# CONTACT US
# 联系我们

好利莱光电
HLL PHOTO ELECTRICITY


manager@cnhll.com

http://www.cnhll.com

86-519-83408000

86-519-83200018

Address: No.10 wangcai road, Luoxi town, Xinbei district, Changzhou, Jiangsu, China.

地址：江苏省常州市新北区罗溪镇旺财路10号

# CHANGZHOU HAOLILAI PHOTO-ELECTRICITY SCIENTIFIC AND TECHNICAL CO., LTD.

## COMPANY INTRODUCTION

Founded in 1998, Changzhou Haolilai Photo-Electricity Scientific and Technical Co., Ltd. is located in national level High-tech Development District, Changzhou, Jiangsu ,China. It’s neighboring Shanghai-Nanjing expressway on the north, Changzhou high speed railway station on the east, Changzhou airport on the west. The company covers an area of 35,000m2 and has passed ISO9001:2015 , ISO14001:2015 system certifications,Intellectual Property Certification,Occupational health and safety management system certificateOHSAS18001 Etc.IATF16949 ,QC080000 and Secrecy certification is being certified.

As a High-Tech enterprise of Jiangsu province, HLL boasts a talent team with intensive experience and first-class technology . The company has established Jiangsu Precision Optical Lens Engineering Technology Center and Jiangsu Enterprise Technology Research Center and obtained 14 patents for inventions, 28 utility model patent and 8 Jiangsu High New Tech Product.



# 常州市好利莱光电科技有限公司

## 企业简介

公司成立于1998年，位于常州市（国家级）高新技术开发区，北靠沪宁高速公路，东临常州高铁站，西近常州国际机场，占地面积30000多平方米，并通过了ISO9001:2015、ISO14001:2015体系认证、知识产权认证；职业健康安全认证OHSAS18001、IATF16949 、QC080000和保密认证正在导入

公司是江苏省高新技术企业，拥有经验丰富、技术一流的人才队伍；建立了江苏省精密光学镜片工程技术中心、江苏省企业技术研究中心；拥有14项发明专利、28项实用新型专利、8个江苏省高新技术产品.

# 历史沿革
## COMPANY HISTORY

### 1998

HLL 公司成立，注册资本 2000 万元
生产球面透镜

HLL was established in 1998 with registered capital 20 million RMB , the company specialized for producing optical lens .

### 2006

产品生产线扩大到镜头
投入 3000 万元，新建 35000M2 现代化标准厂房
于 2006 年通过环评，投入使用
通过 ISO9001:2004 体系认证

Production line extend from lens to projective lens. Invest 30 million RMB to construct a 35000m2 new plant and move to the new plant in 2006 .
Certified by ISO9001:2004

### 2008

通过 ISO14001:2008 体系认证

Passed the Audit of ISO9001:2008 System

### 2009

申报 4-6 英寸蓝宝石衬底基片及其制备技术项目
被评为江苏省民营科技企业

Apply for 4-6 inch sapphire wafer and its manufacturing technology project.
Been identified as Jiangsu PrivateTechnology Company

### 2011

获得 5 项发明专利，1 项实用新型专利
2 个常州市高新技术产品
1 个江苏省高新技术产品
建立江苏省精密光学镜片工程技术研究中心

Obtained 5 invention patents, One utility model patent
2 new products been Identified as High-tech products of Jiangsu and 1 new product been identified as High-tech products of Changzhou.
Jiaungsu precision optical lens Engineering Research Center was established.

### 2012

获得 2 个江苏省高新技术产品
申报 2-6 英寸蓝宝石衬底片精密制造技术 - 市支撑项目
被评为江苏省高新技术企业

2 new products been Identified as High-tech products of Jiangsu
Apply for 2-6 inch sapphire wafer precision manufacturing technology project.
Been identified as Jiangsu High New Tech Enterprise.

### 2014

蓝宝石窗口片月产能 20 万片
获得 4 项江苏省高新技术产品
申报超光滑表面蓝宝石晶片半导体照明技术开发与应用 - 市支撑项目；
智能手机蓝宝石显示屏及窗口片精密制造研发 - 市支撑项目；
超硬、高韧性氧化锆陶瓷手机背板的研究与开发 - 市支撑项目

Produce sapphire wafer over 200 thousand pcs /month ;
Apply for the development and application of ultra-smooth surface sapphire wafer semiconductor lighting technology project ;
Apply for smart phone sapphire display screen and sapphire window precision manufacturing R&D project
Apply for the research and development project of super hard and high toughness zirconia ceramic mobile phone backplane.
4 new products been Identified as High-tech products of Jiangsu.

### 2018

扩大了蓝宝石晶圆生产线，新增了玻璃晶圆，石英晶圆生产
获得 1 项江苏省高新技术产品
申报大尺寸超薄半导体晶圆的联合研发 - 国际合作项目

Expand the sapphire wafer prodution and start produce glass wafer and fused silica wafer;
1 new product been Identified as High-tech products of Jiangsu;
Apply for joint research and development of large-size ultra-thin semiconductor wafers - international cooperation project.

### 2020

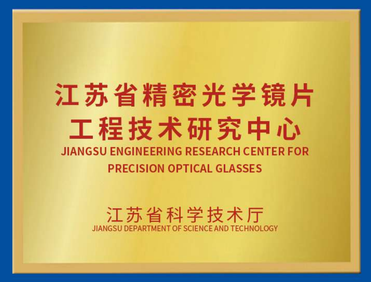
投入 3000 万元用于年产 120 万片光学半导体技术改造项目；
获得 1 项常州市高新技术产品；
申报大尺寸光学半导体晶圆的研发 - 市支撑项目

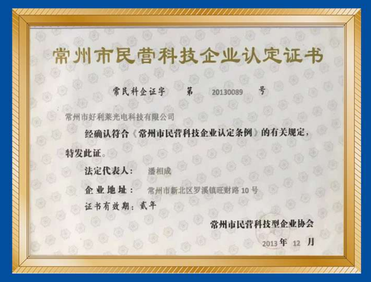
Invest 30 million RMB to new production based for producing optical semi wafer over 1.2 million pcs/Year.
1 new product been identified as High-tech products of Changzhou.
Apply for large size optical semiconductor wafer R&dDproject.

