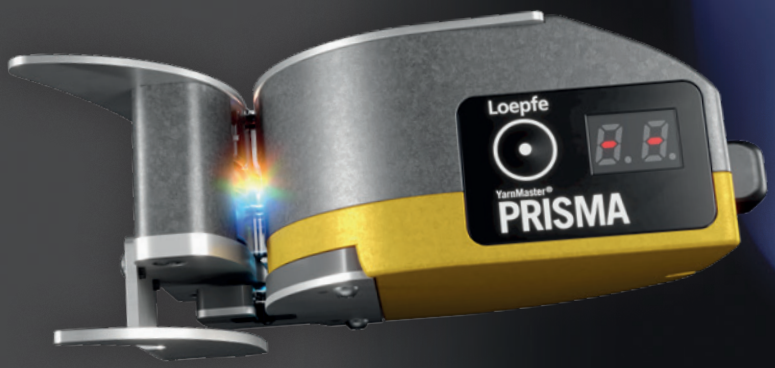
Loepfe

YarnMaster®

PRISMA

CLEVER YARN CLEARING



- Profitable
- Efficient
- Easy

Loepfe

Clever yarn clearing

Profitable, efficient, easy

Clever yarn clearing for winding is profitable, efficient, and easy. PRISMA is the solution for spinning mills that need high quality yarns at maximum machine efficiency. With the market's most advanced yarn monitoring system, spinning mills can reduce costs, increase efficiency, and enjoy ease of use.

PRISMA is a dynamic system that is constantly evolving to market needs. Thanks to regular software updates, users benefit constantly from various advantages. All new functionalities are designed with the needs of spinners in mind, contributing to a significant increase in yarn quality, reduction in yarn waste, and boosting winding machine and production efficiency.

In addition to its technological superiority, PRISMA offers the cleverest and most effortless yarn clearing experience on the market. Time and resources are saved while efficiency and quality remain stable at the highest level. PRISMA's clever yarn clearing is the ultimate solution for spinning mills, providing support and security, optimum user experience, and time and cost savings.

Unique advantages

Best contamination control

RGB

Profitable all-color foreign matter detection and clever organic filtering with unique RGB technology.

Most efficient basic yarn clearing

DUAL

Simultaneous dual measurement is the most accurate way to detect and classify all basic yarn faults.

Effortless operation

Cleverest and most effortless yarn clearing experience on the market.

Most advanced yarn monitoring system

The PRISMA system

Unique four sensor technology and clever PRISMA software, combined with the data management system MillMaster TOP, create the ultimate system for unparalleled performance in yarn quality control and process optimization.

The data management system MillMaster TOP 2.0 is an integrated part of the functional scope of the YarnMaster PRISMA and complements every Loepfe yarn clearer installation.

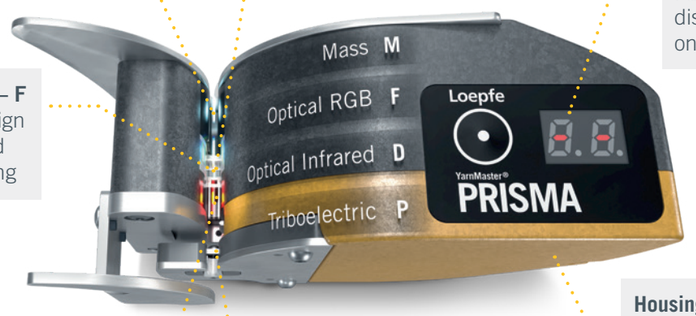
The PRISMA sensing head

Mass sensor – M
Efficient detection of defective core yarns and wrong yarn counts

360° all-round view
Clever calculation of all signals and their reflections for perfect yarn monitoring

LED display
Fault information displayed directly on the sensing head

Optical RGB sensor – F
Unique all-color foreign matter detection and clever organic filtering



Housing
Swiss-made from solid high quality materials

Optical infrared sensor – D
Most accurate detection of basic yarn faults like NSLT and hairiness

Triboelectric sensor – P
Secure detection of white and transparent polypropylene

Unique advantages

Best contamination control

PRISMA's all-color foreign matter detection provides spinning mills with new possibilities in terms of quality, profitability and raw material utilization.

