

Lighting Layer — Spotlights, Particles, Strobes & Controller Shapes

The **Lighting layer** adds stage-light effects to the picture: moving spotlight beams, drifting particles and flashing strobe panels, all driven by the music. This guide explains each part, how it reacts to sound, and what every setting does, with the factory default and the allowed range.

Note

The Lighting layer is a **picture on the screen**. It does not send anything to lights. To control real fixtures over DMX, use the [DMX Rig Configuration](#) guide. The two can run side by side.

Related guides: [Layers, Shaders & FX](#) (the other layers and the shared effects), [Audio Setup & Beat Sync](#) (the sound that drives the lighting) and [MIDI & HID Controllers](#) (the controller shapes).

1. What the layer contains

The Lighting layer is a container with **four parts**. Each part has its own **Visible** switch and its own **Opacity**, and you can use any combination.

Part	What you see	What drives it
Spotlights	Six light beams that sweep across the picture. Two looks: Normal (wide soft beams) or Laser (thin lines).	The overall sound level. The beams move while there is sound.
Particles	Small glowing dots that fall through the picture. Their colour follows bass, mid or high sound.	The sound level in three frequency bands.
Strobes	Four flash panels along the top and/or bottom edge, solid or as vertical bars.	The kick drum during the drop of a track (see 4.4).
MIDI/HID/OSC Actions	Shapes that appear when you press controls on a connected controller.	Your controller, not the audio.

Image LayerAvatar LayerVideo LayerArtist Card LayerVinyl DiscMarquee TextWaveforms LayerWaveform VisualizerParticle VisualizerAnalog VisualizerSpectrum VisualizerXY VisualizerLighting Layer

SpotlightsParticlesStrobesMIDI/HID/OSC ActionsMask

Figure 1: the Lighting tiles on the touch panel's Layers page. **Lighting Layer** is the container; the four tiles below it switch the parts on and off. A green tile is on.

The container has to be visible for any part to show. Its **Opacity** applies to everything inside it, and each part then applies its own opacity on top. In the layer stack, Lighting sits above the Vinyl Disc and below the Waveforms, Artist Card, Marquee Text and Mask layers.

Turn the layer on

- **Touch panel:** open **Layers** and tap **Lighting Layer**, then tap the parts you want (**Spotlights**, **Particles**, **Strobes**, **MIDI/HID/OSC Actions**).
- **Settings:** open **Settings** → **Layer - Lighting** and switch **Visible** on. Each part has its own page (**Layer - Spotlights**, **Layer - Particles**, **Layer - Strobes**, **Layer - MIDI/HID/OSC**) with its own **Visible** switch.
- **Programming Schedule:** the Lighting layer is in the list of layers a schedule row can show or hide.



Tip

Factory settings start with the layer and all four parts **off**. After you turn the layer on, also turn on the part you want, or nothing appears.

2. Before you start: sound

Spotlights, Particles and Strobes only react when the app is hearing sound. If the picture stays still:

1. Check the audio input as described in [Audio Setup & Beat Sync](#).
2. Play music at show volume and make sure the level meters in the **Indicators** page move.

Quiet passages, breaks and silence calm the effects down; they come back with the music.

3. Layer settings (Settings → Layer - Lighting)

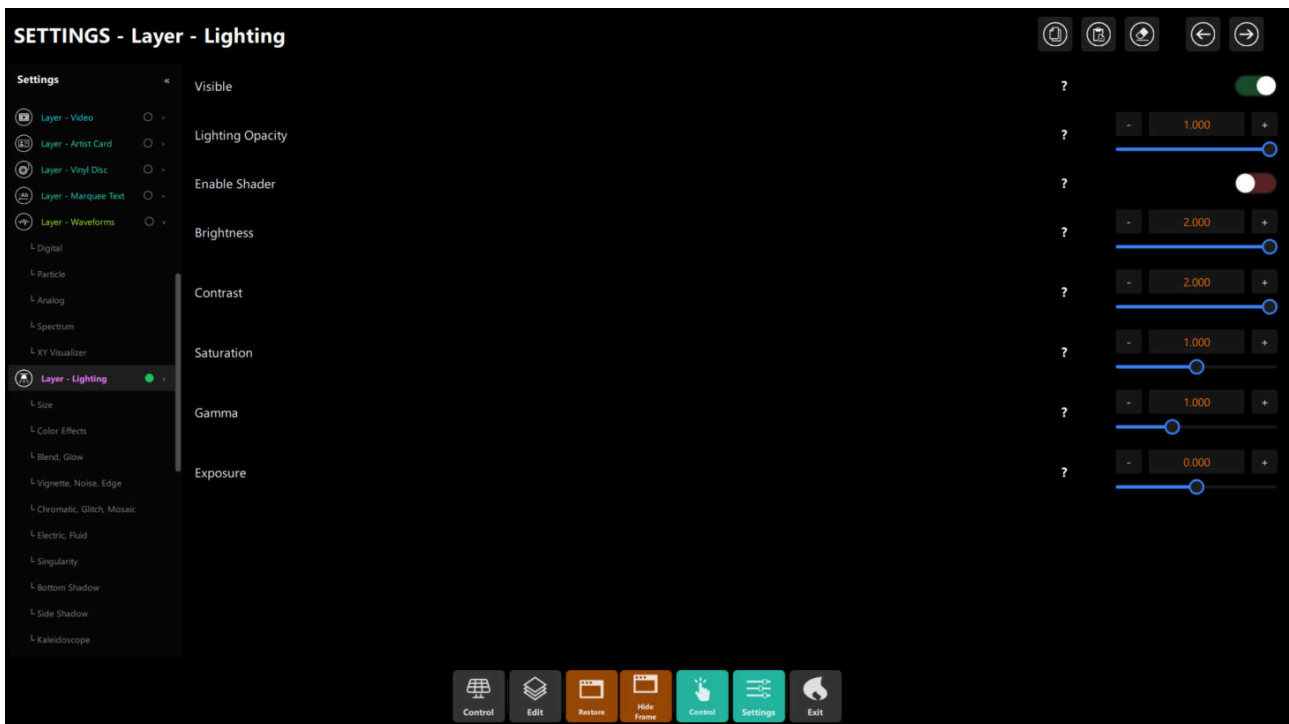


Figure 2: Settings → Layer - Lighting. Visible, Opacity, Enable Shader and the basic colour controls.

