

Flex Lamelines

Lamilines for cut sizes
production



EN

Flat Glass Technology

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we • glass

we • glass

As a global leader in flat glass and hollow glass processing technology, we have been helping to shape one of the most beautiful and useful materials in the world for over 60 years. Its unique qualities, combined with the passion for technology and innovation, guide us in seeking for newer and more effective solutions to improve and expand its use.

We laminate glass

Productivity and flexibility at the highest levels

Bottero's Flex lines offer high performance and great flexibility, thanks to the possibility of laminating jumbo sheets with particularly short production cycles that laminate already shaped glass, up to 10 layers. Bottero technology, chosen by the world's largest laminated glass producers, becomes available to all state-of-the-art glassworks through the Flex lines.



Laminated glass finds new and more and more interesting applications every day, offering architects and designers unique and expressive opportunities. Bottero is committed to supporting the development and diffusion of this material, constantly researching and developing technologies to improve its processing, thus widening its horizons of use.

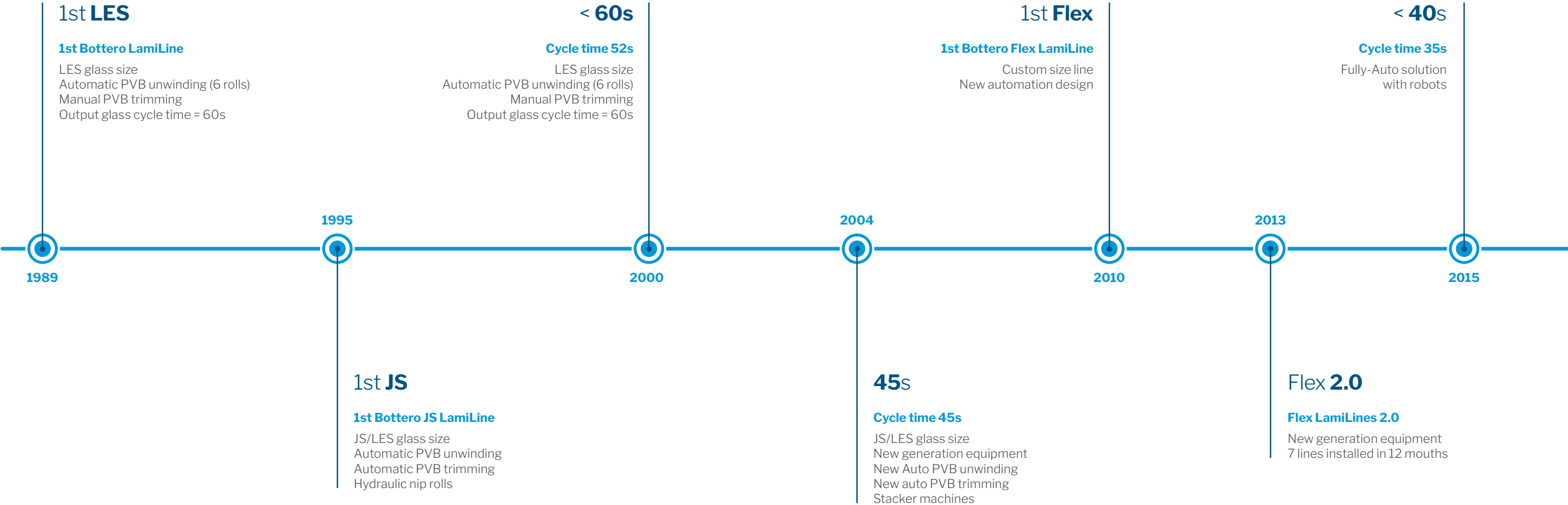
Bottero Experience

Since the first line in 1989, Bottero has always been partner of Companies worldwide for laminated glass production.

In 25 years, Bottero has reached and maintained an undisputed technological leadership in laminated glass process, serving all the multinational Companies and developing top-performance devices for maximum productivity and highest quality.

Today, all this know-how is available also in custom size production at an affordable price. Because quality is not a compromise!

- 25 years of experience
- 52 lines worldwide
- Complete process know-how



Why Choosing us?

Bottero flex Lamelines are the most advanced custom size laminated assembly systems in the market today. The nip rolls and Ovens which are provided as standard are the same ones running all over the world by the most important glass manufacturers. The IR oven and the patented mechanical press system on the nip rolls are only two of the several patents and innovation which guarantees the best final result of the lamination process.

