JDC Line 500

User Manual

Rev. 20240618-01 – Firmware v. 1.0.0

Document revisions

Revision number	Notes	Date released
20240618-01	Corrected error on page 45: channels 93 and 94 corrected to 98 and 99.	June 2024
20240416-01	Added Spread FX (offsets from fixture to fixture) to the flash effect on the Shutter mode DMX channel. Firmware v. 1.0.0	April 2024
20211129-01	Corrected error in DMX channel numbering for DMX Mode 7	November 2021
20211114-01	DMX Mode 7 added Firmware v. 0.6.4	November 2021
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GLP® JDC Line 500 User Manual

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1. Safety

Key to symbols

The following symbols are used in the JDC Line 500 lighting fixture's user documentation:

Warning! Safety hazard. Risk of severe injury or death.

Warning! Hazardous voltage. Risk of lethal or severe electric shock.

Warning! See user manual for important safety information.

Warning! Fire hazard.

Warning! Risk of eye injury.

Warning! Read the JDC Line 500 Quick Start and Safety Manual supplied with the fixture and available for download from www.glp.de before installing, operating or servicing the fixture. The Quick Start and Safety Manual contains important information for the safe use of JDC Line 500 fixtures. If you fail to read that information you may create a safety hazard with a risk of injury, death or damage.

If you have any doubts or questions about how to use the GLP® JDC Line 500 lighting fixture safely, contact your GLP supplier for assistance. Your GLP supplier will be happy to help.

The user documentation for JDC Line 500 fixtures consists of three documents:

- The **JDC Line 500 Quick Start and Safety Manual**, supplied with JDC Line 500 fixtures and available for download from www.glp.de. The Quick Start and Safety Manual contains important safety information and installation instructions that the installer and user must read. It also contains dimensions drawings and technical specifications for the fixture.
- The **JDC Line 500 User Manual**, available for download from www.glp.de. The User Manual explains features and control of JDC Line 500 fixtures.
- The **JDC Line 500 DMX Channel Index**, available for download from www.glp.de. The Channel Index is a separate document containing the DMX control channel layout and DMX commands available in the fixture. This information is also included in the User Manual.

The JDC Line 500 is intended for use by experienced professionals with the knowledge and skills to set up, operate, and maintain high-powered, remotely controlled lighting

equipment safely and efficiently. These operations require expertise that may not be provided in this manual.

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

GLP Service and Support

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

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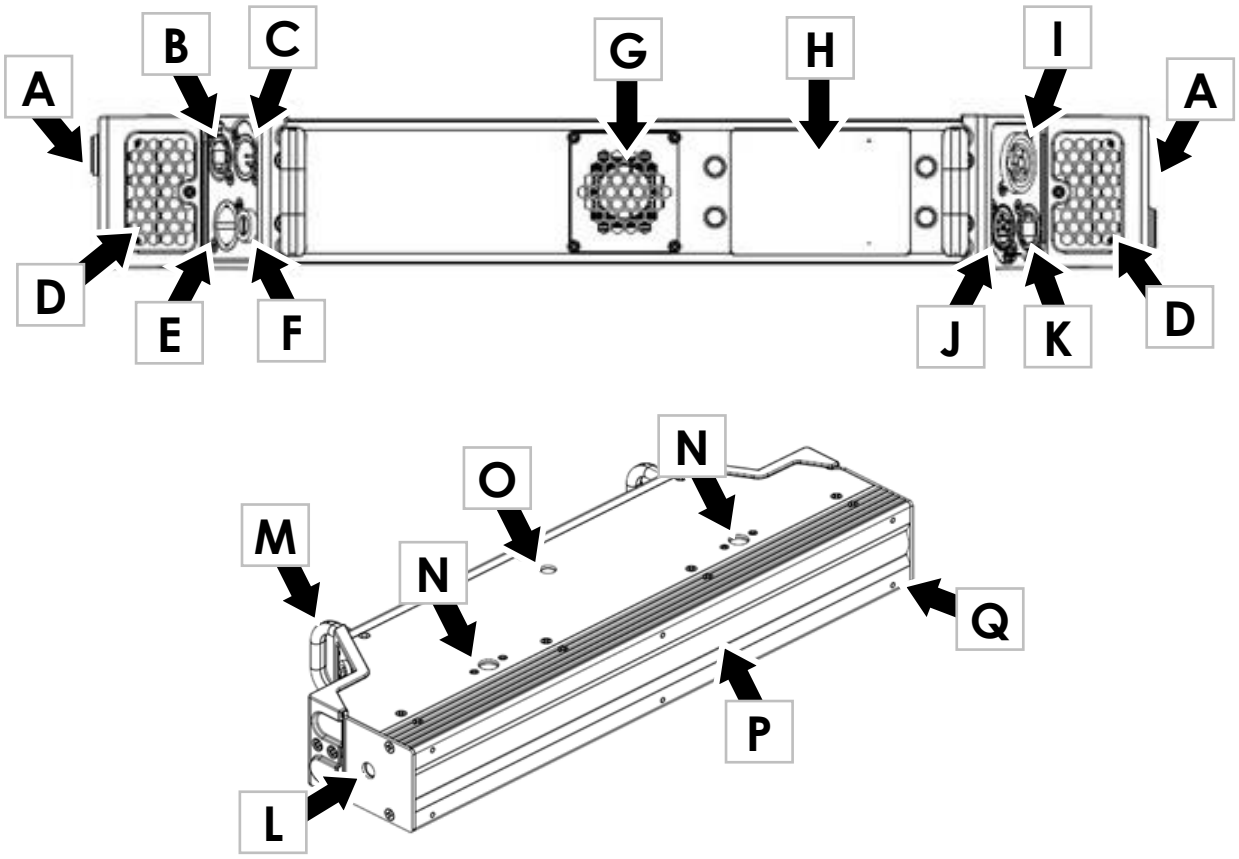
2. JDC Line 500 overview



A – End bracket / side-to-side alignment points

B – Network port A (EtherCON), failsafe)

C – DMX IN (5-pin XLR)

D – Air vent

E – AC mains power IN (Neutrik powerCON TRUE1)

F – Fuseholder

G – Main cooling fan

H – Control panel with multi-color backlit LED display

I – AC mains power OUT/THRU (Neutrik powerCON TRUE1)

J – DMX OUT/THRU (5-pin XLR)

K – Network port B (EtherCON), failsafe

L – 2 x End mounting points (M10 threaded, depth 16 mm)

M – 2 x Safety cable attachment points / carrying handles

N – Top / bottom mounting points (M10 threaded, depth 16 mm)

O – Quarter-turn fastener point

P – White LEDs, RGB LEDs

Q – 6 x M4 threaded holes for permanent mounting of accessories

3. Features

The JDC Line 500 from GLP® is a powerful LED-based strobe/color effect linear lighting fixture. It combines a powerful strobe line with RGB and white pixel mapping in one device. It features:

- 20 super-bright White strobe segments
- 20 super-bright RGB segments
- RGB segments can be split into two (40 segments total) for even more zig-zag effects
- White, RGBW and RGB strobes
- White and RGB pixel mapping, White strobe over RGB pixel mapping, and RGB strobe over White pixel mapping
- RGBW background channels with separate dimmer for continuous ambient light
- Powerful FX engines with a range of pre-programmed pixel patterns
- Interlocking design that allows almost gapless installation of multiple fixtures
- Rear airflow design that lets you stack fixtures on top of each other or place them directly on the ground
- Ease of installation with smart, flexible rigging and mounting options
- Control panel with new backlit multicolor LED display
- Quarter-turn locking points for omega clamps and end-to-end fastener bars
- Integration with JDC Line 1000 fixture

The JDC Line 500 features a central tube of 100 x powerful White LEDs in 20 segments that provide impressive strobe effects and pixel mapping. Above and below the White LEDs are 200 x RGB LEDs in two rows that can be controlled as 20 or 40 segments. The RGB LEDs also provide strobe effects and pixel mapping.

A range of pre-programmed dynamic FX patterns with variable parameters can be selected and run on the White and RGB segments.

The JDC Line 500 can be used indoors in permanent and temporary installations. It can be placed horizontally on a level surface, suspended from a suitable rigging structure or mounted on a structure or surface as described in the fixture's Quick Start and Installation Manual.

Fixtures can be interlocked in lines, and power and data can be daisy-chained for ease of installation.

A magnetic system lets you mount optical accessories from GLP on the front of the fixture in seconds. Six M4 threaded holes are provided for more permanent installation of optical accessories.

The JDC Line 500 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.

JDC Line 1000

The JDC Line Series includes the JDC Line1000, which is twice the length and has twice the performance of the JDC Line 500. The JDC Line1000 has the advantage that it only requires one power connection, one data connection and one control panel to run 1000 mm of JDC Line fixture. Internally, the JDC Line 1000 has two separate strobe and effect engines, which lets you operate it as if it was two separate 500 mm fixtures.

The DMX channel layout of the JDC Line1000 is based on the layout of 2 x JDC Line 500s. This means that you can simply patch two JDC Line 500s next to each other to control one JDC Line 1000. The *Control / Settings* channel of the second patched fixture is ignored – the JDC Line 1000 uses the *Control / Settings* channel of the first patched fixture only.

Fixture setup

The JDC Line 500 has an onboard control panel with a graphic display (see 'Control menus and onboard display' on page 16) that you can use to configure the fixture's settings. You can also access all the fixture's important settings remotely via DMX on the fixture's *Control / Settings* channel (DMX channel 6 in all DMX modes).

Strobe effects

The JDC Line 500 features RGBW strobe effects that you can run on all the fixture's LEDs together over a background with RGBW control. It also offers RGB and White strobe effects that you can run separately. Again, you can run White and RGB strobe effects over a background with RGBW control.

All strobe effects feature a powerful effects engine with pre-programmed patterns. You can snap between patterns and between steps in patterns, or you can crossfade with variable fade times.

Individual cell control

Some of the DMX control modes provide individual control of the white or RGB segments.

On the JDC Line 500, the line of powerful White LEDs can be split into 20 segments. The line of powerful RGB LEDs can also be split into 20 segments with the additional possibility of separating the top and bottom half of each segment to give individual control of 40 RGB pixels.

The JDC Line1000 offers 2 x 20 White and RGB segments that can be controlled like 2 x JDC Line 500s.

For normal pixel-mapping applications (MultiPix Mode) the upper and lower half of each RGB Segment are controlled at the same time. Advanced pixel-mapping mode (MultiPix Advanced Mode) allows individual control of the top and bottom part of the pixel.

RGB Pattern selection offers both segment Patterns and split-segment patterns.

Quad segment control

The Quad segment control available in DMX Mode 7 gives control of the white and/or RGB segments in five groups, each consisting of four segments.

Shutter / intensity effects

The JDC Line 500's electronic shutter effect provides single flash, pulse, opening pulse, closing pulse, random pulse, random opening pulse, random closing pulse, double flash, random double flash, triple flash, random triple flash, spike, lightning, random pixel flash and random fixture flash effects as well as instant blackout. From firmware v.1.0.0, you can apply an offset between the flash in different fixtures, making it easy to create flash chases.

Background Color

All control modes offer a set of RGBW channels with a separate dimmer called Background Color. By default these channels should be set to 0% because they are not necessary for normal use of the fixture.

The Background Color channels let you add a low-priority background color, giving you the ability to set a continuous background color for ambient light in the set design, for example. You can add any of the fixture's other effects on top of the background color at any time.

Background Color works as in these two examples:

- No Background Color active - Background Color is set to 0%.

  You can use the main fixture as normal, but all flash effects run on top of a "black" background. The intervals between flashes are black (off).

- Background Color active - Background Color is set to Blue 100%.

