

Formlabs Fuse Series

Quick Stats



Fuse 1



Fuse 1+ 30W

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| Technology | Selective Laser Sintering | 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 | 165 x 165 x 300 mm 6.5 x 6.5 x 11.8 in |
| Layer Thickness | 110 microns 0.004 in | 110 microns 0.004 in |
| Build Speed (20% packing density) | 0.3 liter per hour | 0.5 liter/hour |
| Laser Type | Ytterbium Fiber | Ytterbium Fiber |
| Laser Spot Size (FWHM) | 200 microns (0.0079 in) | 247 microns (0.0097 in) |
| Material Refresh Rate | 30% – 50% | 30% – 50% |

Printing Properties

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|--------------------------------------|---|---|
| Technology | Selective Laser Sintering | 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 | 165 x 165 x 300 mm 6.5 x 6.5 x 11.8 in |
| Layer Thickness (Axis Resolution) | 110 microns .004 in | 110 microns .004 in |
| Hopper Capacity | 17.8 Liters | 14.5 Liters |
| Material Refresh Rate | 30 – 50 % | 30 – 50 % |
| Dimensions | 685 x 645 x 1065 mm | 685 x 645 x 1065 mm |
| Supports | No supports | No supports |

| Hardware | Fuse 1 | Fuse 1+ 30W |
|---------------------------------------|--|---|
| Minimum Access Dimensions (W × D × H) | 125.5 × 149.5 × 187.0 cm 49.4 × 59.0 × 73.6 in | 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) | 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) | 120 kg (without build chamber or powder) 265 pounds (without build chamber or powder) |
| Startup Time | < 60 minutes | < 60 minutes |
| Operating Environment | 18 – 28 °C 68 – 82 °F ≤ 50% ambient humidity | 18 – 28 °C 68 – 82 °F ≤ 50% ambient humidity |
| Internal Temperature | 200 °C 392 °F | 200 °C 392 °F |
| Temperature Control | Quartz tube heating elements Positive temperature coefficient (PTC) cartridges | Quartz Tube Heating Elements Resistive Air Heater |
| Air Handling | Pressure-controlled two-stage filtration (Replaceable HEPA and carbon mediums) | Interface to external inert gas supply 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) | EU: 230 VAC, 7.5 A (dedicated circuit) US: 120 VAC, 15 A (dedicated circuit) |
| Galvanometers | Formlabs Custom | Formlabs Custom 2nd Generation |
| Laser Specifications | Ytterbium Fiber IEC 60825-1:2014 certified 1070 nm wavelength Maximum 10 Watts 4.01 mrad beam divergence (nominal, full angle) | Ytterbium Fiber IEC 60825-1: 2014 certified 1070 nm wavelength Maximum 30 Watts 3.24 mrad beam divergence (nominal, full angle) |
| Laser Spot Size (FWHM) | 200 microns 0.0097 in | 247 microns 0.0097 in |
| Radiation Information | The Fuse 1 is a Class 1 Laser product. Accessible radiation is within Class 1 limits. | 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 | Wi-Fi (2.4 GHz) Ethernet (1000 Mbit) USB 2.0 |
| Printer Control | 10.1" interactive touchscreen 1280 × 800 resolution | 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 | Touchscreen alerts and tracking SMS/email via Dashboard Live video feed with computer vision Proactive maintenance alerts |

Software

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| Print Preparation | PreForm Desktop Software | 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) | 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 generation 3D Printer | Fuse 1 generation 3D Printer |
| File Types | <ul style="list-style-type: none"> .STL or .OBJ FORM file output | <ul style="list-style-type: none"> .STL or .OBJ FORM file output |

Formlabs Fuse Sift

Properties



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| Printer Compatibility | Fuse Series SLS 3D printers |
| 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 × 16.5 × 30.0 cm (with radiused corners) 6.5 × 6.5 × 11.8 in (with radiused corners) |
| Fresh Powder Hopper Capacity | 17 liters |
| Used Powder Hopper Capacity | 18 liters |
| Operating Environment | 18 – 26 °C 68 – 80 °F ≤ 50% ambient humidity |
| Air Handling | Negatively pressurized hood with replaceable HEPA filter Independent venting system |
| Air Filtration | Replaceable HEPA medium |

Fuse Sift

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| 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 |