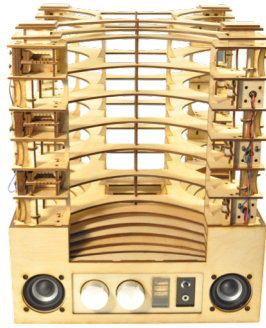


Upright Laser Harp

Version: 1.0

Date: 25-Sept-2019



Description

The upright laser harp is a laser blocking musical instrument with stacked laser beams that propagate horizontally. The beams reflect off mirrors to form square shaped beam paths. The device has a built-in MIDI player so the output is an audio signal, and therefore it does not need to be connected to a computer or MIDI player (e.g. keyboard) to play sound. Both built-in speakers and audio output jack are available for playing music.

The upright laser harp consists of 12 lasers and photoresistors arranged in six layers. Two mirrors per layer reflect the laser beams to the photoresistors. The volume of the device is controlled using a potentiometer connected to the Arduino Mega. The device can also switch between different MIDI instruments. A rotary switch is read and the output is used to update the instrument.

Technical Specifications

System Specs	
Number of strings	12
Tuning range	128 (C ₋₁ to G ₉)
Number of programmable instruments	128
Number of displayed instruments	20
Microcontroller	ATmega2560
MIDI processor	VS1053

Front Panel	
Audio output	1/8" stereo
Volume	Ø32mm aluminum knob
Instrument controller	Ø32mm aluminum knob
Speaker on/off	Latch pushbutton to ground
Internal speakers	Ø50.8mm, 4Ohm 12W
Audio output	1/8" stereo

Rear Panel	
Input power	12V DC, 3A
Program upload	USB Type B
System Reset	Momentary pushbutton to ground
Power switch	On/Off

Dimensions	
Width	29.5cm
Height	29.5cm
Depth	35cm