PRODUCT
CATALOGUE

SMART GLASS AFRICA
MAKE GLASS EXTRAORDINARY

MAKE GLASS
DO MORE FOR YOU

Smart Film | Smart Glass

www.smartglass.africa

SMART GLASS AFRICA
MAKE GLASS EXTRAORDINARY

Smart Glass Africa Ltd

Lagos:
7 Asiata Solarin Crescent, off 19B Kudirat
Abiola Way, Ikeja, Lagos.

Abuja:
Suite S:19b, Say Plaza, Plot 23,
A. E. Ekukinam Street, Utako, Abuja.

Tel: +2349160000090
Email: *sales@smartglass.africa*
Web: www.smartglass.africa

SMART GLASS AFRICA,
Make Glass Do More.

Smart Glass Africa is the foremost smart glass and smart film-producing company in West Africa. Smart Glass Africa makes the glasses in your offices, stores, clubs, hotels, banks, museums, and clinics to become dynamic mediums to display videos and the ability to make glass switch from transparent to opaque at the click of a button.

With years of experience, we have installed smart glass in virtually any scenario you might think of, with intelligent wiring solutions and premium smart glass products delivered on time.

If you have any questions, please get in touch with any of our professional team members. We are available to support and advise you on our intelligent glass products.

ON

OFF

Company: SMART GLASS AFRICA — MAKE GLASS EXTRAORDINARY

Products: - Smart Films
- Smart Glass

TABLE OF CONTENT
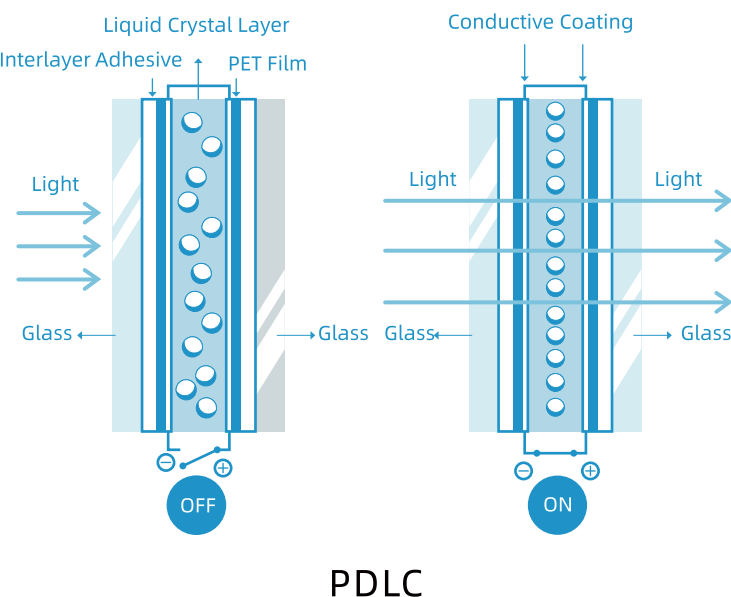
1. Smart Film

01

Smart Film Series

Classic Self-adhesive Smart Film | Laminated Smart Film | Grey Smart Film | Auto Smart Film | PNLC Smart Film

