LiquidSonics

POWERED BY Fusion-IR | Synthesis

User Guide

Applies to version 1.3.0 (and above)

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1. Installation

To install Lustrous Plates an Intel Mac, Apple Silicon Mac, or Windows PC DAW is required. 64-bit DAWs with 8 GB and above are required.

Installation on Windows

The install process will request a number of file locations and the type of plug-in you wish to install (VST for most hosts or AAX for Pro-Tools). Select the plug-in formats required.

If you included a VST2 plug-in in your selection(s) you will be asked where those plug-ins should be installed. Typically Windows VST plug-ins are installed in one of the following locations although many options are available so you should select which is most suitable for your system.

64-bit plug-in on 64-bit Windows	c:\Program Files\Steinberg\Vstplug-ins c:\Program Files\Common Files\VST2

AAX and VST3 plug-ins are stored in standard locations, so there is no need for the installer to ask where they should be installed to.

A small amount of supporting content (around 200MB) will be installed to your primary drive (this cannot be relocated to an alternative drive).

Installation on macOS

Run the installer progress through it until asked which plug-in formats to install. These are 64-bit plug-ins so you must use them in a 64-bit DAW.

2. License Activation

iLok License Manager

Install the iLok License Manager version 5.4 or above available from the http://www.ilok.com website. If the version of license manager is too old it may fail to find a valid activation even if you correctly activate the licenses.

Redeem your Lustrous Plates activation code to your iLok account and select a location to activate to. You may activate to:

- An iLok 2 or 3 USB dongle
- A local computer hard drive location
- iLok Cloud

Drag this license on to your iLok or local computer location to activate to a physical location. Or if you wish to use your license with iLok Cloud simply click ‘Open Cloud Session’ from the ‘File’ menu in iLok License Manager once you have redeemed your code.

3. Plug-in Overview

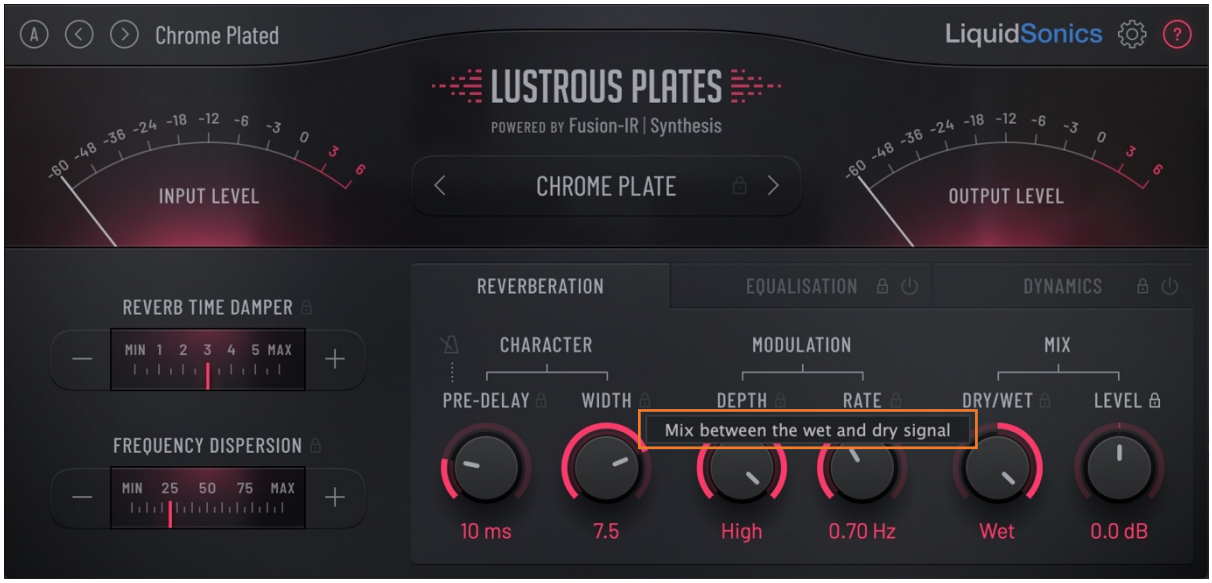
Lustrous Plates is split into the following key areas:

