Quick Start and Safety Manual

Matrix Eye 2
Matrix Eye 4

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Fixture software version v0.2.4

Document revisions

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GLP® Matrix Eye Quick Start and Safety Manual

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1. Safety

Key to symbols

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

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

General safety information

Read this manual carefully before installing, operating or servicing the GLP Matrix Eye lighting fixture.

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

The user documentation for the Matrix Eye consists of:

- The Matrix Eye Quick Start and Safety Manual, supplied with Matrix Eye 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 Matrix Eye User Manual, available for download from www.glp.de. The User Manual explains features and control of Matrix Eye fixtures.
- The Matrix Eye 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 Matrix Eye 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 the fixture's user documentation.

- 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 fixture's 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 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 manual on the GLP website if necessary.
- Make all user documentation available to all installers and operators. Save user documentation 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).
- Use the fixture only as directed in this manual. Observe all markings in this manual and on the fixture.
- Refer all repairs and any service operation not described in this manual to a technician authorized by GLP.
- The LED light source in the Matrix Eye is not user-replaceable.
- Read and follow the user documentation for all additional equipment.

Electrical safety

- Do not allow the fixture to come into contact with water or moisture.
- 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 a TRUE1 compatible cable connector for AC mains power input at the fixture's MAINS IN connector. If the connector and its keys are not in perfect condition, install a new TRUE1 connector on the cable following the instructions available on the Neutrik website before connecting the cable to power. Send the old connector for waste recycling.
- Use a power cable that is minimum 14 AWG or 1.5 mm^2, 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.
- Disconnect the fixture from power before attempting to replace the main fuse. Replace the fuse with one of the specified type only (see the fixture's specifications at the end of this manual).
- Some internal components carry a high voltage while the device is connected to AC mains power. Some of these components can remain live for up to 30 minutes after the power supply has been disconnected.

Fire safety and protection from burns

- Do not operate the fixture if the ambient temperature is outside the range -10° C to 45° C (14° F - 113° F).
- The hottest parts of the fixture's surface can reach up to 85° C (185° F) 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 30 minutes before handling it.
- Keep the fixture well away from flammable materials.
- Do not illuminate surfaces within 1 m (39.4 in.) of the fixture. The light output from the fixture is powerful enough to cause burns or fire in illuminated objects at close range.
- Keep all combustible materials (e.g. fabric, wood, paper) at least 10 cm (4 in.) away from the fixture.
- Ensure that there is free and unobstructed airflow around the fixture. Provide a minimum clearance of 10 cm (4 in.) around fans and air vents.
- Do not place any optical components other than Matrix Eye accessories from GLP onto the front of the fixture.
- Do not stick filters, masks or other materials onto the fixture. 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 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 Matrix Eye is classified as a Risk Group 2 lighting fixture according to EN 62471. 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. All rigging hardware must be approved for the weight of the fixture.
- Fasten the fixture to a structure or surface only as directed in this manual and only with hardware that is specifically designed, approved 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. Nuts must be self-locking type and in good condition. Rigging clamps must be half-coupler type that completely encircle the rigging truss chord.
- If the fixture 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 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.

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 OLED display and control panel from shocks, or they may suffer damage that is not covered by the product warranty.

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

Clean optical components only as directed in this manual. 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.

Avoiding damage from light sources

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, even when the fixture is not in use.
- Do not aim other high-powered beam lights directly at the fixture.

Avoiding damage from dust and airborne particles

- Carry out regular visual inspections of every fixture to make sure that there is no accumulation of dirt, especially on the front glass and on air vents.

- If cleaning is necessary, follow the instructions in ‘Service and maintenance’ on page 29.

Transportation and storage

- Transport the fixture either in a flightcase or 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.
- The fixture is shipped in a GLP DRX sleeve made of PU foam. This may be used as an insert inside a suitably-sized flight case to avoid the need to design complicated foam cutouts.

  Please see the Dimensions section at the end of this manual for details of the sleeve, and flight case dimensions required to fit it.

3. Overview

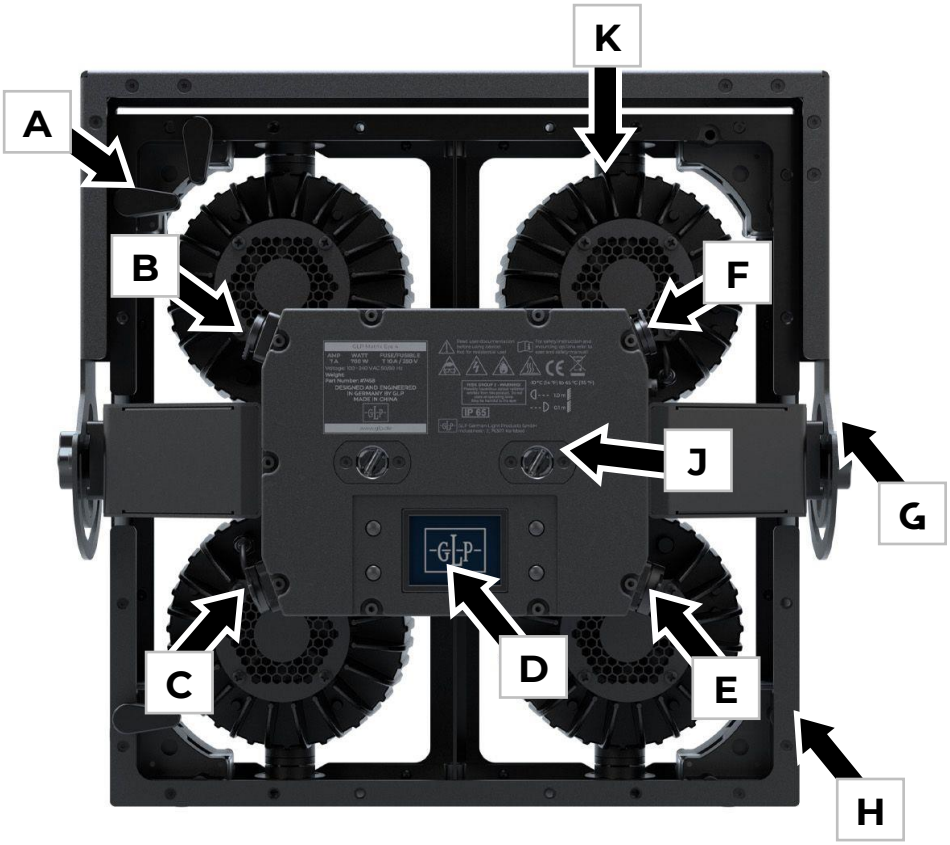


Figure 2. Matrix Eye 4 overview from rear

A – Latch for array mounting (x4)
B – DMX input
C – TRUE1 Mains Power input
D – Control panel with display and buttons
E – TRUE1 Mains Power link through
F – DMX link through
G – Hanging yoke with side clamps
H – Fixture frame with omega clamp points and array points
J – Rear mount position for omega clamp
K – Back of LED head with +/- 20 degree pan

