

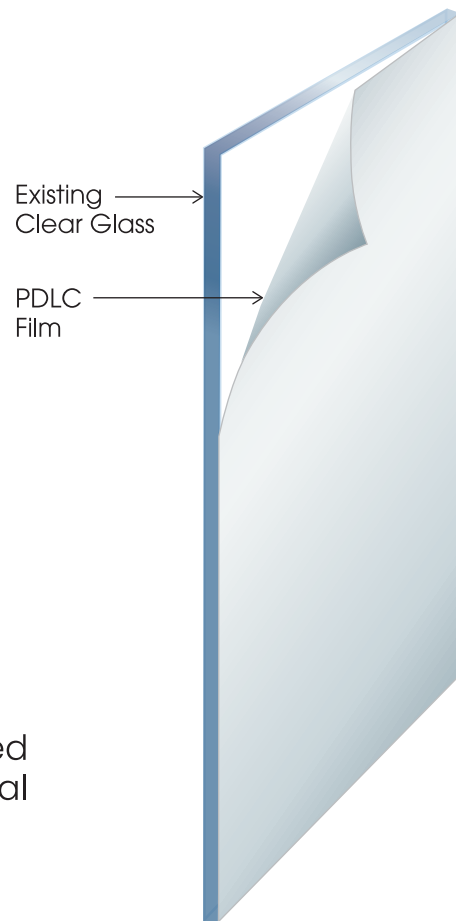
# SMART FILM & SMART GLASS

*Introducing the Essence of Instant Privacy at Your Command!*



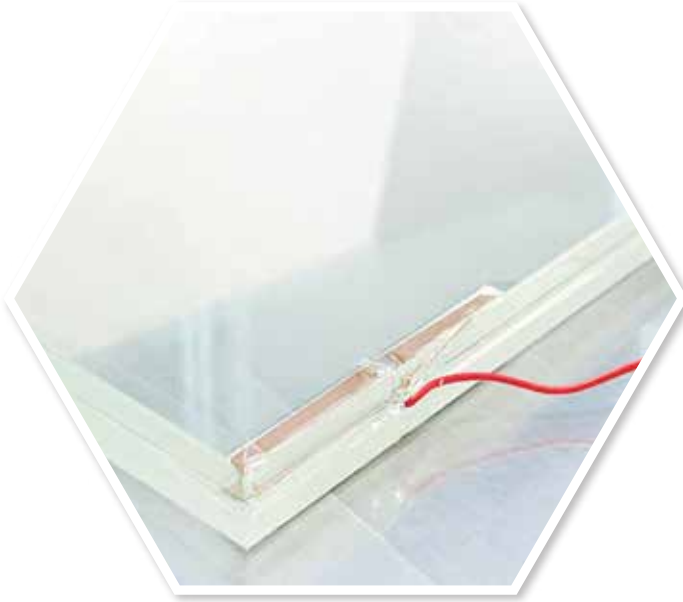
## ABOUT US

**SUN BARRIER™** Sdn Bhd, established in 2017, is a leading subsidiary of Sun-Shine Marketing (M) Sdn Bhd, a company founded in 1989. We are a top-tier supplier of window films, roller blinds, smart films and smart glass in Malaysia. Committed to quality and innovation, we have built a reputation when it comes to reliability and excellence, with our ultimate goal of providing customer satisfaction through our comprehensive product range.