Widely used in offices, hotels, banks, hospitals, shops, clubs, villas and other places.
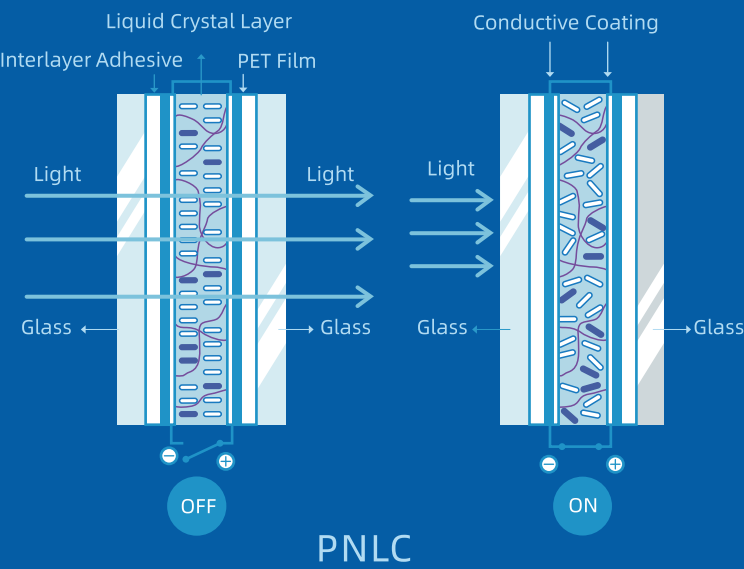
ABOUT SMART FILM

Smart film is a type of electronic light control product. The electronically controlled smart film is liquid crystal/polymer hybrid material injected between two transparent conductive films. The electronically controlled smart film remains opaque without an electric field in the PDLC film. When current is applied, the liquid crystal molecules are arranged orderly; at this point, the electrically controlled dimming film changes from an opaque state (POWER OFF) to a transparent state (POWER ON).

PDLC

PNLC

PNLC film has a reverse working principle to PDLC smart film; the working principle of PNLC film is opaque when powered ON and transparent when powered OFF. When an electric field is applied, PNLC film transitions from the transparent state (POWER OFF) to the opaque state (POWER ON). Smart film is usually applied to the surface of the glass or laminated between the glass layers, making the typically transparent glass more dynamic.

ON

OFF

Privacy Protection
Smart film protects your privacy and security. You can control it to be transparent or opaque at any time. It makes your space more malleable. Choose between transparent or private at the flick of a switch.

Touch Screen and Projection
Smart film allows you to achieve excellent image effects. Watch videos on the film using a projector. Also, with a high-definition projector, you can enable multi-touch to your glass.

Security & Safety
When a smart glass is broken, the smart film will hold the pieces together and remain in place until the glass is replaced. This smart film feature makes glass a security barrier, making it difficult for intruders to break in.

Noise Reduction
Compared with ordinary glass, the anti-noise ability of glass using Smart Glass Africa smart film is increased by 20%.

Cooling and UV Protection
Smart film blocks more than 98% of infrared rays, making it a good material for heat insulation and reducing the workload of air conditioners. At the same time, it blocks more than 99% of ultraviolet rays, protects indoor furniture from fading and ageing, and prevents ultraviolet rays from causing damage to the body.

