

PRIVA-LITE XL

This document provides information on the inherent characteristics and features of the PRIVA-LITE XL.

1. MAIN FUNCTIONALITY

PRIVA-LITE XL is a Laminated Safety Glass (According to EN 14449 norm), using PVB foil. It is an active glass which, under the effect of an electric current, switches from translucent to transparent. In OFF state PrivaLite XL may be used as retro-projection screen.



Transparency
(Switch ON)



Privacy
(Switch OFF)



Retro-projection
(Switch OFF + Retro-projection)

1.1 Haze

In its transparent state, PRIVA-LITE XL will never be as clear as normal float glass. A light haze will always be visible. This haze effect is considered normal and unavoidable due to the nature of the product.

It should also be noted that factors such as ambient lighting (intense diffuse daylight, direct lighting...), compositions (thickness, double and triple glazing unit, bent panel...), position of the glazing (inclined panel, roof application...) and position of the viewer (non-perpendicular observation, facing glass façade...) will increase this effect of haziness.

Glassolutions Saint-Gobain taking all the necessary precaution to ensure minimum haze, and making sure that all delivered panels are within tolerances described in point 2.1 (Optical and solar control performances). Claims for haze, if within tolerance, will be refused.

1.2 Hiding power

PRIVA-LITE XL is a translucent glass in its natural state (switch OFF). It is not an opaque glass. Translucent means that it allows light to pass through but cause sufficient diffusion to prevent perception of distinct images (hiding power).

The shape of colored items placed close to the PRIVA-LITE XL will by consequence always be visible.

Ambient brightness on the final PRIVA-LITE XL installation site should be between 300 Lux to 500 Lux and the viewable spectrum range should be between 400nm to 700nm. Strong viewable red white light and sun light image cannot be blocked by this glass.

2. PERFORMANCES

2.1 Optical and solar control performances

Optical/thermal		LT*	RL*	Haze*	g*	Ug (W/m ² K)
STADIP Planiclear 55.2 (12mm) (For comparison)		85%	9%	~ 0.5%	71%	5.6 to 5.8
PRIVA-LITE XL Diamant 55.4 (12mm)	ON	77%	19%	6%	63%	5.6 to 5.8
	OFF	50%	18%	99%	64%	5.6 to 5.8

*Spectrophotometric data's are given with a tolerance of +/-2%

LT = Light Transmission

RL = Reflection

g = Solar Factor

N.C. = not communicated

Above performances are valid only for standard applications and for PRIVA-LITE XL panels installed and maintained according to our installation and maintenance guides.

Specifications for other compositions are available on request.

2.2 Acoustical performances

Acoustic	R _{a,tr}	R _w (C;Ctr)
PRIVA-LITE XL 55.4 (12mm)	35 dB	37 (-1;-2) dB
PRIVA-LITE XL SILENCE** 55.4 (12mm)	35 dB	38 (-1;-3) dB

** PrivaLite XL version with Silence PVB foil, available as option

Specifications for other compositions are available on demand.

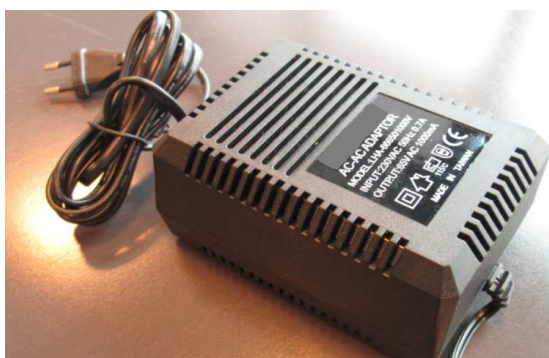
2.3 Electrical performances of Priva-Lite XL

		PRIVA-LITE XL
Supply voltage		65VAC 50~60 Hz
Consumption ON mode @ 25°C		5.0 W/m ²
Time of change of state	OFF to ON	10ms
	ON to OFF	100ms
Life test		3 000 000 cycles ON/OFF

2.4 Power supplies

PSU XL was developed and tested to provide adapted and safe power supply to Priva-Lite XL
Only PSU XL transformers supplied by Saint-Gobain are allowed to power Priva-Lite XL.

	Input Voltage [VAC]	Frequency [Hz]	Output Voltage [VAC]	Surface supply [m ²]	Dimensions [mm]			Weight [kg]
					L	W	H	
PSU XL	230	50~60	65	6,37	130	90	70	0,79
US PSU XL	100~120							



2.5 Indexes/ classes

	PRIVA-LITE XL 55.4 (12mm)
Electrical protection index	IPX7 or IPX4
Impact safety class (EN 12600)	1B1
Protection class laminated glass (EN 356)	P5A for 55.4 (12mm) P6B for 66.8 (16 mm)
Electrical protection class	Class I Class II possible under conditions
	Power supply unit PSU XL
Protection class (EN 55022)	Class B

3. NORMS

PRIVA-LITE is conform to the following norms

- EN12543 Glass building – Laminated glass and laminated safety glass
- EN14449 Glass building – Laminated glass and laminated safety glass
- EN 60529 Protection index
- EN12600 Pendulum test
- EN1279 Insulating glass
- EN 55022 Electromagnetic compatibility
- IEC 60228 Conductors of insulated cables

Certificates available on demand.