  You can use the main fixture as normal, for example red flashes, but all flash effects run on top of a blue background. This gives red flashes with blue in-between the flashes.

Background color and main color mixing

You can define how the background color and the main fixture color are mixed. There are three options:

1. **Crossfade** (default) – the Background Color stays in the background and the main color has higher priority. If you fade in a main color, the background color will crossfade to the main color. For example, if you set a blue background color and then fade in continuous red on the main color channels you will obtain a crossfade from blue background to red main color.
2. **Mix** – the Background Color mixes with the main color. For example, if you set a blue background color and then run a red Flash on the main color channels, the result will be a magenta flash. The main color of the flash will mix with the background color.
3. **Override** – the Background Color stays in the background. The color displayed using the main channels has higher priority and will not mix with the background color. As soon the main color value is >0 the background color will black out and the main color will appear. For example, if you set a blue background color and then fade in continuous red on the main color channels, the blue will disappear completely and the red will fade up from zero intensity. The main red color will not mix or crossfade with the background blue color.

You can select the Crossfade, Mix or Override options in the **Fixture Settings** menu in the fixture's control panel, on the *Control / Settings* DMX channel, or via RDM.

Dimming

The Dimmer channels control the output of the fixture in 16-bit resolution. You can select from Linear or Soft dimming curves in the **Fixture Settings** menu in the fixture's control panel, on the *Control / Settings* DMX channel, or via RDM.

See Figure 2. The dimming curve options available are:

- **Linear** - the Linear setting gives a dimming curve that the eye perceives as linear. Intensity appears to increase and decrease evenly throughout the dimming range.
- **Soft** - The Soft (square law) setting gives finer control at lower light levels, where the eye is most sensitive to changes in light intensity, and coarser control at higher light levels.

The default dimming curve is **Soft**.

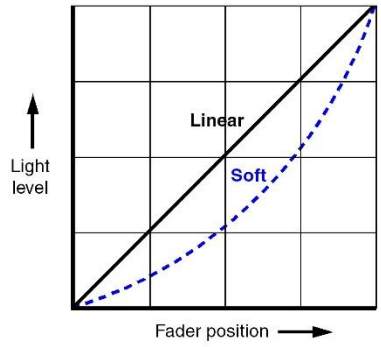


Figure 2. Dimming curves

Duration

The Flash Duration channel lets you adjust the length of flashes from super-short to long.

Rate

If no intensity effect is selected, the Flash Rate channel lets you adjust the interval between flashes:

- At DMX values from 000 to 004 the fixture will not flash.
- At DMX values from 251 to 255 the fixture will execute a continuous on.
- At DMX values from 005 to 250 the fixture will perform flashes with long intervals to super-short intervals between flashes.

If an intensity effect is selected, the Flash Rate channel lets you adjust the speed of the intensity effect.

Flash style

The JDC Line 500 offers two types of LED behavior when operating as a strobe:

- **Normal** sets LEDs to light continuously during flashes at the PWM rate set using the control panel (the default rate is 3000 Hz)
- **Xenon** sets LEDs to mimic the high-frequency flicker during flashes that is characteristic of xenon tube strobe lights.

You can change the Flash style setting in the **Fixture Settings** menu in the fixture's control panel, on the *Control / Settings* DMX channel, or via RDM.

White point

This setting lets you select the white point obtained when RGB is set to 100% and obtain a clean white light with fixed white point when opening the fixture's shutter without adjusting RGB color or programming color presets. The following color temperatures are available as fixed white points: **8000 K**, **6500 K** and **5600 K**. The default setting is **6500 K**.

Setting White point to **Off** disables this feature and puts RGB control into raw mode.

You can change the White point setting in the **Fixture Settings** menu in the fixture's control panel, on the *Control / Settings* DMX channel, or via RDM.

CTC

Using the CTC (Color Temperature Correction) channel lets you temporarily leave the fixed white point of the fixture and change it within a color temperature range of 10 000 K to 2 500 K.

Note that RGB needs to be set to 100% to mix pure white. Decreasing RGB values will modify the color relative to the chosen CTC white point.

Pixel mirror

To achieve symmetrical effects in multiple installations or co-ordinate effects when fixtures are not oriented identically, the JDC Line 500 lets you quickly reverse and/or invert the order of its pixels:

- **Off** gives normal pixel layout (see Figure 3). Pixel 01 is at the Power OUT/THRU end of the fixture, on the left when facing the fixture with the fixture oriented normally.

RGB Upper	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
White	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
RGB Lower	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

Figure 3. Normal pixel layout

- **X-mirror** reverses the order of the pixels so that they run from right to left. In this configuration, Pixel 01 is at the Power IN end of the fixture, on the right when facing the fixture with the fixture oriented normally.

- **Y-mirror** inverts the RGB pixel rows so that the pixels run from left to right but pixels 11 to 20 move to the top row and pixels 1 to 10 move to the bottom row of the fixture. *Top and bottom are relative to the control panel display when the display orientation is set to Normal.*
- **X-Y-mirror** reverses the order of the pixels and inverts the RGB pixel rows at the same time.

You can change the Pixel mirror setting on the *Control / Settings* DMX channel, in the **Fixture Settings** menu in the fixture's control panel.

No-signal behavior

You can decide how the fixture should behave if it is not receiving a DMX signal (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). Three options are available:

- **Blackout** – The fixture goes to dead blackout. This is the default setting.
- **Hold** – The fixture holds the last DMX values that it received.
- **Houselight** – The fixture switches to the maximum light level that can be displayed continuously.

These settings are available on the *Control / Settings* DMX channel, in the **Fixture Settings** menu in the fixture's control panel, or via RDM.

To avoid any possibility of unexpected behavior from a powerful strobe light if the DMX signal fails, we recommend that you always set the fixture to **Blackout** *or* **Houselight**.

Fan Mode

The Fan Mode setting gives different options for the fixture's cooling fan operation and temperature management. Having options to choose from can be very helpful if you are operating the fixture in a very hot or noise-sensitive environment. Four options are available:

- **Regulated** – gives priority to light output and only operates fans as necessary. If the fixture is blacked out, fans run at minimum speed. When light output intensity is increased, temperature regulation increases fan speed to the level necessary to keep the fixture at optimum temperature.

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

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

  Besides maximizing light output in high ambient temperatures, you can use this mode to cool down a fixture quickly or to remove dust from cooling fans.

- **Medium** – sets fans to constant operation at medium speed. Light output intensity is reduced to a level where it will normally remain constant at ambient temperatures of up to 45° C (113° F). Intensity is smoothly limited further if it becomes necessary in order to keep fixture temperature at optimum temperature level.
- **Low** – sets fans to constant operation at low speed and is optimized for minimum noise. Light output intensity is reduced to a level where it will normally remain constant at ambient temperatures of up to 30° C (86° F). Intensity is smoothly limited further if it becomes necessary in order to keep fixture temperature at optimum temperature level.

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

PWM frequency

You can change the LED dimming PWM frequency in order to avoid flicker and beat frequencies in video images. To do this, select a new PWM frequency using either the *Control / Settings* DMX channel, the **Fixture Settings** menu in the fixture's control panel or RDM.

The default PWM setting is 3000 Hz. You can set the PWM frequency to 2700 Hz, 3000 Hz, 4800 Hz or 9600 Hz. Note that a higher PWM frequency may affect dimming performance.

The PWM frequency setting is stored in the fixture and is not affected by cycling power off and on. However, it will be reset to the default frequency if you apply a **Fixture Settings → Load Settings → Default** command or a **Service → Advanced → Load Factory Backup** command in the control menus.

As a rule, you should set all the fixtures in an installation to the same PWM frequency in order to ensure the same performance.

Display mode

You can choose between three different modes for the control panel display:

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

The default setting is **Auto**.

You can change the Display mode setting on the *Control / Settings* DMX channel, in the **Fixture Settings** menu in the fixture's control panel, or via RDM.

Display orientation

Depending on which way up you install the fixture, you can change the orientation of the control panel display:

- **Auto**: The readout in the display is automatically turned through 180° if the fixture is installed upside-down.
- **Normal**: The readout in the display is the right way up when the fixture is placed with the display closer to the right-hand end of the fixture, close to the Mains Power OUT/THRU connector, as shown in Figure 1 on page 6.
- **Inverted**: The readout in the display is turned through 180°.

You can change the Display orientation setting on the *Control / Settings* DMX channel, in the **Fixture Settings** menu in the fixture's control panel, or via RDM.

Custom settings presets

The JDC Line 500 sets you set up three different fixture configurations and save them as custom presets. A configuration includes all of the fixture's personality settings (dimming curve, pixel orientation etc.) but does not include DMX address, DMX mode and control protocol type.

Calling up a preset let you quickly recall configurations that you have set up in advance to match different uses or different environments.

You can save custom presets and load custom presets via DMX on the Control / Settings DMX channel. You can also save custom presets in the **Service → Advanced → Save Settings** menu and load custom presets in the **Fixture Settings** menu in the fixture's control panel.

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 power cycle count, and see DMX signal quality data, for example.

Manual control

If the JDC Line 500 is connected to mains power you can control it without using a DMX controller if you open the **Manual Control** menu in the control panel.

This menu also lets you reboot the fixture.

If the fixture is connected to a DMX controller, it is also possible to take a snapshot of all the DMX values that the fixture is receiving using a **Capture DMX Values** command. These values are then applied as manual control values and stored in memory. Each time that you enter the **Manual DMX** menu, the fixture will use these values until you adjust them or apply a **Reset Manual Values** command.

Custom settings and reloading factory defaults

Custom 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:

- **Fixture Settings → Load Settings → Default** reloads all the fixture's factory default settings **except** DMX address, DMX mode and Control protocol. This option returns the fixture to baseline settings (Normal pixel orientation, Linear dimming curve, etc.) without affecting its basic configuration in an installation.
- **Service → Advanced → Load Factory Backup** reloads all the fixture's factory default settings **including** DMX address, DMX mode and Control Protocol. This option reinitializes the fixture completely and returns to its state when it left the factory.

Service

The **Service** menu is split into two levels: **Service** and **Service Advanced**.

The **Service Advanced** level is for trained technicians only. Read the User Manual carefully before entering this level.

Test Sequences

This menu lets you run different test sequences in order to quickly check the product for correct operation.

Reset Counters

The commands in this menu let you reset the fixture's user resettable counters.

Note that device counters are not reset if you execute a Load Factory Backup command.

4. 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 backlit LED display provide access to user settings, readouts and utilities.

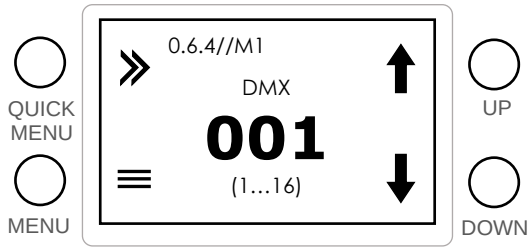


Figure 5. Default screen

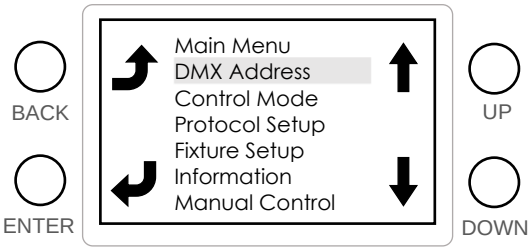


Figure 4. Main menu

The functions of the control buttons depend on which screen is open in the control panel display. The functions are indicated by icons:

BOTTOM-LEFT BUTTON (MENU / ENTER)

When the display is in sleep mode, the bottom-left MENU / ENTER button activates the display and calls up the default screen (see Figure 5) that gives the following information:

- Firmware version // DMX Mode
- Protocol type (DMX, Art-Net, sACN)
- DMX address
- DMX channel footprint.