Hygienic Substitute For Blinds
Smart film is easier to clean, unlike conventional window coverings thats are harder to clean, thereby accumulating dust and bacteria.
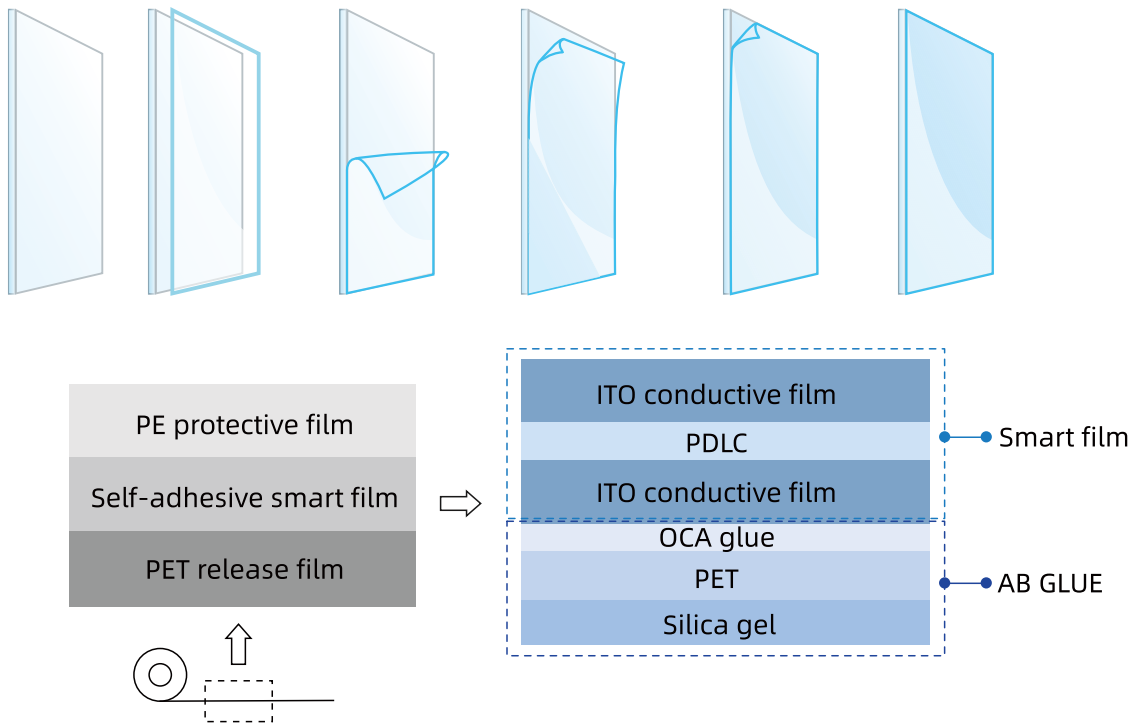
Various Control Methods
In order to meet your various needs, you can choose your preferred control method: remote control, wired control, infrared induction, voice control, mobile application, etc. In addition, an FM transformer can be selected to gradually dim the film.

CLASSIC SELF-ADHESIVE SMART FILM

OFF

ON

Self-adhesive liquid crystal smart film (hereinafter referred to as self-adhesive smart film) is covered with adhesive (AB glue) on one side of the smart film, making it possible to be installed on existing glass.

PE protective film

Self-adhesive smart film

PET release film

ITO conductive film
PDLC
ITO conductive film   ● — Smart film
OCA glue
PET
Silica gel   ● — AB GLUE

(Color and thickness do not represent the actual situation, only for the convenience of illustration)

Product Size   Classic self-adhesive smart film

Items		
Thickness	Total thickness (without protective film)	0.47mm
	PDLC	0.38mm
	AB glue	90μm
	PE protective film	35μm
	PET release film	50μm
Sheet	Width	1000,1200,1500,1800(mm)
	Length	According to customer requirements
Roll	Width	1020,1220,1520,1850(mm)
	Length	≤ 50m/Roll
Roll tube	Inner Diameter	6 inches

Note*: This width is the actual size, the width of the calculated area is 1000,1200,1500,1800 mm

Photoelectric Performance   Classic self-adhesive smart film

Items	ON/OFF		Test Methods/Standards
Operating voltage	ON	60V	Multimeter/ Voltage Regulator,WGW
Power consumption	ON	≤ 5W/m²	Multi-parameter electric measuring instrument
Viewing angle	ON	≥ 160°	Visual Inspection
Uv blocking rate	OFF	≥ 99%	Optical transmittance tester
Infrared blocking rate	OFF	≥ 60%	
Response time	OFF→ON	≤ 30ms	Liquid crystal parameter integrated tester
	ON→OFF	≤ 200ms	
Operating temperature	--	-30℃ ~ 95℃	constant temperature and humidity testing machine
Lifetime	--	10 -15 years	GB18910.5-2008
Switching times	--	≥2 million times	Self-made on/off tester

Smart film is driven by AC power, colorless and transparent when power is added, and fogged and translucent when power is removed, and its photoelectric performance is shown in the table above.

