OBJET

PolyJet Technology

- 16 micron ultra-thin-layers
- Thin walls down to 0.6mm
- High accuracy 0.1mm
- High resolution

- Smooth surface
- Fine details
- Office environment
- FullCure® materials

OBJET

A New Era of 3-Dimensional Printing

The manufacturing world is increasingly turning to 3-D printing in a search for meeting the requirement for higher pace time to market in today's competitive marketplace. By solving engineering challenges as early as possible in the development process, they can save costs and move more quickly from concept to end product.

Objet's advanced PolyJet™ technology, featuring ultra-thin build layers, sets a new standard in 3-D Printing. High-speed, easy, and clean production of smooth surfaced, fine detailed models are available with the Eden™ family of PolyJet systems.

The Eden family of 3 Dimensional Printing Systems enables a wide range of corporations and designers to enjoy the benefits of Rapid Prototyping & Rapid Manufacturing.

EDEN250

Office 3-D Printer

EDEN500V

Large Format 3-D Printer

The Photopolymer Pioneer

With its innovative, multidisciplinary approach to hardware, software and polymer materials, Objet Geometries was the first company to successfully jet photopolymer material. Over the past few years, Objet has focused on continually improving its PolyJet technology in order to offer best-in-class 3-D Printing features and capabilities.
Objet's patented PolyJet inkjet-head technology was designed to jet the Company's proprietary photopolymer materials, FullCure®, layer by layer onto a build tray, until completion of the required model. The process produces fully cured models that can be handled and used immediately.
The FullCure® family of materials includes a full range of different mechanical properties, opacity and flexible characteristics for each material.

FullCure® Family of Materials

FullCure®720
- General purpose
- Transparent

Vero Materials
- Improved mechanical properties
- Opaque colors
- Excellent detail visualization

Durus Materials
- Polypropylene simulation

Tango Materials
- Rubber like flexible
- Different elasticity options

FullCure®705
- Single Support for all model materials

The PolyJet Process

The PolyJet jetting head slides back and forth along the X-axis, similar to a line printer, depositing a single super-thin layer of photopolymer onto the build tray. Immediately after building each layer, UV bulbs alongside the jetting bridge emit UV light, immediately curing and hardening each layer. This step eliminates the additional post curing required by other technologies.

The internal jetting tray moves down with extreme precision and the jet heads continue building, layer by layer, until the model is complete. Sophisticated software tools enable all heads to work in perfect harmony, to synchronously jet identical amounts of materials on the tray. This results in a perfectly even and smooth surface. Two different photopolymer materials are used for building: one for the actual model, and another gel-like material for support. The geometry of the support structure is preprogrammed to cope with complicated geometries, such as cavities, overhangs, undercuts, delicate features, and thin-walled sections. When the build is finished, a WaterJet easily removes the support material, leaving a smooth surface.

SET UP
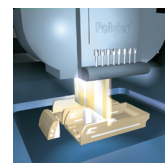
PRINT

CLEAN

Key players adopting Eden Systems

Objet's PolyJet technology has been adopted primarily by the Fortune 1000 companies worldwide in major markets such as Automotive-Heavy Machinery & Aerospace, Consumer goods, Toys, Electronics & Consumer Electronics, Medical devices and related, Universities & Technological schools and others.Objet systems are installed today at such leading corporations worldwide.

PolyJet Technology
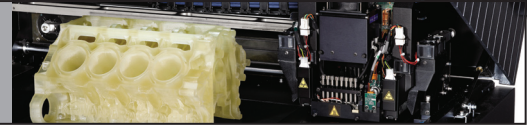
Advanced Features

Embedded in the Eden product line are the breakthrough features of Objet's PolyJet technology. Objet's exclusive focus on photopolymer jetting drives the technology to ever-higher achievements in ultra-thin build layers, material properties, accuracy, speed, and ease-of-use.

- **16-micron Super-Thin Layers for Smooth Surfaces**
  Microscopic drops are jetted in super-thin layers of just 16 microns (0.0006"). This results in ultra-smooth surfaces regardless of the geometric complexity of the model.

- **100 to 300-Micron Accuracy**
  A combination of fine chemical development, precise mechanics and electronics, and advanced software features enables builds that fit very tight tolerances of 100 microns for most models, and up to 300 microns for all geometries.

