

# Introduction

Welcome to the LaserCube Guide. Start here to learn about Wicked Lasers LaserCube devices and how to use LaserOS. You will learn to create a crowd-pleasing laser show, play games, etch images, pop balloons, draw with lasers, paint images with light, play laser instruments, sync with music, and much more.

This guide will get you started with your LaserCube, teach you about the LaserOS laser projector app for Windows, Mac, and Android, and provide tips, examples, and links for further content and support.



## Getting Started

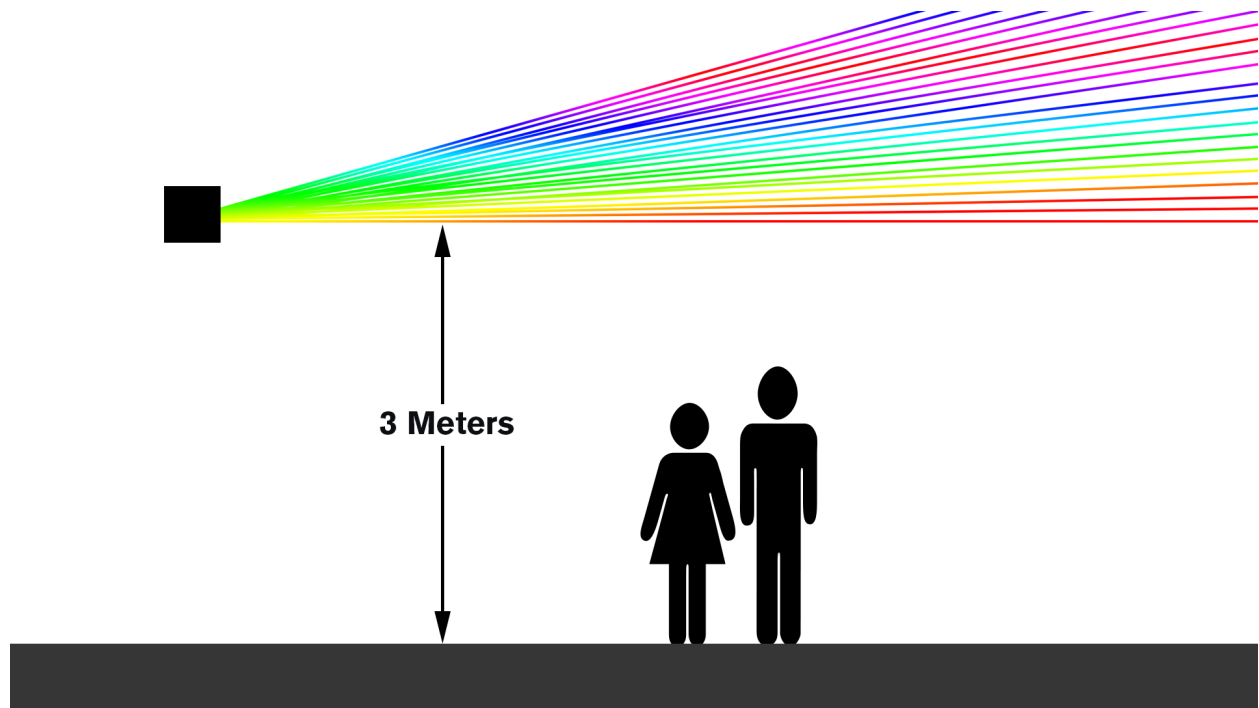
### Safety Review

Lasers can cause injuries and damage to property. Please review our [Safety Guidelines](#) and [Laser Safety Video](#) carefully.

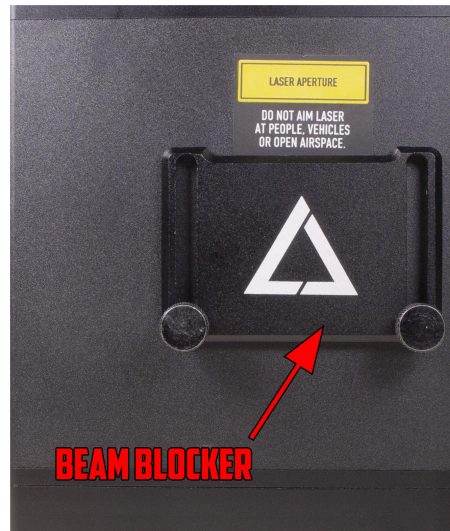


Never shine the lasers on people or animals.

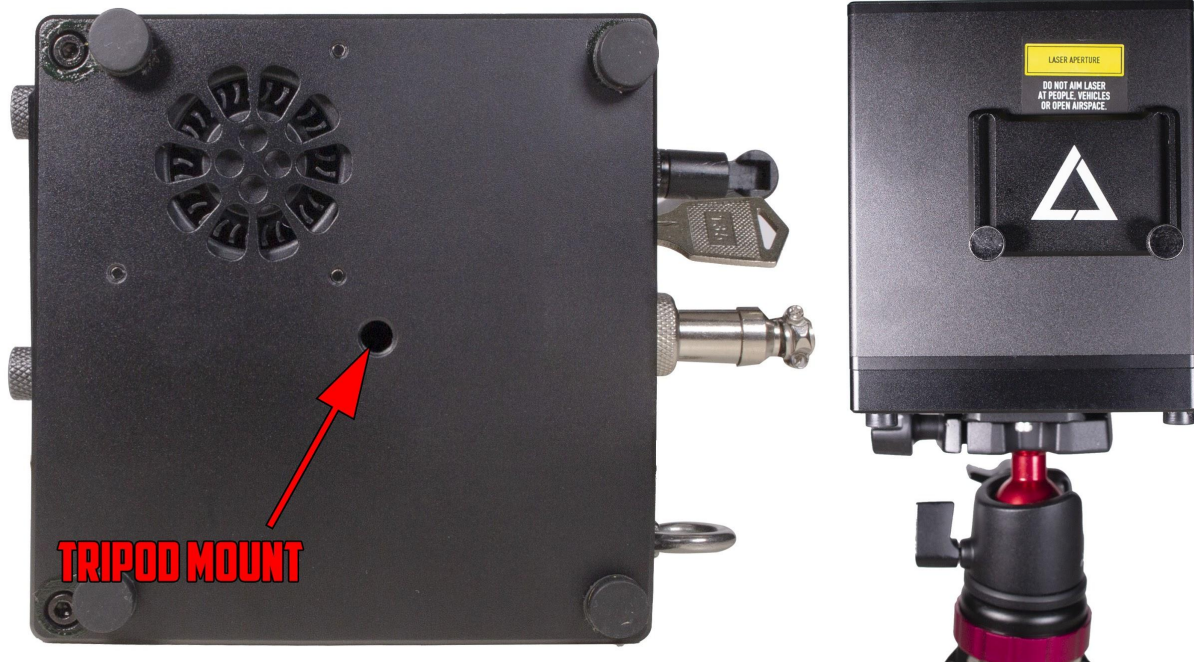
Laser shows look best when seen from a safe distance, and should be installed 3 meters above the floor wherever people may be present.



One way to make sure laser beams don't shine on people is to use the beam blocker. Raise it up and tighten it down to cut off the lower projections.



There's a tripod mount at the bottom of the cube, so you can make sure it's securely fastened during use.



Safety zones can be set up in LaserOS which provide areas where the beam won't shine in order to protect cameras and other sensitive equipment. For information on setting up and using safety zones, please refer to the *Safety Zones* section in the *Settings Mode* of LaserOS.

When using the advanced engraving or balloon popping features, make sure to wear eye protection.





Do not operate near flammable materials, and always have a fire extinguisher available.

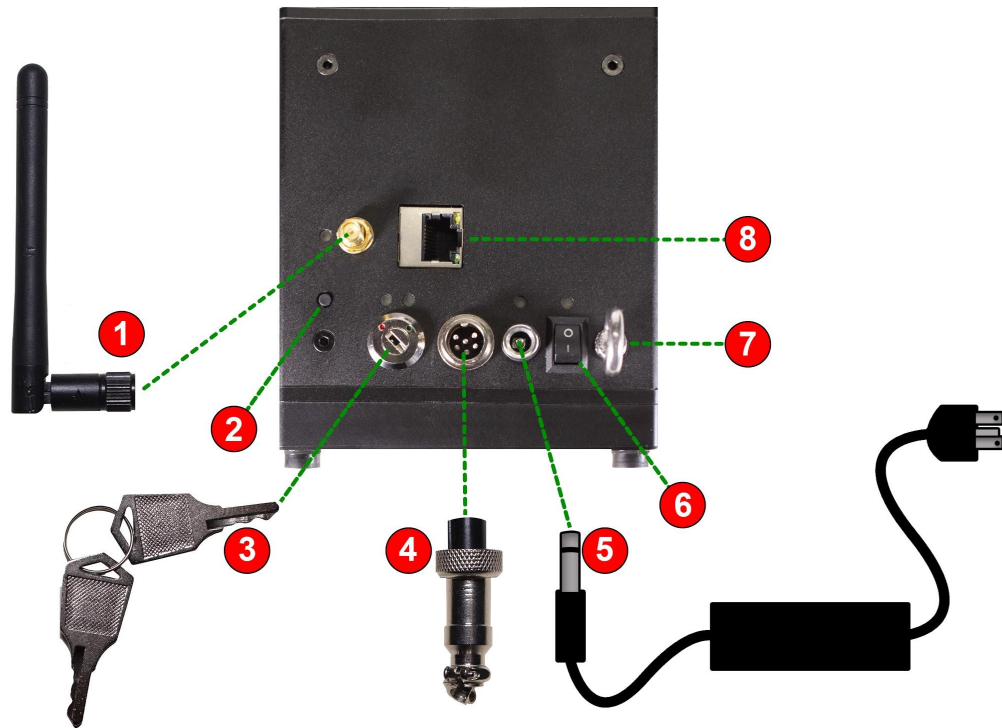
Other safety measures on the laser cube include a jumper and a lock. Both must be installed properly in order for the lasercube to function. When the lasercube is not in use, turn off the power and safety keys, and close the beam blocker completely.



Remember to review the [Wicked Lasers Safety Video!](#)

## Hardware Components

### Wifi LaserCube



1. Wifi Antenna
2. Wifi Mode Button
3. Key Lock
4. Safety Jumper
5. Power Supply
6. Power Switch
7. Eye Bolt Safety Support Mount
8. RJ-45 Ethernet Port

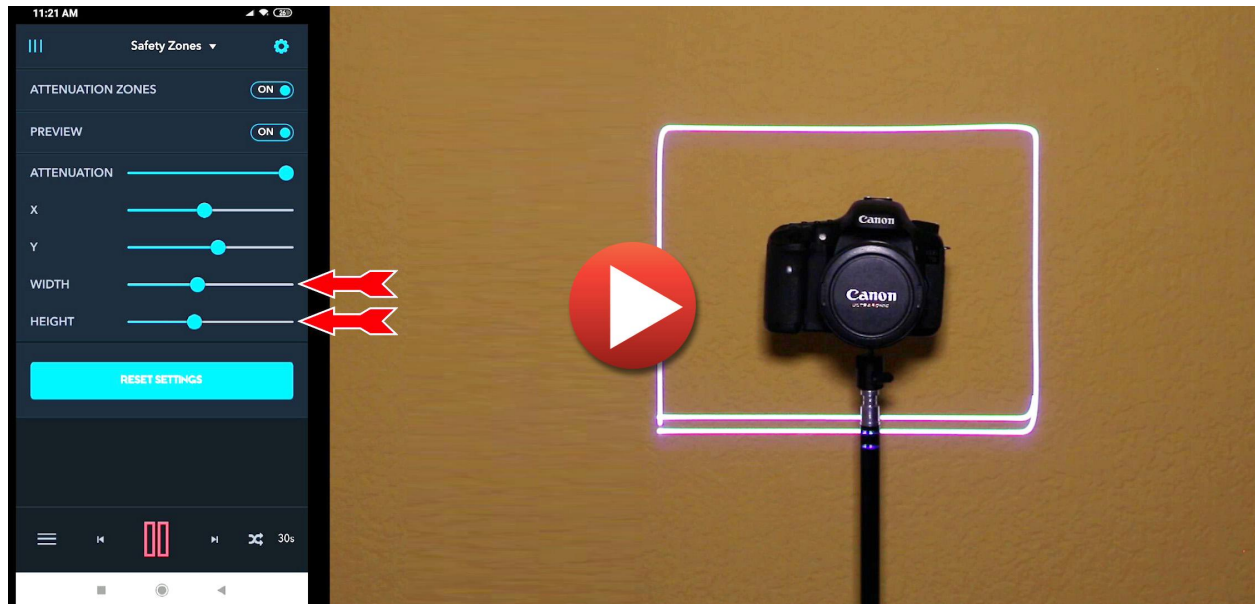
## USB LaserCube



1. Laser Aperture - Laser light is emitted from this opening.
2. Beam Block - Prevents laser emission and also restricts the laser scan from going into an audience.
3. Key Control LED indicators – shows if the LaserCube is Locked/Unlocked and when the lasers are emitting.
4. Charge Status LED indicator – changes color from red to green to show battery charge
5. Power Switch LED indicator - shows if the LaserCube is powered On/Off
6. Micro USB Port - Provides connection and control of the LaserCube via a PC/Mac/Android device. The laser will turn off if it is disconnected.
7. Key Control - Prevents accidental operation. Resetting of the key control will be required if there is a power loss or remote interlock cycling.
8. Remote Interlock Connector- Provides a safety shut-off for terminating the laser emission via a jumper connection. A jumper is included with the product.
9. Power (DC) Input - Power connection/charging port via wall outlet.
10. Power Switch - Toggles the power ON or OFF. Setting up the LaserCube

## Mounting the LaserCube

Securely mount the LaserCube on a tripod, truss, or other safe location such that the beam will not shine on people, animals, fragile equipment, or flammables. If necessary please review our [Safety FAQ](#) and view our [Laser Safety Video](#). The *beam blocker* on the front of the LaserCube may also be used to prevent the beam from shining into unwanted areas. In addition, *safety zones* may be created in the setup section of LaserOS. To learn how to set up safety zones, please view the [Laser Safety Zones Video](#).



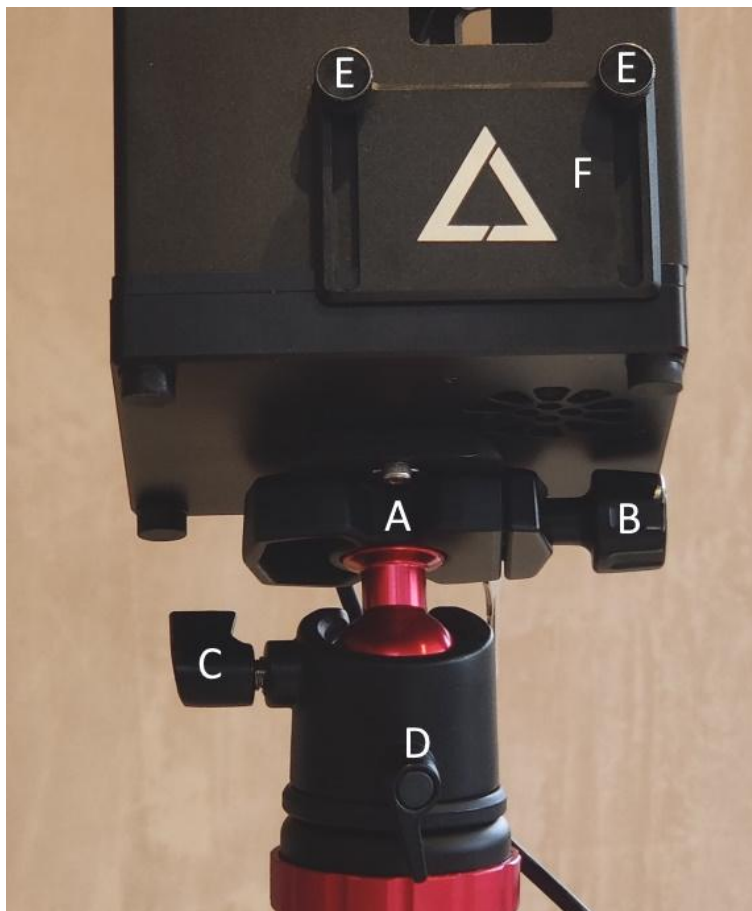


## Using the Tripod



Attach the tripod quick release plate to the underside of the cube. Slide it as far towards the back of the cube as possible before tightening the screw.

This gives maximum clearance to the fan air intake, and optimises center of balance when the cube is tilted upwards



Mount the quick release plate into the quick release clamp (A) and tighten screw (B) to secure the cube to the tripod ball head.

Tilt Lever (C) tightens and loosens the ball, allowing the cube to be tilted left, right, forwards or backwards.

Pan Lever (D) tightens and loosens the rotation mechanism allowing the cube to be rotated left or right.

To lower the safety beam stop (F), slightly loosen each of the beam stop screws (E)

## Charging the Battery

Please charge the LaserCube before use. Connect the power supply to the power supply port on the LaserCube. Plug in the wall outlet plug. When charging, the LED above the power supply connection on the LaserCube will be red. When the LaserCube is fully charged, the LED will turn green. You can now unplug the power supply.

## USB LaserCube Setup

Install LaserOS on your Android device, Mac, or Windows PC as described in the *Installing LaserOS* section.

Connect the correct cable. For Mac and Windows PCs, a USB to Micro USB cable is required. For most Android devices, a USB-C to Micro USB cable is required.

Make sure the safety jumper is installed. Turn the key to the on position. Position yourself behind the laser and lower the beam blocker to the desired position (either fully open or partially blocking the beam for safety reasons).

Turn the power switch on. If LaserOS does not auto-detect your laser and start automatically, start the app.

## Network LaserCube Setup

At the first power on, the LaserCube will be in WiFi Server Mode.

### Enabling The Laser

Make sure the interlock plug is installed and then cycle the key-switch from Red to Green. The two emission warning LEDs should come on.

A short press of the Mode Button will cause the Cube to use its laser to project the Firmware Version (if at 0.6 or above), followed by "WIFI SERVER" then "GWIP:192.168.1.1"

It will also create a 2.4GHz wireless network with the **AP name "LaserCube"**

The Status LED will flash Cyan, showing that the WiFi server is waiting for connection.

Connect to this wireless network (your OS may advise that this network has no internet connection, so you may have to select an option to stay connected to it).

The WiFi password is **Laser2020** - Note, the password is case sensitive.

Once connected, the Status LED should remain Cyan, and stop flashing.

If the firmware version was not projected before the WIFI SERVER text, [update the firmware](#).

### Firmware Update

Download the v0.6 OTA update binary from here:

<https://drive.google.com/file/d/1D6U-4ZN77vfxXTYdOpx5dqSHFskNEpAS/view?usp=sharing>

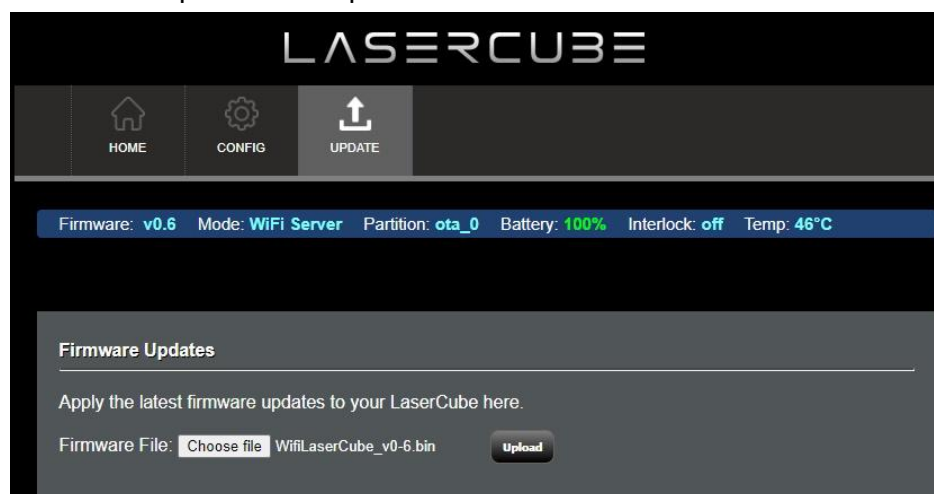
Connect to the LaserCube in WiFi Server mode, as described in [Initial Setup](#).

Browse to 192.168.1.1 and log in using the following credentials:

User Name: **LaserCubeUser**

Password: **Laser2020**

Go to the Update Tab. Click Choose File and select the update binary. Click Upload. Wait for the update to complete and the LaserCube reboot.



## Limitations

Performance depends on availability of the network used to communicate between the device running LaserOS and the LaserCube. If you connect over WiFi via a router and the entire family is using it, with someone streaming Netflix at 4k, the projections will break up.

If your neighbor has a WiFi extender in every room and running a WiFi analyser app shows every WiFi channel in use at high signal strengths, the projections will break up.

For outdoor use, "open field" the WiFi connection is great.

For indoor use, where the WiFi network is congested or there are interfering networks present, a wired Ethernet connection is preferable.

Android OS versions below 10 have particularly poor UDP performance over WiFi, so should be avoided.

## Connection Modes

The Network LaserCube supports 4 connection modes:

WiFi Server

LAN Client

WiFi Client

LAN Server

The mode can be selected via use of the Mode Button, or through the LaserCube web admin - [General Tab](#).

## Mode Button

Having [Enabled the Laser](#) (Two white LEDs on) a brief press on the Mode Button will cause the laser to project a line of text, displaying the current mode and status.

A long press (over 2 seconds) will enable the mode menu.

An asterisk will be projected in front of the current mode.

Subsequent short presses will cycle through the list of available modes:

Wifi Server - Status LED flashing Cyan.

LAN Client - Status LED flashing Green.

WiFi Client - Status LED flashing Blue.

LAN Server - Status LED flashing Yellow.

A long press (over 2 seconds) will select the mode currently shown. If not the same as the current mode, the LaserCube will briefly reboot, in order to change the networking mode.

### WiFi Server

Wifi Server mode is indicated by a Cyan Status LED colour.

If the LED is flashing, this indicates that a Wifi client has not yet connected to the LaserCube.

The LaserCube acts as the wireless DHCP server. Once a client connection has succeeded, the LED will go from a slow flash to solid Cyan.

In order to connect in this mode, the user will need to select the WiFi network with SSID “LaserCube” and use the WiFi password “Laser2020” to log in.

A short press of the Mode Button will project the WiFi Server status

### WiFi Client

In WiFi Client mode, the Cube can be made to connect to a router using WPS.

After selecting WiFi client mode, the LaserCube will reboot and the status LED will be off.

A short press on the Mode Button will confirm Client mode has been selected and will display IP:Not Connected.

Hold the Mode Button in for 5 seconds (after 2, the status LED will begin flashing blue, but continue holding until the Status LED turns White. This indicates the Cube is in WPS mode.

