TECH SPECS SELECTIVE LASER SINTERING 3D PRINTER

Formlabs Fuse 1

Quick Stats

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

Printing Properties

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

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	• .STL or .OBJ • FORM file output

Formlabs Fuse Sift

Properties

Printer Compatibility	Fuse 1
Dimensions	101.5 × 61.0 × 154.5 cm 39.9 × 24.0 × 60.8 in Height when open: 190 cm (75 in)
Fuse Sift Dimensions (W × D × H)	99.1 × 61.0 × 188.8 cm 39.0 × 24.0 × 61.8 in
Build Chamber Dimensions (W × D × H)	27.9 × 34.2 × 48.9 cm 11.0 × 13.5 × 19.3 in
Minimum Access Dimensions (W × D × H)	221.1 × 122.0 × 218.0 cm 87.1 × 48.0 × 85.8 in
Fuse Sift Weight	93 kg (without build chamber or powder) 205 lb (without build chamber or powder)
Build Chamber Weight	11 kg (17.6 kg, full with 20% packed powder) 24.3 lb (38.8 lb, full with 20% packed powder)
Air Filtration Technology	Replaceable HEPA filter
Build Volume (W × D × H)	16.5 x 16.5 x 30.0 cm (with radiused corners) 6.5 × 6.5 × 11.8 in (with radiused corners)
Fresh Powder Hopper Capacity	8.5 kg Nylon 12 18.7 lb Nylon 12
Used Powder Hopper Capacity	9.1 kg Nylon 12 20 lb Nylon 12
Operating Environment	18 – 26 °C 68 – 80 °F ≤ 30% ambient humidity
Air Handling	Negatively pressurized hood with replaceable HEPA filter Independent venting system
Air Filtration	Replaceable HEPA medium

	Fuse Sift
Power Requirements	With a vacuum that draws less than 6 A (230 VAC) / 12 A (120 VAC): EU: 230 VAC, 7.5 A (dedicated circuit) US: 120 VAC, 15 A (dedicated circuit) With a vacuum that draws more than 6 A (230 VAC) / 12 A (120 VAC): EU: 230 VAC, 10 A (dedicated circuit) US: 120 VAC, 20 A (dedicated circuit)
Vacuum Requirements	Auxiliary vacuum with static dissipative components that is grounded and bonded (e.g., a NFPA 652 compliant vacuum)
Connectivity	Wi-Fi (2.4 GHz) Ethernet (1000 Mbit) USB 2.0
Ethernet Connectivity	RJ-45 Ethernet (10BASE-T/100BASE-TX/1000BASE-T) LAN port Connect with a shielded Ethernet cable (not included): minimum Cat5, or Cat5e or Cat6 for 1000BASE-T.
Wi-Fi Connectivity	Protocol: IEEE 802.11 b/g/n Frequency: 2.4 GHz Supported security: WPA/WPA2
USB Connectivity	USB (rev 2.0) B port with a USB A-B cable
Sound Emission	Does not exceed 76.5 dB(A)
Fuse Sift Control	Interactive touchscreen, physical buttons
Included Accessories	Large Brush Small Brush x 2 Pipe Cleaners Dental Picks Gloves Dust Mask Safety Glasses Vacuum Brush Tool Vacuum Crevice Tool Lifting Straps