



PARAGON TECHNOLOGY
(CHINA) LIMITED

晶石科技(中国)股份有限公司

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Paragon Technology Story

晶石科技传奇

The Beginning 创业故事

The inspiration for Paragon originated when the founder, Mr. LM Chan, noticed there was a lack of watch crystals manufacturers based in Hong Kong during the 1970's. He came up with the idea of a company designed to make a difference in the watch parts industry, by providing innovative and high quality products, as well as exceptional customer service. Through persistent efforts on technological development coupled with operational excellence, the company gradually expands its business scope and manufactures parts for 3C products in sapphire and various types of mineral glasses. Paragon has now become one of the leading watch crystal and 3C product manufacturers to provide effective "one-stop shop" solutions for customers worldwide.

上世纪70年代，钟表行业迅速发展，钟表配件市场却存有巨大缺口。创办人陈良美先生凭借敏锐的商业判断，创办「晶石光学」，从事手表镜片的研发及生产加工。同时，顺应时势的发展，运用长期积累的技术优势，开展各类以蓝宝石和普通玻璃生产加工的3C产品配件。多年来，在陈先生的带领下，晶石以创新科技和优质产品为基础，秉承“工匠精神”，坚持不懈的向客户提供优质产品及卓越服务。时至今日，晶石已成为钟表镜片的领导生产商及各类高性能3C配件的重要生产商，为世界各地客户提供广泛及有效的一站式服务。

Corporate Core Principles

To be a leading world class manufacturer of watch crystals and mobile phone covers, by providing innovative and high quality products, as well as exceptional customer service.

In Paragon, we strive for continuous improvement, because we believe that "Quality is our Future".

企業核心理念

“诚信务实，品质稳定，持续改进，顾客满意”

晶石科技以创新技术和优质产品为基础，并向客户提供持续的优越服务，致力成为世界顶级手表镜片和手机盖板的生产商，力求在光学领域做得更好，更专业。

About Paragon

企业介绍



Established in Hong Kong in 1979, Paragon Crystal & Optics Manufacturing Co. started as a manufacturer of crystal for watches. We now also manufacture optical products, such as window plates and covers for mobile phones, tablets, cameras, projectors, measurement equipment, etc. Our production plant in Dongguan has a wide range of in-house facilities which enable us to provide consistent and high quality products, as well as prompt and reliable delivery.

In order to meet our customers' and the market's ever-changing needs, Paragon offers vertically integrated manufacturing services, from product consultation, tooling production, prototype samples, efficient manufacturing processes to prompt delivery. Our production plant has a 36,000 square meters of factory floor space, including 4000 square meters of clean room, and an annual production capacity of 30 million pieces of mineral glasses and 6 million pieces of sapphire crystals. There are over 1,000 trained technicians and research team engineers, specializing in different disciplines. We have imported production lines, coating machines, measurement equipment and raw materials from international world-class suppliers to ensure stability of our product quality. In-house training, such as latest technological developments and requirements of worldwide standards, are also offered to our experienced engineers on a regular basis.

Paragon has been recognized as a "High Technology Enterprise" in 2016 and listed on the New OTC Board in China in April 2017 (Stock No: 871246). We continuously seek for improvement in quality and production efficiency. We have been accredited with ISO 9001:2015 and ISO 14001 assessment, and inducted Six Sigma in daily production.

By offering advantages in reliability, cost, and performance, we pride ourselves in customer satisfaction and the quality of our products and services. Our customers are widely distributed in Europe, Japan, USA and Asia.



晶石于1979年在香港成立。现厂房位于中国东莞市雁田区，建筑面积约36,000平方米，其中4000平方米设有千级及万级无尘车间。为了满足客户和市场需求，我司提供从产品概念设计、模具设计与制造、镜片加工、直至付运的一站式多元化服务。公司拥有多种现代化光学加工设备，更从日本、欧洲、美国等地引进高科技生产机械，全自动镀膜设备和检测仪器。晶石科技不但拥有一支经验丰富的专业技术团队，而且一直本着为客户提供优质服务及服务的原则在光学领域中不断向高新技术挑战。我司产品行销世界各地，已是多个著名品牌的指定供应商。

晶石科技于2016年被认定为国家级高新技术企业，并于同年11月完成股改，由有限公司变更为股份有限公司“晶石科技（中国）股份有限公司”。2017年4月，公司正式在新三板挂牌上市（证券简称：晶石科技，股票代码：871246）。

公司产品：

- 1) 表面玻璃：手表表面玻璃、蓝宝石镜片、康宁大猩猩镜片、纳米晶石镜片、日本旭硝子镜片、龙迹玻璃等
- 2) 3C产品：2.5D及3D手机盖板、智能手表表面、数码相机窗片及扫描仪窗片等
- 3) 光学产品：摄像头保护片、红外成像及感应光学元件、AR镀膜及各种光学镀膜服务
- 4) 其他类：耐汗/耐磨擦/防水镀膜镜片、金属/非导电镀膜镜片

