical codes and has both overload and ground fault (earth fault) protection.
- Ensure that the product is electrically connected to ground (earth).
- Disconnect the product from AC mains power before carrying out any installation or maintenance work and when the product is not in use.
- The product is IP65-rated, but do not expose it to high-pressure water jets and do not allow it to become immersed in water.

- Use only Neutrik powerCON TRUE1 TOP IP65-rated connectors to make power connections to the fixture.
- Line up the keys and keyways in Neutrik powerCON TRUE1 TOP power connectors carefully before inserting a cable connector. If a cable connector is difficult to insert or twist, do not force it. Instead, remove it and check to make sure that keys and keyways are lined up correctly.
- Use only IP65-rated XLR connectors to make data connections to the fixture.
- Keep the rubber connector seals correctly installed on all unused connectors at all times.
- Do not expose the cable connectors to bending forces (by allowing the weight of cables to hang from connectors, for example) as this may affect their ingress protection and allow water to enter the connections.
- Disconnect the product from power immediately if the power plug or any seal, cover, cable, or other component is damaged, defective, deformed, wet or showing signs of overheating. Do not reapply power until the product has been repaired and made safe by a technician authorized by GLP.
- Before using the product, check that all power distribution equipment and cables are in perfect condition and rated for the electrical requirements of all connected devices.
- Use minimum 14 AWG or 1.5 mm^2 power input and relay cables that are minimum 16 A rated and temperature-rated to suit the application. In the USA and Canada the cables must be UL-listed, type SJT or equivalent. In the EU the cables must be type H05VV-F or equivalent.
- Do not connect devices to power in a chain using their power throughput connectors if the total maximum current draw of all the devices in the chain when added together will exceed the current rating of any cable or connector used at any point in the chain. The supplied power input cable is rated as follows:
  - US power cable: 16 A, 14 AWG, UL listed, E304117, SJT, 4.9 ft.
  - EU power cable: 16 A, 1.5 mm^2, H05VV-F, 1.5 m

  Do not connect more than six (6) FP7 fixtures to power in a chain at 100-120 V, 60 Hz.

  Do not connect more than twelve (12) FP7 fixtures to power in a chain at 200-240 V, 50 Hz.
- The voltage and frequency at the MAINS THRU socket are the same as the voltage and frequency applied to the MAINS IN socket. Only connect devices to the MAINS THRU socket that accept this voltage and frequency.
- If you suspect that a fuse has blown, disconnect the product from power and send it to a technician authorized by GLP for repair.

Fire safety and protection from burns

- Do not operate the product if the ambient temperature (Ta) exceeds 45° C (115° F).

- Depending on ambient temperatures and the presence of sunlight, the surface of the product's casing can reach up to 90° C (194° F) during operation. Avoid contact by persons and materials. Do not install the product in a location where there is a risk of accidental contact. Allow the product to cool for at least 20 minutes before handling
- Keep the product well away from flammable materials.
- Keep all combustible materials (e.g. fabric, wood, paper) at least 100 mm (4 in.) away from the product.
- Ensure that there is free and unobstructed airflow around the product. Provide a minimum clearance of 100 mm (4 in.) around fans and air vents.
- Do not illuminate surfaces within 500 mm (19.7 in.) of the product.
- Do not stick filters, masks or other materials onto optical components.
- The product's optical components can focus the sun's rays, creating a risk of fire and damage. Do not expose the front of the product to sunlight or any other intense light source, even from an angle.

Eye safety

- The FP7 is classified as a Risk Group 2 product according to EN 62471. Possibly hazardous radiation emitted.
- Do not stare into the light output from the product. May be harmful to the eyes.
- Do not look at the product's light output with optical instruments or any device that may concentrate the light output.
- Make sure that persons working on or near the product are not looking directly into the light output when the product lights up suddenly. This can happen when power is applied, when the product receives a DMX signal, or when certain control menu items are selected.
- Provide well-lit conditions to reduce the pupil diameter of anyone working on or near the product.

Strobe safety

- Flashing light, particularly at 5 - 30 Hz, may cause seizures in persons with photosensitive epilepsy. Do not use strobe effects for extended periods.
- Comply with local regulations on the use of strobe lighting and notify the public in advance with highly visible warning signs when strobe effects are used.

- If a seizure occurs, stop using strobe effects. Seek professional medical help. Note the time that the seizure starts and finishes. Call emergency medical help urgently if the seizure lasts more than five minutes, if it is the person's first seizure, or if the person is injured. While waiting for help to arrive, consider the following general advice for caring for a person who is having a seizure: Protect the affected person from injuring themselves on hard or sharp objects. If necessary, move the person to a safe place. Lay them on their side with their head supported to prevent it from hitting the floor. Loosen any tight clothing around their neck. Do not use force to hold the person or restrict their movements. Do not put anything in their mouth, including your fingers.

Installation safety and protection from personal injury

- Installation must be performed by qualified personnel only and carried out in accordance with applicable regulations such as DIN VDE 0711-217.
- The product is not portable when installed.
- Ensure that the supporting structure and installation hardware used can hold at least 10 times the weight of the load that they support.
- Suspend the product with hardware specifically designed and rated for the purpose. Check that the hardware is in perfect condition. Fasteners must be steel grade 8.8 strength or better. Rigging clamps must be half-coupler type that completely encircle the rigging truss chord.
- If the product is installed in a location where it may cause injury or damage if it falls, install as directed in this manual a safety cable or similar secondary attachment that will hold the product if a primary attachment fails. The secondary attachment must be approved by an official body such as TÜV as a safety attachment for the weight that it secures, it must comply with EN 60598-2-17 Section 17.6.6, and it must be able to support a static suspended load that is ten times the weight that it secures.
- Either stand the product on a safe surface or fasten the product to a structure or surface as directed in this user manual. Do not use a safety cable as the primary means of support.
- Check that all covers and rigging hardware items are secure.
- Do not operate the product with missing or damaged covers, shields or any optical component.
- Restrict access below the work area and work from a stable platform whenever installing, servicing or moving the product.
- If the product becomes damaged, stop using it immediately and disconnect it from power. Do not attempt to use a product that is obviously damaged.
- Do not modify the product in any way not described in this user manual.
- Install genuine GLP parts only.

2. Avoiding damage

Do not point the front of the fixture towards the sun or other strong light sources. The LED lenses focuses and concentrate light just like magnifying glasses. Strong light can cause internal damage to the fixture, melting components or starting an internal fire within seconds.

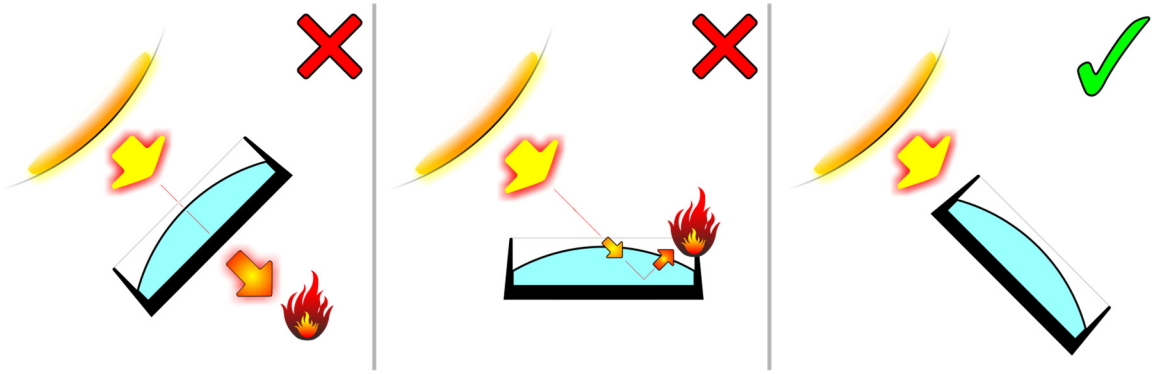


Figure 1. Avoiding damage from light sources

Damage can occur whether the fixture is powered on or off. See Figure 1.Damage can also occur if the light hits the front of the fixture at an angle: the fixture does not need to be pointing *directly* at the sun or other light source.

