



GenVue Shade

Adaptive Electro-Polarised Dynamic Glass System

GenVue[™]
MAKING BUILDINGS ACTIVE

LONDON | DUBAI | NEW DELHI

www.genvue.co.uk



A new standard in facade performance

- GenVue Shade is a solid-state dynamic glazing system designed to precisely control solar heat gain, glare, and daylight transmission.
- At its core is an electro-polarised interlayer embedded within an insulated glass unit, enabling instant, uniform adjustment of light and thermal performance – without mechanical shading systems.
- This allows buildings to respond dynamically to external conditions while maintaining clean architectural intent.

GenVue Shade

Why it matters

- Modern buildings must balance energy efficiency, occupant comfort, and design clarity.
- GenVue Shade delivers all three at the facade level – reducing operational loads while enhancing internal environments.

Key Performance Metrics

- Switching Speed: <1 second
- Solar Heat Reduction: Up to 91%
- Max Panel Size: 6m x 1.5m
- Operating Voltage: $\leq 5V$ DC
- Lifecycle: Comparable to standard IGUs

Our Technology



- GenVue Shade utilises a laminated electro-polarised polymer layer embedded within a multi-pane insulated glass configuration.
- When a low electrical voltage is applied, the internal molecular structure aligns instantly, altering visible light transmission and solar heat gain.
- This enables immediate transition between clear and tinted states, with uniform performance across the entire panel.

System composition

- Outer heat treated glass
- Advanced solar control coating
- Argon-filled cavity
- Electro-polarised switching interlayer
- Laminated inner glass

Operating characteristics

- No chemical transition cycles
- No delay or fade time
- Uniform switching across full panel
- Stable performance over lifecycle

Performance

Measured Performance

≤ 1 Second
Instant switching response

Up to
91%
Solar heat reduction

Up to
25%
Cooling load reduction

$\leq 5V$ DC
Low voltage operation

Up to
6m x 1.5m
Large format panel capability

0 Mechanical Shading
No blinds, no moving systems



Why GenVue Shade

Translating facade performance into real-world impact

Controls Glare

Precisely regulates light transmission to eliminate glare while maintaining clear outward visibility, ensuring comfortable viewing conditions throughout the day.

Reduces Heat Gain

Limits solar heat entering the building, helping maintain stable indoor temperatures and reducing cooling demand.

Optimises Daylight

Balances natural light across interior spaces, preserving brightness without excessive intensity or discomfort.

Enhances Comfort

Creates stable visual and thermal conditions, improving overall indoor experience for occupants.

Improves Energy Efficiency

Reduces reliance on air conditioning and artificial lighting, supporting lower energy consumption.

Simplifies Façade Systems

Eliminates the need for blinds and mechanical shading, reducing maintenance and system complexity.

Supports Building Performance

Enables real-time facade response to changing environmental conditions, improving overall building efficiency.

Performance



Dynamic Electro-Polarised Glazing System

- GenVue Shade integrates an electro-polarised switching interlayer within insulated glass units, enabling real-time control of light transmission and solar heat gain at the facade level.
- A low electrical input triggers instant molecular alignment, allowing each panel to transition between clear and tinted states with uniform, full-surface performance.

Operating States

Clear State — Daylight Priority

VLT: ~46%–60% SHGC: ~0.30–0.46

- Maximises daylight penetration
- Maintains clear external visibility
- Supports passive solar gain
- Optimised for low-light and overcast conditions

Tinted State — Solar Control

VLT: ~1% SHGC: ~0.09–0.15

- Reduces solar heat gain at facade level
- Minimises glare while maintaining transparency
- Controls light intensity without shading systems
- Optimised for high solar exposure

Measured Performance

Energy Reduction : 20–25% reduction in total building energy consumption

Cooling Load Optimisation : Up to 35% reduction in peak cooling demand

Solar Control Efficiency : Up to 91% solar heat reduction in tinted state

System Integration : Eliminates mechanical shading systems entirely

HVAC Impact : Enables reduction in equipment sizing by up to 25%

Sustainability & Environmental Impact

Building-Level Performance

- Contributes to LEED, WELL, and BREEAM certification pathways
- Supports net-zero and low-energy building strategies
- Reduces operational carbon emissions through facade control

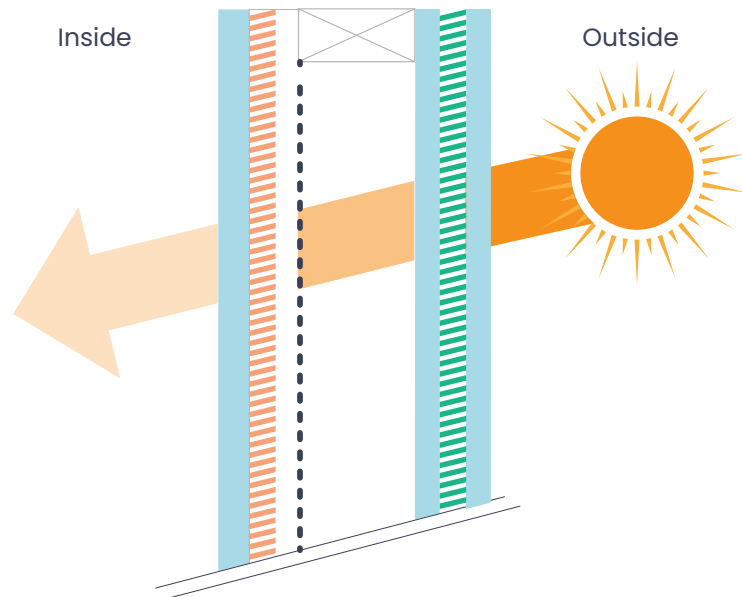
Lifecycle Efficiency








- Lower embodied carbon vs glazing + mechanical shading systems
- Eliminates blinds and associated replacement cycles
- Extends facade lifecycle through adaptive performance
- Supports optimisation of renewable energy system sizing

