Advanced Aspheric Lens Technology
中国超精密玻璃非球面透镜生产商

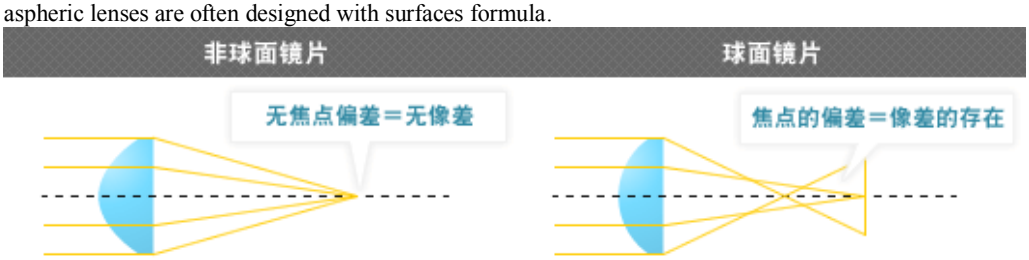
公司简介 COMPANY PROFILE

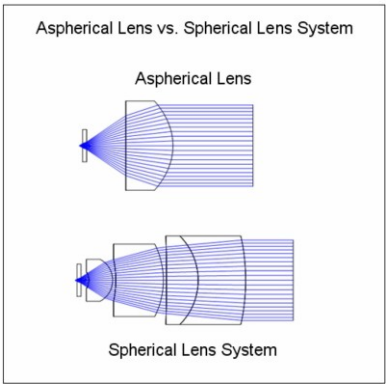
AISO中国国内有4家玻璃非球面合作公司。都是中国国内从事超精密模压玻璃非球面透镜的企业，主要包括精密光学元器件、玻璃非球面透镜的研发、设计、制造与销售服务。广东合作公司拥有厂房 2200 平方米，产品外径 0. 6mm～65mm，年生产能力超过 300 万片。
此公司专注非球面超过 9 年，引进日本非球面模压技术和设备，包括非球面模仁加工机、精密成型机、表面轮廓检测仪等设备，使得公司可以高效率、低本成生产非球面透镜。公司先后与日本，韩国，台湾，德国，美国等国家和地区的公司建立合作与交流。
AISO has 4 aspheric lens parter company in China, They are the professional manufacturer engaged in Ultra-Precision Molded Glass Aspherical Lens in Mainland China. The main business is the R&D, design, manufacture and sales on precision optical components, whose diameter rang 0.6~65mm. one of them has plants 2200m^2, and the annual production capacity is over 3 million pieces. This company focuse on aspheric over 9 years, imported aspherical technology and devices from Japan, including tooling machine, precision molding machine, surface measuring instrument etc. This company has capabilities to produce aspherical lens with high efficiency and low cost. At present, They has been building up the cooperation with companies in Japan, South Korea, Taiwan, Germany, and United States by now.

非球面透镜 ASPHERIC LENS

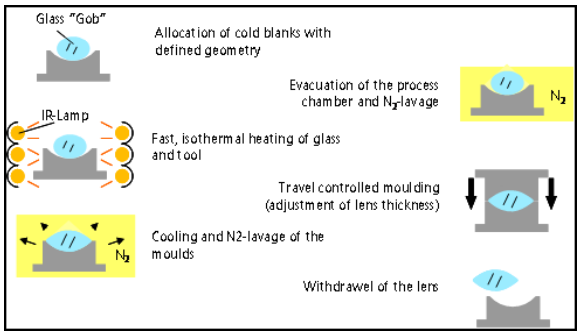
$$z(r) = \frac{r^2}{R\left(1+\sqrt{1-(1+\kappa)\frac{r^2}{R^2}}\right)} + \alpha_1 r^2 + \alpha_2 r^4 + \alpha_3 r^6 + \cdots,$$

非球面透镜是由非球面凹凸或平面的曲面组成的镜片，非球面公式如上。
An aspheric lens or asphere is a lens whose surface profiles are not portions of a sphere or cylinder. aspheric lenses are often designed with surfaces formula.





非球面透镜最大的特点就是至今为止的像差问题得到解决，因为通过的光量较多，无论多大的口径也没有像差。因此球面镜片需要 2-3 组合而成达到的效果非球面镜片 1 枚就可实现。这样，产品的小型化、轻量化乃至节省成本都变成了可能。
The biggest feature is that aspherical lens got rid of aberration, of which the problem in the past. For capturing intensity more, even though lens diameter is much bigger, this lens has no aberration. Thus, 2 or 3 spherical lenses were necessary to be combined in the past. But 1 aspherical lens is enough for solving this aberration problem now. As a result, compactness, weight saving, cost reduction become possible.