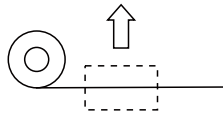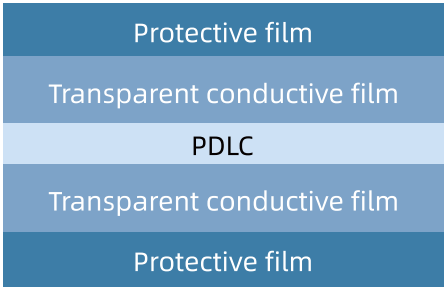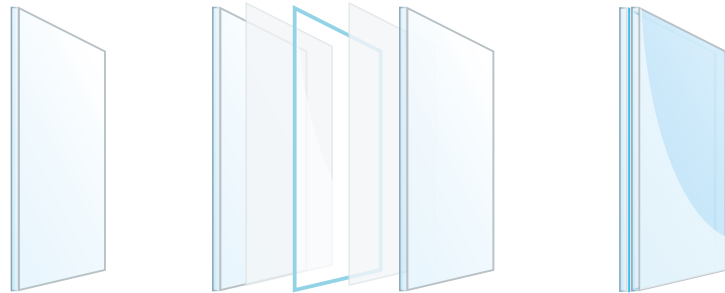## Product Transparency / Haze   Classic self-adhesive smart film

Operating ambient temperature	Transparency	Full light tester				Parallel light tester	
		ON/OFF	Haze	Full light transmittance	b value	45° light	Parallel light
Low temperature	High transparency	OFF	94.56	81.91	5.93	/	/
		ON	4.53	85.4	3.77	58.16	83.43
	Ultra transparency	OFF	94.67	82.45	6.97	/	/
		ON	3.54	87.34	4.69	60.3	85.45
	Ultra high transparency	OFF	94.58	85.51	7.25	/	/
		ON	3.56	90.34	4.8	63.76	87.7
High temperature	High transparency	OFF	94.62	80.75	6.02	/	/
		ON	4.57	85.32	3.94	59.66	83.4
	Ultra transparency	OFF	94.68	82.27	6.82	/	/
		ON	3.6	87.15	4.59	60.6	85.53
	Ultra high transparency	OFF	94.47	85.55	7.35	/	/
		ON	3.76	90.24	4.85	63.65	87.6

LAMINATED SMART FILM

OFF | ON

Laminated liquid crystal smart film (hereinafter referred to as smart film) is non-sticky on both sides. It can be tightly compounded with glass through EVA film to manufacture smart laminated glass.

| Protective film |
| Transparent conductive film |
| PDLC |
| Transparent conductive film |
| Protective film |

(Color and thickness do not represent the actual situation, only for the convenience of illustration)

Product Size

Items		
Thickness	Total thickness (without protective film)	0.38mm
	Conductive substrate (single layer)	188μm
	Protective film (single layer)	35μm
Sheet	Width	1000,1200,1400,1500,1800,2000mm
	Length	According to customer requirements
Roll	Width	1050,1250,1450,1550,1850,2005*mm
	Length	≤ 50m/Roll
Roll tube	Inner Diameter	6 inches

Note*: This width is the actual size, the width of the calculated area is 1000,1200,1400,1500,1800,2000 mm

Photoelectric Performance

Items	ON/OFF		Test Methods/Standards
Operating voltage	ON	60V	Multimeter/ Voltage Regulator,WGW
Power consumption	ON	≤ 5W/m²	Multi-parameter electric measuring instrument
Viewing angle	ON	≥ 160°	Visual Inspection
Uv blocking rate	OFF	≥ 99%	Optical transmittance tester
Infrared blocking rate	OFF	≥ 60%	
Response time	OFF→ON	≤ 30ms	Liquid crystal parameter integrated tester
	ON→OFF	≤ 200ms	
Operating temperature	--	-30℃ ~ 95℃	constant temperature and humidity testing machine
Lifetime	--	10 -15 years	GB18910.5-2008
Switching times	--	≥2 million times	Self-made on/off tester

Smart film is driven by AC power, colorless and transparent when power is added, and fogged and translucent when power is removed, and its photoelectric performance is shown in the table above.