### 未来Future

聚焦激光光学、车载光学、半导体光学、消费类电子等领域，努力打造成为中国光学行业的标杆。
Focus on laser optics, auto optics , semiconductor industry and consumer electronics in the future.
Be the Optical industry trend setter of China.

# 公司资质
## COMPANY QUALIFICATION

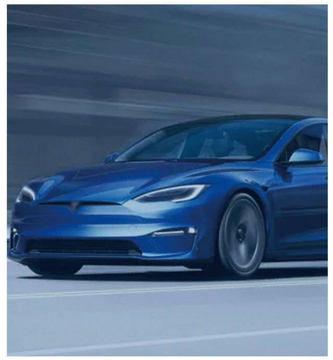


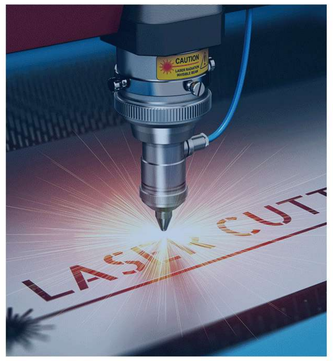
# 应用领域
## APPLICATION

公司产品广泛应用于消费类电子、激光光学、车载光学、半导体光学等领域
Our products are appplied for consumer electronics, laser optics
auto optics and semiconductor optics industry

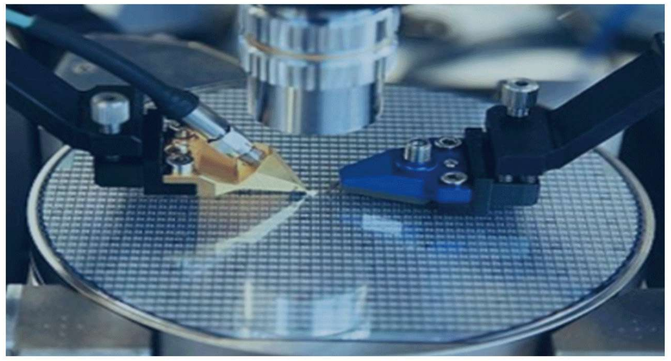
消费类电子
Consumer
Electronics



激光光学
Laser Optics



车载光学
Auto Optics



半导体光学
Semiconductor
optics

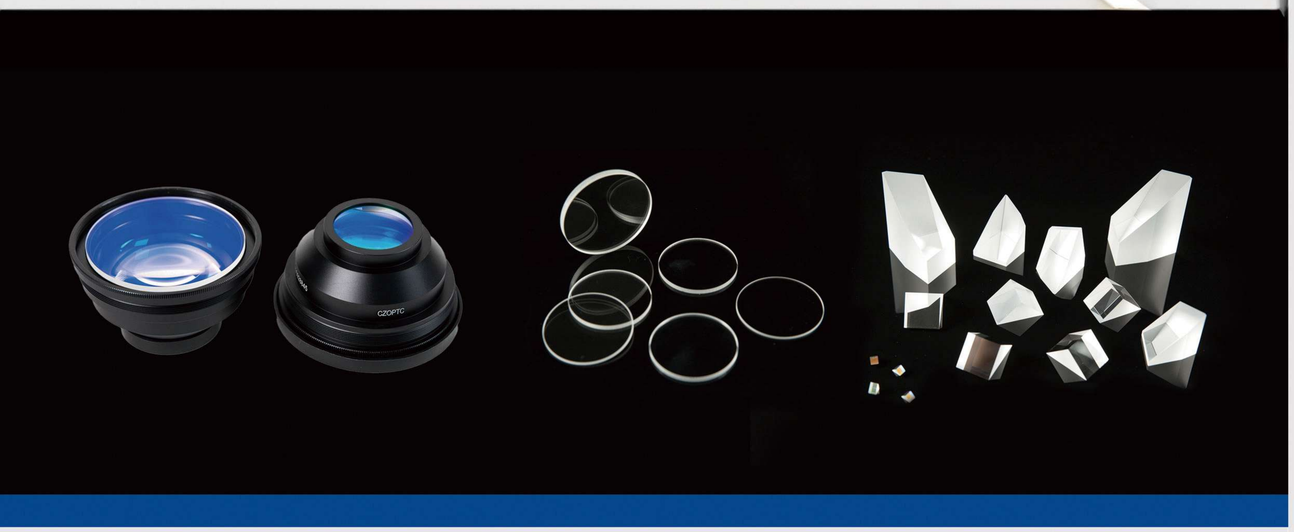


# 消费类电子
# CONSUMER ELECTRONICS

光学窗口片，蓝玻璃滤光片，微棱镜等产品，广泛应用于智能手表，手机摄像头，AR&VR 眼镜
Optical windows, blue glass filter and micro-prism been widely applied for smart watch , cell phone cemera , AR&VR lens Etc.

# 激光光学
# LASER OPTICS

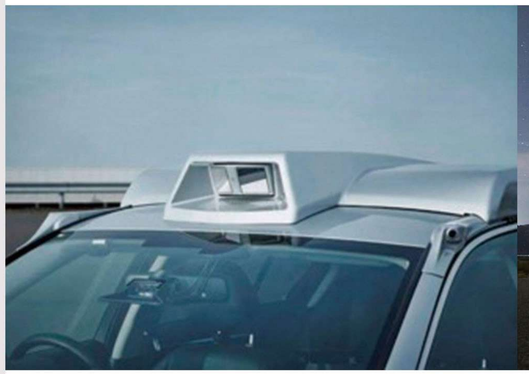
光学窗口片，棱镜等产品应用于各类激光器、激光模组。
Optical window and prism been widely used for laser device and laser module.

