

SUPPLEMENTARY INFORMATION

3-D printer settings

Recommended settings for 3-D printer using 1.75 mm PLA filament on a MakerBot Replicator (5th generation). Specific printer settings may vary slightly with printer model or filament type. The printing raft is recommended in all cases, as are 2 shells. Owing to its large size and flat shape, the cradle tends to warp as it cools, but heating the printer platform can prevent warping. If the printing platform cannot be heated, the potential for warping can be minimized by wiping the platform with alcohol to remove oils. Four screws are required, but we recommend printing extras in case of breakage.

| Part | Layer height (mm) | Infill density | Supports and bridging | Printing time (hours) | Copies to print |
|----------------|-------------------|----------------|-----------------------|-----------------------|-----------------|
| Screw | 0.2 | 50% | None | 0.53 | 4 |
| Nut | 0.2 | 5% | None | 0.25 | 3 |
| Phone bracket | 0.3 | 5% | Yes | 2.55 | 1 |
| Cradle | 0.3 | 5% | None | 3.27 | 1 |
| Laser bracket | 0.3 | 5% | Yes | 2.70 | 1 |
| Support collar | 0.3 | 5% | Yes | 0.77 | 1 |

3-D Printer files

Seven 3-D printer files in the standard .stl file format are included. These files can be read and manipulated by a variety of 3-D printing programs, including Tinkercad, AutoCAD, and FreeCAD. All 3-D printer models, including MakerBot, Ultimaker, LulzBot, and Formlabs resin printers will be able to read .stl files, although some experimentation may be needed to identify the optimal print settings when using different materials or printers.