Press the WPS button on your router.

If connected successfully, the Status LED will turn solid blue.

A Short press on the Mode Button will project the WiFi Client status, including IP address obtained from the router, plus the SSID of the network it had connected to via WPS.



Here, the IP address provided from the router is 182.168.1.180.

If you want to access the LaserCube web admin page, you need to use this address, rather than the default 192.168.1.1 when in WiFi Server mode.

### LAN Server

LAN Server mode is indicated by a Yellow Status LED colour.

If the LED is flashing, then this indicates that a LAN client has not yet connected to the WifiCube that is acting as an Ethernet DHCP server. Once a client connection has succeeded, the LED will go from a slow flash to solid Yellow.

Note: An Ethernet cable is required for this operating mode.

### LAN Client

LAN Client mode is indicated by a Green Status LED colour.

If the LED is flashing, then this indicates that the WifiCube has not yet connected to the User's DHCP hub/router. Once connection has succeeded, the LED will go from a slow flash to solid Green.



Note: An Ethernet cable is required for this operating mode.

## Test Mode

From V0.6 firmware, there is an extra entry in the Menu accessed from the Mode Button. Test mode is only available if V0.6 was factory programmed, it does not appear where V0.6 was installed via LaserCube web admin page OTA update.

If test mode is selected, via holding down the Mode Button for 2 seconds whilst the Test Mode menu item is being projected, the LaserCube will project one of a series of test patterns.

The pattern may be cycled by a short press on the Mode Button.

There is now way to exit the test mode, other than turning the LaserCube off, then back on again.

## LaserCube Web Admin Page

The LaserCube serves a Web Admin Page for adjusting configuration settings.

Obtain the IP address of the cube by a short press on the Mode Button.

Open a web browser and go to that IP address.

Log in using the following credentials:

User Name: **LaserCubeUser**

Password: **Laser2020**

The Web Admin Page has 3 Menu sections:

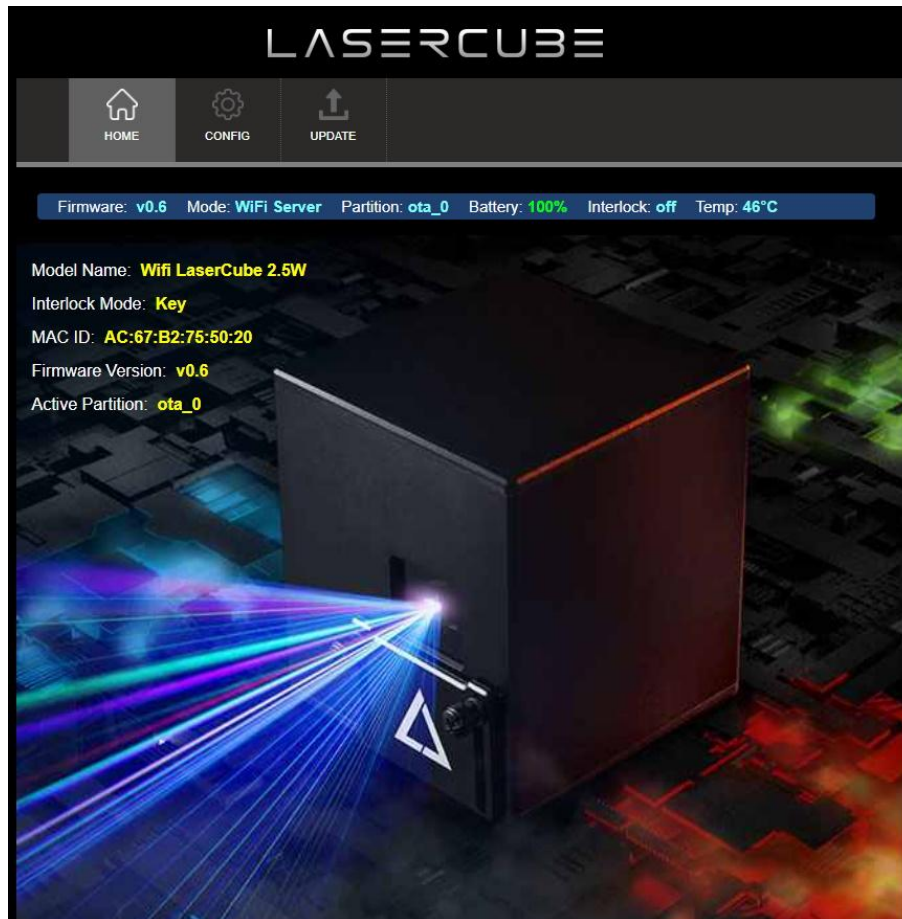
[Home Menu](#), showing general info.

[Config Menu](#), for Network and mode settings.

[Update menu, for Firmware Update](#).

### Home Menu

The Home Menu shows the Model Name, Interlock type, firmware version and Firmware Active Partition. There are 2 partitions to allow fall back to a good working state should an update fail or be interrupted.



## Config Menu

The Config Menu has 3 tabs, for network set-up and mode selection:

[WiFi Tab](#), for Wireless ConnectionSettings

[LAN Tab](#), for Wired Connection Settings

[General Tab](#), for Connection Mode Selection

## WiFi Tab

The screenshot shows the LASERCUBE web interface. At the top, there's a navigation bar with 'HOME', 'CONFIG', and 'UPDATE' buttons. Below this, a status bar displays: Firmware: v0.6, Mode: WiFi Server, Partition: ota\_0, Battery: 100%, Interlock: off, Temp: 45°C. The main content area has three tabs: 'WiFi', 'LAN', and 'General'. The 'WiFi' tab is active, showing two sections: 'Wifi Access Point Config' and 'Wifi Client Config'. The 'Wifi Access Point Config' section includes fields for 'Wifi Channel' (set to 2), 'IP Address' (192.168.1.1), 'Subnet Mask' (255.255.255.0), 'SSID' (LaserCube), and 'Password' (masked). The 'Wifi Client Config' section includes fields for 'SSID' and 'Password', both masked. A 'Show Password' checkbox is present in both sections.

Section	Field	Value
Wifi Access Point Config	Wifi Channel	2
	IP Address	192.168.1.1
	Subnet Mask	255.255.255.0
	SSID	LaserCube
	Password	*****
Wifi Client Config	SSID	*****
	Password	*****

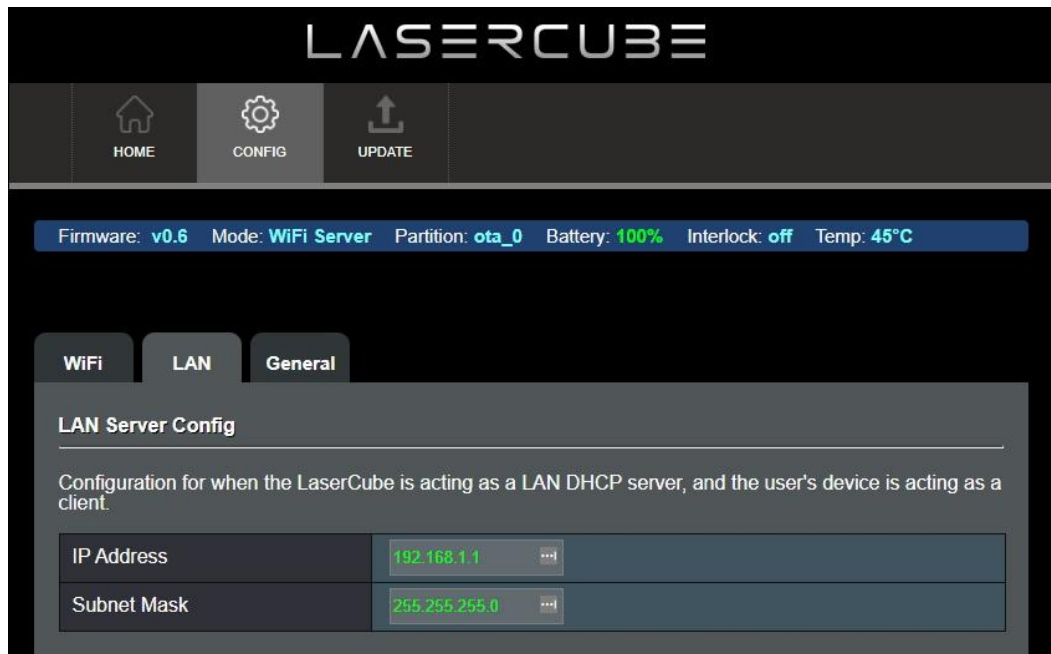
Where WiFi interference is present, the LaserCube WiFi channel can be changed.

The IP address and Subnet can be set for when the LaserCube is operating in WiFi Server mode, where it provides a DHCP service.

The WiFi Server mode default SSID and Password can also be changed.

If connecting to a router in WiFi Client mode, the SSID and WiFi password can be entered directly. This is useful if the router does not support WPS.

## LAN Tab



The IP address and subnet can be set for when the LaserCube is operating in LAN Server mode, where it provides a DHCP service.

## General Tab



The network operating mode can be set from the drop down tab.  
The LaserCube will reboot after changing the mode.



## Multi Network Cube Configurations

Multiple network laser cubes can be connected together using a hub or network switch to allow LaserOS software to project on up to 6 (maybe more) laser cubes at the same time.

The preferred connection method in all multi cube configurations is a wired connection via the cube's ethernet port (due to bandwidth reasons).

The simplest connection method is to have all laser cubes acting as ethernet clients, and then connect them to a hub which is acting as a DHCP server.

If there are more laser cubes than there are available ethernet ports on the user's HUB, a network switch will be required to allow further laser cube's to be connected.

If no DHCP hub is available, one of the laser cubes can be configured to be an ethernet DHCP server, and with the use of a network switch, all remaining cubes can be connected to the network switch and configured as ethernet clients.

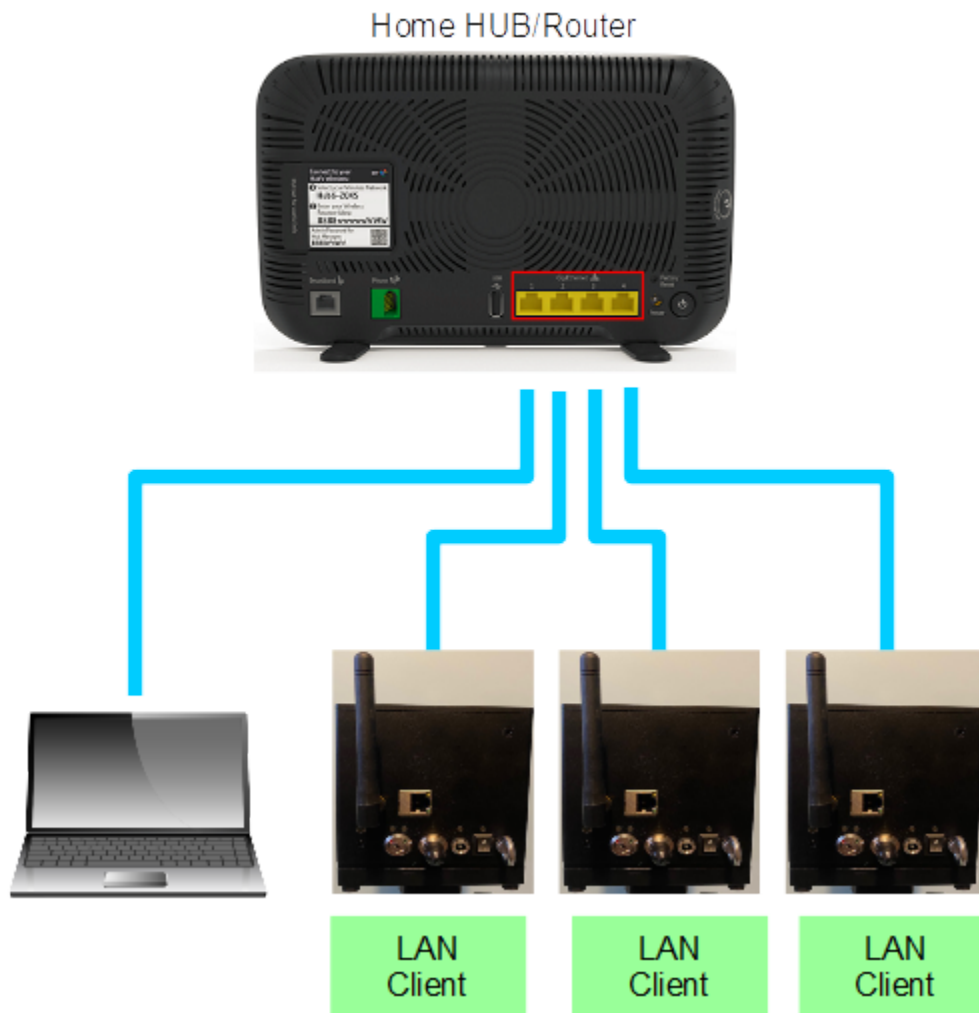
The server cube will then assign IP addresses to all the client laser cubes including the desktop PC or Phone running the laserOS software.

LaserOS has been tested to run with up to 6 network laser cubes simultaneously over the ethernet port with a D-Link 8 port gigabit network switch.

Example network configurations are shown on the following page.

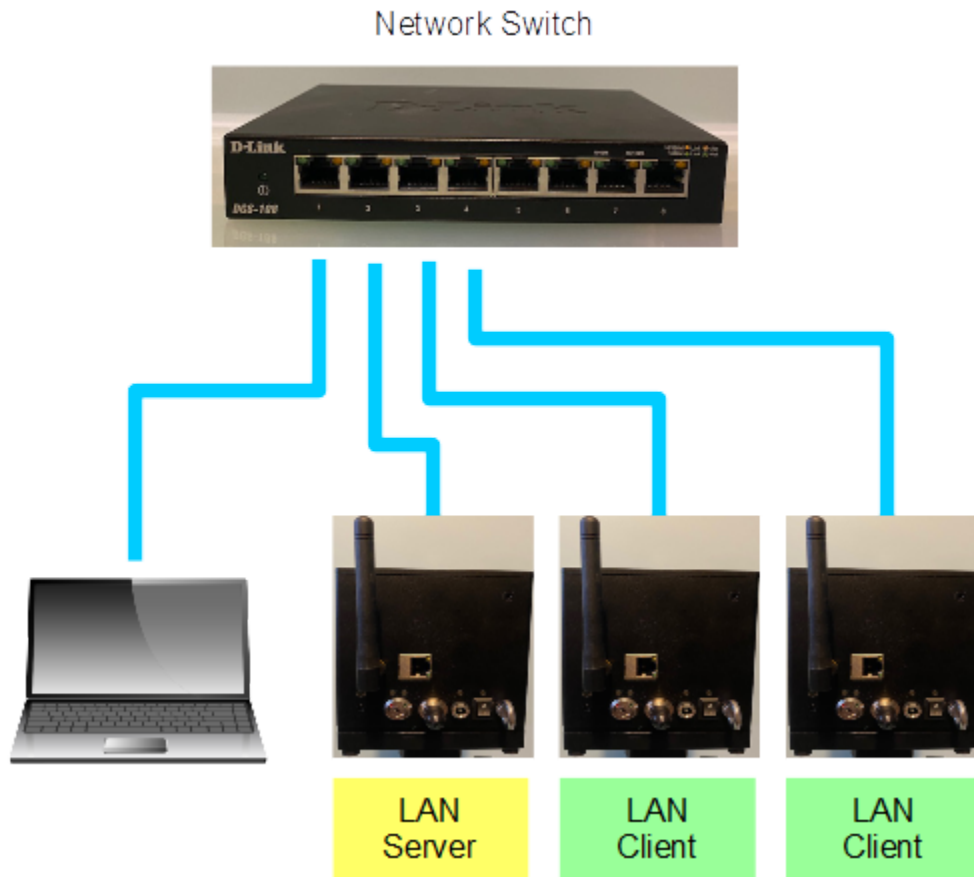
## LAN Setup Example 1

This configuration can be used when the user has all of their devices connected to a home HUB (broadband router). The user's hub will then allocate IP addresses to any network laser cubes connected as long as they are all set to be LAN clients.



This configuration could also be used with an additional network switch in order to increase the number of available ethernet ports, allowing more network laser cubes to be connected.

## LAN Setup Example 2



In LAN Setup example 2, The following equipment is required:

- Laptop or Mobile phone with USB to ethernet adapter
- 8 port 100M/1G ethernet switch (D-Link shown in the example)
- 2-6 Network Laser Cubes.

In this configuration, No DHCP hub is required as this will be performed by the first network cube. The first network cube (LAN server) is acting as the DHCP server and will assign the other devices on the network an IP address.

The other devices need to be set as LAN clients (PC/mobile phone will normally always act as a client on a computer network).

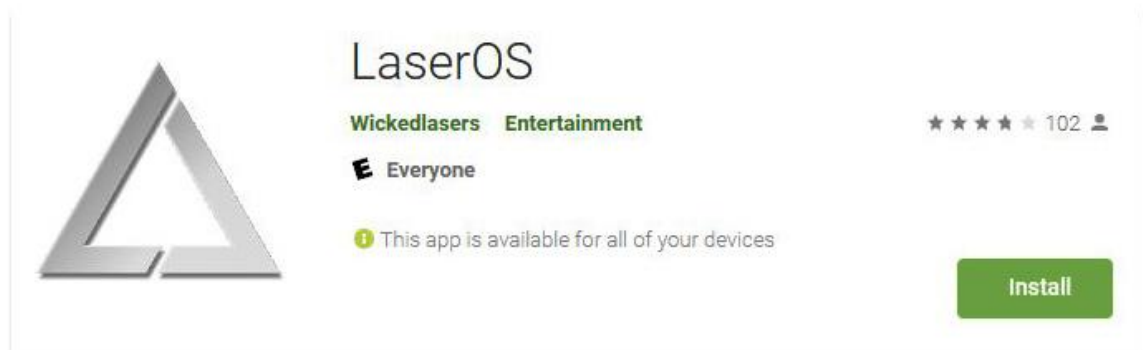
With an 8 port network switch, up to 6 laser cubes can be controlled by LaserOS from the laptop.

## Installing LaserOS

In order to operate your LaserCube, you will need to download LaserOS.

- **Download for Android**

- Follow this link to [download from the Google Play Store](#).



- It is recommended that, to keep LaserOS up to date, you enable *auto-update apps* in your Google Play Store app settings.

- **Download & Install for Windows PC**

- Follow this link to [download for PCs running Windows](#).
- Double click on the downloaded .exe file to install LaserOS.
- Occasionally, Windows will display the following warning. Click on “more info” to enable the “run anyway option”. Click on “run anyway”.



- **Download & Install for Mac**
  - Use the following link to [download and install for Mac OS](#).
  - Double-click on the .pkg file and run the installer app.
- **LaserOS is currently not available for iPhones.**
- **Software Updates**
  - Each time you start the Windows or Mac LaserOS software, it will perform a check to see if there is a version update available. It is recommended that you keep the version up-to-date in order to enable the latest features and improvements.



# Using LaserOS

## Enabling Network LaserCube

Pending product launch, the network capability is not visible immediately after LaserOS install.

To activate network capability, go to Settings, General and select Debug.

Selecting Debug will open a text box. In the text box, type testwifi, then OK.

A new button “Network” will appear at the top of the Settings, General page.

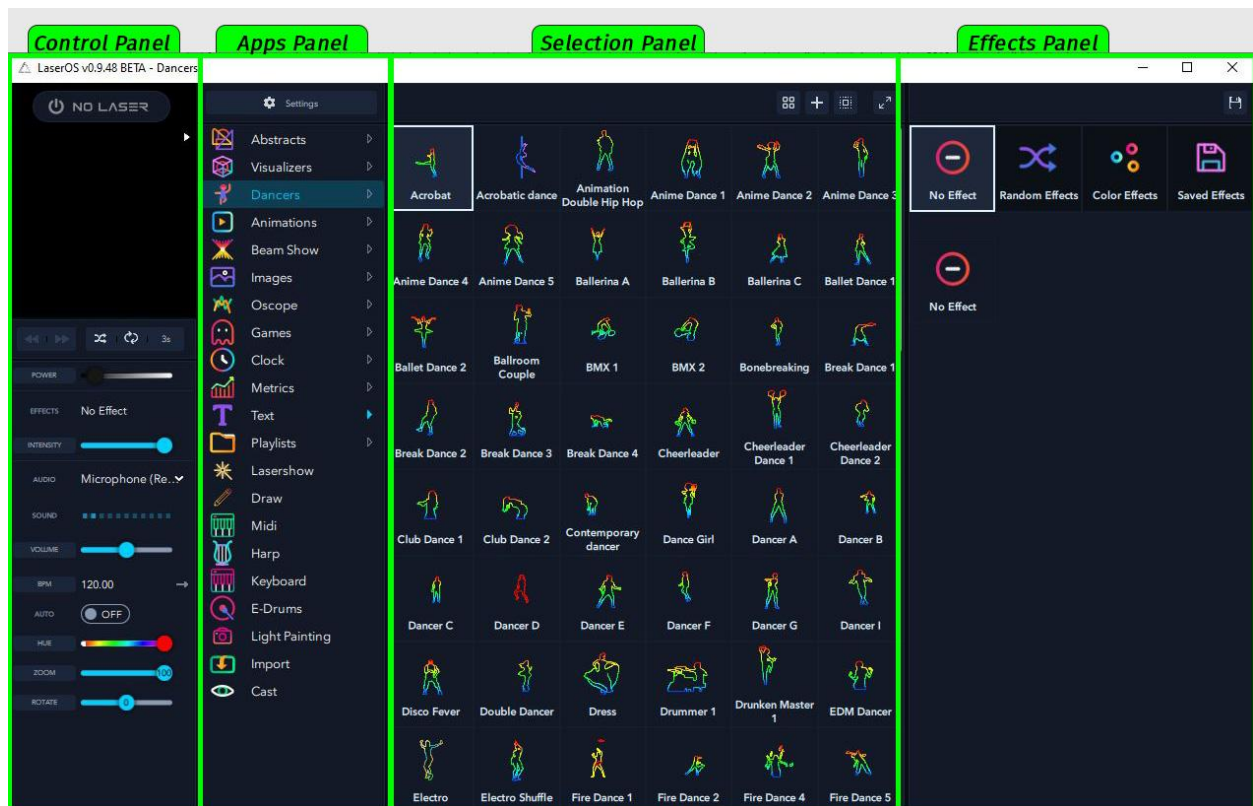
With the network switch off, LaserOS uses USB mode and cannot detect network cubes.

With the network switch on, LaserOS uses network and cannot detect USB cubes.

Having enabled Network in LaserOS, and connected to the LaserCube over WiFi or LAN - see [connection modes](#), the grey No Laser status indication will become Laser OFF.

