

# SUNLIGHT

OLD BLOOD NOISE ENDEAVORS

instruction manual



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Bright, sharp, and strange - pulsing, percussive, plain weird - moving literally and moving emotionally - Sunlight is a reverb pedal. It can be very short, or very long. Reverb passes through a delay line, filter, and volume, and they all love to modulate. Your dynamics can create held notes. And of course, a wide yet approachable control suite allows you to dial it all in with confidence. Like all we do, it is textural and surprising, full of new areas to discover. Listen and play.

### CONTROLS

**Dry** sets the volume of your dry signal. If **Wet** volume is up, it also allows a halo of very short reverb around your dry signal, parallel to the pedal's main reverb.

**Dynamics** introduces one of two dynamic elements to the pedal. At noon, no dynamics are engaged. Below noon, your signal strength causes the LFO to go faster or slower (depending on the **Rate** setting) with increasing intensity. Above noon, a dynamic element is introduced to the reverb, where only signals above a certain threshold are let in, and while those signals are let in, the decay of the reverb is decreased as well to clear out existing trails. The further up you turn **Dynamics**, the more the threshold is increased, requiring louder signals to enter the reverb - tune this to the specific strength of your instrument and play style in order to create dynamic pads with **Decay** all the way up.

**Decay** sets the length of the reverb trail by feeding some of it back into itself. All the way down, reverb is very short. A little bit up, a long trail is introduced, and that trail continues to increase in length. At maximum, with **Dynamics** off or below noon, reverb trails will stack easily and get intense, but not sustain indefinitely. With **Dynamics** above noon, reverb trails can sustain indefinitely while the input signal is below the threshold.

**Feedback** sets the feedback of the post-reverb delay. With short settings of the **Time** knob, this can create comb filter/flanging sounds.



**The LFO** (low frequency oscillator) can affect a few different settings in Sunlight. There are three controls over its character.

**Rate** sets the rate of the LFO, from slow to fast.

By pressing **Aux** while turning the knob, **Rate** also sets subdivisions or multiplications of the main rate. There are seven subdivisions, from left to right:  $\div 4$ ,  $\div 3$ ,  $\div 2$ ,  $\times 1$ ,  $\times 2$ ,  $\times 3$ ,  $\times 4$ . Subdivisions will affect the rate regardless of how it is set (via knob, tap tempo, or MIDI clock). Subdivisions will be saved per-preset, and in live mode, with the factory default being  $\times 1$ .

**Depth** sets the depth of the LFO. All the way down means no movement will occur.

Note: watch the LED between **Rate** and **Depth** to get an idea of where your LFO currently is.

**Shape** sets the shape of the LFO, with six options: Tape (a unique shape inspired by the original Sunlight's "Tape mode"), Triangle, Square, Ramp Up, Ramp Down, and Random.

The LFO can be sent to up to three destinations by pressing the switches next to **Time**, **Freq**, and **Wet**. These knobs will light up to show you when the LFO is active for that element.

**Time** sets the delay time of the post-reverb delay, focused on very short times and going up to 218ms. The further this knob is turned up, the more the delay time is allowed to modulate when the LFO is on, going up to 436ms at full modulation.

**Freq** sets the cutoff frequency of the post-delay filter, from 0Hz to 5kHz. The further this knob is turned up, the more the filter is allowed to modulate when the LFO is on, going up to 10kHz at full modulation.

By pressing **Aux** while turning the knob, **Freq** also sets the filter type. Four options are available, from left to right: low pass, band pass, high pass, and band reject. All filter types are based on a state variable filter topology.

**Wet** sets the volume of the wet signal, allowing you to make up for volume boosts or cuts caused by filtering, feedback, and other elements. For this setting, the LFO is always allowed to modulate at full depth when on, creating a tremolo effect that doesn't change perceived volume.



The **Aux** switch has three potential settings:

- Tap tempo, where pressing it two or more times matches the modulation rate to your tapped tempo. When holding the switch in this mode, it will indefinitely sustain the reverb, returning to normal after being let go.
- Reverb hold, where the reverb signal is indefinitely sustained and no new input signal is allowed in. This allows you to create drones or pads and play over the top of them. In this mode, press the switch to latch or unlatch the held reverb trails, or hold the switch for momentary action.
- Preset switching, where the footswitch cycles through the three onboard presets and live mode. To choose the setting, hold **Aux** and press another switch: any of the LFO assignment switches for tap tempo, the on/off switch for reverb hold, or the preset switch for preset switching. Let go of **Aux**, and this option will be set globally.

The **On/Off** footswitch turns the pedal on and off. Tap to latch, hold for momentary action.

The **Expression** Jack can be used to externally control any combination of knobs on Sunlight, using a TRS expression device. To assign the Expression control, simply turn a knob or knobs while holding the On/Off footswitch. The knob position when you press the footswitch will be the expression heel position, and the knob position when you let go will be the expression toe position. If a knob wasn't moved, expression will not affect it. Expression settings are saved per-preset.