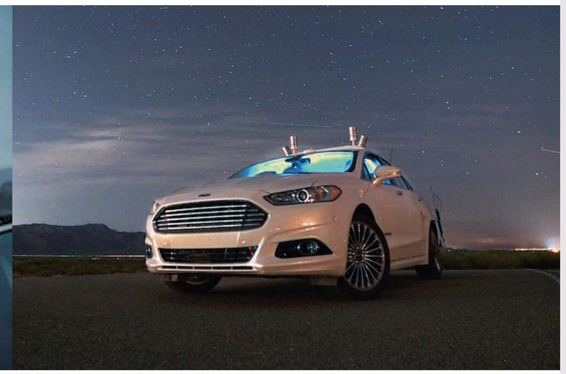




# 车载光学
# AUTO OPTICS

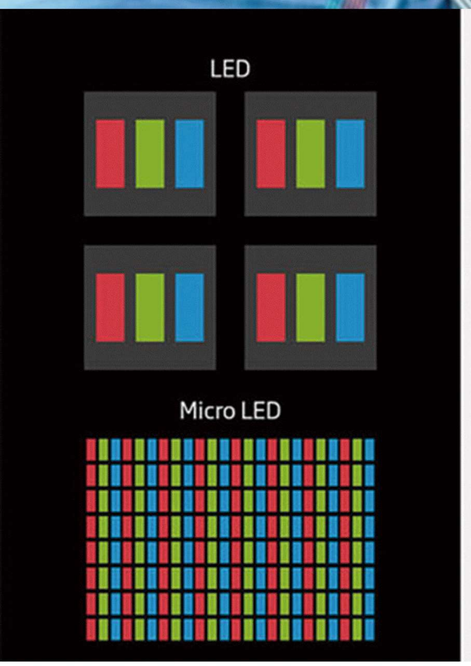
光学窗口、异形棱镜、透镜应用于车载激光雷达及车载摄像头 .
Optical window, customized prism and optical lens been widly used for Auto radar and auto camera.

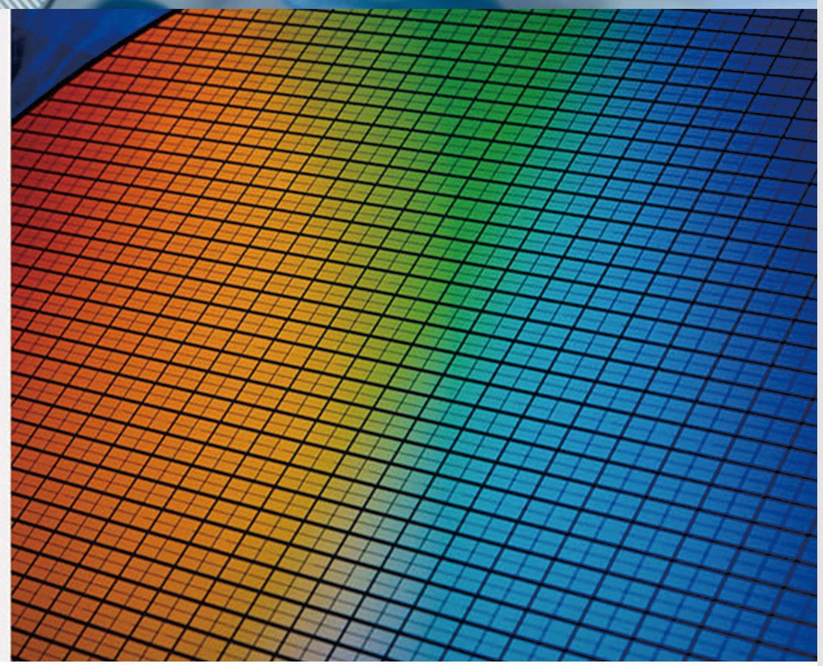




# 半导体光学
# SEMICONDUCTOR OPTICS

玻璃晶圆，石英晶圆，硅晶圆，玻璃通孔 TGV 广泛应用于半导体衬底和晶圆封装。
Glass wafer , fused silica wafer, silica wafer and glass wafer TGV used for semi carrier and wafer package.