To avoid problems from strong light sources:

- Do not expose the front of a fixture to sunlight or any other strong light source.
- For outdoor applications during daylight, make sure that the front face of any fixture is shielded or points away from the sun, even when not in use.
- Avoid pointing other high-powered beam lights directly at the fixture.

Do not pick up or carry the fixture by the front bezel. The LCD display is also fragile. Picking up or supporting the fixture in these spots could result in damage that is not covered by the product warranty.

Use only original spare parts. Any structural modification of the system will void the product warranty.

Inspect the fixture regularly and clean it if necessary. Clean the fixture only as directed in this manual. Oils, solvents, and other chemicals commonly used for cleaning can damage surfaces.

Do not drop the fixture or expose it to mechanical stress.

Do not expose the fixture to heat (from other lighting fixtures for example).

Transportation and storage

Transport the FP7 either in a flightcase or in its original packaging to protect the fixture from damage caused by shocks during transportation.

Store the fixture in a dry location when not in use.

3. FP7 overview

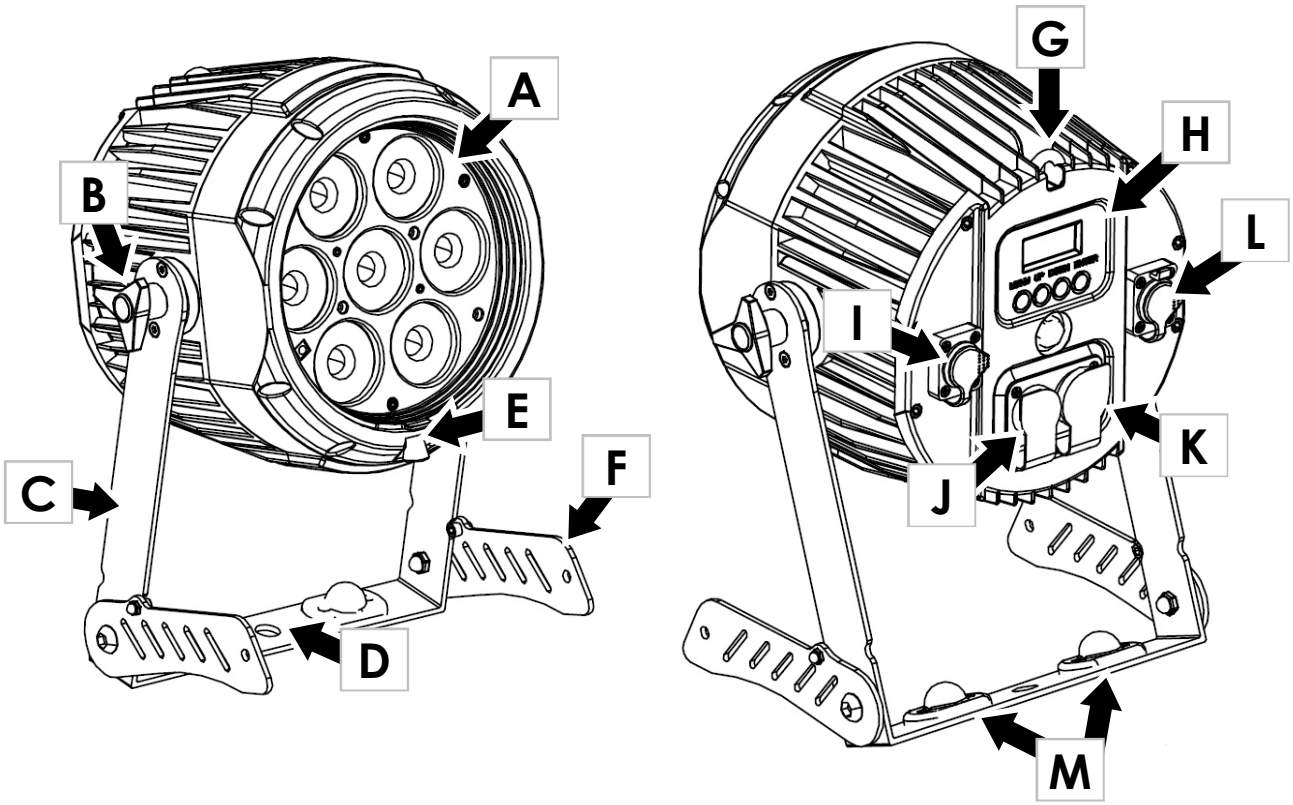


Figure 2. Fusion Par FP7 overview

A – LED array

B – Tilt adjustment locking screw

C – Floorstand / Mounting Bracket

D – Hole that accepts M10 bolt for rigging clamp

E – Spring-loaded optical accessory retaining latch

F – Fold-out foot

G – Safety cable attachment point

H – Control panel and display

I – DMX OUT/THRU (5-pin XLR), IP65-rated

J – AC mains power IN (Neutrik powerCON TRUE1 TOP)

K – AC mains power THRU (Neutrik powerCON TRUE1 TOP)

L – DMX IN (5-pin XLR)

M – Quarter-turn lock mounting points for 100 mm omega clamp

4. Features

The Fusion Par FP7 from GLP® is a compact but powerful LED-based strobe/color mixing effect lighting fixture.

The fixture features an array of 7 x 30 watt RGBW LEDs that produce a powerful beam with a 6° beam angle.

You can either vary color continuously using RGBW color mixing or select preset colors on the fixture's virtual color wheel.

A shutter channel gives variable pulse and strobe effects running at up to 20 Hz, and a master dimmer channel gives 0-100% continuous dimming. The fixture offers a choice of four dimming curves and two dimming modes that are optimized for dimming speed or slow dimming smoothness.

A separate CTO channel is available in DMX Mode 1, letting you quickly adjust the color temperature of the white light output.

Fixtures can be connected to power and data in daisy-chains, reducing the number of cable runs required in installations with multiple fixtures.

Besides indoor use in permanent and temporary installations, the FP7's IP65 rating and rugged construction mean that it can also be used outdoors in temporary installations if precautions are taken to prevent immersion in water and damage from direct sunlight.

Using the Floorstand / Mounting bracket that is supplied with the fixture, the FP7 can be placed upright on a level surface, fastened to a secure surface in any orientation or suspended from a suitable structure such as a rigging truss by means of an omega clamp and rigging clamp (optional accessories).

A spring-loaded latch on the front of the fixture allows quick and easy mounting of optical accessories.

The FP7 is not suitable for household use, for use in any location where unattended children have access to it, or for use in permanent outdoor installations.

Virtual color wheel

The FP7's virtual color wheel effect gives you quick access to a range of 33 LEE-referenced color presets. You can select a static color or run a dynamic sequence of regular or random colors.

The virtual color wheel takes priority over RGBW control in DMX Mode 1. If you want to use RGBW color mixing, set the virtual color wheel channel to zero.

Color temperature presets from a warm tungsten emulation to a very cool 8000 K white are available on the color wheel DMX channel.

