



北玻官网
NorthGlass Official Website



北玻微信公众号
NorthGlass"wechat"



NorthGlass Facebook

上海北玻真空镀膜技术有限公司

地址：上海市松江区小昆山镇光华路328号

电话：021-57858699, 57858611

集团官网：www.northglass.com

镀膜技术官网：coatingtech.northglass.com

北玻股份股票代码：002613

Shanghai North Glass Vacuum Coating Technology Co., Ltd.

No.328, Guanghua Road, Xiaokunshan Town, Songjiang District, Shanghai

Tel: +86-21-57858699, 57858611

Official Website: www.northglass.global

Coatingtech BU Website: coatingtech.northglass.global

Multilingual Website: www.north-glass.com

Stock Code: 002613

为了不断提高产品性能，技术数据和图片并不绑定，北玻有权对产品进行修改而不另行通知。

In order to improve our product quality continuously, the product pictures are not bound by Technical data.

NorthGlass has the right to make changes without prior notice.

2026.03 印制 第七版

2026.03 Printed 7th Edition



北玻股份 • 真空镀膜技术公司 NorthGlass • Vacuum Coating Technology BU

我们致力于向客户提供先进的镀膜设备及完整的工艺解决方案
Advanced coating equipment and customized vacuum solution



真空镀膜技术公司 Vacuum Coating Technology BU

上海北玻真空镀膜技术有限公司（以下简称真空镀膜）是一家集玻璃深加工技术、新材料技术、真空镀膜技术、设备制造技术于一体的高新技术企业，其研发的设备已大量应用于玻璃加工和建筑节能等领域。

真空镀膜凭借雄厚的研发实力和加工制造能力，先后开发出大面积Low-E玻璃生产线、汽车挡风玻璃镀膜生产线和环保制镜线。上述设备得到用户广泛认同，已有超过三十条生产线在各地实现商业化生产。除此之外，公司致力于开发ITO、TCO、HIT等工艺技术和装备。

Shanghai North Glass Vacuum Coating Technology Co., Ltd. is a high-tech company specializing in research and development of glass processing, new materials, vacuum coating and also equipment manufacture. The coaters developed by us have been widely applied to glass aesthetics, energy-efficient buildings, etc.

With strong R & D and manufacturing capability, we have successfully developed the coaters for large area Low-E glass, auto windshields Low-E glass and environmental-friendly mirror. All of these coaters have been well recognized by our customers. Besides, we provide technical solutions and develop coaters for ITO、TCO and HIT industries.

真空镀膜投资超过2亿元人民币在上海建立研发和制造基地，是专业的真空镀膜设备供应商。目前公司有近百名专业人员从事镀膜技术研发和设备生产。

公司研发的镀膜玻璃产品覆盖多种颜色阳光控制膜、Low-E膜、铝镜、TCO膜、ITO膜和太阳能吸收膜，产品均通过了权威检验部门的检验，公司根据不同工艺的实现需要，提供C系列和S系列镀膜设备；公司还可以为客户进行镀膜设备和膜系的个性化开发，设备升级改造，溅射器件（阴极、端头、磁棒等）的替换、保养和维护等。

We have put more than USD 33 million in establishing R&D and manufacturing center in Shanghai and Luoyang as professional vacuum coater supplier. At present, we have nearly 100 employees engaging in coating technology and coater manufacturing.

Coated glasses developed by our coater cover solar-control, Low-E, Al mirror, TCO, ITO, and solar-absorption film. All these products have passed the tests of authority inspection departments. Following the different process, C series and S series coaters are offered, further on, we are able to carry out customerized design of coater and layer stacks, machine upgrading, replacement and maintenance of sputtering devices in accordance with clients' requests. Retail of key parts, cathodes, endblocks, magnet bars are always available for the users.



