

**LIGHT UP**  
**YOUR**  
**LIFE**

**2025**

**ES**  
**SWITCHABLE**  
**FILM**  
**CATALOGUE**

Reason of Choosing Smart Film  
via Easy Glass

**Japan** made LCD material  
Terrific Cost Performance Value  
15 years Smart Film Experience  
Established Technique  
Reliable After Sales Service



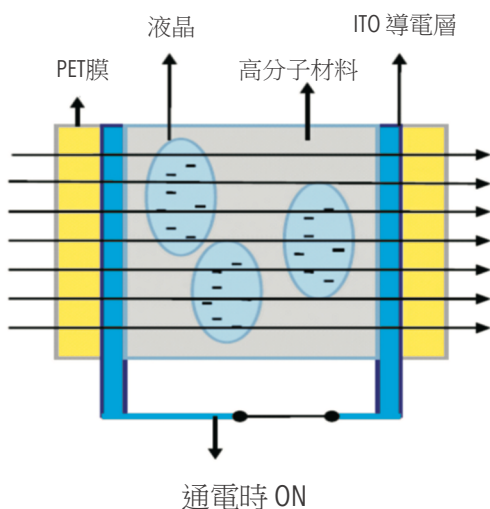
Location : Hong Kong - Office in Central

## 智能調光膜

智能調光膜是一種新型的電子光控產品,其學名為:聚合物分散液晶膜,又稱為PDLC FILM (聚合物分散液晶薄膜) 光膜是在兩塊透明的薄膜材料之間將液晶以微米量級的小微滴分散在聚合物基體內,經由特殊的工藝製作而成。

## 工作原理

當智能調光膜關閉電源時,調光膜裡面的液晶分子會呈現不規則的散佈狀態,此時調光膜呈現透光而不透明的外觀狀態;當給調光膜通電后,里面的液晶分子呈現整齊排列,光線可以自由穿透,此時調光膜瞬間呈現透明狀態。

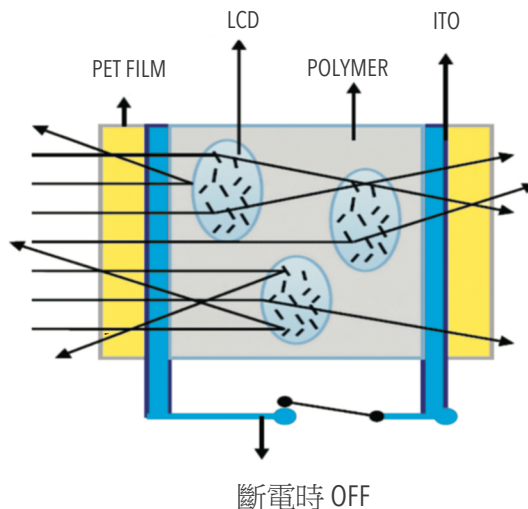


## Smart Film

Smart film is a new electronic controlled optical product, with a scientific name of polymer dispersed liquid crystal film (PDLC FILM). In the poly-vision switchable privacy film, small droplets of liquid crystal at micron meter level is dispersed in a polymer matrix, which is kept between two films. In order to produce this PDLC film, special process is required.

## Working principle

When the power is turned off, the liquid crystal molecules in the PDLC film distributes irregularly. At this state, the PDLC film is opaque. When the power is on, the liquid crystal molecules can get arranged quite regularly and the PDLC film can get transparent instantly.



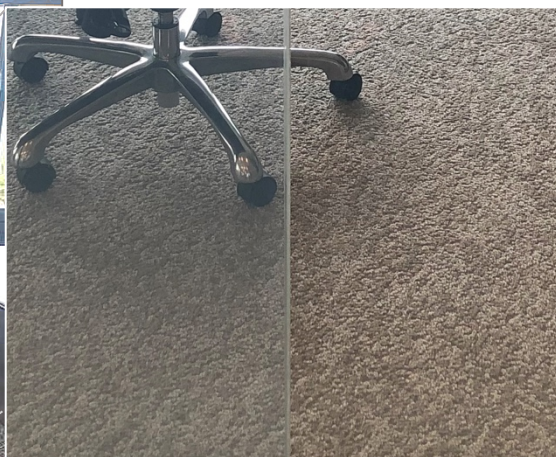


## 高清 / 超高清智能調光膜

### High Definition (HD) / Ultra High Definition (UHD) Smart Film

高清  
HD Smart Film

超高清  
UHD Smart Film



TÜV Rheinland®

Prüfbericht - Produkte Test Report - Products			
Prüfbericht-Nr.: CN22EL02 001E Test report no.: <span style="float: right;">Seite 4 von 4 Page 4 of 4</span>			
Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse - Bemerkungen/ Measuring results - Remarks	Ergebnis Result
<b>Test Results</b>			
<b>1. Luminous transmittance</b>			
Sample No.	Test result		Evaluation
A003264758-001-01	Power off state	5.34%	Data Only
A003264758-001-01	Power on state	89.08%	Data Only
<b>2. Haze</b>			
Sample No.	Test result		Evaluation
A003264758-001-02	Power off state	92.03%	Data Only
A003264758-001-02	Power on state	0.90%	Data Only