The unique RGB technology achieves outstanding measuring accuracy using the additive RGB color model to illuminate yarn in the full spectrum of light. The detection of foreign matter and organic components of cotton, within their true colors, opens up new possibilities for recognition and classification. It enables monitoring of all foreign matter, including shade and glossiness differences in any type of yarn color or mixture.

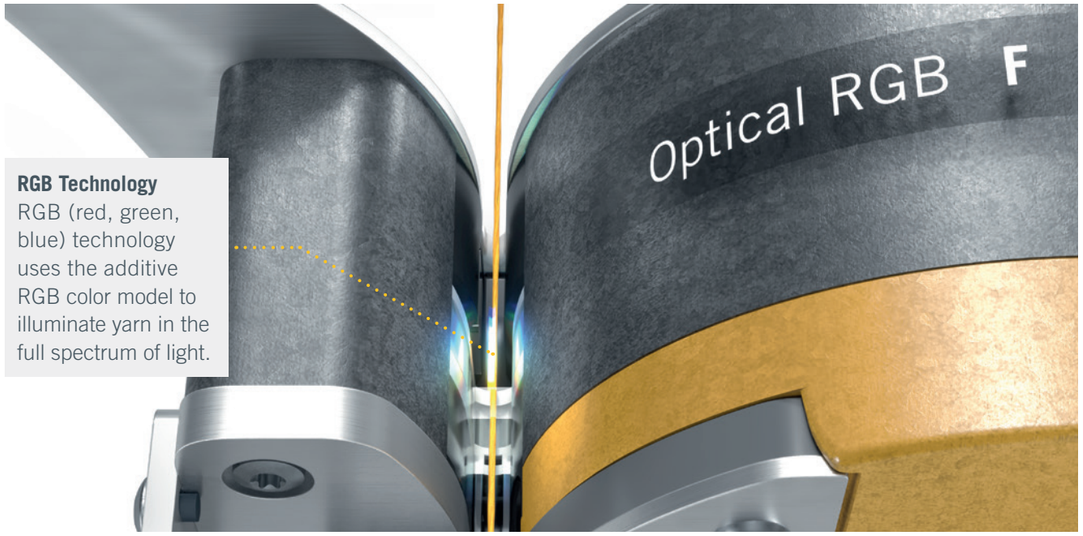
This allows not only the removal of everything unwanted but also retains what is not disturbing. Fulfilling the ultimate goal of producing the needed yarn quality with the highest efficiency.

RGB

Clever organic filtering

Based on the color-oriented selection of organic material in the cotton using RGB technology, an optimized detection and classification of disturbing or non-disturbing defects is achieved. Loepfe has fed the system with thousands of samples of organics, to teach the filter whether organics need to be removed or not, leading to considerable savings, clearer cuts and higher winding efficiency.

Clever organic filtering



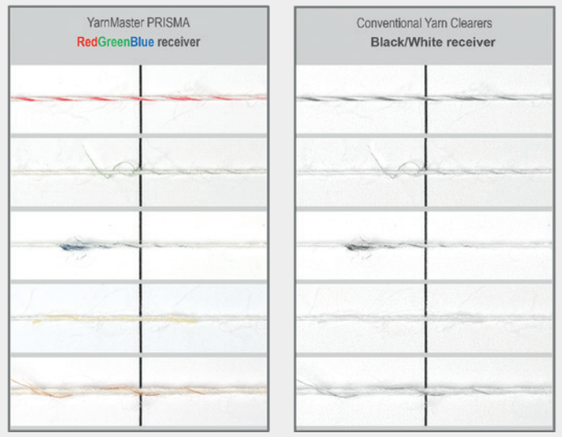
RGB Technology
RGB (red, green, blue) technology uses the additive RGB color model to illuminate yarn in the full spectrum of light.

