INTRODUCTION TO THE USER INTERFACE

MadMapper delivers an intuitive user interface, that is artist-friendly and allows for a fast learning curve.

The UI provides quick access to all of the application's functions, so you can focus on your mappings and unleash your creativity.

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1. Workflow

The basic steps of MadMapper's video mapping workflow are :

1. Import Media.
2. Create surface(s).
3. Adjust Texture Coordinates (UV).
4. Adjust perspective output.

For Light Mapping, the workflow is essentially the same : MadMapper handles a special type of surfaces called Light Surface which convert their texture data to DMX output signals suitable to control physical lights and LEDs.

In both cases, MadMapper's interface is bi-directional, flowing from left (surfaces, fixtures, modules...) to right (media) and vice versa.

And once the project is set up, you can animate it in realtime using physical controllers for instance, or by using MadMapper's built-in Scenes and Cues feature.
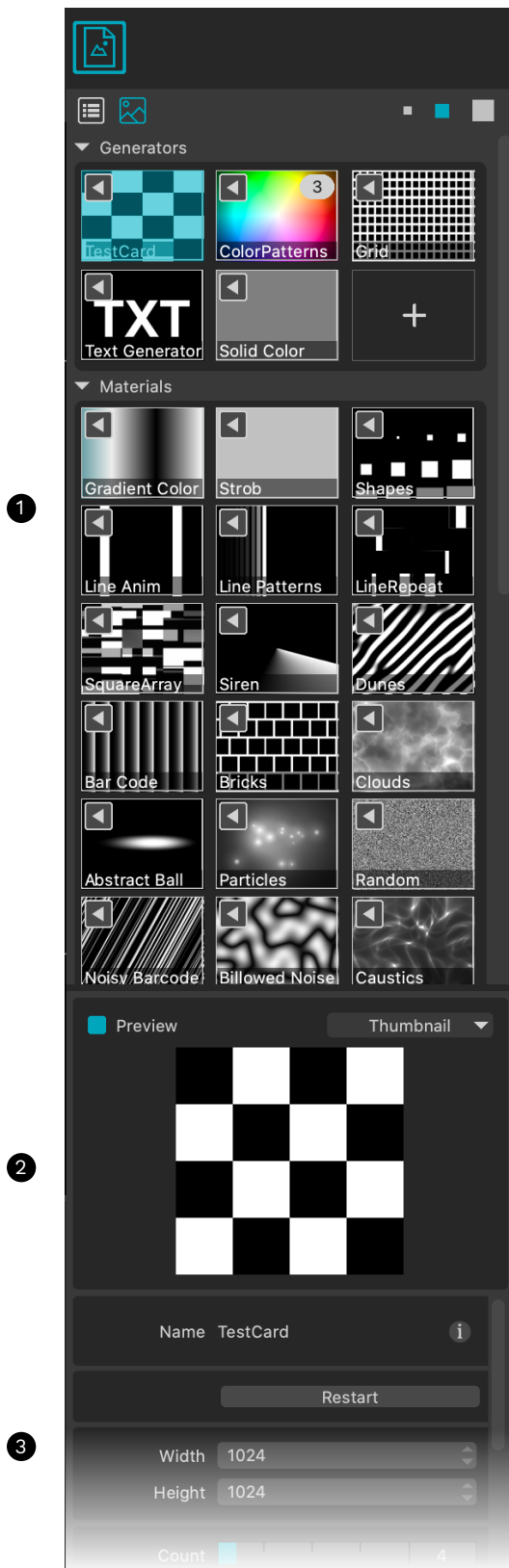
This workflow is detailed in the additional quick guides.
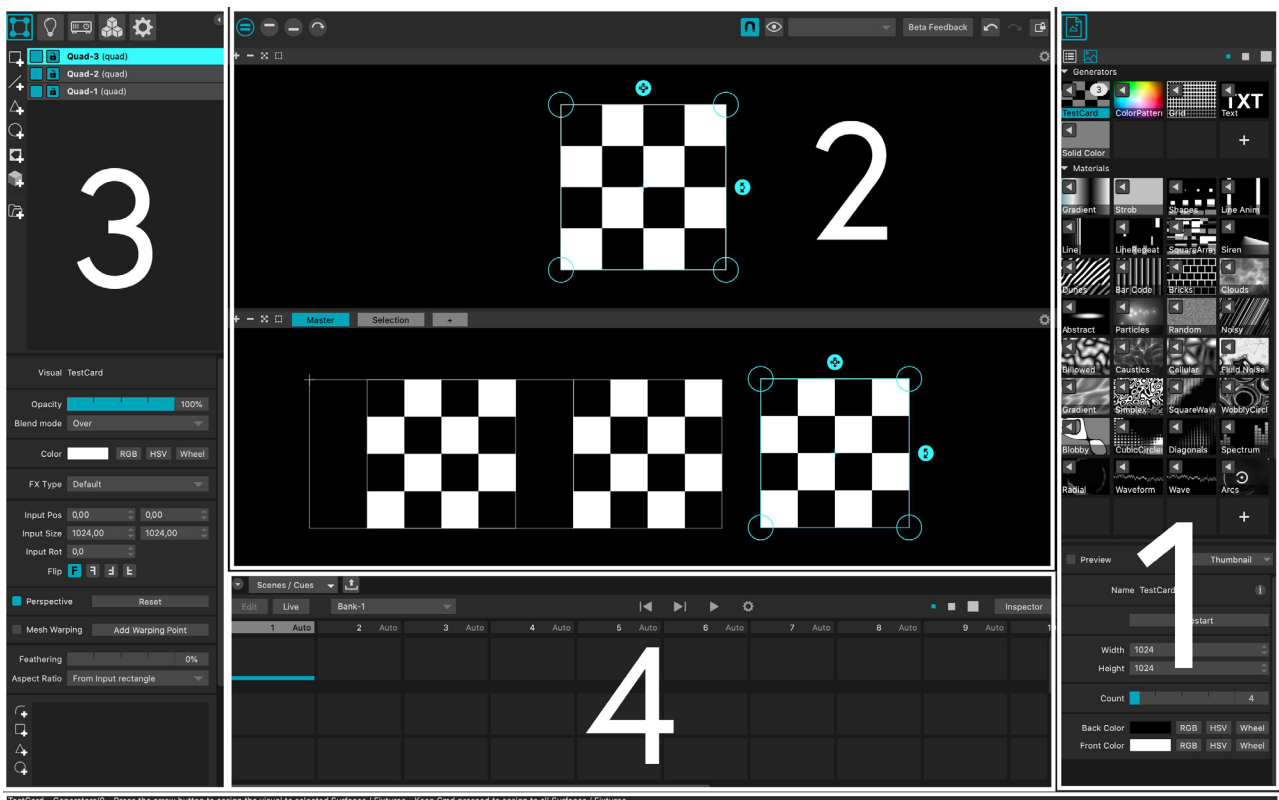
MadMapper's user interface is divided into 4 distinct parts:

the Media Panel ❶, the Views ❷, the Project Tabs ❸ and the Tool Panels ❹.

The Tooltip status bar at the very bottom of the application interface displays contextual information when you mouse over any function/button.

2. Media Panel

▶ The entire right side of the MadMapper interface is the Media Panel, dedicated to the media and divided into two parts : the Media Bin ❶ which shows all the available media and the Media Inspector below, providing access to the selected media's informations ❷, settings and parameters ❸.
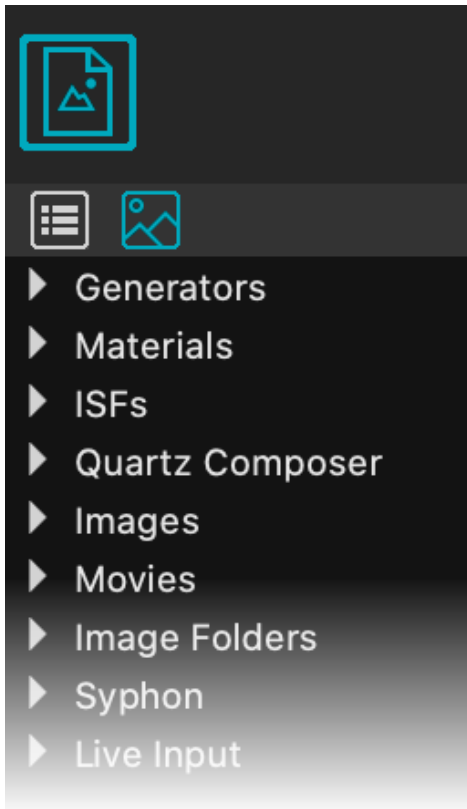
2.1. Media Bin Options

► Switch from thumbnail (default) to List View.

► Increase or decrease the size of the media thumbnail.

▶ Generators
▶ Materials
▶ ISFs
▶ Quartz Composer
▶ Images
▶ Movies
▶ Image Folders
▶ Syphon
▶ Live Input

► Media are organized by categories. Each category can be displayed or not by clicking on its arrow.

► For each Media category, add a media in the Media Bin either with the + button or by dragging and dropping your media from your computer file explorer/finder.
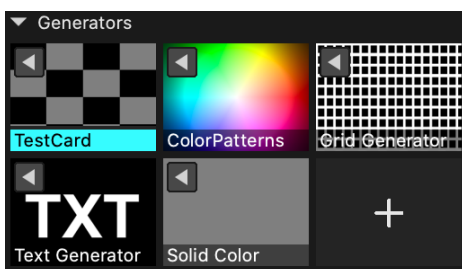

► Affect another media to the selected surface by clicking the Arrow.