洛阳北玻高端装备产业有限公司（园区占地510亩、建筑面积22万m²）
高端装备产业园“万里号”贵宾楼
上海北玻玻璃技术工业有限公司
天津北玻玻璃工业技术有限公司
洛阳北玻三元流风机技术有限公司

北玻技术及产品

□ 钢化炉 6500台北玻钢化炉在世界各地运行	□ 三元流风机 10万台北玻风机在高铁、工业炉等各领域可靠运行
□ 镀膜线 30多条北玻镀膜线销往世界各地	□ 玻璃深加工产品 北玻幕墙玻璃镶嵌在全球各地地标建筑上
□ 预处理连线及智能化玻璃工厂 300多套连线及切割机、仓储系统广销海内外	□ 琉璃玻璃 突破极限，单片最大达15m²，并具备连续生产能力
□ 高效能电加热窑炉 广泛应用于卫生/建筑/发泡陶瓷、琉璃、轻晶石等领域	□ 轻晶石——轻质微晶石单元墙体 年产50万m²轻晶石综合墙体，开启绿色建筑工业化时代

北玻股份

洛阳北方玻璃技术股份有限公司，简称“北玻股份”，由董事长高学明先生于1995年5月18日在洛阳国家高新技术开发区发起创立，是主要从事玻璃深加工设备和玻璃深加工产品的研发、设计、制造、生产、销售的高新技术企业。2011年北玻股份在深圳证券交易所成功上市（股票代码：002613）。北玻股份相继成立了子公司上海北玻玻璃技术工业有限公司、上海北玻真空镀膜技术有限公司、洛阳北玻三元流风机技术有限公司、天津北玻玻璃工业技术有限公司、上海北玻自动化技术有限公司、洛阳北玻高端装备产业园有限公司、洛阳北玻琉璃玻璃有限公司、洛阳北玻高温电窑智能装备有限公司，并参股投资了洛阳北玻轻晶石新材料有限公司。

公司秉承“创新无止境、拼搏才会赢”的企业文化，凭借强大的技术研发实力和精良的设施装备，自主开发和制造了具有核心竞争力的玻璃钢化设备、镀膜设备、高端深加工玻璃等核心产品，在此基础上进一步拓展了玻璃深加工自动化连线、玻璃切割设备、仓储系统、“三元流”风机等产业。同时，北玻股份参股投资的北玻轻晶石产业孵化成功，抢先布局装配式绿色建筑新型墙体材料。

北玻股份是行业内实力强劲、规模领先的玻璃深加工设备研发制造企业之一，其主导产品平弯玻璃钢化机组年产销量自2002年突破100台以来，连续24年稳居行业世界前列，累计已有超过6500台北玻钢化炉在世界各地运行；其自主研发的镀膜生产线已成为了全球玻璃镀膜行业的主流生产设备之一，带动了中国玻璃镀膜产业的迅猛发展。与此同时，北玻自动化智慧工厂解决方案也正广泛应用于建筑、家电、光伏、卫浴等多个领域，持续赋能产业智能化升级。

另一支柱产业玻璃深加工产品也应用在诸如国家大剧院、“鸟巢”“水立方”“冰丝带”、国家会议中心二期、北京大兴国际机场、国家开发银行总部、北京城市图书馆、上海世博会项目、上海中心、上海大歌剧院、上海图书馆东馆、伦敦莱登大厦、阿布扎比国际机场、美国甲骨文总部、美国谷歌总部、美国2050M街、日本第一高楼 森 JP Tower、香港太古、香港西九龙高铁总站大楼、澳大利亚布里斯班新剧院、华为全球旗舰店、深圳OPPO总部、Nike旗舰店、爱马仕/古驰/路易威登等全球标志性建筑上，同时北玻股份也作为苹果公司的两家主要建筑玻璃供应商之一为其在世界各地的旗舰店及位于硅谷的总部提供建筑玻璃。

公司产品遍布全国，并成套出口到美国、英国、德国、法国、日本、印度、巴西、沙特、埃及、土耳其、澳大利亚等超过115个国家和地区，同时拥有一套完善的国内、国际销售服务体系。

北玻股份拥有玻璃钢化、低辐射镀膜等各类国际先进的自备成套试验室。公司先后荣获了行业协会颁发的“建筑玻璃首选品牌”、“中国房地产开发企业500强首选品牌”、“行业影响力品牌TOP榜”等荣誉称号；天津北玻荣获改革开放四十周年“行业突出贡献企业”；北玻商标于2017年7月被认定为全国驰名商标；董事长高学明荣膺“全国建材行业改革开放30年代表人物”荣誉称号。



