VEIRA

ECHO CHAMBER REVERB

VEIRA Chambers

User Manual

An echo-chamber reverb: a speaker, two microphones and ten real rooms, each built from one material, with a vintage saturation control and a view into the room that lights up every reflection as it happens.



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Welcome

Thank you for choosing **VEIRA Chambers**. Before digital reverb, studios built echo chambers: a hard-walled room with a loudspeaker at one end and microphones at the other. The engineer sent a little of a vocal or a snare to the speaker, the room did the rest, and the microphones brought the reverb back to the console. VEIRA Chambers is that room, in ten versions. Each chamber is a real-sized room whose six surfaces are made of one material, and it sounds the way that material makes it sound: glass rings bright and long with thin lows, sandstone is soft and dark, hardwood is warm and short, polished marble goes on and on.

What makes it different

- **Real rooms, real materials.** Every chamber is built from measured absorption data for its material, per octave from 63 Hz to 16 kHz, plus the absorption of the air. You don't dial in a "brightness": you choose a wall.
- **You see the sound in the room.** The chamber view is a picture of the room with its speaker, microphones and panels. While sound plays, every reflection the microphones hear lights up where it strikes the wall, at the moment the sound gets there.
- **Engineer's controls.** MIC moves the microphones down the room, DIFFUSION stands fabric panels ("totems") in it, and LOW CUT / HIGH CUT filter the send to the speaker, as studios did to keep chambers from booming.
- **Saturation that only touches the reverb.** SATURATION adds exact 2nd and/or 3rd harmonics to the chamber's return, never to your dry signal.
- **No latency.** The dry signal passes untouched, and at MIX 0 % the output is the input, bit for bit.
- **A clean, legible face.** Large knobs with the value in their middle, text you can read at a glance, and a window you can scale from 75 % to 200 %.

How this manual is organised. *Getting started* covers installing and activating. *The panel at a glance* names every part of the window. *How an echo chamber works* explains reverb and chambers in two pages. *The ten chambers* introduces the rooms, *Controls* explains every knob and button with drawings, and *Displays* teaches you to read the room and the decay graph. *Insert or send* shows the two ways to use a reverb in a mix. *Presets*, *Recipes*, *Specifications* and *Troubleshooting* close the manual.

Getting started

What you need

macOS	macOS 11 Big Sur or later. Native on Apple silicon and Intel Macs (universal).
Windows	Windows 10 or 11, 64-bit.
Plugin formats	VST3 (macOS and Windows), Audio Units (macOS), and a standalone app. Pro Tools (AAX) versions arrive once they are signed for Pro Tools.
Hosts	Any DAW that loads VST3 or Audio Units: Logic Pro, Cubase, Nuendo, Ableton Live, Studio One, Reaper, FL Studio, Bitwig and others.
Account	A VEIRA account at veiraaudio.com, and the free **VEIRA Manager** app.
Internet	Needed to install and to refresh the licence. The plugin itself never goes online.

Install with VEIRA Manager

VEIRA plugins are not downloaded from the website one by one. You install them with **VEIRA Manager**, the free VEIRA app that installs, updates and activates everything you own. Its own manual covers it in full; the short version is:

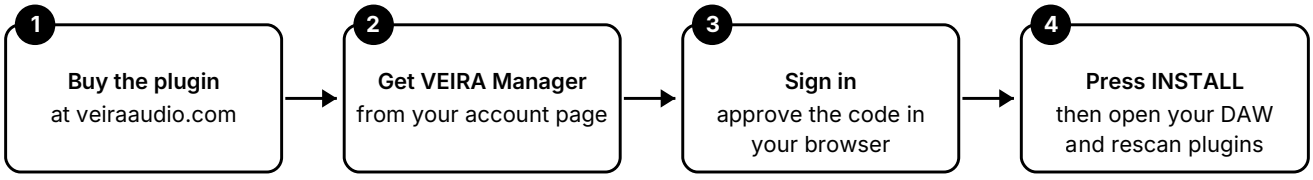


FIGURE 1 From purchase to first sound in four steps.

1. **Buy** VEIRA Chambers at **veiraaudio.com**. It's a one-time purchase: you own it for good, with free updates.
2. **Download VEIRA Manager** from your account page (or veiraaudio.com/manager) and install it.
3. **Sign in.** VEIRA Manager shows a short code and opens your browser; confirm the code there. Your password is never typed into the app.
4. Find VEIRA Chambers in the list and press INSTALL. When it says SHOW, it's installed. Open your DAW and let it rescan its plugins.

After installing, VEIRA Chambers appears in your DAW under the manufacturer **VEIRA** (in Logic Pro: Audio Units ▸ VEIRA ▸ VEIRA Chambers).

Activation and the licence

VEIRA Manager keeps a licence on your computer that the plugins check. It is refreshed every time VEIRA Manager opens and stays valid for 30 days offline, so you can work without internet as long as you open VEIRA Manager now and then.

Without a valid licence, VEIRA Chambers still loads and works, but **its sound fades out for 1.5 seconds every 30 seconds**, and a strip along the bottom of its window says why (for example, *NOT ACTIVATED ON THIS COMPUTER. SIGN IN WITH VEIRA MANAGER.*). Clicking the strip opens your account page.

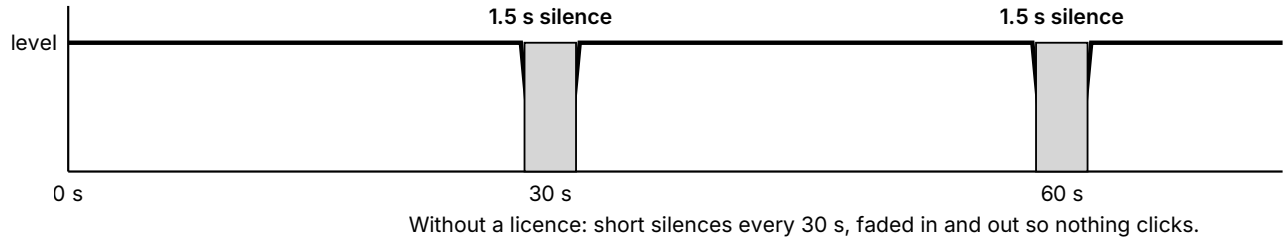


FIGURE 2 What an unlicensed copy does. With a valid licence the audio is never touched.

- **Activating while your DAW is open** takes effect within about two minutes. You don't need to reload the plugin.
- **"Not activated on this computer"**: open VEIRA Manager and sign in.
- **"Expired"**: open VEIRA Manager while online; it renews the licence at once.
- **"Not included"**: the signed-in account doesn't own VEIRA Chambers. Check that you're signed in with the account you bought it with.

Formats and where the files go

VEIRA Manager puts every format in the standard place, so you never need to copy files by hand:

Format	macOS	Windows
VST3	`~/Library/Audio/Plug-Ins/VST3` (just for me, the default) or `/Library/Audio/Plug-Ins/VST3` (all users)	`C:\Program Files\Common Files\VST3` (all users, the default) or `%LOCALAPPDATA%\Programs\Common\VST3`
Audio Units	`~/Library/Audio/Plug-Ins/Components` or `/Library/Audio/Plug-Ins/Components`	(Audio Units are macOS only)
Standalone	`~/Applications/VEIRA` or `/Applications/VEIRA`	`C:\Program Files\VEIRA` or `%LOCALAPPDATA%\Programs\VEIRA`

You choose *just for me* or *all users* in VEIRA Manager's install settings.

The standalone app runs VEIRA Chambers on its own, with your audio interface's input and output, which is handy for trying presets without a DAW.

The panel at a glance



FIGURE 3 VEIRA Chambers with the *Init* preset, adjusted: the plaster chamber, MIX 35 %, DIFFUSION 50 % and SATURATION 30 %, while a snare plays.

The window has three areas: the **chamber view** over the **DECAY display** on the left, the **meter bridge** and the **saturation** panel on the right, and the **control strip** (CHAMBER, ROOM, SEND, RETURN) along the bottom.

	Part	What it does
1	Preset browser	Steps through and saves presets. See *Presets*.
2	Chamber view	The room you're using, with every reflection lighting up as it happens.
3	DECAY display	The reverb time per octave, and the last 6 seconds of input and chamber.
4	Meter bridge	Input and output level, and loudness.
5	HARMONICS bar	How loud the harmonics added by SATURATION are.
6	SATURATION	Adds harmonic colour to the chamber's return, 0 to 100 %.
7	2ND 3RD 2+3	Which harmonics SATURATION adds.
8	CHAMBER	The ten material buttons: chooses the room.

	Part	What it does
9	ROOM	SIZE, DECAY, MIC and DIFFUSION: the room itself.
10	TOTEMS	A button: takes the diffusion panels out of the room, or puts them back.
11	SEND	PRE-DELAY, LOW CUT and HIGH CUT: what reaches the speaker.
12	RETURN	WIDTH, MIX and OUTPUT: what comes back, and how loud.

The panel reads like a signal path. Your track goes into the **send** 11 , plays through the speaker into the **chamber** you chose 8 , shaped by the **room** controls 9 10 ; the microphones bring it back through the **return** 12 , with optional **saturation** 6 7 on the way.

Using the controls

Every VEIRA plugin is played like a piece of hardware. The same few parts appear on every panel:

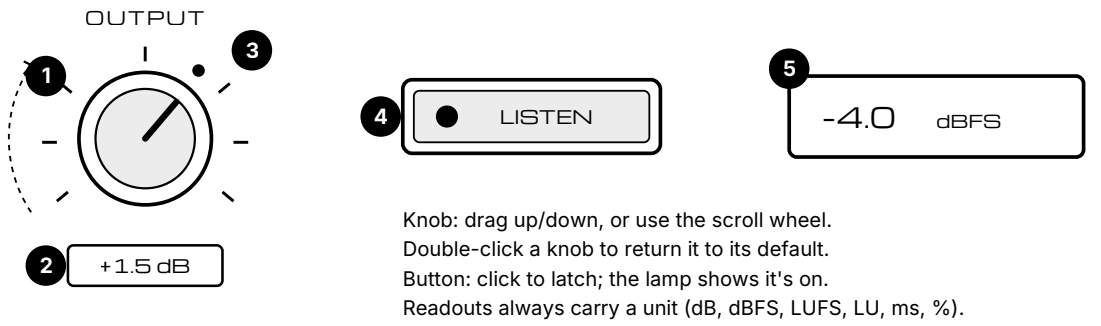


FIGURE 4 The parts you'll find on every VEIRA panel (the labels are examples).

