



ZHIYUAN BUILDING MATERIALS CO., LIMITED



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1 Company profile



Company profile

Established in 2012, We OYPDLC (Zhiyuan Building Materials Co., Limited) has been focusing on R&D Switchable PDLC film technology. Our professional and aspiring team has made a number of milestones on Research and development for polymer dispersed liquid crystal (PDLC) materials.

We are committed to providing advanced PDLC Smart film and total solutions for our customers. Our products export to more than 40 countries in the world. Assisting by educating our clients and averting potential troubles through our experience we can help in many facets.

We can be reached via email, telephone, and fax. We are bilingual, easily accessible and readily available. Always glad to help you in your endeavors.

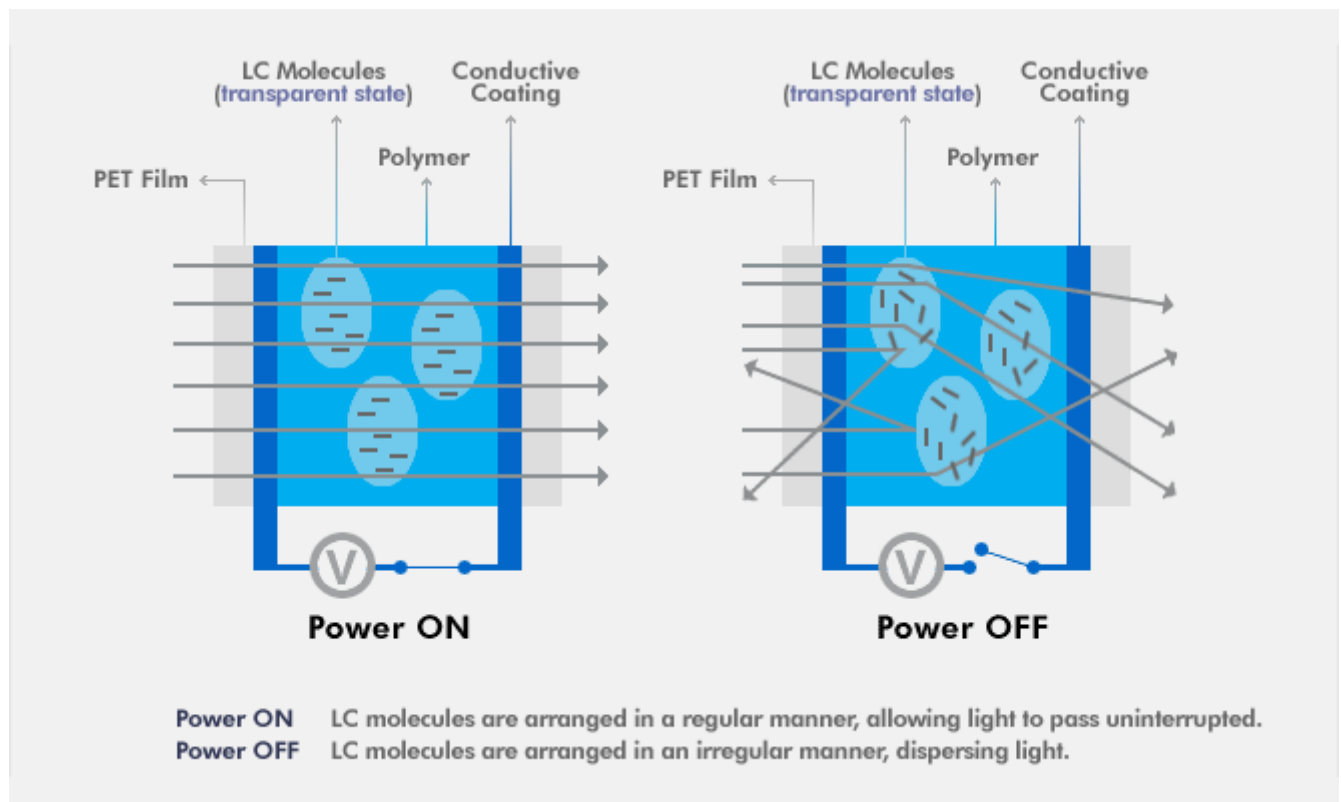


2 Lamination Smart Film

✧ Pdlc smart film structure & mechanism

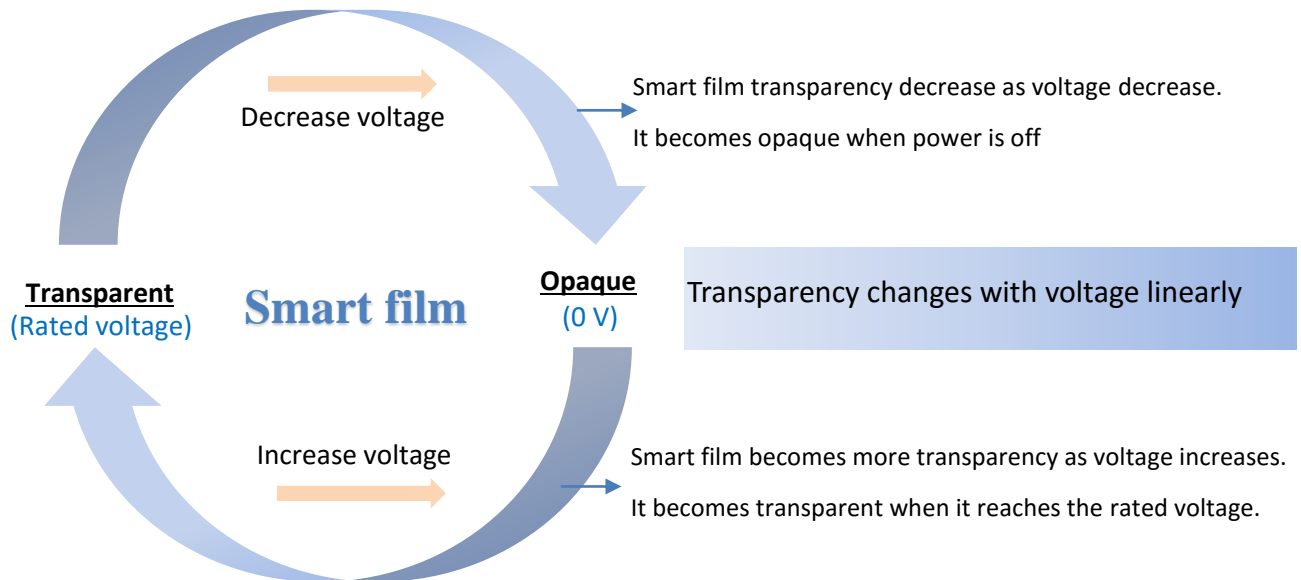
Smart PDLC Switchable Film (Smart Film) which is made of two layers of transparent conductive coating films sandwiched with polymer dispersed liquid crystal material. It is also called Smart Glass Film, Switchable Smart Film, Privacy Glass Film, PDLC Film, Magic Glass Film, Electronic Film etc.

By applying or removing electric field to drive the liquid crystal molecules in aligned or disordered array, Smart PDLC film can realizes transparent or opaque effect.