# 主要产品
# MAIN PRODUCTS

01 光学窗口片 & 滤光片
Optical window& Color glass filter

玻璃晶圆 & 石英晶圆 & 蓝宝石晶圆
Glass wafer & Fused silica wafer
& Sapphire wafer 02

03 棱镜 Prism

透镜 & 镜头
Optical lens & projective lens 04

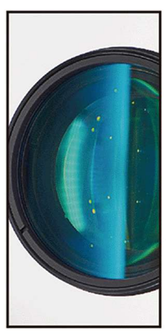
# 激光扫描场镜
# F-THETA LENS

精细的光学设计和制造
PRECISION OPTICAL
DESIGN& FABRICATION

HIGH STRENGTH ALUMINIUM
ALLOY LENS BARREL
高精度合金铝身

耐磨 DURABLE
耐热 HEAT-RESISTANT
耐腐蚀 CORROSION-RESISTANT

PRODUCT DISPLAY
细节清晰可见



# 激光扫描场镜参数
# PARAMETERS OF F-THETA LENS

| 产品编号 ItemNo | 波长 wave | 扫描范围 Scan area mm | 焦距 EFL mm | 入射直径 Extrance pupil dia mm | 光斑直径 Spot dia mm | 螺纹 Thread |
|---|---|---|---|---|---|---|
| 355-100-160 | 355 | 60x60 | 160 | 10(8) | 15 | M85*1 |
| 355-100-160B | 355 | 110x110 | 160 | 10(8) | 15 | M85*1 |
| 355-150-210 | 355 | 150x150 | 210 | 12(10) | 20 | M85*1 |
| 355-175-254 | 355 | 175x175 | 254 | 12(10) | 25 | M85*1 |
| 355-200-290 | 355 | 200×200 | 290 | 12 | 30 | M85*1 |
| 355-220-330 | 355 | 220×220 | 330 | 12 | 30 | M85*1 |
| 355-300-430 | 355 | 300x300 | 430 | 12 | 40 | M85*1 |
| 1064-60-100 | 1064 | 60x60 | 100 | 12(10) | 10 | M85*1 |
| 1064-110-160 | 1064 | 110x110 | 160 | 12(10) | 20 | M85*1 |
| 1064-150-210 | 1064 | 150x150 | 210 | 12(10) | 25 | M85*1 |
| 1064-175-254 | 1064 | 175x175 | 254 | 12(10) | 30 | M85*1 |
| 1064-200-290 | 1064 | 200×200 | 290 | 12(10) | 32 | M85*1 |
| 1064-220-330 | 1064 | 220×220 | 330 | 12(10) | 35 | M85*1 |
| 1064-300-430 | 1064 | 300x300 | 430 | 12(10) | 45 | M85*1 |
| 1064-450-580 | 1064 | 450x450 | 580 | 18(10) | 50 | M85*1 |

# 车载 / 安防镜头参数
# PARAMETERS OF AUTO LENS/CCTV LENS

| 产品编号<br>Item No | 靶面<br>Image format | 焦距<br>EFL(mm) | 光圈<br>FNO | 接口<br>Mount | 分辨率<br>Resolution | 红外共焦<br>Operation |
|---|---|---|---|---|---|---|
| Optc-3818015117IR | 1/1.7” | 3.8-18 | F1.5 | CS | 4K | YES |
| 0ptc-28F18127B | 1/2.7” | 2.8 | F1.8 | M12 | 3MP | NO |
| 0ptc-9101 | 1/4” | 1.25 | F2.0 | CS | 4K | YES |
| 0ptc-9102 | 1/4” | 0.95 | F2.0 | CS | 4K | YES |
| 0ptc-9103 | 1/4” | 1.27 | F2.0 | CS | 4K | YES |
| 0ptc-9104 | 1/4” | 1.2 | F2.0 | CS | 4K | YES |
| 0ptc-9105 | 1/4” | 1.27 | F2.0 | CS | 4K | YES |
| 0ptc-9106 | 1/4” | 0.81 | F2.0 | CS | 4K | YES |
| 0ptc-9107 | 1/3.2” | 1.66 | F2.4 | CS | 4K | YES |
| 0ptc-9108 | 1/4” | 1.18 | F2.5 | CS | 4K | YES |
| 0ptc-9109 | / | 1.52 | F2.4 | CS | 4K | YES |
| 0ptc-9110 | / | 1.52 | F2.4 | CS | 4K | YES |



## 安防镜头
## CCTV LENS

## 车载
## AUTO LENS

# 激光扩束镜头参数
# PARAMETERS OF LASER BEAM EXPANDER LENS

| 产品编号<br>Item No | 放大倍率<br>Magnification | 入射孔径<br>Input (mm) | 出射孔径<br>Output （mm） | 波段<br>Wave | 长度<br>Length | 最大外径<br>Max Dia （mm） | 传动<br>operation | 材料<br>Material |
|---|---|---|---|---|---|---|---|---|
| KS--001 | 1--4x | 1-14mm | 28mm | 532 | 131 | 40 | 手动 | 熔融石英 |
| KS--002 | 1--8x | 1-14mm | 36mm | 532 | 135 | 50 | 手动 | 熔融石英 |
| KS--003 | 1--4x | 1-14mm | 28mm | 1064 | 131 | 40 | 手动 | 熔融石英 |
| KS--004 | 1--8x | 1-14mm | 36mm | 1064 | 138 | 50 | 手动 | 熔融石英 |

# 激光准直镜头参数
# PARAMETERS OF BEAM EXPANDER LENS

| 产品编号<br>Item No | 入射光源<br>Light | 出射孔径<br>Output （mm） | 发散角<br>Divergence angle | 波段<br>Wave | 长度<br>Length | 最大外径<br>Max Dia （mm） |
|---|---|---|---|---|---|---|
| OPTC-2003 | 20° x 4° | 30mm | 5mrad | 950 | 85 | 42 |



## 激光扩束镜头
## LASER BEAM EXPANDER LENS

## 激光准直镜头
## BEAM EXPANDER LENS

# 光学透镜系列
# OPTICAL LENS SERIES

公司拥有较强的加工能力合和先进的工艺水平月生产能力达 300 万片
球面零件的加工口径范围 D2-D200，零件曲率半径范围 R1.9~R∞

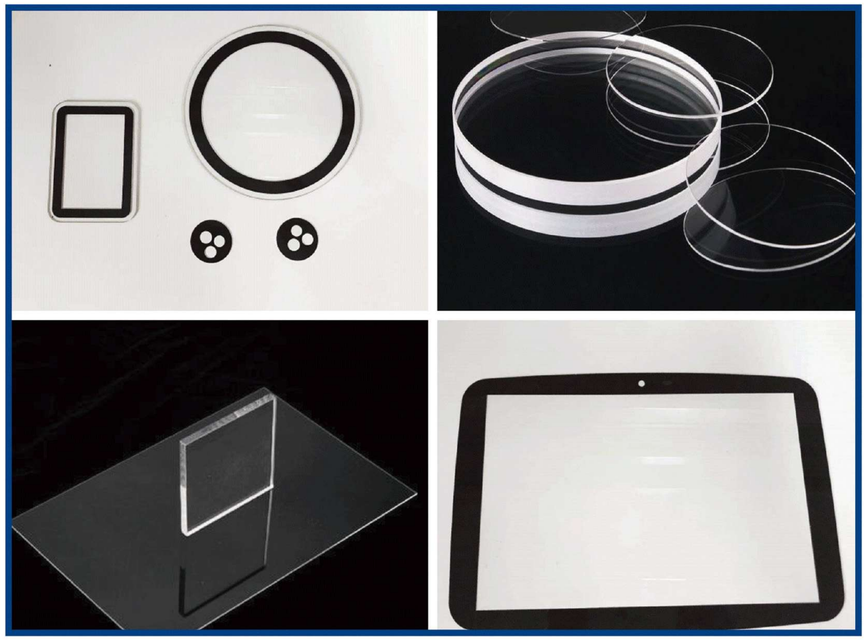
THE COMPARY HAS STRONG PROCESSING CAPACITY
(MONTHLY CAPACITY:300MILION PIECES)

