

Quick Start and Safety Manual

FUSION
by GLP

Exo Hybrid 40



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GLP® Fusion Exo Hybrid 40 Quick Start and Safety Manual

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1. Safety

Key to symbols

The following symbols are used in this Guide:



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.



Important Information for correct use of the product



General safety information

Read this manual carefully before installing, using or servicing the GLP Fusion Exo Hybrid 40 lighting fixture.

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

The user documentation for The Fusion Exo Hybrid 40 lighting fixture consists of:

- The **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.
- The **User Manual**, available for download from www.glp.de. The User Manual explains features and control options of fixtures.
- The **DMX Channel Index**, available for download from www.glp.de. The Channel Index is a separate guide to the DMX control channel layout and DMX commands available.

All documents are available for download from www.glp.de.

The Fusion Exo Hybrid 40 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 or in the User Manual.

- Respect all warnings and directions given in the fixture's user documentation and on the fixture. Read the user documentation and familiarize yourself with the safety precautions it contains before installing or using 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 version of this manual. Check the fixture software version indicated on page 2 of this manual and then use the fixture's control panel to check the version installed in the fixture. If the versions are not the same, this manual may still cover the fixture, because software updates do not always affect the way you use 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 manual on the GLP website if necessary.
- Make all user documentation – this Quick Start and Safety Manual as well as the User Manual – available to all installers and operators. 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).
- The fixture is not suitable for household use or for use in any location where unattended children have access to it.
- Use the fixture only as directed in its user documentation. Observe all markings in this manual and on the fixture.
- Refer any repairs and service operations that are not described in this manual to a technician authorized by GLP.
- The light source in this fixture must not be changed by the end user.
- Read and follow the user documentation for all additional equipment.



Electrical safety

- The fixture is IP65-rated. It may be installed in outdoor locations temporarily for entertainment lighting purposes. It is not designed to be installed permanently outdoors or in any environment where there is a presence of salt or other corrosive substance. Do not submerge the fixture or any part of it. Do not expose any part of the fixture to high-pressure water or air jets.
 - Ensure that cables arrive at connectors from below. Ensure that water cannot pool around connectors.
 - 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 fixture is electrically connected to ground (earth).
 - Disconnect the fixture from AC mains power before carrying out any installation or maintenance work and when the fixture is not in use.
 - Disconnect the fixture from power immediately if any seal, cover, cable, connector or other component is damaged, defective, deformed or showing signs of overheating. Do not reapply power until the fixture has been repaired and made safe by a technician authorized by GLP.
 - Check that all power distribution equipment, cables and connectors are in perfect condition, rated for the electrical requirements of all connected devices, suitable for their application and suitable for the installation environment.
 - Use only Neutrik PowerCON TRUE1 TOP-type cable connectors for AC mains power input at the fixture's Mains IN connector and for relaying AC mains power from one fixture's Mains OUT (Thru) connector to another fixture's Mains IN connector.
 - Use minimum 14 AWG or 1.5 mm² 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 for indoor use in a dry or wet environment or type H07RN-F or equivalent for outdoor use or use in a location where the temperature may fall below 5° C / 41° F.
 - Do not connect devices to power in a chain 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 cord (cable) is rated as follows:
 - US power cord: 16 A, 14 AWG, UL-listed, E304117, SJT, length 4.9 ft.
 - EU power cable: 16 A, 1.5 mm², H05VVF-F, length 1.5 m. This cable is suitable for indoor use in dry or wet locations. If you use the fixture in an outdoor location or in any location where the ambient temperature can fall below 5° C / 41° F, replace the power cable with a 16 A-rated, 3 x 1.5 mm² H07RN-F type cable.
- Do not connect more than two (2) Fusion Exo Hybrid 40 fixtures linked together in a chain to power at 100-120 V, 60 Hz.

Do not connect more than five (5) Fusion Exo Hybrid 40 fixtures linked together in a chain to power at 200-240 V, 50 Hz.

- The voltage and frequency at the Mains OUT socket is the same as the voltage and frequency applied to the Mains IN socket. Only connect devices to the Mains OUT socket that accept this voltage and frequency.