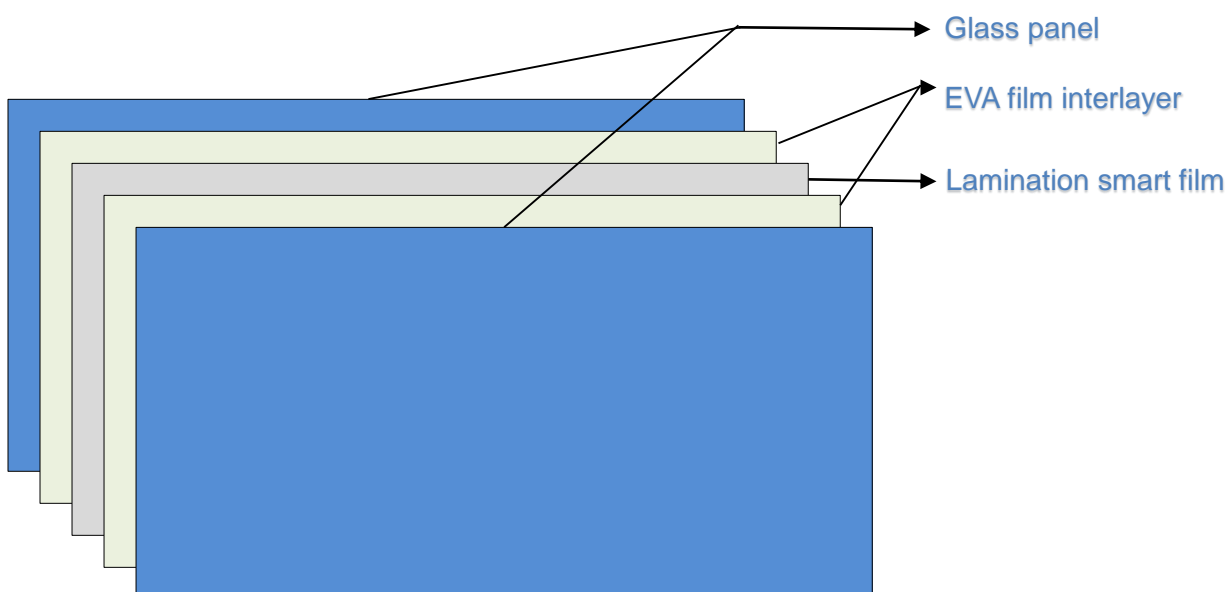
This outstanding electro-optical characteristic enables it to a wide range of application in commercial entertainment, aviation and maritime, rail transportation, store windows and other critical national facilities, sites and so on.

✧ Transparency changes with voltage linearly



✧ How to laminate smart film

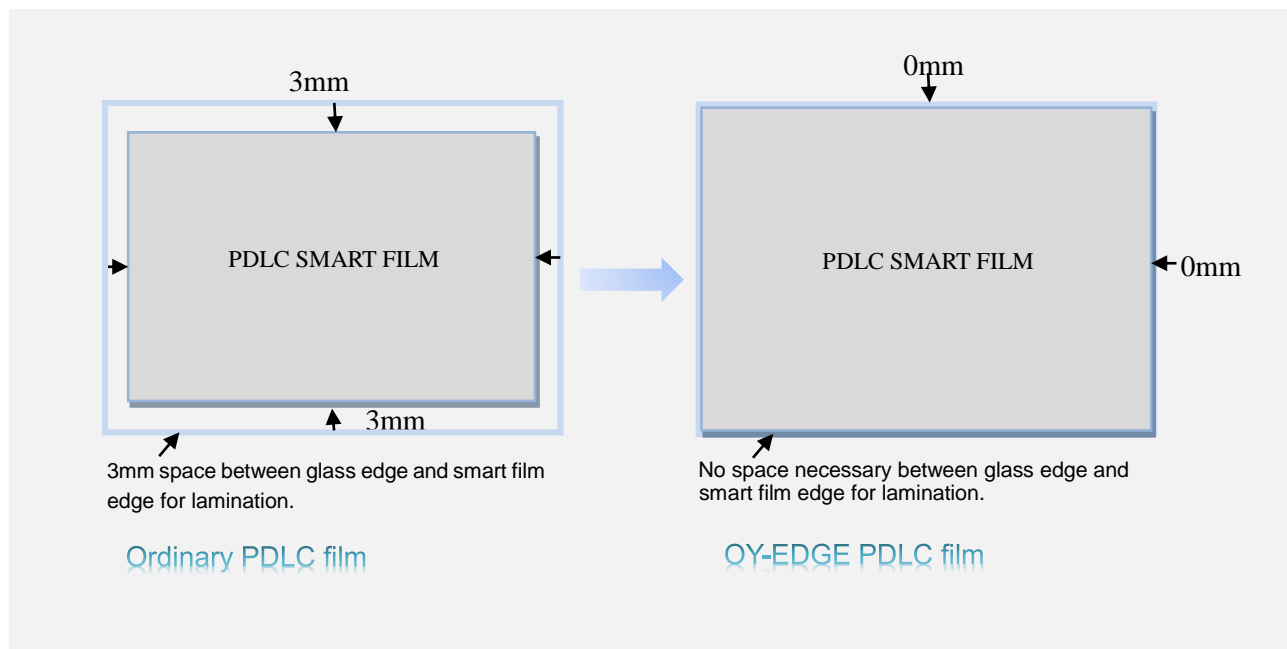
To well protect the PDLC film and let it long time working, especially for environment with much moisture, we suggest customer use lamination smart film to be sandwich laminated between 2 layers glass. Choosing to purchase our lamination smart film and have a local glass company to create the final products (smart glass). This method cuts down on shipping costs and potential loss due to breakage vs purchasing our finished glass when a dealer is not nearby.



