



Multicursal Longing (Tealight holder)



voidbubble

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Summary

A teardrop-shaped tealight holder with an algorithmically generated pattern.

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Tags: [light](#) [tealightholder](#) [generative](#) [procedural](#) [10print](#)

Do algorithms weep for having lost a sheep count?

The teardrop speaks to the sentimental programmer who remembers growing up with a Commodore.

This pattern is produced by the 10 PRINT algorithm, a one-line program originally written in BASIC for the Commodore 64:

```
10 PRINT CHR$ (205.5 + RND (1)); : GOTO 10
```

The program prints an infinite sequence of “/” and “\” characters, randomly selecting between the two at each step. Such random selection produces maze-like patterns.

Here, we first generate the pattern on the surface of a droplet, and then subdivide the pattern to add some rounded corners.

More information on the algorithm:

10 PRINT CHR\$(205.5+RND(1)); : GOTO 10

10 PRINT CHR\$(205.5+RND(1)); : GOTO 10 (archive.org)

Instructions

Prints at 0.15 mm layer height and requires a brim. Use a white filament and your lithophane settings. For the base use a quality 0.2 mm profile and place the seam at the back.

The model pictured is printed in lightweight PLA - try it for a matte, textured surface without any visible layers or seams; with the right settings it almost looks like an SLS nylon print.

Settings for regular filaments:

- Layer height: 0.15 mm
- Walls / Perimeters: 4 (depending on your line width, you want walls / perimeters throughout)
- Infill: 0 %
- Gap fill: off
- Top layers: 1

Modifications for lightweight PLA:

- Printing temperature: 240 C
- Print speed: 40 mm/s - applies *everywhere*: external/internal perimeters, infill, first layer
- Flow: 50%
- Fan speed: 50%

The combination of printing temperature, speed, and flow will depend on your printer; you want a temperature where the filament expands enough to produce the desired texture and a flow that will produce a dimensionally accurate print. For the Prusa i3 MK3s used in this print, 40 mm/s works well for outer walls and 240 C resulted in maximum filament expansion. Start with these two parameters and experiment with the flow.

Two project files are provided that you can adapt to your printer and filament, one for regular PLA, and one for lightweight PLA.

Model files



multicursal-longing.stl



base.stl



multicursal-longing_pla_prusaslicer_240.3mf



multicursal-longing_lw-pla_cura_4121.3mf

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