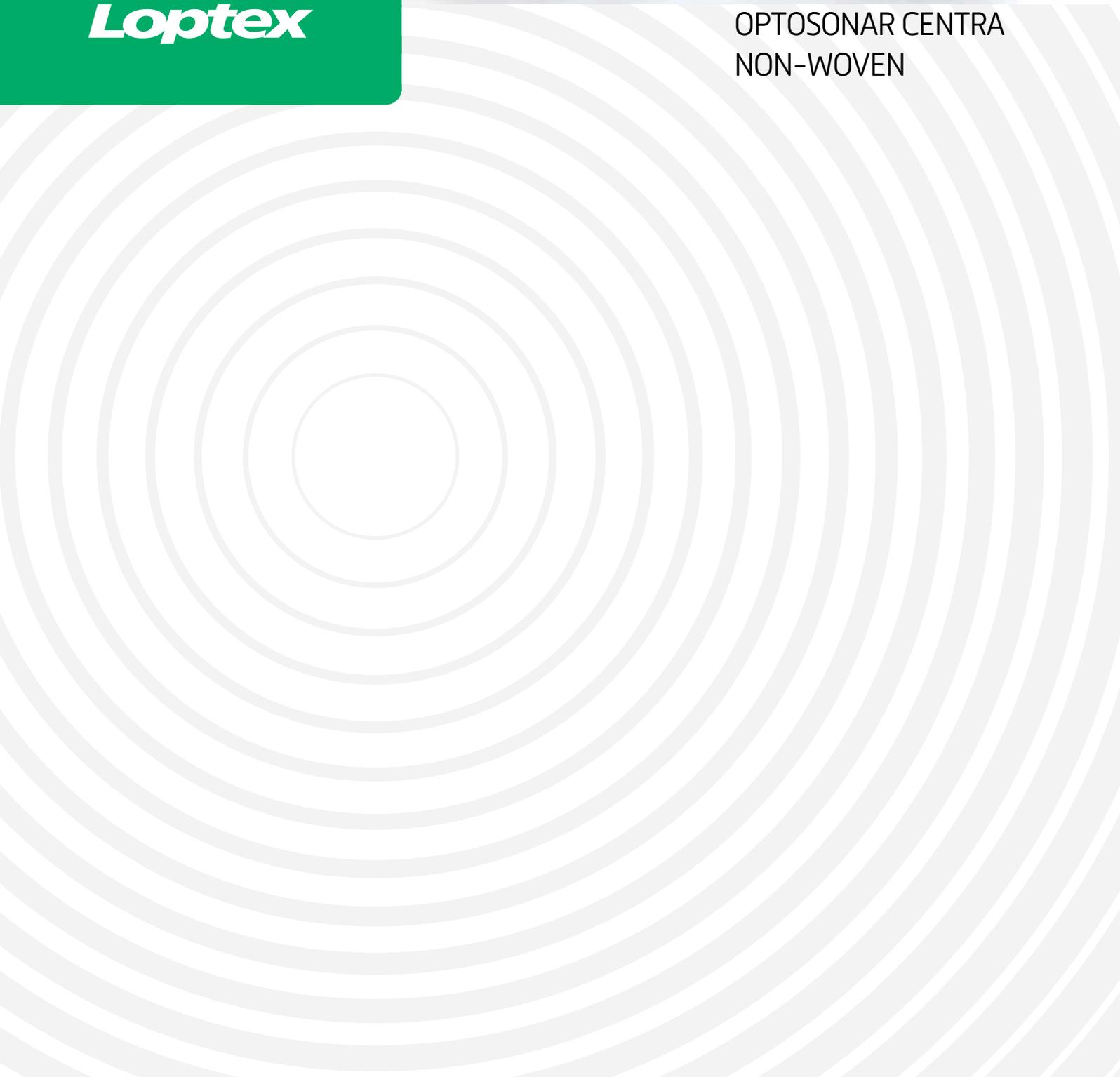




***Loptex***

OPTOSONAR CENTRA  
NON-WOVEN



# NON-WOVEN

LOPTEX, AS MANUFACTURER OF SYSTEMS FOR THE DETECTION AND ELIMINATION OF CONTAMINATION IN A FREE FIBERS FLOW, INTRODUCES A COMPLEMENTARY SOLUTION FOR THE CONTROL AND THE SIGNIFICANT REDUCTION OF IMPURITIES IN NONWOVEN PROCESS.

THE RISK OF CONTAMINATION PRESENCE IN PRODUCTS FOR MEDICAL, PERSONAL CARE AND HYGIENIC PURPOSES IS A FACT.

