

DESCENDING A PARAMETRIC STAIRCASE

BY RAFAEL LOZANO-HEMMER



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GENERAL IMPORTANT INFORMATION

This short section must be read for proper operation.



DESCENDING A PARAMETRIC STAIRCASE, CIRCULAR DISPLAY (2019)

BY RAFAEL LOZANO-HEMMER

Technique

Computer, custom LED circular display (256 x 256). Acrylic diffuser, Rosco gel, Powder-coated steel frame.

Description

A generative 3D animation of an infinite spiral staircase pays homage to Marcel Duchamp's *Nude Descending a Staircase* (1912), but with invisible people descending said staircase where only their shadows are present. The piece references the color palette of his painting as well, and similarly abstracts, or, in this case, removes the human figure while demarcating their absence with the presence of their shadows.

Operation

Please refer to [Appendix I - Installation](#) for detailed system information and wiring diagram.

1. Connect the piece to power. Since the computer is integrated into the display, use the power cable that sticks out from the display.
2. The piece should start automatically when it is connected to power. If it does not turn on then you can press the power button on the computer and it will turn on itself and activate the display. Though the computer is integrated, its power button is accessible (it will glow an orange light when ON.)
3. To turn the piece ON, press the power button on the computer for one second, then release it. Important note: please do not push the button again as this will shut down the piece. Wait at least two minutes before pressing it again, as the computer might need this long to reboot. After two minutes (or less), you should see the piece.
4. To turn the piece OFF, press the power button on the computer.

Make sure to wait about until the display and computer have finished their shutdown routine before turning the piece on again.

5. If the piece doesn't start within two minutes, try turning on the piece again. If it still doesn't turn on, then hold the power button all the way down for 10 seconds. Then, wait at least
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three seconds, then press the power button all the way down for one second, and you should be up and running again.

Maintenance

Please do not clean the display surface with Windex or soap as the screen's surface is matte, and therefore may not react well to liquids. Use a lint-free cloth or compressed air. The metal outer casing can be cleaned with regular all-purpose cleaner. Do not use harsh cleaners or rough sponges. Remove dust using a feather duster, such as those produced by Swiffer.

We recommend cleaning the piece at least every two months.

Placement Instructions

The artwork should be placed on the floor and is meant to be viewed in the round, as shown in the photo before. Access to a nearby power outlet is necessary. Be mindful of overhead lighting to reduce light reflections on the piece.



DETAILED TECHNICAL INFORMATION



Normal Software Operation

This piece uses Unreal Engine 4 as its primary software. When the software starts up, the playback window shows the previously saved position and scale.

The piece automatically restarts itself at 2AM daily.

Manual Software Calibration

Using the wireless keyboard provided, click with the left or right of the mouse to drag the playback window. (You need to let the mouse button fully come up for the playback window to stop dragging with the mouse and that will allow you to save that position later).

Important Note: Usually, the circular display's playback default is a 256 x 256 window from the left side of the screen. This means that if you were to connect another display to the computer, it would crop a region on the left edge of the display.

Key Commands and Shortcuts:

Pressing the **spacebar key** will jump the playback window to the **mouse** position.

Pressing **key 1** will bring up the slider to adjust the playback window Scale, pressing **key 1** again will hide the slider. The slide pops up at the last mouse location and clicking with left click will move the slider to the mouse position.

Pressing **key s** will save the playback window and position. You will see a "SAVED" message pop up after this, but make sure that the playback window is not still locked to the mouse.

Pressing the **up arrow key** will set the current FOV (Field of View) of the camera to 45 so that the shadows of people can be seen, as the piece randomly sets a random FOV between 5 to 50 every 20 to 40 seconds. This can be useful when showing the piece to potential collectors or to gallerists. It will take a few seconds to jump to this new FOV.

Remote Access to Artwork's Computer

There is a software installed on the computer running this artwork that allows the studio to connect remotely to the artwork. This feature is helpful when you require assistance from the studio, as we can remotely connect to it, do a quick inspection, and do a debugging session of your components, if needed. In order to enable this feature, the computer has to be connected to the internet at all times. Depending on the computer's operating system (Windows 7/8/10, OSX), the procedure to set the computer online will vary. Please look online for tutorials, if necessary.

Preliminary Troubleshooting Steps

After pressing the button, nothing seems to happen.

Do you hear any sound coming from the computer? If so, the computer is running and the circular display should show the piece shortly. If not, check that the display is powered. Also, check that the projector's source is set to the same port where the cable is plugged in—HDMI, VGA, DVI, etc.

The piece doesn't react and the image is frozen.

Ensure that the computer is connected to the display. If the image is frozen, it might be because the connection has been disrupted. Also, restarting the piece, as described above, can be another solution.

The piece is on but the screen is black.

The image may be offscreen for whatever reason. Bringing the cursor to the center of the display and pressing **spacebar key** to jumpstart the playback window, or dragging with the mouse should reposition the playback window.

Troubleshooting Assistance

Prior to contacting the Antimodular Studio with a problem about your artwork, please ensure that you went through the preliminary troubleshooting steps outlined in the previous section.

The troubleshooting process will vary depending on the problem. In order to make the process easier, it is recommended that you collect and send the following information to the studio:

- Date and time when the problem first happened;
 - Description of the problem;
 - Actions taken so far and conclusions;
 - Detailed photographs (or videos) displaying the problem;
 - Detailed photographs (or videos) of the suspected faulty component;
 - Detailed photographs (or videos) of the whole artwork and its surroundings;
 - Personnel involved.
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Support (Contact Us)

If you would like support for the piece, please feel free to call Lozano-Hemmer's studio in Canada:

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APPENDIX I - INSTALLATION

Description of Components

This artwork requires the following components:

Component	Description
1 Computer (integrated)	A Windows computer with a GTX 1070 graphics card or higher, small profile to fit underneath the display, in this case we used a Zotac EN1070
1 Custom Circular Display	A 256x256 resolution circular display
1 Keyboard	While not required for normal use of the artwork, it allows you to troubleshoot the artwork.
