

PRIVASEE[®] SMART GLASS SYSTEMS

**PRIVASEE[®] SMART GLASS — EVA
LAMINATED · ACOUSTIC**

**Datasheet & Product Overview · Smart
Glass Systems · LG-02 (Acoustic-
Optimised Asymmetric Build)**

DOCUMENT CODE PVS-SGS-DAT-LG-02 · 2026-05-08 DRAFT

§A · PRODUCT OVERVIEW

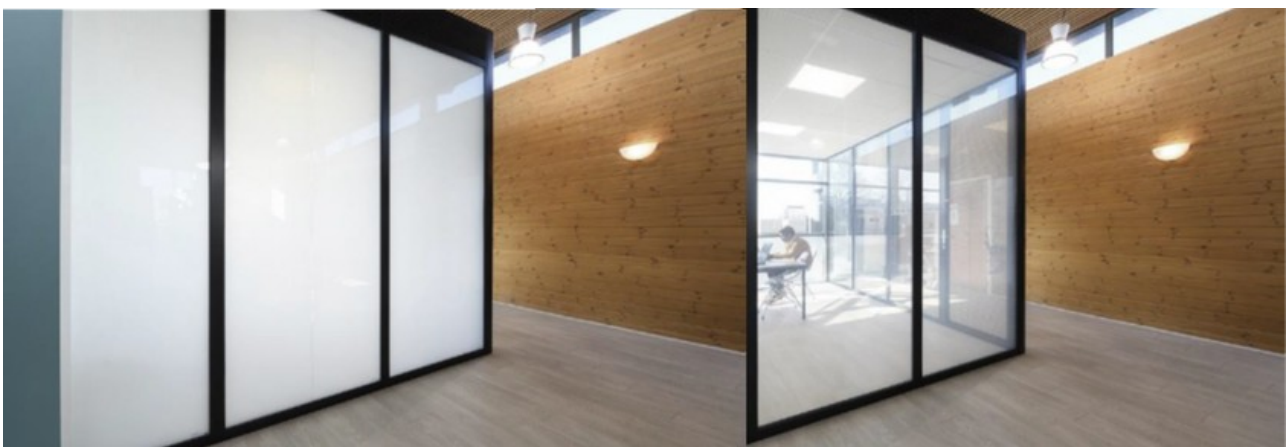
LG-02 is the acoustic-optimised EVA-laminated PDLC smart glass build-up — asymmetric 8 + 6 mm tempered low-iron with acoustic-grade EVA (0.76 mm per side). Engineered for projects where acoustic separation matters: hospitality guest rooms, recording studios, boardrooms, urban residential, premium office partitions.

It is supplied as a complete acoustic-optimised laminated assembly — asymmetric tempered low-iron plies bonded with acoustic-grade 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.”

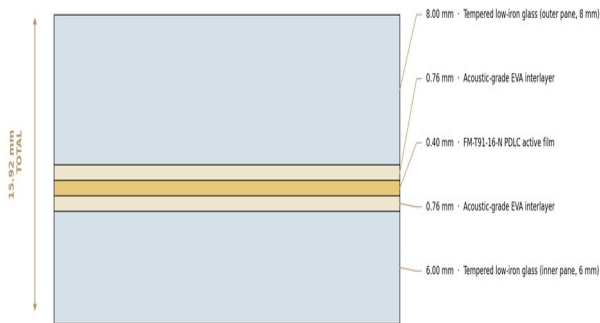


§B · LAYER COMPOSITION

Layer	Material	Thickness	Function
Outer pane	Tempered low-iron glass	8.0 mm	Structural · acoustic mass · weather-facing
Outer interlayer	Acoustic-grade EVA	0.76 mm	Acoustic damping · bonding
Active layer	FM-T91-16-N PDLC film	0.4 mm	Switchable opacity
Inner interlayer	Acoustic-grade EVA	0.76 mm	Acoustic damping · bonding
Inner pane	Tempered low-iron glass	6.0 mm	Structural · interior-facing
Sum (nominal)	—	15.92 mm	Per ISO 12543-5 ±0.5 mm
Sum (factory measured)	—	15.74 mm	Acoustic EVA cure-compression ~0.18 mm

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

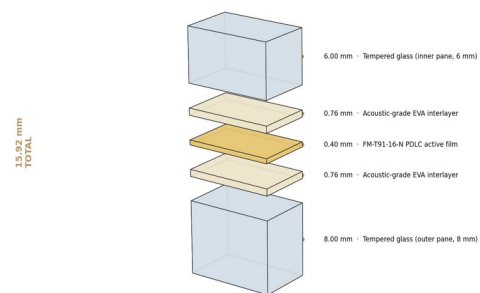
LG-02 · Acoustic Asymmetric (8 + 6 mm) Laminated PDLC Smart Glass



Engineering cross-section - proportional - all dimensions in mm - PRIVASEE® Smart Glass Systems

BUILD-UP 3D ISOMETRIC EXPLODED (XYZ view)

LG-02 · 3D Isometric Exploded · Acoustic Asymmetric (8 + 6 mm)



3D isometric exploded view - proportional - all dimensions in mm - PRIVASEE® Smart Glass Systems