1. Preset selection
2. Settings
3. Assistance (tool-tips / manual)
4. Plate reverb model selector
5. Input and output metering
6. Reverb length (decay time damper)
7. Reverb frequency dispersion
8. Reverberation and mix control tab
9. Equaliser tab
10. Dynamics tab

Lustrous Plates provides two colour themes, a light theme evoking the metallic feel of a hardware plate and a dark theme for those that prefer less brightly coloured UIs when working in lower lighting conditions.

4. Interactive Assistance

Once the plug-in is loaded help is available within it by clicking the question mark icon and hovering the mouse over a control to view a description of its function.



Using the assistance menu it is also possible to access this manual and to bring up additional information about the plug-in such as the version number.

5. Plate Models

Seven plate models are available for selection from the central model menu. Simply click the current plate model to reveal the selection menu, or use the chevrons to move between them.

Each design has the unique timbral and multi-band decay characteristics of an actual plate modelled using LiquidSonics' proprietary Temporal Acoustic Spectral Mapping (TASM) technology. When combined with the power of Fusion-IR Synthesis this technique generates a very natural, high-quality plate simulation with the defining acoustic characteristics of the modelled plates and a reverberant fidelity usually only associated with the very highest quality hardware reverbs.

A brief description of the plate models follows:

- Chrome: A rich, full bodied plate with a classic plate multi-band decay profile
- Silver: A light, airy plate with de-emphasised low-mids for enhanced clarity
- Steel: Similar in nature to the chrome plate with a reduced low band decay time
- Rhodium: Bright and rich, with a very neutral decay profile
- Beryllium: A very reflective, lustrous metal inspiring a plate with a bright tone
- Corbomite: A very dense and heavy plate
- Iridium: Very dense, with a highly emphasised low decay profile
- Osmium: A rich reverb capable of very clean, short ambiences
- Platinum: Very dense and bright, with rich lows on longer decays
- Gold: Simulation of the rare 'gold foil' compact plate reverberator

Each reverb model can be controlled in terms of its damping and frequency dispersion as described in the next section.

6. Reverb Model Control

Reverb Time Damper

The amount of physical pressure applied to a plate by a damper limits its ability to resonate freely; this determines its decay time. The more damping force applied to a plate, the less it can resonate and the shorter the reverb time will be. All plates have slight differences in their reverb times due to differing mechanical properties of plates that depend on many factors (age, material, suspension tension, etc).

Due to highly variable reverb times across the frequency spectrum it is not particularly useful to quote a single measure of the reverb time for any given plate. Plates typically have a reverb time varying from just under one second up to approximately 5 seconds, but no two plates will decay in precisely the same way in time or frequency.

The TASM modelling powered Fusion-IR Synthesis used within Lustrous Plates recreates these decay phenomena with a very high degree of accuracy.

Frequency Dispersion

The dispersion of frequencies by a plate reverb plays a critical role in its sound. Frequency dispersion is a major reason why a plate reverb sounds so distinctive, in particular with respect to the way it affects transients. A plate's whip like onset is especially audible with percussive material, and is very well suited to guitars and vocals.

Sound travels through a plate at different speeds depending on its frequency. Similar in effect to a prism splitting light into different colours, a plate smoothly disperses sound by delaying different frequencies by different amounts (i.e. dispersing it in time).

Low frequencies travel relatively slowly through the metal so are delayed more than the high frequencies. Low frequencies can be delayed by around 10ms more than high frequencies. Simulating the delay's rate of change with frequency is crucial to achieving a convincing plate dispersion tone.

In a real plate dispersion is largely determined by its dimensions and pick-up positions, but other factors including the construction material, tension, mounting factors and so on all make a difference. The amount of simulated dispersion for each plate in Lustrous Plates is all controllable via a single 'frequency dispersion' parameter.