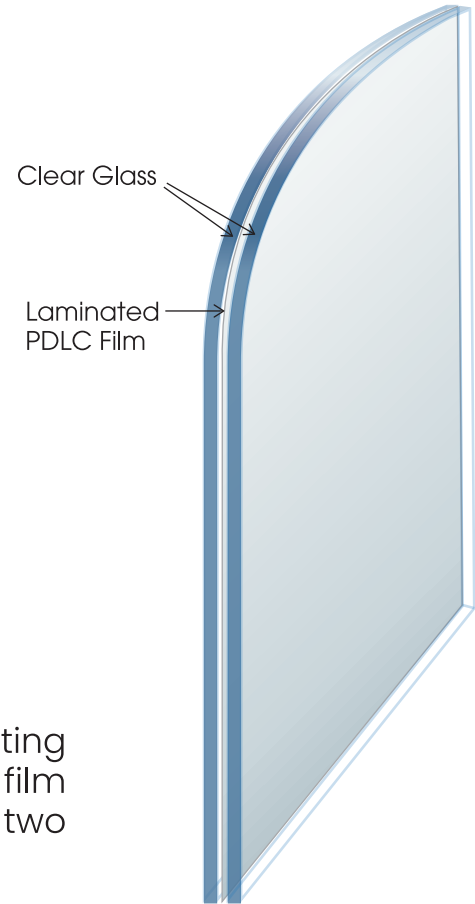
# SMART **FILM**

Smart film is a thin layer of Polymer Dispersed Liquid Crystal (PDLC), and it is a flexible material that can be applied to existing glass surfaces.



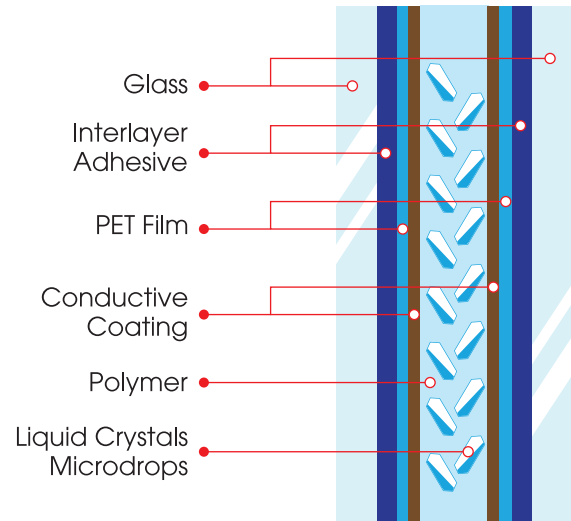
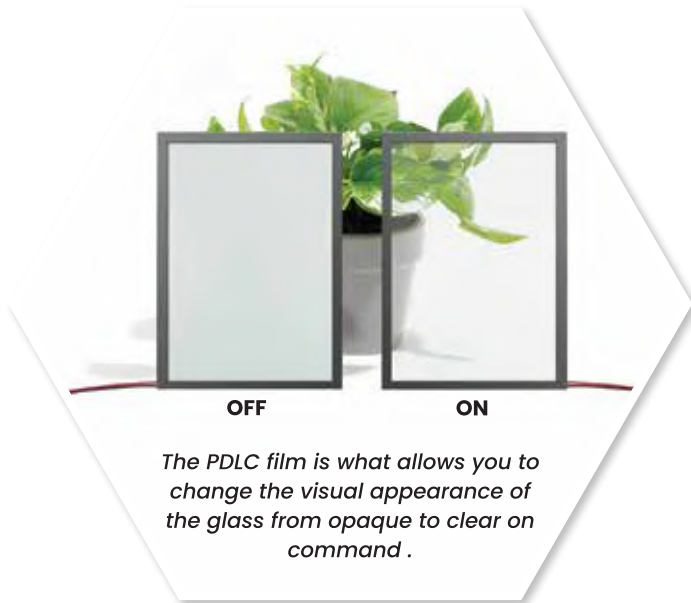
# SMART GLASS

Smart Glass is a laminated glass product consisting of a Polymer Dispersed Liquid Crystal (PDLC) film sandwiched between two layers of glass and two layers of conductive interlayers.



