GKN ADDITIVE
FORECAST 3D

Stereolithography Apparatus (SLA)

For fine, detailed small-featured parts as well as extraordinarily large components

About

Stereolithography, or SLA, uses a UV laser that cures parts one layer at a time in a photo-reactive expoxy resin. SLA is known as the original 3D-printing process for producing rapid prototypes and show models. It is widely regarded as one of the most accurate of the additive technologies.

With both large-format and high-resolution SLA equipment, we can build parts as fine as .002" layer thickness on our high-resolution equipment virtually overnight from a customer's CAD data. We also offer a range of resins to suit your rapid-prototyping needs.

Benefits

- High resolution: parts at .002"–.006" layers
- Fine features from a precise spot-beam UV laser
- Large, seamless parts that can be bonded together with UV light–reactive resins
- Waterclear models (in our Somos® WaterShed XC 11122 resin)

Applications

- Metal-clad models
- Presentation models
- Anatomical models
- Medical models
- Architectural models
- Short-run medical applications
- General-use prototypes

Process

1. GKN Additive (Forecast 3D) reviews the order file to evaluate and align on customer requirements.

2. Project technicians review the customer's CAD files to ensure data integrity and part printability, providing feedback for potential improvements.

3. Once aligned and approved on the order objective, the customer receives an order confirmation showing a detailed project schedule and ship date.

4. Additive technicians process the order with the requested material, resolution, and quantity, as well as the specified orientation (if any).

5. Additive finishers complete parts to the requested finish level and apply any additional postprocessing operations.

6. Quality assurance team reviews parts for official sign-off and release to customer.

This miniature Cytori medical device is an example of some of the strengths of SLA: high level of accuracy and complexity, smooth surface finish, accommodates large build areas.

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Standard lead time	1–3 days
Standard accuracy	Typically within +/- .007" for the first inch and .003" per inch thereafter
Layer thickness: standard resolution	.004"–.006"
Layer thickness: high resolution	.002"
Maximum part dimensions	29" x 26" x 21" on the iPRO 9000 but part size is almost limitless with our UV epoxy bonding methods
Finishes	SLA models can be sandblasted, painted, tinted, and made waterclear (for 11122 XC watershed material).

Materials

Somos® WaterShed XC 11122: This is the clear solution for designers looking for ABS and PBT-like properties for stereolithography technology. It produces highly detailed parts with superior clarity and water resistance.

Somos® NeXt: This material provides the accuracy of stereolithography with the look, feel, and performance of a thermoplastic. Somos® NeXt is nearly indistinguishable from finished traditional thermoplastics, but has the toughness, durability, and accuracy not traditionally seen in stereolithography resins.

Somos® WaterShed Black: Provides a solution for building rigid, tough parts while eliminating the need for painting or coating. With similar properties and processing as Somos® WaterShed XC 11122, this multipurpose resin provides the same benefits in a black stereolithography material.

Somos® BioClear: Perform faster, more accurate procedures with customized cutting guides and surgical models made with Somos® BioClear. Not only will this decrease the recovery time for patients, it can also lessen the chances of repeat procedures. The material is resistant to moisture and many common solvents and chemicals.

This medical model was produced using Somos® BioClear. Parts printed with Somos® BioClear have ABS-like mechanical properties, along with a good combination of strength and toughness.

Find out how GKN Additive (Forecast 3D) can take your product from prototype to production. Visit forecast3d.com today or contact us directly at (877) 835-6170 or hello@forecast3d.com to learn more.