



OPERA

AUTOMATIC
PACKAGING LINE



PANOTEC®

OPERA, THE PACKAGING REVOLUTION

OPERA meets the specific needs to cut production costs and reduce our carbon footprint.

It is the only packaging line able to automatically fit a custom box around any item while at the same time providing very high-performance levels.

Compact and fully automated, OPERA provides custom packaging of single products or multi-item orders within seconds.

Thanks to the patented and innovative box design, OPERA offers high-level protection for the packaged items during handling and transport.

High speed, high precision and maximum flexibility. Custom packaging without void fillers.

FIELDS OF APPLICATION

E-COMMERCE

LOGISTICS

SPAREPARTS



ADVANTAGES



**Best performance
on the market**



**100% green, unique,
patented packaging**



**Custom boxes for single
and multiple items**



Reduces costs



Optimizes resources



Leaner production flow



No more void fillers

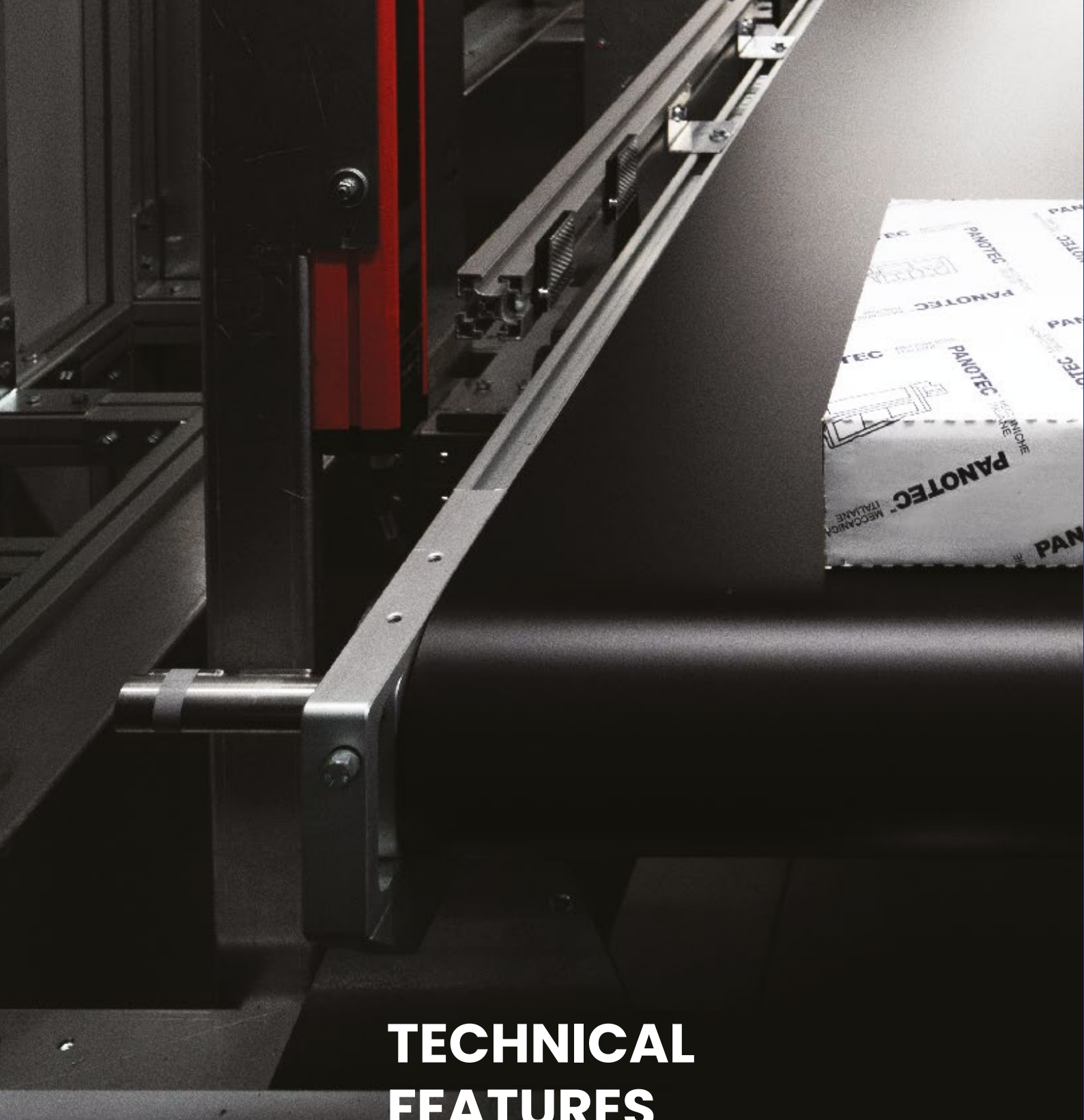


Environmental focus

OPERA

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TECHNICAL FEATURES

- Throughput
- Box Design
- Cardboard
- Footprint and Layout
- Data Exchange

THROUGHPUT

HIGH THROUGHPUT RATES

The best performance
on the market:

**up to 13 boxes
per minute***

The line can be supervised by a single operator
and it can produce a box in less than 5 seconds.

*Output may vary depending on the size of the boxes to be produced

PATENTED BOX: UNIQUE AND FUNCTIONAL PACKAGING DESIGN

The box produced by OPERA is patented for its shape (cross-shaped) as well as the forming operations.

It is cut from a strip of cardboard (FF400 and FF600), to optimize raw material input, and create very little waste.



Maximum size:
600mm L / 500mm W / 440mm H

Minimum size:
200mm L / 150mm W /
50mm H

EASY-OPEN SYSTEM

Thanks to its unique shape and the amount of glue applied to the lid, the box can be opened easily without being damaged and it can then be used for returns.

4 REINFORCED CORNERS

The box is designed in such a way that it is reinforced at all four sides, in order to guarantee high-level transport protection.

STRONG STRUCTURE

The boxes can be stacked neatly on top of each other, thanks to the reinforced corners.

HIGH PROTECTION

Double flaps on the bottom and lid of the box form a double layer of cardboard and provide extra protection for the packaged items. A strong box is thus guaranteed.



OPERA also produces empty boxes with open lids and can be used as automatic “case maker”.



OPERATING MODE «EMPTY BOXES»

This feature is particularly useful:

1. to pack fragile or unstable products: the item is placed by hand in the empty box produced by OPERA. If necessary, the cardboard trim can be used as a protective filling.
2. to produce a stock of boxes ready to be used in an emergency or during high peaks in production.

CARDBOARD

FEATURES

Fanfold (corrugated cardboard)
400 mm to 600 mm
Small widths to produce a large range of sizes

A very wide size range can be provided with only 2 fanfold widths.