生产能力：

玻璃制品每年产量达到3000万片，蓝宝石晶片每年产量达到600万片

品质方针：

“诚信务实，品质稳定，持续改进，顾客满意”

晶石科技已通过ISO9001:2015质量管理体系及ISO14001环境管理体系认证，并且实施6S管理以提高生产效率和保证质量。

Corporate Values 企业价值观



To Enhance Its Leadership Position In The Industry, Paragon:

- Strives for continuous improvement in technical and engineering capabilities to meet the customers' and market's ever-changing demands.
- Commits to provide the highest standard products, exceptional customer services and reliable delivery to worldwide customers.
- Fosters the latest trend through continual technological advancement and innovation.
- Endeavors for the highest level of operation efficiency and effectiveness through the induction of 6-sigma system in daily production.

为了提高晶石科技在光学领域的领导地位：

- 致力不断提升和改良晶片加工技术，以达到客户和市场的要求；
- 向世界各地的客户提供最优质产品，卓越的客户服务和准时安全付运；
- 不断提升工艺和发掘创新技术，以促进最新的科技趋势；
- 竭力达到最有效性和最有效率的产品加工，并严格执行6S管理及ISO品质管理。



"One-Stop Shop" Solution

To offer a more comprehensive and effective "one-stop shop" solution with full turnkey solutions and manufacturing services by expanding Paragon's business scope and operational scale at a steady growth rate.

一站式服务

在稳步增长的情况下，扩展晶石科技的营业范围和产品类型，以提供更广泛和有效的一站式服务，包括完整解决方案和加工服务。



Learning & Development

To provide a safe and rewarding working environment for our employees to achieve their career and personal goals.

培训和发展

晶石科技致力提供安全和有发展空间的工作环境，以协助员工实现职业和个人目标。



Environmental Sustainability

To achieve environmental goals by constantly reviewing and implementing sustainable development strategies in all production processes.

环境永续

长期审查和实施可持续发展的政策，努力改善及防止对环境做成污染和破坏，以达到环保目标。



Paragon Technology Team 晶石科技领导团队

Paragon is committed to providing the highest standard products and taking on arduous challenges. Therefore, we rely on a culture of leadership and diversity to drive innovation and productivity. Beyond the visible differences, our employees come from diverse background, with a wide array of personal experiences and points of view. These highly professional engineering and technical support teams have deep knowledge about our customers' specific needs, as well as strong expertise in customizing solutions to improve product yields and quality. Everyone's full engagement ensures that Paragon delivers on our mission in every part of our business.

全赖公司领导团队的无限创新能力和研发实力，晶石科技多年来不断提供优质产品，并勇于接受各种艰巨的技术挑战。我司的团队人员来自不同的专业背景，拥有丰富的工作经验和知识，为每位客户的需求而制定合适的解决方案。领导团队努力不懈的精神令产品的素质不断提升，扩大产能并缩短生产周期，确保达到“品质稳定，客户满意”的企业理念。

Advanced Manufacturing Technology 精密加工技术

Applications 产品应用方式



Mobile Device Applications

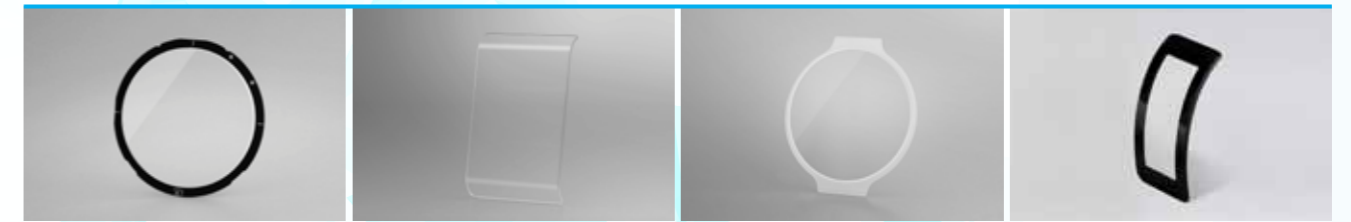
The implementation of advance technology and innovative design into 3C products (computer, communication and consumer electronics) have increased the worldwide demand for these consumer goods in the past decade. In order to meet the market's ever-changing needs, Paragon expands its business scope and manufactures high quality optical products, such as window plates and cover glass for mobile phones, smart watch, digital cameras and scanners.