2.1 OY-Edge lamination pdlc film

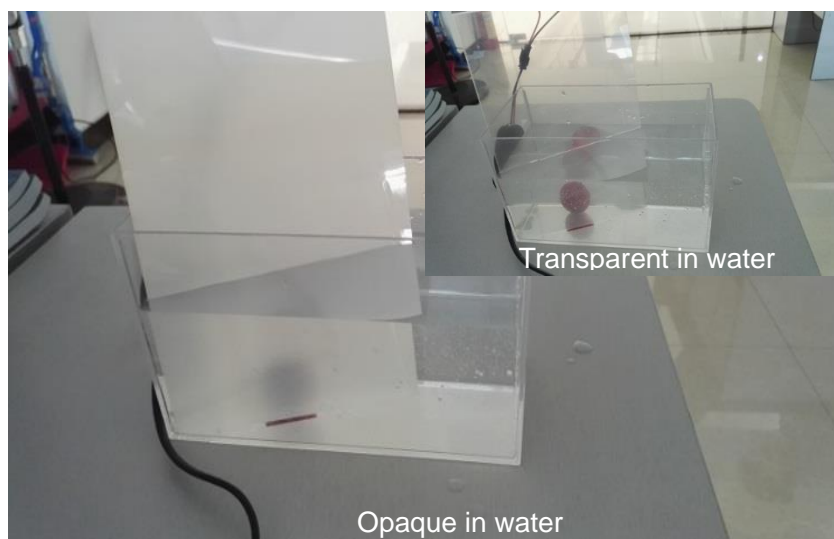
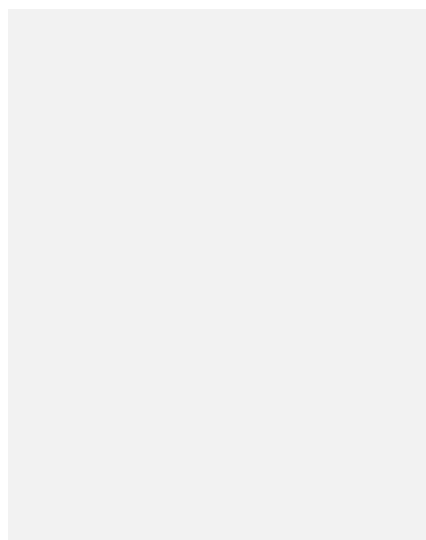
➤ Pdlc laminate exactly to glass edge

You can laminate OY-EDGE PDLC film to glass edge, no need to left any space at the edge.



➤ Excellent waterproof performance

It can work well even after soaking in water for several months.



➤ Specification

Thickness	Maximum size	Voltage	Transmission	Life time
0.38mm	1.8m*5m	65V AC	On>78% / off<1%	>50000hr

2.2 OY-48V lamination pdlc film

This PDLC film working at lower voltage, it will be more safe and energy saving, high clearance.