When the default screen is active, the MENU / ENTER button ≡ opens the main menu (see Figure 4).

When navigating in the menus, the MENU / ENTER button ↵ confirms a selection, enters a sub-menu or implements a command.

TOP-LEFT BUTTON (QUICK MENU / BACK)

When the default screen is active, the QUICK MENU / BACK button » opens the quick menu.

When navigating in the menus, the QUICK MENU / BACK button ↱ navigates back one level towards the top of the menu.

TOP-RIGHT BUTTON (UP)

Scroll up through a menu or increase a number.

BOTTOM-RIGHT BUTTON (DOWN)

Scroll down through a menu or decrease a number.

When you apply power to the fixture it takes a few seconds to boot. After it has booted, the panel displays the default screen.

DMX control is disabled when the control menus are active.

A number of options for customizing the onboard display are available on the *DMX Control / Settings* channel and in the *Display* control menu in the control panel.

Quick menu

A quick menu is provided to save time. To open the quick menu, activate the default screen by pressing the MENU button and then press the ENTER button **»**.

The quick menu gives you the following options:

- Toggle the display orientation between auto, normal and inverted.
- Reboot the fixture.
- Load any of the three custom setting presets that have been saved previously or load the factory default settings.
- Reinitialize the fixture by returning all settings to factory defaults, deleting all custom presets, returning all resettable counters to zero, setting the fixture's DMX address to 1 and setting the DMX Mode to the factory default (Mode 2: W Strobe + RGB Strobe).

Quick access options

When the fixture is connected to mains power and has booted normally, the following functions can be accessed quickly by pressing key combinations.

- Holding UP and DOWN pressed together for less than one second toggles the display orientation.
- Pressing UP or DOWN three times calls up a readout of the main fixture information and the fixture's settings.

Battery Eco mode

When the fixture is not connected to mains power and is running on its internal battery, holding MENU and ENTER pressed in together for 10 seconds activates *Battery Eco Mode*. This disables battery power to protect the battery from being run flat if the fixture is accidentally switched on during transportation.

Put the fixture into *Battery Eco Mode* before transportation or long-term storage.

To take the fixture out of *Battery Eco Mode*, simply connect it to power.

5. Setting up the control protocol

The JDC Line 500 can be controlled via USITT512 DMX over a standard DMX cable link using the fixture's 5-pin XLR connectors or via Art-Net or sACN over network cable using the fixture's Ethernet port. This section explains how to configure the fixture to use the control data protocol that it is connected to.

The fixture is set up for control via a standard DMX cable link by default.

DMX

To configure the fixture to receive DMX control data over a standard DMX cable link, open the menus in the fixture's control panel and make the following adjustments:

1. In the first menu (root menu), give a suitable DMX address to the fixture.
2. In the **Protocol Setup → Protocol Type** menu, set the control protocol to **DMX** (the default setting).

These settings will not be affected if you apply a **Load Settings** command in the fixture's control panel, but the DMX address will be returned to 1 (the factory default) if you apply a **Load Factory Backup** command in the fixture's control panel.

Art-Net

To configure the fixture to receive DMX control data via Art-Net, open the menus in the fixture's control panel and make the following adjustments:

3. In the first menu (root menu), give a suitable DMX address to the fixture.
4. In the **Protocol Setup → Protocol Type** menu, set the control protocol to **Art-Net**.
5. Give all fixtures their own unique IP addresses. To do this, you can either:
   - set fixtures to generate their own IP addresses by choosing the ranges 2.x.x.x or 10.x.x.x (Art-Net specification),
   - set fixtures to acquire IP addresses automatically by DHCP, or
   - assign IP addresses manually by entering individual IP addresses and Subnet mask.
6. Select an Art-Net port/universe from 00000 (Network 0 / Subnet 0 / Universe 0) to 32767 (Network 7 / Subnet 15 / Universe 255). Note that the first Art-Net universe is considered to be universe number 00000, not 00001.

These settings will not be affected if you apply a **Load Default Settings** command in the fixture's control panel, but they will be returned to factory defaults if you apply a **Load Factory Backup** command in the fixture's control panel.

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

sACN

To configure the fixture to receive DMX control data via sACN, open the menus in the fixture's control panel and make the following settings:

1. In the first menu (root menu), give a suitable DMX address to the fixture.
2. In the **Protocol Setup → Protocol Type** menu, set the control protocol to **sACN**.
3. Give all fixtures their own unique IP addresses. To do this, you can either:
   - set fixtures to generate their own IP addresses by choosing the ranges 2.x.x.x or 10.x.x.x (Art-Net specification),
   - set fixtures to acquire IP addresses automatically by DHCP, or
   - assign IP addresses manually by entering individual IP addresses and Subnet mask.
4. Select an sACN universe from 00001 to 63999.

These settings will not be affected if you apply a **Load Default Settings** command in the fixture's control panel, but they will be returned to factory defaults if you apply a **Load Factory Backup** command in the fixture's control panel.

6. Control menu layout

Menus			***Notes***
DMX Address			
1 - 512			*Enter DMX address*
Control Mode			
M1 – RGBW Strobe (CH14)			*Select DMX control mode*
M2 - WStrobe + RGBStrobe (CH32)			
M3 - WStrobe + RGBPixel (CH82)			
M4 - RGBStrobe + WPixel (CH45)			
M5 - MultiPix (CH96)			
M6 - MultiPix Advanced (CH156)			
Protocol Setup			
Protocol type	**DMX**		*Control via DMX protocol*
	ArtNet		*Control via Art-Net protocol*
	sACN		*Control via sACN protocol*
Ethernet Config	Addressing Mode	**Auto 2.X.X.X**	*Auto addressing in the range 2.X.X.X*
		Auto 10.X.X.X	*Auto addressing in the range 10.X.X.X*
		Static IP	*Uses custom IP address and custom subnet mask (set these in next menu)*
		DHCP	*Gets IP address by DHCP*
	Custom IP Address	xxx.xxx.xxx.xxx	*Enter custom IP address*
	Custom IP Subnet	xxx.xxx.xxx.xxx	*Enter custom subnet mask*
	ArtNet Port	0 - 32768	*Sets which port listens for sACN packets*
	sACN Universe	1 - 63999	*Sets ACN universe*
Fixture Settings			
Dimmer Curve	Linear		*Select dimming curve*
	Soft		
Flash Style	**Normal**		*Normal strobe*
	Xenon		*Simulated xenon flicker strobe*
White point	8000		*Sets white point to 8000 K*
	6500		*Sets white point to 6500 K*
	5600		*Sets white point to 5600 K*
	Off (RAW)		*Raw white control*

Pixel Mirror	**Off**		*Normal pixel order: 1 to 10 (Pixel 1 is at Power IN)*
	x-mirror		*Reversed pixel order: 10 to 1 (Pixel 1 is at Power OUT)*
	y-mirror		*Inverted pixel order (Pixel 11 to 20 on top row)*
	x-y-mirror		*Reversed and inverted pixel order (Pixel 20 to 11 on top row)*
Background	**Crossfade**		*Crossfading from background color to main color*
	Mix		*Main color mixes with background color*
	Override		*Main color completely overrides background color*
No Signal	**Blackout**		*If DMX signal absent, fixture blacks out*
	Hold		*If DMX signal absent, fixture holds last DMX values received*
	Houselight		*If DMX signal absent, fixture goes to constant white light*
Fan Mode	**Regulated**		*Fan speed regulated*
	High		*Fans run at constant high speed, output reduced if necessary*
	Medium		*Fans run at constant medium speed, output reduced if necessary*
	Low		*Fans run at constant low speed, output reduced if necessary*
PWM Frequency	2700 Hz		*Sets LED refresh rate*
	3000 Hz		
	4800 Hz		
	9600 Hz		
Display Mode	**Auto**		*Control panel display enters sleep mode after short period. An error will cause the display to light up.*
	On		*Display constantly on*
	Off		*Display constantly off. An error will not cause the display to light up.*
Display Orientation	**Auto**		*Control panel display automatically inverts if fixture is inverted*
	Normal		*Display normal*
	Inverted		*Display inverted down to up*
Load Settings	Preset 1	Hold 3 sec.	Loads custom settings and custom offsets
	Preset 2	Hold 3 sec.	
	Preset 3	Hold 3 sec.	
	Default	Hold 3 sec.	Loads factory default settings and offsets
Information			
Show Errorlist			Shows last and current errors
Show Serial Number			Shows fixture's serial number
Show SW version			Shows current software version
Show device info			Shows fixture information
Show device hours			Shows resettable and non-resettable counters

Device Power Cycles			Shows resettable and non-resettable power cycle counters
Show DMX Input			Shows DMX values received for all functions
Show Signal Quality			Shows signal quality (framerate, noise, etc.)
Show Temperature			Shows temperatures in °C & °F
Show Fan Monitor			Shows fan rpm and Voltage
Manual Control			
Reboot (confirm 3 sec.)			Reboots fixture
Manual DMX	Intensity coarse (RGBW)	**000** - 255	*Manual fixture control*
	Intensity fine (RGBW)	**000** - 255	
	Duration (RGBW)	**000** - 255	
	Rate (Shutter) (RGBW)	**000** - 255	
	Intensity Effects [Strobe Mode] (RGBW)	**000** - 255	
	CTC	**000** - 255	
	R	**000** - 255	
	G	**000** - 255	
	B	**000** - 255	
	W	**000** - 255	
	Capture DMX values (confirm 3 sec.)		*Takes a snapshot of DMX values currently being received and uses them as manual DMX values*
	Reset Manual values (confirm 3 sec.)		*Resets all manual DMX values to default*
Service			
Test All	Confirm		*Runs continuous test sequence: pan & tilt first, then all FX with head straight up. Stop test by pressing "Back" button.*
Test White	Confirm		*Runs continuous test sequence on White LEDs. Stop test by pressing "Back" button.*
Test RGB	Confirm		*Runs continuous test sequence on RGB LEDs. Stop test by pressing "Back" button.*
Advanced (Press and hold Enter for 3 sec. to confirm)	Reset Counters	Device Hours (confirm 3 sec.)	*Returns resettable counter to zero*
		Device Power Cycles (confirm 3 sec.)	
		Max Temperatures (confirm 3 sec.)	
	Save Settings	Preset 1 (confirm 3 sec.)	*Saves all custom settings including offsets as a preset*
		Preset 2 (confirm 3 sec.)	
		Preset 3 (confirm 3 sec.)	
	Load factory backup (confirm 5 sec.)		*Loads factory default settings, resets custom offsets, deletes custom presets, sets resettable counters to zero, sets DMX address to 1, sets DMX mode to default (Mode 2: WStrobe + RGBStrobe)*

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

Quick menu

To open the quick menu, press the ENTER button: [>>] symbol

Menus			***Notes***
Display Orientation	**Auto**		*Display automatically inverts if fixture is inverted*
	Normal		*Display normal*
	Inverted		*Display inverted down to up*
Reboot	Confirm		*Reboots fixture*
Load Settings	Preset 1	Hold 3 sec.	Load custom settings and custom offsets
	Preset 2	Hold 3 sec.	
	Preset 3	Hold 3 sec.	
	Default	Hold 3 sec.	Loads factory default settings and offsets
Load Factory Backup (!) – confirm for 5 sec.			*Loads factory default settings, resets custom offsets, deletes customer presets, sets resettable counters to zero, sets DMX address to 1, sets DMX mode to default (Mode 2: WStrobe + RGBStrobe)*

7. DMX control modes overview

The following DMX control modes are available in the JDC Line 500.

DMX Mode 1: RGBW Strobe

16 DMX Channels

RGBW strobe is a global strobe that uses all the White and all the RGB segments together. The strobe has flash, pulse and ramp-up/down effects as well as special intensity effects such as lightning. It offers RGBW control plus separate color temperature control that defines the fixture's white point.