Scooch (or a similar momentary footswitch) can be used as an external tap tempo switch. To engage or disengage this function, press the **Aux** switch while holding down **On/Off**. This will allow the **Expression** jack to accept a footswitch input, overriding any expression settings. Use a TRS cable, even if the footswitch only requires a TS connection.

Presets are accessible via the **Preset** switch. Press the switch to cycle through stored presets. The LEDs will indicate whether you are on Preset 1 (top LED), Preset 2 (middle), Preset 3 (bottom), or live mode (no LED is lit). To save a preset, hold the Preset switch for five seconds until the preset LED starts blinking. Cycle through the presets using the switch to choose which slot to save your preset to. If you do not want to save, cycle to live mode (no LED lit). Once you've made your selection, hold the Preset switch for five seconds again until the LED stops blinking.

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The Routing of Sunlight can be Mono, Stereo, or Mono-In-Stereo-Out. To choose routing, hold down the **On/Off** switch and press the **Preset** switch to cycle through options. The preset LEDs will blink to indicate the current setting: Mono (top LED), Mono In Stereo Out (middle LED), or Stereo (bottom LED).

Additionally, Sunlight can be true bypass or have trails. To set this, hold down the **Preset** switch for five seconds while assigning stereo/mono routing. A faster blinking LED indicates trails are on, a slower blink indicates trails are off.

The routing and trails settings will save globally.

To Factory Reset your Sunlight, hold **On/Off** and **Aux** for 10 seconds until all LEDs begin blinking. At this point, you can cancel the reset by pressing **On/Off**. To confirm the reset, press **Aux**. All LEDs will light, then count upward as all settings and presets are returned to default, then light once more, then return to normal operation. This will delete all user settings and set all presets to their factory state.

The **USB** jack currently has no function. If a firmware update is made available, further instructions will be provided.

Sunlight requires 350mA 9V DC center negative power.

### MIDI FUNCTIONS

The MIDI In and Out jacks are 3.5mm TRS Type A connections. MIDI In receives messages for Sunlight to process. MIDI Out sends those messages back out, acting like a MIDI Thru, and can also send MIDI clock based on the pedal's delay time (see MIDI Clock Input Mode below).

By default, Sunlight is on Channel 1. The Channel can be changed via CC (see below).

To save and load presets, use MIDI PC messages. To load a preset, send the PC value of the preset. To save a preset, use the preset save CC in the table below to initiate saving, then send the PC value where you want to save the preset, then use the preset save CC again. Alternatively, hold the Preset switch for five seconds until the preset LED begins blinking, send the PC value where you want to save the preset, then hold the Preset switch for five seconds again to save to that location. Note: 127 presets are accessible through PC slots 1-127. PC 128 puts the pedal into Live mode (no preset, settings match knob positions).

By default, Sunlight accepts MIDI clock and will automatically sync the delay time when clock messages are sent. Using the MIDI Clock Input Mode CC, the pedal can be set to accept clock in only, send clock out only (based on the timing of the left delay line), accept clock in and send that clock through, or disregard clock entirely.

All of Sunlight's controls and additional settings can be assigned via MIDI CC messages. See the table on page 6 for more.

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FUNCTION	CC#	VALUES
Expression	11	0-127
Dry	14	0-127
Dynamics	15	0-127
Decay	16	0-127
Feedback	17	0-127
Rate	18	0-127
Depth	19	0-127
Shape	20	Tape: 0-10 Triangle: 11-29 Square: 30-63 Ramp Up: 64-102 Ramp Down: 103-118 Random: 119-127
Time	21	0-127
Freq	22	0-127
Wet	23	0-127
Subdivisions	24	+4: 0-18 +3: 19-36 +2: 37-54 x1: 55-72 x2: 73-90 x3: 91-108 x4: 109-127
Filter Type	25	Low Pass: 0-31 Band Pass: 32-63 High Pass: 64-95 Band Reject: 96-127
On/Off Switch	26	OFF: 0-63 ON: 64-127
Tap Tempo Switch	27	Tap Pulse: 0 (no response for 1-127)
Hold Switch	28	OFF: 0-63 ON: 64-127
LFO Time Switch	29	OFF: 0-63 ON: 64-127
LFO Freq Switch	30	OFF: 0-63 ON: 64-127
LFO Wet Switch	31	OFF: 0-63 ON: 64-127
Trails Setting	85	OFF: 0-63 ON: 64-127
Stereo Setting	86	Mono: 0-42 Mono In Stereo Out: 43-85 Stereo: 86-127
MIDI Clock Input Mode	87	Accept Clock In and Send Clock Thru: 0-31 Accept Clock In Only: 32-63 Send Clock Out Only: 64-95 Deactivate Clock: 96-127
Aux Switch Setting	89	Freeze: 0-42 Tap Tempo: 43-85 Preset: 86-127
Preset Saving Switch	90	Cancel Save: 0-42 Start Save: 43-85 Confirm Save: 86-127
MIDI Channel	102	1-16