THE FINAL CONSUMERS REQUIRE HIGH QUALITY STANDARDS. HENCE, THE FINAL PRODUCTS HAVE TO GUARANTEE PURITY, DELICACY AND COMFORT TO THE HUMAN SKIN.

THE ORIGIN AND SOURCE OF FOREIGN MATTER AND/OR CONTAMINATION IN NONWOVEN PROCESS IS OF DIFFERENT NATURE. THEIR FREQUENCY IS VERY LOW. THEY ARE INCLUDED IN THE CATEGORY OF "RARE EVENTS", BUT THEY CAN SERIOUSLY AFFECT THE QUALITY OF THE FINAL PRODUCTS.

## DETECTION AND ELIMINATION OF CONTAMINATION: LOPTEX SOLUTION

LOPTEX HAS INTRODUCED A COMPLEMENTARY SOLUTION TO THE ALREADY EXISTING QUALITY CONTROL SYSTEMS AND METHODS. THE TARGET IS THE ON-LINE DETECTION AND ELIMINATION OF THE CONTAMINATION DURING FIBERS PROCESSING.

# PRESENCE OF CONTAMINATION IN RAW MATERIAL.

## Man Made fibers: artificial and synthetic fiber.

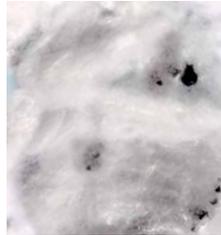
Contaminations may be:



Yellowish fibers



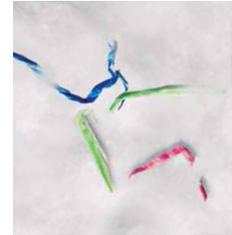
Dark fibers



Black spots



White melted fibers



Color and white polypropylene

They originate during production process due to the chemical treatment and the mechanical action of production machineries. Furthermore, they originate from bale polypropylene woven packaging.

## Natural fibers: raw natural fibers, cards and combing noils, fiber waste.

These contamination have different sources and are of different nature:



Leather and rubber



Feather



Color and white polypropylene



Pieces of cloth



Bunch of hair

They originate at the very beginning of the process during harvesting due to the presence of manual picking and due to the very critical environment conditions. This is typical from emerging countries and emerging economies.

# PRESENCE OF CONTAMINATION IN A NONWOVEN PLANT.

## These types of contamination can result from:

- Mechanical action of machines on fibers;
- Environment debris and insects including flyers.

These contamination and/or impurities are difficult to classify as they can be of very different nature.



Fly

## BASE CENTRA NW

Downward fiber flow



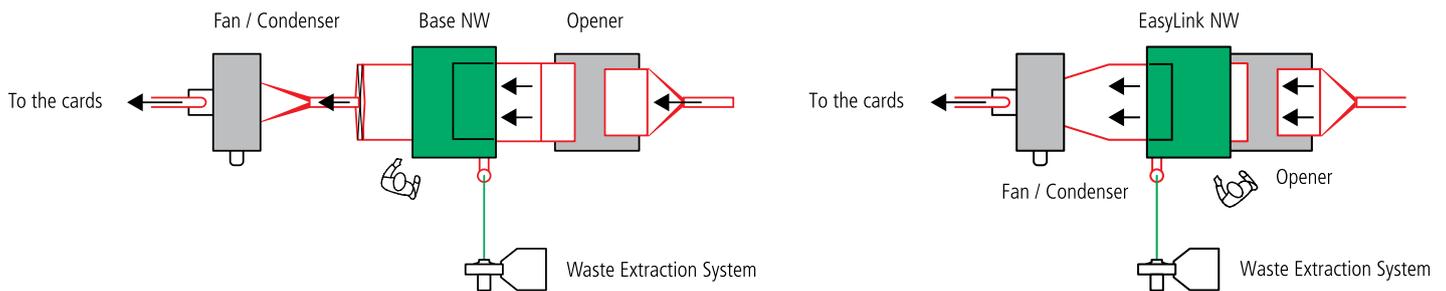
## EASYLINK CENTRA NW

Upward fiber flow



### Where to detect and eliminate the contamination in a Nonwoven plant.

The ideal positioning is in blow room line before carding machines and immediately after an Opener. It may be necessary the use of a Condenser/Buffer in case of feeding of high production carding machines.