- 1 **Knob.** Drag up to turn it clockwise, down to turn it back, or use your mouse wheel. **Double-click** returns it to its default. The engraved pointer and the small dot on the scale show where it's set.
- 2 **Value window.** The backlit window under each knob shows its exact value with its unit.
- 3 **Silkscreen label.** The control's name, as it appears in your DAW's automation list.
- 4 **Push button.** Click to switch on; the lamp lights and the cap sits lower in its bezel. Click again to switch off.
- 5 **Readout.** Live numbers update ten times a second so you can read them while the meters move. A value over 0 dBFS shows as a warning.

Tooltips: hover over any control or display for a short explanation. On displays, the tooltip depends on where you point.

Automation: every knob and button is a host parameter, so you can automate it in your DAW and control it from a MIDI controller or control surface that your DAW maps.

Units: VEIRA never shows a bare number. **dBFS** is level against digital full scale (0 dBFS is the loudest a digital signal can be); **dB** is a change in gain; **LUFS** is loudness as streaming services and broadcasters measure it; **LU** is a difference in loudness (1 LU = 1 dB).

On VEIRA Chambers' panel the parts look a little different from the drawing above:

- **Knobs** show their value **in their middle**, and a lit ring (blue on screen; in print, the lighter arc) shows how far each is turned. SATURATION is the large knob on the right. Drag, use the wheel, or double-click (or Alt/Option-click) for the default, as on every VEIRA knob.
- **Type a value:** right-click a knob (Control-click on a Mac). A field opens over the knob with the current value; type the new one and press Return. The number is enough: **40** for PRE-DELAY, **250** for LOW CUT, **35** for MIX. Press Escape or click elsewhere to leave it unchanged.
- **Buttons** have no lamps: 2ND, 3RD, 2+3 and TOTEMS fill (orange on screen; in print, the solid button rather than an outline) when they are on. The chamber in use has a ring around its sample and its name is lit (blue on screen; in print, the brighter name).
- **Resize the window:** drag its bottom-right corner (the small diagonal lines). It scales from 75 % to 200 % of its normal size and keeps its proportions, so everything stays sharp. Your DAW saves the size with the session.

How an echo chamber works

If you already know reverb, skip to *The ten chambers*. If not, two pages here make every control obvious.

When you play a sound in a room, you first hear it **directly**. A few milliseconds later the first **early reflections** arrive: the sound bounced once or twice off the walls, floor and ceiling. They come from all directions and tell your ear how big the room is and what it's made of. Then the reflections multiply until they merge into a smooth, dense **tail** that dies away. How long it takes the tail to fall by 60 dB (to one thousandth of its level) is the room's **reverb time**, written **RT60**.

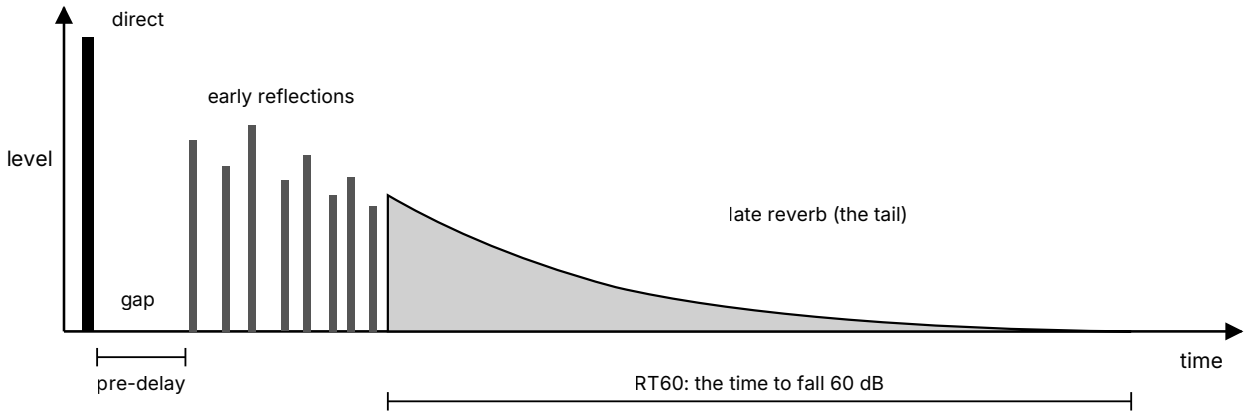


FIGURE 5 What a reverb is made of: the direct sound, a short gap, the early reflections, then the late tail fading away.

An **echo chamber** is a room built only for this. A speaker plays the signal you send it, microphones a few metres away pick up what the walls give back, and that is the reverb. The best chambers had hard, smooth walls (concrete, plaster, tile) so they rang long and bright; engineers filtered the send to stop the low end from booming, and some stood panels in the room to break up the echoes.

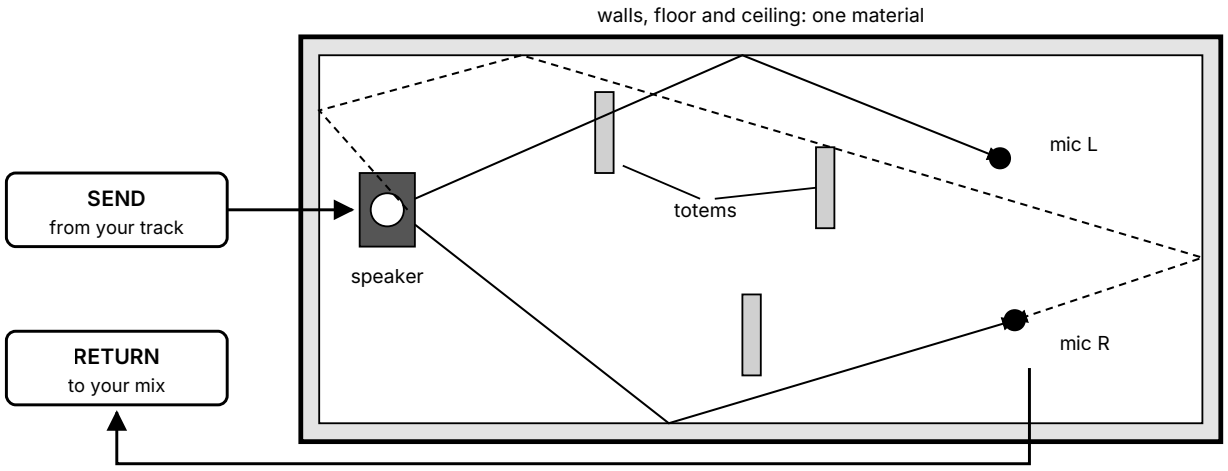


FIGURE 6 An echo chamber seen from above. The speaker faces into the corner behind it; the microphones face the far corners, so they hear mostly the room and very little direct sound. Solid lines: early reflections. Dashed: one of the many later paths.

What happens inside VEIRA Chambers

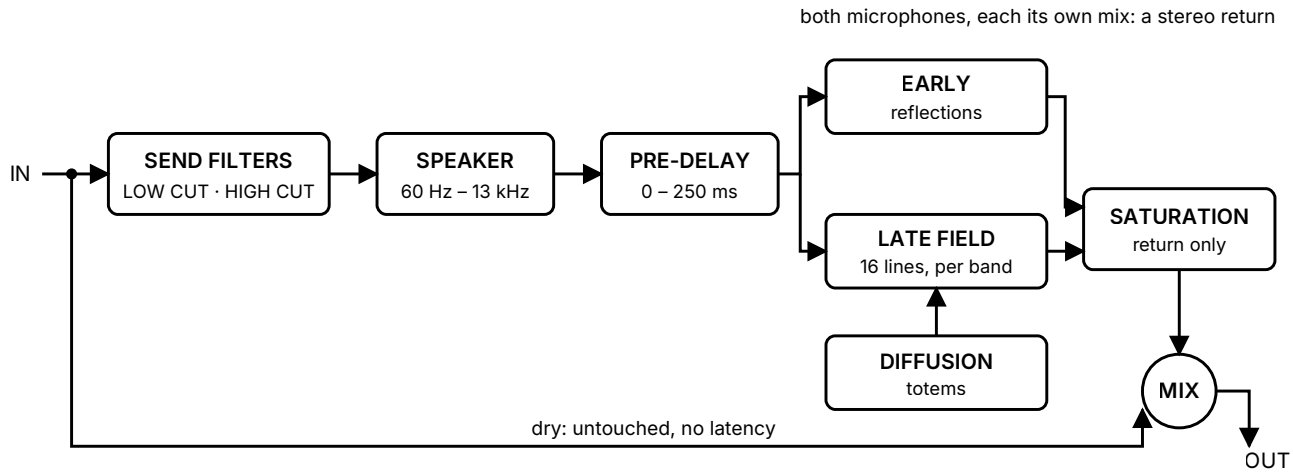


FIGURE 7 Signal flow. The send (left and right summed) is filtered, plays through the speaker and reaches the room after PRE-DELAY. The early reflections and the late field make the return; DIFFUSION smears the early echoes into the tail. SATURATION, WIDTH and OUTPUT act on the return, and MIX blends it with your untouched dry signal.