Clicking Laser OFF will enable the Laser output and the text will change to Laser ON. Once your LaserCube is set up and connected, power it on with the power switch. Depending on your setup, your control device (Windows, Mac, or Android) may auto-detect the LaserCube and start LaserOS automatically. If LaserOS does not start automatically, start it by double clicking on the app icon (Windows or Mac) or taping on the app icon (Android).

## User Interface - Windows or Mac

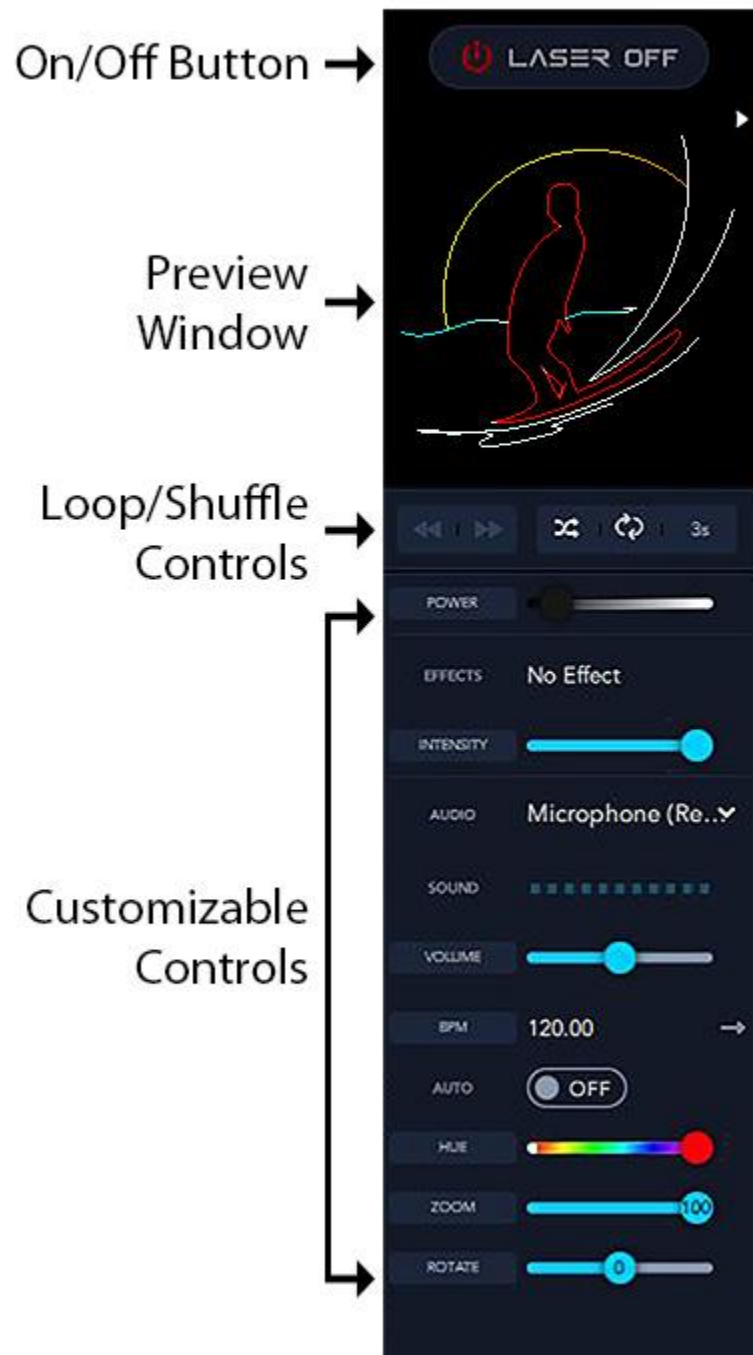


The LaserOS interface consists of 4 main panels: The Control Panel, the Apps Panel, the Selection Panel, and the Effects Panel.

## Control Panel

The Control Panel contains the laser status, preview panel, and a customizable set of control sliders, switches, and buttons.

# Control Panel



Clicking on a button in the control panel pops up options for the selected control. Dragging a slider decreases or increases the value of a control, and right-clicking on a slider allows you to enter a numeric value for finer precision.

Standard features of the control panel include laser power, level, effects selection, intensity, volume, hue, zoom level, and rotation. There are several advanced features as well:

### Autoplay Feature

The Autoplay feature creates an easy-to-use, fully customizable laser show with minimal setup time. You can shuffle and cycle (loop) between apps, selections, and effects, or create your own playlist to select from.



Autoplay controls are located in the control panel, just below the preview window. The buttons include previous, next, shuffle, repeat, and cycle time. To use autoplay, add items from the Apps Panel, the Selection Panel, and the Effects Panel.

In the Apps panel, the small, blue arrow next to an app indicates that it is included in your auto play selection. Clicking on the arrow toggles the inclusion.

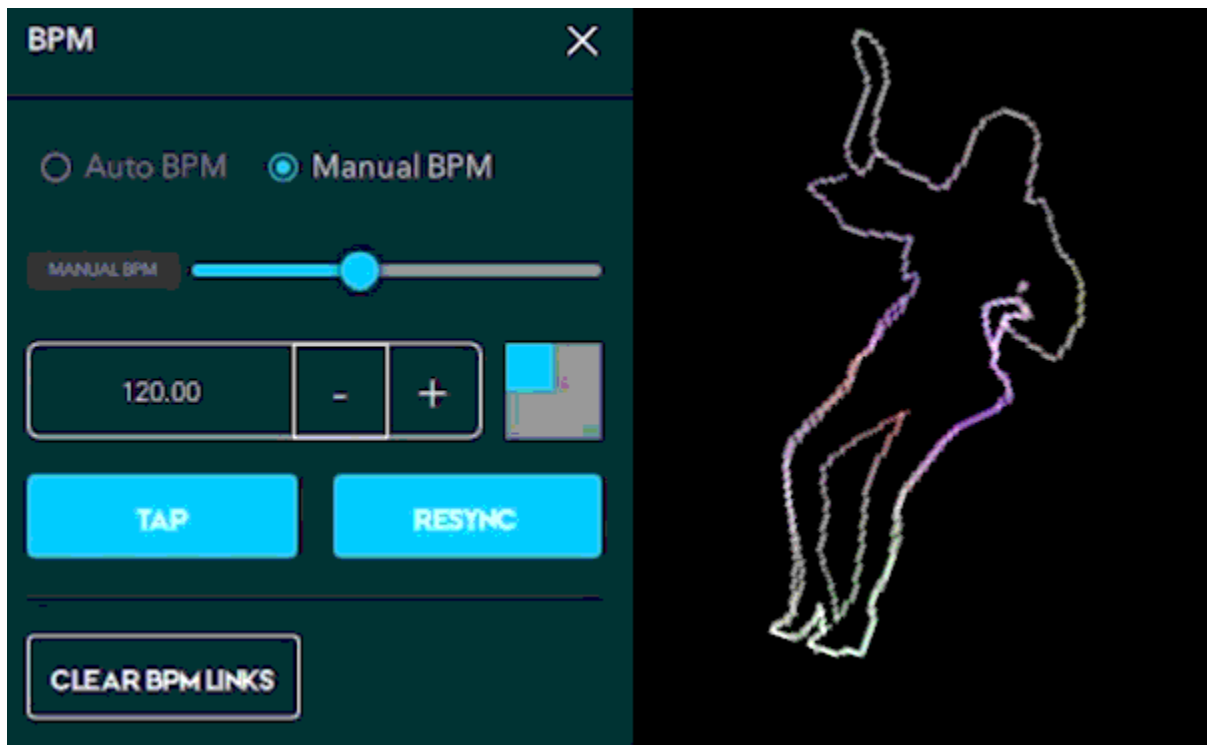
In the Selection Panel, double-click on an item to include it in your Autoplay laser show. Double-clicking toggles between de-selected (greyed out) or selected.

In the Effects Panel, select between “no effects,” “random effects”, “color effects”, or “saved effects”, and double-click on individual effects to de-select (grey out) or select an effect.

Back on the control panel, clicking on shuffle toggles between blue (selected) or grey (de-selected) to shuffle your selected apps, items, and effects. You can also use the repeat button to continuously repeat a custom playlist of laser projections. Lastly, the numeric value sets the amount of time in seconds that each item is displayed.

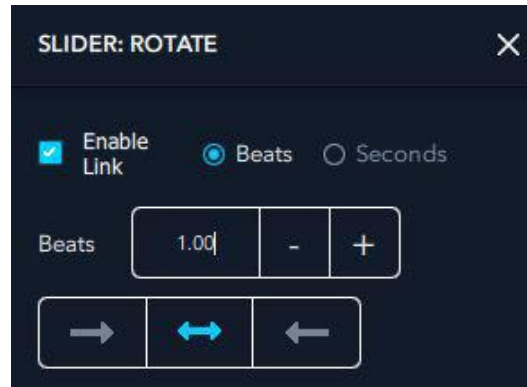
## BPM Feature

The Beats-Per-Minute feature allows you to synchronize your laser show to your music. It can be set automatically by detecting the beats of your music, or manually by entering the beats per minute. This can be done by entering a numerical value in the BPM pop-up window (accessed by clicking on the BPM button in the control panel) or by “tapping” the desired beat rate by clicking on “tap” at each beat until the desired timing is set.



*Illustration of BPM feature when used with rotation control.*

The BPM feature is enabled by clicking on the button next to the desired slider in the control panel. A pop-up window will appear with BPM options. For example, clicking the button next to the *rotate* slider pops up the following window, in which BPM can be enabled:



*Rotate Slider Pop-Up*

You can control the number of reactions of your laser projection per beat, and whether it animates forwards, backwards, or oscillates between the two.

To reset or clear the controls linked to the BPM feature, click on the BPM button and select “clear BPM links” in the pop-up window.

#### Customizing the Control Panel

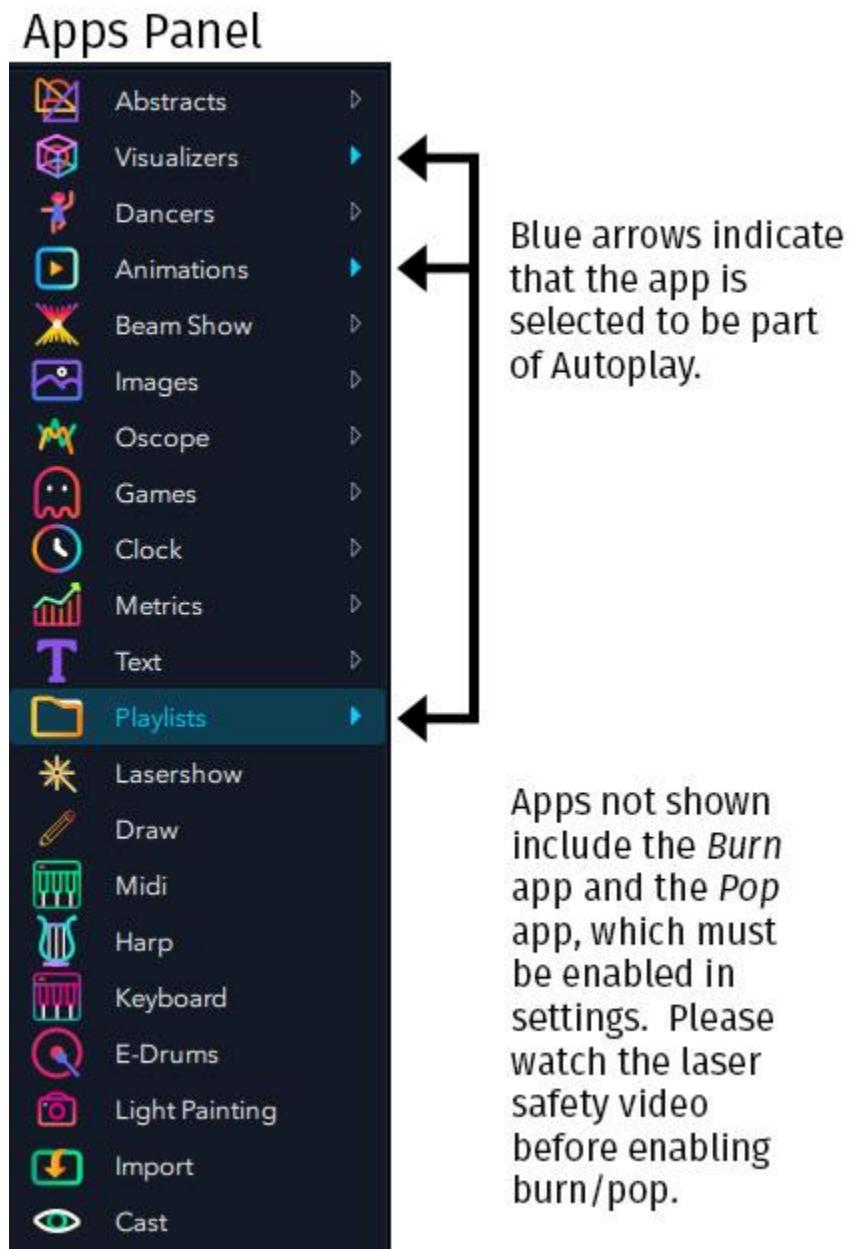
Sliders and controls from within other app settings may be added to the control panel on Windows or Mac versions of LaserOS. Holding the shift key, select and drag the desired app control to the control panel.

-



## Apps Panel

The Apps Panel contains the different apps included in LaserOS. Each app will be discussed in further detail in the individual apps section.

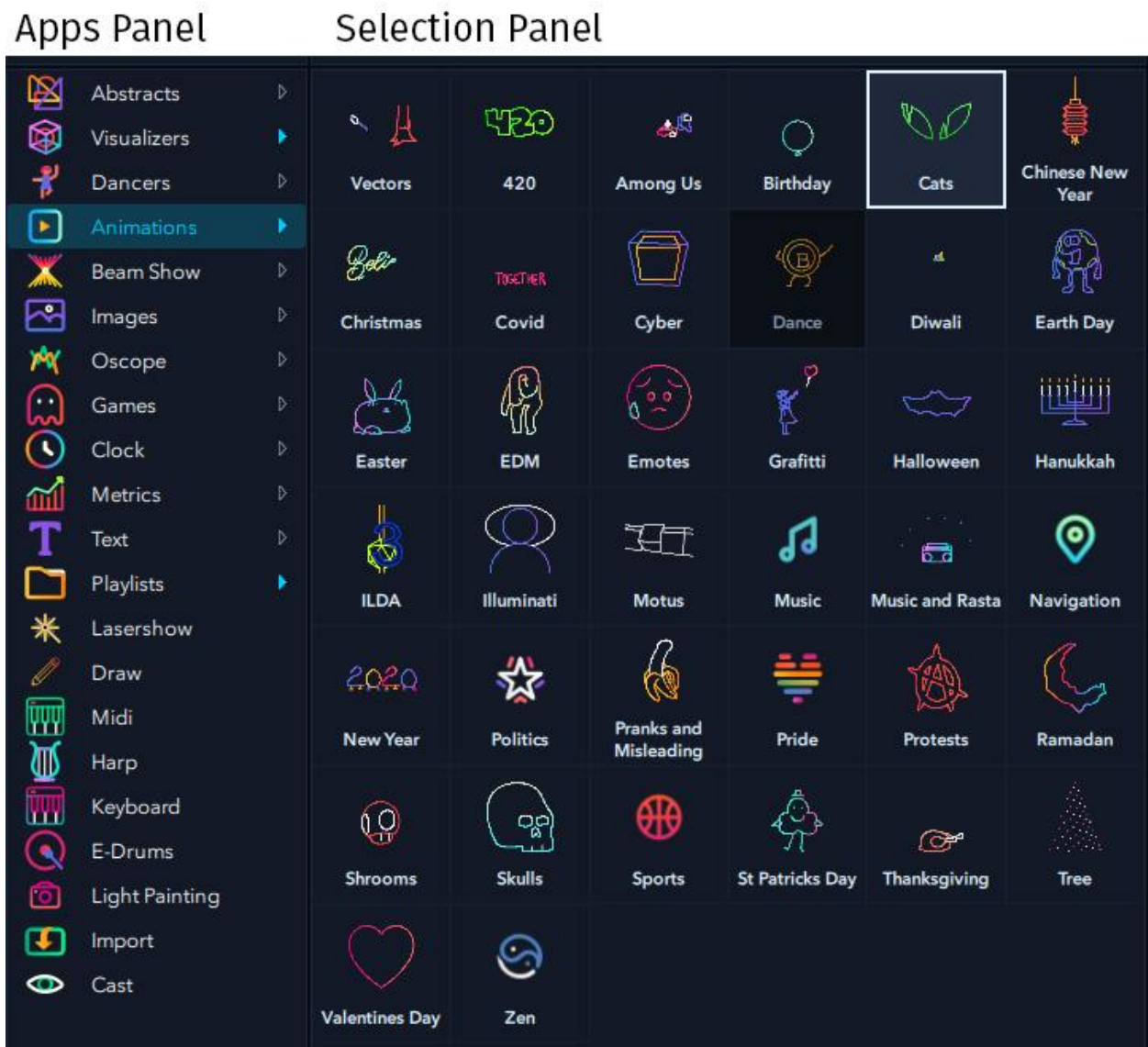


•

## Selection Panel

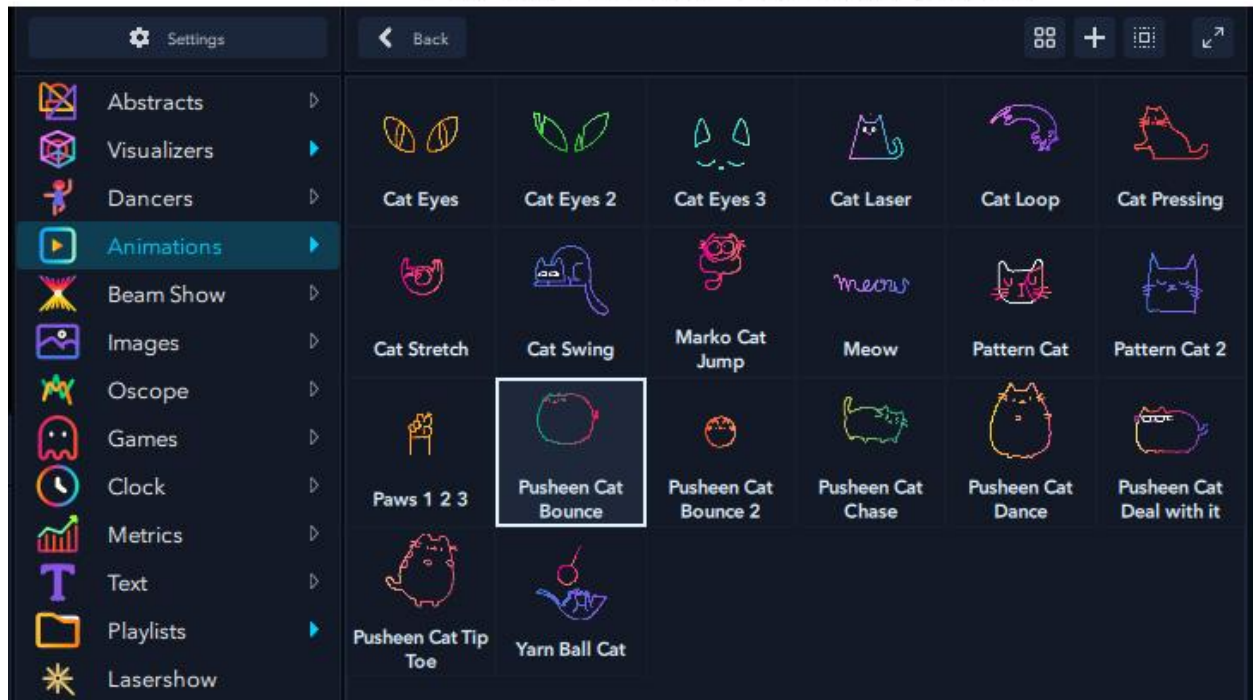
When an app is selected in the Apps Panel, the selections relevant to that app are displayed in the selection panel. Selections may be controls, individual items such as animations, or groups of items.

For example, when the *Animations* app is selected in the Apps Panel, several groups of animations are shown in the Selection Panel. Selecting the *Cats* group then brings you down into the group of cat animations.



*Cats* group selected under the *Animations* app.

Use the “back” button to return to top level of selection panel.



*Cats* sub-menu of Selection Panel.

The buttons at the top right of the selection panel are the Assign Hotkeys, Add to Playlist, Toggle All, and Hide Effects buttons:



### Assign Hotkeys

Toggle the Assign Hotkeys button in order to automatically assign keys on your keyboard to each item in the selection panel. Key assignments are shown next to the icons.

### Add to Playlist

Clicking on the + button adds the selected item to a playlist in the Playlist App.

### Toggle All


The Toggle All button toggles items between selected/deselected in the selections panel. This is useful for shuffle modes and autoplay.

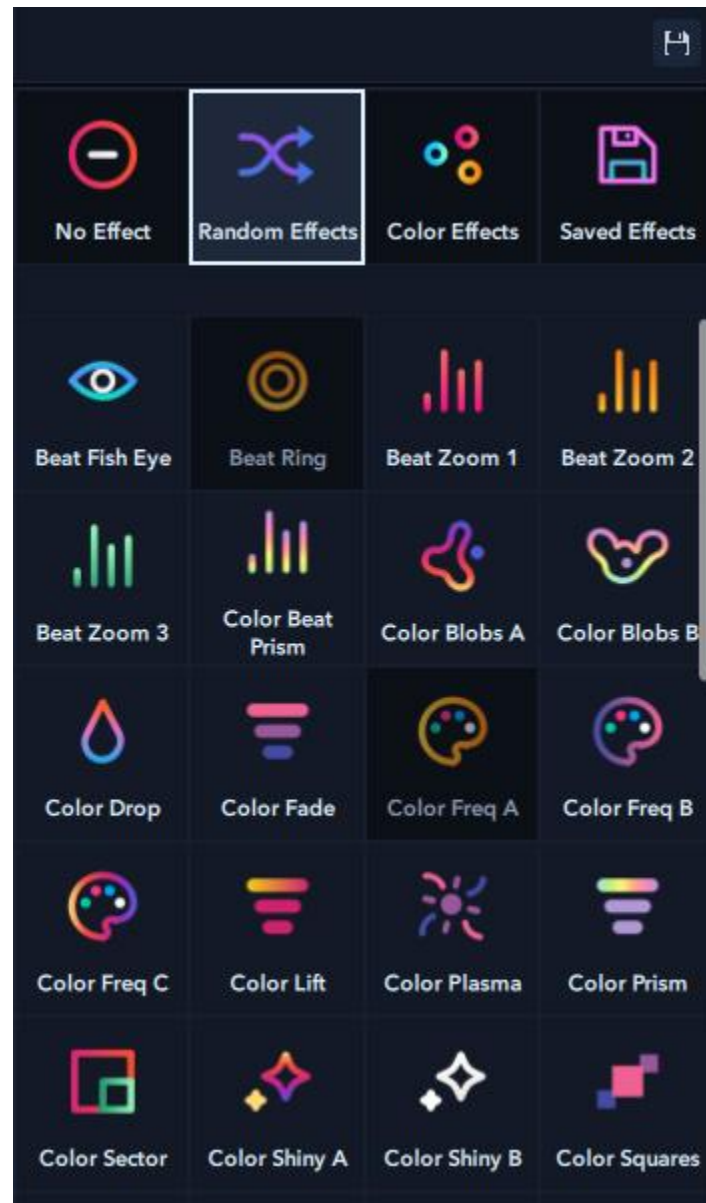
## Hide Effects Panel

The Hide Effects Panel button hides or shows the effects panel when selected.

