

# UniteGlass<sup>TM</sup>

The Leading Manufacturer of Smart PDLC Film|Glass



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## About Uniteglass

UniteGlass Smart PDLC film is manufactured by Anhui Fangxing Optoelectronic New Material Technology Co., Ltd which was founded in 2014 with an area of 168 acres, a sub-factory of triumph science & technology ltd, a **listed company** of China National Building Materials Group, a Fortune 500 company. **Stock code SH:600552.**



With the **world class** Hi-tech production facility of **8 million USD** roll to roll coating system named **SMARTWEB** from Germany Applied Materials, Taiwan Lamination Machine and Slitting machine, specializing in the manufacturer of **ITO films**, **smart PDLC film** with patents.

The total investment of the project is **1 billion RMB**, the total production capacity reach 9.8 million. We offer all our distributors a one stop solution from product technical training to machinery, smart film, switchable glass world-wide, with **24 months quality guarantee.**





## Why Uniteglass?

**In-House Manufacturing:** Uniteglass smart film from technology R&D, ITO film roll to roll coating, liquid crystal lamination, smart film cutting to final delivery are done in one factory with strict quality control.

**Pioneer in Technology:** Strong R&D Team, supported by **China Glass s Industry Design & Research Institute**. Keep improving, solving the common quality problems in the industry such as glue opening, edge shrinkage, bubbles and breakdown by improving productive technology and controlling the production strictly.



R&amp;D Team



Smart Film Slitting Machinery



ITO Film Roll to Roll Coating Machinery from Germany



Smart Film Slitting Machinery



**Hi-Tech Facilities:** 1000 grade dust-free Workshop, German Applied Materials and Automatic 50 Meters **aging test** production lines, Lamination Machine and Slitting machine from Taiwan.




Thermostatic and Dust-free Workshop




PDLC film Cutting Room

**Strong Resource Integration:** Brother factories of Smart Low-e glass and Photovoltaic products, one stop solution.


**Durable Quality:** smart PDLC film with **high & low temperature test** at 70°C and -20°C for 500 hours; **Thermal Shock Test** 10°C-80°C for 30 minutes; **Damp Heat Test** for 500 hours.




Alternate Cooling & Heating  
Test 10°C (30min) -80°C (30min)



Hot & Humid  
60°C 90%RH 500hr

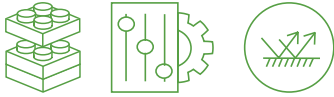


High Temperature Test  
70°C...500hrs



Low Temperature Test  
-20°C...500hrs

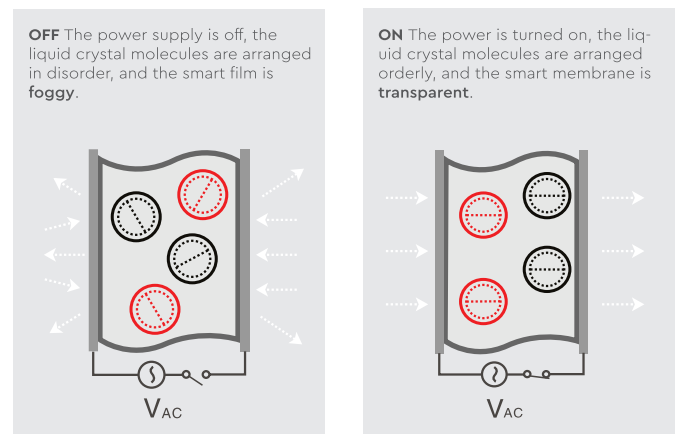
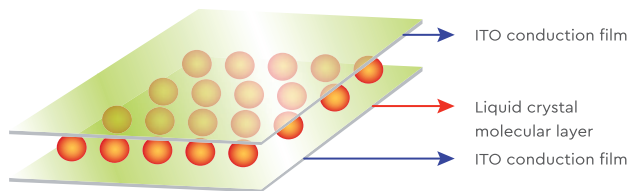




## What's Smart PDLC film?

Smart PDLC film is a high-tech product which is based on PDLC liquid crystal technology. It's a switchable film composed of two layers of ITO films and one layer of PDLC.

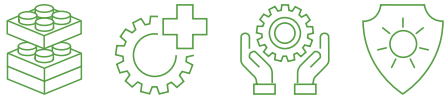
Smart PDLC film will become vaporous due to the disordered arrangement of liquid crystal molecules after turning off the power. On the contrary, when the power has opened,neatly organized molecules will make smart film present transparency.



