JDC2 IP

User Manual

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Document revisions

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GLP® JDC2 IP User Manual

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1. Safety

Key to symbols

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

	**Warning!** Safety hazard. Risk of severe injury or death.		**Warning!** Hazardous voltage. Risk of lethal or severe electric shock.
	**Warning!** See user documentation for important safety information.		**Warning!** Fire hazard.
	**Warning!** Risk of eye injury.		**Warning!** Hot surface. Risk of burn injury.
	**Important Information** for correct use of the product		**Information** – this feature will be implemented in a future firmware update


Warning! Read the JDC2 IP 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 JDC2 IP fixtures. If you fail to read that information you may create a safety hazard with a risk of serious or lethal injury or damage.

If you have any doubts or questions about how to use the GLP® JDC2 IP lighting fixture safely, contact your GLP supplier for assistance. Your GLP supplier will be happy to help.

The user documentation for JDC2 IP fixtures consists of three documents:

- The **JDC2 IP Quick Start and Safety Manual**, supplied with fixtures and available for download from www.glp.de 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 **JDC2 IP User Manual**, this document, explains features and control of JDC2 IP fixtures.

- The **JDC2 IP 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 JDC2 IP 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 that it contains. 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:

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

Avoiding damage to the fixture

The Quick Start and Safety Manual contains important information that is intended to help you avoid possible damage to the fixture from other light sources, during transportation, etc. Read that information before storing, transporting or using the fixture.

2. JDC2 IP overview

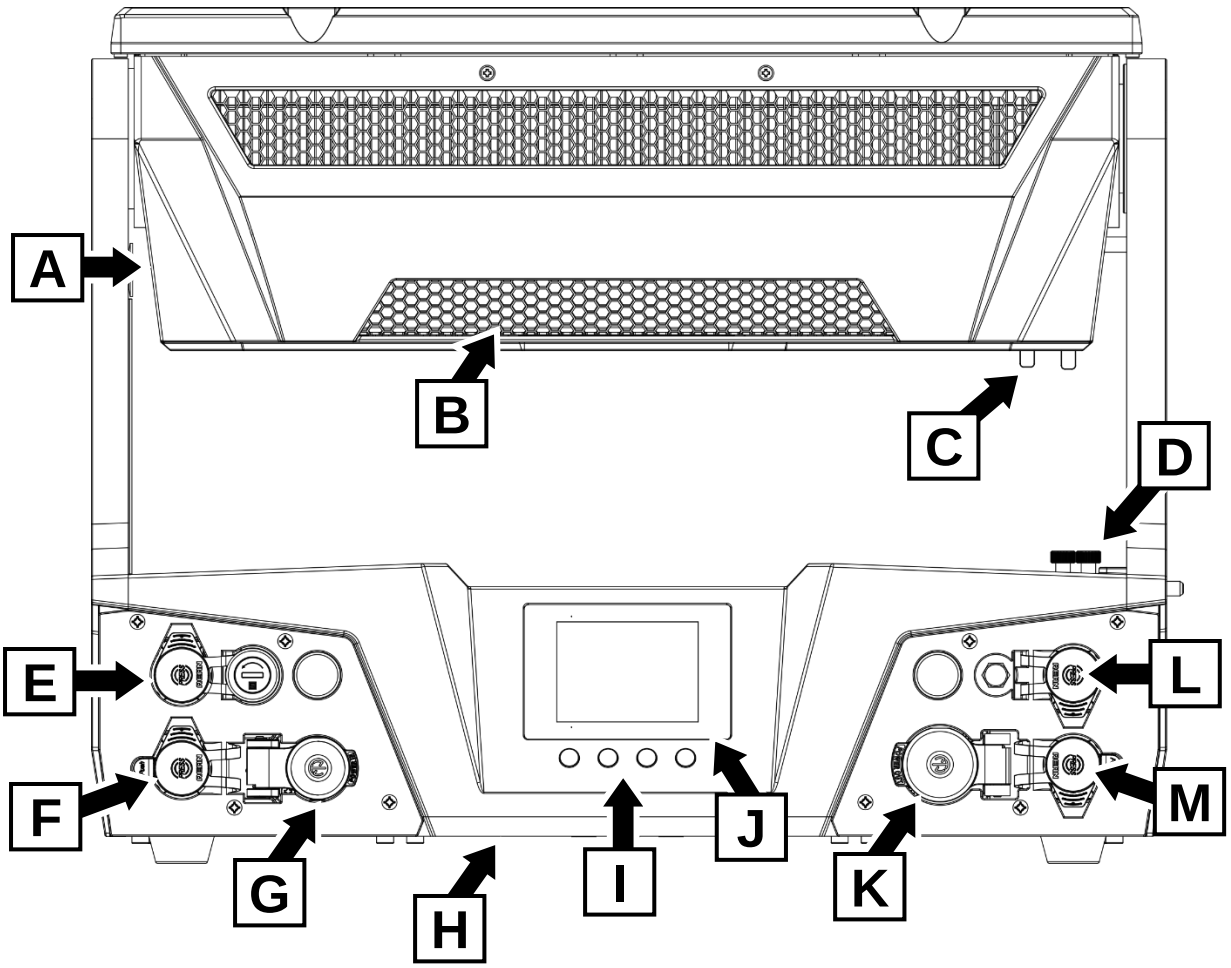


Figure 1. JDC2 IP overview

A - Head
B – Cooling vent
C – Tilt lock
D – Alignment pins button
E – *etherCON Network port A, fail-safe*
F – DMX IN (5-pin XLR)
G – AC mains power IN (powerCON TRUE1 TOP)
H – Safety cable attachment point (underside of base)
I – Control panel with backlit display
J – NFC Sensor (behind display)
K – AC mains power THRU (powerCON TRUE1 TOP)
L – * etherCON Network port B, fail-safe*
M – DMX THRU (5-pin XLR)

*** Network ports may be used for NDI display. Art-Net and sACN control will be available in a future firmware update**

3. Features

The GLP JDC2 IP is an innovative IP65-rated LED Hybrid Strobe Fixture which combines a powerful white LED Strobe line (BEAM) and a colorful RGB LED Strobe (PLATE), along with a motorized tilting head.

The White Strobe LED Line (BEAM) can be controlled as individual segments and the RGB LED Strobe (PLATE) can be controlled as segments *or individual pixels for amazing dynamic effects.

***Individual pixel control by DMX, Art-Net or sACN will be available in a future firmware update**

The resolution of the RGB Pixels allows a wide range of digital effects. Pixel controlled content can be created within the fixture using the built-in DigiFX which can be easily manipulated by the Lighting Operator via the lighting desk. It is also possible to capture and display NDI video streams from live video or content from a media server.

Controlling the fixture

The GLP JDC2 IP is controlled as if it was a number of separate modules:

1. The main White Strobe Module (BEAM) which gives you control over the White Strobe LED Line. Most of the Control Modes include a Pattern Engine for quick dynamic effects on the Strobe Line. The first Module also has the global control channels, such as Tilt, MixPrio and Control.
2. The main RGB Strobe Module (PLATE) which gives you control over the RGB LED Plates above and below the White Strobe Line. Most of the Control Modes include a wide range of DigiFXs for the RGB-LEDs and also allow replaying of external NDI video streams.
3. 3rd / 4th modules are extra Sub Modules which can be used as a background or Mapping Layer. Depending on the Control Mode it is possible to control all Pixels as one group, control just segments of the plates or control the pixels individually.

Control options

The JDC2 IP is compatible with DMX 512 and RDM control protocols.

An integrated GLP FPO (Flexible Protocol Option) Port allows the quick installation of optional control protocols such as Lumenradio CRMX.

GLP iQ.Mesh, Art-Net, sACN and Lumenradio control is not implemented in v0.6.1 and will be available in a future firmware update

Control Modes

You can choose from five different DMX control modes.