RGB technology

True color vision

Only PRISMA recognizes and classifies foreign matter in its true colors providing the best and most efficient contamination control in yarn clearing. This gives quality managers peace of mind, knowing they're getting the best possible performance.

How foreign matter is seen by the sensors



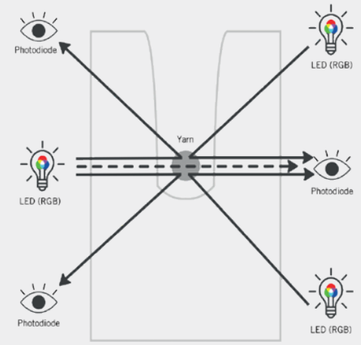
Secure detection of polypropylene with the unique P sensor

Loepfe has been at the forefront of mastering the triboelectric effect for years, and PRISMA is the latest testament to this expertise. Equipped with the latest P sensors from the 4th generation and a dedicated P-Matrix, PRISMA ensures accurate settings and reliable results. PRISMA is the solution to ensure reliable detection of white and transparent polypropylene in yarn production.

360° all-round view

PRISMA is the only sensor on the market with an unparalleled number of signals and an unmatched ability to monitor yarn with a 360° all-round view. Exclusively, PRISMA uses several front and background lights for foreign matter clearing guaranteeing a view from every angle. Furthermore, dedicated signals for basic yarn fault detection as well as polypropylene detection complete the monitoring – resulting in unparalleled accuracy in fault detection and classification.

360° all-round view



Clever calculation of all signals and their reflections for perfect yarn monitoring.

Most efficient basic yarn clearing

DUAL

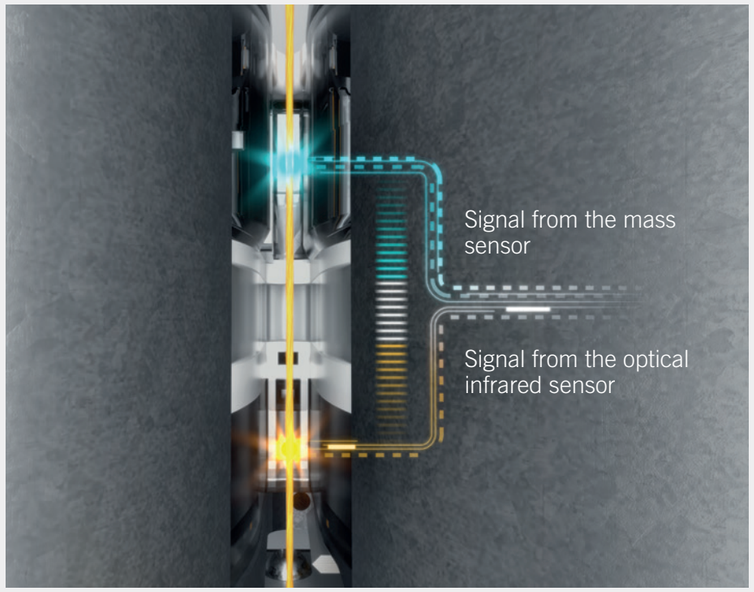
PRISMA's simultaneous dual measurement is the most effective way to detect basic faults in yarn quality control. This provides spinning mills with the best yarn quality while reducing waste, splice cycles and energy consumption.

PRISMA's optical infrared and mass sensors work in harmony, combining the two outputs into one signal. The seamless combination of optical and capacitive measuring methods results in the best recognition and classification of faults by length and intensity. The sensor takes into account factors such as raw material, type of fault, length of the fault, or even hairiness.

Spinning mills that rely on PRISMA can be sure of the highest profitability at all times.