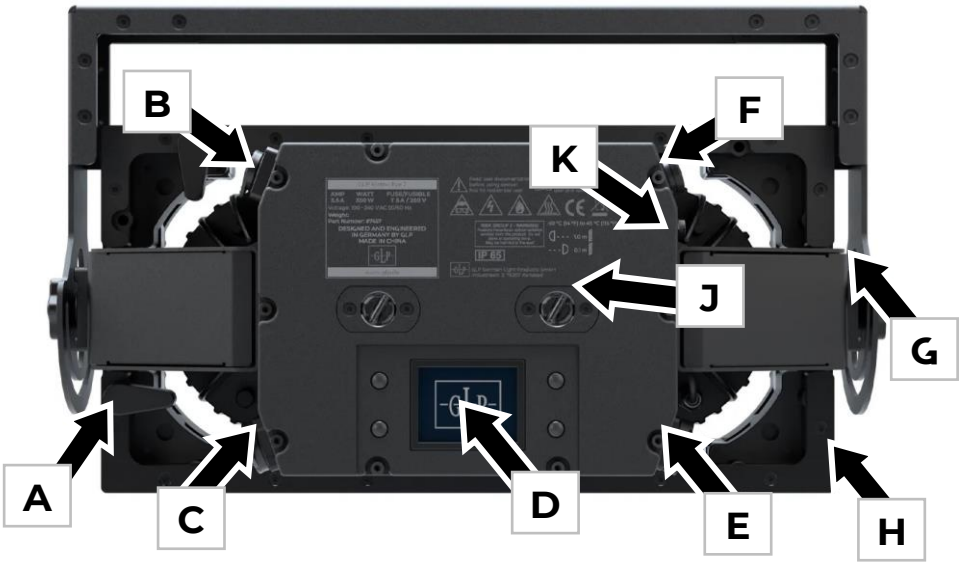


Figure 3. Matrix Eye 2 overview from rear

A – Latch for array mounting (x4)
B – DMX input
C – TRUE1 Mains Power input
D – Control panel with display and buttons
E – TRUE1 Mains Power link through
F – DMX link through
G – Hanging yoke with side clamps
H – Fixture frame with omega clamp points and array points
J – Rear mount position for omega clamp
K – Back of LED head with +/- 20 degree pan

4. Features

The GLP Matrix Eye 2 and Matrix Eye 4 is part of the groundbreaking Matrix Series – a smart cluster system that allows you to mechanically link multiple frame fixtures into one seamless lighting unit. Build your own custom lighting system with LED Blinders and more.

Powered by high-efficiency RGBAL LEDs and the innovative GLP iQ.Gamut Color Algorithm, the Matrix Eye 2 and Matrix Eye 4 deliver intense color output and high-quality white light with superior color rendering. They faithfully replicate the classic tungsten behavior of traditional DWE Blinders, offering an authentic, warm dimming curve with all the benefits of LED technology.

The Matrix Eye is for permanent or temporary indoor use in venues where the distance to illuminated surfaces is at least 1 m (3.3 ft.). It may be used in temporary outdoor applications if precautions are taken to prevent damage from direct sunlight (see “Outdoor Usage” on page 26). It may be placed upright on a level surface or suspended from a suitable structure as described in this manual.

The Matrix Eye is not suitable for household use, wherever unattended children have access to it, for permanent outdoor installation, or in areas where the distance from the fixture to illuminated surfaces is less than specified.

The Matrix Eye shall be installed, operated, and maintained only by persons with the training, knowledge and skills to do so safely.

Rigging options

The Matrix Eye fixtures may be rigged in a variety of ways:

- Removeable mounting yoke allows you to suspend the fixture from rigging at any angle with a rigging clamp.
- Half-turn fasteners on the rear panel and top/side of frame allow a mounting bracket (omega bracket) to be attached with a rigging clamp.
- Multiple linking points on the frame allow fixtures to be joined together to form a larger fixture array using built-in locks. Rigging clamps may then be used to suspend the whole array (when using an array of multiple fixtures please refer to the following section ***Linking fixtures together*** to ensure fixtures are rigged safely).
- Each individual LED head can be panned by +/-20°.

5. Preparation for use

Warning! Read 'Safety' starting on page 5 before installing GLP Matrix Eye fixtures.

Included items

The Matrix Eye is supplied with a power cable with a TRUE1 compatible connector.

Mounting and location

The fixture may be installed in one of the following ways. You must install a secondary attachment such as a safety cable and use one of the hardware configurations described in this chapter.

1. Fastened to a surface at any angle by screwing through the mounting yoke.
2. Fastened to a rigging truss or similar structure at any angle by means of a truss coupler or other clamp fixed to the mounting yoke or fixture frame.
3. Fastened to a rigging truss or similar structure at any angle by means of a truss coupler or other clamp fixed to an omega bracket, attached to the fixture frame or the rear panel of the fixture.

Multiple fixtures may be coupled together using the built-in latches on the frame of the fixture. However, when using multiple fixtures please refer to the following section ***Linking fixtures together*** to ensure fixtures are used safely.

Make sure that the lens will be at least 0.1 m / 4 in. away from combustible materials (wood, paper, textiles, etc.) including curtains and stage scenery when the fixture is installed.

Make sure that there will be a minimum of 1 m / 3.3 ft. between the fixture and any surface to be illuminated.

Securing the fixture with a safety cable

In any location where the fixture can cause injury or damage if it falls, secure it with a safety cable that is approved as a secondary attachment for the weight of the fixture.

To secure the fixture with a safety cable:

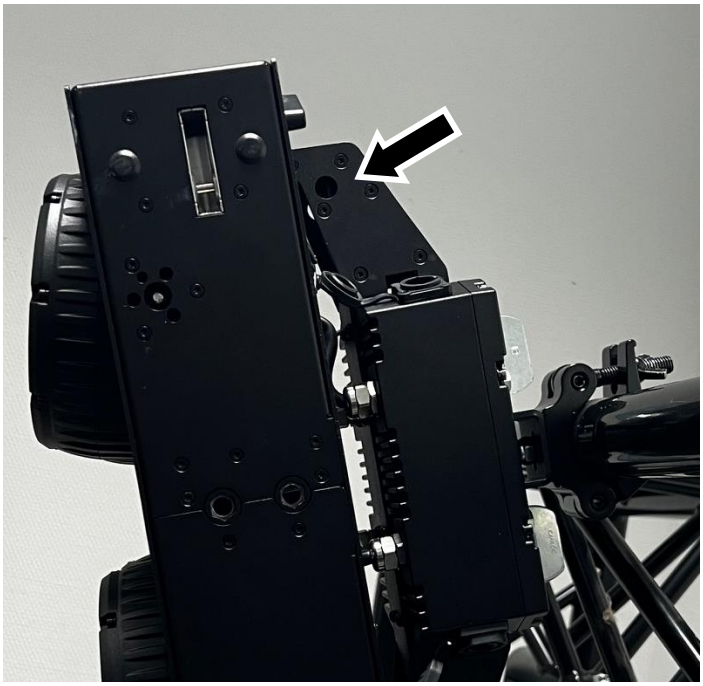


Figure 4. Safety cable attachment point

1. Loop a safety cable around a secure anchoring point such as a truss 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, for example).
2. See Figure 4. Fasten the safety cable to the attachment hole on the rear assembly of the fixture. Check that the safety cable will secure the fixture if the primary attachment fails.

Installing on a surface at any angle using the mounting yoke

To install a Matrix Eye fixture on a surface at any angle:

1. Check that the surface is secure and can safely hold the weight of the fixture plus all hardware and cables.
2. Loosen the handwheels on the yoke, adjust the yoke to a suitable angle and tighten the handwheels.
3. Hold the fixture in position on the surface and mark the positions of holes for fasteners on the surface. You will need at least two fasteners. Drill holes if necessary.
4. Fasten the mounting bracket to the surface by passing at least two suitable fasteners such as grade 8.8 steel bolts or screws through the holes in the bracket and fastening them to the surface. Fasteners must be suitable for their purpose and the installation environment.