M1 - Dual Strobe (CH24)

a.) White Strobe Main Module (BEAM) with global fixture control
b.) RGB Strobe Main Module (PLATE): Dimmer, Shutter, Duration, Intensity Effect, RGB-Colormix
c.) Sub Module (2nd Layer Fixture): Submaster Dimmer, RGB+W-Colormix

1	**General Fixture Control**
1.1	Main Module Beam (White Strobe basic control) *(All Beam Segments linked as one group)*
1.2	Main Module Plate (RGB Strobe basic control) *(All Plate Segments linked as one group)*
1.3	Sub Module Beam+Plate (White Strobe & RGB Strobe basic control) *(All Beam Segments and all Plate Segments each linked as one group)*

M2 - Segment 1-1 (CH46)

a.) White Strobe Main Module (BEAM) with PatternFX and global fixture control
b.) RGB Strobe Main Module (PLATE): Dimmer, Shutter, Duration, Intensity Effect, RGB-Colormix, DigiFX, NDI
c.) Sub Module Beam (2nd Layer Fixture): Submaster Dimmer Beam
d.) Sub Module Plate (2nd Layer Fixture): Submaster Dimmer Plate with RGB Segment Control

1	**General Fixture Control**
1.1	Main Module Beam (White Strobe control with Pattern FX) *(All Beam Segments linked as one group)*
1.2	Main Module Plate (RGB Strobe control with Pattern FX) *(All Plate Segments linked as one group)*
1.3	Sub Module Beam (White) *(All Beam Segments linked as one group)*
1.4	Sub Module Beam+Plate (RGB) *(All Plate Segments linked as one group)*

M3 - Segment 12-12 (CH91)

a.) White Strobe Main Module (BEAM) with PatternFX and global fixture control
b.) RGB Strobe Main Module (PLATE): Dimmer, Shutter, Duration, Intensity Effect, RGB-Colormix, DigiFX, NDI
c.) Sub Module Beam (2nd Layer Fixture): Submaster Dimmer Beam with 12x Beam Segment Control
d.) Sub Module Plate (2nd Layer Fixture): Submaster Dimmer Plate with 12x Plate Segment Control

1	**General Fixture Control**
1.1	Main Module Beam (White Strobe control with Pattern FX)
	(All Beam Segments linked as one group)
1.2	Main Module Plate (RGB Strobe control with Pattern FX)
	(All Plate Segments linked as one group)
1.3	Sub Module Beam (White)
	(individual Beam Segment Control)
1.3.1	Beam Segment 1
1.3.2	Beam Segment 2
1.3.3	Beam Segment 3
...	
1.3.12	Beam Segment 12
1.4	Sub Module Plate (RGB)
	(individual Plate Segment Control)
1.4.1	Plate Segment 1
1.4.2	Plate Segment 2
1.4.3	Plate Segment 3
...	
1.4.12	Plate Segment 12

M4 - Segment 12-24 (CH127)

a.) White Strobe Main Module (BEAM) with PatternFX and global fixture control
b.) RGB Strobe Main Module (PLATE): Dimmer, Shutter, Duration, Intensity Effect, RGB-Colormix, DigiFX, NDI
c.) Sub Module Beam (2nd Layer Fixture): Submaster Dimmer Beam with 12x Beam Segment Control
d.) Sub Module Plate (2nd Layer Fixture): Submaster Dimmer Plate with 24x Plate Segment Control

1	**General Fixture Control**
1.1	Main Module Beam (White Strobe control with Pattern FX)
	(All Beam Segments linked as one group)
1.2	Main Module Plate (RGB Strobe control with Pattern FX)
	(All Plate Segments linked as one group)
1.3	Sub Module Beam (White)
	(individual Beam Segment Control)
1.3.1	Beam Segment 1
1.3.2	Beam Segment 2
1.3.3	Beam Segment 3
...	
1.3.12	Beam Segment 12
1.4	Sub Module Plate (RGB)
	(individual Plate Segment Control)
1.4.1	Plate Segment 1
1.4.2	Plate Segment 2
1.4.3	Plate Segment 3
...	
1.4.24	Plate Segment 24

M5 - JDC1 Spix Patch (CH68)

This mode allows the patch of a JDC2 IP with the same DMX footprint as a JDC1 in CH68 SPix Mode.

Using the same DMX footprint a JDC1 → JDC2 IP Fixture swap is possible BUT do not expect same feature behavior - the channels are arranged in the same order, but the channel features and DMX values per channel can be different, so some re-programming will be necessary.

Do not expect 100% fixture and feature compatibility !

Powering on

When power is applied to the fixture and no valid DMX signal is present, the head moves automatically to its home position (tilt center).

Tilt

The JDC2 IP has 16-bit motorized tilt movement with coarse and fine control channels.

Direction of tilt movement

With the fixture standing on the ground, increasing the tilt DMX value moves the head towards the front (the side away from the display/connectors) from its home position. Tilt direction can be reversed using the **Fixture Settings → Tilt Invert** setting (see 'Tilt invert' on page 31) or via DMX on the Special/Control channel. This can be useful when setting up symmetrical movement in multiple fixtures.

Tilt position feedback and self-correction

The fixture has a tilt position feedback and self-correction system that brings the head back to its correct position if it was unintentionally moved. Tilt remains disabled while you are using the fixture's control panel.

Position feedback can also be set to constantly disabled using the Fixture Settings options. See "Tilt disable" on page 32.

Intensity (Dimmer)

The Intensity Channel controls the output or intensity of the related fixture module (Beam / Plate) in 16 bit resolution. Different dimming curve options are available. You can select the dimming curve using the control panel *(→ Fixture Settings/Dimmer Curve)*, DMX *(→ see DMX Control Channel)* or by RDM.

Dimming curve options will be available in a future firmware update

Duration

Using the Flash Duration Channel the operator can adjust the length of a flash from super short to long flashes. It is possible to change the behavior of the duration control from normal to percentage by control panel (→ Fixture Settings/Duration Control), by DMX (→ see DMX Control Channel) and by RDM.

If the Intensity Effects Channel is set to an intensity effect the Duration Channel will also affect the performance of the selected intensity effect. How the effect will be adjusted is depending on the selected effect.

Rate (Shutter)

The operator can adjust the interval between flashes or the speed of Intensity Effects. If the Intensity Effects Channel is set to DMX 000..004 the Rate Channel will perform as a standard Strobe Channel and will adjust the Strobe speed as follow:

- At DMX 000..004 the fixture will be in blackout (Shutter Blackout)

- At DMX 255 the fixture will be continuously on (Shutter Open)
- In between the above values the fixture will perform flashes with long interval to very short interval

If the Intensity Effects Channel is set to an intensity effect the Rate Channel will also affect the performance of the selected intensity effect. How the effect will be adjusted is depending on the selected effect.

Intensity Effects (Shutter Mode)

The operator can select between different Intensity effects.
At DMX 000 all intensity effects are disabled and there will be normal Flashes performing on all pixels at the same time.

White Point

The white point is the default white that is obtained when the shutter is opened. The JDC2 IP offers a choice of fixed white points. For details of setting the white point, see '**White point**' on page 27.

This feature will be available in a future firmware update

CTC (Color Temperature Control)

The Plate Control offers a separate Color Temperature Correction Channel which allows a shift in color temperature between 10000K to 2500K. Remember, to get the correct CTC color temperature all color mix channels need to be set to 100% , if they are not at 100% the system will mix color relative to the selected white point of the CTC Channel. At DMX 000 the open color temperature depends on the selected white point (see previous section).

This feature will be available in a future firmware update

Pattern Control (Beam)

The JDC2 IP offers a wide range of **static** and **dynamic** pre-programmed FX patterns for the white strobe segments (BEAM).

A **static pattern** is a fixed pattern with only one pattern step. This allows you a very quick selection of a non-dynamic effect. It has active and inactive pixels. Each active pixel shows the selected pattern color while each inactive pixel is fully transparent.

A **dynamic pattern** is a sequence of multiple pattern steps and has active and inactive pixels. Each active pixel shows the selected pattern color while each inactive pixel is fully transparent. You can set pattern steps to automatically change continuously (Pattern Speed) or you can directly select pattern steps (Pattern Index).

Note: The Mix Priority channel lets you decide how the output of the Main module and the Sub module (pattern or pixel mapping) should be merged.

FX Pattern Select

The dynamic patterns offers multiple pattern steps for individual step selection or continuous step-chasers. Pattern 0 (DMX 000) is the idle pattern and just sets all pixels to active.

The Random Pixel FX pattern at the end of the Pattern Select channel randomly selects pixels to create an attractive sparkle effect.

Pattern speed/index

As a dynamic pattern is a sequence of multiple pattern steps, you can select either:

- an automatic clockwise or counterclockwise continuous run-through of the pattern steps with different speeds (dynamic speed control = DMX values 002 ... 127), or
- one of the available specific pattern steps (static indexing = DMX values 128 ... 255).

Note: Bear in mind that different patterns can have a different number of pattern steps. This can affect synchronization between fixtures, for example, if you run different patterns in multiple fixtures.

Pattern step crossfading

The Pattern Step Crossfading channel lets you choose how one step in a pattern should change into the next step. This change can be a snap, a normal crossfade or a fade with tail (quick fade in and variable long fade out).

Pattern transition

The Pattern Transition channel lets you choose how Pattern A should change into Pattern B. This change can be a snap, a soft crossfade, a Fade Over Blackout (FOB) or Fade Over Full (FOF).

Mix Priority

The Mix Priority channel defines how the output of the Main module and the output of the Sub module(s) are merged together – or which value has higher priority. This lets you switch between the layers or create special effects using both layers.

The Mix Priority channel gives the following options:

- **Main + Sub (HTP)** – The fixture takes whichever color value of the Main module or Sub module is highest and uses that value to determine the output color (Highest Takes Priority).
- **Main Only** – The Sub module color value is ignored. The fixture uses the color value of the Main module.
- **Sub Only** – The Main module color value is ignored. The fixture uses the color value of the Sub module.