Ease of use

The simultaneous dual measurement technology is exceptionally user-friendly. There's no need for the user to be concerned with configuring or combining the two sensors, nor choosing which sensor should take precedence in evaluating and determining whether a fault needs cutting or not. The smart functionality of the PRISMA clearer system guarantees an optimal setup is always achieved.



Simultaneous dual measurement

PRISMA utilizes two powerful sensor technologies and unique software for simultaneous signal processing.

As a result, PRISMA's dual measurement capabilities remain unparalleled in today's market.

Dual measurement

Effortless operation with Autoclearing

AUTOCLEARING

PRISMA Autoclearing offers the cleverest and most effortless yarn clearing experience on the market. Providing support and security, optimum user experience, time and cost savings while efficiency and quality remain stable at the highest level.

Autostart

Autostart offers the fastest and safest way to create secure settings for new and existing articles. The clever software automatically creates clearing curves for all matrixes, based on yarn quality data from the first 100km/group. This eliminates the need to manually go through all matrixes and their curve settings which makes the Autostart feature a must-have for any quality manager.

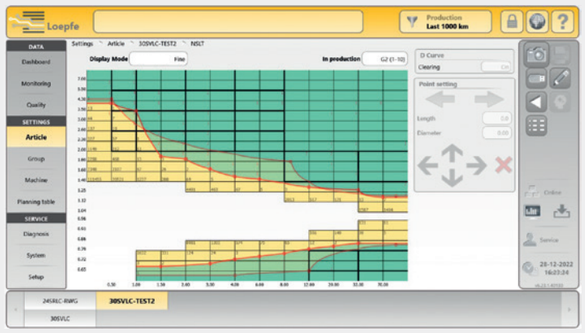
It saves up to one hour of setting time when creating a new article. Likewise, the persons in charge can be sure that with PRISMA's built-in intelligence, the winding process is set up for optimum performance.

After the completion of the Autostart, the curves can be fine-tuned according to the individual needs, if required. As further support, the trusted Loepfe Testmode can be used for fine-tuning the settings.

Autocorrect

If changes are necessary during the winding process, the operators can rely on the Autocorrect function. Autocorrect can be used to readjust the clearing curve based on the quality data of running articles. This ensures a quick and correct reaction to changes at any time. Furthermore, the sensitivity level of Autocorrect can be used to finetune clearing curves very precisely. The cut forecast provides an overview of the rising or falling cuts of the planned changes. This allows decision-making with a balance of efficiency and quality in mind.

Automatic creation of the clearing curve with Autostart



Example NSLT matrix: Development of the curve from start to completion after 100 km/group

Autoclearing

Better yarn quality

Eliminate color variations – OffColor feature (Option)

PRISMA's RGB sensor technology enables the most accurate recognition and classification of shade and glossiness differences in any type of yarn color or blend. The optional feature OffColor completes the unique technology by detecting color variations. As the OffColor feature is cleverly combined with the two textile alarms, Bobbin startup alarm and Length limit alarm, PRISMA offers the most efficient color variation detection.

Prevent processing a wrong yarn count or color – Bobbin startup alarm

The Bobbin startup alarm is the perfect solution for any spinning mill looking to increase its profitability. This textile alarm detects bobbins with the wrong count, and optionally with the wrong color, within the first 11 to 20m, providing the fastest detection of faulty bobbins on the market.

Successful core yarn production – Core yarn feature

PRISMA is the solution, combining its unique simultaneous dual measurement with its core yarn features. Thanks to the simultaneous optical and mass sensor measurement, 100% of the yarn is analyzed in regard of mass and optical variations. This technique accurately detects the occurrences of missing and offcenter cores.

LabPack 24/7 online laboratory (Option)

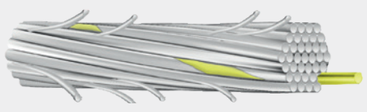
Real-time, in-depth quality reports on 100% of the wound yarn, allowing action to be taken to enhance the complete spinning process.

