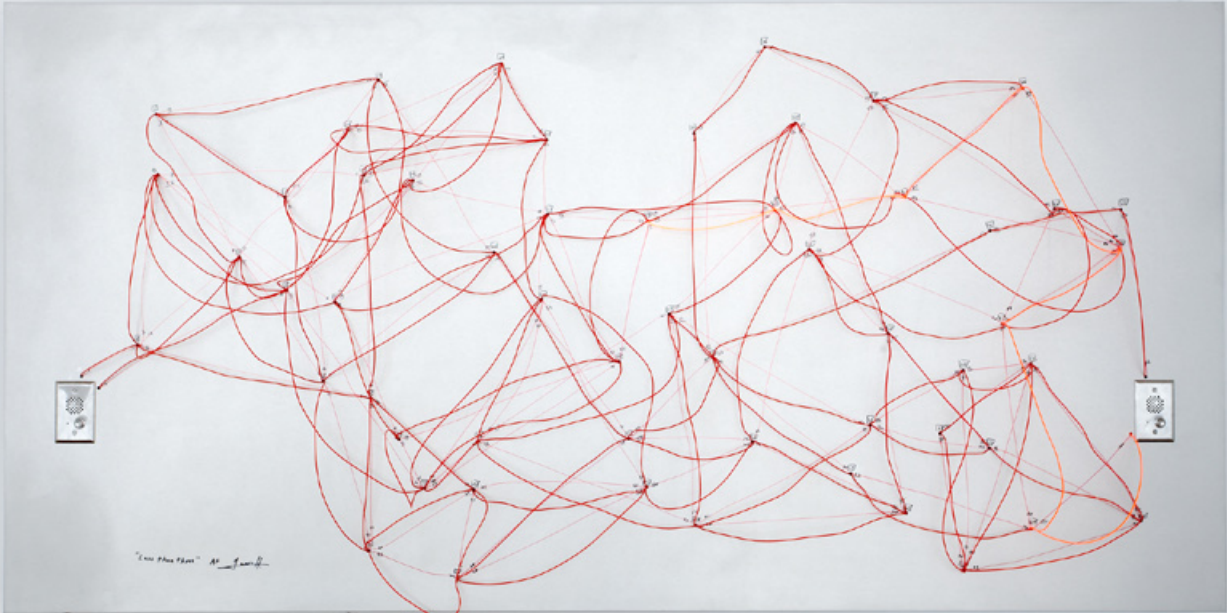# Less Than Three, el version

By Rafael Lozano-Hemmer

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General important information
This short section must be read for proper operation

Detailed technical information
A technical reference for preservation, maintenance and troubleshooting

General important information

Less Than Three, electoluminiscent version (2008), 122 x 244 x 28 cm
Edition of 6 +1AP
By Rafael Lozano-Hemmer

Description

Less than Three is a baroque network of light tubes that suggests the convolutions of communication. As a participant speaks into a nearby intercom, their voice is translated into corresponding flashes of light and this light pattern is transmitted visually along one of the several possible pathways through the network. When it reaches the other side, the viewer's phrase is once again released as sound.

When not being used for 30 seconds the piece will automatically display go in to idle mode. Via a switch the collector can select one of the three types of idle mode; a playback of recorded memories, an animation that move side to side or all the light tubes stay off.
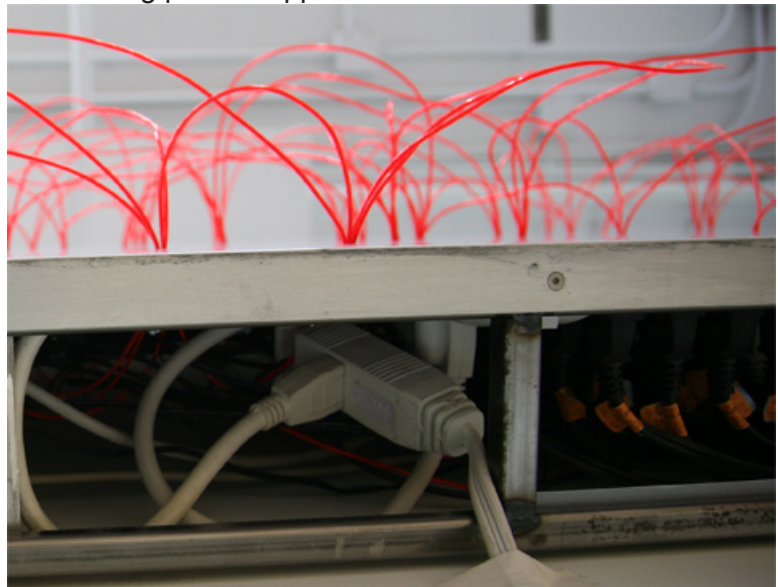
Operation

1. Connect the piece to electrical power via an extension cable. Less Than Three comes with a 3 prong power plug (NEMA 5–15) (see image #1 and #2). You will need to use an adapter to connect this plug to a non-american extension cable.

