

## ❖ Instrument: Mix Laser Cutting Machine



Make	Model	Specification
Trilok	Mix Laser Cutting Machine	Supports metal sheet, acrylic, wood, and plastic cutting. CO <sub>2</sub> and fiber laser combo with power up to 150W. Auto focus and precision cutting head.

### Basic Principle

Laser cutting involves directing a high-power laser beam onto materials, causing them to melt, burn, or vaporize, producing a precise cut.

### Working

1. Load design into laser software.
2. Select material type and thickness.
3. Laser head adjusts focus automatically.
4. Cuts material as per design.

### Applications

- Cutting acrylic for electronics enclosures
- Metal sheet cutting for mechanical parts
- Signage, artwork, and DIY fabrication

### Trilok Laser Cutting Machine – Charges per Minute

Material Type	Charge per Minute (₹)	Minimum Charge (₹)	Remarks
Acrylic / Wood / MDF	12	100	Includes setup time, (excludes design charges, Material Price Excluded )
Mild Steel (<1.2mm)	25	250	Material must be flat and clean(Material Price Excluded )

## ❖ Instrument: Multicolor 3D Printer



Make	Model	Specification
Bambu Lab	Multicolor 3D Printer	Supports up to 4 colors via AMS (Automatic Material System). Uses FDM technology. High resolution printing with auto bed leveling.

### Basic Principle

Fused Deposition Modeling (FDM) melts thermoplastic filaments and deposits them layer-by-layer to build objects.

### Working

1. Load STL file into slicer.
2. Select multicolor profiles.
3. Printer loads filaments from AMS.
4. Heated nozzle extrudes filament layer-by-layer.

### Applications

- Multicolor prototype modeling
- Product design visualization
- Educational and creative models

### Bambu Lab & Pratham 3D Printers – Charges per Gram

Printer Type	Material	Charge per Gram (₹)	Remarks
Bambu Lab Multicolor	PLA	15	Includes multicolor switching charges
Bambu Lab Multicolor	ABS	20	Includes basic support removal

## ❖ Instrument: Monocolor 3D Printer



Make	Model	Specification
Pratham Make in 3D	Monocolor 3D Printer	Single color FDM printer with PLA/ABS support. Layer resolution up to 100 microns. Ideal for educational and prototyping purposes.

### Basic Principle

FDM technology using a single extruder to print with one type/color of thermoplastic filament.

### Working

1. Load design into slicing software.
2. Insert filament.
3. Heated extruder deposits layers.
4. Cooling fans solidify layers instantly.

### Applications

- Single-color prototyping
- 3D educational tools
- Customized parts and enclosures

### Bambu Lab & Pratham 3D Printers – Charges per Gram

Printer Type	Material	Charge per Gram (₹)	Remarks
Pratham Monocolor	PLA	12	Ideal for educational models
Pratham Monocolor	ABS	17	Includes standard supports cleanup

## ❖ Instrument: PCB Prototyping Machine - Fully Automated



Make	Model	Specification
Indus	PCB Prototyping Machine - Fully Automated	Automated PCB prototyping machine with drilling, milling, and solder paste dispensing features. High-precision head, auto tool change, and Gerber file support.

### Basic Principle

Uses mechanical milling and drilling to isolate conductive tracks on copper-clad boards. Supports double-sided PCB prototyping with precision alignment.

### Working

1. Import Gerber files into the software.
2. Load copper-clad board.
3. Machine auto-calibrates and performs milling and drilling.
4. Can dispense solder paste and create vias.

### Applications

- Rapid prototyping of PCBs
- Low-volume production
- Testing and development of electronic circuits

### Indus PCB Prototyping Machine – Charges per Square Inch

Board Type	Charge per Sq. Inch (₹)	Minimum Area (Sq. Inch)	Remarks
Single Layer	20	4	Includes milling and hole drilling (Material Price Excluded )
Double Layer	35	4	Includes alignment an (Material Prince Excluded )