## Effects Panel

The Effects Panel is the last panel on the right side of the Windows/Mac user interface. If you cannot see the effects panel, please click on the “expand window” button:

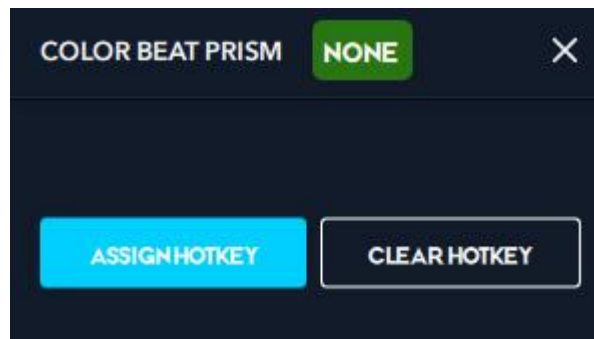
 Click to hide or un-hide the effects panel.



The *Effects Panel* allows you to turn off effects, select random effects, select color effects, or select effects from a saved list.

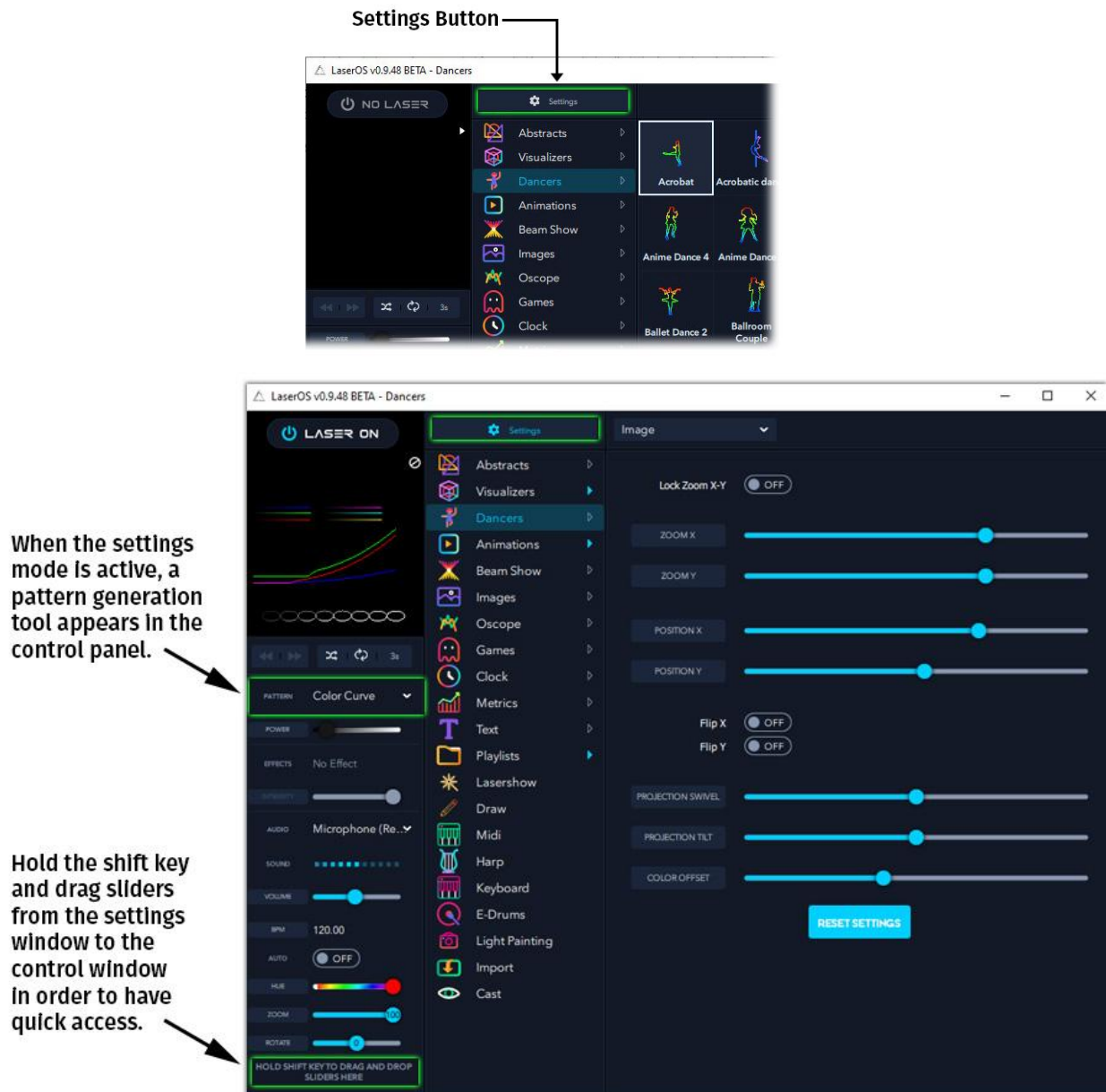
To toggle the on/off status of an effect (for use in Autoplay shuffle, for example), double-click on the effect to deselect (grey out) or select it.

You can also assign a hotkey on a keyboard or midi to toggle an affect. To assign a hotkey, right-click on the desired effect and select “Assign Hotkey” in the pop-up window. Type the key you wish to assign to the effect.



## Settings Mode

Enter the settings menu by clicking on the settings button above the apps panel. This toggles the main interface into “settings” mode. To exit settings mode, click on the settings button again.



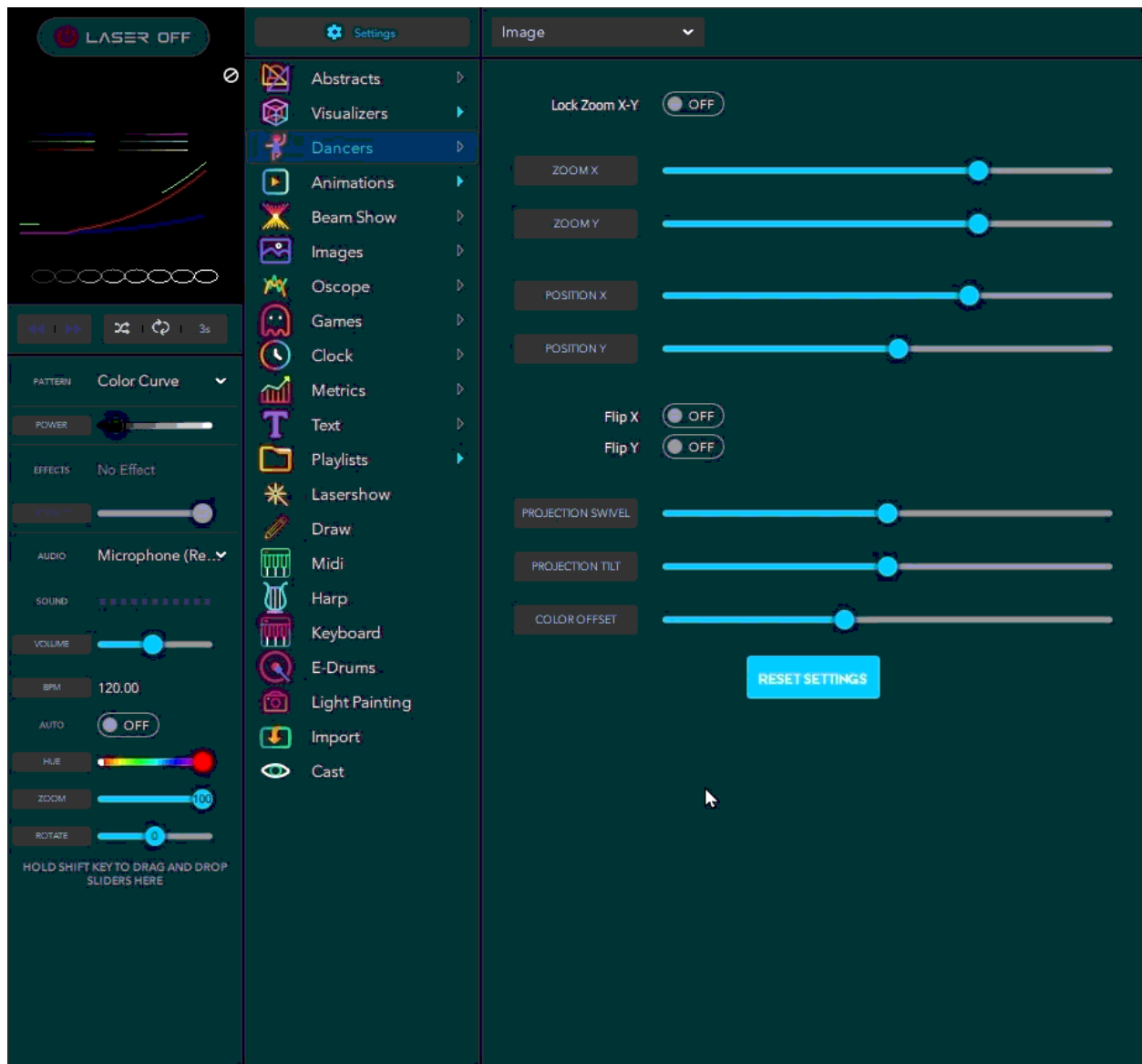
## Test Patterns



While in settings mode, a pattern generation tool is added to the control panel. This enables you to display a variety of setup patterns to determine the size of your laser projections, color range, coverage, shape tests, and more.

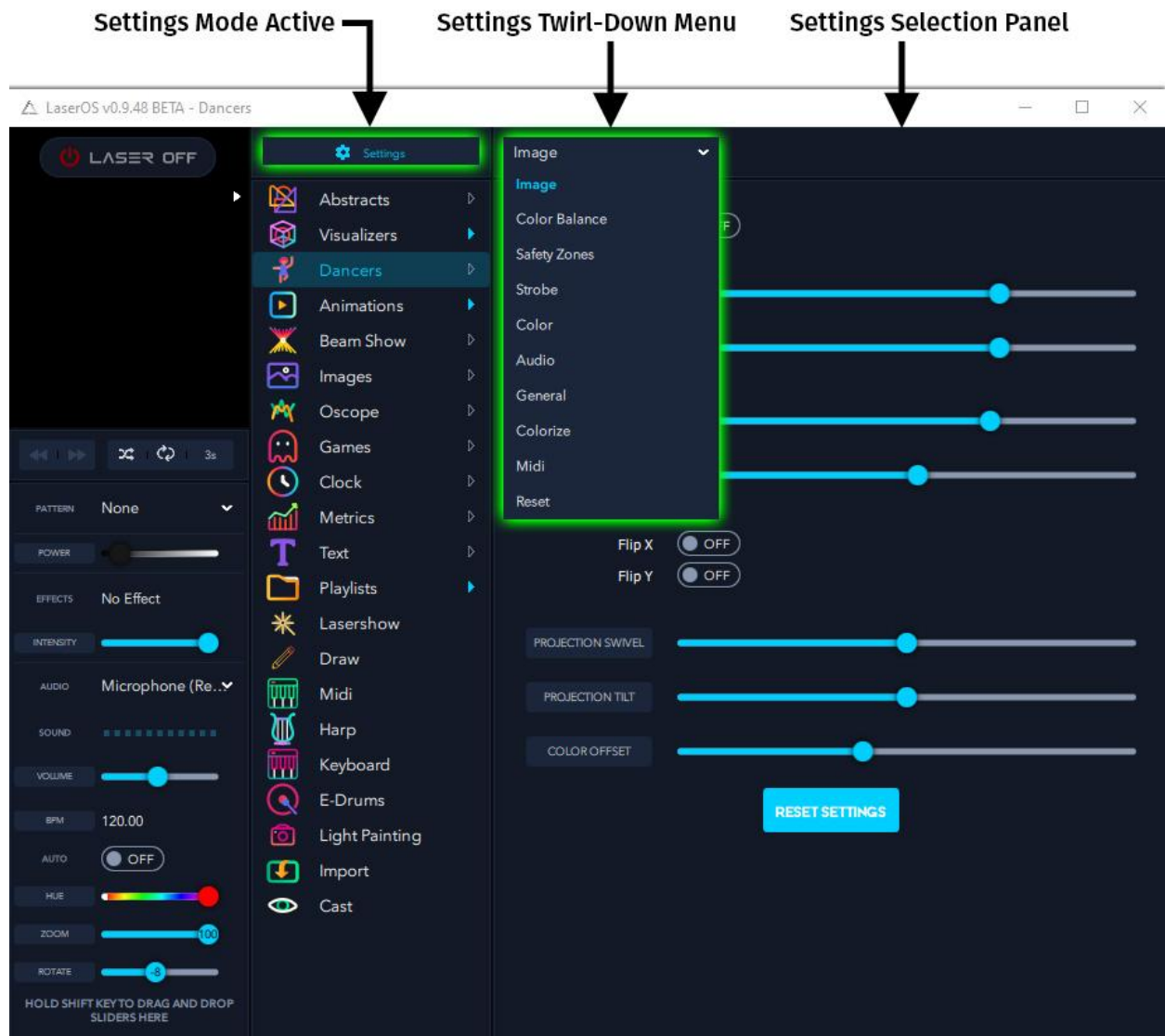
## Customizing the Control Panel

Sliders can be added to or removed from the control panel to customize your setup. Holding the shift key, drag the desired slider to the control window. To remove it, hold the shift key and drag it to the trash icon which appears.



## Settings Menu

When settings mode is activated, a twirl-down menu appears to the right of the settings button. The selection panel displays options for the current settings twirl-down selection.



In settings mode, the twirl-down menu displays options for Image, Color Balance, Safety Zones, Strobe, Color, Audio, General, Colorize, Midi, and Reset.

## Image

The Image settings mode allows you to control the size (zoom) and position of your projections. You can also flip the image horizontally or vertically. Swivel and tilt options are available, as well as color offset.

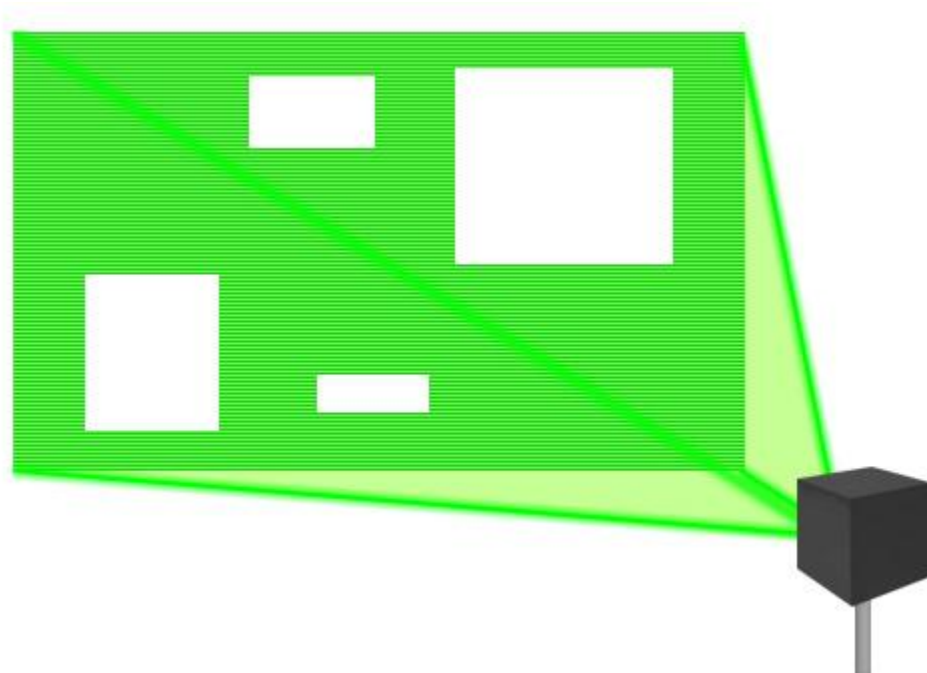
To reset settings to their original value, simply click on “reset settings”.

## Color Balance

Color Balance settings mode allows you to control the color range via max and min RGB sliders. Gamma RGB sliders control gamma, and a TTL mode toggle switch constrains the colors to within a TTL projector range of colors.

## Safety Zones

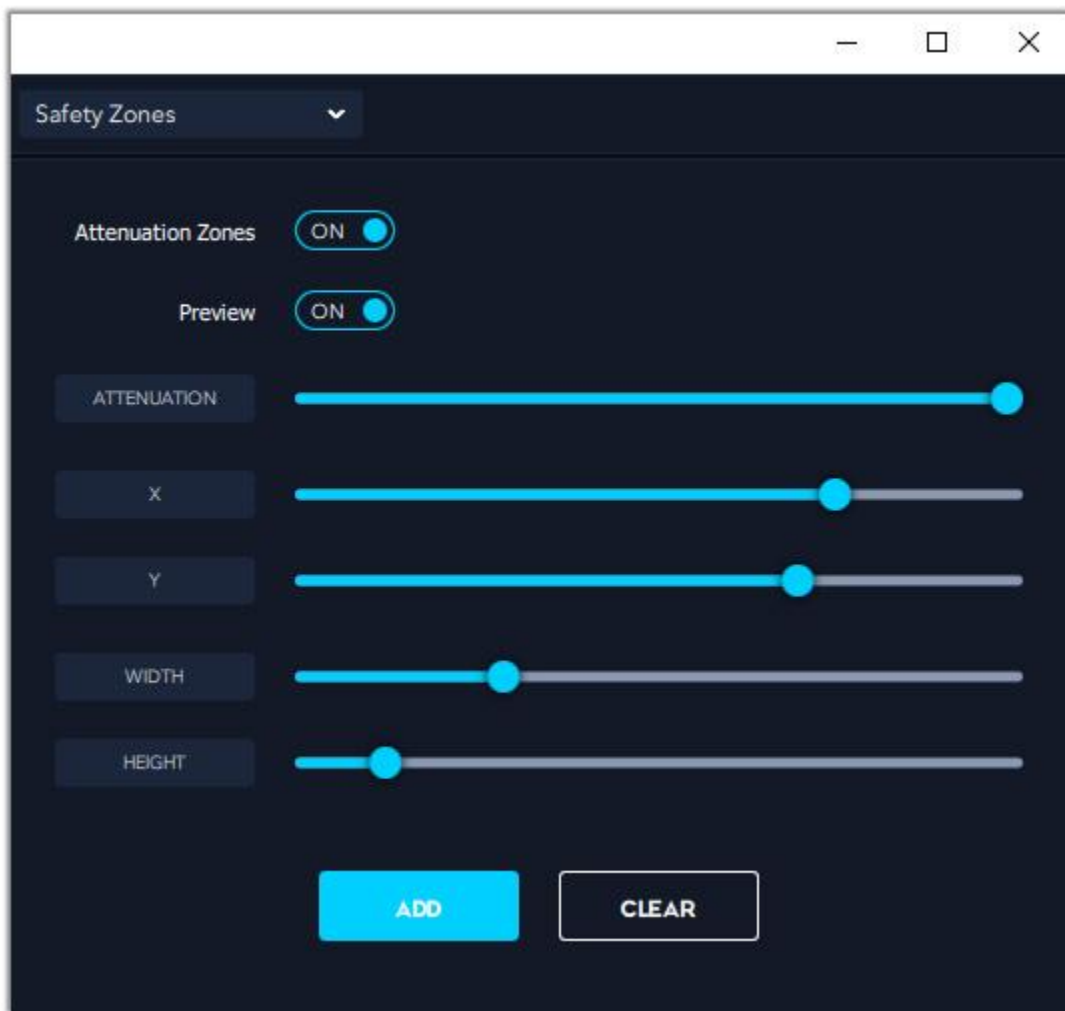
Safety Zones are an important feature of LaserOS. They allow you to designate zones *within* the projection area where the laser will not project.



Safety zones are “blank” areas in the projection where the laser projector will not scan. This is useful to protect sensitive equipment such as cameras, avoid reflections or other dangerous situations, and as an extra safety feature of LaserOS.

To set up safety zones, go into the safety zones settings menu and toggle the “Attenuation Zones” switch to “ON”.

Set the preview switch to “ON” to see a projection of the attenuation zones. You will also see them in the preview window of the control panel.



Attenuation is the amount the laser is blocked from scanning in the safety zone. An attenuation of 0 means full power scanning, and an attenuation of 100 means scanning is completely off inside the safety zones. Use the attenuation slider to control the level of attenuation.

Use the X and Y sliders to position the attenuation zone. Use the width and height sliders to set the size and shape of the attenuation zone.

To add more attenuation zones, click the “add” button. This will duplicate the attenuation zone you already have set, so you’ll need to adjust the position or scale in order to see the new attenuation zone.

Clicking the “CLEAR” button will remove all of your user-defined attenuation zones, and display the default, single, square attenuation zone.

When you are finished setting up your safety zones, toggle the preview switch to “OFF”. Now, laser projections will be blocked from scanning in the safety zones.

## Strobe

Strobe allows you to set up a flashing laser strobe light style projection. Sliders control the amount of time the laser is on and off.

## Color

Color settings mode lets you control the hue, saturation, and RGB fade of laser colors. There is also a switch to turn on VenumCube, which limits your laser projection color to bright, powerful green.

## Audio

The audio settings mode is used to set a sound gate and sound detection level. This is useful when using audio-reactive effects and/or the BPM feature.

## General

There is a variety of features in the general settings mode. Users can enable or disable options such as start-up animations, software update availability checks, tutorials, and more.

Links to laser safety videos and bug reports are also in the general settings panel.

## *Burn and Pop Apps*

Some lasers, such as the Wicked Lasers LaserCube, are so powerful they can burn (etch) materials and pop balloons. This is commonly seen in LaserCube videos. In order to enable this capability, please watch the laser safety video before toggling the “Show Pop/Burn Apps” to “ON” in the General settings selection panel.

## Colorize

The Colorize settings panel allows users to add or change color effects on laser projections. Toggle the “ON/OFF” switches to apply colorization to selected apps. In the effects panel, select or deselect the blue arrow in order to add or remove colorization effects during shuffle or playlist modes.

## Midi

LaserOS and your LaserCube can be controlled from a Midi device. In this settings mode, set your midi input, select channels, and enable blinking of current midi (optional).