Product Transparency / Haze

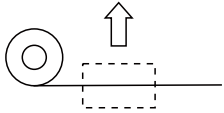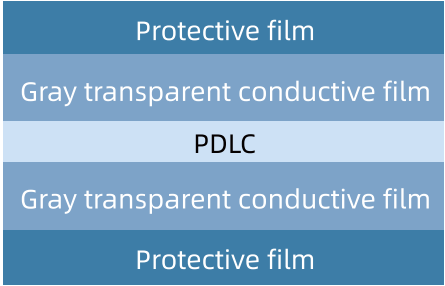| Operating ambient temperature	Transparency	ON/OFF	Full light tester			Parallel light tester	
			Haze	Full light transmittance	b value	45° light	Parallel light
Low temperature	High transparency	OFF	94.51	81.87	5.69		
		ON	3.73	84.68	3.65	57.16	83.3
	Ultra transparency	OFF	94.65	84.5	6.79	/	/
		ON	2.55	87.87	4.51	61.65	86.32
	Ultra high transparency	OFF	94.57	86.55	7.03	/	/
		ON	2.15	91.37	4.7	64.63	89.23
High temperature	High transparency	OFF	94.62	80.86	5.79	/	/
		ON	3.92	84.3	3.81	58.43	82.6
	Ultra transparency	OFF	94.60	84	6.38	/	/
		ON	2.75	87.69	4.53	61.73	86.13
	Ultra high transparency	OFF	94.59	86.78	6.87	/	/
		ON	2.24	91.05	4.8	64.72	89.01

GREY SMART FILM

The grey liquid crystal smart film (hereinafter referred to as the smart film) is non-sticky on both sides. It can be closely combined with flat glass through EVA film to make grey smart laminated glass; it can also be pasted with AB glue on one side to make a self-adhesive grey smart film.

Laminated   Self-adhesive

| Protective film |
| Gray transparent conductive film |
| PDLC |
| Gray transparent conductive film |
| Protective film |

(Color and thickness do not represent the actual situation, only for the convenience of illustration)

Product Size   Gray smart film

Items		
Thickness	Total thickness (without protective film)	0.38mm
	Conductive substrate (single layer)	188μm
	Protective film (single layer)	35μm
Sheet	Width	1200,1500mm
	Length	According to customer requirements
Roll	Width	1250,1550mm
	Length	≤ 50m/Roll
Roll tube	Inner Diameter	6 inches

Note*: This width is the actual size, the width of the calculated area is 1200,1500 mm

Photoelectric Performance   Gray smart film

Items	ON/OFF		Test Methods/Standards
Operating voltage	ON	60V	Multimeter/ Voltage Regulator,WGW
Power consumption	ON	≤ 5W/m²	Multi-parameter electric measuring instrument
Viewing angle	ON	≥ 160°	Visual Inspection
Uv blocking rate	OFF	≥ 99%	Optical transmittance tester
Infrared blocking rate	OFF	≥ 70%	
Response time	OFF→ON	≤ 30ms	Liquid crystal parameter integrated tester
	ON→OFF	≤ 200ms	
Operating temperature	--	-30℃ ~ 95℃	constant temperature and humidity testing machine
Lifetime	--	10 -15 years	GB18910.5-2008
Switching times	--	≥2 million times	Self-made on/off tester

Gray smart filmis driven by AC power, gray and transparent when power is added, and fogged and translucent when power is removed, and its photoelectric performance is shown in the table above.

