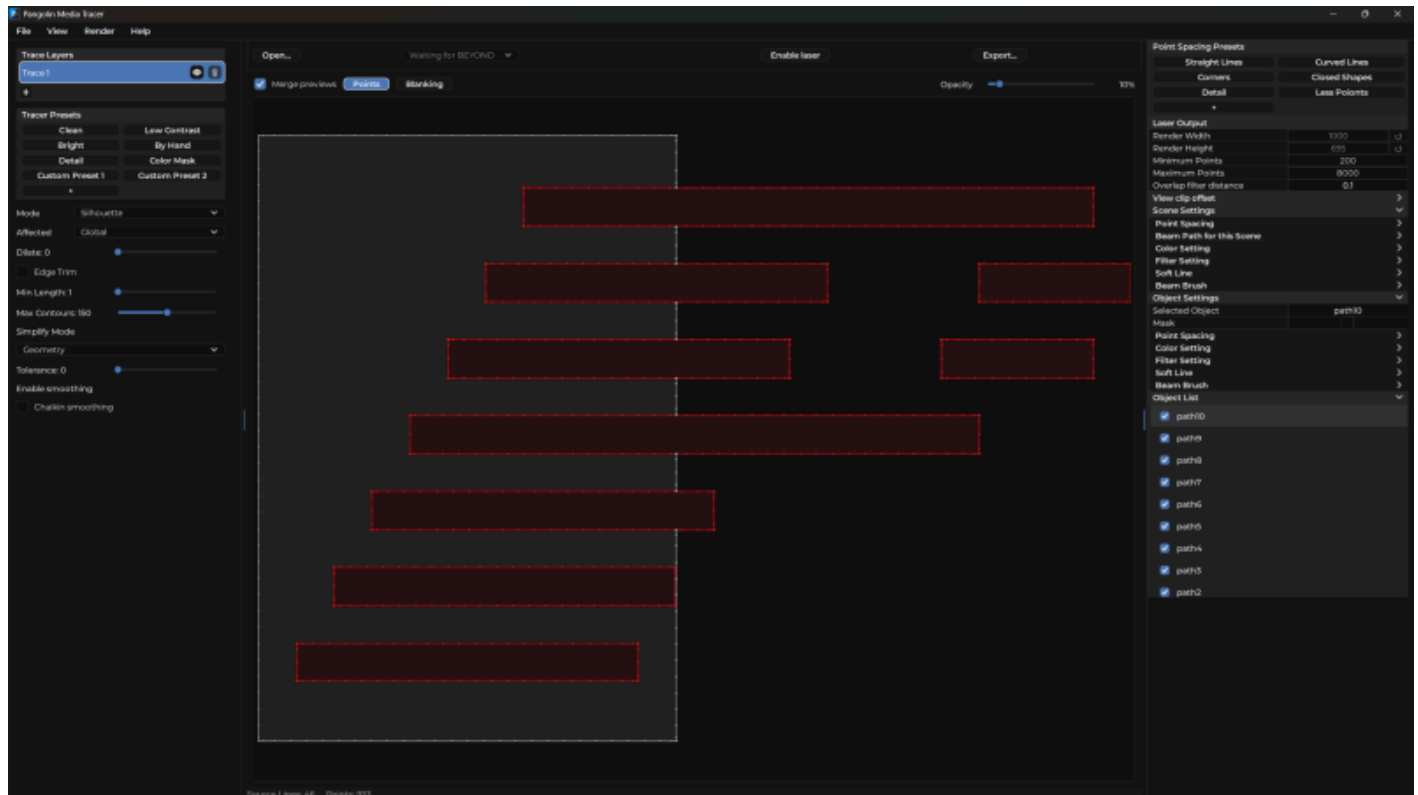


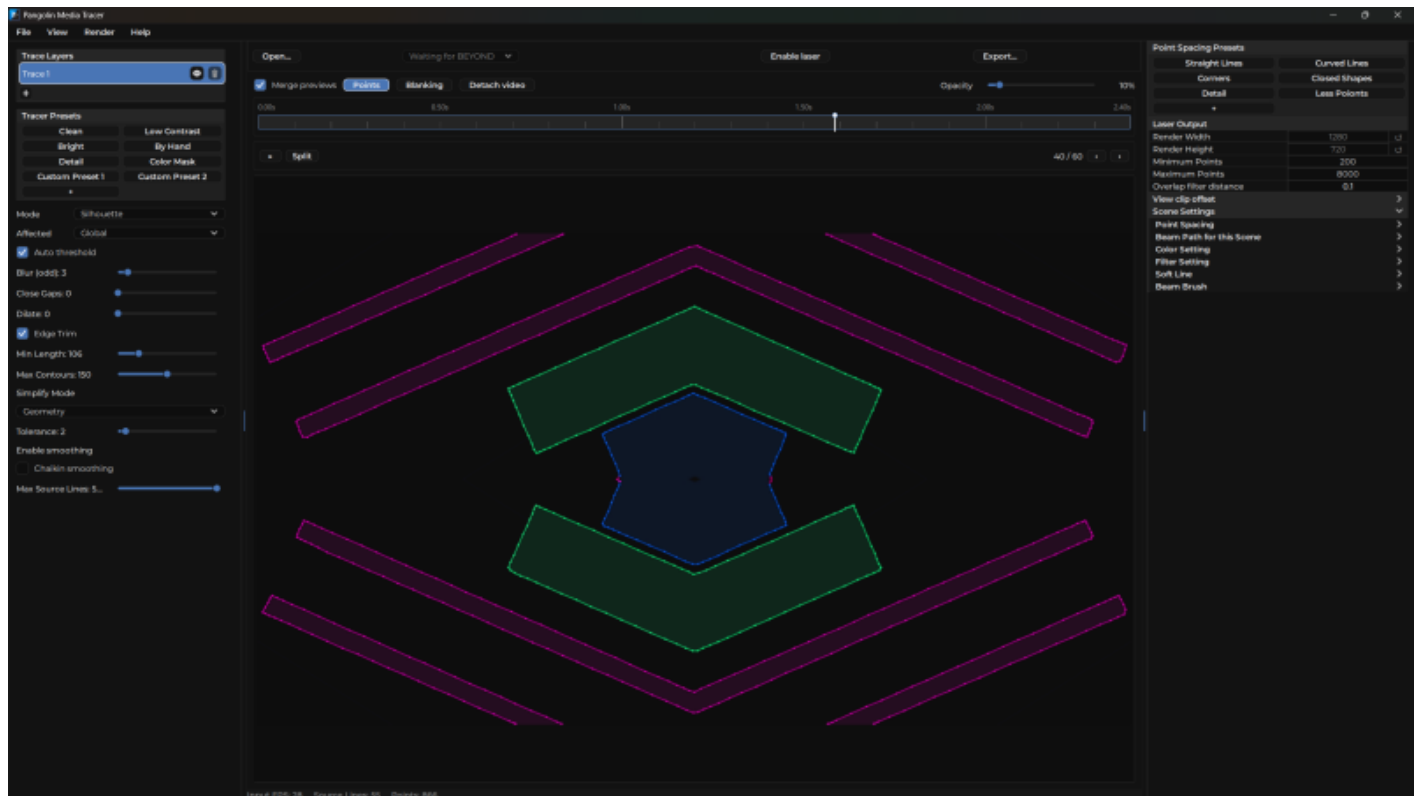
# Pangolin Media Tracer

Manual for the Pangolin Media Tracer, a Companion app for our BEYOND software, first released during the BEYOND 5.8 release.