移动装置应用

过去十年，先进科技和创新设计令全球3C产品 - 电脑、通讯及消费电子产品需求持续快速增长。为了满足和配合市场的趋势，晶石科技扩展光学领域，生产高品质光学产品，包括：3D手机盖板、智能手表镜片、摄像镜头保护片和扫描仪窗片等。



Smart Watch Cover in Corning Gorilla Glass
智能手表镜片 (强化玻璃系列)



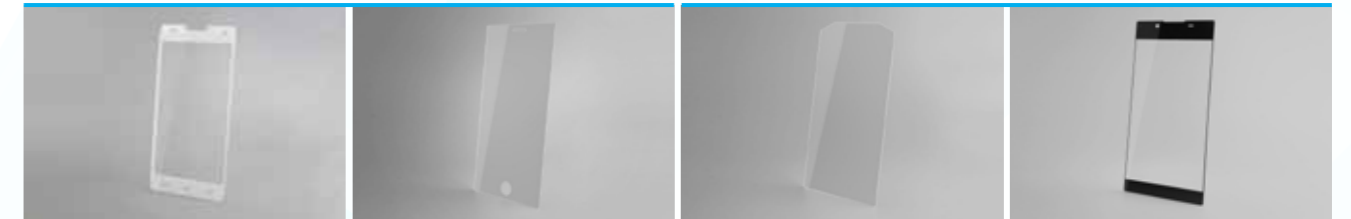
Smart Watch Cover in Sapphire
智能手表镜片 (蓝宝石系列)



Mobile Phone Screen Protector in Sapphire
手机屏幕保护贴 (蓝宝石系列)



Flat Mobile Phone Cover in Sapphire
平面手机盖板 (蓝宝石系列)



3D Mobile Phone Screen Protector
3D手机屏幕保护贴



3D Mobile Phone Back Cover Glass
3D手机后盖板



3C Products Cover Glass in Sapphire
3C产品窗片 (蓝宝石系列)

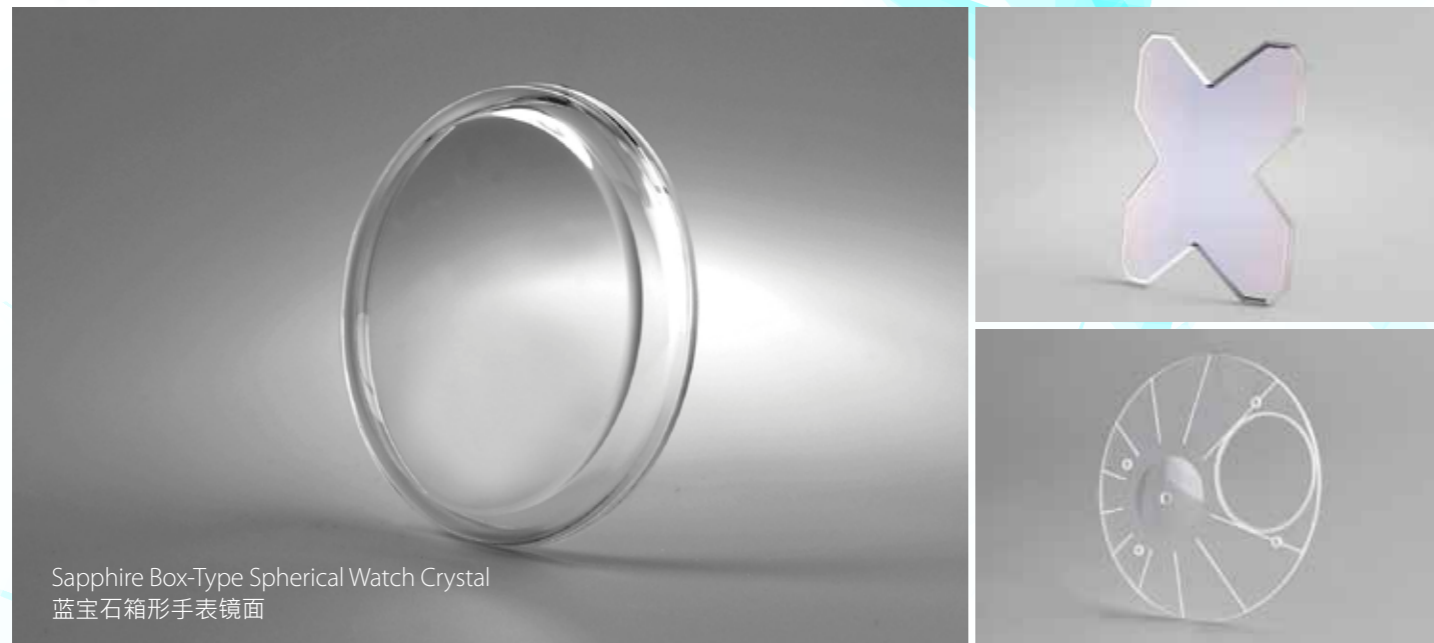


Camera Cover Glass & Cover Lens in Sapphire
摄像机窗片和镜头保护片 (蓝宝石系列)



