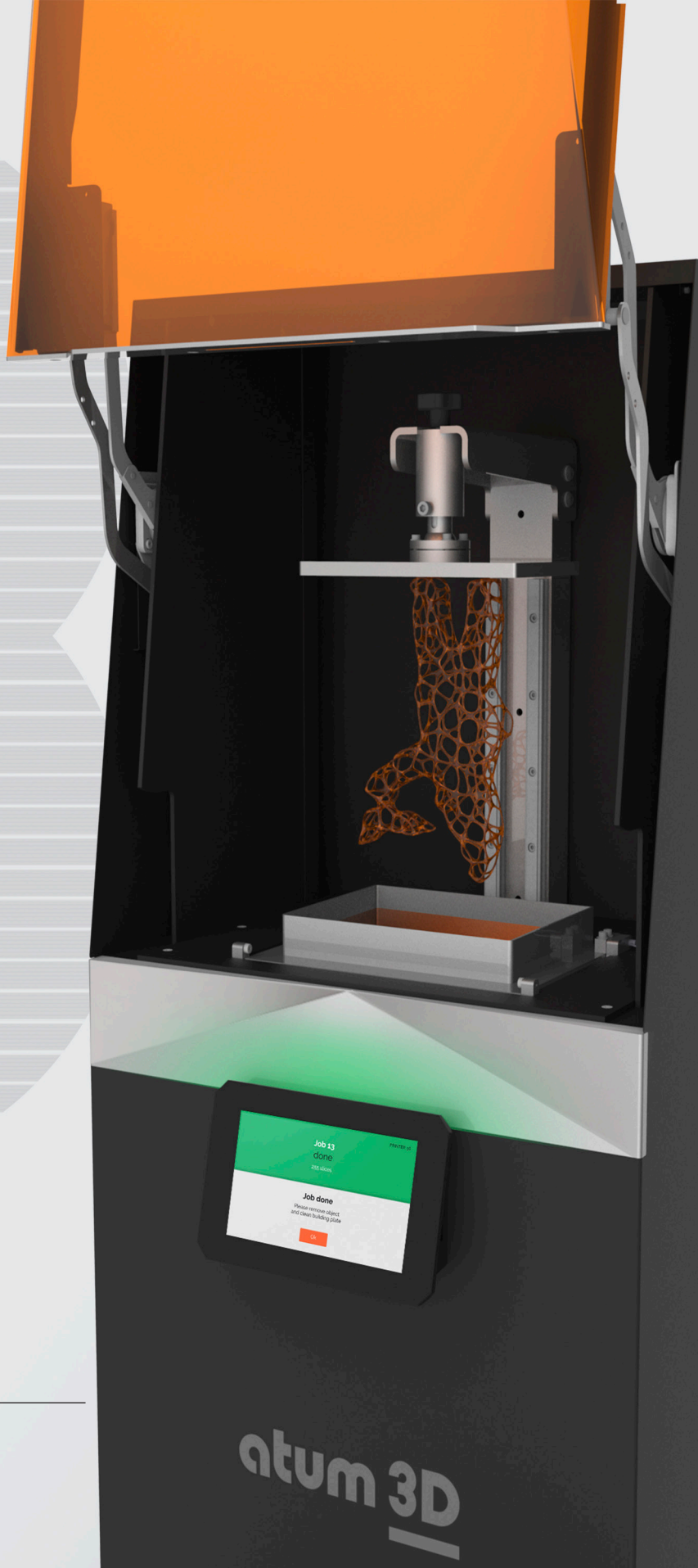


3

DESIGN GUIDE

1. Guidelines.
2. Recommendations.
3. Best practices.

Any high-quality 3D printing process starts with creating a well-designed 3D model, which is a critical step in order to achieve optimal print results. This Design Guide has been created to make your life easy and get the most out of your atum3D products. It includes the recommended geometric limits for your part's design to be printed on DLP Station. If you're looking for tolerance optimization or have any questions regarding the guidelines, please contact atum3D or your local atum3D representative to discuss the options.



