

The Fuse Series SLS Ecosystem

High Performance Selective Laser Sintering Within Reach

formlabs 



Fuse 1+ 30W

Take control of your design and production process with our fastest, most powerful SLS printer yet. Bring high-powered SLS to your benchtop with the Fuse 1+ 30W or Fuse 1.

ZERO WASTE PRINTING

Due to the advanced packing algorithm and improved refresh rates for every material, you can print with an entirely circular workflow - using all your powder for parts, with little to no waste.

INDUSTRIAL QUALITY PARTS, FASTER THAN EVER

With a more powerful laser and enhanced scanning speed, the Fuse 1+ 30W delivers parts at up to two times the speed as previous generations, allowing designers, engineers, and manufacturers to go from design to finished part overnight.

DESIGNED FOR NONSTOP THROUGHPUT

Add a second removable build chamber to start a new print only 1-2 hours after your first production round finishes, increasing your production capacity and enabling continuous printing.

RELIABLE, ACCESSIBLE, STREAMLINED

The Fuse 1+ 30W printer's inert gas environment ensures that you'll get industrial quality parts, every time, while the user-friendly workflow enables anyone to take ownership over production.

Fuse Sift

Fully compatible with all Fuse Series printers, the Fuse Sift creates an easy, streamlined workflow for industrial quality post-processing.

COMPACT, ENCLOSED SYSTEM

A negative air pressure system keeps powder inside while enabling open access and easy cleanup.

AUTOMATIC POWDER MIXING

Fuse Sift will dispense and mix used and new powder automatically so you can reduce waste and control your powder supply.

NONSTOP PRINTING

Reduce downtime by transferring modular build chambers and powder cartridges between the Fuse 1 and Fuse Sift for a nonstop, cyclical workflow.



Fuse 1+ 30W

RAPID BENCHTOP SLS 3D PRINTER



LASER TYPE

30W Ytterbium Fiber

Fast print speeds for same-day delivery

MATERIAL COMPATIBILITY

Full Material Range

Core Powders + Nylon 11 CF Powder

PRINT ENVIRONMENT

Inert gas or Air

Enhanced material performance and recyclability

EFFICIENCY

Zero Waste Printing

High packing density and improved reusability

Fuse 1

ACCESSIBLE BENCHTOP SLS 3D PRINTER



LASER TYPE

10W Ytterbium Fiber

Reliable in-house capabilities

MATERIAL COMPATIBILITY

Core Material Range

Nylon 12, Nylon 11, Nylon 12 GF Powders

PRINT ENVIRONMENT

Air

One option, easy set-up

EFFICIENCY

Low Waste Printing

High packing density

Materials

3D print production-ready, end-use parts on the Fuse Series with our family of SLS Powders.*

Our materials, hardware, and software are developed and validated together to deliver peak performance while optimizing cost per part.



NYLON 12 POWDER

A Material That Does It All

Balancing strength and detail, Nylon 12 Powder is a highly capable material for both functional prototyping and end-use production of complex assemblies and durable parts with high environmental stability.

Tensile Strength	50 MPa
Tensile Modulus	1850 MPa
Elongation at break (X/Y)	11%

NYLON 12 GF POWDER

Stiff, Stable, Functional Parts

A glass-filled material with enhanced stiffness and thermal stability for demanding industrial environments. Choose Nylon 12 GF Powder to produce stiff functional prototypes or end-use parts for applications where structural rigidity and thermal stability are critical.

Flexural Modulus	2400 MPa
Tensile Modulus	2800 MPa
Heat Deflection Temp @ 1.8 MPa	113 °C

NYLON 11 POWDER

High Performance, High Impact

For highly ductile, robust parts, Nylon 11 Powder is our higher performance nylon material for functional prototyping and small batch production. Compared to Nylon 12 Powder, our Nylon 11 Powder is more flexible, less brittle, and better at printing thin walls.

Tensile Strength	49 MPa
Izod Impact Strength	71 J/m
Elongation at break (X/Y)	40%