2 ► Shows how many surfaces have this media applied. Clicking the number will select all surfaces with this media.

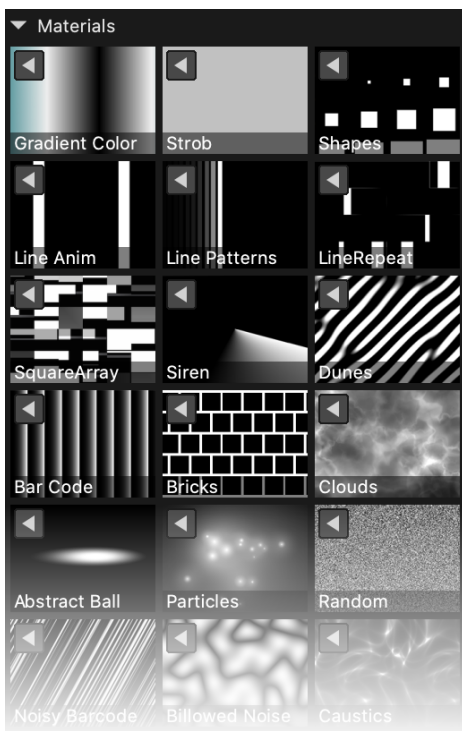Remove a media from the pool at any time with the Delete key.

2.2. Media Categories

► **Generators**
The generators are built-in and are intended for testing and calibration.
They are rendered at a specified pixel size in a texture.

Note that generators also include the Text Generator as well Materials if you drag and drop one in the Generators list.

► **Materials**
Materials are generative shaders, rendered directly on the output destination (projector or preview windows).

Unlike generators where only one rendering will be done regardless of their number in your surfaces, the materials are rendered separately on each of the surfaces where they are used.

The materials are allowing extra precision at high resolution, at the expense of rendering speed.

https://en.wikipedia.org/wiki/Shader

Materials can be dragged to the Generators category in order to convert them to a rendered texture at the same specified rendering dimensions.

► **ISFs**
Interactive Shader Format files are GLSL fragment shaders, just like the materials.
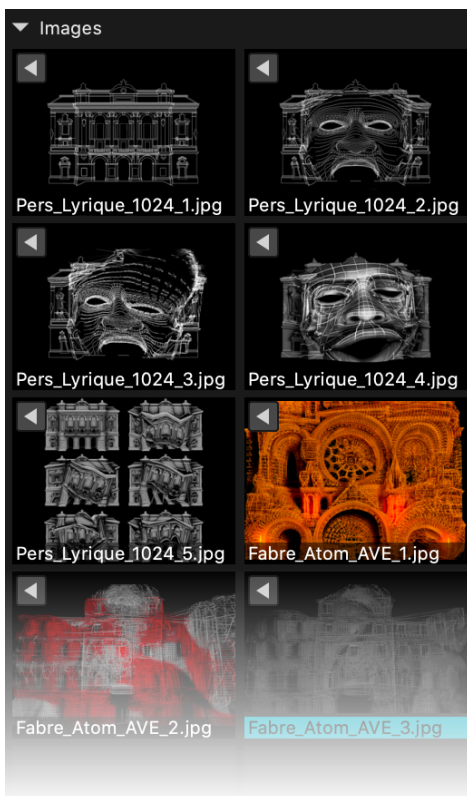
https://isf.video

Note that MadMapper doesn't support multi-pass ISF.
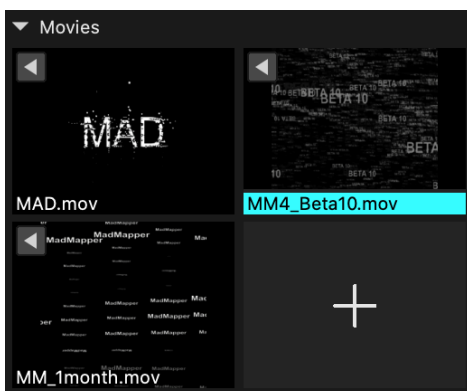
Quartz Composer
Quartz Composer files, the node-based visual programming language.

https://en.wikipedia.org/wiki/Quartz_Composer

► **Images**
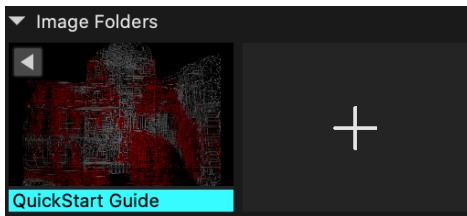Gathers all types of supported images.

► **Movies**
All your imported video files.

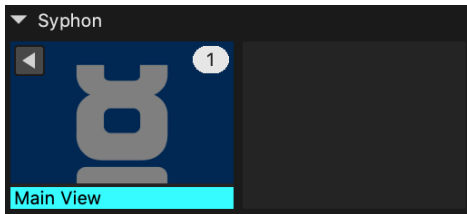Playback performance may vary depending on codec/resolution.

Preferred coded are HAP (for scrubbing) and H264 (for linear forward playback).

▶ **Images Folders**
Add image folders in your media bin.

If pictures are added to this folder, the folder will automatically update in MadMapper (watchdog feature).

▶ **Syphon/Spout /NDI**
Texture data that can be shared between applications using different protocols such as Syphon (Mac), Spout (Win), NDI (Mac/Win).

The data source is live, continuous, e.g. displaying your work done in parallel in Modul8.
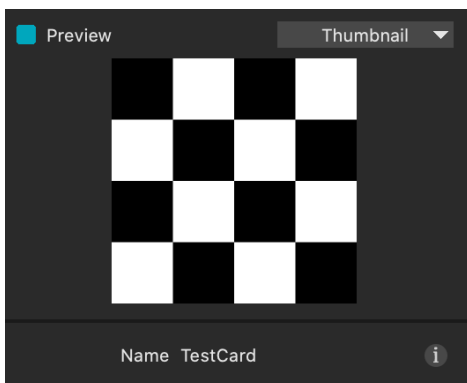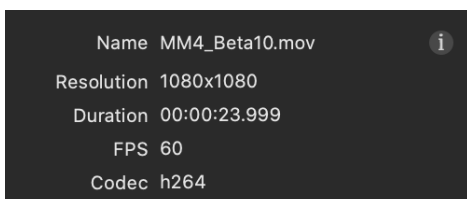
http://syphon.v002.info
https://spout.zeal.co

Live Input
Live feeds that can be streamed into MadMapper, such as webcams or Blackmagic capture cards.
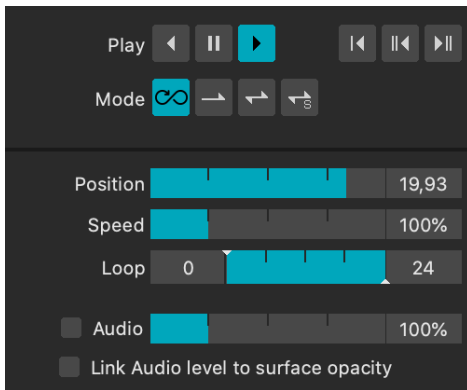
2.3. Media Inspector

▶ The Media Inspector will display for all media a preview (which can be disabled) and options to update the thumbnail of the selected media when a visual is running (update instance in the thumbnail list).

▶ The Media Inspector then displays for instance the media's informations such as the resolution, duration, frame rate and codec (movies).