Fire safety and protection from burns

- Do not operate the fixture if the ambient temperature (T_a) exceeds 45°C (113°F).
- The surface of the fixture can become hot during operation. Avoid contact by persons and materials. Do not install the fixture in a location where there is a risk of accidental contact. Allow the fixture to cool for at least 20 minutes before handling
- Keep the fixture well away from flammable materials.
- Keep all combustible materials (e.g. fabric, wood, paper) at least 0.2 m (8 in.) away from the fixture.
- Ensure that there is free and unobstructed airflow around the fixture.
- Do not illuminate surfaces within 1 m / 3.3 ft. of the fixture. The light output from the fixture is powerful enough to cause burns or fire in illuminated objects at very close range.
- Do not place any optical components other than Fusion Exo Hybrid 40 accessories from GLP onto the front of the fixture.
- Do not stick filters, masks or other materials onto the fixture unless they are supplied or approved by GLP. Do not block the light output in any way. The front surface becomes hot during operation and can melt or ignite objects that are in contact with the surface. Ensure that the front surface is clean and unobstructed at all times in order to prevent a fire hazard and prevent damage to the fixture.
- The fixture's optical components can focus the sun's rays, creating a risk of fire and damage. Do not expose the front of the fixture to sunlight or any other intense light source, even from an angle.



Eye safety

- The Fusion Exo Hybrid 40 is classified as a Risk Group 2 lighting fixture according to EN 62471 at a distance of 1 m (3.3 ft.). Possibly hazardous radiation emitted. Do not stare into the light output from the fixture. May be harmful to the eyes.
- Do not look at the fixture's light output with optical instruments or any device that may concentrate the light output.

- Make sure that persons near to or working on the fixture are not looking directly into the light output when the fixture lights up suddenly. This can happen when power is applied, when the fixture 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 fixture.



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, 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 fixture is not portable when installed.
- Ensure that the supporting structure and installation hardware used can hold at least ten times the weight of the load that they support.
- Fasten the fixture to a structure or surface only as directed in this manual and only with hardware that is specifically designed and rated for its purpose. Do not use a safety cable as the primary means of support. Check that installation 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 fixture is installed in a location where it could cause injury or damage if it falls, install as directed in this manual a safety cable or similar secondary attachment that will hold the fixture 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.

- If the fixture is installed in a location where it may be exposed to forces such as wind pressure, vibration or movement, make sure that the installation can withstand these forces. Monitor weather forecasts constantly. Take down the installation immediately if there is any risk of weather conditions that could destabilize the installation.
- Check that all covers and items of rigging hardware are secure before using the fixture. Do not operate the fixture 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 fixture.
- If the fixture becomes damaged, stop using it immediately and disconnect it from power. Do not attempt to use a fixture that is obviously damaged.
- Do not modify the fixture in any way not described in its user documentation.
- Install genuine GLP parts only.

Waste disposal

As a consumer, you are required to return end-of-life devices to the manufacturer or to a designated collection point for the disposal of electrical and electronic equipment in order to ensure environmentally-friendly disposal. Observe the current regulations in your location. This product and its packaging have been manufactured using high-quality materials and components that can be recycled and reused. This reduces waste and protects the environment. Dispose of the packaging in an environmentally-friendly manner at a designated collection point.



This product is labelled in accordance with the EU Waste Electrical and Electronic Equipment Directive (WEEE). It contains a non-removable rechargeable battery. Do not dispose of the product in ordinary household waste.



Warning! Incorrect disposal of batteries creates a hazard to the environment and to health!

Batteries and rechargeable batteries must never be disposed of with household waste. They contain pollutants such as heavy metals which can be harmful to the environment and human health if disposed of improperly. Valuable raw materials such as iron, zinc, manganese or nickel can be recovered from battery waste. As a consumer, you are legally obliged to hand in used batteries and rechargeable batteries for environmentally-friendly disposal at retailers or appropriate collection points in accordance with national or local regulations. The return service is free of charge. You can obtain addresses of suitable collection points from your city council or local authority.

Do not litter the environment by leaving batteries (or electrical and electronic devices that contain them) lying around carelessly. The separate collection and recycling of batteries and rechargeable batteries makes an important contribution to relieving the impact on the environment and avoiding health risks.

2. Avoiding damage to the fixture



Important! Follow the directions in this section carefully, or the fixture may suffer damage that is not covered by the product warranty.

General precautions

- Do not drop the fixture or expose it to mechanical stress.
- Protect the LCD display and control panel from shocks, or they may suffer damage that is not covered by the product warranty.
- Clean optical components only as directed in the fixture's user documentation. Oils, solvents, and other chemicals commonly used for cleaning can damage the lens coatings and surfaces.
- Use only original spare parts. Do not make any structural modifications to the fixture, or you will void the product warranty.
- Create loose cable bends only. Do not subject connectors to bending forces or allow connectors to bear the weight of long lengths of cable.

