Neo Stereolithography Customer Success Case Studies

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Automotive

Stratasys Neo
Stereolithography

Neo®800 and Somos® WaterClear Ultra 10122 Service Bureau One3D, Czech Republic

Challenge

- Lack of options to produce quality, transparent automotive lenses. Limitation on design and size when producing lenses traditionally
- Traditional methods using milled PMMA (plexiglass) takes 3-4 weeks therefore high lead times and production costs

Solution

- The 800x800x600mm build platform meant One3D could produce **large parts** with any geometry, or many parts at a **better cost-per-piece ratio than conventional manufacturing methods** would have allowed
- With Stratasys Neo800 stereolithography, One3D could **shorten the process** to produce the lenses to 3-4 working days and offered the **designers freedom to build lenses with intricate designs**

Key Winning Points
Costs and Lead time substantial reduction

Impact

Lead Time Savings

~45%

Link to Case Study
Link to Video

Neo®800 and Somos® EvoLVe 128 Service Bureau Midwest Prototyping, USA

Challenge

- Midwest required a large surrogate prototype to determine fit and form of car differential design before investing in future machining of final part

Solution

- Midwest printed a **large custom housing** part on a Neo800 using EvoLVE 128 resin. Providing **great dimensional accuracy and improved surface finish** which saves post processing time
- The part was printed in **33 hours** and resin cost of **$294**
- This prototype would be traditionally machined and typically would incur **costs up to $2,500** and lengthy lead times of **up to 6 weeks**

Key Winning points
Substantial reduction in costs and lead time

Impact

Price Decrease ~88%

Lead Time Savings ~96%

Link to Customer Video

Formula One/NASCAR

Stratasys Neo Stereolithography

Neo®450 and Somos® DMX-SL 100, Service Bureau Mackart Additive and Composites Provider Silverstone Composites, UK

Challenge

- No alternative solution for mandrel tooling for a composite pipe. Traditional methods such as aluminum could not be extracted from the composite pipe
- Previous to using SL technology, each mandrel tool could take up to one-hour of postprocessing per tool and human-error can often happen as a result

Solution

- The **smooth surface finish** of the mandrels printed on the Neo450s **reduces the post-processing time** – saving up to one-hour per tool
- The internal mandrels produced on the Neo450s are **easily extracted from the composite pipe, not previously possible using traditional manufacturing methods**

Key Winning points

The Neo450s produce mandrels that have an accurate, smooth surface finish which reduces the post-processing time by up to one-hour per tool

Link to Case Study

Link to Video

Neo® 800 and Somos® PerFORM Reflect F1 McLaren, UK

Challenge

- Needed to produce wind tunnel models for aero testing. Required a solution to build accurate and detailed models fast to meet with the pressure deadlines of F1

Solution

- **Supreme part accuracy in high-performance polymer materials** improved the wind-tunnel testing, enabling McLaren to optimize aerodynamics and shave vital seconds off the clock
- Somos PerFORM Reflect was developed specifically for wind tunnel models and creates strong, stiff parts that, when combined with the surface finish achieved by the Neo800, **reduces post-processing by more than 30%**

Key Winning points

3D printing is cutting production times of some scale model parts to just three days, rapidly accelerating vehicle development

Link to Case Study

Link to Application Video

Neo®800 and Somos® EvoLVe 128 Nascar Penske, USA

Challenge

- Needed to rapidly print scale model components for aerodynamic testing

Solution

- **Can print larger parts** with less time spent hand sectioning, sanding and joining parts together for wind tunnel testing
- Neo's open resin system meant Penske could source material from any vendor giving **maximum flexibility in material selection**

Key Winning points
Can turn ideas into parts and get them onto the racetrack faster with greater reliability than ever before

Link to Article

Consumer Products

Stratasys Neo Stereolithography

Neo®800 and Somos® WaterShed XC 11122 Service Bureau Paragon Rapid Technologies, UK

