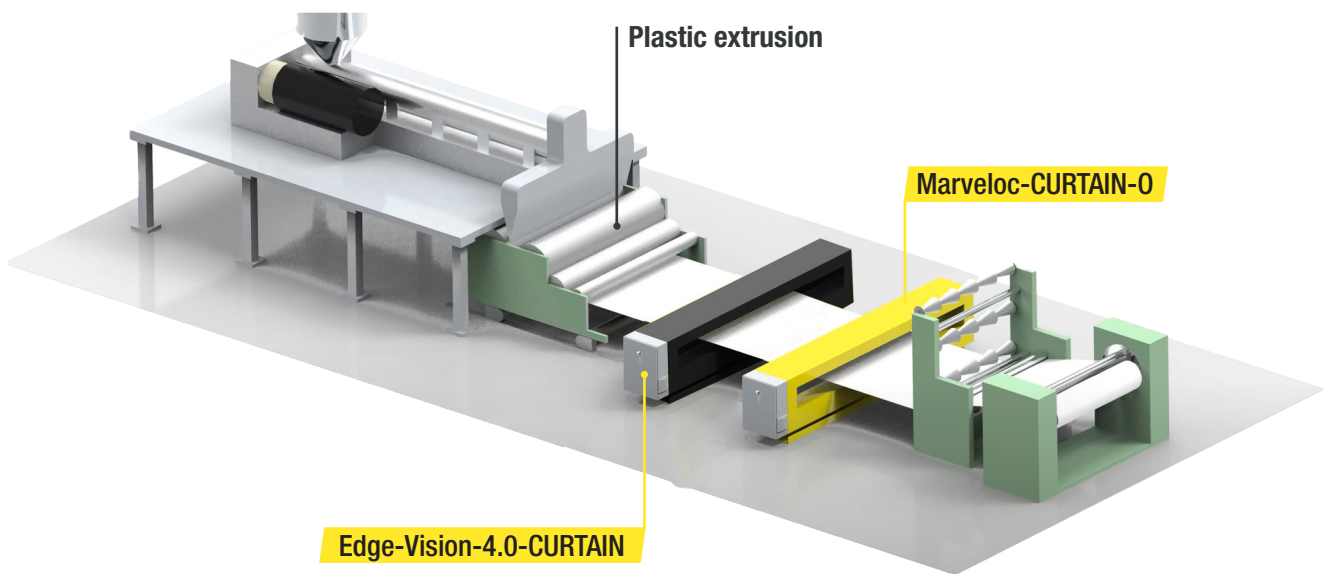




HAMMER-IMS

Sustainable

## Plastic quality control through inline optical defect detection and density/thickness measurement



### General benefits

- ✓ Optimize material usage and reduce costs
- ✓ Achieve consistent product quality
- ✓ Reduce manual inspections and interventions
- ✓ Minimize waste through real-time data
- ✓ Detect optical defects
- ✓ Comply with demanding tolerances and specs across plastic types



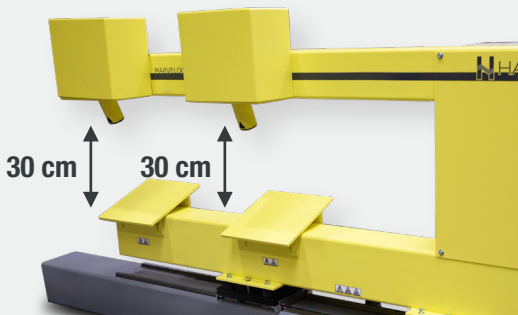
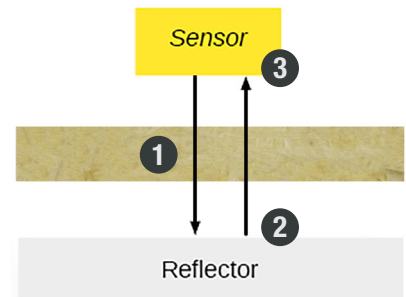
## Marveloc Sensor Technologies

We offer four Marveloc sensor technologies: M-Ray, L-Ray, C-Ray, and U-Ray. Each of these concepts has its own strengths and can be flexibly integrated into our measurement systems. This way, we always provide the right solution tailored to your specific needs and applications.

