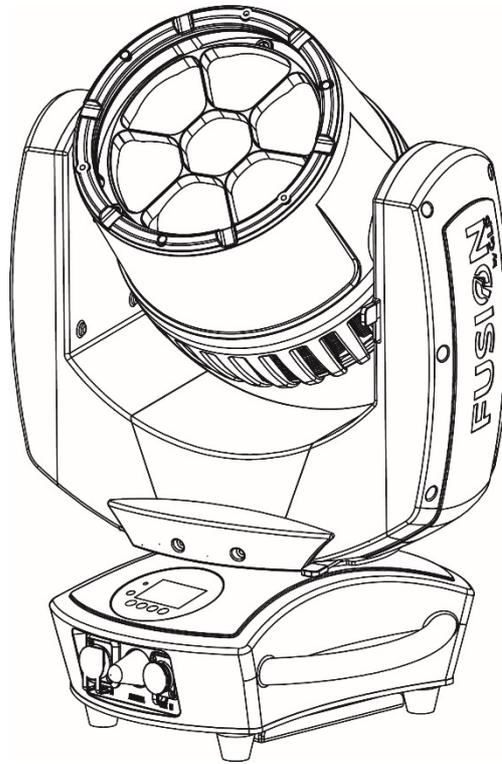


# FUSION

by GLP

## Fusion EXO Wash 30

### User Manual



Software version V1.0.00



GLP® Fusion EXO Wash User Manual – Revision B

This document covers fixture software version V1.0.00

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## 1. Safety

### Key to symbols

The following symbols are used in the Fusion EXO Wash 30 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.

---



### General safety information

**Read this manual carefully before installing, using or servicing the Fusion EXO Wash 30 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 GLP Fusion EXO Wash 30 lighting fixtures consists of:

- This document, the **EXO Wash 30 User Manual**, supplied with the fixture and available for download from [www.glp.de](http://www.glp.de). The User Manual contains important safety information and installation instructions that the installer and user must read.
- The **EXO Wash 30 DMX Channel Index**, available for download from [www.glp.de](http://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](http://www.glp.de).

The Fusion EXO Wash 30 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](http://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 available to all installers and operators. Save this document 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](http://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 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**

- Do not allow the fixture to become immersed. Do not expose the fixture to high-pressure water projections.
- Keep any unused connectors on the fixture sealed with their protective caps at all times, both when the fixture is in use and when not in use.
- 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 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 mm<sup>2</sup> 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 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<sup>2</sup>, H07RN-F, 1.5 m.
- Do not connect more than four (4) Fusion EXO Wash 30 fixtures to power in a chain at 100-120 V, 60 Hz.
- Do not connect more than eight (8) Fusion EXO Wash 30 fixtures to power in a chain at 200-240 V, 50 Hz.
- The voltage and frequency at the Mains OUT socket are 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.
  - Fusion EXO Wash 30 fixtures do not have a user-replaceable fuse. If you suspect that a fuse has blown, disconnect the fixture from power and send it to a technician authorized by GLP for repair.



### **Fire safety and protection from burns**

- Do not operate the fixture if the ambient temperature (Ta) exceeds 40° C / 104° F.
- The surface of the fixture's casing can reach up to 90° C / 194° 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 20 minutes before handling
- Keep the fixture well away from flammable materials.
- Keep all combustible materials (e.g. fabric, wood, paper) at least 0.5 m / 20 in. away from the fixture.
- Ensure that there is free and unobstructed airflow around the fixture.
- Do not illuminate surfaces within 0.5 m / 20 in. 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 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 EXO Wash 30 is classified as a Risk Group 3 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.
- The warning below is printed on the fixture. If the warning becomes impossible to read, replace it with a label reproduced from this illustration:

**Risk Group 3 - WARNING**  
Possibly hazardous optical radiation from this product.  
Do not look at operating lamp.  
Eye injury may result!

- 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 all locally 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 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 onboard LCD display and control panel from shocks, or they may suffer damage that is not covered by the product warranty.

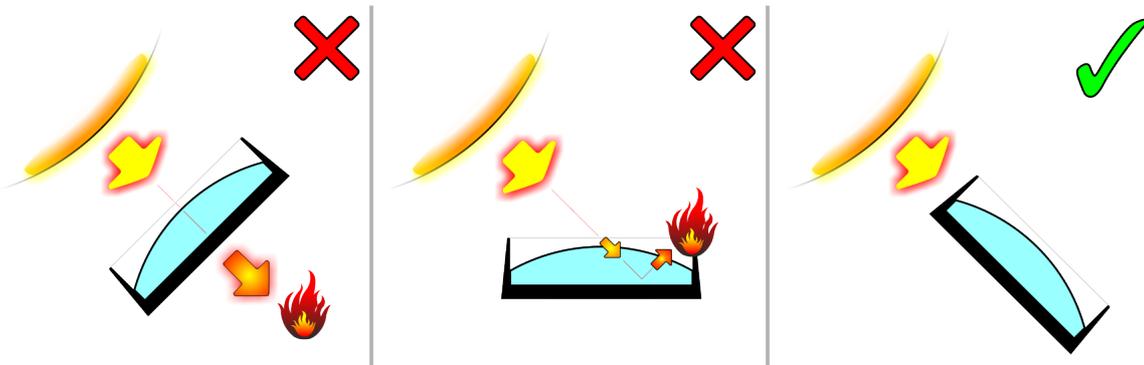
Do not expose the fixture to heat (from other lighting fixtures for example).

Clean optical components only as directed. 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 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, even when not in use.
- Do not aim other high-powered beam lights directly at the fixture.

Do not operate the fixture in ambient temperatures above 40° C / 104° F. Allow free airflow around the fixture.

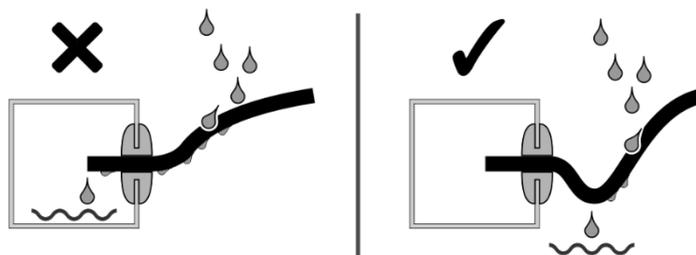
## IP rating

EXO Wash 30 fixtures are IP65-rated:

- **IP** stands for Ingress (entry into the fixture) Protection.
- The first figure **6** in the rating means that fixtures are protected against the entry of dust and airborne particles.
- The second figure **5** in the rating means that fixtures are protected against the entry of rain and water projections from all angles. Fixtures are not protected against immersion in water and they are not protected against high-pressure water jets.

## Avoiding damage from water and humidity

- Do not install EXO Wash 30 fixtures in a location where water can pool around the fixture or allow EXO Wash 30 fixtures to become submerged in any other way. Do not aim low- or high-pressure water jets at fixtures.
- Keep all unused connectors on the fixture sealed with their protective caps, both when the fixture is being used and when it is not in use.
- In outdoor and high-humidity environments, use IP65-rated power and data connectors and cable (an IP65 rating means that the item is protected against the entry of water from rain, projections and low-pressure jets as well as the entry of dust). When assembling connectors and installing them on cable, follow the manufacturer's instructions (see [www.neutrik.com](http://www.neutrik.com)) and ensure that an IP65 rating is maintained for the complete assembly. Use only the following cable connectors:
  - IP65-rated 5-pin XLR connectors for data IN and OUT (THRU)
  - Neutrik powerCON TRUE1 NAC3FX-W for Power IN
  - Neutrik powerCON TRUE1 NAC3MX-W for Power OUT (THRU).
- Apply a dielectric grease (available from electrical suppliers) to connector terminals and caps to prevent corrosion and/or electrical short circuits.
- Make sure that cables open into dry areas or sealed junction boxes. Moisture can be drawn along cables by capillary action or pressure variations resulting from thermal expansion.
- See drawing on right.  
Arrange cables so that they arrive at connectors from below. Make sure that it is impossible for water to flow down cables and accumulate at connectors. If necessary, provide extra cable slack and create 'drip loops' before connectors.
- Create loose cable bends only. Do not subject connections to bending forces or allow connections to bear the weight of long lengths of cable.



***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.
- If cleaning is necessary, follow the instructions in 'Service' on page 48.

***Transportation and storage***

- Transport the fixture in its original packaging or a suitably designed flight case to protect it from damage caused by shocks during transportation.
- Release the tilt lock and support the fixture's head with the original packaging inserts or flight case inserts during transportation.
- Store the fixture in a dry location when not in use.

***GLP Service and Support***

Contact information for the nearest GLP Service and Support is available online at [www.glp.de/en/service](http://www.glp.de/en/service), by email at [info@glp.de](mailto: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
- GLP Asia: +852 (3151) 7730
- GLP Nordic: +46 737 57 11 40

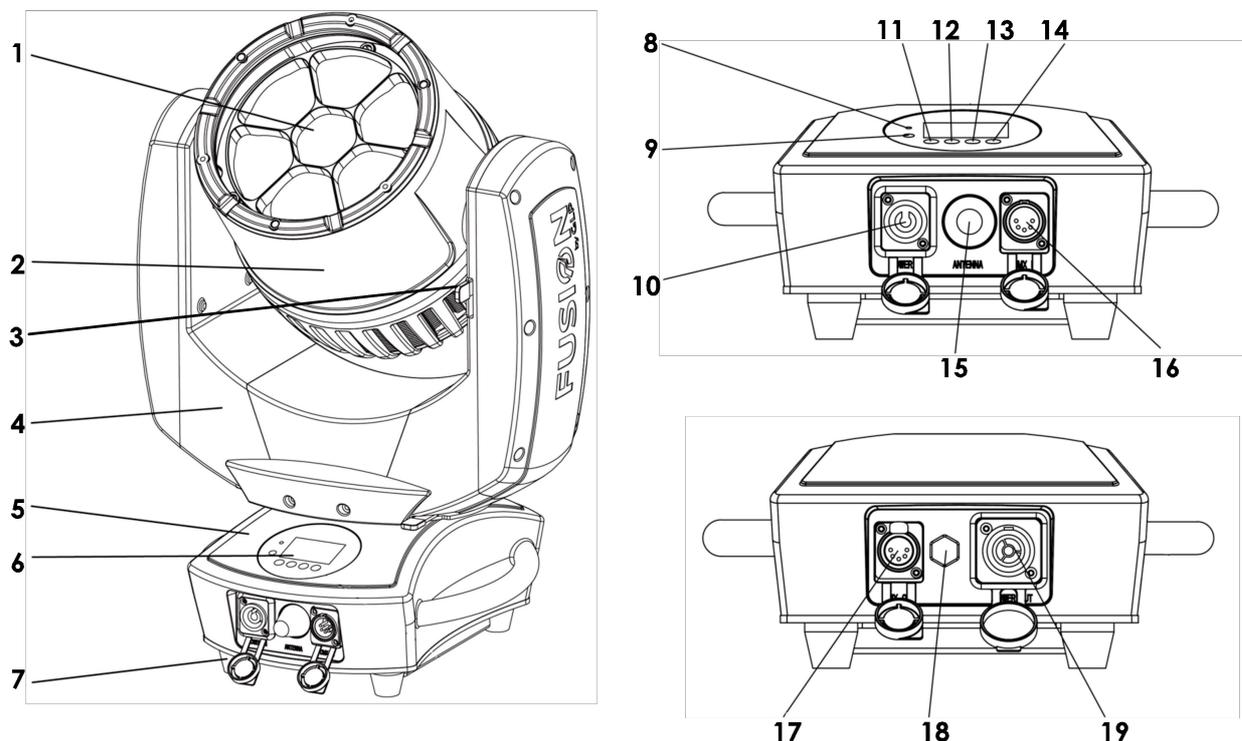
### 3. EXO Wash 30 overview

The Fusion EXO Wash 30 from GLP is a powerful LED-based wash light fixture with fast pan and tilt, 4 to 54 degree variable zoom and seven independently controllable RGBW zones.

The fixture can be controlled by DMX or by settings on its built in color LCD control panel. An optional wireless DMX module can be fitted to enable LumenRadio wireless control. The fixture has a built-in battery to allow the display to be operated for setup before mains power is connected.

The EXO Wash 30 can be used indoors in permanent and temporary installations. Its rugged construction and IP65 rating 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. It can stand on a horizontal surface or be suspended from a suitable structure as described in Section 4.

The EXO Wash 30 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.



**Figure 2. EXO Wash 30 overview**

- |                          |                                       |
|--------------------------|---------------------------------------|
| <b>1 – Output lens</b>   | <b>8 – Wireless indicator</b>         |
| <b>2 – Head</b>          | <b>9 – Battery button</b>             |
| <b>3 – Tilt lock</b>     | <b>10 – PowerCON TRUE1 input</b>      |
| <b>4 – Yoke</b>          | <b>11 – Mode / Esc button</b>         |
| <b>5 – Base</b>          | <b>12 – Up button</b>                 |
| <b>6 – Control panel</b> | <b>13 – Down button</b>               |
| <b>7 – Rubber feet</b>   | <b>14 – Enter button</b>              |
|                          | <b>15 – Optional wireless antenna</b> |
|                          | <b>16 – 5 pin XLR DMX input</b>       |
|                          | <b>17 – 5 pin XLR DMX link out</b>    |
|                          | <b>18 – Vent valve</b>                |
|                          | <b>19 – PowerCON TRUE1 link out</b>   |

## 4. Installation



**Warning!** Read 'Safety' starting on page 5 for important safety information that you must understand before you install or operate the fixture. Install EXO Wash 30 fixtures only as described in this chapter, or you may create an installation that is unsafe.

Install the fixture at least 0.5 m / 20 in. away from combustible materials (wood, textiles, paper, etc.), 0.5 m / 20 in. away from any surface that will be illuminated, and a safe distance away from any flammable materials (volatile spirits, etc.).

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.