4. PRIVA-LITE XL minimum and maximum dimensions:

Dimensions		
Minimum	Maximum standard (IPX7)	Maximum Hotmelt (IPX4)
200 x 300mm	1500x3000mm	1820 x 3500mm

5. PRIVA-LITE XL thickness

Standard:	12mm (55.4)
Minimum:	8mm (33.4)
Maximum:	22mm (1010.4)

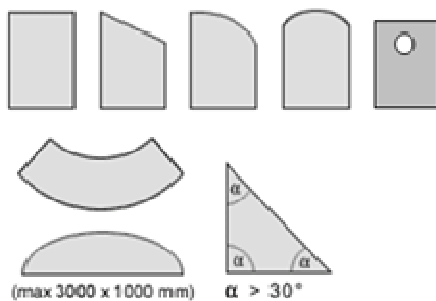
6. PRIVA-LITE XL WORKING CONDITIONS

-10 °C to 70 °C

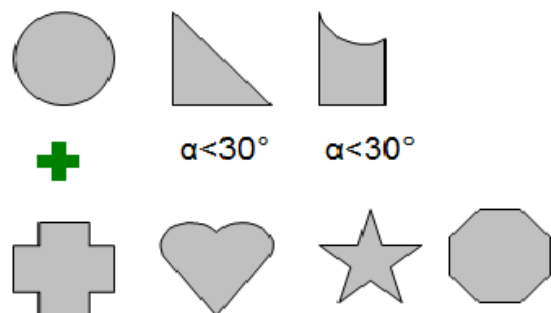
Direct use in façade or exposed to sun is allowed only as ISO glass, mounted with solar control glass on the outside, and Priva-Lite inside.

7. SHAPES

7.1 Available shapes:



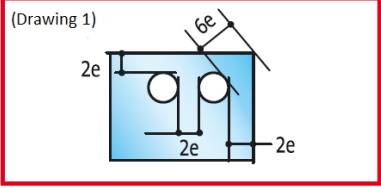
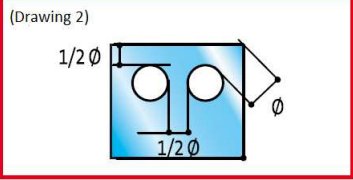
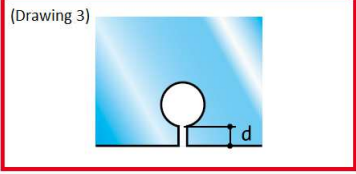
7.2 Unavailable shapes:



8. Holes and notches

8.1 Holes in PRIVA-LITE XL are available when $\varnothing < 50\text{mm}$.

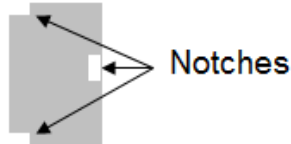
- Attention:**
1. LC film is separated from glass edges of the hole by 3mm +/-2mm inactive zone.
 2. Screws pressure of the fittings on a PRIVA-LITE glass cannot cross 10N/cm

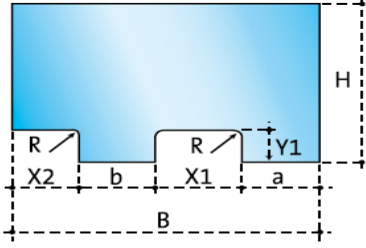
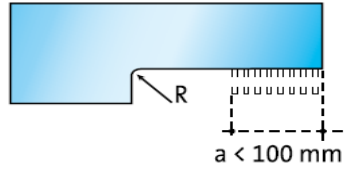
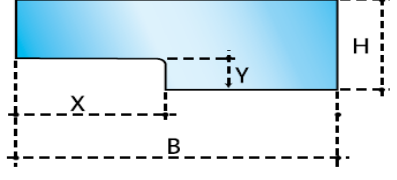
<p>a) holes $\varnothing \leq 40\text{ mm}$</p>	<div style="border: 1px solid red; padding: 5px;"> <p>(Drawing 1)</p>  <p>e = SGG Securit glass thickness</p> </div>
<p>b) holes $\varnothing > 40\text{ mm}$</p>	<div style="border: 1px solid red; padding: 5px;"> <p>(Drawing 2)</p>  <p>\varnothing = Hole diameter</p> </div>
<p>c) $d \leq 2x$ glass thickness (released hole)</p>	<div style="border: 1px solid red; padding: 5px;"> <p>(Drawing 3)</p>  </div>

8.2 Glass notches are possible, under below table conditions.

Attention:

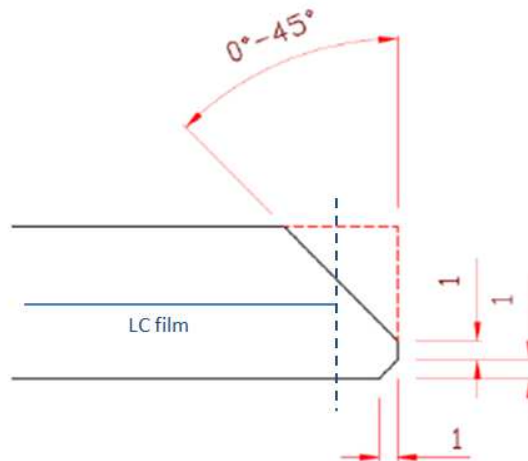
1. LC film is separated from glass edges of the notch by 3mm +/-2mm inactive zone.
2. Screws pressure of the fittings on a PRIVA-LITE glass cannot cross 10N/cm².



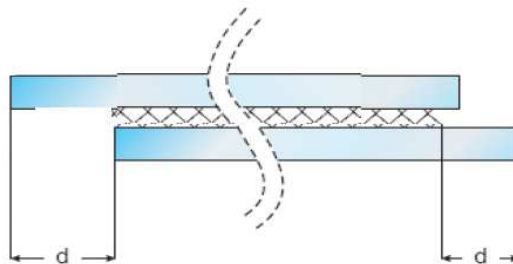
<p>1) Notch height should not cross its width.</p>	<div style="border: 1px solid red; padding: 5px;"> <p>(Drawing 1)</p>  <p> B = glass width H = glass height $X1, X2$ = notch width $Y1$ = notch height a = distance: notch - edge glass b = distance between notches R = radius </p> </div>
<p>2) $b \geq X1/2$: Distance between two notches should be at least equal half the width of the bigger one.</p>	
<p>3) $R \geq e$: Arising $\rightarrow r \geq 10$ mm, Grinding or Polishing $\rightarrow r \geq 15$ mm Radius of a notch should be at least equal to the thickness of the glass and additionally depends on the kind of edge deleting.</p>	
<p>4) $a \geq X1/2$ i $a \geq 100$ mm: distance between a notch and a glass edge should be at least equal to half of its width, but bigger than 100mm.</p>	<div style="border: 1px solid red; padding: 5px;"> <p>(Drawing 2)</p>  <p>$a < 100$ mm</p> </div>
<p>5) $X \leq B/3$ i $X \leq 200$ mm and $Y \leq H/3$ i $Y \leq 200$ mm: Width of a notch cannot cross 1/3 of glass width; in case of horizontal tempering neither notch height nor width cannot cross 200mm.</p>	<div style="border: 1px solid red; padding: 5px;"> <p>(Drawing 3)</p>  </div>

9. MITERED EDGES

Mitered edges are possible in range between $0 \div 45^\circ$ for annealed and tempered glasses.



For PRIVA-LITE glass shift of glasses tolerance $d = \pm 2\text{mm}$ [PN-EN ISO 12543-5 § 3.2.3].

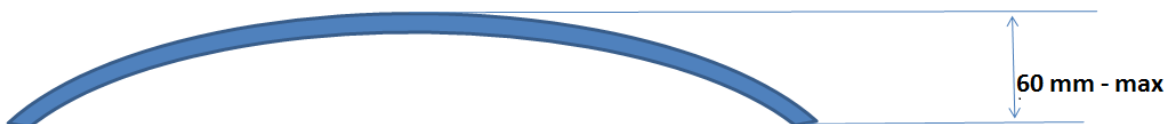


10. CURVED (bent) GLASS

PRIVA-LITE XL is available as a bent glass.

Size : Maximum bent glass dimension 1500 x 3000mm.

Radius : Minimum 2.000mm / Deflection $\leq 60\text{mm}$ (see drawing).
Maximum radius 40.000mm



