

## Engineer's Toolbox: Ultra-Lightweight SLA Models are a Super Solid Concept

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***The ID-Light™ SLA product is created using a proprietary laser-scanning pattern and post-processing methods. It is ideal for large appearance models.***

They said it couldn't be done.

And they were wrong.

Man, don't engineers just love that story arc?!

Such was the case when rapid prototyping service ZoomRP sought outside bids for a 6-ft 4-in. hard-shell model built of their corporate superhero mascot, aptly named ZoomR. Professionals in the entertainment industry said that they would need to "move heaven and earth" to fabricate the ZoomR in four weeks.

And the cost of shipping and weight of the finished model done in solid SLA made the quick creation of this "Man of Plastic" a real grim story.

A similar tale of woe was told when a foam model made by CNC was shopped. The figure would be far too heavy, and the finish would never look as polished as the initial slick concept.

Luckily, ZoomRP sister company Solid Concepts is the only company



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that offers a trademarked technology called Industrial Design Light (ID-Light). This lightweight SLA product is created in a way that produces a thin outer shell (about 0.030 to 0.040 in.) used to encase a drainable rigid inner scaffolding-like matrix. ID-Light parts are between 80% and 92% lighter than solid SLA parts, depending on geometry. They also build faster than solid Stereolithography (SLA) parts.

So ZoomRP went the in-house route, and Solid Concepts built, assembled, and painted ZoomR in less than two weeks. In the end, the model was far less expensive to ship to tradeshow and demonstrations, weighing in at only about 29 lbs as compared to 350 lbs for solid SLA.

Weight Comparisons	ZoomR	Throttle Body	Bed Footboard
<b>Weight ID-Light</b>	<b>29.2 lb</b>	<b>0.247 lb</b>	<b>7.55 lb</b>
Weight solid SLA	351.4 lb	1.12 lb	62.7 lb
Weight (20-lb fm)	97.0 lb	0.309 lb	17.3 lb
Weight (40-lb fm)	194.1 lb	0.618 lb	34.7 lb

The ID-Light product has received excellent acceptance for large appearance models for office products, furniture, entertainment models (like ZoomR), art, and architecture. Although the finished products are not made to handle loads, they certainly may save the day when you need a big-ol' prototype that looks super in a pinch.

### Basic product offerings include:

- SLA ID-Light with proprietary semi-hollow lattice and paint options.
- Parts built with custom-formulated SC1000 photopolymer for quick builds and drainage for rigid, accurate geometries.
- A two-part urethane paint option for increased rigidity and impact strength, also offered with non-cosmetic paint or primer only.

### Product advantages and disadvantages

- + Builds faster, costs less than solid SLA models.
- + Lighter weight than solid SLA models.
- + Lighter weight than CNC (10-lb foam) for most geometries.
- + Harder outer shell than 10- and 20-lb foam (offering better paint surface).
- Not intended for structural applications (will break with impact or heavy load).



Want more information? Visit [www.SolidConcepts.com](http://www.SolidConcepts.com)

*The ID-Light process has also been used to great effect in a throttle body (top) and a bed footboard.*