MAKERX Designs

Rev. 2026-08-25

Cauldron Jack-o-Lantern Print & Use Guide

A 166 mm cauldron with a carved face and a brew that bubbles over the top — and both of them glow.

Body + Lid + Diffuser + Brew | Three 3MF Projects | 24 h 18 m Total

Built by MakerX Designs · Virginia Beach, VA · makerxdesigns.com · © 2026

This is two of my Halloween pieces crossed at full size. The Bubbling Brew Cauldron Lamp glows through a disc of printed bubbles; the Jack-o-Cauldron glows through a carved face. This one does both, on the big pot and the mains-powered RGB puck light — four parts, **335.26 g and 24 h 18 m**, about ten dollars of PLA.

In the download

File	What it is
`makerx-cauldron-jack-body-and-lid.3mf`	**Start here. Two plates in one project** — plate 1 `Cauldron`, plate 2 `Lid` — with the tested profile and the support setup already in them. This is the only project that needs supports.
`...-diffuser.3mf`	**Its own project with its own settings** — vase mode, one wall, 0.2 mm layers. Do not merge it onto another plate.
`...-bubble-insert.3mf`	The Bubbling Brew disc that sits in the mouth. Fine layers and a concentric top, which is what keeps the domes smooth.
`...-lid.3mf`	The lid on its own, for when you want to reprint just that. Same profile as plate 2 above — you do not need this file to print the set.
`...-body.STL` · `...-lid.STL` · `...-diffuser.STL` · `...-bubble-insert.stl`	The raw meshes, for your own slicer and your own profile.

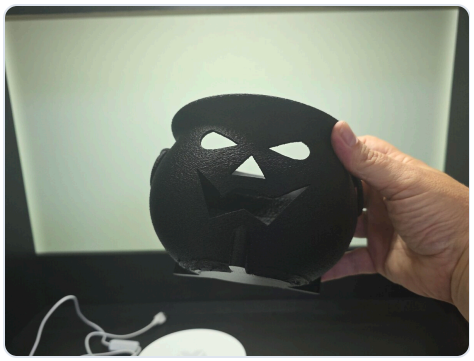
Three projects, three different profiles

The body and the lid share one project because they share one profile. The diffuser and the insert do not: each wants a genuinely different print — 0.12 mm with tree supports, 0.2 mm in vase mode, and 0.08 mm with no supports at all. Slice them one at a time and let each project bring its own settings with it.

1 · What you need besides filament

One **round RGB LED puck light**, the kind sold in 3-packs with a 24-key remote for about $20. It is not included, and it is the only thing you have to supply. The puck sits in the recess in the floor of the pot and its lead runs out through the hole beside it — no cord pinched under the rim.

The one this was designed around is 59.5 mm across and 8.3 mm tall — aluminum-bodied, USB powered, inline switch on a 1.5 m lead, 16 colors and 4 gradient modes. Vendor's published figures, not caliper measurements.



Unlit, in one hand. The stipple is printed, not painted — that is the surface straight off the plate.

Sizes that matter	
Assembled, lid on	166 mm across · **about 128.5 mm tall**
Body	**166 × 158 × 111 mm**, handles included
Lid	134.5 mm across, 33 mm tall
Diffuser	123 mm across the wide end, 97 mm tall, tapering to 77 mm at the narrow end
Bubbling Brew disc	134.5 mm across, 13 mm thick
Your puck light	up to **59.5 mm across and 8.3 mm tall**. Smaller is fine; much taller lifts the diffuser.

No candles. Ever.

This is PLA, and this pot is big enough that people ask. A real flame will soften it long before it looks like it is in trouble. And it is the **light** that changes color, not the print — the insert is a white diffuser.

2 · What each part costs you

Sliced and print-tested on a Creality Hi 2, 0.4 mm nozzle, in PLA; every figure is read off the slicer's own G-code preview. **The body is an overnight print** at 14 h 16 m and 217 g — plan it that way.

	Body	Lid	Diffuser	Brew disc	All four
Print time	14 h 16 m	6 h 25 m	1 h 18 m	2 h 19 m	**24 h 18 m**
Filament	217.04 g	68.26 g	22.37 g	27.59 g	**335.26 g**
Length	72.77 m	22.89 m	7.50 m	9.25 m	112.41 m
Cost	$6.51	$2.05	$0.67	$0.83	**$10.06**
Supports	**Yes — tree**	**Yes — tree**	No	No	

3 · Slice it

1. Open `makerx-cauldron-jack-body-and-lid.3mf` in Creality Print, or any slicer that imports 3MF project files.
2. When it asks whether to load the project's print settings, **say yes** — that is the whole point of the 3MF, and it brings the support setup with it.
3. It opens with **two plates**, `Cauldron` and `Lid`. Slice and print them one at a time; nothing about the pair has to go on one bed.
4. Then slice `...-diffuser.3mf` and `...-bubble-insert.3mf` on their own. **Do not combine them onto one plate** — vase mode cannot share a plate.