### Technical Specifications

Maximum production rate BASE CENTRA:	up to 800 Kg/h [1000/1200 Kg/h and more on demand]
Maximum production rate EASYLINK CENTRA:	up to 800 Kg/h [1000/1200 Kg/h and more on demand]
Power supply:	400 VAC +/- 10% 50Hz
Installed power:	1,5KW [Sorter system] 2,2 KW [Waste extraction system]
Air consumption:	0,6/1,2 NI [per contamination removal]
Compressed air supply:	approx. 6-8 bar
Dimensions BASE CENTRA:	Heigth 2250 mm/Width 1700 mm/Depth 1200 mm/Weigth 860 Kg
Dimensions EASYLINK CENTRA:	Heigth 3400 mm/Width 1800 mm/Depth 1400 mm/Weigth 950 Kg

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# OPTOSONAR CENTRA

THE OPTOSONAR CENTRA COUPLES THE SONAR ACOUSTIC TECHNOLOGY WITH THE IN-HOUSE EMBEDDED COLOR CAMERAS OPTIC TECHNOLOGY FOR THE DETECTION AND REMOVAL OF CONTAMINATION IN COTTON PREPARATION LINES.

THIS IS THE UNIQUE LOPTEX FEATURE IN THE WORLD.

THE OPTOSONAR CENTRA DETECTS WHITE AND TRANSPARENT PLASTICS INCLUDING WHITE POLYPROPYLENE; FLUORESCENT AND NON FLUORESCENT PLASTICS; VERY THIN COLOR, LIGHT COLOR AND COLOR LESS POLYPROPYLENE STRINGS.

THIS INNOVATIVE MODULAR SYSTEM, BY MEANS OF STATE OF THE ART EMBEDDED ACOUSTIC TECHNOLOGY COUPLED WITH EMBEDDED OPTIC TECHNOLOGY AND ELECTRONICS, PERMITS TO IMPLEMENT TAILOR MADE SOLUTIONS AND CONTINUOUS INNOVATIONS FOR PRODUCTIONS UP TO 1.200 KG/H.

## RELIABILITY AND CONSISTENCY ON RESULTS

BY MEANS OF:

- DIRECT VIEWING SYSTEM (NO MIRRORS USE).
- CONSTANT MEASURING AND VIEWING DISTANCE.
- ELIMINATION OF OPTICAL SIDE DISTORSIONS.
- SPOT WISE MULTIPLE IMAGE ANALYSIS.
- MODULAR AND DUST PROOF SYSTEM.
- ROBUST EMBEDDED TECHNOLOGY SUITABLE TO WORK UNDER THE MOST CRITICAL ENVIRONMENT CONDITIONS.
- HIGH PERFORMING PNEUMATIC VALVES WITH MINIMUM LOSS OF FIBROUS MATERIAL.