Background color sets a background color on the RGB segments. As standard, the main color output always has higher priority than the background color. The way that background color and main color are mixed can be selected using *Background color* on the *Control/Settings* channel.

Control / Settings lets you configure the fixture remotely via DMX.

Mode 1 RGBW Strobe	
RGBW strobe	
1	Intensity coarse
2	Intensity fine
3	Duration
4	Flash rate (Shutter)
5	Intensity effects (Strobe mode)
6	Control / Settings
7	CTC
8	Red
9	Green
10	Blue
11	White
Background color	
12	Intensity background
13	Red background
14	Green background
15	Blue background
16	White background

DMX Mode 2: W Strobe + RGB Strobe

34 DMX channels

White strobe with FX runs on the White segments only and has an effects engine with 50 patterns.

RGB strobe with FX runs on the RGB segments only and has its own effects engine with 50 patterns.

Both strobes let you control *crossfading* (duration of changes between the steps in each pattern) and *transition* (duration of changes from one pattern to the next).

Pattern chain length lets you set up a chain of fixtures for the pattern to run across – it defines the total number of fixtures in the chain. *Pattern chain position* lets you set which position in the chain the fixture will occupy: first, second or third etc. fixture in the chain.

Strobe phase lets you shift the timing of the RGB strobe by 1 – 359° relative to the White strobe. A 180° shift will result in a flip-flop between white and RGB flashes.

P*attern phase* lets you shift the timing of the RGB pattern by 1 – 359° relative to the White pattern.

Background color sets a background color on the RGB segments. As standard, the main color output always has higher priority than the background color. You can define how background color and main color are mixed using *Background color* on the *Control/Settings* channel.

Control / Settings lets you configure the fixture remotely via DMX.

Mode 2 W Strobe + RGB Strobe	
White strobe with FX	
1	Intensity coarse
2	Intensity fine
3	Duration
4	Flash rate (Shutter)
5	Intensity effects (Strobe mode)
6	Control / Settings
7	Pattern select
8	Pattern step / speed
9	Pattern step crossfading
10	Pattern transition
11	Pattern chain length
12	Pattern chain position
RGB strobe with FX	
13	Intensity coarse
14	Intensity fine
15	Duration
16	Flash rate (Shutter)
17	Intensity effects (Strobe mode)
18	CTC
19	Red
20	Green
21	Blue
22	Pattern select
23	Pattern step/speed
24	Pattern step crossfading
25	Pattern transition
26	Pattern chain length
27	Position in chain
28	Strobe phase
29	Pattern phase
Background color	
30	Intensity background
31	Red background
32	Green background
33	Blue background
34	White background

DMX Mode 3: W Strobe + RGB Pixel

84 DMX Channels

White strobe with FX runs on the White segments only and has an effects engine with 50 patterns. *Crossfading* sets the duration of changes between the steps in each pattern. *Transition* sets the duration of changes from one pattern to the next.

Pattern chain length lets you set up a chain of fixtures for the pattern to run across in a chase by defining the total number of fixtures in the chain. *Pattern chain position* lets you set which position in the chain the fixture will occupy: first, second or third etc. fixture in the chain.

RGB segments overall control gives overall output control of the individually controllable RGB segments at the end of this DMX mode (see below). It offers the standard strobe channels for intensity and strobe effects and a CTC Channel which lets you adjust the color temperature of the white output.

Strobe phase lets you shift the timing of the RGB segments strobe by 1 – 359° relative to the strobe on the White segments. A 180° shift will result in a flipflop between flashes on the two strobes.

Background color sets a background color on the RGB segments. As standard, the main color output always has higher priority than the background color. You can define how background color and main color are mixed using *Background color* on the *Control/Settings* channel.

Mode 3 W Strobe + RGB Pixel	
White strobe with FX	
1	Intensity coarse
2	Intensity fine
3	Duration
4	Flash rate (Shutter)
5	Intensity effects (Strobe mode)
6	Control / Settings
7	Pattern select
8	Pattern step / speed
9	Pattern step crossfade
10	Pattern transition
11	Pattern chain length
12	Pattern chain position
RGB segments overall control	
13	Intensity coarse
14	Intensity fine
15	Duration
16	Flash rate (Shutter)
17	Intensity effects (Strobe mode)
18	CTC
19	Strobe phase
Background color	
20	Intensity background
21	Red background
22	Green background
23	Blue background
24	White background
RGB segments individual control	
25	Red segment 01
26	Green segment 01
27	Blue segment 01
…	…
82	Red segment 20
83	Green segment 20
84	Blue segment 20

RGB segments individual control adjusts the color of the individual RGB segments. The output of these segments is determined by the *RGB segments overall control* channels (see above).

The upper and lower halves of each segment are controlled together, giving 20 RGB pixels.

Control / Settings lets you configure the fixture remotely via DMX.

DMX Mode 4: White + RGB Strobes + W Pixel

47 DMX Channels

White segments overall control gives overall output control of the individually controllable White segments at the end of this DMX mode (see below). It offers the standard strobe channels for intensity and strobe effects.

RGB strobe with FX provides an RGB color strobe that runs on the RGB segments only. It has an effects engine with 50 patterns. *Crossfading* sets the duration of changes between the steps in each pattern and *transition* sets the duration of changes from one pattern to the next.

Pattern chain length sets up a chain of fixtures for the pattern to run across in a chase – it defines the total number of fixtures in the chain. *Position in chain* lets you set which position in the chain the fixture will occupy: first, second or third etc. fixture in the chain.

Strobe phase lets you shift the timing of the RGB strobe by 1 – 359° relative to the White strobe. A 180° shift will result in a flip-flop between flashes on the two strobes.

Background color sets a background color on the RGB segments. As standard, the main color output always has higher priority than the background color. You can define how background color and main color are mixed using *Background color* on the *Control/Settings* channel.

Mode 4 White + RGB Strobes + W Pixel	
White segments overall control	
1	Intensity coarse
2	Intensity fine
3	Duration
4	Flash rate (Shutter)
5	Intensity effects (Strobe mode)
6	Control / Settings
RGB strobe with FX	
7	Intensity coarse
8	Intensity fine
9	Duration
10	Flash rate (Shutter)
11	Intensity effects (Strobe mode)
12	CTC
13	Red
14	Green
15	Blue
16	Pattern select
17	Pattern step / speed
18	Pattern step crossfade
19	Pattern transition
20	Pattern chain length
21	Position in chain
22	Strobe phase
Background color	
23	Intensity background
24	Red background
25	Green background
26	Blue background
27	White background
White segments individual control	
28	White segment 01
…	…
47	White segment 20

White segments individual control adjusts the output of the individual White segments. The overall output of these segments is determined by the White segments overall control (see above).

Control / Settings lets you configure the fixture remotely via DMX.

DMX Mode 5: Multipix

98 DMX Channels

White segments overall control gives overall output control of the individually controllable White segments at the end of this DMX mode (see below). It offers the standard strobe channels for intensity and strobe effects.

RGB segments overall control gives overall output control of the individually controllable RGB segments at the end of this DMX mode (see below). It offers the standard strobe channels for intensity and strobe effects and a CTC Channel which lets you adjust the color temperature of the white output.

Strobe phase lets you shift the timing of the RGB segments strobe by 1 – 359° relative to the strobe on the White segments. A 180° shift will result in a flipflop between flashes on the two strobes.

Background color sets a background color on the RGB segments. As standard, the main color output always has higher priority than the background color. You can define how background color and main color are mixed using *Background color* on the *Control/Settings* channel.

White segments individual control adjusts the output of the individual White segments. The overall output of these segments is determined by the *White segments overall control* channels (see above).

RGB segments individual control adjusts the color of the individual RGB segments. The output of these segments is determined by the *RGB segments overall control* channels (see above).

Mode 5 MultiPix	
White segments overall control	
1	Intensity coarse
2	Intensity fine
3	Duration
4	Flash rate (Shutter)
5	Intensity effects (Strobe mode)
6	Control / Settings
RGB segments overall control	
7	Intensity coarse
8	Intensity fine
9	Duration
10	Flash rate (Shutter)
11	Intensity effects (Strobe mode)
12	CTC
13	Strobe phase
Background color	
14	Intensity background
15	Red background
16	Green background
17	Blue background
18	White background
White segments individual control	
19	White segment 01
…	…
38	White segment 20
RGB segments individual control	
39	Red segment 01
40	Green segment 01
41	Blue segment 01
…	…
96	Red segment 20
97	Green segment 20
98	Blue segment 20

The upper and lower halves of each RGB segment are controlled together, giving individual RGB control of 20 RGB pixels in total.

Control / Settings lets you configure the fixture remotely via DMX.

DMX Mode 6: MultiPix Advanced

158 DMX Channels

White segments overall control gives overall output control of the individually controllable White segments at the end of this DMX mode (see below). It offers the standard strobe channels for intensity and strobe effects.

RGB segments overall control gives overall output control of the individually controllable RGB segments at the end of this DMX mode (see below). It offers the standard strobe channels for intensity and strobe effects and a CTC Channel which lets you adjust the color temperature of the white output.

Strobe phase lets you shift the timing of RGB segments strobe by 1 – 359° relative to the strobe on the White segments. A 180° shift will result in a flipflop between flashes on the two strobes.

Background color sets a background color on the RGB segments. As standard, the main color output always has higher priority than the background color. You can define how background color and main color are mixed using *Background color* on the *Control/Settings* channel.

White segments individual control adjusts the output of the individual White segments. The overall output of these segments is determined by the *White segments overall control* channels (see above).

RGB segments individual control (upper, lower) adjusts the color of the individual RGB segments. The output of these segments is determined by the *RGB segments overall control* channels (see above).

Mode 6
MultiPix Advanced

White strobe

1	Intensity coarse
2	Intensity fine
3	Duration
4	Flash rate (Shutter)
5	Intensity effects (Strobe mode)
6	Control / Settings

RGB strobe

7	Intensity coarse
8	Intensity fine
9	Duration
10	Flash rate (Shutter)
11	Intensity effects (Strobe mode)
12	CTC
13	Strobe phase

Background color

14	Intensity background
15	Red background
16	Green background
17	Blue background
18	White background

White segments individual control

19	White segment 01
…	…
38	White segment 20

RGB segments individual control (upper, lower separately)

39	Red segment 01
40	Green segment 01
41	Blue segment 01
…	…
156	Red segment 40
157	Green segment 40
158	Blue segment 40

The RGB segments are split into upper and lower halves with individual control of each half. This gives individual RGB control of 40 RGB pixels in total.

Control / Settings lets you configure the fixture remotely via DMX.

DMX Mode 7: MultiPix Quadpix

38 DMX Channels

White segments overall control gives overall output control of the individually controllable White segments at the end of this DMX mode (see below). It offers the standard strobe channels for intensity and strobe effects.

RGB segments overall control gives overall output control of the individually controllable RGB segments at the end of this DMX mode (see below). It offers the standard strobe channels for intensity and strobe effects and a CTC Channel which lets you adjust the color temperature of the white output.

Strobe phase lets you shift the timing of RGB segments strobe by 1 – 359° relative to the strobe on the White segments. A 180° shift will result in a flipflop between flashes on the two strobes.

Background color sets a background color on the RGB segments. As standard, the main color output always has higher priority than the background color. You can define how background color and main color are mixed using *Background color* on the *Control/Settings* channel.

White quad segments divides the 20 White segments into 5 quad segments, each containing 4 segments, and gives intensity control. The overall output of these quad segments is determined by the *White segments overall control* channels (see above).

RGB quad segments divides the 20 RGB segments into 5 quad segments, each containing 4 segments, and gives RGB control. The overall output of these quad segments is determined by the *RGB segments overall control* channels (see above).