▶ Access play mode as well for movies, within the Inspector.
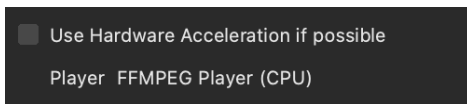
▶ Choose the decompression method for the movie: Using the CPU (processor) of your computer with FFMPEG (default) or using the GPU (graphic card) of your computer for hardware accelerated decompression.
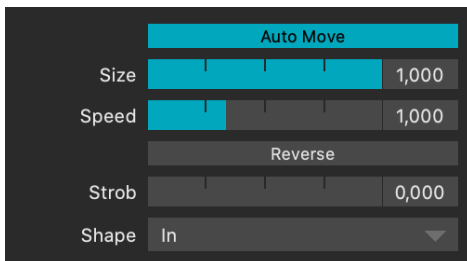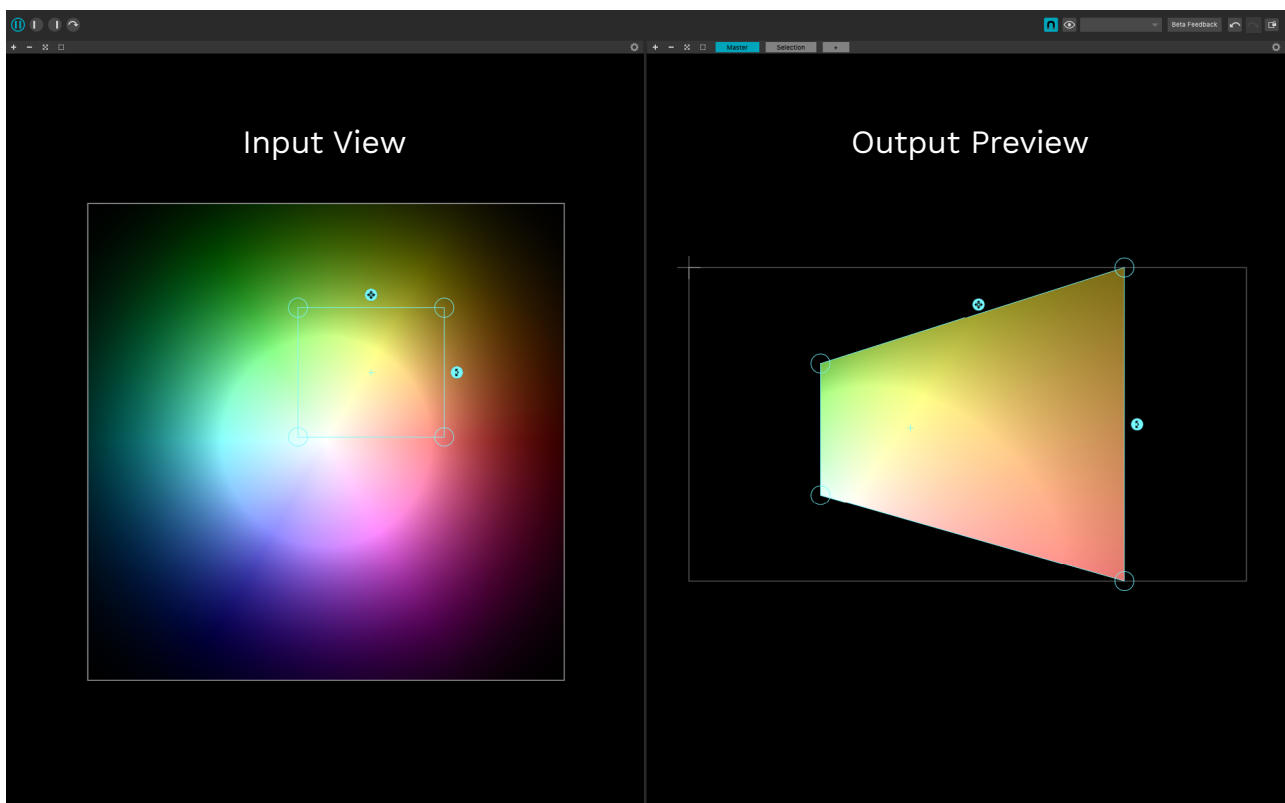
▶ All these settings and parameters are specific to the media.

For instance, these are many options to tweak the Line Patterns shader.

3. Views

Views are at the heart of the interface, where surfaces are created and manipulated.
This central space is split into two views: the input view and the output preview.

In the picture above you can see that only part of the Input View is selected:
so only this part of the input is projected and adjusted in the Output Preview.

3.1. Input, Output
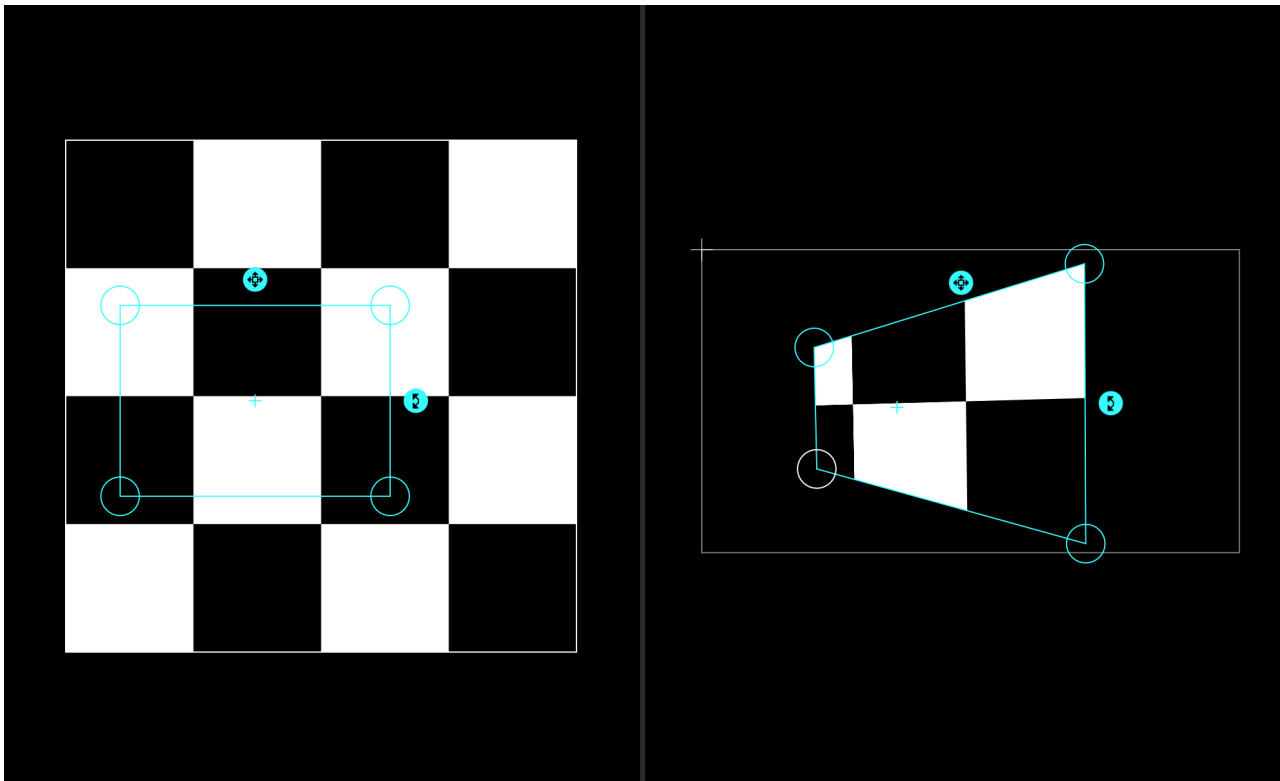
The input view (left) is where you choose what parts of your source media will be mapped.
This is also known as Texture coordinates, or UVs.

https://en.wikipedia.org/wiki/UVW_mapping

The output preview (right) is where you move your surfaces around and change the perspective to conform to the geometry of the object(s) you are projecting on to.

On both views adjust your surface(s) with :

 ▶ The scale button : click, hold and scale.

 ▶ The rotate button : click, hold and rotate.

 ▶ The 4 handle buttons : clic, hold, adjust the corner's position. Use the Tab key to move to the next Handle.

Reminder: the dimensions of the stage are separate from the content. The size of the stage is proportional to the output, but the resolution is fixed by your projector, not the size of your stage.
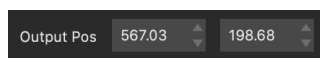
3.2. **Display Options**

Access essential display options with the toolbar, at the top of the views.

▶ • Show the two views side by side (default view).
• Use maximum space for the input view or for the preview output view (show one or the other only).
• Toggle orientations in vertical or horizontal views.

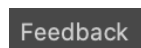▶ Output position : set the selected handle X or Y positions (for your surfaces created in the preview output view).

▶ Activate snapping so objects will snap when they are close.

▶ View only selected objects, click first on what you want to -only- see.

▶ Select a group of surfaces or create a group using the current selection. Allow on the fly selection group by typing a name.

▶ Share with us any remark or feedback : we'll be happy to hear from you!

▶ Undo and Redo buttons.

▶ Lock affine transformations : blocks the possibility to move, scale or rotate any surface. Useful to edit Mesh Warping.

Then, above the input and output preview views, there are several display facilities :
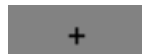
▶ Zoom in.

▶ Zoom out.

▶ Fit the view to the window (will resize to the width of the panel).

▶ Zoom to fit selected surfaces (will resize the window's contents to accommodate all parts of the media that have been selected to be mapped).
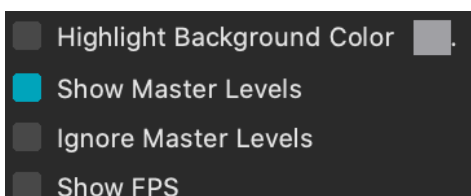
Master	Selection

▶ Master and Selection (preview output window only) : preview groups - filters surfaces shown in preview.

▶ "+" (preview output window only) : preview group from current surfaces selection.

▶ Above both views at top right, click on the gear incon to invoke more setting options.