NorthGlass independently researches and develops equipment

NorthGlass Technologies and products

Tempering Furnace 6500+ NorthGlass tempering furnaces in operation worldwide.	Coating Line 30+ NorthGlass coating lines sold worldwide.
Triturbo Fan 100,000+ NorthGlass Triturbo Fans power efficient operations in high-speed rail and industrial applications.	Processed Glass Curtain wall glass integrated into landmark buildings worldwide.
Pre-processing Line for Glass Intelligent Processing Factory 300+ glass pre-processing lines, cutting machines and glass storage systems sold worldwide.	Cast Glass Redefining possibilities with 15 m ² monolithic panels & continuous production.
High-Efficiency Electric Kilns Utilized in sanitary ware, architectural ceramics, foamed ceramics, cast glass, Light-Stone and other sectors.	Light-Stone — Lightweight Microcrystal Stone Unit Wall With an annual output of 500,000 Light-Stone units for integrated wall systems, NorthGlass is pioneering the era of industrialized green construction.

About Us

Founded on May 18, 1995, by Chairman Mr.Xueming GAO, Luoyang NorthGlass Technology Co., Ltd. (NorthGlass) is a pioneer in the global glass industry. Headquartered in the Luoyang National High-Tech Industrial Development Zone, we specialize in the R&D, design, manufacturing and sales of glass processing equipment and value-added processed glass products. In 2011, NorthGlass was successfully listed on the Shenzhen Stock Exchange (Stock Code: 002613), further strengthening its global presence.

Our Family

Our growth strategy includes the establishment of several subsidiaries, each specializing in different facets of the glass industry. These include:

- Shanghai North Glass technology industrial Co., LTD.
- Shanghai North Glass Vacuum Coating Technology Co., LTD.
- Luoyang North Glass Triturbo Fan Technology Co., LTD.
- Tianjin North Glass Technology Industrial Co., LTD.
- Shanghai North Glass Automation Technology Co., LTD.
- Luoyang North Glass High-end Equipment Co., LTD.
- Luoyang North Glass Cast Glass Co.,LTD.
- Luoyang North Glass High-temperature Electric Kiln Co., Ltd.
- Luoyang North Glass Top Glass Industrial Co., Ltd.
- North Glass (Shanghai) Top Glass Industrial Co., Ltd.

Additionally, our strategic investment in Luoyang NorthGlass Light-Stone New Material Co., Ltd. underscores our commitment to diversification and innovation across the glass industry value chain.

Our Products

At NorthGlass, we adhere to the philosophy that "Innovation has no bounds, and success is rooted in perseverance". We have consistently developed industry-leading products that set new benchmarks for the sector. Our product portfolio covers glass tempering furnaces, coating lines and high-end deep-processed glass, setting new industry standards across automation, new materials and other key sectors. Our dedication to technological advancement also includes the development of automated glass processing lines, glass cutting equipment, glass storage systems and our innovative Triturbo Fan technology. Additionally, our strategic investment in nurturing the Light-Stone industry marks our foray into the modular green building materials market, demonstrating our leadership in environmental sustainability and technological innovation.

NorthGlass has cemented its leading position in the global glass industry through relentless innovation and superior manufacturing of advanced glass processing equipment. Our flat and curved glass tempering furnaces have maintained a leading market position for 24 consecutive years, with more than 6,500 units in operation worldwide.Our in-house developed coating lines have also become a mainstream solution for glass coating manufacturers worldwide. At the same time, NorthGlass Automation's intelligent factory solutions are being widely applied in various fields such as architecture, home appliances, solar energy, and shower glass, continuously empowering the intelligent upgrade of industries.