Setting	Range	Factory default	What it does
Visible	on / off	off	Shows or hides the whole layer.
Lighting Opacity	0.00–1.00	0.80	Transparency of the whole layer.
Enable Shader	on / off	on	Applies the image effects below to the combined picture of the parts that are on. Off = no effects, which also saves graphics power.
Brightness	0.0–2.0	1.0	Overall light level.
Contrast	0.0–2.0	1.0	Difference between dark and light.
Saturation	0.0–2.0	1.0	Colour strength. 0 = grey.
Gamma	0.5–2.0	1.0	Brightens or darkens the mid-tones.
Exposure	–2.0 to 2.0	0.0	Brightens or darkens everything.

Below these, the sidebar lists extra pages with more image effects (see section 7). **Size** → **Scale** (0.1–2.0, default 1.0) enlarges or shrinks the whole layer.



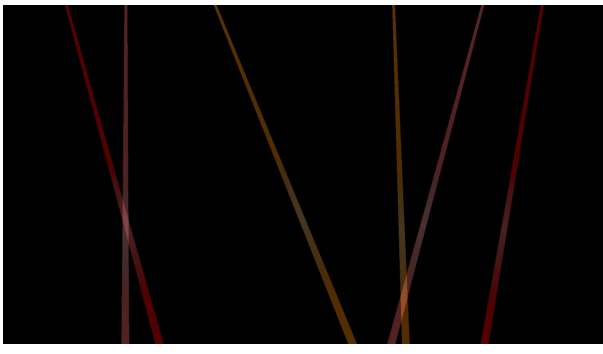
Tip

If the picture looks burnt out after you switch **Enable Shader** on, bring **Brightness** and **Contrast** back to 1.0 and change them in small steps.

4. The four parts

4.1 Spotlights

Six beams of light come from the top of the picture and sweep from side to side. The beams move while there is sound; the flicker follows the sound level.

Normal	Laser
	
<i>Figure 3: Normal mode — wide, soft beams.</i>	<i>Figure 4: Laser mode — thin lines.</i>

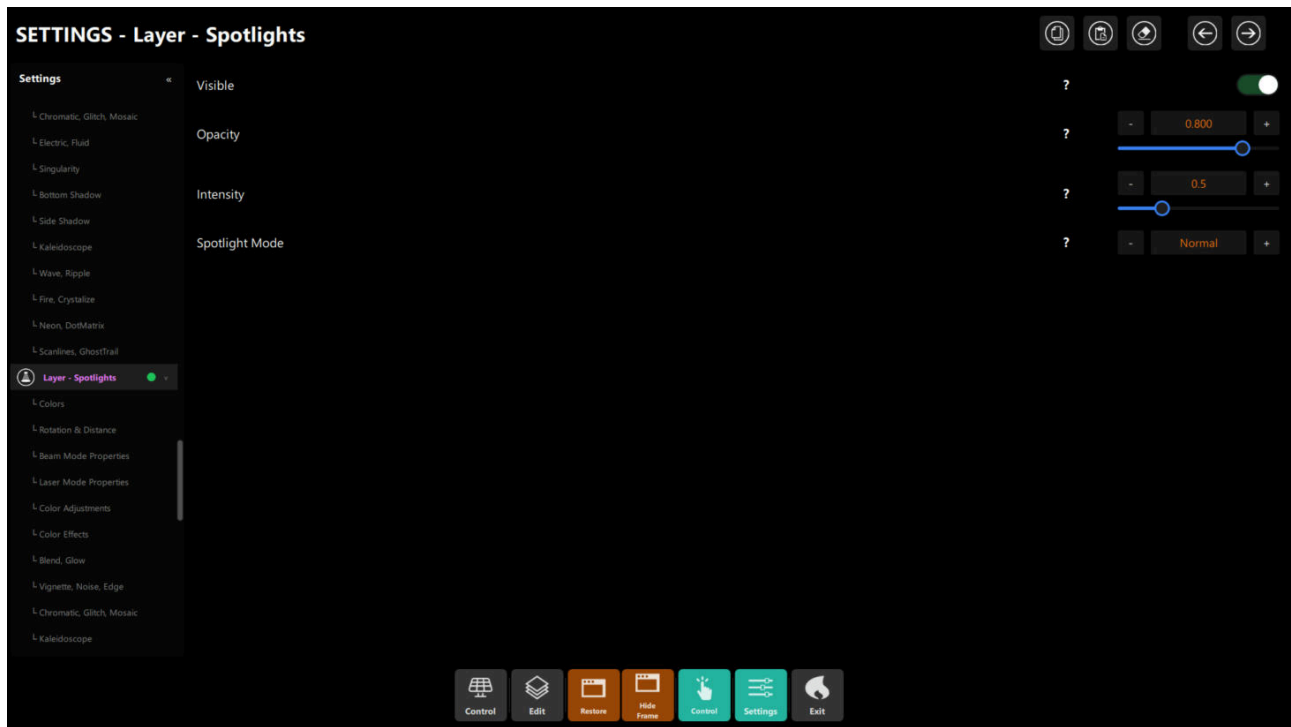


Figure 5: Settings → Layer - Spotlights.

Main page

Setting	Range	Factory default	What it does
Visible	on / off	off	Shows or hides the spotlights.
Opacity	0.00–1.00	0.80	Transparency of the spotlights.
Intensity	0.0–2.0	0.5	Brightness of the beams.
Spotlight Mode	Normal / Laser	Laser	Wide soft beams or thin lines. Use the – and + buttons to change it.