Avoiding damage from light sources and heat

- Do not point the front of the fixture towards the sun or other strong light sources. Strong light can cause internal damage to the fixture, melting components or starting an internal fire within seconds.

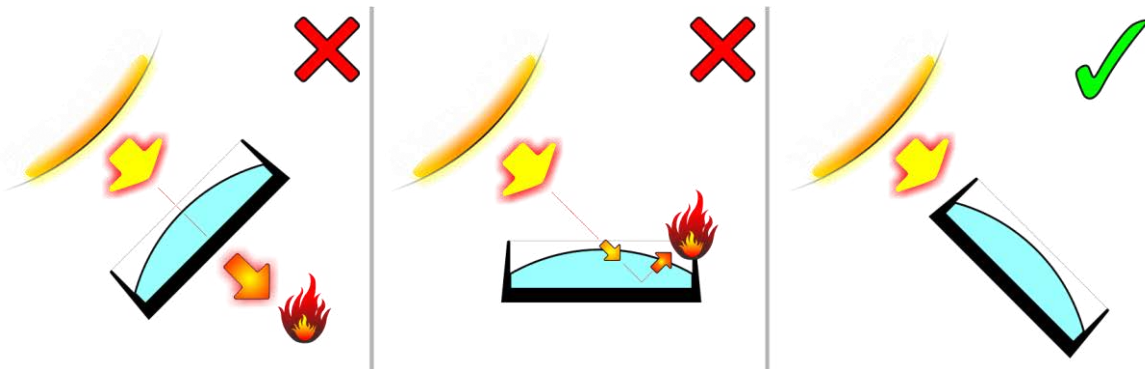


Figure 1. Avoiding damage from light sources

- 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 the fixture to sunlight or any other strong light source.
 - In outdoor applications during daylight, make sure that the front face of the fixture is shielded or points away from the sun at all times, even when the fixture is not in use.

- Do not aim other high-powered lighting fixtures directly at the fixture.
- Do not operate the fixture in ambient temperatures outside the range -10° C (14°F) to 45° C (113°F).
- Allow free airflow around the fixture.

Avoiding damage from dust and airborne particles

- Carry out regular visual inspections of the fixture to make sure that there is no accumulation of dirt, especially on the front of the fixture and around air vents.
- If cleaning is necessary, follow the instructions in 'Service' on page 24.

Transportation and storage

- Transport the fixture in its original packaging to protect it from damage caused by shocks during transportation.
- Store the fixture in a dry location when not in use.



Release the fixture's pan and tilt locks before putting the fixture in its flightcase or other protective container for transportation. Before closing the flightcase, check that the protective liner in the flightcase will hold the head and protect it from shocks.

3. Outdoor usage

Although Fusion Exo Hybrid 40 fixtures have an IP rating for safe outdoor usage, the fixtures are designed for **temporary outdoor use only**.

For important information on the outdoor use of IP-rated GLP fixtures, please see the document "Safety and warranty information for using GLP lighting fixtures in outdoor environments" available at the GLP website www.glp.de.

The IP rating system

Fusion Exo Hybrid 40 fixtures are rated **IP65**. The first figure **6** gives the level of protection against dust and airborne particles. The second figure **5** gives the level of protection against water and humidity.

- First figure 6: Dust-tight – No ingress of dust, complete protection against contact.
- Second figure 5: Water jets – Protection against water projected from a 6.3mm (0.25 in.) nozzle from any direction.



Important! Do not install fixtures in a location where water can pool around the fixture. Do not allow the fixture to become submerged in any way.

Storage

When dismantling an installation, make sure fixtures are dry and clean before they are stored. Residual moisture or wetness on the fixture can lead to early corrosion or mold in flight cases or packaging.

Suitable environment



Fusion Exo Hybrid 40 fixtures are designed for flexible installation and removal and are suitable for **temporary outdoor applications only**. Users must provide additional protection against dust, water, temperature, UV radiation etc. and carry out regular maintenance if used in permanent outdoor installation.

Temperature fluctuation

High humidity and large temperature changes can lead to condensation inside fixtures. If a fixture is subject to a large change in temperature or humidity, allow 30 minutes for the fixture to acclimatize before it is powered on. This allows moisture inside the fixture to escape via the vent valve. The time required depends on the ambient conditions and you may need to allow more time.