SMART FILM		MODE	SPECIFICATION
Optical parameters	Visible Light Transmittance	ON	>85%
		OFF	>55%
	Parallel Light Transmittance	ON	>66%
		OFF	>1.5%
	Haze	ON	<4%
Electrical Parameter	Working Voltage	ON	48V AC
	Sturation Voltage	ON	<36V
	Response Time	OFF-ON	<200ms
		ON-OFF	<10ms
	Power Consumption	ON	5W/M <sup>2</sup>
Mechanical Parameter	Thikness	0.4-0.5mm	
	Max Width	≤ 1.6M	
	Coild Material Size	1.0/1.2/1.6M(W)*50/100/200M (L)	
	Adhseiveness	50g/mm	
Enviromental Parameter	Working Temperature	-20°C -70°C	
	Storage Temperature	-20°C -80°C	
	Service Life	(ON)>10 years	
	Switch Frequency	>80 million times	

Opto-electrical specifications

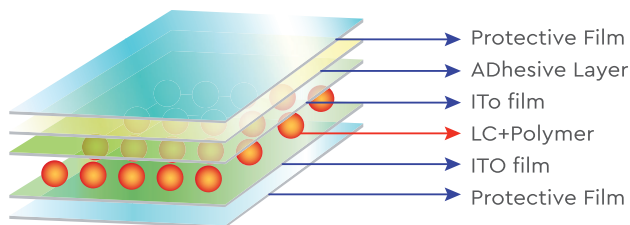




## What's Self-Adhesive Smart film?

Self-adhesive PDLC film is an innovative film with a cling layer on the back side of the non-adhesive film, which can be easily stick on the existing flat glass or curved glass, and switch from opaque to clear simultaneously with electricity.

It's widely used in office, residential house, medical institutions, showcase mall, etc. it's not only functioning as a curtain for partition, privacy, but also working as rear projection for home cinema and office projection with 3D holographic animation in high definition and **180°** viewing angle.



## Advantage of Uniteglass Smart film

**Easy installation:** just pick and stick for self-adhesive smart film.

**Energy saving:** Saves light.

**Privacy:** powered off, it's opaque.

**UV resistant:** it can resist 98% UV light.

**Sound insulation:** when laminated with toughened glass, it blocks 38 db.

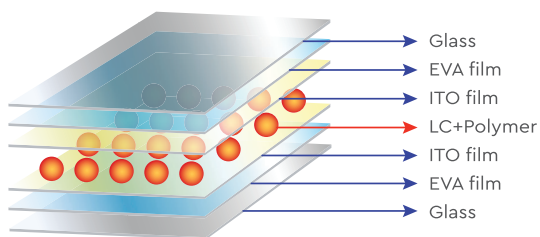
**Safety:** PDLC film lifetime above more 10 years.



## What's Smart Glass?

Smart glass is a laminated glass called switchable glass, privacy glass. It's a new building material for glass walls, homes, offices, etc. It's with the smart PDL film and EVA film laminated in between the tempered glass through lamination machinery.

When power on, it's clear; when powered off, it's opaque. This opto-electrical laminated glass can also be used as a projection screen or billboard indoor and outdoor.



SMART GLASS		MODE	SPECIFICATION
Optical parameters	Visible Light Transmittance	ON	>80%
		OFF	>55%
	Parallel Light Transmittance	ON	>66%
		OFF	<1.5%
	Haze	ON	<4%
		OFF	>90%
	Visual Angle	ON	>140°
Electrical Parameter	Working Voltage	ON	48V AC
	Sturation Voltage	ON	<36V
	Response Time	OFF-ON	<200ms
		ON-OFF	<10ms
	Power Consumption	ON	5W/M <sup>2</sup>
Enviromental Parameter	Working Temperature	-20°C -70°C	
	Storage Temperature	-20°C -80°C	
	Service Life	(ON)>10 years	
	Switch Frequency	>80 million times	
Energy	Sound Insulation	>36db	
	Heat Insulation	>class 2	
Glass optional	Glass type	ordiyary glass, tempered glass, shaped glass, hot, bending glass, LOW-E glass, fireproof, ect	
	Maximum size	1.8*3.2M	
	Glass Thickness	5+5mm, 6+6mm, 8+8mm, 12+12mm	

Opto-electrical specifications





## Advantage of Uniteglass Smart Glass

**Explosion Proof:** laminated switchable glass is designed to remain in place after withstanding a shockwave created by an external explosion. Enjoy security!