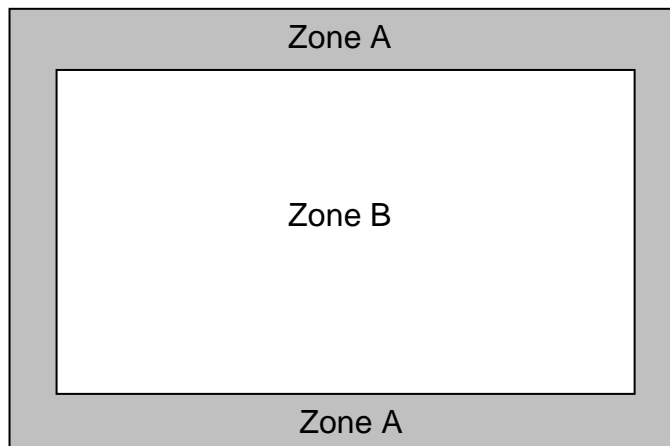
11. QUALITY TOLERANCES

Optical tolerances

	Area A (15mm from the edge)	Area B
Spot defects Black, white or transparent spots Foreign bodies	If diameter < 5mm then OK	If diameter <1mm and if no accumulation** then OK If $1\text{mm} \leq d \leq 3\text{mm}$ and max 2 spots then OK If diameter >3mm then NOK
Scratches on the LC film	If not visible when subjected to the test method EN12543-6 then OK	If <150mm, no accumulation** and not visible when subjected to the test method EN12543-6 then OK
Scratches on the glass	If not visible when subjected to the test method EN12543-6 then OK	If <30mm, no accumulation** and not visible when subjected to the test method EN12543-6 then OK
Bubbles	If diameter < 5mm and if bubbled area doesn't exceed 5% of the edge area then OK	If diameter <1mm and if no accumulation** then OK If $1\text{mm} \leq d \leq 3\text{mm}$ and max 2 bubbles then OK If diameter >3mm then NOK
Orange Skin	A light orange skin effect will always be visible in reflection and under certain conditions such as direct lighting, compositions and position of the viewer. This orange skin effect is considered normal and unavoidable due to the nature of the product makeup.	
LC waviness	*Acceptable	Unacceptable

* Allowable up to 20mm on the edges where the electrodes are located.

**An accumulation of defect occurs if 4 or more defects are at a distance of < 200mm from each other.



Modifications of the photometric or colorimetric characteristics, or loss of functionality located in the edge area A are considered as acceptable, and are excluded of this guarantee.

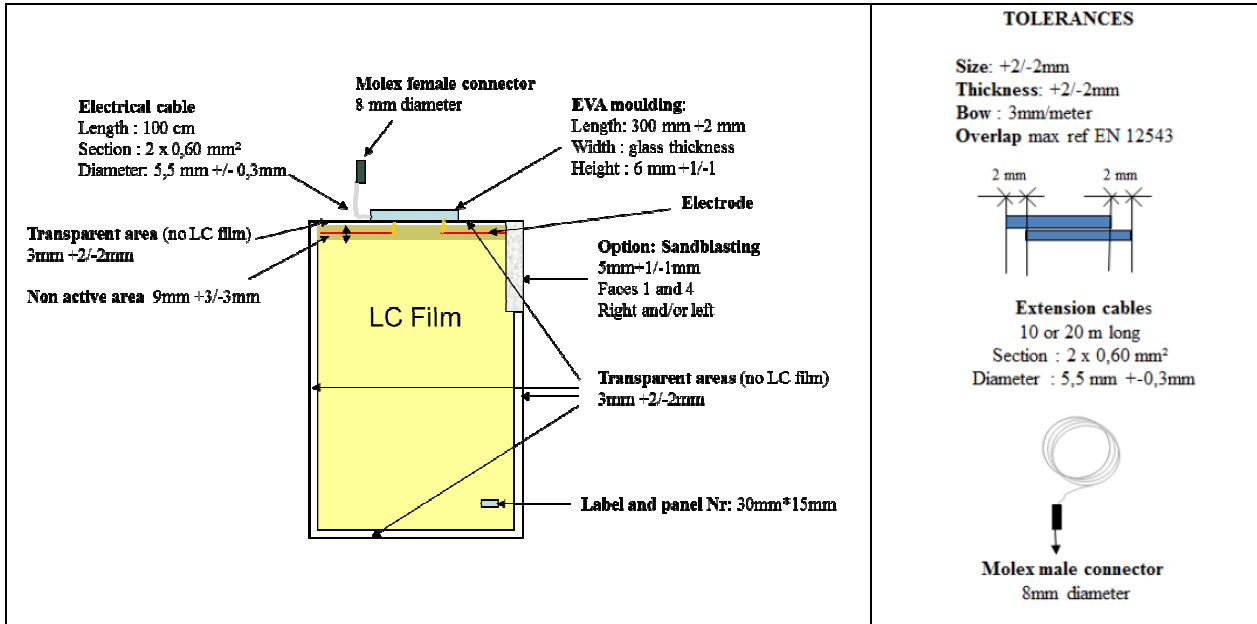
Test method EN12543-6

The laminated glass to be observed is put in a vertical position, in front of and parallel to a matt grey screen, lit by diffuse daylight or equivalent.

The observer will be at a distance of 2m from the glass observing it perpendicularly (the matt screen being on the other side of the glass).