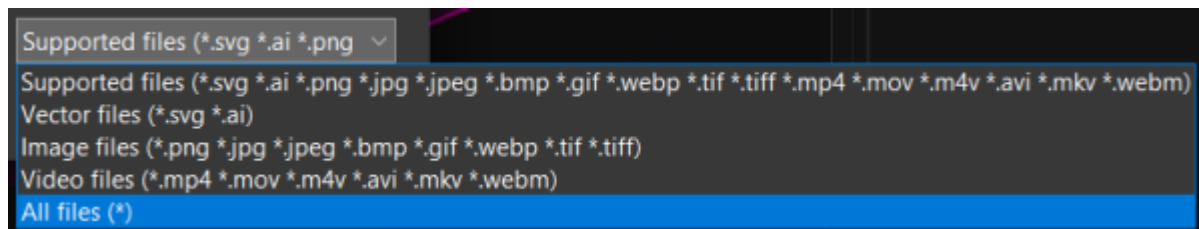


## What is the Pangolin Media Tracer?

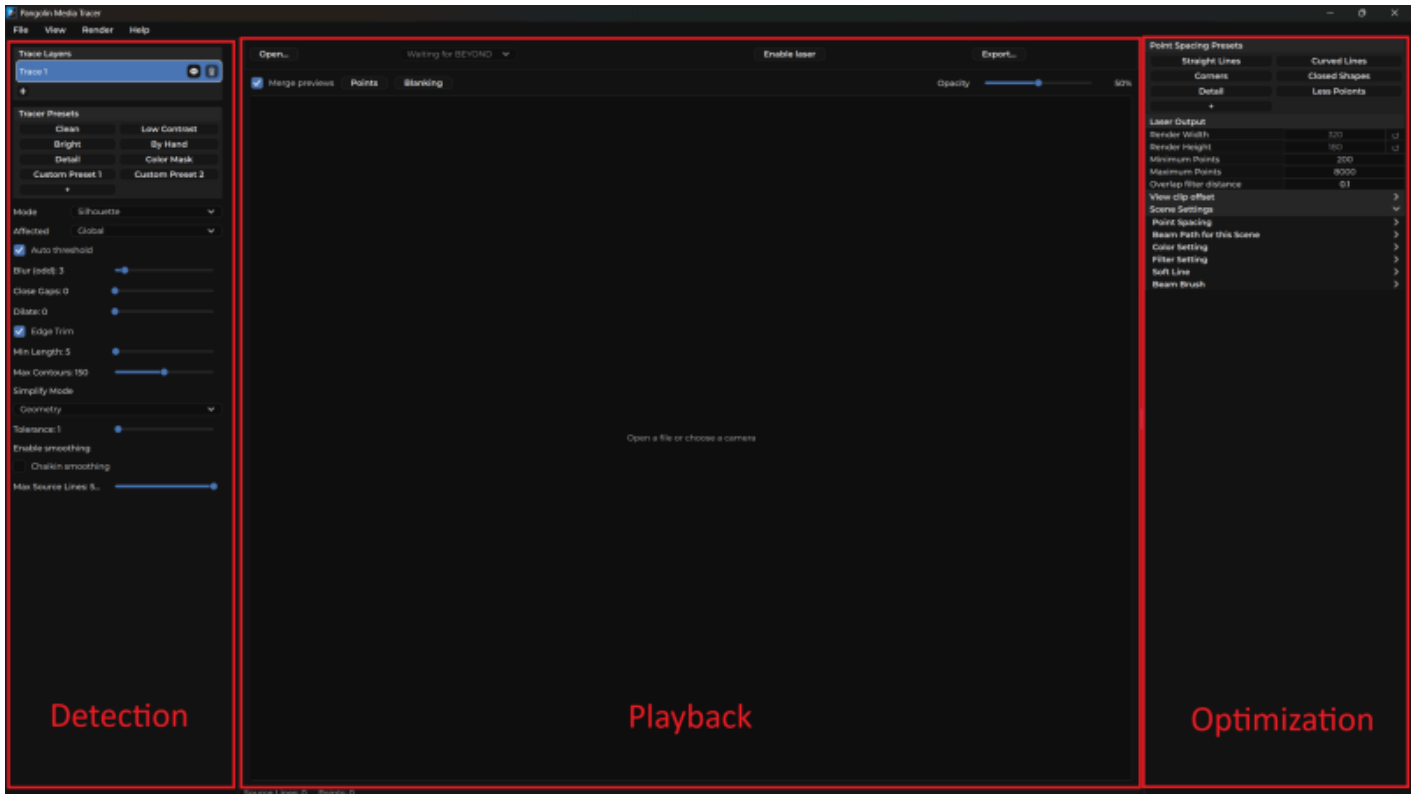
The Pangolin Media Tracer (or PMT) allows users to take in graphical media and convert it to laser graphic content. This tool was designed to be creative tool agnostic, which means it doesn't matter what tool or source you use to create the original media, the media tracer can take it in and create clean and efficient laser lines quickly and efficiently. This should enable the tool to be usable by more artists with different methodologies and creative processes. Without focusing on a single tool that is popular today and making it useful for years to come.



