# Auburn Sounds
# Lens

**Version 1.3.1**

Crystal Clear Multiband Compander

# FOREWORD

Multi-band compression *without* cross-over phase shifts.
EQ with linear phase *without* ringing.
Up to 64 companders, all working together on a stereo signal.
Simultaneous control of sidechain EQ and output EQ.
Removing information that is masked by nearby components.
Clean "Over The Top" multiband upwards compression.

**AUBURN SOUNDS® LENS** gives you all of that!

Originally designed to become a mastering compressor, the prototype revealed itself as a competent track compressor, auto-EQ, noise remover, upwards compressor, multi-band expander/gate... because of its "spherical" sound, it was dubbed LENS.

Once using LENS, manipulating your sound becomes incredibly flexible.

But everything has a price.

LENS has a relatively high CPU usage. Even though entirely optimized, LENS just has a lot of work to do.

LENS also introduces 54 ms of latency. That is non-negotiable to keep the bass aligned. You will find its ability to control low frequency content to be quite unusual.

Finally, there is a small constant phase-shift to pay for using the LENS.

If you agree to pay the phase, latency and CPU tax, what you get is incredible power over your sound.

LENS exists in two versions:

- **AUBURN SOUNDS® LENS FREE** doesn't have access to the Expander. That is a hopelessly mutilated, but of incredible value, product available free of charge.

- **AUBURN SOUNDS® LENS FULL** does have access to the Expander. LENS FULL brings that extra bit of cleanliness that is needed for your recordings.

Because LENS does so much in constant phase, your song ends up being punchier and more direct.

# INSTALLATION

*First, unzip the content of the AUBURN SOUNDS LENS FREE (or FULL) archive.*

## For macOS users

**Double-click on the** `.pkg` **installer in the** `Mac/` **directory.**

- *You may need to reboot your Mac computer to see the new Audio Unit in hosts.*
- *If GateKeeper complains about the Developer being unidentified, try again with Right Click / "Open".*
- *If you can't open the ZIP, try moving it to your Desktop first.*

## For Windows users

**Double-click on the** `.exe` **installer in the** `Windows/` **directory.**

- *When using the VST 2.4 format, you may have to enter the right VST 2.4 directory in order for your DAW to find the plug-in.*

## For Linux users

**Open the** `Linux/` **directory.**

- **LV2:** Copy the LV2 plug-in ( `.lv2` directory) in your LV2 directory.
- **CLAP:** Copy the CLAP plug-in ( `.clap` file) in your CLAP directory.
- **VST3:** Copy the VST3 plug-in ( `.vst3` directory) in your VST3 directory.

# UPDATES

## Upgrade to FULL

Purchasing a FULL upgrade on the Auburn Sounds website, or its resellers, always leads to the `https://itch.io` website.

After purchasing or registering an external purchase here, you need to download a new ZIP and **install it on top of the existing FREE plug-in.**

*Your existing FREE sessions will keep working with the FULL product.*

## Getting newer versions

If you can't find links to your purchase, there are two possibilities:

- **Either you linked your purchase to an `itch.io` account.**
  Go to this page and login: `https://itch.io/my-purchases`

- **Or you did *not* link your purchase to an itch.io account.**
  Go to this page which can send you download links again:
  `https://itch.io/docs/buying/already-bought`

## Should I fear broken sessions?

Session compatibility is broken with each **major** version change.

*eg: Graillon 1.2 to Graillon 2.0*

Session compatibility is preserved with each **minor** version change.

*eg: Graillon 2.3 to 2.4*

*Because your host will see each major version as different plug-ins, you can't loose sessions by upgrading.*

# COMPATIBILITY

AUBURN SOUNDS LENS is available in various plug-in formats:

- CLAP
- VST3
- VST2
- Audio Unit v2
- AAX
- LV2
- FLP

For the following Operating Systems (OS):

- Windows 7 or newer,
- macOS 10.15 or newer,
- Ubuntu 18.04 or newer

Our plug-ins have been tested with a wide variety of Digital Audio Workstations hosts (DAW). However if you find out your DAW isn't well supported, please report a bug at `contact@auburnsounds.com` .