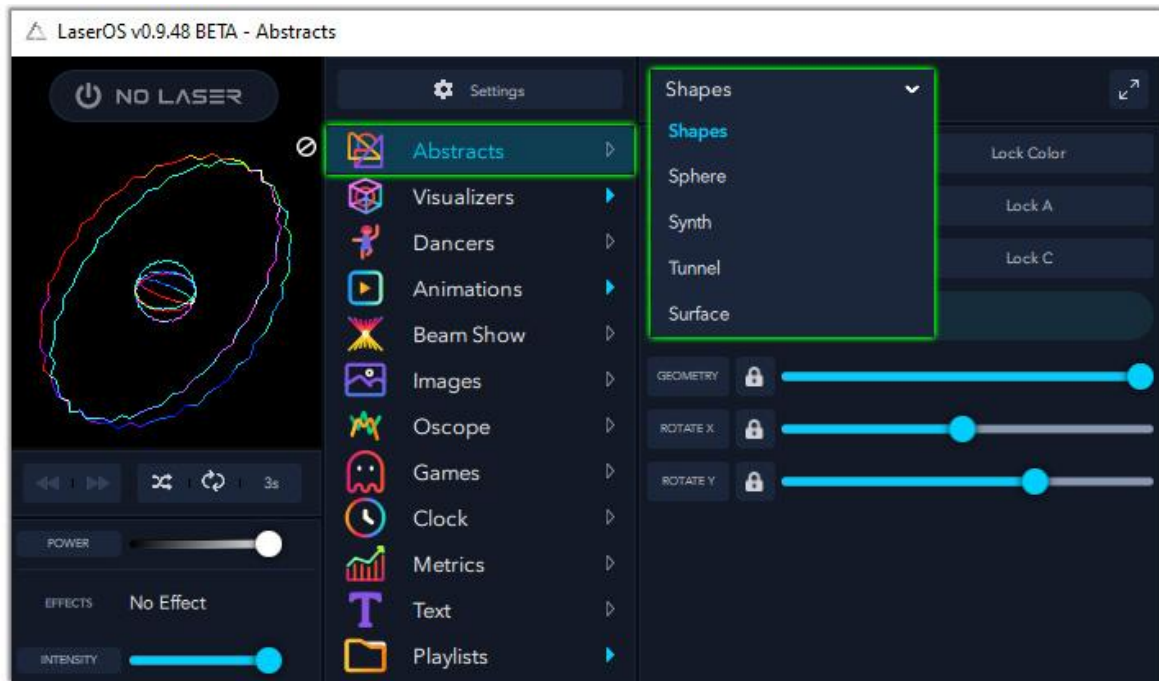
## Reset

The reset settings mode enables you to reset your LaserOS settings to the default modes.

## Apps

### Abstracts

The Abstracts app contains 6 sets of abstract pattern generators: Shapes, Sphere, Synth, Tunnel, and Surface. These pattern generators are most interesting when used with audio, as the abstract patterns are audio-reactive.

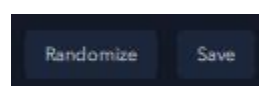


There is an audio meter in the control panel which displays the volume of audio detected. If LaserOS is detecting music correctly, the sound meter reacts to the volume of audio detected. It is recommended to play audio while setting up abstracts.



Selecting “Randomize” in any of the Abstracts windows will randomly generate an abstract pattern except for items that have been locked.

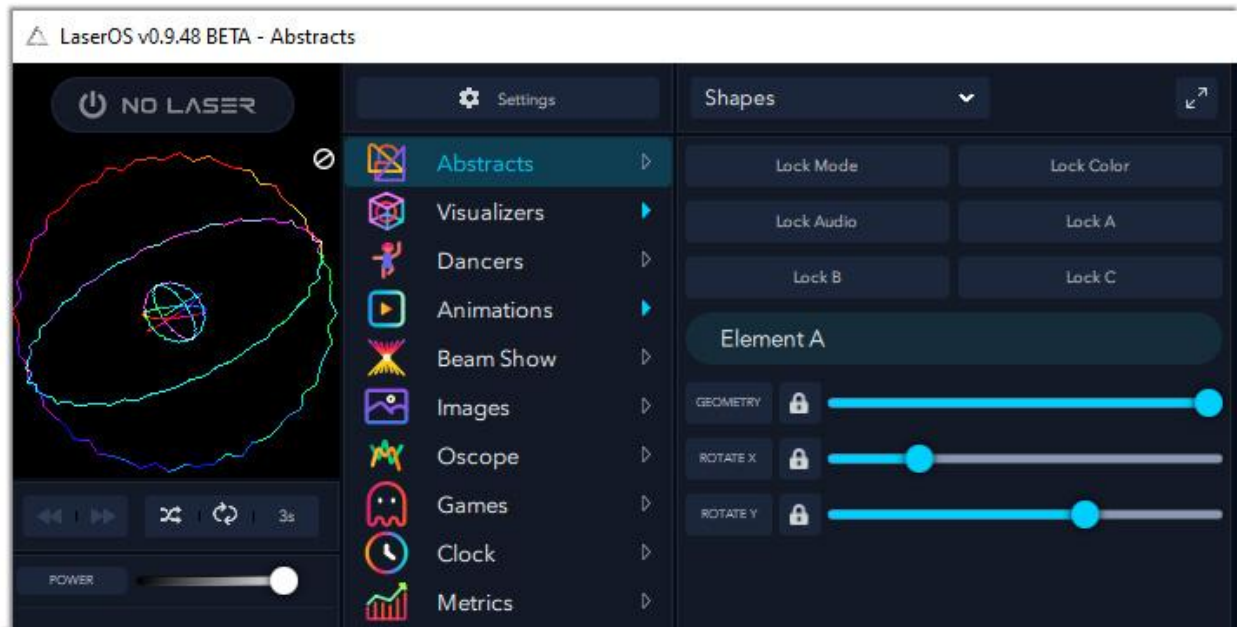
Clicking on “Save” in any of the Abstracts windows will save your pattern to a playlist called “Abstracts” in the Playlists app.





## Shapes

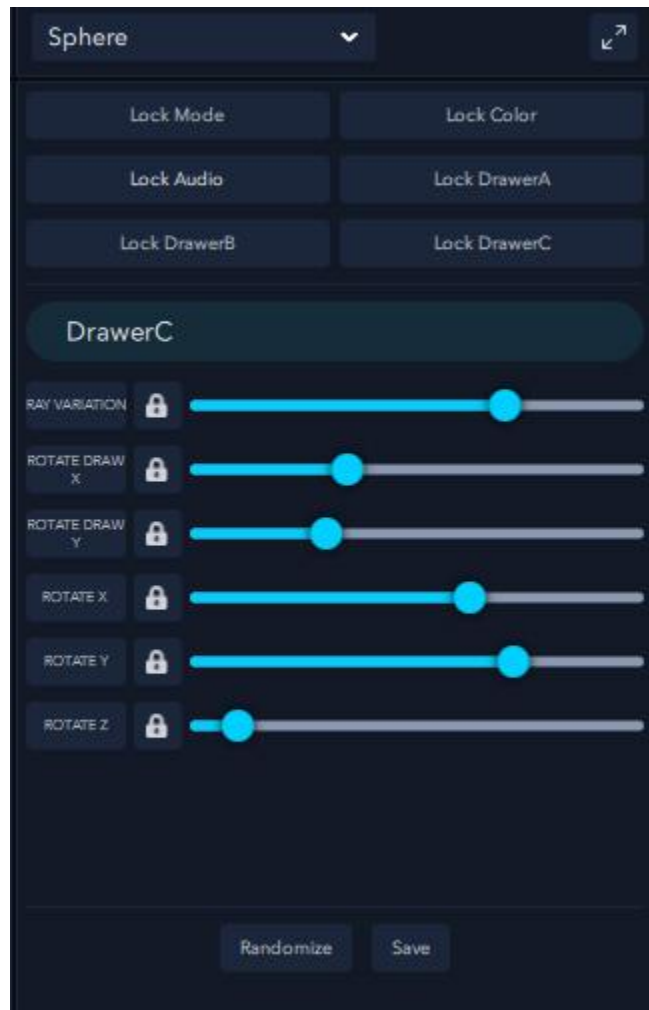
In the Abstracts → Shapes mode there are three audio-reactive elements. To correctly visualize all elements, make sure audio is set up correctly and playing.



In the Shapes menu, there are 3 elements (A, B, and C) with various options for geometry and rotation. In the image above, the preview shows two of the elements as rotating circles with audio distortion while the third element is the sphere in the center.

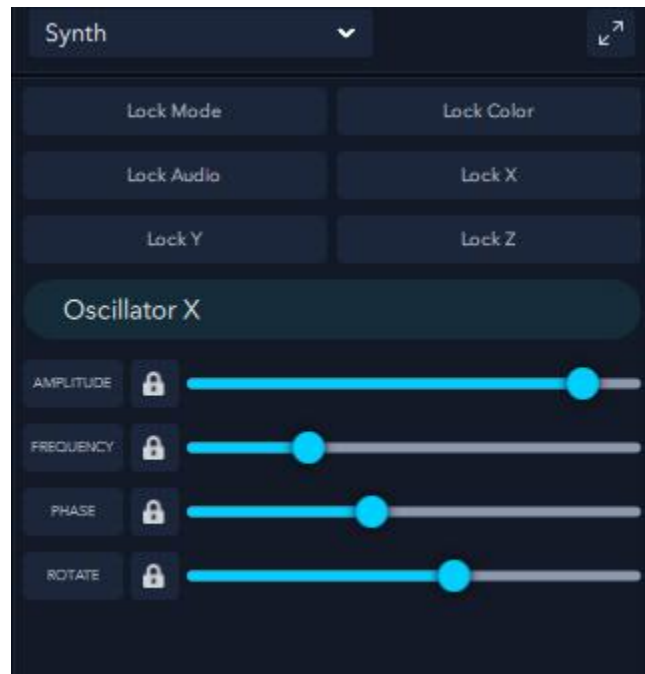
## Sphere

The Abstracts → Sphere mode has three “Drawers” with sliders for ray variation and rotation in the X, Y, or Z plane.



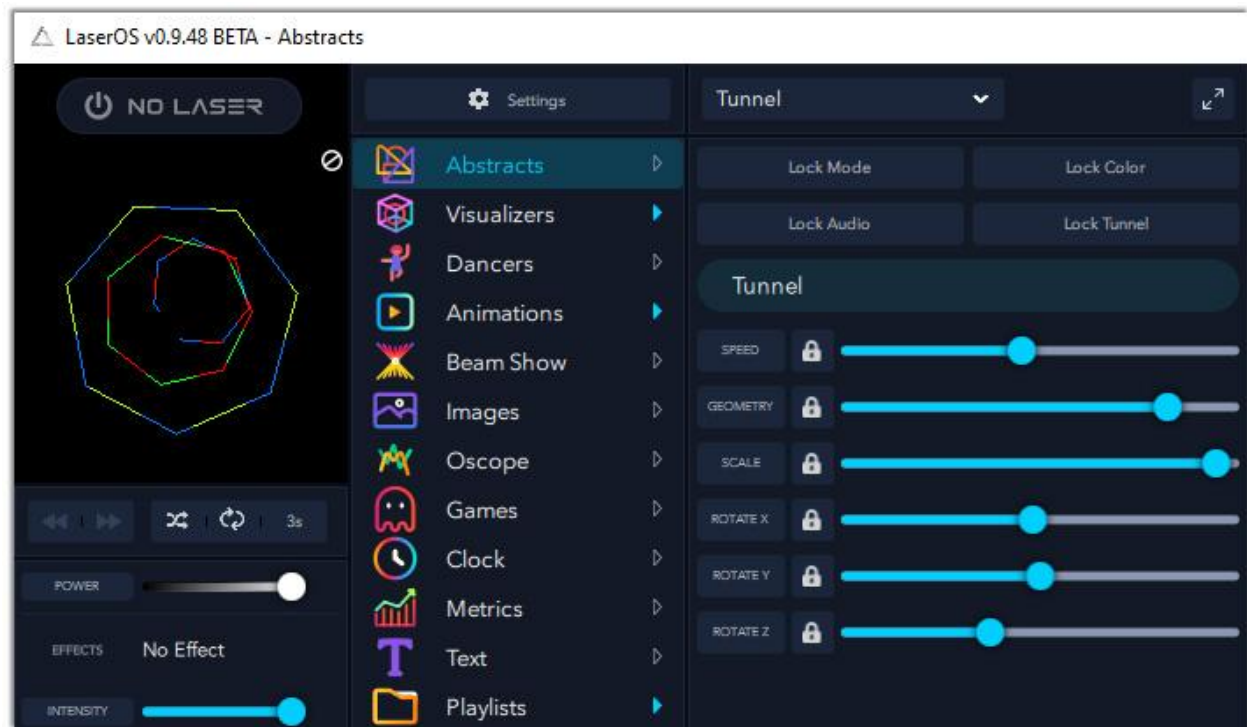
## Synth

The Abstracts → Synth mode displays three oscillators with sliders for amplitude, frequency, phase, and rotation. Audio may be linked to any or all of the oscillators.



## Tunnel

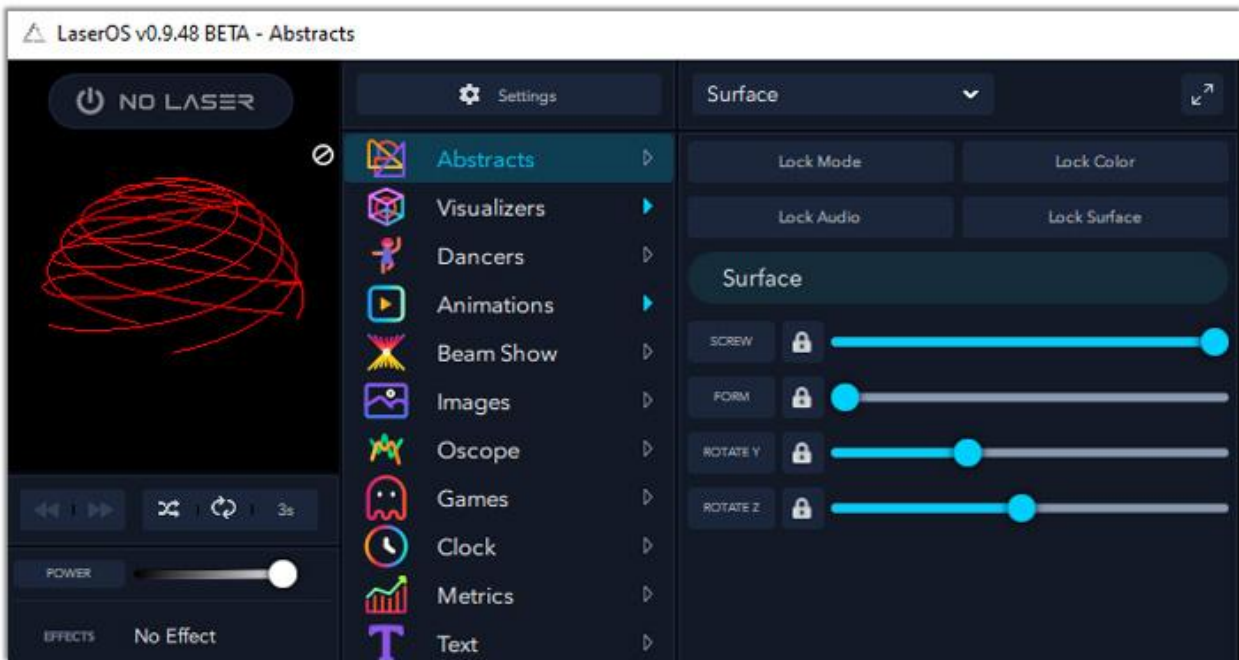
The Abstracts → Tunnel mode generates a pattern with the visual effect of traveling through a 3D tunnel.



Tunnel speed, geometry, scale, and rotation sliders are available. Colors and Audio reaction choices are linked from the Tunnel pull-down menu.

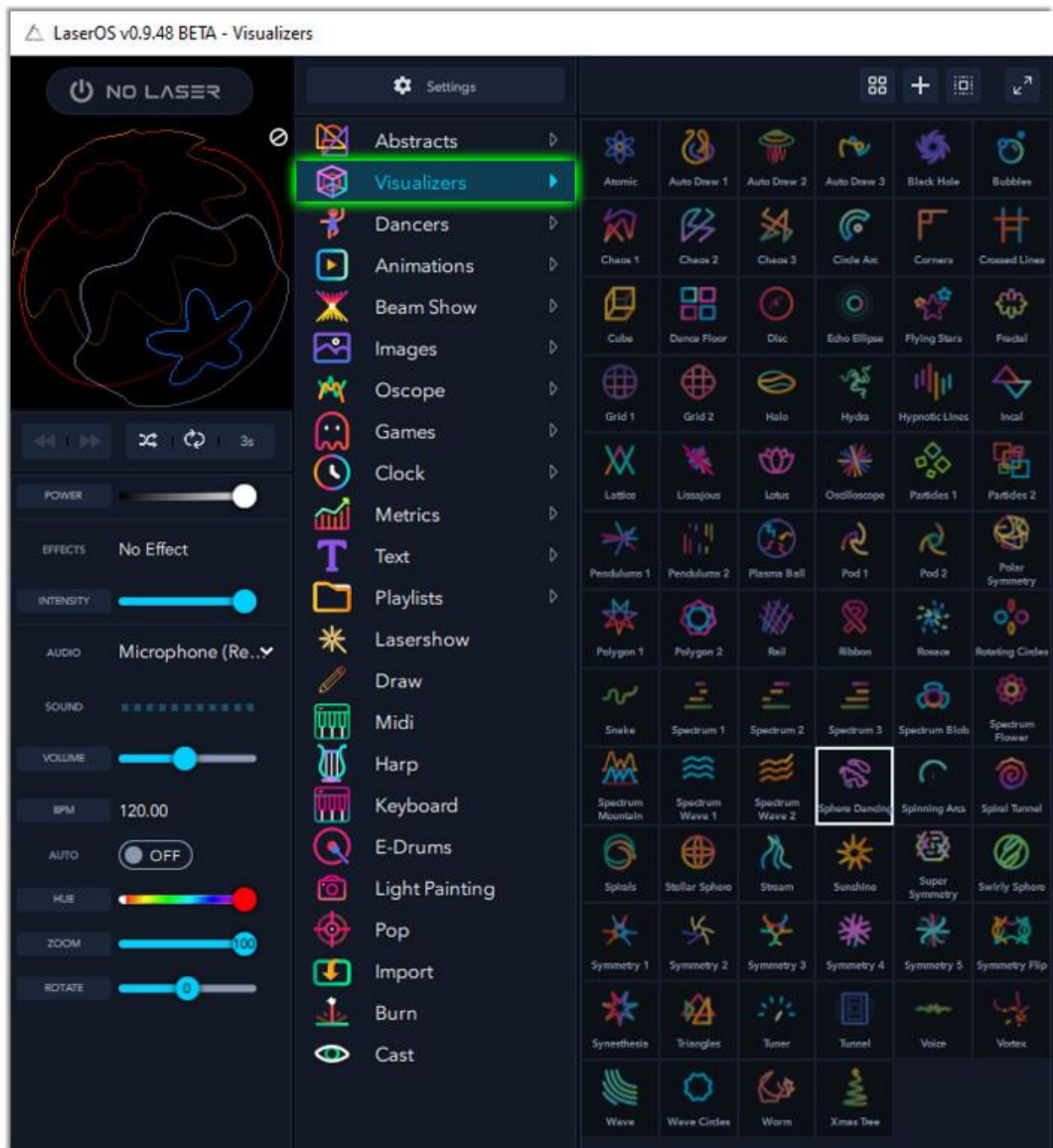
## Surface

The Abstracts → Surface mode creates an abstract projection of a surface, with various screw, form, and rotation settings.



## Visualizers

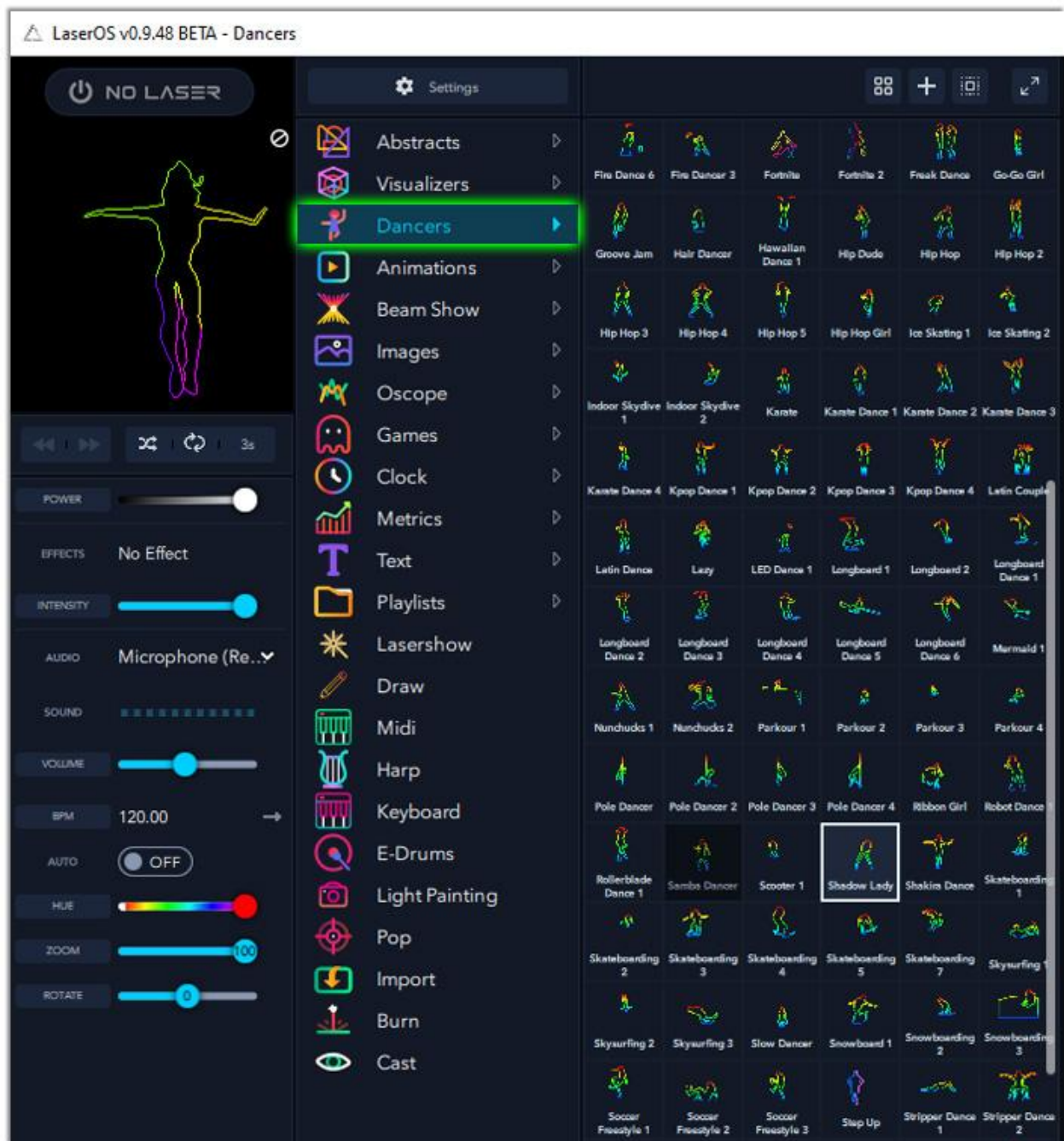
The Visualizers app contains a large assortment of pre-defined animations. They may be played alone, or selected/deselected by double-clicking in order to make them available during random shuffle or autoplay.





