股票代码
Ticker Symbol
002450

KDX 康得新

www.kangdexin.com

KDX

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*设计和技术参数若有更改，恕不另行通知
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V1.2-2015-03-产品宣传

COMPANY PROFILE
公司介绍

康得新复合材料股份有限公司成立于 2001 年 8 月，是深圳中小板上市公司。公司拥有预涂膜和光学膜两大产业集群、五大生产基地、十四家子公司，是一家核心骨干员工持股的国际化企业集团，是最具代表性的中国先进高分子材料平台公司。

公司是北京市首批认定的高新技术企业、北京市企业技术中心、中关村示范园百家创新企业，产品被国家科技部列入《中国高新技术产品出口目录》，“康得 - 菲尔”商标是北京市著名商标。公司入选《福布斯》“中国最具潜力公司榜”荣获 2012 中国中小板最具成长性上市公司十强及 2012 中国中小板上市公司五十强。2013 年荣获“中国上市公司口碑榜 - 最佳管理团队上市公司”，2014 年获“中国裸眼 3D 光学技术应用孵化基地”称号，KDX 窗膜荣膺“2014 年度汽车用品行业新锐品牌”，公司成为世界窗膜协会（IWFA）的 7 名成员之一，也是目前唯一来自亚洲的成员。

作为国际预涂膜行业的领导者，拥有跨地域、全产业链的预涂膜产业群，品牌、性能、质量、市场占有率全面领先，产品销往全球 80 多个国家和地区。

作为中国光学膜领导企业和世界唯一全产业链、高集中度的光学膜企业，2 亿平方米光学膜产业集群占地 574 亩，拥有 24 万平方米厂房和 200 台套国外先进设备，设有挤出事业部、涂布事业部、成型事业部、模具事业部、溅射事业部、树脂事业部、窗膜事业部、触控事业部等八大光学膜事业部，拥有从光学设计、超精密模具加工、光学膜制造到专用材料开发的完整核心技术。各事业部既互为上下游，又面向市场供应终端产品，垂直一体化及规模优势使康得新光学膜产品具有强大的核心竞争力，公司已成为全球光学膜主流供应商。

公司已建立由中、美、日、韩、欧、台专家组成的包括国外独立实验室的国际化研发体系，已申请光学膜、预涂膜专利 224 项，获得授权 96 项。

产品布局在显示、3D、隔热膜、装饰膜、印刷包装五大领域。基于公司的核心技术及制造能力，通过技术、产品，市场，尤其是商业模式的创新，公司完成了具有更大发展空间和更高目标的战略布局，业务由材料向模块化、系统化发展，实现先进高分子材料的价值链延伸的，同时布局碳纤维、石墨烯、碳纳米管等新型碳材料产业，依托全球领先的裸眼 3D 技术进军文化产业，全面布局新能源汽车、柔性材料及相关等新领域，构建公司新的商业生态链，导入互联网经营模式，实现从产品到内容再到生态链的经营模式的全面跨越。

本着追求卓越的不变信念，通过持续创新和内外部资源整合，康得新将不断突破自我，培育相关多元化和多业态的新型经营体系，打造基于先进高分子材料的世界级企业，做中国梦的努力探索者、坚定实践者和真实见证者。

KangDe Xin Optronics Material Co., Ltd. (KDX) was found in August 2001, and made its IPO on Shenzhen Stock Exchange Small and Medium-Sized Enterprise Board. The company owns laminating thermal film cluster and optical film industry cluster, 5 manufacturing bases, 14 subsidiaries. It's an international corporation with Employee Stock Ownership Plans, and the most representing advanced polymer material platform company in China.

KDX is in the first group of hi-tech companies certified by Beijing government, Beijing corporation technology center, Top 100 innovation corporations in Z-Park; its products were included in 'China high-tech product export catalogue' by Ministry of Science and Technology of the People's Republic of China; Kangde-Film is the famous trademark of Beijing; was selected as Forbes China up and comers; was honored as 2012 China Small and Medium-Sized Enterprise Board Top 10 Promising Company and 2012 China Small and Medium-Sized Enterprise Board Top 50 Company in 2012 China Public Company Value Selection. In 2013, KDX was also honored as 'Reputation Award for Public Companies in China Best Management Team of Public Company'. In 2014, KDX was honored with the title of 'China naked-eye 3D optical technology application incubation base'; KDX window film was '2014 best new brand of vehicle appliance industry'; KDX is one of the 7 IWFA members, the only member in Asia.

As a global leader of the laminating thermal film industry, KDX has construct a multiple region, whole industry chain laminating thermal film industry cluster, and hold advantages in brand, performance, quality and market share. Products were distributed to more than 80 counties and regions globally.

As the leader of the optical film industry in China and the only whole industry-chain, highly centralized optical film company in the world, KDX owns a 200 million square meters optical film industry cluster on a land size of 574 Mu, 240 thousand square meters of factory building and more than 200 sets of imported advanced equipment. There are 8 BUs in KDX, including Extrusion BU, Coating BU, Micro Casting BU, Drum Tooling BU, Sputtering BU, Resin Material BU and Window Film BU, Touch Panel BU. core technologies including co-extrusion, precious coating, UV micro casting, precious drum tooling, optical design and testing, vacuum sputtering, special material development. All the BUs supply and support each other, meanwhile sell the products to the market. The rare case of vertical integration of technology, product, cost and operation makes KDX's optical film product highly competitive and attractive. KDX has become a global major supplier of optical film.

KDX has built up a whole global R&D system including experts from China, US, Japan, Korean, Europe and Taiwan, and has applied 224 patents of optical film and laminating thermal film, and is authorized for 96 of them.

There are five areas of product applications, including display, 3D, thermal insulation film, decoration film and printing & package. Based on the core technology and manufacture capability of the company, via the innovation of technology, products and specially the business model, KDX has finished the strategy layout with bigger potential and higher target. The business is developed from material to modularization and systematization. KDX has fulfilled the extension of value chain of the polymer material, while strategically expanded the fields to carbon fiber, graphene, carbon Nano tube and more other new materials. Marching into the culture industry with the advantage of world leading naked-eye 3D technology; strategically expanding in new energy vehicle, flexible material and other relative new areas; constructing a new ecology business chain of the company bringing in the business model of internet, achieving steps up from products to contents, and then to the business model of the ecology chain.

With the belief of pursuing for excellence, by sustained innovation and resource integration, KDX will keep challenging itself and breaking the record of itself, incubate a new business system of multi-direction and multi-domain, become a new leading company in the polymer composite material domain, a hard-working explorer of the Chinese Dream, a steadfast practitioner and a real witness.

PRODUCT PRESENTATION

光学膜板块 Optical Film Business

棱镜膜系列
Prism Film

扩散膜系列
Diffuser Film

扩散板系列
Diffuser Plate

ITO膜系列
ITO Film

盖板硬化膜系列
Hard-Coat Film For Cover Lens

自粘保护膜系列
Self Adhesive Protective Film

PET保护膜系列
PET Protective Film

保护贴系列
Hard-Coat Protective Film

硬化导电膜基材系列
Hard-Coat Film For Touch Sensor

3D板块 3D Business

裸眼3D影像
Naked-Eye 3D Video

3D图像
3D Picture

装饰膜板块 Decoration film Business

模内装饰膜系列
IML Film

压印装饰膜系列
Decoration Film

隔热膜板块
Thermal Insulation Film Business

窗膜系列
Window Film

建筑节能隔热膜
Energy Saving Window Film

包装板块 Packaging Business

预涂膜系列
Laminating Thermal Film

产业配套 Associated Technologies

树脂材料
Resin Material

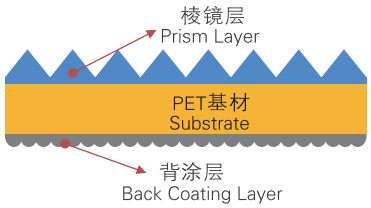
光学级PET基材
Optical Class PET

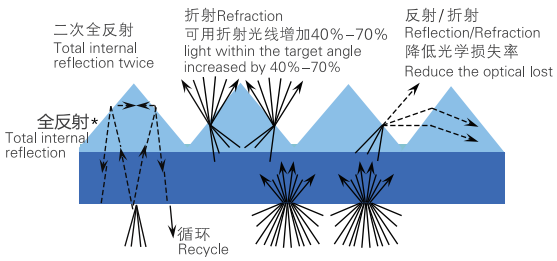
超精密模具加工
Ultra Precision Drum Tooling

棱镜膜原理 Principle of Prism Film

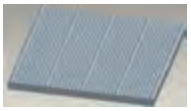
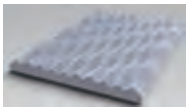
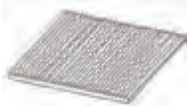
棱镜膜：利用微复制技术加工出表面棱镜结构，实现对背光光线的视角控制。将一定视角的光折射向正面观察者，而在此角度之外的光则进入光路循环，直至在特定视角范围内射出。

Prism Film: The prismatic structure made by micro-replicate technology controls the angle of light emitted from the back light. Light within certain angle is refracted toward the viewer, while light emitted beyond the angle is recycled.





微结构说明 Product Details

正面结构 Front Structure	B系列 B series	C系列 C series	D系列 D series	E/G(U)系列 E/G(U) series
角度 Angle	90°	90°	90°	90°
间距 Pitch	26–30 um	48 um	42–60 um	28/48 um
结构特征 Structure Feature	横向的高低差分布 Horizontal different height structure	纵向的棱峰上下抖动和棱谷左右摆动 Vertical vibration structure	横向的高低差和纵向随机不连续凸起 Horizontal height difference and longitudinal random discontinuous bumps	纵向的棱峰随机上下抖动和棱谷随机左右摆动 Horizontal small period and vertical random vibration structure
示意图 Picture				

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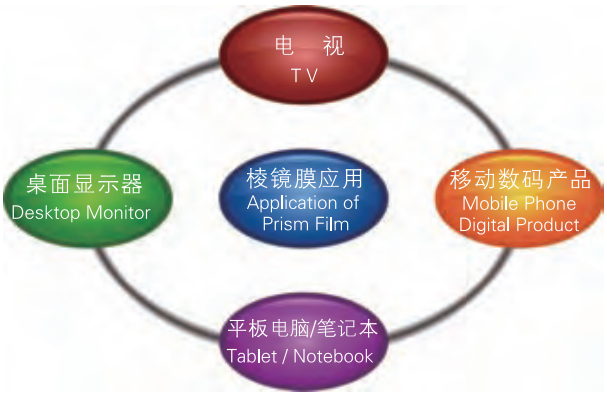
产品应用 Application

