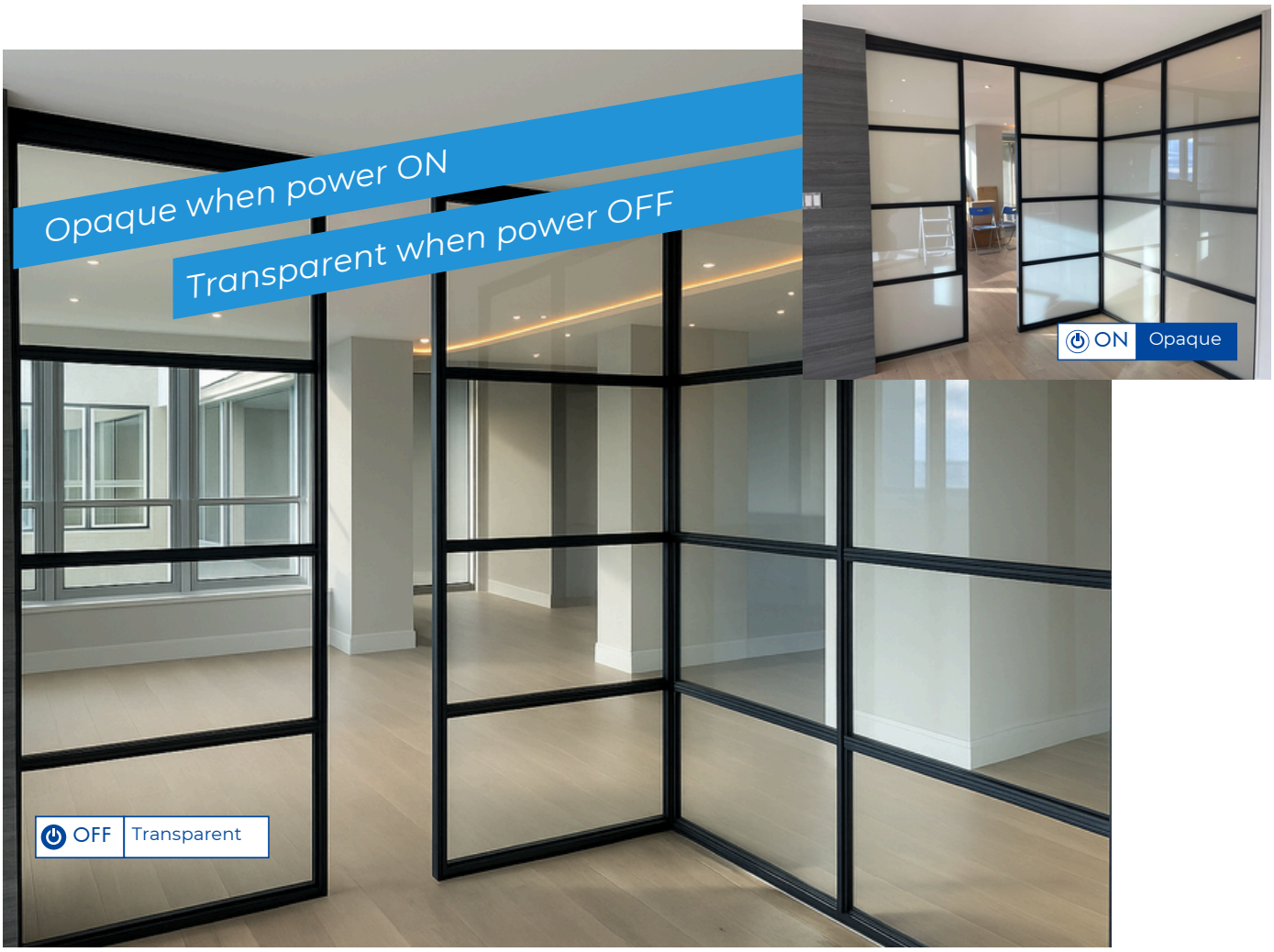
PRIWATT PNLC TECHNOLOGY

SMARTGLASS TECHNOLOGIES



Revolutionary switchable glass product type that does not require electricity at transparent state. Suitable for an environment where transparency is desired.

Ecology and Energy Efficiency

The transparent state is available without electricity, suitable for using mainly at clear state.

Visible During a Power Failure

The film remains transparent in case of power failure, ensuring visibility.

Higher Transparency

PriWatt Reverse is developed focusing mainly on transparency.