Three things are worth knowing about the engine:

- **Early reflections are calculated from the room.** For each microphone, VEIRA Chambers works out the paths of the sound bouncing up to four times off the walls, floor and ceiling, with the speaker's and microphones' directions. Every bounce takes away what the material absorbs at each frequency, plus the air along the way. Rough walls make the later echoes wander a little, so parallel walls never flutter.
- **The tail follows the room per frequency.** The late reverb loses, in every octave band, exactly what this room loses: its material, a little fixed absorption for the door, speaker cabinet and stands, and the air at 20 °C and 45 % humidity. That is why every chamber's highs die sooner than its mids, as in a real room.
- **Level stays put.** The return is normalised per chamber and size, so switching rooms doesn't jump in level. DECAY keeps half of its natural loudness change: a longer tail is a little louder, as you'd expect, but not by much.

The ten chambers

Every chamber is a room of its own size (at SIZE 100 %), with all six surfaces made of one material. The table gives the reverb time at 125 Hz, in the mids (the average of 500 Hz and 1 kHz) and at 4 kHz, at SIZE and DECAY 100 % with no totems.

Chamber	Room (m)	RT60 125 Hz / mid / 4 kHz	Character
Glass	6.0 × 4.0 × 3.2	0.53 / 2.29 / 2.14 s	bright and glassy, thin lows, long shimmering top
Bubinga	6.5 × 4.5 × 3.4	0.88 / 1.35 / 1.29 s	dense hardwood: warm, smooth and rich in the mids
Oak	7.0 × 4.6 × 3.5	0.73 / 1.28 / 1.20 s	oak panelling: warm and woody, a natural short room
Cedar	6.0 × 4.2 × 3.2	0.44 / 0.85 / 0.77 s	soft, porous wood: short, dry and gentle
Granite	8.5 × 5.2 × 4.0	7.98 / 5.16 / 2.63 s	hard rock: dense, long and bright
Sandstone	7.5 × 4.8 × 3.6	4.35 / 1.80 / 0.87 s	soft rock: porous and rough, darker, diffuse tail
Marble	8.0 × 5.0 × 3.8	7.28 / 6.43 / 2.53 s	polished stone: very long, silky highs
Concrete	7.3 × 3.6 × 3.4	3.51 / 2.54 / 1.08 s	the classic studio echo chamber
Brick	7.0 × 4.5 × 3.4	2.95 / 2.54 / 1.15 s	rough and diffuse, warm mids
Plaster	8.0 × 5.0 × 3.6	6.05 / 3.73 / 1.57 s	hard plaster: the smooth vintage studio chamber (*Init*)

Choosing a chamber

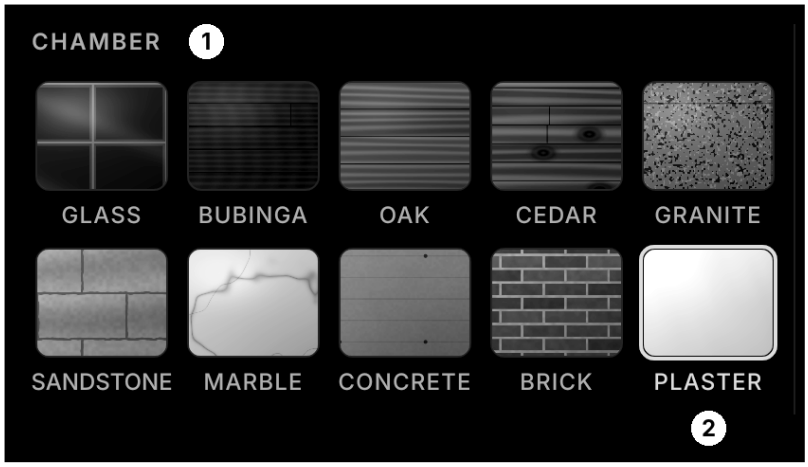


FIGURE 8 1 The CHAMBER buttons, each showing a sample of its surface. 2 The ring and the lit name mark the room you're in (here *Plaster*).

Click a button to move into that room; the others release. The room you're in has a ring around its sample and its name lit (blue on screen; in print, the brighter name), while the other samples are a little darker. Hover over a button to read its character. The ten rooms fall into three families:

- **Woods** ([BUBINGA], [OAK], [CEDAR]): short, warm rooms. Wood absorbs more lows and highs than stone, so these rooms are the most natural on close-miked sources and the safest on a busy mix. Cedar is the shortest and softest of all.
- **Stones** ([GRANITE], [MARBLE], [SANDSTONE]): big, long rooms. Polished granite and marble absorb almost nothing, so their low end rings for many seconds; sandstone is porous and rough, so its highs fade quickly and its tail is darker and more diffuse.
- **Studio chambers** ([CONCRETE], [BRICK], [PLASTER]): the classic echo-chamber sound. Concrete is the reference studio chamber; brick is rougher and warmer in the mids; plaster is the long, smooth vintage chamber the plugin opens with.
- **Glass** stands alone: plate glass flexes and absorbs the lows, so it rings long and bright with thin bass. It's a natural shimmer for vocals, acoustic guitars and cymbals.

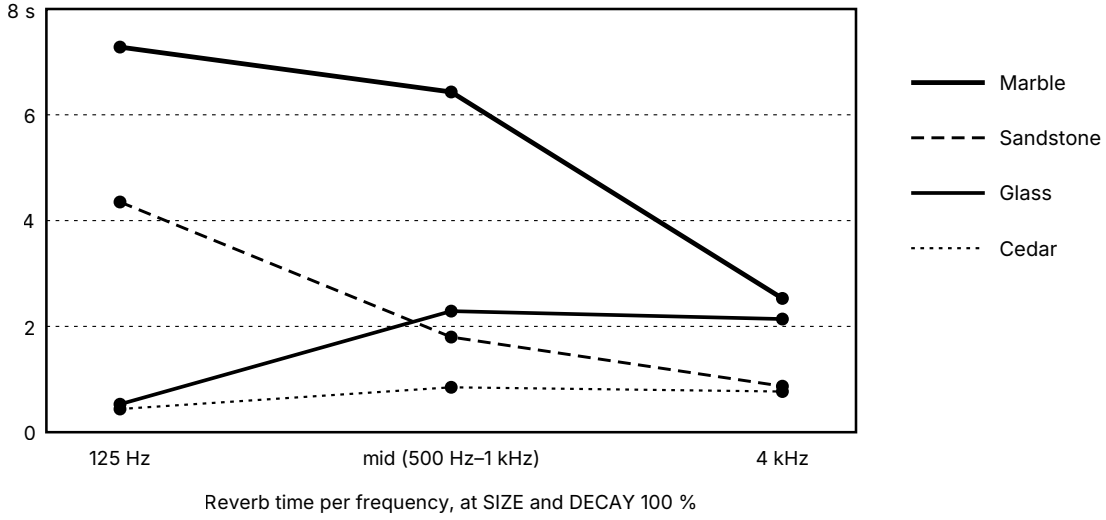


FIGURE 9 Four chambers, four shapes. Marble rings for seconds at every frequency; sandstone is long in the lows and dark on top; glass is the reverse, thin in the lows and long on top; cedar is short everywhere. The DECAY display draws this curve for the room you're in.

> **Tip:** Choose the chamber for its *shape*, then set the length with [DECAY]. A short marble (DECAY 40 %) still sounds like stone: silky and even. A long cedar (DECAY 250 %) still sounds like soft wood: warm and gentle.

Controls

ROOM: SIZE, DECAY, MIC and DIFFUSION

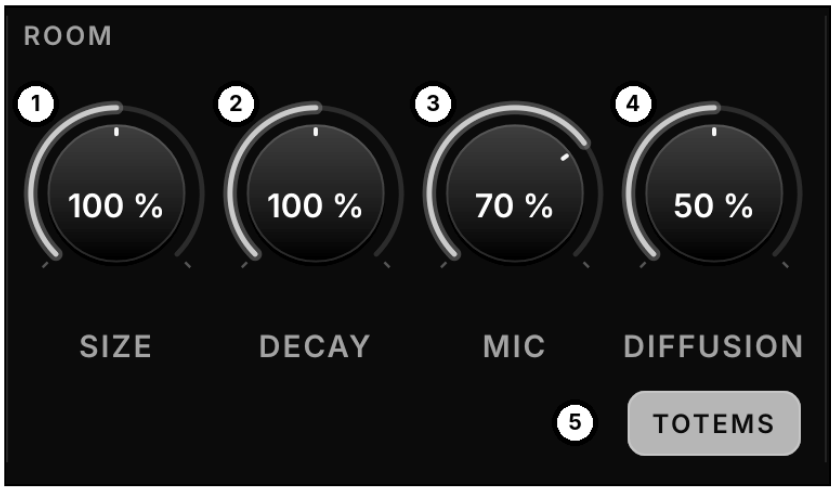


FIGURE 10 1 SIZE, 2 DECAY, 3 MIC, 4 DIFFUSION and 5 the TOTEMS button, lit: the totems are in the room.

Control	Range	Default	What it does
SIZE	50 to 200 %	100 %	Scales the room. 100 % is the chamber's real size.
DECAY	25 to 400 %	100 %	The reverb time as a share of what this chamber does by itself.
MIC	0 to 100 %	70 %	How far down the room the microphones stand.
DIFFUSION	0 to 100 %	0 %	Stands up to six fabric totems in the room.
TOTEMS	In / Out	In	Takes all the totems out, and puts them back at the same setting.

SIZE. Scales the whole room: length, width and height. A bigger room has a longer reverb time and its echoes arrive later, so it sounds bigger in two ways: the tail is longer and the space before it opens up. A smaller room is tighter and its early reflections bunch together into a "boxier" sound. At 50 % the room is half its real size in each direction; at 200 % twice. The size and volume are printed in the top-left corner of the chamber view (for example 8.0 x 5.0 x 3.6 m 144 m3).

DECAY. Sets the reverb time without changing the room. At 100 % the chamber decays as its walls make it decay; at 50 % in half the time, at 200 % twice as long. The shape across frequency stays the chamber's own: a 50 % marble is still darker at 4 kHz than at 1 kHz. The resulting time in seconds is shown at the top right of the chamber view (RT60 MID) and per octave in the DECAY display. DECAY keeps half of its natural loudness change, so lengthening the tail makes the return a little louder.