5. In a temporary installation, secure the fixture with a safety cable as described in ‘Securing the fixture with a safety cable’ on page 15,if there is any risk that the fixture will cause injury or damage if it falls.

Installing on a rigging truss or similar structure

You can suspend a Matrix Eye fixture from a rigging truss or pipe using a suitable clamp attached to the mounting yoke of the fixture, or to an omega bracket on the yoke, the outside frame of the fixture or to the rear panel.

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 a G-clamp. If you are going to install the fixture in any other orientation, you must use a half-coupler clamp that completely surrounds the truss chord or pipe.

Attaching clamps directly to the mounting yoke

1. Attach a suitable clamp to one of the mounting holes in the using an M10 or M12 grade 8.8 steel bolt or screw.
2. Attach the clamp to the truss or structure.
3. Secure the fixture with a safety cable as described in ‘Securing the fixture with a safety cable’ on page 15.

Attaching clamps using an omega bracket

1. Using a standard GLP omega bracket, attach a suitable clamp using an M10 or M12 grade 8.8 steel bolt or screw.
2. Identify where on the fixture you wish to attach the omega bracket. There are points on the mounting yoke, the top or side of the fixture frame and also on the rear panel.
3. Fully turn the fasteners on the omega clamp so that it is securely attached to the fixture.
4. Attach the clamp to the truss or structure.

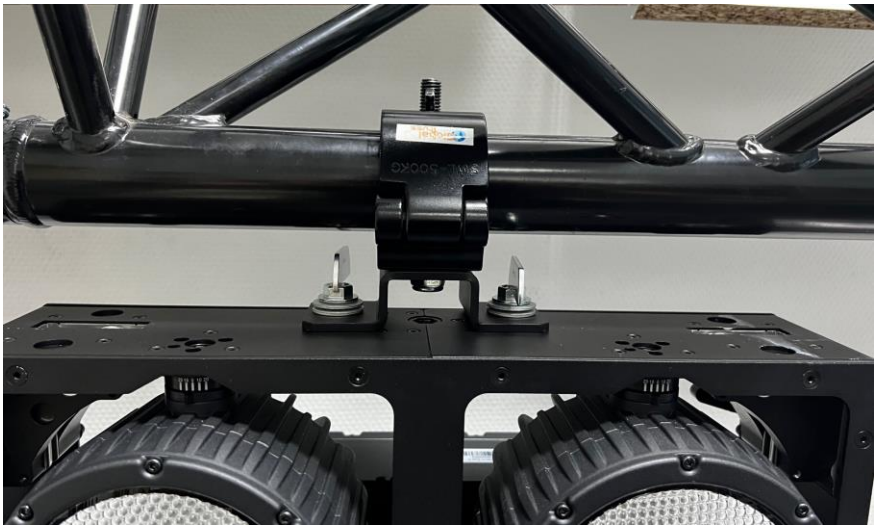


Figure 5. Omega clamp attached to fixture frame

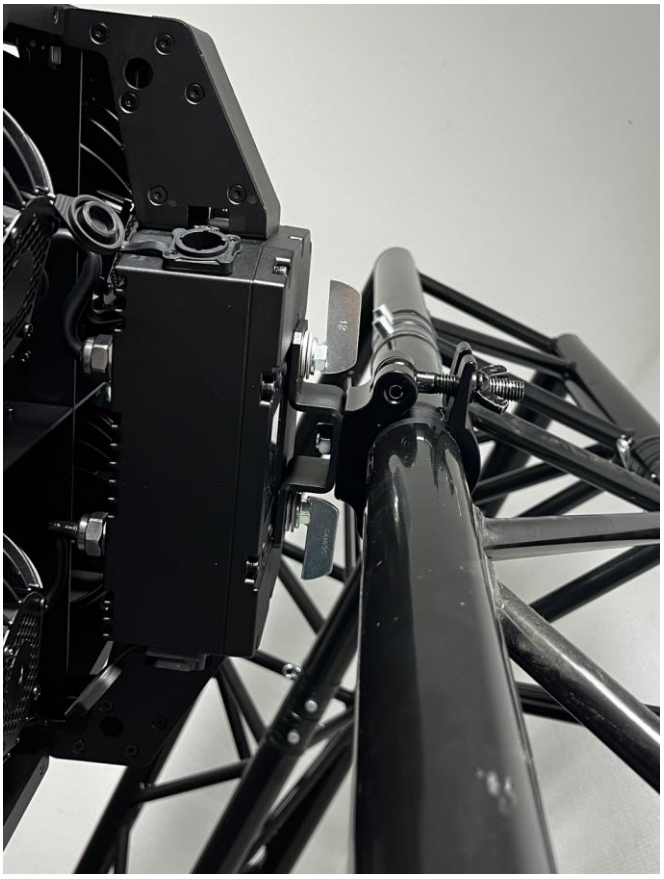
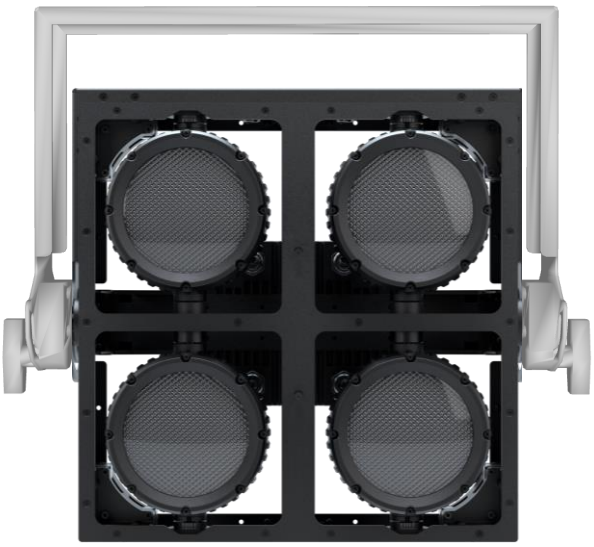


Figure 6. Omega clamp attached to rear of fixture

Hanging yoke

Three different hanging yokes are available to give different rigging options. Part #32001 is supplied as standard with Matrix Eye 4. Part #32003 is supplied as standard with Matrix Eye 2.

#32001
Yoke W400/H200
with installed Matrix Eye4



#32001 Yoke W400/H200
Standard Yoke Matrix Eye 4
included with Matrix Eye4

#32001
Yoke W400/H200
with installed Matrix Eye2

#32003
Yoke W400/H100
with installed Matrix Eye2

#32003 Yoke W400/H100
Standard Yoke Matrix Eye2
included at Matrix Eye2

#32002
Yoke W200/H200
with installed Matrix Eye2

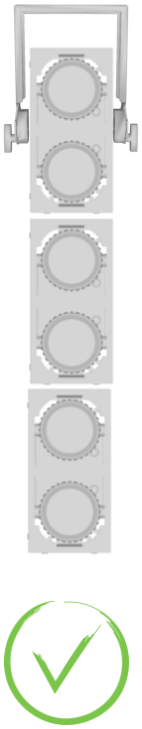
Linking fixtures together

Matrix Eye fixtures may be linked together to form a larger array of light sources using the latches built into the frame of each fixture.