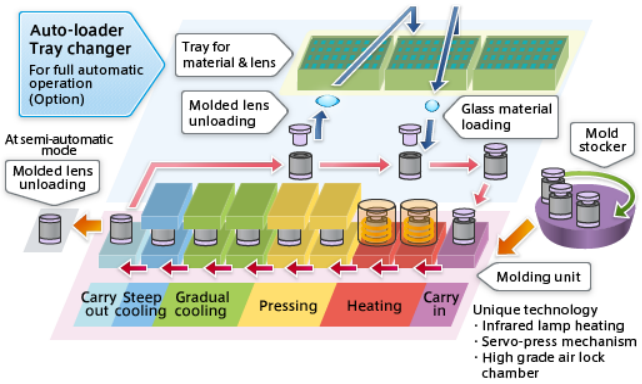


精密玻璃压型 PRECISION MOLDING GLASS

精密玻璃成型也称超精密玻璃模压，无需研磨和抛光，是生产玻璃高精密光学元件的复杂过程。它制造精密玻璃透镜用于消费产品和高端产品。这种机械化透镜生产的主要优点是，制造类似非球面的复杂几何形状透镜，可以节省成本、提高效益。
Precision glass moulding is a replicative process that allows the production of high precision optical components from glass without grinding and polishing. The process is also known as ultra-precision glass pressing. It is used to manufacture precision glass lenses for consumer products, and high-end products. The main advantage over mechanical lens production is that complex lens geometries such as aspheres can be produced cost-efficiently.

工艺流程 MOLDING PROCESS

装载硝材于模具。抽真空充氮气。模具和玻璃用红外灯加热。工作温度到达玻璃转化点与软化点之间，行程控制模具压制玻璃。当形成最终肉厚，切换为力控过程。模型完毕，镜片冷却取出。
The glass blank is loaded into the lower side of the moulding tool. Oxygen is removed from the working area by filling with nitrogen and/or evacuation of the process chamber. The entire system of mould, die and glass is heated up. Infrared lamps are used for heating in most systems. After working temperature between the transition temperature and the softening point of the glass, the moulds close further and start pressing the glass in a travel-controlled process. When the final thickness of the part has been achieved, the pressing switches over to a force-controlled process. After moulding completed and the lens cooled, removed from the tool.



网址：www.aiso-corpo.com

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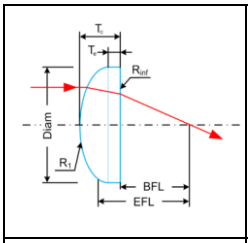
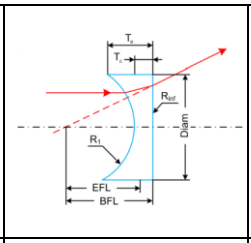
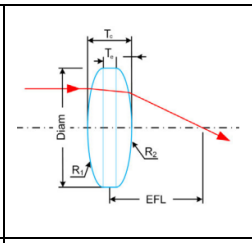
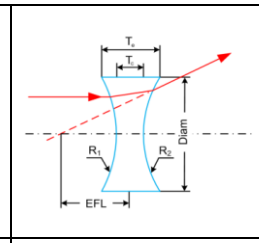
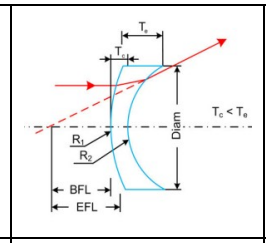
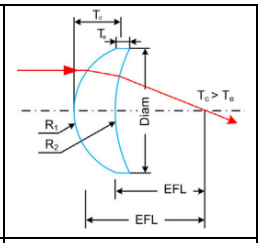
中国超精密玻璃非球面透镜生产商

产品介绍 PRODUCTIONS

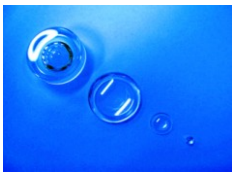
本公司可以提供完整系列的超精密模压玻璃非球面透镜，产品类型包括：平凸、平凹、双凸、双凹、弯月、自由曲面等透镜。光学透镜经过精密压型和测量，可以满足严格的应用要求，并广泛应用于成像系统、投影系统、CCTV 镜头、手机镜头、汽车镜头、激光准直、光通讯、传感器、医疗系统等领域。

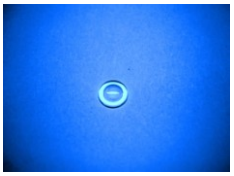
We can provide a complete line of ultra-precision molded glass aspheric lenses. The shapes of products include PLANO-CONVEX, PLANO-CONCAVE, DOUBLE-CONVEX, DOUBLE-CONCAVE, and MENISCUS, FREEFORM etc. The optical lens are molded by precision molding and measure, to meet demanding applications, which are widely used in Imaging Systems, Projection Systems, CCTV Camera, Cellphone Camera, Auto Car Camera, Laser Collimator, Optical Communications, Optical Sensor, Medical Systems etc.