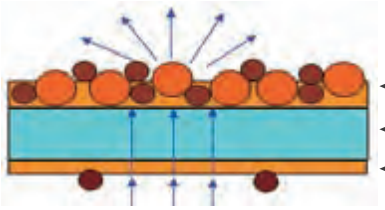


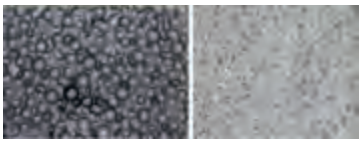
应用 Application	产品型号 Model	总厚度 Total Thickness	增益 Gain(0°)
手机 Mobile	KBUP–065N	69 ± 7 um	≥1.50
	KBUO–065N	64 ± 7 um	≥1.55
	KBGK–065S/KBGT–065S	72 ± 7 um	≥1.65
	KBCO–065N	77 ± 7 um	≥1.60
	KBCO–065S	77 ± 7 um	≧1.70
	KBGO–065S	67 ± 7 um	≧1.65
平板 Tablet	KBUP–100N	94 ± 7 um	≧1.50
	KBUO–100N	89 ± 7 um	≧1.55
	KBGK–100S/KBGT–100S	97 ± 7 um	≥1.65
	KBCO–100N	102 ± 7 um	≥1.60
	KBCO–100S	102 ± 7 um	≥1.70
	KBGO–100S	92 ± 7 um	≥1.65
	KBUP–125N	119 ± 7 um	≥1.50
	KBUO–125N	114 ± 7 um	≥1.55
	KBGK–125S/KBGT–125S	122 ± 7 um	≥1.65
	KBCO–125N	98 ± 7 um	≥1.60
	KBCO–125S	98 ± 7 um	≥1.70
	KBGO–125S	117 ± 7 um	≥1.65
笔记本 Notebook	KBCM–160N	154 ± 10 um	≥1.55
	KBCO–160N	149 ± 10 um	≥1.60
	KBCO–160S	149 ± 10 um	≥1.70
	KBGO–160R	139 ± 10 um	≥1.60
显示器 Monitor	KBCO–220N	212 ± 10 um	≥1.60
	KBCM–220N	217 ± 10 um	≥1.55
	KBCM–220P	217 ± 10 um	≥1.50
	KBDL–220Q	223 ± 10 um	≥1.60
	KBCH–220P	217 ± 10 um	≥1.45
	KBGH–220Q	207 ± 10 um	≥1.45
	KBCA–220R	217 ± 10 um	≥1.65
	KBGT–220R/KBGS–220R	207 ± 10 um	≥1.55
电视机 TV	KBCO–285N	274 ± 10 um	≥1.60
	KBCM–285N	279 ± 10 um	≥1.55
	KBCM–285P	279 ± 10 um	≥1.50
	KBDL–285Q	285 ± 10 um	≥1.60
	KBCH–285P	279 ± 10 um	≥1.45
	KBGH–285Q	269 ± 10 um	≥1.45
	KBCA–285R	279 ± 10 um	≥1.65
	KBGT–285R	269 ± 10 um	≥1.55

扩散膜原理 Principle of Diffuser Film

扩散膜：在 PET 基材上涂布具有扩散功能的粒子，当光线在经过扩散膜时会不断地在折射率不同的兩介质中穿过，同时发生折射、反射与散射之现象，使光能够被均匀分散。

Diffuser Film: Particles were coated on PET substrate. Light would be refracted, reflected and scatted when travelling through media with different refractive indexes.So light can be spread out.





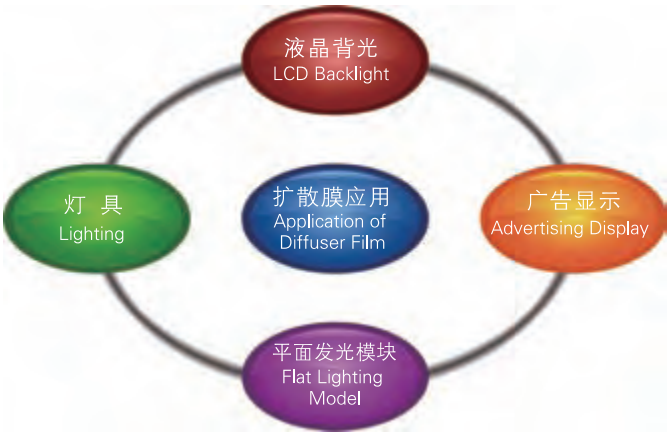
正面结构（左图）
Front Structure（Left）

背面结构（右图）
Back Structure（Right）

产品应用搭配 Application Recommendation

适用 Application	型号 Model	图例 Picture	
电视/显示器 TV/Monitor	KDD-188N KDD-188NH KDD-250N KDD-188H1 KDD-188H2 KDU-188T1 KDD-188T2 KDD-188S1 KDD-188S2 KDD-188S3		
显示器/笔记本 Monitor/NB	KDD-100N KDD-100NV KDD-125N KDD-100H1 KDD-125H1 KDD-100H2 KDD-125H2		
平板/手机 Tablet/Mobile	KDD-050P KDD-075P KDD-025P1 KDD-038P1 KDD-050P1		

产品应用 Application

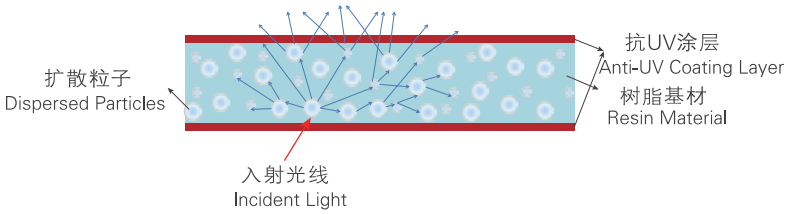


系列 Series	产品型号 Model	标准 Standard			说明 Notes
		雾度 Haze	穿透率 Transmittance	总厚度 Total Thickness	
N	KDD–100N	94 ± 5%	75 ± 5%	120 ± 8 um	高雾型 High Haze
	KDD–100NV			120 ± 8 um	
	KDD–125N			145 ± 8 um	
	KDD–188N			208 ± 8 um	
	KDD–188N2			208 ± 8 um	
	KDD–188NC			208 ± 8 um	
	KDD–100NH			208 ± 8 um	
	KDD–250N			270 ± 8 um	
H1	KDD–100H1	94 ± 5%	80 ± 5%	120 ± 8 um	高雾型 High Haze
	KDD–125H1			145 ± 8 um	
	KDD–188H1			208 ± 8 um	
H2	KDD–100H2	91 ± 5%	90 ± 5%	120 ± 8 um	高雾高透型 High Haze& High Transmittance
	KDD–125H2			145 ± 8 um	
	KDD–188H2			208 ± 8 um	
P	KDD–050P	93 ± 5%	88 ± 5%	67 ± 5 um	薄型 Thin Film Diffuser
	KDD–075P			92 ± 5 um	
P1	KDD–025P1	96 ± 5%	80 ± 5%	38 ± 5 um	
	KDD–038P1			52 ± 5 um	
	KDD–050P1			40 ± 5 um	
T	KDU–188T1	75 ± 5%	95 ± 4%	208 ± 8 um	超透型 Ultra–High Transmittance
	KDD–188T2	85 ± 5%	95 ± 4%	208 ± 8 um	
S	KDD–188S1	96 ± 5%	79 ± 4%	208 ± 8 um	超雾型 Ultra–High Haze
	KDD–188S2	97 ± 5%	76 ± 4%	208 ± 8 um	
	KDD–188S3	98 ± 5%	70 ± 4%	208 ± 8 um	

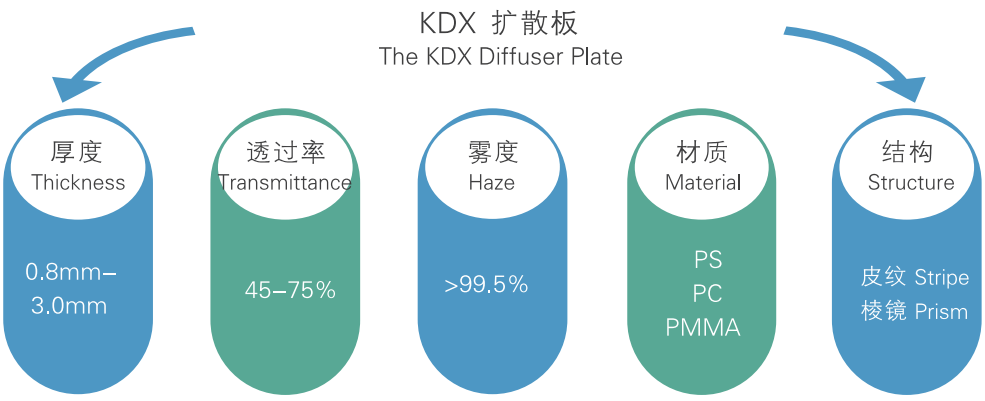
扩散板原理 Principle of Diffuser Plate

扩散板：将光扩散粒子均匀分散到树脂中，通过高精度挤出设备制作成板材， 由于光扩散粒子与基材的折射率差异，入射光照射到扩散粒子会发生多次的偏转和散射，形成均匀的出射光线。同时，板材上下表面涂布了抗UV涂层，有效抵抗黄变。

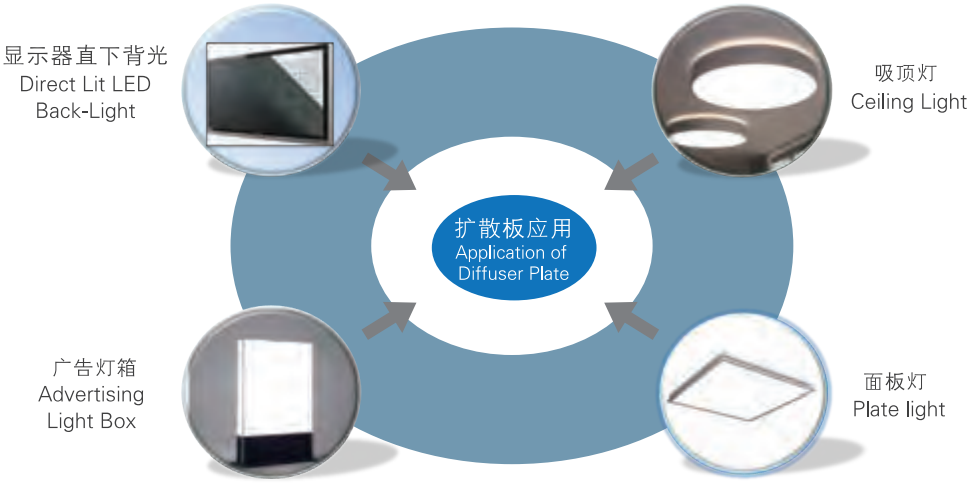
Diffuser Plate: Resin material with dispersed particles is precisely extruded into plate. Due to the refractive index difference between the particles and the substrate, incident light would be refracted and scattered by the particles and come out uniformly. Meanwhile, the surfaces of the plate were coated with anti-UV layers to prevent the plate from becoming yellowy.