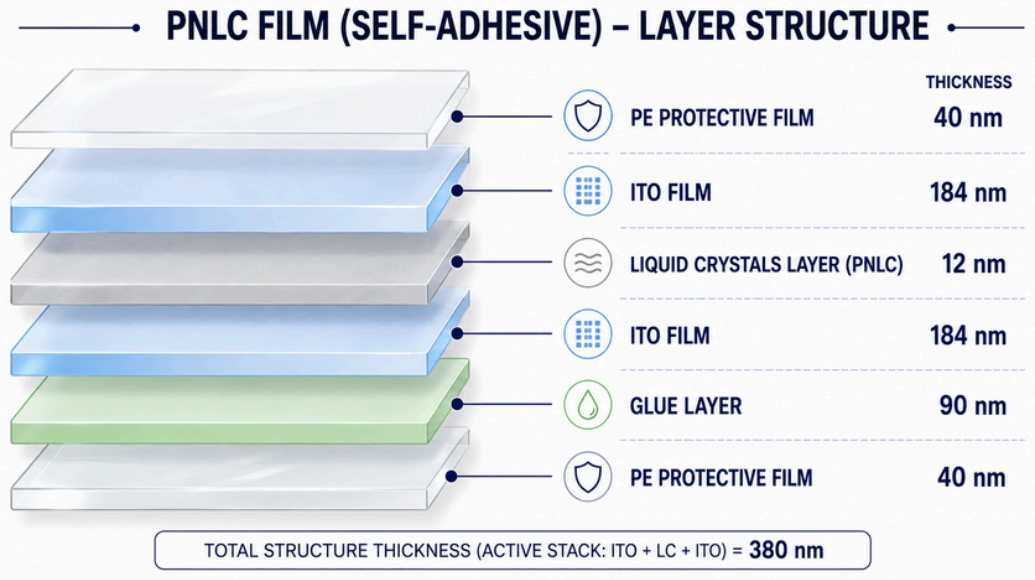
- Transforms from clear state to opaque state with a flick of a switch.
- Allows Architects and Contractors to provide creative design concepts and to incorporate solar protection and energy efficiency with engineering flexibility.
- Flexible size – up to 57'' mm by 130''. No distraction of shutters blinds or drapes.
- Great solution for a rear-projection screen with high contrast.
- Blocks 99% of UV rays.
- Low working voltage (consumes less than 0.05 watts per sq/ft).
- Average life of 10 years with due care – bench tested at over 8,000,000 switches (on and off).

SMARTGLASS TECHNOLOGIES

PNLC SMART FILM TECHNICAL PARAMETERS

White/AdhesiveType (12 μm) / ReverseMode

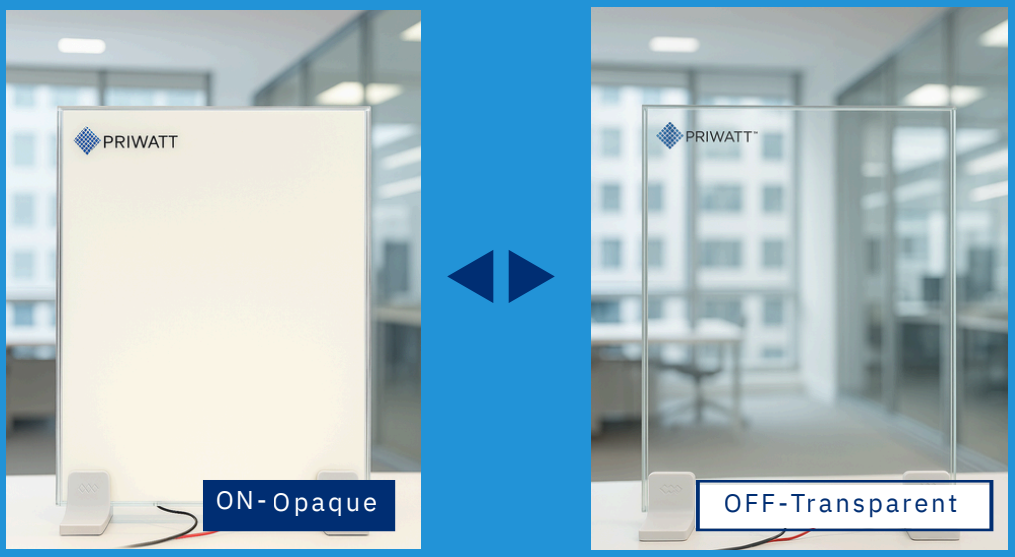
ELECTRICAL	TECHNICAL	OPTICAL
Working Voltage (ON): 24-80VAC	Switching State ON - Opaque	Visible Light Transmission (ON): 88%
Power Consumption <0.5W/SF	Switching State OFF - Transparent	Visible Light Transmission (OFF): 90%
Operating temperature: -20～60℃	Functional Thickness: 350 μm	Haze (OFF): 3%
Responding Time (OFF-ON):<5ms	Max Size 57 inch x 165 inch	Haze (ON): 94%
Responding Time (ON-OFF) <150ms	Lifespan (ON): > 800000	View Angle (ON): 160°



