

Smart Glass / Switchable Privacy

PDLC technology — opaque to fully transparent in under 100 milliseconds

Product Overview

PDLC (Polymer Dispersed Liquid Crystal) film contains billions of microscopic liquid crystal droplets in a polymer matrix. Unpowered: crystals are randomly oriented, scattering light to create a frosted opaque appearance (privacy). Powered: voltage aligns the crystals and light passes through — the glass becomes clear and transparent. Switching takes less than 100 milliseconds. Power consumption is just 5-7 W/m² when clear, and zero when opaque.

Technical Specifications

Property	Specification
Technology	PDLC — Polymer Dispersed Liquid Crystal
Switch speed	<100ms clear / <200ms opaque
Power (on)	5-7 W/m ² when clear
Power (off)	Zero — privacy is unpowered default
Voltage	48V or 65V AC (safe ELV)
Light (on)	75-80% transmission
Light (off)	<5% direct transmission
UV block	Up to 99% in both states
Lifespan	>100,000 switching cycles (20+ years)
Max panel	1500 x 3000mm
Warranty	5-year PDLC film, 5-year sealed unit

Configurations

Configuration	Thickness	U-value	Weight/m ²	Application
Smart Laminated	11.5mm	5.8	28 kg	Internal partitions
Smart + DGU	31.5mm	1.1	38 kg	External windows
Smart + Low-E Argon	31.5mm	1.0	38 kg	Energy-efficient
Smart + Acoustic	35mm+	1.0	43 kg	Boardrooms

Applications

- **Office meeting rooms:** instant privacy for presentations and confidential discussions.

- **Healthcare:** patient privacy screens, ICU partitions, examination rooms.
- **Residential bathrooms:** frameless shower screens with switchable privacy.
- **Retail:** switchable shopfronts, display windows, after-hours privacy.
- **Hospitality:** hotel room partitions, spa treatment rooms.
- **Rear projection:** glass becomes a projection surface when in opaque state.

Handling, Storage & Lead Times

- **Storage:** Store vertically on A-frames under cover. Never store flat.
- **Handling:** Suction cups for units over 25kg. Mechanical handling over 60kg.
- **Edge protection:** Protect edges during transport. Avoid glass-to-glass contact.
- **Installation:** Install within 28 days of delivery for warranty validity.
- **Temperature:** Do not install below 5°C. Allow units to acclimatise first.

Product	Standard	Express	Notes
Standard DGU	3-5 days	1-2 days	Most configs
Triple Glazed	5-7 days	3-4 days	Warm edge std
Integral Blinds	10-15 days	—	Made to order
Jumbo Units	5-10 days	—	Size dependent
Shaped Units	5-7 days	—	Template req.
Fire-Rated	7-14 days	—	Availability
Walk-On Glass	7-10 days	—	SGP lamination
Smart Glass	10-15 days	—	PDLC film

How to Order

Contact our sales team: 020 8574 9342 | 07305 993794 | sales@csultd.co.uk | csultd.co.uk — quotes returned within 2 business hours (Mon-Fri, 8am-5pm).