产品特点 Features



产品应用 Application



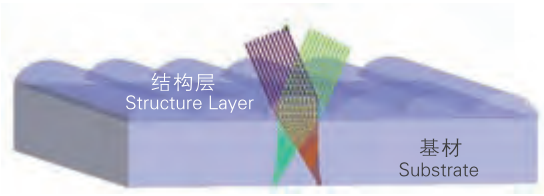
项目 Testing Target	单位 Unit	测量标准 Testing Standard	测量条件 Testing Condition	测量值 Testing Result
拉伸率 Elongation	%	JIS K7161	标准条件 Standard Condition	2
吸水率 Water Absorption	%	KDX Methods	标准条件 Standard Condition	0.2
密度 Density	g/cc	UL94	标准条件 Standard Condition	1.05
抗拉强度 Tensile Strength	MPa	JIS K7161	标准条件 Standard Condition	35
加热收缩率 Thermal Shrinkage	%	JIS K7161	150℃ / 30Min	0.5
UV老化 UV Aging	变化率 Changing Rate	QUV	500Hr UVA–340	△E=4.23
		QUV	1000Hr UVA–340	△E=9.76
表面电阻 Surface Resistance	Ω	ASTM D257	标准条件 Standard Condition	$10^{13.5}$
铅笔硬度 Pencil Hardness	H	ISO 15184	标准条件 Standard Condition	Prism H
耐磨耗 Abrasion	g	ISO 15184	标准条件 Standard Condition	1000

产品型号 Model	穿透率（%） Transmittance	雾度（%） Haze	厚度（mm） Thickness	材质 Material
KDP–2000N	55	> 99	2.0	PS
	65			
KDP–1500N	55	> 99	1.5	
	65			
KDP–1200N	55	> 99	1.2	
	65			
KDP–1000N	55	> 99	1.0	

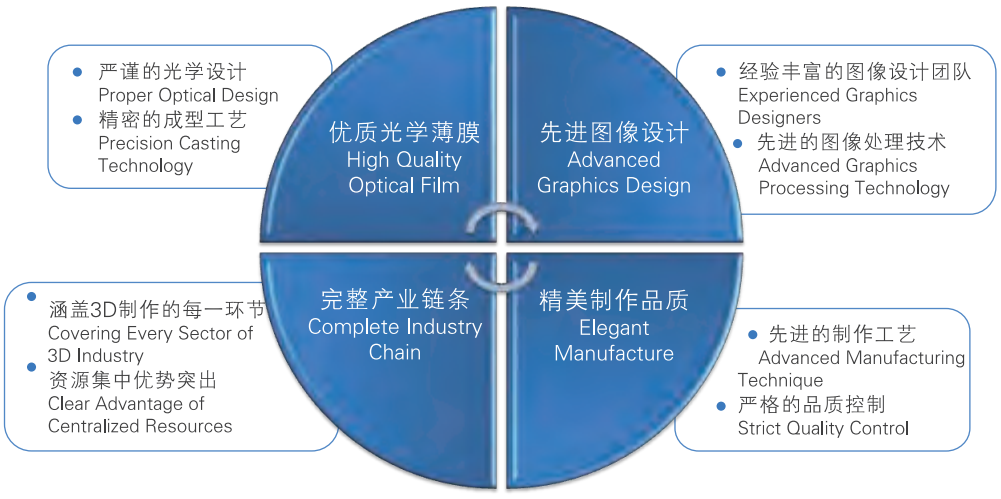
裸眼3D原理 Principle of Lenticular

裸眼3D技术又称柱状透镜技术，表面柱状透镜微结构依据折射原理改变光路方向，使观赏者左右眼能在影像光线集中的设定区域分别看到经过设计处理的不同两幅图像，达到立体视觉感受。

Principle of Lenticular: The lenticular structure changes the path of the rays by refraction, and delivers two different properly designed pictures to the left and the right eyes separately. Therefore, a 3D visual effect is created.



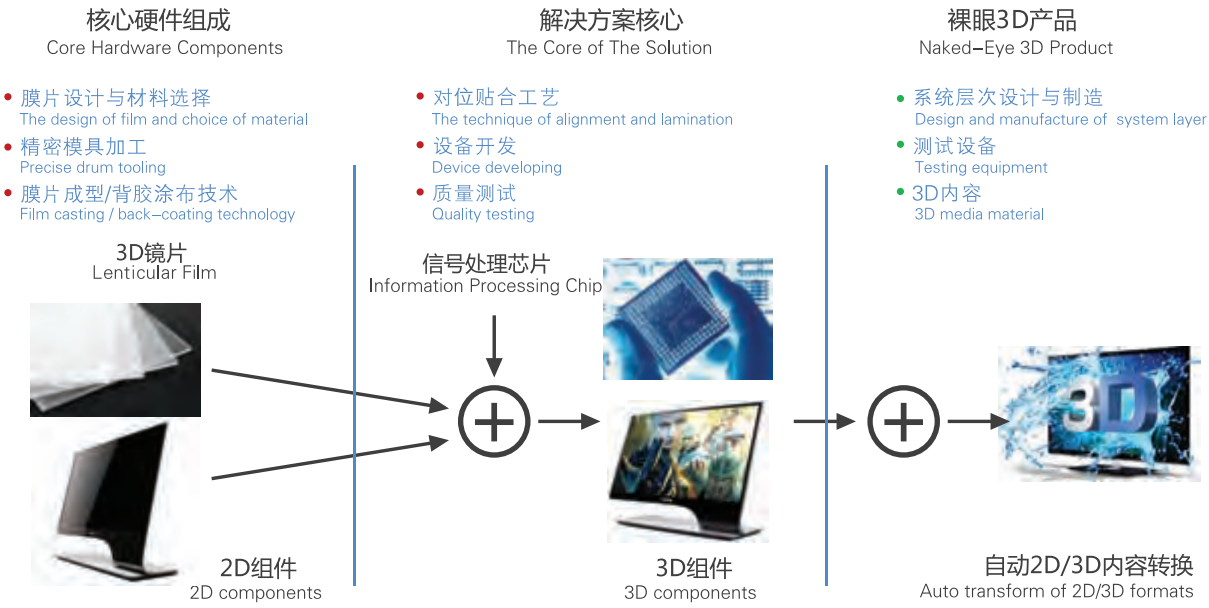
康得新3D产业 The 3D Industry of KDX



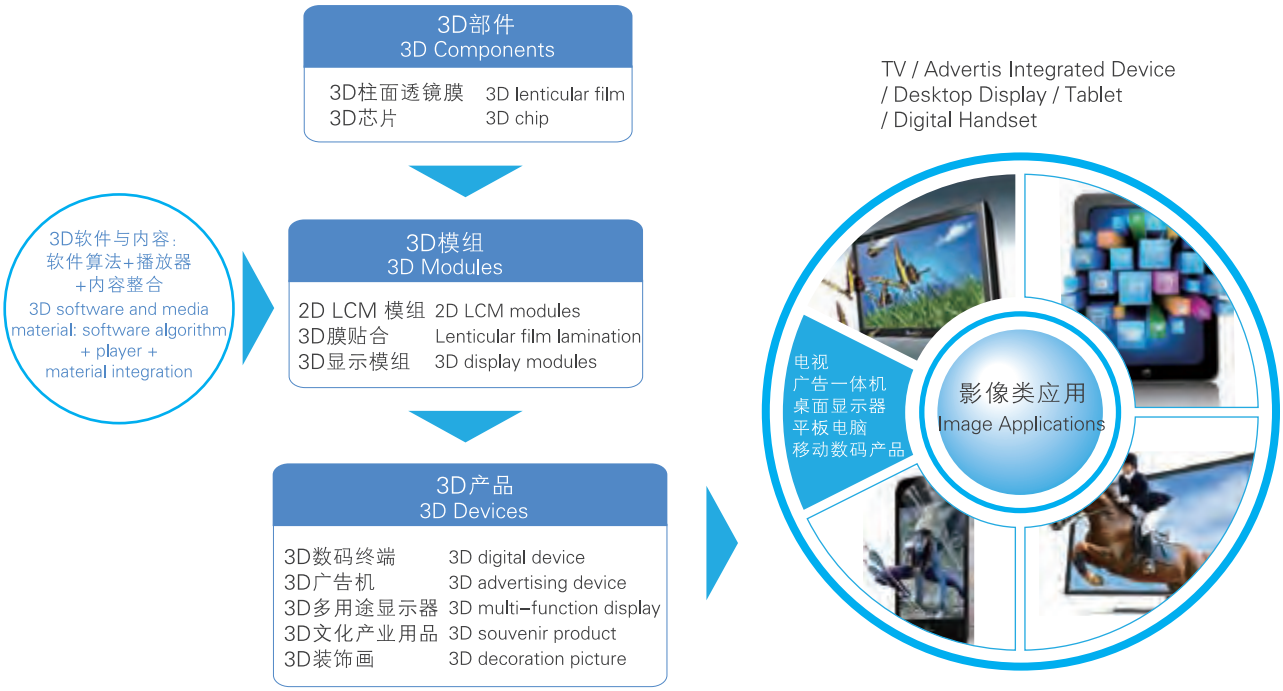
一站式方案 One Stop Solution

我们的3D显示方案以柱面透镜式技术为基础，整合核心部件3D柱面透镜膜的设计、制造、贴合，同时结合自主知识产权的图像处理软件及芯片，提供一站式的裸眼3D显示解决方案。

Our 3D display solution is based on lenticular technology, integrated with core hardware components and design, manufacture and lamination of lenticular with combination of image processing software with proprietary intellectual property rights and processing chips. A one stop naked–eye 3D display solution is provided.



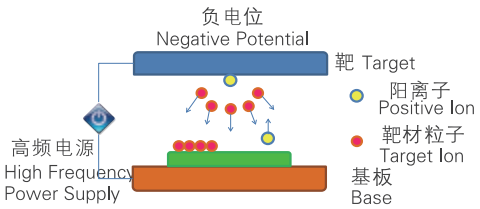
产品部件服务 Product Components Service

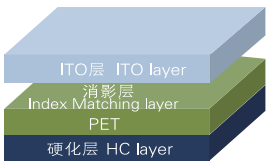


ITO膜原理 Principle of ITO Film

ITO膜：以卷绕式磁控溅射技术为基础，通过光学膜系设计，搭配一次路径多层膜磁控溅射技术以及在线光学监控技术，产出各种性能的功能光学膜材料。

ITO film: Based on roll-to-roll Magnetron sputtering technology and the thin film optical design, adopted the multiple layers sputtering in one go technique and on–line optical monitor technique, different kinds of optical film with different properties were made.





ITO膜结构
ITO Film Layer

应用广泛 Application

ITO膜应用于我们生活的方方面面。
The applications of ITO film is every where in our life.