Control / Settings lets you configure the fixture remotely via DMX.

Mode 7 MultiPix Quadpix	
White strobe	
1	Intensity coarse
2	Intensity fine
3	Duration
4	Flash rate (Shutter)
5	Intensity effects (Strobe mode)
6	Control / Settings
RGB strobe	
7	Intensity coarse
8	Intensity fine
9	Duration
10	Flash rate (Shutter)
11	Intensity effects (Strobe mode)
12	CTC
13	Strobe phase
Background color	
14	Intensity background
15	Red background
16	Green background
17	Blue background
18	White background
White quad segments	
19	White quad segment 1
…	…
23	White quad segment 5
RGB quad segments	
24	Red quad segment 1
25	Green quad segment 1
26	Blue quad segment 1
…	…
36	Red quad segment 5
37	Green segment 5
38	Blue segment 5

8. DMX control channel layout

In the following DMX channel layout tables:

- Default settings are indicated with **bold type**.
- Where commands are followed by (3s hold) you must send that value continuously for 3 seconds (or other duration if indicated in the table) to apply the command.
- Some commands on the Control / Settings channel require the DMX value zero to be sent first and then moved directly to the DMX value required by the command concerned.

DMX Mode 1: RGBW Strobe

16 DMX Channels

Channel		Command	DMX range		Percent %		Default DMX	Fade
Global RGBW strobe								
1	**Global intensity coarse**	RGBW intensity 0 → 100% (16-bit)	0	65535	0	100	0	Fade
2	**Global intensity fine**							
3	**Global flash duration**	Flash duration short → long	0	255	0	100	0	Fade
4	**Global flash rate (Shutter)**	Closed	0	4	0	1.6	0	Snap
		Flash rate slow → fast	5	250	2	97.6		Fade
		Open	251	255	98	100		Snap
5	**Global intensity effects (Strobe mode)**	Off: normal sync flashes	0	14	0	5.5	0	Snap
		Single flash if change on flash rate channel	15	29	5.9	11.4		
		Pulse	30	44	11.8	17.3		
		Pulse opening	45	59	17.6	23.1		
		Pulse closing	60	74	23.5	29.0		
		Pulse random	75	89	29.4	34.9		
		Pulse opening random	90	104	35.3	40.8		
		Pulse closing random	105	119	41.2	46.7		
		Double flash	120	134	47.1	52.5		
		Double flash random	135	149	52.9	58.4		
		Triple flash	150	164	58.8	64.3		
		Triple flash random	165	179	64.7	70.2		
		Spikes	180	194	70.6	76.1		
		Lightning	195	209	76.5	82.0		
		Random pixel flash	210	224	82.4	87.8		
		Random fixture flash	225	239	88.2	93.7		
		Flash offset between fixtures (adjust offset on Global flash rate channel)	240	255	94.1	100		
6	**Control /Settings**	*See'Control / Settings channel' at the end of this chapter*						
7	**CTC (RGB)**	Open	0	10	0	3,9	0	Snap
		10 000 K	11	11	4,3	4,3		Fade
		…	12	254	4,7	99,2		
		2 500 K	255	255	100	100		
8	**Red intensity**	Intensity 0 → 100%	0	255	0	100	0	Fade
9	**Green intensity**	Intensity 0 → 100%	0	255	0	100	0	Fade
10	**Blue intensity**	Intensity 0 → 100%	0	255	0	100	0	Fade
11	**White intensity**	Intensity 0 → 100%	0	255	0	100	0	Fade
Background color								
12	**Intensity backgnd.**	Intensity 0 → 100%	0	255	0	100	0	Fade
13	**Red background**	Intensity 0 → 100%	0	255	0	100	0	Fade
14	**Green background**	Intensity 0 → 100%	0	255	0	100	0	Fade
15	**Blue background**	Intensity 0 → 100%	0	255	0	100	0	Fade
16	**White background**	Intensity 0 → 100%	0	255	0	100	0	Fade

DMX Mode 2: W Strobe + RGB Strobe

34 DMX Channels

Channel		Command	DMX range		Percent %		Default DMX	Fade
White strobe with FX								
1	**White intensity coarse**	White intensity 0 → 100% (16-bit)	0	65535	0	100	0	Fade
2	**White intensity fine**							
3	**White flash duration**	Flash duration short → long	0	255	0	100	0	Fade
4	**White flash rate (Shutter)**	Closed	0	4	0	1.6	0	Snap
		Flash rate slow → fast	5	250	2	97.6		Fade
		Open	251	255	98	100		Snap
5	**White intensity effects (Strobe mode)**	Off: normal sync flashes	0	14	0	5.5	0	Snap
		Single flash if change on flash rate channel	15	29	5.9	11.4		
		Pulse	30	44	11.8	17.3		
		Pulse opening	45	59	17.6	23.1		
		Pulse closing	60	74	23.5	29.0		
		Pulse random	75	89	29.4	34.9		
		Pulse opening random	90	104	35.3	40.8		
		Pulse closing random	105	119	41.2	46.7		
		Double flash	120	134	47.1	52.5		
		Double flash random	135	149	52.9	58.4		
		Triple flash	150	164	58.8	64.3		
		Triple flash random	165	179	64.7	70.2		
		Spikes	180	194	70.6	76.1		
		Lightning	195	209	76.5	82.0		
		Random pixel flash	210	224	82.4	87.8		
		Random fixture flash	225	239	88.2	93.7		
		Flash offset between fixtures (adjust offset on Global flash rate channel)	240	247	94.1	96.9		
		Random pattern	248	251	97.3	98.4		
		Random pixel	252	255	98.8	100		
6	**Control / Settings**	*See 'Control / Settings channel' at the end of this chapter*						
7	**White FX pattern select**	Off (White patterns inactive)	0	11	0	4.3	0	Snap
		Pattern 01	12	15	4.7	5.9		
		Patterns 02 … 49	…	…	…	…		
		Pattern 50	208	211	81.6	82.8		
		No function	212	247	83.1	100		
8	**White pattern step select / speed**	Pattern step 01	0	2	0	0.8	0	Snap
		Pattern steps 02 … 39	…	…	…	…		Snap
		Pattern step 40	117	119	45.9	46.7		Snap
		No function	120	127	47.1	49.8		Snap
		CW fast → slow (run pattern step 1 … n)	128	190	50.2	74.5		Fade
		Stop	191	192	74.9	75.3		Snap
		CCW slow → fast (run pattern step n … 1)	193	255	75.7	100		Fade

9	**White pattern step crossfading**	No crossfading, snap from one step to next	0	5	0	3.9	0	Snap
		Snap → longest crossfade (fade in and fade out times are identical)	6	127	4.3	49.0		Fade
		No crossfading, snap from one step to next	128	133	49.4	51.0		Snap
		Snap → longest crossfade with tail (fade-in time is shorter than fade out time, creates a shadow effect)	134	255	51.4	100		Fade
10	**White pattern transition**	No transition time, snap from one pattern to next	0	10	0	3.9	0	Snap
		Snap → 15 sec. transition time	11	68	4.3	26.7		Fade
		No transition time, snap from one pattern to next	69	73	27.1	28.6		Snap
		FOB (Fade Over Blackout) transition, Snap → 15 sec. transition time	74	130	29.0	51.0		Fade
		No transition time, snap from one pattern to next	131	135	51.4	52.9		Snap
		FOF (Fade Over Full) transition, Snap → 15 sec. transition time	136	193	53.3	75.7		Fade
		No function	194	255	76.1	100		
11	**White pattern chain length**	Off (no chain)	0	0	0	0	0	Snap
		Total length of pattern chain: 1 → 255 fixtures	1	255	0.4	100		Fade
12	**White pattern position in chain**	Off (no chain)	0	0	0	0	0	Snap
		Fixture is number 1 → number 255 in the chain	1	255	0.4	100		Fade

RGB strobe with FX

13	**RGB intensity coarse**	RGB intensity 0 → 100% (16-bit)	0	65535	0	100	0	Fade
14	**RGB intensity fine**							
15	**RGB duration**	Flash duration short → long	0	255	0	100	0	Fade
16	**RGB flash rate (Shutter)**	Closed	0	4	0	1.6	0	Snap
		Flash rate slow → fast	5	250	2	97.6		Fade
		Open	251	255	98	100		Snap
17	**RGB intensity effects (Strobe mode)**	Off: normal sync flashes	0	14	0	5.5	0	Snap
		Single flash if change on flash rate channel	15	29	5.9	11.4		
		Pulse	30	44	11.8	17.3		
		Pulse opening	45	59	17.6	23.1		
		Pulse closing	60	74	23.5	29.0		
		Pulse random	75	89	29.4	34.9		
		Pulse opening random	90	104	35.3	40.8		
		Pulse closing random	105	119	41.2	46.7		
		Double flash	120	134	47.1	52.5		
		Double flash random	135	149	52.9	58.4		
		Triple flash	150	164	58.8	64.3		
		Triple flash random	165	179	64.7	70.2		
		Spikes	180	194	70.6	76.1		
		Lightning	195	209	76.5	82.0		
		Random pixel flash	210	224	82.4	87.8		
		Random fixture flash	225	239	88.2	93.7		
		Flash offset between fixtures (adjust offset on Global flash rate channel)	240	255	94.1	100		

18	**CTC (RGB)**	Open	0	10	0	3,9	0	Snap
		10 000 K	11	11	4,3	4,3		Fade
		…	12	254	4,7	99,2		
		2 500 K	255	255	100	100		
19	**Red**	Intensity 0 → 100%	0	255	0	100	0	Fade
20	**Green**	Intensity 0 → 100%	0	255	0	100	0	Fade
21	**Blue**	Intensity 0 → 100%	0	255	0	100	0	Fade
22	**RGB FX pattern select**	Off (all white patterns inactive)	0	11	0	4.3	0	Snap
		Pattern 01	12	15	4.7	5.9		
		Patterns 02 … 49	…	…	…	...		
		Pattern 50	208	211	81.6	82.8		
		No function	212	247	83.1	100		
23	**RGB pattern step select / speed**	Pattern step 01	0	2	0	0.8	0	Snap
		Pattern steps 02 … 39	…	…	…	…		Snap
		Pattern step 40	117	119	45.9	46.7		Snap
		No function	120	127	47.1	49.8		Snap
		CW fast → slow (run pattern step 1 … n)	128	190	50.2	74.5		Fade
		Stop	191	192	74.9	75.3		Snap
		CCW slow → fast (run pattern step n … 1)	193	255	75.7	100		Fade
24	**RGB pattern step crossfading**	No crossfading, snap from one step to next	0	5	0	3.9	0	Snap
		Snap → longest crossfade (fade in and fade out times are identical)	6	127	4.3	49.0		Fade
		No crossfading, snap from one step to next	128	133	49.4	51.0		Snap
		Snap → longest crossfade with tail (fade-in time is shorter than fade out time, creates a shadow effect)	134	255	51.4	100		Fade
25	**RGB pattern transition**	No transition time, snap from one pattern to next	0	10	0	3.9	0	Snap
		Snap → 15 sec. transition time	11	68	4.3	26.7		Fade
		No transition time, snap from one pattern to next	69	73	27.1	28.6		Snap
		FOB (Fade Over Blackout) transition, Snap → 15 sec. transition time	74	130	29.0	51.0		Fade
		No transition time, snap from one pattern to next	131	135	51.4	52.9		Snap
		FOF (Fade Over Full) transition, Snap → 15 sec. transition time	136	193	53.3	75.7		Fade
		No function	194	255	76.1	100		
26	**RGB pattern chain length**	Off (pattern length: normal)	0	0	0	0	0	Snap
		Pattern length: 1 → 255 steps	1	255	0.4	100		Fade
27	**RGB pattern position in chain**	Off (pattern starts at Step 1)	0	0	0	0	0	Snap
		Pattern starts at Step 1 → Step 255	1	255	0.4	100		Fade
28	**RGB strobe phase**	RGB strobe timing shift 0° → 359° relative to White strobe	0	255	0	100	0	Fade
29	**RGB pattern phase**	RGB pattern timing shift 0° → 359° relative to White strobe	0	255	0	100	0	Fade