An automatic sorter selects the perfect cardboard width so that raw material consumption is cut down to a minimum.



Thickness: 3mm

Flute: B

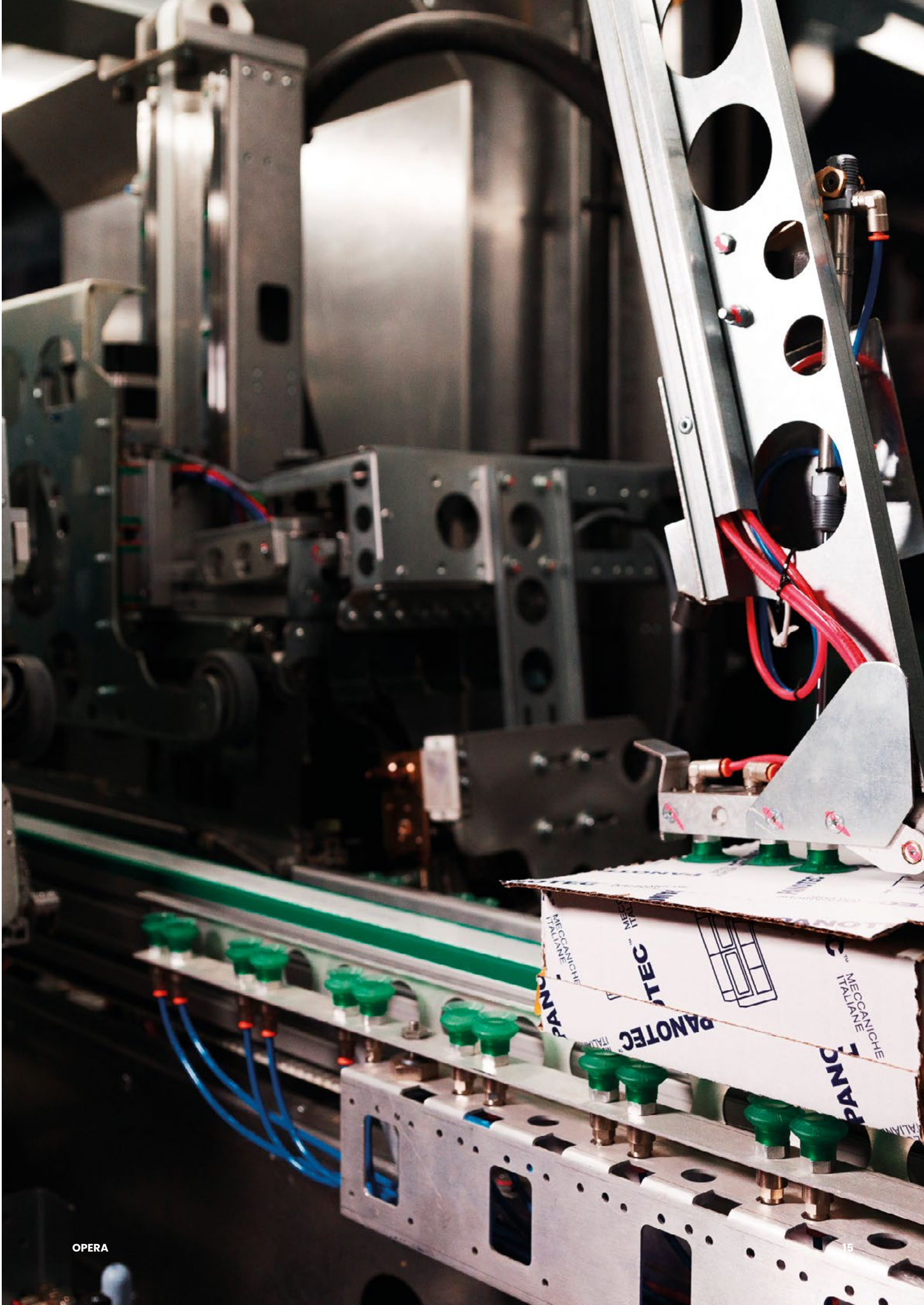
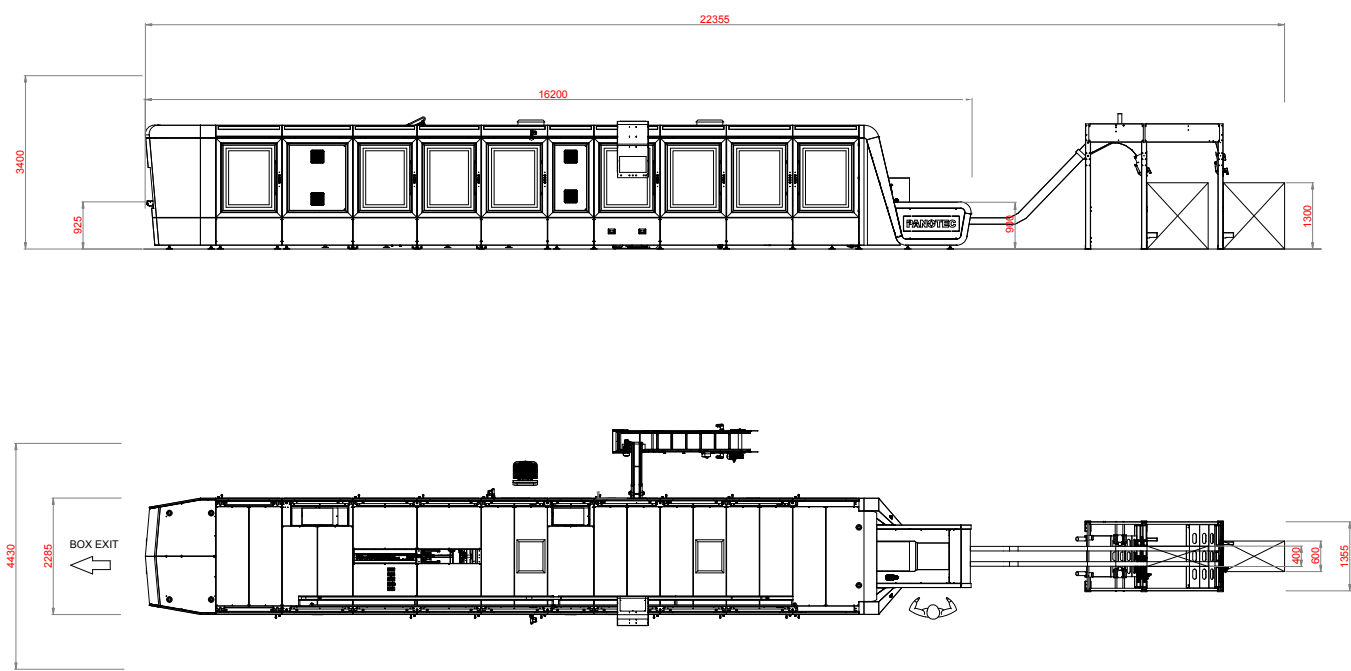
Grammage:
370 to 520g/m²

OPERA uses cardboard widths (400 and 600mm) which are standard for fanfold manufacturers, the raw material costs are significantly lower than those of other formats.