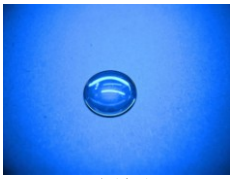
产品形状 SHAPES

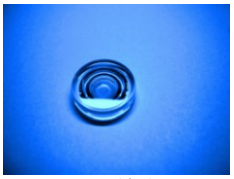
					
平凸 PLANO-CONVEX	平凹 PLANO-CONCAVE	双凸 DOUBLE-CONVEX	双凹 DOUBLE-CONCAVE	弯月 MENISCUS	弯月 MENISCUS

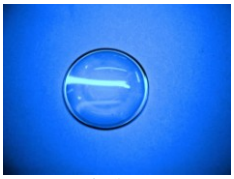
产品应用 APPLICATIONS


成像系统
Imaging Systems

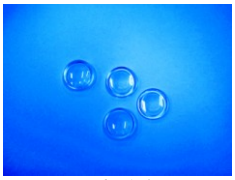

手机镜头
Cellphone Camera

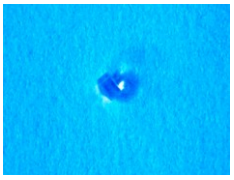

汽车镜头
Auto Car Camera

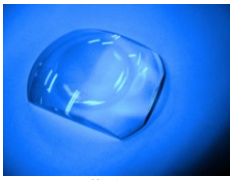

CCTV 镜头
CCTV Camera

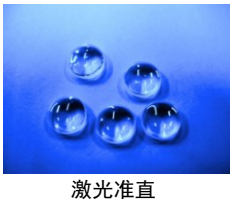

传感器
Optical Sensor

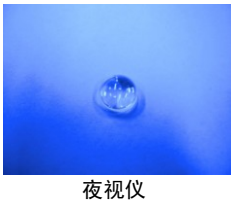

投影系统
Projection Systems

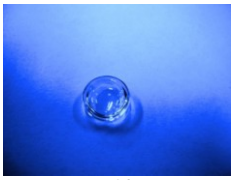

医疗系统
Medical Systems


光通讯
Optical Communications


瞄准器
Sighting Device


激光准直
Laser Collimator


夜视仪
Night Vision


LED 封装
LED Package

产品规格 SPECIFICATIONS

- 有效焦距(EFL)：+/- 1%
- 外径 (DIA)：+0/-0.02mm
- 通光口径：>=90%
- 中心厚度(CT)：+/-0.02mm
- 外观：60/40
- 表面精度：UA3P Design PV<1um, Bestfit PV<0.25um
- 偏心精度：1arc minutes
- 设计波长：380-1550nm

- Effective Focal Length (EFL): +/- 1%
- Diameter (DIA): +0/-0.02mm
- Clear Aperture: >=90%
- Center Thickness (CT): +/-0.02mm
- Cosmetics: 60/40
- Surface Accuracy: UA3P Design PV<1um, Bestfit PV<0.25um
- Centering Accuracy: 1arc minutes
- Designed Wavelength: 380-1550nm

加工能力 CAPACITY

Items	Concave and Convex			Double Concave			Double Convex			D-CUT Shaped		Special Shaped	
	0.6~5mm	5~20mm	20~60mm	0.6~5mm	5~20mm	20~60mm	0.6~5mm	5~25mm	25~65mm	5~25mm	25~65mm	5~20mm	20~65mm
PV Value	0.5um	1.5um	TBD	0.5um	1.5um	TBD	0.3um	1.0um	TBD	1.5um	TBD	1.5um	TBD
Irregularity	0.5 本	1 本	1 本	0.5 本	1 本	1 本	0.5 本	1 本	1 本	0.5 本	1 本	0.5 本	1 本
Roughness	0.005um	0.01um	0.02um	0.005um	0.01um	0.02um	0.005um	0.01um	0.02um	0.01um	0.02um	0.01um	0.02um
Surface S/D	40/10	40/20	80/40	40/10	40/20	80/40	40/10	40/20	60/40	40/20	60/40	40/20	60/40
AR Coating	0.5%	0.7%	TBD	0.5%	0.7%	TBD	0.5%	0.7%	TBD	0.7%	TBD	0.7%	TBD
Centration	60”	90”	120”	60”	90”	120”	60”	60”	90”	60”	90”	60”	90”

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