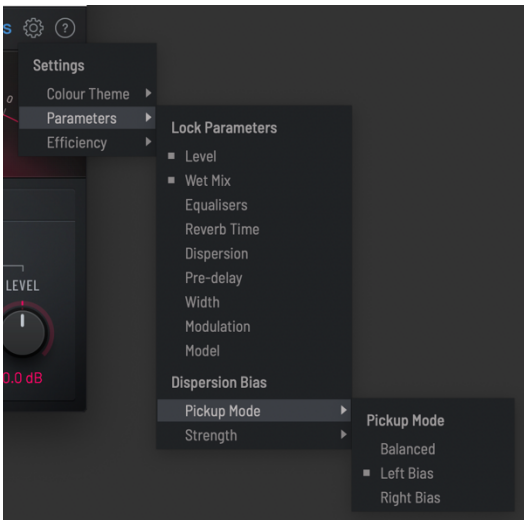
Dispersion Bias

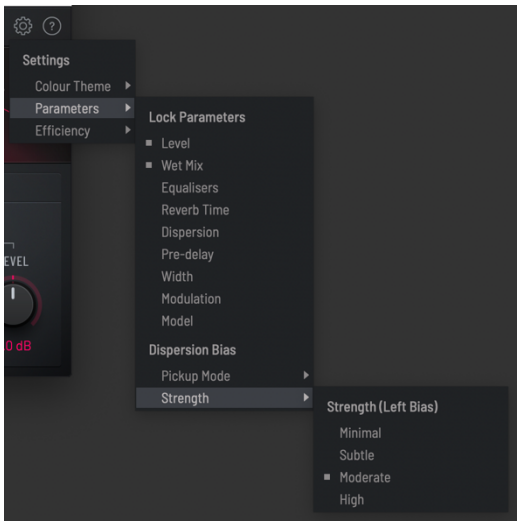
The pickups in a plate can be repositioned such that there is a difference in the path length between the driver, left pickup and right pickup. This causes the dispersion present in the left and right channels to differ enhancing stereo depth. The effect can be subtle so should be used with sources that most benefit from higher levels of dispersion (harmonically rich impulsive sources including electric piano and acoustic guitar are a good example).

The bias can be controlled via the settings menu in Lustrous Plates.

Pickup mode: focuses dispersion bias to the left or right side (or turns biasing off when 'balanced')

Strength: controls the difference between the left and right channel dispersion levels





7. Reverberation Character, Modulation and Mix

The reverberation tab provides control over traditional reverberation properties.

Pre-delay

The pre-delay of the reverb can be set in milliseconds, or click the metronome button to set it relative to the current project tempo.

Pre-delay would typically be achieved in a real plate with the use of a delay module before or after the reverb, and is very useful for giving the source and reverb some temporal separation. This can improve intelligibility with vocals, add rhythmic qualities or generally increase the perception of distance from the source.

Width

The reverberation generation algorithm employed by Lustrous Plates is capable of producing mono and fully decorrelated true stereo spaces or anything in-between.

In true stereo it presents an optimally wide image without any phase or mono-compatibility concerns. For sources that do not require such a high degree of perceptual space around them the width can be progressively collapsed down from true stereo down to mono using the width control.

Modulation Depth and Rate

Although traditional plate reverbs are static devices that do not modulate in time, we tend to find modulated reverbs more acoustically interesting (and even more realistic) than static ones. Hence modulation is a highly desirable characteristic in a reverb irrespective of the simulation type.

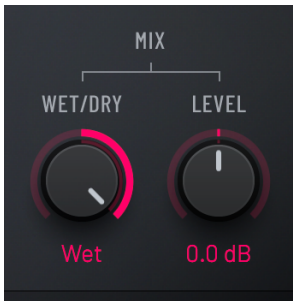
Plate simulations typically employ modulation in their algorithms to improve their perceived quality. This would traditionally be achieved via subtle delay time deviations or delay tap motion (causing chorusing).

Lustrous Plate's Fusion-IR Synthesis engine is capable of fully modulating its reverb in a very natural, organic manner. It does not induce any unrealistic chorusing or other colourations of the reverb, and does not compromise the decay profiling in any way.