Load in All types of picture files (PNG, JPEG, GIF and more) Vector Files (SVG and AI) Video Files (MOV, MP4, and more) and live inputs (Webcams, NDI) and convert it live or use it to optimize your frames for a perfect conversion.



The Pangolin Media Tracer Is comprised of 3 main parts. The detection choices, Playback area, and optimization settings. The PMT can be used extremely quickly by just loading media and exporting to BEYOND, or used very in depth with different trace layers, masks, video splits, and the full point optimization settings based off the Laser Show Converter MAX render.



And with the bells and whistles needed to do things like quick video tracing with detachable video, Live input options, layering, masking, and splitting of videos into segments. The PMT has every tool a designer may need to create laser content from external media sources.

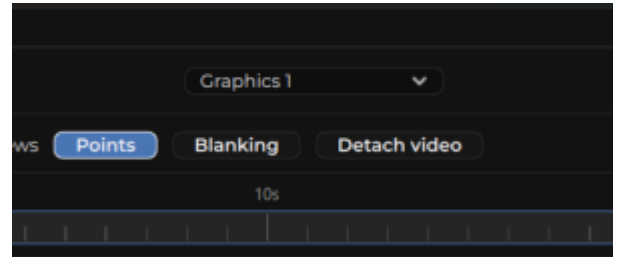
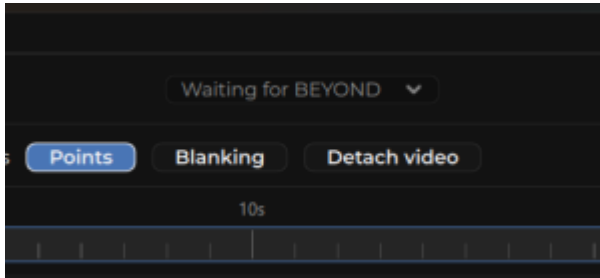
## Getting Started

The Pangolin Media Tracer is part of the BEYOND install starting in the 5.8 Release. To launch the PMT, right click on any empty cell in your workspace, highlight create, and select the “Pangolin Media Tracer”. This will launch the app directly from the installed folder.

(Insert Integration Picture)

