

**TRANSFORM YOUR SPACE
MAKE IT DIFFERENT**

**SWITCHABLE PDLC
SMART GLASS FILM**

Polymer Dispersed Liquid Crystal (PDLC)

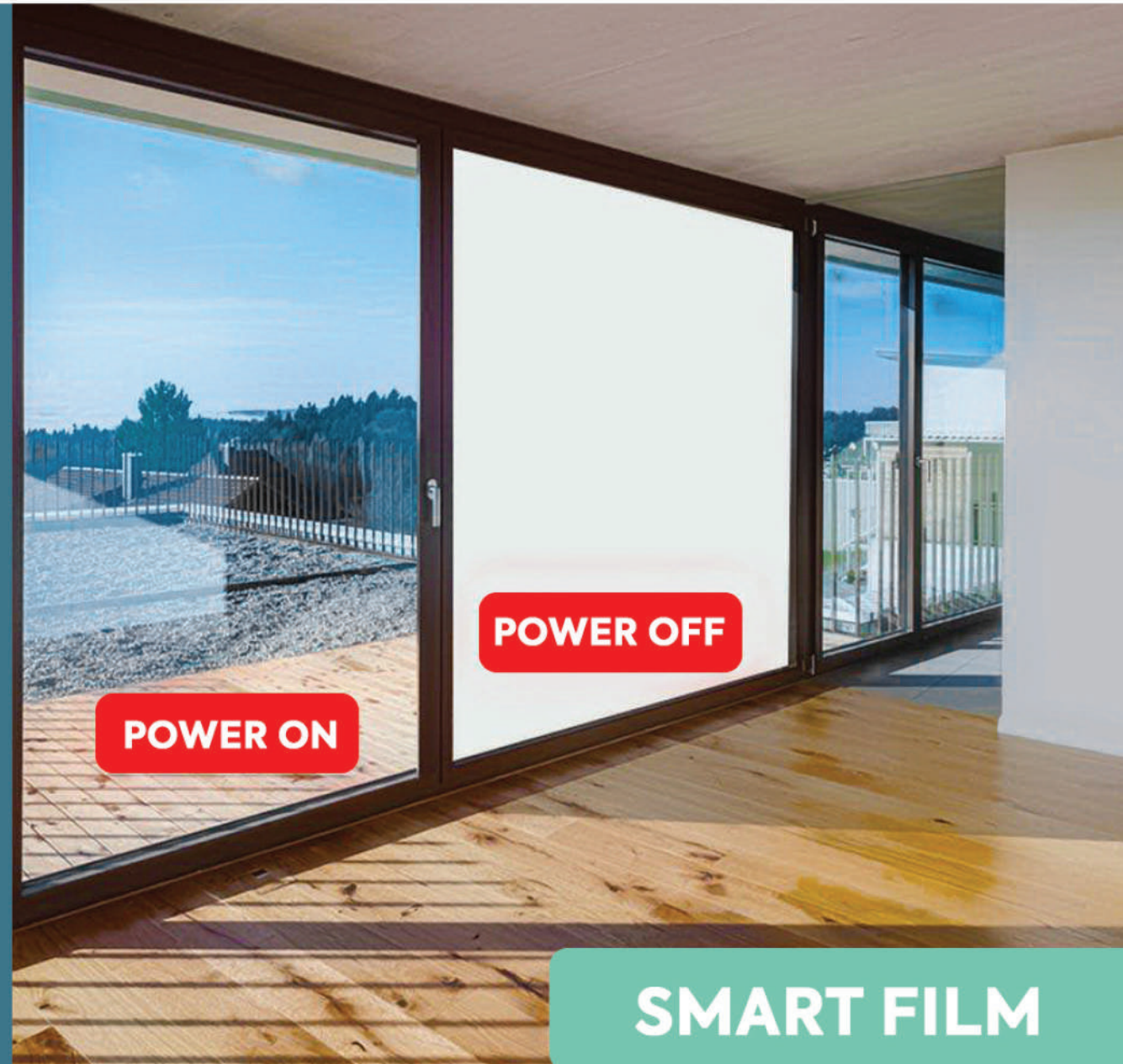
switchable smart glass film consists of micron sized droplets of liquid crystal dispersed in an optically isotropic polymer matrix. By choosing appropriate combinations of liquid crystal and polymer material, the PDLC film can be electrically switched from a light-scattering or opaque “off state” to a non-scattering or transparent “on state”. In the “off state”, the PDLC film appears milky white due to the refractive index mismatch encountered by incoming light at the liquid crystal/polymer interface.