Simply align the fixtures and turn the latches through 90 degrees to lock the fixtures together. (If you need to remove the hanging yoke, unscrew the 2x captive screws each side of the yoke - 4x screws in total).

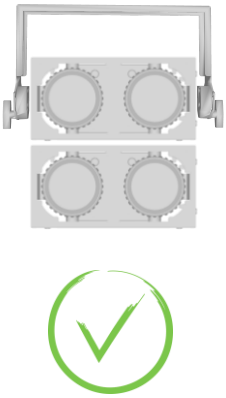
Multiple linked fixtures may be safely rigged as follows:

#32002
Yoke
W200/H200



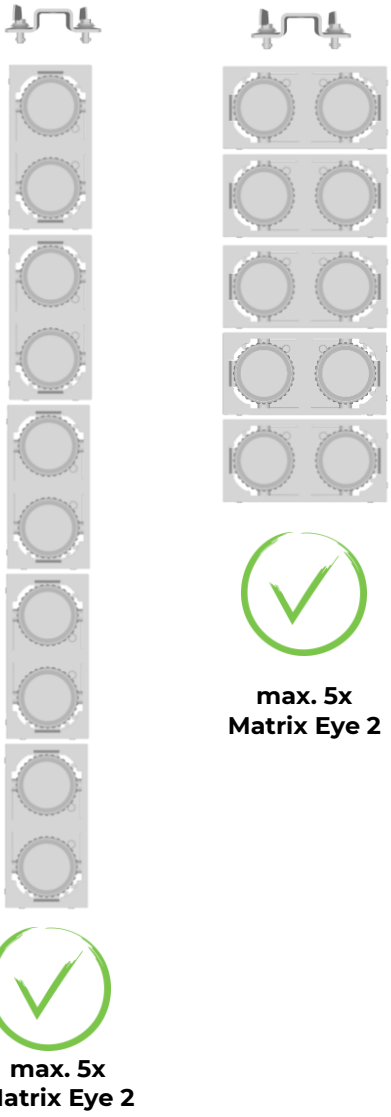
max. 3x
Matrix Eye 2

#32003
Yoke
W400/H100



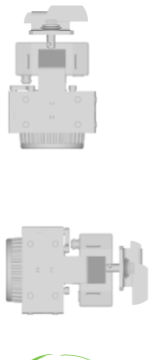
max. 2x
Matrix Eye 2

#87069
Omega Bracket



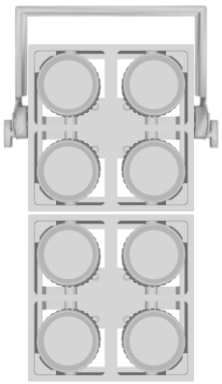
max. 5x
Matrix Eye 2

max. 5x
Matrix Eye 2



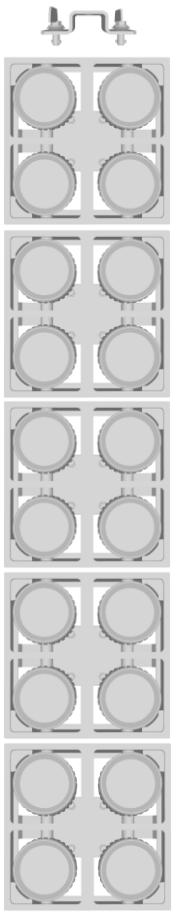
max. 1x
Matrix Eye 2

#32001
Yoke
W400/H200

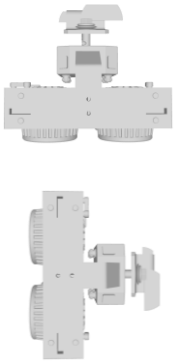


max. 2x
Matrix Eye 4

#87069
Omega Bracket



max. 5x
Matrix Eye 4

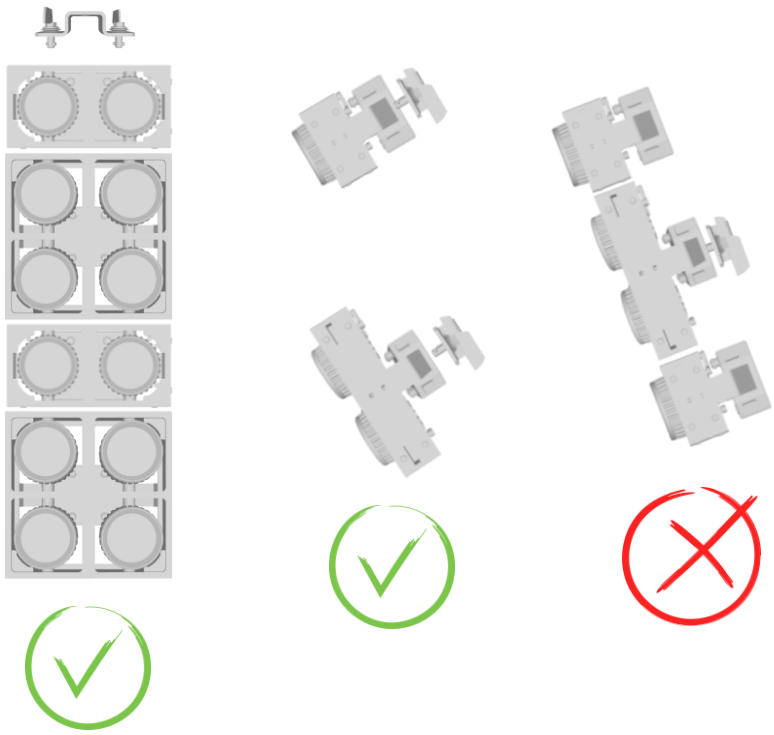


max. 1x
Matrix Eye 4

In any other configuration, including horizontal arrays, each fixture must be supported by its own rigging clamp.

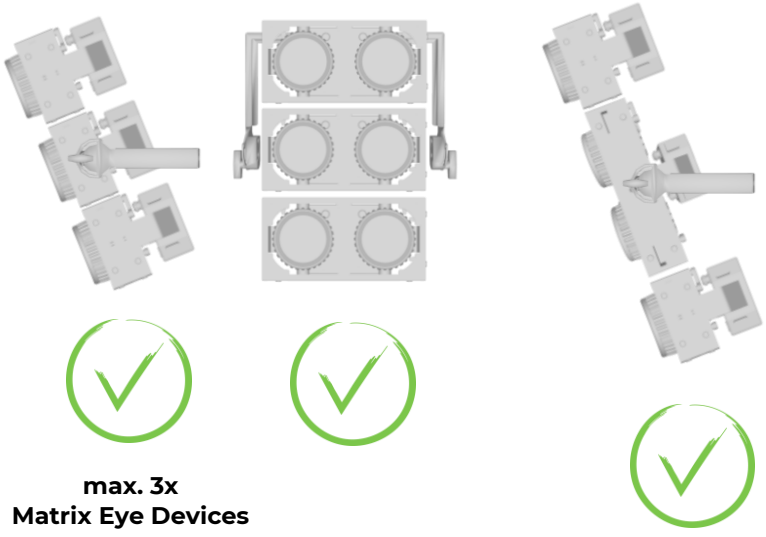
Please note the following restrictions on use of the Omega Bracket and Yoke with arrays of multiple fixtures.