- Maximized raw material utilization and consistent yarn quality
- Optimize service and maintenance work to save cost
- Access to the SFI/D surface variation matrix: curve clearing and classification

Complete information on:

- 100% of the processed material
- SFI value: variation of hairiness
- IPI diameter-related imperfections

Offcenter core



The mass remains the same but the diameter is influenced

Missing core

The mass decreases but the diameter remains the same

Increased profitability and efficiency

Maximize efficiency and maintain quality – Matrix Clearing

Loepfe's unique matrix clearing maximizes efficiency by providing the same yarn quality with less cuts, reducing waste, splice cycles and energy consumption. The clearing matrix paves the most advanced way to optimize clearing limits and offers the longest observation lengths on the market:

- OffCount (Deviations in Count) up to 50m
- SFI/D (Hairiness and CV) up to 80m
- OffColor (Deviations in Color) up to 50m

PRISMA removes long faults in the yarn with a single cut and accurately identifies them, providing the most complete picture of the yarn structure in the process.

Improve profitability – Length limit alarm

PRISMA's Length limit alarm maximizes winding machine and production efficiency with fewer splices and less hard waste. If a fault reaches the set Length limit a signal to remove those long faults from the package is sent to the winding machine. The spindle position is now alarmed and the operator has the possibility to decide if the bobbin remains within the process or will be removed to be used within second-grade process.

Process optimization with color mapping

The PRISMA operating system provides a Cut History in which the detected colors are displayed for each cut. This enables data-based decisions on quality mill management optimization and helps to increase efficiency from the blow-room to the winding machine.

NSLT Cluster feature

Periodic faults are disturbing in the final fabric and could lead to the fault patterns known as moiré and strippiness. Non-periodic small fault accumulations are also disturbing and can lead to an uneven fabric appearance. With the unique Cluster feature, available for neps, short, long, and thin clusters it is possible to detect reliable off standard bobbins with such kind faults.

Discover the wide range of opportunities available to boost profitability, efficiency and yarn quality on the PRISMA Know-how page

Real-time data management

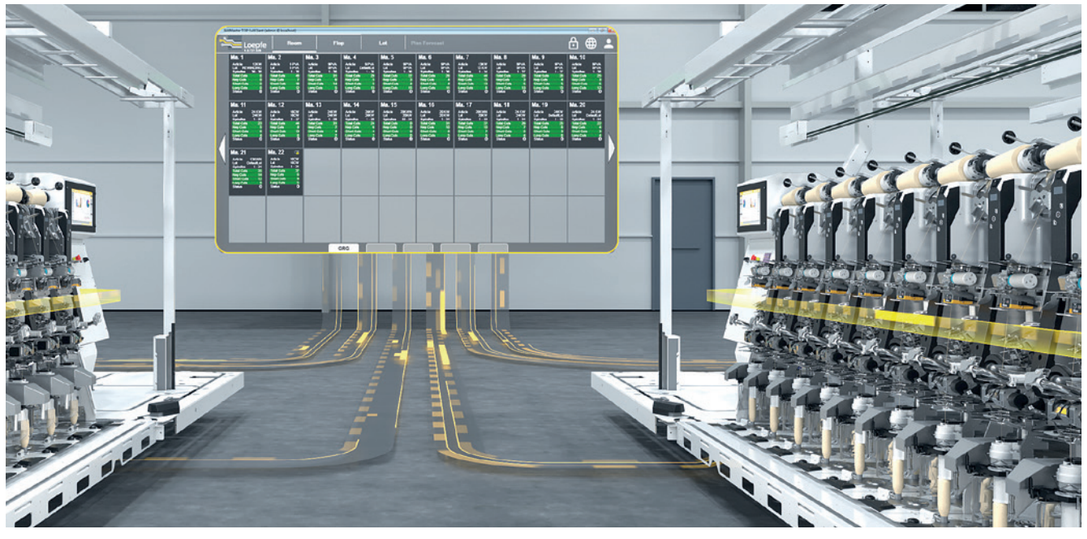
MillMaster® TOP

MillMaster TOP monitors YarnMaster PRISMA yarn clearer data online and in real-time. The data of all connected machines and winding units are combined and shown in value-added reports for fully optimized yarn production.