How does it work?

When the power **is** off the liquid crystal molecules **are** randomly oriented and **will** scatter incidental light. This renders the **Switchable Privacy Glass** panel opaque. When an electric current is applied, the liquid crystal molecules line up, the incidental light passes through, and the privacy **glass** becomes clear.

Where to use?

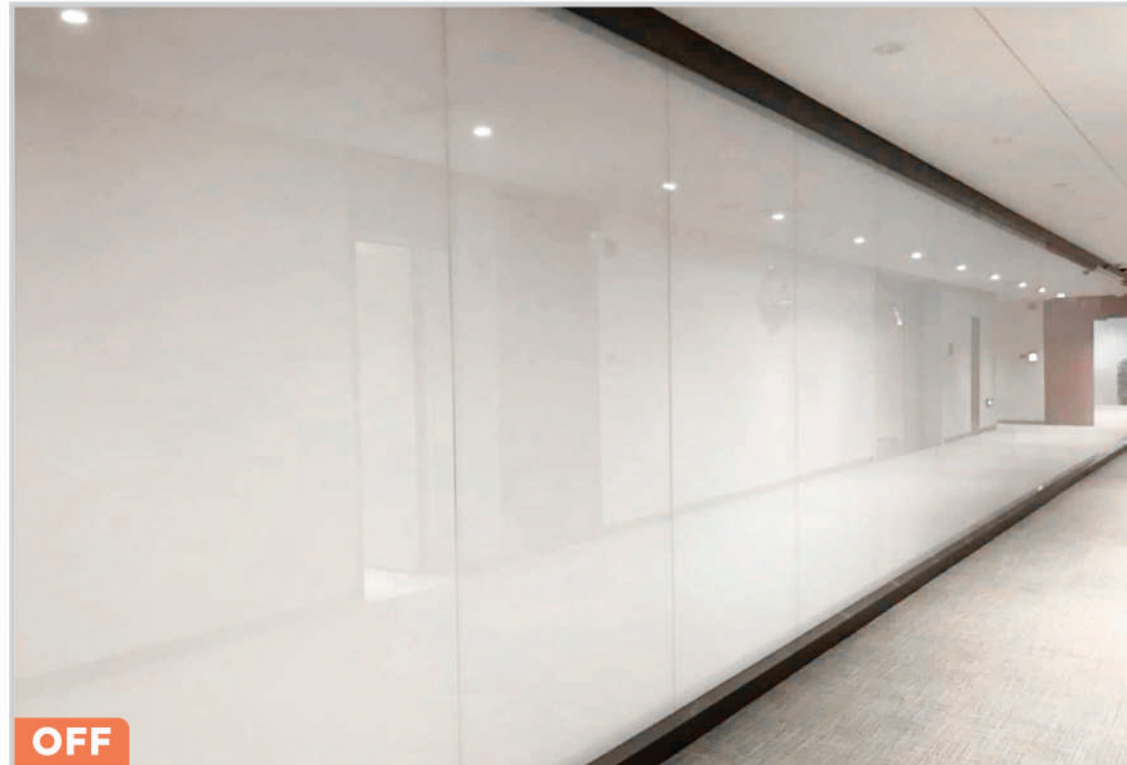
- Office glass partitions
- Hospitals, ICU , Operating theatre, Quarantine areas
- Dental clinics
- Stores window
- Hotels
- Homes, shower rooms, living rooms, bedrooms
- Classified zones
- Rear projection video screen
- Commercial applications i.e. yachts and private jets



POWER ON

POWER OFF

SMART FILM



Although contemporary work spaces exude flexibility and space, a business and its workers still require privacy. From private meetings, sensitive one-on-ones with HR, and a quiet spot to sit down and think without feeling as if you are in a fishbowl, privacy isn't a luxury it is more of a necessity. In today's modern world, there are just a few luxuries more valuable than quiet time, Quiet zones are essential to maximizing output and productivity. This highly innovative smart glass film provides users the capability to produce immediate privacy on demand. Switchable films, allow glass office walls to switch from transparent to opaque

in an instant, encouraging both privacy and light-filled atmosphere.

The switchable glass can be controlled using a switch or wireless remote controller, for privacy at the touch of a button. Through the use of a tiny electrical current, users can quickly transform glass walls from transparent to opaque and back.

Smart Glass enhances the appearance and feel of a room, raises productivity while enabling both privacy and an open work environment.