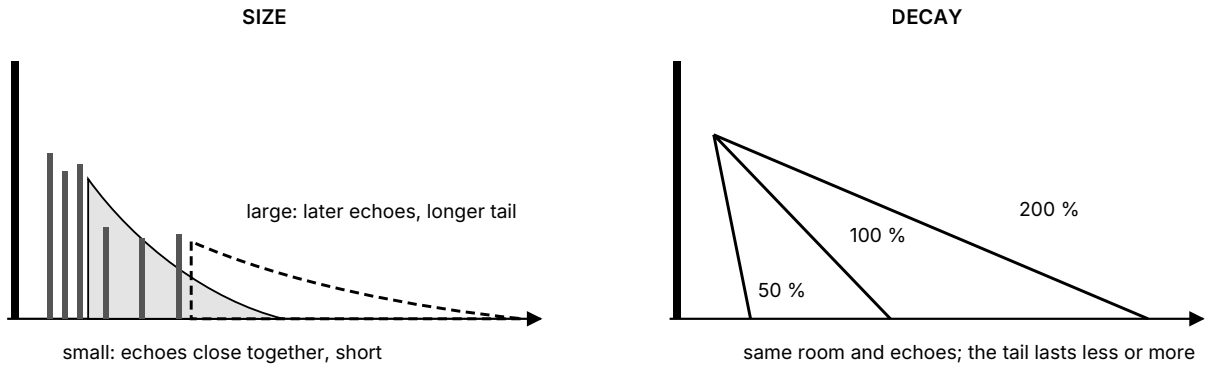


FIGURE 11 SIZE moves the echoes and the tail together, like a bigger or smaller building. DECAY only changes how long the tail lasts.

MIC. In a real chamber the microphones stand somewhere between the speaker and the far wall. Close to the speaker (low MIC), the first reflections arrive sooner and stronger: the sound is earlier, clearer and more defined, good for rhythmic parts. Far down the room (high MIC), the first reflections come later and weaker compared with the tail: the sound is more diffuse, more "distant", with a natural gap before it, good for pads and long vocals. The default of 70 % is the classic placement. In the chamber view you see the two stands move as you turn the knob.

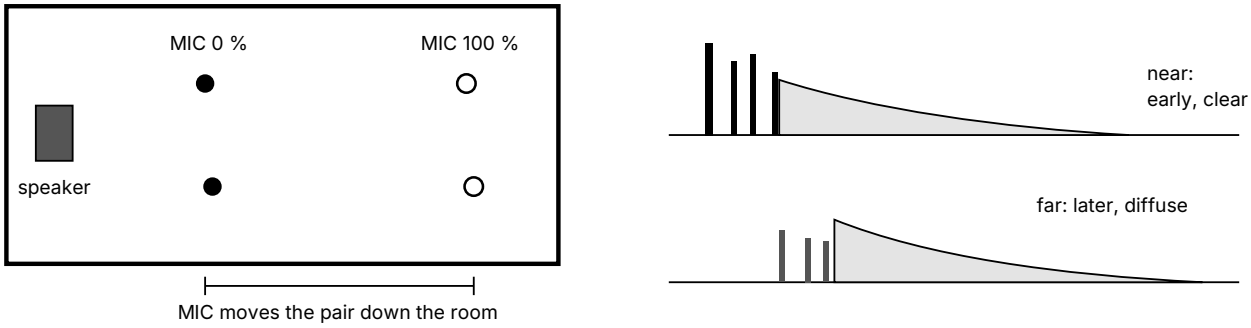


FIGURE 12 Left: the room from above. Right: what the microphones hear. Near the speaker, strong first reflections arrive early. Far down the room, the first echoes come later and sit lower against the tail.

DIFFUSION and TOTEMS. Turning up DIFFUSION stands fabric panels, "totems", in the room: freestanding 0.6 × 1.8 m panels, fabric over mineral wool with a slatted diffuser behind it. One more totem appears for every 17 % or so, up to six at 100 %. You see them in the chamber view and you hear them:

- the early echoes smear into a smoother, denser wash: less slap, less flutter, a softer attack to the reverb;
- the fabric absorbs some of the mids and highs, so the room gets a little **shorter and darker**. The lows are hardly touched. In the plaster chamber, six totems take the mid reverb time from 3.7 s to 2.05 s.

The TOTEMS button under the knob takes all the totems out of the room (button dark) and puts them back at the DIFFUSION you set (button lit: orange on screen; in print, the solid button). Use it to compare the room with and without them; DIFFUSION keeps its setting.

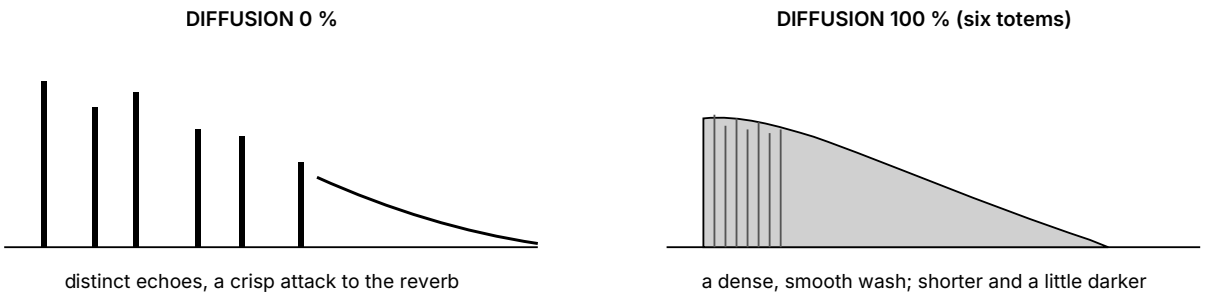


FIGURE 13 The first 100 ms or so of the reverb, without and with totems. Measured in the plaster chamber, the echo density of the first 40 ms rises from 0.31 to 0.51 (0 is sparse, 1 is like noise).

> **Tip:** Chambers with hard, parallel walls (glass, marble, granite) can sound "slappy" on drums and percussive guitar. Two or three totems (DIFFUSION 30–50 %) usually cure it without losing the room's character.

SEND: PRE-DELAY, LOW CUT and HIGH CUT

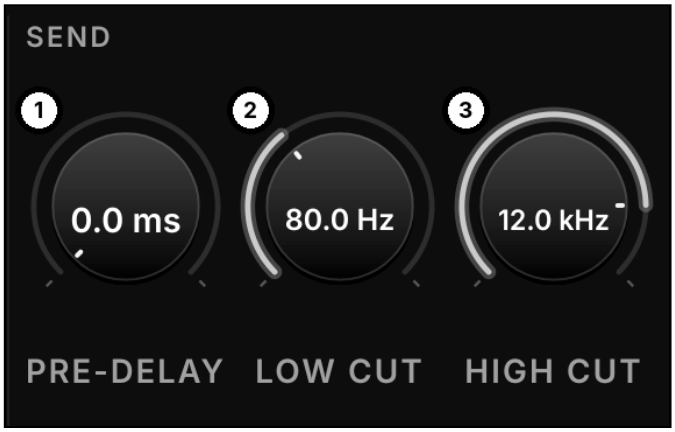


FIGURE 14 1 PRE-DELAY, 2 LOW CUT and 3 HIGH CUT: they shape what reaches the chamber's speaker.

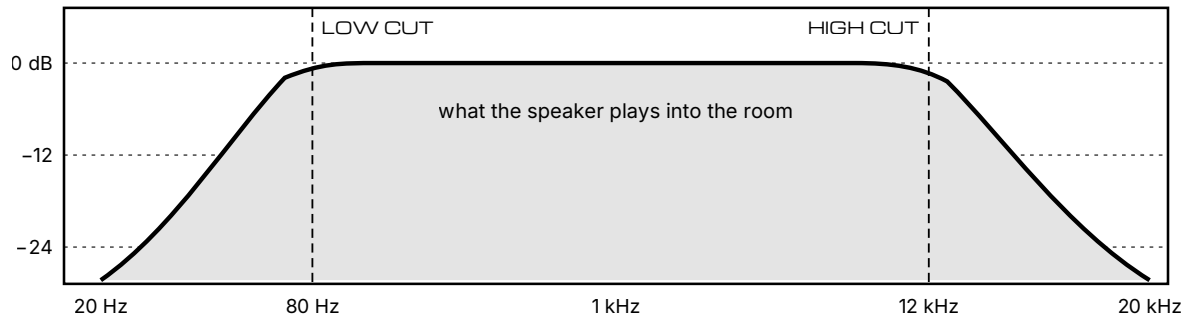
Control	Range	Default	What it does
PRE-DELAY	0 to 250 ms	0.0 ms	Delays the sound before it reaches the speaker.
LOW CUT	20 Hz to 1 kHz	80.0 Hz	High-pass filter on the send, 12 dB per octave.
HIGH CUT	1 kHz to 20 kHz	12.0 kHz	Low-pass filter on the send, 12 dB per octave. Fully up reads Open.

These controls work on the **send**, before the room: they change what the chamber is fed, not the room itself. The dry signal is never filtered.

PRE-DELAY. Adds a gap between the dry sound and the reverb. A few tens of milliseconds lets the attack of a vocal or a snare come through clean before the room answers, so the part stays upfront while the reverb sits behind it. Typical settings: 0–10 ms on drums and room ambience, 20–60 ms on vocals, longer as an effect (the *Mono Throw Chamber* preset uses the full 250 ms).