# WHAT IS **PDLC FILM**?

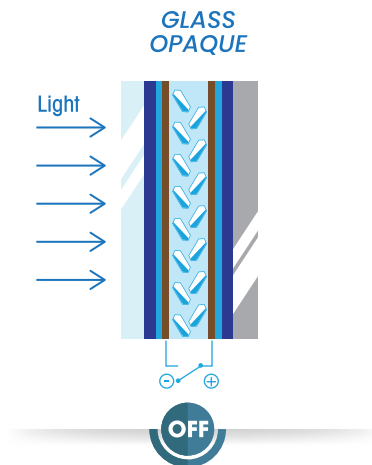
PDLC film is the abbreviation of Polymer Dispersed Liquid Crystals film which is basically three-dimensional structures composed by liquid crystal microdrops dispersed in a polymer matrix.



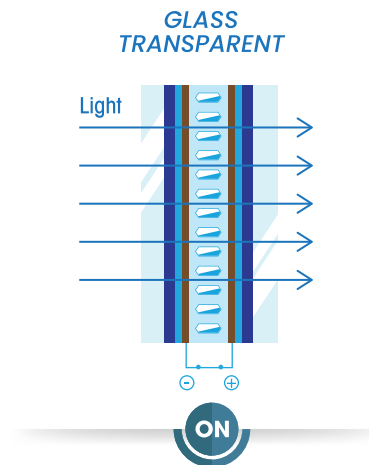
***Schematic diagram of the  
PDLC FILM - based Smart Glass***

## HOW DOES IT **WORKS?**

PDLC films use liquid crystal molecules with built-in electrical properties, enabling remote control to switch their visual appearance between frosted and transparent states by applying an electric voltage.



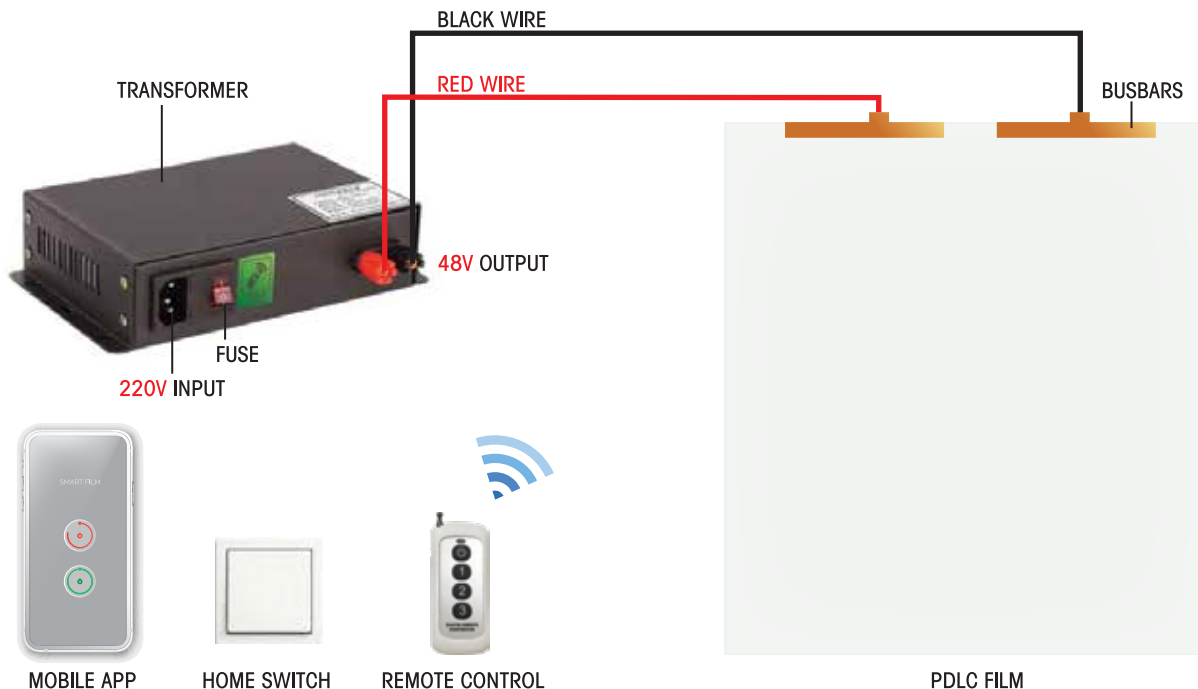
*During the OFF state, the liquid crystal molecules do not align, resulting in the film being in a state of opaque/frosted.*