LINEAR FOOTPRINT

The linear footprint allows for more functional space management and makes it easier to integrate the line into the existing logistics production flow.

STANDARD LAYOUT WITH CARDBOARD SLOTS





HOW TO SEND DATA TO OPERA

There are two options for data exchange via Web Service

SYNCHRONOUS PROCEDURE

Barcodes and customer IDs are scanned the moment the products are entering the line.

ASYNCHRONOUS PROCEDURE

Order data for packing is sent in advance (with standard REST data exchange protocol, in Json format, http communication).

When the products reach the input conveyor, the manual scanner captures the barcode and searches for the data that has already been submitted.

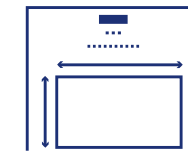
INCLUDED IN BASIC MACHINE SET-UP

HOW THE LINE WORKS

- Size Detection System
- Custom Box Production
- Automatic Coupling of Box & Item
- Forming, Gluing and Closing of the Box
- Closing of the Lid
- Labeling and Weight Check

STATION 1

SIZE DETECTION SYSTEM

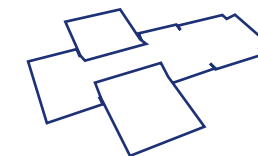


The items are fed into the line, scanned and measured.

The system submits the item sizes to the next station, where the custom box is produced.

STATION 2

CUSTOM BOX PRODUCTION

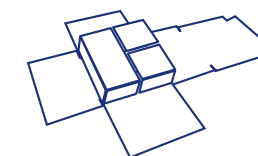


The special design of the box and its engineering allow for stable packaging, preventing the items from shifting inside and avoiding accidental bumps and damage.

The design of the box optimises cardboard consumption and no void fillers are required.

STATION 3

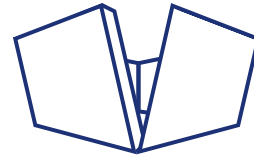
AUTOMATIC COUPLING BOX & ITEM



The items and the invoice are automatically placed on the solid bottom of the box.

STATION 4

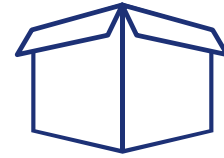
FORMING, GLUING AND CLOSING



The box is fitted around its content on all sides, regardless of the shape of the items.

STATION 5

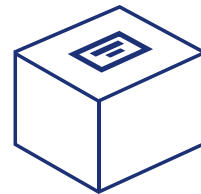
LID CLOSING



The lid is closed and glued with Hot Melt glue.

STATION 6

LABELING AND WEIGHT CHECK



The label is automatically applied to the lid of the box and its weight is checked.



NEW HMI SOFTWARE

Production Management and Data Control
Software included on OPERA.

OPERA features a new software solution with a Human Centered Design. It is extremely versatile and focuses on both the software user and the embedded system.

A more user-friendly control panel significantly reduces the start-up training times, simplifies operations for skilled operators and limits the risk of operating errors.

- New management of icons, symbols and text access for colourblind users
- Dashboard displaying output levels and consumables
- Set-up of machine parameters
- Off-line production of open boxes
- Reports on output, consumables, alerts and machine performance
- Predictive maintenance
- Highly accurate production sensors
- Alerts can be resolved via pdf and video tutorials



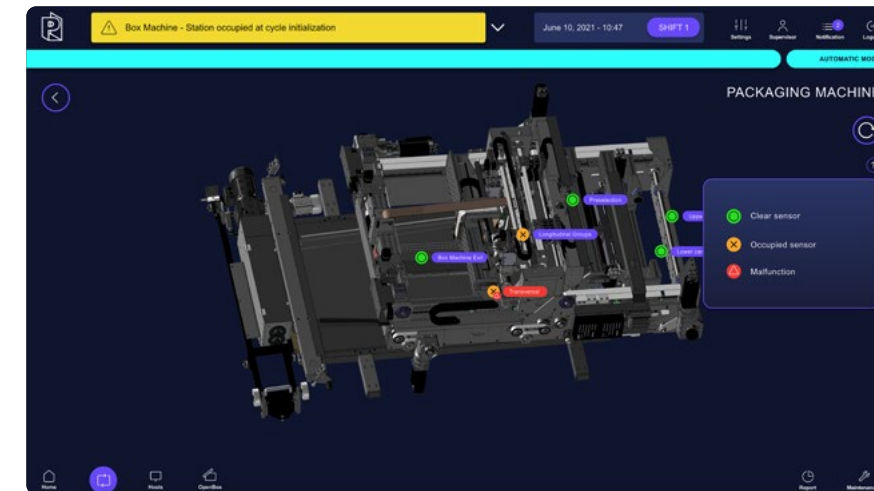
DASHBOARD SHOWING PRODUCTION DATA AND CONSUMABLES LEVELS

The data is always available on the main page and gives an immediate overview of the line's performance.

	LENGTH	WIDTH	HEIGHT	QUANTITY	BOXES PRODUCED
1	250	220	60	23	2
2	380	350	100	877	450
3	200	120	50	33	0
4	0	0	0	0	0
5	0	0	0	0	0
6	0	0	0	0	0
7	0	0	0	0	0
8	0	0	0	0	0
9	0	0	0	0	0
10	0	0	0	0	0

OFF-LINE PRODUCTION OF OPEN BOXES

Boxes with open lids can be produced to store fragile items that cannot be processed within the line.



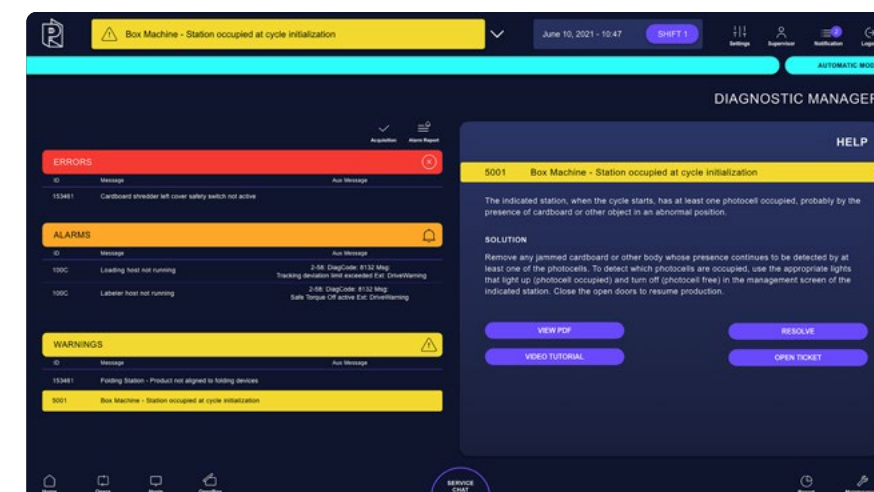
HIGHLY ACCURATE SENSORS

Highly efficient production sensors that identify and help resolve issues.