Our high-performance processed glass products form another core business pillar, adorning iconic architectural landmarks worldwide – including Google Bay View (USA), 2050 M Street (Washington, D.C., USA), Oracle Headquarters (Austin, USA), Azabudai Hills Mori JP Tower (Japan), the Leadenhall Building (UK), Abu Dhabi International Airport, New Performing Arts Venue (Brisbane, Australia). These landmarks also include China's national Olympic venues such as the Bird's Nest, the Water Cube and the Ice Ribbon, the National Centre for the Performing Arts (China), National Convention Center (China), Beijing Daxing International Airport (China), "Sun Valley" & "Shiliupu Pier" of EXPO 2010 Shanghai (China), Beijing Library (China), Shanghai Tower (China), Nike Shanghai 001 (China), XRL Topside West Kowloon (Hong Kong, China), Two Taikoo Place (Hong Kong, China), Huawei Global Flagship Store (China), OPPO Headquarters (China), as well as flagship stores of Hermès, Louis Vuitton, GUCCI among many other notable buildings. Furthermore, NorthGlass is proud to be one of the two primary architectural glass suppliers for a world-renowned technology company, providing glass for its global flagship stores and Silicon Valley headquarters. This underscores our global footprint and the trust placed in our products by prestigious clients.

Backed by a comprehensive domestic and international sales and service network, NorthGlass products are available nationwide and exported to more than 115 countries and regions, including the USA, UK, Germany, France, Japan, India, Brazil, Saudi Arabia, Egypt and Turkey.

R&D AND MANUFACTURING CAPABILITY

强大的研发和制造能力

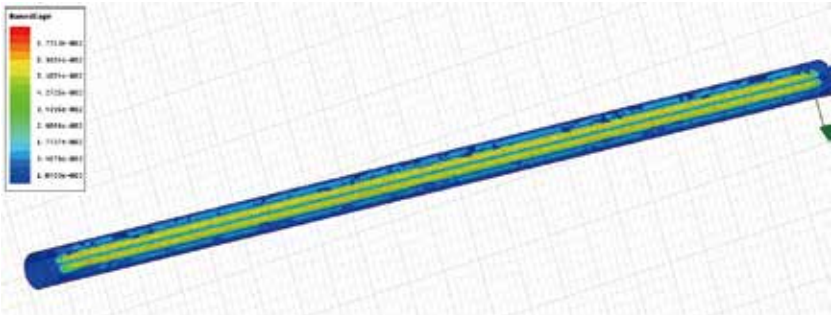
特点 / Features

应用专业软件对结构在各种外载荷条件下的受力、变形稳定性及各种动力特性做出全面分析，从力学计算，组合分析等方面提出全面解决方案。

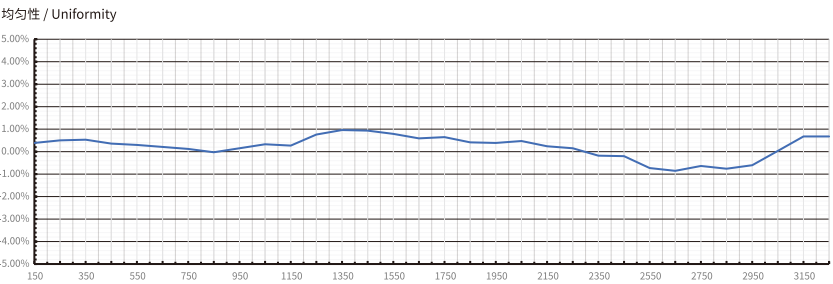
自主研发的三维空间磁场测量分析系统，用于磁钢阵列空间气隙场分布的测定及磁钢的安装、调整，为阴极研发提供有效的技术手段。

Ansys and Solidworks are used to analyze the stress, deformation and various dynamic characteristics of the structure under external load conditions. Comprehensive solutions are obtained through mechanical calculations, combination analysis and etc.

The device of 3D magnet test gives an effective method for measurement and adjustment of magnetic intensity distribution of target surface.



旋转阴极磁场仿真
Magnetic field simulation of rotary cathode



单靶横向均匀性示例 (3300mm)
Uniformity of single rotary cathode

STABLE COATING PROCESS

稳定的镀膜工艺

特点 / Features



采用真空磁控溅射技术，沉积效率高，基片温度低，膜层质量高，可重复性好。

新型磁棒采用新型的铝型材支撑结构、可调节式磁钢阵列、更均匀的靶材冷却，膜层均匀性极佳。

提供辅助工艺气体系统（如3、5、7或9段），提高真空环境工艺气体分布均匀性，提高膜层均匀性。

气体隔离装置的创新设计，有效避免了不同井位之间的气体漂移，气体隔离效果好。

采用先进的干泵和磁浮分子泵配置，杜绝工艺室返油污染，运行更加可靠、高效。

采用同步电机或伺服电机控制，实现传输的高精度控制。

具有多种控制和操作方式，操作者可以根据需要灵活的操作生产线，完成对产品的生产调整和产品的自动生产。

提供实时动态监测，对设备的故障进行报警提示，保障设备和产品生产的安全可靠。

Vacuum magnetron sputtering technology is leading to a high deposition rate, low substrate temperature, as well as high coating quality and repeatability.