Supported sampling rates range from 11025 Hz to 192 kHz.

# CHANGELOG

## Version 1.3.1

- Fix crash during load and DAW scan in macOS Sequoia 15.4.

## Version 1.3

- **NEW CLAP format** support.
- **NEW** Preset browser (top-left button).
- Faster UI resize and opening performance.
- Fix bad UI size in Cubase, OBS, Digital Performer.
- Fix bad UI size in FLStudio Mac VST2.
- Fix AU latency reporting in REAPER.
- Fix Studio One Mac crash on resize (CoreGraphics).
- Fix installation path for FL2024.
- **Removed:** No more VST2 support on Linux.
- **Removed:** No more 32-bit support on Windows.
- **Removed:** Minimum macOS version is now 10.15.

## Version 1.2

- **NEW** Support FLStudio plug-in format on Windows.
- Fix CoreGraphics crash in macOS, triggered on resize or opening.
- Slightly nicer UI, some lights computed in linear RGB.
- Faster UI resize.
- Windows installer now asks to close DAW if plugin is open.

## Version 1.1

- **Support for macOS Ventura and Sonoma.**
- **Support for AAX arm64 for native M1.**
- **NEW** Can preview parameter values by hovering mouse.
- Interface is less dark, sharper, and some text is larger.
- Fix sluggish controls in Ableton + VST3.
- Fix crash in Studio One when augmenting buffer size.
- Fix macOS mousewheel being extreme with some mouses.
- Fix unreachable threshold point when both threshold and ratio points are high.
- Windows: can now use mouse wheel even when dragging outside the window.

## Version 1.0.2

- **NEW** Can move Dry and Wet slider by the same amount of dB by right-clicking

on the Dry slider, and dragging.
- The macOS installer should not need Rosetta anymore.
- Fix crash in macOS and Linux when holding several mouse buttons at once in the EQ section.
- Fix lack of Gain Map display and wrong UI timings in Linux.

## Version 1.0.1

- **AMD Phenom compatibility.** No more need for a SSSE3 processor, instead the minimum instruction set is SSE3.
- Fix crashes in Logic after Logic reloads a plugin.

## Version 1.0

- Initial release.

# PARAMETERS

## Selectivity

You can choose from 18 bands (less selective) to 64 bands (more selective).

**Lower selectivity:**

- Has a thinner phase-shift,
- May have a high-end roll-off,
- Doesn't distinguish too much between frequencies.

**High selectivity:**

- Introduces more phase-shift,
- Has a fuller and rounder sound,
- Can distinguish nearby frequencies.

In the same panel, **Stereo width** sets how much gain reduction is shared for the left and right channels.

## Compressor panel

**Attack Hi** is the attack time of the compressor for high frequencies, at 20000 Hz.

**Attack Lo** is the attack time of the compressor for low frequencies, at 20 Hz.

*TIP: Dragging one of those knobs with the right mouse button will set them both at once.*

**Release** is the release time of the compressor, for both low and high frequencies. When low, this will dramatically augment the body of everything, at the cost of depth. That is an important parameter to choose.

*TIP: Do not hesitate to set timings really low, since a variety of counter-measures exist in LENS to avoid adverse effects.*

**SC Width** is the stereo width of the compressor sidechain signal. Decreasing SC Width will compress the Side less than the Mid signal, thus increasing width.

**Link Bands**

You can continuously transition between fullband and multiband for the gain reduction stage.

- With 0% linked bands, each band reacts only to its own detected volume. This usually changes spectral balance, since the detector follows a psychoacoustic profile.
- With 100% linked bands, you will have a multiband detection, but a fullband gain reduction for the compressor.

## Gain map

The gain map can be in either "Compressor View" or "Expander View" mode. It shows the individual gain reduction for each band.