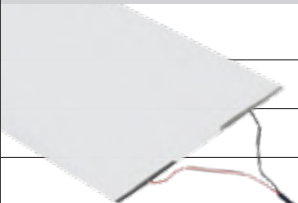

*In the ON state, the liquid crystal molecules align, causing the film to be in a transparent state.*

## HOW DOES IT **CONTROL**?

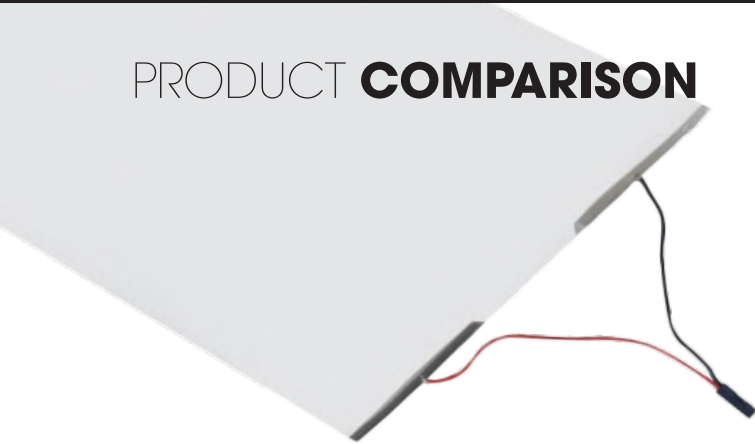
The adapter from the plug point is connected to the transformer, which converts the low voltage and supplies current to the smart film, enabling it to be controlled via remote, a phone app, or a home switch.



## PRODUCT SPECIFICATION

SMART FILM			SMART GLASS	
ON	OFF	SOLAR SPECIFICATION	ON	OFF
> 80%	> 50%	Visible Light Transmission	> 85%	> 50%
< 10%	> 92%	Haze	< 5%	> 95%
> 55%	> 98%	UV Rejection	> 80%	> 98%
> 50%	> 80%	IR Rejection	> 50%	> 80%
		TECHNICAL SPECIFICATION		
	7 watts	Energy Consumption	5 watts	
	0.1A/ m2	Current	0.1A/ m2	
	50~60 Hz	Frequency	50~60 Hz	
	<200ms	Response Time	<200ms	
Milky White		Color	Milky White	
5 feet (W) X 98 feet (L)		Max. Sizes	5 feet (W) X 20 feet (L)	
0.28mm (0.42mm) ± 10%		Thickness	from 10mm (Customizable)	
Any type		Glass Structure	Any type	
-40° C to 70° C / -40° F to 158° F		Working Temperature	-40° C to 70° C / -40° F to 158° F	
-20° C to 40° C / -4° F to 104° F		Storage Temperature	-20° C to 40° C / -4° F to 104° F	
80,000,000+ Times (> 20 Years)		Life Time	80,000,000+ Times (> 20 Years)	

# PRODUCT **COMPARISON**



## SMART **FILM**

**VS**

## SMART **GLASS**

### **THIN & ELASTIC**

Thin and flexible material that can be applied to existing glass surfaces. It offers flexibility in terms of customization and can be easily removed and replaced if needed.

### **FORM**

### **100% CUSTOMIZABLE**

Requiring specialized manufacturing, smart glass is 100% customizable with various color options, ideal for new construction or major renovations.

### **FLEXIBLE**

Installing smart film is a relatively simple process. It involves applying the film to the surface of existing glass, and it can be easily retrofitted to windows, doors, or other glass surfaces without the need for major structural changes.

### **INSTALLATION**

### **ELABORATE**

Smart glass, seamlessly integrated into the glass itself, requires more specialized installation, typically undertaken during initial construction or renovation. Retrofitting may be complex, involving the replacement of existing windows with new smart glass units.