Advanced Manufacturing Technology 精密加工技术

Applications 产品应用方式



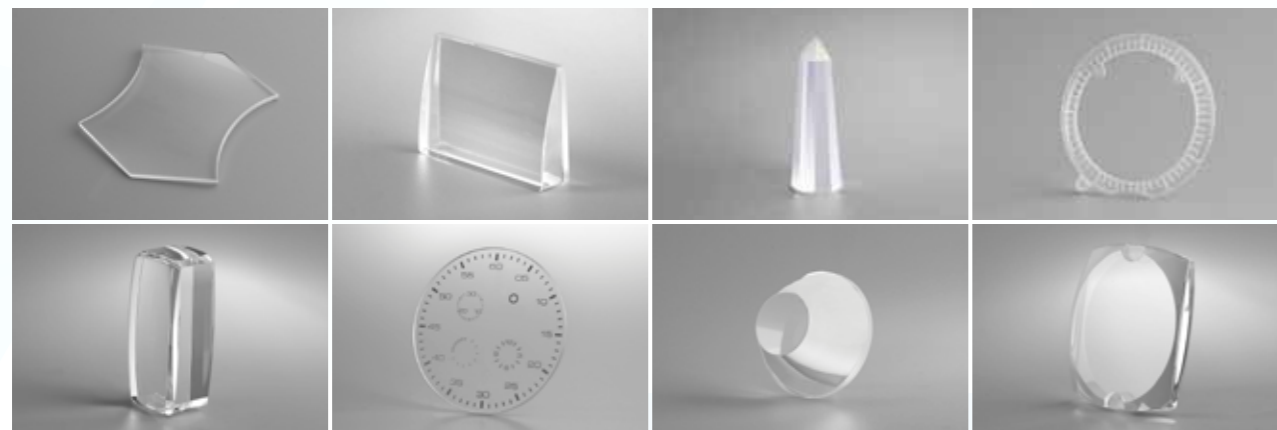
Watch Applications

Paragon manufactures high precision and quality watch crystals for over 35 years. We provide products in various shapes and materials and work closely with many internationally renowned luxury brands.

手表应用

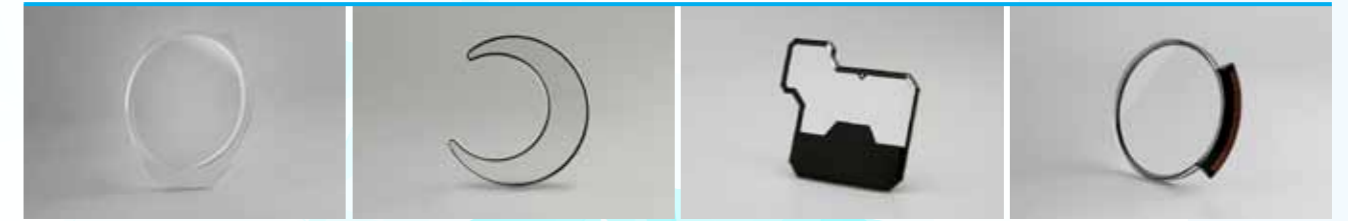
晶石科技拥有超过三十年的手表表面加工经验和技術，生产优质和高精度的各种形状表面玻璃和蓝宝石镜片，产品行销世界各地。

