



SHANGHAI OPTICS LENS SYSTEM DESIGN & ASSEMBLY

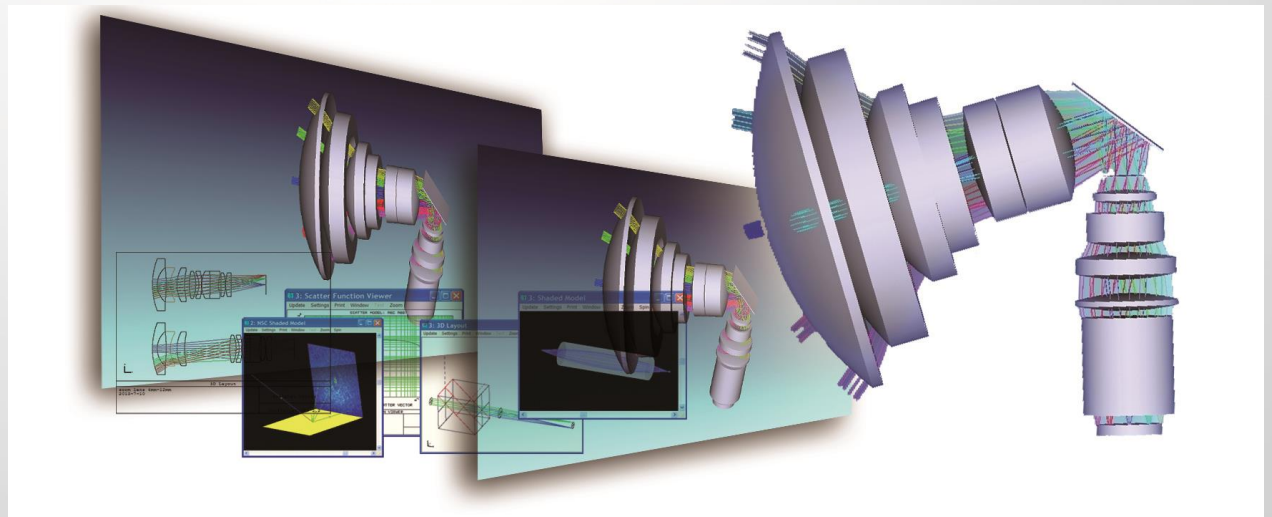
Our Customers

About 60% of our products are exported to Japan, United States, Germany, France, Australia and Spain. We are one of the leading optics suppliers in China.

Lens System Design

Shanghai Optics provides a variety of designs (imaging, illumination and opto-mechanical systems) for all different types of applications.

- Precision optical system design and optimization
- Powerful optical and illumination analysis
- Fully integrated system including CCD/CMOS and circuit board integration
- Timely communication with customers
- Capability to provide model light sources, mechanical parts, and optical components



