

TECHNICAL DATASHEET

PDLC switchable privacy film - product overview and specifications

PDLC Switchable Smart Film | Issued 23 July 2026 | Rev 1.0

INDICATIVE DATA

All figures below are indicative typical ranges for PDLC switchable film and are provided for design reference only. Exact values depend on the glass make-up, film construction and controller selected - confirm per project with a written specification before tender or fabrication.

OVERVIEW

PDLC (Polymer Dispersed Liquid Crystal) switchable film turns ordinary glass into an on-demand privacy surface. With power applied the film is clear; switched off it becomes translucent white, obscuring vision while still transmitting daylight. It is supplied as a self-adhesive retrofit film or laminated between glass at fabrication.

TECHNOLOGY

A layer of liquid-crystal droplets is dispersed in a polymer matrix between two transparent conductive (ITO) films. Without a field the droplets scatter light (private state). An applied AC field aligns them so light passes straight through (clear state). Switching is near-instant and has no moving parts.

INDICATIVE SPECIFICATIONS

Visible Light Transmission - Clear	~ 75 - 82 %
Visible Light Transmission - Private	~ 3 - 8 %
Haze (private state)	~ 85 - 95 %
Power Consumption	~ 4 - 7 W/m2 (~ 0.5 W/ft2)
Total Film Thickness	~ 0.4 - 0.8 mm (laminated unit varies)
Operating Voltage	~ 48 - 65 V AC via controller / transformer
Switching Time	< 100 ms (near-instant, both directions)
UV Rejection	up to ~ 99 %
IR Rejection	~ 40 - 90 % (construction dependent)
Operating Temperature	~ -10 deg C to +60 deg C
Design Life	10+ years typical, indoor use

WarrantyPer written warranty issued with order (typ. 1 - 3 yrs)

■ AVAILABLE WIDTHS & LENGTHS

- Self-adhesive film: standard maximum width typically up to ~ 1.5 m; larger areas are seamed by a qualified installer.
- Laminated glass units: cut to the project schedule, subject to the glass processor's size limits.
- Film is supplied by the running metre or cut to a supplied cutting list.

■ INSTALLATION NOTES

- Bus-bar edges must be sealed and kept dry; the film is an interior product unless laminated and edge-sealed.
- Low-voltage cabling from the driver to the film should be concealed within the frame or reveal.
- Allow access to the driver / controller for future service.

■ MAINTENANCE

- Clean the glass face with a soft, damp microfibre cloth and mild detergent.
- Do not use ammonia-based cleaners, solvents or abrasive pads.
- Keep liquids away from the bus-bar edges and connections.

■ SAFETY

- Only a qualified electrician should connect the driver to mains supply.
- Use the manufacturer-supplied driver/transformer rated for the film area.
- Isolate power before any service on the film or wiring.

■ TYPICAL APPLICATIONS

- Offices, boardrooms and meeting rooms - instant privacy for glass partitions.
- Hospitals and clinics - switchable vision panels for wards and consulting rooms.
- Hotels, retail and residences - facades, bathrooms and feature glazing.