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/m ²	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	Standard build	Acoustic build
EVA thickness per side	0.8 mm	0.76 mm
Total EVA per assembly	1.6 mm	1.52 mm
Material grade	PRIVASEE-specified EVA for PDLC	Acoustic-grade EVA
Lamination process	Vacuum lamination + 3-stage cure	Same
Cure cycle reference	ENG-001 (CONFIDENTIAL)	ENG-001 (CONFIDENTIAL)
Substrate compatibility	Low-iron tempered (default)	Same

imitation imposed (1.6 mm per side)
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]
Acoustic Rw (LG-AC family)	EN ISO 717-1	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.3 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

§C.9 · ACOUSTIC PERFORMANCE CALCULATION REFERENCE

Per-configuration estimated Sound Reduction Index Rw · ISO 10140 / ISO 717-1 methodology

PRIVASEE® ENGINEERING REFERENCE · Calculated estimates per ISO acoustic methodology

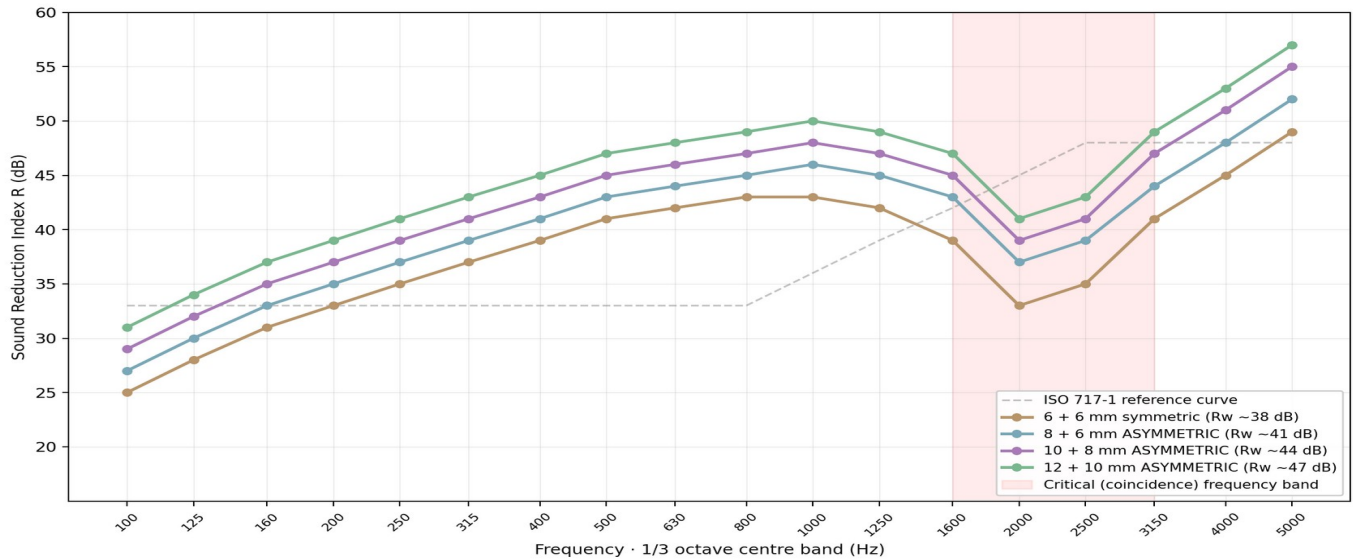
Project-specific Rw verified per independent test report on commission · per LP-003 verbatim acoustic statement

1 · ACOUSTIC PERFORMANCE TABLE — Rw per glass + acoustic-EVA combination

Configuration	Total nominal	Estimated Rw (engineering calc)	Use case
6 + 6 mm symmetric · acoustic EVA	13.52 mm	≈ 38 dB	Boutique guest rooms · light office partition
8 + 6 mm ASYMMETRIC · acoustic EVA	15.92 mm	≈ 41 dB	Mid-range hospitality · meeting rooms
8 + 8 mm symmetric · acoustic EVA	17.92 mm	≈ 43 dB	Premium hotel · executive offices
10 + 8 mm ASYMMETRIC · acoustic EVA	19.92 mm	≈ 44 dB	Recording studios · medical consultation
10 + 10 mm symmetric · acoustic EVA	21.92 mm	≈ 45 dB	Concert venues · broadcast control rooms
12 + 10 mm ASYMMETRIC · acoustic EVA	23.92 mm	≈ 47 dB	High-acoustic applications · studio isolation
12 + 12 mm symmetric · acoustic EVA	25.92 mm	≈ 48 dB	Maximum acoustic separation · single panel

2 · SOUND REDUCTION FREQUENCY RESPONSE (dB) — engineering reference curves

PRIVASEE® LG-02 Acoustic Smart Glass — Sound Reduction Frequency Response
Engineering reference per ISO 10140 / ISO 717-1 methodology



Reference curves shown · actual Rw verified per project on independent lab test commission · per LP-003 verbatim acoustic statement

LP-003 · ACOUSTIC EXTERNAL-SAFE WORDING (verbatim — use in tender drawings):

"Acoustic-rated EVA laminated PDLC smart glass build-ups are available. Acoustic performance depends on glass thickness, laminated construction, cavity design where applicable, frame/seal performance, and project specification. Verified Rw / STC values are supplied where independent test evidence is available."

PRIVASEE® ENGINEERING REVIEW

Per ISO 9001:2015 (cert 17420Q22138R1S)

PER-PROJECT VERIFICATION

Independent lab test on commission · partner labs UK + UAE