MODERNIZING HEALTHCARE FACILITIES

Hospitals and doctors offices are places where **efficiency** and **minimalistic** design are paramount. Switchable glass creates open, connected patient environments while maintaining **privacy on demand** and improving **cleanliness**.

Smart film goes from transparent to opaque with the flick of a switch thanks to PDLC (Polymer-Dispersed Liquid Crystal) technology. Create a pleasant environment for patients and healthcare workers with smart privacy glass. **Natural light promotes positivity**, wards off depression and helps regulate sleep cycles.

Cost Effective

Smart Glass Film Technology **reduces energy costs** by maximizing natural light, reducing heat transfer and being simplifying cleaning.

Clean and Sanitary

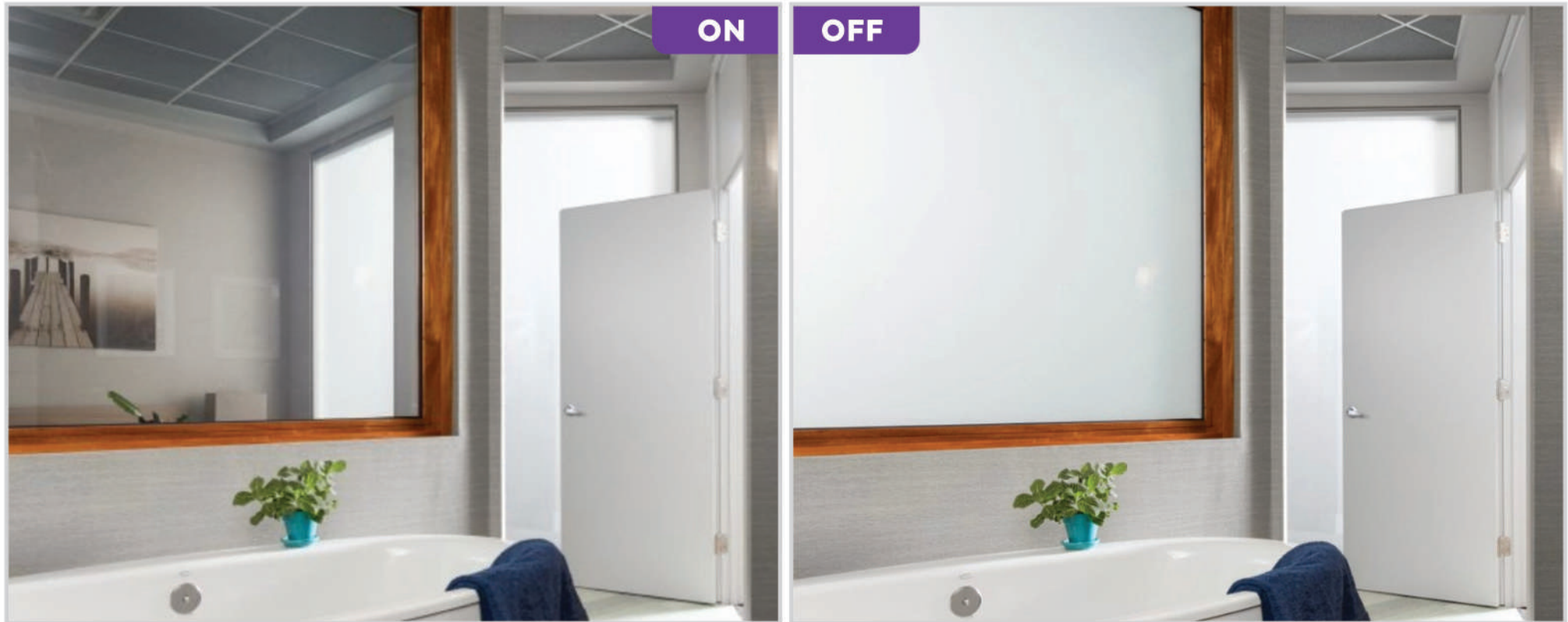
Curtains and blinds can hold dust, germs, mold and allergens. Smart glass film products are extremely **hygienic**, easy to clean and can be controlled without being touched.

Increased Control

Smart glass film goes from clear to frosted and is easily controlled by wall switches, remotes, smartphones or automated systems. Nurses and patients can **easily** adjust their privacy and lighting conditions without having to move.

Open Spaces

Clinics are often small and hospitals can be confining. Smart Glass Film **makes spaces feel bigger** by providing privacy when necessary and leaving them clear and open the rest of the time.



