

Classic American Dynamics

# LUNCHRAIL



## **General Info**

A very versatile VCA based compressor with revered ancestry, that can provide tone/compression characteristics from 'vintage' to 'modern' and anything in between. Different controls on the hardware allow many combinations of settings between feed-forward or feed-back detection, and hard or soft knee response curves. Those modes have been replicated here (with an added 50/50 feed-forward + feed-back mode).

Much effort was put into replicating the attack shape very accurately here, as well as the range of settings for that control, which has actually been expanded to allow for a much slower attack than what is possible on the hardware. There are separate programs for hard and soft knee, but also a combo 'variable knee' set of programs which include a knee control that actually allows you to transition through settings in between a hard and soft knee (allowing for a medium soft knee), which isn't possible on the hardware and it works really well. However, these special 'variable knee' programs require extra CPU and should be thought of mostly as a bonus.

You can get over 30dB of compression and it still sounds great. The fastest attack is almost instant, at .2ms. Add that same tiny amount of look ahead and you have instant peak reduction/limiting. There's a wide range of uses with this comp- from hard knee mastering/limiting, to bus compression, to soft knee vocal compression, shaping drums in many different ways from smashing to transient enhancement, you name it.

Programs were all sampled in stereo (using 2 units), providing left and right channels that are very subtly different, adding to the analog imperfections that most of us came to Nebula looking for. There's also a 'pass-through' program done like the typical Nebula preamp style programs, for getting some tone of the hardware without any compression.

## **Installation**

There are two main steps to the installation-

- 1) Install the programs/vectors. Just copy the .n2p files to your Nebula 'Programs' folder, and the .n2v files to the 'Vectors' folder. Before moving on to the skin install, check to see that the programs do load properly in default Nebula, by going into Nebula's program finder list and loading them from there. You'll find the programs in the 'COM' category, then either the 'LP4', 'LP5', 'LP8', or 'LP9' categories below that, depending on the sample rate(s) you've installed. 'LP5' is for the 48khz rate. The pass-through program is also found there, and in the 'PRE', then 'CW4', 'CW5', 'CW8', and 'CW9' category. You can't load the pass-through with the skin, so you will need to use standard Nebula to it.

- 2) To install the skins, consult the section of the skin installation manual relating to either Nebula 3 or Nebula 4, depending on which you're using. After installing the skins you will be loading these programs as a unique plug-in, so don't ever load them from the default Nebula and its program selection list again! The program buttons will not work if you do!

## Program Choices

If you're using the skins (you really should be), you have two main compressor 'plug-ins' to choose from. The first gives you access to all quality modes for both the Hard and Soft knee programs. The second one gives you access to all of the Variable Knee programs.

The variable knee programs include both hard and soft knees, with a special 'knee' control to transition between them, allowing for medium-soft knees. This gives you another dimension of control and can be useful although it can also be subtle. If you know for sure you want either a hard or soft knee (and not something in-between), you should stick to those programs because they use much less CPU. The 'Variable Knee' programs are to be considered bonuses, because you may not be able to get them to work well with your CPU.

In both skins, there's a 'switch matrix' on the bottom right corner. You use these switches to select between the various modes. The 'lite' 'full' and 'SHQ' modes are all clearly labeled in the program/mode selection switch matrix (these are explained later in the manual). The feed-forward, 50% feed-forward/50% feed-back, and feed-back modes are labeled in the matrix as FF, 50/50, and FB. FF mode gives a more modern sound, while FB gives something more like how older hardware comps worked. 50/50 is in between.

Try out different combos of hard or soft (or variable) knee, paired with FF, 50/50, and FB modes, to get many different sounding results. You should be able to get used to what is going on and know what you're after eventually.

The 'lite' 'full' and 'SHQ' modes are all clearly labeled in the program/mode selection switch matrix. These are explained next.

## Lite, Full, and SHQ

Lite programs use less CPU, but have no sampled harmonics. The Full version adds 2<sup>nd</sup> and 3<sup>rd</sup> harmonic orders, but also increases the CPU use. SHQ has a full 5 harmonic orders on top of the fundamental (beyond that the harmonics were just too low in level to include, as this is a very clean comp), with a HUGE increase of CPU. Not only that, but the SHQ programs use a slightly 'fuller' set of samples which makes them slightly more accurate to the hardware (this difference is very subtle though). You will NOT be able to run them live, and it is for rendering only! You shouldn't load SHQ programs unless you are ready to render, because the moment it loads, your system will take a huge hit in performance. **Make sure to save your project before even trying!**

Here are the improvements you get if you render with SHQ:

- More accurate frequency response. The full or lite programs just don't have as perfect of a recreation of the frequency response of the hardware as the SHQ ones.
- SHQ programs also have more kernels for more harmonics, so the distortion model is more complete.
- Higher sample count for fundamental (kernel #1), meaning a higher resolution in the captured hardware response- BUT the difference here is very subtle! Not sure if anyone could even detect it.
- Slightly better (possibly subjective) recreation of the tone of the hardware.