- **Main + Sub additive** – The Sub module color value is added to the Main module color value. The fixture uses the sum of both values.
- **Main - Sub subtractive** – The Sub module color value is subtracted from the Main module color value.
- **Sub - Main subtractive** – The Main module color value is subtracted from the Sub module color value.
- **TrueColor Main over Sub Snap –** Sub module color stays in the background. Main module color has higher priority and will not mix with Sub module color. As soon the Main module color value is greater than zero, Sub module color blacks out and the fixture uses the Main module color.
- **TrueColor Sub over Main Snap –** Main module color stays in the background. Sub module color has higher priority and will not mix with the Main module color. As soon as Sub module color value is greater than zero, Main module color blacks out and the fixture uses Sub module color.
- **TrueColor Main over Sub Crossfade –** Sub module color stays in the background. Main module color has higher priority**.** If you fade in a Main module color, Sub module color will crossfade to the Main module color.
- **TrueColor Sub over Main Crossfade** – Main module color stays in the background. Sub module color has higher priority. If you fade in a Main module color, Sub module color will crossfade to the Main module color.
- **Main to Sub Crossfade –** Manually crossfading from Main module color only → Main and Sub module color (HTP) → Sub module color only.

DigiFX and NDI Control

The second main module gives control over the RGB Plate LEDs as one group.
When no DigiFX or NDI Stream is selected (DMX 000) all Plate LEDs perform as one group. The Color output can then easily be mixed using the RGB Color Channel Set A. Color Channel Set B has no function.

The DigiFX/NDI Select Channel gives access to preprogrammed DigiFXs and the user can additionally capture content of one of 4 external NDI Streams.

- If a DigiFX is selected, the Plate LEDs will perform one of a selection of dynamic DigiFX patterns. The selection, control and manipulation options allow a wide range of different effects to be obtained from the original DigiFX. Each DigiFX is based on two colors A and B and the default color is mostly white.
  To adjust the color of a DigiFX the user can change two separate colors with the RGB Color Channel Set A and B.

  In the current firmware version only a small number of DigiFX are available. More DigiFX will be available in future firmware updates

- If NDI Stream is selected, the Plate LEDs will show the content of a selected NDI data stream. The Color Channel Set A allows you to limit the intensity of RGB individually. Color Channel Set B has no function.

DigiFX operation

The internal DigiFX function of the GLP JDC2 offers a completely new way to generate breathtaking effects in a short time. In order to offer you the best possible performance and easy control, the DigiFX are sorted into different quality categories.

1. Simple 2-Color DigiFX

A 2-Color DigiFX is a 2-Layer effect with the option to adjust each of the layer colors separately (RGB1 and RGB2). These simple 2-Layer effects give easy color control to the user.

Example:
The DigiFX runs two effects in two Layer combined together.
RGB1-Color-Mix allows to adjust the color of the first effect running in layer 1.
RGB2-Color-Mix allows to adjust the color of the second effect running in layer 2.
The default color mix settings are RGB1: 100%,100%,100% and RGB2: 0%,0%,0%.

2. Multicolor DigiFX

Most of the multicolor DigiFX are multi-layer effects. The user can set two layer colors (RGB1 and RGB2) and the effect then shows additional automatically created colors. As the color control is not limited to two colors only and additional colors are automatically generated, these effects look much more realistic and multi-dimensional compared to the 2-Color DigiFXs.

In some multicolor DigiFXs the adjustable colors (RGB1 and RGB2) will shift colors instead of showing the selected colors.

3. DigiFX in Preparation

Since the development of DigiFX is very complex and we want to offer an optimal mix of 2-color and multicolor effects, we select DigiFX very carefully. In the default setting state of the JDC2, only officially released DigiFX are displayed, which offer reliable content for shows and pre-programming.

Additional, non-approved DigiFX can be activated via the fixture setting "Experimental DigiFXs".

Experimental DigiFXs will become standard effects in future firmware updates

DigiFX Capture Frame positioning, scale and rotation

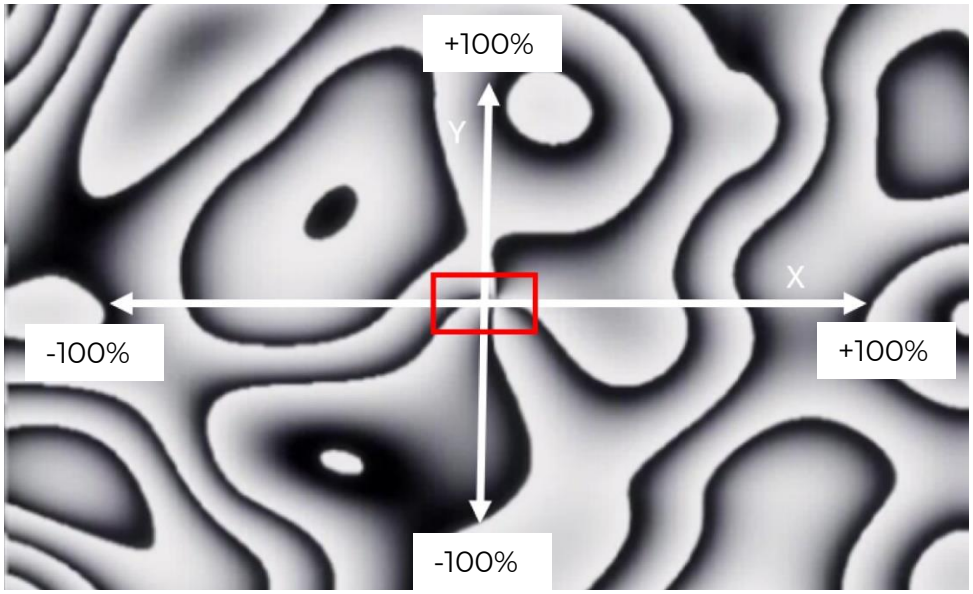
The DigiFX pattern is generated in unlimited size, of which the JDC2 fixture can only display a small part. You can select the fixture capture area within the DigiFX content using the X and Y positioning channels.

The virtual pixel matrix of the JDC2 capture frame is 54 x 36px.
On the JDC2 device this is shown as 54 x 16px above and below the central white segment with an undisplayed gap of 4 pixels between the two plates.

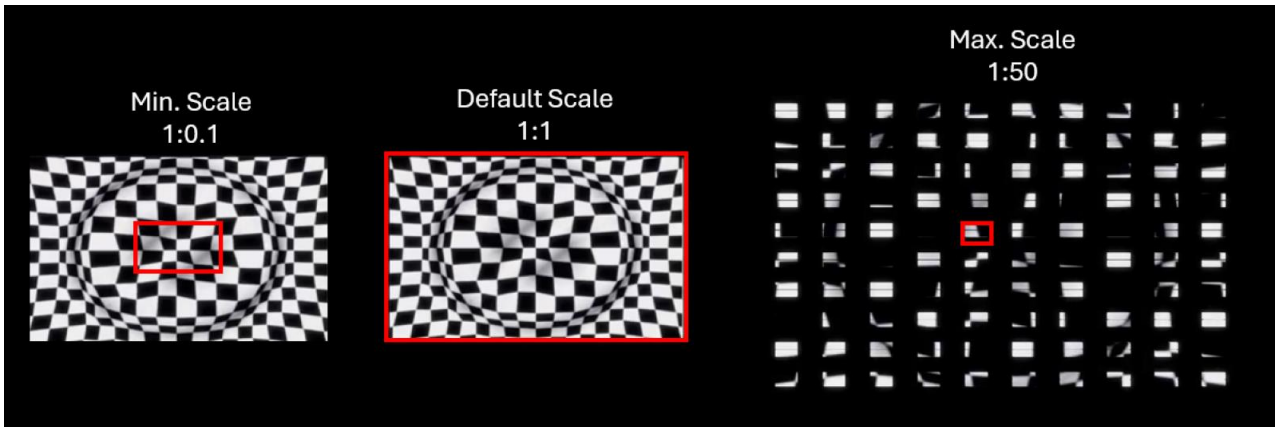
- If you want to show an identical effect on all fixtures, set all fixtures to the same position.

- If you want each fixture to show part of the larger DigiFX pattern, set the fixture capture area to a grid of individual positions.

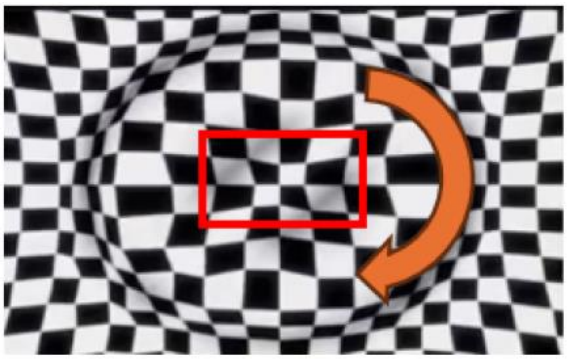
The DigiFX positioning can be set from -100% ← 0% (Default position) → +100%.