New type magnet bar leads to excellent film uniformity over new support structure from extruded aluminum, adjustable magnet array and more homogeneous target cooling over whole length.

Trim process gas system(e.g. 3, 5, 7or 9-partioned) improves distribution of process gas and coating uniformity as well.

New design of the gas separation device avoids gas drifting between cathode compartments and achieves a better gas separation effect.

By using maglev turbo-molecular pumps and screw line pumps, no oil will flow back into the process zone and the process will be more reliable and efficient.

By adopting synchronous or servo motors, high precision conveying control can be achieved.

There are multiple control and operation modes for users to choose in coating process. The coater can be easily operated on the process requirements. Once the process data are set, the coater will be running automatically.

Real-time dynamic monitoring alarms faults and mulfunctions in order to ensure the safe and reliable production.

FLEXIBLE PROCESS CONFIGURATION

灵活的工艺配置

特点 / Features

可互换等隔舱设计，客户可随意调整泵位、气体隔离位和阴极位，提高工艺灵活性。

真空腔室的模块化设计，提高腔室加工效率，提高重大部件的加工质量和互换性，缩短整条线的交货周期。

集成式溅射阴极设计，将工艺气体控制、水电连接及电气控制完美地结合在一起，使工艺布置更加灵活，设备升级更加容易。

The identical design of vacuum compartments enables users to exchange the location of the pump, gas separation and cathode eath other freely, thus to improve process flexibility.

Modularized design of vacuum chambers improves machining efficiency. Interchange of the key parts can shorten the lead time of the whole coater.

An Integrated cathode lid makes a perfect combination by putting gas manifold, controllers, connections for power supply and utility in a “box” to achieve a flexible process configuration.



EASY OPERATION AND MAINTENANCE

操作、维护方便

特点 / Features

服务阀采用标准井位的双翻板闭锁阀设计，避免腔体端面连接板受力不均、腔体变形，由于采用了新设计，结构简单，可靠性高，方便维护。

提供专用换靶小车，换靶及维修清理工作更加方便、快捷。

新型可拆卸阴极屏蔽挡板，保护腔室不受污染，大大缩减维护时间。

By using the double flap locking design, the service valve can avoid the end face uneven force and deformation of chambers, which make it more reliable and convenient to operate.

New cathode service carts are provided to make the cathode maintenance more convenient and rapid.

The new sputtering shields are installed to prevent the chambers from pollution of sputtering. They are easy to change and shorten downtime.



CREATIVE COMPONENTS

最新技术应用

液压式盖板
Hydraulic Lid

整体式盖板和液压提升机构的设计，实现盖板的自动控制，提升设备的自动化水平，缩短设备检修维护时间，降低镀膜线厂房空间要求。

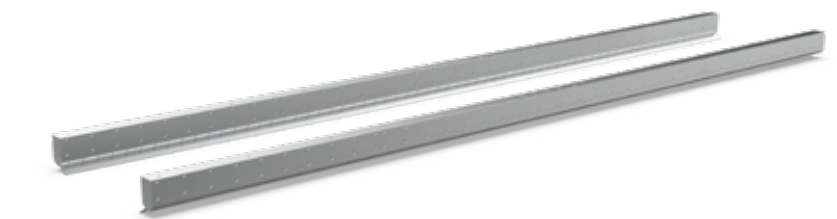
The one-large lid with hydraulic lifting mechanism is designed to achieve the automatic control, which can improve the automation level of the coater, shorten the maintenance time and reduce the building space.