NYLON 11 CF POWDER

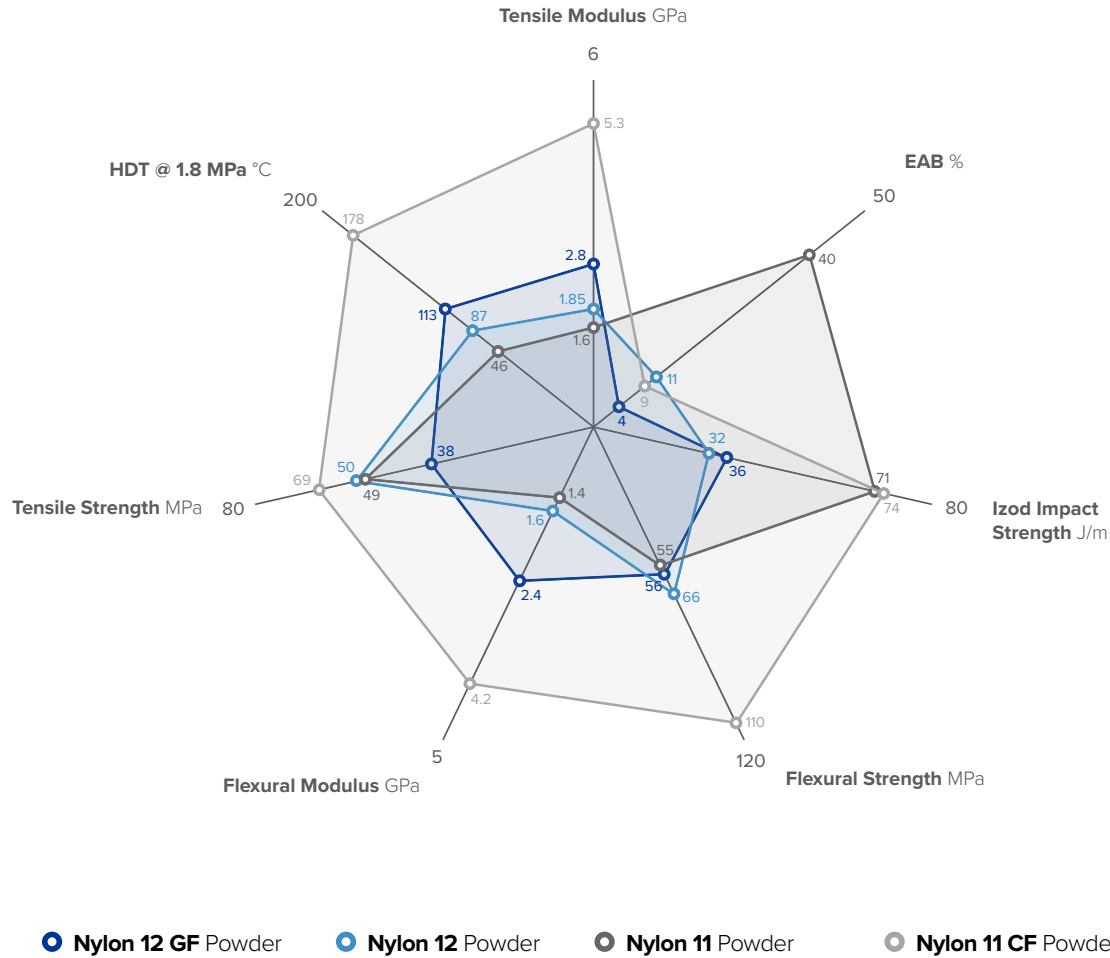
Stiff, Lightweight Strength Reinforced With Carbon Fiber

Our highest strength material reinforced with carbon fiber, Nylon 11 CF Powder enables end-use production of automotive, aerospace, and other highly rugged applications. Compatible with the Fuse 1+ 30W.

Tensile Strength	69 MPa
Tensile Modulus	5300 MPa
Heat Deflection Temp @ 1.8 MPa	178 °C

* SLS Powders available now, many other materials are in development.

The Fuse Series ecosystem offers a range of high-performance materials with complementary properties to meet your needs for functional prototyping and end-use products.



APPLICATIONS

JIGS AND FIXTURES

CASINGS, HOUSINGS, ENCLOSURES

HOT FLUID/AIR COMPONENTS

MECHANICAL CONNECTORS

GENERAL PARTS

NYLON 12 POWDER

Rigid, impact-resistant

Balanced stiffness and ductility

Not recommended

Clips and clamps

Balanced stiffness and ductility

NYLON 12 GF POWDER

Stiff, static, load-bearing

Static, mountable

Manifolds, pipings, ducts

Threads, sockets

Static, rigid, unyielding

NYLON 11 POWDER

Ductile, high-impact

Resilient, pliable

Not recommended

Snap fits, sliding joints

Flexible, resilient

NYLON 11 CF POWDER

Stiff, load-bearing, lightweight

Rigid, impact-resistant

Manifolds, pipings, ducts

Snap fits

Strong, unyielding, lightweight

Tech Specs: **Fuse 1+ 30W**

Technology	Selective laser sintering (SLS) Class 1 Laser Product
Build Volume	165 x 165 x 300 mm 6.5 x 6.5 x 11.8 in
Layer Thickness	110 microns 0.004 in
Laser Type	Ytterbium Fiber 30W
Laser Spot Size	200 microns (0.0079 in)
Material Refresh Rate	30% – 50%
Build Chamber	Modular, compatible with Fuse 1+ 30W, Fuse 1 and Fuse Sift
Print Support Structures	No supports necessary
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 optional stand)
Weight	114 kg (without build chamber or powder) 251.3 lb (without build chamber or powder)
Startup Time	60 minutes
Power Requirements	EU: 230 VAC, 7.5 A (dedicated circuit) US: 120 VAC, 15 A (dedicated circuit)
Warranty and Service	One Year Warranty included. Extended Warranty, Standard Service Plan and Premium Service Plan available.
Software Compatibility	Windows 7 and up // Mac OSX 10.6.8 and up
File Type	STL or OBJ

100,000,000 Parts Printed With Formlabs Technology



Get In Touch

US +1 617 702 8476
sales@formlabs.com

EU +49 1573 5993322
eu-sales@formlabs.com

UK/IE +44 330 027 0040
eu-sales@formlabs.com