Loepfe's data management system provides a precise overview of the quality processes. The comprehensive reports allow for conclusions to be drawn regarding the entire yarn production process including raw material, preparation and spinning. The error sources can thus be located and quickly resolved. These targeted actions lead to optimized production, prevent costly maintenance and guarantee a consistent yarn quality.

Fully optimized process for profitable yarn production

- Informative and graphical reports for: Lots, shifts and intermediate shifts, spindles, groups, yarn counts, articles/lots, articles/shifts
- Trend analyses compare the output of different machines over time and ensure a continuous improvement of performance and quality
- Planning boards help achieve maximum efficiency with lot planning and winding machine scheduling
- Clearer assistant shows the influence of different settings with a precise cut forecast
- OffLimit reports display the worst performing spindles



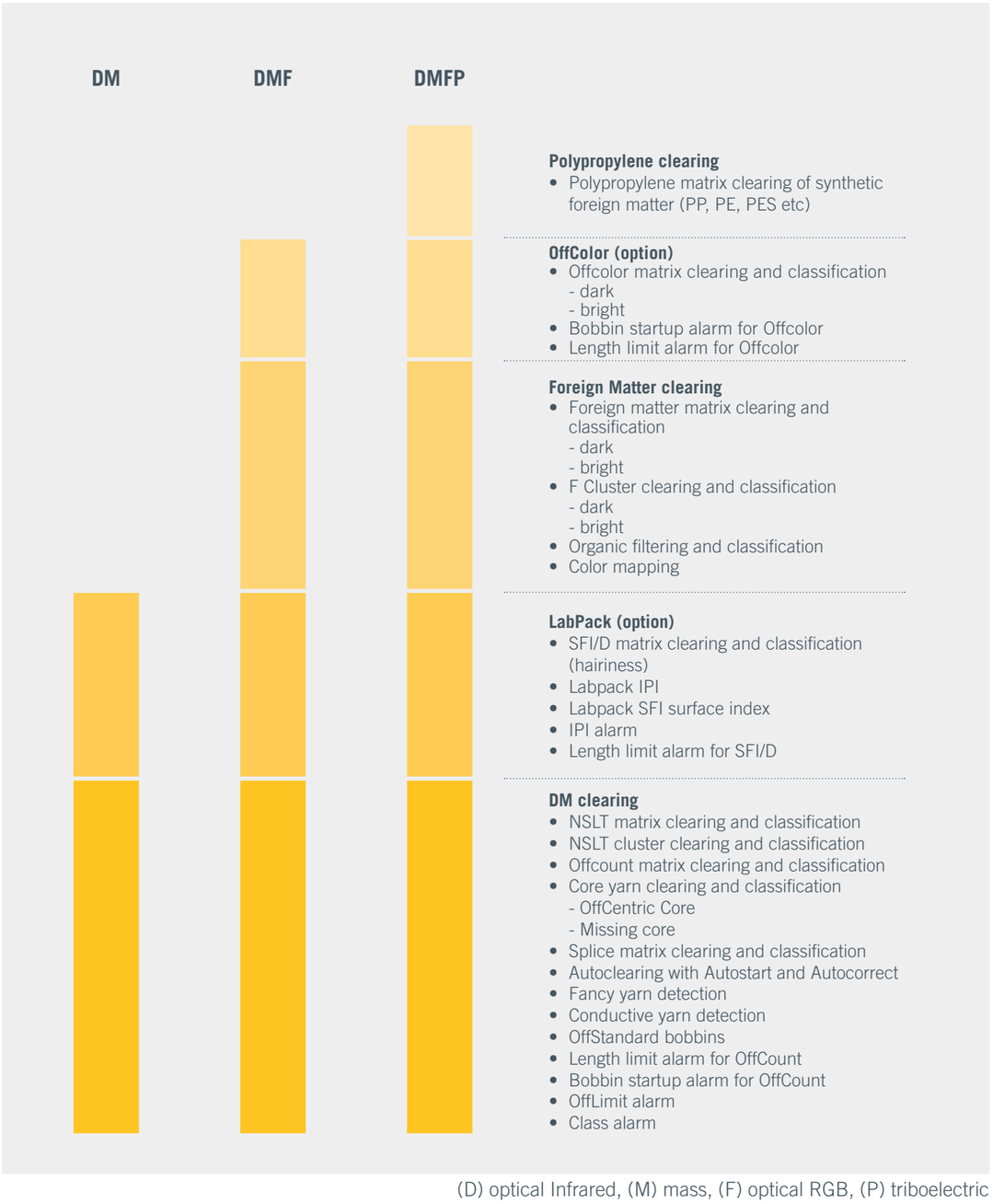
MillMaster TOP
Know-How

Functionalities

YarnMaster® PRISMA

Application range

- One sensing head covers it all
- For all staple fiber yarns (Cotton, natural fibers, synthetic, blend, mélange, fancy and core yarn)
- Yarn count: Ne 2.4 – 320, Nm 4.1 – 540
- For all splicer types
- Winding speed up to 2200m/min.



Polypropylene clearing
- Polypropylene matrix clearing of synthetic foreign matter (PP, PE, PES etc)

OffColor (option)
- Offcolor matrix clearing and classification
  - dark
  - bright
- Bobbin startup alarm for Offcolor
- Length limit alarm for Offcolor

Foreign Matter clearing
- Foreign matter matrix clearing and classification
  - dark
  - bright
- F Cluster clearing and classification
  - dark
  - bright
- Organic filtering and classification
- Color mapping

LabPack (option)
- SFI/D matrix clearing and classification (hairiness)
- Labpack IPI
- Labpack SFI surface index
- IPI alarm
- Length limit alarm for SFI/D

DM clearing