LOW CUT and HIGH CUT. Real chambers were usually fed through filters: low frequencies make a hard room boom and muddy the mix, and very high frequencies make it hiss. Cutting the send is the cleanest way to keep a long reverb from clouding the bass and kick:

- LOW CUT 80–150 Hz for most sources; 200–500 Hz on vocals and on a busy mix, so the reverb never thickens the low mids.
- HIGH CUT 8–12 kHz for a smooth, vintage tail; Open (fully clockwise) for air and shimmer, especially with the glass chamber. Very low settings (2–4 kHz) give a telephone or lo-fi room.



Both slopes are 12 dB per octave. The speaker itself plays 60 Hz to 13 kHz.

FIGURE 15 The send filters at their defaults. Everything outside the band reaches the room more and more weakly, so it hardly rings.

RETURN: WIDTH, MIX and OUTPUT

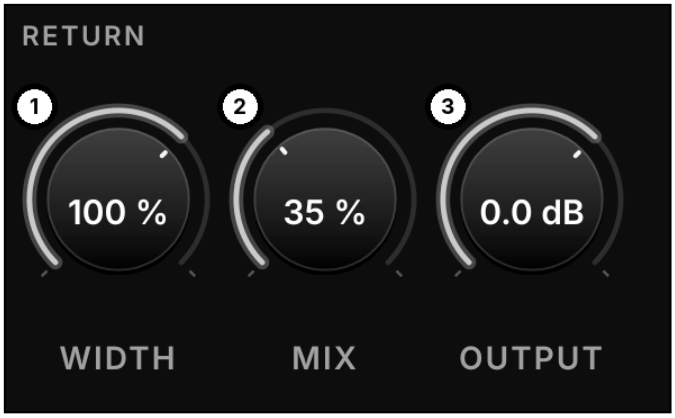


FIGURE 16 1 WIDTH, 2 MIX and 3 OUTPUT.

Control	Range	Default	What it does
WIDTH	0 to 150 %	100 %	Stereo width of the return: mono, as the microphones hear it, or wider.
MIX	0 to 100 %	30 %	Dry against chamber. 100 % for an aux return.
OUTPUT	−24 to +12 dB	0.0 dB	The final level of the plugin.

WIDTH. The two microphones each hear their own mix of the room, so the return is a wide, decorrelated stereo image. WIDTH scales the difference between them: 0 % folds the chamber to mono (centred behind the source), 100 % leaves it as the microphones hear it, and up to 150 % spreads it wider. Narrow widths keep a reverb tidy behind a centred lead vocal or a mono bass; wide settings suit pads and stereo ambience.

MIX. Blends your dry signal with the chamber. At 0 % you hear only the dry signal (bit for bit what came in); at 100 % only the chamber. The blend is **equal-power**: as MIX rises, the chamber comes up as the dry signal goes down, keeping the overall loudness steady, so a sweep of MIX changes the depth, not the volume.

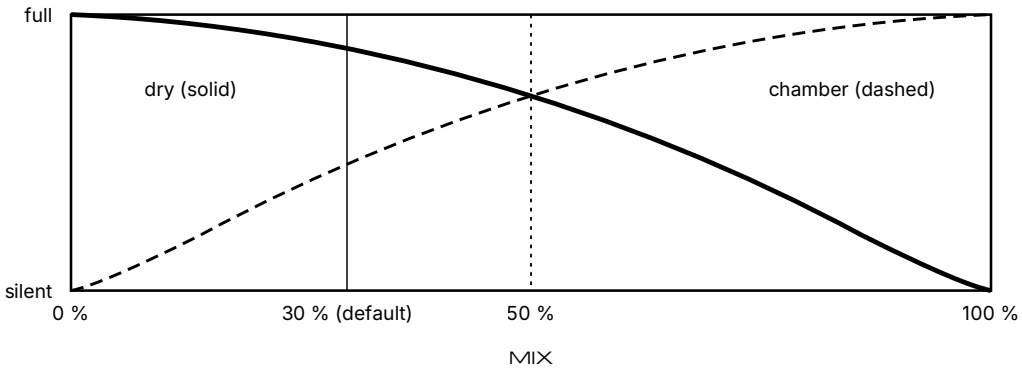


FIGURE 17 MIX is an equal-power crossfade. At 50 % both are about 3 dB down, so dry and chamber add up to the same loudness.

On an **insert**, set MIX by ear: 10–30 % on single tracks, 5–10 % on a mix bus, 3–8 % on a master. On an **aux return**, set MIX to 100 %: the dry signal already reaches the mix through its own channel. See *Insert or send*.

OUTPUT. Trims the level after everything else. Most factory presets have a small OUTPUT boost (+0.5 to +1.3 dB) so the track doesn't get quieter when you add the chamber. Use the Δ readings on the meter bridge to check.

SATURATION: harmonic colour on the return

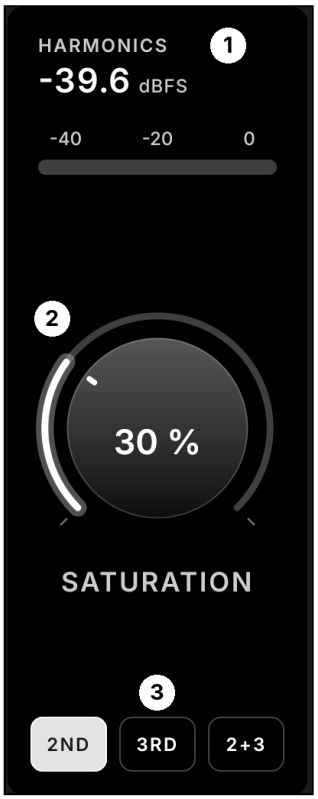


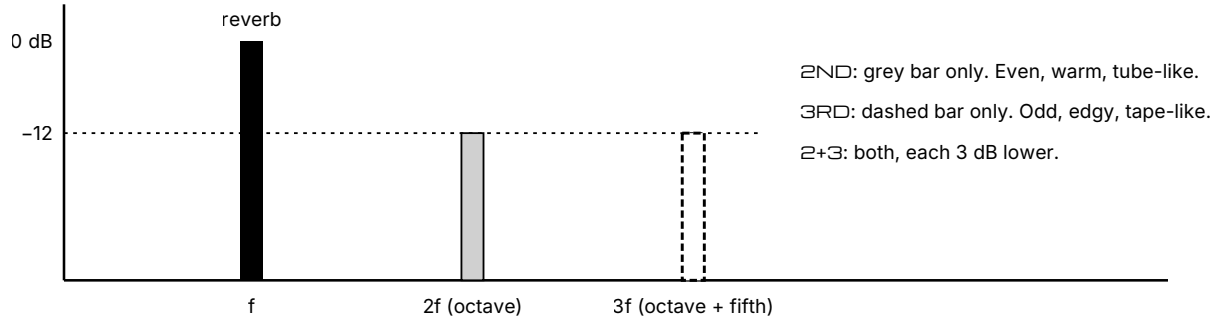
FIGURE 18 1 The HARMONICS bar with its read-out, 2 the SATURATION knob with its value in the middle, and 3 the 2ND 3RD 2+3 buttons.

Control	Range	Default	What it does
SATURATION	0 to 100 %	0 %	How loud the added harmonics are. 100 % puts them 12 dB under the reverb.
2ND / 3RD / 2+3	three buttons	2ND	Which harmonics are added.

The knob works like every other knob on the panel: drag, use the wheel, double-click to return it to 0 %, or right-click to type a value. Its setting is shown in its middle. The three harmonic buttons work as radio buttons: click one and the others release; the one in use is lit.

Old chambers were never perfectly clean: the power amplifier, the speaker and the microphone preamps all added a little colour. SATURATION adds that colour to the chamber's return, and **only** there: your dry signal is never touched.

Unlike a clipper, it doesn't depend on level. For every frequency in the reverb (up to 6 kHz) it adds a new one at exactly two or three times that frequency, at a fixed ratio to its level. At 100 % the harmonics sit 12 dB under the reverb whether the reverb is loud or quiet. Nothing it makes can fold back as aliasing: the highest harmonic it makes is 18 kHz.



At SATURATION 100 %; lower settings lower the harmonics, never the reverb.

FIGURE 19 What [SATURATION] adds for each note in the reverb.

- [2ND] (an octave up) is the even, warm, tube-like colour: it thickens and rounds the tail. It's the choice of most factory presets that use saturation (10–25 %).
- [3RD] (an octave and a fifth up) is odd, edgier and tape-like; it makes the reverb cut through. *Lo-Fi Chamber* uses it at 60 %.
- [2+3] gives both, for a dense, driven return (*Telephone Chamber*, *Crushed Drum Room*).

The **HARMONICS** bar above the knob shows how loud the added harmonics are, in dBFS, on a scale from −40 to 0 ([-40], [-20], [0]). The bar (blue on screen; in print, the lighter fill in the dark track) grows to the right: it jumps up with the peaks and falls back smoothly, like a VU meter. The number above it is the highest level of the last quarter-second, and reads [-inf] when no harmonics are being added. With [SATURATION] at 0 % the bar is empty. The chamber view also shows saturation: the microphones glow warmer when it's on.

> **Tip:** Saturation works best as a subtle thickener. Set it so you miss it when you turn the knob down, rather than so you hear it when you push it up: 10–25 % is usually plenty.