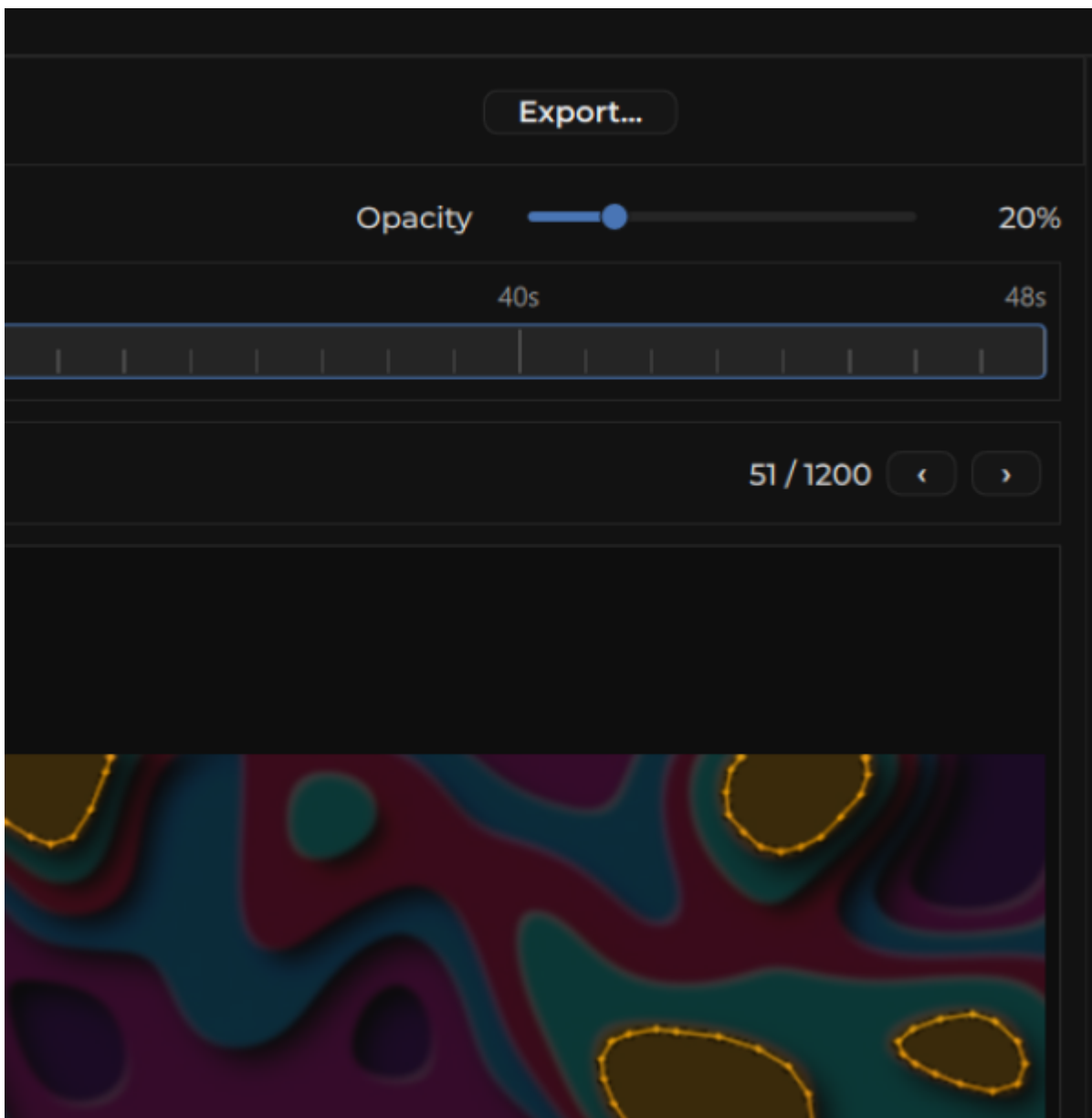
*NOTE: For the PMT to work, you must download a fresh installer for at least the 5.8 release so that it can be properly installed within the BEYOND Folder. If you upgrade from the “In App” updater, the PMT is not included and cannot be updated. All PMT updates will be provided through full installer releases, as it is a companion app to BEYOND and not directly inside the BEYOND application.*

As BEYOND is already running, the PMT app will automatically connect to your active BEYOND software. If the zone selection dropdown says, “Waiting for BEYOND” It is not connected, if it is connected you will see available zones in your BEYOND install.