PREDICTIVE MAINTENANCE

The maintenance of the various components can be managed more effectively.

MACHINE	Name	Current Value	Last Reading	Last Reset	Maximum Value	I-I
SELECTOR	Number of cycles	20884	4/30/2021 2:50pm	5/14/2020 3:29pm	8000000	
Cardboard box	Number of cycles	20884	4/30/2021 2:50pm	5/14/2020 3:29pm	8000000	
Machine jammed and stop at last state	Advancement	7352	4/30/2021 2:50pm	5/14/2020 3:29pm	8000000	[m]
Bearings and target bearing unit of horizontal	Advancement	7352	4/30/2021 2:50pm	5/14/2020 3:29pm	8000000	[m]
Electromagnetic brakes	Advancement	7352	4/30/2021 2:50pm	5/14/2020 3:29pm	8000000	[m]
Motor gearbox and drive of roll stage	Advancement	7352	4/30/2021 2:50pm	5/14/2020 3:29pm	8000000	[m]
Cogwheels and rails	Advancement	7352	4/30/2021 2:50pm	5/14/2020 3:29pm	8000000	[m]
Bearings and target bearing unit of vertical	Advancement	7352	4/30/2021 2:50pm	5/14/2020 3:29pm	8000000	[m]

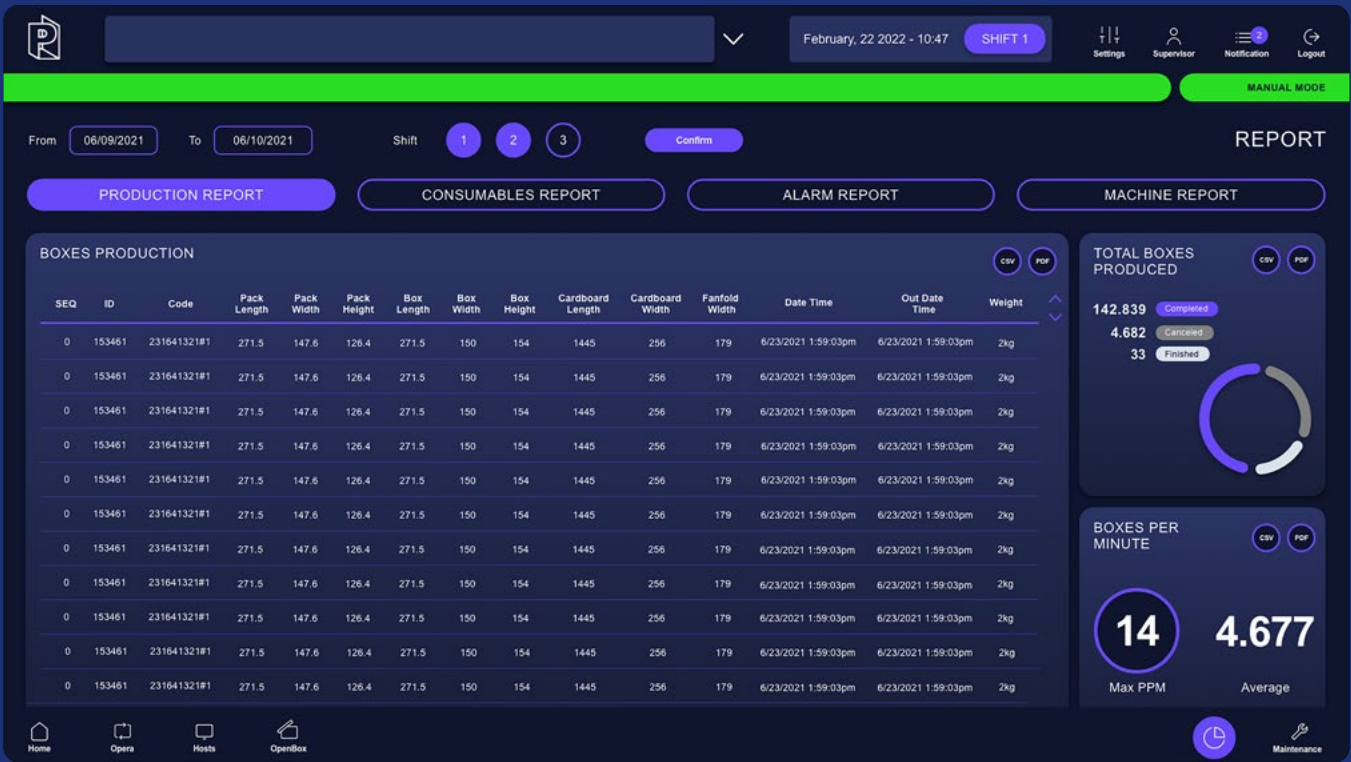


ALERTS CAN BE RESOLVED VIA PDF OR VIDEO TUTORIALS

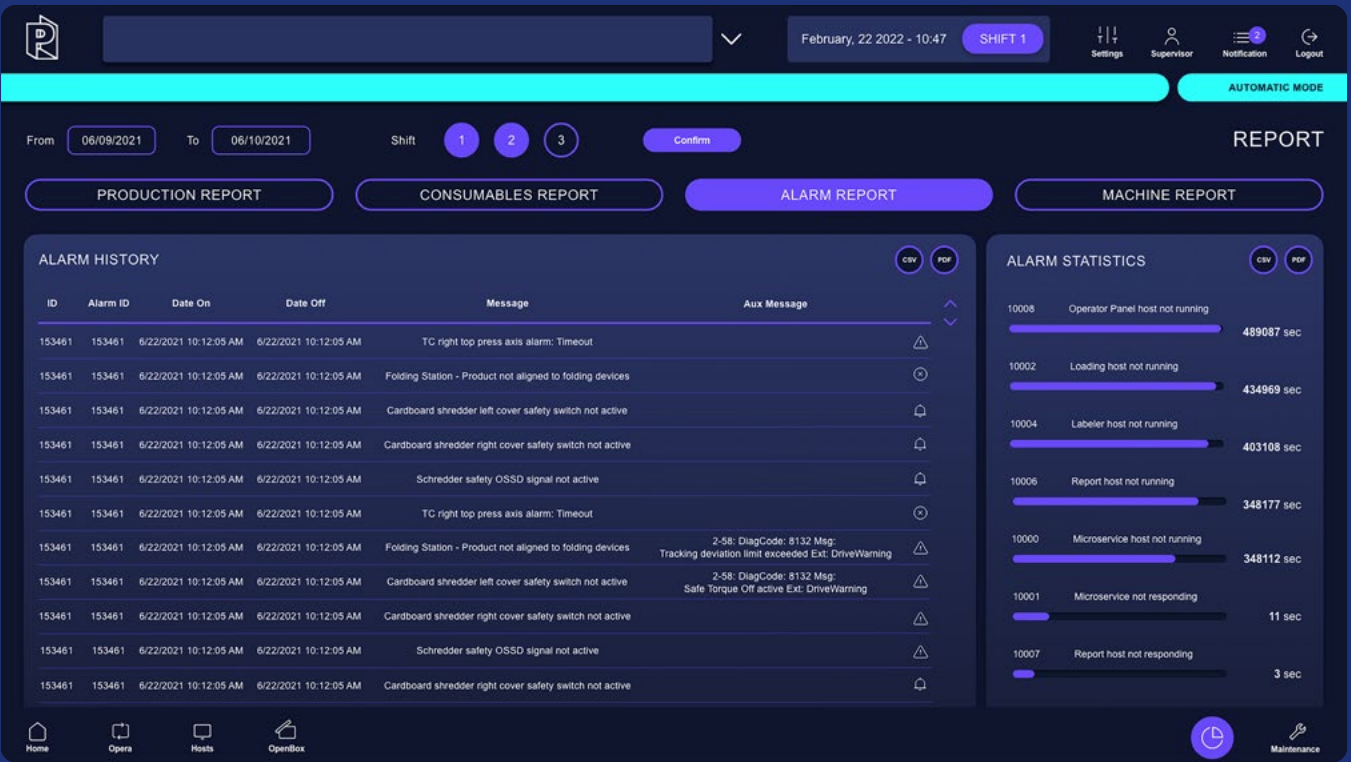
Alerts and issues can be resolved with new pdfs, video tutorials or by opening a service ticket.

MACHINE STATUS AND PRODUCTION REPORTS

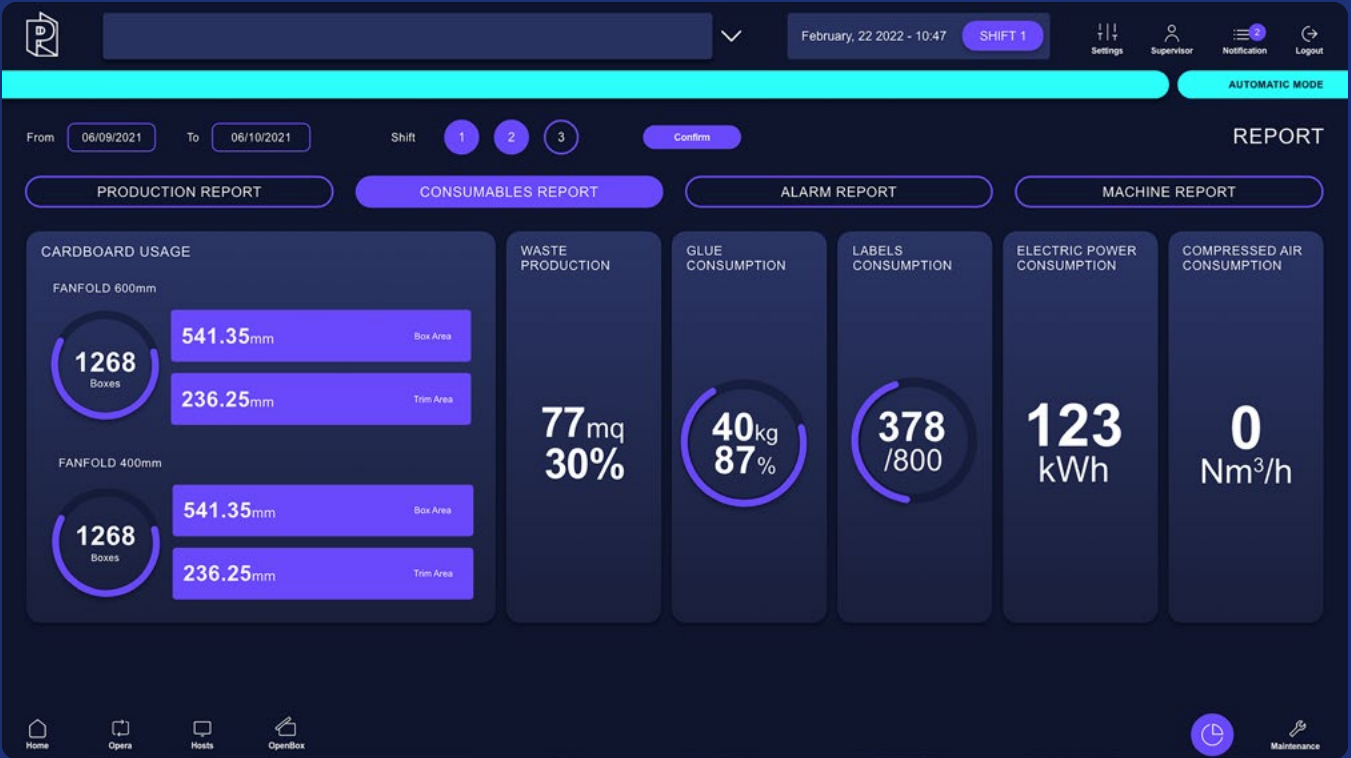
A reporting section to monitor production progress and all data related to the OPERA automatic packaging line.