AND ADVANCED TECHNOLOGICAL LEVEL.
THE PROCESS CALIBER RANGE OF SPHERICALPARTS Φ2-$200.
THE RANGE OF PART RADIUS OFCURVATURE: R1.9-R∞

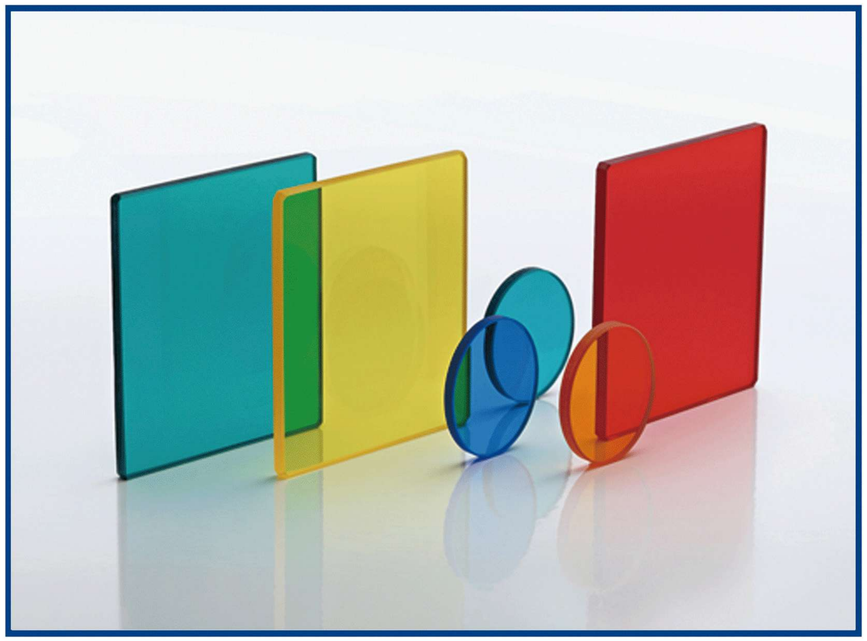


# 透镜生产线
# OPTICAL LENS PRODUCTION LINE

## 光学窗口片 Optical Window

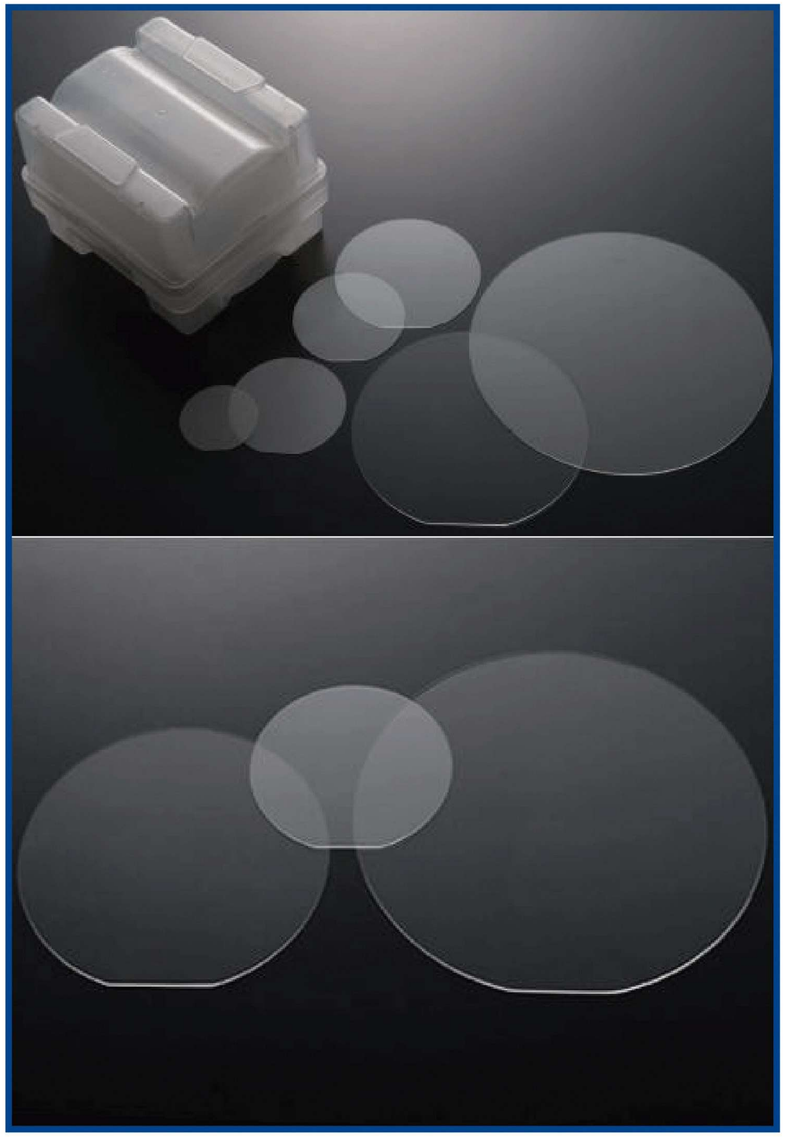


## 有色玻璃滤光片 Color glass filter



## 光学窗口片 & 有色玻璃滤光片参数
## TECHNICAL PARAMETERS OF OPTICAL WINDOW & FILTER GLASS

| 材　料<br>Material | 光学玻璃 ,蓝宝石，熔融石英，有色玻璃<br>Optical glass, Sapphire , fused silica，filter glass |
|---|---|
| 外形公差<br>Dimension tolerance | +/-0.03mm |
| 厚度公差<br>Thickness tolerance | ±0.005mm |
| 面　型<br>Flatness | ≤1/8λ，@632.8nm |
| 平行度<br>Parallelism | ≤1' |
| 光 洁 度<br>Surface quality | 5/10；20/10；40/20，60/40 |
| 有效孔径<br>Clear aperture | >90% |
| 镀膜<br>Coating | AR/AF/IR/dielectric film/metal film/laser film |