## Dancers

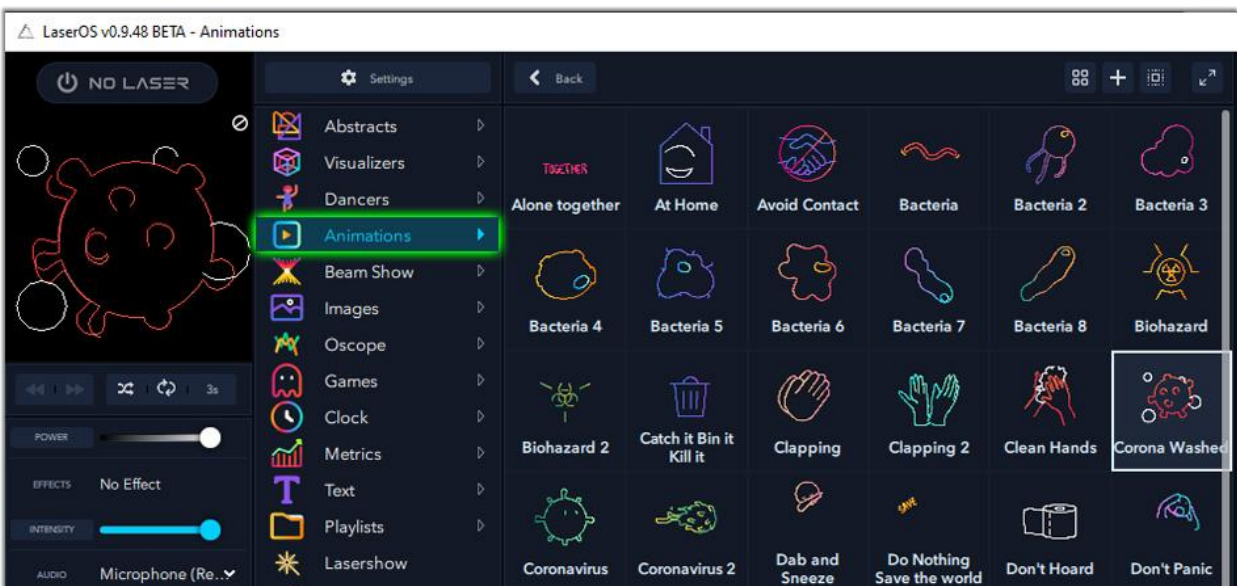
The Dancers app contains an extensive list of animated dancers, BMX riders, surfers, skaters, and more. Play them individually or select/deselect by double-clicking to include or exclude them from random play, shuffle, auto play, or playlists.





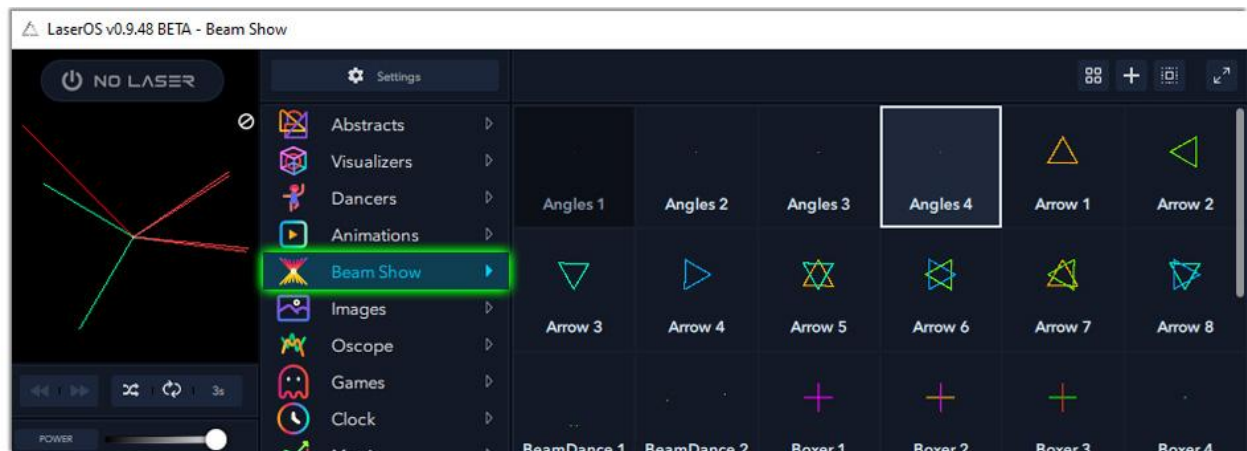
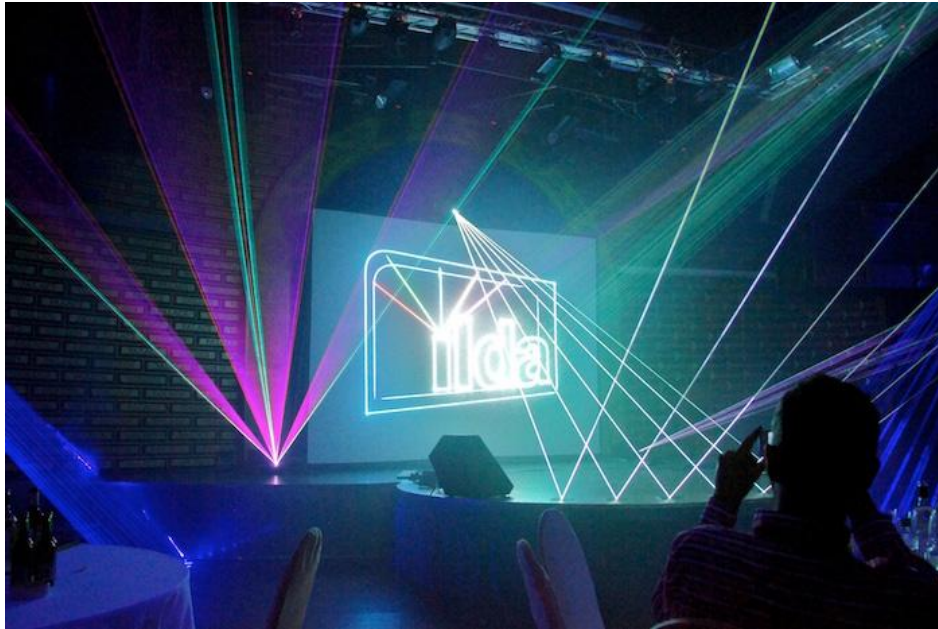
## Animations

The Animations app contains animations grouped by categories such as Valentine's Day, Birthday, Christmas, New Year, EDM, Covid, Diwali, and many more. When the app is selected, click on any group in the selection panel to step into the group folder and see individual animations. Use the "Back" button at the top of the selection panel to move your view back to the top (group) level.



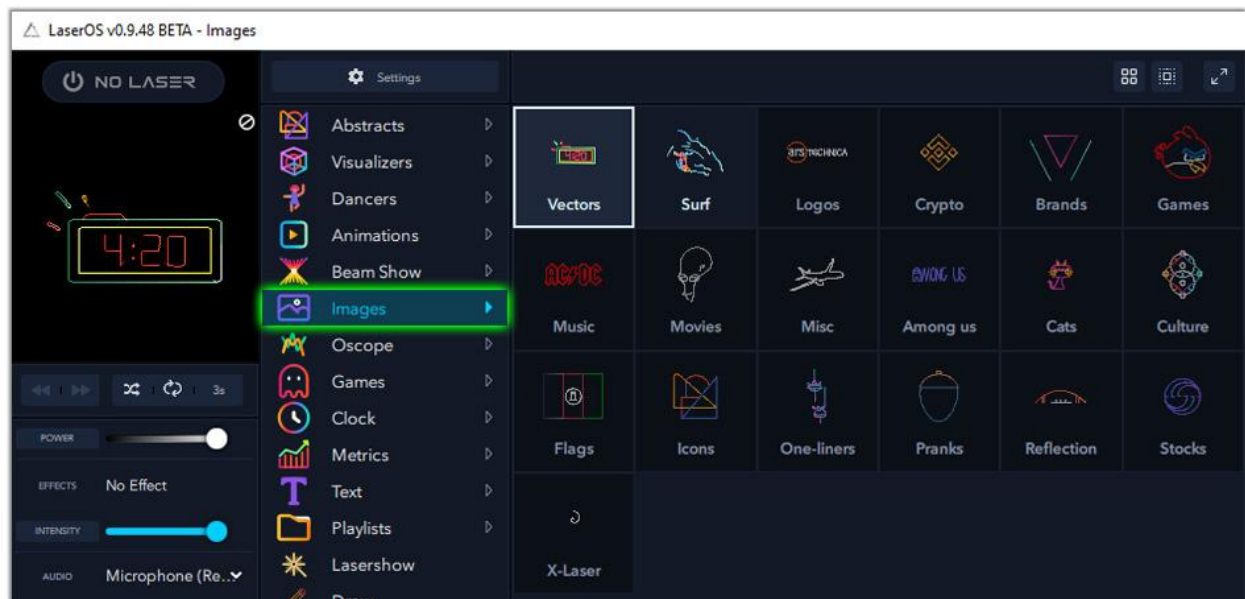
## Beam Show

The Beam Show app displays beautiful laser beams that work particularly well in a foggy or smokey venue such as a concert or dance club.



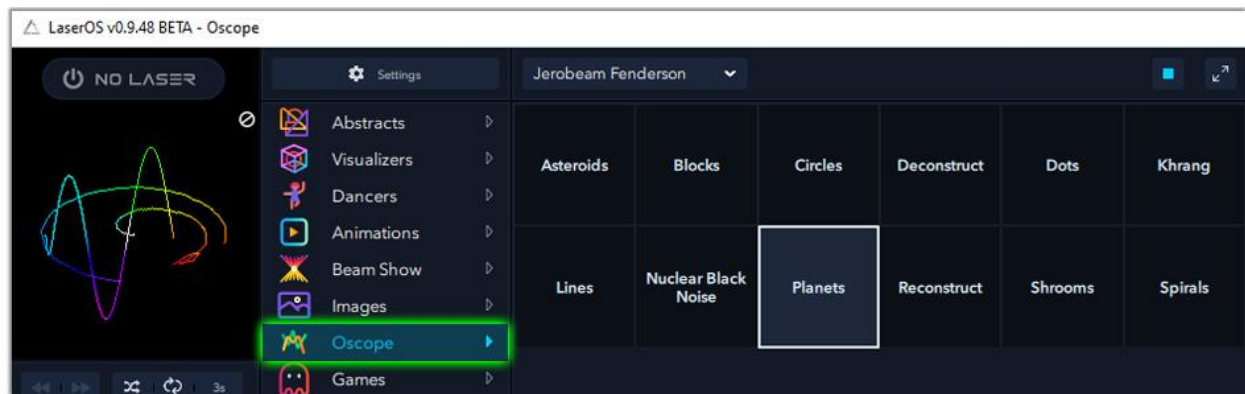
## Images

The Images app contains hundreds of images grouped by category. Movies, vectors, logos, flags, and many more groups are available.



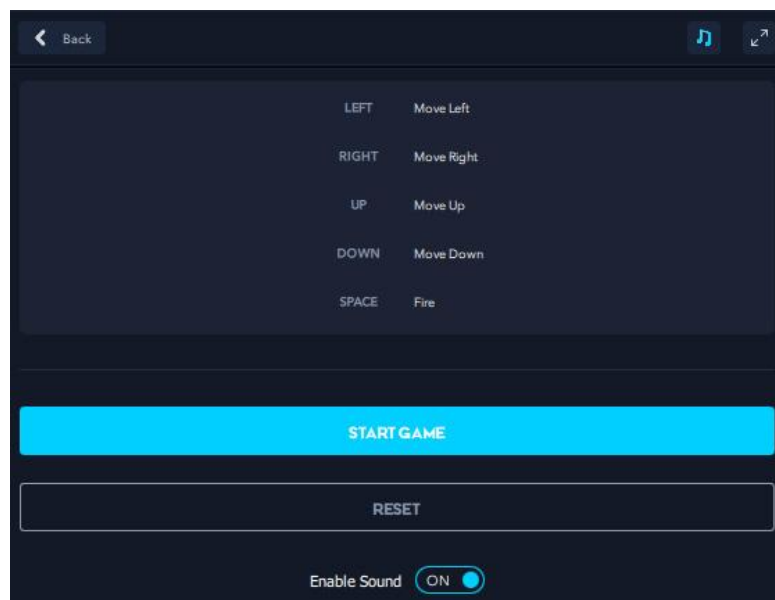
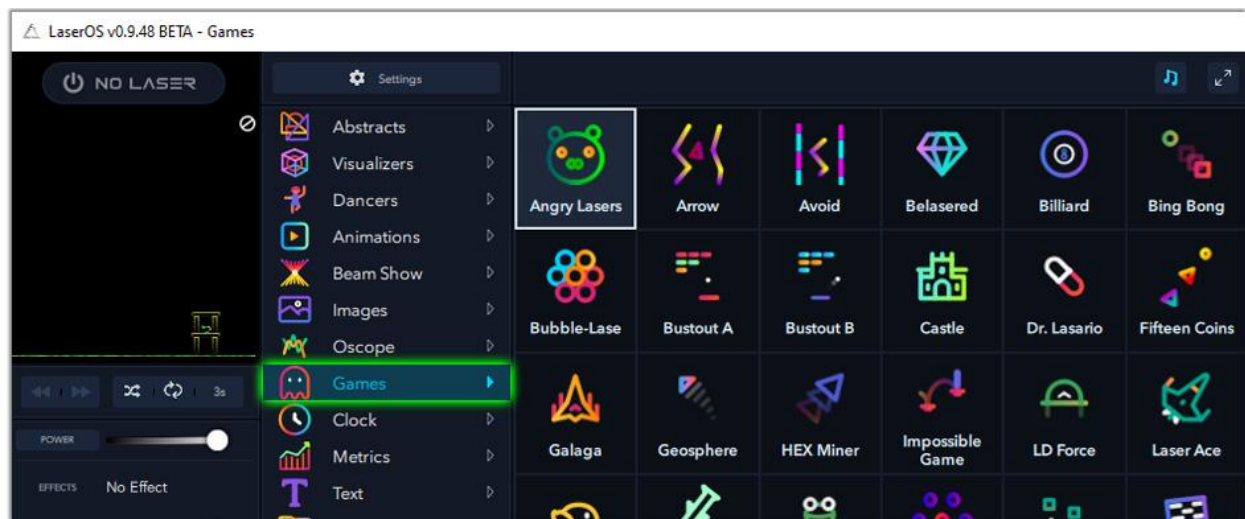
## Oscope

The Oscope app contains complete laser shows, including music. These are a great go-to for demonstrating some of the capabilities of your LaserCube device or entertaining an audience.



## Games

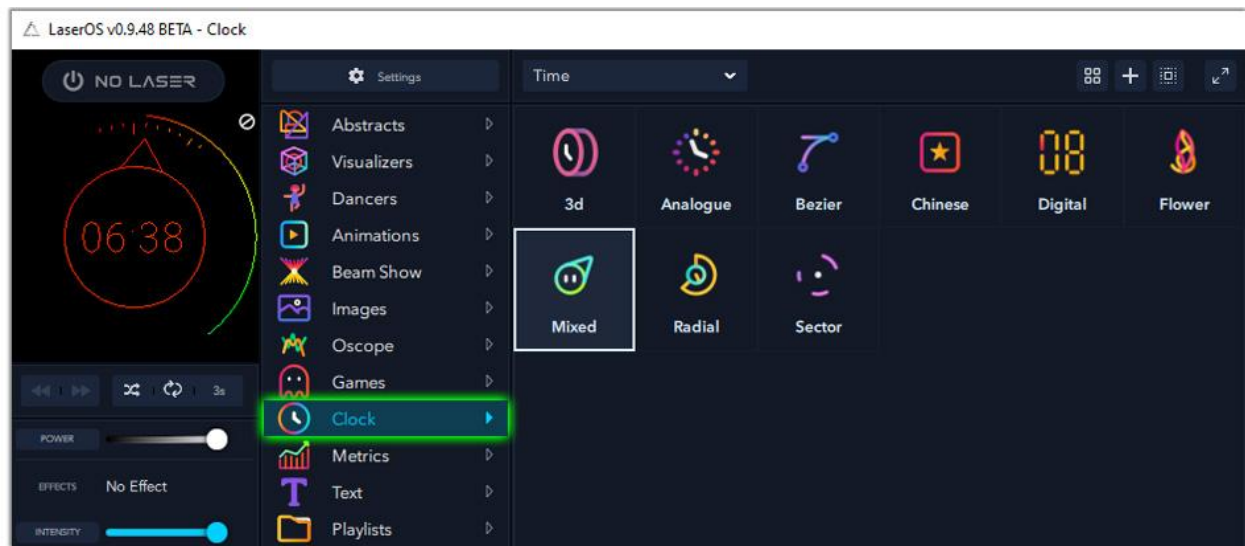
The Games app contains many games you can play on your LaserCube device. Select a game and use the controls on your keyboard, or connect an optional game controller to your computer.



When a game is selected, control information and options are displayed.

## Clock

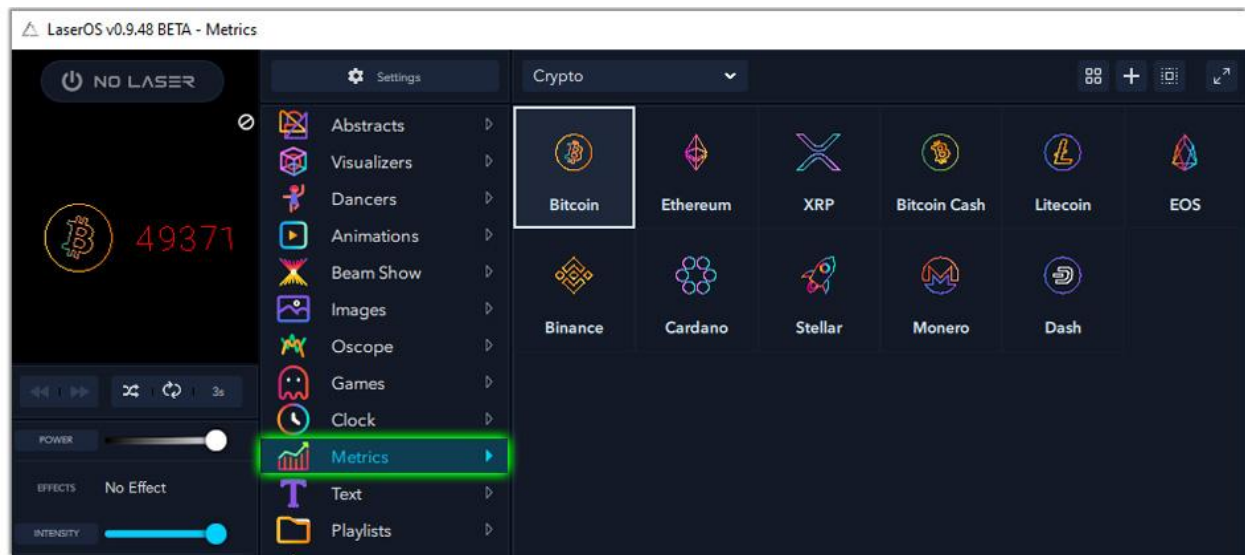
The Clock app allows you to display the time in the coolest way possible: with lasers! Project onto a wall or other surface.



As always, a single clock may be selected or they can be shuffled using the controls directly under the preview panel.

## Metrics

The Metrics app enables you to display useful information such as the covid infection rate by country, stock prices, social media feeds like twitter, youtube, or facebook, and crypto prices.

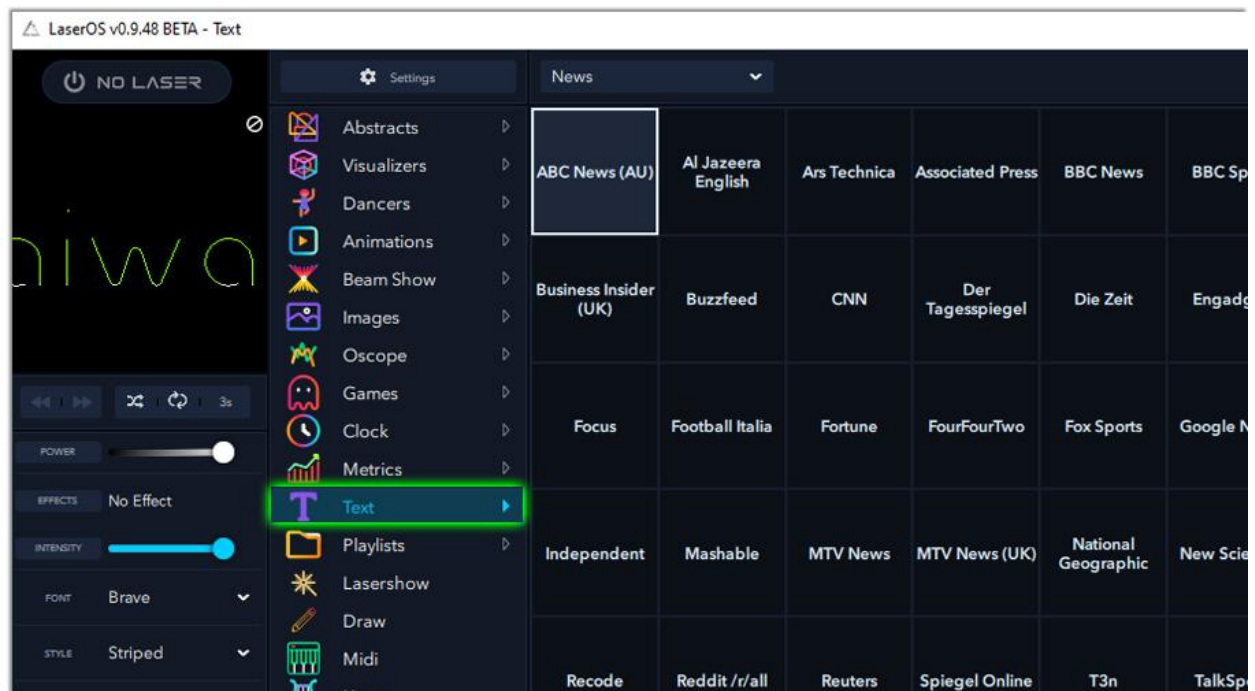


Select the Metrics app and use the pull-down menu in the selection panel to see available metrics for display. Your computer must be connected to the internet to access current metric values such as stock prices.



