



Ultralight 2gram Glider (print in place)



robotfriend

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Summary

Very lightweight just 2 grams, fast 15 minute print, gentle indoor glider, now in Mini+ friendly size



0.18 hrs



2 pcs



0.30 mm
0.25 mm



0.40 mm



PLA



1 g



Prusa
MK3/S/S+

[Toys & Games](#) > [Vehicles](#)

Tags: [printinplace](#) [airplane](#) [glider](#) [throwglider](#) [thrownglider](#)

If you enjoy this model, take a look at the new F23 Glider:

<https://www.printables.com/model/456057-f23-ultralight-glider-print-in-place>

or a glider starship:

<https://www.printables.com/model/462466-uss-enterprise-1701-f-print-in-place-glider>

**Instructions:**

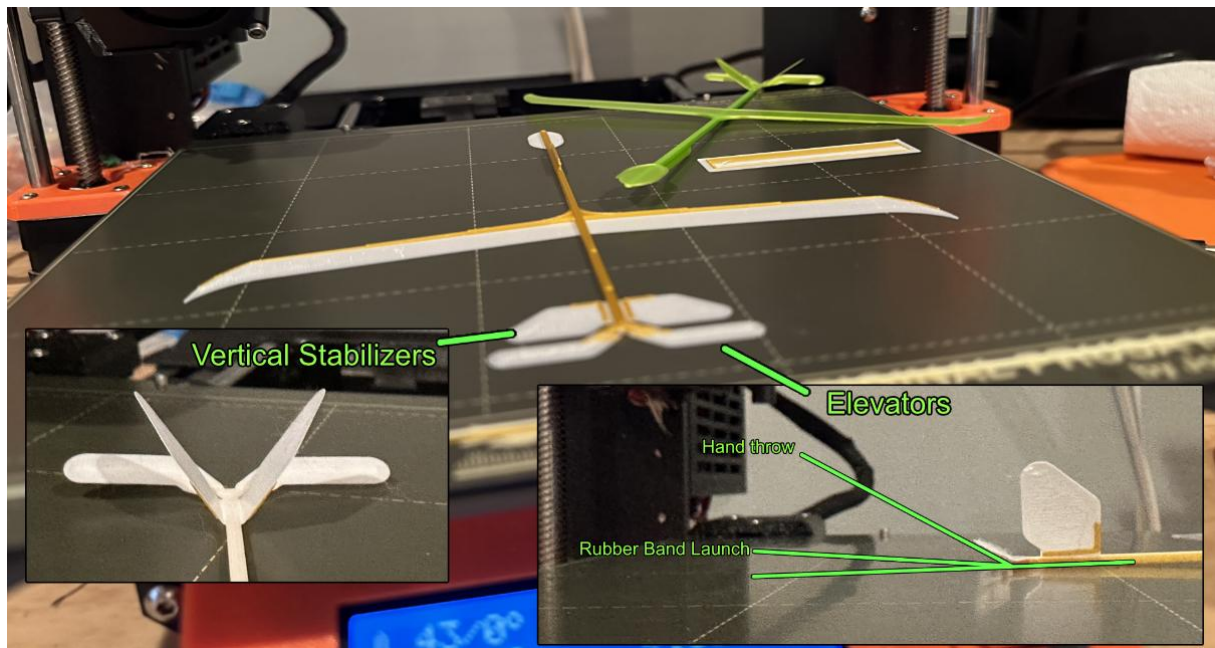
Print at either 0.2mm or 0.3mm with flat surface on the build plate. No supports or brim needed.

For best results removing the plane, let the build plate cool slightly, then flex the plate to release the front end so that you can then use a scraper to gently separate the rest of the plane.

Once printed and removed from the build plate, turn the plane over and:

1. bend the vertical stabilizers up, then
2. adjust the elevators as needed.

A gentle bend on the elevators is great for rubber band launching (there's a little notch at the back of the front handhold), while a steeper bend works great for slow indoor glides.



Versions:

Glider v4: Prusa Mini+ sized version is here with v4. New Features:

- Front grip notched to ease throwing and enable rubber-band launching
- Winglets are gone! Long live the vertical stabilizer!
- Less than 2g of filament (less than 1m of filament) 11m print time
- 15 minutes to flight: Download, print, fold up stabilizer, slight bend to elevators, and throw!

If you printed one of the earlier versions, do yourself a favor and print v4. The vertical stabilizers on the tail improve stability that much.

Glider v3: rounded curves, rebalanced center of gravity, and reinforced winglets.

Glider v2: uploaded, 2.3 total grams provides slightly larger winglets and elevators plus a small handle to help hold during launch. Seems to fly a little more consistently than v1. File with wings at 0.2mm thickness uploaded (single layer wing print at 0.2mm layer thickness).

More Information:



After dozens of tries with larger and more complicated gliders which did not exactly glide, I reached out to a few aerospace engineers and started learning about wing loading, drag, center of gravity, and center of lift. This model features

- Balanced center of gravity
- Minimal wetted skin area to reduce drag
- Single layer wing
- Very slight sweep in main wing
- One adjustment point for flight: rear elevator to balance glide vs lift
- 3 steps to fly:
 - Print
 - Fold up rear stabilizer and elevators
 - Throw
- Less than 2 grams of filament (less than a meter of filament) and a 12 minute print time

This glider comes in at less than half the weight of a sheet of paper and flies well indoor and outside. Starting with v4 it features a notch up front to help throw and allow rubber band launches.

Enjoy this Ultra-light glider - a glider designed for the unique characteristics of 3d printing.

Just a few of the design iterations:



Model files



Bends Modeled

2 files



gliderv4mini_bent.3mf



gliderv4mini_benddown.3mf



v4 - Latest Model

2 files



gliderminiv4_tail2.3mf



gliderminiv4_tail2.stl



Older Models

7 files



gliderv2_0200_prj.3mf

☐ PrusaSlicer project for v2 with single layer wings at 0.2mm layer thickness



gliderv2_prj.3mf

☐ PrusaSlicer project for v2



gliderv1_0200_prj.3mf

☐ PrusaSlicer project for v1 with single layer wings at 0.2mm layer thickness



gliderv3_prj.3mf

☐ Glider v3



glider_mmu.3mf

☐ PrusaSlicer project file for 2 filament print



glider.3mf

☐ PrusaSlicer project file for single filament print



glider_model.3mf

☐ 3mf export model only



gliderminiv4_tail2.3mf

☐ Glider v4 - vertical stabilizers, Prusa Mini+ friendly

Print files



gliderminiv4_tail2_03mm_pla_mk3s_11m.gcode

🌀 PLA 📏 0.40 mm ≡ 0.30 mm ⌚ 0.18 hrs ⚖️ 1 g 📄 Prusa MK3/S/S+

☐ v4 glider - vertical stabilizers, Prusa MK3S+



gliderminiv4_tail2_025mm_pla_mini_11m.gcode

🌀 PLA 📏 0.40 mm ≡ 0.25 mm ⌚ 0.19 hrs ⚖️ 1 g 📄 Prusa MINI / MINI+

☐ v4 glider - vertical stabilizers, Prusa Mini+

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