PRODUCT FEATURE <ul style="list-style-type: none"> •Working voltage at 48V •More safe •Energy saving •High clearance, lower voltage 	Optical Properties	Visible Light	ON	>80%
		Transmission	OFF	<1%
		Visual Angle	ON	150°
		UV Blocking	OFF/ON	>99%
		Haze	OFF/ON	94%/6%
	Electrical Properties	Operating Voltage	ON	48V AC
		Frequencies	ON	50 to 60Hz
		Current	2mA/m2	2mA/m2
		Response Time	ON==>OFF	10ms
			OFF==>ON	20ms
		Power Consumption	ON	5W/m2/hr
	Specification	Durable Temperature	-30°C to 100°C	
		Life Time	>50000hr	
		Thickness	0.38mm	

2.3 OY-Color lamination pdlc film

Now we can supply the black, blue, pink, yellow, light grey color smart PDLC film, these film only the liquid crystal layer with tinted, not PET tinted. And other customized color we can make as required with a MOQ.



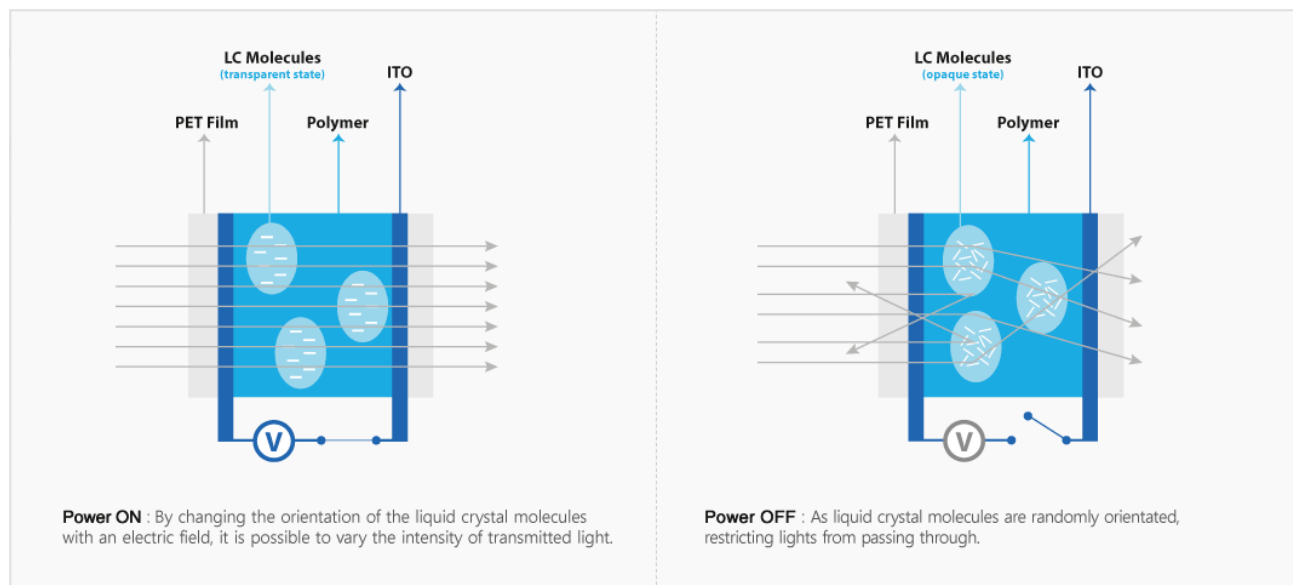
FEATURE

- Waterproof
- High weather resistance& no edge shrinkage
- **Customized color available**
- Lamination to glass edge

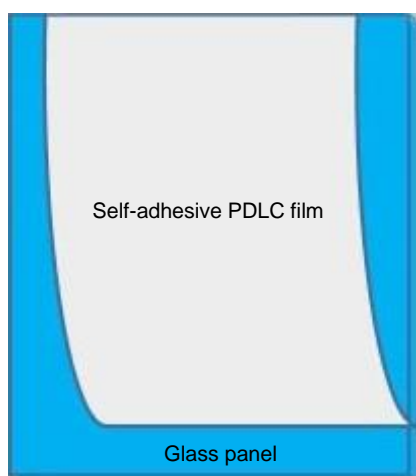
3 Self adhesive smart film

➤ Self adhesive pdlc smart film

Self-adhesive PDLC smart film is an improved product from the non-adhesive PDLC smart film. Which polymer dispersed liquid crystal(PDLC) material inside, through the function of electric fields, can fast switch from transparent and opaque condition.