Sapphire Crystal & Parts 蓝宝石镜片及配件

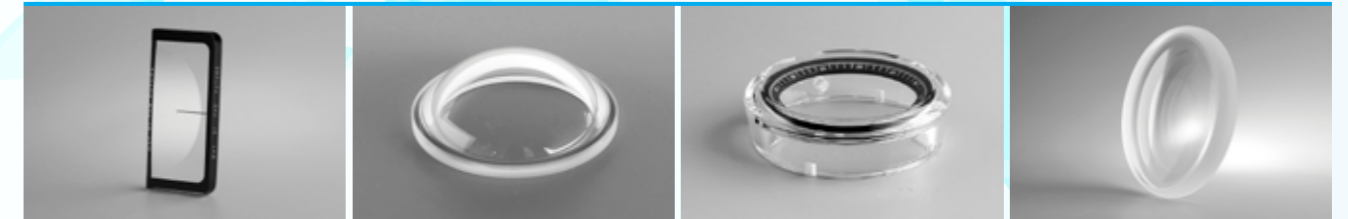


Mineral Glass Watch Crystals 玻璃镜片

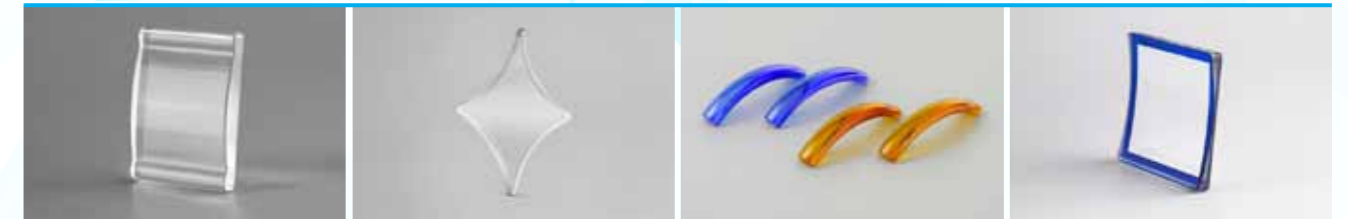
Flat 平面



Spherical 球面



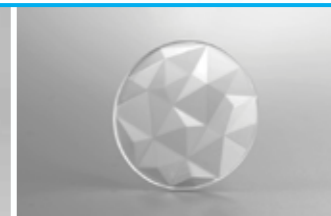
Cylindrical 桥面



Facet Cut 特殊切割



Heat Press 热加工



Watch Dial 手表表盘



Watch Case 手表表壳



Magnifying Lens & Cementation 日历晶及粘贴



Hole-Drilling & Other Products 钻孔及其他



Competitive Advantage

競爭優勢

Vertically Integrated
Manufacturing Solutions
一站式服務

Research & Development 研究和发展

Our Research & Development department consists of 1000 engineers and technicians. We constantly investigate new production method possibilities and continuously improve on our existing production technology. In addition, we provide new and creative solutions to meet our customers' special needs.

晶石科技拥有一支经验丰富和专业的团队，不断研发新的科技和加工方法，并提升现有的生产技术。我司凭着创新能力和研发实力，为客户解决设计上遇到的问题，更引领光学行业迈向新趋势。

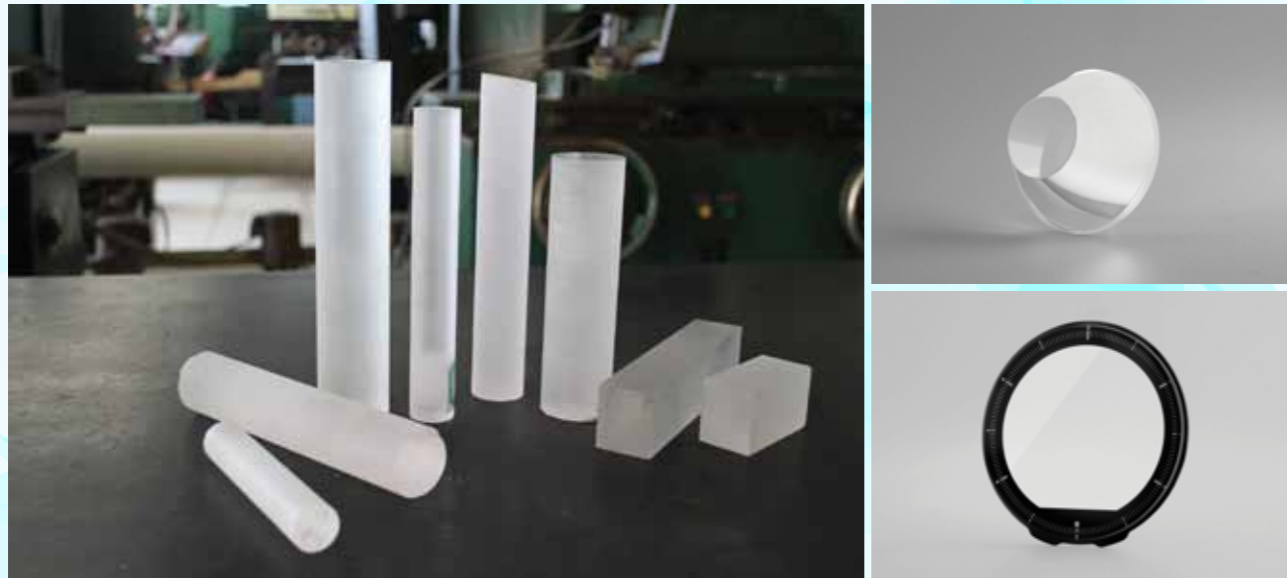


Material 原材料

The RoHS Directive and the UK RoHS regulations came into force on July 1, 2006. However, long before the international requirements were enforced, Paragon already ensured that the raw materials used for watch crystal production comes from reliable sources. The materials used in our production comes from renowned suppliers with proven technology and management systems, ensuring that our products are friendly to the environment.