Colors page

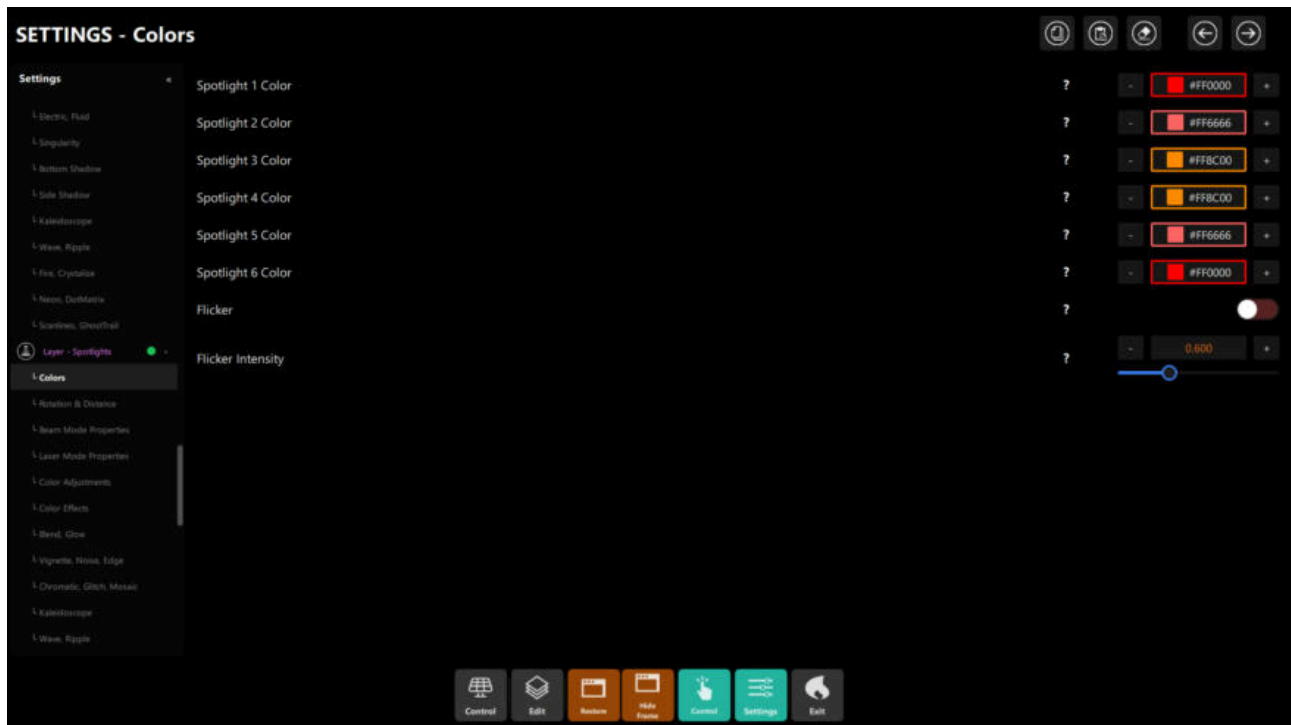


Figure 6: each of the six beams has its own colour.

Setting	Range	Factory default	What it does
Spotlight 1 ... 6 Color	any colour	red, light red, orange, orange, light red, red	Colour of each beam. Set all six the same for a single-colour look.
Flicker	on / off	on	Makes the beams twinkle with the sound level.
Flicker Intensity	0.0–2.0	0.6	How strong the twinkle is.

Rotation & Distance page

Setting	Range	Factory default	What it does
Rotation Speed Factor	0.0–2.0	0.5	How fast the beams sweep. 0 stops the sweep.
Rotation Amplitude Factor	0.0–1.0	0.5	How wide the sweep is.
Distance	100–1600	1000	How far the beams reach.
Distance Multiplier	1.0–2.0	1.0	Extra length on top of Distance.

Beam Mode Properties page (the look of Normal mode)

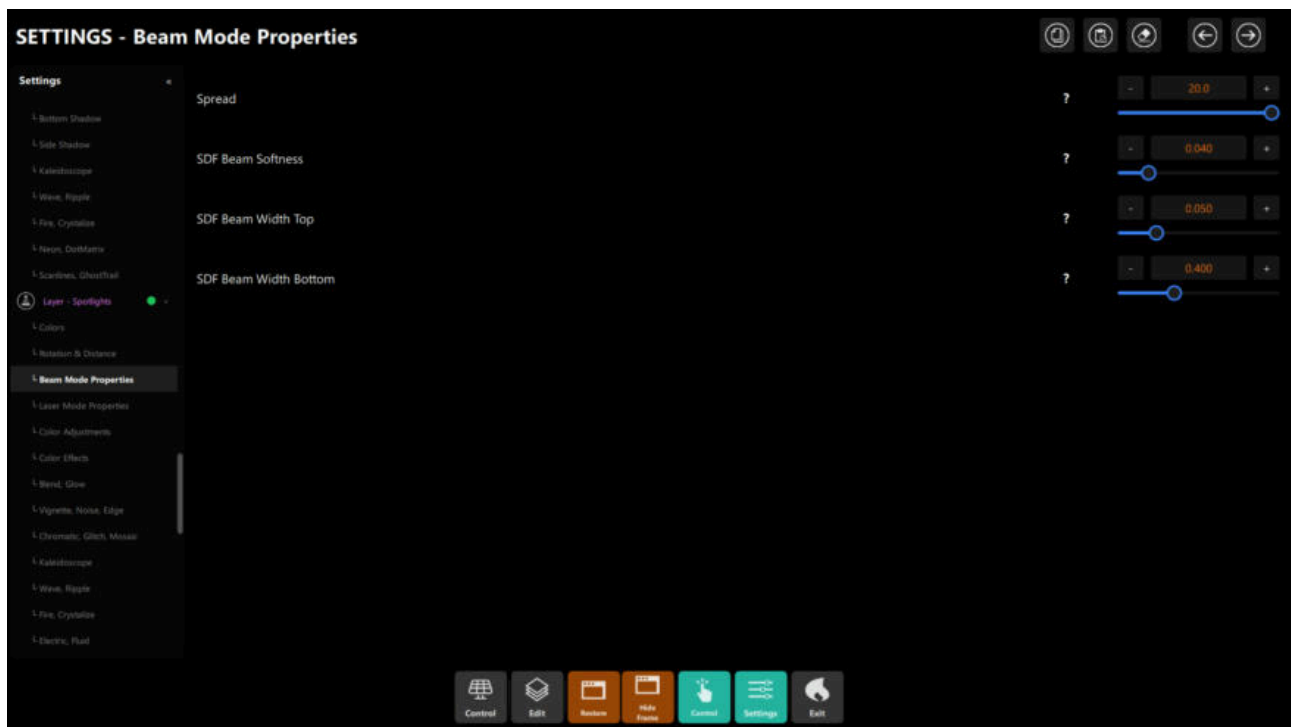


Figure 7: Beam Mode Properties.

Setting	Range	Factory default	What it does
Spread	1–10 on the slider	20	Opening angle of each beam. The factory value is higher than the slider's upper end, so the slider starts pinned to the right.
SDF Beam Softness	0.01–0.20	0.04	How soft the beam edges are.
SDF Beam Width Top	0.01–0.20	0.05	Width of the beam where it leaves the light.
SDF Beam Width Bottom	0.10–1.00	0.40	Width of the beam at the far end.