Using the **Scale channel** you can set the capture frame between x0.1 and x50 scale.



Using the **Rotation channel** you can rotate the capture frame from 0-359 degrees.



NDI operation

The fixture can receive up to 4 external NDI streams with up to 640x480px (VGA) resolution. You can select which NDI stream you want to display using the DigiFX/NDI Select channel. There are different positioning options available (see NDI Capture Frame Positioning on the next page) .

By selecting a NDI stream the fixture will continuously capture the data from the stream, even if the user changes back to a DigiFX. This allows you to toggle between DigiFX and the previously selected NDI stream with minimal latency. Changing between different NDI Streams can cause some latency due to re-capturing.

NDI Bandwidth Note: External NDI streams can be used for performing simple NDI content or customized logos or graphics. Please always be aware of the network data load caused by resolution and dynamic of the NDI signal. If a high number of devices are used, content with high resolution or dynamic movement can increase the bandwidth usage quickly and cause unsynchronised display or increased latency. If higher resolution, very dynamic content, a high amount of devices or low latency is needed, please add a GLP FVP Decoder to the system (in development. If needed please contact your local GLP Support)

FVP Decoder is in development and will be available soon.

NDI Stream Network Configuration

To receive an external NDI Stream the JDC1 IP fixture needs to be connected to the same network as the NDI source. Configure the fixture's primary Network IP Address to be in the same range as the NDI source.

NDI Multicast Note: NDI supports multicast-based video sources using multicast UDP with forward error correction to insure against packet loss. Multicasting allows for a single NDI source to be delivered to multiple receivers by replicating the NDI packets from the sender to any number of receivers. It is important to be aware that using multicast on a network that is not properly configured can produce undesirable results and cripple network performance. **For this reason, multicast sending is not supported.**

NDI Stream Name

For correct internal NDI stream routing it is necessary that each of the 4 NDI streams has a specific name as shown below. This allows the fixture to route the NDI Signal to the related NDI port 1 to 4. The name as shown below can be a substring within the full NDI Stream name if you want to use a longer name.

Here is a list of the specific allowed NDI stream names:

NDI Stream	NDI Stream Label	Resolution
NDI Stream 1	GLP-JDC2-1	up to 640x480px (VGA)*
NDI Stream 2	GLP-JDC2-2	up to 640x480px (VGA)*
NDI Stream 3	GLP-JDC2-3	up to 640x480px (VGA)*
NDI Stream 4	GLP-JDC2-4	up to 640x480px (VGA)*

For higher resolution the system can be run in combination with a GLP FVP Decoder *(under development)*.

For renaming an NDI Stream Name you can use the free software tool “NDI Tool” from Newtek.

If it is not possible to rename your NDI Stream Name, you can run the system in combination with a GLP FVP Decoder. This will allow you to work with individual NDI Stream names.

NDI Capture Frame positioning

You can position the JDC2 capture area within the NDI content by using the X and Y positioning channels.

If you want to show an identical effect on all fixtures, set all fixtures to the same position. If you want each fixture to show a different part of the NDI content, set the fixture capture area to individual positions.

The capture frame positioning can be done by three different methods :

a.) relative (percentage offset from 0..100%)

b.) segmented (not yet available, under development)

c.) absolute (pixel offset from 0..65535px)

Additionally each of the methods is available in two options:

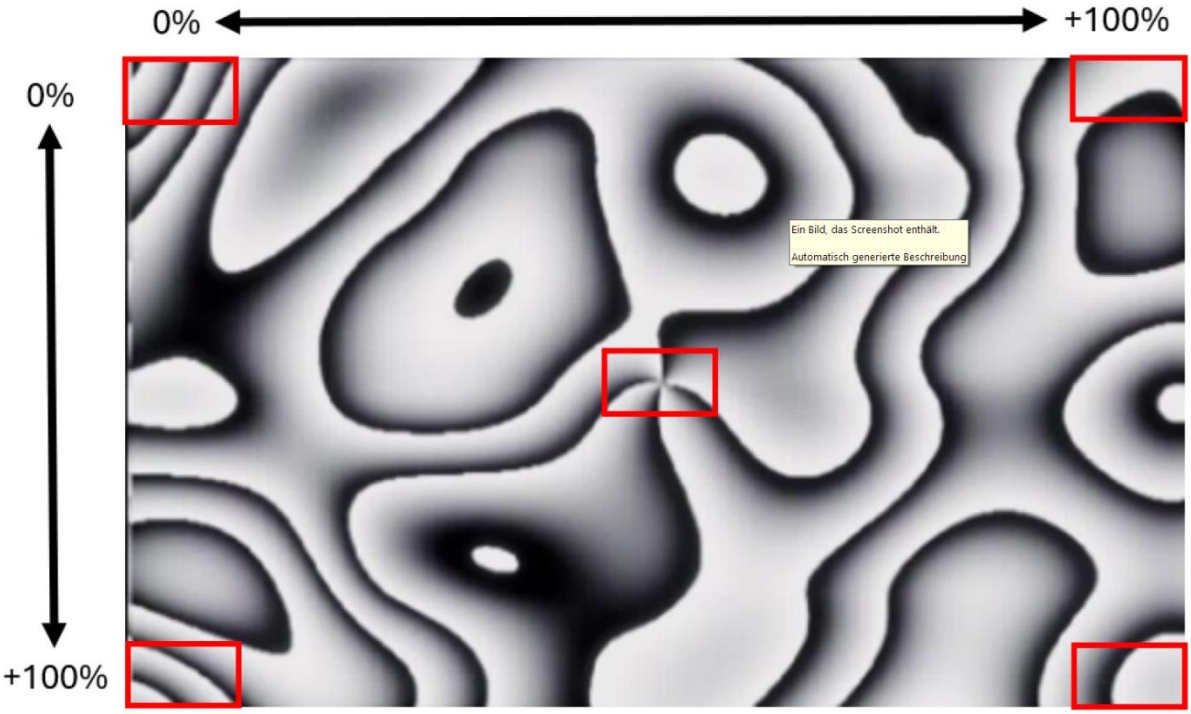
1.) flexible positioning (uses the X/Y settings from the DMX control)

2.) fixed positioning (uses the internally stored values)

b) Segmented positioning will be available in a future firmware update.

a.) Relative capture frame position

When relative capture frame position is selected, the X-Y Position Channels allow you to move the capture frame in the captured content with percentage values:



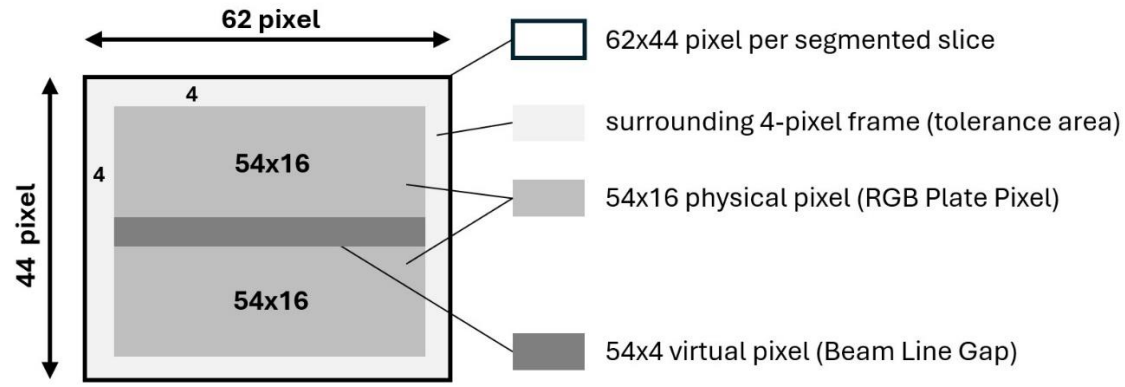
X	Y	Position
0%	0%	Capture frame is in the lop left corner of the NDI Stream
100%	0%	Capture frame is in the lop right corner of the NDI Stream
50%	**50%**	**Capture frame is in the center of the NDI Stream (DEFAULT)**
0%	100%	Capture frame is in the bottom left corner of the NDI Stream
100%	100%	Capture frame is in the bottom right corner of the NDI Stream

- See also “Flex positioning option” and “Fix positioning option” on the next page.