12. SPECIFICATIONS

12.2.1 PRIVA-LITE XL STANDARD (IPX7) single glazing technical data

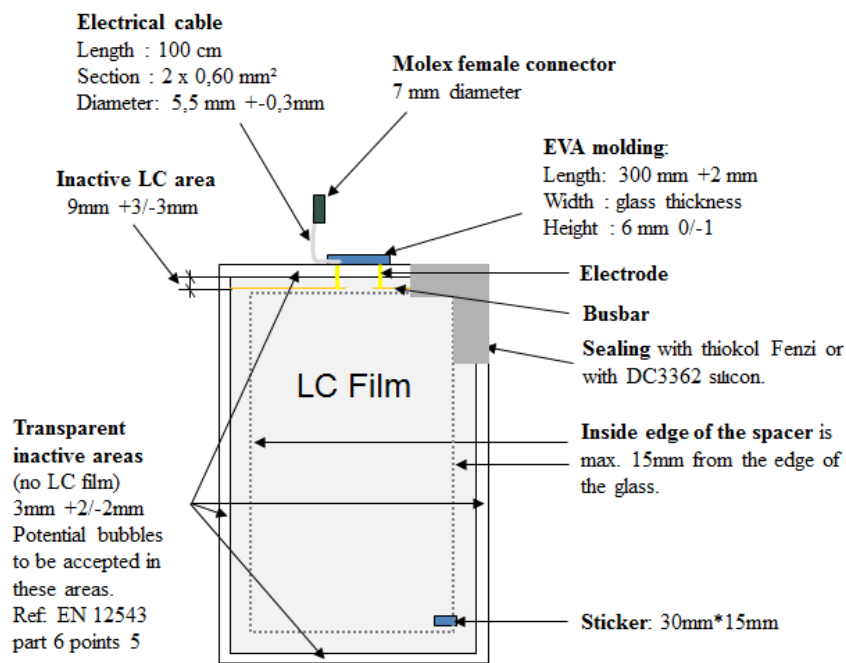


Molex connectors:

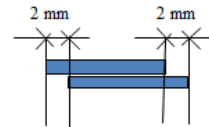
Female (cable attached to glass)

Male (extension cable)



12.2.2 PRIVA-LITE XL STANDARD (IPX7) : Double Glazing technical data

TOLERANCES

Size: $\pm 2\text{-}2\text{mm}$
Thickness: $\pm 2\text{-}2\text{mm}$
Bow : $3\text{mm}/\text{meter}$
Overlap max ref EN 12543



Extension cables
 10 or 20 m long
 Section : $2 \times 0,60 \text{ mm}^2$
 Diameter : $5,5 \text{ mm} \pm 0,3\text{mm}$