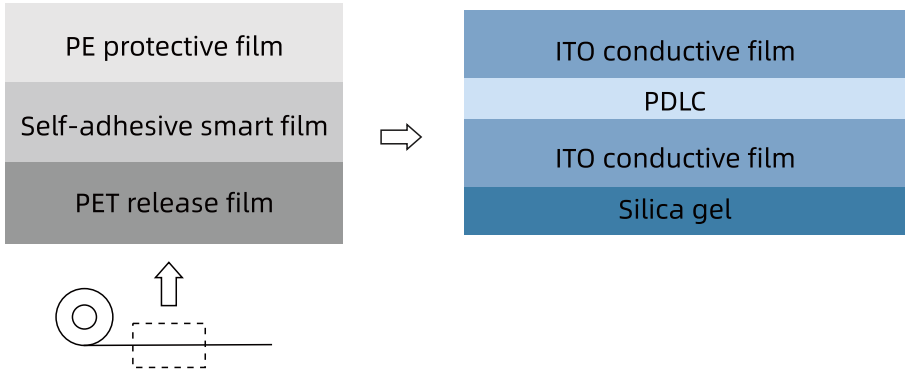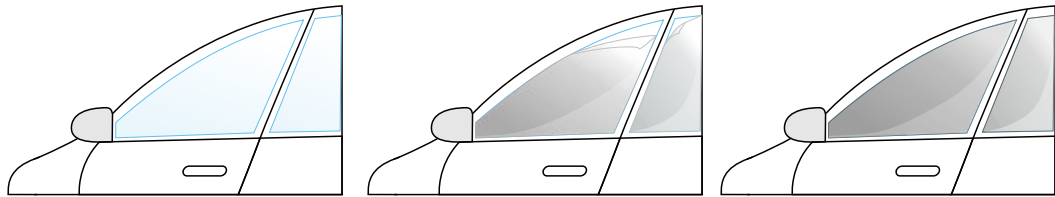## Product Transparency / Haze   Gray smart film

Product	Operating ambient temperature	Full light tester				Parallel light tester	
		ON/OFF	Haze	Full light transmittance	b value	45° light	Parallel light
Gray laminated Smart film	/	OFF	94.38	21.67	-1.06	/	/
		ON	3.02	24.64	-3.45	15.5	24.5
Gray self-adhesive Smart film	/	OFF	94.24	26.35	0.12	/	/
		ON	3.54	29.85	-2.24	19.7	29.33

AUTO SMART FILM

The grey liquid crystal smart film (hereinafter referred to as the smart film) is non-sticky on both sides. It can be closely combined with flat glass through EVA film to make grey smart laminated glass; it can also be pasted with AB glue on one side to make a self-adhesive grey smart film.

| PE protective film |
| Self-adhesive smart film |
| PET release film |

⟹

| ITO conductive film |
| PDLC |
| ITO conductive film |
| Silica gel |

(Color and thickness do not represent the actual situation, only for the convenience of illustration)

Product Size

Auto smart film

Items			
Thickness	Total thickness (without protective film)	0.13mm	
	PDLC	0.12mm	
	Silica gel	0.01mm	
	PE protective film	130μm	
	PET release film	50μm	
Sheet	Width	1200,1500¹*mm	
	Length	According to customer requirements	
Roll	Width	1250,1500²*mm	
	Length	≤ 50m/Roll	
Roll tube	Inner Diameter	6 inches	

Note*: This width is the actual size, the width of the calculated area is 1200,1500, mm

Photoelectric Performance

Auto smart film

Items	ON/OFF		Test Methods/Standards
Operating voltage	ON	48V	Multimeter/ Voltage Regulator,WGW
Power consumption	ON	≤ 5W/m²	Multi-parameter electric measuring instrument
Viewing angle	ON	≥ 160°	Visual Inspection
Uv blocking rate	OFF	≥ 99%	Optical transmittance tester
Infrared blocking rate	OFF	≥ 82%	
Response time	OFF→ON	≤ 30ms	Liquid crystal parameter integrated tester
	ON→OFF	≤ 200ms	
Operating temperature	--	-30℃ ~ 95℃	constant temperature and humidity testing machine
Lifetime	--	10 -15 years	GB18910.5-2008
Switching times	--	≥2 million times	Self-made on/off tester

Auto smart filmis driven by AC power, gray and transparent when power is added, and fogged and translucent when power is removed, and its photoelectric performance is shown in the table above.

