

Fuse Series Technical Specifications

Selective Laser Sintering 3D Printers

Quick Stats

Printer

Fuse 1+ 30W

Technology

Selective Laser Sintering

Build Volume (W x D x H)

165 × 165 × 300 mm

Layer Thickness

110 microns

Laser Type

Ytterbium Fiber 30W

Laser Spot Size (FWHM)

247 microns

Build Chamber

Modular, compatible with Fuse 1 generation printers and Fuse Sift

Printing Properties

Technology

Selective Laser Sintering

Build Volume (W × D × H)

16.5 x 16.5 x 30 cm

Layer Thickness (Axis Resolution)

110 microns

Hopper Capacity

14.5 Liters

Dimensions

68.5 x 64.5 x 106.5 cm

Supports

No supports

Design/CAD Specifications

[Download Fuse Series Design Guide \(PDF\)](#)

Hardware

Minimum Access Dimensions (W × D × H)

125.5 × 149.5 × 187 cm

Printer Dimensions (W × D × H)

64.5 × 68.5 × 107 cm (165.5 cm with stand)

Recommended Operating Footprint (W × D × H)

145.5 × 149.5 × 167.5 cm to allow access to the front and sides of the printer.

Stand Dimensions (W × D × H)

59.6 x 60 x 58.4 cm

Weight

120 kg (without build chamber or powder)

Startup Time

< 60 minutes

Operating Environment

18 – 28 °C

Internal Temperature

Up to 200 °C

Temperature Control

Quartz Tube Heating Elements
Resistive Air Heater

Air Handling

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)

Galvanometers

Formlabs Custom 2nd Generation

Laser Specifications

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)

247 microns

Radiation Information

The Fuse 1+ 30W 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 generation 3D printer

File Types

.STL or .OBJ
FORM file output