

# 5-axis CNC machining: perfect realization of rapid prototyping of car lights

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CITY OF INDUSTRY, CALIFORNIA, UNITED STATES, February 26, 2021 /EINPresswire.com/ -- TikPrecision has the most advanced 5-axis CNC in the industry which can meet the precision five axis machining. Rapid prototyping of car lights is one of our main businesses.

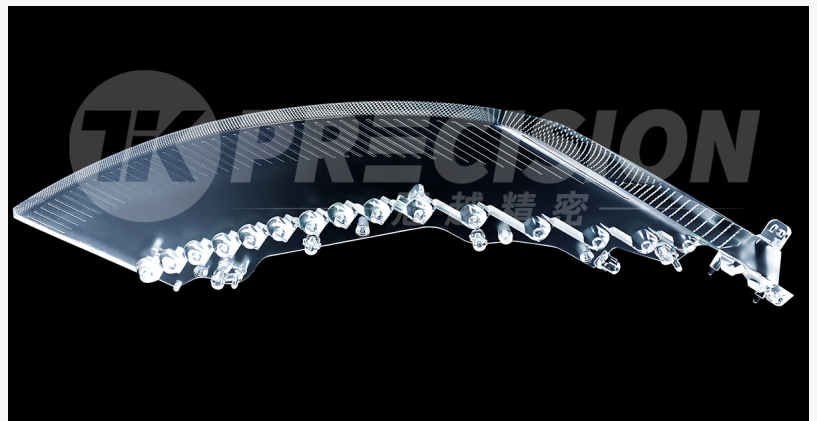
The company has a wide range of business, in addition to the rapid prototyping business of car light rapid prototyping; there are impeller turbines and other precision parts that need to be processed by five axles. The company's employees are dedicated, take pride in every job and feel honored to serve customers all over the world. We are honored to provide automotive lighting prototypes to thousands of customers around the world. Equipped with the latest technology, the company offers products in different designs and sizes to meet customer needs. It is characterized by its good quality due to the high quality guarantee and good after-sales service. With use, this product provides the best functionality.



car light reflector



Optical clear parts



Prototype light guide project

### [Car light rapid prototype](#)

Car light rapid prototype is an important part of the company's business. TikPrecision provides automotive lighting assemblies, including proof-of-concept design reviews and optical system development engineering testing, to demonstrate automotive projects. At the same time, our top professional manufacturers can also meet the needs of other customers, from lamp lens prototype to optical prototype. Support all levels of the automotive light development process.

### [Prototype lamp lens](#)

TikPrecision's prototype lamp lens is made of a special premium material. Both of these two materials belong to the category of optical plastics, and the product can be molded by injection molding, which can easily realize the light concentration of aspheric surface and reduce the phenomenon of yellow halo. But the penetration rate of PC and PMMA and glass, temperature resistance is less than the defects of glass materials; But PC and PMMA have significant advantages in terms of material and production cost;

### [Prototype light guide project](#)

Notably, TikPrecision's expertise covers comprehensive CNC machining, efficient segmentation and bonding solutions, and highly skilled hand polishing. For many of the company's technical business and prototype light guide project, the company adopts comprehensive processing technology, TikPrecision combination of three, four, five axis CNC milling machine, equipped with machine tools, the stroke of more than 1 meter. Therefore, it is easy to machine clean plastic parts without stains. Explore more prototype lamp lens projects. In addition, effective demarking solutions are also important. Split and combine solutions can address the cost savings and processing constraints. Visible adhesive wiring on acrylic surfaces can be invisible by applying a suitable splitting solution and a fine finish. To ensure the fine transparency of the automatic lens, TikPrecision performs a rigorous sanding process from coarse to fine, from polishing paste to polishing fluid, to achieve the highest lens transparency.

### Aluminum reflector

One of the highlights of TikPrecision is the CNC aluminum reflector. Enhancing the reflectivity, illumination intensity and light range is the key of automobile light reflector (reflector cup). Therefore, manufacturers use precision five-axis CNC machining equipment and high-speed cutting technology to manufacture aluminum reflectors with complex geometries. Similarly, attention to every engineering detail and design specification is a priority to help designers deal with every challenging project. Here's where TikPrecision has been successful in prototyping automotive lighting.

### Optical clear parts

In terms of optical clear parts, the company always insists on providing customers with a range of clear and transparent parts solutions to meet all requirements, including CNC machining, vacuum casting and rapid injection molding technology. Clear prototyping and optical prototyping mainly refer to the processing of clear acrylic acid (PMMA) and polycarbonate (PC),

which are selected for most applications to achieve a clear mirror effect. During processing we will take care of your transparent plastic parts and have the plastic knowledge needed to make the machine flawless. Optical clear parts polishing can be achieved on plastic parts by proper polishing methods. TikPrecision pays attention to every design detail. Optical pattern details are machined to a minimum radius of R0.10mm. The company offers excellent surface quality with a surface finish of Ra ( $\mu\text{m}$ ) 0.2 and a surface tolerance of  $\pm 0.025\text{mm}$ . In order to meet the overall machining requirements of parts, auxiliary EDM is needed. After highly professional hand polishing, the final reflector sample surface will have an optical mirror effect. Explore more prototype optical guided projects here. Skilled craftsmen with many years of experience are employed in this highly specialized process. Our pragmatic and flexible way of working enables us to fully support clear and optical prototyping development projects.

### Optical prototyping

The optical prototyping is mainly composed of three principles: Lamp Bezel—Light Guide—Light Blades. The diffuse light emitter as a universal optical design feature creates a three-dimensional impression of the radiation and ensures a high degree of uniformity of the illuminated surface. The 5-axis CNC continuous milling and mirror polishing technology provide excellent surface quality for the production of transparent acrylic (PMMA) prototypes.

The cylindrical light conductors, typically 7 to 10 mm in diameter, are CNC machined from PMMA or PC material in a single piece. The transmission of light through the total reflection results in very uniform linear illumination over the entire prismatic column. Attention to detail in every aspect of the complex optical design and the use of ultra-precision cutting technology and hair-thin tools breaks new ground in the production of automotive lighting prototypes.

Prismatic light conductors radiate LED light from the rear through the light guide to the front through total reflection, emphasizing the depth of the lighting system with additional lens structures on the sides. We specialize in the precision machining of complex surfaces, and support you with expert rapid prototyping to create intelligent and attractive innovative designs.

Tikprecision

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