The amount of modulation can be controlled from low to high with the depth control, and the speed of modulation is set using the rate control. Modulation can be bypassed entirely by setting the rate to its minimum value resulting in a static reverb.

Mix and Level

The final parameter group controls the reverb mix and overall output level produced by the plug-in.



The relative levels of the wet and original dry signal can be balanced using the wet/dry control. When using as a send effect the reverb should be set to the fully wet position.

The overall plug-in gain can be set using the level control.

8. Reverb Equalisation

A four-band EQ is provided by Lustrous Plates for further opportunities to sculpt the tone of the plate reverb models. The following filters are available:

- Low cut: smooth 1 to 4-pole (6dB to 24dB / Oct) low cut filter
- Low band: low shelf or peak filter with variable width
- High band: mid/high shelf or peak filter with variable width
- High cut: smooth 1 to 4-pole (6dB to 24dB / Oct) high roll-off filter

The high-cut filter type can be changed by clicking the roll-off button under the High Cut label.

9. Dynamics

The dynamics tab allows the use of a compressor or gate. You can select the current mode using the drop-down selector just above the gain reduction meter.

- Compression
    - Reverb ducking – a compressor after the reverb keyed on the dry input signal or an external sidechain (VST3, AU and AAX only)
    - Reverb compression – a traditional compressor placed after the reverb
    - Input compression – a traditional compressor acting before the reverb
- Gate – a processor to mute the signal when the reverb drops below a threshold as measured by one of three audio signals
    - Reverb level (the output level of the wet reverb signal)
    - Dry level (the input to the plug-in)
    - External sidechain (VST3, AU and AAX only)

Compression and Ducking

In the compression modes (ducking, reverb compression and input compression) the output signal is reduced when it rises above the threshold value at a rate determined by the ratio. The knee controls how gradually that ratio is applied. Attack and release control how quickly the compression begins to act on the signal when it is above or below the threshold. A simple trim control is provided to allow level adjustments because a compressor can significantly affect gain.

Ducking a reverb is often used to avoid a reverb swamping the dry signal, allowing the verb to be tucked away until there is space in the mix for it to fill the space between phrases. Often this will improve intelligibility.

Gate

When the reverberated signal falls below the gate's threshold it is reduced in gain by the number of decibels specified by the range control. This reduction happens after the pause time determined by 'hold', and takes the time to reach the level reduction determined by the 'close' time.

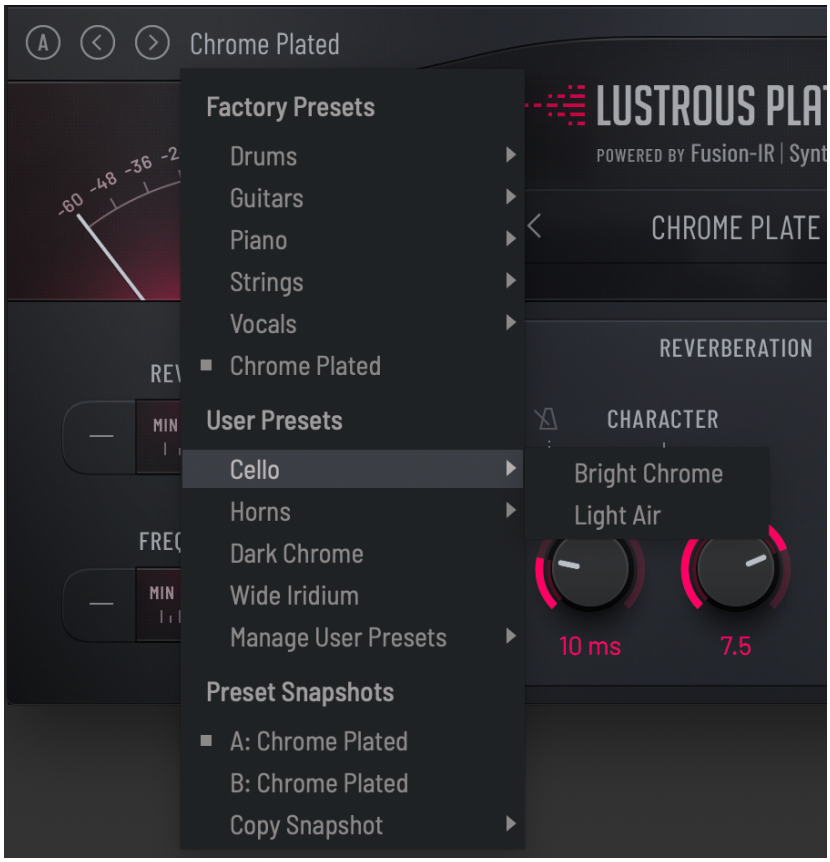
In the example below, when the signal falls below -30 dB, the gate waits 50 ms before responding, and then reduces the signal by 45 dB over a period of 200 ms.