Production report



Alarm History



Report on consumables



Report on Machine Performance

OPTIONAL

INCLUDED IN BASIC MACHINE SET-UP

- Label Printing
- Oversize Detection
- Waste Management
- Weight Check System

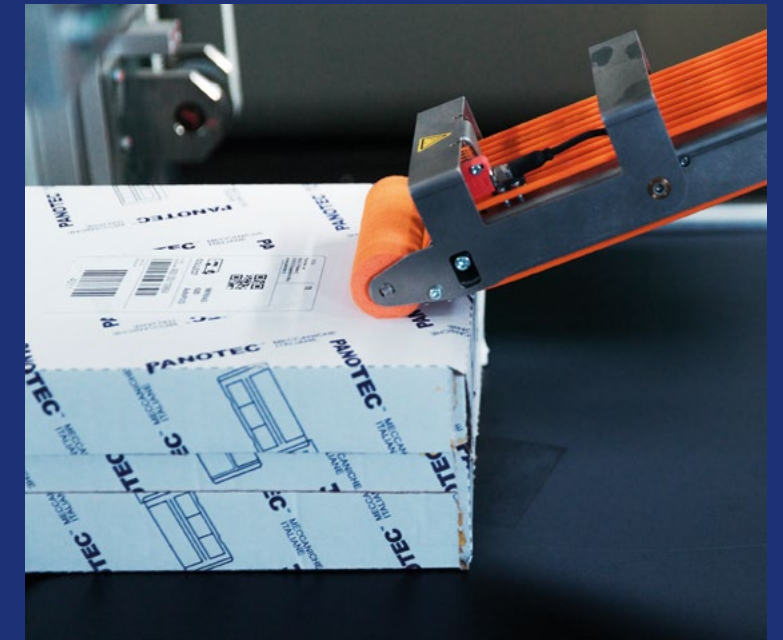
ADDITIONALLY AVAILABLE EXTRAS

- Custom Infeed Systems
- Invoice Enclosing
- Volume Optimization Software

INCLUDED IN BASIC MACHINE SET-UP

LABEL PRINTING

The label is automatically printed and applied. The shipping label is provided on A5* sheets (148x210mm) in standard ZPL format. It is applied to the centre of the lid. On request it is possible to add a second labeling station to the application of the label on the side of the box.



OVERSIZE DETECTION

Oversize checks are carried out at the measuring station. If the item is oversized, it is automatically returned to the operator.



*other formats can be agreed with Panotec



WASTE MANAGEMENT

Due to the innovative box design, cardboard waste is kept to a minimum. The little excess cardboard is cut up and automatically evacuated at the side of the OPERA line on a motor-powered conveyor. It can be collected and used as void filler.



WEIGHT CHECK SYSTEM

OPERA can pack items up to a maximum of 30kg. After the lid has been closed and the label has been applied, a weight check is carried out at the last station of the line.

The weight data is submitted to the customer's management system for inspection and filing.



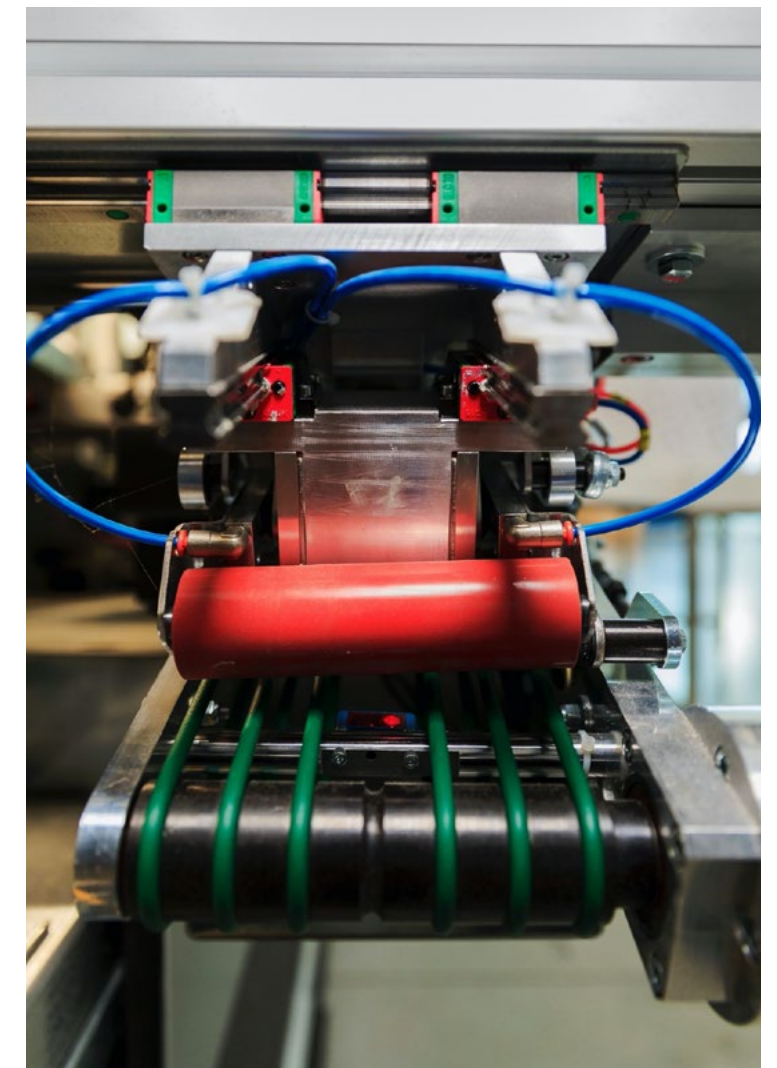
ADDITIONALLY AVAILABLE EXTRAS

ENCLOSING OF INVOICES

The line can be equipped with a system that automatically prints and encloses shipping documents inside the box.

The invoice is placed at the bottom of the open box, before the item is placed inside.

The document is provided on A5 sheets (148x210mm) in black and white printing.



CUSTOM FEEDING LINE

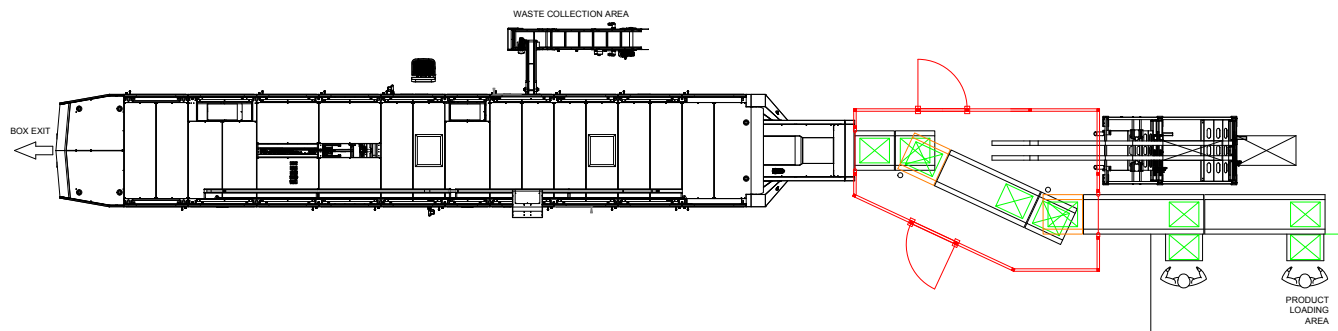
Panotec designs and supplies customised infeed lines to pack multiple item orders or orders requiring special handling (e.g. addition of protection material) still guaranteeing full performance of OPERA in terms of output.

These infeed lines can be of different shapes and sizes as they are adapted to the customer's layout of the production facility and the space available on site.