SMARTGLASS TECHNOLOGIES

PriWatt™ PNLC Technology

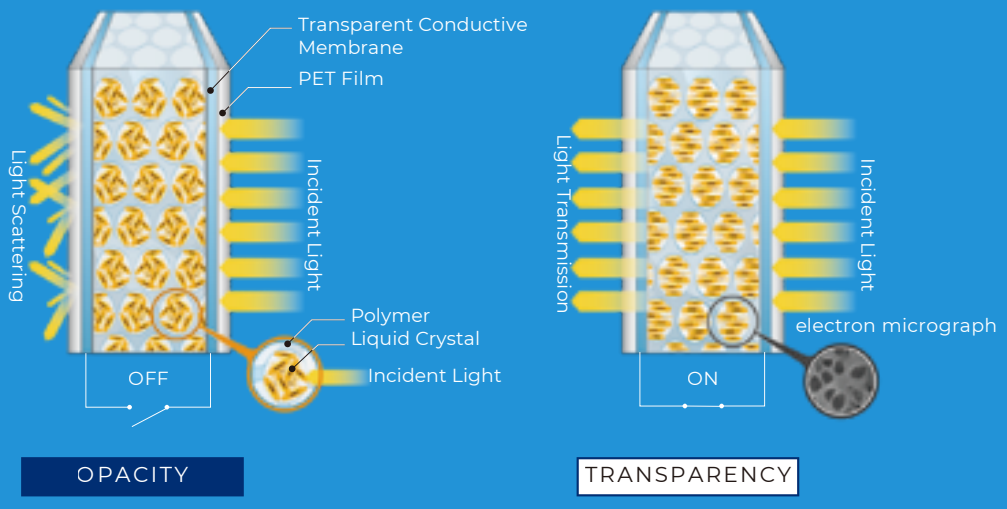
PriWatt Smart Glass technology allows you to switch back and forth between clear glass and opaque, all through a simple electrical current. PriWatt Glass panels contain a film of dispersed liquid crystal molecules in a polymer matrix pressed between two glass sheets. In normal state, without electrical current your glass is transparent. When the current is connected, the molecules immediately disarrange for instantaneous and total privacy.



Working Principles

PriWatt PNLC Glass is composed of a thin film interlayer of liquid crystals dispersed in a polymer matrix laminated between two plastic substrates coated on the inner face with a thin layer of conductive material. By applying a small electrical current, its state can change from transparent to opaque and vice versa. Modified Ethylene Vinyl Acetate (EVA) or Thermoplastic polyurethane (TPU) is used to bond the thin film with the glass.

Modulation of light transmission by polymer network liquid crystals



SMARTGLASS TECHNOLOGIES

PRIWATT PNLC LAMINATED GLASS

TECHNICAL SPECIFICATIONS

We test our product regularly to ensure adhesion and safety. As a Certified Laminator our tolerances exceed those defined for industry by SGCC, IGCC, UL and ASTM. We pride ourselves on our ability to tackle complex challenges, push the boundaries of design, and exceed client expectations with every project we undertake.

UL Recognized Component

SGCC

INSULATING GLASS IGCC CERTIFICATION COUNCIL

UL Certificate E514182
a. cULus - Recognized component to UL 962 5th edition
b. CSA C22.2 No. 0.4, Bonding of Electrical Equipment, Edition 4.
Product Category IYQX2/8

Patent US 11,686,966 B2
Canadian Patent #3.212.838
SGCC 9059
IGCC 5997-P L23

ELECTRICAL	TECHNICAL	OPTICAL
Working Voltage (ON): 25-80VAC Current Frequency: 50/60Hz	Glass Type: Low Iron, Laminated, Heat Treated or Fully Tempered	Visible Light Transmission (OFF): 91%
Power Consumption <0.5W/SF	Glass Color: Can be combined with color interlayers or a wide range of tinted glass to meet any requirement	Parallel Light Transmission (ON): 7% Parallel Light Transmission (OFF): 80%
Operating temperature: -10~60℃	Max Size 57 inch x 130 inch	Haze (ON): 94% Haze (OFF): 2.4%
Responding Time (OFF-ON): <200ms	Thickness 3/8 inch Thickness 1/2 inch Thickness 9/16 inch Weight ~5 lbs/sqft	UV Block: 99% /365nM-380nM
Responding Time (ON-OFF): <10ms	Shape: Any shape or curved including holes, notches and cut outs.	IR Block (ON): 98% IR Block (OFF): 20%
Switch Speed ON < 200 milliseconds	Sound transmission class (STC) ~ 37	SHGC (ON): 0.74% SHGC (OFF): 0.31%
Switch Speed OFF < 10 milliseconds	Lifespan (ON): > 800000	Light Transmission View Angle (ON): 170°