### In Compressor View

The gain map lets you choose:

- **Compressor Threshold** *(drag the middle point)*
- **Compressor Ratio** *(drag the rightmost point)*
For gentle compression, start between 1.8 and 2.2 ratio.
- **Compressor Make-up** *(yes, the bottom-left point is draggable!)*

*TIP: You can set both **Threshold** and **Ratio** at the same time by right-clicking the Threshold point.*

### In Expander View (FULL version only)

The gain map lets you choose:

- **Expander Threshold** *(drag the middle point)*
- **Expander Ratio** *(drag the bottom point)*

*TIP: Like with the Compressor view, you can set both **Threshold** and **Ratio** at the same time by right-clicking the Threshold point.*

## Expander panel (FULL version only)

**Attack** is the attack time of the expander, for both low and high frequencies. It can usually be left to its lowest value.

**Release** is the release time of the expander, for both low and high frequencies.

**Relative Threshold** is a special mode where the threshold of the expander is the

average local energy. This lets you suppress information masked by high volume components in the same spectral frame. Relative Threshold can make the signal sound less "complex".

*TIP: Most recording noise has an absolute level, not a relative one. Hence Relative Threshold is disabled by default.*

**SC Width** is the stereo width of the expander sidechain signal. Increasing SC Width gives a preference to Side signal energy.

**Link Bands** Like with the compressor, you can continuously transition between fullband and multiband for the gain reduction stage.

- With 0% linked bands, each band reacts only to its own detected volume. It sounds like water drops or an audio codec.

- With 100% linked bands, you will have a multiband detection, but a fullband gain reduction for the expander. It sounds more like like a fullband digital gate.

## Equalizer controls

### Compressor Sidechain EQ

This shows compressor detection, and compressor gain reduction. This graph doesn't account for Input, Dry, Wet, or Make-up levels.

*IMPORTANT: in LENS there is no EQ for the expander sidechain.*

**Listen Mode** can be activated to listen to the compressor sidechain.

### Output EQ

This displays a view of the "Wet" signal, after compressor and expander applied. This graph does account for Input and compressor Make-up levels, but not Dry or Wet levels. This is not the actual "output" signal, this is before the Dry signal is mixed.

### Points operations

LENS offers extensive manipulations for EQ bands.

- **Add an EQ** point with double-click.
- **Change EQ point width** with mouse-wheel or CTRL + drag.
- **Move EQ points** with left click + drag.
- **Move EQ points vertically** with right click + drag.
- **Select points** by clicking on a point, or drawing a rectangle. Holding SHIFT down lets you grow a selection.
- **Disable EQ points** by double clicking on them *(or press D).*

- **Remove EQ points** with ALT + click or clicking the cross icon when some points are selected *(or press DEL).*
- **Scale EQ points -200% to 200%** by clicking the arrow icon when some points are selected.
- **Mirror EQ points** by clicking the mirror icon when some points are selected *(or press M).*
- **Unselect EQ points** by clicking outside the EQs *(or press ESC).*

*TIP: You can select and move points in both equalizers at once using the SHIFT selection. All the above operations are performed on all selected points, on both side at once.*

*TIP: Display frequency and gain by hovering a point with the mouse.*

## Levels panel

**Input** is an output distortion stage. This is useful to drive the compressor more or less.

*TIP: The expander is not affected by the Input slider. Your expander threshold remains correct when you change levels.*

**Dry** is the level of the dry signal added to form the LENS output. Can be used for parallel compression, or simulate upwards compression.

*TIP: Right click + drag on **Dry** move both **Dry** and **Wet** at once, it is your Output volume slider.*

**Wet** is the level of the wet signal (spectral, companded) that forms the LENS output when mixed with Dry.

*TIP: Right click + drag on **Input** or **Wet** move both at once, in a way that preserves compressor volume.*

## Vintage panel

**Even** is an output distortion stage.

**Stage** is an input transformer distortion stage.

**Min Rate** and **Max Rate** can remove spectral bands. Used to emulate old hardware or simply to save CPU usage.

# CREDITS

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