RGBW color mixing

RGBW color mixing gives you complete control of color. In DMX Mode 1, which has both RGBW color mixing and a virtual color wheel effect, you must set the virtual color wheel channel to zero before the RGBW channels become active.

RGB color mixing is available in DMX mode 5 which has a DMX footprint of only three channels.

Shutter effect

The FP7's electronic shutter effect provides ramp up and ramp down effects, a variable speed strobe with strobe pause effects and instant blackout and full intensity.

Color temperature

Color temperature can be varied continuously from 2700 K to 8000 K on a separate CT channel in DMX Mode 1.

5. Preparation for use

Warning! Read 'Safety' starting on page 4 for important safety information that you must understand before you install or operate the fixture.

Included Items

The Fusion Par FP7 is supplied with a power cord with powerCON TRUE1 TOP connector and a Floorstand / Mounting Bracket that accepts an M10 bolt for fastening to a rigging clamp.

Installation

Orientation and location

The FP7 can be installed:

- indoors in temporary or permanent installations, or
- outdoors in temporary installations.

In outdoor installations you must protect the front of the fixture from direct sunlight. The fixture is IP65 rated so it will withstand rain and water projections, but do not expose the fixture to high-pressure water jets or allow the fixture to become immersed in water.

The FP7 can be used when placed on a level surface, fastened to a surface in any orientation or fastened to a structure such as a rigging truss in any orientation.

Keep the fixture at least 0.5 m (20 in.) away from combustible materials (including curtains and stage scenery) when the fixture is installed.

Placing on a surface

You can stand the impression FP7 upright on its Floorstand / Mounting bracket on a flat, stable, horizontal surface.

To use the floorstand, see Figure 3. Fold the feet on the floorstand around so that they lock into the position shown and form feet.

If necessary to prevent the fixture from moving or falling (in a location that is subject to vibrations for example), loop a ratchet strap, webbing or other bracing strap around the legs of the floorstand and fasten it to secure anchoring points.

Loosen the tilt adjustment handscrews (arrowed) on both sides of the floorstand, set the fixture to the required angle and retighten the handscrews.

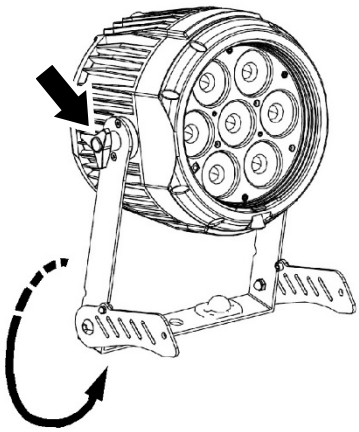


Figure 3. Deploying feet on Floorstand

Securing with a safety cable

If the FP7 can cause injury or damage if it falls, secure it with a safety cable that is approved for the weight that it secures and capable of catching the fixture safely if the primary means of attachment fails.

To secure the fixture with a safety cable:

1. See Figure 4. Pass a carabiner hook (arrowed) or similar means of attachment around the safety cable attachment point in the fixture housing above the control panel.
2. Secure the fixture by adding a safety cable that is fastened to a secure anchoring point. Remove as much slack as possible from the safety cable (by looping more than once around a rigging truss chord, for example).

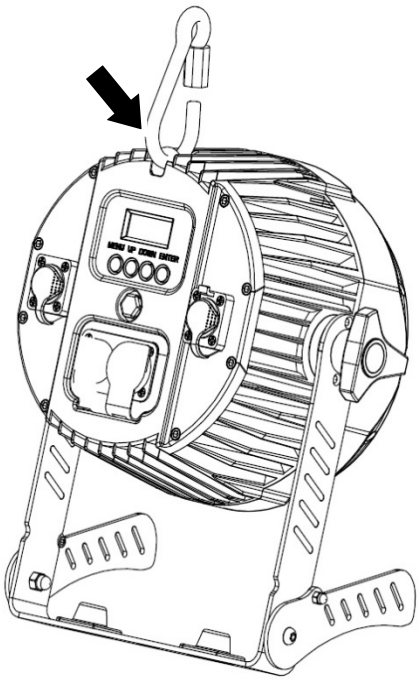


Figure 4. Safety cable attachment

Mounting on a rigging truss or similar structure

The Floorstand / Mounting bracket has two attachment points with a center-to-center distance of 100 mm / 3.94 ins for the quarter-turn fasteners on an omega bracket. It also has a hole that accepts an M10 bolt.

Before installing, check that all mounting hardware and fasteners are approved for the weight that they will support and in perfect condition. Fasteners must be high-tensile steel.

To mount the fixture on a rigging truss, either:

3. Bolt a rigging clamp to a suitable omega bracket.
4. Fasten the omega bracket to the fixture's mounting bracket with quarter-turn fasteners, turning the handles on both quarter-turn fasteners a full 90° to lock them.
5. Fasten the rigging clamp around a truss chord to mount the fixture on the rigging truss.
6. Secure the fixture with a safety cable as directed above.

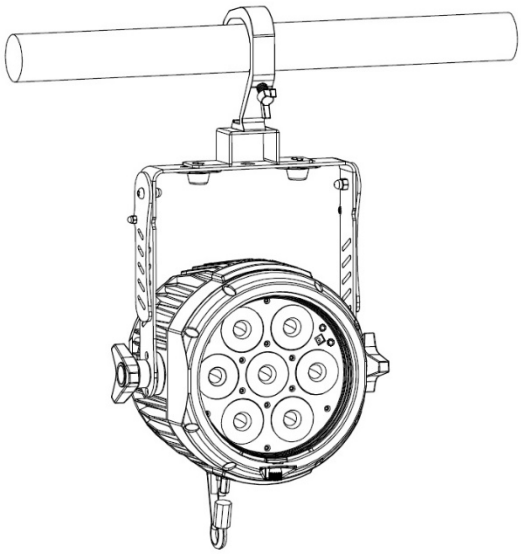


Figure 5. FP7 flown from rigging truss with omega bracket and rigging clamp

Or:

1. Bolt a rigging clamp to the fixture's mounting bracket using a high-strength M10 bolt passed through the hole in the center of the mounting bracket yoke (see **D** in 'FP7 overview' on page 11) and self-locking nut.

2. Fasten the rigging clamp around a truss chord to mount the fixture on the rigging truss.
3. Secure the fixture with a safety cable as directed on page 15.

Fastening to a surface

You can use the Floorstand / Mounting bracket to fasten the FP7 to a suitable secure surface at any angle.

To mount the FP7 on a surface:

1. Prepare a suitable hole in the mounting surface, adding a means of anchoring the fastener such as a screwplug if necessary.
2. Pass a high-strength M10 bolt or screwbolt through the hole in the center of the mounting bracket yoke (see D in 'FP7 overview' on page 11) and fasten it into the surface.
3. Secure the fixture with a safety cable as directed on page 15.

Connecting to power

Warning! Read 'Safety' starting on page 4 for important safety information that you must understand before you connect the fixture to power.

The AC mains power supply must include a connection to ground / protective earth. It must be protected against ground / earth leakage and overload. The autosensing power supply accepts AC power at 100-240 V, 50/60 Hz. Do not connect the fixture to power at any other voltage or to an external dimmer.

The Fusion FP7 does not have a power ON/OFF switch. Power is applied to the fixture as soon as the power cord / power cable that is connected to the fixture becomes live.

The FP7 has a 3-conductor IP65-rated Neutrik powerCON TRUE1 TOP socket that accepts AC power from a Neutrik powerCON TRUE1 TOP IP65-rated female cable connector.