To load your media, click on the open button on the main toolbar. This will then ask what kind of media you would like to open. From there you can open any and all types of media.

Once the media is loaded, it will begin to be traced by the PMT utilizing the default settings. And you can see the trace. We recommend adjusting the opacity of the background image to your liking, and enabling points to see how the tracer is placing points.



Because media comes in all shapes and sizes, it's recommended to try a few of the presets on the

detection panel to see which might work best for this specific media you are trying to trace.

### List types and give descriptions

Once you are happy with your detection, you can then move onto point optimization. Similarly for detection, we have provided some presets that you should try and check the total point count to find the right value for your needs.

### List types and describe when to use them

You can select a zone from the dropdown and enable laser output to preview your traced media.

Once you are happy, ensure the cue you want to export your trace to is selected in BEYOND. This is where the PMT will send the animation to. Then in the PMT, click export and choose what you would like to export, this changes based on the kind of media you have loaded and other settings you may be using. But For pictures, export trace and for videos export animation are your most likely choices.

The PMT will then render the full animation or single frame and place them in the empty cell you started on in BEYOND. You may then close the PMT, or just select another empty cue, and load different media in the already loaded PMT window, and follow the same process.

## App Sections

Each section of the PMT app serves different purposes and is organized by what the task at hand is. Below we cover each section in detail and describe how to use them.

### File Menu

### Main Button Menu

### Detection Panel

### Time Controls

### Optimization Panel

## Full Tooltips

# Media Tracer Tool Tips

Below is the full list of software tooltips provided in a handy chart.

| Item                | Description                                                                                                                                                                                                               |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Left Pane</b>    |                                                                                                                                                                                                                           |
| "Trace Layers"      | Trace Layers are different configurable "traces" that can have individual settings for tracing and point settings. Can also be separated by splits on video media.                                                        |
| "Tracer Presets"    | Tracer Presets are pre-built settings tested against many types of content.                                                                                                                                               |
| <b>Presets</b>      | Looks good for now, when I change them I will update                                                                                                                                                                      |
|                     |                                                                                                                                                                                                                           |
| Mode                | The Mode is the trace detection mode for this trace layer.                                                                                                                                                                |
| Affected            | This is to select the area you want to trace, either global for the entire image, local to auto detect an object, or mask to draw specific areas to trace.                                                                |
| "Auto Treshold"     | Auto Threshold will automatically detect the overall brightness of the scene and determine the correct place to put the trace.                                                                                            |
| Threshold           | Manually set at what average brightness the trace should start.                                                                                                                                                           |
| Blur                | Blur will soften the source content to remove noise for detection.                                                                                                                                                        |
| Close Gaps          | Close gaps determines how much spacing between closed shapes are allowed in the trace, increase this number to connect small objects together and be seen as larger objects.                                              |
| Dilate              | Dilate allows you to make the detected lines farther away from the source. This can help circles look better on laser output by spreading the points away from where the scanner will need to actually be while scanning. |
| Edge Trim           | Edge trim will cut all lines that connect to the edge of the frame, on by default to save points in your final image. Disable to get closed shapes along objects cutting on the edge of the frame.                        |
| Min Length          | Minimum length is the shortest length of object to be detected. If you have many small shapes that are not needed, increase this number to filter them out.                                                               |
| Max Contours        | Max contours is the number of vertices on a detected object allowed. This acts as a filter for unnecessarily large objects and can filter detection of extra noisy objects.                                               |
| Simplify Mode       | Simplify mode is the method of simplifying the output frame from the source material. This can be useful for reducing noise, or removing detail to reduce points.                                                         |
| Tolerance           | The tolerance is the multiplier on the simplify mode, increase this value to simplify the laser frame from the source material more.                                                                                      |
| Enable Smoothing    | Chaikin Smoothing is an algorithm to smooth out the input data to create a softer render off of a harder traced image.                                                                                                    |
| Max Source Lines    | Max Source Lines is the number of vertices detected in a frame. Reduce this value to create a limit to the amount of detail traced.                                                                                       |
| <b>Central Pane</b> |                                                                                                                                                                                                                           |
| Open                | Open files, load live inputs and media into the tracer.                                                                                                                                                                   |
| Zone Dropdown       | Select the zone from the zone list in BEYOND to output from the Media Tracer. This list only updates from the Projection Zone list when closed and reloaded.                                                              |