为了保证质量稳定，晶石科技从世界各地顶级的供应商购买原材料，确保产品符合RoHS国际环保标准。

Sapphire 蓝宝石

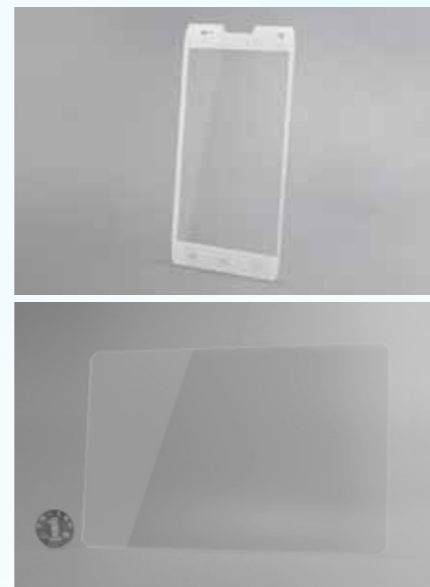


Due to its chemical, mechanical, optical and structural properties, Sapphire has been widely used for manufacturing watch crystals, mobile phone covers, and camera cover lens.

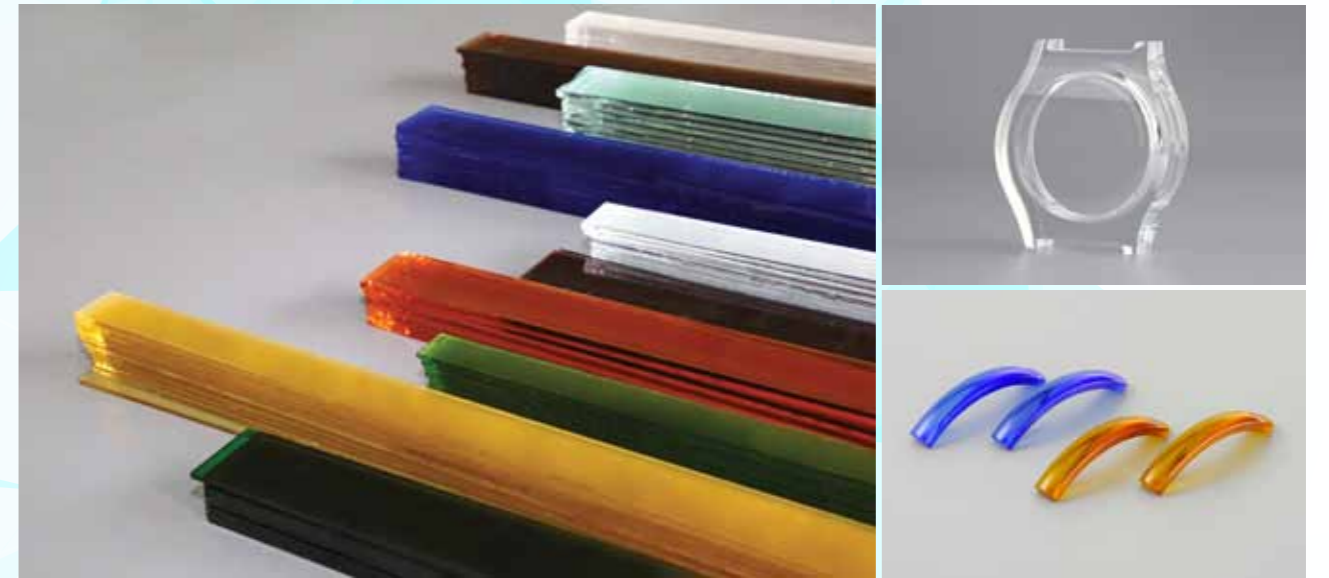
蓝宝石具有高硬度及不易磨损的特性，其良好的透光性，适用于高级品表面、手机盖板和摄像头保护片。

Technical Characteristics of Sapphire 蓝宝石属性

- Scratch-resistant with a hardness of 9 on the Mohs scale
硬度达到莫氏9级，拥有高硬度及不易磨损的特性
- High dielectric constant
高介电常数
- Good light transmission in the VIS region
良好的透光率
- Refractory temperature tolerance from within a few hundred degrees to its 2040°C melting point
耐热性高，熔点达到2040°C
- Excellent thermal shock resistance due to high strength and high thermal conductivity
高强度和高导电的特性令材质有抗热冲击性的功能
- High mechanical strength at high and low temperatures
在高低温度仍保持高机械强度
- Chemical resistivity stable in many acid environments at high temperatures
良好的化学性能
- High electrical resistivity
电阻系数高



Mineral Glass 玻璃



Paragon specializes in polishing glass for watches, mobile device, optical and other applications.

Chemically strengthened glass, such as Corning Gorilla Glass, Nanoceram, Dragontrail Glass and Asahi, are commonly used for the cover glass of portable equipment. These materials are stronger than conventional soda lime glass and are available in a variety of thickness.

We are equipped with production capability to meet our customers' requirements of using different materials in the optical industry and for other applications. These glass materials include Sodalime, B270, BK-7, K1, CX-01 and colored glass etc.

