KNIGHTSNARE

Optical Knight

Optical Leveling Amplifier — User Manual



Audio effect plugin for Mac (AU, VST3), Windows (VST3) and Linux (VST3).
knightsnare.com
Inspired by the classic Teletronix LA-2A. Optical Knight is an independent Knightsnare product: not affiliated with or endorsed by Universal Audio. It is a model built from published specifications.

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1. Welcome

Optical Knight is a leveling amplifier in the style of the 1960s tube compressor with a light-sensitive (optical) gain cell, a favourite on vocals, bass and anything that needs to sit still in the mix without sounding squashed.

There are only two knobs. The optical cell reacts to the music by itself: it lets the first moment of each note through and then levels the body smoothly, recovering faster after short peaks and more slowly after long loud passages. That's why it sounds natural even with a lot of reduction.

2. Installing

Mac

Open the downloaded zip and double-click the installer. It installs the Audio Unit (Logic, GarageBand) and the VST3 (Ableton Live, Cubase, Studio One, Reaper and others). Then open your DAW and let it rescan its plug-ins. The installer is signed and approved by Apple, so macOS won't warn you. macOS 11 or later, Apple Silicon and Intel.

Windows

Unzip the download and copy the **.vst3** into `C:\Program Files\Common Files\VST3`, then rescan plug-ins in your DAW. 64-bit Windows 10 or 11.

Linux

Unzip the download and copy the **.vst3** into `~/.vst3` (create the folder if needed), then rescan in your DAW (for example Reaper or Bitwig). 64-bit, Ubuntu 22.04 or newer, or a similar distribution.

> **Tip** This is an audio effect. Insert it on an audio track, a bus or an aux / return channel.

3. The panel



Optical Knight.

Control	What it does
PEAK REDUCTION	How much it compresses: 0 = none, 100 = up to 40 dB of reduction on a loud signal.
GAIN	Output level after compressing. 40 = unity (no change).
LIMIT / COMPRESS	Switch up = LIMIT: a high ratio for firm control. Down = COMPRESS: a gentler ratio for smooth leveling.
Meter selector	What the VU meter shows: GAIN REDUCTION, OUTPUT +4 or OUTPUT +10.
VU meter	Shows the reduction or the output level, with real VU movement.
POWER and lamp	Switch up = on; the lamp glows. Down = bypassed.
Top bar	SIDECHAIN, the preset arrows and name, SAVE, and STEREO LINK.

- Drag knobs up and down (or sideways). Hold Shift for fine moves, use the mouse wheel, or double-click to return to the default.
- Click a switch to flip it. Click a label on the meter selector to choose it.
- The window can be resized from 40% to 100%.

4. Using it

1. Insert Optical Knight on your track. Set the meter selector to **GAIN REDUCTION**.
2. Turn **PEAK REDUCTION** up while the track plays until the needle moves back about 3-6 dB on the loud parts.
3. Switch the meter to **OUTPUT** and turn **GAIN** up until the level matches what you had before. Flip POWER off and on to compare.
4. For firmer control of peaks, flip the switch to **LIMIT**.

Material	Starting point
Lead vocal	COMPRESS, 4-8 dB of reduction, then make up the level with GAIN.
Bass	COMPRESS or LIMIT, 4-6 dB of reduction, for an even, solid low end.
Drum bus or room mics	LIMIT with plenty of PEAK REDUCTION for a thick, pumping sound.
Mix bus	COMPRESS with just 1-2 dB of reduction to glue things gently.

Tip Optical compressors are slow by design: the very start of a drum hit gets through. For catching sharp peaks, use a fast limiter after it.

5. The VU meter

- **GAIN REDUCTION**: the needle rests at 0 and moves left by the number of dB being taken off (10 dB of reduction reads -10).
- **OUTPUT +4**: 0 VU is -18 dBFS, the usual level for a healthy mix.
- **OUTPUT +10**: 0 VU is -12 dBFS, for hotter signals.
- The needle moves like a real moving-coil meter, so it shows the average level rather than every peak.

6. Stereo link and side-chain

- **STEREO LINK** (top bar) **on**, the default: one gain cell, driven by the louder side, turns both channels down together, so the stereo image holds. **Off**: dual mono, each channel compresses on its own with the same settings.
- **SIDECHAIN** set to **EXT**: another track (for example the kick) drives the compression, so this track ducks on every hit.

1. Set SIDECHAIN in the top bar to EXT.
2. Send the other track to the plugin's side-chain input. **Logic:** the side-chain menu at the top right of the plugin window. **Ableton Live:** open the device's side-chain section (the triangle in its title bar), switch Sidechain on and choose the track in Audio From. **Other DAWs:** send the track to the plugin's second input.
3. Turn up PEAK REDUCTION until the ducking is as deep as you want.

The dot next to SIDECHAIN is dark when OFF, amber on EXT while no side-chain signal is arriving (nothing is ducked then), and green, flashing on every hit, when it arrives. Presets never change the side-chain setting.

7. Presets

- The arrows step through presets; click the name for the list: Init, 30 factory presets in six groups (Vocals, Bass, Drums, Instruments, Mix & Master, Character), your own presets, and Save As, Delete and Show Preset Folder.
- A small dot after the name means you've changed something since loading it.
- **SAVE** names and stores your settings as your own preset. Your DAW session also reopens exactly as you left it.
- **Init**: PEAK REDUCTION 35, GAIN 40 (unity), COMPRESS.

8. Troubleshooting

Problem	Try this
No compression	Check POWER is up and the lamp is lit, and turn PEAK REDUCTION up.
It's quieter than before	Turn GAIN up to make up the level (watch the meter on OUTPUT).
Side-chain doesn't duck	SIDECHAIN must be on EXT and your DAW must send a signal to the side-chain input. If the dot is amber, nothing is arriving.

About

Optical Knight is made by Knightsnare. It is inspired by the Teletronix LA-2A, built from its published specifications and written from scratch; no circuits, sounds or code from the original are copied. Teletronix and LA-2A are trademarks of Universal Audio. Optical Knight is an independent product: not affiliated with or endorsed by them.