PRIVASEE® SMART GLASS SYSTEMS

PRIVASEE® SMART GLASS — EVA LAMINATED · STANDARD

Datasheet & Product Overview · Smart Glass Systems · SG-01 (Engineering reference: LG-01)

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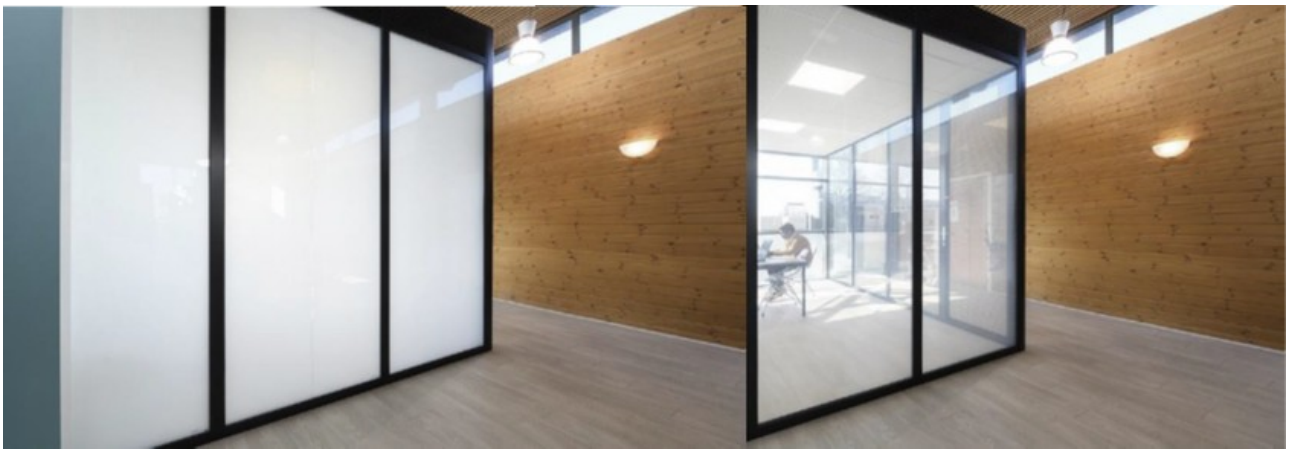
§A · PRODUCT OVERVIEW

SG-01 is the EVA-laminated PDLC smart glass build-up engineered for new construction and architectural integration — partitions, walls, façades, treatment rooms, hospitality booths, residential glazing.
It is supplied as a complete laminated assembly — tempered low-iron plies bonded with PRIVASEE-specified EVA around the active PDLC layer — and integrated with the PRIVASEE Power Drive, remote, and TOSSEAL 381 silicone. Building integration (BMS · smart-home · switches) is delivered by others through the controller's dry-contact interface — a deliberate open-architecture position with no proprietary lock-in.

OFF state (no voltage): the panel is opaque-by-diffusion — milky / frosted privacy. ON state (AC voltage applied): the panel is transparent. Transition to clear is effectively instantaneous; transition to privacy is engineered to a controlled cadence.

Technology basis (LP-003 · use verbatim)

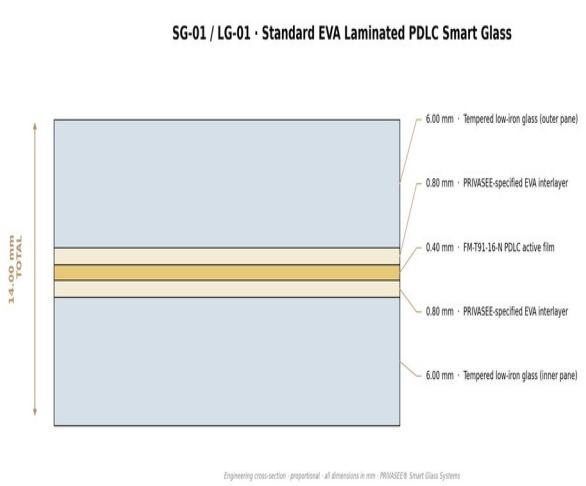
"PRIVASEE® uses PDLC (Polymer Dispersed Liquid Crystal) technology — not SPD (Suspended Particle Device) technology — a deliberate engineering choice for switching speed, optical clarity in the ON state, and architectural-grade integration."