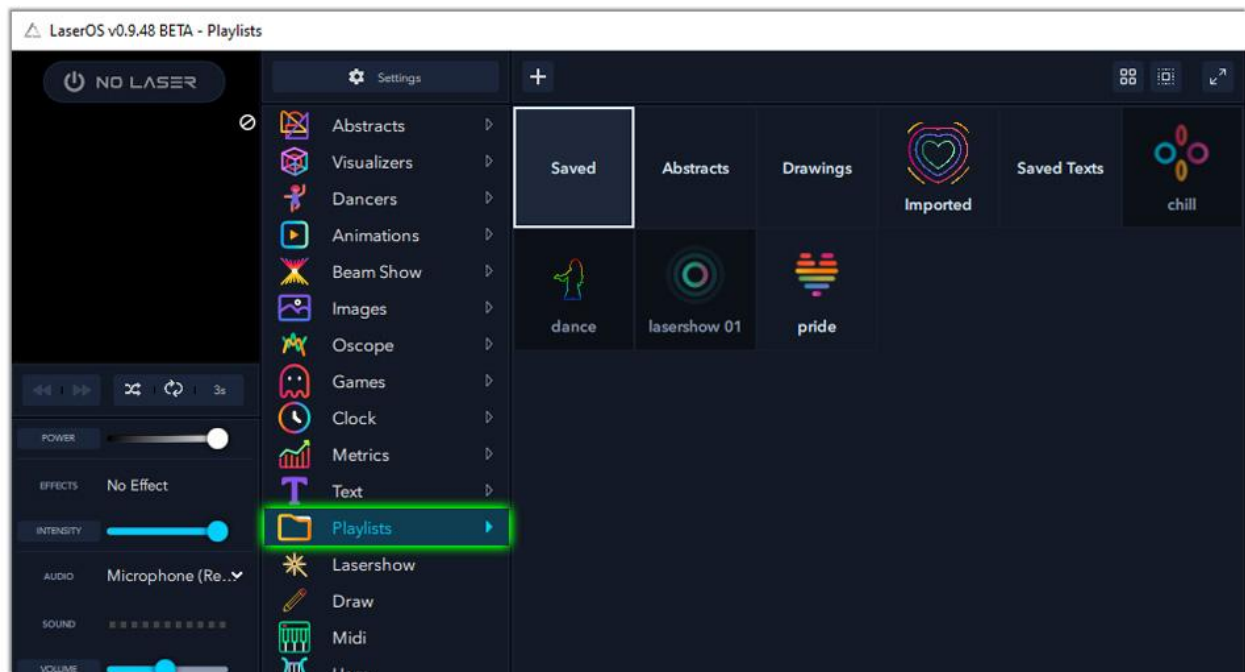
## Text

The Text app displays current news, RSS feeds, reddit, or even custom text.



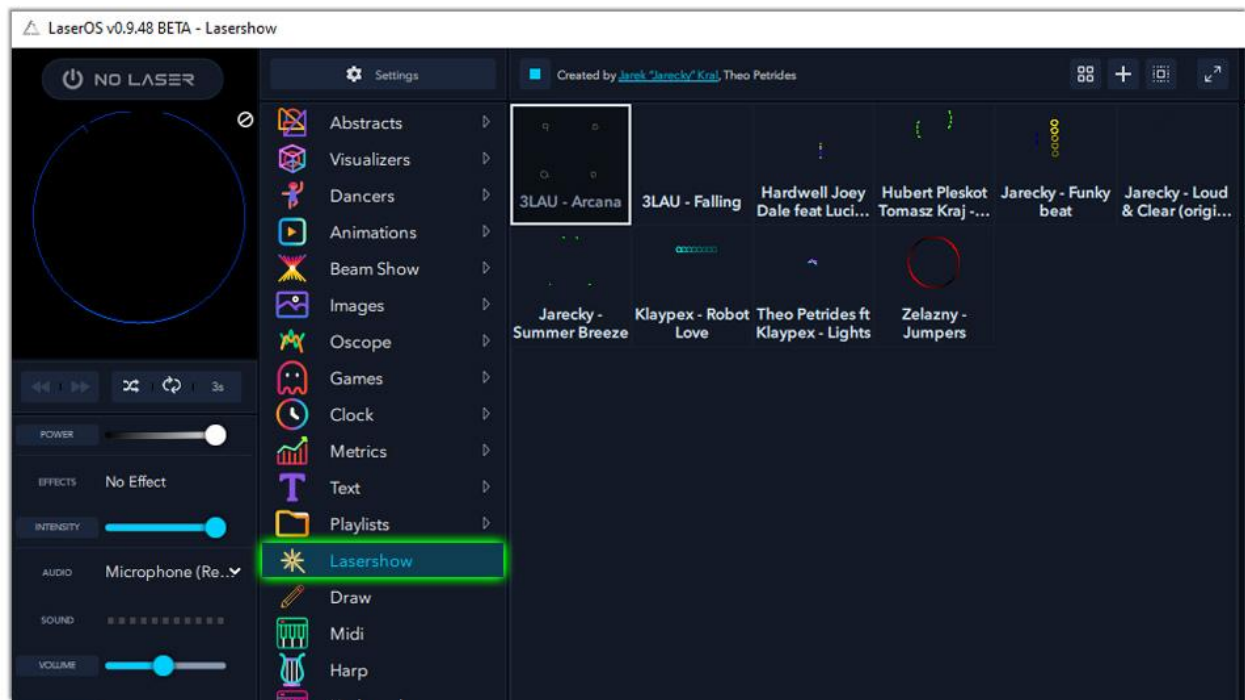
## Playlists

The Playlists app contains all of your custom playlists. You can create fully custom playlists across groups and apps, then display them here for your lasershow.



## Lasershow

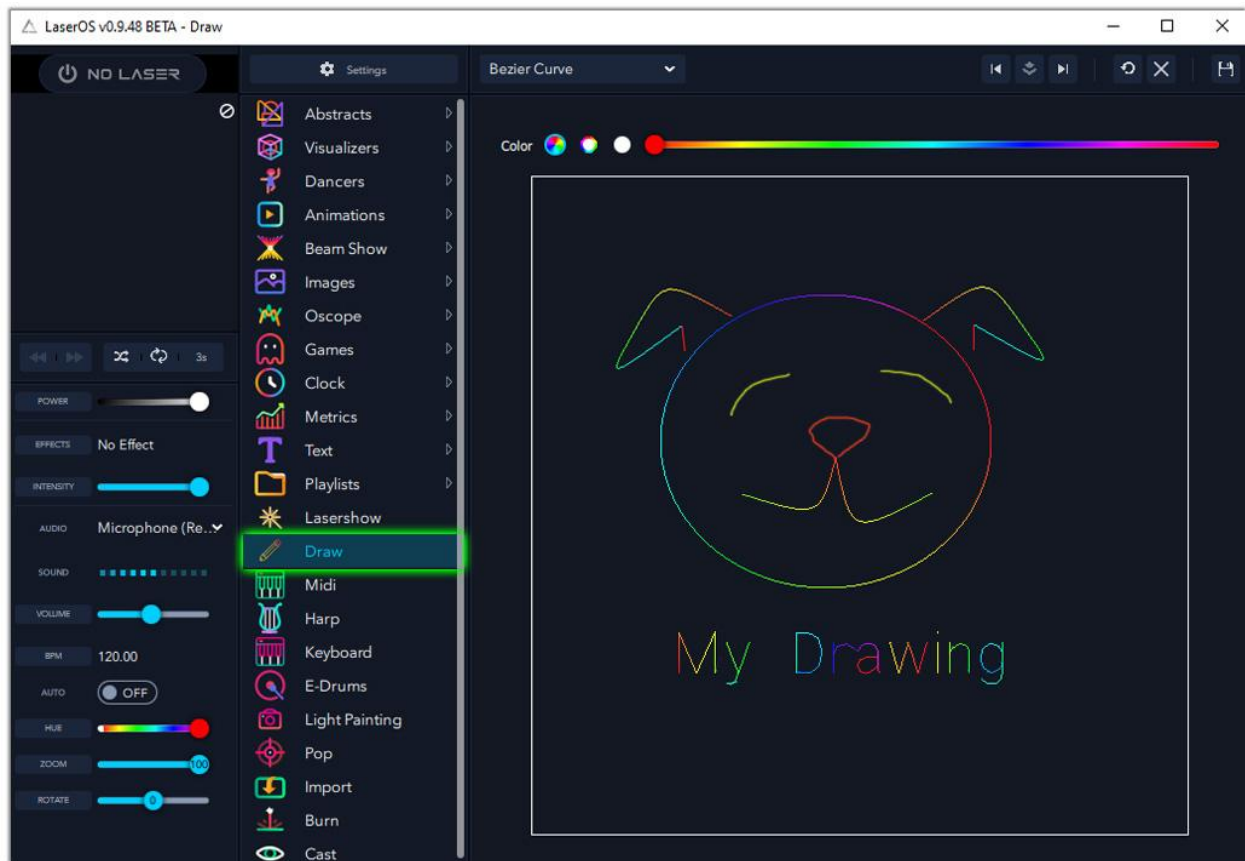
The Lasershow app contains several complete lasershows with music and audio-reactive animations.



Select one or more lasershows, and click on the play button above the selection panel. Lasershows may also be added to a playlist, or enabled for shuffle/autoplay.

## Draw

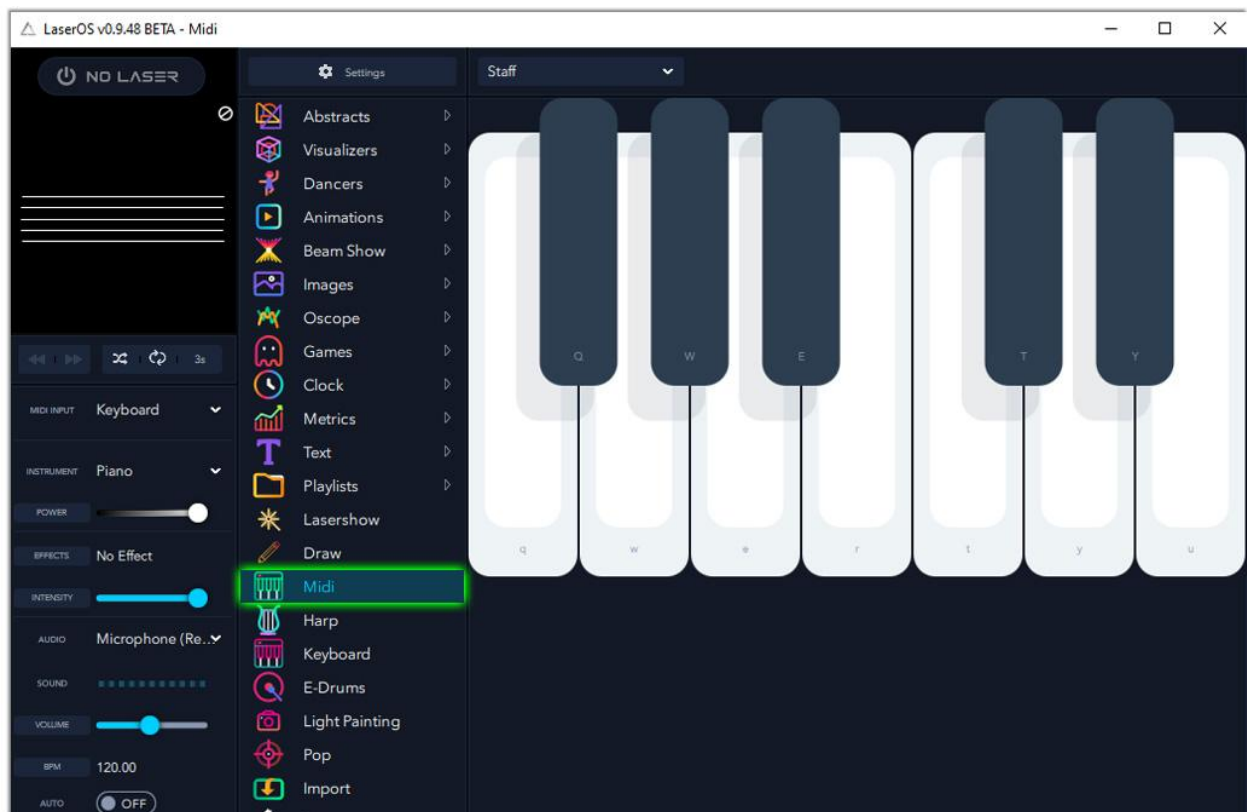
The draw tool allows you to create your own drawings and project them with your lasercube. When the draw app is selected, there are a number of drawing tools at your disposal: Pencil, Line, Bezier Curve, Rectangle, Ellipse, and Text. Be creative!



Drawings can be saved by clicking on the floppy disk icon which appears in the upper right portion of the draw app.

## Midi

The Midi app is a musical and laser light instrument. A number of options and inputs are available, from a laser-projected musical staff with QWERTY keyboard input to amazing 3D shapes displayed with each musical key press.



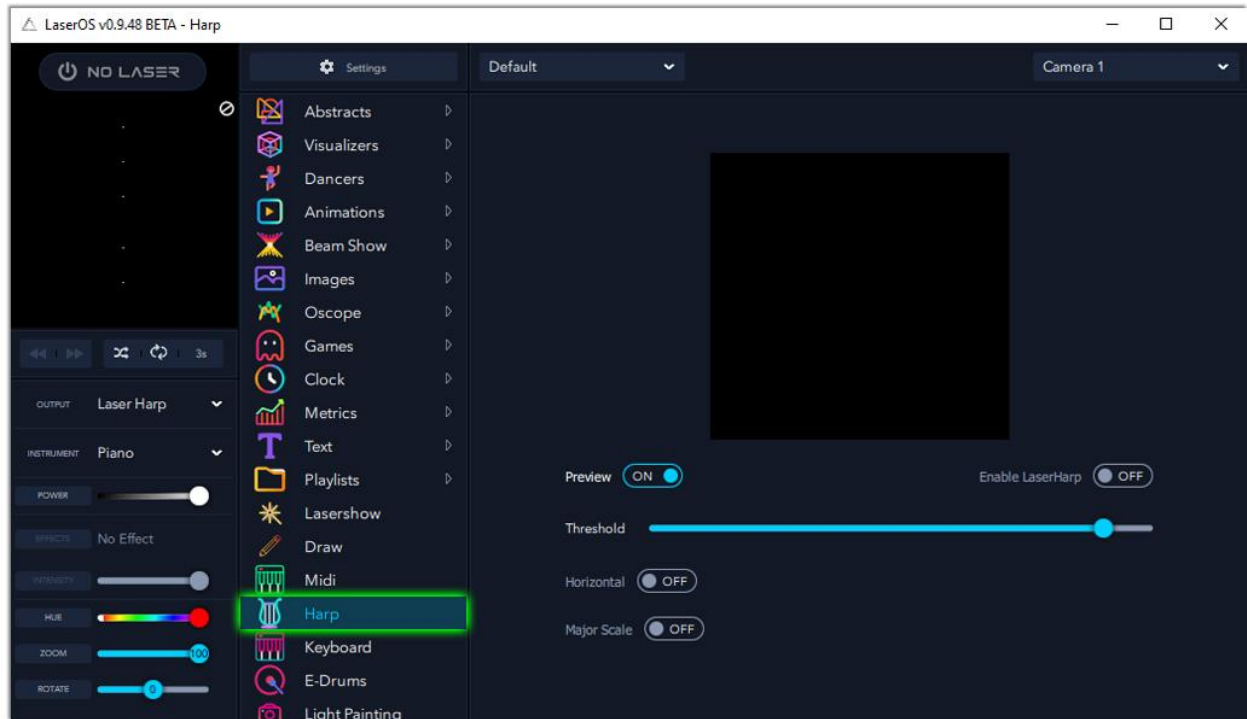
While the Midi app is selected, use the pull-down menu in the selection window to set your preferred display mode.

Keyboard keys corresponding to the piano notes displayed are indicated on each piano key.

## Harp

The Harp app is another laser light and musical instrument. In this app, the input is created when your hands block beams of light.





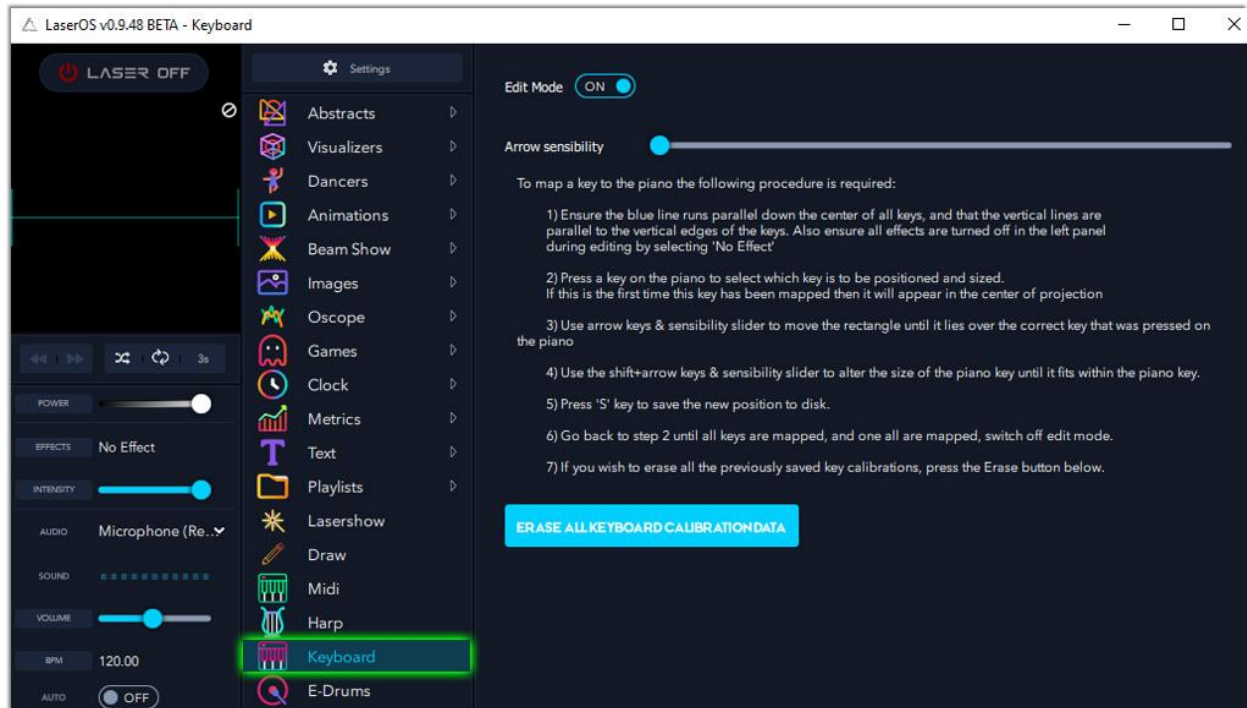
A camera input is required to use the Harp app. To set it up, turn on your LaserCube. In the Harp app, toggle the Preview switch to ON. Point your webcam at the dots projected by your LaserCube. If necessary, adjust the threshold slider until the dots seen by your webcam are distinctly seen in the preview window. Toggle “Enable Laserharp” to ON.

## Keyboard

The Keyboard app lights up the keys on your piano or other keyboard instrument with laser light. Before using, the keyboard must be set up correctly.







To set up the Keyboard app, position your LaserCube to project onto your keyboard. Then in LaserOS select the Keyboard app, go into edit mode, and follow the instructions.

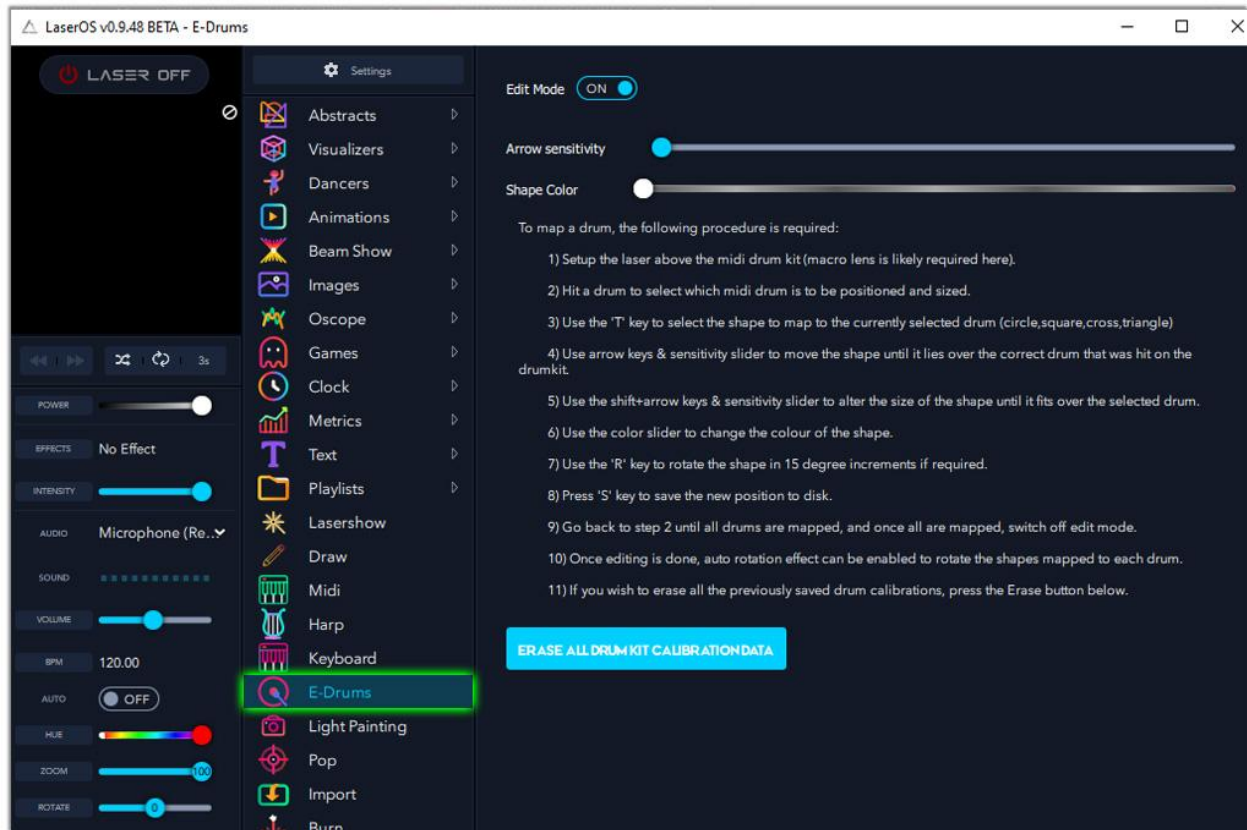
For guidance setting up the Keyboard app, we have created this video:

<https://youtu.be/fzv2WzhV1os>

## E-Drums

The E-Drums app lights up your midi-compatible drumset while you play.