### ***Permitted mounting options***

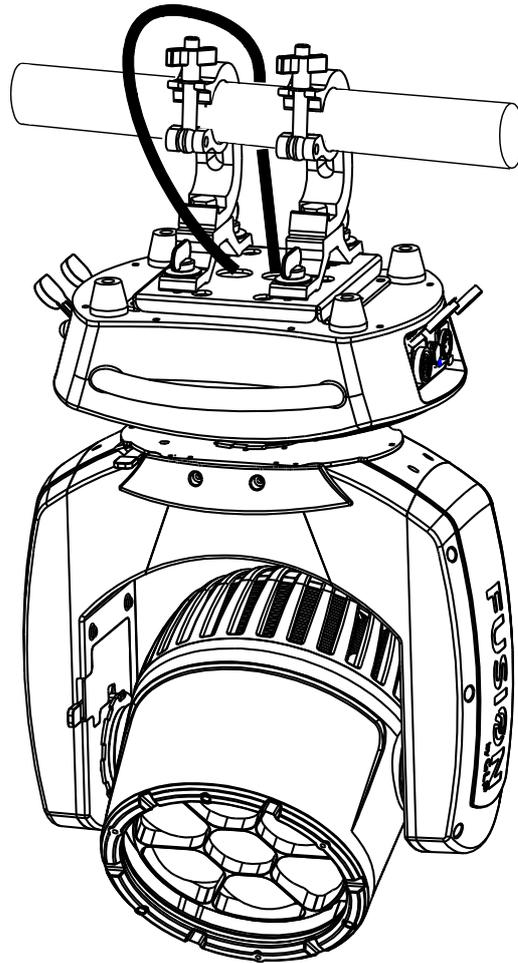
An EXO Wash 30 fixture may be installed in one of the following ways:

1. Fastened to a rigging truss or similar structure at any angle by means of truss couplers or other clamps fixed to the two Omega brackets which attach to the half-turn couplers on the underside of the base.
2. Standing upright on the base on a horizontal surface.

### ***Securing fixtures with a safety cable***

In temporary installations, if a fixture can cause injury or damage if it falls you must secure it with a 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 an EXO Wash 30 fixture with a safety cable:



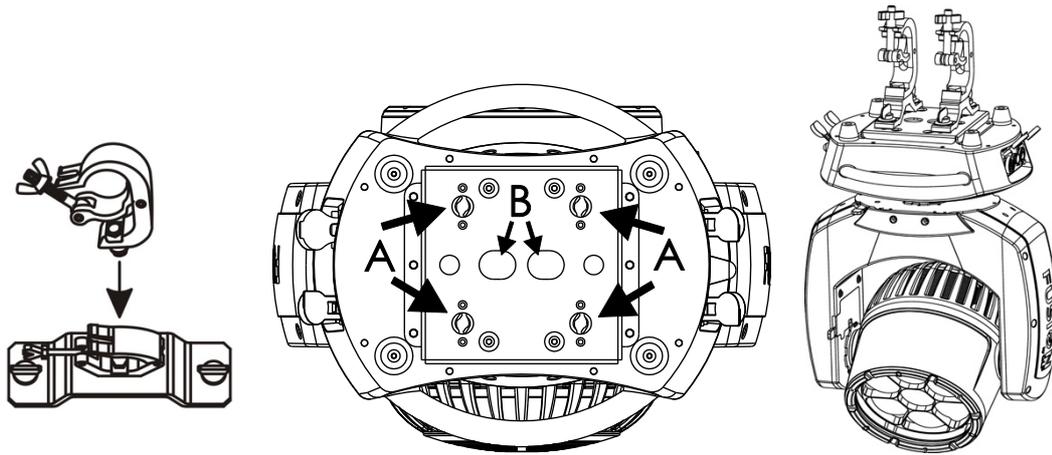
**Figure 3. Safety cable attachment**

1. Loop a safety cable around a secure anchoring point such as a truss beam 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 bar, for example).
2. See Figure 3 and Figure 4. Fasten the safety cable through the slot "B" on the underside of the fixture base. Check that the fixture is now secured.

### **Installing on a rigging truss or similar structure**

You can suspend an EXO Wash 30 fixture from a rigging truss or pipe using suitable clamps attached to the Omega Brackets supplied with the EXO Wash 30.

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, you must use half-coupler clamps that completely surround the truss chord or pipe.



**Figure 4. Omega bracket fasteners**

1. Attach suitable clamps to the Omega brackets.
2. Line up the fasteners of the Omega bracket with the holes "A" in the base of the EXO Wash 30 as shown in Figure 4. The brackets may be installed either way round so the cabling is in line with the bar or at right angles to it.
3. Lock the Omega brackets onto the EXO Wash 30 by turning the fasteners through 90 degrees.
4. Attach the clamp to the truss or structure. Ensure that the head and yoke of the fixture will not collide with any fixed objects as the fixture moves. Ensure that the fixture has sufficient clearance to any adjacent surfaces or objects.
5. Secure the fixture with a safety cable through slots "B" as described in the previous section.

### **Standing on a horizontal surface**

To install an EXO Wash 30 fixture on a horizontal surface:

1. Check that the surface is secure and can safely hold the weight of the fixture plus all hardware and cables.
2. Stand the fixture firmly on the rubber feet fitted to the base of the unit. Ensure that the head and yoke of the fixture will not collide with any fixed objects as the fixture moves. Ensure that the fixture has sufficient clearance to any adjacent surfaces or objects.

## 5. 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 10).

Use H07 RN-F 3 x 2.5mm / SJT 12 AWG cables with original Neutrik powerCON TRUE1 connectors to supply power to fixtures.

Line up the keyways in connectors carefully. Do not try to insert or twist a connector if it feels excessively stiff. Resistance to insertion or twisting is a sign that connectors may be incorrectly lined up.

Keep connectors sealed with their rubber caps at all times when not in use.

### **Included items**

The EXO Wash 30 is supplied with a power cord with Neutrik powerCON TRUE1 connector.

### **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 EXO Wash 30 does not have a power ON/OFF switch. Power is applied to the fixture as soon as the power cable becomes live.

The EXO Wash 30 has a 3-conductor Neutrik powerCON TRUE1 Mains IN power input socket that accepts AC power from a TRUE1 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 convenient, shut down power to the power input cable.
2. Note the position of the keys and keyways on the TRUE1 power cable connector and Mains IN socket and align them with each other. 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 again that it is lined up correctly.
3. Before applying power to the power cable, check that nobody is looking directly into the front of the fixture.

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 intend to draw power from convenience receptacles / consumer mains power sockets, it is possible to install a suitable cord cap / power plug on the supplied power cord / 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 connector on a power cable, follow the instructions given in the Support area of the Neutrik website at [www.neutrik.com](http://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 ⊕ |
|------------------|-----------|--------------|---------------------|
| <b>US system</b> | Black     | White        | Green               |
| <b>EU system</b> | Brown     | 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.

EXO Wash 30 fixtures have 2.5 mm<sup>2</sup> internal wiring from Power IN to Power THRU connectors.



**Warning!** Do not connect more than four (4) EXO Wash 30 fixtures in total to power in one chain at 100-120 V, 60 Hz. Do not connect more than eight (8) EXO Wash 30 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 Neutrik powerCON TRUE1 connectors. Cables must be minimum 14 AWG or 1.5mm<sup>2</sup>, 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 18.
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. If you are using 100-120 V, 60 Hz AC mains power you can continue connecting EXO Wash 30 fixtures Mains OUT / THRU socket to Mains IN socket until the chain contains a maximum of four (4) fixtures in total. If you are using 200-240 V, 50 Hz AC mains power you can continue connecting fixtures Mains OUT to Mains IN until the chain contains a maximum of eight (8) fixtures total.

## 6. Connecting to DMX data

Check that all cables and connectors are suitable for the installation environment and application (see recommendations in 'Avoiding damage to the fixture' on page 10).

Use digital 110 Ohm DMX cable with IP65 5-pin XLR connectors to supply DMX data to fixtures.

Keep connectors sealed with their rubber caps at all times when not in use.

The EXO Wash 30 has two 5-pin XLR sockets for IN and THRU connections to a DMX data link. EXO Wash 30 fixtures support the USITT DMX 512A signal protocol. They also support RDM (Remote Device Management).

The 5-pin XLR connectors use standard pin allocations:

|   |               |
|---|---------------|
| 1 | Signal Ground |
| 2 | Data -        |
| 3 | Data +        |
| 4 | Not used      |
| 5 | Not used      |

The DMX cable should start at the console and be daisy-chained through each fixture to be controlled using the DMX input and DMX link out connectors. If you need to split the DMX cable, use a powered DMX splitter.

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

## 7. Starting and stopping operation



**Warning!** Before you apply power to the fixture or operate it after a blackout, make sure that nobody is looking directly into the front of the fixture.

The EXO Wash 30's TRUE1 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, then apply power to the AC mains power circuit.

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

## 8. Features

The EXO Wash 30 unit has the following features:

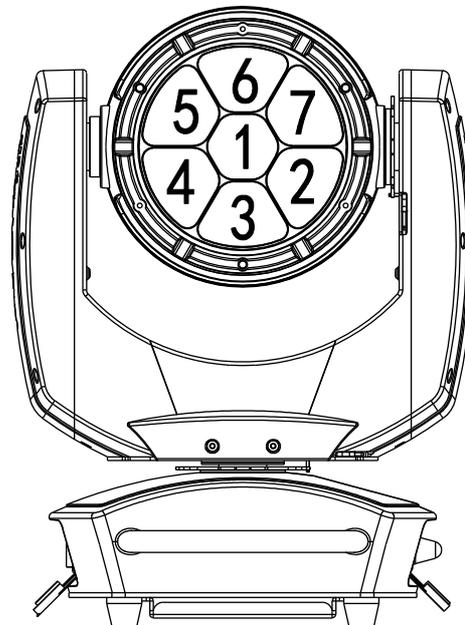
### **Position**

Pan rotation 630°(3.9 sec) or 540°(4.3 sec), Tilt rotation 267°(2.2 sec) with 16 bit resolution. The fixture will automatically reposition if knocked – this option can be disabled from the menu. The Pan and Tilt movements can be inverted using the menu.

### **Color**

The fixture has seven zones of Red/Green/Blue/White (RGBW) color mixing LEDs. Depending on the DMX mode these have up to 16-bit dimming and can be controlled independently, or using macro patterns.

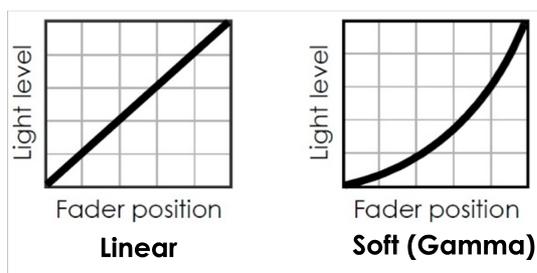
The zones/pixels are arranged as shown in the diagram below.



**Figure 5. Pixel order**

## Dimming

See Figure 6. You can select from two dimming curves using the control panel or the *Control / Settings* DMX channel:



**Figure 6. Dimming curves**

- **Linear** sets dimming so that it appears to increase and decrease evenly throughout the dimming range.
- **Soft** gives finer control at low light levels and coarser control at high light levels.

The default setting is **Soft**.

## Strobe / shutter

A variety of strobing and fading effects can be produced by the fixture.

## Zoom

The beam angle of the fixture can be adjusted (zoom) from 4° to 54°. The zoom operation can be inverted using the menu.

## Behavior when the fixture is not receiving a DMX signal

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):

- **Blackout** 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.
- **Preset Scene** sets the fixture to output a preset scene which you have previously captured from an incoming DMX state using the Manual Control > Capture Scene menu option. You can also manually set the control values (or edit the captured values) using the attribute settings in the Manual Control menu.

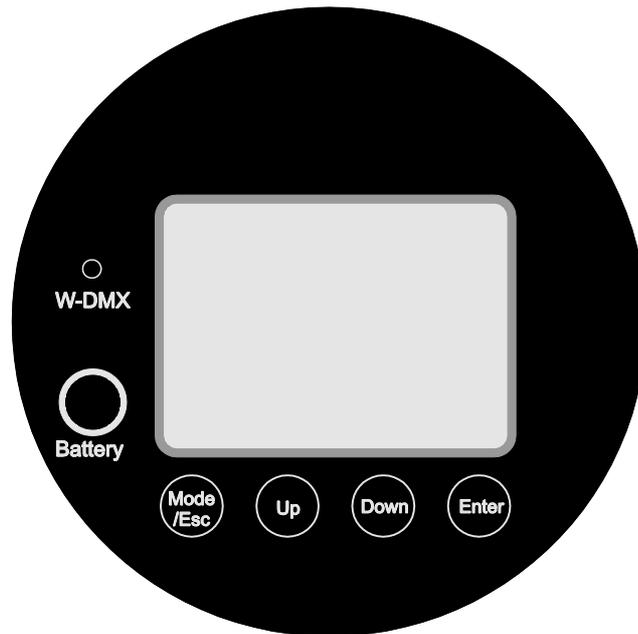
All these settings are available via DMX on the *Control / Settings* channel and in the fixture's control panel.

## 9. 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 LCD display provide access to user settings, readouts and utilities.



**Figure 7. Onboard display**

The four control buttons have the following functions:

**MODE/ESC:** 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.

When you apply power to the fixture, it boots up. After it has booted, the panel displays the default screen.

The **Battery** button is used to power up the control panel for setup before mains is connected to the unit. Battery mode can be disabled in the menu.

The **W-DMX** indicator shows when wireless DMX is being received, if the optional wireless module has been fitted.

DMX control is disabled when the control menus are active.

## **Display options**

The illuminated LCD display lets you change fixture settings. The display has a battery backup so that you can change the settings before mains is connected to the fixture. See Chapter 9 for more details.

Using the *Control / Settings* DMX channel or the fixture's control panel you can:

Set **display modes** using the *Fixture Settings > Display Mode* option:

- **On:** The display stays on constantly. This setting can be useful when you are configuring or servicing the fixture.
- **Auto:** The display will automatically switch off after a few seconds even if the fixture is not receiving a valid control signal or if it has detected an error.

**Invert the display** using the *Fixture Settings > Display Orientation* option, so it is easier to read if the fixture is hanging upside down.

## **Display Locking**

On the *Fixture Settings > Lock* menu, you can configure the display to lock after a period of time to prevent accidental changes to the options.

You can set a custom lock code using the *Fixture Settings > Lock > Set Passcode* option. If you do not set a custom code, the default code is 0000.

## **Manual Control**

Using the *Manual Control* menu you can set fixed values to the fixture's control channels, as if it was in DMX control mode 1. This is useful when testing.

## **LED PWM frequency**

The LEDs in the unit are dimmed using Pulse Width Modulation (PWM) which can sometimes cause flickering on cameras. The *Fixture Settings > PWM* option allows you to select different frequencies for the PWM to fix such issues. The higher frequencies may cause reduced dimming performance.

## **Fan control**

The fixture has internal cooling fans. In a noise critical situation you can slow these down using the *Fixture Settings > Fan Mode* option. The normal setting is *Regulated* which will adjust the fan speed automatically. If you set the option to *Low* the fan speed is kept slow but this may result in the fixture overheating and reducing its output.

The fixture has an additional fan near the lens to clear condensation. You can control how this fan works using the *Fixture Settings > Defog* option.

## **Fixture information**

The **Information** menu in the control panel gives access to items of information from the fixture's sensors and memory. You can check temperature sensor readouts, see total operating hours counters, and see software version number, for example.