Background color

30	**Intensity backgnd.**	Intensity 0 → 100%	0	255	0	100	0	Fade
31	**Red background**	Intensity 0 → 100%	0	255	0	100	0	Fade
32	**Green background**	Intensity 0 → 100%	0	255	0	100	0	Fade
33	**Blue background**	Intensity 0 → 100%	0	255	0	100	0	Fade
34	**White background**	Intensity 0 → 100%	0	255	0	100	0	Fade

DMX Mode 3: W Strobe + RGB Pixel

84 DMX Channels

Channel	Command	DMX range		Percent %		Default DMX	Fade
White strobe with FX patterns							
1	**White intensity coarse**	White intensity 0 → 100% (16-bit)	0	65535	0	100	0	Fade
2	**White intensity fine**							
3	**White flash duration**	Flash duration short → long	0	255	0	100	0	Fade
4	**White flash rate (Shutter)**	Closed	0	4	0	1.6	0	Snap
		Flash rate slow → fast	5	250	2	97.6		Fade
		Open	251	255	98	100		Snap
5	**White intensity effects (Strobe mode)**	Off (normal sync flashes)	0	14	0	5.5	0	Snap
		Single flash if change on flash rate channel	15	29	5.9	11.4		
		Pulse	30	44	11.8	17.3		
		Pulse opening	45	59	17.6	23.1		
		Pulse closing	60	74	23.5	29.0		
		Pulse random	75	89	29.4	34.9		
		Pulse opening random	90	104	35.3	40.8		
		Pulse closing random	105	119	41.2	46.7		
		Double flash	120	134	47.1	52.5		
		Double flash random	135	149	52.9	58.4		
		Triple flash	150	164	58.8	64.3		
		Triple flash random	165	179	64.7	70.2		
		Spikes	180	194	70.6	76.1		
		Lightning	195	209	76.5	82.0		
		Random pixel flash	210	224	82.4	87.8		
		Random fixture flash	225	239	88.2	93.7		
		Flash offset between fixtures (adjust offset on Global flash rate channel)	240	247	94.1	96.9		
		Random pattern	248	251	97.3	98.4		
		Random pixel	252	255	98.8	100		
6	**Control / Settings**	*See 'Control / Settings channel' at the end of this chapter*						
7	**White FX pattern select**	Off (all white patterns inactive)	0	11	0	4.3	0	Snap
		Pattern 01	12	15	4.7	5.9		
		Patterns 02 … 49	…	…	…	...		
		Pattern 50	208	211	81.6	82.8		
		No function	212	247	83.1	100		
8	**White pattern step select / speed**	Pattern step 01	0	2	0	0.8	0	Snap
		Pattern steps 02 … 39	…	…	…	…		Snap
		Pattern step 40	117	119	45.9	46.7		Snap
		No function	120	127	47.1	49.8		Snap
		CW fast → slow (run pattern step 1 … n)	128	190	50.2	74.5		Fade
		Stop	191	192	74.9	75.3		Snap
		CCW slow → fast (run pattern step n … 1)	193	255	75.7	100		Fade

9	**White pattern step crossfading**	No crossfading, snap from one step to next	0	5	0	3.9	0	Snap
		Snap ... longest crossfade (fade in and fade out times are identical)	6	127	4.3	49.0		Fade
		No crossfading, snap from one step to next	128	133	49.4	51.0		Snap
		Snap → longest crossfade with tail (fade-in time is shorter than fade out time, creates a shadow effect)	134	255	51.4	100		Fade
10	**White pattern transition**	No transition time, snap from one pattern to next	0	10	0	3.9	0	Snap
		Snap → 15 sec. transition time	11	68	4.3	26.7		Fade
		No transition time, snap from one pattern to next	69	73	27.1	28.6		Snap
		FOB (Fade Over Blackout) transition, Snap → 15 sec. transition time	74	130	29.0	51.0		Fade
		No transition time, snap from one pattern to next	131	135	51.4	52.9		Snap
		FOF (Fade Over Full) transition, Snap → 15 sec. transition time	136	193	53.3	75.7		Fade
		No function	194	255	76.1	100		
11	**White pattern chain length**	Off (no chain)	0	0	0	0	0	Snap
		Total length of pattern chain: 1 → 255 fixtures	1	255	0.4	100		Fade
12	**White pattern position in chain**	Off (no chain)	0	0	0	0	0	Snap
		Fixture is number 1 → number 255 in the chain	1	255	0.4	100		Fade

RGB segments overall control

13	**RGB intensity coarse**	Intensity 0 → 100% (16-bit)	0	65535	0	100	0	Fade
14	**RGB intensity fine**							
15	**RGB duration**	Flash duration short → long	0	255	0	100	0	Fade
16	**RGB flash rate (Shutter)**	Closed	0	4	0	1.6	0	Snap
		Flash rate slow → fast	5	250	2	97.6		Fade
		Open	251	255	98	100		Snap
17	**RGB strobe intensity effects (Strobe mode)**	Off (normal sync flashes)	0	14	0	5.5	0	Snap
		Single flash if change on flash rate channel	15	29	5.9	11.4		
		Pulse	30	44	11.8	17.3		
		Pulse opening	45	59	17.6	23.1		
		Pulse closing	60	74	23.5	29.0		
		Pulse random	75	89	29.4	34.9		
		Pulse opening random	90	104	35.3	40.8		
		Pulse closing random	105	119	41.2	46.7		
		Double flash	120	134	47.1	52.5		
		Double flash random	135	149	52.9	58.4		
		Triple flash	150	164	58.8	64.3		
		Triple flash random	165	179	64.7	70.2		
		Spikes	180	194	70.6	76.1		
		Lightning	195	209	76.5	82.0		
		Random pixel flash	210	224	82.4	87.8		
		Random fixture flash	225	239	88.2	93.7		
		Flash offset between fixtures (adjust offset on Global flash rate channel)	240	247	94.1	96.9		
		Random pattern	248	251	97.3	98.4		
		Random pixel	252	255	98.8	100		

18	**CTC (RGB)**	Open	0	10	0	3,9	0	Snap
		10 000 K	11	11	4,3	4,3		Fade
		…	12	254	4,7	99,2		
		2 500 K	255	255	100	100		
19	**RGB strobe phase**	RGB strobe phase shift 0 → 359° offset relative to White strobe	0	255	0	100	0	Fade

Background color

20	**Intensity backgnd.**	Intensity 0 → 100%	0	255	0	100	0	Fade
21	**Red background**	Intensity 0 → 100%	0	255	0	100	0	Fade
22	**Green background**	Intensity 0 → 100%	0	255	0	100	0	Fade
23	**Blue background**	Intensity 0 → 100%	0	255	0	100	0	Fade
24	**White background**	Intensity 0 → 100%	0	255	0	100	0	Fade

RGB segments individual control (upper and lower halves controlled as one pixel)

25	**Red segment 01**	Red intensity 0 → 100%	0	255	0	100	0	Fade
26	**Green segment 01**	Green intensity 0 → 100%	0	255	0	100	0	Fade
27	**Blue segment 01**	Blue intensity 0 → 100%	0	255	0	100	0	Fade
28 **…** **81**	**Red segment 02** **…** **Blue segment 19**	RGB segments in order, intensity 0 → 100%	0	255	0	100	0	Fade
82	**Red segment 20**	Red intensity 0 → 100%	0	255	0	100	0	Fade
83	**Green segment 20**	Green intensity 0 → 100%	0	255	0	100	0	Fade
84	**Blue segment 20**	Blue intensity 0 → 100%	0	255	0	100	0	Fade

DMX Mode 4: White + RGB Strobes + W Pixel

47 DMX Channels

Channel	Command	DMX range		Percent %		Default DMX	Fade
White segments overall control							
1 **Global intensity coarse** / **2** **Global intensity fine**	Overall intensity 0 → 100% (16-bit)	0	65535	0	100	0	Fade
3	**Global duration**	Flash duration short → long	0	255	0	100	0	Fade
4	**Global flash rate (Shutter)**	Closed	0	4	0	1.6	0	Snap
		Flash rate slow → fast	5	250	2	97.6		Fade
		Open	251	255	98	100		Snap
5	**Global intensity effects (Strobe mode)**	Off (normal sync flashes)	0	14	0	5.5	0	Snap
		Single flash if change on flash rate channel	15	29	5.9	11.4		
		Pulse	30	44	11.8	17.3		
		Pulse opening	45	59	17.6	23.1		
		Pulse closing	60	74	23.5	29.0		
		Pulse random	75	89	29.4	34.9		
		Pulse opening random	90	104	35.3	40.8		
		Pulse closing random	105	119	41.2	46.7		
		Double flash	120	134	47.1	52.5		
		Double flash random	135	149	52.9	58.4		
		Triple flash	150	164	58.8	64.3		
		Triple flash random	165	179	64.7	70.2		
		Spikes	180	194	70.6	76.1		
		Lightning	195	209	76.5	82.0		
		Random pixel flash	210	224	82.4	87.8		
		Random fixture flash	225	239	88.2	93.7		
		Flash offset between fixtures (adjust offset on Global flash rate channel)	240	255	94.1	100		
6	**Control / Settings**	*See 'Control / Settings channel' at the end of this chapter.*						
RGB strobe with FX patterns							
7 **RGB intensity coarse** / **8** **RGB intensity fine**	RGB intensity 0 → 100% (16-bit)	0	65535	0	100	0	Fade
9	**RGB duration**	Flash duration short → long	0	255	0	100	0	Fade
10	**RGB flash rate (Shutter)**	Closed	0	4	0	1.6	0	Snap
		Flash rate slow → fast	5	250	2	97.6		Fade
		Open	251	255	98	100		Snap