Highlight Background Color
Show Master Levels
Ignore Master Levels
Show FPS

Last Tip

If the resolution of the views (or the interface in general) does not suit you, which may be the case on a notebook for example, the trick is to change the display resolution of your system, in the Mac / Windows preferences.
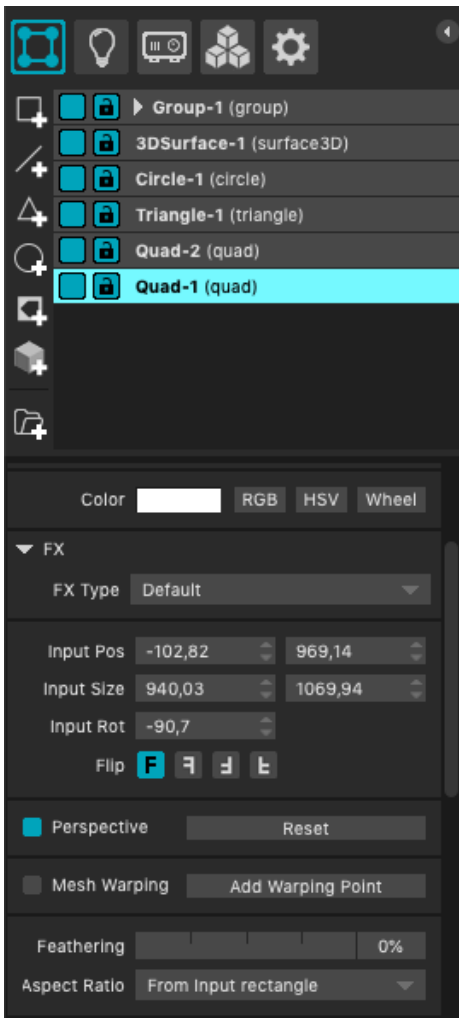
4. Project Tabs
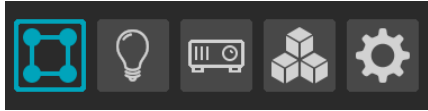
▶ Set up your project with surfaces (video mapping), fixtures (light mapping), manage your projectors (outputs), add extra features with modules and fiddle the master settings.

▶ Show/hide the UVs view and preview. This mode is specifically designed to remove 2 on-screen renderings and might help gain extra performance for your show.

▶ As for the Media and their Media Inspector, Surfaces, MadLight, Outputs and Modules display an Inspector below their list.

4.1. Surfaces Creation Tab

► This is where you will create virtual surfaces that correspond to your real world structure.

The Surface creation tab is generally the main place where you will work and it's therefore the default tab when you launch MadMapper.

The different types of shapes, their flexibility of use and their parameters will allow you to handle your simplest or most complex projects with ease.
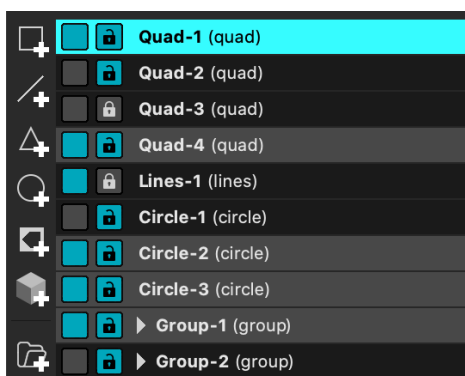
► Added surfaces (and groups) will be listed on the left in the surface list.

By clicking on their names, surfaces can be renamed. Other options are :

► Display or not the surface.

► Lock it or not. Locking a surface is useful when you don't want to change its settings anymore, it will avoid accidents.

By moving your surfaces in the list, they will function as layers in a stack.
Example: if you have two surfaces, the first surface in your list will be in the foreground and the second surface in your list will be in the background.
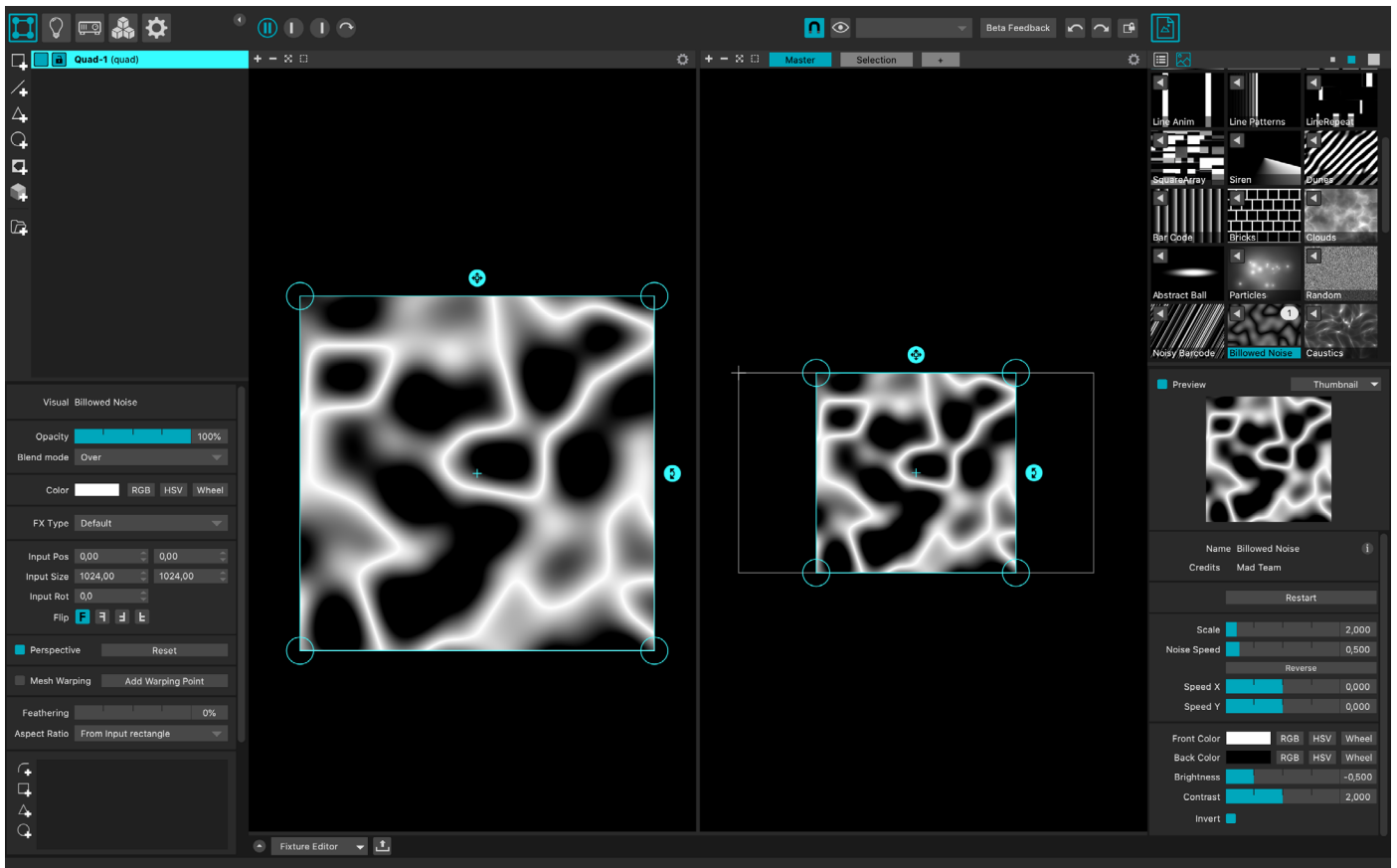
The highlighted surface is also the one that is selected: its Inspector will be displayed in the Project Tab, and the Inspector of the media used will also be displayed in the Media Inspector.

► **Quads**
Create a quad surface.
Use the output preview to adjust the scale, rotation and perspective of a surface.

► **Line**
Add lines as a surface : click, move the cursor and your line is being created. Click again to have an intermediate selection. Press Enter when you have finished your line.

► **Triangle**
Add triangles as a surface - then adjust, scale and rotate your triangle(s) in the output view.

► **Circle**
Add circles as a surface - then adjust (with the four handle points), scale and rotate your circle(s) in the output view. The perspective is scaled with the center handle.

▶ Mask

Add an alpha mask over a surface, in the preview output view only.

Masks don't have textures, they are used to hide parts of the composition on the projector.

In a manner similar to lines, click and draw your mask that will be linked to an other surface.

Press Enter when you are finished.

▶ 3D Surface

Import and calibrate 3D objects in the .OBJ format.

## ▶ Group

Create a group with as many surfaces as you want. Drag them into your group, no matter what type they are.

Or select a group of surfaces, then click on the group icon holding the Shift key. A group will be created with the selected surfaces, in the same location as the selected surfaces.

Create multiple groups for your most complex projects or simply for a better workflow.
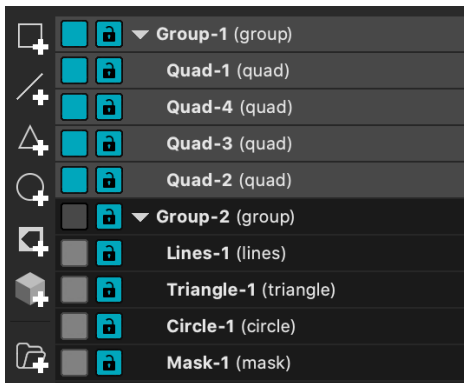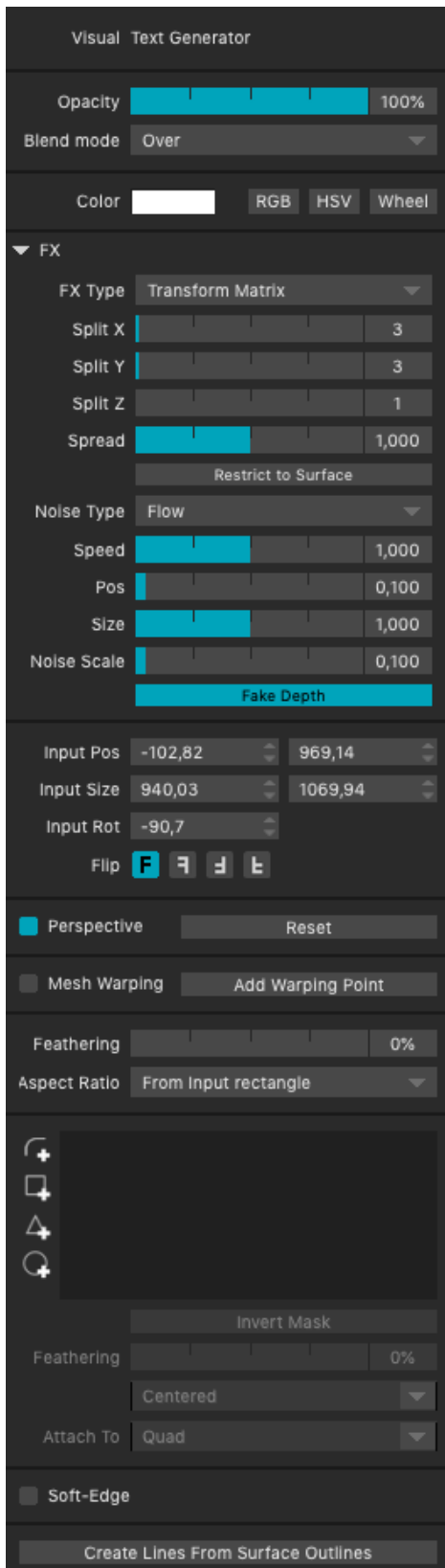
► Surface Inspector

