Detailed Documentation of 3D Printers at USC Aiken

Bambu Lab P1S:

- **Max Nozzle Temp**:
  300°C

- **Max Bed Temp:**
  100°C

- **Heated Chamber:**
  No

- **Build Volume:**
  256x256x256 mm

- **Max Speed:**
  500 mm/s

- **Max Acceleration:**
  20000 mm/s²

- **Special Features:**
  AMS unit - capable of printing with up to 16 colors in a single print

| Materials Combability	Bambu lab P1S
PLA	✓
PETG	✓
TPU	✓
PC	✓
ABS	✓
ASA	✓
PEEK	
PEKK	
PSU	
PPSU	
PI	
PA	✓
CF-Filled	✓
GF-Filled	✓
Metal-Filled	✓

Description:

The Bambulab P1S 3D printer boasts a maximum nozzle temperature of 300°C and a maximum bed temperature of 100°C. While it does not feature a heated chamber, its spacious built volume of 256x256x256 mm allows for versatile printing options. With a remarkable maximum speed of 500 mm/s and an acceleration of 20000 mm/s², the printer is equipped with an Advanced Multicolor System (AMS unit), enabling the printing of intricate designs with up to 16 colors in a single print.

Snapmaker J1S:

- **Max Nozzle Temp:**
  300°C

- **Max Bed Temp**:
  100°C

- **Heated Chamber**:

  No

- **Build Volume:**
  300x200x200 mm

- **Max Speed:**
  350 mm/s

- **Max Acceleration:**
  10000 mm/s²

- **Special Features:**
  Independent Dual Extruders
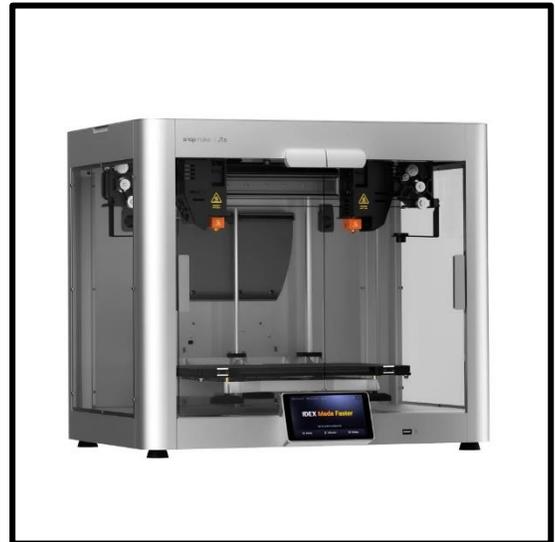
Material Combability	Snapmaker J1s
PLA	✓
PETG	✓
TPU	✓
PC	✓
ABS	✓
ASA	✓
PEEK	
PEKK	
PSU	
PPSU	
PI	
PA	✓
CF-Filled	✓
GF-Filled	✓
Metal-Filled	✓

Description:

The Snapmaker J1S offers similar temperature capabilities, with a maximum nozzle and bed temperature of 300°C and 100°C, respectively. This printer does not include a heated chamber and has a build volume of 300x200x200 mm. Notably, it features Independent Dual Extruders, allowing for more efficient and complex printing processes. The printer operates at a maximum speed of 350 mm/s with an acceleration of 10000 mm/s².

Raise3D E2:

- **Max Nozzle Temp:**
  300°C

- **Max Bed Temp:**
  110°C

- **Heated Chamber:**
  No

- **Build Volume:**

  330x240x240 mm

- **Max Speed:**
  150 mm/s

- **Max Acceleration:**
  1000 mm/s²

- **Special Features:**
  Independent Dual Extruders

Material Combability	Raise3D E2
PLA	✓
PETG	✓
TPU	✓
PC	✓
ABS	✓
ASA	✓
PEEK	
PEKK	
PSU	
PPSU	
PI	
PA	✓
CF-Filled	✓
GF-Filled	✓
Metal-Filled	✓

Description:

The Raise3D E2 3D printer comes with a maximum nozzle temperature of 300°C and a bed temperature of 110°C. Similar to the previous models, it lacks a heated chamber but provides a spacious build volume of 330x240x240 mm. With a maximum speed of 150 mm/s and an acceleration of 1000 mm/s², this printer also features Independent Dual Extruders.