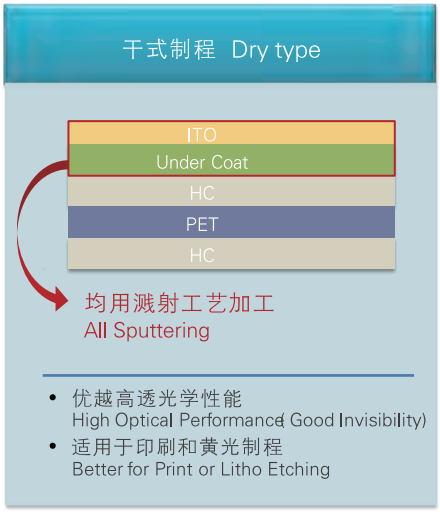
触控面板
Touch Panel

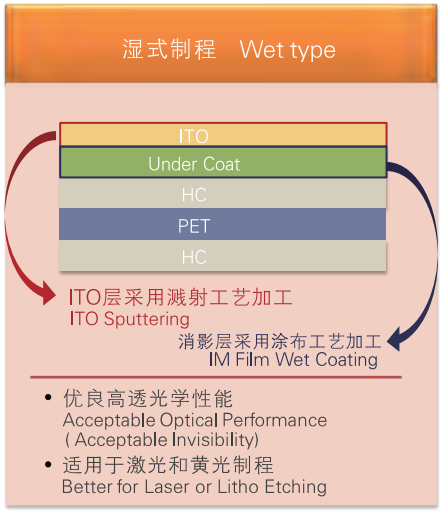
电子书
E–Paper

智慧窗膜
Smart Window Film

柔性显示屏
Flexible Display

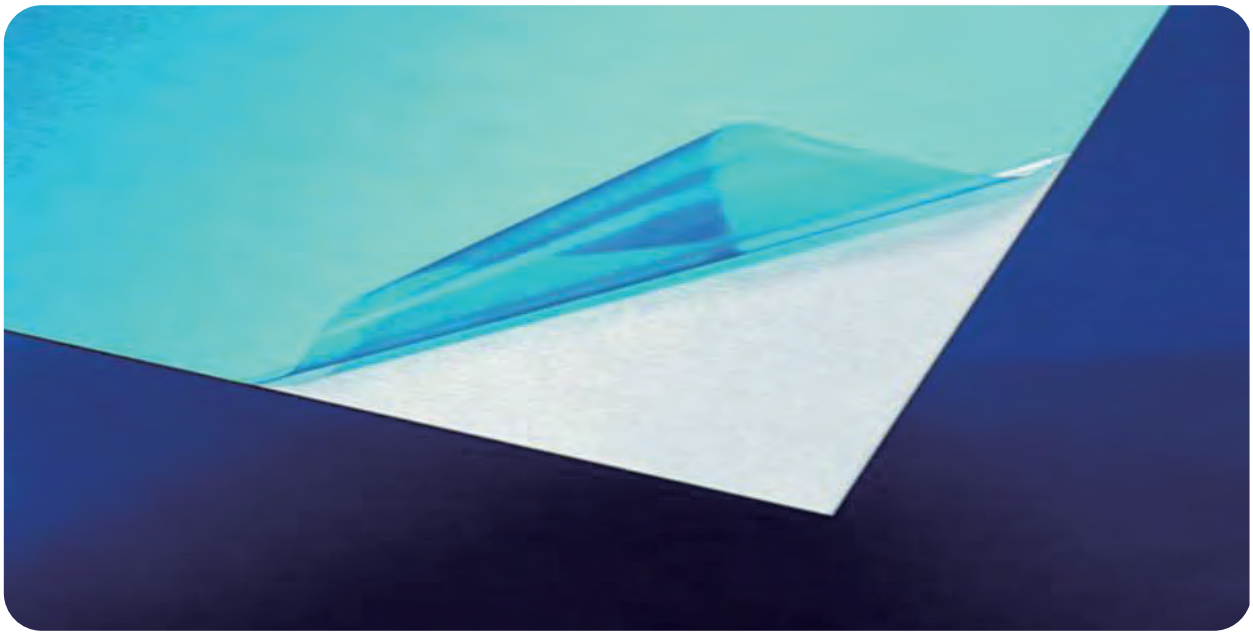
制程工艺 Manufacturing Technique





产品参数 Product Details

系列 Series	型号 Model	结构 Structure	厚度(um) Thickness	电阻(Ω/□) Resistance	穿透率(%) VLT	雾度(%) Haze	硬度(H) Hardness
D	DB150–32H5	PP P.F. ITO Under Coat HC PET (125um) HC (2H) PET P.F. (50um)	125	150^{+30}_{-50}	> 88	< 1.5	2H
	DB150–32H7		125	150^{+30}_{-50}	> 88	< 1.5	2H
	DB100–32H5		125	$100_{\pm 20}$	> 87	< 1.5	2H
	DB100–32H7		125	$100_{\pm 20}$	> 87	< 1.5	2H
	DC150–32H5	PP P.F. ITO Under Coat HC PET (50um) HC (H) PET P.F. (125um)	50	150^{+30}_{-50}	> 88	< 1.5	H
	DC100–32H5		50	$100_{\pm 20}$	> 87	< 1.5	H
W	WB150–32S6	PP P.F. ITO Under Coat HC PET (125um) HC (2H) PET P.F. (50um)	125	150^{+30}_{-50}	> 88	< 1.5	2H
	WB150–32T2		125	150^{+30}_{-50}	> 88	< 1.5	2H
	WB100–32S6		125	$100_{\pm 20}$	> 87	< 1.5	2H
	WB100–32T2		125	$100_{\pm 20}$	> 87	< 1.5	2H



产品简介 Introduction

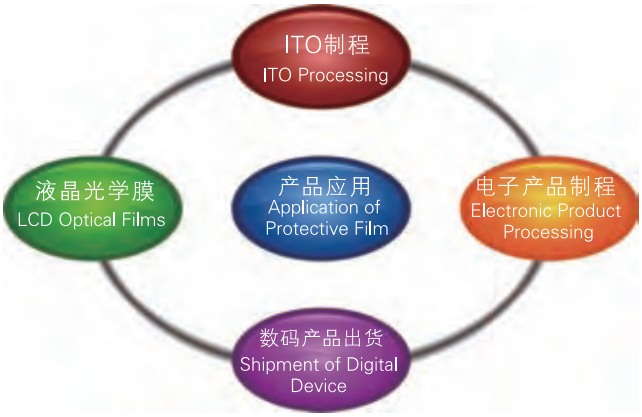
自粘保护膜通过共挤出工艺生产，从而减少了残胶的污染。产品可广泛用于保护各种光学膜、片材、金属、玻璃、硬化膜及其他塑料产品。

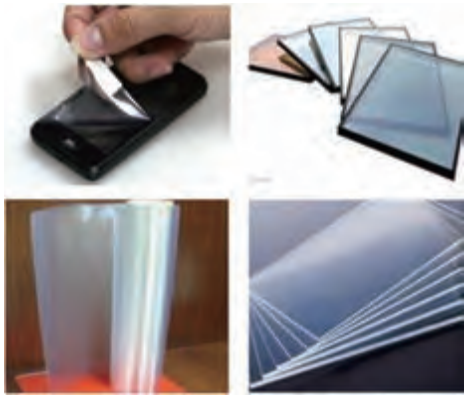
The Self Adhesive Protective films are manufactured by the co-extrusion technique that can reduce the adherend contamination caused by adhesive residue. The product can be used to protect various optical films and sheets, metal, glass, hard coating PET and other plastic products.

产品细节 Product Details

用途 Application		型号 Model	主材质 Main Material	厚 度 Thickness	特点 Feature	粘着力 Adhesion （gf/25mm）
PC制品用 for PC Products	耐温型 Heat Resistance	30L1E	PE	30 um	透明、低晶点 Transparent、Low GeL	1–5（PMMA）
	印刷级 Printing Class	3CL2P	PP	30 um		1–5（PMMA）
		3CL2PG	PP	30 um	绿色、低晶点 Green、Low GeL	1–5（PMMA）
PET薄膜用 for PET Film		30L1P	PP	30 um	透明、低晶点 Transparent、Low GeL	3–9（PMMA）
		30L1PG	PP	30 um	绿色、低晶点 Green、Low GeL	3–9（PMMA）
棱镜膜背面用 for Backside of Prism Film		40L3PY	PP	40 um	黄色、低晶点 Yellow、Low GeL	2–7（PMMA）
导光板保护用 for Light Guide Plate		8GL1E	PE	80 um	透明、低晶点 Transparent、Low GeL	5–15（PMMA）
		8GL1EB	PE	80 um	蓝色、低晶点 Blue、Low GeL	5–15（PMMA）
金属板材保护用 for Metal Panels		5FL1E	PE	50 um	透明、低晶点 Transparent、Low GeL	15–50（PMMA）

产品应用 Application





光学板材保护
Protective film for optical plate

特点：低晶点、剥离后无残留、耐老化。
用途：贴光学板材，如贴增亮膜背面、光学级PET等。

Feature: Low Gels, No residue after peeling, anti–aging.
Application: Protection for optical plate, prism film, optical PET etc.

耐温光学保护
High–temper optical protective film

特点：适用于高温加工过程，粘合力好，为片材提供良好的保护，耐片材成型温度可达150℃ 10min或120℃1h，剥离后无残胶。
用途：用于PC、PET、PMMA等注塑成型加工过程板材表面的防护。

Feature: Suitable for high-temper process procedure, Good adhesion, Good protection for film, Survive after 150 ℃ for 10 min or 120 ℃ for 1 hour, no residue after peeling.
Application: Protection for PC, PET, PMMA and other injection molding process.

防静电光学保护
Anti–static electricity protective film

特点：表面电阻可达$10^{11-12}\Omega$，消除材料表面静电，可以表层或是粘着层导电。可防止空气中的灰尘和微粒被产品表面吸附，使用过程无析出、无残留。
用途：贴对抗静电有要求的电子元件，如LCD出厂时的表面防护。

Feather: Surface resistance up to $10^{12}\Omega$, removing static electricity on the surface of the material, conductivity on the top layer or adhesive layer. Prevent ash or particle attached to the surface, no residue or separate out.
Application: Protection for electronic device, for example, LCD.

玻璃材料用光学保护
Optical protective film for glass material

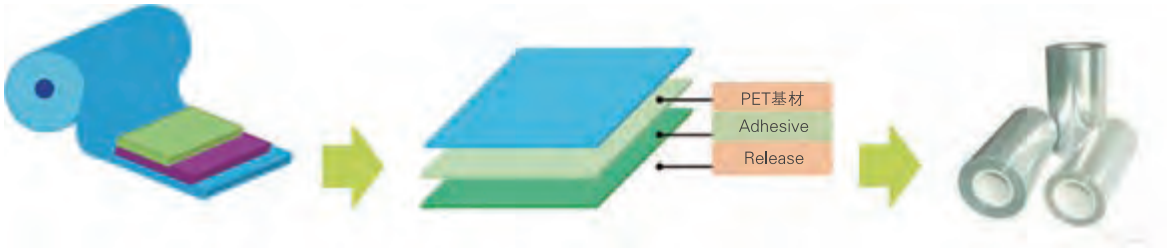
特点：低晶点、透明性好，无残留，易剥离，良好的粘性可以预防玻璃材料表面灰尘污染和划伤。
用途：用于各种玻璃制品表面防护。

Feature: Low Gels,Good transparency, No residue, Easy to peel, Good adhesion to prevent the glass from ash and scratch.
Application: Protection for the surface of glass product.

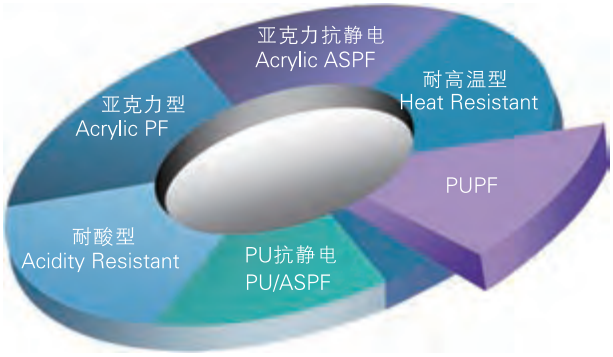
产品简介 Introduction

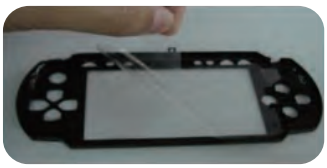
PET保护膜可应用在诸多领域：LCD面板、触控面板及其他光学产品；汽车产品表面、电子产品表面、标牌产品表面及其它产品表面，为产品提供全方位保护作用。

The protection films are qualified for various applications, such as LCD, touch panel, and other optical related products. The main function of protection film is to protect the goods during transportation and storage and on–line processing.



产品系列 Product Series





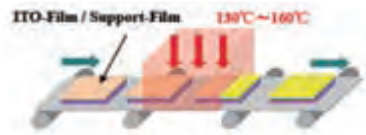
产品应用 Application

抗静电系列
Anti-static Series

应用领域：偏光片出货保护膜/光学膜、光学镜片、平板显示器等制程用保护膜/电子产品临时转移及出货保护。

Application: Protection film for shipment of polarizer, optical film, optical lens, tablet display,etc. Procesing protection for shipment and transfering of electronic products.

耐高温系列
High-temper Series



应用领域：ITO膜制程及高温制程保护。

Application: Protection for ITO film processing and other high-temper processing.

PU保护膜系列
PUPF Series

应用领域：触摸屏的制程和出货保护。

Application: Protection film for touch panel processing and shipment.