Displays

The chamber view

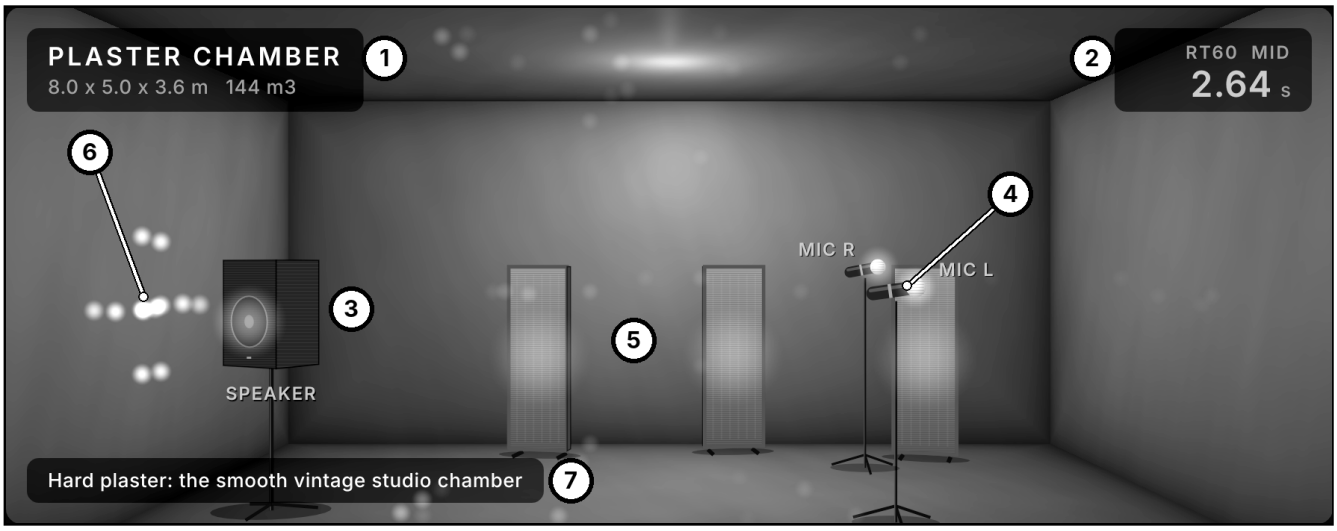


FIGURE 20 The chamber view: 1 the chamber and its size, 2 its reverb time, 3 the speaker, 4 the microphones, 5 the totems, 6 reflections lighting up on the wall, 7 what the material does.

The chamber view is a perspective view into the room you're using. Its walls, floor and ceiling show the chamber's material, lit by a single bulb under the ceiling, at the real proportions of the room. Change CHAMBER or SIZE and the room is redrawn; the old picture stays until the new one is ready.

- 1 **Name plate:** the chamber (PLASTER CHAMBER), its dimensions in metres and its volume in m³, at the current SIZE.
- 2 **RT60 MID:** the reverb time in the mids (the average of 500 Hz and 1 kHz), in seconds, at the current SIZE, DECAY and DIFFUSION.
- 3 **The speaker** (SPEAKER), near one end of the room and aimed into the corner behind it. It glows with what it plays, so you can see when the send is active.
- 4 **The microphones** (MIC L, MIC R), further down the room and aimed at the far corners. They move with MIC, and they glow with what they hear: warmer with SATURATION.
- 5 **The totems** that DIFFUSION stands in the room. They glow softly when the sound reaches them.
- 6 **Reflections.** While sound plays, every reflection the microphones hear (up to two bounces) lights up as a small spot of light where it strikes the wall, floor or ceiling, at the moment the sound gets there. Watch a snare hit: the first spots appear near the speaker, then spread across the room.
- 7 **Character line:** one line about what the material does to the sound.

In silence the view is a still picture; as the tail dies away the lights fade and it returns exactly to that picture.

The DECAY display

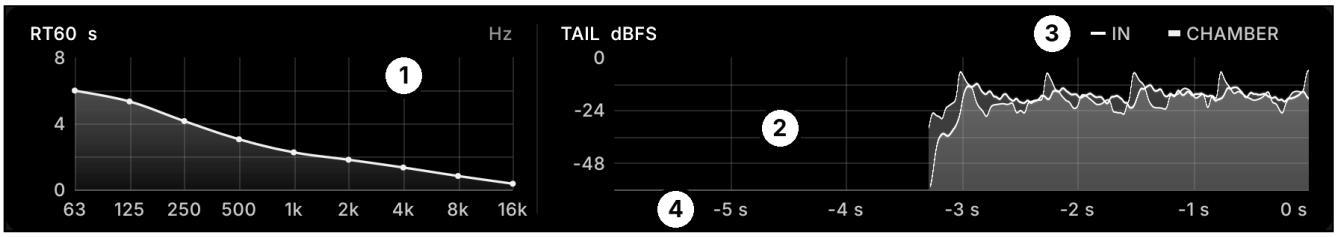


FIGURE 21 The DECAY display: 1 the reverb time per octave, 2 the tail of input and chamber, 3 the legend, 4 the time scale.

The DECAY display has two parts.

RT60 (left) 1 draws the reverb time per octave, from 63 Hz to 16 kHz, in seconds, at the current CHAMBER, SIZE, DECAY and DIFFUSION. A dot marks each octave and a smooth curve joins them. The scale adapts to the room (up to 8 s here). This is the "fingerprint" of the chamber: a falling line means the highs die sooner than the lows (warm, dark), a hump in the middle means the room rings longest in the mids.

TAIL (right) 2 shows the last 6 seconds, newest at the right edge (0 s), with a mark every second 4 , on a dBFS scale from 0 at the top to −60 at the bottom. Two outlines are drawn on top of each other 3 :

- **IN** (on screen grey; drawn as the thin, lighter line): the peak level of your input.
- **CHAMBER** (on screen amber; drawn as the filled shape with a bold outline): the peak level of what the chamber returns, before MIX.

Hover over either part for a short explanation.

What to look for: after each hit or phrase, the chamber's outline should fall away smoothly. If it never falls before the next note, the tail is building up: shorten DECAY or raise PRE-DELAY. If the chamber's outline sits as high as the input, the return is loud; on an insert, check MIX.

Meter bridge (IN | OUT)

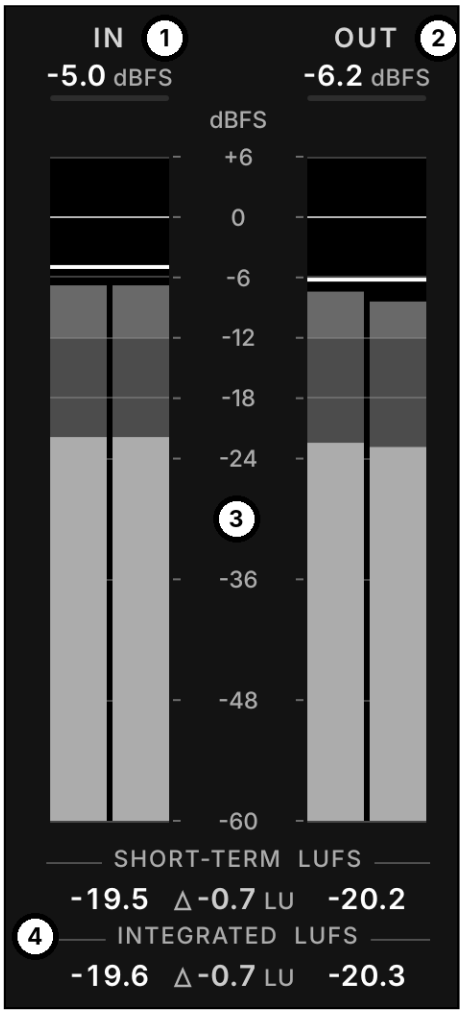


FIGURE 22 The meter bridge: 1 input, 2 output, 3 the shared dBFS scale, 4 short-term and integrated loudness with the OUT − IN difference.

VEIRA Chambers uses the standard VEIRA meter bridge, with an input and an output column and no gain-reduction column.

Reading the IN and OUT meters

The meter bridge measures what goes into VEIRA Chambers and what comes out, in level and in loudness. The drawing shows the input and output columns; any extra column on your plugin's bridge is described above.

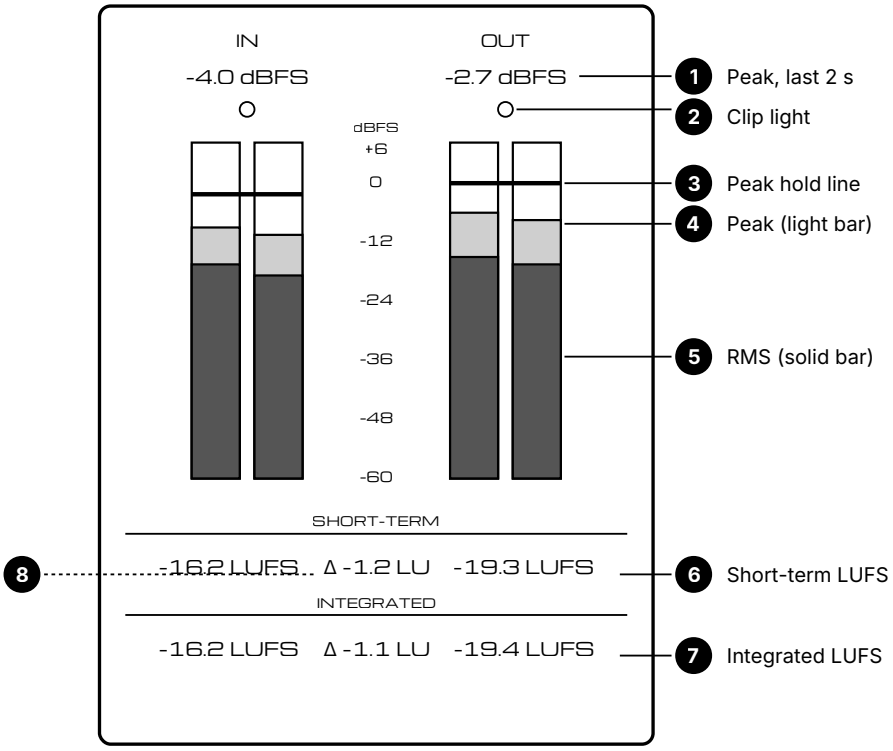


FIGURE 23 The meter bridge, left and right channel bars for input and output, with loudness below.