11	**RGB intensity effects (Strobe mode)**	Off (normal sync flashes)	0	14	0	5.5	0	Snap
		Single flash if change on flash rate channel	15	29	5.9	11.4		
		Pulse	30	44	11.8	17.3		
		Pulse opening	45	59	17.6	23.1		
		Pulse closing	60	74	23.5	29.0		
		Pulse random	75	89	29.4	34.9		
		Pulse opening random	90	104	35.3	40.8		
		Pulse closing random	105	119	41.2	46.7		
		Double flash	120	134	47.1	52.5		
		Double flash random	135	149	52.9	58.4		
		Triple flash	150	164	58.8	64.3		
		Triple flash random	165	179	64.7	70.2		
		Spikes	180	194	70.6	76.1		
		Lightning	195	209	76.5	82.0		
		Random pixel flash	210	224	82.4	87.8		
		Random fixture flash	225	239	88.2	93.7		
		Flash offset between fixtures (adjust offset on Global flash rate channel)	240	255	94.1	100		
12	**CTC**	Open	0	10	0	3.9	0	Snap
		10 000 K	11	11	4.3	4.3		Fade
		…	12	254	4.7	99.2		
		2 500 K	255	255	100	100		
13	**Red**	Intensity 0 → 100%	0	255	0	100	0	Fade
14	**Green**	Intensity 0 → 100%	0	255	0	100	0	Fade
15	**Blue**	Intensity 0 → 100%	0	255	0	100	0	Fade
16	**RGB FX pattern select**	Off (all white patterns inactive)	0	11	0	4.3	0	Snap
		Pattern 01	12	15	4.7	5.9		
		Patterns 02 … 49	…	…	…	...		
		Pattern 50	208	211	81.6	82.8		
		No function	212	247	83.1	100		
17	**RGB pattern step select / speed**	Pattern step 01	0	2	0	0.8	0	Snap
		Pattern steps 02 … 39	…	…	…	…		Snap
		Pattern step 40	117	119	45.9	46.7		Snap
		No function	120	127	47.1	49.8		Snap
		CW fast → slow (run pattern step 1 … n)	128	190	50.2	74.5		Fade
		Stop	191	192	74.9	75.3		Snap
		CCW slow → fast (run pattern step n … 1)	193	255	75.7	100		Fade
18	**RGB pattern step crossfading**	No crossfading, snap from one step to next	0	5	0	3.9	0	Snap
		Snap → longest crossfade (fade in and fade out times are identical)	6	127	4.3	49.0		Fade
		No crossfading, snap from one step to next	128	133	49.4	51.0		Snap
		Snap → longest crossfade with tail (fade-in time is shorter than fade out time, creates a shadow effect)	134	255	51.4	100		Fade
19	**RGB pattern transition**	No transition time, snap from one pattern to next	0	10	0	3.9	0	Snap
		Snap → 15 sec. transition time	11	68	4.3	26.7		Fade
		No transition time, snap from one pattern to next	69	73	27.1	28.6		Snap
		FOB (Fade Over Blackout) transition, Snap → 15 sec. transition time	74	130	29.0	51.0		Fade
		No transition time, snap from one pattern to next	131	135	51.4	52.9		Snap
		FOF (Fade Over Full) transition, Snap → 15 sec. transition time	136	193	53.3	75.7		Fade

		No function	194	255	76.1	100		
20	**RGB pattern chain length**	Off (no chain)	0	0	0	0	0	Snap
		Total length of pattern chain: 1 → 255 fixtures	1	255	0.4	100		Fade
21	**Position in chain**	Off (no chain)	0	0	0	0	0	Snap
		Fixture is number 1 → number 255 in the chain	1	255	0.4	100		Fade
22	**RGB strobe phase**	RGB strobe timing shift 0 → 359° offset relative to White strobe	0	255	0	100	0	Fade

Background color

23	**Intensity backgnd.**	Intensity 0 → 100%	0	255	0	100	0	Fade
24	**Red background**	Intensity 0 → 100%	0	255	0	100	0	Fade
25	**Green background**	Intensity 0 → 100%	0	255	0	100	0	Fade
26	**Blue background**	Intensity 0 → 100%	0	255	0	100	0	Fade
27	**White background**	Intensity 0 → 100%	0	255	0	100	0	Fade

White segments individual control

28	**White segment 01**	White intensity 0 → 100%	0	255	0	100	0	Fade
29 **…** **46**	**White segment 02** **…** **White segment 19**	White segments in order: intensity 0 → 100%	0	255	0	100	0	Fade
47	**White segment 20**	White intensity 0 → 100%	0	255	0	100	0	Fade

DMX Mode 5: Multipix

98 DMX Channels

Channel	Command	DMX range		Percent %		Default DMX	Fade
White segments overall control							
1 **2**	**White intensity coarse** **White intensity fine**	White intensity 0 → 100% (16-bit)	0	65535	0	100	0	Fade
3	**White duration**	Flash duration short → long	0	255	0	100	0	Fade
4	**White flash rate (Shutter)**	Closed	0	4	0	1.6	0	Snap
		Flash rate slow → fast	5	250	2	97.6		Fade
		Open	251	255	98	100		Snap
5	**White intensity effects (Strobe mode)**	Off (normal sync flashes)	0	14	0	5.5	0	Snap
		Single flash if change on flash rate channel	15	29	5.9	11.4		
		Pulse	30	44	11.8	17.3		
		Pulse opening	45	59	17.6	23.1		
		Pulse closing	60	74	23.5	29.0		
		Pulse random	75	89	29.4	34.9		
		Pulse opening random	90	104	35.3	40.8		
		Pulse closing random	105	119	41.2	46.7		
		Double flash	120	134	47.1	52.5		
		Double flash random	135	149	52.9	58.4		
		Triple flash	150	164	58.8	64.3		
		Triple flash random	165	179	64.7	70.2		
		Spikes	180	194	70.6	76.1		
		Lightning	195	209	76.5	82.0		
		Random pixel flash	210	224	82.4	87.8		
		Random fixture flash	225	239	88.2	93.7		
		Flash offset between fixtures (adjust offset on Global flash rate channel)	240	255	94.1	100		
6	**Control / Settings**	*See 'Control / Settings channel' at the end of this chapter.*						
RGB segments overall control							
7 **8**	**RGB intensity coarse** **RGB intensity fine**	RGB intensity 0 → 100% (16-bit)	0	65535	0	100	0	Fade
9	**RGB duration**	Flash duration short → long	0	255	0	100	0	Fade
10	**RGB flash rate (Shutter)**	Closed	0	4	0	1.6	0	Snap
		Flash rate slow → fast	5	250	2	97.6		Fade
		Open	251	255	98	100		Snap

11	**RGB intensity effects (Strobe mode)**	Off (normal sync flashes)	0	14	0	5.5	0	Snap
		Single flash if change on flash rate channel	15	29	5.9	11.4		
		Pulse	30	44	11.8	17.3		
		Pulse opening	45	59	17.6	23.1		
		Pulse closing	60	74	23.5	29.0		
		Pulse random	75	89	29.4	34.9		
		Pulse opening random	90	104	35.3	40.8		
		Pulse closing random	105	119	41.2	46.7		
		Double flash	120	134	47.1	52.5		
		Double flash random	135	149	52.9	58.4		
		Triple flash	150	164	58.8	64.3		
		Triple flash random	165	179	64.7	70.2		
		Spikes	180	194	70.6	76.1		
		Lightning	195	209	76.5	82.0		
		Random pixel flash	210	224	82.4	87.8		
		Random fixture flash	225	239	88.2	93.7		
		Flash offset between fixtures (adjust offset on Global flash rate channel)	240	255	94.1	100		
12	**RGB CTC**	Open	0	10	0	3,9	0	Snap
		10 000 K	11	11	4,3	4,3		Fade
		…	12	254	4,7	99,2		
		2 500 K	255	255	100	100		
13	**RGB strobe phase**	RGB strobe phase shift 0 → 359° offset relative to White strobe	0	255	0	100	0	Fade

Background color

14	**Intensity backgnd.**	Intensity 0 → 100%	0	255	0	100	0	Fade
15	**Red background**	Intensity 0 → 100%	0	255	0	100	0	Fade
16	**Green background**	Intensity 0 → 100%	0	255	0	100	0	Fade
17	**Blue background**	Intensity 0 → 100%	0	255	0	100	0	Fade
18	**White background**	Intensity 0 → 100%	0	255	0	100	0	Fade

White segments individual control

19	**White segment 01**	White intensity 0 → 100%	0	255	0	100	0	Fade
20 … **37**	**White segment 02** … **White segment 19**	White segments in order: intensity 0 → 100%	0	255	0	100	0	Fade
38	**White segment 20**	White intensity 0 → 100%	0	255	0	100	0	Fade

RGB segments individual control (upper and lower halves controlled as one pixel)

39	**Red segment 01**	Red intensity 0 → 100%	0	255	0	100	0	Fade
40	**Green segment 01**	Green intensity 0 → 100%	0	255	0	100	0	Fade
41	**Blue segment 01**	Blue intensity 0 → 100%	0	255	0	100	0	Fade
42 … **95**	**Red segment 02** … **Blue segment 19**	RGB segments in order, intensity 0 → 100%	0	255	0	100	0	Fade
96	**Red segment 20**	Red intensity 0 → 100%	0	255	0	100	0	Fade
97	**Green segment 20**	Green intensity 0 → 100%	0	255	0	100	0	Fade
98	**Blue segment 20**	Blue intensity 0 → 100%	0	255	0	100	0	Fade

DMX Mode 6: Multipix Advanced

158 DMX Channels

Channel		Command	DMX range		Percent %		Default DMX	Fade
White segments overall control								
1	**White intensity coarse**	White intensity 0 → 100% (16-bit)	0	65535	0	100	0	Fade
2	**White intensity fine**							
3	**White duration**	Flash duration short → long	0	255	0	100	0	Fade
4	**White flash rate (Shutter)**	Closed	0	4	0	1.6	0	Snap
		Flash rate slow → fast	5	250	2	97.6		Fade
		Open	251	255	98	100		Snap
5	**White intensity effects (Strobe mode)**	Off (normal sync flashes)	0	14	0	5.5	0	Snap
		Single flash if change on flash rate channel	15	29	5.9	11.4		
		Pulse	30	44	11.8	17.3		
		Pulse opening	45	59	17.6	23.1		
		Pulse closing	60	74	23.5	29.0		
		Pulse random	75	89	29.4	34.9		
		Pulse opening random	90	104	35.3	40.8		
		Pulse closing random	105	119	41.2	46.7		
		Double flash	120	134	47.1	52.5		
		Double flash random	135	149	52.9	58.4		
		Triple flash	150	164	58.8	64.3		
		Triple flash random	165	179	64.7	70.2		
		Spikes	180	194	70.6	76.1		
		Lightning	195	209	76.5	82.0		
		Random pixel flash	210	224	82.4	87.8		
		Random fixture flash	225	239	88.2	93.7		
		Flash offset between fixtures (adjust offset on Global flash rate channel)	240	255	94.1	100		
6	**Control / Settings**	*See 'Control / Settings channel' at the end of this chapter.*						
RGB segments overall control								
7	**RGB intensity coarse**	RGB intensity 0 → 100% (16-bit)	0	65535	0	100	0	Fade
8	**RGB intensity fine**							
9	**RGB flash duration**	Flash duration short → long	0	255	0	100	0	Fade
10	**RGB flash rate (Shutter)**	Closed	0	4	0	1.6	0	Snap
		Flash rate slow → fast	5	250	2	97.6		Fade
		Open	251	255	98	100		Snap

11	**RGB intensity effects / Strobe mode**	Off (normal sync flashes)	0	14	0	5.5	0	Snap
		Single flash if change on flash rate channel	15	29	5.9	11.4		
		Pulse	30	44	11.8	17.3		
		Pulse opening	45	59	17.6	23.1		
		Pulse closing	60	74	23.5	29.0		
		Pulse random	75	89	29.4	34.9		
		Pulse opening random	90	104	35.3	40.8		
		Pulse closing random	105	119	41.2	46.7		
		Double flash	120	134	47.1	52.5		
		Double flash random	135	149	52.9	58.4		
		Triple flash	150	164	58.8	64.3		
		Triple flash random	165	179	64.7	70.2		
		Spikes	180	194	70.6	76.1		
		Lightning	195	209	76.5	82.0		
		Random pixel flash	210	224	82.4	87.8		
		Random fixture flash	225	239	88.2	93.7		
		Flash offset between fixtures (adjust offset on Global flash rate channel)	240	255	94.1	100		
12	**RGB CTC**	Open	0	10	0	3.9	0	Snap
		10 000 K	11	11	4.3	4.3		Fade
		…	12	254	4.7	99.2		
		2 500 K	255	255	100	100		
13	**RGB strobe phase**	RGB strobe phase shift 0 → 359° offset relative to White strobe	0	255	0	100	0	Fade

Background color

14	**Intensity backgnd.**	Intensity 0 → 100%	0	255	0	100	0	Fade
15	**Red background**	Intensity 0 → 100%	0	255	0	100	0	Fade
16	**Green background**	Intensity 0 → 100%	0	255	0	100	0	Fade
17	**Blue background**	Intensity 0 → 100%	0	255	0	100	0	Fade
18	**White background**	Intensity 0 → 100%	0	255	0	100	0	Fade