性能指标 Performance	亚克力型 Acrylic PF	亚克力抗静电 Acrylic ASPF	耐高温 Heat Resistant	PU	PU抗静电 PU/ASPF	耐酸型 Acidity Resistant
剥离力(g/25mm) 180° Adhesion Force	3~6 6~12	3~6	3~9	<3	<3	20~40
胶面阻抗（Ω） PAS Surface Resistivity	~	$10^{8\sim11}$	$10^{8\sim11}$	~	$10^{8\sim11}$	$10^{8\sim11}$
膜面阻抗（Ω） PET Surface Resistivity	~	$10^{8\sim11}$	~	~	$10^{8\sim11}$	~
剥离静电压（V） Electrostatic Voltage	~	~	~	~	<200	~
排气性（S/30cm2） Buble-release	~	~	~	<4	<4	~
透光率（%） Transmittance	>87	>89	>87	>87	>87	>87
雾度（%） Haze	<5	<3	<5	<5	<5	<5
耐酸性（<20% HF） Acidity Resistant	~	~	~	~	~	1h
耐温性（℃） Heat Resistant	80	80	150	80	80	180

产品特点 Feature

- 高透过率 High Transparency
- 高硬度 High Hardness
- 高耐磨耗性 Highly Wearable
- 低翘曲性 Low Warping

结构示意
Structure Sketch

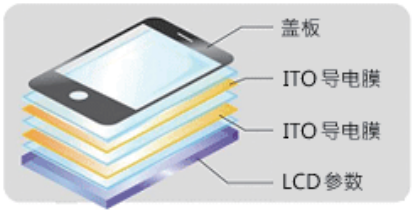
产品参数 Product Details

测试项目 Test Item	单位 Unit	Spec.	KHO23R	KHO231
硬化层厚度 HC Thickness	um	4~5	4	4
铅笔硬度 Pencil Hardness	–	3H（750g）	3H（750g）	3H（750g）
耐磨耗 Steel Wool Rubbing	gf/cm^2	>1000	>1000	>1000
雾度 Haze	%	< 1	0.63	0.55
透过率 Transmittance	%	> 90	92.96	92.41
干扰纹 Interference Pattern	–	–	低 Low	正常 Normal

盖板硬化膜系列 Hard-Coat Film For Cover Lens

KDX 康得新

产品应用 Application



产品特点 Feature

- 高透明低彩虹 High Transparency with Low Rainbow Pattern
- 高硬度 High Hardness
- 低热收缩 Low Thermal Shrinkage
- 弯曲性佳 Bendable
- 良好的油墨在涂性 Good Adhesiveness with Ink

以塑料基板取代玻璃基板外盖,降低生产成本。
By replacing the glass substrate with plastic substrate, the cost is reduced .

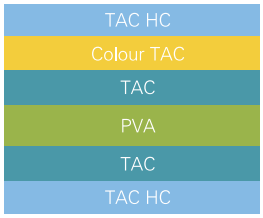
项目 Item			单位 Unit	低彩双面 HC—KHL162	双面 Double Face HC—KHL166	单面 Single Face HC—KHL161
结构 Structure			–	3H HC / PET 250 um / AB	3H HC / PET 250 um / H HC	3H HC / PET 250 um
物理性能 Physical Property	总厚度 Total Thickness		HC	256 ± 6	256 ± 6	254 ± 6
	HC附着力 HC Adhesion		–	100/100	100/100	100/100
	铅笔硬度 Pencil Hardness	HC	–	≥3H	≥3H	–
		AB	–	≥H (印刷面 Printing Face)		≥3H
	耐磨耗 Steel Wool Rubbing	HC	gf/cm^2	≥1000	≥1000	–
		AB	gf/cm^2	≥250	≥250	≥1000
	达因值 Dyne	HC	–	< <32	< <32	< <32
		AB	–	42–46	42–46	42–46
光学性能 Optical Property	光线穿透率 Transmittance		%	≥90.0	≥90.0	≥90.0
	雾度 Haze		%	≤1	≤1	≤1.5

在TAC基材上涂上抗刮与抗眩涂料，保护产品的抗刮伤与反射光.

We do coat the anti–scratch and anti–glare resin on TAC film for product protection.

产品应用 Application

1. 太阳眼镜抗刮伤 Sunglasses Anti–Scratch



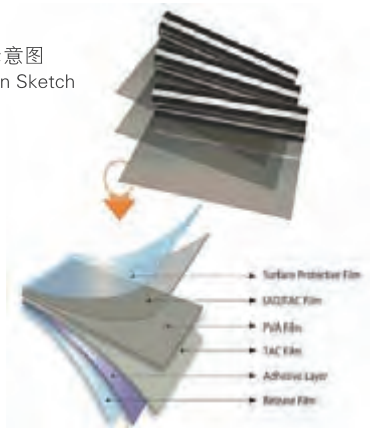
应用示意图
Application Sketch

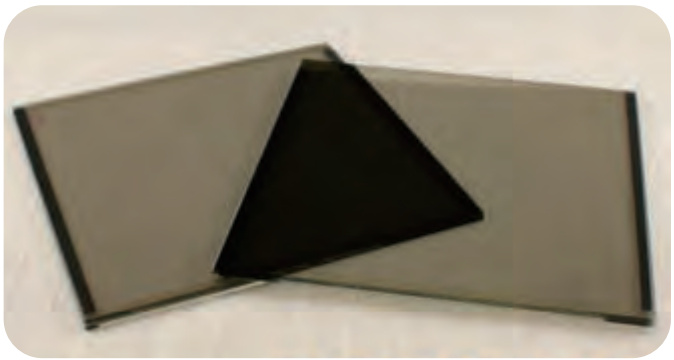
2. 3D眼镜抗刮伤 3D Glasses Anti–Scratch

应用示意图
Application Sketch

3. 偏光板用抗刮伤 Anti–Scratch for Polarizer

应用示意图
Application Sketch





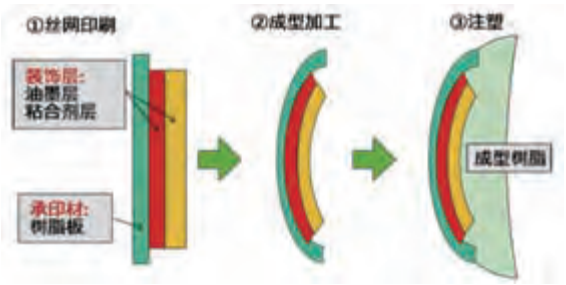
产品参数 Product Details

项目 Item		单位 Unit	KHG1C0 (For 3D–Glass)	KHP101 (For Sun–Glass)	KHY113 (For LCD)
物理性能 Physical Property	总厚度 Total Thickness	um	83 ± 2	203 ± 2	45 ± 2
	粘性 Adhesion	–	100/100	100/100	100/100
	铅笔硬度 Pencil Hardness	–	2H (500gf ,4/5)	2H (500gf ,3/5)	2H (500gf ,3/5)
	耐磨性 Steel Wool Rubbing	gf/cm^2	≥300	≥300	≥500
光学性能 Optical Property	穿透率 Transmittance	%	>90	>90	>90
	雾度 Haze	%	<1	<1	<1

模内装饰膜简介 Introduction

IML是国际风行的表面装饰技术，表面硬化透明薄膜，中间印刷图案层，背面注塑层，由于油墨夹在中间，可使产品耐摩擦，防止表面被刮花，并可长期保持颜色的鲜明不易褪色。

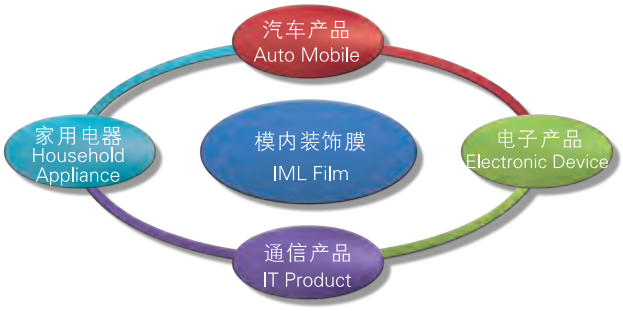
IML is a world wide–popular surface decoration technology.The IML film is hard coating PET film with high elongation & printable property.After plastic injected on ink side of IML film, hard coating layer can protect the product from friction and scratch.



使用原理
Principle

完成后的产品
Finish Product

应用广泛 Application

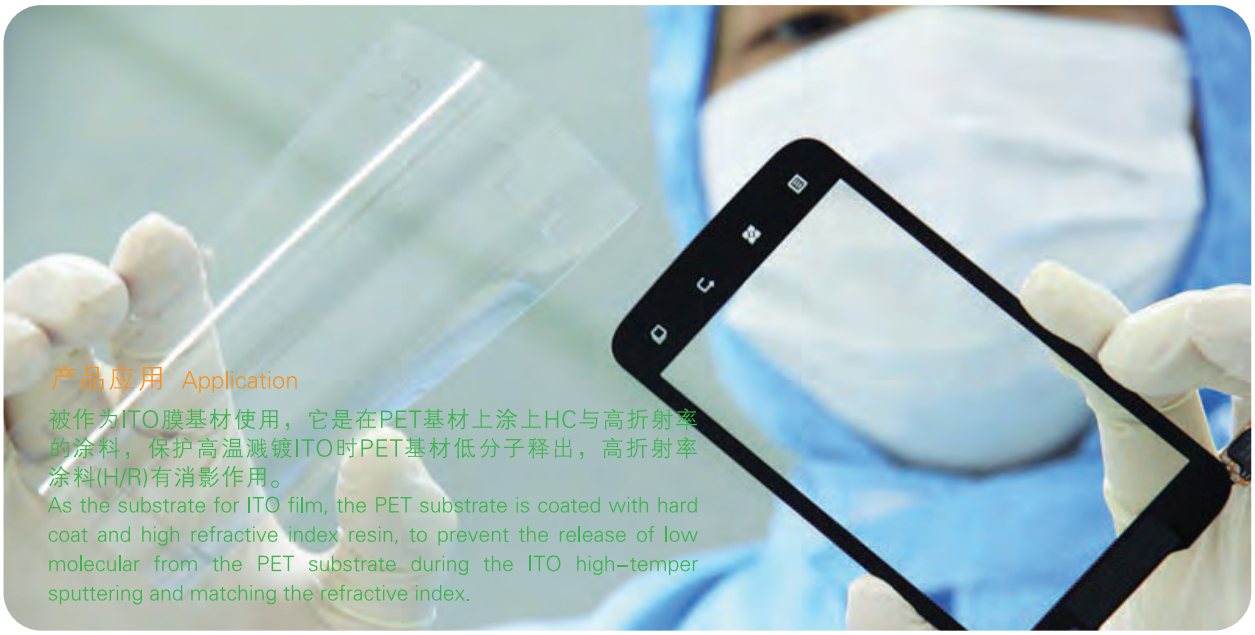


产品参数 Product Details

项目 Item	单位 Unit	KHM1	KHM2	KHM3	KHM4	KHM5
结构 Structure	–	PET PF 2H HC PET PE PF	PET PF 3H HC PET PE PF	PET PF H HC PET PE PF	PET PF F HC PET PE PF	PET PF H HC PET PE PF
铅笔硬度 Pencil Hardness	–	2H	3H	H	F	H
延展性 Elongation	%	10~15%	< 5%	25~30%	45~50%	30~35%
耐磨耗 Steel Wool Rubbing	gf/cm^2	500	1000	500	–	200
弯曲性 Bend Property	–	180° OK	8mm OK	2mm OK	180° OK	180° OK
拉伸深度 Btretch	mm	3	1	5	> 8	6~7

硬化导电膜基材 Hard-Coat Film For Touch Sensor

KDX 康得新



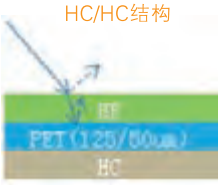
产品应用 Application

被作为ITO膜基材使用，它是在PET基材上涂上HC与高折射率的涂料，保护高温溅镀ITO时PET基材低分子释出，高折射率涂料(H/R)有消影作用。

As the substrate for ITO film, the PET substrate is coated with hard coat and high refractive index resin, to prevent the release of low molecular from the PET substrate during the ITO high-temper sputtering and matching the refractive index.