- 1 **Peak readout:** the highest sample peak of the last two seconds, in dBFS. It turns to a warning above 0 dBFS.
- 2 **Clip light:** lights on any sample at or over full scale. It stays lit until you click the meter.
- 3 **Hold line:** marks the recent peak on the bar.
- 4 **Peak bar** (the lighter part): the instantaneous sample peak of each channel.
- 5 **RMS bar** (the solid part): the average level over 300 ms, closer to how loud it sounds.
- 6 **SHORT-TERM:** loudness over the last 3 seconds, in LUFS, for the input (left) and the output (right).
- 7 **INTEGRATED:** loudness of everything since the measurement started, gated as the ITU-R BS.1770-4 and EBU R 128 standards require.
- 8 **Δ (delta):** OUT minus IN, in LU. It tells you how much louder (+) or quieter (−) VEIRA Chambers made the signal, so you can match levels fairly when you compare with bypass. It reads [--] while either side is too quiet to measure (below −70 LUFS).

The scale: on screen the bars are coloured like a studio console: green below −12 dBFS, yellow from −12 to −3, orange from −3 to 0 and red above 0 dBFS.

Clicks: click a level meter to reset its hold and clip light. Click the loudness readouts to restart the integrated measurement, for example at the start of a song.

On a reverb, the Δ readings mean two different things. On an insert, Δ tells you whether adding the chamber made the track louder (most factory presets keep it within a few tenths of a dB). On an aux return with [MIX] at 100 %, the output is the reverb alone, so Δ tells you how loud the return is compared with what you send it: the *Classic Chambers* presets return between −7 and 0 dB.

Insert or send

A reverb can be used in two ways, and VEIRA Chambers is built for both.

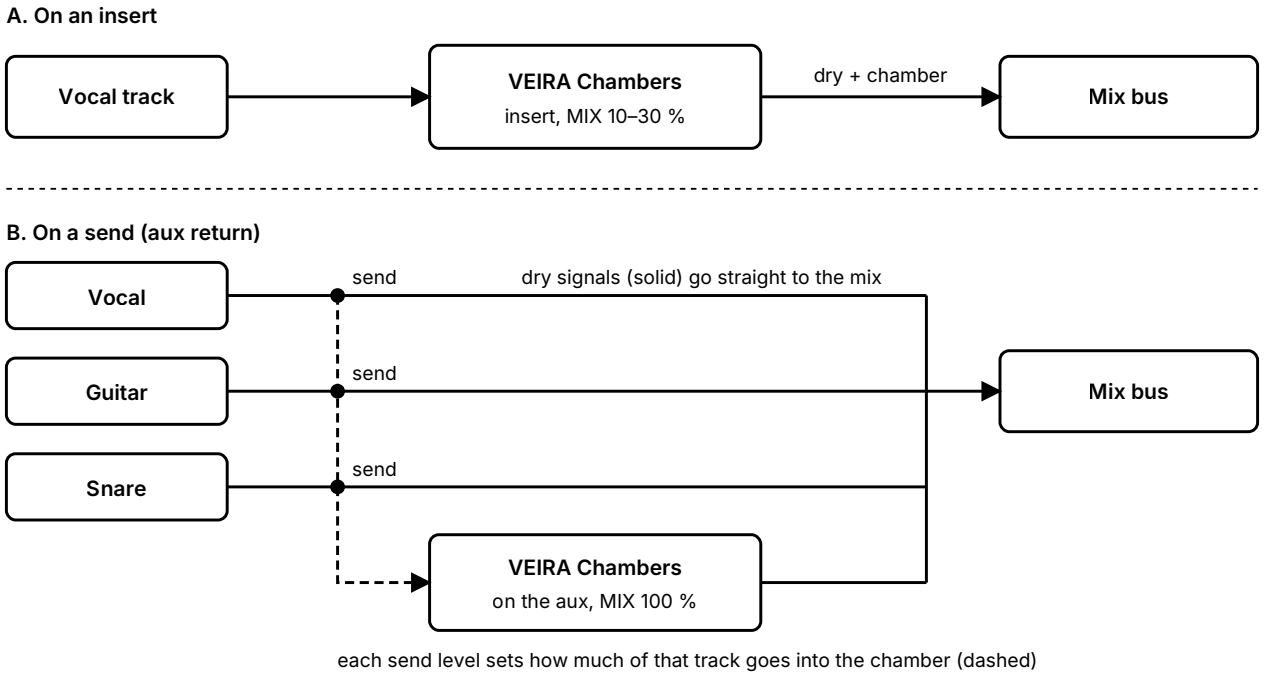


FIGURE 24 Two ways to use a reverb. A: on the track itself, MIX blends dry and chamber. B: several tracks feed one chamber on an aux channel; the plugin returns the chamber only (MIX 100 %) and each dry signal reaches the mix on its own.

On an insert

Put VEIRA Chambers directly on the track, in an insert slot, and set MIX for the amount of room. This is quickest, and right when:

- one track needs its own space (a lone acoustic guitar, a drum room on the kit bus);
- you want the chamber to follow the track's own processing, such as automation of the track's fader;
- you're using VEIRA Chambers on a mix bus or the master for a touch of glue or depth (*Mix Bus* and *Mastering* presets, MIX 3–10 %).

Every factory preset outside the *Classic Chambers* folder is an insert preset, set to add space without making the track louder.

On a send (aux return)

Create an aux (return) channel, put VEIRA Chambers on it with MIX at **100 %**, and send each track to it with its own send level. This is how echo chambers were always used, and it's the better choice when:

- several tracks should share the **same room**, so the mix sounds as if it was played in one place (drums, guitars and vocal in one chamber);
- you want to **save CPU**: one chamber for ten tracks instead of ten;

- you want to process the reverb on its own: EQ it, compress it, automate its level with one fader, or duck it with a sidechain compressor.

Why MIX 100 %? On a send, the dry signal already reaches the mix through the track's own channel. If MIX were lower, the return would add a second copy of the dry signal, which makes the track louder and can cause phasing. The *Classic Chambers* presets (one per chamber) are already at 100 %.

Setting it up:

1. **Create the aux.** In Logic Pro, click an empty **Send** slot on the track and choose a bus: Logic creates the aux channel for you. In Cubase or Nuendo, add an **FX Channel** track and choose VEIRA Chambers as its effect. In Ableton Live, use a **Return** track. In Studio One, Reaper and others, add a bus or FX channel.
2. **Load VEIRA Chambers** on the aux, and pick a preset from **Classic Chambers**, or set MIX to 100 % yourself.
3. **Turn up the sends** on the tracks that should be in the room. Start around −10 dB and adjust by ear.
4. **Pre or post fader?** Use **post-fader** sends (the usual default): when you pull a track's fader down, its reverb follows. Pre-fader sends keep feeding the chamber whatever the fader does, which is useful for special effects only.
5. **Balance** the whole chamber with the aux channel's fader, and shape it with the plugin's LOW CUT, HIGH CUT and PRE-DELAY.

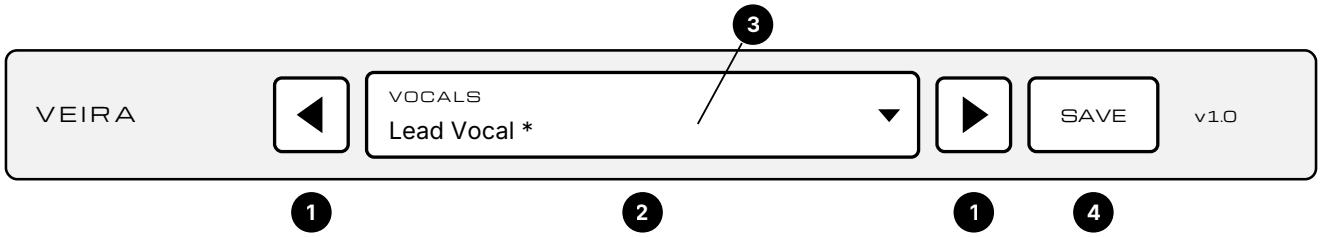
> **Tip:** To use any insert preset on an aux, load it and set MIX to 100 %. Its chamber, size, decay and filters stay as they were made.

Presets

VEIRA Chambers comes with **73 factory presets** in 13 folders. Each one is a starting point made for a real job. Load one close to what you need, then adjust the first control its note mentions.

The preset browser

The preset browser sits in the header, at the top of the window.



The header: logo and plugin name, then the preset browser, then the version.

FIGURE 25 The preset browser.

- 1 ◀ ▶ step to the previous or next preset, through every folder in order.
- 2 **The display** shows the folder (small, above) and the preset's name. Click it to open the preset menu. Hover over it to read the preset's note: what it's for and what to adjust first.
- 3 **An asterisk (*)** after the name means you've changed something since the preset loaded.
- 4 SAVE stores your current settings as a user preset.

The preset menu

Clicking the display opens a menu with:

- one submenu per **factory folder**, in the order shown below;
- **User Presets**, with your own presets in their folders;
- **Save...**, **Delete** (only for user presets: factory presets can't be deleted), **Rescan** (re-reads the user folder, if you copied presets in by hand) and **Show User Preset Folder** (opens it in Finder or Explorer).

Saving your own presets

1. Set VEIRA Chambers the way you like it.
2. Press SAVE. A dialog opens inside the plugin window.
3. Type a name, choose a folder or type a new folder name, and confirm.

Each user preset is one small .veirapreset file:

	Folder
macOS	~/Library/Audio/Presets/VEIRA/VEIRA Chambers/<Folder>/
Windows	%APPDATA%\VEIRA\VEIRA Chambers\Presets\<Folder>\

Copy these files to move your presets to another computer, or to back them up. Presets keep loading in future versions: any control added later simply starts at its default.

Presets in your DAW

The factory presets also appear in your DAW's own preset or program menu, named *Folder: Name* (for example *Vocals: Lead Vocal*). Whatever preset is selected is saved with your session and comes back when you reopen it, including the asterisk if you'd changed it.

The **Default ▸ Init** preset equals a fresh instance of the plugin: every control at its default.

