

ADDITIVE MANUFACTURING FACILITIES

SELECTIVE LASER MELTING METAL 3D PRINTER:



iFusion150

Sl.No	Specification Parameters	Details
1	Technology	Selective Laser Melting
2	Build Volume	150mmX180mm
3	Layer Thickness	20-100 μ m
4	Focus Diameter	45-80 μ m
5	Build rate	20cm ³ /h and above
6	Precision optics Laser	F-theta lens, high speed scanner
7	Laser type	Yb-Fibre laser
8	Laser power	500W
9	System Dimension (mm)	1650mmX1250mmX2350mm
10	Scan speed (Max)	7 m/s
11	Material	AlSi10Mg, 18Ni300, 13Ni400, SS316L, 17-4PH, IN718, IN625, CoCrMo, Ti64, CM247LC, and more.

Fused Deposition Modeling (FDM)



S.No	Specification Parameters	Details
1.	Technology	Fused filament fabrication (FFF)
2.	Application	a) Rapid prototyping, b) Jigs & fixtures, c) Functional/non-functional models, d) Tooling casting/forming patterns, e) Conceptualization and realization of 3D CAD models.
3.	Build volume	X = 500 mm, Y = 500 mm, Z = 500 mm
4.	Extruder	High torque direct drive Extruder
5.	Nozzle temperature	180 to 400°C
6.	Bed temperature	60 to 150°C
7.	Envelop temperature	30 to 50°C for ABS, PETG and HIPS materials
8.	Layer thickness	X and Y axis 25 micron Z axis 10 micron
9.	Accuracy	25 micron
10.	Nozzle diameter	0.2 mm to 1 mm



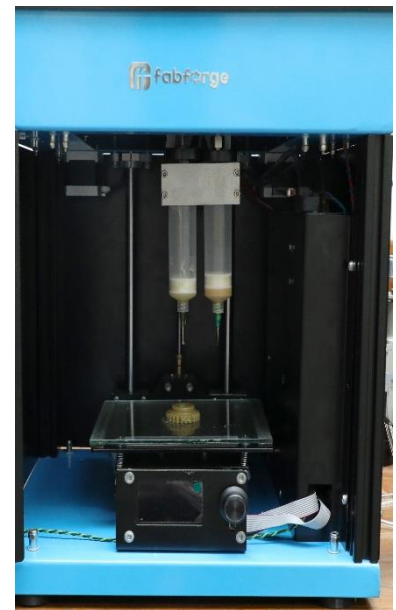
Sl.No	Specification Parameters	Details
1	Technology	Fused filament fabrication (FFF)
2	Build volume	223 x 223 x 205 mm
3	Layer resolution	20 – 200 micron
4	Positioning precision (X/Y/Z)	12.5 / 12.5 / 5 micron
5	Filament diameter	2.85 mm
6	Nozzle diameter	0.4 mm
7	Nozzle temperature	180 – 260 °C
8	Speed	Print: 30 mm/s – 300 mm/s Travel: 30 mm/s – 350 mm/s
9	Print surface	Heated glass build plate
10	Build plate temperature	50 – 100 °C

Selective Laser Sintering (SLS) - Polymer



Sl.No	Specification Parameters	Details
1	Technology	Laser Bed Powder Fusion (LPBF)
2	Build volume	113x113x123 in mm
3	Build Table	Dynamic adjustable/scalable platform
4	Working Materials	Ceramic Powders - HAP,Ca3(PO4)2, PA12
5	Print Layer Resolution	120 μ m
6	Laser Speed	5-600mm/sec
7	Laser Type	405nm Diode
8	Laser Power	30 watts
9	Chamber Temperature	30 – 180 °C
10	Surface Temperature	Upto 200 °C

Paste Extrusion / Slurry Based 3D Printing



Sl.No	Specification Parameters	Details
1	Technology	PEP
2	Dispensing Technology	CPPD
3	Build volume	100x110x110 in mm
4	Build Table	TEFLON -Swappable
5	Working Materials	1.Ceramic Powders - HAP,Ca3(PO4) Bentonite, 2.Bio Medical - Hydrogels and serum's, 3. Food Engineering – Starch, Proteins, Pastries, Chocolates, Cake batters, Millets etc, 4. Pottery – Porcelain Clays
6	Viscosity Range	Upto 20000 Poise
7	Print Layer Resolution	0.1mm - 1.54mm
8	Print Speed	5-60mm/sec
9	Extruder Counts	2
10	Extruder Volume	30-55cc - Expanding range to 500cc
11	Head Temperature	80 °C
12	Dispensing Nozzle Range	0.1mm - 1.54mm
13	Dispensing Range	0.01 - 0.8 MPa
14	Material Type	Open Source