#87069
Omega Bracket



max. 60kg total load

#32001
Yoke
W400/H200



max. 3x
Matrix Eye Devices

Connections

Warning! Read ‘Safety’ starting on page 5 before connecting the Matrix Eye to power.

AC power

The Matrix Eye has a TRUE1 compatible socket for connection to AC mains power from a TRUE1 compatible female cable connector. The autosensing power supply accepts 100-240 V, 50/60 Hz AC power. Do not connect the fixture to AC power at any other voltage.

The AC mains power distribution circuit must include a connection to ground / protective earth. It must be protected against ground / earth leakage and overload.

Do not connect the fixture to a power distribution circuit that is equipped with an external dimmer.

The fixture includes a Power THRU connector which allows you to daisy-chain multiple fixtures if power circuit rating permits. See ***Connecting multiple fixtures to power in a chain***.

Powering the fixture on

The fixture does not have an ON/OFF switch. It is powered on as soon as power is applied to the power input cable. Before applying power, check that the head is unlocked, check that the head will not collide with anything, and check that nobody will be looking directly at the fixture if it lights up suddenly.

Connecting to power

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. Check that the TRUE1 compatible connector on the power input cable is in perfect condition, paying attention to the keys on the connector. If the connector or its keys show signs of damage, replace the connector with a new item.
2. Line up the keys in the TRUE1 connector correctly with the keyways in the MAINS IN socket.
3. Insert the connector into the socket. Do not use force. If you feel any more than light resistance when you try to push the connector into the socket, something is wrong. You may have lined up keys and keyways incorrectly. Remove the connector and check the positions of keys and keyways before trying to insert the connector again.
4. Twist the connector fully clockwise to lock. Listen for a ‘click’ that indicates that the connector is locked.
5. Make sure that nobody is looking directly at the fixture. Then apply power to the power input cable.

Installing power connectors on the input cable

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 TRUE1 compatible connector on a power cable, follow the instructions given on the manufacturer's website.

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 or black	Blue	Yellow/green

Connecting multiple fixtures to power in a chain

You can connect fixtures to power in a daisy-chain to simplify your power circuit layout. However you must be careful not to exceed the total power rating of the circuit as shown in the Table below.

Matrix Eye fixtures have 2.0 mm^2 internal wiring from Power IN to Power THRU connectors.

Warning! See Table below for the maximum number of fixtures which can be safely linked in a chain.

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 TRUE1 compatible connectors. Cables must be minimum 14 AWG or 1.5mm^2, 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 as described under 'Connecting to power' on page 23.
3. Connect a relay cable to the Mains OUT / THRU socket of the first fixture and to the Mains IN socket of the second fixture.
4. Observe the limits in the table below for how many fixtures you can link. Note, using a 100-120V power supply, Matrix Eye 4 fixtures may not be linked together for power.

Maximum number of linked fixtures in a chain using 16 A circuit

Power supply	Matrix Eye 2	Matrix Eye 4
100-120V, 60Hz	2 fixtures	Fixtures cannot be linked
200-240V, 50Hz	4 fixtures	2 fixtures

Control data

The Matrix Eye can be controlled via USITT512 DMX over a standard DMX cable link. The fixture's **Protocol Setup** control menu lets you set the fixture's control protocol (see the Matrix Eye User Manual available online at www.glp.de for details).

See 'Overview' on page 12. The fixture has 5-pin XLR IN and THRU sockets for connection to a DMX cable link. 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.

To link fixtures in cabled DMX daisy-chains using their XLR connectors, use certified DMX cable only.

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

The Matrix Eye fixture can also be controlled by GLP iQ.Mesh and by RDM.

6. Outdoor Usage

Although the Matrix Eye fixtures have an IP rating for safe outdoor usage, the fixtures are designed for temporary outdoor use only.

For full details please refer to 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

The Matrix Eye 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

Note: Do not install fixtures in a location where water can pool around the fixture or allow the fixture to become submerged in any other 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

Matrix Eye 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 any 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.

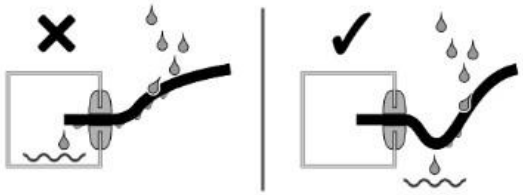
Connectors and cables

For outdoor use, IP65-rated power and data connectors and cable should be used for connections to the fixture. Use cable connectors which match the connectors fitted on the fixture, not all combinations of connectors maintain the IP rating. Ensure that

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

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

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



Transportation and storage

- Transport the fixture either in a flightcase or 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.

The fixture is shipped in a GLP DRX sleeve made of PU foam. This may be used as an insert inside a suitably-sized flight case to avoid the need to design complicated foam cutouts.

Please see the Dimensions section at the end of this manual for details of the sleeve, and flight case dimensions required to fit it.

The DRX sleeve has a hole in the bottom to allow humidity to escape from the fixture in storage. Flight cases should have a matching hole in the base and also ventilation openings in the cover.

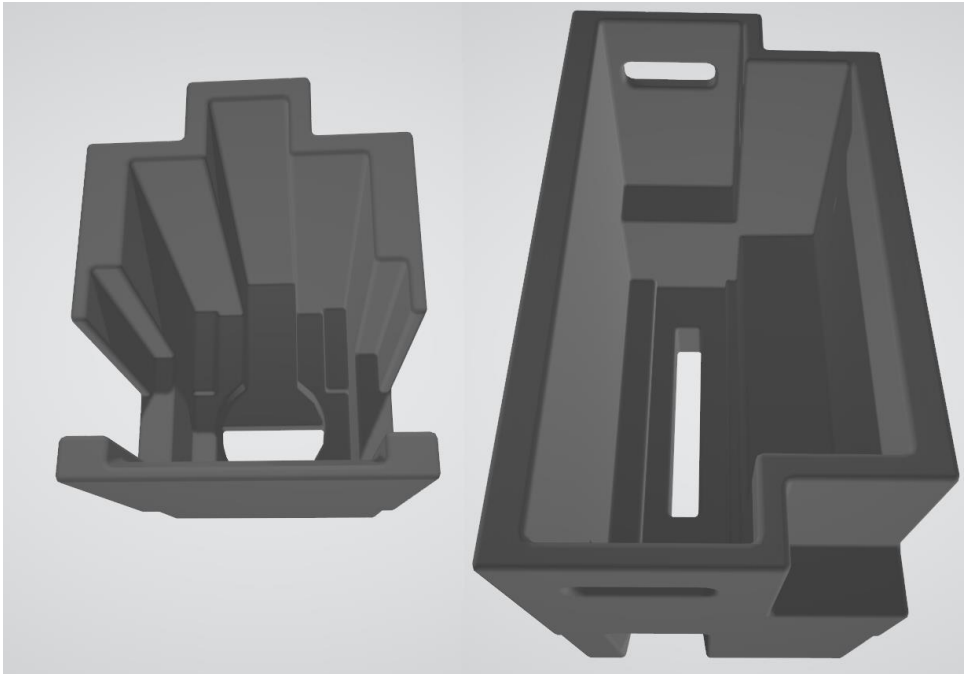


Figure 7. GLP DRX sleeve for Matrix Eye 2 and Matrix Eye 4

7. Using the fixture

For guidance on using the Matrix Eye, see the latest version of the fixture's User Manual, available for download from www.glp.de.