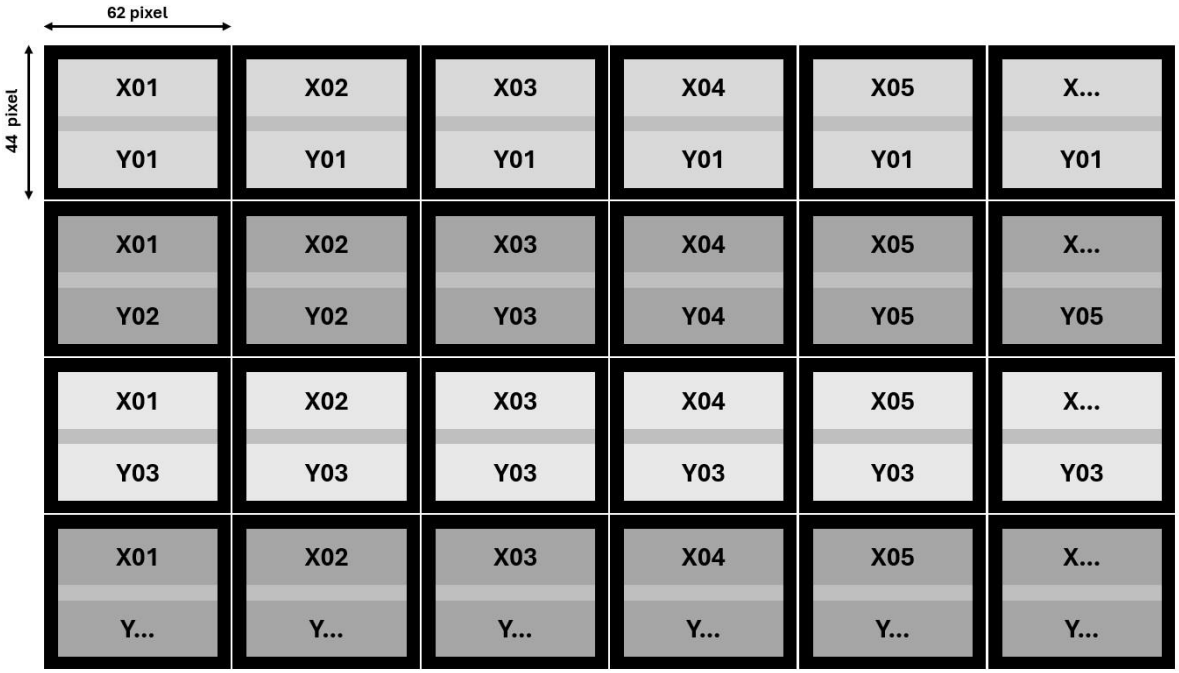
b.) Segmented capture frame position

Segmented capture positioning will be available in a future firmware version.

When segmented capture frame position is selected, the capture frames are placed side by side and line by line with a slice size of 62x44 pixel (See picture). This slice includes the physical 2x 54x16 pixel of the two plates, a 4x54 pixel Beam Line gap and a surrounding 4 pixel tolerance area per segment.



The slices are then placed in segments next to each other arranged like this.



By using the X-Y Position Channels the user can select the row (X) and the column (Y) as follow:

DMX Values	X : Horizontal position	Y : Vertical position
00000 ... 00999	1st column	1st row
0**1**000 ... 0**1**999	1st column	1st row
0**2**000 ... 0**2**999	2nd column	2nd row
0**3**000 ... 0**3**999	3rd column	3rd row
...	... column	... row
65000 ... **65**535	65st column	65st row

- See also “Flex positioning option” and “Fix positioning option” on the next page.

c.) Absolute capture frame position

Selecting a NDI Stream with absolute capture frame position, will place the capture frame in a defined individual pixel position. Each fixture uses a virtual capture frame of 54x36 pixel.

By using the X-Y Position Channels the user can select the exact pixel position of the top left pixel in x and y pixel coordinate as follow:

X DMX Values	Horizontal position	Vertical position
000001	1st pixel from left	1st pixel from top
000002	2nd pixel from left	2nd pixel from top
…	…	…
000055	55th pixel from left	37th pixel from top
…	…	…

1.) Flex positioning option

If NDI Stream is selected with “***flex positioning***” option, the user can move the capture frame position live by using the X-Y Position Channels. This allows maximum flexibility and dynamic cues.

If using flex positioning the NDI Stream selection and X-Y DMX values should be saved as a combined preset.

2.) Fix positioning option

If NDI Stream is selected with "***fix positioning***" option, the X-Y position values stored within the fixture are used to display the video content and the X-Y Position Channels are not used.

This is useful if the setup will not change, or no dynamic movement is needed. Also, if multiple types of lighting consoles are being used in one system, for example in a festival environment, then this avoids the need for a X-Y Position preset in every console type.

Setting the fixed X-Y position can either be done via the menu on the fixture, or using the following process by DMX control:

- Set the desired co-ordinates using the X-Y Channel. This can be viewed in Realtime by receiving the NDI stream using "flex positioning".
- Store the X-Y position into the fixture memory using the relevant control channel function. (Set absolute fix position / set segmented fix position /set relative fix position)

In the current firmware version only absolute position can be stored. Segmented and relative positions will be available soon.

GLP FVP Decoder

FVP Decoder is in development and will be available soon.

The GLP FVP Decoder (FVP = Fixture Video Protocol) is an optional hardware unit which can be added to the JDC2 NDI-Stream Network. The device will capture NDI Streams and convert them into the four GLP FVP Streams.

Using a GLP FVP Decoder allows the following advanced features:

- NDI Video Input of up to 4K
- minimalized latency and increased synchronisation in the JDC2 Network
- higher amount of fixtures in the Network
- free NDI Name labeling
- backup / fallback system for NDI Streams and FYI Network Server

The GLP JDC2 IP will automatically prioritize a received FVP Stream if available - if no FVP Stream is received the NDI port will fall back to the normal NDI-Stream.

Port	Normal	Higher Priority

NDI (FVP) 1	NDI GLP-JDC2-1	FVP Stream 1
NDI (FVP) 2	NDI GLP-JDC2-2	FVP Stream 2
NDI (FVP) 3	NDI GLP-JDC2-3	FVP Stream 3
NDI (FVP) 4	NDI GLP-JDC2-4	FVP Stream 4

DigiFX Presets

DigiFX Presets will be available in a future firmware update.

The DigiFX Preset Channel give a quick access to a wide selection of pre-programmed effects.

DigiFX Speed

The DigiFX Speed channel let you manipulate the original speed of the DigiFX.

Speed adjust of NDI Streams is not possible.

Special/Control DMX channel

The Special/Control DMX channel lets you change fixture settings and perform a fixture reset from the control desk (a possibility that can be very useful during a show or for a specific scene). To apply a command on the Special/Control channel, you must hold the command for the time indicated in the DMX channel index section at the end of this user manual.

To trigger a reset using the Special/Control channel, you must send the DMX value for this function for 3 seconds. If you want to trigger an additional reset using the Special/Control channel, you must first move away from the Reset DMX value and then return to this value. This requirement to change DMX values eliminates the risk of the fixture entering an unwanted Reset loop if it is patched wrongly.

Note: Most of the fixture settings available in the fixture's control menus or on the Special/Control DMX channel are also available via RDM.

4. Fixture Configuration and Settings

The settings described in this chapter let you customize how the JDC2 IP operates. Settings can be modified from the onboard control panel, via DMX and/or via RDM.

DMX Address

Set DMX Address of Main Module Channels **001**···512

Control Modes

Select the control mode (DMX channel layout) you want to use. (see Control Modes on page 10)

Protocol Setup

Data in (DMX)

Select how the fixture should receive control data:

- **DMX** - Control via DMX Protocol (connected by XLR 5pin connector)
- *ArtNet - Control via ArtNet Protocol (connected by ethernet)
- *sACN - Control via sACN Protocol (connected by ethernet)
- *CRMX (FPO) - Control via wireless LumenRadio CRMX Protocol (received by wireless LumenRadio CRMX protocol)

***Only DMX control is currently available. Other control options will be added in a future firmware update.**

Ethernet Config

Art-Net / sACN control is not currently available. These options will be added in a future firmware update.

For fixture control by ArtNet, sACN or NDI you need to configure the ethernet network:

Addressing Mode (Primary)

- **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
- DHCP - Get IP address by DHCP
- Custom IP - Use Custom IP Address

Custom IP Address (Primary)

- Enter IP Address 000.000.000.000

Custom IP Subnet (Primary)

- Enter IP Subnet 255.000.000.000

ArtNet Port (Primary)

- Enter ArtNet Port **0**..32768

sACN Universe (Primary)

- Enter sACN Universe **1**..63999

White point

This feature will be added in a future firmware update.

The white point is the default white that is obtained when the shutter is opened. The JDC2 IP offers a choice of fixed white points for the RGB Plate, allowing convenient use in different environments. The following fixed white points (color temperatures) are available:

- **8000 K** (effect light)
- **6500 K** (daylight – default)
- **5600 K** (TV and studio, matches the BEAM leds)
- **Off** (the RGB LEDs run in raw colormix mode)

If a fixed white point is enabled, the fixture mixes colors with reference to it.

Dimming curves

This feature will be added in a future firmware update.