### ***Pan disable / Tilt disable***

These options allow you to disable the startup reset movements or disable the drive of the pan and/or tilt motors. The options are

- **Off:** Normal motor control
- **Reset Disabled:** The fixture will not do its power on reset sequence on this motor but the motor is still controlled. This can be used when a fixture is mounted in a confined space and would collide with an obstruction if it did the reset sequence.
- **Current Disabled:** The motor drive function is completely disabled. This is mostly used for service or diagnostics.

### ***Preset settings and factory defaults***

You can store three different versions of option settings using the *Service > Service Advanced > Save Settings* menu and load them using the *Load Settings > Preset 1-2-3* options. These allow you to quickly set up the fixture in a particular configuration. Settings are stored after a power off/on cycle and after a reset.

Two options are available in the fixture's control panel for deleting multiple custom settings and restoring defaults:

- **Service > Default Settings** reloads all the fixture's factory default settings **except** DMX address, DMX mode, captured scene, preset settings and offset values. This option returns the fixture to baseline settings without affecting its basic configuration in an installation.
- **Service > Service Advanced > Factory Backup** reloads all the fixture's factory default settings **including** DMX address, DMX mode, and erases all storage. This option reinitializes the fixture completely and returns to its state when it left the factory.
-

## 10. Control menu layout

| Menus                     |                                      | Notes  |   |
|---------------------------|--------------------------------------|--|---|
| DMX ADDRESS               | 1 - 512                              | Enter DMX address  |   |
| CONTROL MODE              | <b>Compressed</b> – 13 channels      | Select DMX control mode  |   |
|                           | Standard – 22 channels               |  |   |
|                           | Extended – 37 channels               |  |   |
|                           | Pixel – 50 channels                  |  |   |
| CONTROL PROTOCOL          | <b>DMX</b>                           | Wired DMX control  |   |
|                           | WIRELESS                             | Wireless DMX control (optional module)                           |   |
| FITTURE SETTINGS          | Pan Invert                           | <b>Off</b> / On  | Invert Pan movement   |
|                           | Tilt Invert                          | <b>Off</b> / On  | Invert Tilt movement  |
|                           | Position Feedback                    | Off / <b>On</b>  | If On, fixture repositions if knocked   |
|                           | Pan Disabled                         | <b>Off</b> / Reset Disabled / Current Disabled                   | Disable motor drive for service   |
|                           | Tilt Disabled                        | <b>Off</b> / Reset Disabled / Current Disabled                   |   |
|                           | Zoom Invert                          | <b>Off</b> / On  | Inverts Zoom movement   |
|                           | Dimmer Curve                         | <b>Soft (Gamma)</b> / Linear                                     | Dimming curve   |
|                           | No Signal                            | <b>Blackout</b> / Hold / run<br>Captured Scene                   | Action when no DMX signal   |
|                           | Capture Scene                        | Press ENTER to capture scene                                     | Store scene for no signal   |
|                           | PWM                                  | 600 Hz / 2200 Hz / <b>3000 Hz</b> / 4800 Hz / 9600 Hz / 25000 Hz | Frequency of LED dimming  |
|                           | Display Mode                         | <b>Auto</b> / On / Off   | Display blanking  |
|                           | Display Orientation                  | <b>Normal</b> / Upside Down                                      | Display reversing   |
|                           | Max Temperature                      | 60 – <b>90C</b> / 140-194F                                       | Sets overheat temperature where shutdown will occur                             |
|                           | Fan Mode                             | <b>Regulated</b> / High / Medium / Low                           | Set fan speed control   |
|                           | Load Settings                        | <b>Preset 1</b> / Preset 2 / Preset 3                            | Press ENTER for 3 sec to confirm  |
|                           | Lock                                 | <b>Off</b> / On /. Set Passcode                                  | Lock the control panel  |
|                           | Defog                                | Off / <b>On</b> / Quick  | Settings for lens defogging fan   |
| Battery                   | <b>On</b> / Off                      | Disable the battery operation of the control panel               |   |
| MANUAL CONTROL            | Reboot                               |  | Press ENTER for 3 sec to confirm  |
|                           | Manual function control (DMX Mode 1) | Pan Coarse 0-255   | These values can be set manually or from a DMX state using Capture Scene option |
|                           |                                      | Pan Fine 0-255   |   |
|                           |                                      | Tilt Coarse 0-255  |   |
|                           |                                      | Tilt Fine 0-255  |   |
|                           |                                      | Dimmer 0-255   |   |
|                           |                                      | Shutter 0-255  |   |
| Virtual color wheel 0-255 |                                      |  |   |

|              |   |  |   |
|--------------|---|--|---|
|              |   | Red 0-255                                      |   |
|              |   | Green 0-255                                    |   |
|              |   | Blue 0-255                                     |   |
|              |   | White 0-255                                    |   |
|              |   | Zoom 0-255                                     |   |
|              |   | Control 0-255                                  |   |
|              | Capture Scene   |  | Press ENTER for 3 sec to capture incoming DMX state |
| INFORMATION  | Firmware Version  | ver x.x  | Fixture firmware version                            |
|              | Fixture Details   | Serial ... xx / RDM ... xx                     | Show fixture serial, RDM unique ID                  |
|              | Device Life   | Total / User                                   | Shows power cycles, Power Hours, LED Hours          |
|              | DMX Link Status   | Refresh Rate (Hz) / Frame Length / Mode Length | Details of DMX signal                               |
|              | Temperatures  | xxx...   | Unit temperatures                                   |
|              | Fan Speeds  | Fan1 ...                                       |   |
|              | Error Log   | Xxx  |   |
| SERVICE      | Test All  | Running  | Press Enter to start test, Menu or Enter to stop    |
|              | Test Pan only   | Running  |   |
|              | Test Tilt only  | Running  |   |
|              | Test LED only   | Running  |   |
|              | Test Zoom only  | Running  |   |
|              | Default Settings  |  | See Note 1 below                                    |
|              | Service Advanced  | See below for menu                             | Hold Enter for 6 sec to enter this menu             |
| FACTORY MENU | This menu is for use by authorized service technicians only |  |   |

Note 1: Default Setting will return all options to default except DMX address, Control Mode. It does not erase captured scene, preset settings or offset values

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

**Service Advanced menu**

Hold down Enter for 6 seconds to access this menu.

**Menus****Notes**

|                |                  |     |                  |
|----------------|------------------|-----|------------------|
| Pan Disable    | Off/On           |     |                  |
| Tilt Disable   | Off/On           |     |                  |
| Units          | °C / °F          |     |                  |
| Offsets        | Tilt             | xxx |                  |
|                | Zoom             | xxx |                  |
| Reset Counter  | Power Hours      |     |                  |
|                | Power Cycles     |     |                  |
|                | LED Hours        |     |                  |
|                | Max Temperature  |     |                  |
|                | Temperature Unit |     |                  |
| Save Settings  | Preset 1         |     |                  |
|                | Preset 2         |     |                  |
|                | Preset 3         |     |                  |
| Factory Backup |                  |     | See Note 2 below |

Note 2: Factory backup will reset all options to default, erase captured scene, erase preset settings, erase offset values. User Hour counter and Temperature Unit will not be affected.

## 11. DMX control modes overview

The following DMX control modes are available in the EXO Wash 30.

### DMX Mode 1: Compact

Compact Mode uses 13 DMX channels.

It provides 16-bit control of pan and tilt, dimming and a shutter with strobe and ramp up/down effects. It has a virtual color wheel effect (color presets with rotation effects) and RGBW color mixing.

Compact Mode also provides control of zoom and a control / settings channel that lets you configure the feature and adjust settings remotely via DMX.

#### Mode 1 Compact

|    |                     |
|----|---------------------|
| 1  | Pan                 |
| 2  | Pan fine            |
| 3  | Tilt                |
| 4  | Tilt fine           |
| 5  | Dimmer              |
| 6  | Shutter             |
| 7  | Virtual color wheel |
| 8  | Red                 |
| 9  | Green               |
| 10 | Blue                |
| 11 | White               |
| 12 | Zoom                |
| 13 | Control / Settings  |

### DMX Mode 2: Standard

Standard Mode uses 22 DMX channels.

It provides 16-bit control of pan and tilt, 16-bit control of dimming and a shutter with strobe and ramp up/down effects. It has a virtual color wheel effect (color presets with rotation effects), color temperature control and 16-bit RGBW color mixing.

Standard Mode also gives access to a range of Pattern FX with variable speed and crossfading parameters, control of zoom and a control / settings channel that lets you configure the feature and adjust settings remotely via DMX.

#### Mode 2 Standard

|    |                     |
|----|---------------------|
| 1  | Pan                 |
| 2  | Pan fine            |
| 3  | Tilt                |
| 4  | Tilt fine           |
| 5  | Dimmer              |
| 6  | Dimmer fine         |
| 7  | Shutter             |
| 8  | Virtual color wheel |
| 9  | CTC                 |
| 10 | Red                 |
| 11 | Red fine            |
| 12 | Green               |
| 13 | Green fine          |
| 14 | Blue                |
| 15 | Blue fine           |
| 16 | White               |
| 17 | White fine          |
| 18 | Pattern             |
| 19 | Pattern Speed       |
| 20 | Pattern Fading      |
| 21 | Zoom                |
| 22 | Control / Settings  |

### DMX Mode 3: Extended

Extended Mode uses 37 DMX channels.

It provides 16-bit control of pan and tilt, 16-bit control of dimming and a shutter with strobe and ramp up/down effects. It has a virtual color wheel effect (color presets with rotation effects), color temperature control and 16-bit RGBW color mixing.

Extended Mode also has two layers:

- Layer 1, the background layer, has 16-bit color dimming and a shutter effect that includes a random pixel strobe.
- Layer 2, the top layer, has a range of Pattern FX with 16-bit dimming, shutter effects and color control via a virtual color wheel (color presets) and 16-bit RGBW color mixing. Layer 2 also has variable speed and crossfading parameters

Extended Mode also provides control of zoom and a control / settings channel that lets you configure the feature and adjust settings remotely via DMX.

| Mode 3<br>Extended |  |
|--------------------|--|
|--------------------|--|

|    |                             |
|----|-----------------------------|
| 1  | Pan                         |
| 2  | Pan fine                    |
| 3  | Tilt                        |
| 4  | Tilt fine                   |
| 5  | Dimmer                      |
| 6  | Dimmer fine                 |
| 7  | Shutter                     |
| 8  | Virtual color wheel         |
| 9  | CTC                         |
| 10 | Red                         |
| 11 | Red fine                    |
| 12 | Green                       |
| 13 | Green fine                  |
| 14 | Blue                        |
| 15 | Blue fine                   |
| 16 | White                       |
| 17 | White fine                  |
| 18 | Layer 1 Color dimmer        |
| 19 | Layer 1 Color dimmer fine   |
| 20 | Layer 1 Shutter             |
| 21 | Layer 2 Pattern dimmer      |
| 22 | Layer 2 Pattern dimmer fine |
| 23 | Layer 2 Pattern shutter     |
| 24 | Layer 2 Pattern color wheel |
| 25 | Layer 2 Pattern red         |
| 26 | Layer 2 Pattern red fine    |
| 27 | Layer 2 Pattern green       |
| 28 | Layer 2 Pattern green fine  |
| 29 | Layer 2 Pattern blue        |
| 30 | Layer 2 Pattern blue fine   |
| 31 | Layer 2 Pattern white       |
| 32 | Layer 2 Pattern white fine  |
| 33 | Layer 2 Pattern             |
| 34 | Layer 2 Pattern speed       |
| 35 | Layer 2 Pattern fading      |
| 36 | Zoom                        |
| 37 | Control / Settings          |

### DMX Mode 4: Pix

Pix Mode uses 50 DMX channels.

It provides 16-bit control of pan and tilt, 16-bit control of dimming and a shutter with strobe and ramp up/down effects. It has a virtual color wheel effect (color presets with rotation effects), color temperature control and 16-bit RGBW color mixing.

Pix Mode also gives access to a range of Pattern FX with variable speed and crossfading parameters, control of zoom and a control / settings channel that lets you configure the feature and adjust settings remotely via DMX.

Finally, Pix Mode provides independent RGBW color mixing on each of the fixture's seven pixels.

| Mode 4<br>Pix |                     |
|---------------|---------------------|
| 1             | Pan                 |
| 2             | Pan fine            |
| 3             | Tilt                |
| 4             | Tilt fine           |
| 5             | Dimmer              |
| 6             | Dimmer fine         |
| 7             | Shutter             |
| 8             | Virtual color wheel |
| 9             | CTC                 |
| 10            | Red                 |
| 11            | Red fine            |
| 12            | Green               |
| 13            | Green fine          |
| 14            | Blue                |
| 15            | Blue fine           |
| 16            | White               |
| 17            | White fine          |
| 18            | Pattern             |
| 19            | Pattern Speed       |
| 20            | Pattern Fading      |
| 21            | Zoom                |
| 22            | Control / Settings  |
| 23            | Pixel 1 Red         |
| 24            | Pixel 1 Green       |
| 25            | Pixel 1 Blue        |
| 26            | Pixel 1 White       |
| 27            | Pixel 2 Red         |
| 28            | Pixel 2 Green       |
| 29            | Pixel 2 Blue        |
| 30            | Pixel 2 White       |
| 31            | Pixel 3 Red         |
| 32            | Pixel 3 Green       |
| 33            | Pixel 3 Blue        |
| 34            | Pixel 3 White       |
| 35            | Pixel 4 Red         |
| 36            | Pixel 4 Green       |
| 37            | Pixel 4 Blue        |
| 38            | Pixel 4 White       |
| 39            | Pixel 5 Red         |
| 40            | Pixel 5 Green       |
| 41            | Pixel 5 Blue        |
| 42            | Pixel 5 White       |
| 43            | Pixel 6 Red         |
| 44            | Pixel 6 Green       |
| 45            | Pixel 6 Blue        |
| 46            | Pixel 6 White       |
| 47            | Pixel 7 Red         |
| 48            | Pixel 7 Green       |
| 49            | Pixel 7 Blue        |
| 50            | Pixel 7 White       |

