



GUANGZHOU HUICHI GLASS TECHNICAL CO.,LTD

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Product description

Electrical Smart Switchable glass is composed with one liquid crystal sheet solidified(calls pdlc film) and double tempering glass under high-pressure & high-temperature.

How it work-

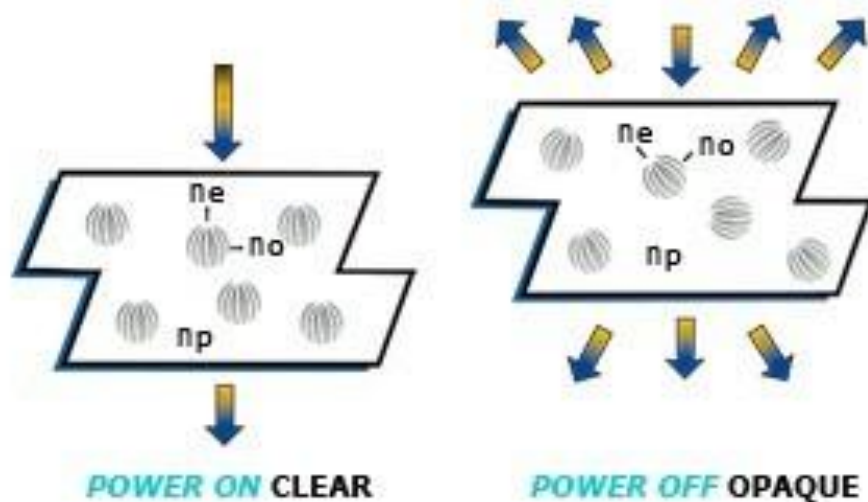
On natural condition, the arrangement of the liquid crystal inside the glass is ruleless, the refractive index of liquid crystal is lower than the polymer outside, incident light scatters on the polymer, which is milk-white, means opaque.

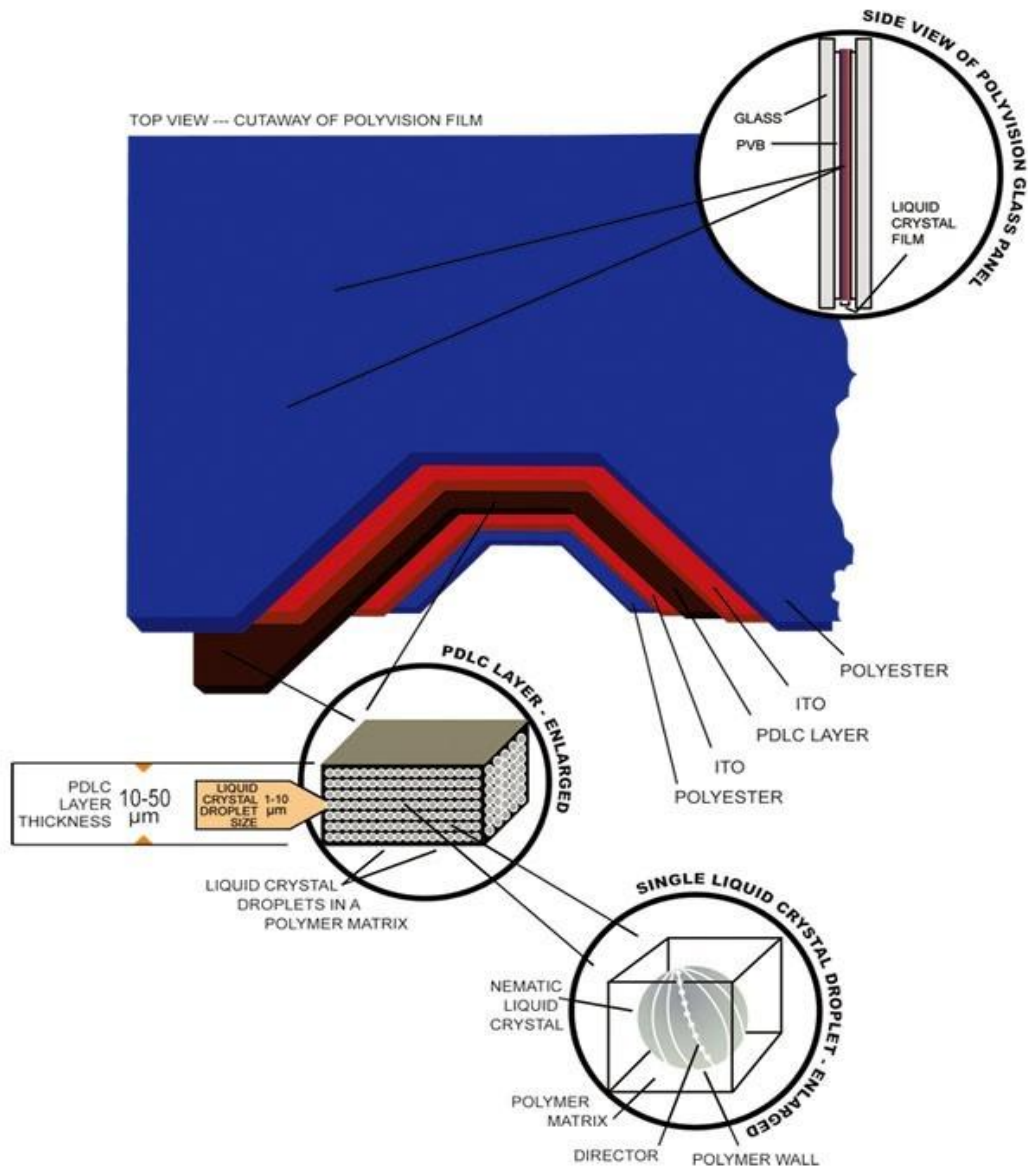
When power on, the liquid drop of the polymer with liquid crystal dispersion will rearrange, the liquid crystal will become ruleless arrangement to ordered arrangement, which makes the same refractive index of the liquid crystal and the polymer, so incident light can pass through completely to form transparent condition.