The electronic dimming effect provides smooth 16-bit dimming of the Main module and Sub modules. The following three dimming curves are available:

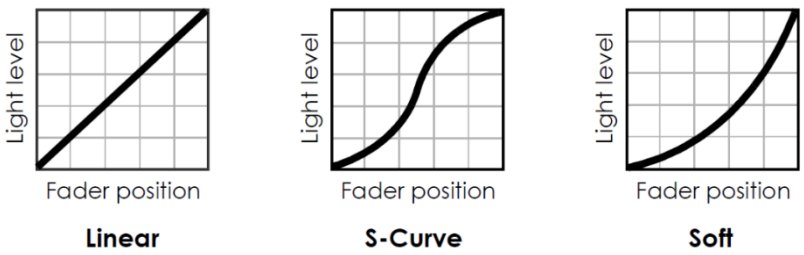


Figure 2. Dimming curves

- The **Linear** setting gives a dimming curve that the eye perceives as linear.
- The **S-Curve** setting gives finer control at lower light levels and at higher light levels, with coarser control at medium light levels.
- The **Soft** 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.

Note: Depending on the selected Subfixture Mode, the dimmer and shutter channels of the Sub modules can operate independently of or subordinately to the dimmer and shutter channels of the Main module.

Duration Control

The Duration Control let you define how the duration channel will behave.

- **Normal (Default)** - the duration timing is fix from short to long independent from the rate channel setting.
- **Percentage** - the duration timing will be calculated percentage to the selected flash rate.

Fan modes

This feature will be added in a future firmware update.

Five cooling fan modes let you give priority to lowest fan noise or most powerful cooling:

- **Regulated** mode gives priority to light output and only operates fans as necessary. If the fixture is blacked out, fans switch off after some seconds. Only the fans that are necessary operate, and they 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 is no regulation of light intensity. If the fixture begins to exceed optimum temperature and the fans are running at maximum speed, light intensity is limited until optimum temperature can be maintained.
- **High** mode sets the fixture to give 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 level.

  You can also use **High** mode to cool down a fixture quickly after a period of operation or to help remove dust from cooling fans.
- **Medium** mode 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 level.
- **Low mode** 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 level.
- **Minimum** mode operates as follows:
  - If the fixture is at blackout, all unnecessary fans are shut down completely and only fans that are absolutely necessary remain active. These fans operate at low speed.
  - As soon as the fixture emits light, other necessary fans may start but will stay at minimum speed. Light output is limited.

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

Capture Frame Position

If a NDI Stream is selected with FIX positioning, this option lets you set the position of the capture frame within the full video content for Relative, Segmented or Absolute Fix Position mode.

You can also capture the position settings from DMX by setting the DMX values using the X-Y Position Faders and then capturing the values using the Control channel (Set Capture Frame Position).

Relative Fix Position	X (0...100%) Y (0...100%)
Segmented Fix Position	Column (X) (1...65) Row (Y) (1...65)
Absolute Fix Position	X (1...640) px Y (1...480) px

Relative and Segmented fix positioning will be added in a future firmware update.

Pixel mirror

This setting allows the operator to change the layout of the pixels in the RGB Plate and the Segments in the white strobe line.

OFF - Fixture standing on the floor with Tilt >50%.
The first pixel/segment is left position of the top row.
The last pixel/segment is at right position bottom row.

01 - 02 - 03 - 04 - 05
06 - 07 - 08 - 09 - 10

x-mirror - The pixels/segments are mirrored on a horizontal axis (x).
The first pixel/segment is left position of the bottom row.
The last pixel/segment is right position of the top row

06 - 07 - 08 - 09 - 10
01 - 02 - 03 - 04 - 05

y-mirror - The pixels/segments are mirrored on a vertical axis (y)
The first pixel/segment is right position of the top row.
The last pixel/segment is left position of the bottom row

05 - 04 - 03 - 02 - 01
10 - 09 - 08 - 07 - 06

x-y-mirror - The pixels/segments are mirrored on both axes (x and y)
The first pixel/segment is right position of the bottom row.
The last pixel/segment is left position of the top row

10 - 09 - 08 - 07 - 06
05 - 04 - 03 - 02 – 01

These settings affect the Segment, DigiFX and NDI positions.

No signal

This feature will be added in a future firmware update. Fixture will always blackout if no DMX signal is present.

This setting lets you select what the fixture should do 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 (Default)** sets the fixture to black out whenever it is not receiving a DMX signal.
- **Hold** sets the fixture to continue using the last DMX values it received.
- **Houselight** sets the fixture to go to white at approx. 80% output when there is no DMX. This is useful for working lights during setup or take down phases or emergency lighting.

- **Scene (Stand-alone)** sets the fixture to play its stored stand-alone scene (see **Capture DMX Values** below) when the fixture is not receiving a DMX signal. If no stand-alone scene is stored in memory, the fixture will black out.

  If the fixture is set to **Scene (Stand-alone)** and if a stand-alone scene has been stored in its memory using the **Capture DMX Values** command, it will display its stand-alone scene at all times when it is powered on but not receiving a DMX signal. You can therefore use this setting if you want fixtures to automatically start stand-alone operation when you apply power to them.

- **Capture DMX Values** takes a snapshot of the DMX values that are currently being received and stores them in the fixture's memory as its captured scene. The fixture will display this scene if it is set to **Scene (Stand-alone)** (see above) and is not receiving a DMX signal.

Display Mode

In v0.6.1 this feature is not fully implemented. This feature will be added in a future firmware update.

Gives different behavior options for the fixture‘s control panel display. This can be helpful in case of errors or during service operations:

- **Auto** (default): the display automatically switches 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 remains constantly on and shows the error.
- **On**: The display stays on constantly. This setting can be useful if 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. Pressing any button turns on the display again.

Display Orientation

In v0.6.1 this feature is not fully implemented. This feature will be added in a future firmware update.

Lets you select **Normal**, **Upside-down** or **Auto** control panel display orientation.

If **Display Orientation** is set to **Auto**, changing the display orientation by pressing UP and DOWN at the same time will only change the display orientation until the next power cycle.

Tilt invert

Increasing the tilt DMX value moves the head from its home position towards the front of the fixture.

Changing the Tilt invert setting to ON inverts the tilt direction so that increasing the tilt value turns the head towards the back of the fixture.

Tilt disable

In v0.6.1 this feature is only available from display menu and cannot be set by DMX Control channel. This feature will be added in a future update.

Tilt disable is normally OFF. Changing the Tilt disable setting to "Current disable" de-activates tilt by disabling the tilt motor current.

Note: When changing from ON back to OFF to re-enable tilt movement, you must carry out a reset before you can operate tilt normally.

Position feedback

In v0.6.1 this feature is only available from display menu and cannot be set by DMX Control channel. This feature will be added in a future update.

Tilt auto-correction (position feedback) is normally enabled (ON). Changing this setting to OFF will disable the position feedback and auto-correction. If you need to return tilt to its correct position, you must perform a reset.

Hibernation

This feature will be added in a future firmware update.

Lets you put the fixture into energy-saving mode and disables all electronic components apart from the DMX receiving module.

You can take the fixture out of hibernation mode with a power off/on cycle, via RDM or using the Special / Control DMX channel. If you do this, the fixture will perform a fixture reset before returning to normal operation.

Load Setting Preset

This feature will be added in a future firmware update.

Lets you load different custom fixture configurations or return the fixture to the default fixture settings.

*To save a custom setting preset from 1 to 3, see **Service → Advanced → Save Setting Preset**.*

- **Load Setting Preset 1** to **3** loads one of three specific custom fixture settings. You must confirm the function for 3 seconds before the new settings are loaded (see ***Fixture Settings → Load Setting Preset**).*
- **Save Setting Preset 1** to **3** saves the current fixture settings as a set of user settings. You must confirm the function for 2 seconds in order to save the settings as one of the three custom settings presets (see ***Service → Advanced → Save Setting Preset**).*

*Note: The **Load Setting Preset** and **Load Setting Defaults** commands will only affect settings in the **Fixture Settings** group and will not affect DMX Address, Control Mode, Protocol Type, IP Settings, etc. This helps avoid loss of communication with the controller.*

Information

The **Information** submenu provides readouts of all relevant information such as the error list if any errors have been detected, the fixture's serial number, firmware version, device info, device hours counter, power cycles counter, DMX input monitor, signal quality etc.

Manual Control

This submenu gives different options for resetting the fixture manually. It can be helpful for service or stand-alone issues.

- **Reset All**: Performs a full fixture reset to initialize all features and effects.
- **Reset Tilt**: Resets tilt only to initialize the tilt position.
- **Reset Head**: Resets all the features in the head.

Manual DMX

This feature will be added in a future firmware update.

Gives individual control of the fixture using the fixture user interface. The menu timeout function is disabled as long this menu is open.

- **Manual Control**: Manually sets a DMX value for each function.
- **Reset Manual values**: Resets all manual control values to default.

External DMX values will always have higher priority than manual control commands. Disconnect the fixture from the data source when using manual control.

Note: When entering manual control, be prepared for the fixture to start moving.

