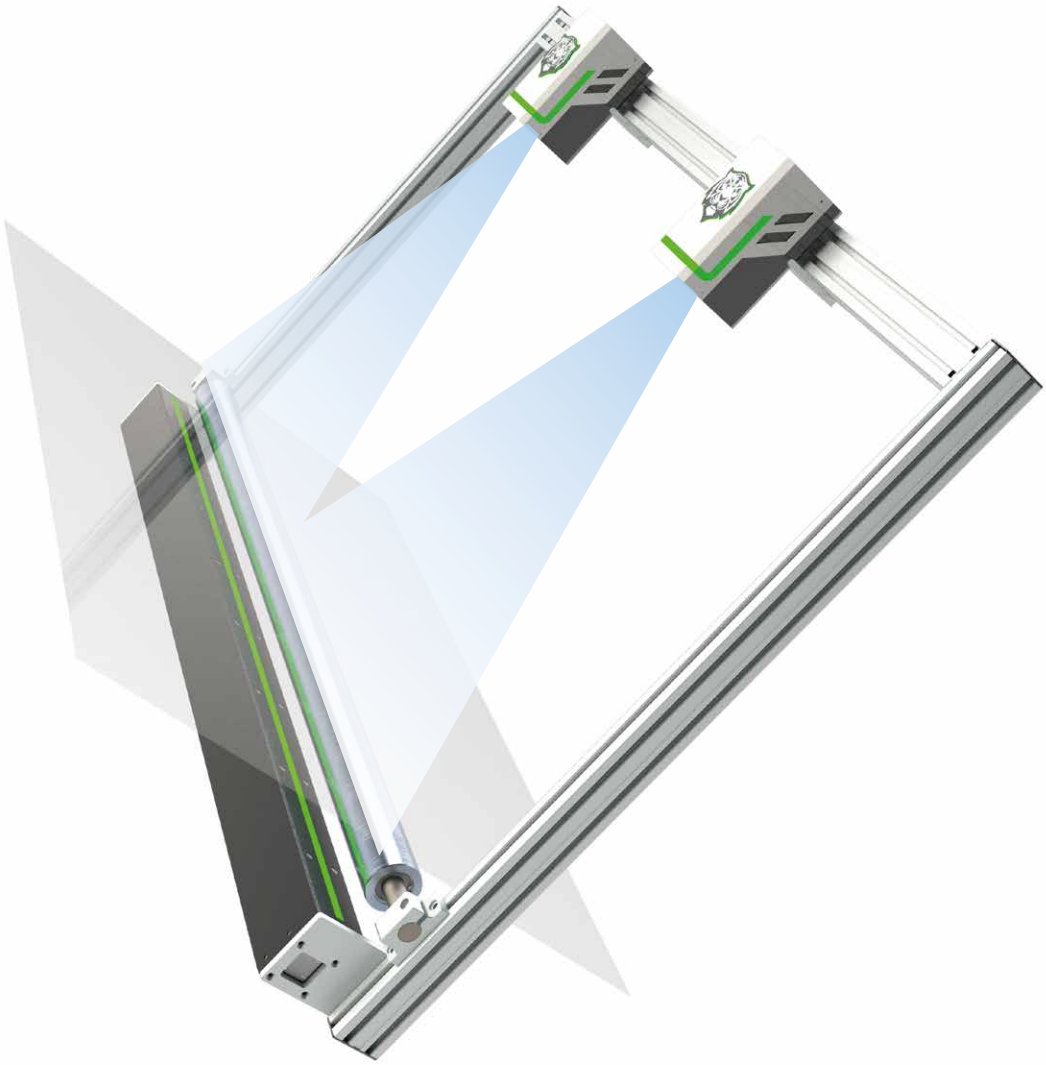
SYNCRO®

SYNCRO GROUP

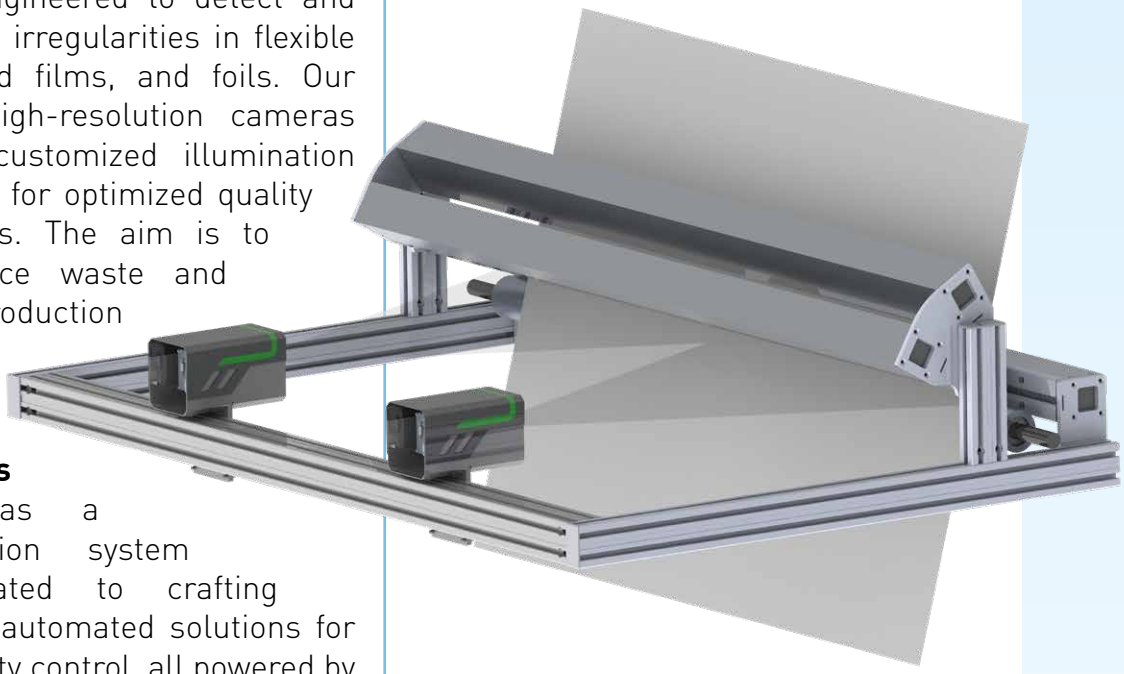
WEB INSPECTION SOLUTIONS



SYNCRO® GROUP

A quick and reliable detection and resolution of product defects in the early stages in the process, avoid the potential for them to escalate into costly issues

In 2022, **AceLabs** joined **Syncro Group**, and together, we have developed an **extensive range of optical control solutions**. These innovations are engineered to detect and qualify defects and irregularities in flexible films, sheets, rigid films, and foils. Our state-of-the-art, high-resolution cameras are paired with customized illumination hardware, allowing for optimized quality production controls. The aim is to substantially reduce waste and enhance overall production efficiency.



Established in 2006, **AceLabs** has emerged as a distinguished vision system integrator, dedicated to crafting advanced, tailored automated solutions for industry-wide quality control, all powered by cutting-edge artificial vision technologies. Our extensive expertise lies in leveraging the visual characteristics of monitored products to extract critical process insights. This includes assessing quality parameters, determining spatial object positioning, evaluating volume and surface area, and decoding text and codes with precision.

These encompass tridimensional surface reconstruction, non-contact measurement, verification of correct cutting and metal forming, continuous material monitoring (across materials such as paper, cloth, plastic film, rubber, sheet metal, and nanomembranes) in both 2D and 3D, robot guidance, packaging quality control, variable data printing verification, code reading and verification (including text, barcodes, and datamatrices), as well as ensuring the presence and correct installation of parts and components.