Challenge

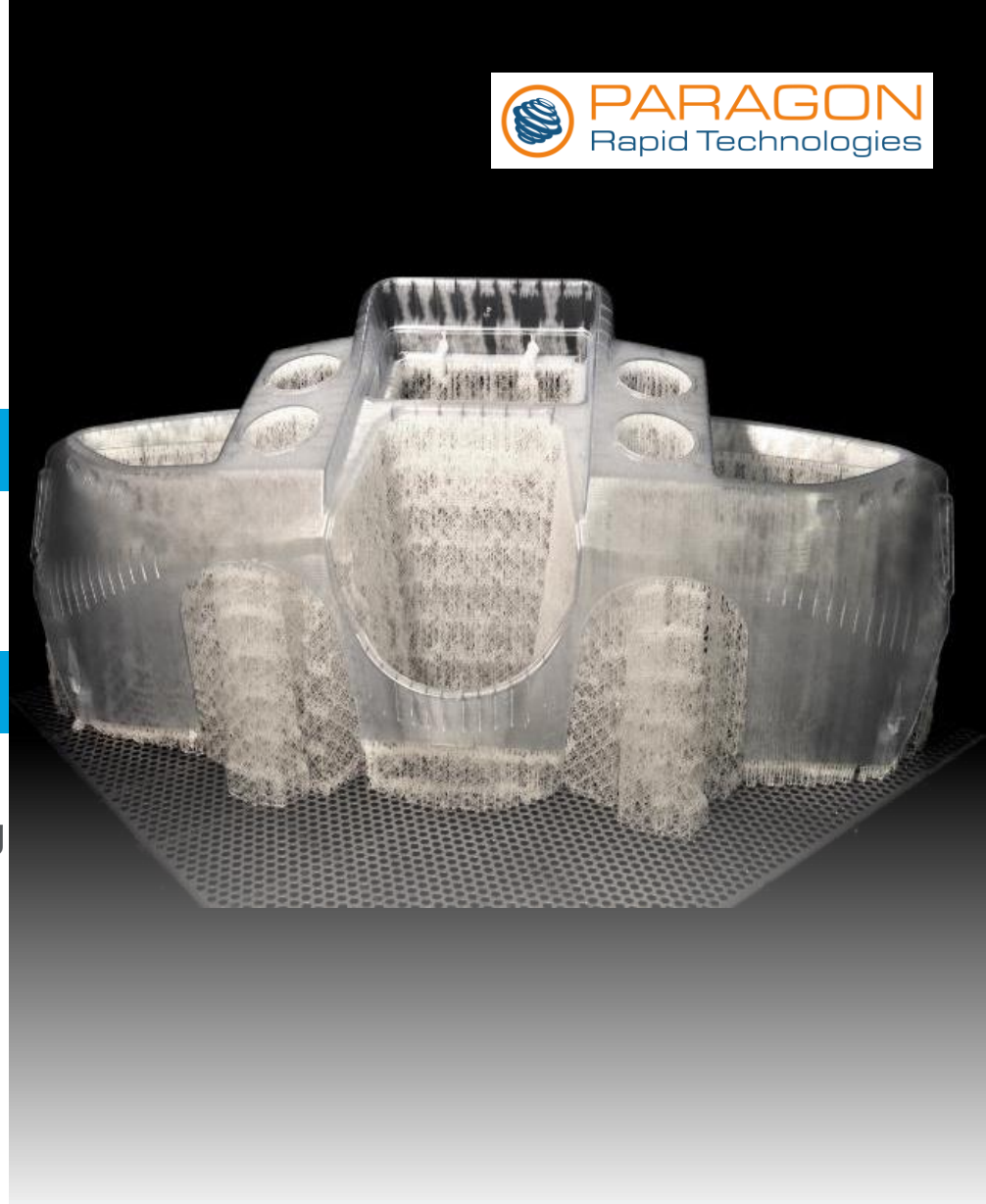
- Large form, fit and functional prototype required before investing in large-scale manufacturing

Solution

- Paragon printed the large console on the Neo®800 in Somos® Watershed resin in one build so **no need for sectioning or bonding**
- Console was printed in just over 3 days vs 2-3 weeks CNC machining time, which results in s**ignificant reduction in material and labour costs**

Key Winning points
Costs and lead time substantial reduction

Impact



Price Decrease ~55%

Lead Time Savings ~86%

Link to Case Study

Link to Video

Neo®450 and Somos® EvoLVE 128
Consumer Products Whirlpool, USA

Challenge

- To produce marketing prototypes without the need for tooling, reducing time and costs

Solution

Parts produced on the Neo450s using Somos® EvoLVE 128 resin helped Whirlpool **produce accurate prototypes with smooth side-wall finish, reducing finishing**.

- Whirlpool could **print impact resistant parts with thin walls such as clips when required** – removing need for developing tooling.
- Parts produced on the Neo450s had an **outstanding surface finish resulting in ease of post-processing**

Key Winning points
Part surface quality, saving time and costs vs traditional methods

Impact

Link to Customer Video

Neo - Peace of Mind Stereolithography

Vs Legacy
3D Printers

Neo®450 and Neo® 800, Somos® EvoLVE 128, Peace of Mind Stereolithography Ogle Models, UK

Challenge

- Looking to update and expand SLA offering and required a reliable, large SLA 3D printer to meet customers needs

Solution

- The Neo800's **larger build chamber allows for larger parts to be made, but also higher throughput for smaller parts.** The Neo450s has a smaller build chamber allowing greater capacity and flexibility in Ogle's SL offering
- The Neo printers, **are simpler more refined, therefore more efficient that deliver accurate, repeatable results**
- Produces parts with a **level of accuracy and surface finish rivaling injection molding**, and does so quickly and consistently

Key Winning points

Reliable hardware producing parts with outstanding sidewall quality

Impact

Link to Case Study

Link to Video

Neo®800 and Somos® EvoLVE 128, Peace of Mind Stereolithography, Realize Inc. USA

Challenge

- Realize Needed a larger, reliable, open resin SL 3D printing solution that would allow for greater throughput, reduced build times, and increased sidewall quality compared to the legacy SL systems in its fleet

Solution

- The **open-source solution** enabled Realize to use their preferred resin that ran on previous legacy machines: Somos® EvoLVe 128
- **Time-saving when post-processing parts** allowed the team to do minimal finishing, moving directly from print to primer and paint
- **Accurate parts allows flawless production of each section** where all the parts fit perfectly together, resulting in much less labor from a finishing and assembly standpoint
- **Reliability and Ease of Use** dramatically reduced downtime to better meet their ever-changing demands from clients

Key Winning points **Impact**

Reliable and easy to use open resin system that produces accurate and quality parts which results in time and cost savings.

Link to Case Study