- NSLT matrix clearing and classification
- NSLT cluster clearing and classification
- Offcount matrix clearing and classification
- Core yarn clearing and classification
  - OffCentric Core
  - Missing core
- Splice matrix clearing and classification
- Autoclearing with Autostart and Autocorrect
- Fancy yarn detection
- Conductive yarn detection
- OffStandard bobbins
- Length limit alarm for OffCount
- Bobbin startup alarm for OffCount
- OffLimit alarm
- Class alarm

(D) optical Infrared, (M) mass, (F) optical RGB, (P) triboelectric

Loepfe Brothers Ltd.

The Pioneers

Since its establishment in 1955 Loepfe has been the pacesetter for innovation in textile quality control. Loepfe researches, develops and manufactures clever sensor systems in Switzerland to meet the needs of producers. Loepfe has excelled in sensor technologies for yarn and filament monitoring worldwide.

Today, Loepfe is considered worldwide as the specialist for integral quality control systems. Half of the worldwide staple yarn productions are monitored by Loepfe yarn clearers.

1955
First electronic weft monitoring in the textile industry

1963
First Loepfe yarn clearer

1991
Pioneer in the detection of foreign matter

1999
Pioneer in the detection of hairiness

2003
Pioneer in the detection of polypropylene

2019
Pioneer in simultaneous dual measurement and RGB technology for all-color foreign matter detection

Connect with the Loepfe world

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Loepfe is part of the Vandewiele Group. Providing cutting-edge technology and effective solutions for the textile industry. Machine manufacturers, as well as spinning and weaving mills around the world, rely on our innovation at the highest level. Quality made in Switzerland.

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Disclaimer: The YarnMaster® PRISMA system helps to improve yarn quality, the ultimate responsibility for the spinning quality lies with the spinner.
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