The Surface Inspector, below the list of surfaces, displays the settings and parameters of the selected surface (highlighted in the surfaces list).

It's divided into several parts : fusion modes, FXs, inherent surface parameters.

There are common parameters : Blend Mode, Opacity, Position, Perspective, Colors, FX, etc.

There are useful tools such as soft-edge or feathering.

It's also the place to access essential techniques like Mesh Warping (enable a grid mesh in order to warp the shape, add as many control points as needed), Bezier Mesh Warping (use bezier curves to change the shape into a complex surface), etc.

More details about these techniques in their dedicated In Depth guides.

Also, the 3D surface Inspector comes with specific tools and parameters (wireframe, lighting, edit UVs, etc.).

Last, with shift+select several surfaces, the Inspector will only display the common parameters of the selected surfaces.

Note that the percentage of a setting is multiplied by the group setting.

4.2. Light Fixtures Creation Tab

► This is where you will manage your fixtures for your light mapping projects.
By adding fixtures you will somehow replicate your physical lighting installation in MadMapper.

So technically, you must therefore create fixtures with channels corresponding to your universe(s).

MadMapper will then allow you to animate your installation with an infinite number of media and possibilities.

As for surfaces, you can rename your fixtures, display them or not, lock them or not, and move them in your fixtures lists, they behave as layers as well.

Note that in MadLight, you only work in the input view.
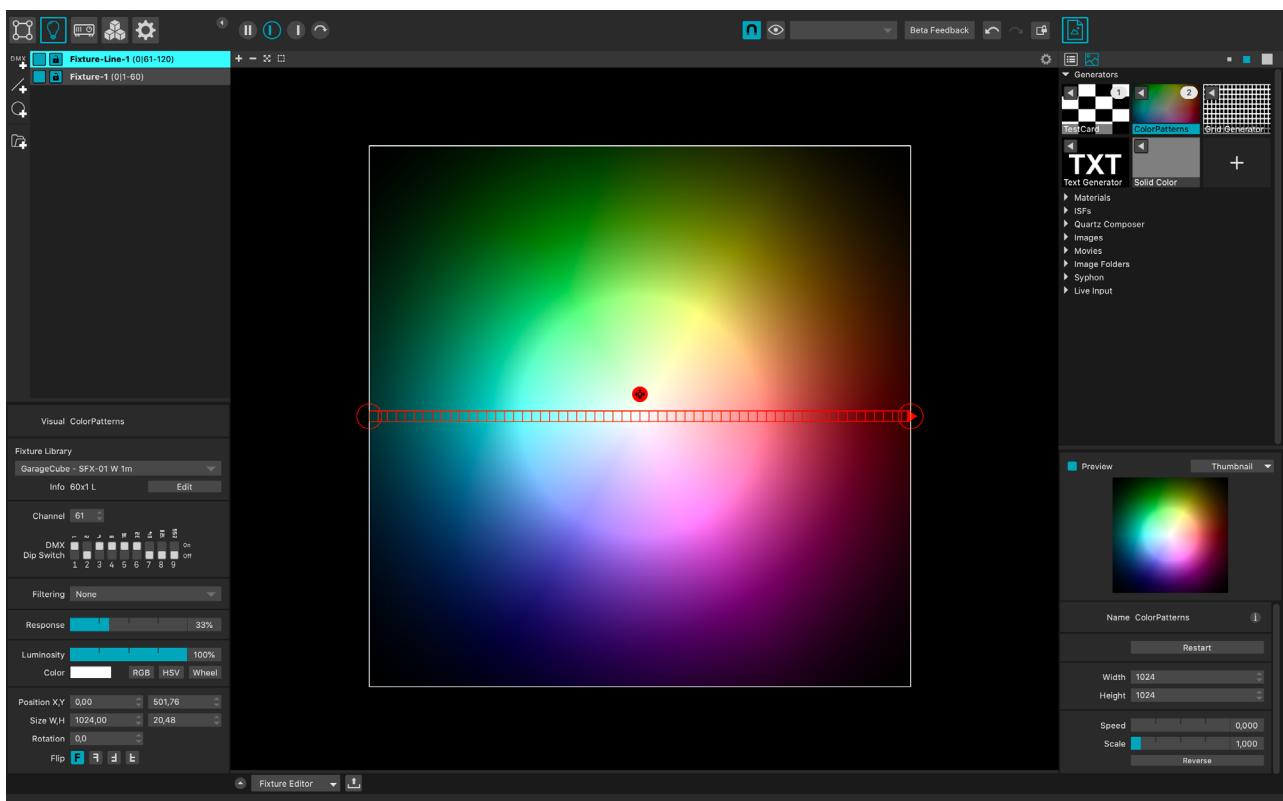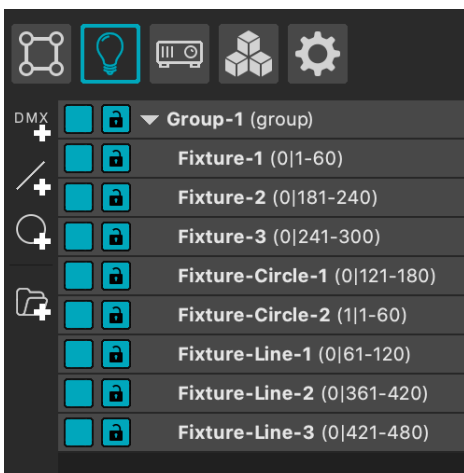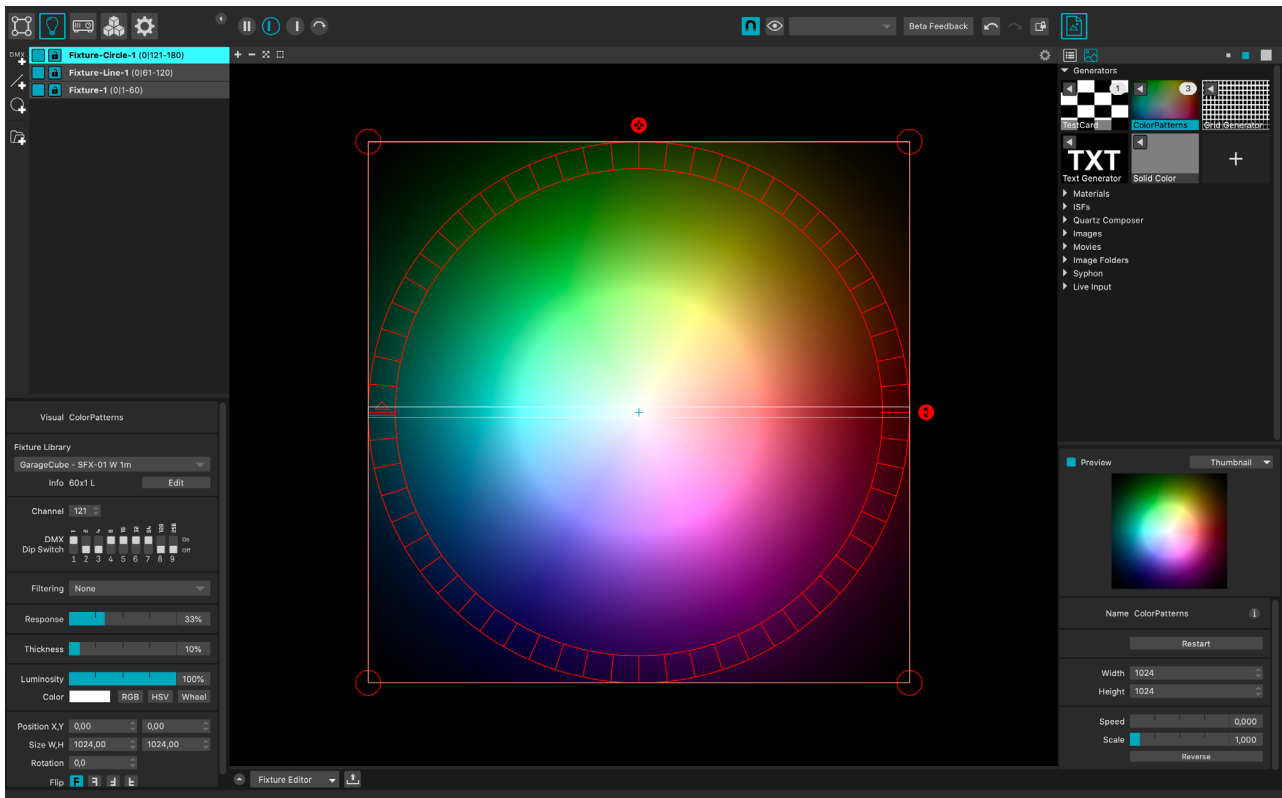

The possibilities available are :

► Add a DMX fixture.