Similar to the Keyboard app, the E-Drums app must be set up correctly before playing. The LaserCube must be set up such that it can project over all of the drums you wish to light up. If necessary, the optional macro lens may be used.

The midi input in the LaserOS settings mode must match the midi output of your drum kit. For further guidance, we have created this video: <https://youtu.be/SZEGPqY0Eg>

## Light Painting

The Light Painting app is great for photographers. Using an imported image, the LaserCube creates a line-by-line display intended to be captured via long exposure photography.



In the Light Painting app, import an image and set the start delay and exposure time using the sliders.



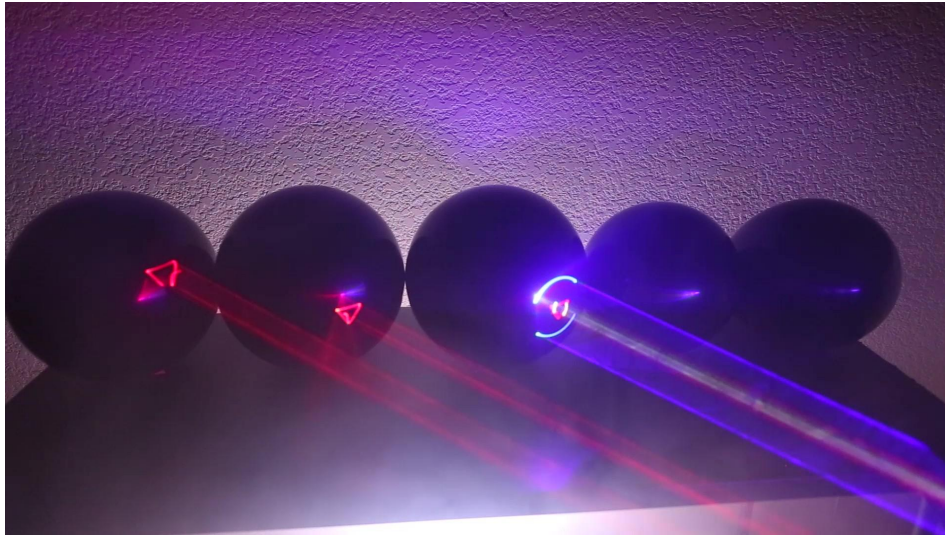
A text tutorial is available in-app, and we have created this video for further guidance:

<https://youtu.be/tk7jr3l9PyQ>

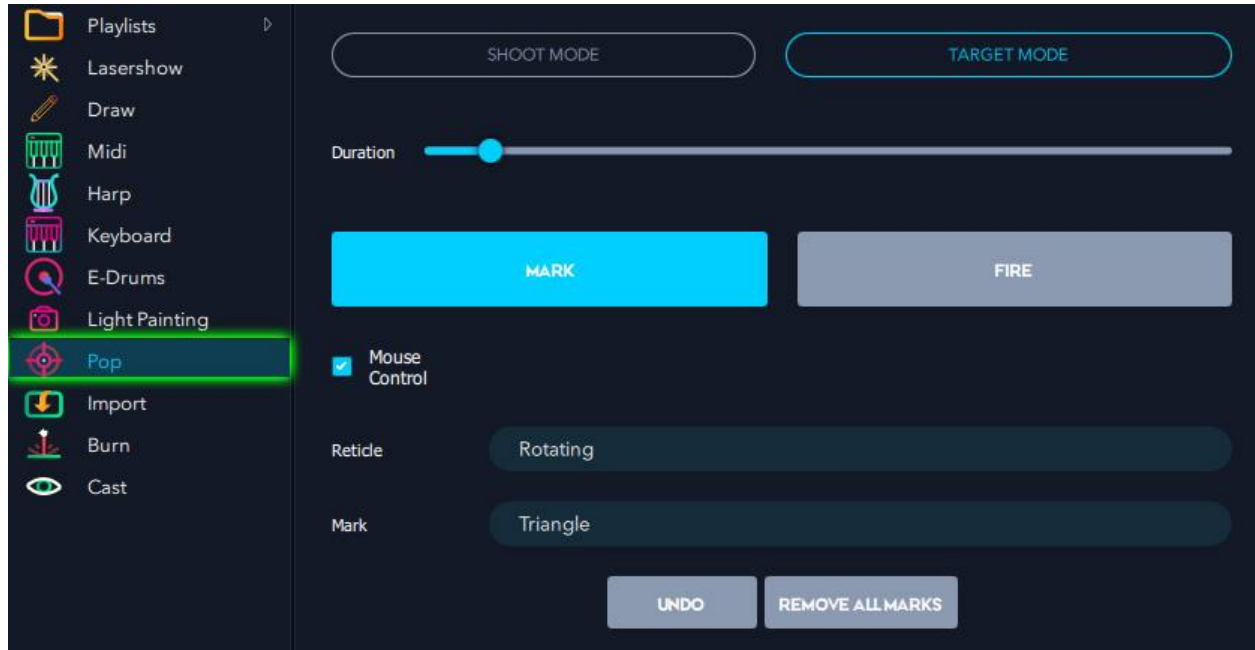


## Pop

The Wicked Lasers LaserCube is powerful enough to pop balloons. Please review all safety information before proceeding. The Pop app allows you to target and pop balloons within the projection area of the LaserCube.



The Pop app must be enabled in settings before use.

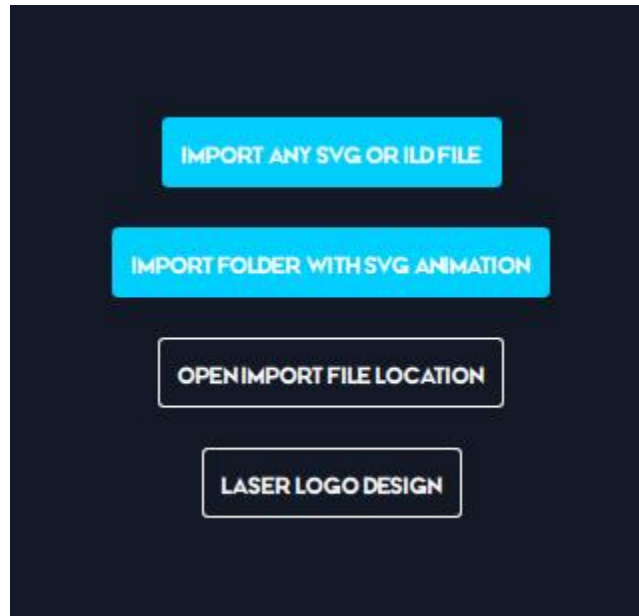


The Pop app has 2 main modes of operation: single shot mode (shoot mode) or target mode, in which several targets may be set before initiating a “FIRE” sequence which then automatically blasts each target that was set. Other options such as mouse control, reticle type, and target marks are available.

Many videos are available to demonstrate popping mode: <https://youtu.be/7pTLOirCwxY>

## Import

The Import app allows you to import SVG or ILD files, or entire folders containing SVG animations.



You can even have your company logo made into a Laser Logo Design.

## Burn

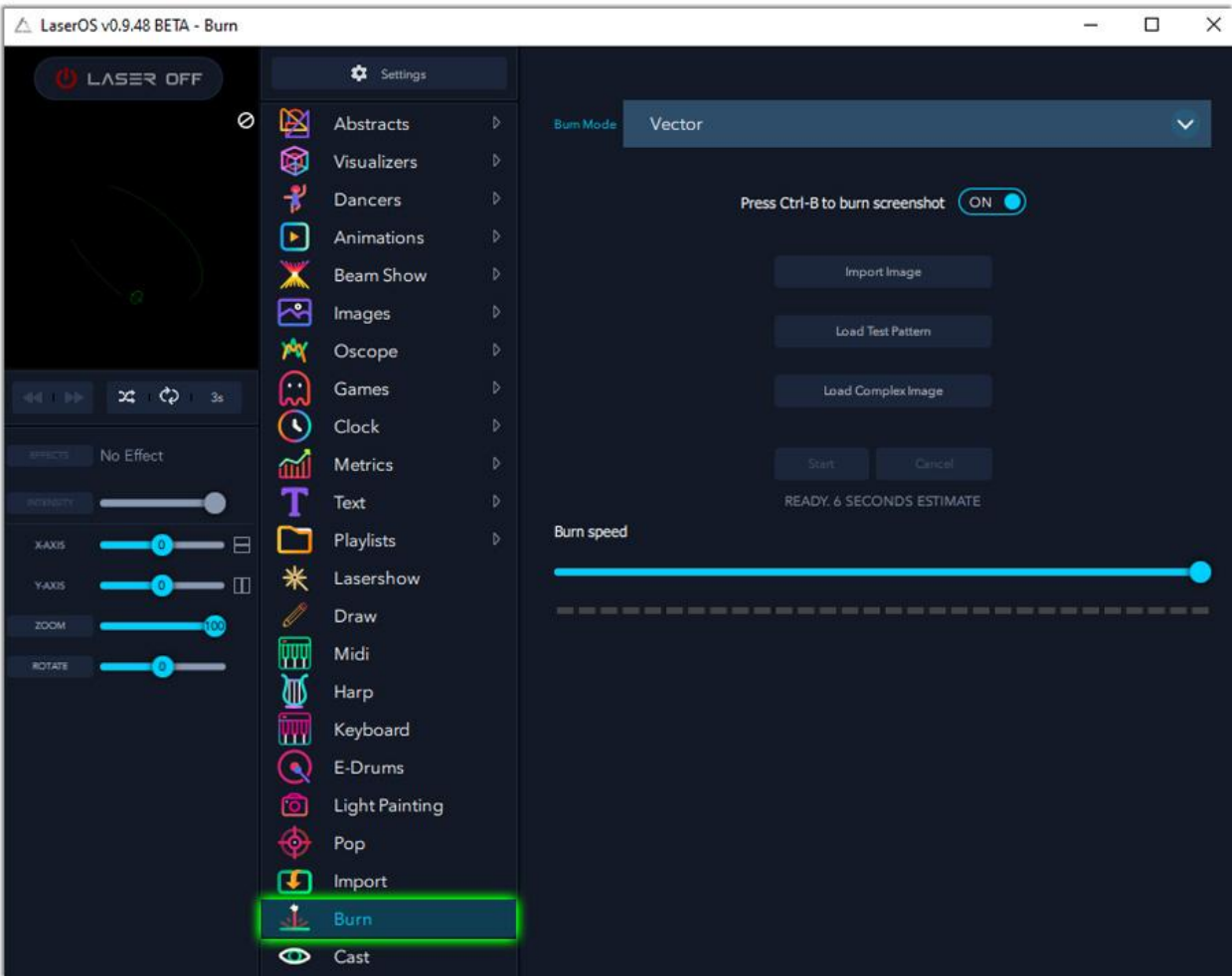
The Burn app allows you to burn, or engrave, images onto various materials such as wood, leather, or plastic.



The Burn app is activated in *General Settings*. Please review all safety videos before using this app.







You can burn custom images or vector files, or screenshots from any of the other apps within LaserOS.

It is recommended that you experiment on a scrap piece of material in order to determine the proper burn settings and burn rate. Too high of a burn speed setting may cause blank spots in your etch, and too low of a setting may cause it to over-burn, distorting the image or creating holes in your material.

### *Burning a Custom Image*

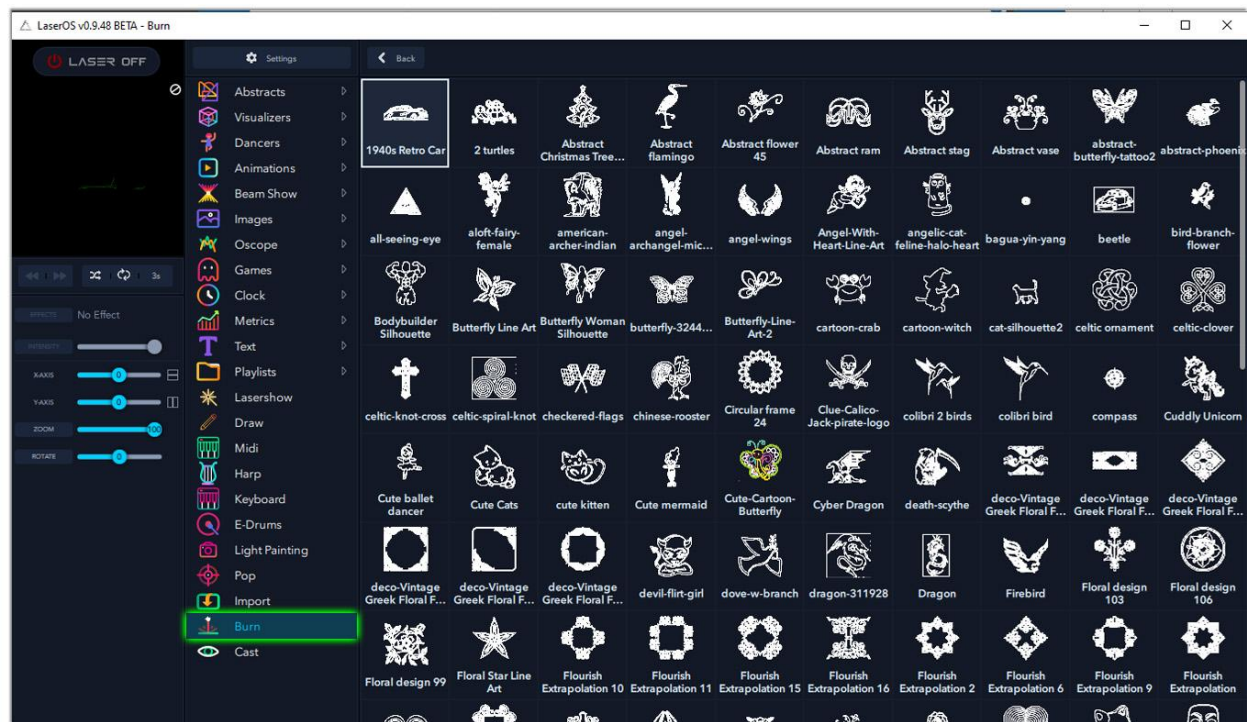
To burn a custom image, use “Import Image” from the Burn app. You can import any jpg, svg, ild, png, or bmp file.

### *Burning a Screenshot*

To burn a screenshot from any app in LaserOS, make sure the “Press Ctrl-B to burn a screenshot” option is toggle ON within the Burn app. Then, from any app, use the Ctrl-B keys on your computer to send the screenshot to the burn app.

## Burning Built-In Images

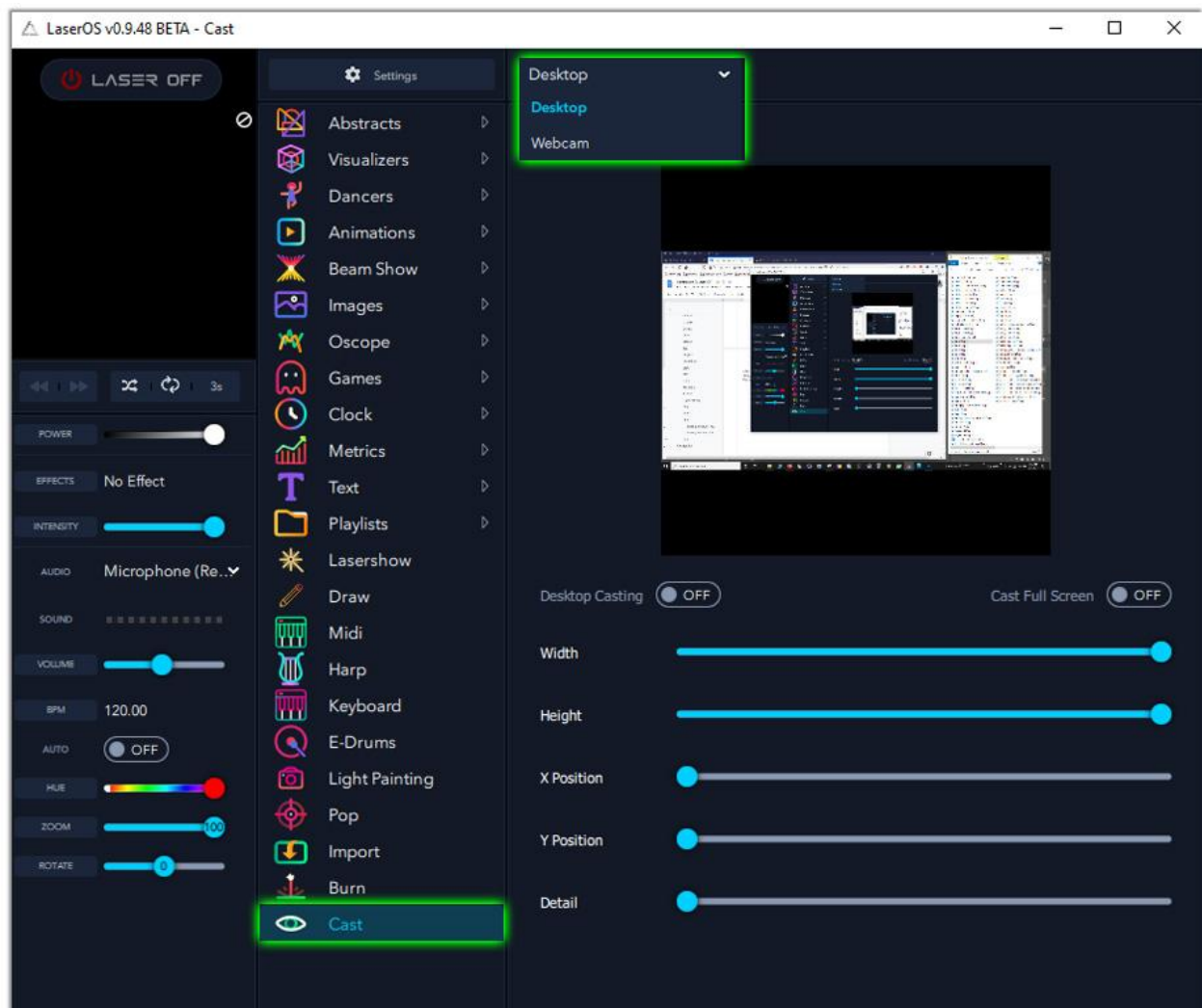
LaserOS has hundreds of built-in images, logos, and vectors to choose from. In the Burn app, select *Load Complex Image* to see some examples of built-in vector images ready to burn.

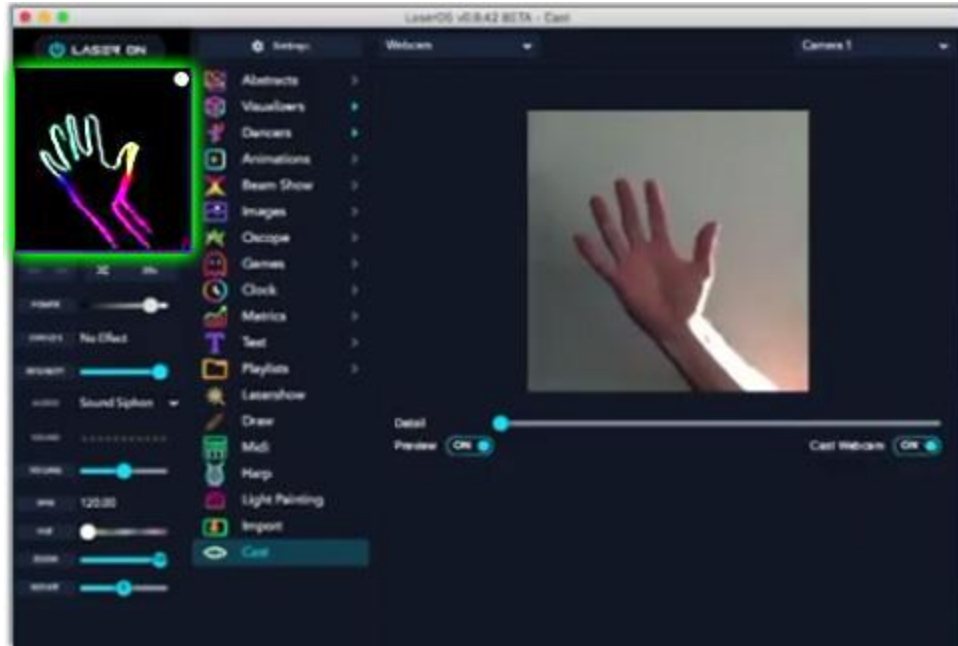


A video tutorial on the Burn app is located here: <https://youtu.be/MuQhJF0DS0s>

## Cast

The Cast app allows you to cast your computer screen to your LaserCube projector.





Alternatively, you can cast images directly from a webcam connected to your computer.

You can also adjust the projected image settings using the width, position, and detail sliders within the Cast app.

A video tutorial on the Cast app is located here: <https://youtu.be/jLj1UxnGZ3w>

## Accessories

Laser accessories can be located at <https://www.laseros.com/laser/gear/>

### Starter Kit

The LaserCube Starter Kit contains a professional grade tripod with a ball head, a mounting clamp, and an EVA case to carry your gear. Everything you need to get moving!

<https://youtu.be/WUZMKlgw-Rs>

### Lens Accessories

#### Lens Kit

Includes 5 lenses: Engraving (focal length 25cm), safety, and 3 diffraction effects. The safety (ND8) lens reduces power for photography.

<https://youtu.be/EIRCEQ-qlcE>

#### Lumia Kit

Texturize your laser shows with 3 unique lumia glass optics. Bring the mesmerizing web and ripple effects from the laserium to your club or living room.

[https://youtu.be/zLPd29\\_ByhU](https://youtu.be/zLPd29_ByhU)

### Beam Expander

Expand your projection size by 9x. The most recommended accessory. Expands the scan angle by 3x to fill larger spaces like clubs and discos with your LaserCube easily.

<https://youtu.be/p-jk1VLQYUM>

### Rain Cover



Protect your cube. The rain cover shields the LaserCube from the rain, allowing you to take your rave outside. Increases the IP rating of the LaserCube from IP54 (cover off) to IP65 (cover on).

## GamePad Game Controller

This bluetooth controller works for LaserOS games on PC/Mac/Android.