



PNLC ADHESIVE FILM

WHITE REVERSE MODE

Adhesive Polymer Network Liquid Crystal (PNLC) smart film switches between opaque and clear states instantly. When power is OFF, the crystals align, allowing light to pass through for full transparency. When power is ON, liquid crystals (LC) scatter light, making the film opaque.

ADVANTAGES



Fast Switching Time

Changes from clear to opaque in less than a second



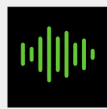
Low Power

Consumes less than 0.5 W/ft² (5 W/m²) when ON



Ultra Clear

Transmits 88% of visible light when OFF



Acoustic Insulation

Acts as a sound barrier reducing noise transmission



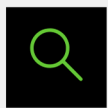
Long Lasting

Lasts over 15 years and endures 80 million switching cycles



Wellbeing

Allowing natural daylight



Low Haze

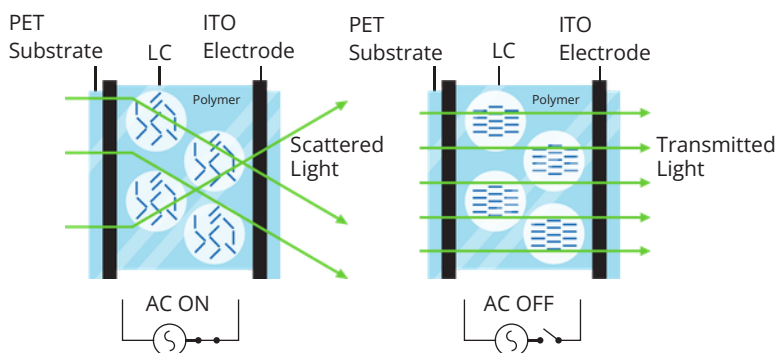
Maintains haze below 10%, preserving crisp views



Control

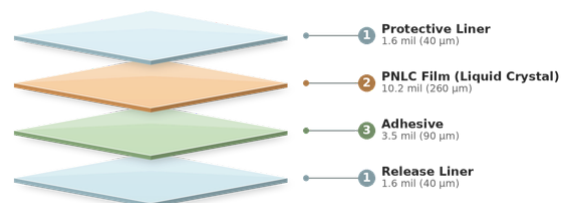
Certified controllers offer ON/OFF and dimming

WORKING PRINCIPLE



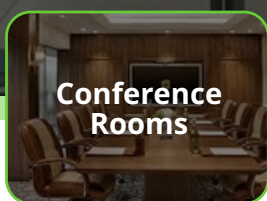
LAYERS STRUCTURE

PNLC Adhesive Film (Reverse Mode)



1 mm = 1,000 µm; 1 mil = 25.4 µm; 1 inch = 1,000 mil = 25.4 mm

APPLICATIONS



PNLC SMART FILM ADHESIVE WHITE SPECIFICATIONS

CATEGORY	PARAMETER	STATE	PNLC
OPTICAL	Color	ON	Opaque White
		OFF	Transparent
	Visible Light Transmittance	ON	9%
		OFF	88%
	Parallel Light Transmittance	ON	7%
		OFF	80%
	Haze	OFF	10%
	Viewing Angle	ON	> 160°
	UV Blocking Rate	ON	99.6%
	SHGC	ON	N/A
		OFF	N/A
ELECTRICAL	Controller Input Supply		110 V / 220 V AC
	Working Operating Voltage	ON	48-65 V AC
	Response Time	ON → OFF ~500 ms	
	Response Time	OFF → ON ~500 ms	
	Switching Cycles	> 80 million	
	Durability	ON	> 15 years
	Smart Film Power Consumption	ON	< 0.5 W/ft² (< 5 W/m²)
	Controller Power Consumption	0.2-0.4 W/ft² (2-4 W/m²)	
MECHANICAL	Operating Modes		ON, OFF, Dimming
	Width	47.2" (1200 mm), 57.1" (1450 mm)	
	Roll Length	98 ft (30 m), 164 ft (50 m)	
	Formats	Cut to Size, Roll	
	Available Colors	White	
	Compliance	Company: ISO 9001, IATF 16949 Products: RoHS, CE, UL	
ENVIRONMENTAL	Storage Conditions	-4 °F to 140 °F (-20 °C to 60 °C) 20-60% humidity	
	Working Temperature	14 °F to 140 °F (-10 °C to 60 °C)	