



Custom, hand-built pedals, designed  
on the east coast of Canada.



@bennettcustomaudio

## Lighthouse Tremolo

### Introduction:

Inspired by the stoic, coastal watchtowers of yesteryear, The Lighthouse tremolo combines a premium, all-analog signal path with a flexible and interactive digital Low Frequency Oscillator (“LFO”). It features both harmonic and amplitude tremolo, 5 unique LFO waveforms, tap tempo with divisions, and variable-slope speed ramping – allowing you to smoothly increase or decrease the LFO speed momentarily. The analog circuitry is powered by an internal voltage inverter for an increased headroom of 18VDC, and uses a pair of optocouplers to create warm, vintage, throbbing tremolo. Like all our pedals, each Lighthouse is meticulously hand-wired, hand-tested, and features true bypass switching. For more information about this pedal and our other products, please visit our website or contact us directly!

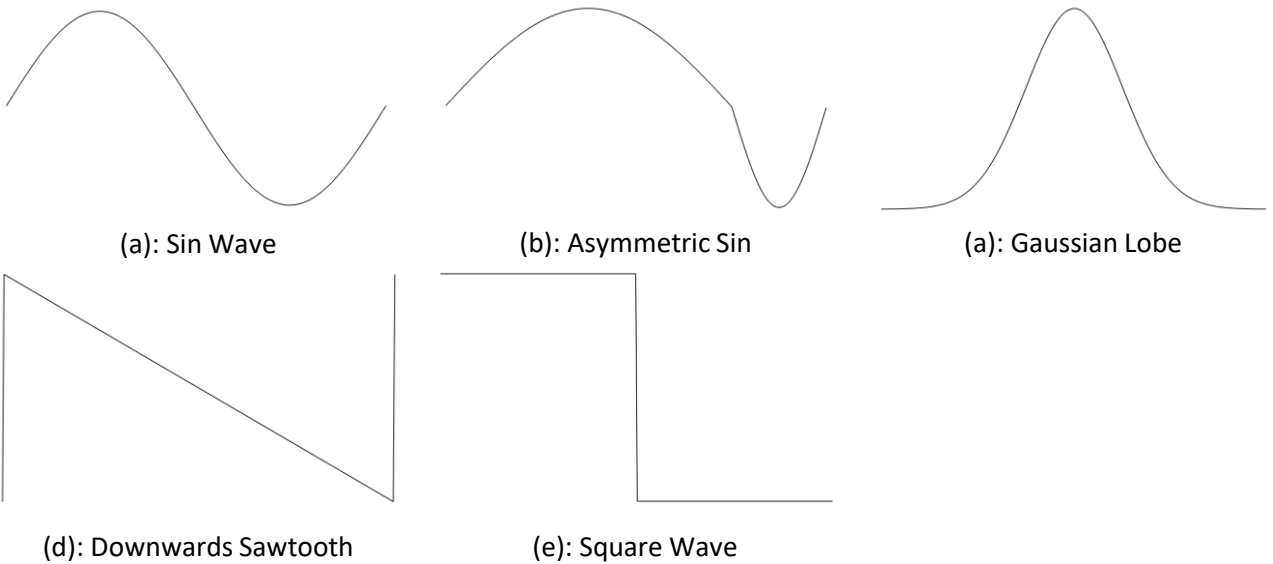
### Controls:

- **Speed:** Sets the speed of the LFO, has a range of 0.25Hz to 12.5Hz. Note that the speed pot is not affected by the tap division setting – it always has the aforementioned range!
- **Ramp:** Determines the slope and direction of the ramping feature. See “Tap/Ramp footswitch” for more info on ramping. Counter-clockwise from noon will make the LFO speed ramp downwards, while clockwise from noon will make it ramp upwards. The distance from noon determines how quick the ramping will occur.
- **Depth:** Controls the depth of the LFO. Turning it up gives a deeper tremolo effect.
- **Tap Division:** Selects between 5 different tap tempo multipliers, allowing you to always tap quarter notes, but achieve different rhythmic patterns. They are: 1x (quarter notes), 0.5x (half notes), 2x (eighth notes), 3x (triplets), 4x ( sixteenth notes). The Tap division setting only affects the speed when it is set using tap tempo, it does not affect the speed pot!
- **Waveform:** Allows you to select between the 5 different LFO waveforms. They are; a. Sin wave, b. Asymmetric Sin Wave, c. Gaussian Lobe, d. Downward Sawtooth, and e. Square Wave. See the diagrams on the next page for a visual description of the waveforms. Note that in harmonic mode, different waveforms will sound warmer/brighter than others!
- **Harmonic Switch:** Selects between harmonic tremolo (up) and amplitude tremolo (down). Amplitude tremolo will modulate the volume of your entire signal, like the bias tremolo of an old tube amplifier. Harmonic tremolo separates your signal into bass and treble frequencies, and modulates their volumes out of phase from each other, which gives a throbbing, phasing-like effect.
- **Tap/ramp Footswitch:** This footswitch can be used to both set the LFO speed and engage the ramping feature. Two consecutive taps of this footswitch will set the LFO speed, multiplied by the “Tap division” setting. ONLY TWO quarter-note taps are necessary! Holding the footswitch for more than 250ms will engage speed ramping. The ramp direction and slope is set by the “ramp” pot. The speed can ramp down as low as 0.25Hz, and it will ramp upwards as far as 12.5Hz. Whenever you release the switch after holding it, the speed will automatically ramp in the reverse direction, returning to the speed from which it started.

## Controls (Cont'd):

- **Bypass Footswitch:** This footswitch simply turns the effect on or off, it is wired for true bypass!
- **Indicator LED:** The LED lights up when the effect is on, and blinks along with the LFO! This gives you a visual indication of the LFO speed, depth and waveform setting.
- **Internal Volume Trim pot:** This trim pot inside the pedal allows you to adjust the overall output volume of the effect – turning it clockwise will make the effect louder. If you find that the volume seems to drop while the effect is on, or you find there is too much of a volume boost, try adjusting the trim pot! **BE CAREFUL** not to disturb any of the electronic components or wires will adjusting the trim pot!!

## Waveforms:



## Power:

The Lighthouse can be powered by any standard, 9VDC, 2.1mm, center-negative power supply and requires 30mA of current under normal operation. It does not have room inside to accommodate a battery. As the pedal has an internal Voltage inverter, it **CANNOT** be powered with higher voltages: **USING A HIGH VOLTAGE SUPPLY WILL DAMAGE THE PEDAL.** Using a high-quality, isolated and regulated power supply is always recommended. Poor-quality power supplies may produce excess noise. **\*\*USE OF AN IMPROPER POWER SUPPLY WILL VOID WARRANTY.**