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Intamsys Funmat HT:

- **Max Nozzle Temp:**
  450°C

- **Max Bed Temp:**
  160°C

- **Heated Chamber:**
  Yes, up to 90°C.

- **Build Volume:**
  260x260x260 mm

- **Max Speed:**
  300 mm/s

- **Max Acceleration:**
  1000 mm/s²

- **Special Features:**
  High Temp, heated build chamber

Description:

The Intamsys Funmat HT stands out with its high-temperature capabilities, boasting a maximum nozzle temperature of 450°C and a bed temperature of 160°C. This printer includes a heated chamber that can reach temperatures up to 90°C, expanding the range of materials it can handle. The build volume is 260x260x260 mm, and it operates at a maximum speed of 300 mm/s with an acceleration of 1000 mm/s².

Material Combability	Intamsys Funmat HT Enhanced
PLA	✓
PETG	✓
TPU	✓
PC	✓
ABS	✓
ASA	✓
PEEK	✓
PEKK	✓
PSU	✓
PPSU	✓
PI	✓
PA	✓
CF-Filled	✓
GF-Filled	✓
Metal-Filled	✓

Snapmaker A250:

- **Max Nozzle Temp:**
  275°C

- **Max Bed Temp:**
  100°C

- **Heated Chamber:**
  No

- **Build Volume:**
  230x250x235 mm

- **Max Speed:**
  150 mm/s

- **Max Acceleration:**
  1000 mm/s²

- **Special Features:**
  3-in-1 CNC mill, 3D printer, Laser Cutter

Material Combability	Snapmaker A250
PLA	✓
PETG	✓
TPU	✓
PC	
ABS	✓
ASA	✓
PEEK	
PEKK	
PSU	
PPSU	
PI	
PA	
CF-Filled	
GF-Filled	
Metal-Filled	

Description:

The Snapmaker A250 has a maximum nozzle temperature of 275°C and a bed temperature of 100°C, similar to the Snapmaker J1S. It does not feature a heated chamber and offers a build volume of 230x250x235 mm. This versatile machine is a 3-in-1 CNC mill, 3D printer, and laser cutter, providing a range of fabrication options. The printer operates at a maximum speed of 150 mm/s with an acceleration of 1000 mm/s².

Elegoo Saturn S

- **Technology:**
  LCD SLA

- **Display Resolution:**
  4K (4098 x 2560)

- **XY Resolution:**
  0.048mm

- **Layer Thickness:**
  0.01-0.15mm

- **Printing Speed:**
  30-70mm/h

- **Build Volume:**
  196 x 122 x 210mm

- **Light Source:**
  LED

- **Connectivity:**
  USB

Description:
The Elegoo Saturn S impresses with its expansive build volume of 196x122x210 mm, catering to larger-scale printing projects. Complemented by a 4K screen resolution, this printer ensures high-definition rendering, capturing intricate details with precision. The pixel size of 48x48 micrometers contributes to the printer's ability to produce fine and intricate layers in the final prints.

Elegoo Mars 4

- **Technology:**
  DLP

- **Display Resolution:**
  4K (4098 x 2560)

- **XY Resolution:**
  0.048mm

- **Layer Thickness:**
  0.01-0.15mm

- **Printing Speed:**
  30-70mm/h

- **Build Volume:**
  143 x 89.6 x 175mm

- **Light Source:**
  DLP projector

- **Connectivity:**
  USB

Description:
The Elegoo Mars 4, while slightly more compact with a build volume of 153x78x175 mm, compensates with a remarkable 9K screen resolution. This higher resolution promises enhanced clarity and sharpness in the printed objects. The pixel size of 18x18 micrometers further refines the level of detail achievable with this printer.