4 · The profiles baked into the 3MFs

Quality — body and lid	
Layer height	0.12 mm
Nozzle	0.4 mm
Walls	3 loops
Top / bottom	5 / 5 layers
Infill	15 % gyroid
Top surface	Concentric

Supports & adhesion — that project only	
Supports	**Tree, auto — required**
Top Z distance	**0.25 mm**
Interface top layers	**3**
From the plate only	Yes
Brim	Auto, 5 mm

The diffuser is different	
Mode	**Vase / spiral**
Layer height	0.2 mm
Walls / infill	1 loop · 0 %
Bottom layers	5
Supports	**Off**

The brew disc is different again	
Layer height	**0.08 mm**
Walls	2 loops
Infill	8 % lightning
Top surface	**Concentric**
Supports	**Off**

All four: **PLA** · 220 °C nozzle · 60 °C bed · 0.4 mm nozzle · epoxy resin plate.

Supports on for body and lid — OFF for the other two

The face is cut clean through, the handles stand off the sides and the pot overhangs its own feet, so the body needs tree supports; the lid needs them under its outer rim. Both plates in that project ship with supports on. The diffuser and the insert do not want them and both ship with them off. If your slicer offers to turn them on anyway, decline: supports inside a vase-mode cone ruin it, and supports under the brew disc print into the domes.

5 · Before you hit print

- ☐ Supports **on for the body and the lid**, **off for the other two**.
- ☐ Diffuser queued as its own vase-mode print.
- ☐ A light or translucent filament loaded for the diffuser and the disc, and enough left on the spool for the body — that part alone is 217 g.

6 · Off the plate

1. Let the plate cool, then flex it and lift the body away. Peel the brim off from one edge.
2. **Take the mouth supports out last, and slowly.** The teeth are the thinnest thing on the part. Work a fingernail or a pick under the interface layer and lift it away as one sheet rather than picking at it tooth by tooth.
3. Twist the remaining tree supports off the eyes, the nose, the handles and the feet. They release with very little force — that is what the 0.25 mm gap buys you.
4. The lid's supports come off its underside in one ring — do that before you try the lid on the pot, or it will not seat. The diffuser and the disc come off clean; neither has any.

Four printed parts and one puck light. The white cone is the diffuser; the disc of domes is the brew. The light, the remote and the lead are the parts you buy.

7 · Put it together

1. Feed the light's lead down through the hole in the floor of the pot from the inside, and set the puck in the recess beside it.
2. **Turn the diffuser cone upside down from the way it printed.** It prints with its wide face — the one carrying the MakerX mark — flat on the plate. In the pot that face goes **up**, and the narrow 77 mm end drops over the puck.
3. Rest the Bubbling Brew disc in the mouth. It seats on the rim and the domes stand proud, so the brew looks like it is about to boil over.
4. Leave the lid off for that look, or set it on for a closed cauldron on a shelf. Nothing clips, screws or glues anywhere in the stack.
5. Switch it on at the inline switch, then use the remote for color and brightness. To get back inside, lift the disc and the cone out; the pot never has to be turned over.

Lid off, lit. The face glows through the carving and the brew glows over the rim — the two things this model exists to do at once.

> **★ Print the parts in different colors, on purpose**
>
> This model wants a **dark body and lid** and a **white or light translucent** diffuser and disc. The black body is what makes the carved face read as a silhouette; the white brew is what carries the glow up out of the pot.

Where precision meets the printer

Thanks for printing this one. My daughters are the reason it exists — they love fall, and Halloween most of all — so if it ends up glowing on your table in October, it has done exactly what it was designed to do.

Same lamp, one button on the remote. It is the light that changes color, not the print.

For years my design world existed entirely behind a screen. As a mechanical engineer I spent countless hours building complex CAD models, but there was always a missing link — the ability to hold an idea in my hands. That changed in January 2026, when I went headfirst into 3D printing. The moment that first layer stuck to the bed, the gap between concept and reality vanished.

Coming from a background where precision is everything, tolerances aren't suggestions to me — they are a religion. Every wall count, every layer height and every infill percentage in this guide is a deliberate decision backed by testing.

Three principles behind every print

01

Functional Engineering

High-utility, real-world solutions rather than purely decorative models. If it doesn't solve a practical problem, it doesn't leave the workstation.

02

Rigorous Tolerances

Designed in professional CAD with mechanical intent — press-fits that click and assemblies that work straight off the build plate. No sanding, no filing, no guesswork.

03

Bridging the Gap

Industrial structural integrity at maker speed. Proving a desktop printer can produce parts worthy of real engineering applications is what drives every release.

IF THIS ONE EARNED ITS SPOT

A **Like** or a **Favorite** on the model page takes a second and genuinely helps. A **Boost** helps more than either — it is what puts a design in front of makers who would never otherwise come across it. And if you **Follow** me, new models and updates land in your feed as they are released.

This one has two smaller relatives. The **Bubbling Brew Cauldron Lamp** is the same pot without the face, and the **Jack-o-Cauldron Tea Light** is this whole idea at 75 mm, on a battery tea light, in under three hours.

Happy Halloween. — MakerX Designs · makerxdesigns.com ·