



PDLC SMART FILM – REVERSE PNLC | Specialty Series

Professional Normally-Transparent Switchable Privacy Glass Solution

Energy-conscious Reverse PNLC Smart Film providing transparency in its unpowered state and instant privacy on demand when activated, ideal for applications where clear glass should remain the default condition.

Product Overview

The **Reverse PDLC (PNLC) Smart Film** is a specialized switchable privacy solution designed to operate in the opposite manner to conventional PDLC Smart Film.

When **power is OFF**, the film remains transparent, maintaining an open appearance and allowing clear visibility through the glass. When **power is applied**, the film transitions to an opaque privacy state, providing immediate visual screening whenever required.

This normally-transparent operating principle makes Reverse PNLC particularly suitable for applications where transparency is required for the majority of the time and privacy is needed only temporarily. Because electrical power is required only while the privacy state is active, it can also offer an efficient solution for applications with predominantly transparent operation.

With high transparency in its default state, rapid switching, wide viewing angles and compatibility with automated control systems, Reverse PNLC provides a distinctive alternative to conventional PDLC technology for specialized architectural applications.

Key Benefits

- ✓ Transparent by Default
- ✓ Privacy On Demand
- ✓ No Power Required for Transparent State
- ✓ High 90% Light Transmission (OFF)
- ✓ Privacy Haze up to 92% (ON)
- ✓ Wide Viewing Angle $\geq 160^\circ$
- ✓ Smart Control Integration Ready
- ✓ ≥ 2 Million Switching Cycles

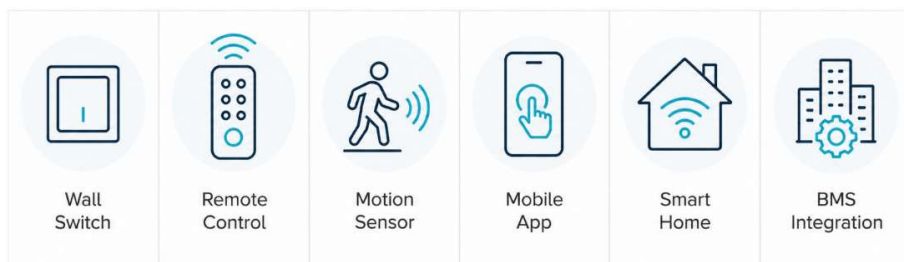
Typical Applications

- Consultation Areas:** Spaces requiring on-demand privacy while maintaining default transparency.
- Conference Rooms:** Partitioned rooms where transparency is the preferred default state and privacy is required only during selected meetings.
- Executive Offices:** Premium offices combining permanent visual openness with on-demand privacy when required.
- Healthcare:** Consultation and treatment spaces where flexible privacy is required during operation.
- Commercial Spaces:** Glazing applications where maximum openness is preferred with on-demand privacy.

Technical Specifications

PARAMETER	SPECIFICATION
FILM TYPE:	Self-Adhesive Reverse PDLC (PNLC) Smart Film
LIGHT TRANSMISSION (OFF):	90%
HAZE (OFF):	7%
LIGHT TRANSMISSION (ON):	88%
HAZE (ON):	92%
OPERATING VOLTAGE:	60V AC
POWER CONSUMPTION:	4-6 W/m ² (Average)
VIEWING ANGLE:	$\geq 160^\circ$
UV REJECTION:	$\geq 85\%$
IR REJECTION:	$\geq 60\%$
RESPONSE TIME (OFF→ON):	≤ 200 ms
RESPONSE TIME (ON→OFF):	≤ 20 ms
OPERATING TEMPERATURE:	-30°C to +50°C
EXPECTED LIFESPAN:	100,000 Hours
SWITCHING CYCLES:	≥ 2 Million
AVAILABLE WIDTH:	Up to 1400 mm

Control Options



Professional Installation by Bullconcept

Bullconcept Smart Solutions Ltd. provides complete turnkey PDLC Smart Film solutions, including technical consultation, site assessment, product selection, professional installation, system commissioning, and after-sales support.

Every project is individually evaluated to ensure the most suitable film type, control method, and installation approach for the specific environment and customer requirements.

Maintenance & Care

Detailed cleaning and maintenance instructions are available in the PDLC Smart Film Care & Maintenance Guide, available at <https://smartfilm.bullconcept.com>.

Important Notes

This product is intended to be installed, connected, and commissioned by qualified professionals. Final suitability depends on the project environment, glass condition, dimensions, control requirements, and site-specific installation conditions.

Important:

Reverse **PNLC** operates differently from conventional PDLC Smart Film. The film is **transparent when unpowered (OFF)** and transitions to its **opaque privacy state when power is applied (ON)**.

Ready to discuss your project?

Contact our team for a free consultation.

Contact



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