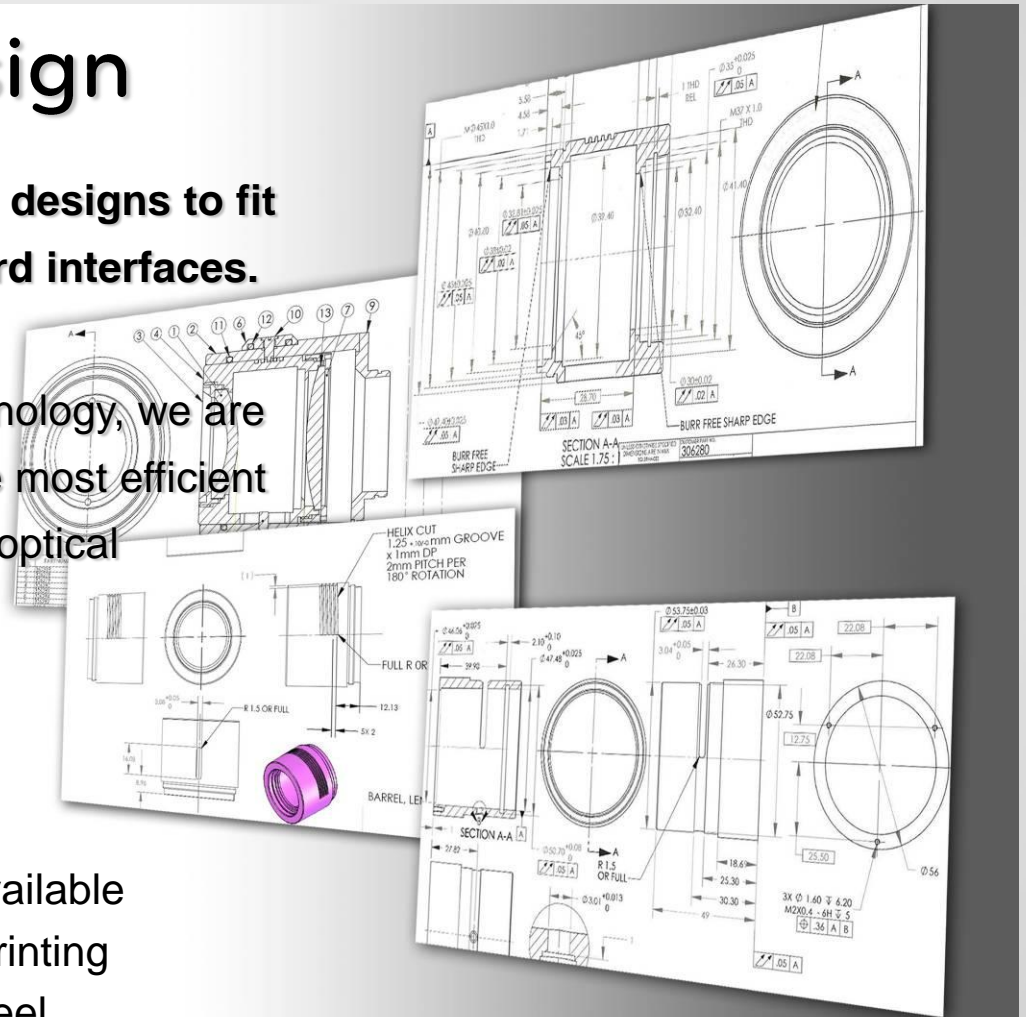
Lens System Design

Shanghai Optics offers mechanical designs to fit our customers' current and standard interfaces.

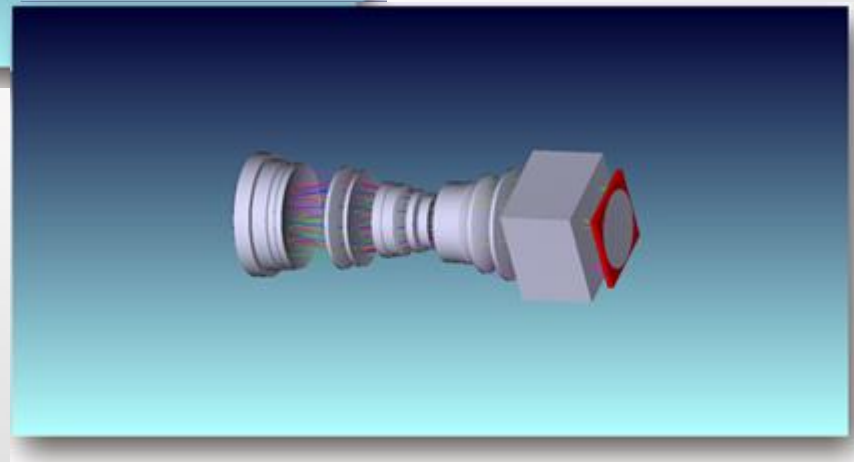
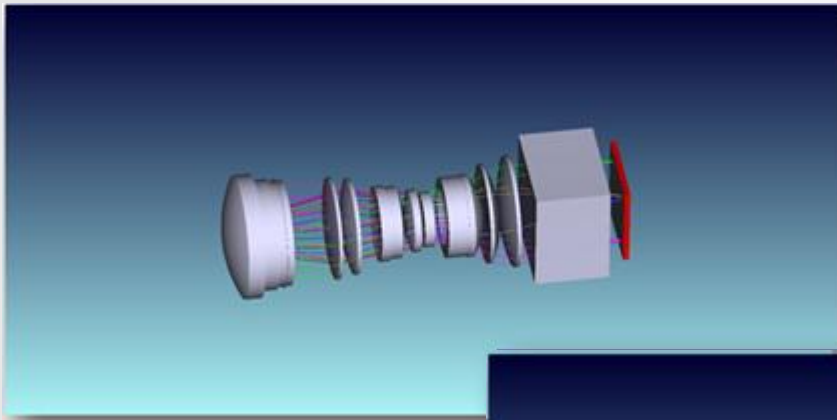
With second-to-none processing technology, we are confident in our ability to complete the most efficient mechanical design along with secure optical performance.