Light is scattered when passing through an optically inhomogeneous medium. PDLC (polymer dispersed liquid crystal) is a medium whose light scattering power is adjustable through applying an electric field. In their natural (uncharged) state, the PDLC droplets align randomly.

Picture of product theory:

PDLC Light Scattering Mechanism (How It Works)





PRODUCT-FEATURE

1. Transparent when power on, opaque when power off; freely switching; concise and convenient.
2. By spinning the voltage control button, change the light intensity and Infra Red Transmission automatically according to the change temperature and lights outside the window, which can achieve the effect for fixing the temperature and light. It is of high UV resistance, environmental protection and health protection.
3. Double layer laminating technical, Of the high quality of safety glass, it is safe and firm, together with sound insulation, heat insulation and high noise resistance.
4. Various controlling ways: switch, light control, voice control, thermal control, remote control, remote network control, etc, custom made by customers'require.

Thickness	Double tempered glass thickness	5+5,6+6,8+8,10+10,12+12 (mm)
	a piece of Pdlc-interlayer thickness	1.14mm approximately
Max size	1800×3200mm	
Life time	>50,000hr (ON)	
View angle	120°	
Qualification	Standard.Pass Chinese Safety Glass Compulsory Certification(CCC). Accordance withGB9962-1999 Laminated safety glass ASTM D882-02&ASTM D3330-04 Laminated safety glass	

ITEMS	PARAMETER	STATUE
Parallel light transmittance	79%	power on
	5%	power off
Visible light transmittance	84%	power on
	52%	power off
Haze	5%	power on
	82%	power off
Reaction time	10ms	power on
	200ms	power off
Operating Voltage	24V	power on
Power Consumption	6w/m ²	power on
Works temperature	-20~60°C	—————
Life time on	on	>50000hr

Recommend Name:

PDLC FILM, 4~12mmPrivacy Glass, electric privacy glass for window, electronic privacy glass, Functional Glass, Privacy glass , privacy glass for partition, glass for window and door, Smart glass electric switchable glass for Door, Smart Glass Office partitions, Switchable Electrochromic Glass

Application:

More than 50000
service hours when power on

50000

Hours

Normal life more than 15 years



Power on



Power off

OFFICE

BATHROOM



Power off



Power on



Power off



Power on

BANK

HOSPITAL



Power off



Power on

Installation and Usage instruction

Glass installation:

A, check each glass before installation

- 1) Do not install the glass if it has problems of the wrong size, breakage on the edges, scratch, abrasion or shortage.
- 2) Do not remove the label of the glass supplier unless the architect asks to do.
- 3) In compliance with instructions and drawings of the H&C Smart Switchable glass.

B, Put the gaskets on the window frame according to the standard width and thickness.

The gaskets should be cut and sealed the edges according to the advice from the producer. Waterproof and gas-prevent seals should be provided on the corners and the joints.

C, Attention to the connecting of the electrical wires during the installation.