The factory folders

Folder	Presets
Default	Init
Drums	Tight Drum Room, Snare Chamber, Live Kit Ambience, Big Rock Drums, Cymbal Sheen, Vintage Drum Chamber
Bass	Bass Air, Upright Bass Room, Synth Bass Space, Warm Bass Glue
Guitar	Acoustic Guitar Room, Strummed Chamber, Clean Electric Chamber, Fingerpicked Glow, Surf Guitar Splash
Keyboards	Grand Piano Chamber, Intimate Piano, Upright Piano Room, Electric Piano Glow, Synth Lead Echo, Wide Synth Pad
Strings	Violin Chamber, Cello Warmth, String Section Hall, Low Strings Depth, Solo Strings Close
Brass	Brass Section Room, Trumpet Chamber, Trombone Warmth, Horn Section Air
Woodwinds	Flute Shimmer, Sax Chamber, Clarinet Room, Flute Ballad Hall
Vocals	Female Pop Chamber, Male Pop Chamber, Vocal Slap Room, Ballad Vocal Chamber, Vintage Vocal Chamber, Intimate Vocal, Male Rock Vocal, Female Airy Vocal, Spoken Voice Room, Backing Vocals Wash, Rap Vocal Space, Male Soul Vocal
Mix Bus	Mix Glue Room, Mix Bus Depth, Vintage Bus Chamber, Wide Mix Air, Live Band Room
Mastering	Master Space, Master Air, Master Depth, Master Glue
Classic Chambers	Glass Vocal Shimmer, Bubinga Warm Chamber, Oak Drum Chamber, Cedar Short Chamber, Granite Long Chamber, Sandstone Dark Chamber, Marble Silk Chamber, Concrete Echo Chamber, Brick Vocal Chamber, Plaster Vintage Chamber
Creative FX	Lo-Fi Chamber, Endless Marble, Telephone Chamber, Crushed Drum Room, Glass Shimmer Wash, Tiny Box Kit, Mono Throw Chamber

Levels matter, a little. The chamber doesn't react to level; only its balance with the mix does. Presets assume peaks near −8 dBFS (drums −6, buses −4). If yours differ, adjust MIX or the send, not OUTPUT.

Recipes

Step-by-step starting points. Before you judge, match levels: on an insert, set [OUTPUT] so the Δ INTEGRATED reading is close to 0.0 LU when you compare with bypass.

A classic vocal chamber on a send

1. Create an aux channel and load VEIRA Chambers on it with **Classic Chambers ▸ Plaster Vintage Chamber** (or **Concrete Echo Chamber** for a shorter, punchier room).
2. Send the lead vocal to it, starting around −10 dB.
3. Set [PRE-DELAY] to 30–60 ms so each word starts dry and the chamber blooms behind it.
4. Raise [LOW CUT] to 300–500 Hz if the vocal gets cloudy in the low mids; lower [HIGH CUT] to 8–9 kHz to hide sibilance in the tail.
5. Set [DECAY] so the tail fades just before the next phrase. Watch the TAIL on the DECAY display.

A drum room that glues the kit

1. On the drum bus, load **Drums ▸ Tight Drum Room** (oak, three totems, [MIX] 25 %).
2. Raise [MIX] until the kit sounds played in a room, then back off a touch.
3. If the kick blooms, raise [LOW CUT] to 150–200 Hz.
4. For a bigger, rock sound, switch to **Drums ▸ Big Rock Drums** (granite, with a little [2ND] saturation) and shorten [DECAY] for faster songs.

Snare and toms in the concrete chamber

1. Send snare and toms to an aux with **Classic Chambers ▸ Concrete Echo Chamber**, or load **Drums ▸ Snare Chamber** on the snare itself.
2. Set [DECAY] so the tail fills the gap between hits without overlapping the next one.
3. [MIC] lower (30–50 %) gives a tighter, more immediate crack; higher gives a longer, more distant bloom.
4. Two or three totems ([DIFFUSION] 30–50 %) smooth the slap off the parallel walls.

Air and shimmer on acoustic guitar or vocals

1. Load **Classic Chambers ▸ Glass Vocal Shimmer** on an aux, or **Vocals ▸ Female Airy Vocal** on the track.
2. Keep [HIGH CUT] at [Open] and [LOW CUT] at 300–400 Hz: the glass room's lows are thin anyway, and the shimmer lives on top.
3. If the top turns splashy on cymbals or "s" sounds, lower [HIGH CUT] to 10–12 kHz.

Depth on the mix bus

1. On the mix bus, load **Mix Bus ▸ Mix Bus Depth** (plaster, [MIX] 9 %).
2. The aim is to *feel* it, not hear it: switch bypass on and off; the mix with the chamber should sound deeper and more joined-up, but not wetter.
3. Keep [LOW CUT] at 300 Hz or above so the low end stays dry and tight.

4. For a vintage character, try **Mix Bus ▸ Vintage Bus Chamber** (concrete with 20 % [2ND] saturation).

Strings and pads in a long stone room

1. On a string section or pad, load **Strings ▸ String Section Hall** (marble, three totems, [MIC] 85 %), or **Strings ▸ Low Strings Depth** (sandstone) for a darker room.
2. Set [MIX] until the section sits behind the other parts, usually 20–30 %.
3. Turn [SIZE] up (120–150 %) for a grander space; the echoes move later and the tail grows.
4. If the low strings start to rumble, raise [LOW CUT] to 200–250 Hz: polished stone rings longest in the lows.
5. For a slow, lush wash, try **Keyboards ▸ Wide Synth Pad** (marble, [WIDTH] 140 %).

A long throw on the last word

1. Send the vocal to an aux with **Creative FX ▸ Mono Throw Chamber** (granite, [PRE-DELAY] 250 ms, [WIDTH] 0 %).
2. Automate the send level up for the last word of a phrase only.
3. The word echoes into a mono stone room a quarter-second later and rings out behind the next section.

Specifications

Type	Echo-chamber reverb: image-source early reflections and a 16-line late field, per-octave decay from measured material data
Channels	Mono, stereo, and mono in / stereo out
Latency	None. At MIX 0 % the output is bit-identical to the input
Tail	Reported to the host: the longest reverb time plus PRE-DELAY (up to 40 s)
Chambers	Glass, Bubinga, Oak, Cedar, Granite, Sandstone, Marble, Concrete, Brick, Plaster (default)
SIZE	50 to 200 % (default 100 %)
DECAY	25 to 400 % (default 100 %)
MIC	0 to 100 % (default 70 %)
DIFFUSION	0 to 100 %, up to six totems (default 0 %)
TOTEMS	In / Out (default In)
PRE-DELAY	0 to 250 ms (default 0 ms)
LOW CUT	20 Hz to 1 kHz, 12 dB/oct, on the send (default 80 Hz)
HIGH CUT	1 kHz to 20 kHz, 12 dB/oct, on the send; Open at the top (default 12 kHz)
WIDTH	0 to 150 % (default 100 %)
MIX	0 to 100 %, equal-power (default 30 %)
OUTPUT	−24 to +12 dB (default 0.0 dB)
SATURATION	0 to 100 %, harmonics up to 12 dB under the return (default 0 %)
Harmonics	2ND, 3RD, 2+3 (default 2ND)
Displays	Chamber view with live reflections; DECAY display (RT60 per octave, 63 Hz–16 kHz; 6 s tail in dBFS); HARMONICS bar (−40 to 0 dBFS)
Metering	IN and OUT meters (sample peak, RMS); short-term and integrated loudness per ITU-R BS.1770-4 / EBU R 128
Presets	73 factory presets in 13 folders, plus your own
Window	1400 × 880 points; resizable from 75 % to 200 %, saved with the session
Formats	VST3, Audio Units, standalone; AAX once signed
Plugin ID	Manufacturer Veir, plugin Vchm

Troubleshooting and questions

The sound drops out for a moment every 30 seconds. The plugin isn't activated on this computer. Open VEIRA Manager and sign in; the strip at the bottom of the plugin's window says exactly what's wrong. See *Getting started ▸ Activation and the licence*.

I don't see VEIRA Chambers in my DAW. Make sure VEIRA Manager shows SHOW (installed) for it, then rescan plugins in your DAW. In Logic Pro, open the Plug-in Manager and choose *Reset & Rescan Selection* if needed. Look under the manufacturer **VEIRA**.

My track got louder and slightly phasey on an aux. MIX is below 100 % on the aux, so the return carries a second copy of the dry signal. Set MIX to 100 % on any aux return, or load a *Classic Chambers* preset.

I hear no reverb at all. Check MIX (0 % is the dry signal only), and on an aux check that the tracks' send levels are up. The speaker in the chamber view glows when the chamber is receiving sound: if it stays dark, nothing is reaching the send. Very high LOW CUT with very low HIGH CUT can also leave little for the room to play.

The reverb is cut off at the end of my bounce. VEIRA Chambers tells your DAW how long its tail is (up to 40 s), but some DAWs stop a bounce at the end of the region anyway. Extend the bounce range by a few seconds past the last note, or bounce the whole song section.

The low end gets muddy. Raise LOW CUT (150–300 Hz on most sources, higher on vocals), shorten DECAY, or choose a wood or glass chamber, whose lows are short. The stone chambers ring longest in the lows.

Can I use it on a mono track? Yes. On a mono track, most DAWs let you insert it as mono in / stereo out, so the chamber returns in stereo. On a mono-only output, the two microphones are mixed to one.

Does SATURATION change my dry sound? No. It acts only on the chamber's return. At MIX 0 % the output is the input, bit for bit, whatever SATURATION is set to.

The window is too small (or too big) on my screen. Drag its bottom-right corner. It scales from 75 % to 200 % and keeps its proportions; the size is saved with your session.

How do I type an exact value? Right-click the knob (Control-click on a Mac), type the number and press Return.

Do my sessions keep my settings? Yes. Every control, the chamber, the selected preset and the window size are saved with your session.

Contact: support@veiraaudio.com. Mention your computer (Mac or Windows and its version), your DAW and version, and what you see.



VEIRA Chambers · User Manual · Version 0.3.1

Support: **support@veiraaudio.com** · Web: **veiraaudio.com**

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