Ovens

Oven modules are equipped with IR lamps and upper/lower full convection system (forced air) to allow every kind of glass (coated, tempered, multiple layers) to be perfectly pre-laminated.

Upper lamps are adjustable in height, to give an extra regulation to manage both thin laminated glass and special glasses such as multiple layers or tempered, requiring a special recipe.



Nip-Rolls

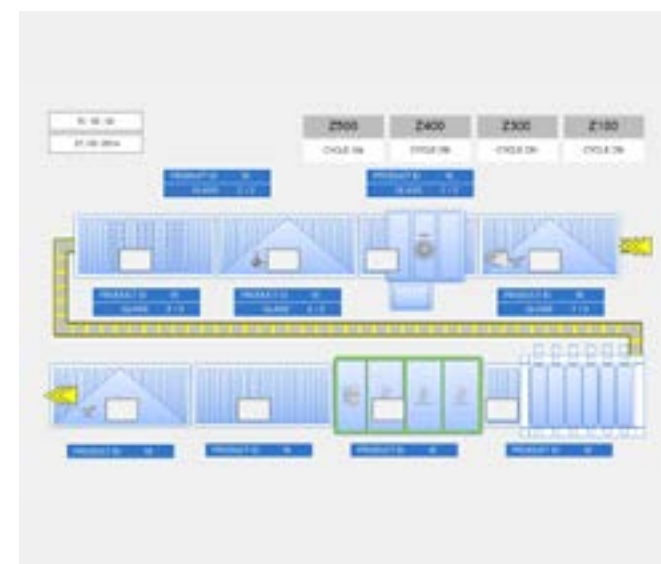
Nip-rolls from Bottero are specifically designed to guarantee complete flatness of the pressing surface, for each kind of glass shape and dimension. The mechanical torsion bar device, and the high-pressure press system are able to press in a uniform way from the center to the edges of each nip roll, thus giving a perfect result to the pre-laminated glass.



Software

By means of HMI panels along the line, all the main functions and parameters are easily adjustable. In the assembly area, a main panel allow to manage the recipes and main data of the line in real time.

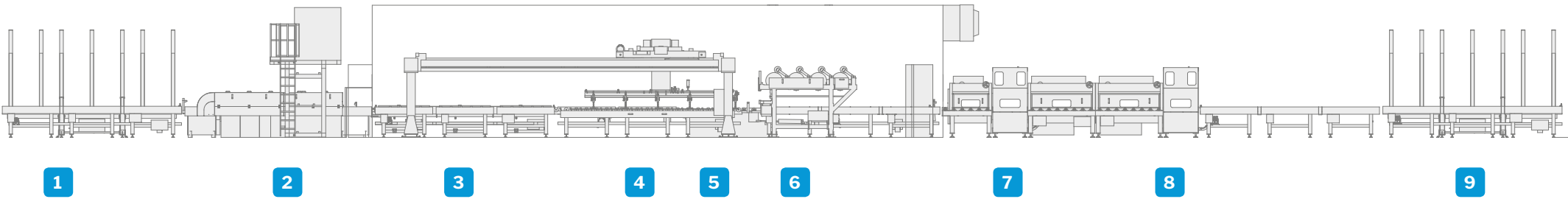
The remote assistance device, standard on each flexlami line, allows Bottero service to remotely connect to the line all over the world.



Solutions

Bottero is producing laminated glass lines both for stock sheets high capacity production and for the custom market of cut to size laminated glass. These lines are capable of easily manufacturing different product types irrespective of dimensions, shape and make-up. This key factor is achieved by implementing a strategy focusing on quality, reliability and total flexibility of the manufacturing plant.