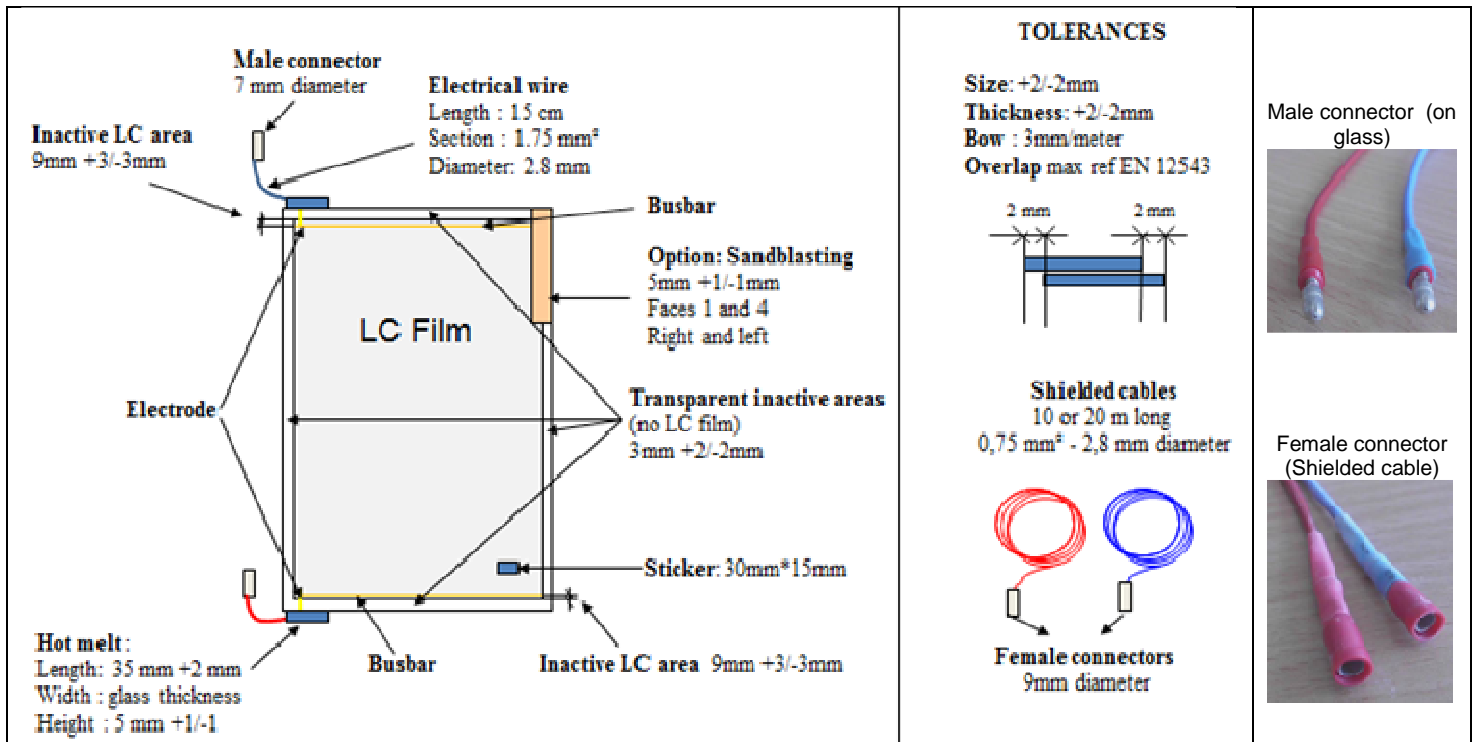
Molex male connector
 8mm diameter

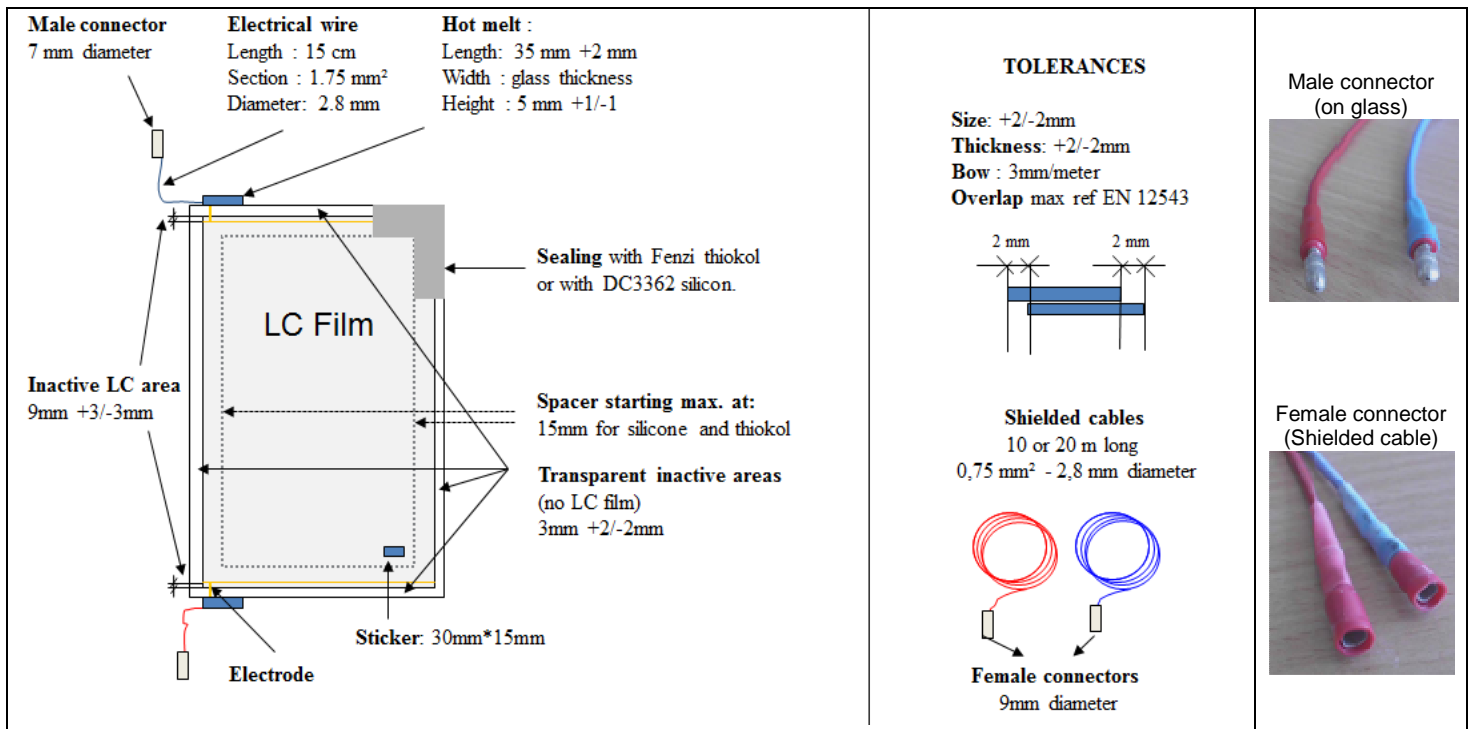
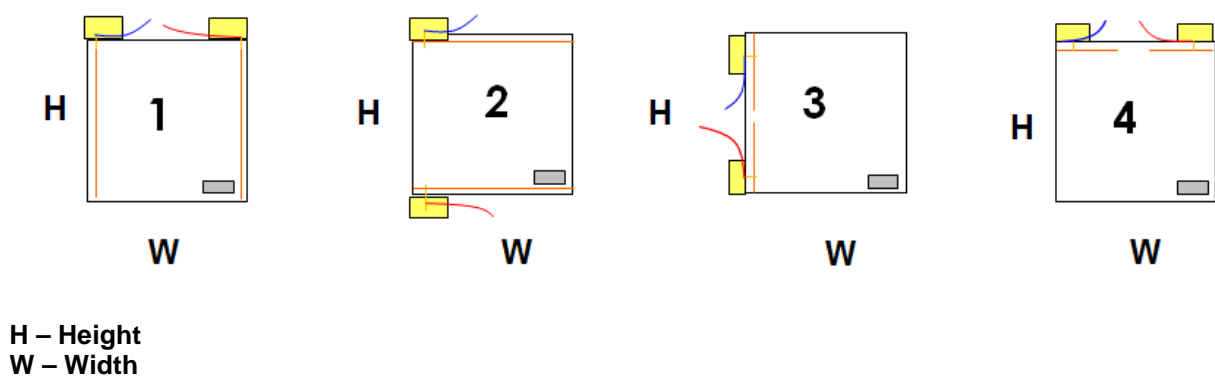
Molex connectors:

Female (cable attached to glass)

Male (extension cable)



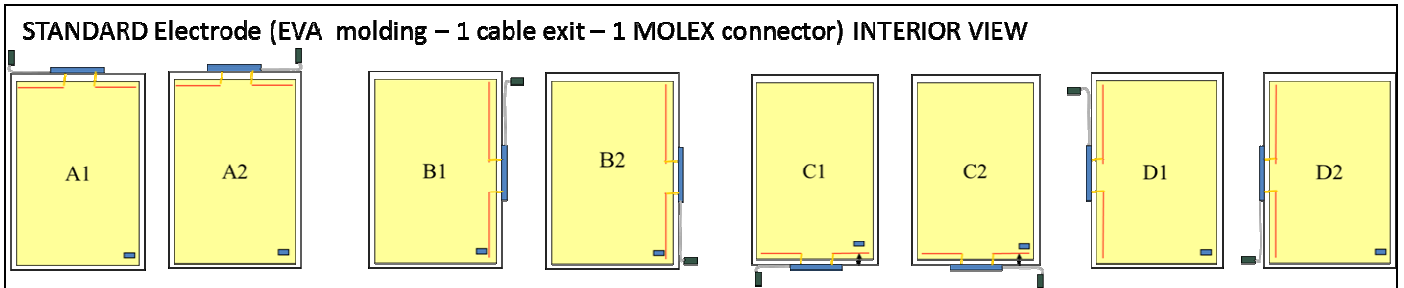
12.2.4 PRIVA-LITE XL IPX4 (Hotmelt)
12.2.4 PRIVA-LITE XL Hotmelt (IPX4) single glazing technical data


12.2.5 PRIVA-LITE XL Hotmelt (IPX4) double glazing technical data

12.2.6 PRIVA-LITE IPX4 busbar and electrodes locations:


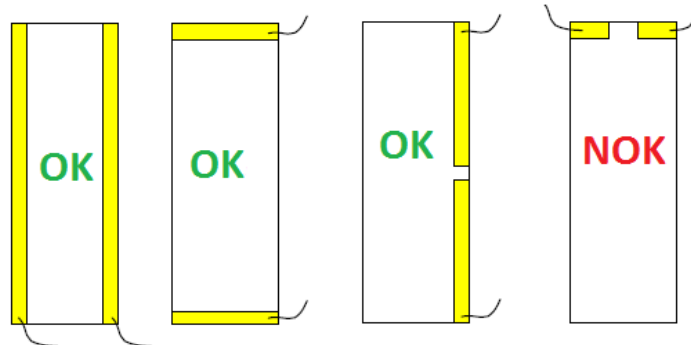
13. Electrodes positions depending on PRIVA-LITE XL dimension:

13.1 Standard :

If 1:4 PRIVA-LITE XL sides size ratio is not crossed (ex: 300mm x 1200mm), and within maximum 1500x3000mm, then Standard IPX7 electrode positions as presented below on the drawings are possible. The Hotmelt (IPX4) electrodes are possible too, on request.

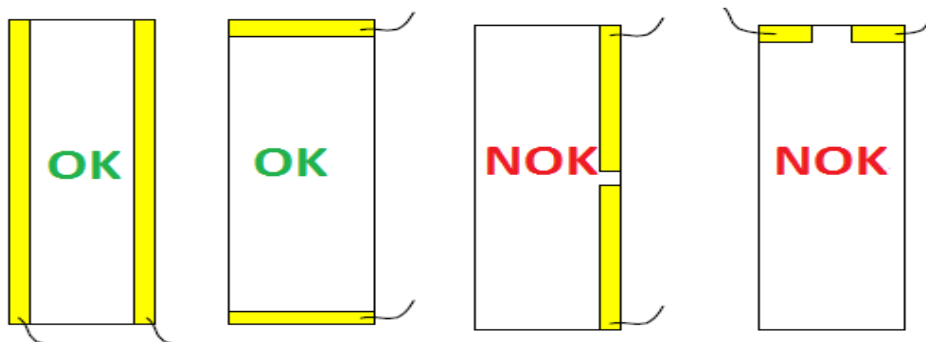


13.2 If 1:4 PRIVA-LITE XL sides size ratio is crossed (ex: 300mm x 1500mm) OR/AND shorter edge is over 1500mm OR longer edge is over 3000mm then electrode location must be like below drawings:



13.3

When shorter edge is over 1500mm AND longer edge is over 3000mm then busbar location must be IPX4, like below on the drawings. Maximum PRIVA-LITE XL size is 1820 x 3500mm.