Connectors and cables

When the fixture is installed outdoors, use power and data connectors and cable that are rated IP65 minimum for connections to the fixture. Use cable connectors which match the connectors fitted on the fixture. Bear in mind that not all combinations of connectors maintain an IP rating. Ensure that connectors and

cables are assembled following the manufacturer's instructions to maintain the IP65 rating for the complete assembly.

Make sure that all connections are properly plugged and that protective caps are in place on unused connectors. Use dielectric grease if necessary to ensure sealing.

Arrange cables with a drip loop to prevent water from flowing down cables into connectors.



4. Fusion Exo Hybrid 40 overview



Figure 2. Fusion Exo Hybrid 40 overview

- A - Head**
- B - Tilt Lock**
- C - Pan Lock**
- D - Control panel with backlit display and NFC sensor**
- E - AC mains power IN (powerCON TRUE1 TOP)**
- F - DMX IN (5-pin XLR)**
- G - etherCON port A ethernet connection, fail-safe**
- H - AC mains power THRU (powerCON TRUE1 TOP)**
- I - DMX THRU/OUT (5-pin XLR)**
- J - etherCON port B ethernet connection, fail-safe**

5. Features

The Fusion Exo Hybrid 40 from GLP can be used temporarily in outdoor locations for entertainment purposes and in dry locations in permanent and temporary installations. Fixtures can be placed on or fastened to a level surface, or they can be suspended from a suitable structure as directed in this manual.

Power and data can be daisy-chained for ease of installation, and multiple fixtures can be lined up to give an unbroken line of pixels.

User Manual

This Quick Start and Installation Manual gives a very basic overview of control options and functions. See The Fusion Exo Hybrid 40 User Manual available for download from www.glp.de for full details of control, internal functions, etc.

Pan and Tilt lock



Important! Before transporting the fixture in its original packaging or in a flight case, release the pan and tilt locks and make sure that the head is supported to prevent it from moving.

The Fusion Exo Hybrid 40 has pan and tilt locks that can be used to stop the head moving while you are carrying or servicing the fixture.

You can lock the head in either vertical or horizontal position.

See Figure 3. The lock buttons are located on the side and bottom of the yoke. To engage the locks:

1. Check that power to the fixture is shut down.
2. Move the head into either vertical (as shown) or horizontal position, with the yoke lined up with the base.
3. Slide the tilt lock button downwards and slide the pan lock button towards the center of the fixture. You may need to move the head and yoke around slightly to get the locks to engage.
4. To unlock, slide the tilt lock upwards and slide the pan lock away from the center of the fixture.
5. Ensure locks are released before reapplying power to the fixture and before transporting it.



Figure 3. Pan / Tilt lock buttons

6. Installation



Warning! Read 'Safety' starting on page 5 for important safety information that you must understand before you install or operate the fixture. Install Fusion Exo Hybrid 40 fixtures only as described in this chapter, or you may create an installation that is unsafe.

It is the installer's responsibility to provide a stable, secure supporting structure that is suitable for the environment and application and that meets all applicable codes and legal requirements. Note the requirement to secure lighting fixtures with safety cables in temporary installations.

Mounting options

A Fusion Exo Hybrid 40 fixture may be installed in one of the following ways:

1. Standing horizontally on a horizontal surface.
2. Fastened to a rigging truss or similar structure at any angle using the supplied brackets and two or more rigging clamps (optional accessories).

Securing the fixture with a safety cable

If a fixture can cause injury or damage if it falls you must secure it with at least one secondary attachment such as a safety cable that will hold it if the primary means of attachment fails. The safety cable must be approved for the weight that it secures. In multiple installations, each fixture must have its own safety cable.

To secure a Fusion Exo Hybrid 40 fixture with a safety cable:

1. Obtain a safety cable that is approved for the weight of the fixture and rigging hardware that it will secure.
2. Loop the cable around a secure anchoring point such as a truss chord or fixed structure so that it will catch the fixture if a rigging clamp fails. Take up as much slack as possible in the safety cable (by looping it more than once around the truss chord, for example).
3. See Figure 4 on the previous page. Fasten the safety cable to one of the arrowed attachment points on the base of the unit. *The handles may also be used as a safety attachment point.*



Figure 4. Safety cable attachment

4. If there is any danger that the fixture may swing dangerously from the safety cable if a primary attachment fails, add a second safety cable as described above, fastening it to the second safety cable eyelet.
5. Check that the fixture will now be caught safely by the safety cable if a primary attachment fails.