结构示意 Structure Sketch

HC/HC结构



HR/HC结构

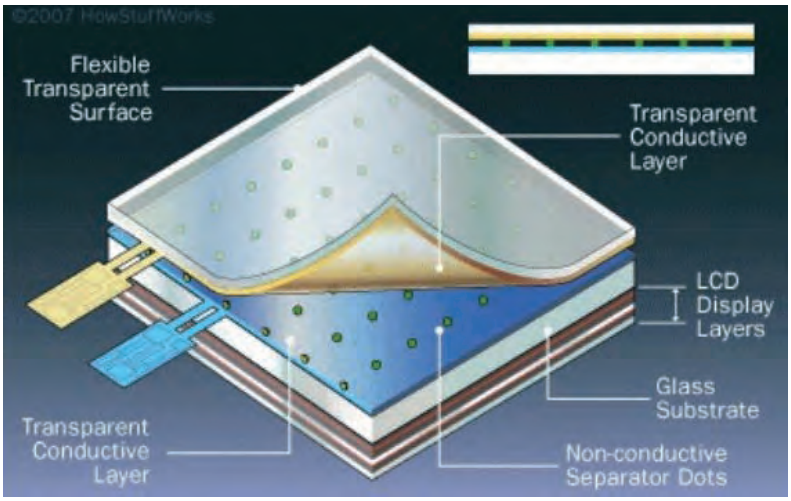
良好的抗刮性防止溅镀制程可能所造成的刮伤，硬化层与溅镀层有良好的密着性。

Good anti-scratch to prevent the possible scratch during the sputtering. Good adhesion between the HC layer and the sputtering layer.

高折射率涂层(HR)提供有消影作用

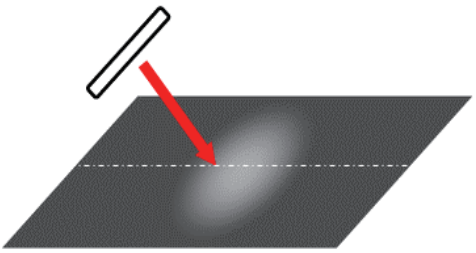
High refraction index (HR) layer is designed to make the electrode pattern invisible.

型号 Model	结构 Structure	厚度(um) Thickness	穿透率(%) VLT	雾度(%) Haze	硬度(H) Hardness	百格 Adhesion
KHD142		125	≥90	<1	2/2	100/100
KHF342		125	≥89	<1	1/2	100/100
KHF143		125	≥88	<1	2/2	100/100
KHD112		50	≥90	<1	1/1	100/100
KHF312		50	≥89	<1	1/1	100/100



产品应用 Application

抗反光涂布效果
Effect of Antiglare Coating



结构示意 Structure Sketch

类型一 TYPE I AG/HC

类型二 TYPE II AG/AG

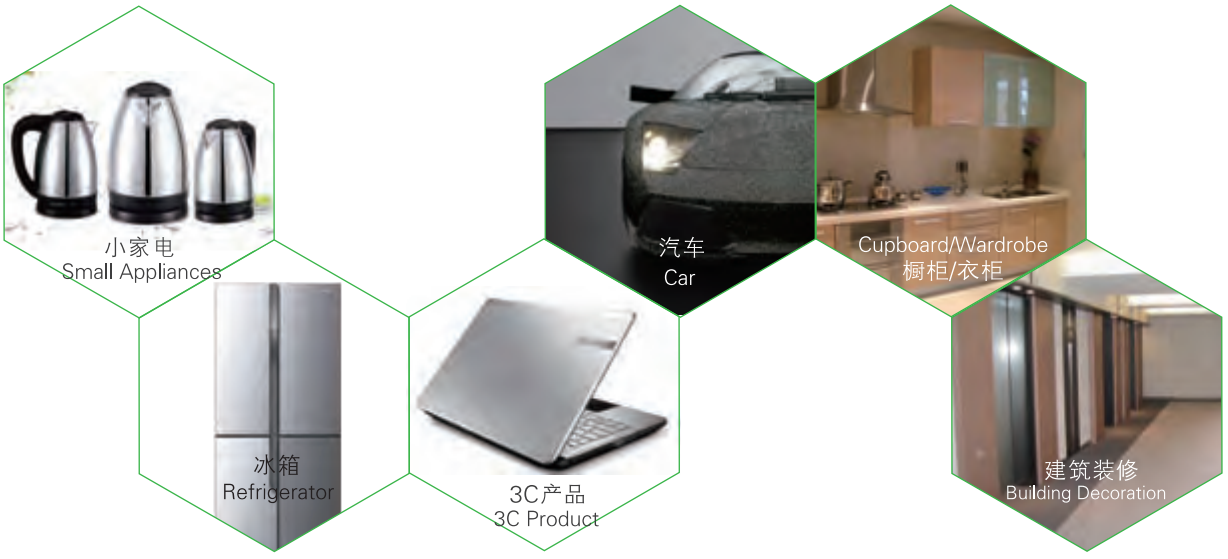
产品参数 Product Details

项目 Item		单位 Unit	KHT452 (AG/HC)	KHT152 (AG/AG)
物理性能 Physical Property	总厚度 Total Thickness	um	200 ± 2	200 ± 2
	粘性 Adhesion	–	100/100	100/100
	铅笔硬度 (AG) Pencil Hardness (AG)	–	3H（750gf ,4/5)	3H（750gf ,4/5)
	铅笔硬度 (HC) Pencil Hardness (HC)	–	2H（750gf ,4/5)	–
	耐磨耗 Steel Wool Rubbing	gf/cm^2	≥500	≥500
	弯曲度 Bending	–	<15mm	<15mm
光学性能 Optical Property	穿透率 Transmittance	%	≥90.0	≥90.0
	雾度 Haze	%	4 ± 1.0	8 ± 2.0
	C(清晰度)	–	>83	>75

产品特点 Product Feature

- 多种花色可选适用不同市场定位 Customized pattern & colour for different markets and applications
- 高硬度/耐刮性提高产品品质 High physical performance for better product quality
- 工艺简单提高产能 Simple technique for efficient manufacturing
- 立体制作提供良好触感 3D surface provides real touch feeling
- 耐刮/耐磨/耐水汽/耐高温 Good performance against scratch, abrasion, steam and heat

产品应用 Application



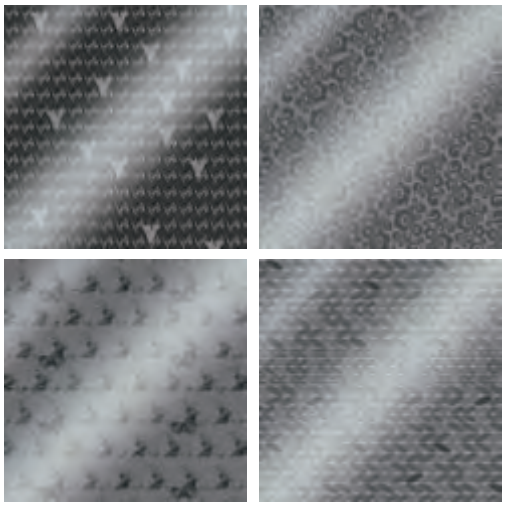
工艺说明 Technology

用高科技压印技术搭配特殊高透光学UV成型胶，透过精密压印成型设备成型，展现出高硬度高透明结构层，能应用于多种不同厚度的薄膜基材上。

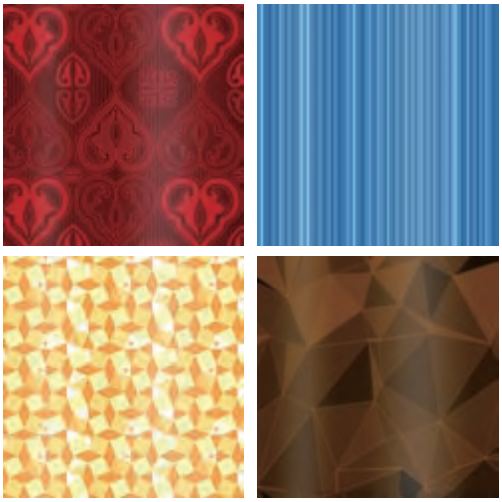
By using high–tech casting technology with special high transmittance UV resin and precise casting equipment, adding high hardness and high clearance structure layer to film substrate with different thicknesses.

花色样品 Sample

家电应用
Household Application



建材应用
Architect Application



产品参数 Product Details

项目 Item		规格 Standard	结果 Result
表面特性 Surface Property	总厚度 Total Thickness	75–400 um	–
	附着力 Adhesion	5B	OK
	铅笔硬度 Pencil Hardness	≥H(平涂 Coating)	OK
	耐磨耗 Steel Wool Rubbing	花纹无损 No damage to the pattern	OK
	耐黄变 Yellowing	无黄变、脆化 No Yellowing 、No Embrittlement	OK
	耐污染 Stain Resistance	无明显残留物 No obvious residue	OK
	耐腐蚀 Corrosion Proof	无变色、起泡、起皱等变化 No colour changing、No bubble、No wrinkle	OK
物理特性 Physical Property	抗拉强度 Tensile Strength	≥40MPa ≥40MPa	OK
	拉伸率 Elongation	≥50% ≥50%	OK

KDX是世界领先的窗膜制造商，作为世界窗膜协会认证的全球七家生产商之一，KDX为客户提供高性能的建筑和汽车隔热膜，并且广泛应用于汽车隔热、建筑节能、装饰以及安全领域。康得新在张家港拥有巨型工业园，生产优质的窗膜产品，KDX窗膜的生产、研发和销售团队来自全球知名业内企业，拥有丰富经验，是康得新旗下进行全球化业务发展和运作的高科技公司。KDX窗膜所属的康得新集团，是世界领先的预涂膜和光学膜的生产企业，已在深圳上市。

KDX is the world’s leading manufacturer of solar control window films.As a member of International Window Film Association (IWFA), KDX provides high performance and diverse Archi/Auto insulation,safety, decoration window films. Its advanced manufacturing facility is located in Zhangjiagang High–tech industrial park, China. The core talents are all from global famous window film manufacturers with strong capability of branding, R&D and manufacturing. The parent company, Kangdexin Composite Materials, is the world’s leading manufacturer of pre–coating and optical films.

