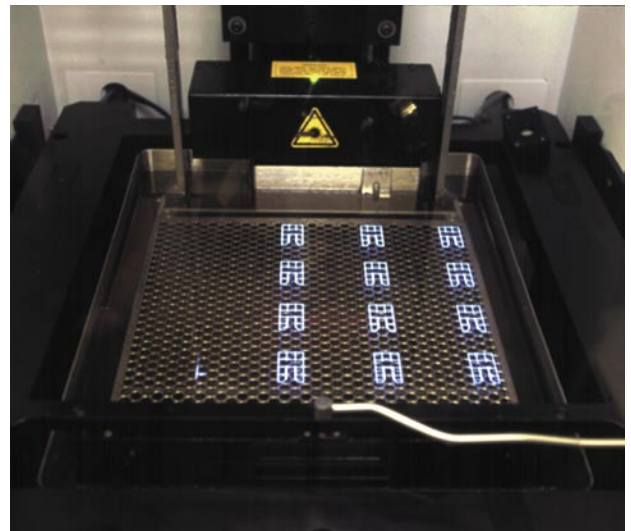


Rapid Prototyping

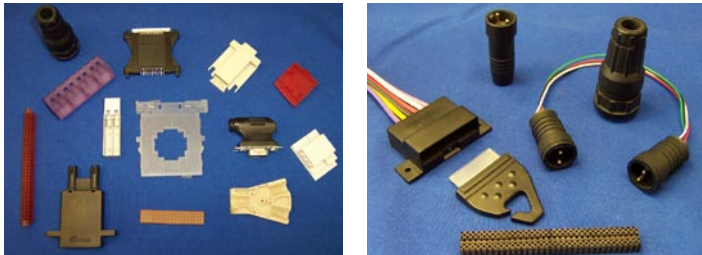
Trace Laboratories provides rapid prototyping services to customers using an in-house Stereolithography (SLA) system. SLA is a rapid-prototyping process which produces a physical three-dimensional part, a conceptual model, or a master pattern. Using a 3D Systems Viper si2 stereolithography machine to produce rapid prototype parts, customers can hold a physical, plastic, scaled (in some cases functional) model of their design, usually within hours.

The customer can choose between standard resolution mode, for the best balance of build speed and part resolution, and high resolution mode for ultra-detailed small parts and features. The SLA machine uses a computer-controlled laser to cure a photosensitive resin, layer by layer, to create the 3D part. The time frame for prototype creation varies based on product sizing – with a maximum platform size of 10" x 10" x 10". With smaller designs, multiple pieces can be produced simultaneously.



Finishing

The standard finish of SLA parts include support removal, sanding surfaces, and glass bead blasting. The natural finish of the SLA parts is an opaque color, but a clear finish is also available. SLA parts can be painted or they can be dyed in an array of colors without changing the overall size of the part.



Material

Trace uses Huntsman SL7540 which is designed to create parts that mimic end-use plastics in (SLA) applications, ranging from snap-fit testing to the creation of multi-component assemblies. SL7540 resin exhibits mechanical properties similar to those offered by popular thermoplastics, such as polypropylene. Consequently, prototypes can be tested rigorously while maintaining the integrity of the part geometry. This material is suitable for use in a wide range of automotive, engineering and electronics applications.

Rapid Prototyping Benefits

- Crisp, highly detailed, and accurate pieces
- Speed of delivery (usually 2-3 days)
- Tolerances within .004"/inch
- Reduces time to market
- Applies to almost any industry
- Greatly enhances the visualization of a product
- Provides patterns for castings and secondary processes
- Produces robust prototypes that mimic production components
- Enhances communication between project team members
- Provides mechanically functional samples for comparison testing



Stereolithography and Rapid Prototyping



Design Source Material

In order to create the prototype part, Trace only needs an STL, STP, or AutoCAD format file. If a 3D CAD platform is not available, Trace Laboratories can provide the necessary tools and personnel to create the needed files and models. A quotation for this service will be sent promptly after receiving specific customer information (please contact Trace Central via the information provided on this page – or use Trace's online quote request form at www.tracelabs.com).

Stereolithography is a cutting edge technology. It can be applied to almost any industry, and it can provide a useful way to facilitate the design process.

Independent, Internationally Accredited Testing Services

- ✓ Acceleration
- ✓ Climatic Testing, Shock/Vibration, Material Characterization
- ✓ Contour Flight Fatigue Life (Thermal Shock and Cycling)
- ✓ DSCC, DGSC, DISC
- ✓ EMC Testing
- ✓ Environmental Stress Screening (ESS)
- ✓ Explosion Proofing
- ✓ Failure Analysis
- ✓ HALT/HASS
- ✓ High Altitude Outgassing
- ✓ Solder Joint Reliability



Testing is performed in strict accordance with the standards and customer-specific requests. The lab is also available on a per-day basis for preliminary testing and troubleshooting.

Trace is an A2LA Accredited Laboratory.

For more information, or for a quote on specific test requirements, contact:

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Email: info@tracelabs.com

Internationally Accredited Independent Testing Services

www.tracelabs.com