14. Multisil silicone

The Multisil Silicone supplied by Saint-Gobain is the only silicone validated as compatible with Priva-Lite edges, and is the only silicone accepted for Priva-Lite installation.

The Multisil silicone delivered by Glassolutions Saint-Gobain is regularly tested.

However, qualities and performances of the Multisil silicone are under the sole responsibility of Multisil manufacturer.

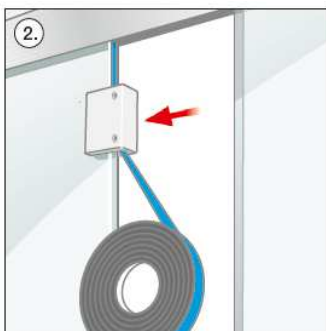


15. TESA ACX 7058 tape and applicators

TESA ACX 7058 double side adhesive tape has been tested by Glassolutions Saint-Gobain, and is compatible with PrivaLite XL. It is used for butt-joined applications as an alternative to Multisil silicone.

Only the TESA ACX 7058 delivered by Saint-Gobain Glassolutions is allowed for installation.

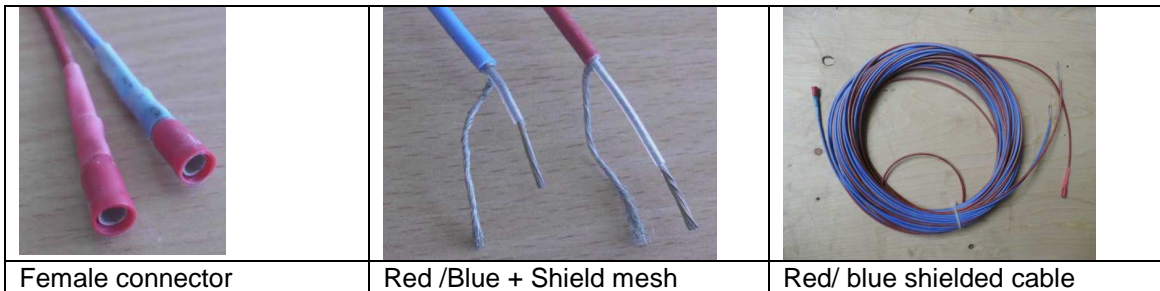
TESA tape is 2mm thick, 9mm wide, and may be installed by dedicated applicator.



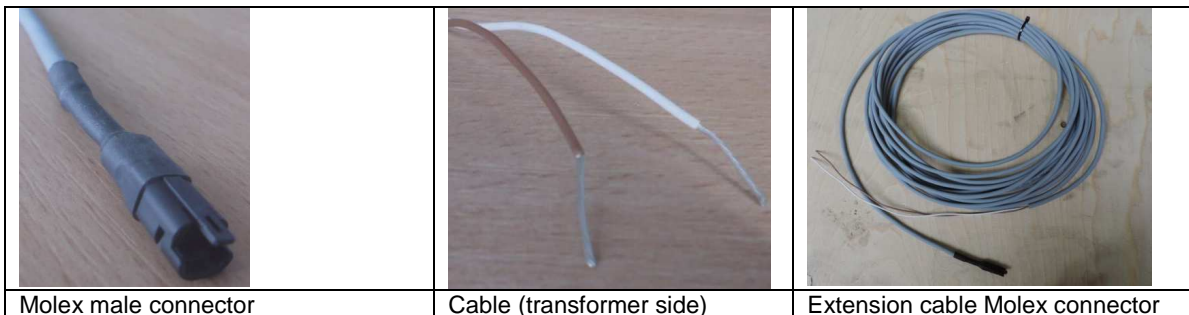
Extension cables

The extension cables delivered by Glassolutions Saint-Gobain are the only ones tested and validated as compatible with the PRIVA-LITE XL :

1. IPX4 shielded extension cable: Made of 2 cables (Red and Blue) with female connector.



2. IPX7 extension cable : Single cable with Molex male connector :



3. For sliding door application, a specific extension cable may be needed. Please contact Glassolutions Saint-Gobain for more information.

17. Warranty

Please refer to the Saint-Gobain Glassolutions Polska 'Priva-Lite Warranty' document, for full conditions and guarantee details.

Under the conditions mentioned below, Glassolutions Saint-Gobain guarantees the functionality of the PRIVA-LITE XL for a period of 5 years, and of its power supply unit for a period of 2 years, starting from the invoice date Saint-Gobain Glassolutions Polska.

The Warranty shall be invalidated if the instructions contained in our installation and maintenance guides are not followed.