## 12. DMX control channel layout tables

### DMX Mode 1: Compact

#### 11 DMX Channels

| Channel   | Command                              | DMX range                                  |      | Percent |      | Default DMX | Fade  |      |
|-----------|--------------------------------------|--|------|---------|------|-------------|-------|------|
| <b>1</b>  | <b>Pan</b>                           | Pan left-right                             | 0    | 65535   | 0    | 100         | 32767 | Fade |
| <b>2</b>  | <b>Pan fine</b>                      |  |      |         |      |             |       |      |
| <b>3</b>  | <b>Tilt</b>                          | Tilt up-down                               | 0    | 65535   | 0    | 100         | 32767 | Fade |
| <b>4</b>  | <b>Tilt fine</b>                     |  |      |         |      |             |       |      |
| <b>5</b>  | <b>Dimmer</b>                        | Intensity 0-100%                           | 0    | 255     | 0    | 100         | 0     | Fade |
| <b>6</b>  | <b>Shutter</b>                       | Shutter closed                             | 0    | 4       | 0    | 1.6         | 0     | Snap |
|           |                                      | Single flash when change on dimmer channel | 5    | 9       | 2.0  | 3.5         |       |      |
|           |                                      | Sync ramp up slow-fast                     | 10   | 39      | 3.9  | 15.3        |       |      |
|           |                                      | Sync ramp down slow-fast                   | 40   | 69      | 15.7 | 27.1        |       |      |
|           |                                      | Sync ramp up-down slow-fast                | 70   | 99      | 27.5 | 38.8        |       |      |
|           |                                      | Sync double flash (slow-fast)              | 100  | 129     | 39.2 | 50.6        |       |      |
|           |                                      | Random strobe pixel (slow-fast)            | 130  | 159     | 51.0 | 62.4        |       |      |
|           |                                      | Random strobe all (slow-fast)              | 160  | 199     | 62.7 | 78.0        |       |      |
|           |                                      | Sync strobe (1 Hz-10 Hz)                   | 200  | 250     | 78.4 | 98.0        |       |      |
|           | Shutter open                         | 251  | 255  | 98.4    | 100  |             |       |      |
| <b>7</b>  | <b>Color wheel effect</b>            | Off (RGBW)                                 | 0    | 7       | 0    | 2.7         | 0     | Snap |
|           |                                      | Color 01 - Red                             | 8    | 15      | 3.1  | 5.9         |       | Snap |
|           |                                      | Color 02 - Amber                           | 16   | 23      | 6.3  | 9.0         |       | Snap |
|           |                                      | Color 03 - Warm Yellow                     | 24   | 31      | 9.4  | 12.2        |       | Snap |
|           |                                      | Color 04 - Yellow                          | 32   | 39      | 12.5 | 15.3        |       | Snap |
|           |                                      | Color 05 - Green                           | 40   | 47      | 15.7 | 18.4        |       | Snap |
|           |                                      | Color 06 - Turquoise                       | 48   | 55      | 18.8 | 21.6        |       | Snap |
|           |                                      | Color 07 - Cyan                            | 56   | 63      | 22.0 | 24.7        |       | Snap |
|           |                                      | Color 08 - Blue                            | 64   | 71      | 25.1 | 27.8        |       | Snap |
|           |                                      | Color 09 - Lavender                        | 72   | 79      | 28.2 | 31.0        |       | Snap |
|           |                                      | Color 10 - Mauve                           | 80   | 87      | 31.4 | 34.1        |       | Snap |
|           |                                      | Color 11 - Magenta                         | 88   | 95      | 34.5 | 37.3        |       | Snap |
|           |                                      | Color 12 - Pink                            | 96   | 103     | 37.6 | 40.4        |       | Snap |
|           |                                      | Color 13 - White 3200K                     | 104  | 111     | 40.8 | 43.5        |       | Snap |
|           |                                      | Color 14 - White 5600K                     | 112  | 119     | 43.9 | 46.7        |       | Snap |
|           |                                      | Color 15 - White 7200K                     | 120  | 127     | 47.1 | 49.8        |       | Snap |
|           |                                      |  | Stop | 128     | 128  | 50.2        |       | 50.2 |
|           | Rainbow colors crossfade slow > fast | 129  | 223  | 50.6    | 87.5 | Fade        |       |      |
|           | Random colors crossfade slow > fast  | 224  | 255  | 87.8    | 100  | Fade        |       |      |
| <b>8</b>  | <b>Red</b>                           | Red intensity 0-100%                       | 0    | 255     | 0    | 100         | 0     | Fade |
| <b>9</b>  | <b>Green</b>                         | Green intensity 0-100%                     | 0    | 255     | 0    | 100         | 0     | Fade |
| <b>10</b> | <b>Blue</b>                          | Blue intensity 0-100%                      | 0    | 255     | 0    | 100         | 0     | Fade |
| <b>11</b> | <b>White</b>                         | White intensity 0-100%                     | 0    | 255     | 0    | 100         | 0     | Fade |
| <b>12</b> | <b>Zoom</b>                          | Wide-narrow                                | 0    | 255     | 0    | 100         | 0     | Fade |

|                     |                    |  |      |     |      |      |   |      |
|---------------------|--------------------|--|------|-----|------|------|---|------|
| 13                  | Control / Settings | No function                                  | 0    | 9   | 0.0  | 3.5  | 0 | Snap |
|                     |                    | <b>Dimmer curve: Extra-soft (3s hold)</b>    | 10   | 15  | 3.9  | 5.9  |   |      |
|                     |                    | Dimmer curve: Linear (3s hold)               | 16   | 21  | 6.3  | 8.2  |   |      |
|                     |                    | <b>Display mode: Auto (3s hold)</b>          | 22   | 27  | 8.6  | 10.6 |   |      |
|                     |                    | Display mode: On (3s hold)                   | 28   | 33  | 11.0 | 12.9 |   |      |
|                     |                    | Display mode: Off (3s hold)                  | 34   | 39  | 13.3 | 15.3 |   |      |
|                     |                    | <b>Display orientation: Normal (3s hold)</b> | 40   | 45  | 15.7 | 17.6 |   |      |
|                     |                    | Display orientation: Inverted (3s hold)      | 46   | 51  | 18.0 | 20.0 |   |      |
|                     |                    | No DMX: Blackout (3s hold)                   | 52   | 57  | 20.4 | 22.4 |   |      |
|                     |                    | <b>No DMX: Hold (3s hold)</b>                | 58   | 63  | 22.7 | 24.7 |   |      |
|                     |                    | No DMX: Stand-alone (3s hold)                | 64   | 69  | 25.1 | 27.1 |   |      |
|                     |                    | <b>Fan mode: Regulated (3s hold)</b>         | 70   | 75  | 27.5 | 29.4 |   |      |
|                     |                    | Fan mode: High (3s hold)                     | 76   | 81  | 29.8 | 31.8 |   |      |
|                     |                    | Fan mode: Medium (3s hold)                   | 82   | 87  | 32.2 | 34.1 |   |      |
|                     |                    | Fan mode: Low (3s hold)                      | 88   | 93  | 34.5 | 36.5 |   |      |
|                     |                    | Position feedback: Off (3s hold)             | 94   | 99  | 36.9 | 38.8 |   |      |
|                     |                    | <b>Position feedback: On (3s hold)</b>       | 100  | 105 | 39.2 | 41.2 |   |      |
|                     |                    | No function                                  | 106  | 117 | 41.6 | 45.9 |   |      |
|                     |                    | <b>Tilt inversion: Off (3s hold)</b>         | 118  | 123 | 46.3 | 48.2 |   |      |
|                     |                    | Tilt inversion: On (3s hold)                 | 124  | 129 | 48.6 | 50.6 |   |      |
|                     |                    | <b>Pan inversion: Off (3s hold)</b>          | 130  | 135 | 51.0 | 52.9 |   |      |
|                     |                    | Pan inversion: On (3s hold)                  | 136  | 141 | 53.3 | 55.3 |   |      |
|                     |                    | <b>Zoom inversion: Off (3s hold)</b>         | 142  | 147 | 55.7 | 57.6 |   |      |
|                     |                    | Zoom inversion: On (3s hold)                 | 148  | 153 | 58.0 | 60.0 |   |      |
|                     |                    | <b>Defog: Off</b>                            | 154  | 159 | 60.4 | 62.4 |   |      |
|                     |                    | Defog: On                                    | 160  | 165 | 62.7 | 64.7 |   |      |
|                     |                    | Defog: Quick                                 | 166  | 171 | 65.1 | 67.1 |   |      |
|                     |                    | Load Settings Preset1                        | 172  | 177 | 67.5 | 69.4 |   |      |
|                     |                    | Load Settings Preset2                        | 178  | 183 | 69.8 | 71.8 |   |      |
|                     |                    | Load Settings Preset3                        | 184  | 189 | 72.2 | 74.1 |   |      |
|                     |                    | PWM 600 Hz (5s hold)                         | 190  | 195 | 74.5 | 76.5 |   |      |
|                     |                    | PWM: 2200 Hz (5s hold)                       | 196  | 201 | 76.9 | 78.8 |   |      |
|                     |                    | <b>PWM: 3000 Hz (5s hold)</b>                | 202  | 207 | 79.2 | 81.2 |   |      |
|                     |                    | PWM: 4800 Hz (5s hold)                       | 208  | 213 | 81.6 | 83.5 |   |      |
|                     |                    | PWM: 9600 Hz (5s hold)                       | 214  | 219 | 83.9 | 85.9 |   |      |
|                     |                    | PWM: 25 kHz (5s hold)                        | 220  | 225 | 86.3 | 88.2 |   |      |
|                     |                    | No function                                  | 226  | 231 | 88.6 | 90.6 |   |      |
|                     |                    | Return to default settings                   | 232  | 237 | 91.0 | 92.9 |   |      |
|                     |                    | Reset Pan/Tilt (3s hold)                     | 238  | 243 | 93.3 | 95.3 |   |      |
|                     |                    | Reset Head (3s hold)                         | 244  | 249 | 95.7 | 97.6 |   |      |
| Reset All (3s hold) | 250                | 255  | 98.0 | 100 |      |      |   |      |

**DMX Mode 2: Standard**

**22 DMX Channels**

| Channel                             | Command                           | DMX range                                  |      | Percent |      | Default DMX | Fade  |      |
|-------------------------------------|-----------------------------------|--|------|---------|------|-------------|-------|------|
| 1                                   | <b>Pan</b>                        | Pan left-right                             | 0    | 65535   | 0    | 100         | 32767 | Fade |
| 2                                   | <b>Pan fine</b>                   |  |      |         |      |             |       |      |
| 3                                   | <b>Tilt</b>                       | Tilt up-down                               | 0    | 65535   | 0    | 100         | 32767 | Fade |
| 4                                   | <b>Tilt fine</b>                  |  |      |         |      |             |       |      |
| 5                                   | <b>Dimmer</b>                     | Intensity 0-100%                           | 0    | 65535   | 0    | 100         | 32767 | Fade |
| 6                                   | <b>Dimmer fine</b>                |  |      |         |      |             |       |      |
| 7                                   | <b>Shutter</b>                    | Shutter closed                             | 0    | 4       | 0    | 1.6         | 0     | Snap |
|                                     |                                   | Single flash when change on dimmer channel | 5    | 9       | 2.0  | 3.5         |       |      |
|                                     |                                   | Sync ramp up slow-fast                     | 10   | 39      | 3.9  | 15.3        |       |      |
|                                     |                                   | Sync ramp down slow-fast                   | 40   | 69      | 15.7 | 27.1        |       |      |
|                                     |                                   | Sync ramp up-down slow-fast                | 70   | 99      | 27.5 | 38.8        |       |      |
|                                     |                                   | Sync double flash (slow-fast)              | 100  | 129     | 39.2 | 50.6        |       |      |
|                                     |                                   | Random strobe pixel (slow-fast)            | 130  | 159     | 51.0 | 62.4        |       |      |
|                                     |                                   | Random strobe all (slow-fast)              | 160  | 199     | 62.7 | 78.0        |       |      |
|                                     |                                   | Sync strobe (1 Hz-10 Hz)                   | 200  | 250     | 78.4 | 98.0        |       |      |
| Shutter open                        | 251                               | 255  | 98.4 | 100     |      |             |       |      |
| 8                                   | <b>Color wheel effect</b>         | Off (RGBW)                                 | 0    | 7       | 0    | 2.7         | 0     | Snap |
|                                     |                                   | Color 01 - Red                             | 8    | 15      | 3.1  | 5.9         |       | Snap |
|                                     |                                   | Color 02 - Amber                           | 16   | 23      | 6.3  | 9.0         |       | Snap |
|                                     |                                   | Color 03 - Warm Yellow                     | 24   | 31      | 9.4  | 12.2        |       | Snap |
|                                     |                                   | Color 04 - Yellow                          | 32   | 39      | 12.5 | 15.3        |       | Snap |
|                                     |                                   | Color 05 - Green                           | 40   | 47      | 15.7 | 18.4        |       | Snap |
|                                     |                                   | Color 06 - Turquoise                       | 48   | 55      | 18.8 | 21.6        |       | Snap |
|                                     |                                   | Color 07 - Cyan                            | 56   | 63      | 22.0 | 24.7        |       | Snap |
|                                     |                                   | Color 08 - Blue                            | 64   | 71      | 25.1 | 27.8        |       | Snap |
|                                     |                                   | Color 09 - Lavender                        | 72   | 79      | 28.2 | 31.0        |       | Snap |
|                                     |                                   | Color 10 - Mauve                           | 80   | 87      | 31.4 | 34.1        |       | Snap |
|                                     |                                   | Color 11 - Magenta                         | 88   | 95      | 34.5 | 37.3        |       | Snap |
|                                     |                                   | Color 12 - Pink                            | 96   | 103     | 37.6 | 40.4        |       | Snap |
|                                     |                                   | Color 13 - White 3200K                     | 104  | 111     | 40.8 | 43.5        |       | Snap |
|                                     |                                   | Color 14 - White 5600K                     | 112  | 119     | 43.9 | 46.7        |       | Snap |
|                                     |                                   | Color 15 - White 7200K                     | 120  | 127     | 47.1 | 49.8        |       | Snap |
|                                     |                                   | Stop                                       | 128  | 128     | 50.2 | 50.2        |       | Snap |
|                                     |                                   | Rainbow colors crossfade slow > fast       | 129  | 223     | 50.6 | 87.5        |       | Fade |
| Random colors crossfade slow > fast | 224                               | 255  | 87.8 | 100     | Fade |             |       |      |
| 9                                   | <b>Color Temperature (Kelvin)</b> | RAW  | 0    | 15      | 0    | 5.9         |       | Snap |
|                                     |                                   | 10000                                      | 16   | 18      | 6.3  | 7.1         |       |      |
|                                     |                                   | 9900                                       | 19   | 21      | 7.5  | 8.2         |       |      |
|                                     |                                   | 9800                                       | 22   | 24      | 8.6  | 9.4         |       |      |
|                                     |                                   | 9700                                       | 25   | 27      | 9.8  | 10.6        |       |      |
|                                     |                                   | 9600                                       | 28   | 30      | 11.0 | 11.8        |       |      |
|                                     |                                   | 9500                                       | 31   | 33      | 12.2 | 12.9        |       |      |
|                                     |                                   | 9400                                       | 34   | 36      | 13.3 | 14.1        |       |      |
|                                     |                                   | 9300                                       | 37   | 39      | 14.5 | 15.3        |       |      |
|                                     |                                   | 9200                                       | 40   | 42      | 15.7 | 16.5        |       |      |
|                                     |                                   | 9100                                       | 43   | 45      | 16.9 | 17.6        |       |      |
|                                     |                                   | 9000                                       | 46   | 48      | 18.0 | 18.8        |       |      |
|                                     |                                   | 8900                                       | 49   | 51      | 19.2 | 20.0        |       |      |
|                                     |                                   | 8800                                       | 52   | 54      | 20.4 | 21.2        |       |      |
|                                     |                                   | 8700                                       | 55   | 57      | 21.6 | 22.4        |       |      |