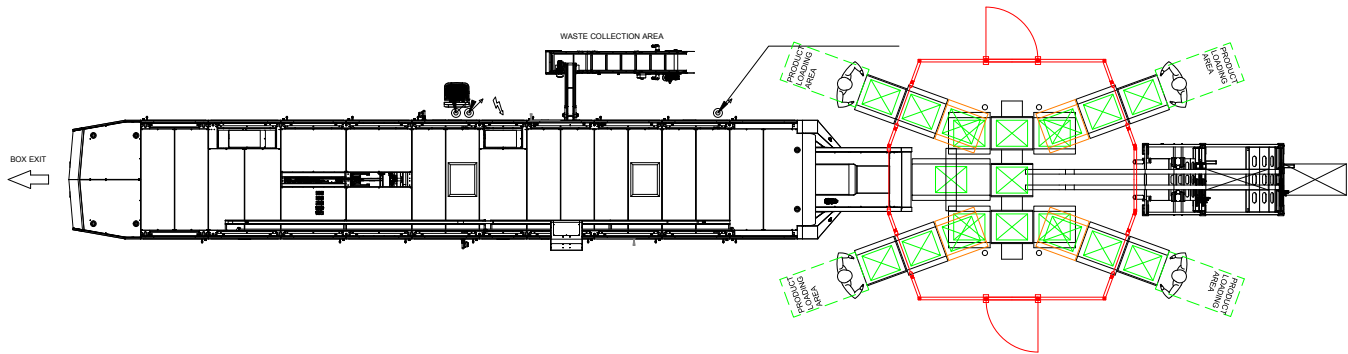
They can be equipped with one or more prep stations, depending on the requested throughput and the type of item(s) to be packed.

Examples of different infeed layouts:

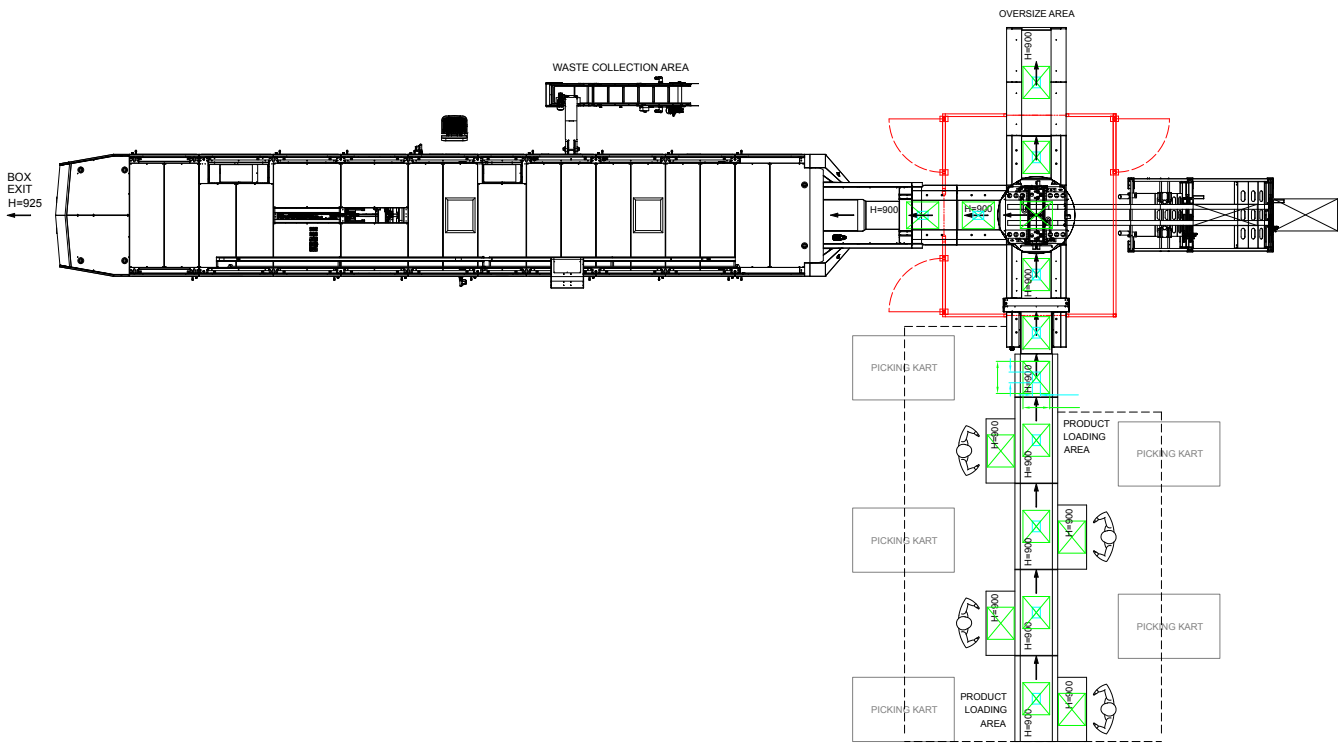
1 Feeding line with 2 item infeed stations and motor-driven conveyors



2 "X"-shaped feeding line with 4 different item infeed stations featuring a sliding shuttle to transfer packing orders to Opera. The best solution for high throughput rates



3 Feeding line with multi-station item infeed and oversize outfeed line



The item infeed stations are equipped with dimensional reference scales and any filling/ protection supplies required for order preparation.

The infeed line can be fitted with an outfeed bay for oversize items (example 3).

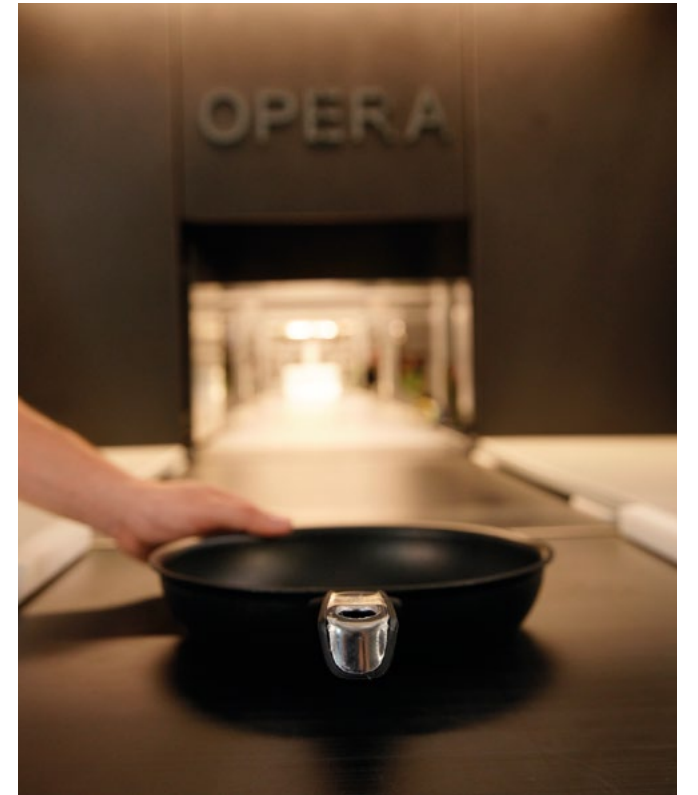
The size of the orders is detected immediately after preparation by means of a dimensional detection gate positioned ahead of the outfeed station.