Semi-Auto Solution

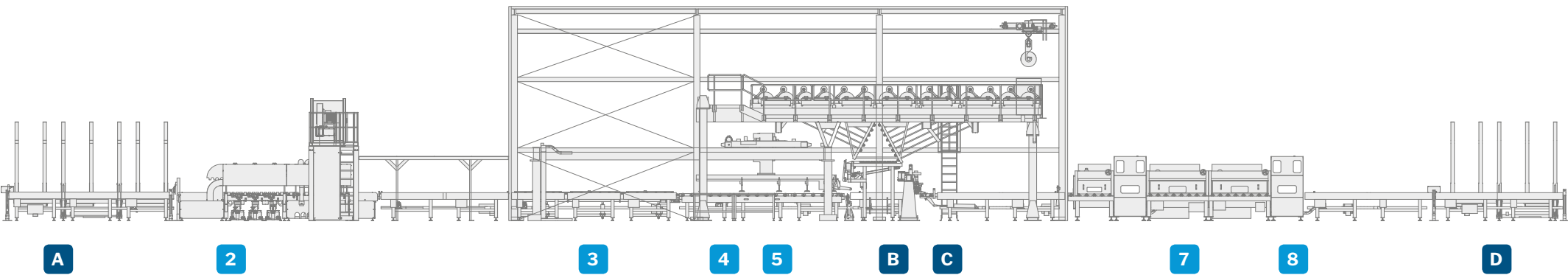


Available configurations



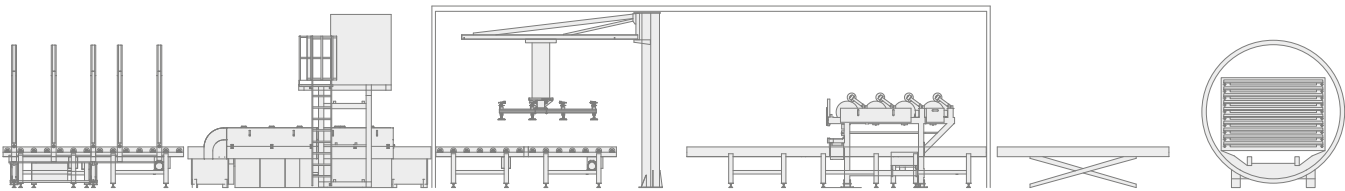
In-Line configuration

Fully-Auto Solution



U configuration

Entry Level Solution



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5	Assembling conveyor	C	Automatic PVB trimming
6	PVB storage	D	Automatic Unloading
7	Oven		

Unique Features

Flex lami-line is equipped with the most advanced solution for the pre-lamination process as the nip roller with anti-torsion system and the forced air convection furnaces. Besides it can be easily adapted according to customer needs with optional and accessories as automatic loader, additional PVB rolls, automatic PVB foil application, cutting and trimming... Bottero is capable to provide the complete turnkey package including autoclave, climatic room and all the needed accessories.



Washing System

- Totally stainless steel.
- Ready for Low-e.
- Antistatic system.
- Up to 12 m/min of washing speed.

Squaring & Glass Positioning

- Mechanical reference for both sides.
- Automatic shape squaring & positioning.
- Automatic suction cups exclusion.
- High accuracy & repeatability of plates positioning.

Assembling

- Automatic film cutting according to plate length.
- Servo assisted laying task to avoid film stretch.
- Multi laying.
- PVB rolls positions from 3 to 30.

Ovens

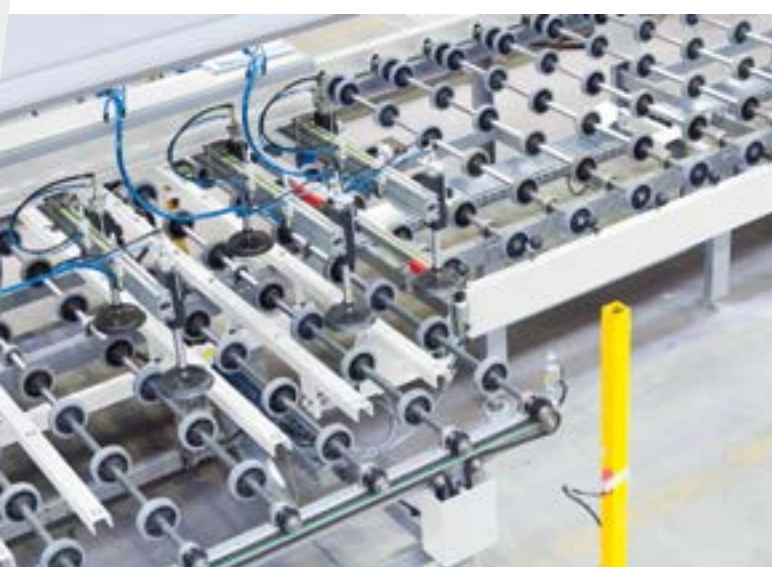
- Heavy mechanical system.
- Advanced rolls design .
- Full pressure distribution and parallelism between rolls independently to the width of plates.
- Symmetrical design of the roll.

