

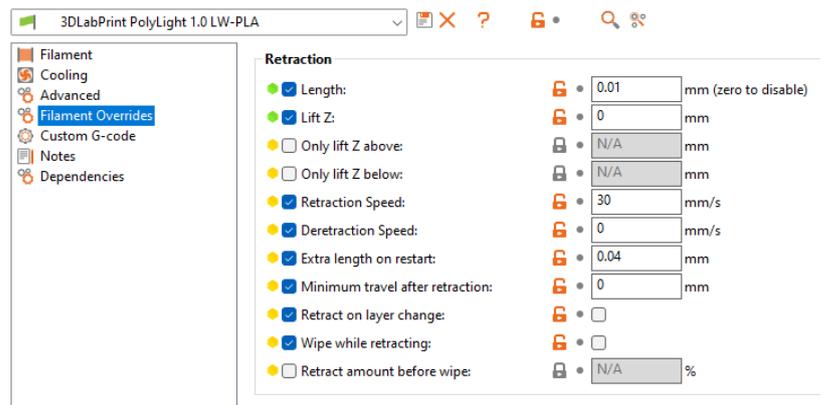
How to print with PolyLight 1.0?

With temperature activated foaming factor, the PolyLight 1.0 filament can be used for prints where the weight is concerned as well as fast speed drafting. You can easily achieve a single wall width of 1.1 mm with a 0.4 mm nozzle with 0.3 mm layer height, keeping the extrusion multiplier at 1 as well as 65% weight reduction tuning the extrusion multiplier down to 0.35.

Similar to popcorn, foaming agent needs heat to increase the volume. The amount of heat is determined by the hotend temperature and printing speed. The faster you're printing, the hotter your nozzle should be to achieve the same wall width.

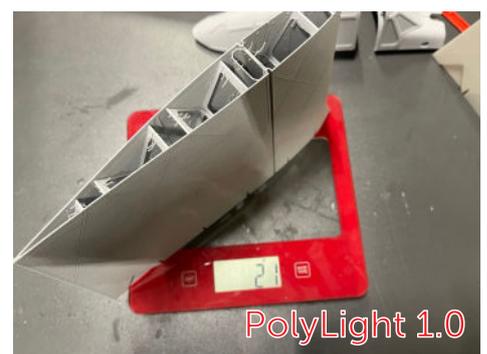
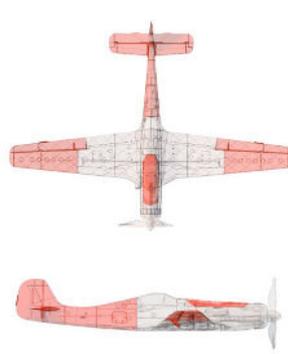
The maximum amount of foaming is achieved around 240-250°C.

Due to foaming inside the nozzle, printing with low layer height and too much extrusion multiplier can lead to clogging when printing multiple layers. Also, the material tends to ooze out from the nozzle regardless the retractions, which may also lead to clogs. Retraction engine can help with re priming the nozzle after a travel move. Set the Retraction Length to 0.01 mm and Extra length on restart as required.



Avoid unnecessary travel moves where possible to reduce unwanted stringing. Use Spiral Vase mode where possible or optimize the seam position. Any imperfections on the outside surface can be easily scuffed using a snap knife and sanded with sanding sponge.

A rule of thumb for single-wall plane parts is 0.3 mm layer height, multiplier set at 0.5, 0.42 mm extrusion width, resulting wall width between 0.5-0.6 mm. This results in strong enough parts that are half the weight of regular PLA parts. Almost every plane, even the older projects not explicitly designed for LW printing, can benefit from weight reduction when used wisely. You can use the [3D LabPrint Prusa Slicer profiles](#) to print any plane.



Foaming factor