THE ADVANTAGES OF HAVING AN OPTICAL CONTROL SYSTEM

- **HARDWARE MODULARITY** - Multiple camera configurations are available based on the defect dimensions and process speed.
- **HIGH SCANNING SENSITIVITY** - The system supports various lighting technologies, such as incident light for reflection work and diascopic light for transmission work, operating simultaneously.
- **SIMPLE AND INTUITIVE INTERFACE** - Streamlined HMI control boosts productivity through real-time 2D process visualization and one-click statistical analysis reporting.
- **WIDE RANGE OF APPLICATIONS** - Different frames and hardware configurations are available to inspect any kind of transparent or opaque materials and can be installed on either production lines or converting lines. Examples are: Agricultural film, Technical film for packaging, Barrier film and Battery sheet film.
- **REPORTING** - Detailed inspection reports, meeting industry standards, enhance production understanding, increasing productivity, and reducing waste.
- **SIMPLE INSTALLATION** – With a slim and flexible mounting frame the system has maximum flexibility to be installed within an extrusion line (usually right before the winding section) as well as converting lines, helping guarantee excellent quality control through simple installation.
- **INDUSTRY 4.0 AND IoT** - The EYES's software suite is easy to interface with an ERP or production management software system, plus has remote database integration via Industry 4.0. Using standard communication protocols, inspection reports can be digitally transferred to downstream processes after the extrusion process.

