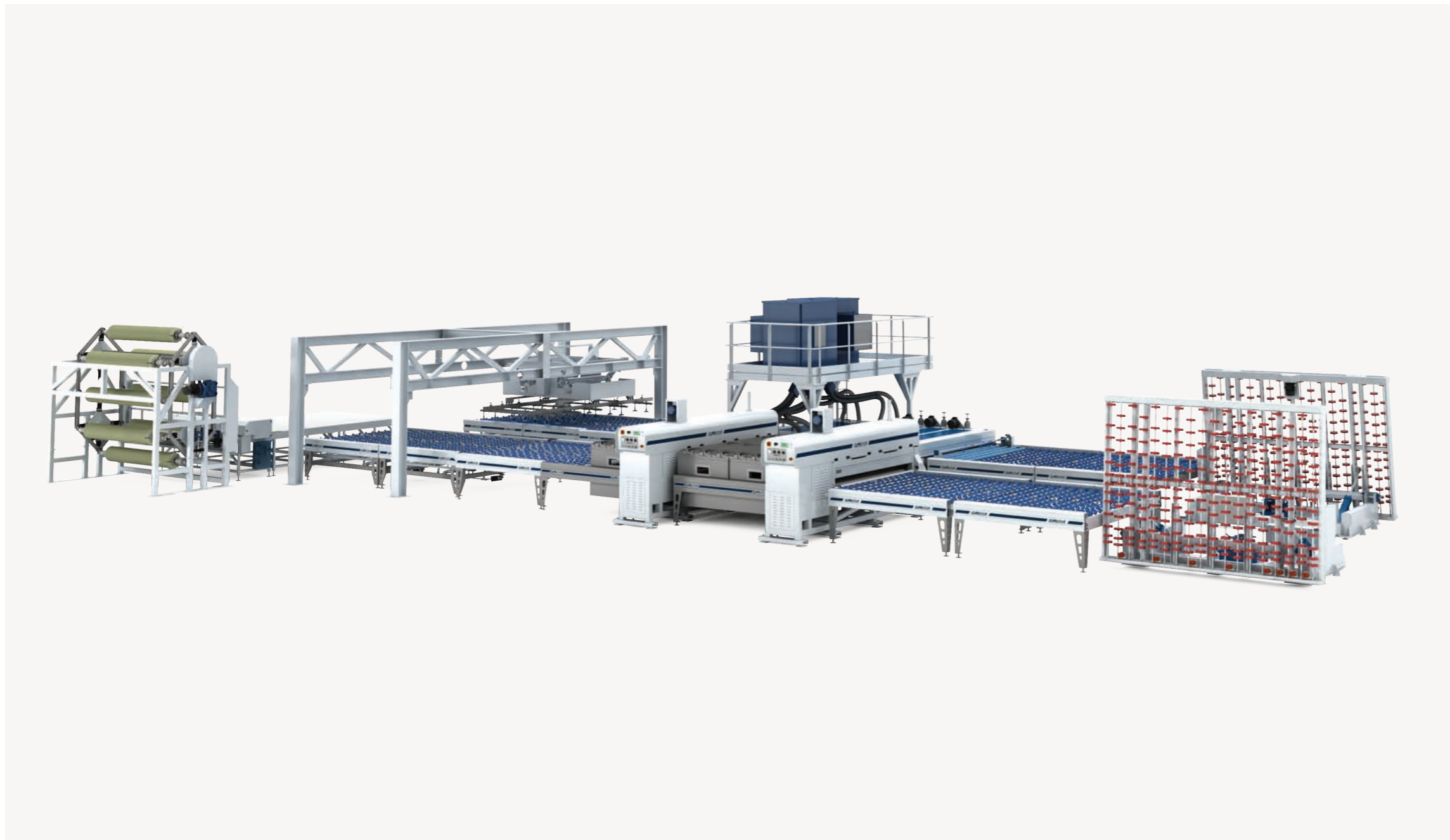


# ART. LL LINE FOR THE PRODUCTION OF LAMINATED GLASS

THE LL LAMINATION LINE HAS BEEN DESIGNED AND ENGINEERED SPECIFICALLY FOR THE LAMINATING OF FLAT AND TEMPERED GLASS WITH PVB (POLYVINYL BUTYL) AND SENTRYGLAS® INTERLAYERS WITH STANDARD OR CUSTOMISED SIZES, SHAPES AND OTHER TYPES OF MIXED PRODUCTION.