Heating Area

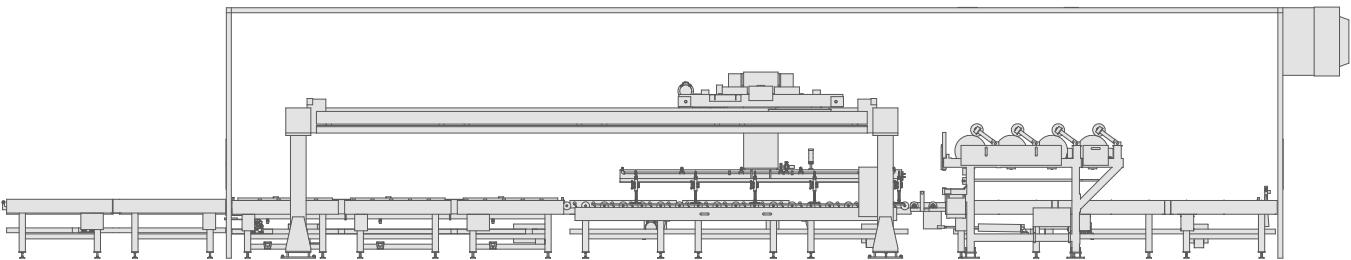
- Modularity design.
- Easy customization.
- Vertical adjustment of the upper lamps for process tuning.
- Forced air with reserved fans for each side.
- Lamps driven according to the glass tracking.
- Independent tuning of each IR lamp
- High efficiency IR lamps.
- Up to 50% of energy saving.
- High insulation & Easy maintenance.
- Full temperature distribution.
- Patent system to adjust the upper IR lamps.

Line Supervision

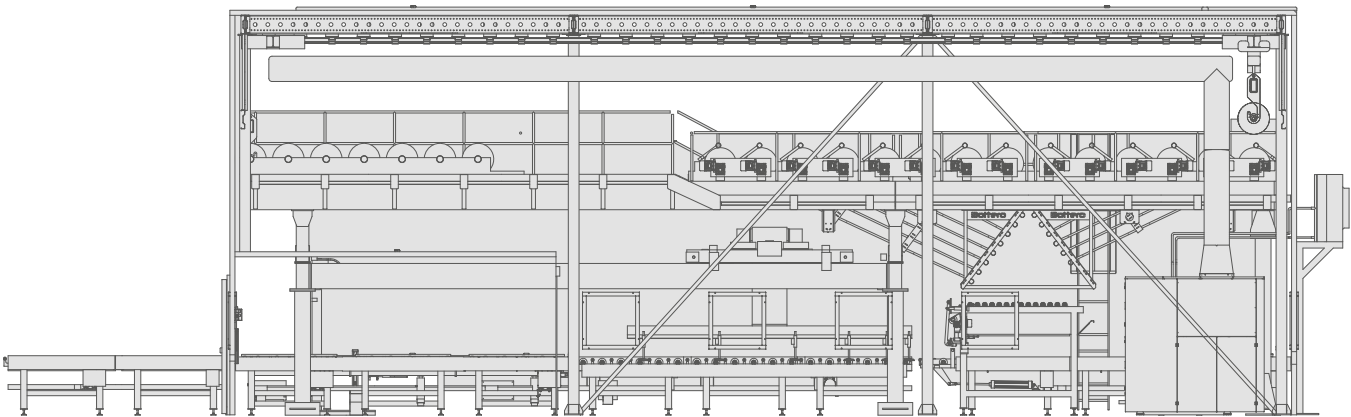
- Touch panels along the line
- Full control of line & process
- Production based on recipes concept
- Remote connection included in basic solution