晶石科技的玻璃产品可应用于手表行业、移动装置、光学行业和其他类。移动装置配件可应用强化玻璃如：康宁大猩猩玻璃、纳米晶石、龙迹玻璃和日本旭硝子。这些物料除了硬度比一般的青料强，厚度亦可供多款选择。我司具有足够的生产能力去满足客户对不同原材料应用在不同行业的需求。我们还可以提供的材料包括：青料、B270、BK-7、K1、CX-01及各種顏色玻璃等。



Tooling Design & Fabrication 模具设计与制造

In order to provide a seamless manufacturing solution to our customers, Paragon is fully equipped with CAD/CAM system to produce high precision tooling to support the operation needs. These tools are designed, developed and fabricated by a team of experienced and skillful toolmakers.

Our in-house tooling design and fabrication capabilities reduce the overall manufacture lead time and enable our customers to meet the demands of the competitive market with flexibility.

晶石科技具备高端CAD/CAM设备，为各款各样的产品制订专有的精密模具，以满足产品的不同要求，并为客户提供一个更全面的一站式服务。这些模具由我司的专业工程师负责设计、开发和制造，大大减少生产时间，令客户可在现今竞争力强大的市场上有更多的优势。



Lapping Machines
研磨机

Paragon strives for the highest level of operation efficiency and effectiveness by using imported and in-house designed machineries during the production processes. We believe that the continuous improvement in technical and engineering development will help maintain high quality and precision products for our worldwide customers.

为了达到最高的生产效率和效能，晶石科技从世界各地引入高科技生产设备，并聘请专业人员开发新的机器和技术，以保持品质和精准度达到标准。

Production facilities include: 生产设备包括：

- Polishing and lapping machines
研磨机和抛光机
- 3D heat press machines
3D热弯机
- CNC machines
数控机床
- Sapphire slicing machines
蓝宝石线切割机
- Laser cutting machines
镭射激光机
- Sputtering coating machines
溅射镀膜机
- Crystal-gluing facilities
晶粒粘贴设备
- Hole-drilling facilities
钻孔设备

Surface Treatment 表面加工处理

To provide a more comprehensive "one-stop shop" solution to our customers, Paragon offers various types of surface treatments to meet the market demand. Besides using advanced equipment to maintain the product quality, our skillful technicians also receive regular training on latest technological developments to keep adequately informed with the trend. We are equipped with several multi-layer coating and single-layer coating machines imported from Japan.

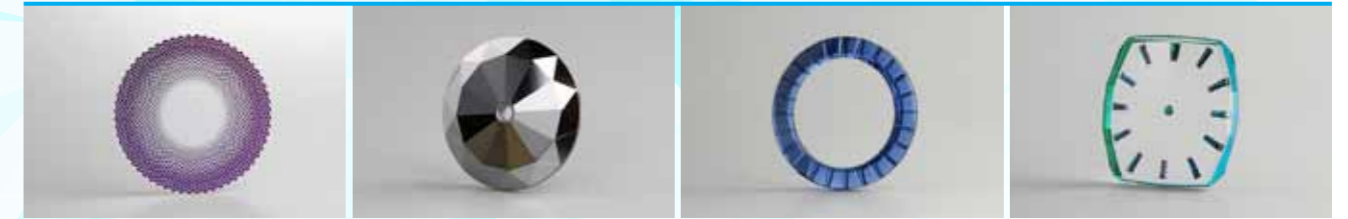
晶石科技从日本引进全自动双层和单层镀膜设备，提供多种表面加工处理来迎合市场不同的需求。我们采用先进高端的科技、设备和检测仪器进行加工处理，亦向工程人员作定时技术培训以便紧贴市场趋势。