EASYEYES

ZERO WASTE, TOTAL CONTROL

EasyEyes, the Optical Inspection System designed exclusively for quality control on plastic film surfaces, provides a standardized configuration.

It is ideal for both Blown and Cast film production lines with **speeds up to 300 mt/min and defect resolutions of no less than 250 microns**.

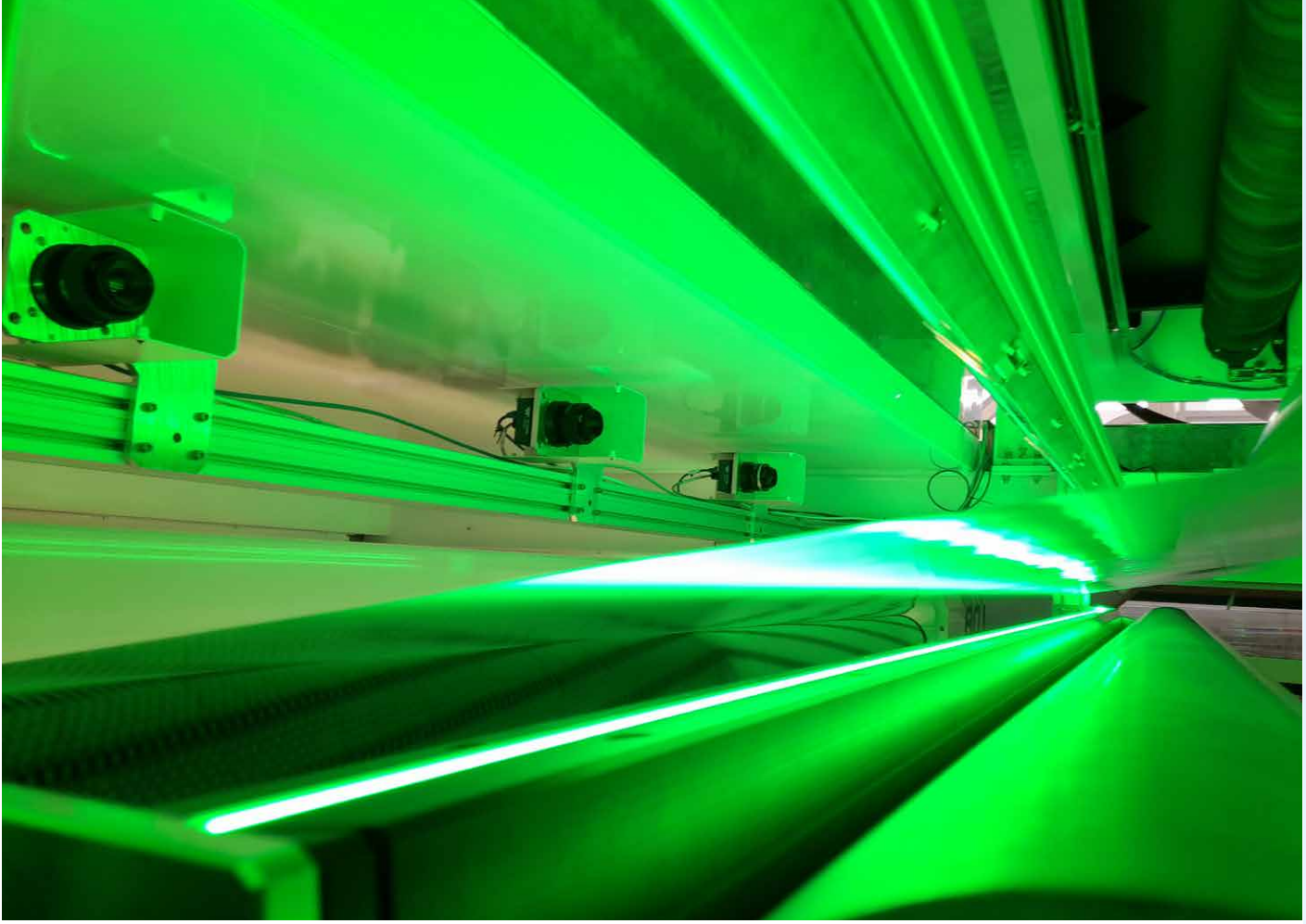
PROCESSES:

Burn material | Hole | Inclusion | Insect

Fish Eye | Paraffine | Bubble | Gel

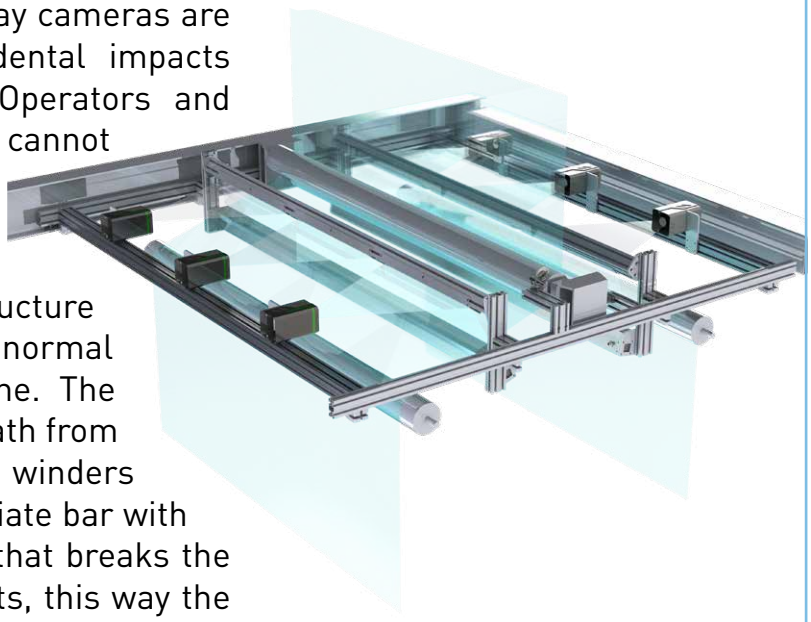
BLOWN FILM	WEB WIDTH	
	2000 mm	3000 mm
Qty of 4k Cameras needed	4	6
Qty of Backlight Illuminators	2	2
Max Line speed mt/min	300	200
Max Resolution Reached	250 µ	250 µ

CAST FILM	WEB WIDTH	
	2000 mm	3000 mm
Qty of 4k Cameras needed	2	3
Qty of Backlight Illuminators	1	1
Max Line speed mt/min	300	200
Max Resolution Reached	250 µ	250 µ



A NEW INNOVATIVE CONFIGURATION FOR BLOW FILM INSPECTION

The new Eyes solution integrates completely camera optical path just under the mezzanine floor, this way cameras are protected from both accidental impacts and environmental dust. Operators and machine movements cannot interfere with optical path so there is **no risk of false detections** and, at the same time, camera support structure does not interfere with normal work operations on the line. The problem of the very short path from blow film separation to the winders is solved using an intermediate bar with a special reflecting mirror that breaks the optical path in two segments, this way the inspection system can be installed on the line without any machine modification.



EYES

CUSTOMIZABLE HIGH PERFORMANCE

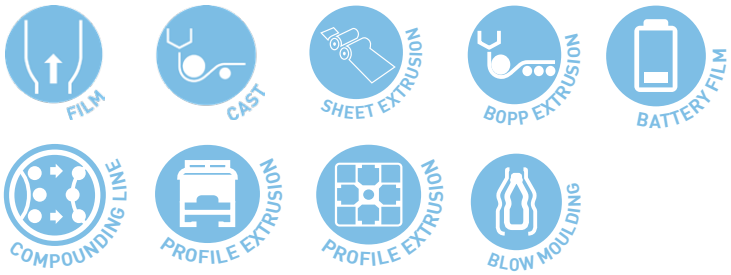
Eyes is our cutting-edge, fully **customizable** automatic visual quality inspection system designed for various applications.

Utilizing high-resolution cameras and multiple lighting configurations, including up to 3 illuminators, the system ensures 100% film scanning capability, accurately detecting and categorizing all common defects.

Eyes provides comprehensive defect mapping for each roll, allowing you to maintain complete control over your production.