UHD Luminous Transmittance Test Result by TÜV Rheinland

### ES智能調光膜分為高清和超高清兩種

- ES 高清智能調光膜的透光率可以達到 **80% (+/-3%)**，是市場上高等級的一種調光膜，在霧化度，可視角度，耐熱度跟壽命更是市場上一等一的選擇
- ES 超高清智能調光膜的透光率可以達到 **89% (+/-3%)**，可算是現今市場上PDLC技術的中透光率和清晰度最頂級的智能調光膜，加上各種高配置的參數值，絕對是調光膜中的不二之選

### ES Smart Film in High Definition / Ultra High Definition

- ES High Definition (HD) Smart Film has 80% (+/-3%) Luminous Transmittance, is a high standard smart film in the market. With the parameters of Wide Visual Angel, High Temperature resistance, Long Life Time, if you looking for HD smart film, ES is definitely the one you should be looking at
- ES Ultra High Definition (UHD) Smart Film has 89% (+/-3%) Luminous Transmittance, is the highest transmittance and the most clear you can get in the market under PDLC technic. With all the high standard of parameters, if you are looking for the top quality of smart film in the market, ES will be your unique choice.

ES 智能調光膜在日光下的清晰度與覆蓋度展示  
Actual Photos being taken from one of our jobs, showing the clear and opaque stage under daily light



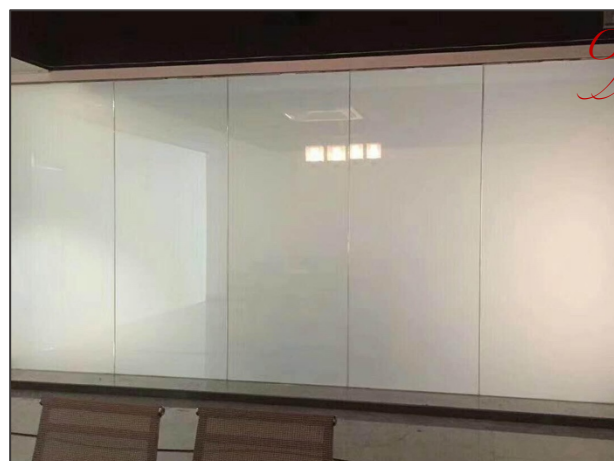
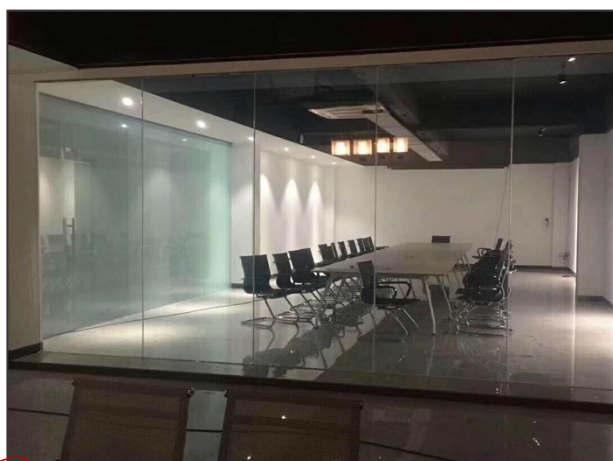
Location : Hong Kong - Office in Shun Tak Centre, China  
Merchants Tower - more than 20 rooms of the Entire Floor



弧形貼膜工藝展示 Curved Film Crafts Display



Easy



Location : Hong Kong - Office in San Po Kong by Easy Glass

## 本公司智能調光膜優勢

- 1、採用全球領先的卷對卷工藝,做到連續生產,比起原有單張生產工藝,生產效率和產品穩定性明顯提升。
- 2、通過對液晶聚合物的深入研究,能夠生產各種顏色的調光膜。

## Advantages

- 1.Using the leading roll-to-roll process in the world, continuous production was able to get achieved. Compared to the original single production technology, efficiency and stability of the products improved significantly.
2. We are able to produce PDLC film in various colors, based on the research of liquid crystal polymer.

## 智能調光膜參數 Smart Film Parameters

測試參數 Test Parameter		狀態 State	結果 Results
光學 Optical	透光率 Transmittance 平行光 Parallel Light	通電 Power On	高清約 HD About: 80% (+/- 3%) 超清約 UHD About: 89% (+/- 3%)
		斷電 Power Off	< 1%
	霧化度 Haze	通電 Power On	< 7%
		斷電 Power Off	> 90 %
	可視角度 Visual Angle	通電 Power On	約 About: 160°
	紫外光阻隔率 UV Light Blocking Rate	通電 Power On	> 99%
		斷電 Power Off	> 99%
	紅外線阻隔率 IR Light Blocking Rate	通電 Power On	> 30%
		斷電 Power Off	> 90%
電學 Electricity	電源適配器 Power Adapter	通電 Power On	45 VAC
	反應時間 Response Time	通電 Power On → 斷電 Power Off	200 毫秒 (ms)
		斷電 Power Off → 通電 Power On	10 毫秒 (ms)
	功耗 Power	通電 Power On	約 About: 5 W/m <sup>2</sup>
尺寸 Size	厚度 Thickness	/	0.4 mm
	單件最大尺寸 Max Size per each unit	/	1500 mm x 3000 mm
環境 Environment	操作溫度 Operating Temperature	/	-10°C to 60°C
	存儲溫度 Storage Temperature	/	-20°C to 100°C
壽命 Life	使用壽命 Life Time	通電 Power On	超過 More than 100,000 hours