► Add a DMX Line

▶ Add a DMX Circle fixture.

▶ Add a Group of fixtures.

Drag your fixtures into the created group or select a group of surfaces, then click on the group icon holding the Shift key. A group will be created with the selected surfaces, in the same location as the selected surfaces.

Fixtures can be moved around in the fixtures list, but note that a fixture will overwrite the one below it because there are no opacity settings for fixtures: you can't define two fixtures on top of each other and play with the opacity, it will «overwrite» it instead.
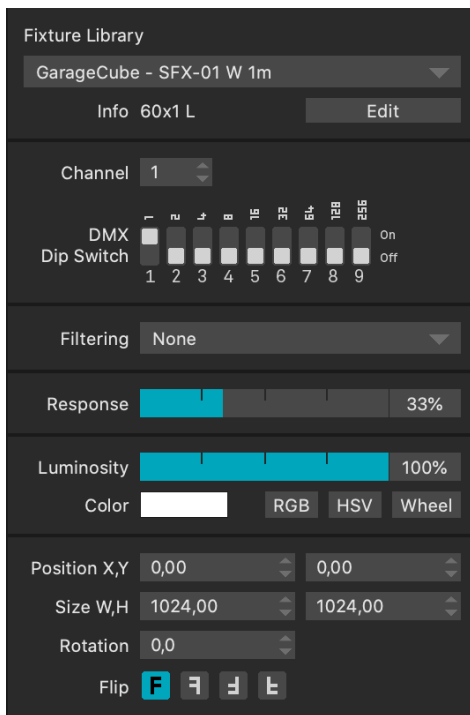
▶ As for surfaces, when a fixture is selected, its settings and parameters are displayed in the fixture Inspector.

The percentage of a setting is also multiplied by the group setting.

The main settings are :

• Fixture definition - choose one from the Fixture library and eventually click on Edit to open the Fixture Editor panel.

• Channel and DMX Dip Switch - acting like a physical dip swith.

• Filtering - change the surface blend mode.

• Response curve - defines how the device luminosity responds to the value sent in DMX/ArtNet.

• Luminosity, Color, Position, Size, Rotation, Flip.

For a selected group of fixture, the Inspector will allow opacity and color triggering.

Much more settings are available directly in the DMX Monitor and the Fixture Editor (cf. Tool Panels section).

More information about the DMX fixture creation in the In Depth guide.

4.3. Projectors Tab

▶ Manage your projectors here.
Note that as with surfaces and fixtures, the Inspector displays the information of the selected projector, highlighted in the projectors list.

Although unlike them, the order of projectors doesn't matter, projectors don't behave like layers.

► Add Projector
Add as many projectors as you want, double-click on their name to rename them, adjust, scale and rotate the projector(s) in the output view so that it matches the surfaces you want to project.
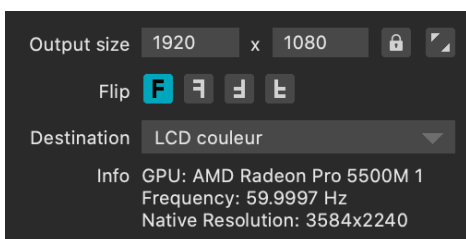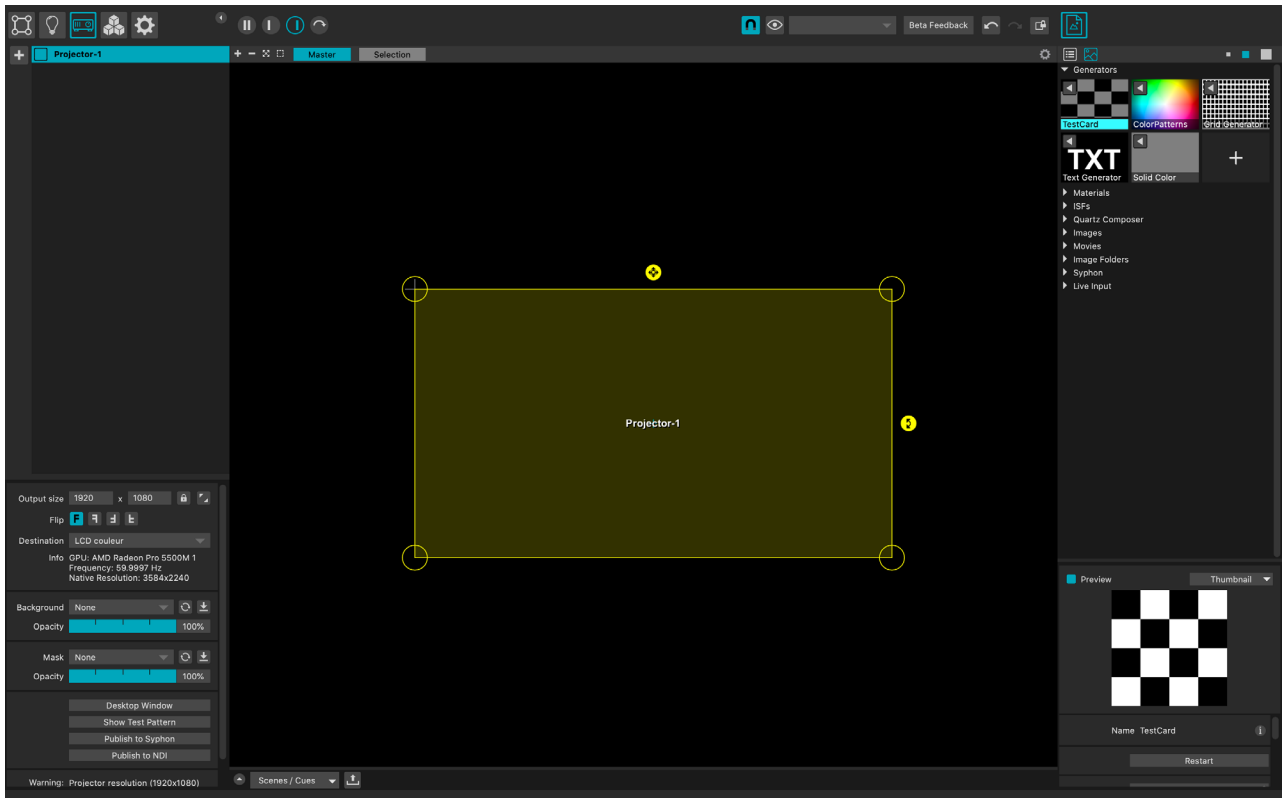
► Output Size, Destination (Inspector)
The Inspector displays the projector's settings and parameters : change the output size, lock/unlock the aspect ratio, capture the destination's resolution.

Below you can flip your projector and then select the atual corresponding projector in the Destination list. The information of the projector will be mentioned below the Destination list.

► Access other parameters below.
Background : Load an image to facilitate your mapping, this image will not be seen in the output. If you modify your image you don't need to re-upload it, just click on the refresh button.
Mask : same process with a mask in .png, although the mask will be seen in the output.
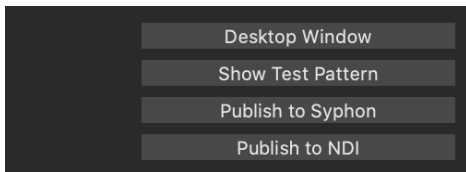
► **Output Tools (Inspector)**
The last part of the output Inspector brings several useful output tools:

-Show or hide the preview with the "desktop windows" button.
-Activate or deactivate a show test pattern for the selected projector.
-Publish the -live- content of the selected projector to Syphon or NDI.

More information the setup of multiple projectors in the In Depth guide.
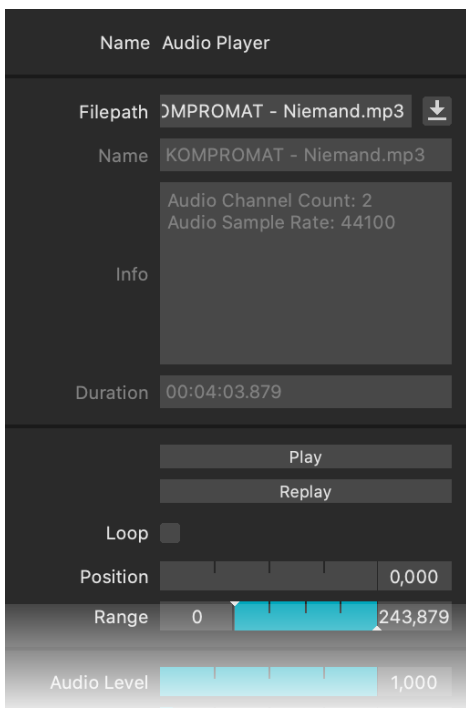
4.4. Modules Tab

► Access extra tools as well as specific functions within the Modules tab.

