

TECH SPECS SELECTIVE LASER SINTERING 3D PRINTER

Formlabs Fuse 1

Quick Stats



Technology	Selective Laser Sintering
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Build Volume (W x D x H)	165 x 165 x 300 mm 6.5 x 6.5 x 11.8 in
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Layer Thickness	110 microns 0.004 in
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Build Speed	10 mm / hour 0.39 in / hour
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Laser Type	Ytterbium Fiber
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Laser Spot Size (FWHM)	200 microns (0.0079 in)
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Material Refresh Rate	30% – 50%
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Printing Properties

Technology	Selective Laser Sintering
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Build Volume (W x D x H)	165 x 165 x 300 mm 6.5 x 6.5 x 11.8 in
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Layer Thickness (Axis Resolution)	110 microns .004 in
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Hopper Capacity	8.5 kg PA12 nylon 18.7 lb PA12 nylon
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Material Refresh Rate	30 – 50 %
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Dimensions	685 x 645 x 1065 mm
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Supports	No supports
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Maximum Part Size (Nylon 12 Powder)	15.9 x 15.9 x 29.5 cm 6.3 x 6.3 x 11.6 in
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Hardware

Fuse 1

Minimum Access Dimensions (W × D × H)	125.5 × 149.5 × 187.0 cm 49.4 × 59.0 × 73.6 in
Printer Dimensions(W × D × H)	64.5 × 68.5 × 107 cm (165.5 cm with stand) 25.4 × 27.0 × 42.0 in (65.0 in with stand)
Weight	114 kg (without build chamber or powder) 251.3 lb (without build chamber or powder)
Startup Time	60 minutes
Operating Environment	18 – 28 °C 68 – 82 °F ≤ 30% ambient humidity
Internal Temperature	200 °C 392 °F
Temperature Control	Quartz tube heating elements Positive temperature coefficient (PTC) cartridges
Air Handling	Pressure-controlled two-stage filtration (Replaceable HEPA and carbon mediums)
Power Requirements	EU: 230 VAC, 7.5 A (dedicated circuit) US: 120 VAC, 15 A (dedicated circuit)
Galvanometers	Formlabs Custom
Laser Specifications	Ytterbium Fiber, rated to > 10,000 hrs EN 60825-1: 2014 certified Class 1 Laser Product 1065 nm wavelength Maximum 10 Watts 4.01 mrad beam divergence (nominal, full angle)
Laser Spot Size (FWHM)	200 microns .008 in
Radiation Information	The Fuse 1 is a Class 1 Laser product. Accessible radiation is within Class 1 limits.
Connectivity	Wi-Fi (2.4 GHz) Ethernet (1000 Mbit) USB 2.0
Printer Control	10.1" interactive touchscreen 1280 × 800 resolution
Alerts	Touchscreen alerts and tracking SMS/email via Dashboard Live video feed with computer vision Proactive maintenance alerts

Software

Print Preparation	PreForm Desktop Software
System Requirements	Windows 7 (64-bit) and up Mac OS X 10.12 and up OpenGL 2.1 4 GB RAM (8 GB recommended)
Hardware Requirements	Fuse 1 3D printer
File Types	<ul style="list-style-type: none">• .STL or .OBJ• FORM file output