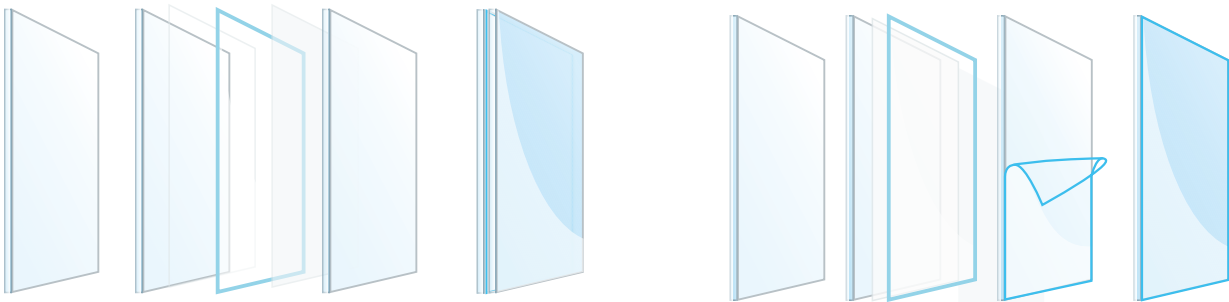## Product Transparency / Haze

Auto smart film

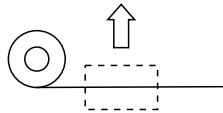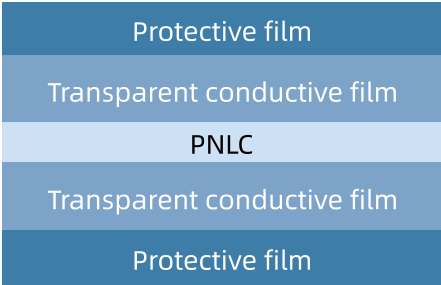| Operating ambient temperature	Transparency	Full light tester				Parallel light tester	
		ON/OFF	Haze	Full light transmittance	b value	45° light	Parallel light
/	/	OFF	94.2	51.19	5.24	/	/
		ON	2.94	56.43	3.2	38.4	55.26

PNLC SMART FILM

OFF

ON

PNLC smart film, also called adverse PDLC film. The working principle of PNLC film is the reverse of the PDLC film; that is, opaque is power ON, and clear is power OFF.

Laminated

Self-adhesive

| Protective film |
| Transparent conductive film |
| PNLC |
| Transparent conductive film |
| Protective film |

(Color and thickness do not represent the actual situation, only for the convenience of illustration)

Product Size

PNLC Smart Film

Items		
Thickness	Total thickness (without protective film)	0.38mm
	Conductive substrate (single layer)	188μm
	Protective film (single layer)	35μm
Sheet	Width	1450mm
	Length	According to customer requirements
Roll	Width	1450mm
	Length	≤ 50m/Roll
Roll tube	Inner Diameter	6 inches

Photoelectric Performance

PNLC Smart Film

Items	ON/OFF		Test Methods/Standards
Operating voltage	ON	60V	Multimeter/ Voltage Regulator,WGW
Power consumption	ON	avg 4-6W/m²	Multi-parameter electric measuring instrument
Viewing angle	ON	160°+1°	Visual Inspection
Uv blocking rate	OFF	≥ 99%	Optical transmittance tester
Infrared blocking rate	OFF	≥ 85%	
Response time	ON	≤ 200ms	Liquid crystal parameter integrated tester
	OFF	≤ 220ms	
Operating temperature	--	-20℃ ～ 90℃	constant temperature and humidity testing machine
Lifetime	--	10 -15 years	GB18910.5-2008
Switching times	--	≥2 million times	Self-made on/off tester

PNLC smart film is driven by AC power, fogged and translucent when power is added, colorless and transparent when power is removed, and its photoelectric performance is shown in the table above.