Standing the fixture on a horizontal surface

To place a Fusion Exo Hybrid 40 fixture standing horizontally on a stable horizontal surface:

1. Stand the fixture on the small feet in the fixture's base as shown in Figure 5. Make sure that it is safe and secure, and that it will not present a danger of tripping or falling.

If there is any danger of injury or damage if the fixture falls from the surface, secure it with a safety cable as described in 'Securing the fixture with a safety cable' on page 17.



Figure 5. Fusion Exo Hybrid placed on a horizontal surface

Installing on a rigging truss or similar structure

You can suspend a Fusion Exo Hybrid 40 fixture from a rigging truss or pipe using the two omega brackets supplied with the fixture and rigging clamps that are available from GLP as optional accessories.

If you are going to install the fixture hanging vertically downwards from a horizontal rigging truss or pipe, you can fasten it to the truss using G-clamps. If you are going to install the fixture in any other orientation or if the rigging truss is not horizontal, you must use half-coupler-type clamps that completely surround the truss chord or pipe.

Rigging clamps must be approved for the weight that they will support.

To install the Fusion Exo Hybrid 40 on a rigging truss or pipe:

1. Check that the truss or pipe is secure and can safely hold ten times the weight that it will support.
2. See Figure 6. Bolt a rigging clamp **B** securely to each of the two rigging (omega) brackets **A** that are supplied with the fixture using high-tensile steel screws or

bolts and self-locking nuts with washers passed through the central holes in the rigging brackets.

3. Fasten the two brackets **A** to the bottom of the base using two quarter-turn fasteners **C** per bracket. Turn each fastener a full 90° to lock it. The brackets may be fixed either side to side or front to back.
4. Hold the fixture up to the truss and use the rigging clamps to fasten the fixture securely onto the truss chord.
5. If there is any risk that the fixture will cause injury or damage if it falls, secure it with a safety cable that is approved for the weight of the fixture, rigging hardware, cables etc. as described in 'Securing the fixture with a safety cable' on page 17.

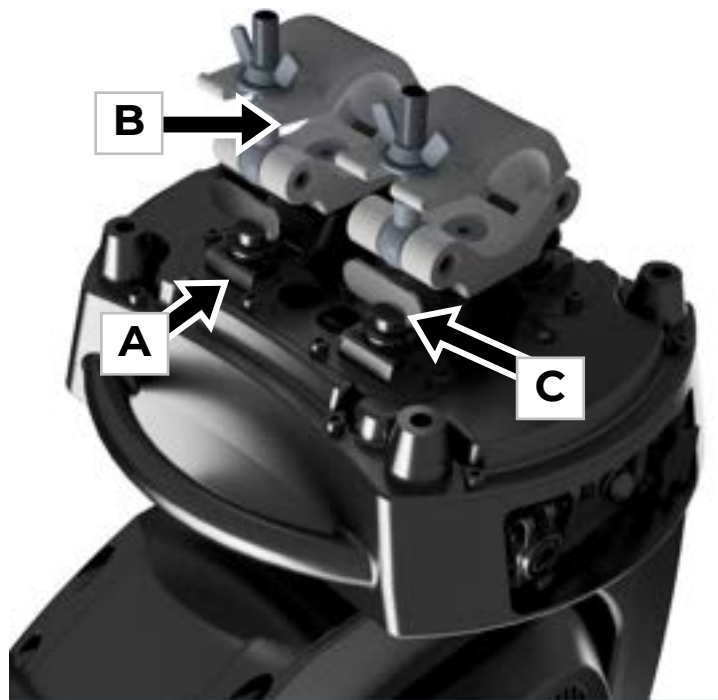


Figure 6. Rigging brackets

7. AC mains power



Warning! Read 'Safety' starting on page 5 for important safety information that you must understand before you install or operate the fixture.

Check that all cables and connectors are suitable for the installation environment and application (see recommendations in 'Avoiding damage to the fixture' on page 11).

Cables used for power input and for relaying power to other fixtures must meet the requirements listed under 'Electrical safety' on page 7.

Power input cable

The Fusion Exo Hybrid 40 is supplied with a power cord (power cable) with a powerCON TRUE1 TOP connector for AC mains power input.