|      |     |     |      |      |
|------|-----|-----|------|------|
| 8600 | 58  | 60  | 22.7 | 23.5 |
| 8500 | 61  | 63  | 23.9 | 24.7 |
| 8400 | 64  | 66  | 25.1 | 25.9 |
| 8300 | 67  | 69  | 26.3 | 27.1 |
| 8200 | 70  | 72  | 27.5 | 28.2 |
| 8100 | 73  | 75  | 28.6 | 29.4 |
| 8000 | 76  | 78  | 29.8 | 30.6 |
| 7900 | 79  | 81  | 31.0 | 31.8 |
| 7800 | 82  | 84  | 32.2 | 32.9 |
| 7700 | 85  | 87  | 33.3 | 34.1 |
| 7600 | 88  | 90  | 34.5 | 35.3 |
| 7500 | 91  | 93  | 35.7 | 36.5 |
| 7400 | 94  | 96  | 36.9 | 37.6 |
| 7300 | 97  | 99  | 38.0 | 38.8 |
| 7200 | 100 | 102 | 39.2 | 40.0 |
| 7100 | 103 | 105 | 40.4 | 41.2 |
| 7000 | 106 | 108 | 41.6 | 42.4 |
| 6900 | 109 | 111 | 42.7 | 43.5 |
| 6800 | 112 | 114 | 43.9 | 44.7 |
| 6700 | 115 | 117 | 45.1 | 45.9 |
| 6600 | 118 | 120 | 46.3 | 47.1 |
| 6500 | 121 | 123 | 47.5 | 48.2 |
| 6400 | 124 | 126 | 48.6 | 49.4 |
| 6300 | 127 | 129 | 49.8 | 50.6 |
| 6200 | 130 | 132 | 51.0 | 51.8 |
| 6100 | 133 | 135 | 52.2 | 52.9 |
| 6000 | 136 | 138 | 53.3 | 54.1 |
| 5900 | 139 | 141 | 54.5 | 55.3 |
| 5800 | 142 | 144 | 55.7 | 56.5 |
| 5700 | 145 | 147 | 56.9 | 57.6 |
| 5600 | 148 | 150 | 58.0 | 58.8 |
| 5500 | 151 | 153 | 59.2 | 60.0 |
| 5400 | 154 | 156 | 60.4 | 61.2 |
| 5300 | 157 | 159 | 61.6 | 62.4 |
| 5200 | 160 | 162 | 62.7 | 63.5 |
| 5100 | 163 | 165 | 63.9 | 64.7 |
| 5000 | 166 | 168 | 65.1 | 65.9 |
| 4900 | 169 | 171 | 66.3 | 67.1 |
| 4800 | 172 | 174 | 67.5 | 68.2 |
| 4700 | 175 | 177 | 68.6 | 69.4 |
| 4600 | 178 | 180 | 69.8 | 70.6 |
| 4500 | 181 | 183 | 71.0 | 71.8 |
| 4400 | 184 | 186 | 72.2 | 72.9 |
| 4300 | 187 | 189 | 73.3 | 74.1 |
| 4200 | 190 | 192 | 74.5 | 75.3 |
| 4100 | 193 | 195 | 75.7 | 76.5 |
| 4000 | 196 | 198 | 76.9 | 77.6 |
| 3900 | 199 | 201 | 78.0 | 78.8 |
| 3800 | 202 | 204 | 79.2 | 80.0 |
| 3700 | 205 | 207 | 80.4 | 81.2 |
| 3600 | 208 | 210 | 81.6 | 82.4 |
| 3500 | 211 | 213 | 82.7 | 83.5 |
| 3400 | 214 | 216 | 83.9 | 84.7 |
| 3300 | 217 | 219 | 85.1 | 85.9 |
| 3200 | 220 | 222 | 86.3 | 87.1 |
| 3100 | 223 | 225 | 87.5 | 88.2 |
| 3000 | 226 | 228 | 88.6 | 89.4 |
| 2900 | 229 | 231 | 89.8 | 90.6 |

|                               |                           |  |      |       |      |      |       |      |
|-------------------------------|---------------------------|--|------|-------|------|------|-------|------|
|                               |                           | 2800   | 232  | 234   | 91.0 | 91.8 |       |      |
|                               |                           | 2700   | 235  | 237   | 92.2 | 92.9 |       |      |
|                               |                           | 2600   | 238  | 240   | 93.3 | 94.1 |       |      |
|                               |                           | 2500   | 241  | 255   | 94.5 | 100  |       |      |
| 10                            | <b>Red</b>                | Red intensity 0–100%                         | 0    | 65535 | 0    | 100  | 32767 | Fade |
| 11                            | <b>Red fine</b>           |  |      |       |      |      |       |      |
| 12                            | <b>Green</b>              | Green intensity 0–100%                       | 0    | 65535 | 0    | 100  | 32767 | Fade |
| 13                            | <b>Green fine</b>         |  |      |       |      |      |       |      |
| 14                            | <b>Blue</b>               | Blue intensity 0–100%                        | 0    | 65535 | 0    | 100  | 32767 | Fade |
| 15                            | <b>Blue fine</b>          |  |      |       |      |      |       |      |
| 16                            | <b>White</b>              | White intensity 0–100%                       | 0    | 65535 | 0    | 100  | 32767 | Fade |
| 17                            | <b>White fine</b>         |  |      |       |      |      |       |      |
| 18                            | <b>Pattern</b>            | Static pattern                               | 0    | 51    | 0    | 20.0 | 0     | Snap |
|                               |                           | Chase animation                              | 52   | 131   | 20.4 | 51.4 |       |      |
|                               |                           | Fade animation                               | 132  | 211   | 51.8 | 82.7 |       |      |
|                               |                           | Random                                       | 212  | 255   | 83.1 | 100  |       |      |
| 19                            | <b>Pattern speed</b>      | Slow–fast                                    | 0    | 255   | 0    | 100  | 0     | Fade |
| 20                            | <b>Pattern fade</b>       | Slow crossfade–snap                          | 0    | 255   | 0    | 100  | 0     | Fade |
| 21                            | <b>Zoom</b>               | Wide–narrow                                  | 0    | 255   | 0    | 100  | 0     | Fade |
| 22                            | <b>Control / Settings</b> | No function                                  | 0    | 9     | 0.0  | 3.5  | 0     | Snap |
|                               |                           | <b>Dimmer curve: Extra-soft (3s hold)</b>    | 10   | 15    | 3.9  | 5.9  |       |      |
|                               |                           | Dimmer curve: Linear (3s hold)               | 16   | 21    | 6.3  | 8.2  |       |      |
|                               |                           | <b>Display mode: Auto (3s hold)</b>          | 22   | 27    | 8.6  | 10.6 |       |      |
|                               |                           | Display mode: On (3s hold)                   | 28   | 33    | 11.0 | 12.9 |       |      |
|                               |                           | Display mode: Off (3s hold)                  | 34   | 39    | 13.3 | 15.3 |       |      |
|                               |                           | <b>Display orientation: Normal (3s hold)</b> | 40   | 45    | 15.7 | 17.6 |       |      |
|                               |                           | Display orientation: Inverted (3s hold)      | 46   | 51    | 18.0 | 20.0 |       |      |
|                               |                           | No DMX: Blackout (3s hold)                   | 52   | 57    | 20.4 | 22.4 |       |      |
|                               |                           | <b>No DMX: Hold (3s hold)</b>                | 58   | 63    | 22.7 | 24.7 |       |      |
|                               |                           | No DMX: Stand-alone (3s hold)                | 64   | 69    | 25.1 | 27.1 |       |      |
|                               |                           | <b>Fan mode: Regulated (3s hold)</b>         | 70   | 75    | 27.5 | 29.4 |       |      |
|                               |                           | Fan mode: High (3s hold)                     | 76   | 81    | 29.8 | 31.8 |       |      |
|                               |                           | Fan mode: Medium (3s hold)                   | 82   | 87    | 32.2 | 34.1 |       |      |
|                               |                           | Fan mode: Low (3s hold)                      | 88   | 93    | 34.5 | 36.5 |       |      |
|                               |                           | Position feedback: Off (3s hold)             | 94   | 99    | 36.9 | 38.8 |       |      |
|                               |                           | <b>Position feedback: On (3s hold)</b>       | 100  | 105   | 39.2 | 41.2 |       |      |
|                               |                           | No function                                  | 106  | 117   | 41.6 | 45.9 |       |      |
|                               |                           | <b>Tilt inversion: Off (3s hold)</b>         | 118  | 123   | 46.3 | 48.2 |       |      |
|                               |                           | Tilt inversion: On (3s hold)                 | 124  | 129   | 48.6 | 50.6 |       |      |
|                               |                           | <b>Pan inversion: Off (3s hold)</b>          | 130  | 135   | 51.0 | 52.9 |       |      |
|                               |                           | Pan inversion: On (3s hold)                  | 136  | 141   | 53.3 | 55.3 |       |      |
|                               |                           | <b>Zoom inversion: Off (3s hold)</b>         | 142  | 147   | 55.7 | 57.6 |       |      |
|                               |                           | Zoom inversion: On (3s hold)                 | 148  | 153   | 58.0 | 60.0 |       |      |
|                               |                           | <b>Defog: Off</b>                            | 154  | 159   | 60.4 | 62.4 |       |      |
|                               |                           | Defog: On                                    | 160  | 165   | 62.7 | 64.7 |       |      |
|                               |                           | Defog: Quick                                 | 166  | 171   | 65.1 | 67.1 |       |      |
|                               |                           | Load Settings Preset1                        | 172  | 177   | 67.5 | 69.4 |       |      |
|                               |                           | Load Settings Preset2                        | 178  | 183   | 69.8 | 71.8 |       |      |
|                               |                           | Load Settings Preset3                        | 184  | 189   | 72.2 | 74.1 |       |      |
|                               |                           | PWM: 600 Hz (5s hold)                        | 190  | 195   | 74.5 | 76.5 |       |      |
|                               |                           | PWM: 2200 Hz (5s hold)                       | 196  | 201   | 76.9 | 78.8 |       |      |
| <b>PWM: 3000 Hz (5s hold)</b> | 202                       | 207  | 79.2 | 81.2  |      |      |       |      |
| PWM: 4800 Hz (5s hold)        | 208                       | 213  | 81.6 | 83.5  |      |      |       |      |
| PWM: 9600 Hz (5s hold)        | 214                       | 219  | 83.9 | 85.9  |      |      |       |      |
| PWM: 25 kHz (5s hold)         | 220                       | 225  | 86.3 | 88.2  |      |      |       |      |

|  |                            |     |     |      |      |  |  |
|--|----------------------------|-----|-----|------|------|--|--|
|  | No function                | 226 | 231 | 88.6 | 90.6 |  |  |
|  | Return to default settings | 232 | 237 | 91.0 | 92.9 |  |  |
|  | Reset Pan/Tilt (3s hold)   | 238 | 243 | 93.3 | 95.3 |  |  |
|  | Reset Head (3s hold)       | 244 | 249 | 95.7 | 97.6 |  |  |
|  | Reset All (3s hold)        | 250 | 255 | 98.0 | 100  |  |  |

**DMX Mode 3: Extended**

**37 DMX Channels**

| Channel |                            | Command                                    | DMX range |                  | Percent        |      | Default DMX | Fade |      |       |
|---------|----------------------------|--|-----------|------------------|----------------|------|-------------|------|------|-------|
| 1       | Pan                        | Pan left-right                             | 0         | 65535            | 0              | 100  | 32767       | Fade |      |       |
| 2       | Pan fine                   |  | 3         | Tilt             | Tilt up-down   | 0    | 65535       | 0    | 100  | 32767 |
| 4       | Tilt fine                  | 5  | Dimmer    | Intensity 0-100% |                | 0    | 65535       | 0    | 100  | 32767 |
| 6       | Dimmer fine                | 7  | Shutter   |                  | Shutter closed | 0    | 4           | 0    | 1.6  | 0     |
|         |                            | Single flash when change on dimmer channel |           | 5                | 9              | 2.0  | 3.5         |      |      |       |
|         |                            | Sync ramp up slow-fast                     |           | 10               | 39             | 3.9  | 15.3        |      |      |       |
|         |                            | Sync ramp down slow-fast                   |           | 40               | 69             | 15.7 | 27.1        |      |      |       |
|         |                            | Sync ramp up-down slow-fast                |           | 70               | 99             | 27.5 | 38.8        |      |      |       |
|         |                            | Sync double flash (slow-fast)              |           | 100              | 129            | 39.2 | 50.6        |      |      |       |
|         |                            | Random strobe pixel (slow-fast)            |           | 130              | 159            | 51.0 | 62.4        |      |      |       |
|         |                            | Random strobe all (slow-fast)              |           | 160              | 199            | 62.7 | 78.0        |      |      |       |
|         |                            | Sync strobe (1 Hz-10 Hz)                   |           | 200              | 250            | 78.4 | 98.0        |      |      |       |
|         |                            | Shutter open                               | 251       | 255              | 98.4           | 100  |             |      |      |       |
| 8       | Color wheel effect         | Off (RGBW)                                 | 0         | 7                | 0              | 2.7  | 0           | Snap |      |       |
|         |                            | Color 01 - Red                             | 8         | 15               | 3.1            | 5.9  |             | Snap |      |       |
|         |                            | Color 02 - Amber                           | 16        | 23               | 6.3            | 9.0  |             | Snap |      |       |
|         |                            | Color 03 - Warm Yellow                     | 24        | 31               | 9.4            | 12.2 |             | Snap |      |       |
|         |                            | Color 04 - Yellow                          | 32        | 39               | 12.5           | 15.3 |             | Snap |      |       |
|         |                            | Color 05 - Green                           | 40        | 47               | 15.7           | 18.4 |             | Snap |      |       |
|         |                            | Color 06 - Turquoise                       | 48        | 55               | 18.8           | 21.6 |             | Snap |      |       |
|         |                            | Color 07 - Cyan                            | 56        | 63               | 22.0           | 24.7 |             | Snap |      |       |
|         |                            | Color 08 - Blue                            | 64        | 71               | 25.1           | 27.8 |             | Snap |      |       |
|         |                            | Color 09 - Lavender                        | 72        | 79               | 28.2           | 31.0 |             | Snap |      |       |
|         |                            | Color 10 - Mauve                           | 80        | 87               | 31.4           | 34.1 |             | Snap |      |       |
|         |                            | Color 11 - Magenta                         | 88        | 95               | 34.5           | 37.3 |             | Snap |      |       |
|         |                            | Color 12 - Pink                            | 96        | 103              | 37.6           | 40.4 |             | Snap |      |       |
|         |                            | Color 13 - White 3200K                     | 104       | 111              | 40.8           | 43.5 |             | Snap |      |       |
|         |                            | Color 14 - White 5600K                     | 112       | 119              | 43.9           | 46.7 |             | Snap |      |       |
|         |                            | Color 15 - White 7200K                     | 120       | 127              | 47.1           | 49.8 |             | Snap |      |       |
|         |                            |  |           | Stop             | 128            | 128  |             | 50.2 | 50.2 | Snap  |
|         |                            | Rainbow colors crossfade slow > fast       | 129       | 223              | 50.6           | 87.5 | Fade        |      |      |       |
|         |                            | Random colors crossfade slow > fast        | 224       | 255              | 87.8           | 100  | Fade        |      |      |       |
| 9       | Color Temperature (Kelvin) | RAW  | 0         | 15               | 0              | 5.9  |             | Snap |      |       |
|         |                            | 10000                                      | 16        | 18               | 6.3            | 7.1  |             |      |      |       |
|         |                            | 9900                                       | 19        | 21               | 7.5            | 8.2  |             |      |      |       |
|         |                            | 9800                                       | 22        | 24               | 8.6            | 9.4  |             |      |      |       |
|         |                            | 9700                                       | 25        | 27               | 9.8            | 10.6 |             |      |      |       |
|         |                            | 9600                                       | 28        | 30               | 11.0           | 11.8 |             |      |      |       |
|         |                            | 9500                                       | 31        | 33               | 12.2           | 12.9 |             |      |      |       |
|         |                            | 9400                                       | 34        | 36               | 13.3           | 14.1 |             |      |      |       |
|         |                            | 9300                                       | 37        | 39               | 14.5           | 15.3 |             |      |      |       |
|         |                            | 9200                                       | 40        | 42               | 15.7           | 16.5 |             |      |      |       |
|         |                            | 9100                                       | 43        | 45               | 16.9           | 17.6 |             |      |      |       |
|         |                            | 9000                                       | 46        | 48               | 18.0           | 18.8 |             |      |      |       |
|         |                            | 8900                                       | 49        | 51               | 19.2           | 20.0 |             |      |      |       |
|         |                            | 8800                                       | 52        | 54               | 20.4           | 21.2 |             |      |      |       |
|         |                            | 8700                                       | 55        | 57               | 21.6           | 22.4 |             |      |      |       |
|         |                            | 8600                                       | 58        | 60               | 22.7           | 23.5 |             |      |      |       |
|         |                            | 8500                                       | 61        | 63               | 23.9           | 24.7 |             |      |      |       |
| 8400    | 64                         | 66   | 25.1      | 25.9             |                |      |             |      |      |       |