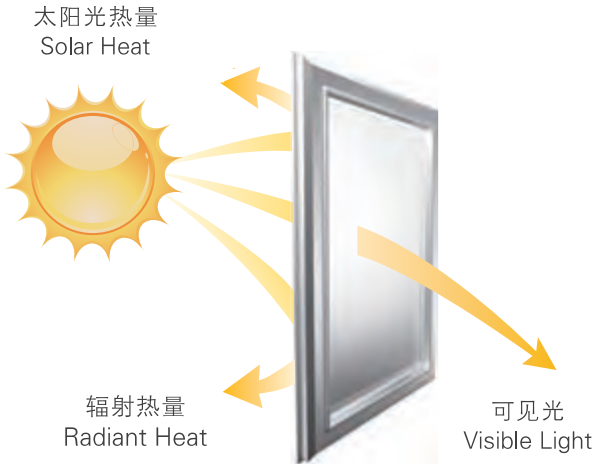
KDX车膜系列 Automotive Film

中国唯一一家IWFA制造商会员
The only IWFA member company in China

- ☑ –隔热 Solar Rejection
- ☑ –紫外线防护 UV Rejection
- ☑ –安全防爆 Safety & Security
- ☑ –私密 Privacy
- ☑ –阻隔炫光 Anti–Glare
- ☑ –防刮伤 Anti–Scratch
- ☑ –美观 Beautiful Appearance

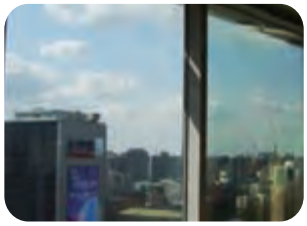
KDX建筑膜是带有多层磁控溅射贵金属纳米镀层的PET基材，或带有精密金属镀层的PET基材复合而成的具有高性能隔热、节能效果的建筑膜。

KDX architect window film is PET substrate with multiple Nano–meter layers of metal sputtering or lamination of PET substrates with metal coating layer. It is high performance window film with solar rejection and energy saving.



产品特性 Feature

- 总太阳能阻隔率：最大 90%　Overall Insulation of Solar Energy: Up to 90%
- 紫外线阻隔率：99% 以上　UV Block: Above 99%
- 寿命：10年以上　Life Time: Above 10 year



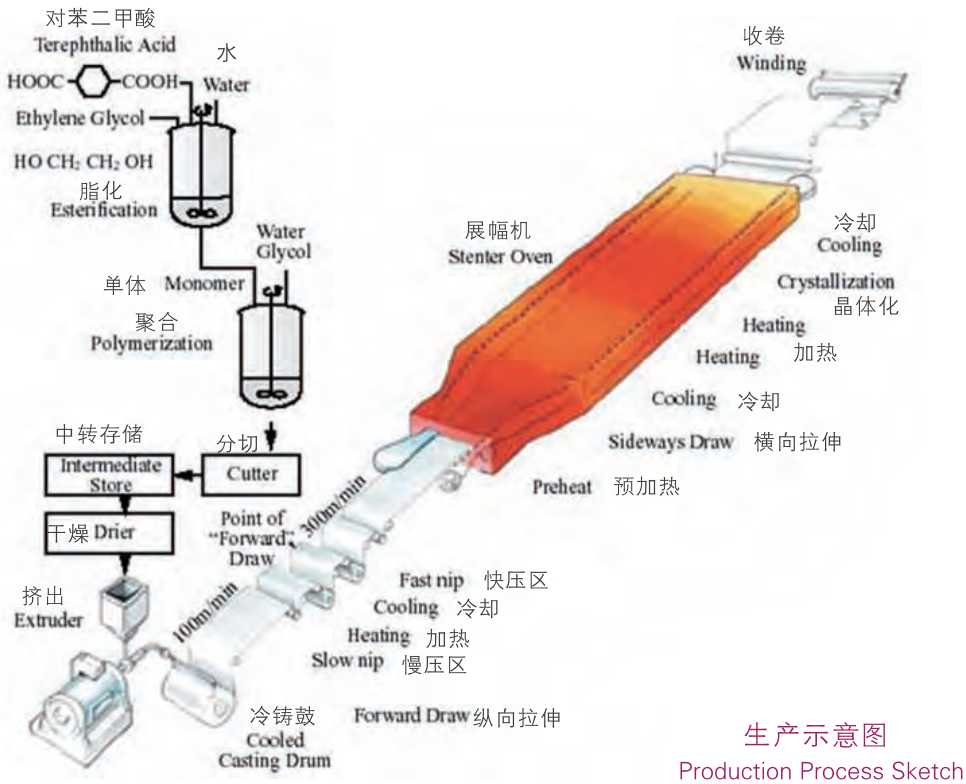
示意图：使用前(左图)与使用后(右图)的对比
Pictures of Window with (right) and without Film (left)

- ☑ – 隔热 Solar Rejection
- ☑ – 节能 Energy Saving
- ☑ – 防雾 Haze–Proof
- ☑ – 保护隐私 Protecting Privacy

结构示意
Structure Sketch

光学级PET薄膜是双向拉伸聚酯薄膜，其具有强度高，刚性好，透明，光泽度高等特点，无嗅，无味，无色，无毒，有很高的透光率，较低的雾度，优秀的尺寸稳定性，表观平整度高，薄膜清晰度好；具有良好的抗静电性，易进行真空溅射；具有良好的耐热性，优异的耐蒸煮性。广泛应用于离型膜，扩散膜，硬化膜，增亮膜等光学领域。

Optical class PET film is biaxial oriented polyester film with high strength, high rigidity, high transparency, high gloss and other more features; and without odor, smell, color and toxicity. with high light transmittance, low haze, excellent dimensional stability, apparent flatness, good film clarity; good anti–static electricity, easy to sputter; good resistance to heat boiling. Widely used in release liner, diffuser film, hard –coat film, prism film.

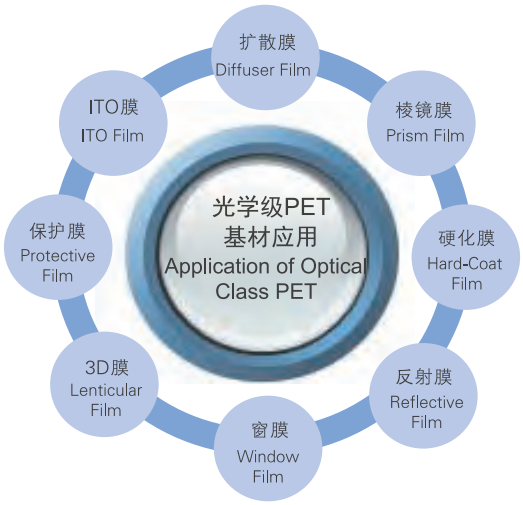


生产示意图
Production Process Sketch

产品应用 Application

光学PET基材是在PET基膜上下表面进行不同的primer预涂处理，以满足不同光学膜的生产要求。

Optical class PET substrate is PET substrate with different surface primer treatments for different optical film manufacturing requirements.



保护膜基材
Protective Film Substrate

特点：单面电晕处理，用于离型膜，拥有比较高的平整度，优良的光学、尺寸稳定性能。

Feature：Single side corona treated, for release film application, high flatness, good optical and dimension properties.

型号 Model	表面处理 Surface Treatment	透光率 Transmittance	雾度 Haze	拉伸强度 Tensile Strength		热稳定性 Thermal Shrinkage	
				MD	TD	MD	TD
KFNI–G1	单面电晕 Single Side Corona Treatment	≥89%	≤1.2%	200±70	200±70	≤1.5%	≤0.5%

扩散膜基材
Diffuser Film Substrate

特点：产品表面化学处理，用于扩散膜，拥有优异的光学性能，稳定的附着力。

Feature：Product surface chemical treated, for diffuser film application, good optical performance and stable adhension.

型号 Model	表面处理 Surface Treatment	透光率 Transmittance	雾度 Haze	拉伸强度 Tensile Strength		热稳定性 Thermal Shrinkage	
				MD	TD	MD	TD
KFDN–G2	双面化学处理 Double Side Chemical Treatment	≥90%	≤1.5%	200±70	200±70	≤1.5%	≤0.5%

硬化膜基材
Hard–Coat Film Substrate

特点：产品表面化学处理，用于保护贴，抗彩硬化，ITO硬化等，拥有优异的光学性能，稳定的附着力，较高的折射率。

Feature：Product surface chemical treated, for protective film, hard–coat film, ITO HC film applications, good optical performance, stable adhension and high refractive index.

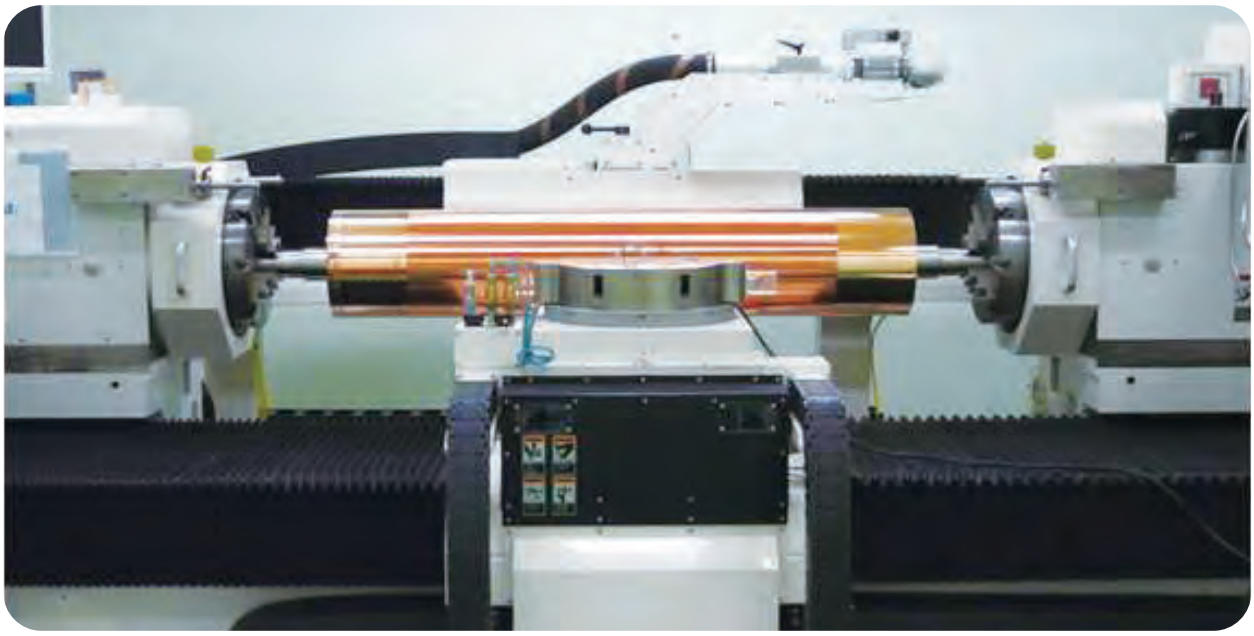
型号 Model	表面处理 Surface Treatment	透光率 Transmittance	雾度 Haze	拉伸强度 Tensile Strength		热稳定性 Thermal Shrinkage	
				MD	TD	MD	TD
KFDN–G3	单双面化学处理 Single/ Double Side Chemical Treatment	≥92%	≤1%	200±70	200±70	≤1.5%	≤0.5%

棱镜膜基材
Prism Film Substrate

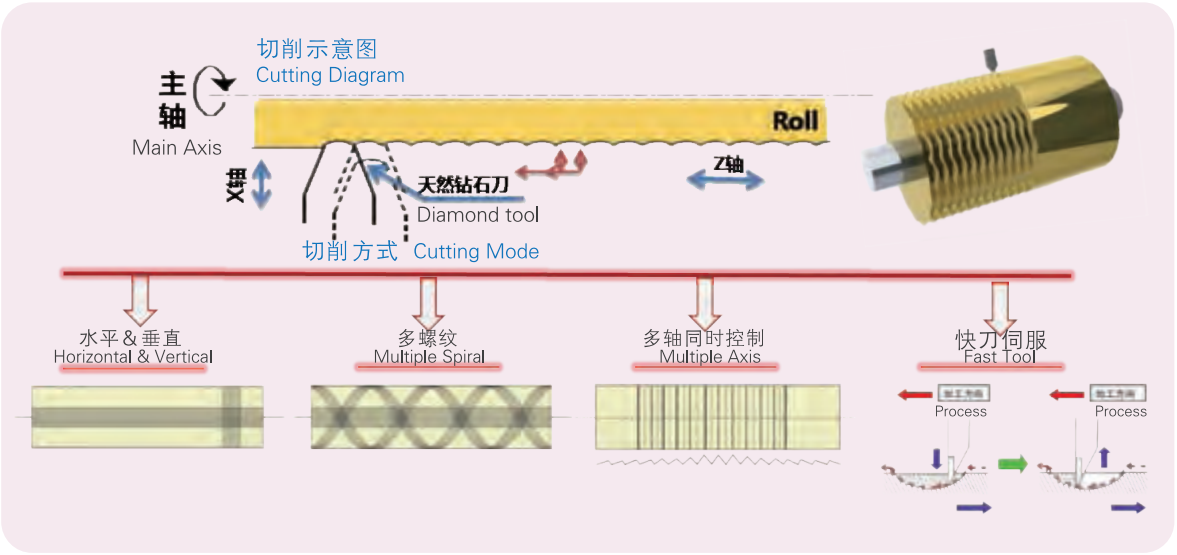
特点：产品表面化学处理，用于棱镜，3D膜等，拥有优异的光学性能，稳定的附着力，优异的产品表观。

Feature：Product surface chemical treated, for prism film and lenticular film application, good optical performance and stable adhension.