Self-adhesive PDLC smart film is manufactured with a self-adhesive cling layer on rear side, you can peel and stick to the existing glass, which provides a simple and cost effective alternative to smart glass panel.



FEATURE

- Self-adhesive (Peel and stick)
- Can be applied onto the regular glass without replacing the existing glass
- UV / solar protection
- Removable
- Power: 65 V/AC (5 watts per square meter)
- Maximum cut size: 1.5m x 3.6m

➤ Specification

Thickness	Maximum size	Voltage	Transmission	Life time
0.6mm	1.5m*20m	65V AC	On>78% / off<1%	>50000hr

4 Switchable smart glass

Switchable smart glass is a laminated glass product consisting of a PDLC smart film sandwiched between two layers of glass. The PDLC film is what allows you to change the glass from opaque to transparent.(or dim any where in between)

We provide complete Switchable smart glass already with bus bar, customers just directly install to where they wanted. Switchable smart glass has longer life than Self-adhesive smart film, since the PDLC smart film is well protected by glass on both sides. Our switchable smart glass is laminated with tempered glass, finished product more security and safety.

Feature

- Transparent switchable smart glass
- Anti-UV: smart glass can block over 90% ultraviolet radiation
- Soundproof: Smart glass can decrease the noise level reach 35dB
- Security: Smart glass will not hurt people if it were broken, because the broken glass shards still stick on the PDLC film.
- Customized smart glass is available

Technical specification

Optical Properties	Visible Light Transmission	ON	>80%
		OFF	<1%
	Visual Angle	ON	150°
	UV Blocking	OFF/ON	>99%
	Haze	OFF/ON	94%/6%
Electrical Properties	Operating Voltage	ON	60AC
	Frequencies	ON	50 to 60Hz
	Current	2mA/m2	2mA/m2
	Response Time	ON==>OFF	10s
		OFF==>ON	20ms
	Power Consumption	ON	5W/m2/hr
Specification	Durable Temperature	-30°C to 100°C	
	Life Time	>50000hr	
	Thickness	4mm+4mm--12mm+12mm	

5 Smart glass application

•PDLC smart glass for privacy protection and energy saving.

Currently, this product has been widely applied in the sheds, doors, windows and ceilings of car, bath room, shower enclosure, villas, Conference room, insurance companies, supermarket, hotels, restaurants, churches and command centers. PDLC smart glass applying in luxury hotels, flats and family shower rooms can turn to transparent or opaque easily according to user's need, which not only ensures personal privacy, but also adds more zest for life.

•PDLC smart glass for displaying and Security.

In banking, jewelry industry and exhibition industry counters, bulletproof glass and glass of display are made with PDLC Switchable film. When robbery happens, the glass can instantaneously turn into opaque through a variety of ways like remote control so that criminals lose their target which can guarantee maximize personal and property safety.

•PDLC smart glass for hospital.

PDLC smart glass can take the place of curtains in the application for medical institutions. Its firmness, safety, noise insulation and environmental protection can help calm the patients down and recovery. It is used in private clinical areas, nurseries, emergency rooms, ICUs, operation rooms.

•PDLC smart glass for projection screen

Application for 2D/3D computer and TV monitor, 3D glasses are no more needed when watching a movie or playing online game. PDLC smart glass can be used in projection screen

The application is as the projection screens of shopping plazas, it will function as electronic glass curtain for inner heat insulation in the day time, In the evening, it would be the perfect large free billboard, flash advertisements on it attract public attention.

•PDLC smart glass in Aircraft

It can control the glare daylight instantly by passengers or crew and they can enjoy view with variable tint. Also it eliminates shades. With the great thermal and sound insulation PDLC smart glass create us a cooler and quieter cabin. Owing to its light weight and firm stability, it saves weight and increases cabin space. The satisfactory of the privacy protection makes it a modern design option.



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