(3D projector metrology on site)

- Diameter tolerance: $\pm 0.025\text{mm}$
- Aperture tolerance: $\pm 0.020\text{mm}$
- Various outer surface finishing available
- Logo etching, curving, and pad printing
- Materials: aluminum, stainless steel

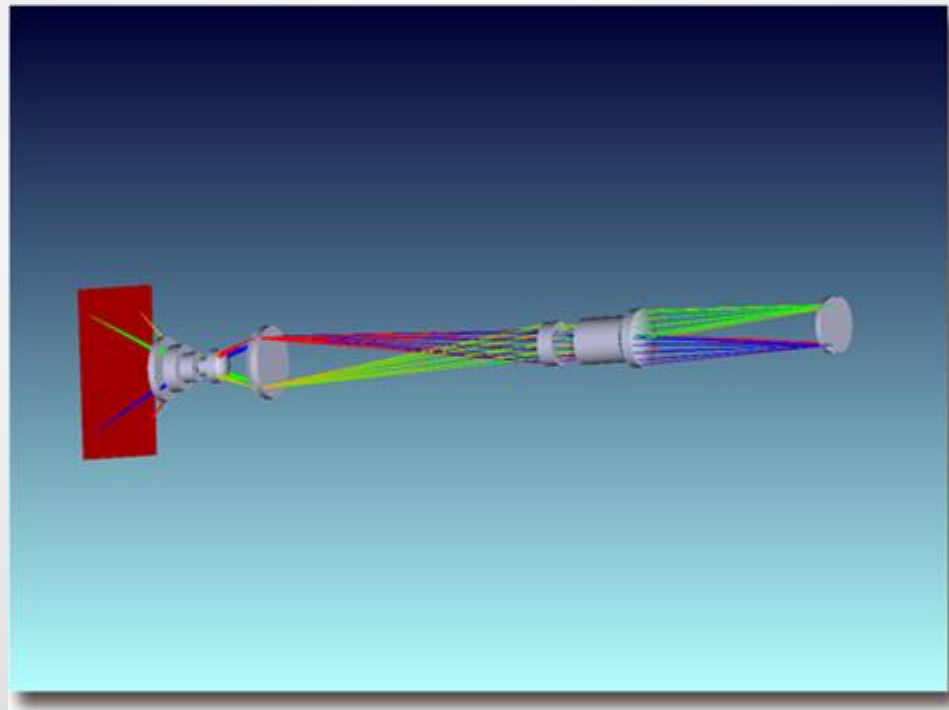


Lens Design Portfolio:



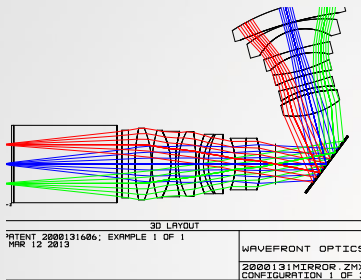
Projector Zoom Lens

Lens Design Portfolio:



Micro-Scanning Lens

Lens Design Portfolio:



Rear Bending TV Projector Lens

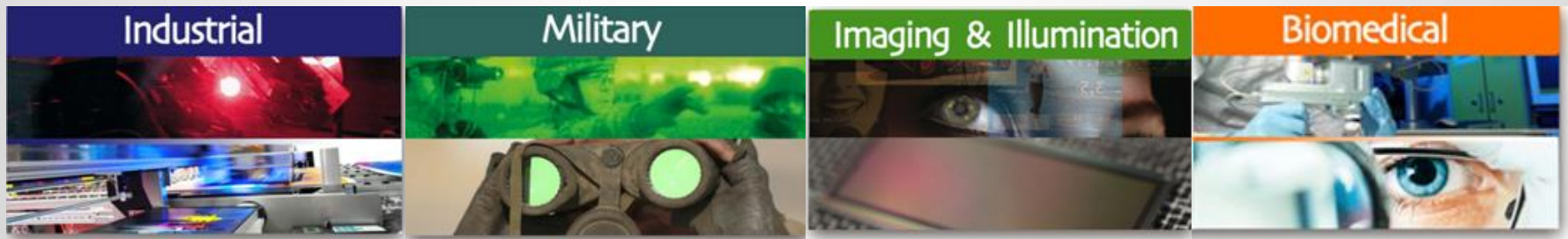
Vertically Integrated Capabilities

- Optical systems design
- Lens design
- Mechanical/Electrical/Systems design, modeling, and analysis
- Coating design
- Precision lens assembly
- Metrology including Zygo NewView, ZMI, VeriFire systems, Zygo proprietary distortion tester, multi-axis MTF (large aperture and multispectral), Aspheric null and metering mirror systems, vertical tower system test benches, CMM's, microscopes, autocollimators, spectrophotometers, profilers, and other advanced measurement equipment.



Lens System Assembly

Shanghai Optics offers a wide range of lens system assembly services covering visible to UV & IR wavelengths. We serve customers ranging from biomedical, imaging & illumination, to industrial and military applications. With extensive experience in manufacturing optical components, we have an excellent understanding between manufacturability and design expectations.



Lens Assembly

- **High Quality Manufacturing Capability**

With connections and support from domestic materials & accessories suppliers, SO can often propose affordable solutions without sacrificing performance

- **Ever-Expanding Metrology Capabilities**

SO is well equipped and constantly looking to expand its metrologies to ensure we can fully meet and measure our customers' specifications.



Capability Highlights

Large glass material inventories

We have over 800 types of glass materials in stock for daily usage. Special materials can be arranged per the customer's request.



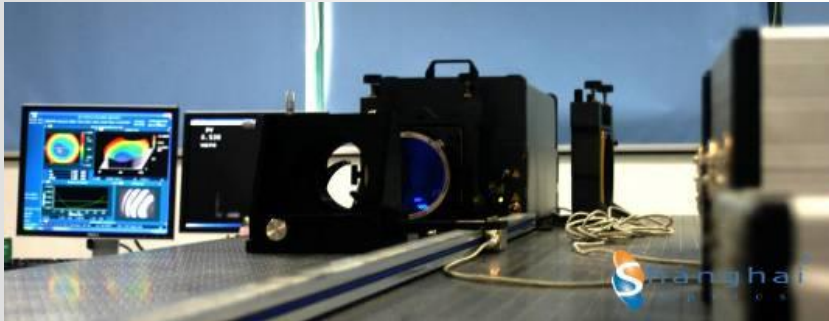
Capability Highlights

We have built up a collection of more than 5,000 types of high end test plates. They are all sorted and classified, ready for the customer's selection.