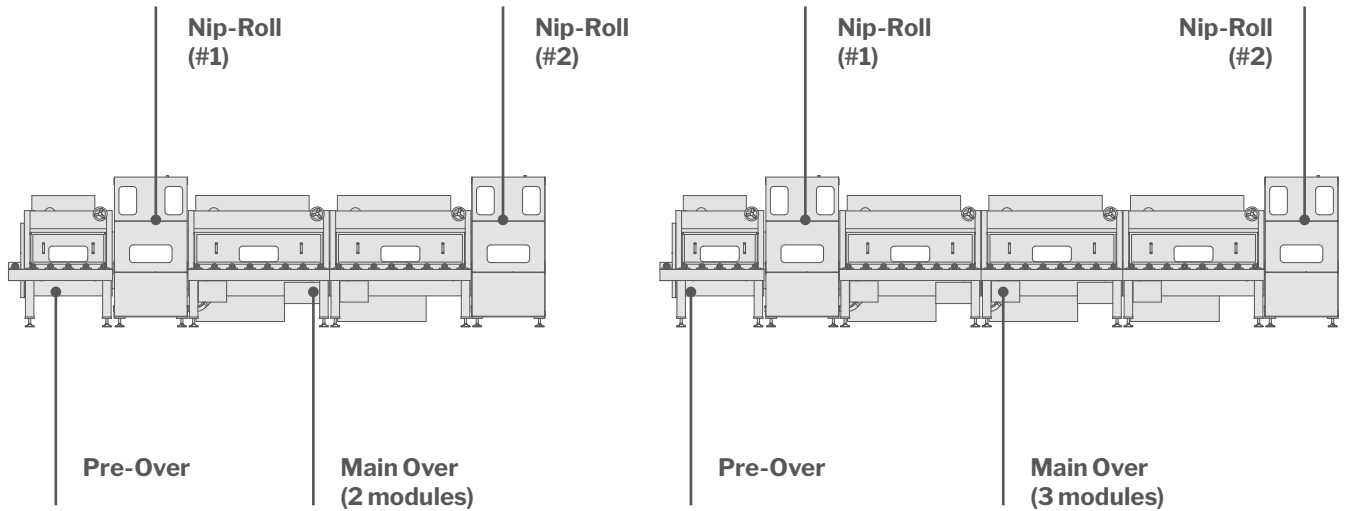
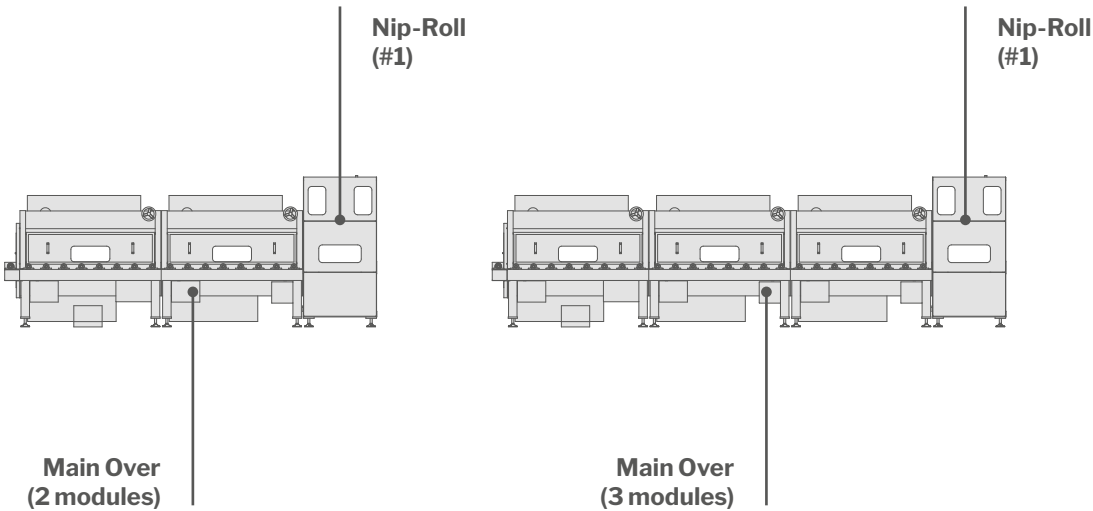
Assembling Area Configurations



Standard Solution



Advanced Solution



Options

Bottero Flex Lamelines offer come with a set of options to fullfill all the most common requirements of the laminated glass industry. Automatic features, increased productivity and reporting and supervision system are the biggest differentials of the Bottero proposal.



Automatic Laying System

Patented system
PVB stretch-free device



Automatic Trimming

Task operator free
Automatic thickness adjustment
High performance cutting wheels with special shape
Automatic trimming starting from 22.1



Automatic Handling

AIR/TIN side loading & unloading
Automatic spacers management
Repacking functionality
Heavy load



Software Packages

Reporting system
Job optimizer
Customized solution for ERP integration



Autoclave & Services

In cooperation with all main suppliers
Turn-key contractor



Clean Room

High performance Clean room for interleaved PVB
20°C and 25% of relative humidity
Energy saving
Integrated data management

Technical Features

From small glasses to big sheets, a Bottero Flex Lamiline is a modular system which is completely configurable, according to each customer needing.
Most of the options and the upgrade can be added even later with a simple and effective intervention.