# SMART FILM

## VS

# SMART GLASS

### INDOOR

Suitable for indoor settings as privacy film panels, windows and projection screens.

### STANDARD CLARITY

Smart film offers a specialized blend of features, prioritizing privacy and customizable light modulation.

### UP TO 20 YEARS

Despite direct exposure, the performance of smart film remains unaffected, and through proper maintenance, its lifespan can surpass twenty years.

### GENTLE

The surface of smart film is exposed, requiring a gentle wipe in dry areas to maintain its optimal condition.

### COST-EFFECTIVE

Smart film is considered a more cost-effective option compared to smart glass. The installation process is less labor-intensive, and the film itself tends to be more affordable.

### SETTING

### OUTDOOR

Suitable for outdoor and commercial settings as privacy screens and projection screens.

### HIGH CLARITY

The positioning of the PDLC film directly between two glass layers ensures optimal clarity.

### UP TO 20 YEARS

Smart glass could have a longer lifespan due to the concealment of the PDLC film within the sandwiched glass.

### CONVENIENCE

Smart glass, concealed with a protective layer of silicon, offers the convenience of easy cleaning.

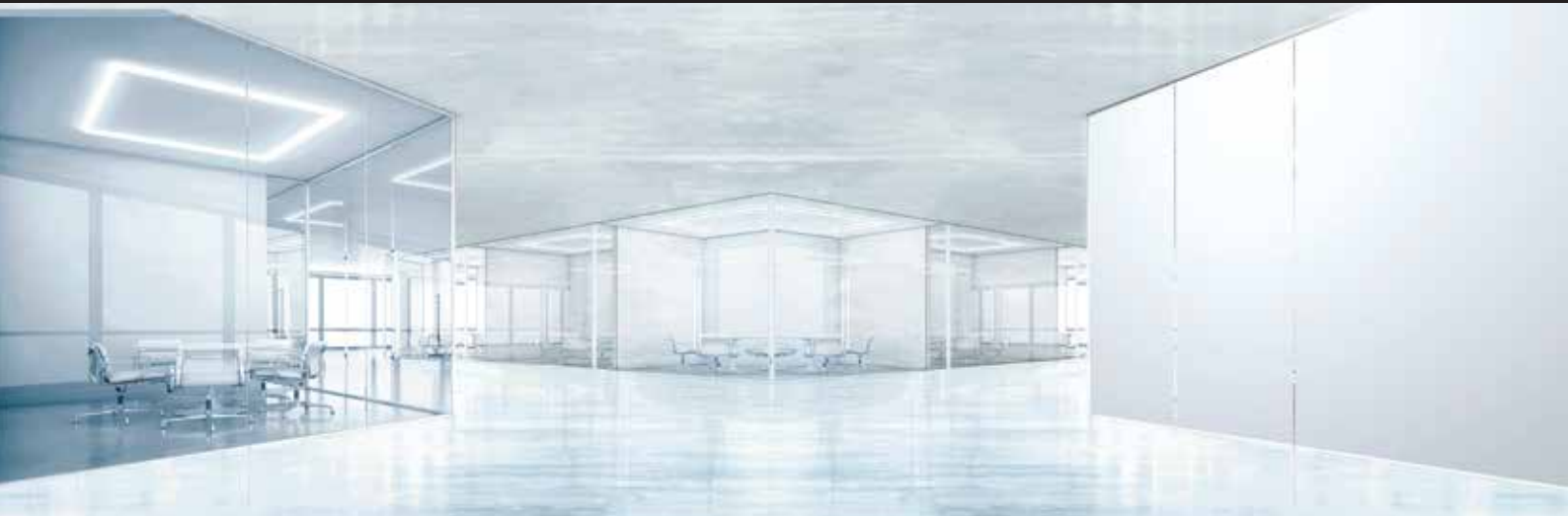
### PREMIUM

Smart glass can be more expensive due to the specialized manufacturing and installation processes involved. The cost may be justified by its seamless integration into the architecture.

