



# Fuse 1

High Performance SLS 3D Printer

# The industrial power of selective laser sintering (SLS) in your workshop.

## **Fuse 1**

Manage prototyping and production yourself, in your space, at a tenth of the cost of existing SLS machines.

## **A Complete SLS Solution**

Full ecosystem includes a benchtop SLS 3D printer, post-processing station, and intuitive software for setting up and managing prints.

## **No Specialized Infrastructure**

No need for a dedicated room, inert gas, or special air handling equipment.

## **No Supports**

Pack the build chamber full of parts, print intricate geometries, and save time in post-processing.

## **Powder Recovery System**

Print with up to 50% recycled powder.





# Technical Specifications

## FUSE 1

|                       |                           |
|-----------------------|---------------------------|
| Print Engine          | Selective Laser Sintering |
| Build Volume          | 165 x 165 x 320 mm        |
| Build Speed           | 10 mm / hour              |
| Layer Thickness       | 100 $\mu$ m               |
| Material Refresh Rate | Up to 50 %                |
| Startup Time          | 60 minutes                |
| Network Connectivity  | Ethernet or Wi-Fi         |
| Dimensions            | 677 x 668 x 1059 mm       |
| Weight                | 88 kg                     |
| Power Requirements    | 2 kW, 120 or 240 VAC      |

## OPTICAL SYSTEM

|                  |                             |
|------------------|-----------------------------|
| Galvanometers    | Formlabs Custom             |
| Scan Speed       | 2,000 mm/sec                |
| Laser Type       | Fiber rated to > 10,000 hrs |
| Laser Wavelength | 1064 nm                     |
| Laser Power      | 10 W                        |
| Laser Spot Size  | 200 $\mu$ m (FWHM)          |

## SOFTWARE

|                   |                          |
|-------------------|--------------------------|
| Print Preparation | PreForm Desktop Software |
| File Type         | .STL or .OBJ             |

# A material that does it all

Lightweight, robust nylon is suitable for functional prototypes and small batch manufacturing. Materials offered will be Nylon 12 and Nylon 11, with more materials in development.



## Nylon 12: Material Properties

| MEASUREMENT                    | AS PRINTED ON FUSE 1 | PUBLISHED VALUE |
|--------------------------------|----------------------|-----------------|
| Ultimate Tensile Strength (XY) | 52 MPa               | 50 MPa          |
| Ultimate Tensile Strength (Z)  | 50 MPa               | 48 MPa          |
| Tensile Modulus (XY)           | 1800 MPa             | 1850 MPa        |
| Tensile Modulus (Z)            | 1900 MPa             | 1800 MPa        |
| Elongation at Break (XY)       | 14 %                 | 12 %            |
| Elongation at Break (Z)        | 7 %                  | 6 %             |

## Feature Design Guidelines

| FEATURE               | MINIMUM VALUE | FULL STRENGTH / DEPTH |
|-----------------------|---------------|-----------------------|
| Wall Thickness        | 0.75 mm       | 2.00 mm               |
| Pin Diameter          | 1.00 mm       | 2.00 mm               |
| Hole Diameter         | 0.60 mm       | 1.00 mm               |
| Slot Width            | 0.75 mm       | 3.00 mm               |
| Moving Part Clearance | 0.25 mm       | 1.00 mm               |



## Visit us

UAE Office:

701, Wasl Business Center, Port Saeed,  
Deira, Dubai, United Arab Emirates  
P.O. Box 98617

KSA Office:

A. Shifa Area, Al-Mussa Industrial Area,  
Al-Nasser Street cross Hayel Road, Riyadh,  
Kingdom of Saudi Arabia

## Contact us

UAE Office:

+971 4 251 7734

Email

[info@maptec.ae](mailto:info@maptec.ae)

KSA Office:

+966 545 823123

Website

[www.maptec.ae](http://www.maptec.ae)