	Metric	Imperial
Glass sizes (min)	350 x 180 mm	14" x 7"
Glass thickness	3 - 19 mm	8/64" - 48/64"
Type of glass allowed	Float Low-e Tempered Coated	
Glass thickness output (max)	100 mm	4"
Glass weigth output (max)	1350 kg	2980 lb
Interlayers thickness	0,38 mm 0,76 mm 1,14 mm 1,52 mm	1/64" 2/64" 3/64" 4/64"
Type of interlayers allowed	Interleaved PVB EVA SentryGlass Plus	



Most common sheet dimensions



Min glass Size
400x200 mm (15.74"x7.87")



Max common Size
4000x2600 mm (157"x102")



Max common Size
5000x2600 mm (197"x102")



Max common Size
6000x2600 mm (236"x102")



Max common Size
4000x2800 mm (157"x110")



Max common Size
5000x2800 mm (197"x110")



Max common Size
6000x2800 mm (236"x110")



Max common Size
5000x3300 mm (197"x130")

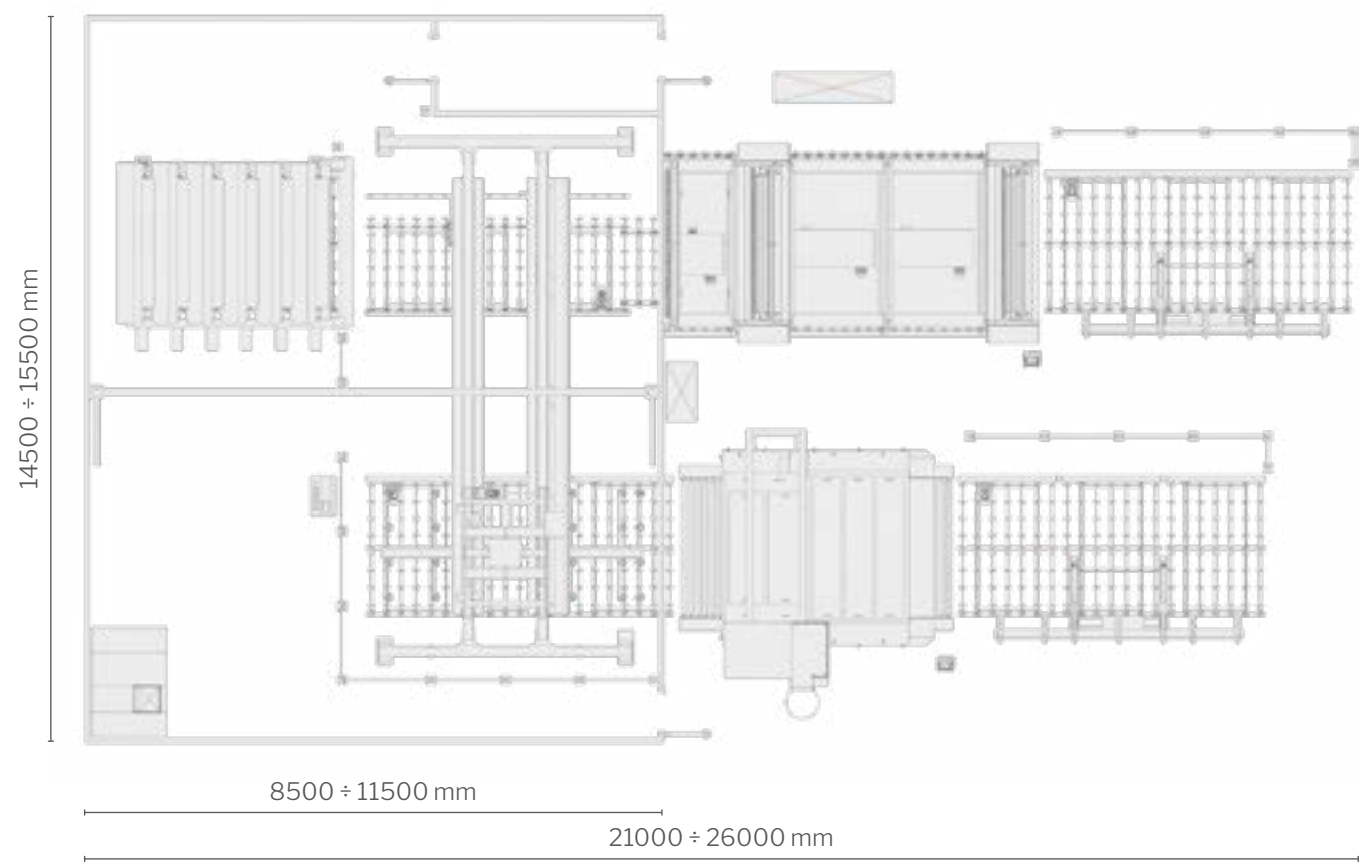
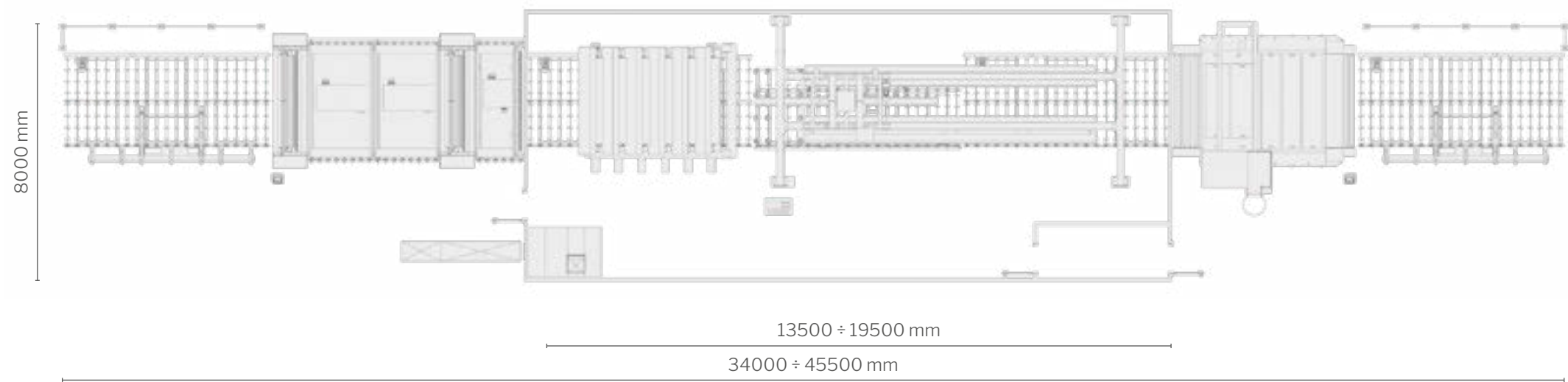