TRANSFORM YOUR HOME

Don't let anything stand between you and your view. Smart privacy glass eliminates the need for curtains and blinds, providing **privacy on demand** while giving your glass a **minimalistic** appearance.

Any Window Shape

Smart glass film is **flexible** and ideal for non standard window shapes and hard to reach areas.

Reduce Glare

Cut the glare, keep the view. Smart windows are great for **skylights** as they reduce the glare from sunlight through their **self-tinting** properties.

Open Spaces

In the past, designers have had to choose between the opacity of walls and transparency of clear glass. Smart Glass Technology creates **more design options** by alternating between transparent and frosted states.



CUSTOM APPLICATIONS

Yachts:

To increase privacy when docking a yacht at a marina, or at public beaches and location, many yacht owners are using smart glass film due to ease of installation, prestige quality and functionality as well as complete privacy on demand.

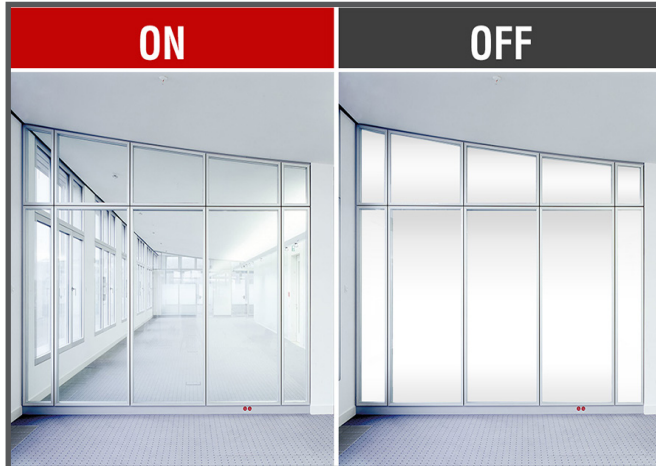
Smart glass film is ideal for marine interiors where space utilization is a core feature of design. When turned 'ON', is translucent providing a sense of space and openness. When it is turned 'OFF', smart glass film is opaque thus allowing complete privacy whilst still letting natural light permeate throughout the space.

Private Jets:

Smart glass film allows passengers to control the amount of natural light that enters the airplane with the click of a button. Fly in luxury with the remote controlled smart glass film.



**Milky White/Pink/Blue/Dark grey/
Light Grey/Green/Yellow/Black**



Milky White, High Transparency
Light Transmittance: On- 83%; Off- 2%



Grey
Light Transmittance: On- 39.6%; Off- 2%

Smart Glass Films Rolls or Sheets

Smart glass films are available in various options for customers to buy:

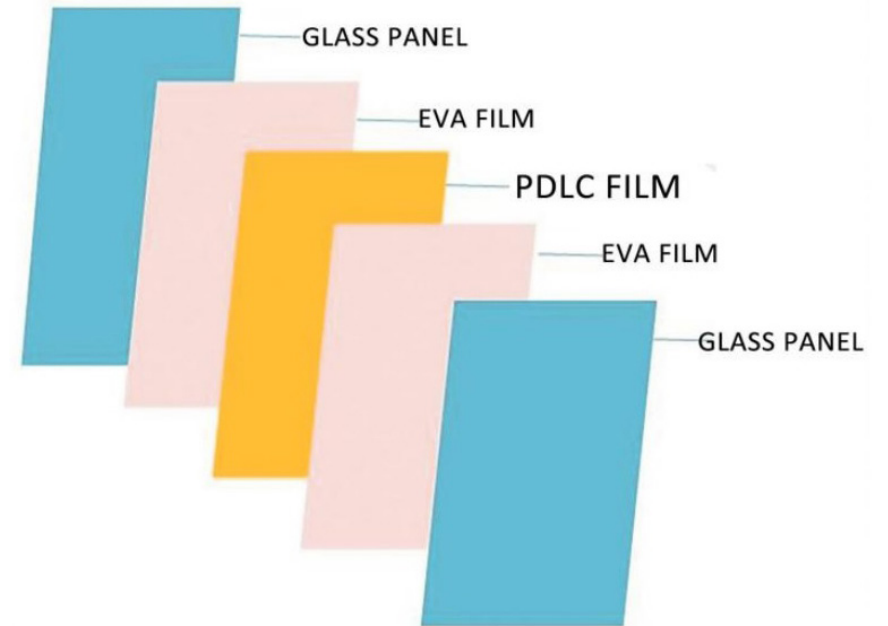
- Self-adhesive & none adhesive roll, available **in various roll** lengths and widths without busbar. Busbar would have to be installed at client's end.
- Sheets cut to size, minimum quantity of 100m² applies. Sheets will be cut at factory to size and shipped with busbar.