Connecting 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 fixture's internal auto-sensing 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 Exo Hybrid 40 does not have a power ON/OFF switch. Power is applied to the fixture as soon as the power cable becomes live.

The Fusion Exo Hybrid 40 has a 3-conductor powerCON TRUE1 TOP Mains IN power input socket that accepts AC power from a TRUE1 TOP female cable connector. Although TRUE1 connectors support hot-plugging, it is still good practice to shut down power to power cables before connecting them to fixtures.

To connect the fixture to power:

1. If possible, shut down power to the power input cable.
2. Note the position of the keys and keyways on the TRUE1 TOP power cable connector and Mains IN socket and align them with each other carefully. Insert the cable connector into the socket and twist clockwise to lock. Do not use force. If the connector feels excessively stiff, remove it and check that it is lined up correctly.
3. Before applying power to the power cable, check that the pan/tilt locks are released, that nobody is looking directly into the front of the fixture and that there is no risk of collision if the head moves without warning.


To disconnect the fixture from power, pull the latch on the cable connector outwards to release it, then twist the connector counterclockwise and pull to remove it from the socket.

Installing power connectors

If you need to replace the cord cap / power plug on the supplied power cord / power input cable, 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 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	Green / Yellow

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! Do not connect more than two (2) Fusion Exo Hybrid 40 fixtures in total to power in one chain at 100-120 V, 60 Hz. Do not connect more than four (4) Fusion Exo Hybrid 40 fixtures in total to power in one chain at 200-240 V, 50 Hz.

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.

To connect fixtures to power in a chain:

1. Obtain power relay cables that have male and female 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. Connect the power input cable to the Mains IN socket of the first fixture.
3. If you are operating the fixture on 100-120 V, 60 Hz AC mains power, you can connect one further fixture to the mains THRU socket (giving a maximum of 2 fixtures total connected together in a chain) using a power relay cable. Do not connect any devices to the Mains THRU socket of the second fixture.

If you are operating the fixture on 200-240 V, 50 Hz AC mains power, you can connect up to three further fixtures to the mains THRU socket (giving a maximum of 4 fixtures total connected together in a chain) using power relay cables. Do not connect any devices to the Mains THRU socket of the fourth fixture.

8. Connecting to control system

Check that all cables and connectors are suitable for the installation environment and application (see recommendations in 'Avoiding damage to the fixture' on page 11).

DMX512 control

The Fusion Exo Hybrid 40 supports the USITT DMX 512A control data signal protocol. Two 5-pin XLR connectors are provided for IN and THRU connections on a DMX data link using standard DMX protocol. Connectors use standard DMX pinout:

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

We recommend the use of digital 110 Ohm DMX cable with original Neutrik 5-pin TOP-type XLR connectors.

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

Art-Net and sACN control

The Fusion Exo Hybrid 40 supports Art-Net and sACN control over an ethernet network connected to either of the etherCON connectors. Fixtures may be connected to the network by individual cables back to an ethernet switch, or may be linked together in daisy-chain by cabling into the first etherCON connector then linking out to the next fixture from the second etherCON connector.

CRMX wireless control

The Fusion Exo Hybrid 40 supports wireless control using the LumenRadio CRMX protocol. No connection is necessary but the fixture must be paired to the CRMX transmitter, see the Fusion Exo Hybrid 40 User Manual for further information.

GLP iQ.Mesh wireless control

The Fusion Exo Hybrid 40 supports wireless control using the GLP iQ.Mesh protocol.

9. Starting and stopping operation



Warning! Before you apply power to the Fusion Exo Hybrid 40 or operate it after a blackout, make sure that nobody is looking directly into the front of the fixture and that there is sufficient clearance for the head to move safely.

The fixture's TRUE1 TOP mains power input connector supports hot-plugging, and connecting and disconnecting a live power cable is an option, especially if you need to shut down power urgently, but it is still good practice to shut down power to the AC mains power circuit before connecting and disconnecting power cables.

To start operation, check that nobody is looking into the front of the fixture and that there is no risk of collision of the head moves without warning, then apply power to the AC mains power circuit.

To stop operation, shut down power to the AC mains power circuit.

Transportation and storage

We strongly recommend that you transport the fixture either in a flightcase or in its original packaging to protect it from damage during transportation. The product warranty does not cover damage caused by abnormal shocks during transportation and handling. Release the pan/tilt locks and support the head during transport.