|           |                 |                      |     |       |      |      |       |      |
|-----------|-----------------|----------------------|-----|-------|------|------|-------|------|
|           |                 | 8300                 | 67  | 69    | 26.3 | 27.1 |       |      |
|           |                 | 8200                 | 70  | 72    | 27.5 | 28.2 |       |      |
|           |                 | 8100                 | 73  | 75    | 28.6 | 29.4 |       |      |
|           |                 | 8000                 | 76  | 78    | 29.8 | 30.6 |       |      |
|           |                 | 7900                 | 79  | 81    | 31.0 | 31.8 |       |      |
|           |                 | 7800                 | 82  | 84    | 32.2 | 32.9 |       |      |
|           |                 | 7700                 | 85  | 87    | 33.3 | 34.1 |       |      |
|           |                 | 7600                 | 88  | 90    | 34.5 | 35.3 |       |      |
|           |                 | 7500                 | 91  | 93    | 35.7 | 36.5 |       |      |
|           |                 | 7400                 | 94  | 96    | 36.9 | 37.6 |       |      |
|           |                 | 7300                 | 97  | 99    | 38.0 | 38.8 |       |      |
|           |                 | 7200                 | 100 | 102   | 39.2 | 40.0 |       |      |
|           |                 | 7100                 | 103 | 105   | 40.4 | 41.2 |       |      |
|           |                 | 7000                 | 106 | 108   | 41.6 | 42.4 |       |      |
|           |                 | 6900                 | 109 | 111   | 42.7 | 43.5 |       |      |
|           |                 | 6800                 | 112 | 114   | 43.9 | 44.7 |       |      |
|           |                 | 6700                 | 115 | 117   | 45.1 | 45.9 |       |      |
|           |                 | 6600                 | 118 | 120   | 46.3 | 47.1 |       |      |
|           |                 | 6500                 | 121 | 123   | 47.5 | 48.2 |       |      |
|           |                 | 6400                 | 124 | 126   | 48.6 | 49.4 |       |      |
|           |                 | 6300                 | 127 | 129   | 49.8 | 50.6 |       |      |
|           |                 | 6200                 | 130 | 132   | 51.0 | 51.8 |       |      |
|           |                 | 6100                 | 133 | 135   | 52.2 | 52.9 |       |      |
|           |                 | 6000                 | 136 | 138   | 53.3 | 54.1 |       |      |
|           |                 | 5900                 | 139 | 141   | 54.5 | 55.3 |       |      |
|           |                 | 5800                 | 142 | 144   | 55.7 | 56.5 |       |      |
|           |                 | 5700                 | 145 | 147   | 56.9 | 57.6 |       |      |
|           |                 | 5600                 | 148 | 150   | 58.0 | 58.8 |       |      |
|           |                 | 5500                 | 151 | 153   | 59.2 | 60.0 |       |      |
|           |                 | 5400                 | 154 | 156   | 60.4 | 61.2 |       |      |
|           |                 | 5300                 | 157 | 159   | 61.6 | 62.4 |       |      |
|           |                 | 5200                 | 160 | 162   | 62.7 | 63.5 |       |      |
|           |                 | 5100                 | 163 | 165   | 63.9 | 64.7 |       |      |
|           |                 | 5000                 | 166 | 168   | 65.1 | 65.9 |       |      |
|           |                 | 4900                 | 169 | 171   | 66.3 | 67.1 |       |      |
|           |                 | 4800                 | 172 | 174   | 67.5 | 68.2 |       |      |
|           |                 | 4700                 | 175 | 177   | 68.6 | 69.4 |       |      |
|           |                 | 4600                 | 178 | 180   | 69.8 | 70.6 |       |      |
|           |                 | 4500                 | 181 | 183   | 71.0 | 71.8 |       |      |
|           |                 | 4400                 | 184 | 186   | 72.2 | 72.9 |       |      |
|           |                 | 4300                 | 187 | 189   | 73.3 | 74.1 |       |      |
|           |                 | 4200                 | 190 | 192   | 74.5 | 75.3 |       |      |
|           |                 | 4100                 | 193 | 195   | 75.7 | 76.5 |       |      |
|           |                 | 4000                 | 196 | 198   | 76.9 | 77.6 |       |      |
|           |                 | 3900                 | 199 | 201   | 78.0 | 78.8 |       |      |
|           |                 | 3800                 | 202 | 204   | 79.2 | 80.0 |       |      |
|           |                 | 3700                 | 205 | 207   | 80.4 | 81.2 |       |      |
|           |                 | 3600                 | 208 | 210   | 81.6 | 82.4 |       |      |
|           |                 | 3500                 | 211 | 213   | 82.7 | 83.5 |       |      |
|           |                 | 3400                 | 214 | 216   | 83.9 | 84.7 |       |      |
|           |                 | 3300                 | 217 | 219   | 85.1 | 85.9 |       |      |
|           |                 | 3200                 | 220 | 222   | 86.3 | 87.1 |       |      |
|           |                 | 3100                 | 223 | 225   | 87.5 | 88.2 |       |      |
|           |                 | 3000                 | 226 | 228   | 88.6 | 89.4 |       |      |
|           |                 | 2900                 | 229 | 231   | 89.8 | 90.6 |       |      |
|           |                 | 2800                 | 232 | 234   | 91.0 | 91.8 |       |      |
|           |                 | 2700                 | 235 | 237   | 92.2 | 92.9 |       |      |
|           |                 | 2600                 | 238 | 240   | 93.3 | 94.1 |       |      |
|           |                 | 2500                 | 241 | 255   | 94.5 | 100  |       |      |
| <b>10</b> | <b>Red</b>      |                      |     |       |      |      |       |      |
| <b>11</b> | <b>Red fine</b> | Red intensity 0-100% | 0   | 65535 | 0    | 100  | 32767 | Fade |

|    |   |  |     |       |      |      |       |      |
|----|---|--|-----|-------|------|------|-------|------|
| 12 | <b>Green</b>                              | Green intensity 0–100%                             | 0   | 65535 | 0    | 100  | 32767 | Fade |
| 13 | <b>Green fine</b>                         |  |     |       |      |      |       |      |
| 14 | <b>Blue</b>                               | Blue intensity 0–100%                              | 0   | 65535 | 0    | 100  | 32767 | Fade |
| 15 | <b>Blue fine</b>                          |  |     |       |      |      |       |      |
| 16 | <b>White</b>                              | White intensity 0–100%                             | 0   | 65535 | 0    | 100  | 32767 | Fade |
| 17 | <b>White fine</b>                         |  |     |       |      |      |       |      |
| 18 | <b>Layer 1 Dimmer</b>                     | Layer 1 (background) intensity 0–100%              | 0   | 65535 | 0    | 100  | 32767 | Fade |
| 19 | <b>Layer 1 Dimmer fine</b>                |  |     |       |      |      |       |      |
| 20 | <b>Layer 1 Shutter</b>                    | Layer 1 (background) shutter closed                | 0   | 4     | 0    | 1.6  | 0     | Snap |
|    |   | Single flash when change on dimmer channel         | 5   | 9     | 2.0  | 3.5  |       |      |
|    |   | Sync ramp up slow–fast                             | 10  | 39    | 3.9  | 15.3 |       |      |
|    |   | Sync ramp down slow–fast                           | 40  | 69    | 15.7 | 27.1 |       |      |
|    |   | Sync ramp up–down slow–fast                        | 70  | 99    | 27.5 | 38.8 |       |      |
|    |   | Sync double flash (slow–fast)                      | 100 | 129   | 39.2 | 50.6 |       |      |
|    |   | Random strobe pixel (slow–fast)                    | 130 | 159   | 51.0 | 62.4 |       |      |
|    |   | Random strobe all (slow–fast)                      | 160 | 199   | 62.7 | 78.0 |       |      |
|    |   | Sync strobe (1 Hz–10 Hz)                           | 200 | 250   | 78.4 | 98.0 |       |      |
|    | Shutter open                              | 251  | 255 | 98.4  | 100  |      |       |      |
| 21 | <b>Layer 2 Dimmer</b>                     | Layer 2 (top layer) intensity 0–100%               | 0   | 65535 | 0    | 100  | 32767 | Fade |
| 22 | <b>Layer 2 Dimmer fine</b>                |  |     |       |      |      |       |      |
| 23 | <b>Layer 2 Pattern Shutter</b>            | Shutter closed                                     | 0   | 4     | 0    | 1.6  | 0     | Snap |
|    |   | Single flash when change on dimmer channel         | 5   | 9     | 2.0  | 3.5  |       |      |
|    |   | Sync ramp up slow–fast                             | 10  | 39    | 3.9  | 15.3 |       |      |
|    |   | Sync ramp down slow–fast                           | 40  | 69    | 15.7 | 27.1 |       |      |
|    |   | Sync ramp up–down slow–fast                        | 70  | 99    | 27.5 | 38.8 |       |      |
|    |   | Sync double flash (slow–fast)                      | 100 | 129   | 39.2 | 50.6 |       |      |
|    |   | Random strobe pixel (slow–fast)                    | 130 | 159   | 51.0 | 62.4 |       |      |
|    |   | Random strobe all (slow–fast)                      | 160 | 199   | 62.7 | 78.0 |       |      |
|    |   | Sync strobe (1 Hz–10 Hz)                           | 200 | 250   | 78.4 | 98.0 |       |      |
|    | Shutter open                              | 251  | 255 | 98.4  | 100  |      |       |      |
| 24 | <b>Layer 2 Pattern color wheel effect</b> | Layer 2 (top layer) pattern off (RGBW)             | 0   | 7     | 0    | 2.7  | 0     | Snap |
|    |   | Color 01 - Red                                     | 8   | 15    | 3.1  | 5.9  |       | Snap |
|    |   | Color 02 - Amber                                   | 16  | 23    | 6.3  | 9.0  |       | Snap |
|    |   | Color 03 - Warm Yellow                             | 24  | 31    | 9.4  | 12.2 |       | Snap |
|    |   | Color 04 - Yellow                                  | 32  | 39    | 12.5 | 15.3 |       | Snap |
|    |   | Color 05 - Green                                   | 40  | 47    | 15.7 | 18.4 |       | Snap |
|    |   | Color 06 - Turquoise                               | 48  | 55    | 18.8 | 21.6 |       | Snap |
|    |   | Color 07 - Cyan                                    | 56  | 63    | 22.0 | 24.7 |       | Snap |
|    |   | Color 08 - Blue                                    | 64  | 71    | 25.1 | 27.8 |       | Snap |
|    |   | Color 09 - Lavender                                | 72  | 79    | 28.2 | 31.0 |       | Snap |
|    |   | Color 10 - Mauve                                   | 80  | 87    | 31.4 | 34.1 |       | Snap |
|    |   | Color 11 - Magenta                                 | 88  | 95    | 34.5 | 37.3 |       | Snap |
|    |   | Color 12 - Pink                                    | 96  | 103   | 37.6 | 40.4 |       | Snap |
|    |   | Color 13 - White 3200K                             | 104 | 111   | 40.8 | 43.5 |       | Snap |
|    |   | Color 14 - White 5600K                             | 112 | 119   | 43.9 | 46.7 |       | Snap |
|    |   | Color 15 - White 7200K                             | 120 | 127   | 47.1 | 49.8 |       | Snap |
|    |   | Stop   | 128 | 128   | 50.2 | 50.2 |       | Snap |
|    | Rainbow colors crossfade slow > fast      | 129  | 223 | 50.6  | 87.5 | Fade |       |      |
|    | Random colors crossfade slow > fast       | 224  | 255 | 87.8  | 100  | Fade |       |      |
| 25 | <b>Layer 2 Pattern Red</b>                | Layer 2 (top layer) pattern red intensity 0–100%   | 0   | 65535 | 0    | 100  | 32767 | Fade |
| 26 | <b>Layer 2 Pattern Red fine</b>           |  |     |       |      |      |       |      |
| 27 | <b>Layer 2 Pattern Green</b>              | Layer 2 (top layer) pattern green intensity 0–100% | 0   | 65535 | 0    | 100  | 32767 | Fade |