Check that the software version given at the front of the user manual matches the software version installed in the fixture.

8. Service and maintenance

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 maintenance and 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 a suitable GLP Firmware Updater or the GLP iQ.Service App. 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

The buildup of dust, dirt and other airborne particles will reduce the fixture's light output. It will also prevent the fixture from cooling correctly, and this will reduce the fixture's lifetime. The rate of dirt buildup will vary depending on environmental factors such as airborne dust, use of smoke machines, airflow from ventilation systems, etc. and any smoke particles that are present in the atmosphere will increase the tendency for dirt to clog.

To get the best performance and lifetime from the fixture, inspect it regularly and clean it as soon as you see signs of dirt buildup. Assess the operating environment each time you begin to use the fixture. In dusty or smoky conditions, inspect the fixture after a few hours and check it frequently – the fixture may attract dirt faster than you expect. Draw up a cleaning schedule that will make sure that dirt is removed before it can build up.

Follow these guidelines:

- Disconnect the fixture from power and allow it to cool completely before cleaning.
- Do not use solvents, abrasives or any other aggressive product to clean the fixture.

- Use a vacuum cleaner and soft brush to remove dust and loose particles from surfaces and air vents.
- Do not let optical components come into contact with oil or grease. Put on clean, dry lint-free gloves before you touch them.
- Clean glass components by wiping gently with alcohol wipes or a soft, clean, lint-free cloth moistened with a weak detergent solution. Put the solution on the cloth, not on the surface to be cleaned. Avoid rubbing glass surfaces. If particles are stuck to the glass, try to lift them off by dabbing them repeatedly with a cotton swab or moistened lint-free cloth.
- Dry the fixture with a soft, clean, lint-free cloth or low-pressure compressed air before reapplying power.

Suggested maintenance intervals

We suggest the maintenance schedule below, but bear in mind that cleaning intervals depend on the operating environment. Our suggested cleaning intervals are based on our experience with typical installations – check the fixture to assess the need for cleaning and adjust intervals as necessary.

Maintenance Task	Environment	Interval	How
Clean front lens, fixture housing. .	High levels of airborne contaminants (club, bar, touring, concert etc.)	Monthly	Use soft, lint-free cloth moistened with weak detergent solution
	Low levels of airborne contaminants	Every 3 months	
Clean air vents	High levels of airborne contaminants (club, bar, touring, concert etc.)	Monthly	Remove dust from air vents with vacuum cleaner and soft brush.
	Low levels of airborne contaminants	Every 3 months	

Maintenance Task	Environment	Interval	How
Check cables, connectors and mechanical linking system. Perform IP Test (Vacuum Test)	Large / heavy complex constructions - especially if the construction was moved to different angles (e.g. Moving truss)	After each job / tour	Check cables for flexibility, isolation and aging Check mechanical linking system for bending or corrosion. Check screws and connectors for UV light damage or corrosion Check Sealings and make IP Vacuum test.
	Normal usage on exhibitions, stages or tours -	Once a year	

GLP Service and Support

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

- GLP Germany: +49 (7248) 927 1955
- GLP N. America: +1 818 767-8899
- GLP U.K.: +44 1392 690140
- GLP Asia: +852 (3151) 7730
- GLP Nordic: +46 737 57 11 40

9. Technical specifications

Light source

50x 10 W RGBAL LED per head (total 500W)

CRI (Ra): 85+ @6500K, 85+ @3200K (preliminary data)

LED lifetime: 50 000 hours to 70% output
(Figure obtained under manufacturer's test conditions)

Optical system

Total fixture output (Matrix Eye 2):

19650 lm* Boost RGBAL, 13165 lm* constant RGBAL

Total fixture output (Matrix Eye 4):

39300 lm* Boost RGBAL, 26300 lm* constant RGBAL

Minimum beam angle: 60°

Maximum field angle: 100°

* Preliminary data

Control

DMX Channels (Matrix Eye 2): 2 / 19 / 29 / 38 / 6

DMX Channels (Matrix Eye 4): 4 / 19 / 49 / 76 / 12

DMX control modes: 5

Control protocols: DMX (USITT DMX512-A), RDM (ANSI/ESTA E1.20), GLP iQ.Mesh

NFC sensor

Standalone operation: One captured scene

Setting and addressing: Onboard control panel with invertible OLED display, DMX, RDM, iQ.Service smartphone app

Fan modes: Regulated / High / Medium / Low

Effects

Color mixing: RGB 8-bit, 16-bit; RGBAL 8-bit, 16-bit

Virtual shutter: Regular and random strobe and pulse effects, instant open and blackout

Dimming: 0 – 100% continuous with 16-bit resolution, Linear, Soft and S-Curve dimming curve options

Tungsten Simulation: Red Shift control / Dimmer Response control

With fix CCT:

- Tungsten ACL 250W/28V
- Tungsten Blinder 650W/120V
- Tungsten 750W/80V
- Tungsten 1000W/240V
- Tungsten 1200W/240V
- Tungsten 2000W/230V
- Tungsten 2500W/230V
- Tungsten 5000W/230V

With flexible CCT:

- Tungsten ACL 250W/28V
- Tungsten Blinder 650W/120V

Tungsten 750W/80V
Tungsten 1000W/240V
Tungsten 1200W/240V
Tungsten 2000W/230V
Tungsten 2500W/230V
Tungsten 5000W/230V

Electrical

AC mains power: 100-240 V nominal, 50/60 Hz

Internal power supply unit: Auto-ranging electronic switch mode

Power consumption:

- . Maximum 1200 W (Matrix Eye 4), 600W (Matrix Eye 2) @ 230 V

Thermal

Cooling system: active fan cooling

Max. ambient temperature: 45° C / 113° F

Min. ambient temperature: -10° C / 14° F

Installation

Operating position: any

Location: indoor or temporary outdoor

Connections

Mains power IN and THRU: TRUE1 compatible

DMX data IN and THRU: 5-pin XLR

Construction

Ingress protection: IP65

Standard color: Black

Housing: high-impact flame-retardant thermoplastic / aluminum / steel plates

Accessories supplied

Power cable with TRUE1 compatible connector

Dimensions and weight

Matrix Eye 2

Height 200 mm / 7.9 in.

Width: 400 mm / 15.7 in

Depth (without yoke): 246 mm / 9.7 in.

Depth (with yoke 400/100) 303 mm / 11.9 in.