型号 Model	表面处理 Surface Treatment	透光率 Transmittance	雾度 Haze	拉伸强度 Tensile Strength		热稳定性 Thermal Shrinkage	
				MD	TD	MD	TD
KFDN–G4	双面化学处理 Double Side Chemical Treatment	≥92%	≤1%	200±70	200±70	≤1.5%	≤0.5%

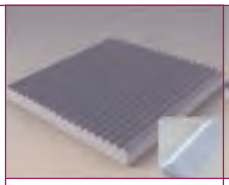
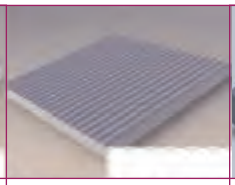
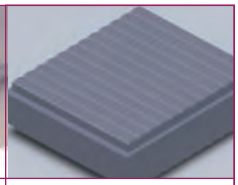


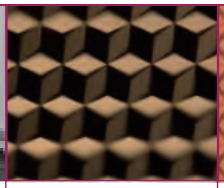
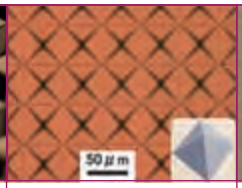
超精密CNC加工示意
Ultra Precision CNC processing



加工能力 Process Capability		精度 Tolerance	
长 度 Length	Max. 3.5 m	位置精度 Position Tolerance	X 轴 ± 0.3 um up to 300 mm
直 径 Diameter	Max. 600 mm		Z 轴 ± 1.5 um up to 3000 mm
重 量 Weight	Max. 3,000 kg		主轴(C轴) Main Axis ± 1 s

模具微结构的光学应用 Applications of Micro Structure Drum

结构 Structure					
	三角棱镜	曲线三角棱镜	Fresnel Lens	Lenticular Lens	矩阵式复眼
应用 Application	增亮膜 Prism Film	增亮膜 Prism Film	太阳能聚光膜 Solar Concentrator	3D膜/投影屏幕 3D Display/Projection Screen	LED照明 LED Lighting

结构 Structure					
	Sin Wave	三角锥	四角锥	雨滴形	Micro Lens
应用 Application	匀光膜 Prism Film	反光膜 Reflective Film	反光膜/照明 Reflective Film / Lighting	照明/导光膜 Lighting / Light Guide Film	

光学级喷砂技术 Optical Class Sand Blasting Technology

工艺 Process		最大喷砂滚轮尺寸 Maximum size of the Drum	
雾 度 Haze	5%~75%	轮面 Length	Max. 2.4 m
镀层材质 Plating Material	Cu、Ni、NiP	直径 Diameter	<350 mm

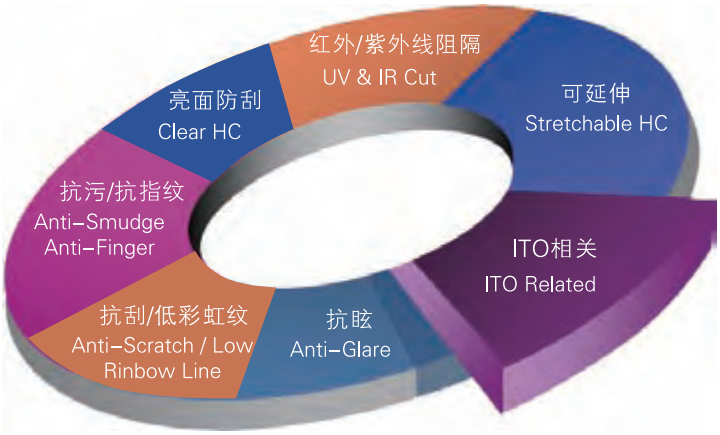
超镜面滚筒抛光模具 Ultra Mirror Polishing Drum

用途：精密滚轮模具表面研磨与抛光 Application: Precision Drum Grinding and Polishing	加工能力 Process Capability			设备简介 Equipment Introduction
镜面加工 Mirror Polishing 表面细致化 Smoothing the Surface	材质 Material	Ra	表面状况 Surface Condition	工件长度 Total Length Max. 4m 最大轮径 Diameter of the drum Max. Φ 0.6m
	镍 Nickel	0.009um	研磨面 Grinding	
	铬 Chromium	0.003um	镜面 Mirror	

电镀超精密加工用材料 Materials for CNC processing

提供滚轮或平板模具用的电镀层处理 I Provide Plating Service for Drum or Flat Mold	提供滚轮模具用的电镀层处理 II Provide Plating Process for Drum	滚轮模具镀层 Plating Layer for Drum	最大电镀滚轮尺寸 Maximum Size of the Plated Drum	
适合钻石超精密加工的NiP 镀层提高滚轮的使用寿命 基材: 铜, 不锈钢, Stavax Nickel plating for Ultra Precision diamond tooling process to increase life time of the drum. Substrate: Copper, Stainless steel, Stavax	适合钻石超精密加工的硬质铜镀层提高刀具使用的寿命 基材: 铜, 不锈钢, Stavax Copper plating for Ultra Precision diamond tooling process, increase life time of the tool. Substrate: Copper, Stainless steel, Stavax, Steel	镀硬质铜厚度 Copper Plating Thickness 800~1000 um	总长度 Total Length	Max. 3 m
		镀NiP厚度 Nickel Plating Thickness 200~600 um	轮 面 Length	Max. 2.7 m
			直 径 Diameter	Max. 500 mm

产品应用 Application



3H抗彩虹纹硬化树酯 3H Anti-Rainbow Hard Coat Resin

主要应用：PET 低彩虹保护贴 ，3D Glass TAC HC

Application：Low Rainbow Pattern Protection Film，3D Glass TAC HC

适用基材 Suitable Substrate	硬度 Hardness	彩虹纹 Rainbow	雾度 Haze	穿透率 T.t	翘曲 Warpage	溶剂 Solvent	接触角 Contact Angle	耐摩擦 Steel wool Rubbing (#0000) 10*time
PET，TAC	3H	Low	<1%	≥90%	Low	PGME/EAC	85° ±5°	1000 g

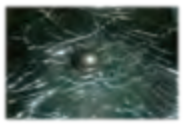
高延伸硬化树酯 High Stretchable Hard Coat Resin

主要应用 Application：

IML Film，Sunglass TAC HC，3D Glass TAC HC

适用基材 Suitable Substrate	硬度 Hardness	彩虹纹 Rainbow	雾度 Haze	穿透率 T.t	拉伸 Elongation	溶剂 Solvent	接触角 Contact Angle	耐摩擦 Steel wool Rubbing (#0000) 10*time
PET，TAC	HB/H/2H	Low	<1%	≥90%	15%–45%	PGME/MEK	85° ±5°	100 g–300 g

ITO防爆膜硬化树酯 ITO Crack–Proof Hard Coat Resin



主要应用：用于防爆膜
Application：Crack–Proof Film

适用基材 Suitable Substrate	硬度 Hardness	彩虹纹 Rainbow	雾度 Haze	穿透率 T.t	接触角 Contact Angle	溶剂 Solvent	附着性 Adhesion	耐摩擦 Steel wool Rubbing (#0000) 10*time
PET	3H	Low	<1%	≥90%	≤70°	PGME/EAC	5B	1400 g

抗污抗指纹硬化树酯 Anti–finger Print Hard Coat Resin

主要应用：PET 低彩抗指纹易擦拭保护贴
Application：Low Rainbow Pattern Anti–finger Print Easy–wiping Protection Film.

适用基材 Suitable Substrate	硬度 Hardness	彩虹纹 Rainbow	雾度 Haze	穿透率 T.t	接触角 Contact Angle	溶剂 Solvent	附着性 Adhesion	耐摩擦 Steel wool Rubbing (#0000) 10*time
PET，TAC	3H	Low	<1%	≥90%	100° –110°	PGME/EAC	5B	1000 g

抗眩光硬化树酯 Anti–Glare Hard Coat Resin

主要应用：抗眩类产品
Application：Anti–Glare Product.

适用基材 Suitable Substrate	硬度 Hardness	雾度 Haze	穿透率 T.t	接触角 Contact Angle	溶剂 Solvent	附着性 Adhesion	翘曲 Warpage	耐摩擦 Steel wool Rubbing (#0000) 10*time
PET，TAC	3H	4%–25%	≥89%	85° ±5°	PGME/EAC	5B	Low	500 g

抗红外线专用硬化树酯 IR–Cut Hard Coat Resin

主要应用：用于窗膜、隔热膜
Application：Window Film

适用基材 Suitable Substrate	硬度 Hardness	红外截止 IR–Cut	穿透率 T.t	雾度 Haze	b*	溶剂 Solvent	耐摩擦 Steel wool Rubbing (#0000) 10*time
PET	2H	940 nm–1800 nm Transmissivity ≦10%–20%	≥75%	<2%	<1	PGME/EAC	1000 g

抗紫外线抗眩硬化树酯 UV–Cut&Anti–Glare Hard Coat Resin

主要应用：用于窗膜、隔热膜
Application：Window Film

适用基材 Suitable Substrate	硬度 Hardness	紫外截止 UV–Cut	穿透率 T.t	雾度 Haze	b*	溶剂 Solvent	耐摩擦 Steel wool Rubbing (#0000) 10*time
PET	2H	300nm–390nm Transmissivity ≦5%	≥85%	12% ±2%	<2	PGME/EAC	1000 g

抗紫外线硬化树酯 UV–Cut Hard Coat Resin

主要应用：用于窗膜、隔热膜
Application：Window Film

适用基材 Suitable Substrate	硬度 Hardness	紫外截止 UV–Cut	穿透率 T.t	雾度 Haze	接触角 Contact Angle	b*	溶剂 Solvent	耐摩擦 Steel wool Rubbing (#0000) 10*time
PET	2H	300nm–390nm Transmissivity ≦5%	≥90%	<1%	≤70°	<2	PGME/EAC	1000 g