Service

This feature will be added in a future firmware update.

The **Service** menu is split into two levels: **Service** and **Service Advanced**. The **Service Advanced** level is for trained technicians only. Read the information below carefully before entering this level.

The Service menu contains the following items:

- **Live Diagnostic**: Calls up an overview of all main fixture information, signal quality and settings. This can be helpful while troubleshooting or talking to GLP Service.
- **iQ.Service Connect**: Wakes up the integrated GLP iQ.Mesh Module for 5 minutes and enables connectivity to the GLP iQ.Service App.

- **Test All**: Runs a test sequence of all LEDs for a quick test of the fixture. Press BACK to stop the test sequence.
- **Test Tilt**: Runs a test sequence of tilt movement only. Press BACK to stop the test sequence.
- **Test Beam LEDs**: Runs a test sequence of the LED Beam segments only. Press BACK to stop the test sequence.
- **Test Plate LEDs**: Runs a test sequence of the LED Plate segments only. Press BACK to stop the test sequence.
- **Test Fans (Manual)**: Tests fans one by one manually.

Advanced Service

This feature will be added in a future firmware update.

The **Advanced Service** level is for trained technicians only. Read the information below carefully before entering this level. You must confirm by pressing and holding ENTER for 3 seconds before you can enter this level.

The **Advanced Service** level contains the following items:

- **Service Mode**: Disables tilt and all display timeouts to make servicing the fixture head easier. This mode is automatically disabled after a power cycle.
- **Reset Counters**: Resets the different resettable fixture counters.

  Device counters are not reset by a **Load Factory Backup** command.
- **Save Setting Presets**: Lets you save the current fixture settings to one of the three user settings presets. You can load a user settings preset that you have saved with a **Load Setting Preset** command (see **Fixture Settings → Load Setting Preset**). The default fixture preset cannot be changed.

  This command only saves fixture settings (Fan Mode, Color Mix etc.). It does not save fixture configuration information such as DMX address and DMX mode.

Load Factory Defaults

Reloads all factory defaults over the entire fixture and brings the fixture into standard show condition.

You must confirm the function for 3 seconds before the default settings are loaded.

Important! *The factory default settings that are reloaded with this command include all data and network configuration parameters such as DMX start address, IP configuration etc. You may therefore lose communication with your controller.*

*The **Load Factory Defaults** command does not affect device counters and calibration.*

Factory Menu

Important! Do not enter the Factory Menu if you are not a trained service professional with service documentation or clear instructions from GLP Service.

Read the user and service documentation carefully before entering this menu. In the Factory Menu you can apply critical settings which can damage the fixture.

The Factory Menu is a hidden menu for the manufacturer or professional service technicians only. This special menu allows fixture calibration and the adjustment of all mechanical features following the manufacturer's instructions.

To enable the Factory Menu, apply power to the fixture and press the ENTER and BACK buttons together while the pre-boot screen is being displayed. You can release the buttons as soon as FACTORY MODE appears in the black display. After doing this, **Factory Menu** is visible as the last item in the main menu. The Factory Menu will remain available until the next power cycle. While the Factory Menu is enabled, all display timeouts are disabled to make working on the fixture easier and a Factory symbol is visible in the main screen.

5. Control panel

Warning! DMX control is disabled when the control menus are active. Be prepared for the head to move as soon as you exit the control menus.

The control panel and backlit graphic LCD display with self-charging battery allow you to change fixture settings, view readouts and use utilities quickly and intuitively, even when the fixture is disconnected from power.

To allow comfortable use of the control panel, tilt is automatically disabled for a few seconds if you press any button on the control panel. Tilt remains disabled for as long you are working in the control panel. If no button is pressed for a few seconds, head movement is re-enabled with tilt correction applied.

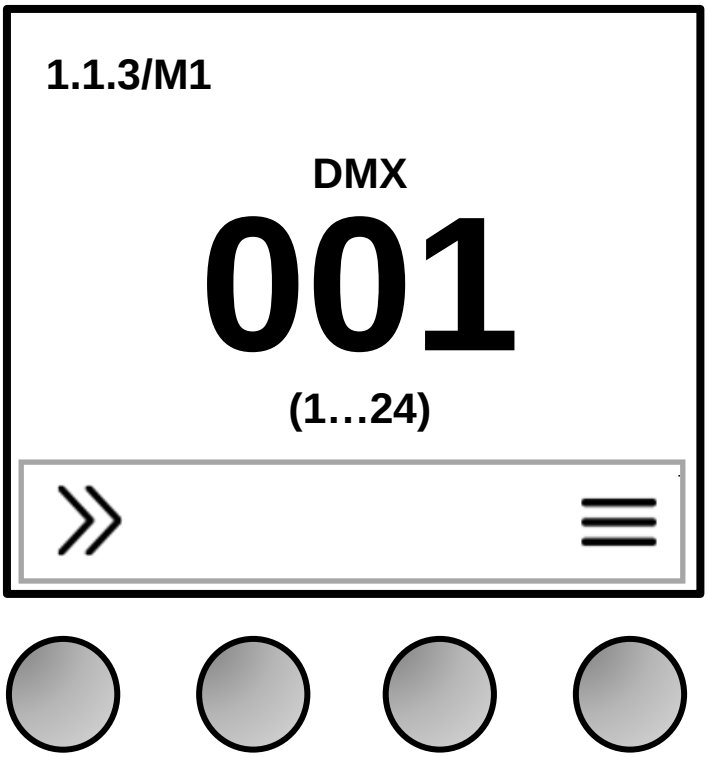


Figure 3. Default information screen

Default information screen

When power is applied, the fixture performs a reset. After the reset has completed, the default information screen appears in the control panel display on the base of the fixture.

At any other time, you can press any key to unlock the control panel. Doing this also calls up the default information screen in the control panel display.

See Figure 3. The top line of the default information screen consists of, from left to right:

- Main CPU firmware version
- DMX Mode

The center of the screen shows the following information:

- Signal source.
- Fixture's current DMX address in large characters. If the fixture's self-diagnosis system detects an error, the fixture will flash an error message alternately with the DMX address. This lets you see the DMX address and error message at a distance from the fixture.
- The fixture displays network IP addresses below the DMX Address.
- Below the current DMX address, the fixture displays in smaller characters the DMX channels that the fixture is currently using.

In the example shown in Figure 3:

- The fixture is running CPU software version 1.1.3
- The fixture is set to DMX Mode 1
- The fixture is set to receive data via DMX
- The fixture's DMX start address is 001
- The fixture is using DMX channels 1 to 24.

Using the control panel

The four control panel buttons under the display have the following functions.

In the main screen:

QUICK MENU – Activates the Quick Menu

UP/DOWN – Press three times to open the live diagnostic tool

MENU – Activates the control panel if it is in sleep mode, then opens the main menu

When navigating through the menus:

BACK – Goes back one level towards the top of the menu

UP – Scrolls up or increments a number

DOWN – Scrolls down or decreases a number

ENTER – Confirms a setting or implements a command

At any time:

UP and DOWN at the same time – Temporarily rotates the display 180°

Control button shortcuts

Battery Eco Mode (available in Battery Mode only)

This feature will be added in a future firmware update.

When the fixture is running on battery power, holding MENU and ENTER together for 10 seconds activates Battery Eco Mode. This switches off the display completely to avoid any unwanted discharge of the battery and can be very useful when a fixture is put into long-term storage.

Live Diagnostics

Pressing UP or DOWN three times calls up an overview of all main fixture information, signal quality and settings. This can be useful if you are troubleshooting or if you are in contact with GLP Service.

Toggle Display Orientation

This feature will be added in a future firmware update.

Pressing and releasing UP and DOWN together rotates the display through 180°.

*Note: If Display Orientation is set to **Auto**, changing the display orientation by pressing UP and DOWN at the same time will only change the display orientation until the next power cycle. To change the display orientation permanently, go to **Fixture Settings → Display Orientation** in the control panel menus.*

Error Messages

If the fixture detects an error, it displays an error message in the display. The Error is 'sticky' and will continue to be shown in the display until the next power cycle or reset. To get details of the error message, follow the information in the display. These details are important if you talk to GLP service.

Loss of DMX signal

The display flashes if the DMX signal is lost (the fixture will then behave according to its No Signal setting – see 'No signal' on page 30).

Service and maintenance

See the separate *JDC2 IP Quick Start and Safety Manual* supplied with the fixture and available for download from www.glp.de for information on service and maintenance.

6. Setting up the control protocol

The JDC2 IP can be controlled via:

- USITT512 DMX over a standard DMX cable link using the fixture's 5-pin XLR connectors,
- GLP's wireless iQ.Mesh technology.
- *ArtNet / sACN
- *LumenRadio CRMX (optional if installed in FPO port). This section explains how to configure the fixture to use one of these control data protocols.

GLP iQ.Mesh, Art-Net, sACN, LumenRadio will be added in a future firmware update.