To connect the fixture to power:

1. Check that power to the power input cable is shut down.
2. See Figure 2 on page 11. Connect the power input cable to the *MAINS IN* socket by lining up the key (tab) on the cable connector carefully with the keyway (slot) in the MAINS IN connector, then inserting and twisting the cable connector clockwise to lock. You should hear a 'click' when the connector is locked. Do not force the cable connector – if it feels excessively stiff, remove it and check that the key and keyway are correctly lined up.
3. Do not expose the cable connector to bending forces by letting cable hang from the connector, for example, as this may affect its ingress protection and allow water to enter the connection.

To remove the power input connector, pull the locking latch towards you to release it, then twist the connector counterclockwise and remove it from the socket.

Install the rubber connector seals on any unused connectors.

Connecting multiple fixtures to power in a chain

You can connect fixtures to power in a daisy-chain to simplify your power circuit layout.

Warning! The power input cable supplied with the fixture is rated 16 A maximum. Add together the maximum current draw ratings of all the devices that you intend to connect to power in a daisy chain and do not create a chain with a total maximum current draw of more than 16 A, or you will create a risk of fire and electric shock. Respect the following safety limits:

- Do not connect more than **six (6) FP7 fixtures** to power in a chain at **100-120 V, 60 Hz**.
- Do not connect more than **twelve (12) FP7 fixtures** to power in a chain at **200-240 V, 50 Hz**.

To connect fixtures to power in a chain:

1. Obtain power relay cables that have male and female IP65-rated Neutrik powerCON TRUE1 TOP connectors. Cables must be minimum 14 AWG or 1.5mm2, rated minimum 16 A and suitable for the environment and application.
2. Check that the total current draw of all the devices in the chain will not exceed 16 A.
3. Check that power is not applied to the input cable.
4. Connect the power input cable to the MAINS IN socket (see Figure 2 on page 11) following the instructions given in the previous section.
5. Connect a relay cable to the *MAINS OUT* socket (see Figure 2 on page 11) of the first fixture and to the *MAINS IN* socket of the next fixture in the chain. Continue until the chain is complete.
6. Do not expose cable connectors to bending forces, by letting cable hang from a connector for example, as this may affect its ingress protection and allow water to enter the connection.
7. Before applying power, check that that nobody is looking directly into the front of a fixture.

Connecting to a power circuit

If using the fixture outdoors, make sure that all cable connections are protected from water and moisture.

It is possible to install a cord cap / mains power plug that is suitable for your local convenience receptacles / power sockets on the supplied power input cable. If you do this, check that the cord cap / plug is rated minimum 250 V, 16 A, that it has a connection to ground / earth and that it has an integral cable grip. Follow the cord cap / plug manufacturer's assembly instructions.

If you need to install a Neutrik powerCON TRUE1 TOP connector on a power cable, follow the instructions given in the Support area of the Neutrik website at www.neutrik.com.

Respect the color coding used in the supplied power cable and in your local mains power wiring system. US and EU systems use the color coding shown below:

	Live or L	**Neutral or N**	**Ground / Earth or ⏚**
US system	Black	White	Green
EU system	Brown	Blue	Yellow/green

Connecting to a DMX control data link

The Fusion FP7 has 5-pin XLR DMX IN and DMX THRU sockets for connection to a USITT DMX512 data link.

Connectors use standard DMX pinout:

- Pin 1 = Ground
- Pin 2 = -ve / data cold
- Pin 3 = +ve / data hot.
- Pins 4 and 5 are not used.

If using the fixture outdoors, use only IP67-rated Neutrik 5-pin XLR connectors.

If you would like any advice with planning and installing a DMX link, your GLP supplier will be happy to provide assistance.

Install the rubber connector seals on any unused connectors.

6. Control menus and onboard display

Warning! DMX control is disabled when the control menus are active. Be prepared for the fixture to emit strong light as soon as you exit the control menus.

The control panel and onboard display provide access to user settings, readouts and utilities.

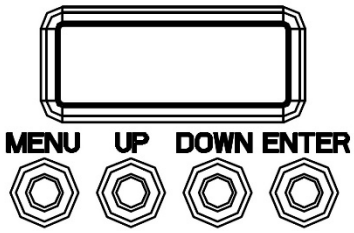


Figure 6. Onboard display

The four control buttons have the following functions:

MENU: Activate the menus or go back one level towards the top of the menu.

UP: Scroll up or increase a number.

DOWN: Scroll down or reduce a number.

ENTER: Activate the control panel if it is in sleep mode. Then enter a menu, select a setting or implement a command.

After you have applied power to the fixture and the fixture has booted, the panel displays the default screen with the fixture's DMX mode and DMX address.

DMX control is disabled when the control menus are active.

Control menus

This section explains the functions of the commands available in the FP7 control menus.

DMX

DMX address

Sets the DMX start address of the fixture. The DMX address is 001 by default.

Mode

Selects the fixture's DMX control mode. See 'DMX control modes overview' on page 31.

No DMX

You can set the fixture to react in three different ways 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):

- **Shut off** sets the fixture to black out. This is the default setting.
- **Hold** sets the fixture to continue obeying the last DMX values it received.

  If no DMX signal was being received, the fixture will black out.
- **Play P1 / P2 / P3** sets the fixture to show the program that has been stored in the *St Alone → P Edit* menu (see 'P Edit' on page 23).

To avoid any possibility of unexpected behavior from a powerful strobe light if the DMX signal fails, we recommend that you set the fixture to *Shut off* when you are not running a stand-alone program.

DMX Live

DMX Live lets you view the current refresh rate of the DMX signal that the fixture is receiving.

It also lets you see the DMX values that the fixture is receiving for each individual effect.

Personal

D Curve

See Figure 7. You can select from four dimming curves using the control panel or the *Control / Settings* DMX channel:

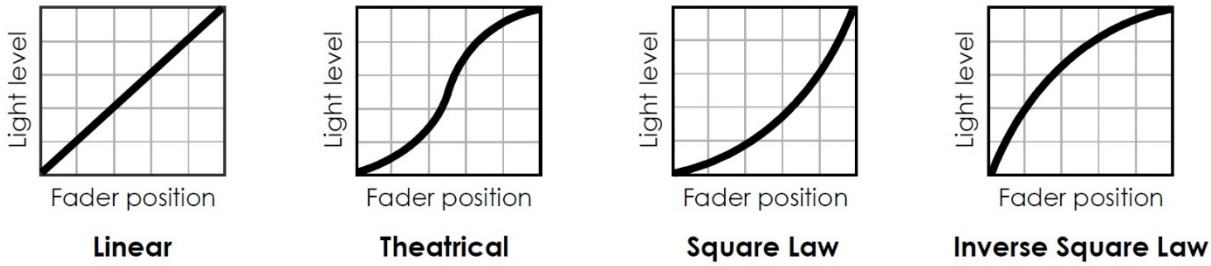


Figure 7. Dimming curves

- **Linear** sets dimming so that it appears to increase and decrease evenly throughout the dimming range.
- **Theatrical (Theat)** is an S-shaped curve that gives finer control at low and at high light levels.
- **Square Law (Square)** gives finer control at low light levels and coarser control at high light levels.

- **Inverse Square Law (Inv Sq)** gives coarser control at low light levels and finer control at high light levels.

The default setting is **Linear**.

D Speed

Lets you select from two dimming control speed settings:

- **Fast** (the default setting) lets you make fast changes in intensity level. Slow changes may be less even.
- **Smooth** lets you make very smooth slow changes in intensity level. It will be impossible to make very fast changes.

No matter which dimming control speed setting you select, you can still black out and go to full intensity instantly using the Shutter channel.