# 石英、玻璃、蓝宝石晶圆
# Quartz wafer & Glass wafer & Sapphire wafer



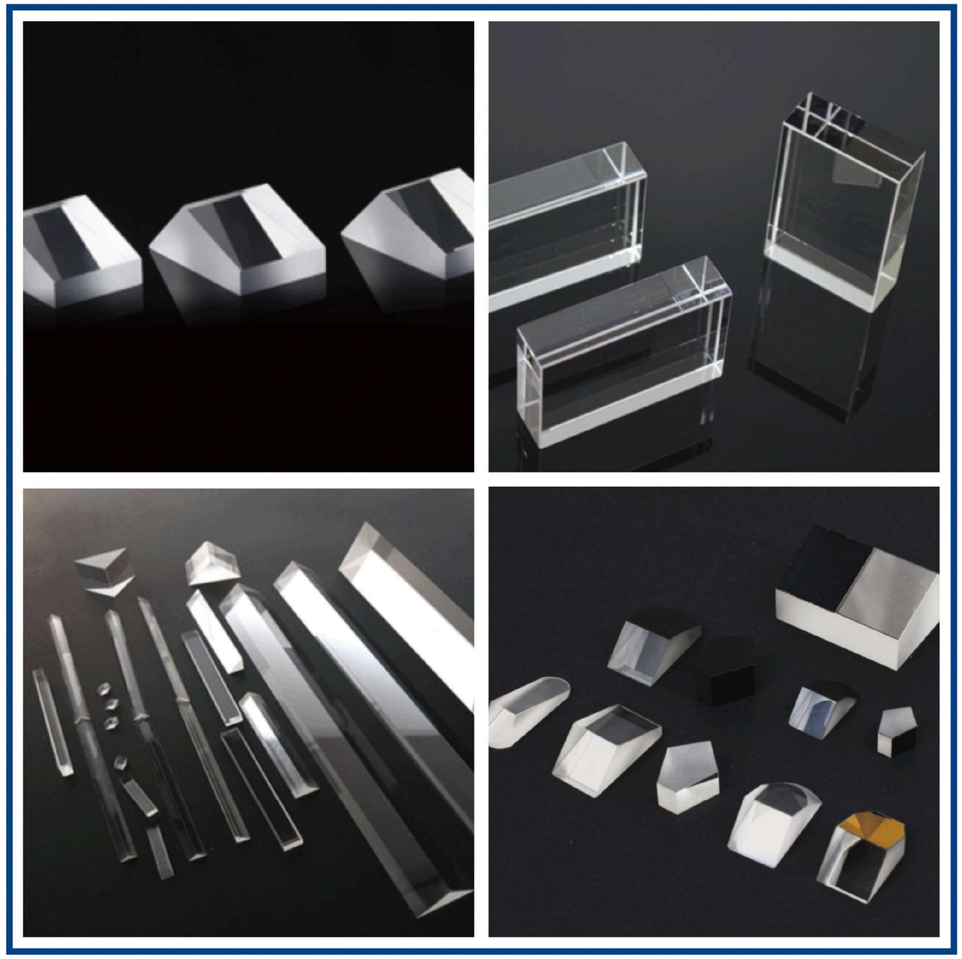
## 玻璃晶圆 / 石英晶圆
## GLASS WAFER/FUSED SILICA WAFER

| 规格<br>Property | 4 inch | 5 inch | 6 inch | 8 inch | 12 inch |
|---|---|---|---|---|---|
| 直径<br>Diameter | 100 ± 0.1 mm | 125 ± 0.1 mm | 150 ± 0.1 mm | 200 ± 0.1 mm | 300 ± 0.1 mm |
| 厚度<br>Thickness | 500 ± 5 um<br>或定制<br>or customized | 625 ± 5 um<br>或定制<br>or customized | 675 ± 5 um<br>或定制<br>or customized | 725 ± 5 um<br>或定制<br>or customized | 1000 ± 5 um<br>或定制<br>or customized |
| 粗糙度<br>Roughness | Ra ≤ 1 nm | Ra ≤ 1 nm | Ra ≤ 1 nm | Ra ≤ 1 nm | Ra ≤ 1 nm |
| 翘曲度 warp | ≤ 5 um | ≤ 5 um | ≤ 5 um | ≤ 5 um | ≤ 5 um |
| 平整度 TTV | ≤ 1 um | ≤ 1 um | ≤ 1 um | ≤ 1 um | ≤ 1um |
| 表面质量<br>Scratch/Dig. | 20/10 | 20/10 | 20/10 | 20/10 | 20/10 |
| 形状<br>Shape | 圆形, 带定位边, 带定位角Round, Flat, Notch | | | | |
| 倒边<br>Bevel | 45°, SEMI Spec; C Shape | | | | |
| 材质<br>Material | Corning, Nikon, Heraeus etc. Sodalime, Pyrex, Borofloat, Borosilicate (D263T),Corning eagle XG, BK7, and etc. | | | | |
| 备注<br>Remarks | 晶圆可定制<br>All specifications above can be customized upon your request | | | | |