工艺气体分配系统
Process Gas Distribution

采用多段辅气调节，每段可根据工艺需要选择不同类型的工艺气体，膜层均匀性可以控制在±1%以内。

Multi-section trim process gas is equipped, each section of which can flow different process gas according to the process. The uniformity of the layer can be well controlled less than ±1%



ADVANCED AUXILIARY EQUIPMENT

先进的辅助设备

特点 / Features

配置高速装卸片台，实现高速生产。

配置高性能镀膜用清洗机，实现多级清洗，可抛除玻璃表面老化层，保证玻璃表面洁净，有利形成致密膜层。

配置多点位、多角度膜系自动检测监控系统，确保镀膜质量和产品稳定性。

High-speed loading and unloading systems help the coater to achieve a high-speed production.

A high-performance washing machine is to realize a multi-stage cleaning that removes surface impurities easily and benefits layers adhesion.

An optical detecting and monitoring system with multi-point and multi-angle is set to preinform the layer quality and keep it stable.

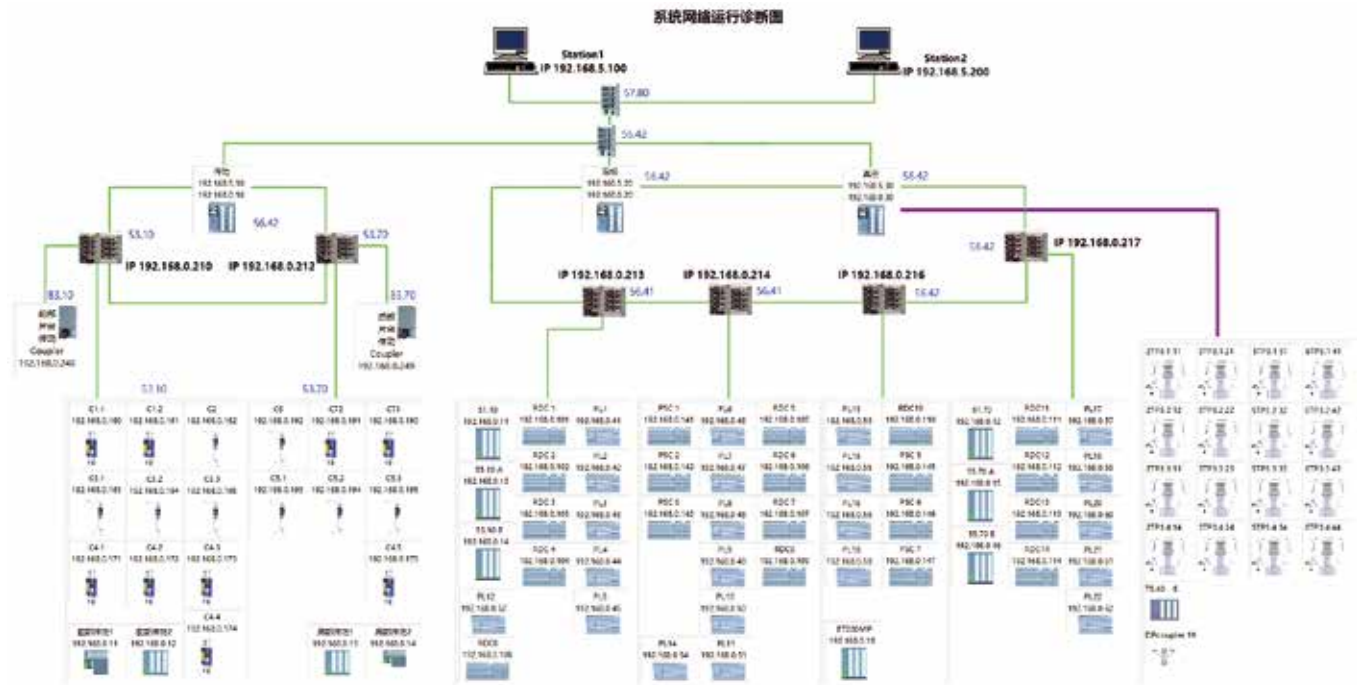
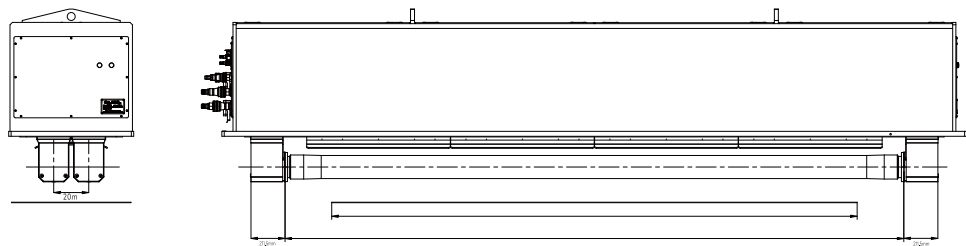