Laser Mode Properties page (the look of Laser mode)

Setting	Range	Factory default	What it does
Laser Width	0.1–10.0	1.0	Thickness of each line.
Laser Intensity	0.0–3.0	1.0	Brightness of the lines.

The remaining pages of **Layer - Spotlights** (Color Adjustments, Color Effects, Blend/Glow, Vignette/Noise/Edge, Chromatic/Glitch/Mosaic, Kaleidoscope, Wave/Ripple, Fire/Crystalize, Electric/Fluid, Neon/DotMatrix and Scanlines/GhostTrail) are image effects that apply **only to the spotlights**. They are described in section 7.

4.2 Particles

Small glowing dots fall through the picture. Their colour is chosen by the part of the sound that is strongest at that moment: **bass**, **mid** or **high**. They are emitted only while the sound is above a low level.

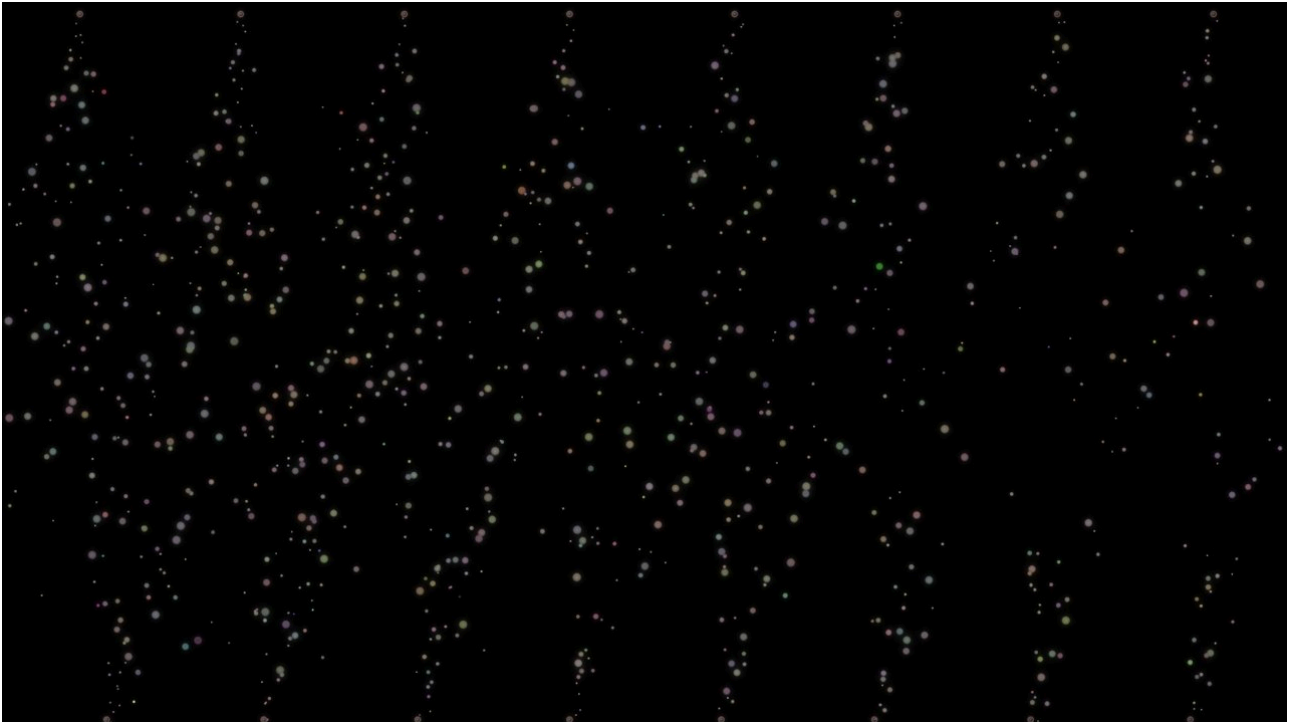


Figure 8: particles with both emitters on, at full density.

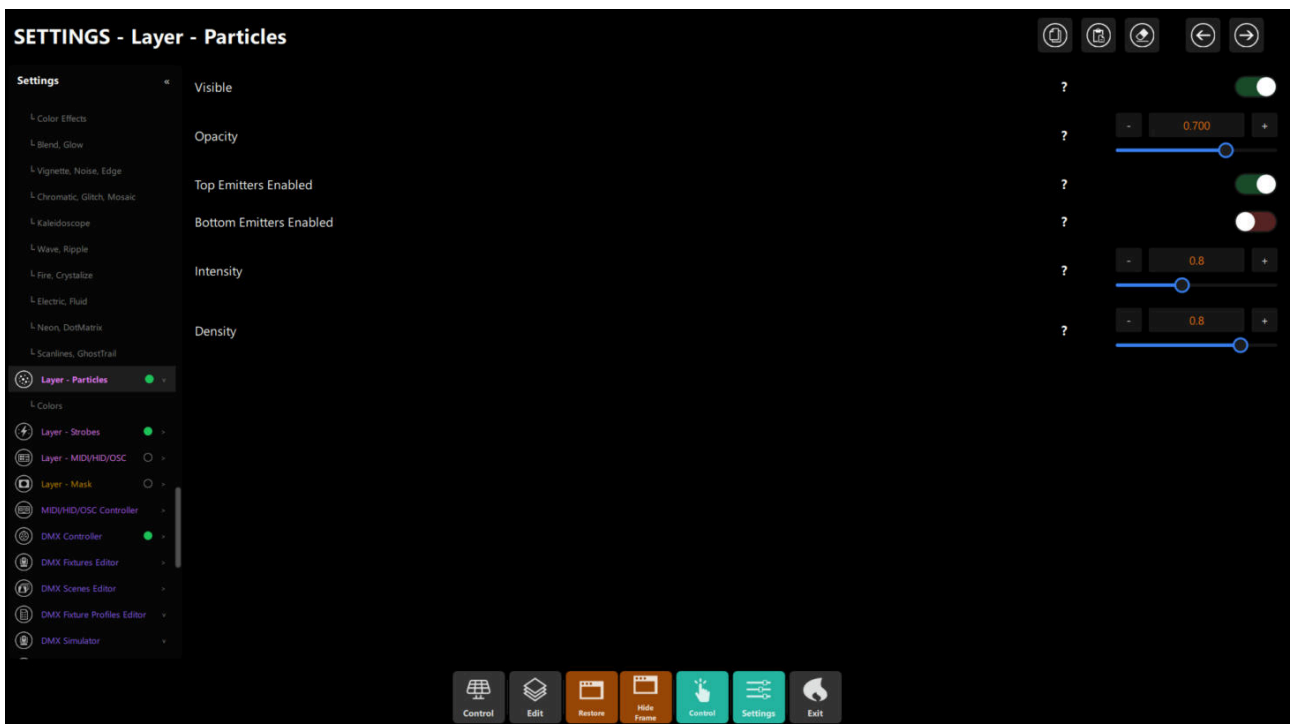


Figure 9: Settings → Layer - Particles.