|                            |                            |  |      |       |      |      |       |      |
|----------------------------|----------------------------|--|------|-------|------|------|-------|------|
| 28                         | Layer 2 Pattern Green fine |  |      |       |      |      |       |      |
| 29                         | Layer 2 Pattern Blue       | Layer 2 (top layer) pattern blue intensity 0–100%  | 0    | 65535 | 0    | 100  | 32767 | Fade |
| 30                         | Layer 2 Pattern Blue fine  |  |      |       |      |      |       |      |
| 31                         | Layer 2 Pattern White      | Layer 2 (top layer) pattern white intensity 0–100% | 0    | 65535 | 0    | 100  | 32767 | Fade |
| 32                         | Layer 2 Pattern White fine |  |      |       |      |      |       |      |
| 33                         | Layer 2 Pattern            | Layer 2 (top layer) static pattern                 | 0    | 51    | 0    | 20.0 | 0     | Snap |
|                            |                            | Chase animation                                    | 52   | 131   | 20.4 | 51.4 |       |      |
|                            |                            | Fade animation                                     | 132  | 211   | 51.8 | 82.7 |       |      |
|                            |                            | Random   | 212  | 255   | 83.1 | 100  |       |      |
| 34                         | Layer 2 Pattern speed      | Slow–fast  | 0    | 255   | 0    | 100  | 0     | Fade |
| 35                         | Layer 2 Pattern fade       | Slow crossfade–snap                                | 0    | 255   | 0    | 100  | 0     | Fade |
| 36                         | Zoom                       | Wide–narrow  | 0    | 255   | 0    | 100  | 0     | Fade |
| 37                         | Control / Settings         | No function  | 0    | 9     | 0.0  | 3.5  | 0     | Snap |
|                            |                            | <b>Dimmer curve: Extra-soft (3s hold)</b>          | 10   | 15    | 3.9  | 5.9  |       |      |
|                            |                            | Dimmer curve: Linear (3s hold)                     | 16   | 21    | 6.3  | 8.2  |       |      |
|                            |                            | <b>Display mode: Auto (3s hold)</b>                | 22   | 27    | 8.6  | 10.6 |       |      |
|                            |                            | Display mode: On (3s hold)                         | 28   | 33    | 11.0 | 12.9 |       |      |
|                            |                            | Display mode: Off (3s hold)                        | 34   | 39    | 13.3 | 15.3 |       |      |
|                            |                            | <b>Display orientation: Normal (3s hold)</b>       | 40   | 45    | 15.7 | 17.6 |       |      |
|                            |                            | Display orientation: Inverted (3s hold)            | 46   | 51    | 18.0 | 20.0 |       |      |
|                            |                            | No DMX: Blackout (3s hold)                         | 52   | 57    | 20.4 | 22.4 |       |      |
|                            |                            | <b>No DMX: Hold (3s hold)</b>                      | 58   | 63    | 22.7 | 24.7 |       |      |
|                            |                            | No DMX: Stand-alone (3s hold)                      | 64   | 69    | 25.1 | 27.1 |       |      |
|                            |                            | <b>Fan mode: Regulated (3s hold)</b>               | 70   | 75    | 27.5 | 29.4 |       |      |
|                            |                            | Fan mode: High (3s hold)                           | 76   | 81    | 29.8 | 31.8 |       |      |
|                            |                            | Fan mode: Medium (3s hold)                         | 82   | 87    | 32.2 | 34.1 |       |      |
|                            |                            | Fan mode: Low (3s hold)                            | 88   | 93    | 34.5 | 36.5 |       |      |
|                            |                            | Position feedback: Off (3s hold)                   | 94   | 99    | 36.9 | 38.8 |       |      |
|                            |                            | <b>Position feedback: On (3s hold)</b>             | 100  | 105   | 39.2 | 41.2 |       |      |
|                            |                            | No function  | 106  | 117   | 41.6 | 45.9 |       |      |
|                            |                            | <b>Tilt inversion: Off (3s hold)</b>               | 118  | 123   | 46.3 | 48.2 |       |      |
|                            |                            | Tilt inversion: On (3s hold)                       | 124  | 129   | 48.6 | 50.6 |       |      |
|                            |                            | <b>Pan inversion: Off (3s hold)</b>                | 130  | 135   | 51.0 | 52.9 |       |      |
|                            |                            | Pan inversion: On (3s hold)                        | 136  | 141   | 53.3 | 55.3 |       |      |
|                            |                            | <b>Zoom inversion: Off (3s hold)</b>               | 142  | 147   | 55.7 | 57.6 |       |      |
|                            |                            | Zoom inversion: On (3s hold)                       | 148  | 153   | 58.0 | 60.0 |       |      |
|                            |                            | <b>Defog: Off</b>                                  | 154  | 159   | 60.4 | 62.4 |       |      |
|                            |                            | Defog: On  | 160  | 165   | 62.7 | 64.7 |       |      |
|                            |                            | Defog: Quick                                       | 166  | 171   | 65.1 | 67.1 |       |      |
|                            |                            | Load Settings Preset1                              | 172  | 177   | 67.5 | 69.4 |       |      |
|                            |                            | Load Settings Preset2                              | 178  | 183   | 69.8 | 71.8 |       |      |
|                            |                            | Load Settings Preset3                              | 184  | 189   | 72.2 | 74.1 |       |      |
|                            |                            | PWM: 600 Hz (5s hold)                              | 190  | 195   | 74.5 | 76.5 |       |      |
|                            |                            | PWM: 2200 Hz (5s hold)                             | 196  | 201   | 76.9 | 78.8 |       |      |
|                            |                            | <b>PWM: 3000 Hz (5s hold)</b>                      | 202  | 207   | 79.2 | 81.2 |       |      |
| PWM: 4800 Hz (5s hold)     | 208                        | 213  | 81.6 | 83.5  |      |      |       |      |
| PWM: 9600 Hz (5s hold)     | 214                        | 219  | 83.9 | 85.9  |      |      |       |      |
| PWM: 25 kHz (5s hold)      | 220                        | 225  | 86.3 | 88.2  |      |      |       |      |
| No function                | 226                        | 231  | 88.6 | 90.6  |      |      |       |      |
| Return to default settings | 232                        | 237  | 91.0 | 92.9  |      |      |       |      |
| Reset Pan/Tilt (3s hold)   | 238                        | 243  | 93.3 | 95.3  |      |      |       |      |

|  |                      |     |     |      |      |  |  |
|--|----------------------|-----|-----|------|------|--|--|
|  | Reset Head (3s hold) | 244 | 249 | 95.7 | 97.6 |  |  |
|  | Reset All (3s hold)  | 250 | 255 | 98.0 | 100  |  |  |

DMX Mode 4: Pix

**50 DMX Channels**

| Channel                             |                                   | Command                                    | DMX range |       | Percent |      | Default DMX | Fade |
|-------------------------------------|-----------------------------------|--|-----------|-------|---------|------|-------------|------|
| 1                                   | <b>Pan</b>                        | Pan left-right                             | 0         | 65535 | 0       | 100  | 32767       | Fade |
| 2                                   | <b>Pan fine</b>                   |  |           |       |         |      |             |      |
| 3                                   | <b>Tilt</b>                       | Tilt up-down                               | 0         | 65535 | 0       | 100  | 32767       | Fade |
| 4                                   | <b>Tilt fine</b>                  |  |           |       |         |      |             |      |
| 5                                   | <b>Dimmer</b>                     | Intensity 0-100%                           | 0         | 65535 | 0       | 100  | 32767       | Fade |
| 6                                   | <b>Dimmer fine</b>                |  |           |       |         |      |             |      |
| 7                                   | <b>Shutter</b>                    | Shutter closed                             | 0         | 4     | 0       | 1.6  | 0           | Snap |
|                                     |                                   | Single flash when change on dimmer channel | 5         | 9     | 2.0     | 3.5  |             |      |
|                                     |                                   | Sync ramp up slow-fast                     | 10        | 39    | 3.9     | 15.3 |             |      |
|                                     |                                   | Sync ramp down slow-fast                   | 40        | 69    | 15.7    | 27.1 |             |      |
|                                     |                                   | Sync ramp up-down slow-fast                | 70        | 99    | 27.5    | 38.8 |             |      |
|                                     |                                   | Sync double flash (slow-fast)              | 100       | 129   | 39.2    | 50.6 |             |      |
|                                     |                                   | Random strobe pixel (slow-fast)            | 130       | 159   | 51.0    | 62.4 |             |      |
|                                     |                                   | Random strobe all (slow-fast)              | 160       | 199   | 62.7    | 78.0 |             |      |
|                                     |                                   | Sync strobe (1 Hz-10 Hz)                   | 200       | 250   | 78.4    | 98.0 |             |      |
| Shutter open                        | 251                               | 255  | 98.4      | 100   |         |      |             |      |
| 8                                   | <b>Color wheel effect</b>         | Off (RGBW)                                 | 0         | 7     | 0       | 2.7  | 0           | Snap |
|                                     |                                   | Color 01 - Red                             | 8         | 15    | 3.1     | 5.9  |             | Snap |
|                                     |                                   | Color 02 - Amber                           | 16        | 23    | 6.3     | 9.0  |             | Snap |
|                                     |                                   | Color 03 - Warm Yellow                     | 24        | 31    | 9.4     | 12.2 |             | Snap |
|                                     |                                   | Color 04 - Yellow                          | 32        | 39    | 12.5    | 15.3 |             | Snap |
|                                     |                                   | Color 05 - Green                           | 40        | 47    | 15.7    | 18.4 |             | Snap |
|                                     |                                   | Color 06 - Turquoise                       | 48        | 55    | 18.8    | 21.6 |             | Snap |
|                                     |                                   | Color 07 - Cyan                            | 56        | 63    | 22.0    | 24.7 |             | Snap |
|                                     |                                   | Color 08 - Blue                            | 64        | 71    | 25.1    | 27.8 |             | Snap |
|                                     |                                   | Color 09 - Lavender                        | 72        | 79    | 28.2    | 31.0 |             | Snap |
|                                     |                                   | Color 10 - Mauve                           | 80        | 87    | 31.4    | 34.1 |             | Snap |
|                                     |                                   | Color 11 - Magenta                         | 88        | 95    | 34.5    | 37.3 |             | Snap |
|                                     |                                   | Color 12 - Pink                            | 96        | 103   | 37.6    | 40.4 |             | Snap |
|                                     |                                   | Color 13 - White 3200K                     | 104       | 111   | 40.8    | 43.5 |             | Snap |
|                                     |                                   | Color 14 - White 5600K                     | 112       | 119   | 43.9    | 46.7 |             | Snap |
|                                     |                                   | Color 15 - White 7200K                     | 120       | 127   | 47.1    | 49.8 |             | Snap |
|                                     |                                   | Stop                                       | 128       | 128   | 50.2    | 50.2 |             | Snap |
|                                     |                                   | Rainbow colors crossfade slow > fast       | 129       | 223   | 50.6    | 87.5 |             | Fade |
| Random colors crossfade slow > fast | 224                               | 255  | 87.8      | 100   | Fade    |      |             |      |
| 9                                   | <b>Color Temperature (Kelvin)</b> | RAW  | 0         | 15    | 0       | 5.9  |             | Snap |
|                                     |                                   | 10000                                      | 16        | 18    | 6.3     | 7.1  |             |      |
|                                     |                                   | 9900                                       | 19        | 21    | 7.5     | 8.2  |             |      |
|                                     |                                   | 9800                                       | 22        | 24    | 8.6     | 9.4  |             |      |
|                                     |                                   | 9700                                       | 25        | 27    | 9.8     | 10.6 |             |      |
|                                     |                                   | 9600                                       | 28        | 30    | 11.0    | 11.8 |             |      |
|                                     |                                   | 9500                                       | 31        | 33    | 12.2    | 12.9 |             |      |
|                                     |                                   | 9400                                       | 34        | 36    | 13.3    | 14.1 |             |      |
|                                     |                                   | 9300                                       | 37        | 39    | 14.5    | 15.3 |             |      |
|                                     |                                   | 9200                                       | 40        | 42    | 15.7    | 16.5 |             |      |
|                                     |                                   | 9100                                       | 43        | 45    | 16.9    | 17.6 |             |      |
|                                     |                                   | 9000                                       | 46        | 48    | 18.0    | 18.8 |             |      |
|                                     |                                   | 8900                                       | 49        | 51    | 19.2    | 20.0 |             |      |
|                                     |                                   | 8800                                       | 52        | 54    | 20.4    | 21.2 |             |      |
|                                     |                                   | 8700                                       | 55        | 57    | 21.6    | 22.4 |             |      |
|                                     |                                   | 8600                                       | 58        | 60    | 22.7    | 23.5 |             |      |
|                                     |                                   | 8500                                       | 61        | 63    | 23.9    | 24.7 |             |      |
| 8400                                | 64                                | 66   | 25.1      | 25.9  |         |      |             |      |

