

Rapid Prototyping Facility

To create mid-sized, high-quality prototypes

The lab operates Stratasys Eden350V which uses photopolymer resin as a raw material to build artifacts irrespective of their complexity. With 17 distinct materials to choose from, including specialized materials for dental and medical applications, the m/c offers tremendous versatility to create prototypes that closely resemble your finished product.



Eden 350V Rapid Prototyping Machine from Objet Ltd.

Model materials:

- Transparent rigid (VeroClear)
- Rubber-like (Tango family)
- Transparent general-purpose (FullCure RGD720)
- Rigid Opaque (Vero family)
- Polypropylene-like (DurusWhite)
- High Temperature (RGD525)

Support material:

FullCure 705 non-toxic gel-like photopolymer support

Material cartridges:

Sealed four 3.6 kg (7.9 lbs) cartridges

Tray size:

350x350x200 mm (13.8 x 13.8 x 7.9 in.)

Net build size:

340x340x200 mm (13.4 x 13.4 x 7.9 in.)

Layer thickness:

Horizontal build layers down to 16-microns (0.0006 in.)

Build resolution:

X-axis: 600 dpi; Y-axis: 600 dpi; Z-axis: 1600 dpi

Accuracy:

20-85 um for features smaller than 50mm; Up to 200 um for full model size (for rigid materials only, depending on geometry, build parameters and model orientation)

Workstation compatibility:

Windows 7 32/64-bit

Network connectivity:

LAN-TCP/IP

Size and weight:

1320 x 990 x 1200 mm (52.0 x 39.0 x 47.25 in.); 410 kg (902 lbs)

Jetting heads:

SHR (Single Head Replacement), 8 units

Power Requirements:

110-240 VAC 50/60 Hz; 1.5 KW single phase

Operational Environment:

Temperature 18 C-25 C (64 F-77 F); relative humidity 30-70% (Non - condensing)

Studio Software

Studio makes it simple to build high-quality, accurate 3D models. It automatically transforms STL and SLC files from any 3D CAD application into 3D modeling slices including both build material and support. With click-and-build wizards, you can quickly edit trays, assign materials, manage job queues and perform routine system maintenance. Objet Studio features:

- Easy tray setup including multiple models and materials
- Automatic support generation
- On-the-fly slicing so printing can start right away
- Auto-placement of trays for accurate, consistent positioning
- Multi-user networking



<http://ed.iitm.ac.in/~gsaravana>
<http://www.stratasys.com/>

A Partial List of Projects and the Prototypes Fabricated using the RP Facility



Custom Hearing Aid



Human Femur Model for Study



Calibration and Testing Model



Art and Sculpting



Planetary Gears for a PD Lab Student's Project



A Fork Lift Mechanisms Prototyped for a Consultancy Project



Two Wheeler Chain



New Helmet Design - Student's Project



Bevel Gear Mechanism



Jewelry Design and Prototyping (Consultancy Project)



PageFlipper - Student's Product Design Project