Setting	Range	Factory default	What it does
Visible	on / off	off	Shows or hides the particles.

Setting	Range	Factory default	What it does
Opacity	0.00–1.00	0.70	Transparency of the particles.
Top Emitters Enabled	on / off	on	Particles start at the top edge.
Bottom Emitters Enabled	on / off	off	Particles also start at the bottom edge.
Intensity	0.0–2.0	0.8	Strength of the particles.
Density	0.0–1.0	0.8	How many particles are emitted.

Colors page

Setting	Range	Factory default	What it does
Bass Color	any colour	orange-red	Colour while the bass is strongest.
Mid Color	any colour	yellow	Colour while the mid sound is strongest.
High Color	any colour	sky blue	Colour while the high sound is strongest.
Color Variation	0.00–1.00	0.50	How much each particle's colour differs from the main colour.
Saturation Factor	0.00–1.00	0.30	Colour strength of the particles.
Lightness Factor	0.00–1.00	0.50	How light the particles are.
Alpha Factor	0.00–1.00	0.60	How see-through the particles are.

4.3 MIDI/HID/OSC Actions

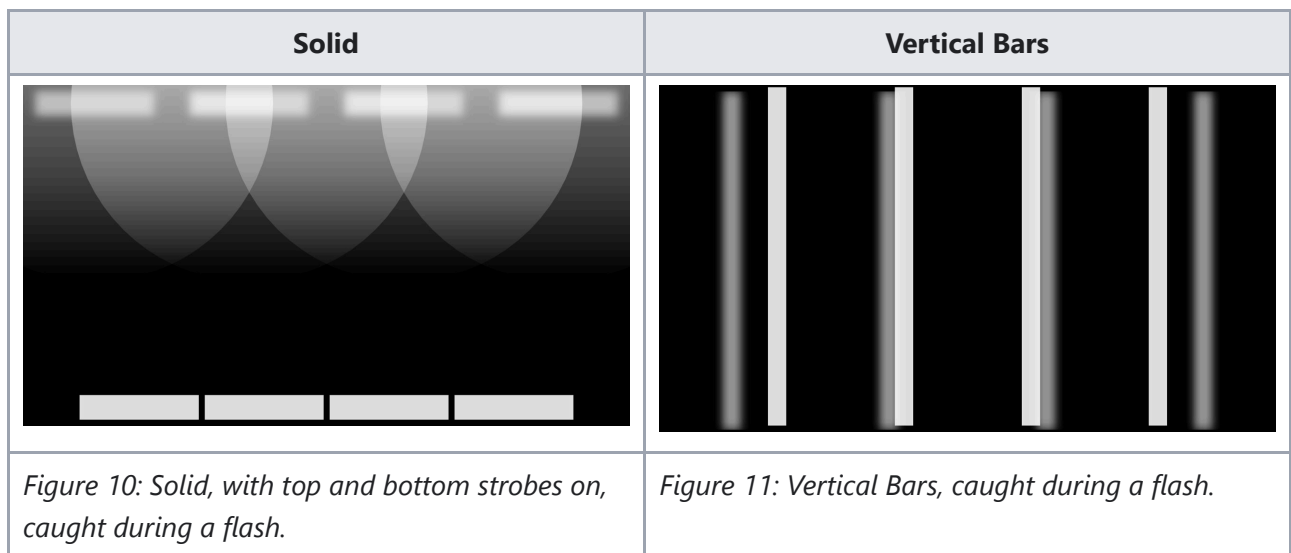
This part draws **shapes when you press controls on a MIDI, HID or OSC controller**. It is separate from the audio: nothing appears until you press a mapped control that spawns a shape.

Setting	Range	Factory default	What it does
Visible	on / off	off	Shows or hides the controller shapes.
Opacity	0.00–1.00	1.00	Transparency of the shapes.

The shapes themselves, how to map a control to a shape and the limits on how many appear at once are explained in the [MIDI & HID Controllers](#) guide.

4.4 Strobes

Four flash panels. **Solid** shows rectangles; **Vertical Bars** shows tall vertical bars across the picture.



Important

Strobes flash **on the kick drum during the drop** of a track — the loudest, most intense part. They do not flash on every beat, and they stay dark during intros and quiet parts. This is on purpose, so the flash keeps its impact. If you want to check the layer, play the loudest section of a track.