The control protocol settings are not affected if you apply a **Load Setting Preset Default** command in the fixture's control panel, but they are returned to factory defaults if you apply a **Load Factory Defaults** command in the main menu.

DMX

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

If the control data protocol has been changed and you want to return to DMX control over a standard DMX signal, open the menus in the fixture's control panel and make the following adjustments:

1. In the main menu in the fixture's control panel, open **DMX Address** and give the fixture a suitable DMX address.
2. In the **Protocol Setup → Data In** menu, set the control protocol to **DMX**.

iQ.Mesh

GLP iQ.Mesh will be added in a future firmware update.

If you want to control the fixture via GLP iQ.Mesh:

1. Open the menus in the fixture's control panel.
2. In the **Protocol Setup → Data In** menu, set the control protocol to **iQ.Mesh**.

LumenRadio CRMX

LumenRadio functionality will be added in a future firmware update.

LumenRadio CRMX module is an optional extra to be fitted in the JDC2 IP's FPO port.

If you want to control the fixture via LumenRadio CRMX you must install the module. For more details contact GLP support.

7. Control menus

Quick menu

The control panel's Quick Menu gives you quick access to the most frequently used commands. To open the Quick Menu, press the left-hand control button » marked when the display is showing the default information screen.

The Quick Menu contains the following items:

Menus			***Notes***
Reset All			*Resets the entire fixture (takes a few seconds).*
Live Diagnostic			*Calls up overview of all main fixture information, signal quality and settings.*
iQ.Service Connect	>>>Connect<<<		*Enables connectivity to the GLP iQ.Service App for 5 minutes.*
Load User Settings	User Setting Preset 1	>>>Confirm<<<	*Loads custom user settings*
	User Setting Preset 2	>>>Confirm<<<	
	User Setting Preset 3	>>>Confirm<<<	
	Setting Defaults	>>>Confirm<<<	*Returns fixture to default settings (not including DMX address, protocol type, Ethernet / CRMX configuration, user offsets, user presets and counters).*
Load Factory Defaults (!)	*Displays Message: Fixture may lose connection to controller* >>>Confirm<<<		*Restores all factory default settings (including DMX address, protocol type, Ethernet / CRMX configuration, user offsets and user presets).* ***Important! The fixture may lose contact with the controller!***

Main menu

The following menus and commands are available in the JDC2 IP control panel.

Greyed-out options will be added in a future firmware update.

Menus		***Notes***
DMX Address		
001-512		*Set fixture's DMX start address. Highest possible address depends on control mode.*
Control Mode		
M1 Basic		*Set fixture's DMX control mode.*
M2 Normal		
M3 Segment		
M4 Multipix Advanced		
M5 Multipix Compressed RGB		
M6 Multipix Compressed RGBL		
Protocol Setup		
Data In	**DMX**	*Control via DMX protocol*
	iQ.Mesh	*Control via GLP iQ.Mesh*
	CRMX	*Control via CRMX (only available if CRMX module is installed at fixture's FPO port)*
Linking options	iQ.Mesh Unlink	*Unlink from GLP iQ.Mesh link*
	CRMX (FPO) Unlink	*Unlink from CRMX (only available if CRMX module is installed at fixture's FPO port)*
Fixture Settings		
White Point	8000 K	*Set fixture white point when RGB is at 100% (RGB Color Mix Mode only)*
	6500 K	
	5600 K	
	OFF	
Dimmer Curve	Linear	*Linear dimming curve*
	Soft	*Soft (square law) dimming curve*
	S-Curve	*Finer dimming control at low and high intensity*
Fan Mode	**Regulated**	*Fan speed temperature-regulated*
	High	*Fan speed constant high*
	Medium	*Fan speed constant medium*
	Low	*Fan speed constant low*
	Minimum	*All fans off or at minimum speed*

Menus			***Notes***
Pixel Mirror	**Off**		*Normal pixel layout*
	Mirror Y		*Pixels mirrored over y-axis*
No Signal	No Signal Mode	Blackout	*Fixture blacks out if no DMX signal received*
		Hold	*Fixture continues to display current effect if no DMX signal received*
		Scene	*Plays the stored captured scene (see next menu item) if no DMX signal received*
	Capture DMX Values	*>>>Confirm<<<*	*Captures current scene and stores it for use in **No Signal Mode → Scene***
Tilt Invert	**OFF**		*Reverse direction of tilt movement*
	ON		
Position feedback	OFF		*Enable/disable /tilt position correction*
	ON		
Tilt Disable	**OFF**		*Disables tilt motor*
	Current Disable		
Display Mode	**Auto**		*Display dims after a short period of inactivity if no errors and valid DMX signal*
	On		*Display constantly on*
	Off		*Display dims even if there are errors / no DMX signal*
Display Orientation	**Auto**		*Display automatically inverts to match installation position*
	Normal		*Display normal (for use when fixture is standing)*
	Flip		*Display inverted (for use when fixture is flown head-down)*
Hibernation	ON		*Fixture enters energy saving mode, all electronics except DMX receiver are disabled. Cycling power off and on exits hibernation.*
Load User Settings	User Setting Preset 1	>>> Confirm<<<	*Apply a user preset to fixture settings*
	User Setting Preset 2	>>> Confirm<<<	
	User Setting Preset 3	>>> Confirm<<<	
	Setting Defaults	>>> Confirm<<<	*Return fixture to default settings (not including DMX address, protocol type, Ethernet / CRMX configuration, user offsets, user presets and counters)*

Menus			***Notes***
Information			
Live diagnostic			*Shows overview of fixture information*
Show errors			*Shows any stored errors*
Show temperature			*Shows fixture temperature*
Show fan status			*Shows current cooling fan status*
Show controllers info			*Shows controllers info*
Show iQ.Mesh status			*Shows current GLP iQ.Mesh status*
Show LED calibration			*Shows LED calibration information*
Show fixture counters			*Shows total device hours (non-resettable), resettable device hours, total power cycles (non-resettable), resettable power cycles, resettable air filter hours*
Show DMX input			*Shows DMX values being received*
Show DMX info			*Shows info about any lost DMX packages*
Manual Control			
Reset All			*Reset all effects*
Reset Tilt			*Reset tilt only*
Reset Head			*Reset all effects except tilt*
Manual DMX ***Warning! Fixture will start moving*** Press **Enter**	Tilt	001 - **128** - 255	*Manually control all effects*
	Intensity	000 - **255**	
	... *Scroll through all effects* ...		
	Blue - All Pixel	000 - **255**	
	Reset Manual Values	Confirm for 3 seconds *(press Enter)*	*Reset all manually entered DMX values to zero*
Service			
Live diagnostic			*Shows overview of fixture information*
iQ.Service Connect		>>> Connect <<<	*Enables connectivity to the GLP iQ.Service app.*
Tests	Test All		*Run test sequence of all effects including tilt. Stop with BACK.*
	Test Tilt		*Run test sequence of tilt only. Stop with BACK.*
	Test LED		*Run test sequence of all LEDs. Stop with BACK.*
	Test Fans (Auto)		*Run fan self-test. Tries to detect fan errors, clears if successful.*
	Test Fans (Manual)		*Manually test fans one by one*

Menus				***Notes***
Advanced *(Press and hold for 3 secs.)*	Service Mode	**OFF**		*Normal operation*
		ON		*Disable tilt and display timeouts (exit by cycling power off and on.)*
	Reset counters	Lamp Hours	Confirm 2 seconds	*Reset to zero*
		Service Timer	Confirm 2 seconds	
		Air filter	Confirm 2 seconds	
	Save Setting Presets	Preset 1	Confirm 2 seconds	*Saves current fixture settings as setting preset*
		Preset 2	Confirm 2 seconds	
		Preset 3	Confirm 2 seconds	
Load factory defaults				
>>>Confirm<<<				*Reloads all factory default settings and default fixture configuration settings.* ***Important! Controller may lose connection to fixture!***

** indicates features still under development*

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

8. Error messages

When restarting the fixture or sending a RESET command, the fixture performs an initialization process to test all functions and sensors. The fixture also continuously checks itself for correct operation.

If an error is detected, the fixture display shows the message **ERROR**.

- Pressing ✕ ignores the error message and exits the error display.
- Pressing ✓ shows information about the error.

Note: Make a note of any error message displayed. You may need these details for error diagnosis. Please be ready to give them to GLP Service if necessary.

Certain critical error messages are permanently stored in the display. In this case, please contact your GLP service agent.

9. Pixel layout

The JDC2 IP pixels are located as shown below, seen from the front of the fixture (connectors and display facing away from you) with tilt at >50% and **Pixel mirror** set to **Off**.

12 segment mode

24 Segment mode

Full pixel mode

This control mode will be added in a future firmware update.

The pixels are arranged in 32 rows of 54 pixels. The top row is pixels 1-54, the next row 55-108 etc. The central beam LEDs are divided into 12 segments.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