Max common Size
6000x3300 mm (236"x130")



Max Size
12000x3300 (472"x130") actually
produced

Overall Dimensions



Bottero, the choice of the greatest

With us, you have all the experience and technology that we use to serve the largest industries

With Bottero, you don't simply buy products but the entire experience, the technology and the organisational skills of a company that can provide very high productivity glass processing plants, and the selected supplier of some of the most important companies in the world.

more than
50.000 installations
all over the world



With thousands of installations spread all over the world, Bottero guarantees first-class technical and commercial assistance.

Bottero S.p.A. - Headquarters
via Genova 82 - 12100 Cuneo - Italy

Bottero S.p.A. - Trana
Trana - Italy

Bottero S.p.A. - Pesaro
Pesaro - Italy

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Vicenza - Italy

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Rochdale - Great Britain

Bottero France SA
Nice - France

Bottero do Brasil
S.Paolo - Brasil

Bottero Flat Glass Inc.
Kernersville - North Carolina - USA

Bottero Glass Industry Co. Ltd
Shanghai - China



Above and to the side:
some high-productivity lines
manufactured by Bottero.

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The images and data in this catalogue are only indicative and never override the contract engagement of Bottero S.p.A.
For photographic reasons the products is often shown complete with accessories that are not part of the standard equipment of the machine.

Discover the Bottero technology for **Flat Glass**



- Float Cutting
- Glass Stock Management
- Straight Line Edgers & Bevellers
- Double Edgers
- Drilling
- CNC
- Laminated Lines

- Coating Lines
- Float Lines
- Laminated Lines
- Mirror Lines
- Off line Cutting
- Packing Lines
- Solar Lines

BOTTERO S.p.A.
via Genova 82
12100 Cuneo Italy
Tel.: +39 0171 310611
Fax: +39 0171 401611

www.bottero.com