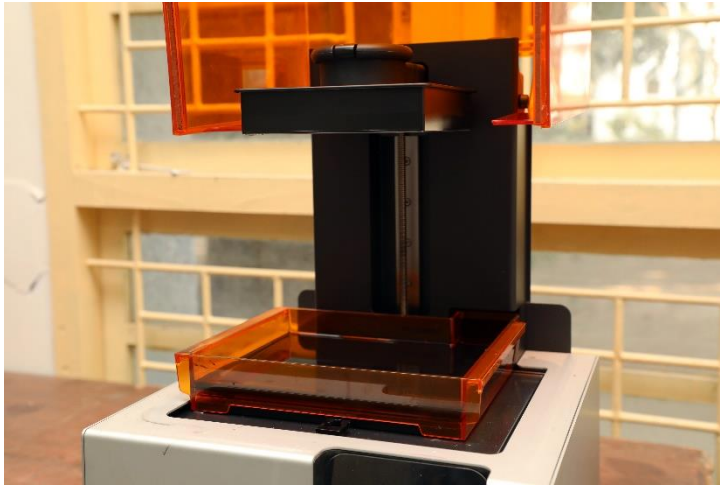
Bio 3D Printing



Micro Extrusion Multi Head Bio 3D Printer

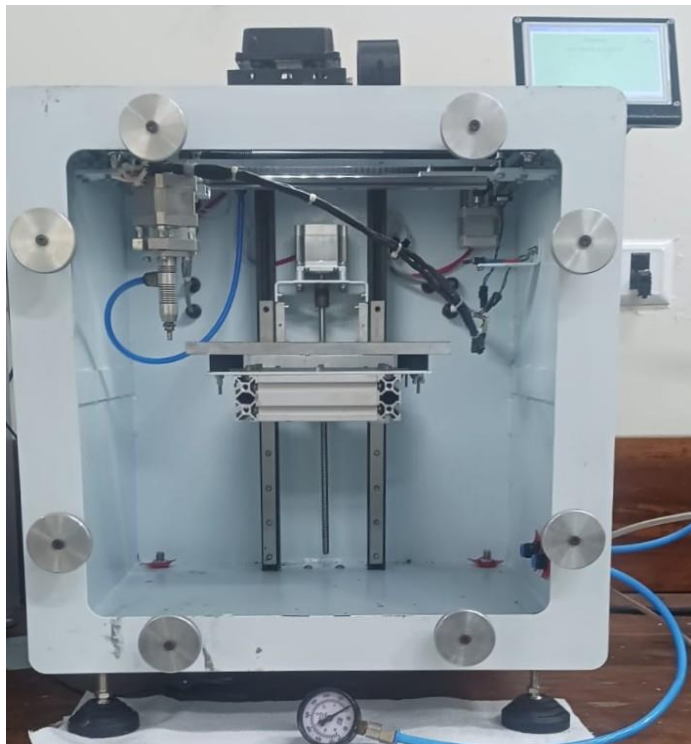
GENERAL SPECIFICATIONS	
No.of Print Heads	8
Print Heads Lifting setup	Auto Lifting height of minimum 30mm for all tool heads
Printing volume	130x90x70 mm in XYZ directions
Print table types	Petri Dishes, Multi Well Plates, Glass slides
Multi head/material printing	Multi materials using multiple heads must be printable on all 3 types of print tables
Working Materials	Hydrogels, Bio inks, Live cells etc
Working Viscosity	Upto 12000 Poise
Supported Nozzles	0.1mm - 1.54mm (All Taper tips,Steel tips, Full metal tips)
Syringe Volume	5CC & 10CC
Local Photo curing	365nm,405nm,465nm,520nm
Movement Resolution	Min X – 1.0 micron, Y – 1.0 micron, Z – 1.0 micron
Print Layer Resolution	Min 100 µm
Printing Speed	10-120mm/sec
Temperature control	Print heads and print bed
Operating Pressure	Upto 8 bar

Stereolithography – Resing Based 3D Printing



Sl.No	Specification Parameters	Details
1	Technology	Stereolithography (SLA)
2	Build Volume	145 × 145 × 175 mm
3	Layer Thickness (Axis Resolution)	25, 50, 100 microns
4	Laser Spot Size (FWHM)	140 microns
5	Laser Specifications	EN 60825-1:2007 certified Class 1 Laser Product 405nm violet laser
6	Operating Temperature	Auto-heats to 35° C
7	Supports	Auto-Generated Easily Removable

Composite Solid Propellant slurry-based screw 3D printer



Sl.No	Specification Parameters	Details
1	Technology	Composite slurry-based screw 3D printing
2	Build Volume	200 × 200 × 200 mm
3	Working Viscosity	Upto 100000 poise
4	Print environment	Vacuum upto 1 torr
5	Working materials	Solid -propellants
6	Supported nozzles	2mm
7	Local photo curing	365nm, 405nm
8	Syringe volume	50cc or 500cc
9	Operating pressure	Upto 8 bar