PWM

Lets you select the PWM frequency of the fixture's LEDs to reduce problems with flicker when using video or TV cameras.

Mic

Enables the FP7's audio trigger functionality. This lets you set fixtures to automatically run a light show in sync with a music beat or other audio source.

Mic Sens

Lets you adjust the sensitivity of the audio trigger microphone. Three sensitivity levels are available: **Normal** (the default setting), **High** and **Low**.

To set up microphone sensitivity, set Mic to On, set Mic Sens to Normal and play music at a typical level.

If the fixture does not react at all or does not change lighting effects correctly in time with the music beat, try increasing sensitivity to **High**. If this does not help, try reducing microphone sensitivity to **Low**. If the audio level is extremely low or extremely high, you may need to move the fixture relative to the audio source.

Display

Gives three options for the control panel display:

- **Shutoff** sets the fixture to remain on constantly (**Shutoff** set to **Off**, the default setting) or go into sleep mode after a period that you can select.
- **Blink** sets the fixture to flash if the fixture detects an error.
- **Flip D** rotates the display 180° for easier viewing if the fixture is installed head-down.

Temp U

Lets you display all temperatures in Celsius (the default setting) or Fahrenheit.

Lock

Lets you set a password for access to the control menus to prevent unwanted tampering.

IR Prio

If enabled, signals from the infrared remote that is available from GLP as an accessory take priority over any DMX signals that the fixture is receiving.

Boot

Determines what the fixture does when power is applied:

- **Auto** sets the fixture to resume the action that it was performing when power was shut down. If the fixture was operating under DMX control, it will wait for a DMX signal again.
- **DMX** sets the fixture to enter DMX control operation when power is applied. It will not give any light output until it receives a DMX signal.
- **Static** sets the fixture to show the static scene programmed in the **St-Alone → Static** menu (see later in this section) when power is applied.

  If the fixture begins to receive a DMX signal while showing the static scene, DMX commands will take priority by default. If you want the Static scene to take priority, set **Boot → DMX Hi P** to **Off**.
- **Program** sets the fixture to run the dynamic sequence **P1**, **P2** or **P3** programmed in the **St-Alone → P Edit** menu (see later in this section) when power is applied.

  If the fixture begins to receive a DMX signal while running **P1**, **P2** or **P3**, DMX commands will take priority by default. If you want **P1**, **P2** or **P3** to take priority, set **Boot → DMX Hi P** to **Off**.

St-Alone

The St-Alone menu gives a range of options for setting the fixture's autonomous stand-alone behavior.

Test

Runs a factory-programmed sequence that tests all colors and all LEDs.

Master

Lets you configure the fixture's master-slave functionality during stand-alone operation:

- **Alone** sets the fixture to act independently. It will not act as a master or as a slave fixture.
- **Master** sets the fixture to act as the master fixture in a master-slave setup. It will run the static scene or programmed sequence (**P1**, **P2** or **P3**) that it is set to. It will also send out all three programmed sequences (**P1**, **P2** and **P3**) over the DMX data link.
- The **Slave** settings **Slave 1**, **Slave 2** and **Slave 3** set the fixture to act as a slave fixture in a master-slave setup:
  - A fixture set to **Slave 1** will run the programmed sequence **P1** that is being sent by the Master fixture.
  - A fixture set to **Slave 2** will run the programmed sequence **P2** that is being sent by the Master fixture.

- A fixture set to **Slave 3** will run the programmed sequence **P3** that is being sent by the Master fixture.

Static

Lets you set up the static scene that the fixture will display if set to **Boot → Static** (see earlier in this section).

P Edit

Lets you set up the programmed sequences **P1**, **P2** and **P3** that the fixture will display if set it to **Boot → Program** (see earlier in this section).

You can create up to 30 steps in one program.

To create the program:

1. Open the **P Edit** menu, then scroll to **Prog 1**, **Prog 2** or **Prog 3** and press **Enter**.
2. Scroll to **Step** and press **Enter.**
3. Scroll to a step from **01** – **30** and press **Enter**.
4. Once you have selected a step, you can either:
   - use **Capture** to capture the DMX values that the fixture is currently receiving and save that as the step, or
   - scroll through and select different effects one by one starting with the color wheel and set a DMX value for each effect.
5. Once you have programmed the steps in your sequence:
   - use **HoldTime** to set the length of time that each step will be displayed before the fixture moves to the next step, and
   - use **FadeTime** to set the speed at which one step will crossfade into the next scene.

P Play

Lets you set the fixture to replay either one program sequence **P1**, **P2** or **P3** continuously in a loop or replay all three sequences continuously in a loop.

P Reset

Lets you delete either one program sequence **P1**, **P2** or **P3** or delete all three sequences at once.

Service

Reset

Reboots and resets the fixture.

C Offset

Lets you create color offsets for the RGBW LEDs to fine-tune or calibrate the color or white output of the fixture. Creating a color offset involves setting a maximum DMX value to replace the normal maximum value of 255 for the color that you want to limit in the color mix.

Any color offsets that you create are unaffected by power off/on cycles. You can delete all color offsets at once by applying a **Default** command (see next point).

Default

Returns all user settings including the fixture's DMX address and DMX mode to the factory defaults.

Info

Time

Lets you view the fixture's two power-on hours counters.

The **Reset** counter is resettable and can be returned to zero with the **Clear** command.

The **Total** counter is non-resettable and will always show the number of hours the fixture has been powered on since it left the factory.

Temp

Lets you view the current temperature for the LED board and the driver board.

Each board also has a resettable maximum temperature log that lets you view the maximum temperatures recorded since the log was last reset with a **Reset Max** command.

Firmw

Displays the version number of the currently installed firmware.

Serial

Displays the fixture's serial number.

7. IR Remote

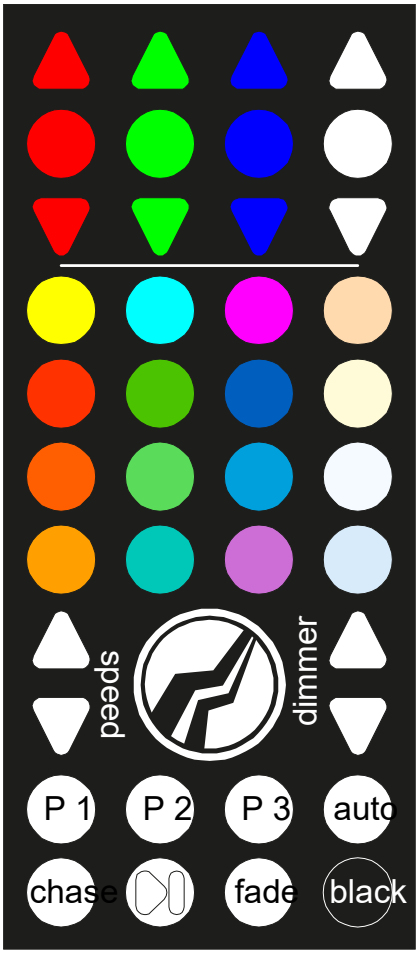
An infrared remote control is available from GLP as an optional accessory for the FP7.

Be default, the fixture gives priority to commands received via DMX and will ignore commands sent by the IR remote if it is receiving a DMX signal. If you want the fixture to give priority to commands from the IR remote, set **IR Priority** in the **Personality** menu is set to **ON**.

The receiver for commands from the IR remote is located in the center of the front surface of the fixture.

The IR remote is powered by a button-cell battery. If the remote seems to have stopped working the battery may be discharged. Replace it with a new item.