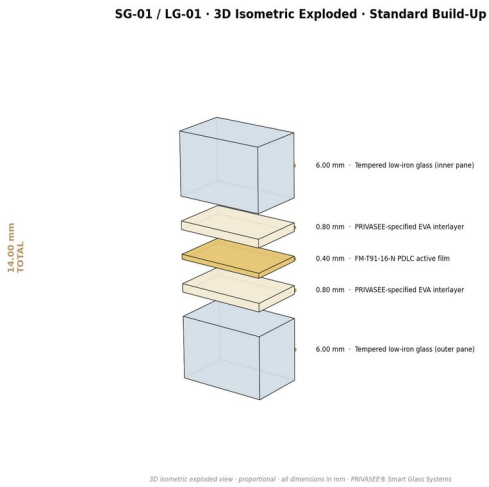
§B · LAYER COMPOSITION

Layer	Material	Thickness	Function
Outer pane	Tempered low-iron glass	6.0 mm	Structural · weather-facing
Outer interlayer	PRIVASEE-specified EVA	0.8 mm	Bonding · impact safety
Active layer	FM-T91-16-N PDLC film	0.4 mm	Switchable opacity
Inner interlayer	PRIVASEE-specified EVA	0.8 mm	Bonding · impact safety
Inner pane	Tempered low-iron glass	6.0 mm	Structural · interior-facing
Sum (nominal)	—	14.0 mm	Per ISO 12543-5 ±0.5 mm
Sum (factory measured)	—	13.82 mm	EVA cure-compression ~0.18 mm

BUILD-UP CROSS-SECTION (2D engineering view)



BUILD-UP 3D ISOMETRIC EXPLODED (XYZ view)



Per PRIVASEE® brand rule: every engineering drawing presented as 2D cross-section + 3D isometric XYZ view (locked 2026-05-09).

§C · FULL PERFORMANCE SPECIFICATION

C.1 · OPTICAL PERFORMANCE

Parameter	ON state	OFF state	Source
Visible light transmission (VLT)	≥ 75%	≥ 50%	PDLC component spec
Haze	≤ 5%	≥ 90%	PDLC component spec
UV transmission	< 1%	< 1%	Active layer
Viewing angle	> 140°	—	P-010
Colour rendering (CRI)	> 95	—	Low-iron substrate

C.2 · SWITCHING PERFORMANCE

Parameter	Value	Source
ON transition (privacy → clear)	< 100 ms	P-007
OFF transition (clear → privacy)	< 200 ms	P-008
Switching cycle life	100 000+ cycles	P-011 / LP-002
Service life (continuous ON)	> 80 000 hours	LP-002 verbatim

C.3 · POWER & ENERGY

Parameter	Value	Notes
Drive method	AC mains-switched	via PRIVASEE Power Drive (separate manual)
Power consumption (active)	4–8 W/m²	When ON
Standby consumption	0 W	Powered OFF = privacy state
Operating voltage (panel)	[INTERNAL]	See PRIVASEE Power Drive documentation

§C · FULL PERFORMANCE SPECIFICATION

C.4 · THERMAL & ENVIRONMENTAL

Parameter	Value	Notes
Operating temperature	−20 °C to +60 °C	Active panel surface
Storage temperature	−20 °C to +70 °C	Long-term storage
Storage humidity	20–60% RH	Non-condensing
Service environment	Indoor, dry-edge install	Outdoor on engineering review

C.5 · BUILD-UP TOLERANCE (ISO 12543-5)

Parameter	Value	Standard
Total build-up tolerance	±0.5 mm	ISO 12543-5
EVA cure-compression (total)	~0.18 mm	PRIVASEE-measured (~11% per EVA layer)
Glass thickness tolerance	Per BS EN 12150	Tempered glass standard
Edge finish tolerance	±0.5 mm polished	Default polished edge

C.6 · DEFECT TOLERANCE (AUDITED UNDER ISO 9001)

Defect type	Limit	Audit basis
Point defects > 3 mm	Not allowed	ISO 9001:2015 audit (cert 17420Q22138R1S)
Linear defects > 30 mm	Not allowed	ISO 12543-5 visual quality
Bubble inclusions	Not allowed in active area	Visual inspection per assembly
Edge chips < 2 mm	Allowable in concealed edge	Per EN 12150 tempered standard

§C · FULL PERFORMANCE SPECIFICATION

C.7 · EVA INTERLAYER SPECIFICATION

Parameter	Value
EVA thickness per side	0.8 mm
Total EVA per assembly	1.6 mm
Material grade	PRIVASEE-specified EVA for PDLC
Lamination process	Vacuum lamination + 3-stage cure
Cure cycle reference	ENG-001 (CONFIDENTIAL)
Substrate compatibility	Low-iron tempered (default)

ration · no duty-cycle

limitation imposed (EP-002 per P-011)