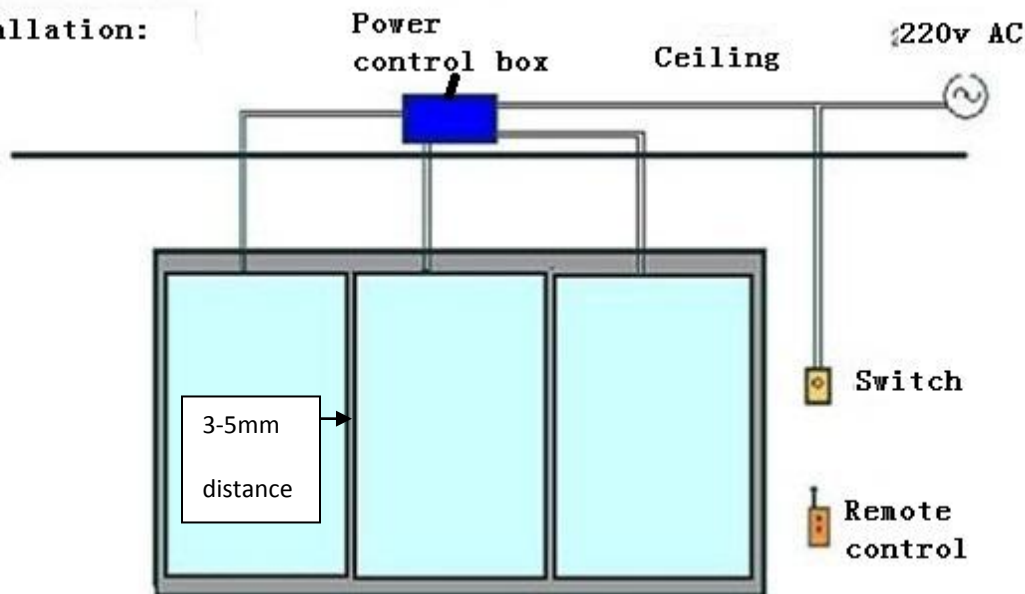
D, When using H&C Smart Switchable glass under humid conditions, attention should be paid to the safety of circuit during the installation.

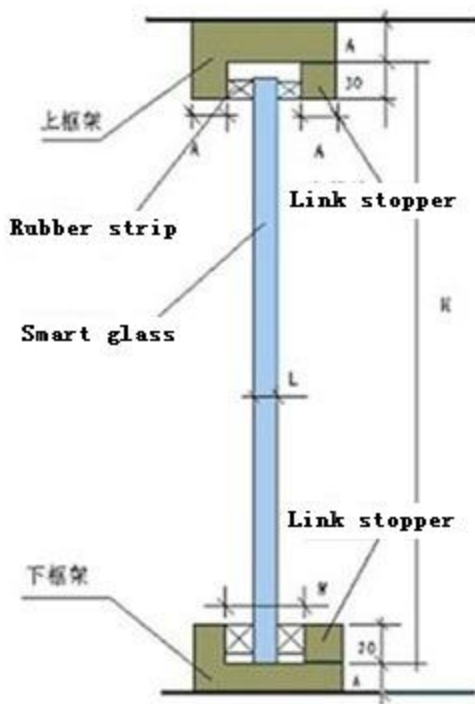
Remarks:

Installation method:

Firstly, on the place of installing the glass, make the frame around the glass according to the structure. In the middle of the groove up the frame, half width of the glass, drill hole $\phi 15\text{mm}$ — $\phi 20\text{mm}$. If need to install multi pieces glass, must drill hole in the same position of each piece. A pair of wires should be put outside the hole in advance, the diameter of the wire is $\phi 0.5\text{mm}$, the length is 2.5m, 300mm should be left inside the frame in advance, put the wire from the hole of the up frame to the centre of the frame or put them to the place of controller (need to be discussed). Make the frame must make sure the glass installation is in the same plane and vertical to the ground. Use adhesive tape to stick all around the inwall of the frame. Special attention must be paid to install one piece glass and then fix it when placing the Smart Switchable glass, which means fixing link stopper on. If install multi pieces Smart Switchable glass, need to adjust the space between the two glass 3-5mm, and it is the same to other pieces. Connect the wire of each glass to the power control box. Fix the link stopper all around and all the contacts in the inwall of the glass and the link stopper should be adhered with rubber strip. After installing, fixing the power control box and checking the power on condition of each glass, then process the entire joint-trial. Seal treatment should be done to the glass for the out decoration of the frame.