The IR remote offers these functions:



Increase color intensity
Toggle color on (100%) / off (0 %)
Reduce color intensity
Select a color preset
Increase speed / increase intensity
Reduce speed / reduce intensity
Select an internal program from the three programs created in **Stand-Alone → Program Edit**
Set a program to run a chase / pause a program / fade out / black out

8. Service

Warning! There are no user-serviceable parts inside the Fusion FP7. Opening the fixture can compromise its IP65 rating and cause damage that is not covered by the product warranty. Any service operation that requires removal of a cover must be performed by a GLP technician only.

Cleaning

The FP7 requires occasional cleaning to prevent the buildup of dust, dirt, residue from atmospheric effects etc. Failure to keep a fixture clean will significantly reduce light output and may cause damage that is not covered by the product warranty. Regular cleaning will ensure maximum performance and reliable operation.

Inspect the fixture at regular intervals and clean it whenever dirt is visible. Pay special attention to the cooling fins and the front of fixtures. You can clean the front of a fixture using a soft cloth slightly dampened with a household or automotive glass cleaning product. You can clean cooling fins with a soft brush and vacuum cleaner.

Do not immerse the fixture in water. Do not spray it with high-pressure water jets.

Optical accessories

A diffuser lens is available from GLP as an optional accessory for the FP7. The diffuser gives a wider beam angle and a softer beam. A quick-release locking system on the front of FP7 fixtures lets you install and remove the diffuser in seconds.

To install a diffuser on the front of the fixture:

1. See Figure 8. Pull the spring-loaded locking pin **A** outwards, away from the center of the fixture.
2. Insert one side of the diffuser behind the lip **B** in the front of the fixture opposite the locking pin, then insert the other side of the diffuser behind the locking pin **A**.
3. Release the locking pin **A** so that it slides in towards the center of the fixture under spring pressure and holds the diffuser in place.

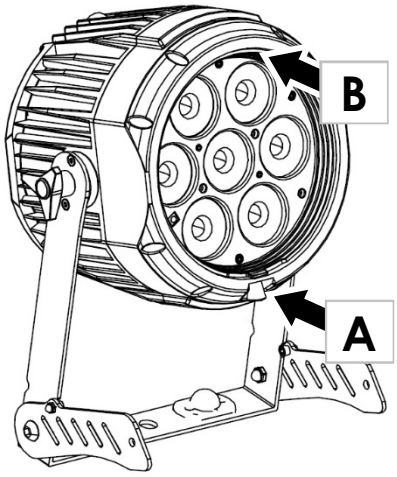


Figure 8. Mounting points for optical accessories

4. Check that the diffuser is held securely by the lip and the locking pin and cannot fall out of the fixture.

To remove a diffuser, pull on locking pin **A** to release the diffuser, then lift the diffuser off the front of the fixture.

9. Control menu layout

Menus			***Notes***
DMX			
Address	**1** - 512		*Enter DMX address*
Mode	**Stand-8**		*Select DMX control mode*
	6-CH		
	5-CH		
	RGBW-4		
	RGB – 3		
	Easy - 2		
No DMX	**Shut off**		*Blackout when no DMX signal is received*
	Hold		*Hold current scene when no DMX signal is received*
	Play P1		*Play stored stand-alone program 1, 2 or 3 when no DMX signal is received*
	Play P2		
	Play P3		
DMX Live	Refresh	XXX Hz	*Display current DMX signal refresh rate*
	Color Red Green Blue White Shutter Dimmer CTO	0 - 255 0 - 255 0 – 255 0 – 255 0 – 255 0 – 255 0 – 255 0 - 255	*Display DMX values being received for each effect*
Personal			
D Curve	**Linear**		*Select dimming curve*
	Theat		
	Square		
	Inv Sq		
D Speed	**Fast**		*Dimmer optimized for speed*
	Smooth		*Dimmer optimized for smoothness*
PWM	600 Hz		*Select LEDs' PWM frequency*
	1200 Hz		
	2000 Hz		
	2400 Hz		
	6000 Hz		
Mic	**Off**		*Audio trigger disabled*
	On		*Audio trigger active*
Mic Sens	**Normal**		*Set audio trigger microphone sensitivity*
	High		
	Low		

Display	Shutoff		**Off**	*Display sleep mode disabled: display remains on permanently*
			1 min	*Display goes into sleep mode after 1 / 5 / 60 minutes*
			5 min	
			60 min	
	Blink		**On**	*Enable / Disable flashing display if no DMX signal is received*
			Off	
	Flip D.		Off	*Display orientation normal*
			On	*Display inverted*
Temp. U	**Celsius**			*Set temperature units used in display*
	Fahrenh			
Lock	**Off**			*Enable / disable password requirement for access to control menus*
	On			
	Password	XXXX	XXXX	*Set a custom password for access to control menus*
IR Prio	**Off** / On			*If enabled, IR remote takes priority over DMX signal*
Boot	Select		**Auto**	*At power on, fixture returns to last action before power off*
			DMX	*At power on, fixture waits for DMX signal*
			Static	*At power on, fixture shows scene programmed in St-Alone → Static*
			Program	*At power on, fixture shows scene programmed in St-Alone → P Edit (Prog 1 by default)*
	DMX Hi P		**On** / Off	DMX High Priority: *if enabled, a DMX signal takes priority over any action set for power on in Boot → Select above*
St-Alone				
Test	Run / **Cancel**			*Run sequence that tests all colors and all LEDs*
Master	**Alone**			*Independent stand-alone operation (fixture does not act as Master or Slave).*
	Master			*Sends out all 3 internal programs to DMX link if you run any program*
	Slave		**Slave 1**	*Slave 1 plays Program 1 sent by a Master device, Slave 2 plays Program 2, Slave 3 plays Program 3*
			Slave 2	
			Slave 3	

Static	C Wheel	**0** - 255		*Set fixture to display a static color, set intensity, set shutter effects*
	Red	**0** - 255		
	Green	**0** - 255		
	Blue	**0** – 255		
	White	**0** – 255		
	Shutter	0 – **255**		
	Dimmer	0 – **255**		
	CTO	**0** – 255		
	Reset All	Yes / No		*Set all **Static Mode** values to defaults (Shutter and Dimmer = 255, all other values = 0)*
P Edit *(Program Edit)*	Prog 1	Step	01-30	*Select step to program from Step 1 to Step 30*
		Capture	**Yes** / Cancel	*Capture current DMX values as scene for current step in program 1*
		C Wheel	0 - 255	*Set DMX value for each effect that you want to use in current scene*
		Red	0 – 255	
		Green	0 – 255	
		Blue	0 – 255	
		White	0 – 255	
		Shutter	0 – 255	
		Dimmer	0 – 255	
		CTO	0 - 255	
		Reset	**No** / Yes	*Reset all effects values to zero*
		HoldTime	000 – 999	*Set time in seconds that scene is held*
		FadeTime	000 - 999	*Set time in seconds for scene to crossfade into next*
	Prog 2	…		*Same as Program 1 (see above)*
	Prog 3	…		*Same as Program 1 (see above)*
P Play	Prog 1	**No** / Yes		*Play one of the Programs created in **Program Edit***
	Prog 2	**No** / Yes		
	Prog 3	**No** / Yes		
	Prog All	**No** / Yes		*Play consecutively all of the Programs created in **Program Edit***
P Reset	Prog 1	**No** / Yes		*Delete one of the Programs created in **Program Edit***
	Prog 2	**No** / Yes		
	Prog 3	**No** / Yes		
	Prog All	**No** / Yes		*Delete all of the Programs created in **Program Edit***