I would recommend using either Lite or Full while mixing, then switching to Full or SHQ for rendering.

## Pass-through

The pass through program gives you some of the tone of the unit but without any compression. It's really subtle. Four different setups (using different control settings on the hardware) were sampled for this and you can select between them, but the difference is very subtle. I can't really hear a difference, but I decided to include them all, 'just in case'.

## Controls

**Attack-** Variable from .2 to 280ms which is expanded beyond the original hardware's maximum of 25ms. The longer possible attacks here allow for a wider range of use, including things like mastering with really slow attacks, etc. The unique attack shape seen in the hardware in its faster range is maintained and carried over into these new slower speeds.

**Release-** Variable from .05 to 3 seconds. The complex release behavior was recreated as accurately as possible with Nebula, and it changes depending on how much compression you have before it releases.

**Thresh-** Threshold control.

**Ratio-** Sets the ratio, goes from 1:1 to infinite:1, which is great for hard limiting. Infinite shows as 100.

**Knee-** Only found in the Variable Knee programs. This control allows you to not only switch between a soft or hard knee as on the real unit, but it also allows you to transition between the two to get various stages in between. Try it! 0% on the control represents a soft knee, and 100% represents a hard knee. If you know for sure you only want a hard or soft knee, you should use the Hard or Soft Knee programs, as they take up much less resources.

**Ahead-** It allows you to add a look-ahead of up to 1.5ms, and can be used to achieve a peak limiting effect (with the fastest attack setting), or just to soften the attack a little. Feed Back programs don't have this control since it wouldn't work with them anyway. It will still work with the 50/50 programs since they still use some of the feed-forward signal for detection.

**MakeUp-** Allows up to 25dB of gain after compression. With the feedback mode/programs (or the 50/50 ones), this will actually affect how much compression you get, because you're increasing the level of the signal before it goes into the detector.

**Wet-** This is a typical Dry/Wet mixer control. The value is the % of wetness. Not found in the Variable Knee programs (I had to sacrifice it to make room for the variable knee control).

**Trim-** This is an input drive control only found in the pass-through programs, that compensates with the opposite amount of output adjustment. For example, if you boost input by 6dB, the output is lowered by 6dB. This helps keep a somewhat steady level, allowing you to more easily hear the difference in effect you get by having different input drive levels.

**Sel-** 'Select'. Only in the pass-through programs. This control actually switches between 4 different sampled versions of the pass-through. I sampled it 4 different ways, to see if the results would be any different. For example, with more or less input drive, with different settings switched on or off, etc. The results are almost impossible to tell apart to my ears, and the harmonic structures look pretty similar in all four, but I decided to keep them just in case anyone else gets any use out of having these choices. Just try moving the control between them and seeing if you notice any difference and prefer one to the other.

**Dist-** Only in the pass-through programs. This control directly adjusts the level of the harmonics that the program creates. It's the same control that is usually called 'drive' in lots of other Nebula programs out there, but I always rename it to 'dist' because I think that's more accurate.

## **General Usage Tips/Ideas:**

- If you want to even out the peaks in a signal some but not completely, try using the hard knee program with feed-forward, the fastest attack, a fast release, a tiny bit of look-ahead, high ratio, set thresh where you want the peaks caught, and now you have instant peak limiting. Now to dial it back a bit, just lower the wet control some.
- Similar to above, try completely squashing an input with a really low threshold, high ratio, fast attack and release, using the hard or soft knee feed-forward program. Now reduce wet and start increasing the makeup gain control (called output on the skins) so you can mix a small amount of this squashed signal into your dry signal. This can be a nice effect on drums.

V1.8 – use this version number to keep track of updates. If the manual posted at my site has a higher version number than the one you have, your set probably isn't up to date.

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The skins were made by Max!

**Huge thanks to Max Ponomaryov, aka azzimov for the skins!**

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