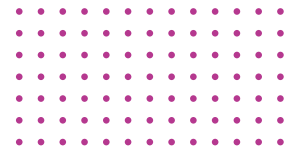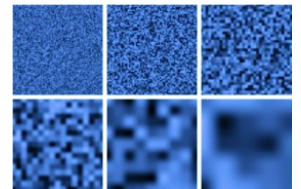# Light Waves

## How the Light Sequencing Works



This work uses computer programming that incorporates a noise generator that was originally designed to make video game graphic textures appear less machine like and more natural. Combining random scale, color, and animation speed it was possible to create a light sequence that although is within a defined aesthetic range of scale, color, and time, the animation will virtually never repeat itself. This produces a lighting sequence that is not completely deliberate and not completely random....it is someplace in between.
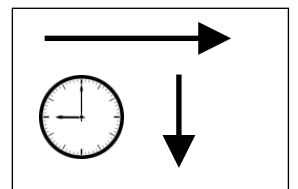
The lights are arranged as a grid array with a left to right and up and down orientation so that a light pattern can be positioned and then move through the grid.



The noise generator produces updated random patterns dictating which lights are on and which ones are off. The scale of the pattern is random, but controlled within a predetermined range chosen by the artist.
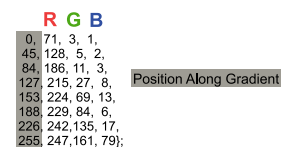


The speed the pattern moves from left to right and from top to bottom are randomly updated, but also controlled within a predetermined range chosen by the artist.
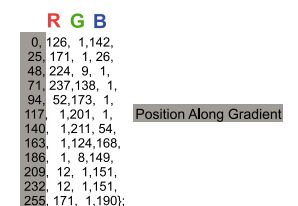


LED color is added to the pattern and defined as a mix of Red, Green, and Blue on a gradient along a line. Red, Green, and Blue at equal intensity illuminates as white.



R G B
0, 71, 3, 1,
45, 128, 5, 2,
84, 186, 11, 3,
127, 215, 27, 8,
153, 224, 69, 13,
188, 229, 84, 6,
226, 242,135, 17,
255, 247,161, 79};

Position Along Gradient

The range of colors are randomly changed and slowly morph from one palette to another. Some palettes are programmed to form from a specific palette and others are set from random and partial random levels of red, blue, and green.



R G B
0, 126, 1,142,
25, 171, 1, 26,
48, 224, 9, 1,
71, 237,138, 1,
94, 52,173, 1,
117, 1,201, 1,
140, 1,211, 54,
163, 1,124,168,
186, 1, 8,149,
209, 12, 1,151,
232, 12, 1,151,
255, 171, 1,190};

Position Along Gradient

This is written in computer code and compiled into a binary language that is stored on a micro processor that when turned on tells each LED when to light up, with what color, and at what time. The program loops and updates with the many, many random parameters.

One of the allures of viewing this work that forms a larger entity based upon interactions among smaller, random, and simpler behaviors is that any specific preconceived outcome is removed. We are allowed to anticipate, contemplate, and enjoy what will come next.

John Lefelhocz  © 2017