|           |                 |                      |     |       |      |      |       |      |
|-----------|-----------------|----------------------|-----|-------|------|------|-------|------|
|           |                 | 8300                 | 67  | 69    | 26.3 | 27.1 |       |      |
|           |                 | 8200                 | 70  | 72    | 27.5 | 28.2 |       |      |
|           |                 | 8100                 | 73  | 75    | 28.6 | 29.4 |       |      |
|           |                 | 8000                 | 76  | 78    | 29.8 | 30.6 |       |      |
|           |                 | 7900                 | 79  | 81    | 31.0 | 31.8 |       |      |
|           |                 | 7800                 | 82  | 84    | 32.2 | 32.9 |       |      |
|           |                 | 7700                 | 85  | 87    | 33.3 | 34.1 |       |      |
|           |                 | 7600                 | 88  | 90    | 34.5 | 35.3 |       |      |
|           |                 | 7500                 | 91  | 93    | 35.7 | 36.5 |       |      |
|           |                 | 7400                 | 94  | 96    | 36.9 | 37.6 |       |      |
|           |                 | 7300                 | 97  | 99    | 38.0 | 38.8 |       |      |
|           |                 | 7200                 | 100 | 102   | 39.2 | 40.0 |       |      |
|           |                 | 7100                 | 103 | 105   | 40.4 | 41.2 |       |      |
|           |                 | 7000                 | 106 | 108   | 41.6 | 42.4 |       |      |
|           |                 | 6900                 | 109 | 111   | 42.7 | 43.5 |       |      |
|           |                 | 6800                 | 112 | 114   | 43.9 | 44.7 |       |      |
|           |                 | 6700                 | 115 | 117   | 45.1 | 45.9 |       |      |
|           |                 | 6600                 | 118 | 120   | 46.3 | 47.1 |       |      |
|           |                 | 6500                 | 121 | 123   | 47.5 | 48.2 |       |      |
|           |                 | 6400                 | 124 | 126   | 48.6 | 49.4 |       |      |
|           |                 | 6300                 | 127 | 129   | 49.8 | 50.6 |       |      |
|           |                 | 6200                 | 130 | 132   | 51.0 | 51.8 |       |      |
|           |                 | 6100                 | 133 | 135   | 52.2 | 52.9 |       |      |
|           |                 | 6000                 | 136 | 138   | 53.3 | 54.1 |       |      |
|           |                 | 5900                 | 139 | 141   | 54.5 | 55.3 |       |      |
|           |                 | 5800                 | 142 | 144   | 55.7 | 56.5 |       |      |
|           |                 | 5700                 | 145 | 147   | 56.9 | 57.6 |       |      |
|           |                 | 5600                 | 148 | 150   | 58.0 | 58.8 |       |      |
|           |                 | 5500                 | 151 | 153   | 59.2 | 60.0 |       |      |
|           |                 | 5400                 | 154 | 156   | 60.4 | 61.2 |       |      |
|           |                 | 5300                 | 157 | 159   | 61.6 | 62.4 |       |      |
|           |                 | 5200                 | 160 | 162   | 62.7 | 63.5 |       |      |
|           |                 | 5100                 | 163 | 165   | 63.9 | 64.7 |       |      |
|           |                 | 5000                 | 166 | 168   | 65.1 | 65.9 |       |      |
|           |                 | 4900                 | 169 | 171   | 66.3 | 67.1 |       |      |
|           |                 | 4800                 | 172 | 174   | 67.5 | 68.2 |       |      |
|           |                 | 4700                 | 175 | 177   | 68.6 | 69.4 |       |      |
|           |                 | 4600                 | 178 | 180   | 69.8 | 70.6 |       |      |
|           |                 | 4500                 | 181 | 183   | 71.0 | 71.8 |       |      |
|           |                 | 4400                 | 184 | 186   | 72.2 | 72.9 |       |      |
|           |                 | 4300                 | 187 | 189   | 73.3 | 74.1 |       |      |
|           |                 | 4200                 | 190 | 192   | 74.5 | 75.3 |       |      |
|           |                 | 4100                 | 193 | 195   | 75.7 | 76.5 |       |      |
|           |                 | 4000                 | 196 | 198   | 76.9 | 77.6 |       |      |
|           |                 | 3900                 | 199 | 201   | 78.0 | 78.8 |       |      |
|           |                 | 3800                 | 202 | 204   | 79.2 | 80.0 |       |      |
|           |                 | 3700                 | 205 | 207   | 80.4 | 81.2 |       |      |
|           |                 | 3600                 | 208 | 210   | 81.6 | 82.4 |       |      |
|           |                 | 3500                 | 211 | 213   | 82.7 | 83.5 |       |      |
|           |                 | 3400                 | 214 | 216   | 83.9 | 84.7 |       |      |
|           |                 | 3300                 | 217 | 219   | 85.1 | 85.9 |       |      |
|           |                 | 3200                 | 220 | 222   | 86.3 | 87.1 |       |      |
|           |                 | 3100                 | 223 | 225   | 87.5 | 88.2 |       |      |
|           |                 | 3000                 | 226 | 228   | 88.6 | 89.4 |       |      |
|           |                 | 2900                 | 229 | 231   | 89.8 | 90.6 |       |      |
|           |                 | 2800                 | 232 | 234   | 91.0 | 91.8 |       |      |
|           |                 | 2700                 | 235 | 237   | 92.2 | 92.9 |       |      |
|           |                 | 2600                 | 238 | 240   | 93.3 | 94.1 |       |      |
|           |                 | 2500                 | 241 | 255   | 94.5 | 100  |       |      |
| <b>10</b> | <b>Red</b>      |                      |     |       |      |      |       |      |
| <b>11</b> | <b>Red fine</b> | Red intensity 0-100% | 0   | 65535 | 0    | 100  | 32767 | Fade |

|                               |                           |  |      |       |      |      |       |      |
|-------------------------------|---------------------------|--|------|-------|------|------|-------|------|
| 12                            | <b>Green</b>              | Green intensity 0–100%                       | 0    | 65535 | 0    | 100  | 32767 | Fade |
| 13                            | <b>Green fine</b>         |  |      |       |      |      |       |      |
| 14                            | <b>Blue</b>               | Blue intensity 0–100%                        | 0    | 65535 | 0    | 100  | 32767 | Fade |
| 15                            | <b>Blue fine</b>          |  |      |       |      |      |       |      |
| 16                            | <b>White</b>              | White intensity 0–100%                       | 0    | 65535 | 0    | 100  | 32767 | Fade |
| 17                            | <b>White fine</b>         |  |      |       |      |      |       |      |
| 18                            | <b>Pattern</b>            | Static pattern                               | 0    | 51    | 0    | 20.0 | 0     | Snap |
|                               |                           | Chase animation                              | 52   | 131   | 20.4 | 51.4 |       |      |
|                               |                           | Fade animation                               | 132  | 211   | 51.8 | 82.7 |       |      |
|                               |                           | Random                                       | 212  | 255   | 83.1 | 100  |       |      |
| 19                            | <b>Pattern speed</b>      | Slow–fast                                    | 0    | 255   | 0    | 100  | 0     | Fade |
| 20                            | <b>Pattern fade</b>       | Slow crossfade–snap                          | 0    | 255   | 0    | 100  | 0     | Fade |
| 21                            | <b>Zoom</b>               | Wide–narrow                                  | 0    | 255   | 0    | 100  | 0     | Fade |
| 22                            | <b>Control / Settings</b> | No function                                  | 0    | 9     | 0.0  | 3.5  | 0     | Snap |
|                               |                           | <b>Dimmer curve: Extra-soft (3s hold)</b>    | 10   | 15    | 3.9  | 5.9  |       |      |
|                               |                           | Dimmer curve: Linear (3s hold)               | 16   | 21    | 6.3  | 8.2  |       |      |
|                               |                           | <b>Display mode: Auto (3s hold)</b>          | 22   | 27    | 8.6  | 10.6 |       |      |
|                               |                           | Display mode: On (3s hold)                   | 28   | 33    | 11.0 | 12.9 |       |      |
|                               |                           | Display mode: Off (3s hold)                  | 34   | 39    | 13.3 | 15.3 |       |      |
|                               |                           | <b>Display orientation: Normal (3s hold)</b> | 40   | 45    | 15.7 | 17.6 |       |      |
|                               |                           | Display orientation: Inverted (3s hold)      | 46   | 51    | 18.0 | 20.0 |       |      |
|                               |                           | No DMX: Blackout (3s hold)                   | 52   | 57    | 20.4 | 22.4 |       |      |
|                               |                           | <b>No DMX: Hold (3s hold)</b>                | 58   | 63    | 22.7 | 24.7 |       |      |
|                               |                           | No DMX: Stand-alone (3s hold)                | 64   | 69    | 25.1 | 27.1 |       |      |
|                               |                           | <b>Fan mode: Regulated (3s hold)</b>         | 70   | 75    | 27.5 | 29.4 |       |      |
|                               |                           | Fan mode: High (3s hold)                     | 76   | 81    | 29.8 | 31.8 |       |      |
|                               |                           | Fan mode: Medium (3s hold)                   | 82   | 87    | 32.2 | 34.1 |       |      |
|                               |                           | Fan mode: Low (3s hold)                      | 88   | 93    | 34.5 | 36.5 |       |      |
|                               |                           | Position feedback: Off (3s hold)             | 94   | 99    | 36.9 | 38.8 |       |      |
|                               |                           | <b>Position feedback: On (3s hold)</b>       | 100  | 105   | 39.2 | 41.2 |       |      |
|                               |                           | No function                                  | 106  | 117   | 41.6 | 45.9 |       |      |
|                               |                           | <b>Tilt inversion: Off (3s hold)</b>         | 118  | 123   | 46.3 | 48.2 |       |      |
|                               |                           | Tilt inversion: On (3s hold)                 | 124  | 129   | 48.6 | 50.6 |       |      |
|                               |                           | <b>Pan inversion: Off (3s hold)</b>          | 130  | 135   | 51.0 | 52.9 |       |      |
|                               |                           | Pan inversion: On (3s hold)                  | 136  | 141   | 53.3 | 55.3 |       |      |
|                               |                           | <b>Zoom inversion: Off (3s hold)</b>         | 142  | 147   | 55.7 | 57.6 |       |      |
|                               |                           | Zoom inversion: On (3s hold)                 | 148  | 153   | 58.0 | 60.0 |       |      |
|                               |                           | <b>Defog: Off</b>                            | 154  | 159   | 60.4 | 62.4 |       |      |
|                               |                           | Defog: On                                    | 160  | 165   | 62.7 | 64.7 |       |      |
|                               |                           | Defog: Quick                                 | 166  | 171   | 65.1 | 67.1 |       |      |
|                               |                           | Load Settings Preset1                        | 172  | 177   | 67.5 | 69.4 |       |      |
|                               |                           | Load Settings Preset2                        | 178  | 183   | 69.8 | 71.8 |       |      |
|                               |                           | Load Settings Preset3                        | 184  | 189   | 72.2 | 74.1 |       |      |
|                               |                           | PWM: 600 Hz (5s hold)                        | 190  | 195   | 74.5 | 76.5 |       |      |
|                               |                           | PWM: 2200 Hz (5s hold)                       | 196  | 201   | 76.9 | 78.8 |       |      |
| <b>PWM: 3000 Hz (5s hold)</b> | 202                       | 207  | 79.2 | 81.2  |      |      |       |      |
| PWM: 4800 Hz (5s hold)        | 208                       | 213  | 81.6 | 83.5  |      |      |       |      |
| PWM: 9600 Hz (5s hold)        | 214                       | 219  | 83.9 | 85.9  |      |      |       |      |
| PWM: 25 kHz (5s hold)         | 220                       | 225  | 86.3 | 88.2  |      |      |       |      |
| No function                   | 226                       | 231  | 88.6 | 90.6  |      |      |       |      |
| Return to default settings    | 232                       | 237  | 91.0 | 92.9  |      |      |       |      |
| Reset Pan/Tilt (3s hold)      | 238                       | 243  | 93.3 | 95.3  |      |      |       |      |
| Reset Head (3s hold)          | 244                       | 249  | 95.7 | 97.6  |      |      |       |      |
| Reset All (3s hold)           | 250                       | 255  | 98.0 | 100   |      |      |       |      |
| 23                            | <b>Pixel 1 Red</b>        | Intensity 0-100%                             | 0    | 255   | 0    | 100  | 0     | Fade |
| 24                            | <b>Pixel 1 Green</b>      | Intensity 0-100%                             | 0    | 255   | 0    | 100  | 0     | Fade |
| 25                            | <b>Pixel 1 Blue</b>       | Intensity 0-100%                             | 0    | 255   | 0    | 100  | 0     | Fade |

|    |               |                  |   |     |   |     |   |      |
|----|---------------|------------------|---|-----|---|-----|---|------|
| 26 | Pixel 1 White | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 27 | Pixel 2 Red   | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 28 | Pixel 2 Green | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 29 | Pixel 2 Blue  | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 30 | Pixel 2 White | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 31 | Pixel 3 Red   | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 32 | Pixel 3 Green | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 33 | Pixel 3 Blue  | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 34 | Pixel 3 White | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 35 | Pixel 4 Red   | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 36 | Pixel 4 Green | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 37 | Pixel 4 Blue  | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 38 | Pixel 4 White | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 39 | Pixel 5 Red   | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 40 | Pixel 5 Green | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 41 | Pixel 5 Blue  | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 42 | Pixel 5 White | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 43 | Pixel 6 Red   | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 44 | Pixel 6 Green | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 45 | Pixel 6 Blue  | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 46 | Pixel 6 White | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 47 | Pixel 7 Red   | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 48 | Pixel 7 Green | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 49 | Pixel 7 Blue  | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |
| 50 | Pixel 7 White | Intensity 0-100% | 0 | 255 | 0 | 100 | 0 | Fade |

## 13. Service



**Warning!** There are no user-serviceable parts inside the fixture. 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 professional service technician with the tools, skills, and personal protective equipment to maintain high-powered lighting equipment safely and efficiently.

### **Cleaning**

EXO Wash 30 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 clear front or display on the back of the fixture, as you may scratch these surfaces.

Use the tilt lock mechanism to hold the head in a vertical position for easier cleaning.

### **GLP Service and Support**

Contact information for the nearest GLP Service and Support is available online at [www.glp.de/en/service](http://www.glp.de/en/service), by email at [info@glp.de](mailto: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
- GLP Asia: +852 (3151) 7730
- GLP Nordic: +46 737 57 11 40

## 14. Technical specifications

### Optics

Light source: 7x 40W Osram RGBW LEDs  
Lifetime: 20 000 hrs. approx. to > 70% luminous output  
Luminous flux: 40995 lux @ 3 m, 14758 lux @ 5 m  
Beam angle (half peak): 4° to 54°

### Control

Control systems: DMX, RDM, Manual setting  
DMX channel footprint: 13 / 22 / 37 / 50 depending on mode  
Setting and addressing: Onboard control panel with LCD display, RDM  
DMX compliance: USITT DMX512  
RDM compliance: ANSI/ESTA E1.20  
Pan range: 630°, 16 bit resolution  
Tilt range: 267°, 16 bit resolution

### Installation

Options: Stand on horizontal surface, suspended using truss mount brackets  
Operating position: Any  
Minimum distance to combustible materials: 0.5 m (20 in.)  
Minimum distance to illuminated surfaces: 0.5 m (20 in.)  
Installation environment: Temporary or permanent indoor installation, temporary outdoor installation  
Secondary attachment: Slot for safety cable attachment

### Electrical

AC mains power: 100-240 V nominal, 50/60 Hz  
Power supply unit: Auto-ranging electronic switch mode  
Maximum power consumption, all LEDs at 100% output: 300 W

#### **Maximum permitted number of fixtures daisy-chained to power**

4 x EXO Wash 30 total @ 100-120 V, 60 Hz  
8 x EXO Wash 30 total @ 200-240 V, 50 Hz

### Connections

AC mains power in and thru (out): Neutrik powerCON TRUE1 with sealing cap  
Control data in and thru (out): Neutrik 5-pin XLR with sealing cap

### Construction

Ingress protection rating: IP65  
Fixture housing: Aluminum, plastic  
Color: Black

### Thermal

Cooling: Fan, Convection  
Minimum ambient temperature: -10° C (14° F)  
Maximum ambient temperature: 40° C (104° F)

## **Included items**

Power cable with Neutrik powerCON TRUE1 mains input plug

## **Dimensions and weight**

Length: 279mm / 11.0 ins.

Width: 380 mm / 15.0 ins.

Height: 521 mm / 20.5 ins.

Weight: 19.7 kg (43.4 lbs.)

### 15. Dimensions

All dimensions are in millimeters

