



# Neo800

## One3D utilise the Neo800 to provide 3D printed lens prototypes for automotive industry

Czech Republic service bureau [One3D](#) is making an impact in the automotive industry. Utilising the Neo800 stereolithography technology to produce state-of-the art lens prototypes, One3D is helping automotive lighting system companies lead the way with future innovation and development.

### Prototyping

**Develop the latest lighting system applications, using 3D printed lens prototypes**

Companies within the automotive lighting system market are constantly developing the latest lighting system applications, using 3D printed lens prototypes to help development. One3D is 3D printing lens prototypes for companies such as HELLA, Varroc and rail vehicle parts developer MSV Elektronika. The companies use the lenses as a visual aid to confirm designs before going into large-scale production.

Traditionally lenses are produced by milling from PMMA (plexiglass) which could take approximately 3-4 weeks to finish, resulting in high lead times and production costs. Companies are moving away from PMMA and turning to 3D printing to produce new lens design

prototypes for future development and innovation concept projects. Thanks to 3D printing and Neo800 stereolithography technology, One3D can shorten the process to produce the lenses to only 3-4 working days. This offers greater cost and time savings for companies where lead time and budget are crucial when considering proceeding with production.

3D printing prototype parts offers more design freedom, allowing users to build lenses with highly intricate designs with higher accuracy and detail. Iteration of designs can also happen quickly compared to traditional methods of manufacturing where changes to moulds can be costly and time consuming.

## Technology

**One3D chose the Neo800 and DSM Somos WaterClear Ultra 10122 resin to produce quality transparent lens prototypes**

One3D chose the Neo800 and Somos® WaterClear Ultra 10122 resin to produce quality transparent lens prototypes for their customers. Due to design freedom offered by stereolithography technology and the Neo800, One3D can produce large parts with any geometry requested by the customer at a fraction of the cost compared to traditional prototype production. The ease of production, freedom of design and the removal of changing moulds for each iteration of design allowed One3D to provide their customers a better cost-per-piece ratio in small series over conventional manufacturing methods.

Somos WaterClear Ultra is an optically clear resin with ABS properties, perfect for applications requiring optical clarity, such as automotive lenses, bottles, fluid flow analysis, packaging, prototypes, light pipes and more. The raw parts produced from Somos WaterClear Ultra are sanded through different grits, then multiple layers of clear coat are applied to achieve transparency. Post processing takes up to 6 hours to produce quality parts with the highest optical clarity.

As the Neo800 3D printer builds parts top-down, there is less force affecting the printed part. One3D can optimise the part prior to printing by easily adjusting or removing supports where necessary. This makes it easier for technicians to post-process, which speeds up the prototyping production process. Optimising the part where necessary also allows One3D to avoid the positions of optical surfaces so they can focus on producing clarity and transparency.

The Neo800's large 800x800x600mm building platform offers users the ability to build larger parts without the need to cut. No cuts mean no gluing or imperfections, which in turn reduces post-processing times and results in lower costs.

## Results

**The Neo800 printer helped One3D produce large, state of the art lenses for customers leading the way within the automotive sector**



Reliable, easy to use and with functionality to produce outstanding parts with extreme quality and clarity, the Neo800 printer allows One3D to produce large, state of the art lenses for customers leading the way within the automotive sector.

**‘Stereolithography is a perfect solution for creating quality transparent pieces. It helps us to build any geometry that the customer can think of in a fraction of a time needed for conventional prototype production. Ease of production and freedom of shape (no need for changing the mould in each iteration of prototyping) gives our customers better cost per piece ratio in small series over conventional manufacturing methods.’**

**Ing. Tomáš Klempa**

One3D Technical Team Leader