

## LulzBot Filament Testing Report

Manufacturer: Fargo 3D / 3DOM filament  
Filament Name: Biome  
Filament Type: Potato starch based filament  
Tested By: Brent M  
Date: 7/28/2015

**Ease of use:** 8/10

**Appearance:** 6/10

**Size consistency:** 9/10

**Color consistency:** 8/10

**Print temperature:** 195/60C

**Prints using Lulzbot profiles/temps:** No, prints best using PLA settings with print head temperature dropped to 195C

**Recommendation:** This filament definitely fills a very specific niche, combining the low Tg of PLA with the ductility, look and feel of ABS. It would definitely be a good option for someone who needs more ductility and impact resistance than PLA can provide but that doesn't want to use petroleum based plastics like ABS or HIPS. It's been marketed as having superior surface finish to PLA, which we were unable to replicate due to the higher heat retention that this material shows. I'd like to know more about why this material was chosen for compostable coffee pods over PLA, I think that easier composting might be this filaments best feature, but it's one that we're unable to test currently.

### Notes:

- This filament exhibits massive amounts of die swell coming out of the nozzle. This doesn't severely affect print quality, but shows how much better this plastic holds onto it's heat than PLA filaments.
- For the same reason, this filament has issues cooling enough between layers, leading to curling and surface defects, as well as negating the print speed advantage that this filament has over PLA. The resulting surface finish is good, but not comparable with PLA.
- The filament is definitely more ductile than PLA, giving it characteristics similar to ABS but with a much lower glass transition temperature.
- Fine detail and surface finish were worse than well tuned PLA profiles, especially on overhangs and slopes.
- The filament claims to be more easily compostable than PLA, we're not currently able to confirm
- The printed parts did show some very slight variation in color, indicating color changes in the base or incomplete mixing of the colorant.

Filament	Variance in diameter	Maximum out of round	Extrusion temperature
Blue Biome 3mm	2.80-2.85mm	2.82-2.85mm	180-210, 190/60 used for surface quality testing

