



Auburn Sounds Lens

Version 1.0.2

Crystal Clear Multiband Compressor



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".*

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.

- **VST2:** Copy the LV2 plug-in (`.lv2` directory) in your LV2 directory.
- **VST3:** Copy the VST2 plug-in `Auburn Sounds Lens.so` in your VST2 directory.
- **LV2:** 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

COMPATIBILITY

AUBURN SOUNDS LENS is available as a:

- VST2 plug-in
- VST3 plug-in
- Audio Unit plug-in
- AAX plug-in
- LV2 plug-in

For the following Operating Systems (OS):

- Windows 7 or newer,
- macOS 10.12 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 1.0.2

- **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

Development, UI/UX, DSP

- Guillaume PIOLAT

UX Review

- Sephora SCHMIDT

QA

- Robert RANDOLPH
- Benjamin RENARD
- Andrey VAKHNENKO

Beta testers

- Clément BASTIAT
- Ugo HEVIN

Thanks

Thanks goes to our fellow musicians, friends and family that provides invaluable support for the creation of state of the art audio tools.

LEGAL INFORMATION

- Mac OS® and the Mac OS logo are registered trademarks of Apple Inc.
- Windows® and the Windows Logo are registered trademarks of Microsoft.
- AAX® is a registered trademark of Avid Technology.
- VST® is a registered trademark of Steinberg Media Technologies AG.



External Licences

Audio Unit

This software contains copyrighted material from Apple Inc.

Disclaimer: IMPORTANT: This Apple software is supplied to you by Apple Inc. ("Apple") in consideration of your agreement to the following terms, and your use, installation, modification or redistribution of this Apple software constitutes acceptance of these terms. If you do not agree with these terms, please do not use, install, modify or redistribute this Apple software. In consideration of your agreement to abide by the following terms, and subject to these terms, Apple grants you a personal, non-exclusive license, under Apple's copyrights in this original Apple software (the "Apple Software"), to use, reproduce, modify and redistribute the Apple Software, with or without modifications, in source and/or binary forms; provided that if you redistribute the Apple Software in its entirety and without modifications, you must retain this notice and the following text and disclaimers in all such redistributions of the Apple Software. Neither the name, trademarks, service marks or logos of Apple Inc. may be used to endorse or promote products derived from the Apple Software without specific prior written permission from Apple. Except as expressly stated in this notice, no other rights or licenses, express or implied, are granted by Apple herein, including but not limited to any patent rights that may be infringed by your derivative works or by other works in which the Apple Software may be incorporated. The Apple Software is provided by Apple on an "AS IS" basis. APPLE MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, REGARDING THE APPLE SOFTWARE OR ITS USE AND OPERATION ALONE OR IN COMBINATION WITH YOUR PRODUCTS. IN NO EVENT SHALL APPLE BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) ARISING IN ANY WAY OUT OF THE USE, REPRODUCTION, MODIFICATION AND/OR DISTRIBUTION OF THE APPLE SOFTWARE, HOWEVER CAUSED AND WHETHER UNDER THEORY OF CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE, EVEN IF APPLE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Copyright (C) 2014 Apple Inc. All Rights Reserved.

Destroy FX AU

This software contains copyrighted material from Sophia Poirier.

Destroy FX AU Utilities is a collection of helpful utility functions for creating and hosting Audio Unit plugins. Copyright (C) 2003-2008 Sophia Poirier All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. * Neither the name of Destroy FX nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. To contact the author, please visit <http://destroyfx.org/> and use the contact form.

QOI (Quite OK Image format)

This software contains copyrighted material from Dominic Szablewski.

Copyright(c) 2021 Dominic Szablewski Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files(the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and / or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions : The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

AirWindows

This software contains copyrighted material from Chris Johnson (AirWindows). Specifically slightly modified Coils and PurestGain.

MIT License Copyright (c) 2018 Chris Johnson Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions: The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.