GenVue Shade

Electro-Polarised Polimer Technology

Typical Insulated glass

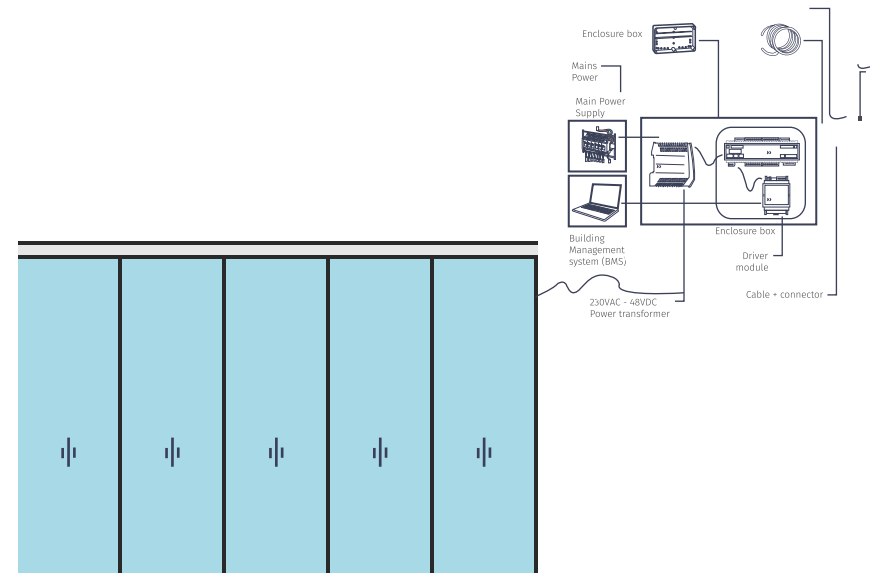


-  Cover sheet 4-10mm heat strengthened inner glass
-  PVB interlayer
-  Cavity gas or air filled
-  Genvue Shade Electro Polarized Layer
-  Outer Laminated Glass
-  inter layer
-  Low-E coating

GenVue Shade – Connection Schematic

The system is designed such that all the electrical connectors, cables and non active areas on edge of the glass are hidden in the frame. Glasses are connected in series connection and then to a driver module which is powered through a transformer. Input is provided manually through a dimmer switch /Casambi device or automatically via a Building management system (BMS). System can be designed to control each panel individually or in groups.

GenVue Shade in a butt joint glazing solution application



Technical Specifications & System Configuration

Electro-Polarised Glazing System

- GenVue Shade utilises an electro-polarised polymer interlayer laminated within insulated glass units.
- When voltage is applied, the internal structure aligns instantly, enabling precise control of light transmission and solar heat gain through the facade.



Performance Characteristics

- **Switching Speed :**
≤ 1 second
- **Light Transmission Range :**
~1% – 60% (VLT)
- **Operating Voltage :**
≤ 5V DC
- **Maximum Panel Size :**
Up to 6m x 1.5m
- **U-Value :**
~1.2 W/m²K (EN 673)
- **Impact Resistance :**
Class 1(B)1 (EN 12600)
- **Service Life :**
Comparable to standard glazing systems

Glass Configuration Options

Skylight Configuration (~44.04 mm total thickness)

Outboard : 6mm Low-E heat-strengthened + 1.52mm interlayer + 6mm advanced solar control (double silver)

Cavity : 16mm warm edge spacer with ~90% argon fill

Inboard : 6mm low iron + electro-polarised switching layer + 6mm low iron (laminated)

Curtain Wall Configuration (~36.52 mm total thickness)

Outboard : 6mm advanced solar control (double silver)

Cavity : 16mm warm edge spacer with ~90% argon fill

Inboard : 6mm low iron + electro-polarised switching layer + 6mm low iron (laminated)

System Advantages

Lower Total Cost of Ownership

Eliminates mechanical shading systems, reducing installation, maintenance, and lifecycle costs associated with blinds and shading infrastructure.

Flexible Control & Integration

Supports automated and manual control through building systems. Panels can respond dynamically to ambient light conditions or be controlled via BMS, sensors, or user interface systems.

Multipurpose Application

Available across multiple facade types, geometries, and configurations, supporting both new-build and retrofit projects.



GenVue Shade vs Other Smart Glass Solutions

Feature	Genvue Shade	Other Electrochromic Glass
Warranty	10-year switching	5-year switching
Curves	Possible	Not Possible
Switching Speed	≤1 second	10-20 minutes
Shapes	Irregular shapes Possible	Limited to 5 sided shapes with no acute angle shapes
Max. Size	6m x 1.5m	3m x 1.5m

SERVING GLOBALLY

GenVue™
MAKING BUILDINGS ACTIVE

hello@genvue.co.uk | www.genvue.co.uk

LONDON

160 City Road, London
EC1V 2NX United Kingdom
+44(0) 203 576 06163
+44 7415 189 5553

DUBAI

809, Executive Bay Tower
Al A'amal Street, Business Bay.
Dubai, United Arab Emirates
+44 7415 89 5553

NEW DELHI

CB 362 Ring Road,
Narina, New Delhi 110028,
India
+91 9899705553