You may connect the piece to 100-120V 60Hz (American) or to 210-240V 50Hz (European) current, as all the gear inside has auto switching power supplies.

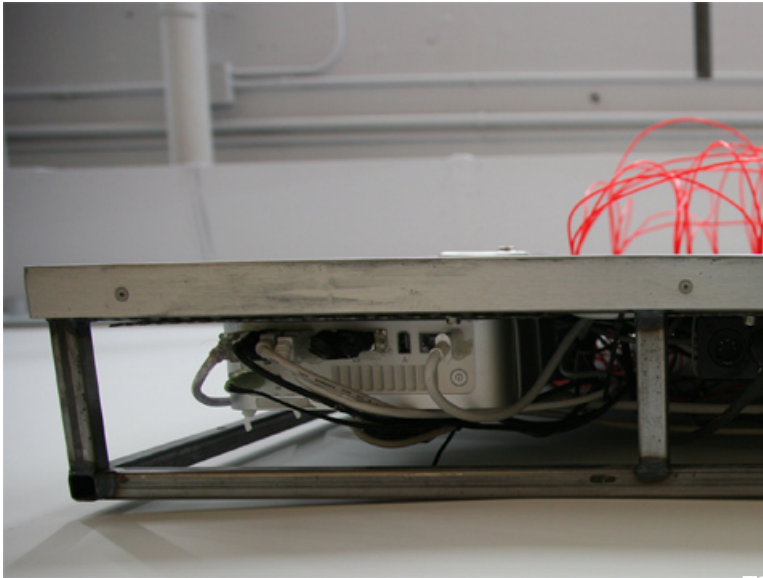#1   #2

2. To turn the piece ON, firmly press the power button on the mac-mini, located at the bottom of the piece (see image #3). Once the button is pushed it takes up to 3 minutes for the piece to start-up. Press one of the two intercom buttons to starts Less Than Three.
Important note: Please do not push the power button again.

#3

3. To turn the piece OFF, press the power button for 10 sec. This turns the computer off. Now unplug the main power plug from the wall-outlet.

4. To select one of the three idle modes locate the 3 position switch at the bottom of Less Than Three. (see image #4) Once this switch is set to left, middle or right go to one of the intercoms and press the intercom button. Now the new idle mode is set and well appear after 30 sec. of in activity.
If you selected the memory playback mode only already recorded audio clips longer than 2 seconds will be played back.
To stop the idle mode just press one of the intercom buttons and start speaking.

#4

Cleaning

The aluminium frame is treated with a water based varnish which makes the frame resistant to touch. For cleaning only a damp cloth should we used. Don't use soap or any other cleaning products. Only use a soft rag, nothing abrasive.

Placement Instructions

The piece should be hung with the centre at 152 cm (60 inches) from the ground, using the provided mounting brackets. The wall the piece is mounted on should support a weight about 90kg (200 pounds).

Ideally the piece should be mounted in a location which is dimly lit so the light tubes stand out beautifully when illuminated.

Software

The piece includes custom-made software that automatically starts up when the computers starts. The Less Than Three software is being started and re-started by a software called Monitor.

To find out how to adjust the volume please go to the "technical details" part of this manula.

Detailed technical information

Components of the piece

Metal Box

The box has an internal steel frame with an aluminium cover.

El-Wires

Computer

An Apple MacMini computer is mounted behind the aluminium cover. This has 1 Gigabytes of RAM, at least a 1.6 GHz dual core Intel processor, at least 128MB of VRAM with a DVI graphics link. The operating system MacOSX 10.5 Leopard is installed. The computer comes with a one-year warranty and can be easily removed for future replacement.

Audio Loudspeakers

Microphones
Snowflake by Blue, USB mic

DMX Interfaces

Arduino Micro-Conroller
Enttec USB - DMX adapter
explain which drivers need to be installed

Software

The project software is entirely programmed in objective-c and the source code is open to the collector for future compilation to accommodate forthcoming operating systems or hardware. Engineer Gideon May programmed the software and he can be contacted through Lozano-Hemmer studio:

If
delete clips

adjust volume

access computer

manipulate text file

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 A full set of CD-ROMs with software is included.