SPUTTERING CATHODE DEVICE

溅射阴极器件

北玻提供旋转阴极和平面阴极（含盖板、工艺气路）的完整阴极总成。溅射器件可根据镀膜线的实际井位尺寸进行定制，方便客户进行镀膜系统设计集成。具有本地操作控制和远程操作控制两种模式，可根据需要选择数字量总线或模拟量I/O接口与镀膜系统通讯。

NorthGlass can offer you the complete rotary cathode and planar cathode system (incl. lid, gas distribution). The sputtering device can be customized for all new and regular coater, which can facilitate the customer to integrate with local and/or remote control (digital or analog).



APPLICATION

镀膜线应用

建筑镀膜 Architectural Coating Solutions

真空镀膜水平式建筑镀膜线，采用磁控溅射沉积技术，在玻璃表面沉积一系列介质和金属薄膜，主要用于加工各种Low-E玻璃、AR膜，以及阳光控制玻璃等。

The horizontal architectural glass coaters mainly produce Low-E coated glass, solar-control glass, AR film, etc. by using magnetron sputtering process depositing different kinds of material on the substrate.

主要参数 Main Data	
基片尺寸 Substrate size	Max.3300 × 24000mm (W × L) (Jumbo coater)
	Max.2540 × 3660mm (W × L) (Standard coater)
基片厚度 Substrate thickness	3 - 19mm
机械节拍 Cycle time	≥35s (Jumbo coater)
	≥25s (Standard coater)
极限真空 Ultimate pressure	< 2×10 ⁻⁶ mbar
有效生产时间 Up time	≥90%
最大年产能 Max. annual capacity	12,000,000m ² (Jumbo coater)
	7,500,000m ² (Standard coater)

注：以上参数仅作参考

制镜镀膜 Mirror Coating Solutions

北玻环保制镜线，采用磁控溅射技术，主要用于加工各种高品质环保镜，其中所加工的环保铝镜反射率达到80%以上。设备还配置机器人上下片系统确保设备全自动高效运行。

The Mirror coater is running to produce environmental-friendly mirrors by sputtering down process, the AI mirror achieves the reflection over 80%. The robot system can make sure of automatic and high efficient operation.

主要参数 Main Data	
基片 Substrate	浮法玻璃、钢化玻璃、或经殊处理的平板玻璃 Float Glass, Tempered Glass, Special Pretreated Flat Glass
基片尺寸 Substrate size	Max.2540 × 3660mm (W × L) (customizable)
基片厚度 Substrate thickness	2-10mm (customizable)
机械节拍 Cycle time	> 30s
极限真空 Ultimate pressure	< 8×10 ⁻⁶ mbar
上下片方式 Loading / Unloading	自动或手动 Automatic or manual
漆膜 Painting	1 or 2

注：以上参数仅作参考

汽车镀膜 Automotive Coating Solutions

北玻自主开发的汽车前挡镀膜线，采用磁控溅射沉积技术，在玻璃表面沉积一系列介质和金属薄膜，主要用于加工高性能隔热汽车前挡镀膜玻璃，可见光透过率高于75%，太阳透过率低于35%。