► Add and set up as many Modules as you want with the + button.
Once a Module is added, its Inspector will be displayed in order to set up the Module.
More details in the Modules In Depth guide.

► **Example of the Audio Player Module**
Allowing the use audio files : drag and drop a mp3, wav, aiff, etc. in MadMapper to instantly launch the module and even create cues with it.

The other Modules are (non-exhaustive list, Modules can be added during the lifetime of MadMapper) :

Calendar Scheduler

Trigger Scenes and Cues at specific dates and times from any calendar application with the Calendar Scheduler Module.

More information about the Calendar Scheduler Module in the In Depth guide.

Cue Scheduler

Schedules your cues/columns with the Cue Scheduler Module.

More information about the Cue Scheduler Module in the In Depth guide.

DMX Router

Allow you to route ArtNet / sACN universes to one or multiple USB DMX devices (Enttec Pro/mk2, garageCube USB-DMX).

MIDI Out

With the MIDI Out Module, MadMapper becomes a MIDI controller for your compatible third-party software or devices.

OSC Out

The OSC Out Module allows you to send OSC requests from MadMapper.

Oscillator

Use this module as a control with numerous signals and parameters.

Oscillator 2D

The Oscillator 2D module is identical as the previous one but with two phase settings.

Oscillator Bank

Identical as the previous Osciallator modules but integrates offset.

MiniMad Controller

Control your MiniMads (Video & Light) from MadMapper, with the MiniMad Controller Module.

4.5. Master Settings Tab

▶ Access quickly to global settings within the Master Setting tab.

▶ **Master:** affects everything.
Video Master: affects only surfaces.
DMX Master: affects only your Light mapping.
**Audio Master:** affects audio only.

If the Master setting is zero, everything will be at zero. And as for surfaces or fixtures groups, the percentage of the Video, DMX or Audio setting is multiplied by the Master setting.
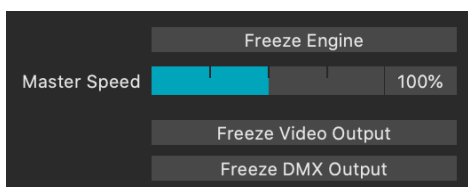
▶ Freeze engine allows to stop the activity, except if an Ableton Link / BPM is in progress.
The Master Speed value is then set to 0.
Playing with this setting with the Master Speed value will also affect the Audio.
Freeze Video and DMX Output: stops the Output (but does not stop playback). Interesting function in Live when assigned to a control.
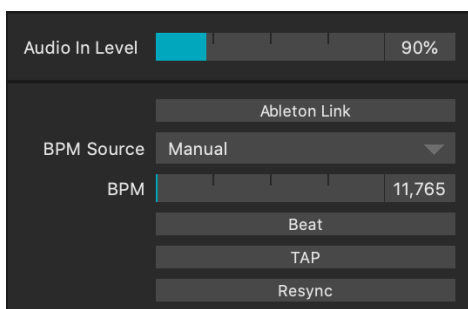
▶ Access to other settings below such as your BPM source for audio analysis.
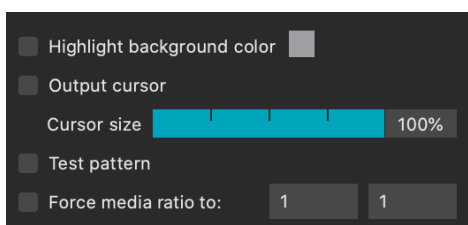
▶ Access useful functions within the last part such as the Output cursor size (useful with the Desktop Window) or the Force media ratio in order to define the same ratio for your media.

5. Tool Panels

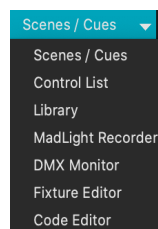You can in one click make a panel of productivity tools appear, which will be useful from the implementation of your projects to your Live performances. Each panel has its own interface, adapted to its function.

5.1. The Tool Panels UI

Note that the Tool Panel is the only part of the interface that can be enlarged or reduced with the window splitter.

► Click on the very first arrow to enlarge or hide the tool panels

► Next, the drop-down list allows you to select a panel and easily switch from one panel to another.

Scenes / Cues
Control List
Library
MadLight Recorder
DMX Monitor
Fixture Editor
Code Editor

► By clicking on the undock button, the panel will detach

► Once the panel is undocked, it can be kept in the foreground with the bottom right button "Keep this panel on top of other windows"

5.2. Scenes and Cues

This feature really changes the way we program a show, it completely replace the former Presets and offers a much more flexible way to store / restore the status of surfaces, fixtures, media or any parameters.

The two tools have different purposes and different advantages, Scenes are made to handle in an easy way the most common cases, while Cues allow finer control of you show. Using one or the other, or combining both, depends on your scenario.

More details in our Scenes and Cues guide about the Cue Banks, the Autoplay Settings and the Cue Inspector.
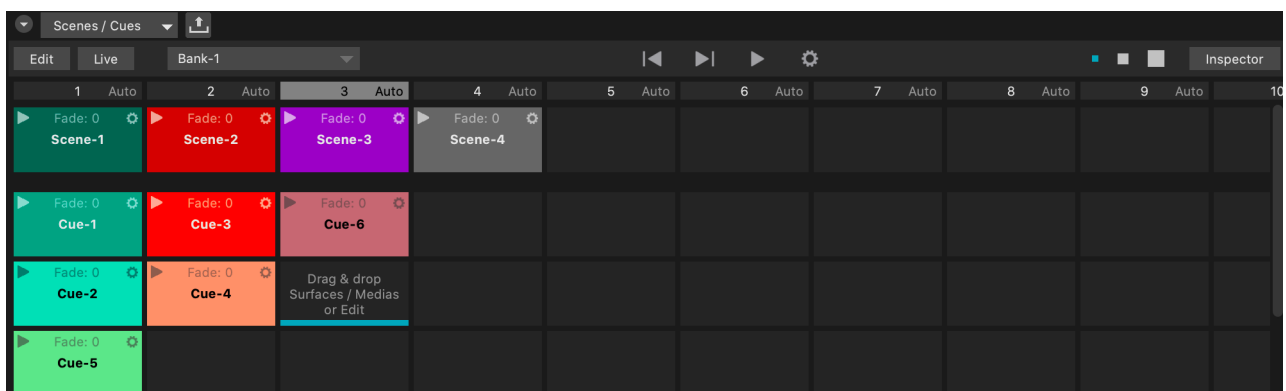
5.3. **Control List**

This panel will allow you to add, configure and manage your controls according to their category.

First, by clicking Learn, you can assign controls to many MadMapper functions. These functions will be highlighted in purple :

Next to the Learn button, select and define numerous custom controls to the selected target parameters with your keyboard, your MIDI controller, OSC (Open Sound Control), Audio,

your Playstation controller, created modules such as the Oscillator (MadMapper controls) or «other» like Leap Motion (needs to be activated in the preferences).
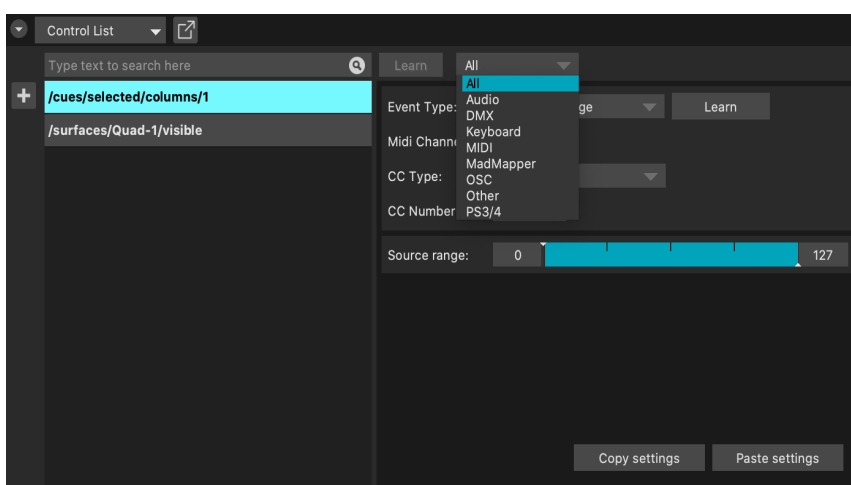
Plus, when you have a lot of controls set up, filter them by clicking on the category or selecting the category from the list if your screen is narrower.
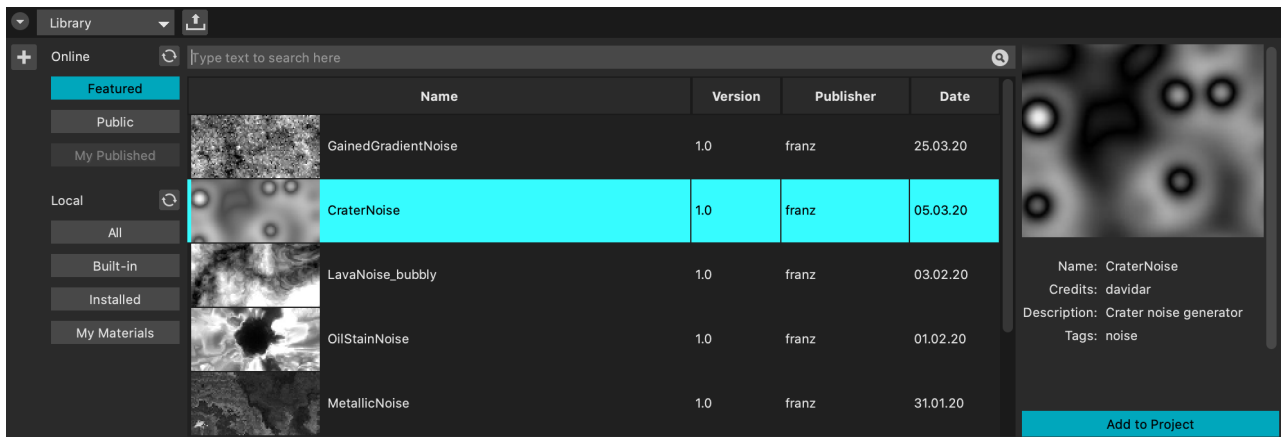
5.4. Library

The Materials Library panel is a great place to share your materials and access those of the community.