## 蓝宝石晶圆
## SAPPHIRE WAFER

| 规格参数Property | 2 inch | 4 inch | 6 inch | 8 inch |
|---|---|---|---|---|
| 直径<br>Diameter | 50.8 ± 0.1 mm | 100 ± 0.1 mm | 150 ± 0.1 mm | 200 ± 0.1 mm |
| 厚度<br>Thickness | 430 ± 25 um<br>或定制<br>or customized | 650 ± 25 um<br>或定制<br>or customized | 1300 ± 25 um<br>或定制<br>or customized | 1300 ± 25 um<br>或定制<br>or customized |
| 粗糙度<br>Roughness | Ra ≤ 0.3 nm | Ra ≤ 0.3nm | Ra ≤ 0.3nm | Ra ≤ 0.3nm |
| 翘曲度<br>Warp | ≤ 5um | ≤ 5um | ≤ 5um | ≤ 5um |
| 总厚度偏差<br>TTV | ≤ 3 um | ≤ 3um | ≤ 3 um | ≤ 3 um |
| 表面质量<br>Scratch/Dig. | 20/10 | 20/10 | 20/10 | 20/10 |
| 表面状态<br>Polish | 双面抛光; 单面抛光<br>DSP (Double Side Polished); SSP(Single Side Polished) | | | |
| 形状<br>Shape | 圆形, 带定位边<br>Round, Flat | | | |
| 倒边<br>Edge Form | 45°,C Shape | | | |
| 材质<br>Material | 蓝宝石晶体<br>Sapphire crystal | | | |
| 备注<br>Remarks | 蓝宝石晶圆可定制<br>All specifications above can be customized upon your request | | | |

# 棱镜
# Prism

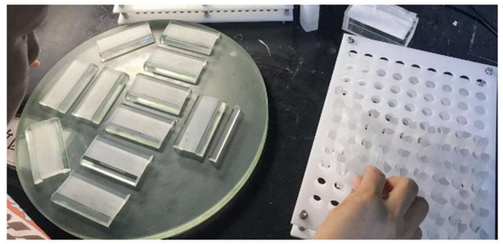


## 棱镜参数
## PRISM PARAMETERS

| 材　料<br>Material | 光学玻璃，熔融石英、蓝宝石<br>Optical glass, fused silica ,sapphire |
|---|---|
| 尺寸<br>Dimension | 2~420mm |
| 尺寸公差<br>Dimension tolerance | +/-0.01mm |
| 角度公差<br>Angle tolerance | +/-5" |
| 面型<br>Surface accuracy | N=0.5, △N=0.1 |
| 光 洁 度<br>S/D | 5/10；20/10；40/20，60/40 |
| 倒边<br>Chamfer | C0.1mm, 45° |
| 镀膜<br>coating | AR/AF/IR/dielectric film/metal film/laser film |

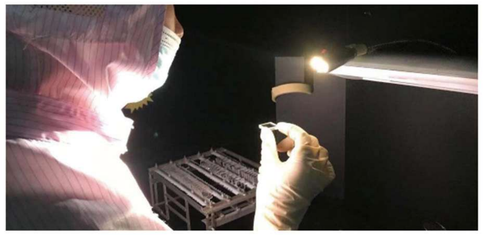
## 平面镜生产线
## PLANE OPTICS PRODUCTION LINE

## 棱镜生产线
## PRISM PRODUCTION LINE

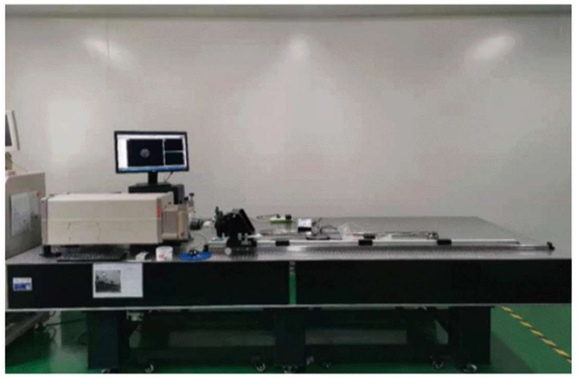


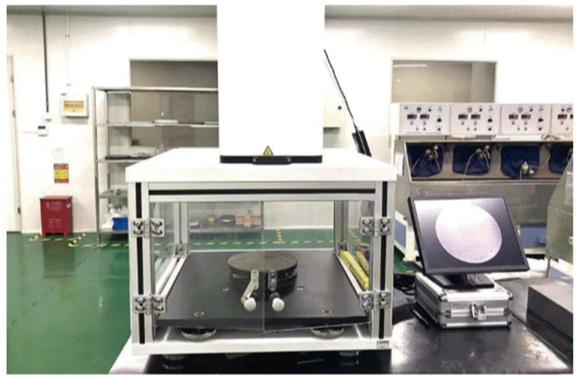
## 钢化 & 丝印 & 镀膜 & 贴合
## TOUGHENING&SILK PRINTING & COATING &BONDING