Center-to-center distance: 200mm (7.9 in.) vertical, 400mm (15.7 in.) horizontal

Weight: 9.5 kg / 20.9 lbs. (Fixture only)

11.1 kg / 24.5 lbs. (Fixture with included yoke 400/100)

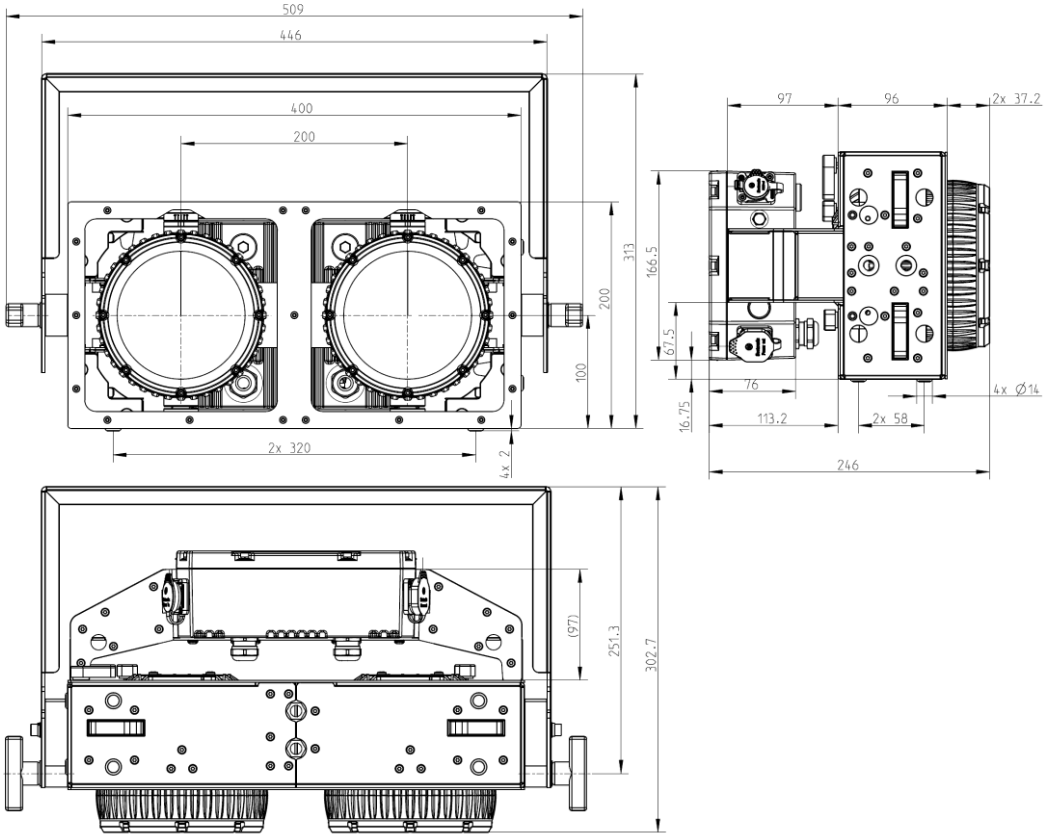
Matrix Eye 4

Height 400 mm / 15.7 in.
Width: 400 mm / 15.7 in
Depth (without yoke): 246 mm / 9.7 in.
Depth (with yoke 400/200) 303 mm / 11.9 in.
Center-to-center distance: 400mm (15.7 in.) vertical, 400mm (15.7 in.) horizontal
Weight: 13.5 kg / 29.8 lbs. (Fixture only)
15.3 kg / 33.7 lbs. (Fixture with included yoke 400/200)