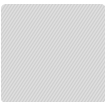
atum 3D

3D Manufacturing Excellence

With a combination of proprietary DLP Station hardware, Operator Station software and firmware, atum3D products achieve unprecedented levels of both accuracy, speed. Due to the open resin platform, a rapidly growing number of different material properties are available for use. This Design Guide can be used as a guideline when engineering parts to get the most out of your atum3D products. **Please note:** these are generic design guidelines; specific build materials can potentially cause different values for one or more variables.

MAXIMUM BUILD ENVELOPE

The maximum building size for DLP Station manufactured parts varies with the selected resolution.



100 µm x,y	192 x 108 x 250 mm
75 µm x,y	144 x 81 x 250 mm
50 µm x,y	96 x 54 x 250 mm

MINIMUM SUPPORTED WALL THICKNESS

A supported wall with a smaller thickness may warp or break due to shrinkage or the peeling process.



100 µm x,y	0,4 mm
75 µm x,y	0,3 mm
50 µm x,y	0,2 mm

PRO TIP: limit wall height to 10x the wall thickness for the best results.

MINIMUM ENGRAVED DETAIL

Engraved details smaller than mentioned may not be visible.



100 µm x,y	0,4 mm
75 µm x,y	0,4 mm
50 µm x,y	0,3 mm

MAXIMUM UNSUPPORTED OVERHANG

An unsupported horizontal overhang may be slightly deformed beyond. You can add temporary build supports for longer overhangs.



100 µm x,y	1,5 mm
75 µm x,y	1,5 mm
50 µm x,y	1,5 mm

MINIMUM HOLE DIAMETER

Holes with a smaller diameter may disappear/fill during printing. Please note: this variable is highly dependant on the specific build material.



100 µm x,y	0,5 mm
75 µm x,y	0,4 mm
50 µm x,y	0,3 mm

MINIMUM HEIGHT OF LETTERS AND NUMBERS

Letters and numbers with a smaller height may fade or become invisible.



100 µm x,y	2 mm
75 µm x,y	1,5 mm
50 µm x,y	1 mm

GENERAL TOLERANCES

Although the final tolerances can largely depend on external process variables and resin types, a general guideline is available.



100 µm x,y	± 0,2 mm
75 µm x,y	± 0,15 mm
50 µm x,y	± 0,1 mm

MINIMUM UNSUPPORTED WALL THICKNESS

An unsupported wall with a smaller thickness may deform during printing.



100 µm x,y	0,4 mm
75 µm x,y	0,3 mm
50 µm x,y	0,2 mm

PRO TIP: limit wall height to 10x the wall thickness for the best results.

MINIMUM EMBOSSED DETAIL

DLP Station may not be able to accurately create embossed details with smaller dimensions.



100 µm x,y	0,4 mm
75 µm x,y	0,3 mm
50 µm x,y	0,2 mm

MAXIMUM HORIZONTAL SUPPORTED BRIDGE

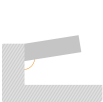
A longer span may deform during printing.



100 µm x,y	4 mm
75 µm x,y	4 mm
50 µm x,y	4 mm

MINIMUM UNSUPPORTED OVERHANG ANGLE

An unsupported overhang with a smaller angle could result in the part to deform. You can add temporary build supports for added stability.



100 µm x,y	50°
75 µm x,y	50°
50 µm x,y	50°

MINIMUM CLEARANCE FOR ASSEMBLED PARTS

Parts for assembly should be designed with at least the mentioned tolerance clearance.



100 µm x,y	0,3 mm
75 µm x,y	0,3 mm
50 µm x,y	0,3 mm

atum3D strives for 3-fold excellence. With proprietary **software, hardware** and an **open resin platform**, we offer exceptional **accuracy, speed** and **cost effectiveness**. We aim to make your life easy with comprehensive **training, services** and **support**. Team up with atum3D and become a part of the next industrial revolution!

For more information and specifications, please call +31 (0)85 488 26 60 or visit **atum3D.com**.



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