

3D MODEL ONLY



Solar-powered fan



H3dSprint

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Summary

To cool down on hot days and to vent low vented areas, I have designed this solar-powered fan.

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Tags: [fan](#) [solar](#) [coolingfan](#) [ventilator](#) [solarpowered](#)

Designed parts of the fan are printed with XPETG from extruder to get a mat appearance. Rubber pads are printed with TPU.

The goal of the design was to print many parts as possible. Only the motor, the solarcell and the fixing elements are not printed.

Overall dimensions:

- height: 135 mm
- width: 149 mm
- depth: 70 mm

Part list:

- printed parts (see .stl)
- propeller - follow link: [Propeller with ø75mm for a shaft ø2mm von H3dSprint | Kostenloses STL-Modell herunterladen | Printables.com](#)

- solar motor RF300
 - voltage: 0,18 - 6,0 V
 - rpm: 6000@6Volt
 - size: $\varnothing 24,2 \times 13,8$ mm + axis
 - axis: $\varnothing 2 \times 10$ mm
- solarcell SM2380
 - 2V / 380mA
- fixing elements
 - countersunk screw $\varnothing 3 \times 10$ (for wood) | quantity: 3
 - screw M1,6x2 | quantity: 2

Printing parts:

- use setting “support on bed only” and set distance to 0,2mm - only small areas need support
- to avoid warping, I recommend to print the housing in an enclosure

Assembly instruction:

1. prepare housing by removing supports and add e.g. rubber pads
2. insert motor to the housing and thread cables through the cable channel
3. rout cable to the side of window where solarcell will be added
4. fix motor by adding screws M1,6x2 - it should also work without screws if you do not have screws handy
5. cover solarcell to avoid motor start to rotate
6. connect cable to solarcell
7. insert solarcell to housing
8. check routing of cable and ensure area for cover is free
9. assemble cover by mounting countersunk screws $\varnothing 3 \times 10$ mm
10. assemble propeller to shaft of motor - I recommend to support area of housing to avoid damage of housing
11. check clearance between propeller and housing
12. remove cover from solarcell and orient solarcell for best solar radiation
13. now the fan should work if there is enough solar radiation
14. check if propeller rotating direction is fine. If not, change rotating direction by changing pins
15. in case of noise response, fill up space in housing with cellular foam or a similar material

Now use your new printed fan and have fun.

Model files

fan_assembled.stl

fan_housing.stl

fan_cover.stl

rubber_feet.stl

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