Product Transparency / Haze

PNLC Smart Film

Product	Operating ambient temperature	Full light tester			Parallel light tester	
		ON/OFF	Haze	Full light transmittance	45° light	Parallel light
PNLC Smart film	/	OFF	3	88	/	88.1
		ON	95	65	11	3.5

ON

ON

OFF

OFF

Customized Service

At present, Smart Glass Africa has three customization styles: colour smart film, smart blinds and UV printing smart film, which can meet the needs of different groups of people in various situations.

Color PDLC Film

There are black, green, orange, red, blue, and yellow options to simultaneously decorate wherever you want and enhance privacy.

Blind PDLC Film

New shading solutions that were never possible before enabled us to embed liquid crystal films in various shapes into thin glass windows and create in-window blinds that can be controlled to achieve different levels of transparency, opening animation and support for unconventional windows and shapes.

UV Printing Film

Smart Glass Africa UV printing film uses UV printing technology to print any patterns you want. Compared with standard smart film, it brings a unique visual experience that provides privacy and aesthetics.
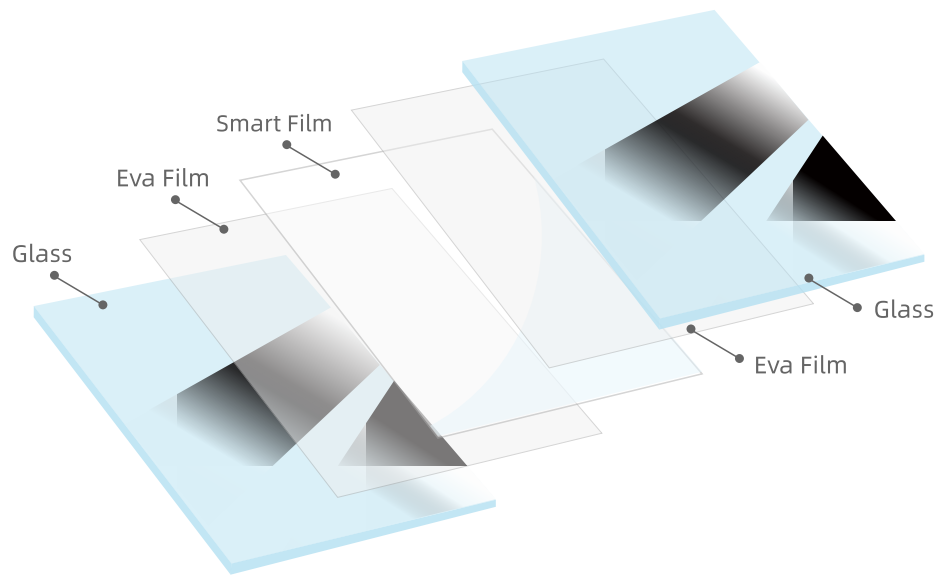
02

Smart Glass Product Series

Widely used in offices, hotels, banks, hospitals, shops, clubs, villas and other places.

SMART GLASS

OFF

ON

Smart glass is a new type of glass with a sandwich structure that combines PDLC film between two layers of glass and is integrally formed after high temperature and high-pressure bonding. Through the controller, it can instantly switch between opaque and transparent.

Product Parameters

Smart Glass

Items	
Thickness	4+4、5+5、6+6、8+8、10+10、12+12
Film color	White
Haze（on）	4%±1
Haze（off）	96%±1
Total light transmittance（on）	81-83%
Total light transmittance（off）	77-78%
Uv block	>99%
Ir block	>86%
Power consumption	5w/m²
Imput voltage	60v 50hz
Compatible with	Eva
Glass types	Flat or Curved,Annealed,Tempered,Clear,Low Iron/Ultra Clear,Other
Biggest size	1800×6000mm

Smart Film

Eva Film

Glass

Glass

Eva Film