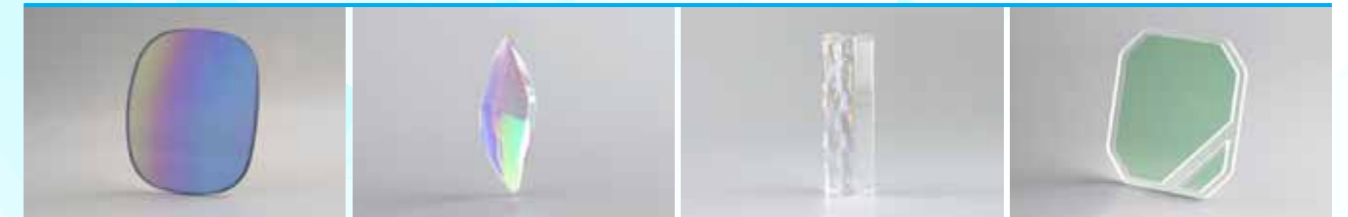
Silk Screen Printing 丝印



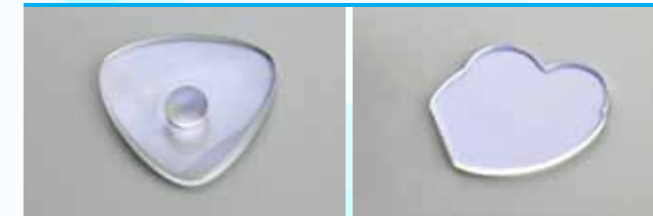
Metalization Coating 电镀



Dichroic Coating 幻彩电镀



Anti-Reflection, Sweat, Scratch and Water Resistant Coating 抗反射、耐汗、耐磨擦、防水镀膜



Quality Control 品质管理

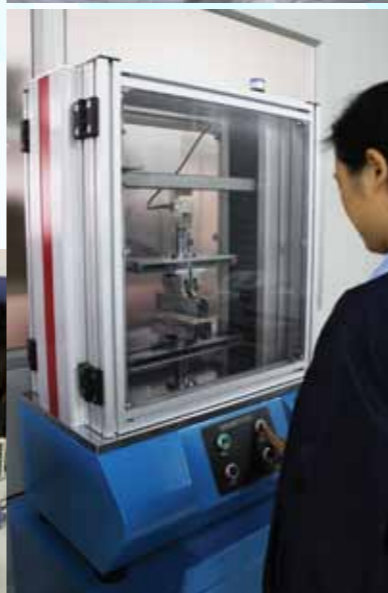
To enhance its position as a leader in the industry, Paragon continuously seeks for quality control in our production processes. Our factory floor space includes 4,000 square meter of class 1000 and class 10,000 cleanroom. These controlled spaces, where surface treatment and silk screen printing procedures take place, minimize products from air contamination and ensure consistent quality throughout the manufacturing processes.

In addition, a wide range of advanced measuring facilities are implemented to ensure our customers' specific requirements are met. These imported equipment, such as spectrometer, interferometer, microscope, and projector, provide accurate measurement and test results for technological improvements.

Paragon also addresses quality management by implementing strategic tools. ISO 9001 is an internationally recognized standard, which applies to the processes that create and control the products and services an organization supplies. It also prescribes systematic control of activities to ensure that the needs and expectations of customers are met. ISO9001 is designed and intended to apply to virtually any product or service, made by any process anywhere in the world. Paragon has been accredited with ISO 9001:2015 assessment in 2017.

为了提升晶石科技在行业的领导地位，我司致力在生产过程中严谨实施品质控制。我司厂房设有4000平方米的千级和万级洁净车间，令表面加工处理和丝印过程中防止受到空气污染，并把产品品质保持高水准。我司亦引入先进的测量仪器，从准确的数据和测试结果中不断提升加工技术，确保产品达到客户的设计标准。这些仪器包括：分光仪、干涉仪、显微镜和投影仪等。

晶石科技于2017年通过ISO9001:2015质量管理体系认证。此国际认可的标准全面控制和管理企业的产品和服务流程，使企业的运行产生更大的效益及更高的效率，以致客户对公司及其产品也增强更大的信任。



Competitive Advantage

竞争优势

Sapphire Production Capacity

蓝宝石生产能力

Since its establishment in 1979, Paragon constantly develops and creates seamless manufacturing solutions to increase production to its full capacity. With over 20 years of sapphire manufacturing experiences, Paragon has an annual production capacity of 6 million pieces, as well as the capability to produce these crystals in various shapes, sizes and specifications. Advanced machineries and production lines are imported regularly to keep up with the industry trends and market's demand.

从成立至今，晶石科技一直潜心钻研玻璃和蓝宝石加工技术，在生产经验上积累稳固的基础，并不断加强对人才方面的培养，使玻璃的生产工序：冷磨、热压、印刷、真空镀膜等成熟工艺于一体。晶石科技已拥有20年以上的蓝宝石加工经验，对于原材料的特性和工艺流程深入钻研，能够生产各种形状和规格的蓝宝石制品，年产量达600万片。为了保持每一项产品的质量，晶石科技不断引入和扩展生产线，紧贴产业发展的步伐。



Product Innovation & Technological Capability

产品创新与技术能力

To fully execute the company's mission in all aspects of our business, Paragon strives to provide exceptional customer services- by offering professional advice on enhancing the products' aesthetics and functions during the design process. In addition, we design and build machineries, specifically for unique products which require high accuracy of precision and workmanship. Paragon's strong technical background and expertise ensure its products always maintain at high standard, because "Quality is our Future".

晶石科技以优质顾客服务为长期目标，致力在生产各方面履行企业核心理念。从产品设计到生产阶段，我司向客户提供外观和功能提升的专业意见。同时，晶石科技的技术团队会为这些独特的产品专门设计和开发生产设备，以提高产品的精准度和良品率。我司的创新和技术能力一直为客户提供高水平的产品，为世界各地的著名品牌带来重要商机及市场竞争力。

Quality Is Our Future

诚信务实, 品质稳定, 持续改进, 顾客满意



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