When the fixture is not installed, disconnect it from power and store it in a dry location.

10. Service



Warning! There are no user-serviceable parts inside the fixture. Any service operation that requires removal of a cover must be performed by a professional service technician with the tools, skills, and personal protective equipment to maintain high-powered lighting equipment safely and efficiently.

Servicing the fixture can expose the user to safety hazards. Read the 'Safety Precautions' section at the beginning of this manual carefully before carrying out any service or maintenance operation.

Regular cleaning is essential to get the best performance and service lifetime from your fixture. Accumulations of dust and dirt will cause loss of performance and overheating that may damage the fixture. Damage caused by lack of maintenance, improper service or improper cleaning is not covered by the product warranty.

The user can upload firmware (device software) using D3Prog or GLP iQ.Service. All other maintenance operations must be carried out by professionals or trained and qualified personnel. Please contact your GLP dealer for this.

Optical and mechanical components are subject to normal wear and tear during the product's lifetime. This may result in physical wear and gradual changes in optical characteristics such as color. The amount of wear depends strongly on the operating and environmental conditions. It is therefore impossible to give a general indication of when changes may occur and to what extent it may be necessary to replace optical or mechanical components.

Cleaning

Fusion Exo Hybrid 40 fixtures require occasional cleaning to prevent the buildup of dust, dirt, and residue from atmospheric effects. Failure to keep the fixture clean will significantly reduce light output and may cause heat buildup and damage that is not covered by the product warranty. Regular cleaning will ensure maximum performance and reliable operation.

The cleaning schedule depends on the operating environment. Check fixtures regularly for signs of dirt buildup.

You can clean the fixture using a soft cloth slightly dampened with a household or automotive glass cleaning product. Do not apply pressure to the lens or the control display, as you may scratch these surfaces.

Ensure the fans are kept clear of fluff and dust build up using a vacuum cleaner.

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 19-55
- GLP N. America: +1 818 767-8899
- GLP UK: +44 1392 690140

www.glp.de

FUSION_{by GLP} Exo Hybrid 40

- GLP Asia: +852 (3151) 7730
- GLP Nordic: +46 737 57 11 40

11. Technical specifications

Light Source

Type: White light LED
Light Source Count: 1
Light Source Power: 380W

Optical System

Output: Up to 11,000lm
Min. Zoom: 3.8°
Max. Zoom: 46°
Zoom Ratio: 1:12

Effects

Dimmer / Shutter: 0-100% electronic
Effect Wheel: rotating (wave pattern)
Frost: 2-way (soft/heavy)
Prism: 2-way (linear & circular)
Gobo Wheel 1: 8 rotating Gobos + open
Gobo Wheel 2: 11 static Gobos + open
Color mixing: CMY color mixing
Color Wheel: 12 fix color filters + 4 fix CTC filters
Zoom: motorized
Animation wheel: rotating (wave pattern)
Movement
Pan (Degrees): 540°
Tilt (Degrees): 270°

Control

DMX channels: 29
Control Modes: 1
Protocol:
DMX (USITT DMX512-A)
RDM (ANSI/ESTA E1.20)
Art-Net
sACN
CRMX (Lumenradio)
GLP iQ.Mesh
Setting and addressing:
control panel with backlit graphic display
4 Button Menu Navigation
DMX
RDM
High-Res Channels:
Dimming
Pan
Tilt
Gobo index/rotation

Dimming Curves:

- linear
- soft
- S-Curve

Fan Modes:

- regulated
- high
- medium
- low

Others: Stand Alone 1 captured Scene

Connectors

Signal connection:

- XLR 5-Pin
- etherCON
- In/Out

Power input:

- powerCON TRUE1
- In/Out

Electrical Specifications

Power input: 100 – 240 VAC / 50 – 60Hz

Power supply: auto-ranging electronic switch-mode

max. power (@230V):

463 W

Thermal Specifications

Cooling: combined convection and forced air

max. ambient temperature (Ta max.): 45 °C / 113 °F

min. ambient temperature (Ta min.): -10 °C / 14 °F

Total heat dissipation (calculated, +/-10%): 1,600 BTU/h

Mounting Options

Mounting: 2 pair of 1/4-turn locks

Orientation: any

Location:

- Indoor permanent
- Outdoor temporary

Construction

Housing Color: Black

Housing Materials:

- high-impact flame-retardant thermoplastic
- Aluminum
- Magnesium
- steel metal plates