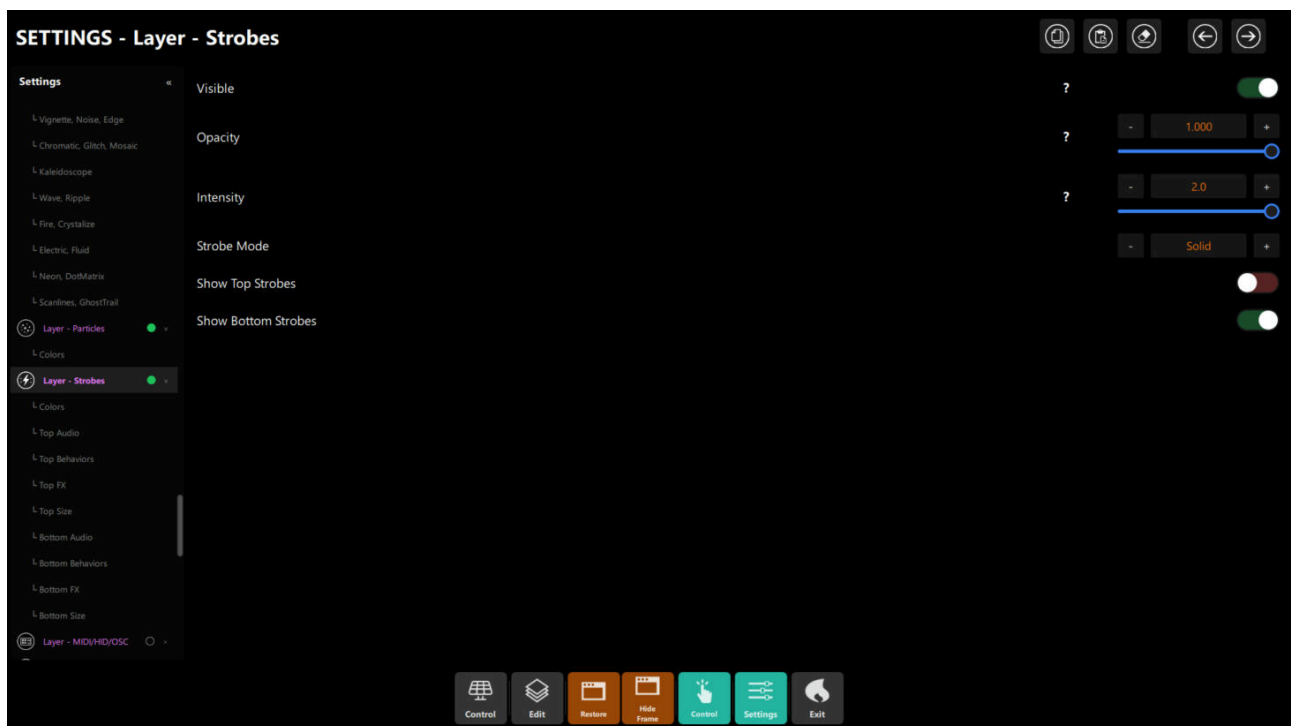


Figure 12: Settings → Layer - Strobes.

Main page

Setting	Range	Factory default	What it does
Visible	on / off	off	Shows or hides the strobes.
Opacity	0.00–1.00	1.00	Transparency of the strobes.
Intensity	0.0–2.0	2.0	Brightness of the flash.

Setting	Range	Factory default	What it does
Strobe Mode	Solid / Vertical Bars	Solid	Rectangles or vertical bars.
Show Top Strobes	on / off	on	Flash panels along the top edge.
Show Bottom Strobes	on / off	on	Flash panels along the bottom edge.

Colors page: Strobe 1 Color ... Strobe 4 Color set the colour of each of the four panels. All four are white at the factory.

The top and bottom rows have their own sets of pages: **Top Audio, Top Behaviors, Top FX, Top Size** and the same four with **Bottom**. They have the same settings, so the table shows them once.

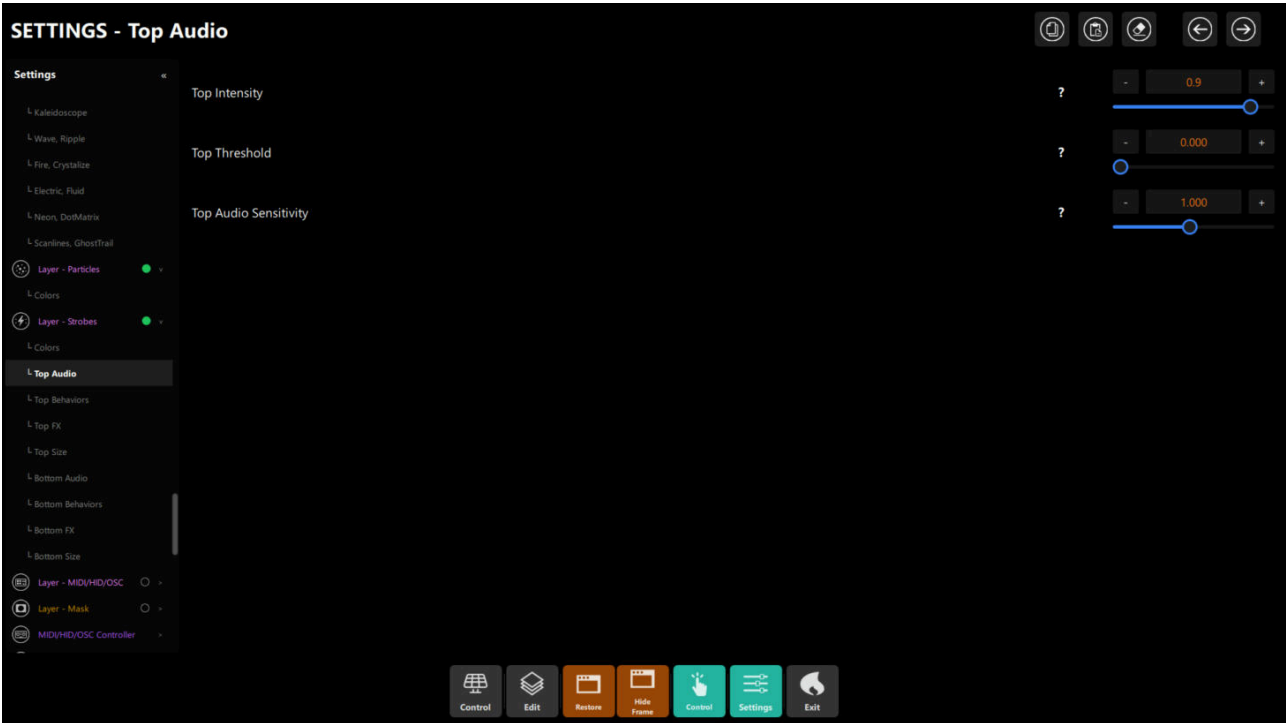


Figure 13: the Top Audio page. The Bottom pages are identical.

Page	Setting	Range	Factory default	What it does
Audio	Intensity	0.1–1.0	0.9	Strength of this row's flash.
Behaviors	Min Opacity	0.00–0.80	0.40	The weakest a flash can be.
Behaviors	Max Opacity	0.20–1.00	1.00	The strongest a flash can be.
Behaviors	Min Flash Duration	10–100 ms	20	How long each flash lasts.
FX	Enable Glow	on / off	on	Soft glow around the flash.

Page	Setting	Range	Factory default	What it does
FX	Enable Radial Glow	on / off	on	A round glow that spreads from the flash.
FX	Glow Intensity	0.0–1.0	0.8	Strength of the glow.
FX	Glow Radius	1.0–4.0	3.0	Size of the glow.
Size	Strobe Spacing	0.00–0.40	0.06	Gap between the four panels, as a share of the width.
Size	Strobe Width	0.00–0.60	0.20	Width of each panel, as a share of the width.

 Note

Strobes are triggered only by the drop detector, not by a sound level. That is why the menu has no threshold, sensitivity or frequency controls for them. Shape the flashes with **Intensity**, **Min/Max Opacity**, **Min Flash Duration**, the glow controls, **Spacing** and **Width**.