- **Durable Models for a Variety of Applications**
  An integral part of the PolyJet technology is the Objet FullCure® line of proprietary photopolymer resins. These materials offer excellent flexibility, impact strength and transparency, producing durable models suitable for snap fits and frequent handling. The FullCure line includes multiple colors and the unique Tango flexible rubber-like materials.

- **High-Speed Jetting for Greater Productivity**
  PolyJet technology uses a raster process to produce photopolymer models, enabling the machine to build in slices of 65mm (2.5") rather than point-by-point. Several models can therefore be created in the same amount of time it takes other technologies to produce a single model. The combination of a raster process with high-speed mechanical movement further reduces build times compared to alternative technologies.

- **Thin Walls for Unique Geometries**
  The high-precision jetting of PolyJet technology enables super-thin walls, down to 0.6mm, depending on the geometry.

- **Clean, Easy Process**
  Objet's 3-D Printing Systems can be used in an office-type facility, as the model and support materials are environmentally stable and are loaded in sealed cartridges, with the model material fully cured (Solidified) immediately after build. The PolyLog™ materials management system optimizes materials usage and alerts the user when cartridges should be replaced. Objet Studio software is simple to use and intuitive, enabling virtually anyone to operate Objet systems efficiently.

- **Easy Support Removal on any Geometry**
  Objet's support and model materials are completely separated with a high pressure WaterJet, resulting in clean, smooth surfaces. This process is quick and simple and allows finishing of most parts within 5 – 10 minutes. Fast jetting combined with easy support removal creates finished models, ready for use, in record time.

PolyJet Inkjet technology sets the new standard for 3-D printing solutions, offering a platform that can meet rapid prototyping & rapid manufacturing users needs today and for years to come. Building on the successful Eden products, Objet is committed to answering the market needs with new and innovative solutions that address a wide range of customer applications.

Objet is also committed to ongoing development of materials, ensuring a variety of materials for current and emerging applications. With PolyJet at the forefront of 3-D printing technology, Objet's focus on customers ensures continuous growth to meet new challenges and market opportunities as they arise.

The PolyJet™ Technology Advantage

High-Quality Models & Parts
- 16 micron, ultra-thin layer
- High resolution ensures smooth surfaces and fine details
- Automatic "click & build" for any geometry, simple or complex
- Thin walls – down to 0.6mm
- High accuracy – 0.1mm
- Slice on-the-fly

Wide Variety of Materials
- FullCure®720, Vero, Durus, Tango
- Single support material for all model materials
- Wide range of applications

Clean Technology
- Instant curing
- Fully cured models
- Material packaged in sealed cartridges
- Easy machine operation
- Easy support removal

- No model-finishing required
- Office environment

Applications
- Silicon Molding
- Rapid Tooling
- Metal Coating
- Investment Casting
- Vacuum Forming
- Gluing & Painting
- Aluminum Epoxy
- Fluid Testing

FullCure® Materials
- FullCure®720
- VeroWhite, VeroBlue & VeroBlack
- DurusWhite
- TangoPlus, TangoBlack, TangoGray
- FullCure®705 Support

About Objet Geometries

Objet Geometries Ltd., the innovation leader in 3D printing, develops, manufactures and globally markets ultra-thin-layer, high-resolution 3-dimensional printing systems and materials that utilize PolyJet™ polymer jetting technology, to print ultra-thin 16-micron layers.

The market-proven Eden™ line of 3D Printing Systems and the Alaris™30 3D desktop printer are based on Objet's patented office-friendly PolyJet™ Technology. The Connex™ family is based on Objet's PolyJet Matrix™ Technology, which jets multiple model materials simultaneously and creates composite Digital Materials™ on the fly. All Objet systems use Objet's FullCure® materials to create accurate, clean, smooth, and highly detailed 3D parts.

Objet's solutions enable manufacturers and industrial designers to reduce cost of product development and dramatically shorten time-to-market of new products. Objet systems are in use by world leaders in many industries, such as Education, Medical / Medical Devices & Dental, Consumer Electronics, Automotive, Toys, Consumer Goods, and Footwear industries in North America, Europe, Asia, Australia, and Japan.

Founded in 1998, Objet serves its growing worldwide customer base through offices in USA, Mexico, Europe, Japan, China and Hong Kong, and a global network of distribution partners. Objet owns more than 50 patents and patent pending inventions. Visit www.objet.com.

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