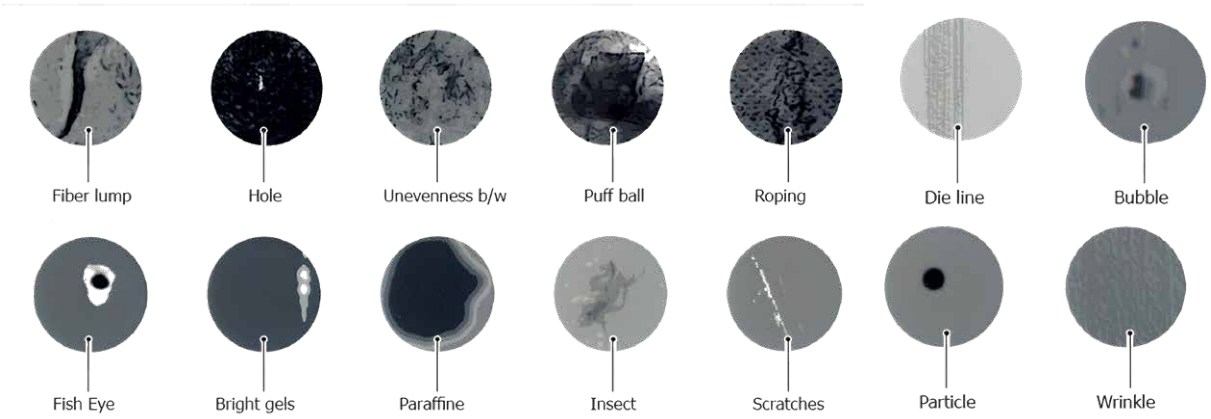
It is ideal for production lines **exceeding 300 mt/min speed and defect resolutions below 250 microns, up to 3 µ.**

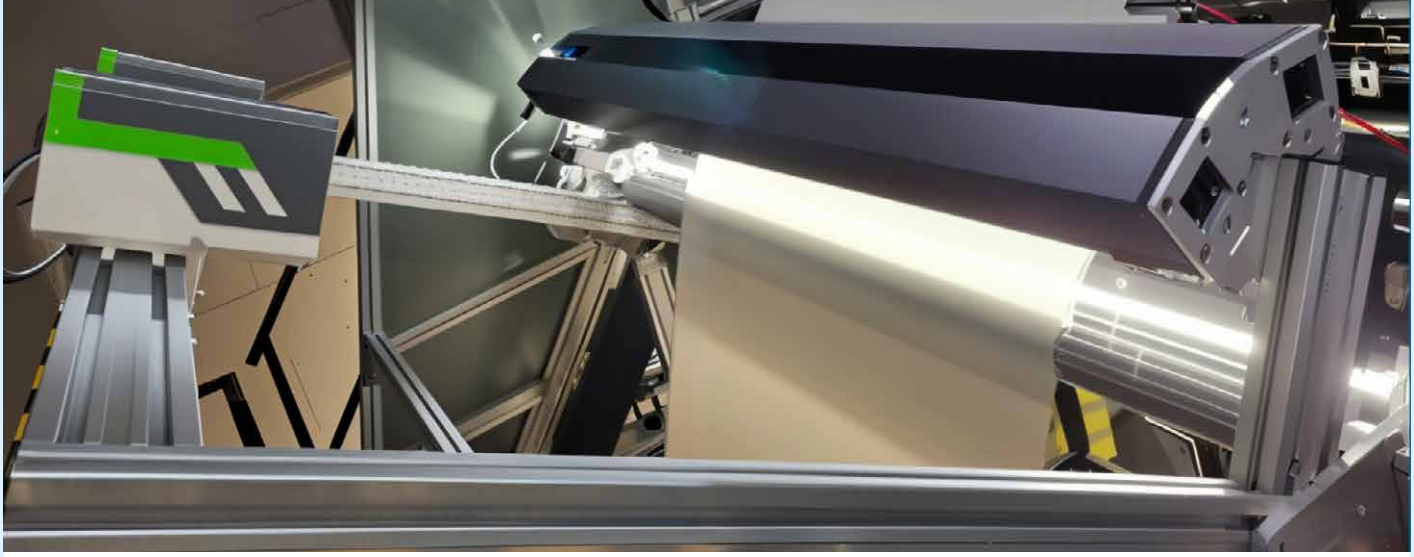
PROCESSES:



MATERIAL COLOR: Clear, Transparent, Translucent, White, Black, Coloured, Opaque

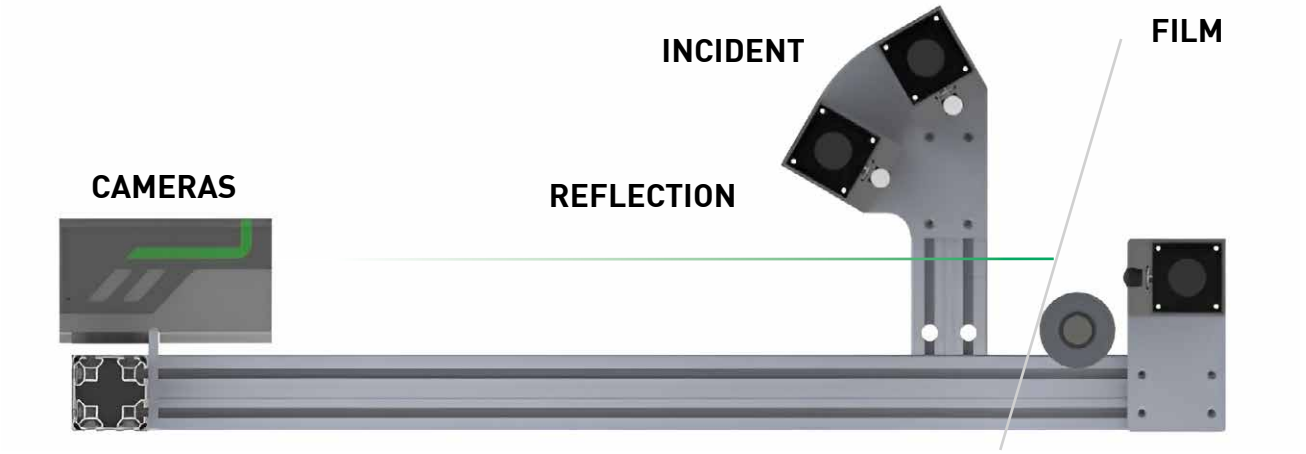
DEFECTS:





In standard applications, a single backlight illuminator suffices to detect all common film defects. Two additional types of illuminators for specific needs:

- The incident illuminator is essential for dark material and thick film production.
- The reflection illuminator is useful for detecting coating defects.



Defect Dimensions	Max Speed		Net Film Width				
	Single Lighting	Double Lighting	500 mm	1000 mm	1500 mm	2000 mm	2500 mm
25 µm	30 m/min	15 m/min	#3 x EYES-16K-LE	#5 x EYES-16K-LE	#8 x EYES-16K-LE	#10 x EYES-16K-LE	#13 x EYES-16K-LE
	200 m/min	100 m/min	#3 x EYES-16K-HE	#3 x EYES-16K-HE	#8 x EYES-16K-HE	#10 x EYES-16K-HE	#13 x EYES-16K-HE
50 µm	60 m/min	30 m/min	#2 x EYES-16K-LE	#3 x EYES-16K-LE	#4 x EYES-16K-LE	#5 x EYES-16K-LE	#7 x EYES-16K-LE
	400 m/min	200 m/min	#2 x EYES-16K-HE	#3 x EYES-16K-HE	#4 x EYES-16K-HE	#5 x EYES-16K-HE	#7 x EYES-16K-HE
100 µm	120 m/min	60 m/min	#1 x EYES-16K-LE	#2 x EYES-16K-LE	#2 x EYES-16K-LE	#3 x EYES-16K-LE	#4 x EYES-16K-LE
	800 m/min	400 m/min	#1 x EYES-16K-HE	#2 x EYES-16K-HE	#2 x EYES-16K-HE	#3 x EYES-16K-HE	#4 x EYES-16K-HE
200 µm	400 m/min	200 m/min	#1 x EYES-08K-LE	#2 x EYES-08K-LE	#2 x EYES-08K-LE	#3 x EYES-08K-LE	#4 x EYES-08K-LE
	>1000 m/min	>500 m/min	#1 x EYES-08K-HE	#2 x EYES-08K-HE	#2 x EYES-08K-HE	#3 x EYES-08K-HE	#4 x EYES-08K-HE
300 µm	200 m/min	100 m/min	#1 x EYES-04K-LE	#2 x EYES-04K-LE	#3 x EYES-04K-LE	#4 x EYES-04K-LE	#5 x EYES-04K-LE
	700 m/min	350 m/min	#1 x EYES-04K-ME	#2 x EYES-04K-ME	#3 x EYES-04K-ME	#4 x EYES-04K-ME	#5 x EYES-04K-ME
	>1000 m/min	>500 m/min	#1 x EYES-08K-HE	#1 x EYES-08K-HE	#2 x EYES-08K-HE	#2 x EYES-08K-HE	#3 x EYES-08K-HE
500 µm	700 m/min	350 m/min	#1 x EYES-02K-LE	#2 x EYES-02K-LE	#3 x EYES-02K-LE	#4 x EYES-02K-LE	#5 x EYES-02K-LE
	>1000 m/min	>500 m/min	#1 x EYES-08K-HE	#1 x EYES-08K-HE	#2 x EYES-08K-HE	#2 x EYES-08K-HE	#3 x EYES-08K-HE