**Elevate Space:** no need blinds, shades, curtains and drapes, which requires washing regularly. Enjoy more open spaces as well as privacy. just with a flick of a button, glass dims from transparent to opaque.

**Save Cost:** though the curtains block out most of the light but the light still comes affecting temperature. Switch smart glass will save cost on air conditioning charge for its insulation and blocks of 99% UV light, reducing the temperature inside the house and enjoy cooling.

**Projection screen:** it's multi functional, use rear projection screen as home theater, or shopping window advertising, office and school projection when it's opaque.

**Make it Simple:** streamline the cleaning and maintenance associated with traditional windows and window coverings. With a mobile app to control clear and opaque.

**Long life time:** it can be used at least 10 years, it deserves invest for its modern convenience.

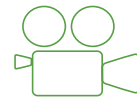
### EXPLOSION PROOF



### ELEVATE SPACE



### PROJECTION SCREEN



## ADVANTAGE



### MAKE IT SIMPLE



### SAVE COST



### LONG LIFE TIME



## Markets

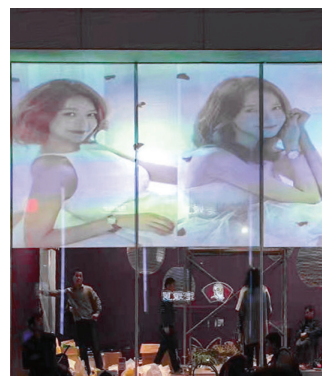
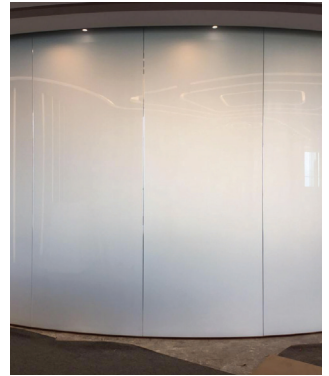
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**Architecture:** high-grade hotels, villas, offices, conference rooms, toilet doors and windows, shower rooms, kitchen doors and windows, glass curtain walls, greenhouses, science and technology residential buildings, commercial buildings, factories, laboratories, doors and windows, or partitions of clean rooms.

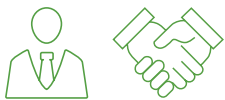
**Car windows:** Car skylights, subway, high-speed rail.

**Financial and medical treatment:** Bank counter window, automatic teller machine security window; Hospital baby room, or visiting window of intensive care unit.

**Various industries:** Interior design application, exhibition hall, command center, prison isolation room, home theaters, ticket window, shop window, commercial advertisement, etc.







## APPLICATIONS

### Banking System

Smart PDLC film opens up a new field of modern bank that has high-performance covert function, so that the working environment is more secure. Because of the bullet-proof PDLC film counter used for bank isolation, during business hours the glass window remains transparent,

once an emergency occurs, in a few seconds the window can be immediately darkened so that the terrorists lose the looting targets, which leave enough time for police officers to subdue the robbers, and to maximize the safety of personnel life and property.