Service				
Reset	Reset / **Cancel**			*Reset fixture*
C Offset	Red		0 - 255	*Enter maximum value for each color. Values are saved as custom calibration settings that are unaffected by power off/on cycles. Custom values are deleted if Factory defaults are loaded*
	Green		0 – 255	
	Blue		0 – 255	
	White		0 - 255	
Default	**No**/Yes			*Return all settings to factory default values*
Info				
Time	Reset		XXX hours	*View resettable power-on hours counter*
	Total		XXX hours	*View total (non-resettable) power-on hours counter*
	Clear		Clear / Cancel	*Clear resettable power-on hours counter*
Temp	LED	Actual	XXX C / XXX F	*View current LED board temperature*
		Max	XXX C / XXX F	*View resettable maximum LED temperature log*
		Reset Max	Clear / Cancel	*Clear resettable maximum LED temperature log*
	Driver	Actual	XXX C / XXX F	*View current driver board temperature*
		Max	XXX C / XXX F	*View resettable maximum driver temperature log*
		Reset Max	Clear / Cancel	*Clear resettable maximum driver temperature log*
Firmw	X.X.X.X			*View currently installed firmware version*
Serial	XXXXXXXXXX			*View fixture's serial number*

Control Menus

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

10. DMX control modes overview

The following DMX control modes are available in the FP7:

DMX Mode 1: Standard

Standard Mode provides a virtual color wheel effect (color presets with rotation effects) and RGBW color mixing.

A separate Shutter channel provides strobe and ramp-up/down effects, and a Master dimmer channel controls overall intensity.

Color temperature control is available on a separate CTO channel.

Mode 1 Standard	
1	Color wheel
2	Red
3	Green
4	Blue
5	White
6	Shutter
7	Master dimmer
8	CTO

DMX Mode 2: 6-Channel

6-Channel Mode provides a Master dimmer and RGBW color mixing.

A separate Shutter channel provides strobe and ramp-up/down effects.

Mode 2 6-Channel	
1	Master dimmer
2	Red
3	Green
4	Blue
5	White
6	Shutter

DMX Mode 3: 5-Channel

5-Channel Mode provides a Master dimmer and RGBW color mixing.

Mode 3 5-Channel	
1	Master dimmer
2	Red
3	Green
4	Blue
5	White

DMX Mode 4: RGBW

RGBW Mode provides RGBW color mixing.

Mode 4 RGBW	
1	Red
2	Green
3	Blue
4	White

DMX Mode 5: RGB

RGB Mode provides RGB color mixing.

Mode 5 RGB	
1	Red
2	Green
3	Blue

DMX Mode 6: Easy

Easy Mode provides a virtual color wheel effect and a Master dimmer.

Mode 6 Easy	
1	Color wheel
2	Master dimmer

11. DMX control channel layout tables

DMX Mode 1: Standard

8 DMX Channels

Channel		Command	DMX range	Percent	Default DMX	Fade
1	**Color wheel**	No function: RGBW color mixing	0-5	0-2.0%	0	Snap
		LEE 790 - Moroccan Pink	6-10	2.4-3.9%		
		LEE 157 - Pink	11-15	4.3-5.9%		
		LEE 332 - Special Rose Pink	16-20	6.3-7.8%		
		LEE 328 - Follies Pink	21-25	8.2-9.8%		
		LEE 345 - Fuchsia Pink	26-30	10.2-11.8%		
		LEE 194 - Surprise Pink	31-35	12.2-13.7%		
		LEE 181 - Congo Blue	36-40	14.1-15.7%		
		LEE 071 - Tokyo Blue	41-45	16.1-17.6%		
		LEE 120 - Deep Blue	46-50	18.0-19.6%		
		LEE 079 - Just Blue	51-55	20.0-21.6%		
		LEE 132 - Medium Blue	56-60	22.0-23.5%		
		LEE 200 - Double CT Blue	61-65	23.9-25.5%		
		LEE 161 - Slate Blue	66-70	25.9-27.5%		
		LEE 201 - Full CT Blue	71-75	27.8-29.4%		
		LEE 202 - Half CT Blue	76-80	29.8-31.4%		
		LEE 117 - Steel Blue	81-85	31.8-33.3%		
		LEE 353 - Lighter Blue	86-90	33.7-35.3%		
		LEE 118 - Light Blue	91-95	35.7-37.3%		
		LEE 116 - Medium Blue Green	96-100	37.6-39.2%		
		LEE 124 - Dark Green	101-105	39.6-41.2%		
		LEE 139 - Primary Green	106-110	41.6-43.1%		
		LEE 089 - Moss Green	111-115	43.5-45.1%		
		LEE 122 - Fern Green	116-120	45.5-47.1%		
		LEE 738 - JAS Green	121-125	47.5-49.0%		
		LEE 088 - Lime Green	126-130	49.4-51.0%		
		LEE 100 - Spring Yellow	131-135	51.4-52.9%		
		LEE 104 - Deep Amber	136-140	53.3-54.9%		
		LEE 179 - Chrome Orange	141-145	55.3-56.9%		
		LEE 105 - Orange	146-150	57.3-58.8%		
		LEE 021 - Gold Amber	151-155	59.2-60.8%		
		LEE 778 - Millennium Gold	156-160	61.2-62.7%		
		LEE 135 - Deep Golden Amber	161-165	63.1-64.7%		
		LEE 164 - Flame Red	166-170	65.1-66.7%		
		Color wheel rotation forwards fast-slow	171-185	67.1-72.5%		
		Color wheel stops at current color	186-190	72.9-74.5%		
		Color wheel rotation backwards fast-slow	191-205	74.9-80.4%		
		Color wheel stops at current color	206-210	80.8-82.4%		
		Random colors fast-slow	211-225	82.7-88.2%		
		Tungsten simulation	226-230	88.6-90.2%		
		Warm white - 3200K	231-235	90.6-92.2%		
		Neutral white - 4200K	236-240	92.5-94.1%		
		Cool white - 5600K	241-245	94.5-96.1%		
		Cool white - 7200K	246-250	96.5-98.0%		
		Cool white - 8000K	251-255	98.4-100%		

2	**Red**	Intensity 0-100%	0-255	0-100%	0	Fade
3	**Green**	Intensity 0-100%	0-255	0-100%	0	Fade
4	**Blue**	Intensity 0-100%	0-255	0-100%	0	Fade
5	**White**	Intensity 0-100%	0-255	0-100%	0	Fade
6	**Shutter**	Shutter closed	0-15	0-5.9%	0	Snap
		Random strobe	16-47	6.3-18.4%		
		Ramp up slow-fast	48-79	18.8-31.0%		
		Ramp down slow-fast	80-111	31.4-43.5%		
		Ramp up-down slow-fast	112-143	43.9-56.1%		
		Strobe pause 5s – 1s (slow – fast)	144-199	56.5-78.0%		
		Strobe 1Hz – 20 Hz (slow – fast)	200-239	78.4-93.7%		
		Shutter open	240-255	94.1-100%		
7	**Dimmer**	Master intensity 0-100%	0-255	0-100%	0	Fade
8	**CTO**	Color temperature cool-warm	0-255	0-100%	0	Fade