5. A look to start with

1. Open **Settings** → **Layer - Lighting** and switch **Visible** on.
2. Open **Layer - Spotlights**, switch **Visible** on and choose **Normal** mode.
3. Open **Colors** and give the six beams two or three colours that match your visuals.
4. Open **Layer - Particles** and switch **Visible** on. Leave the defaults.
5. Play music. Adjust **Opacity** of each part until the lights support the picture instead of hiding it.
6. For big moments, switch **Layer - Strobes** on and use **Intensity** 1.0 to start with.
7. Check the result on the actual screen or projector.

Ideas

- **Club look:** Spotlights in Laser mode, **Rotation Speed Factor** 1.0, particles off, strobes on.
- **Soft ambience:** Spotlights in Normal mode at **Intensity** 0.3, **Flicker** off, particles on with low **Density**.
- **Only the drop:** keep only Strobes on, with **Intensity** 2.0 and **Bottom Strobes** only.

6. Use it with the rest of the show

- **Touch panel:** the **Layers** page has tiles for each part, so you can bring lights in and out live.
- **Programming Schedule:** a schedule row can show or hide the Lighting layer at a set time. See [Programming Schedule](#).
- **Controller:** map a controller button to the layer's **Visible** setting or to the shape actions. See [MIDI & HID Controllers](#).
- **Other layers:** Lighting sits above the Vinyl Disc and below the visualizers, so the waveforms stay readable on top of the beams.

7. Image effects

The same family of effects is available in three places:

Where	What it affects	Needs
Layer - Lighting (the pages under it)	The whole layer: spotlights, particles and strobes together.	Enable Shader on.
Layer - Spotlights (the pages under it)	The spotlights only .	Nothing extra.
Layer - Particles / Strokes	They have no effect pages.	—

The pages and their settings (range for the whole layer first; the spotlights use the same names):

Page	Settings
Color Adjustments (spotlights)	Brightness, Contrast, Saturation 0–2; Gamma 0.5–2; Exposure –2 to 2.
Color Effects	Invert 0–1, Hue 0–1, Sepia 0–1. The whole layer also has Threshold 0–1.
Blend, Glow	Blend Color, Blend Amount 0–0.99, Glow 0–1, Glow Color. The whole layer also has Move Time 0–100.
Vignette, Noise, Edge	Vignette 0–1, Pixelation 0–10, Noise 0–1, Edge Detection 0–1.
Chromatic, Glitch, Mosaic	Chromatic Aberration 0–1, RGB Split 0–2, Glitch 0–1, Mosaic 0–0.05.
Kaleidoscope	Kaleidoscope 0–1, Sides (6–24 for the layer, 3–24 for the spotlights), Rotation 0–6.28, Offset X/Y –0.5 to 0.5.
Wave, Ripple	Wave 0–1, Speed, Frequency; Ripple 0–1, Ripple Frequency 0–2, Ripple Speed.
Fire, Crystalize	Fire 0–1, Fire Speed, Fire Scale; Crystalize 0–1, Crystal Scale, Crystal Speed, Crystal Edge.
Electric, Fluid	Electric 0–1, Intensity 0–5, Speed 0–5, Branches; Fluid 0–1, Speed, Scale, Complexity 0–5.
Neon, DotMatrix	Neon Outline, Thickness, Intensity; Dot Matrix, Rows, Cols, Intensity.
Scanlines, GhostTrail	Scanlines, Density, Brightness; Ghost Trail, Distance, Steps, Noise.
Singularity (whole layer only)	Singularity 0–1, Radius 0–2, Twist 0–10, Glow 0–5, Rotation ± 6.28 , Speed 0–5, Offset X/Y.
Bottom Shadow (whole layer only)	Bottom Shadow 0–1, Blur 0–10, Offset X/Y.

Page	Settings
Side Shadow (whole layer only)	Side Shadow Neon 0–5, Angle ± 180 , Blur 0–10, Layers 1–10, Speed 0–5, Saturation 0–5.

Every effect is **off at 0**. Turn up one effect at a time; they add up, and a few together can make the picture hard to read.

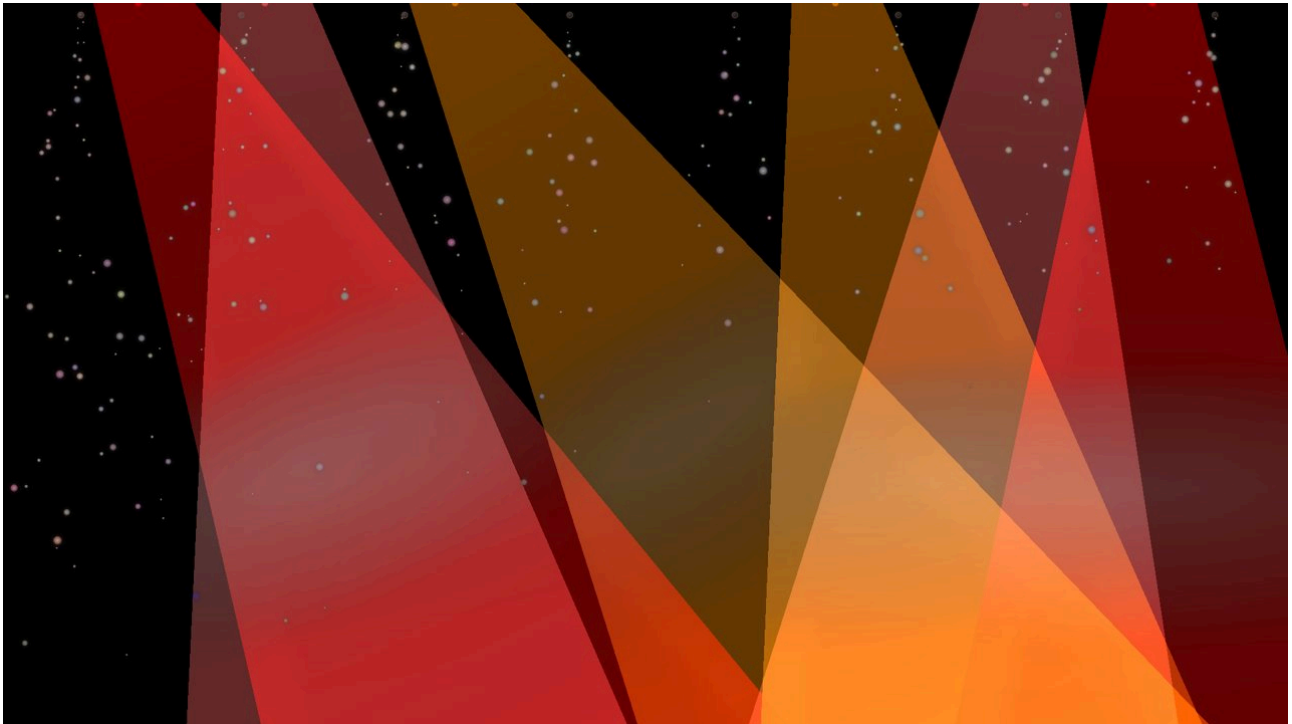


Figure 14: spotlights and particles with Enable Shader off, no effects.