SUITABLE ITEMS

- Single Items
- Multiple Items
- Fragile Items
- Irregular Shapes
- Unstable Items

SINGLE ITEMS

OPERA packs items of all shapes and sizes



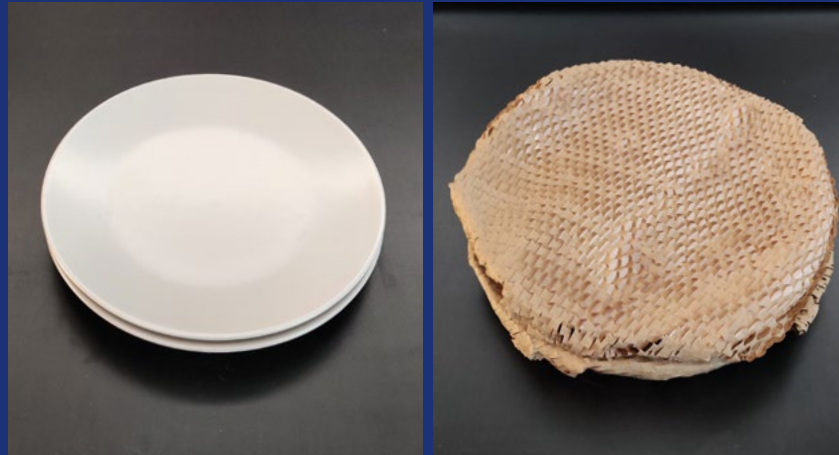
MULTIPLE ITEMS

The box is neatly wrapped around the items and there is no risk of items shifting or falling out.



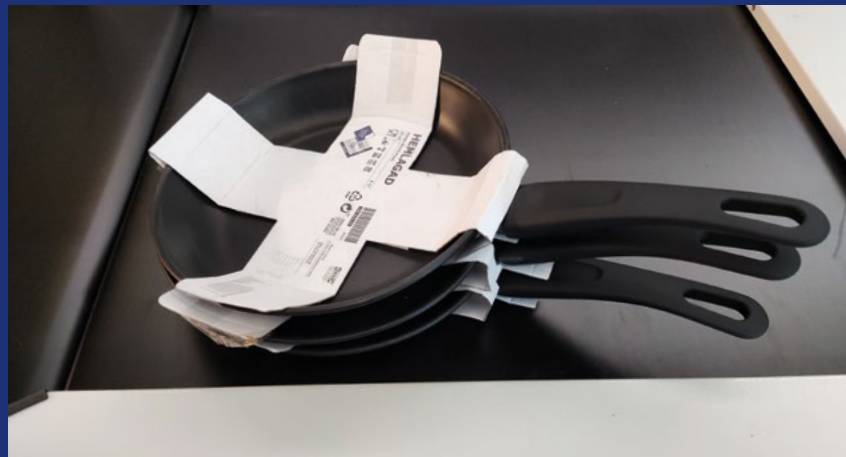
FRAGILE ITEMS

OPERA packs fragile products, such as plates and glasses. It is advisable to wrap such items in protective material before feeding them into the line.



IRREGULAR SHAPES

Items with irregular shape can also be easily packed by OPERA.



UNSTABLE ITEMS

Unstable items can be packed by placing them on cardboard trays or using small protective nets to keep them firm and stable as they are processed by OPERA.



FAST SET-UP & START-UP

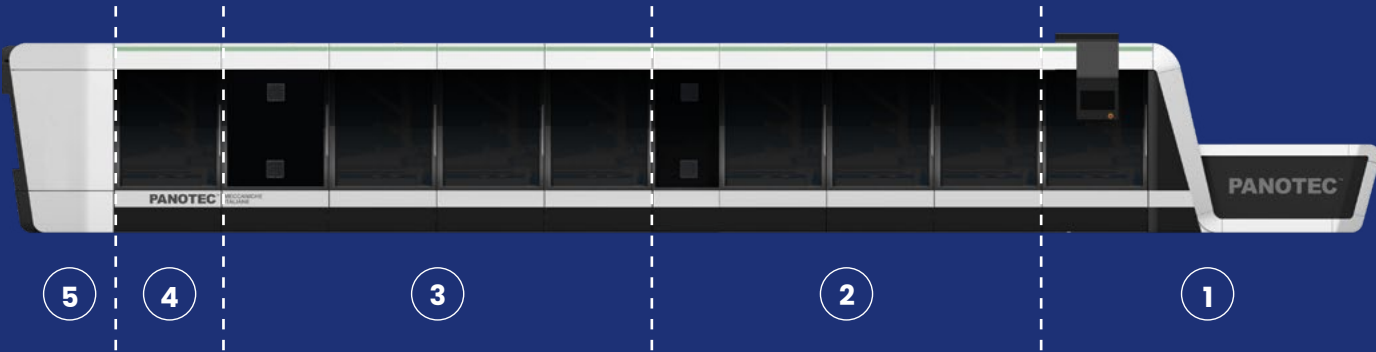
The line is designed to be set up and started up within a very short time.

OPERA is divided into 5 main sections that are shipped on two trucks.

Once they are delivered on site, the 5 sections are reassembled and wired up within 4 days, and the line is then ready for start-up.

Start-up of the line and operator training are completed within 3 weeks after start-up.

4 days only



TRAINING AND CUSTOMER SERVICE

Our staff of highly qualified Panotec service technicians and engineers provide specific training sessions so that the customers will be able to run OPERA efficiently and safely.

Our team offers comprehensive training for each specific task, and assess the training results to determine whether additional training is needed to operate the system correctly and independently.

Our Local Service Partners are also offered constant maintenance and service training sessions for OPERA, to keep them up to date with the latest innovations in technology and software. This service is essential to provide the end customer with qualified and certified service team able to operate the system independently, efficiently and safely.

OPERA is extremely reliable and offers high performance and long-term uptime.

The members of the Panotec Service Team are specifically trained to provide support and servicing of OPERA, both remotely and on site, also on a 24/7 basis.

Our service engineers keep track of support requests, general enquiries or sparepart requests in real time via our online service platform.