For a good start, a curation is made in the featured section.

The panel also allow to :

• Add a new material.
• Access online public ones, your owns.
• Access your local ones: built-in (defaults ones), installed ones from the library, your owns.

5.5. MadLight Recorder

This complete tool is dedicated to the recording of your fixtures, that you will then export to your MiniMad(s) for your installations or performances.

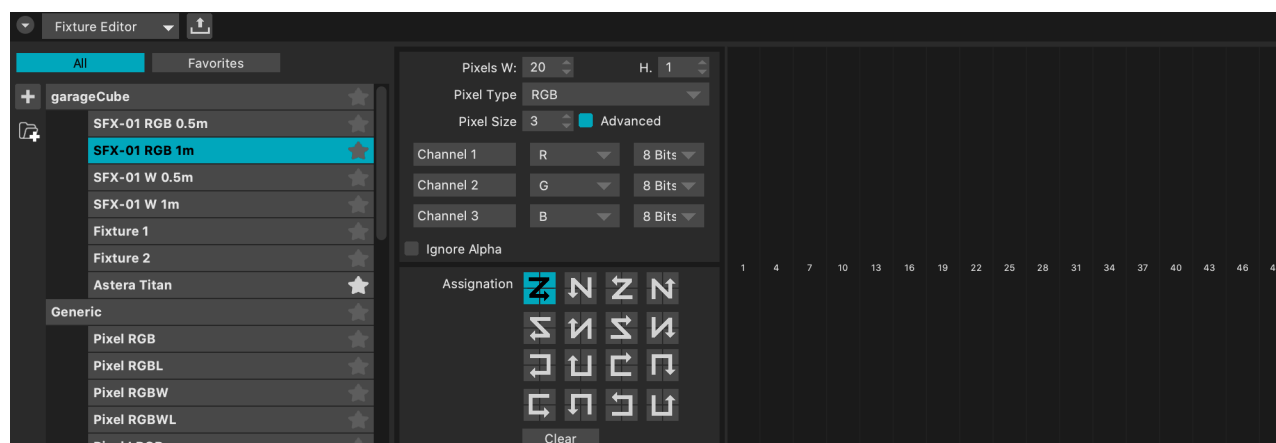For more information, there is the MadLight Recording Quick Guide available.
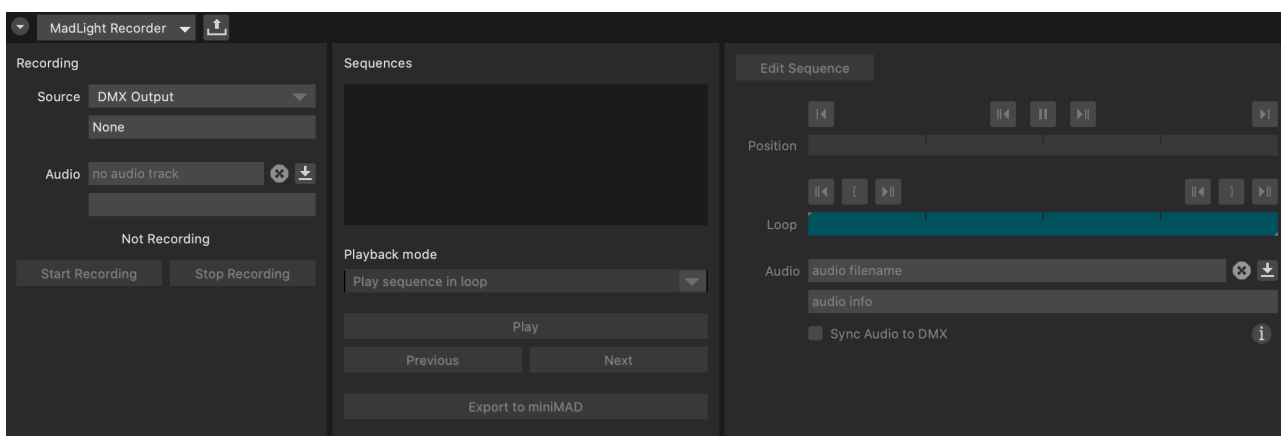
5.6. DMX Monitor

The DMX Monitor, now fully integrated within MadMapper's UI, is remarkably faster and more convenient to use.

5.7. Fixtures Editor

More information about the Fixture Editor in the In Depth guide.


5.8. Code Editor

Now completely native within MadMapper's UI with multi line comments, fast editing, better syntax coloring.

You can drag and drop materials from the Media Tab to the editor to start coding.
The materials are coded in GLSL
(version max 4.1 for Mac, 4.5 for Windows).

https://en.wikipedia.org/wiki/OpenGL_Shading_Language

GLSL quick reference card: https://www.khronos.org/files/opengl41-quick-reference-card.pdf

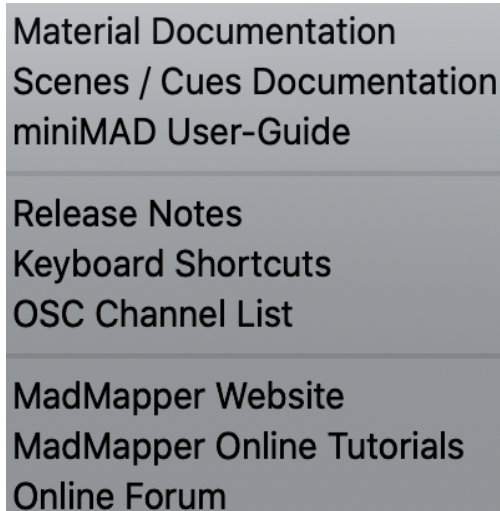More information about material coding in the In Depth guide.
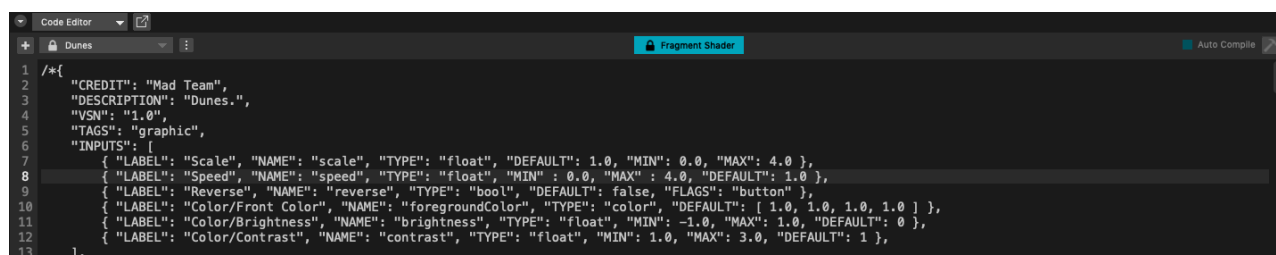
6. Menus and Settings

The MadMapper menu, at the top of the window (Win) or at the top of the screen (Mac) allow you to access many functions manually, to know the keyboard shortcuts, and also to access additional features sometimes only found in these menus such as:

• Export video mapping to MiniMad (File Menu). More details in the «My first video export to MiniMad» guide.

• Toggle between Desktop & Full Screen Mode (Output Menu).

• Spatial Scanner and LED Scanner (Tools Menu). More information in their In Depth guides, available here.

• De-authorize MadMapper: a window inside the software will ask you to confirm with your computer's Administrator password (leave it blank if you don't have one).
A new window will appear with the message «the authorization was successfully removed».
You can click on «ok», MadMapper will close and you'll be able to install it on a new computer with the same license.
Note that authorizing MadMapper is necessary to download or publish materials.

Plus, in the Help Menu you'll find some useful resources and links :

Material Documentation
Scenes / Cues Documentation
miniMAD User-Guide

Release Notes
Keyboard Shortcuts
OSC Channel List

MadMapper Website
MadMapper Online Tutorials
Online Forum

Last, access to important settings via the MadMapper Preferences, such as the Workspace settings or DMX Input and Output settings.

Final Tip!

If the resolution of the views (or the interface in general) does not suit you, which may be the case on a notebook for example, the trick is to change the display resolution of your system, in the Mac / Windows preferences.