EYESLAB

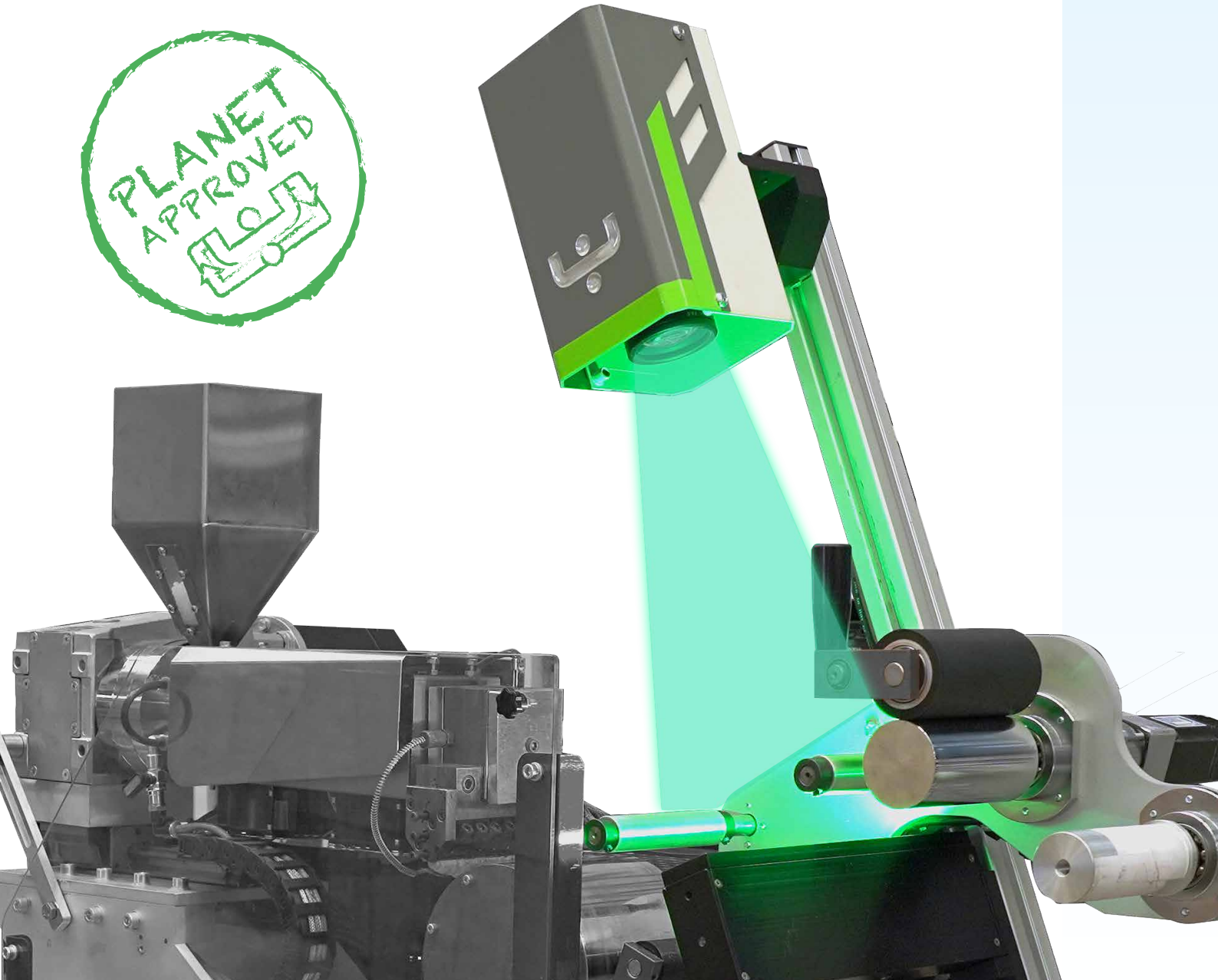
R&D MADE SIMPLE

The **EyesLab** system is available for laboratory machines.
With precision scanning across the entire material width (up to 100mm), our system features line-scan cameras boasting 4096-pixel resolution. Detecting defects as small as 50 µm, EyesLab ensures meticulous inspection at a remarkable scan resolution of 25 µm. Operating at a maximum speed of 10 meters per minute, it seamlessly integrates into workflows for enhanced productivity and accuracy.