### LIFE SPAN

### MAINTENANCE

### COST



## KEY FEATURES

- *Switchable Opacity*
- *Quick And Easy Installation*
- *Touchscreen Capability*
- *Plug-and-play Projection Screen System*
- *Sound Insulation*
- *Energy Efficiency*
- *Durable And Reliable*
- *Variety Of Color Options*
- *UV & Heat Rejection*
- *Reduced Glare*



## BENEFITS

### ***Modern Aesthetics***

Smart film adds a contemporary touch to interiors and exteriors, enhancing the overall appearance of spaces.

### ***Enhanced security***

In opaque mode, smart film can prevent visibility into interiors, adding an extra layer of security against prying eyes.

### ***Customization***

It can be customized to fit different shapes and sizes of glass, offering flexibility in design and installation.

### ***Versatility***

Smart film can be applied to various glass surfaces, including windows, doors, skylights, and partitions, making it suitable for both residential and commercial applications.

### ***Convenience***

With remote control or automated systems, users can easily switch between opaque and transparent modes, adjusting privacy and light levels according to their preferences.

# WHY CHOOSE US?

## ***Established Company***

We are a strong and established company that has been operating in Malaysia for over 35 years. Our provision of warranties and after-sales support showcases our unwavering commitment to customers satisfaction.

## ***Top Smart Film Supplier in Malaysia***

We are Malaysia's pioneer source of smart film materials, with a comprehensive selections available directly from our warehouse. Our exclusive direct supply of smart film and smart glass materials has helped in lowering the cost for our customers.

## ***Premium Services at Affordable Rates***

We are committed to delivering superior quality and affordability, and our dedication to fair pricing underscores our pledge to provide exceptional value.

## ***Expertise and Organized Teamwork***

To ensure flawless execution, our highly skilled and experienced team meticulously manages the entire process from site visits to quotations and installations, ensuring that deadlines are met without compromising on quality and services.





## WHAT WE OFFERS?

### *Supply and Installation*

We maintain ample stock at our warehouse and employ a team of experts for seamless installations.

### *Consultation*

Our team will conduct an on-site visit to demonstrate the product and provide a detailed explanation of its features.

### *Warranty*

We offer a warranty post-installation to ensure your peace of mind.

### *Collaboration*

We offer training on product knowledge, installations and also provide commissions to our subcontractors.

### *After-Sales Support*

Our team is dedicated to resolving any issues that may arise post-installation.

# PRODUCT **APPLICATION**



## CORPORATE

Switch from co-working to a private space, in a flick of a button.

- Conference Room
- Showroom
- Any Glass Partition



CONFERENCE ROOM



OFFICE PARTITION





## HOSPITALITY

Enjoy the benefits of customisation and get the most out of your space.

- Bedroom
- Shower and Bathroom
- Concierge
- Event Hall
- Restaurant



OUTDOOR PARTITION



BEDROOM PARTITION



# PRODUCT **APPLICATION**



## HEALTHCARE

The most hygienic privacy on demand solution in your clinic, with no maintenance.

- Emergency Room
- Intensive Care Unit
- Newborn
- Dialysis Room
- Triage Room
- Hospitalisation Room



DIALYSIS ROOM



HOSPITALISATION ROOM







## RETAIL

Smart Glass will make sure that everyone will talk about your business.

- Fitting Room
- Bank Teller
- Smart Toilets
- Private Room
- Store Front
- Showroom



SHOWROOM



DENTAL TREATMENT ROOM



# PRODUCT **APPLICATION**



## RESIDENTIAL

Bring your dream house to life by incorporating our Smart Film or Smart Glass into your space.

- Home Office
- Bedroom
- Living Hall
- Garden Area
- Skylight
- Kitchen
- Bathroom Partition



BALCONY



BATHROOM PARTITION





## TRANSPORTATION

Integrate our one of a kind window film for a more comfortable traveling experience.

- Minivan Window
- Marine Glass
- Aircraft Window
- Elevator Glass
- Train



CRUISE WINDOW



TRAIN



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