DMX Mode 2: 6-Channel

17 DMX Channels

Channel		Command	DMX range	Percent	Default DMX	Fade
1	**Dimmer**	Master intensity 0-100%	0-255	0-100%	0	Fade
2	**Red**	Intensity 0-100%	0-255	0-100%	0	Fade
3	**Green**	Intensity 0-100%	0-255	0-100%	0	Fade
4	**Blue**	Intensity 0-100%	0-255	0-100%	0	Fade
5	**White**	Intensity 0-100%	0-255	0-100%	0	Fade
6	**Shutter**	Shutter closed	0-15	0-5.9%	0	Snap
		Random strobe	16-47	6.3-18.4%		
		Ramp up slow-fast	48-79	18.8-31.0%		
		Ramp down slow-fast	80-111	31.4-43.5%		
		Ramp up-down slow-fast	112-143	43.9-56.1%		
		Strobe pause 5s – 1s (slow – fast)	144-199	56.5-78.0%		
		Strobe 1Hz – 20 Hz (slow – fast)	200-239	78.4-93.7%		
		Shutter open	240-255	94.1-100%		

DMX Mode 3: 5-Channel

5 DMX Channels

Channel		Command	DMX range	Percent	Default DMX	Fade
1	**Dimmer**	Master intensity 0-100%	0-255	0-100%	0	Fade
2	**Red**	Intensity 0-100%	0-255	0-100%	0	Fade
3	**Green**	Intensity 0-100%	0-255	0-100%	0	Fade
4	**Blue**	Intensity 0-100%	0-255	0-100%	0	Fade
5	**White**	Intensity 0-100%	0-255	0-100%	0	Fade

DMX Mode 4: RGBW

4 DMX Channels

Channel		Command	DMX range	Percent	Default DMX	Fade
1	**Red**	Intensity 0-100%	0-255	0-100%	0	Fade
2	**Green**	Intensity 0-100%	0-255	0-100%	0	Fade
3	**Blue**	Intensity 0-100%	0-255	0-100%	0	Fade
4	**White**	Intensity 0-100%	0-255	0-100%	0	Fade

DMX Mode 5: RGB

3 DMX Channels

Channel		Command	DMX range	Percent	Default DMX	Fade
1	**Red**	Intensity 0-100%	0-255	0-100%	0	Fade
2	**Green**	Intensity 0-100%	0-255	0-100%	0	Fade
3	**Blue**	Intensity 0-100%	0-255	0-100%	0	Fade

DMX Mode 6: Easy

2 DMX Channels

Channel		Command	DMX range	Percent	Default DMX	Fade
1	**Color wheel**	No function: RGBW color mixing	0-5	0-2.0%	0	Snap
		LEE 790 - Moroccan Pink	6-10	2.4-3.9%		
		LEE 157 - Pink	11-15	4.3-5.9%		
		LEE 332 - Special Rose Pink	16-20	6.3-7.8%		
		LEE 328 - Follies Pink	21-25	8.2-9.8%		
		LEE 345 - Fuchsia Pink	26-30	10.2-11.8%		
		LEE 194 - Surprise Pink	31-35	12.2-13.7%		
		LEE 181 - Congo Blue	36-40	14.1-15.7%		
		LEE 071 - Tokyo Blue	41-45	16.1-17.6%		
		LEE 120 - Deep Blue	46-50	18.0-19.6%		
		LEE 079 - Just Blue	51-55	20.0-21.6%		
		LEE 132 - Medium Blue	56-60	22.0-23.5%		
		LEE 200 - Double CT Blue	61-65	23.9-25.5%		
		LEE 161 - Slate Blue	66-70	25.9-27.5%		
		LEE 201 - Full CT Blue	71-75	27.8-29.4%		
		LEE 202 - Half CT Blue	76-80	29.8-31.4%		
		LEE 117 - Steel Blue	81-85	31.8-33.3%		
		LEE 353 - Lighter Blue	86-90	33.7-35.3%		
		LEE 118 - Light Blue	91-95	35.7-37.3%		
		LEE 116 - Medium Blue Green	96-100	37.6-39.2%		
		LEE 124 - Dark Green	101-105	39.6-41.2%		
		LEE 139 - Primary Green	106-110	41.6-43.1%		
		LEE 089 - Moss Green	111-115	43.5-45.1%		
		LEE 122 - Fern Green	116-120	45.5-47.1%		
		LEE 738 - JAS Green	121-125	47.5-49.0%		
		LEE 088 - Lime Green	126-130	49.4-51.0%		
		LEE 100 - Spring Yellow	131-135	51.4-52.9%		
		LEE 104 - Deep Amber	136-140	53.3-54.9%		
		LEE 179 - Chrome Orange	141-145	55.3-56.9%		
		LEE 105 - Orange	146-150	57.3-58.8%		
		LEE 021 - Gold Amber	151-155	59.2-60.8%		
		LEE 778 - Millennium Gold	156-160	61.2-62.7%		
		LEE 135 - Deep Golden Amber	161-165	63.1-64.7%		
		LEE 164 - Flame Red	166-170	65.1-66.7%		
		Color wheel rotation forwards fast-slow	171-185	67.1-72.5%		
		Color wheel stops at current color	186-190	72.9-74.5%		
		Color wheel rotation backwards fast-slow	191-205	74.9-80.4%		
		Color wheel stops at current color	206-210	80.8-82.4%		
		Random colors fast-slow	211-225	82.7-88.2%		
		Tungsten simulation	226-230	88.6-90.2%		
		Warm white - 3200K	231-235	90.6-92.2%		
		Neutral white - 4200K	236-240	92.5-94.1%		
		Cool white - 5600K	241-245	94.5-96.1%		
		Cool white - 7200K	246-250	96.5-98.0%		
		Cool white - 8000K	251-255	98.4-100%		
2	**Dimmer**	Intensity 0 – 100%	0-255	0-100%	0	Fade

12. Technical specifications

Light source

LED type: 7 x 30 watt RGBW
LED lifetime: 20.000 hours
Base color temperature: 7500 K
CRI (Ra): 77
TLCI: 57
TM30-15: 97/72
Luminous flux: 9500 lumens

Optics

ConsistentColor ™ optics
Beam angle: 6°

Effects

Color mixing: RGBW continuous, 8 or 16-bit
SteadyColor™ dimming
Continuous CTO
Virtual color wheel with 39 colors including six whites (2700 K, 3200 K, 4200 K, 5600 K, 7200 K, 8000 K)
High resolution dimmer: 0-100% continuous
Strobe: Variable speed, max. 20 Hz
Pre-programmed regular and random strobe and pulse effects

Control

Control system: USITT DMX512
Onboard interface: Control panel with backlit LCD graphical display

Installation

Orientation: Any
Ingress protection rating: IP65
Location: Indoors or temporary outdoor location.
Floorstand / mounting bracket for standing installation, bolting to surface or bolting to rigging clamp
Eyelet for attaching safety cable

Connections

AC mains power in and out (thru): IP65- rated Neutrik powerCON TRUE1 TOP
DMX data in and out (thru): IP65- rated 5-pin XLR

Electrical

AC power: 100-240 V, 50/60 Hz
Maximum power consumption @230 V: 200 W

Thermal

Convection cooling
Thermal protection system
Maximum ambient temperature: 40° C / 104° F
Minimum ambient temperature: -10° C / 14° F

Product color

Black (standard)

Included items

Floorstand / Installation Bracket
Power cable (depending on region):
- US power cable: 16 A, 14 AWG, UL listed, E304117, SJT, 4.9 ft.
- EU power cable: 16 A, 1.5mm², H07RN-F, 1.5 m

Shipping options

Single product: Cardboard box
Tour packs are available: please ask your GLP supplier for details

Dimensions and weight

Depth: 175 mm / 6.9 ins.
Width: 254 mm / 10.0 ins.
Height: 210 mm / 8.3 ins.
Height including bracket: 287 mm / 11.3 ins.
Weight: 7.7 kg / 17.0 lbs.
Minimum center-to-center distance: 340 mm / 13.4 ins.

13. Dimensions