Installation:





调光玻璃安装示意图

1. 图中H尺寸为:
 $H = \text{玻璃高度} + 20\text{mm}$;
 2. 图中W尺寸为:
 $W = 5\text{mm} + 5\text{mm} + \text{玻璃厚度 (L)}$ 尺寸;
 3. 图中A尺寸, 由建筑装饰设计确定;
 4. L为玻璃厚度:
 $3+1+3=7\text{mm}$;
 $4+1+4=9\text{mm}$;
 $5+1+5=11\text{mm}$;
 $6+1+6=13\text{mm}$;
 $8+1+8=17\text{mm}$;
 5. 玻璃两边安装结构同底端尺寸结构一致;
 6. 玻璃安装固定后, 框体外部需装饰。
- 注意事项:
1. 严禁使用非厂家提供的任何一种类型的玻璃胶密封玻璃缝隙或玻璃边框。

Attention:

1. Before the glasses leave the factory, the edges have been protected with sealing material, aiming to prevent the component of the glass glue erode into the interior of the luminous glass, so it needs to be confirmed the sealing material is in a good condition before installation.
2. To get the glass sealed all around must use the dedicated glass glue provided by the factory
3. Regularly clean of the glass is necessary, but the cleanser with abra ability cannot be used, especially when the glass surface is reflection coating. After using the soft, clean cloth with neuter soap or weak acid (vinegar) liquid, must clean the glass with water and dry it immediately.
4. Glass protection

After installation, architect, contractor or users must take the responsibility of protecting and cleaning the glass. Steel that is easy to rust and alkaline substances will hurt the glass surface. It absolutely cannot use the cleanser with abraability, especially when glass surface is reflection coating. Dust from installation, welding spark or anything works on the glass surface, may cause an irremediable damage

Wiring Installations

1. Resource requirement

- 1) At least 15 AMP ground wire: 120 VAC 60 Hz or 220 VAC 50 Hz
(Supplied by the installation manufacturer)
- 2) Switch fixed on the wall: 120 VAC 60 Hz or 220 VAC 50 Hz
(Supplied by the installation manufacturer) This switch is used to control two mode conversions.
- 3) H&C dedicated power supply

2. Wire connection

- 1) All the relative circuits of H&C Smart Switchable glass must be installed by qualified electrical engineer, and be complied with all applicable laws and regulations
- 2) Before the installation must inspect the exposed electrode piece to see the electrode and wire whether connect to a metal frame or not, so as not to damage the power and the glass. The exposure part can be covered by the insulating tape during the process of adhesive or transport.
- 3) Multi pieces of H&C Smart Switchable glass and power should be arranged parallel connection, "INPUT" of the

power connects with 120VAC 60HZ or 220 VAC 50 HZ , “OUTPUT” connects with the H&C Smart Switchable glass, the output power is 24VAC

4) Before turn on the power, first to check the electronic resistance between metal frame and electrode, to determine whether it is unlimited or not, otherwise must check the short-circuit place, and make the electrode of the metal frame part insulated

Notice : HC Smart Switchable glass must work under the voltage of the dedicated power, too high voltage and current may cause permanent damage to the glass. After service for maintenance and circuit should be provided by the professional electrical engineer after who are in fully understands of this product.

After open power , check the panel is normal work or not, if any piece or multi pieces of HC Smart Switchable glass is out of work:

1. Check the current circuit breaker is normal or not, or have to reset or replace the fuse, etc
2. Inspection of the wall socket is normally electrified or not, or must be replaced
3. Check for electrical input and connection with the wall socket for electric wire is normally electrified or not.
4. Check for electrical output is normal or not, or the fuse may be burnout, must be replaced the fuse with same type and size

Quality Guarantee

1. Warranty

Since the Smart Switchable glasses reach the place of customer, our company will give maintenance with one year under normal condition, even replacement if necessary.

Special statement: quality guarantee only limit to the interior interlayer of the glass and the special power supply. Exterior glass belongs to the fragile goods, beyond the scope of the maintenance.

2.The scope of the maintenance

HC assures the quality of each piece produced glass during the warranty and on the normal using and maintenance condition. If the product suffers the damage in the scope of the maintenance, HC promises to give reply in 2 working-days. On the condition of the solution by mutual agreement, HC will solve the problem in 14 working-days for the customer.

After one year use of the Smart Switchable glass, accessories and maintenance in favorable price will be available to the customers