Transformer

The power **transformer** (also referred as power supply or power control unit) is a device which supplies the rated voltage for **smart glass film** and **smart glass**. The power **transformer** is such an equipment which providing **switchable glass** product with appropriate voltage. We supply transformers of high quality and long life span covered by 2 years warranty from 30w to 1000w.

Non-Adhesive PDLC Smart Glass Film for Glass Manufacturers



If you own or run a glass manufacturing facility, it would be very cool to add a new innovative product to your products, and provide switchable smart glass to your customers by using our non-adhesive films.

Non-adhesive smart film is made of two (2) layers of transparent conductive coating films sandwiched with polymer dispersed liquid crystal material.

The non-adhesive smart film is sandwich laminated between two (2) layers of glass, in order to make switchable smart glass, an EVA film lamination furnace will be required.

Any glass type is acceptable i.e., toughened, curved, regular, white/crystal white, hollowed etc.

Smart Glass Films Specification

Item	Self-Adhesive Smart Glass Film		Non-Adhesive Smart Glass Film	
Electrical Characteristic	Operating Voltage	AC 60V/48V	Operating voltage	AC 60V/48V
	Response time	Off=== On <10ms On=== Off <200ms	Response time	Off=== On <10ms On=== Off <200ms
	On=== Off <200ms	Response time	Off=== On <10ms	AC 60V/48V
Colors	Milky white/Grey/Pink/Green/Blue/Black/Yellow		Milky white/Grey/Pink/Green/Blue/Black/Yellow	
Thickness	0,40mm		0,38mm	
Roll Length	30m/50m		30m/50m	
Roll Width	Milky white	1m/1,2m/1,5m/1,8m	Milky white	1m/1,2m/1,5m/1,8m
	Colored films	1m/1,2m/1,5m	Colored films	1m/1,2m/1,5m
Optical Characteristic	Visible Light Transmission	On (white) >83%, Off <50%	Visible Light Transmission	On (white) >83%, Off <50%
	Parallel Light Transmission	On >72%, Off <2%	Parallel Light Transmission	On >72%, Off <2%
	Haze	On <6%, Off 95%	Haze	On <6%, Off 95%
	Viewing angle of screen	160°	Viewing angle of screen	160°
	UV Blocking	On & Off ≥98%	UV Blocking	On & Off ≥98%
Environmental Characteristic	Working temperature	10 ~ +60	Working temperature	10 ~ +60
	Storing temperature	-10 ~ +60	Storing temperature	-10 ~ +60
Sound Insulation	35db		35db	
Lifespan	>80000hrs		>80000hrs	
Switch Frequency	>2million times		>2million times	
Warranty	12 months		12 months	
Standard Conformity	CE		CE	

Standard compliance



(Specifications are subject to changes without prior notice)

Transformers Specification

Item	Specification							
Input Voltage	AC220V (or AC110V)							
Output Voltage	AC60V							
Frequency	50 - 60Hz							
Output Power & Area Coverage	30w (within 3,6m ²)	50w (within7,2m ²)	100w (within12,4m ²)	200w (within20,2m ²)	300w (within30m ²)	500w (within 50m ²)	50w dimmable (within7,2m ²)	100w dimmable (within12,4m ²)
Output Current	0.01A~20A							
Rated Power	6-8W/ M ²							
Ambient Temperature	- 20 ~ + 60°C							
Ambient Humidity	> 90%RH							
Power Consumption	6~ 8W/ M ²							
Isolation Voltage	AC1800V 1MIN							
Insulation Resistance	20M							
Features	Overcurrent Protection/ Overvoltage Protection/ Overheat Protection/ Moisture proof/ Fireproof							
Standby Mode	Voltage Control, long term standby mode							
Control Mode	Button Control/ Remote Control/ APP Control							
Unconventional Type	Dimmer Transformer/ Flicker Transformer/Multiple Transformer							
Warranty	24 months							
Lifespan	≥15 Years							

SWITCHABLE SMART GLASS REAR PROJECTION FILM SCREEN

Create your office or showroom large video screen. Smart glass film supports rear projection HD screen in its opaque state makes an high resolution of projection screen when presenting videos. This solution saves media gadgets space and still maintain privacy.





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