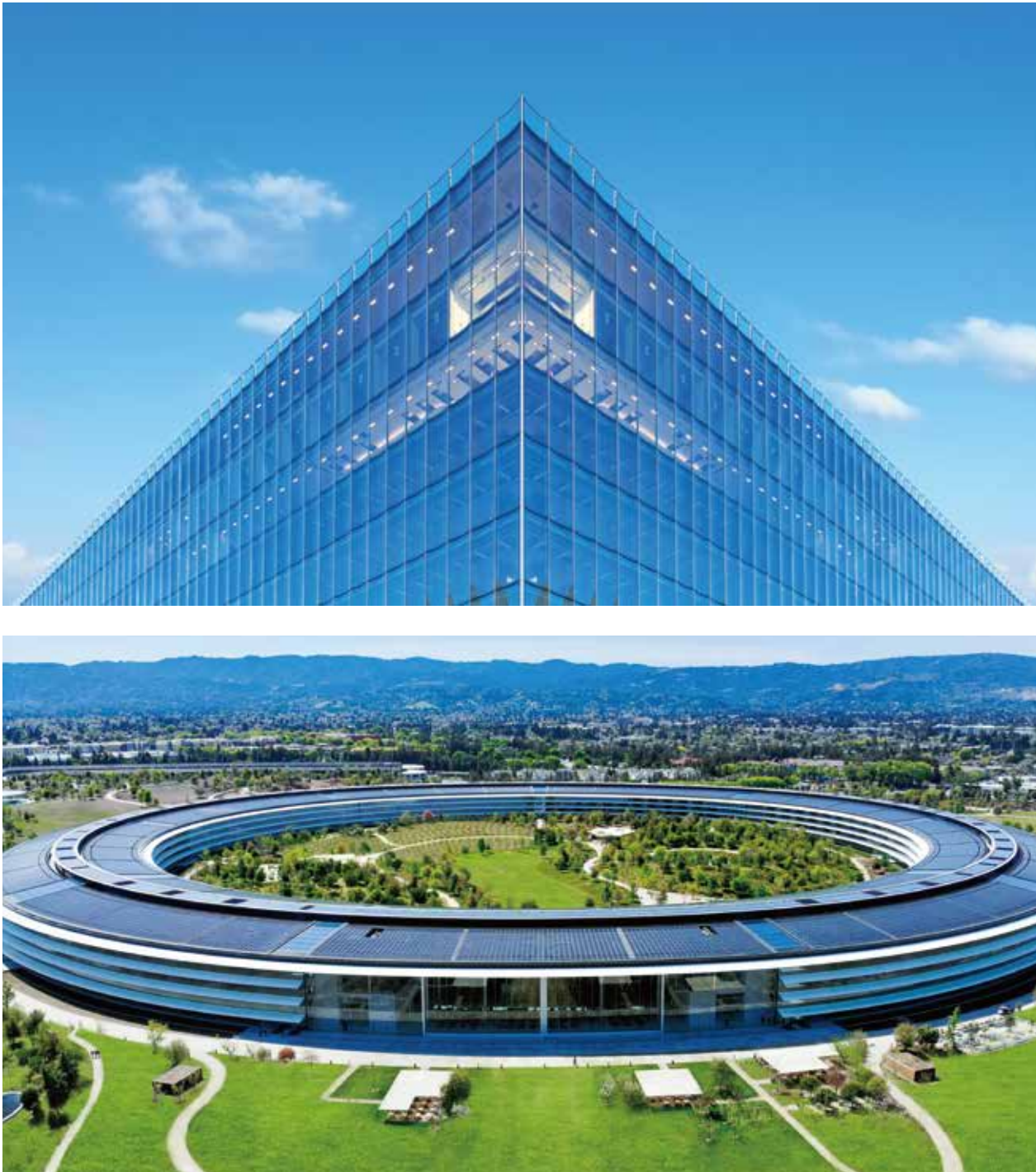
The automobile coater is applied to deposit a series of functional films on the surface of front windshield with light transmittance of over 75% and solar transmittance of below 35%.

主要参数 Main Data	
基片 Substrate	汽车前挡玻璃 (Automobile windshield glass)
基片尺寸 Substrate size	Max.1500 × 2000mm (W × L) (Customizable)
基片厚度 Substrate thickness	1.6 - 6mm (Customizable)
机械节拍 Cycle time	>17s
极限真空 Ultimate pressure	< 2 × 10 ⁻⁶ mbar



APPLICATION CASE

镀膜应用案例



华盛顿M大道2050办公楼·美国
苹果总部·美国
布里斯班新剧院·澳大利亚
上海世博会博物馆·中国
丹佛艺术博物馆·美国
北京城市图书馆·中国

Washington 2050 M Street · USA
Apple Park · USA
New Performing Arts Venue · Australia
Shanghai World Expo Museum · China
Denver Art Museum Welcome Center · USA
Beijing Library · China