Smart PDLC film  
OFF



Smart PDLC film  
ON

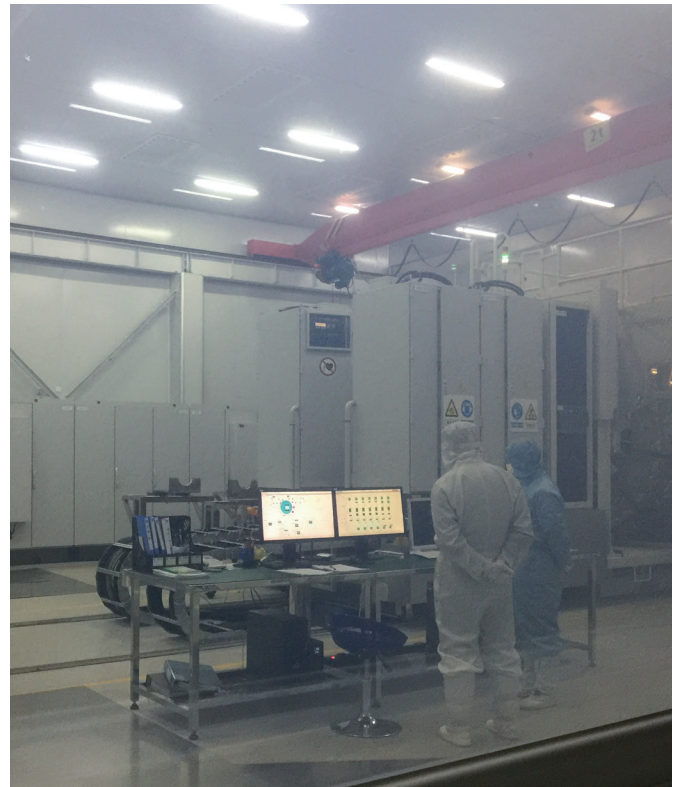


## Practical industrial system

The feature of transparent and opaque of smart PDLC film brings a new working environment to the factory workshop. At the same time, it is convenient to monitor the working condition and customers' visit, and to prevent be disturbed by unrelated personnel.

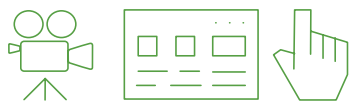


Smart PDLC film  
OFF



Smart PDLC film  
ON





## Multimedia Projection

Multimedia intelligent system integrates intelligent visual film, ultra-short focus touch screen, infrared touch screen and computer diversification technology.

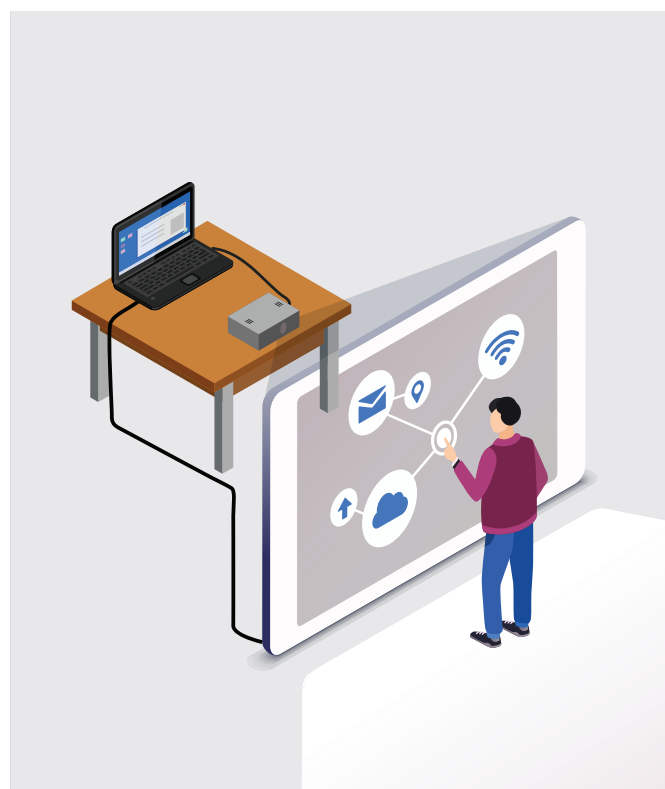
It can be projected, touched and realizes the interaction of super body feeling game without power.

The glass becomes transparent when the power is on, which realize 3D stereoscopic image without affecting the display of exhibits.

It can be applied in shopping malls, outdoor advertisements, bank exhibitors and other equipment or public places.



Smart PDLC film OFF/ON



Multimedia intelligent system



## High-end Hotel System

Smart 'Privacy Rooms' are becoming increasingly popular within high-end hotels, offering users the chance to study, work and sleep in the height of privacy.



Smart PDLC film OFF



Smart PDLC film  
ON

## Residential

At home we can have the smart PDLC film or smart laminated glass in restroom, living room doors and windows, offer us a privacy space to enjoy time.



Smart PDLC film OFF



Smart PDLC film  
ON



## Commercial: Office

Smart PDLC film brings the modern office environment a new field of invisibility, showing a completely different hidden space. Both design and visual will give you an extraordinary new experience. Being seen or not, depending on your own control.



Smart PDLC film  
OFF



Smart PDLC film  
ON





For more information, pls contact us freely.  
You're warmly welcomed to visit our factory!

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