STANDARD ENVELOPE (EVA Laminated) · 6+0.8+0.4+0.8+6 mm = 14.0 mm nominal · ISO 12543-5 ±0.5 mm · JUMBO multi-busbar engineered per project

§F · COMPLIANCE & CERTIFICATIONS

F.1 · EN HARMONISED STANDARDS UNDERLYING CE CONFORMITY

Standard	Reference / certificate	Issuing body	Status
BS EN 14449	Compliance basis	BSI (UK)	Ongoing
CE marking	TTC-26-2703	TURKAK (Türkiye)	Valid
ISO 9001:2015	Cert 17420Q22138R1S	IAF accredited	Audit cycle ongoing
IATF 16949:2016	Cert DB00987	IATF Reg 0453312	Audit cycle ongoing
EN 12600	Class 1B1 typical	Per assembly	Pendulum impact
EN 12150	Conformance	Tempered glass standard	Per pane
ISO 12543-5	Tolerance basis	Laminated glass tolerance	Applied

F.2 · INDEPENDENT THIRD-PARTY TEST REPORTS

Test	Standard	Status	Provider
Pendulum impact (1B1)	EN 12600	Per project on commission	[NEEDS INPUT — UK lab]
Switching cycle endurance	PRIVASEE-internal	100 000+ cycles verified	PRIVASEE QA
UV transmission	Manufacturer data	<1% verified	PDLC component
Weathering	EN 1279 / accelerated	[NEEDS INPUT — pending]	[NEEDS INPUT]

§G · ARCHITECT SPEC, QUOTATION, LEAD TIME & WARRANTY

ARCHITECT SPEC CALL-OUT · “Privasee supplies the smart film LG-01, the power drive, the remote, and the approved silicone. Building integration (BMS, smart-home, switches) is delivered by others through the controller’s dry-contact interface.”
QUOTATION LINE ITEM · “Supply and installation of EVA-laminated PDLC smart glass (PRIVASEE SG-01 / engineering reference LG-01), build-up engineered per project. Includes Privasee power drive, remote control, and TOSSEAL 381 silicone where required. Building integration (BMS, smart-home, switches) by others.”

§H · DOCUMENT REFERENCES

Code	Document	Purpose
TEC-07	Smart Glass Install Manual	Site install procedure
TEC-11b	Smart Glass Maintenance Guide	Customer + installer maintenance
QUA-01b	Smart Glass Warranty	Warranty terms (GCC + EU editions)
OPS-02	Method Statement (Lamination)	Factory lamination procedure
OPS-03	Risk Assessment (RAMS)	On-site installation risks
SPEC-01	Architect Spec Sheet (SG-01 / LG-01)	CSI-format spec for tender drawings
PVS-SGS-CAT-CONFIGS-01	Custom Configurations Catalogue	Bespoke build paths reference
Power Drive Manual	Per drive family	PJ-D · PJ-C · DZD · LD-A · DZ6L · CZ

§I · SUPPLY CHAIN

PRIVASEE® laminates the smart glass build-up under PRIVASEE specification, engineered and quality-controlled in the United Kingdom by SORS GT UK LTD, distributed across the GCC by S O R S Reflective LLC (UAE TM 430322).

C.8 CUSTOM & SPECIAL CONFIGURATIONS

Bespoke build paths PRIVASEE engineers alongside the standard SG-01 / LG-01 platform. For full detail, photo examples and project references see the Custom Configurations Catalogue (PVS-SGS-CAT-CONFIGS-01).

Option	Availability	Notes
Coloured Smart Glass	On request	Tinted bronze / grey / blue or custom-coloured tempered substrate · tinted EVA for ambient OFF-state colour
Printed Smart Glass — ceramic frit	On request	Kiln-fired ceramic print on outer pane · architectural-grade · combined with active PDLC for branded surface
Printed Smart Glass — digital UV-cured	On request	Digital UV-cured print on internal surface · high-resolution · combined with PDLC for decorative + switchable
DGU Façade Smart Glass	Engineered per project	Laminated PDLC inner + 12–16 mm cavity (argon-fill option) + tempered outer (low-E coating option) · EN 1279 compliant · façades, curtain walls, building envelopes
Skylight Smart Glass (overhead)	Engineered per project	Overhead glazing — DGU construction with structural review · low-E + argon recommended for thermal performance
Custom logo / pattern embedding	On request	Logo or pattern integrated within active PDLC area · vector or 300 dpi raster artwork
Asymmetric build-up	On request	Different outer + inner pane thicknesses for acoustic / structural / aesthetic targets
Jumbo sizing	Engineered per project	Multi-busbar configuration available — tell us your project