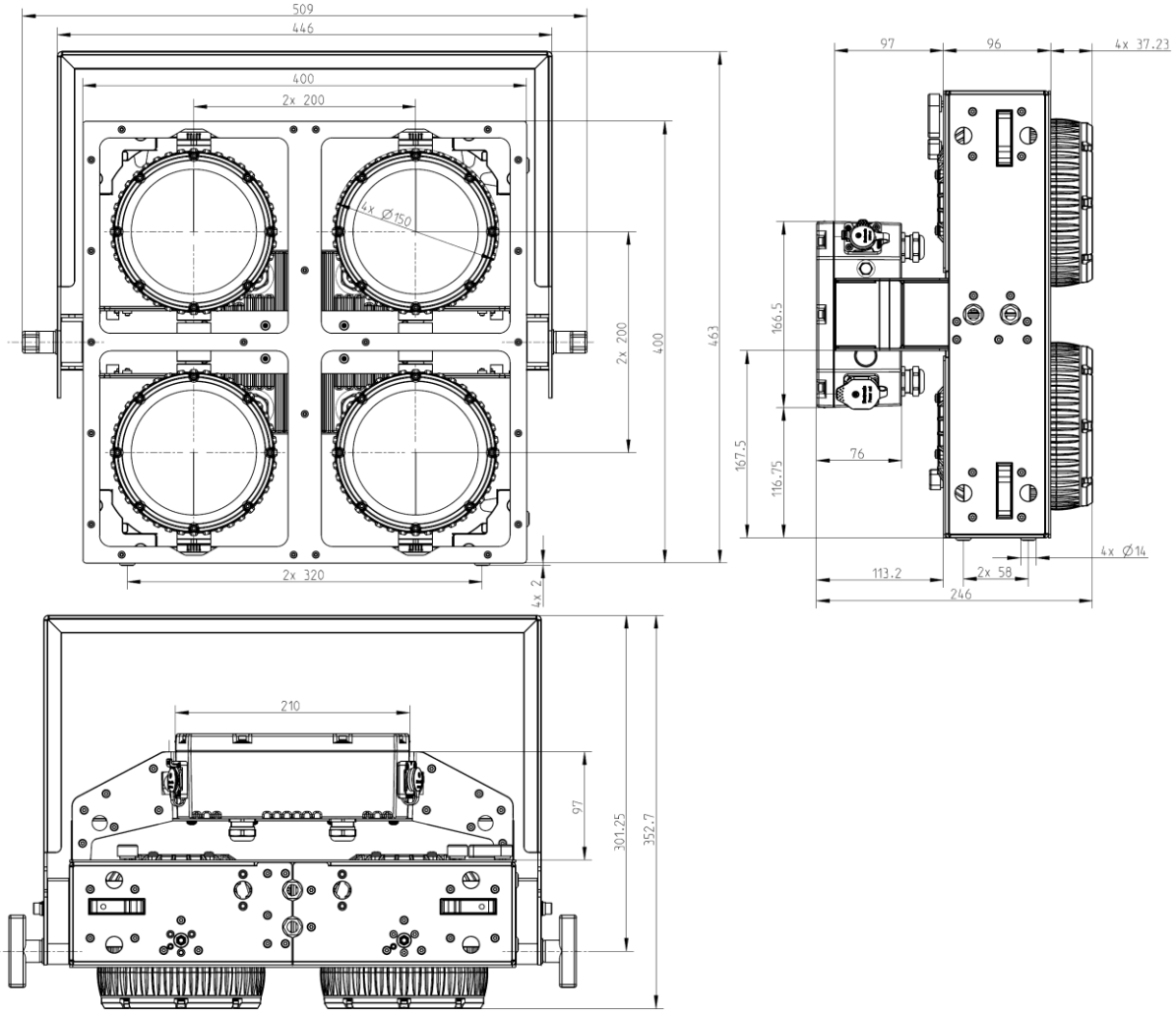
10.Dimensions

Dimensions are given in millimeters

Matrix Eye 2

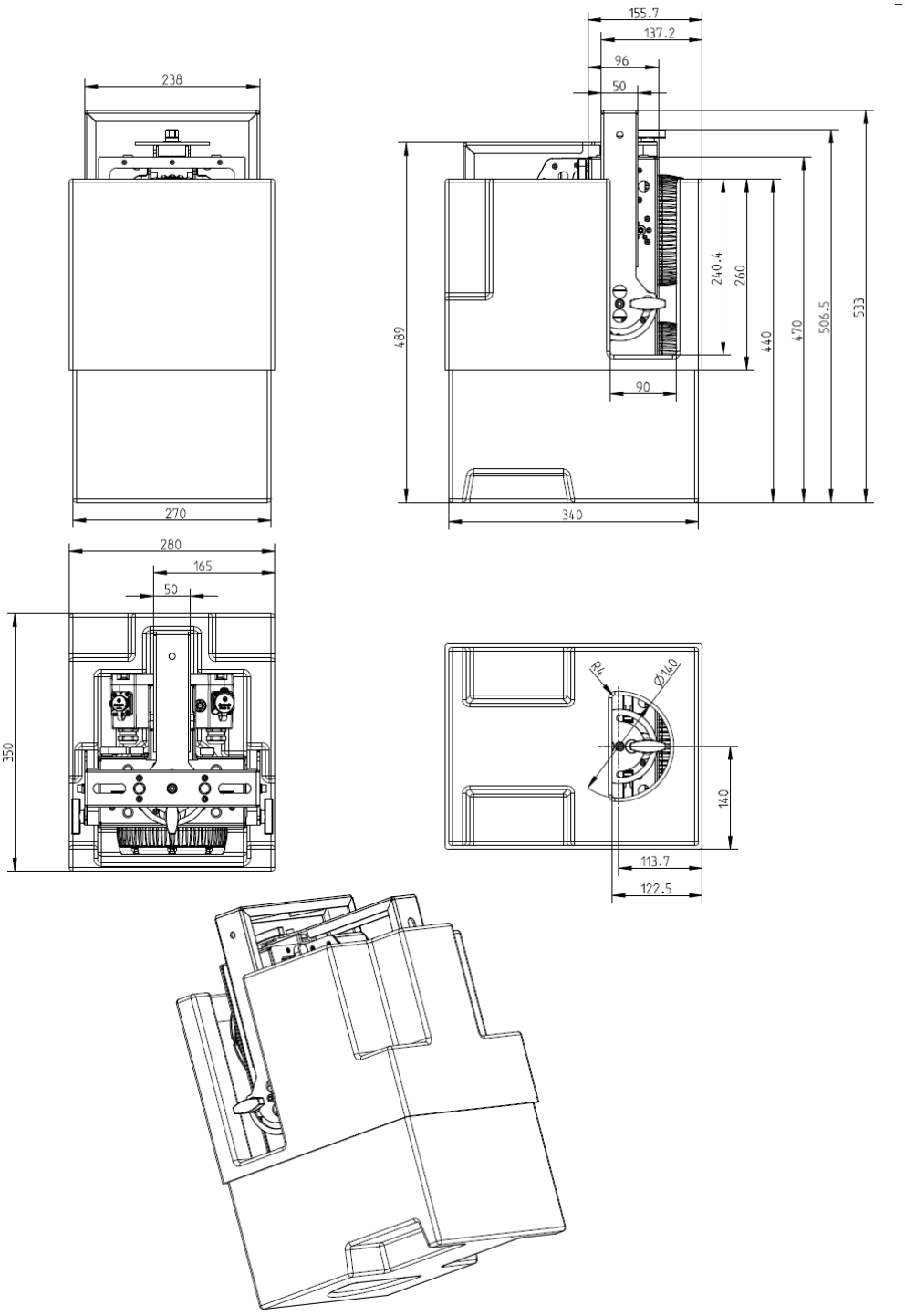


Matrix Eye 4


509
446
400
2x 200
4x Ø150
2x 200
400
463
2x 320
4x 2
97
96
4x 37.23
166.5
167.5
116.75
76
4x Ø14
113.2
2x 58
246
210
97
301.25
352.7

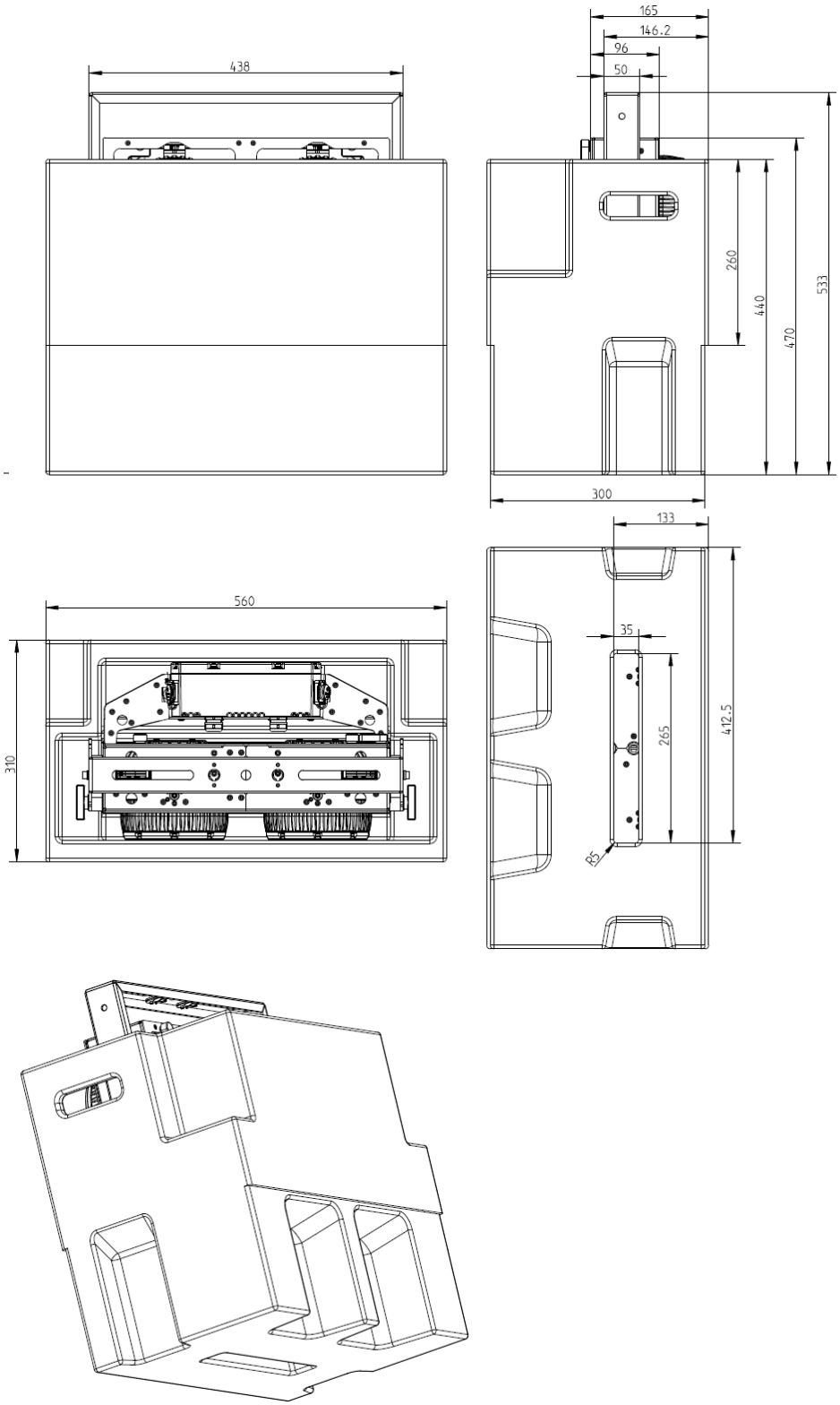
DRX Sleeve for Matrix Eye 2

The fixture is shipped in this PU sleeve which can be used as a flightcase insert.



DRX Sleeve for Matrix Eye 4

The fixture is shipped in this PU sleeve which can be used as a flightcase insert.




GLP