## 清洗 & 检验
## CLEANING& INSPECTION

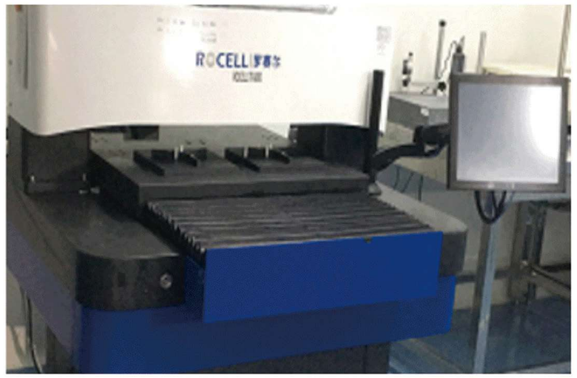


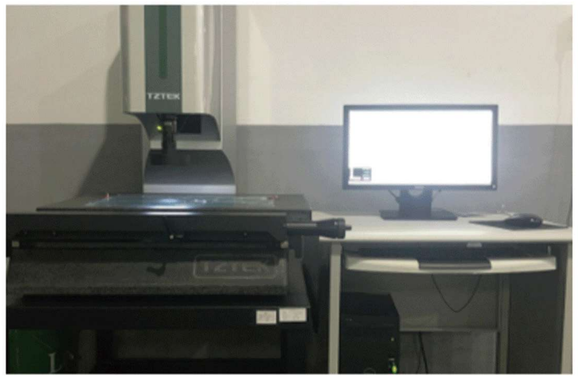
# 检测设备
# INSPECTION DEVICE

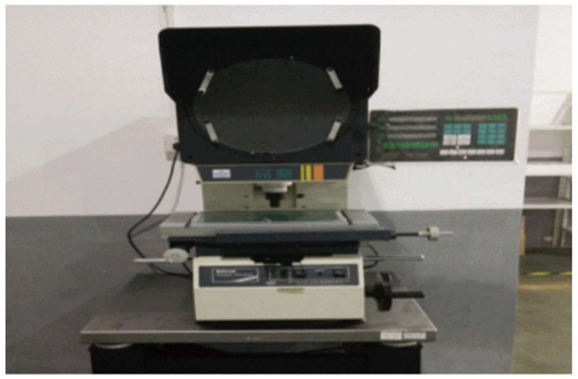




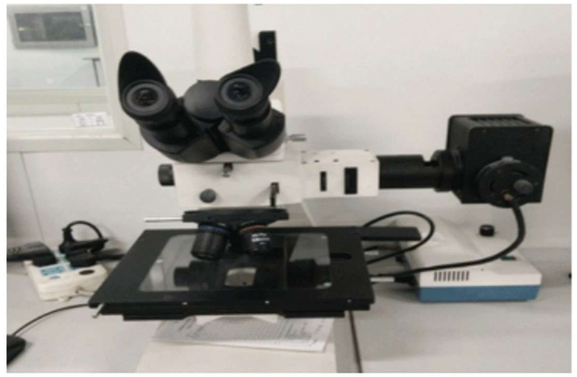
# 检测设备
# INSPECTION DEVICE

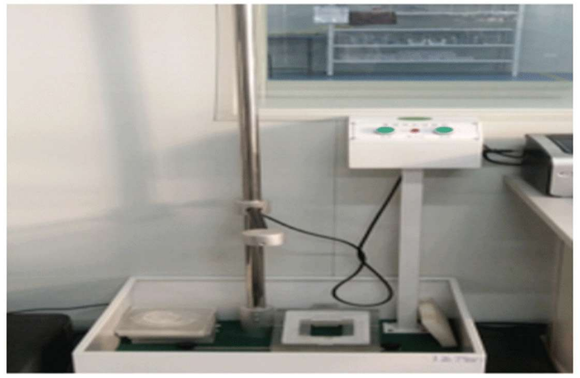




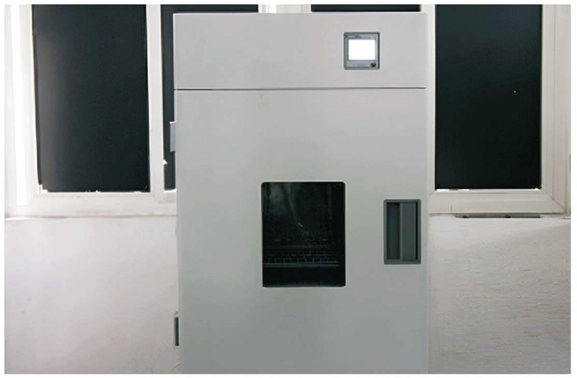



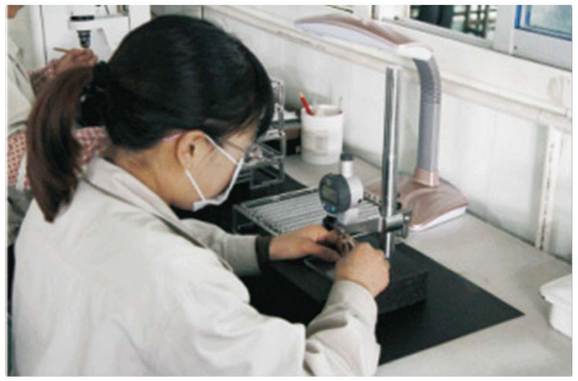
# 检测设备
# INSPECTION DEVICE





# 检测设备
# INSPECTION DEVICE





# 研发与创新
# R&D AND INNOVATION

未来，我们新的研究工艺和产品：高功率激光镜头，大尺寸超薄晶圆 , 玻璃通孔 TGV , 异型棱镜激光 / 化学蚀刻 , 光刻 , 镀膜（高功率激光膜，截止膜，介质膜，分光膜 )

We will focusd on R&D in new area in the future, product and technology which under the R&D covers High-power laser lens, fabricate large dimesion semi wafer, glass wafer TGV ,customized prism , laser etching ,chemicaletching Photolithography and coating, this may including high

**01**

高功率激光镜头
High-power laser lens

**02**

大尺寸超薄晶圆，玻璃通孔 TGV，异形棱镜
Large dimesion semi wafer,
Glass wafer TGV
Customized prism

**03**

激光 / 化学蚀刻、光刻
Laser etching
Chemical etching
Photolithography

**04**

镀膜（高功率激光膜、截止膜，介质膜，分光膜）
Coating for high power laser film , IR film, dielectric film and light-spliting film

# 业务分布
# DISTRIBUTION

公司先后开发了光学窗口片，半导体晶圆、有色玻璃滤光片、棱镜 , 镜头，镜片等产品。产品畅销国内外，出口欧洲（荷兰，瑞 士、德国）、美国、以色列、新加坡、马来西亚、台湾、日本、韩国等 20 多个国家和地区

Our products including optical windows, semi wafers, color glass filters ,prisms and optical lens, which has achieved a good sales record both in China and overses market, the products been exported to over 20 contries in EU, the USA, Japan, Isreal ,South Korea and South Asia Etc