When the signal exceeds the threshold plus the hysteresis amount (i.e. -30dB + 3dB = -27 dB in this example) the gate will re-open over the time period set by the 'open' parameter (10 ms in this example).

Hysteresis and hold are typically used in conjunction to reduce chatter (the effect whereby a gate rapidly opens and closes as the signal fluctuates briefly around the threshold if the open and close values are small).

10.Factory and User Presets

Lustrous Plates is supplied with a number of professionally designed presets, and allows the user to save custom presets for later recall.



User and factory presets are accessed using a menu activated by clicking the preset name in the top left corner of the plug-in. Presets can be auditioned quickly by using the chevron arrows to move between them.

The A / B feature allows the user to quickly switch between two presets within the same plug-in instance.

11.Settings

Preset Settings

Many of the controls can be held (locked) when preset changes occur so that if certain settings are known to be set correctly (for instance the equalisers or dispersion) the presets can be changed without affecting those parameters.

Plug-in locks can also be enabled or disabled by clicking the icons shown. When locks are not enabled hovering over their location next to the parameter name will cause them to illuminate ready for selection.

The dispersion bias settings are also accessible from this menu.

Processing

The efficiency settings menu includes options to reduce CPU consumption.

Latency

Latency can be introduced to the processing system which reduces CPU consumption. This is reported to the host for automatic compensation.

Sample Rate Limiting

For sample rates higher than 48 kHz the plug-in can optionally down-sample to 44.1 kHz or 48 kHz operation (depending which of those is a factor of 2). For instance, with this setting enabled a sample rate of 96 kHz will result in the plug-in running all reverb processing at 48 kHz (a 2x divider) or 176.4 kHz will result in 44.1 kHz (a 4x divider).

This option is only shown in the menu when Lustrous Plates detects the host to be running at a rate higher than 48 kHz.

In some sessions it may be desirable to band-limit the reverb at around 20 kHz in exchange for lower CPU consumption.

Reverb Update Processing

When the reverb is updated the maximum number of available CPU cores are used to minimise update time. If this causes CPU overloading during preset changes disabling this feature may

alleviate the problem by reducing CPU demands. This has no effect on CPU consumption at any other time and does not affect audio quality.

Interface

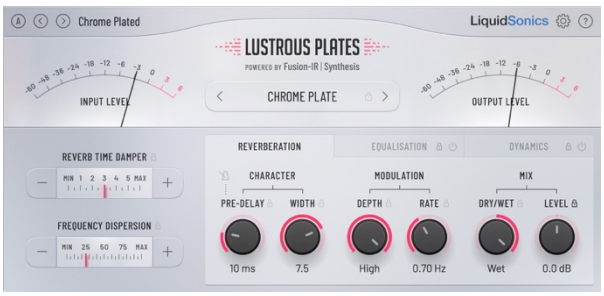
Scale

Select from 75% to 200% scaling for the interface size.

Theme

Two colour themes are available within the plug-in, a light and a dark mode. Click the settings button to reveal the colour theme selection menu.

The differences between the two themes are shown below.



Plug-in using light theme

Plug-in using dark theme