| Item                        | Description                                                                                                                                                                                                                                                                                                                               |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enable Laser                | Click to enable laser data streaming to the selected zone in BEYOND. Press ESC at any time to disable.                                                                                                                                                                                                                                    |
| Export...                   |                                                                                                                                                                                                                                                                                                                                           |
|                             | Export your frame or animation to the currently selected BEYOND Cue. There are multiple options for export. Check the render dropdown for more options.                                                                                                                                                                                   |
| "Merge Previews"            | View the source media on top of or separately from the traced laser image.                                                                                                                                                                                                                                                                |
| Points                      | View the points of the traced frame.                                                                                                                                                                                                                                                                                                      |
| Blanking                    | View the blanking of the traced frame.                                                                                                                                                                                                                                                                                                    |
| Opacity                     | Change the brightness of the source material to the traced laser frame                                                                                                                                                                                                                                                                    |
| <b>Video options</b>        | Look good                                                                                                                                                                                                                                                                                                                                 |
| <b>Right Pane</b>           |                                                                                                                                                                                                                                                                                                                                           |
| Point Spacing Presets       | Here you adjust the point spacing options to optimize your laser frames. Based on the 3DS MAX Point Spacing Settings.                                                                                                                                                                                                                     |
| For the presets themselves, | Looks good for now, I will describe when I make them.                                                                                                                                                                                                                                                                                     |
| Laser Output                | This will be the render size of the content, the higher resolution the more accurate the trace, but sometimes the slower performance and more points. Recommend lower values for live tracing, medium for video, and high for single frames. Set to an aspect Ratio of 1:1 at the preferred resolution to fill a BEYOND frame completely. |
| Minimum Points              | The lowest number of points in a frame the media tracer will produce.                                                                                                                                                                                                                                                                     |
| Maximum Points              | The highest number of points in a frame the media tracer will produce.                                                                                                                                                                                                                                                                    |
| Overlap Filter Distance     | A filter for points on top of each other.                                                                                                                                                                                                                                                                                                 |
| Video Clip Offset           | Here you can trim the edges of detection for the overall render.                                                                                                                                                                                                                                                                          |
| Scene Settings              | Below is the full setting options for how the render will place points on your traced image. All settings are configurable and optimization for points mostly happens here. These settings are separate for each separate trace as well as splits.                                                                                        |
| Point Spacing               | Point Settings for the full scene.                                                                                                                                                                                                                                                                                                        |
| AutoBlanked Points          | The number of blanked anchors at each location.                                                                                                                                                                                                                                                                                           |
| AutoAnchor Points           | The amount of visible anchors at each type.                                                                                                                                                                                                                                                                                               |
| AutoSpace Distance          | The amount of space between each points for "straight" lines.                                                                                                                                                                                                                                                                             |
| Beam Path For This Scene    | Control the methodology for blanking direction and lengths. (Adjust the parameters for blanking, direction, and length?)                                                                                                                                                                                                                  |
| Color Settings              | Control color of the scene with overrides and recolors.                                                                                                                                                                                                                                                                                   |
| Filter Setting              | Filters related to rendering of points and not related to detection.                                                                                                                                                                                                                                                                      |
| Soft Line                   | Add soft line endings to the points at the render level.                                                                                                                                                                                                                                                                                  |
| BeamBrush                   | Add BeamBrush values to the points at the render level.                                                                                                                                                                                                                                                                                   |

From:

<http://wiki.pangolin.com/> - **Complete Help Docs**

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