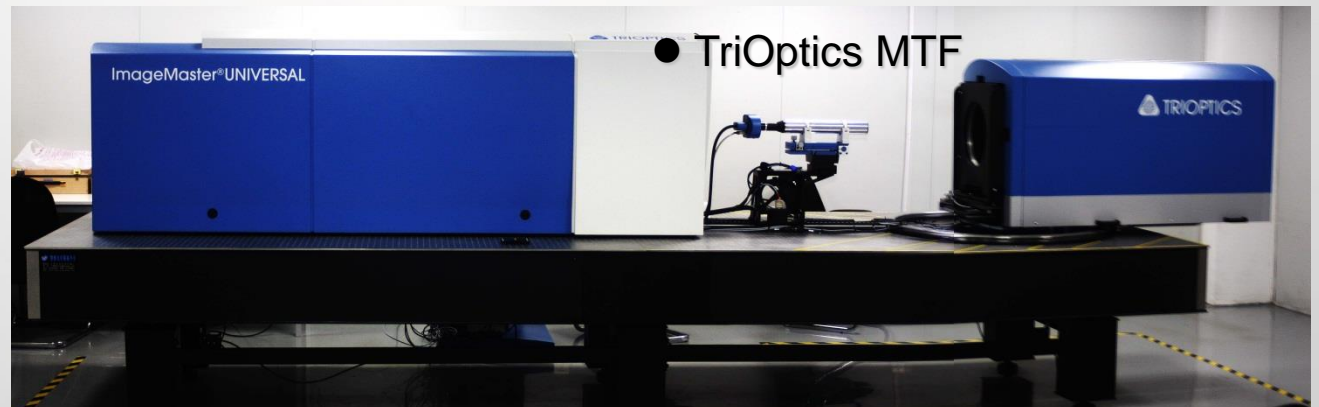


Metrology Equipment

- *Zygo Interferometer 6'*



- *Parallel photocell*



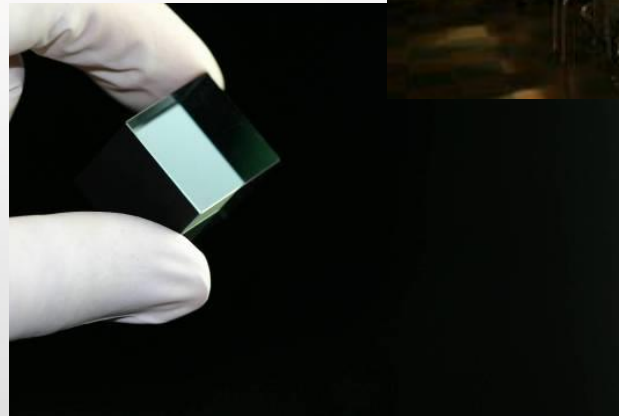
- *TriOptics MTF*

Metrology Equipment



Quality Assurance

- Shanghai Optics stands behind our products 100%
- All parts are under the comprehensive quality control system (ISO: 9001 & 14001 certified)
- 100% inspection of all parts
- State-of-the-art metrology equipment



Why Shanghai Optics

- Reduce risks associated with handling optics
- Reduce the potential distortion of optics within the assembly and ensure the optimal accuracy
- Inspect and test mounted optics



DFM Input from SO



The Cutting-Edge Advantages SO Offers:

- **Cost-Effective Philosophy**

Our experienced optical designers and engineering team can help you achieve the most cost-saving solution for your application.

- **System Optimization**

With over 55 years of manufacturing experience, SO can offer precise analysis to each single element in your system, preventing unnecessary specs that drive up the overall system cost.

Production Highlights

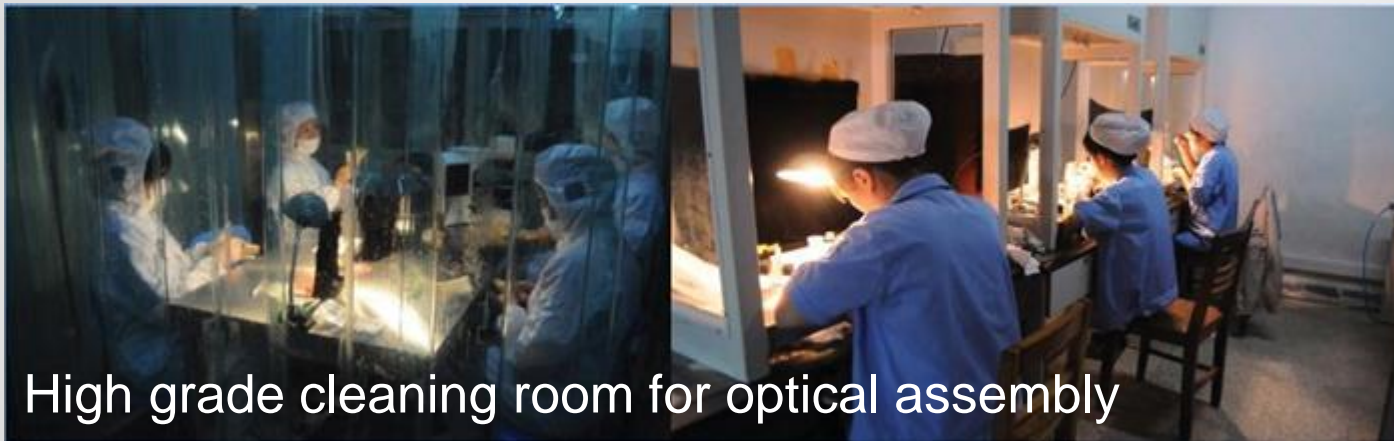


Production Highlights

Optical Assembly



Production Highlights



Thank you!