The machine is a solid structure featuring Forel's innovative construction reflecting the philosophy and culture for quality build. This feature guarantees extreme accuracy, performance and capacity especially considering weight per linear metre.

The machine is made up of the following operating zones:

- Loading
- Washing
- Transferring
- Film positioning
- Coupling
- Heating and pressing
- Unloading

The lamination line is equipped with an in-feed conveyor with an inbuilt tilt capacity of 1097 Kgs.

The washing zone features a six brush washing machine (brush diameter Ø 200 mm) equipped with a self-learning device for measuring glass thickness. Low emissivity (Low-e) glass is detected automatically through an electro static device and automatically detects orientation. An antistatic bar can be fitted to the washers out feed conveyor to prevent dust contamination of the glass surface.

A multiple PVB reel holder is located in a dedicated mezzanine within the clean room and is connected to lines management software.

The platform is supplied with an automatic sheet centering system that guarantees the perfect alignment of the glass relative to the pressing rollers.

The pressing rollers are coned shaped in design to promote the exhaust of air from the centre of the glass out through the sides. The management of the rollers is independent of the glass thickness and is accurate in both dimension and pressure.

The heating and pressing zone is made up of two temperature controlled zones and two sets of pressing rollers.

Both ovens are equipped with thermo regulated electronic resistors which work in conjunction with Forel's forced air convection system, recirculating hot air delivers maximum performance and efficiency.

The lamination line can also be supplied with an external rotary 8 station PVB magazine, with a table and semiautomatic cutter for cutting special shapes and sizes.

The machine is equipped with a self-diagnostic system that identifies faults with codes, descriptions and images with an additional system that allows for remote connection and assistance.

The lamination line is equipped with an out-feed conveyor with an inbuilt tilt capacity of 3456 Kgs.

Technical information

	LL2645	LL2651	LL3360
S	1 1/14" GJ	1 1/14" GJ	1 1/14" GJ
W	Rp 1/2" GJ Ø17 2.5 bar	Rp 1/2" GJ Ø17 2.5 bar	Rp 1/2" GJ Ø17 2.5 bar
water waste	0,7 m3/8h	0,7 m3/8h	0,7 m3/8h
A1	Rp 1/2" 6 bar	Rp 1/2" 6 bar	Rp 1/2" 6 bar
compressed air	20 Nm3/h	20 Nm3/h	20 Nm3/h
E1	3P+N+E 400/230V -50/60 Hz Installed: kW 50 Absorbed maximum: -80%	3P+N+E 400/230V -50/60 Hz Installed: kW 50 Absorbed maximum: -80%	3P+N+E 400/230V -50/60 Hz Installed: kW 50 Absorbed maximum: -80%
thermal switch	125 A	125 A	125 A
E2	3P+N+E 400/230V -50/60 Hz Installed: kW 5 Absorbed maximum: -80%	3P+N+E 400/230V -50/60 Hz Installed: kW 5 Absorbed maximum: -80%	3P+N+E 400/230V -50/60 Hz Installed: kW 5 Absorbed maximum: -80%
thermal switch	25 A	25 A	25 A
E3	3P+N+E 400/230V -50/60 Hz Installed: kW 190 Absorbed maximum: -80%	3P+N+E 400/230V -50/60 Hz Installed: kW 190 Absorbed maximum: -80%	3P+N+E 400/230V -50/60 Hz Installed: kW 240 Absorbed maximum: -80%
thermal switch	400 A	400 A	400 A
E4	3P+N+E 400/230V -50/60 Hz Installed: kW 5 Absorbed maximum: -80%	3P+N+E 400/230V -50/60 Hz Installed: kW 5 Absorbed maximum: -80%	3P+N+E 400/230V -50/60 Hz Installed: kW 5 Absorbed maximum: -80%
thermal switch	16 A	16 A	16 A
H	4125	4125	4125
L	35000	35000	43000
P	16000	16000	18000

Forel reserves the right to change the data in this general description sheet. The machine shown is a mere guideline, it may include optional accessories and vary according to the maximum work height.