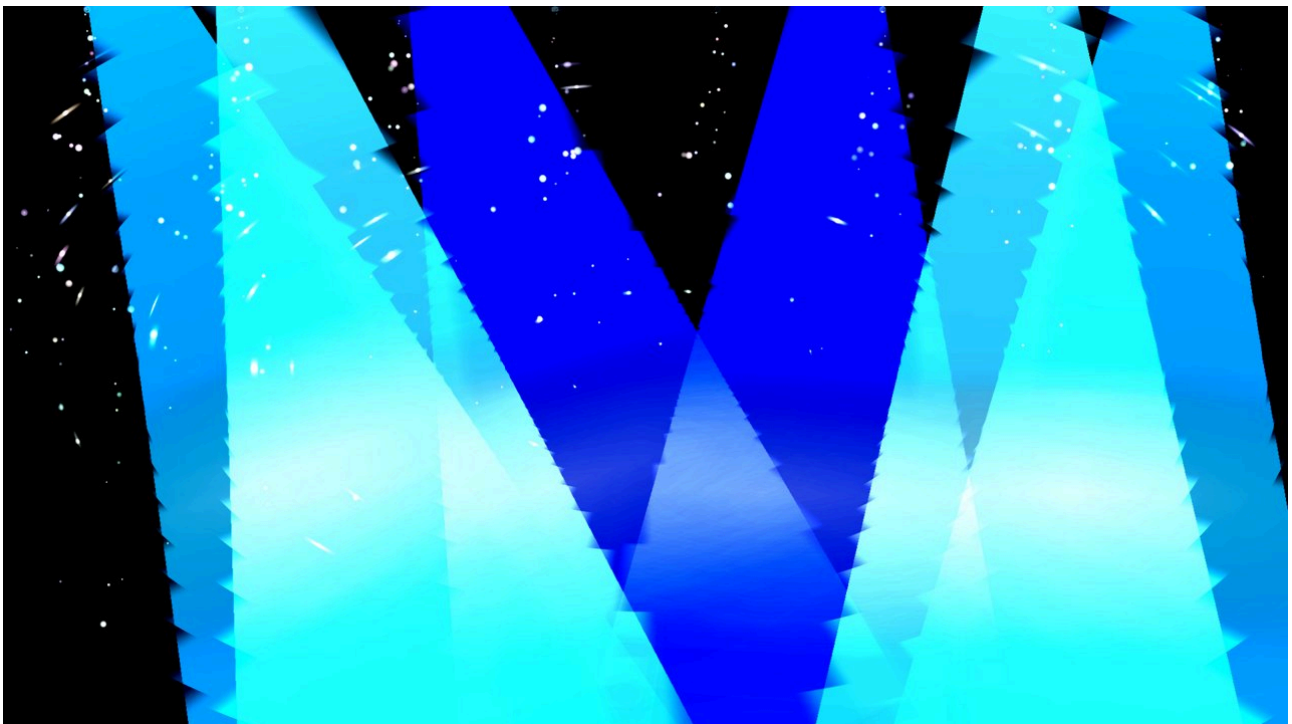


Figure 15: the same scene with Enable Shader on, Hue 0.55 and Kaleidoscope 0.6.

8. Troubleshooting

Problem	Likely cause	What to do
Nothing appears	The layer or the part is off.	Switch Layer - Lighting → Visible and the part's Visible on. Check the Lighting Opacity is above 0.
Beams or particles are still	No sound reaches the app.	Check the audio input. See Audio Setup & Beat Sync .
Strobes never flash	They only flash on the kick during a track's drop.	Play the loudest part of a track. Check Show Top/Bottom Strobes and Intensity .
You look for a Strobes threshold or sensitivity control	Strobes flash only when the drop is detected, so they have no such controls.	Use Intensity, Min/Max Opacity and Min Flash Duration instead.
Picture looks harsh or burnt out	Brightness or Contrast is above 1 with Enable Shader on.	Set both back to 1.0.
The layer slows the show down	Many effects stacked, or particles at full density.	Lower Density , turn Enable Shader off, or switch off parts you do not need.
Particles only at the top	Bottom Emitters Enabled is off.	Switch it on.
Controller shapes do not show	MIDI/HID/OSC Actions is off, or no control spawns a shape.	Switch Layer - MIDI/HID/OSC → Visible on and check the mapping.

9. For advanced users: configuration keys

All settings live under `elements.lightingView` in the configuration. They can be changed with the HTTP API (PATCH `/api/v1/config`), for example:

```
{ "elements": { "lightingView": {  
  "visible": true,  
  "spotlights": { "visible": true, "spotlightMode": 0, "intensity": 0.8 },  
  "particles": { "visible": true, "bottomEmittersEnabled": true },  
  "strobes": { "visible": false }  
} } }
```

Key	Meaning
<code>visible, opacity, shaderEnabled</code>	The layer container.
<code>spotlights.spotlightMode</code>	0 = Normal, 1 = Laser.

Key	Meaning
<code>strobes.strobeMode</code>	0 = Solid, 1 = Vertical Bars.
<code>strobes.top.*</code> , <code>strobes.bottom.*</code>	Per-row settings. Keys such as <code>audioThreshold</code> , <code>audioSensitivity</code> , <code>minFrequency</code> , <code>maxFrequency</code> and <code>maxFlashDuration</code> exist in the file but have no effect on strobes.
<code>spotlights.audioThreshold</code> , <code>particles.audioThreshold</code>	Sound level above which the beams move and the particles are emitted. They have no menu control (defaults 0.03 and 0.02).
<code>midi.visible</code> , <code>midi.opacity</code>	The controller shapes.

See the [HTTP & WebSocket API](#) guide for how to read and change the configuration.