It is studied and completely integrated in **Eurexma micro cast** /blown machines, but it can be easily installed in any other laboratory machine.

PROCESSES: FILM CAST

MATERIAL COLOR: Clear, Transparent, Translucent, White, Black, Coloured, Opaque

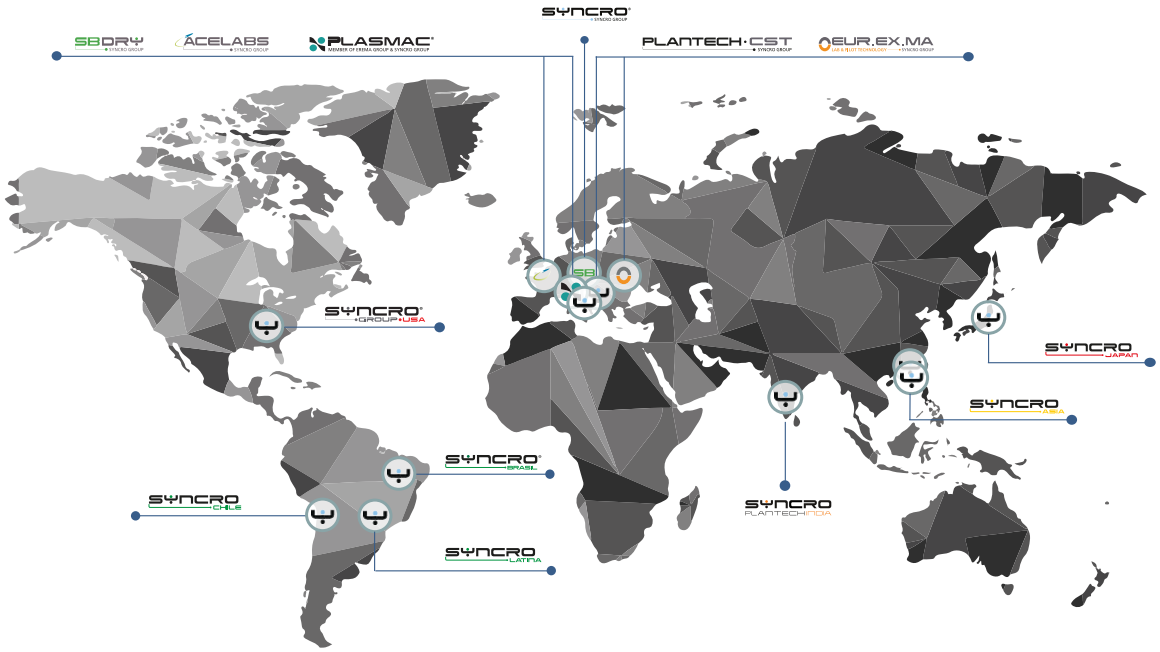


HMI

Eyes, **EasyEyes** and **EyesLab** catalogue and map every defect, displaying the image and location of the nonconformity on the interface within the coil. The inspection yields a comprehensive defect map of the coil, ensuring full control over production.

For the defect map browsing and post processing (ex. cropping in sub-reels) an off line application is available. This application can be installed on other office PCs with an extra license.

SYNCRO® GROUP



ACELABS SYNCRO GROUP → Web Inspection System (High Definition Cameras plus Illuminators for In-line Defect Detection

SYNCRO® SYNCRO GROUP → Raw Material Dosing Equipment, Automatic Air Ring, Film Thinckness Control Gauges and Relevant Automatic Control of Dies

PLASMAC® MEMBER OF EREMA GROUP & SYNCRO GROUP → In line compact Shredding and Pelletizing Extrusion/Recycling Machines

EUR.EX.MA LAB & PILOT TECHNOLOGY — SYNCRO GROUP → Laboratory and Pilot Plants for Any Plastic Processing Methods

PLANTECH·CST SYNCRO GROUP → Raw Material, Granules, Powders, Liquid and Flakes stock, Transportation, Feeding, Mixing and Dosing (including silos Big Bag Emptying Station and Automatic Controls)

SBDRY SYNCRO GROUP → PET Treatment, Drying and Dehumidification handling and transport, dosing and mixing, granulation

SYNCRO® GROUP

SYNCRO srl
Viale dell'Industria,19
21052 Busto Arsizio (VA)
Phone +39.0331.677716
Web www.syncro-group.com
E-mail info@syncro-group.com

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