Protection Rating: IP 65

Construction Features: base handles, Pan-Tilt-Lock-System

Shipping

Tourpack: 2-way

Dimensions & Weight

Height: 680 mm / 26.77 in

Height (head vertical): 569 mm / 22.4 in

Width (across yoke): 429 mm / 16.88 in

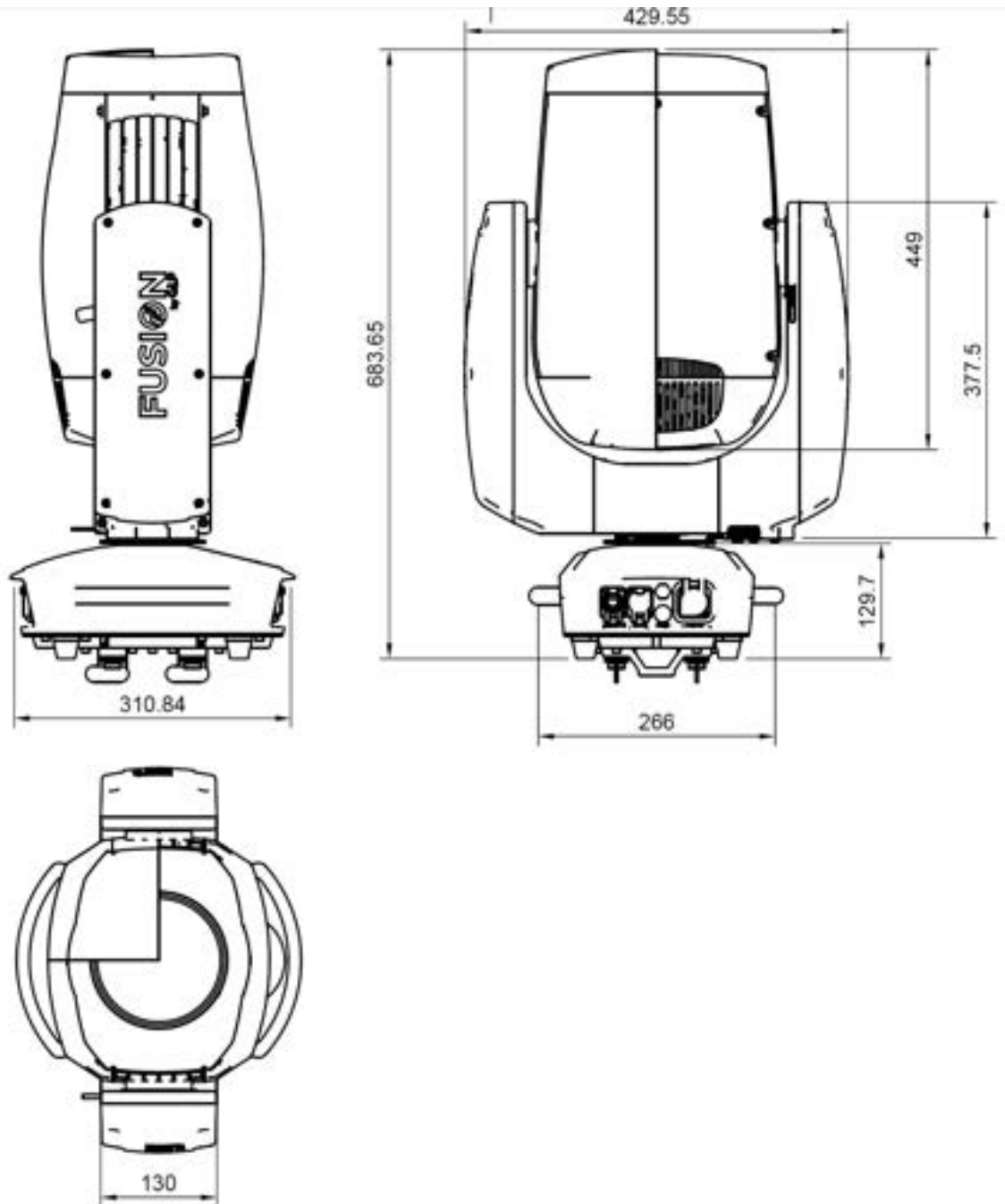
Length: 314 mm / 12.36 in

Weight: 25 kg / 55.11 lbs

12. Dimensions

Fusion Exo Hybrid 40

All dimensions are in millimeters



-GLP-