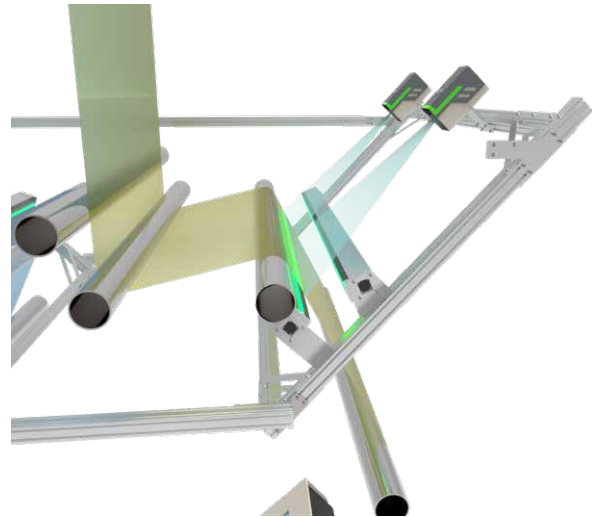# EYES

100% Visual inspection system for plastic film

Eyes is an automatic visual quality inspection system for plastic film extrusion. Thanks to the high resolution cameras and the different back lighting configurations available, the system can provide 100% film scanning capability, detecting and categorizing all of the commen defects known. EYES's provides film inspection with a complete mapping of defects detected within each roll. EYES allows you to always have your production under control.

FUNCTIONALITY

Eyes can be equipped with either a set of monochrome or colour linear industrial cameras which are scanning the entire film surface in real-time. The images captured by the cameras are processed via industrial PC's within the control system, upon detecting any defects, EYES catalogues and then maps these defects and displays the images on the operator panel.

PRINCIPLES OF OPERATION

HARDWARE MODULARITY

Multiple camera configurations are available based on the defect dimensions and process speed. EYES, thanks to the high-resolution cameras and the computing power of its latest generation processors can detect defects down to 25 µm, defects which would be undetectable to the naked eye, this level of accuracy is achievable even with line speeds of up to 1200 m/min.

HIGH SCANNING SENSI TIVITY

In order to identify and classify different kinds of defects, EYES can be equipped with a variety of different back-lighting technologies which all work simultaneously: for instance incident light for working in reflection or diascopic light to work in light transmission.

SIMPLE AND INTUITIVE INTERFACE

Intuitive HMI control panel to improve productivity through real-time process visualization with 2D mapping, this allows the operator to quickly view defect's quantity and density, categorization and position. The system provide process statistical analysis available in reports just by a click of a button.

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
• Tech nical fil m for packaging
• Barrier film
• Battery sheet film

REPORTING

Detailed inspection reports are generated which follow the recognised Industry Standards allowing for a thorough understanding of the production process, and hence increasing productivity and decreasing waste.
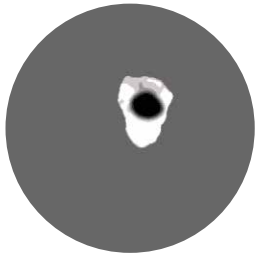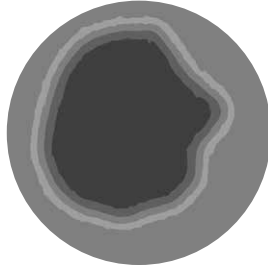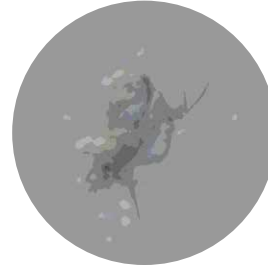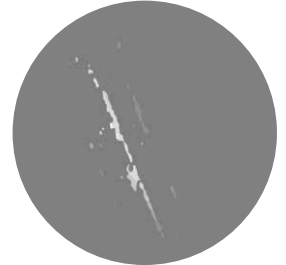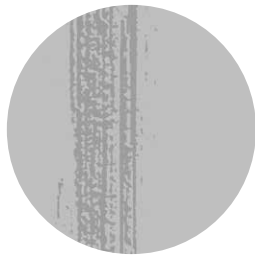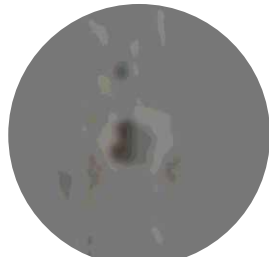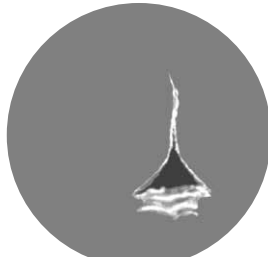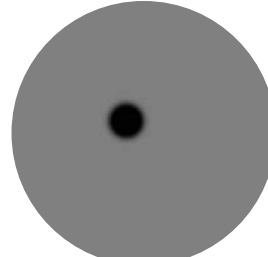
SIMPLE INSTALLATION

Thanks to EYES's slim and flexible mounting frames 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.

DETECTABLE DEFECTS

☐ Fish Eye ☐ Bright gels ☐ Paraffine ☐ Insect ☐ Scratches

☐ Die line ☐ Bubble ☐ Holes ☐ Particle ☐ Wrinkle

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	#5 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/min4	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/min3	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-04K-HE	#1 x EYES-04K-HE	#2 x EYES-04K-HE	#2 x EYES-04K-HE	#3 x EYES-04K-HE

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