White segments individual control

19	**White segment 01**	White intensity 0 → 100%	0	255	0	100	0	Fade
20 … 37	**White segment 02 … White segment 19**	White segments in order: intensity 0 → 100%	0	255	0	100	0	Fade
38	**White segment 20**	White intensity 0 → 100%	0	255	0	100	0	Fade

RGB segments individual control (upper and lower halves controlled separately)

39	**Red segment upper 01**	Red intensity 0 → 100%	0	255	0	100	0	Fade
40	**Green segment upper 01**	Green intensity 0 → 100%	0	255	0	100	0	Fade
41	**Blue segment upper 01**	Blue intensity 0 → 100%	0	255	0	100	0	Fade
42 … 98	**Red segt. upper 02 … Blue segt. upper 20**	RGB segments upper halves in order, intensity 0-100%	0	255	0	100	0	Fade
99 … 155	**Red segt. lower 21 … Blue segt. lower 39**	RGB segments lower halves in order, intensity 0-100%	0	255	0	100	0	Fade
156	**Red segment lower 40**	Red intensity 0-100%	0	255	0	100	0	Fade
157	**Green segment lower 40**	Green intensity 0-100%	0	255	0	100	0	Fade
158	**Blue segment lower 40**	Blue intensity 0-100%	0	255	0	100	0	Fade

DMX Mode 7: Multipix Quadpix

38 DMX Channels

Channel		Command	DMX range		Percent %		Default DMX	Fade
White segments overall control								
1	**White intensity coarse**	White intensity 0 → 100% (16-bit)	0	65535	0	100	0	Fade
2	**White intensity fine**							
3	**White duration**	Flash duration short → long	0	255	0	100	0	Fade
4	**White flash rate (Shutter)**	Closed	0	4	0	1.6	0	Snap
		Flash rate slow → fast	5	250	2	97.6		Fade
		Open	251	255	98	100		Snap
5	**White intensity effects (Strobe mode)**	Off (normal sync flashes)	0	14	0	5.5	0	Snap
		Single flash if change on flash rate channel	15	29	5.9	11.4		
		Pulse	30	44	11.8	17.3		
		Pulse opening	45	59	17.6	23.1		
		Pulse closing	60	74	23.5	29.0		
		Pulse random	75	89	29.4	34.9		
		Pulse opening random	90	104	35.3	40.8		
		Pulse closing random	105	119	41.2	46.7		
		Double flash	120	134	47.1	52.5		
		Double flash random	135	149	52.9	58.4		
		Triple flash	150	164	58.8	64.3		
		Triple flash random	165	179	64.7	70.2		
		Spikes	180	194	70.6	76.1		
		Lightning	195	209	76.5	82.0		
		Random pixel flash	210	224	82.4	87.8		
		Random fixture flash	225	239	88.2	93.7		
		Flash offset between fixtures (adjust offset on Global flash rate channel)	240	255	94.1	100		
6	**Control / Settings**	*See 'Control / Settings channel' at the end of this chapter.*						

RGB segments overall control

7	**RGB intensity coarse**	RGB intensity 0 → 100% (16-bit)	0	65535	0	100	0	Fade
8	**RGB intensity fine**							
9	**RGB flash duration**	Flash duration short → long	0	255	0	100	0	Fade
10	**RGB flash rate (Shutter)**	Closed	0	4	0	1.6	0	Snap
		Flash rate slow → fast	5	250	2	97.6		Fade
		Open	251	255	98	100		Snap

11	**RGB intensity effects / Strobe mode**	Off (normal sync flashes)	0	14	0	5.5	0	Snap
		Single flash if change on flash rate channel	15	29	5.9	11.4		
		Pulse	30	44	11.8	17.3		
		Pulse opening	45	59	17.6	23.1		
		Pulse closing	60	74	23.5	29.0		
		Pulse random	75	89	29.4	34.9		
		Pulse opening random	90	104	35.3	40.8		
		Pulse closing random	105	119	41.2	46.7		
		Double flash	120	134	47.1	52.5		
		Double flash random	135	149	52.9	58.4		
		Triple flash	150	164	58.8	64.3		
		Triple flash random	165	179	64.7	70.2		
		Spikes	180	194	70.6	76.1		
		Lightning	195	209	76.5	82.0		
		Random pixel flash	210	224	82.4	87.8		
		Random fixture flash	225	239	88.2	93.7		
		Flash offset between fixtures (adjust offset on Global flash rate channel)	240	255	94.1	100		
12	**RGB CTC**	Open	0	10	0	3.9	0	Snap
		10 000 K	11	11	4.3	4.3		Fade
		…	12	254	4.7	99.2		
		2 500 K	255	255	100	100		
13	**RGB strobe phase**	RGB strobe phase shift 0 → 359° offset relative to White strobe	0	255	0	100	0	Fade

Background color

14	**Intensity backgnd.**	Intensity 0 → 100%	0	255	0	100	0	Fade
15	**Red background**	Intensity 0 → 100%	0	255	0	100	0	Fade
16	**Green background**	Intensity 0 → 100%	0	255	0	100	0	Fade
17	**Blue background**	Intensity 0 → 100%	0	255	0	100	0	Fade
18	**White background**	Intensity 0 → 100%	0	255	0	100	0	Fade

White quad segments

19	**White quad segment 1**	Segments 1-4 White intensity 0 → 100%	0	255	0	100	0	Fade
2	**White quad segment 2**	Segments 5-8 White intensity 0 → 100%	0	255	0	100	0	Fade
21	**White quad segment 3**	Segments 9-12 White intensity 0 → 100%	0	255	0	100	0	Fade
22	**White quad segment 4**	Segments 13-16 White intensity 0 → 100%	0	255	0	100	0	Fade
23	**White quad segment 5**	Segments 17-20 White intensity 0 → 100%	0	255	0	100	0	Fade

RGB quad segments

24	**Red quad segment 1**	Segments 1-4 Red intensity 0 → 100%	0	255	0	100	0	Fade
25	**Green quad segment 1**	Segments 1-4 Green intensity 0 → 100%	0	255	0	100	0	Fade
26	**Blue quad segment 1**	Segments 1-4 Blue intensity 0 → 100%	0	255	0	100	0	Fade
27	**Red quad segment 2**	Segments 5-8 Red intensity 0 → 100%	0	255	0	100	0	Fade
28	**Green quad segment 2**	Segments 5-8 Green intensity 0 → 100%	0	255	0	100	0	Fade
29	**Blue quad segment 2**	Segments 5-8 Blue intensity 0 → 100%	0	255	0	100	0	Fade

30	**Red quad segment 3**	Segments 9-12 Red intensity 0 → 100%	0	255	0	100	0	Fade
31	**Green quad segment 3**	Segments 9-12 Green intensity 0 → 100%	0	255	0	100	0	Fade
32	**Blue quad segment 3**	Segments 9-12 Blue intensity 0 → 100%	0	255	0	100	0	Fade
33	**Red quad segment 4**	Segments 13-16 Red intensity 0 → 100%	0	255	0	100	0	Fade
34	**Green quad segment 4**	Segments 13-16 Green intensity 0 → 100%	0	255	0	100	0	Fade
35	**Blue quad segment 4**	Segments 13-16 Blue intensity 0 → 100%	0	255	0	100	0	Fade
36	**Red quad segment 5**	Segments 17-20 Red intensity 0 → 100%	0	255	0	100	0	Fade
37	**Green quad segment 5**	Segments 17-20 Green intensity 0 → 100%	0	255	0	100	0	Fade
38	**Blue quad segment 5**	Segments 17-20 Blue intensity 0 → 100%	0	255	0	100	0	Fade

Control / Settings channel

The Control / Settings commands listed below are available on Channel 6 in every DMX mode.

Channel		Command	DMX range		Percent %		Default DMX	Fade
6	Control / Settings	*No function*	0	11	0	4.3	0	Snap
		Dimmer curve: Soft / square law (3 sec.)	12	14	4.7	5.5		
		Dimmer curve: Linear (3 sec.)	15	17	5.9	6.7		
		No function	18	26	9.4	10.2		
		Display mode: Off (3 sec.)	27	29	10.6	11.4		
		Display mode: Auto (3 sec.)	30	32	11.8	12.6		
		Display mode: On (3 sec.)	33	35	12.9	13.7		
		No function	36	38	14.1	14.9		
		Display orientation: Normal (3 sec.)	39	41	15.3	16.1		
		Display orientation: Inverted (3 sec.)	42	44	16.5	17.3		
		Display orientation: Auto (3 sec.)	45	47	17.7	18.4		
		No function	48	50	18.8	19.6		
		No signal: Blackout (3 sec.)	51	53	20.0	20.8		
		No signal: Hold (3 sec.)	54	56	21.2	22.0		
		No signal: House Light (3 sec.)	57	59	22.4	23.1		
		No function	60	65	23.5	25.5		
		Flash style: Normal (3 sec.)	66	68	25.9	26.7		
		Flash style: Xenon (3 sec.)	69	71	27.1	27.8		
		No function	72	77	28.2	30.2		
		White Point: Off (RAW) (3 sec.)	78	80	30.6	31.4		
		White Point: 8000K (3 sec.)	81	83	31.8	32.6		
		White Point: 6500K (3 sec.)	84	86	32.9	33.8		
		White Point: 5600K (3 sec.)	87	89	34.1	34.9		
		No function	90	101	35.3	39.6		
		Fan mode: Regulated (3 sec.)	102	104	40.0	40.8		
		Fan mode: High (3 sec.)	105	107	41.2	42.0		
		Fan mode: Medium (3 sec.)	108	110	42.4	43.1		
		Fan mode: Low (3 sec.)	111	113	43.5	44.3		
		No function	114	140	44.7	54.9		
		Pixel Mirror: Off (3 sec.)	141	143	55.3	56.1		
		Pixel Mirror: x-mirror (3 sec.)	144	146	56.5	57.3		
		Pixel Mirror: y-mirror (3 sec.)	147	149	57.7	58.4		
		Pixel Mirror: x-y-mirror (3 sec.)	150	152	58.8	59.6		
		No function	153	173	60.0	67.8		
		Background color: Override (3 sec.)	174	68.2	176	69.0		
		Background color: Crossfade (3 sec.)	177	179	69.4	70.2		
		Background color: Mix Color (3 sec.)	180	182	70.6	71.4		
		No function	183	185	71.8	72.6		
		PWM 2700 Hz (5 sec.)	186	188	72.9	73.7		
		PWM 3000 Hz (5 sec.)	189	191	74.1	74.9		
		PWM 4800 Hz (5 sec.)	192	194	75.3	76.1		
		PWM 9600 Hz (5 sec.)	195	197	76.5	77.3		
		No function	198	209	77.7	82.0		

	Control / Settings (continued)	Save as Settings Preset 1 (move directly from zero, 5 sec.)	210	212	82.4	83.1		
		Save as Settings Preset 2 (move directly from zero, 5 sec.)	213	215	83.5	84.3		
		Save as Settings Preset 3 (move directly from zero, 5 sec.)	216	218	84.7	85.5		
		No function	219	221	85.9	86.7		
		Load Settings Preset 1 (3 sec.)	222	224	87.1	87.8		
		Load Settings Preset 2 (3 sec.)	225	227	88.2	89.0		
		Load Settings Preset 3 (3 sec.)	228	230	89.4	90.2		
		Load Settings Default (3 sec.)	231	233	90.6	91.4		
		No function	234	251	91.8	98.4		
		Reboot fixture (3 sec.)	252	255	98.8	100		

To reduce the risk of accidentally changing settings, the commands on the Control / Settings channel must be held for a certain time before they are executed. The above table indicates the number of seconds that you must hold a command.


GLP