# COMPREHENSIVE AND ACCURATE DETECTION AND ELIMINATION OF CONTAMINATION.

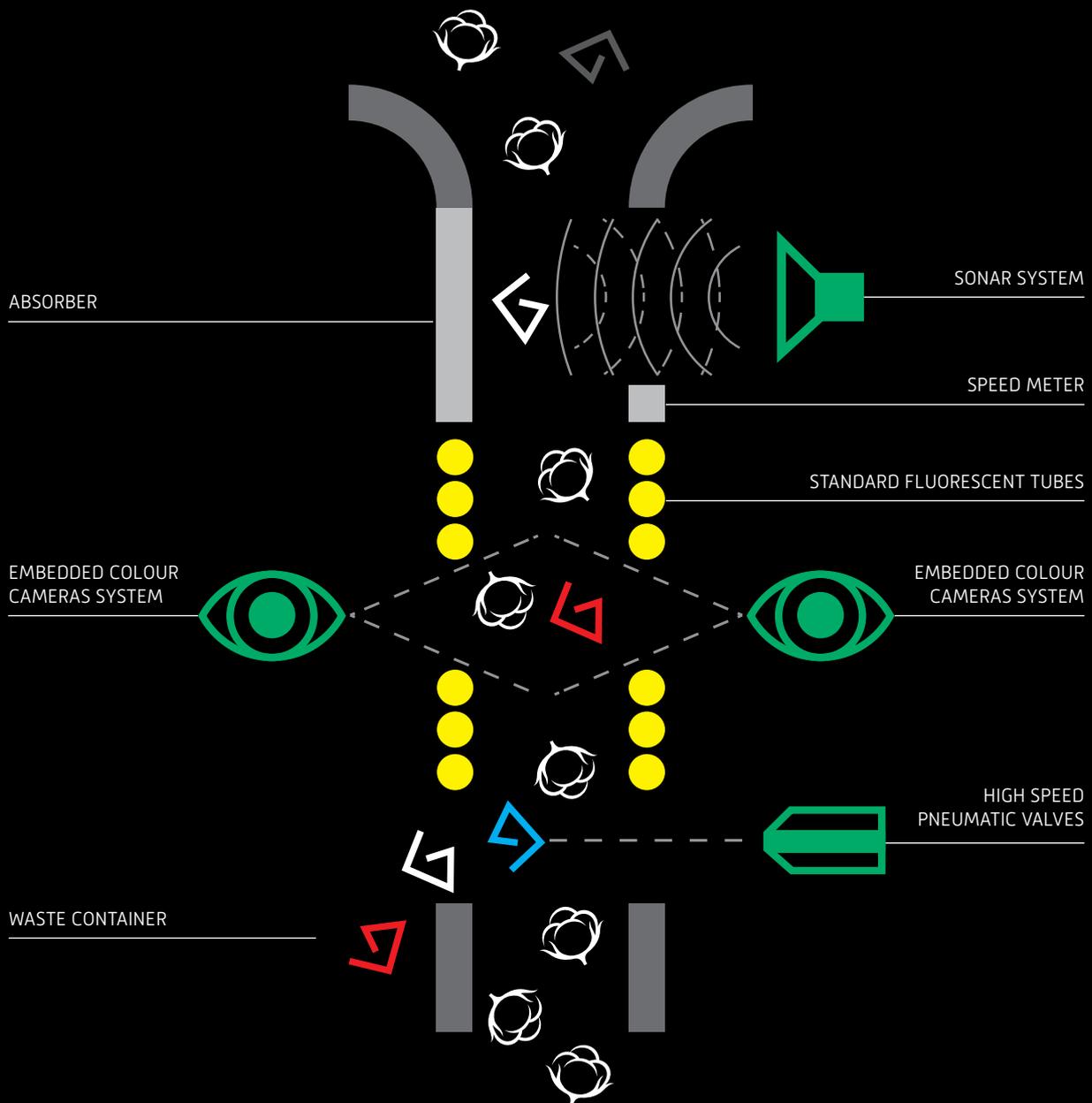
The Optosonar Centra is a forefront system designed to grant comprehensive and accurate detection and elimination of contamination.

It implements the Double Control on contaminants by means of an Acoustic system coupled with an Optical system with in-house lenses focal adjustment.

The Direct Viewing feature by means of 12 Embedded Cameras per channel side (total of 24

Embedded Color Cameras) eliminates the camera sides distortions. It excludes the use of optical mirrors which attract dust deposit.

The High Speed Pneumatic Valves sort out the contamination from the fibers stream into a waste container. Dedicated software and firmware complete the design.



## THE SONAR SYSTEM

The system consists of a high frequency ultrasound emitter bar generating acoustic waves, whose geometrical propagation is close to the optical geometrical propagation of straight beams.

A second bar of high reliable and accurate receiving acoustic sensors is placed underneath. Any contamination with a structure and density, which differ from the processed fiber, reflects the acoustic

wave towards a receiving sensor which activates the corresponding solenoid valve for its removal.

The Sonar system detects white PP, plastics with the same color as the cotton processed, hidden contaminant, transparent plastics and non transparent plastics, fluorescent and non fluorescent plastics.

## THE NEW EMBEDDED COLOR CAMERAS SYSTEM

The system consists of 2 rectangular plexiglass implementing the monitoring channel. The cotton fibers are free to flow without interruption of production.

A blackened aluminum bar is placed on both sides of the monitoring channel. Each bar houses 12 sealed dust proof Embedded Color Cameras. A total of 24 sealed dust proof Embedded Color Cameras is implemented. This feature permits a direct viewing of the contamination with elimination of cameras side distortions effect with constant sensitivity level all over the monitoring channel. The Embedded Color Cameras system offers a resolution of 3.840 pixels per channel side (0.3 mm).

A powerful 32 bit ARM microprocessor per each Color Camera performs a spot wise image analysis for the identification and for the detection of the contamination. It assures high processing speed and significant reduction of processing faults.

It increases the efficiency and the consistency on results on the detection of all type colored contamination including color thin PP strings, light color thin PP strings and colorless thin PP strings.

The unique Loptex know-how optimizes the coupling of the Sonar system with the Embedded Color Cameras system.

## ADDITIONAL KEY FEATURES

No need of heat exchanger and/or mechanical cooling system. No need of cleaning of sonar and optical devices due to dust deposit.

The sonar coupled with the new embedded color cameras systems have been designed, engineered and tested to perform in preparation lines.

Results exceed the expectations for those applications where high quality standards are met.

Loptex continuous to offer to the market cost effective solutions which lead to high effectiveness and fast return of investment.

# LOPTEX IN THE WORLD

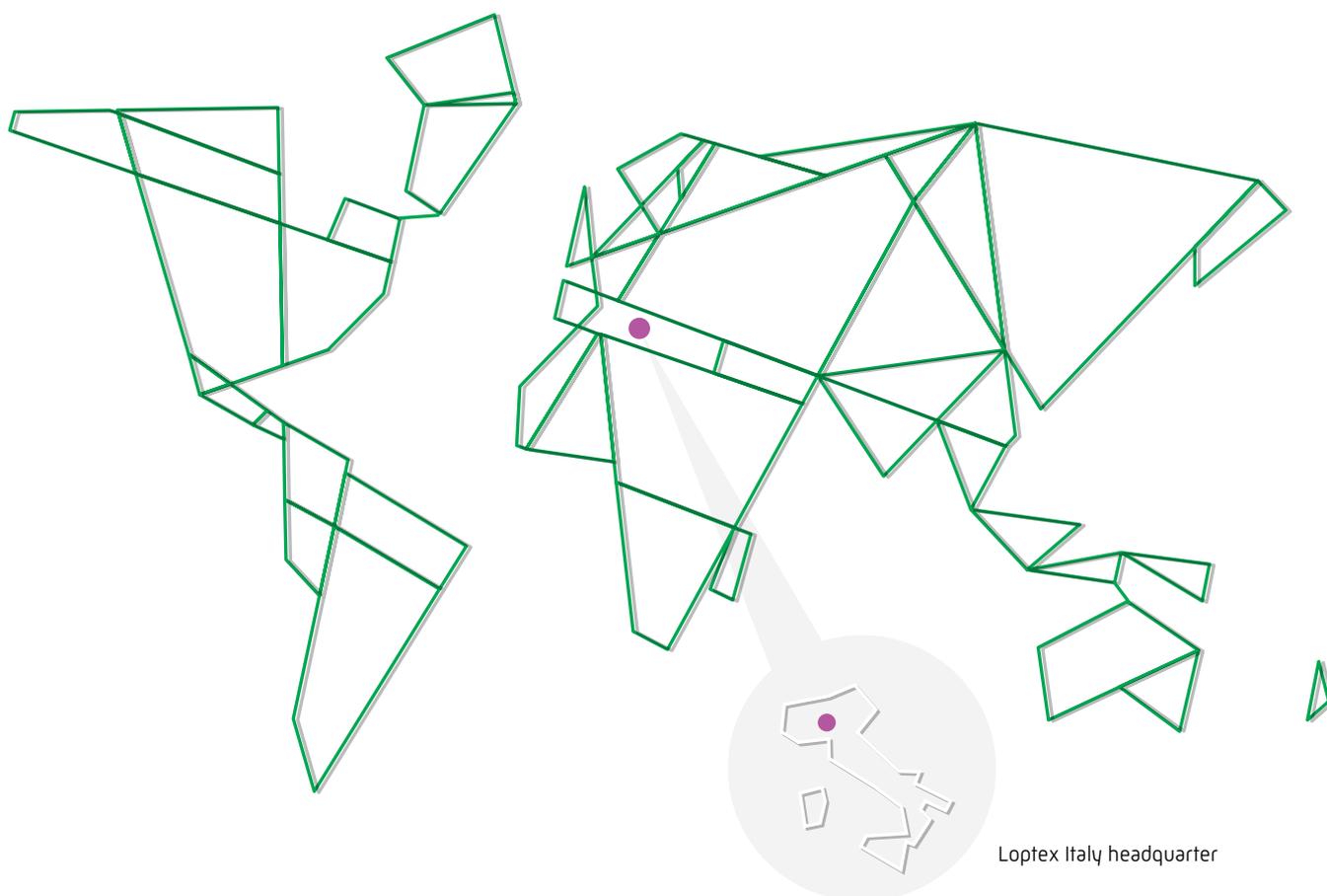


Loptex through innovations improves the competitiveness and quality of its customers.

Loptex systems are suitable to all existing and new opening lines of the main worldwide machine manufacturers.

Loptex through agencies and service stations in the main textile areas of the world, guarantees an excellent service and support to its customers.

Local technicians are trained on regular basis in Italy by Loptex specialized personnel.



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