### M-Ray: millimeter wave sensor technology

The concept of our M-Ray technology for thickness measurement is straightforward: a sensor at the top sends out a millimeter wave. This wave goes through the material we want to measure. **1** When it reaches the bottom, it bounces off a reflector **2** and comes back up through the material once again. Finally, it reaches the sensor again, where we can capture it and analyze it. **3**

For **foam materials**, this principle provides accurate thickness measurement or can be used to provide valuable insights into the material's density.



### No damage with our measuring distance

The M-Ray's **high stand-off** capability enables fast, accurate measurements while keeping a safe distance from the material. This makes it perfectly suited not only for **thick and heavy** plastic sheets and films, but also for **corrugated and structured** materials. Even with significant surface texture, the M-Ray ensures precise readings while protecting surfaces from scratches and preventing sensor damage caused by fluttering lines or overheated materials.

### L-Ray: laser-based sensor technology

For **thickness control**, L-Ray laser-based sensors are integrated. By employing two opposing laser sensors, our system accurately measures insulation thickness with precision alignment. This integration allows for a complete analysis of the material's thickness profile.



L-Ray sensor



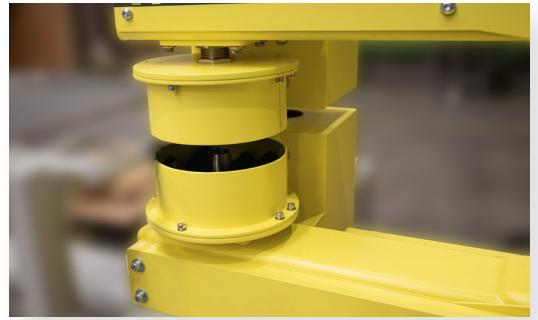
Marveloc-CHARIOT with C-ray

### C-Ray: capacitive sensor technology

C-Ray is a smart capacitive sensor for accurate thickness measurements, even with **transparent plastics**. Its compact design and precise readings make it ideal for thin-film extrusion lines, where space is limited and efficiency matters.

### U-Ray: ultrasound sensor technology

Our U-Ray technology is a perfect fit for the plastics industry, performing exceptionally well on **thin plastic films**, even when they **contain carbon** or **metallic components** that often disturb conventional measurement technologies.

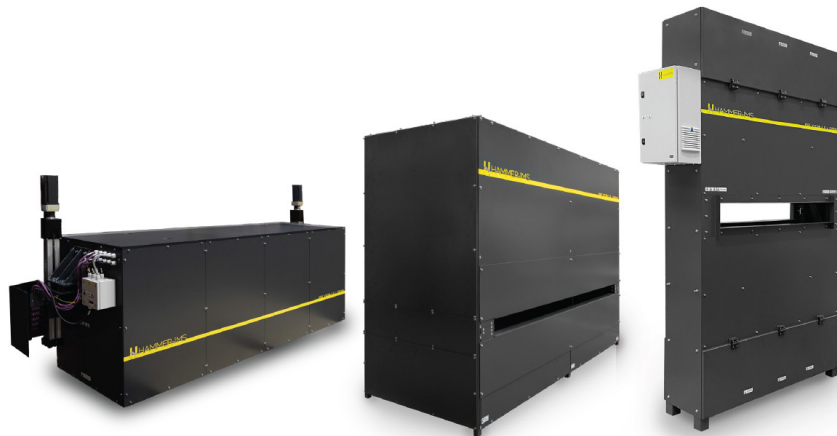


U-Ray sensor

## Surface Inspection

### Edge-Vision-4.0-CURTAIN

Our high-precision vision system is designed to optimize plastic extrusion processes. By continuously monitoring the film or sheet as it is produced, it detects defects, color variations, and cutting, slitting, or printing-related issues in real time. Its advanced imaging technology is especially useful for thin films and transparent plastics. Overall, Edge-Vision-4.0-CURTAIN helps ensure consistent, high-quality output while improving efficiency and cost-effectiveness in extrusion lines.



## Redefining quality control with sustainable measuring systems

Compared to older radioactive technologies, our systems are not harmful for the environment nor the operators handling the system. Moreover, when taking into consideration the licenses required to use traditional radioactive measuring technologies, Hammer-IMS systems do not require such licenses, making it a better total-cost-of-ownership solution.



Experience the benefits of radiation-free technology:

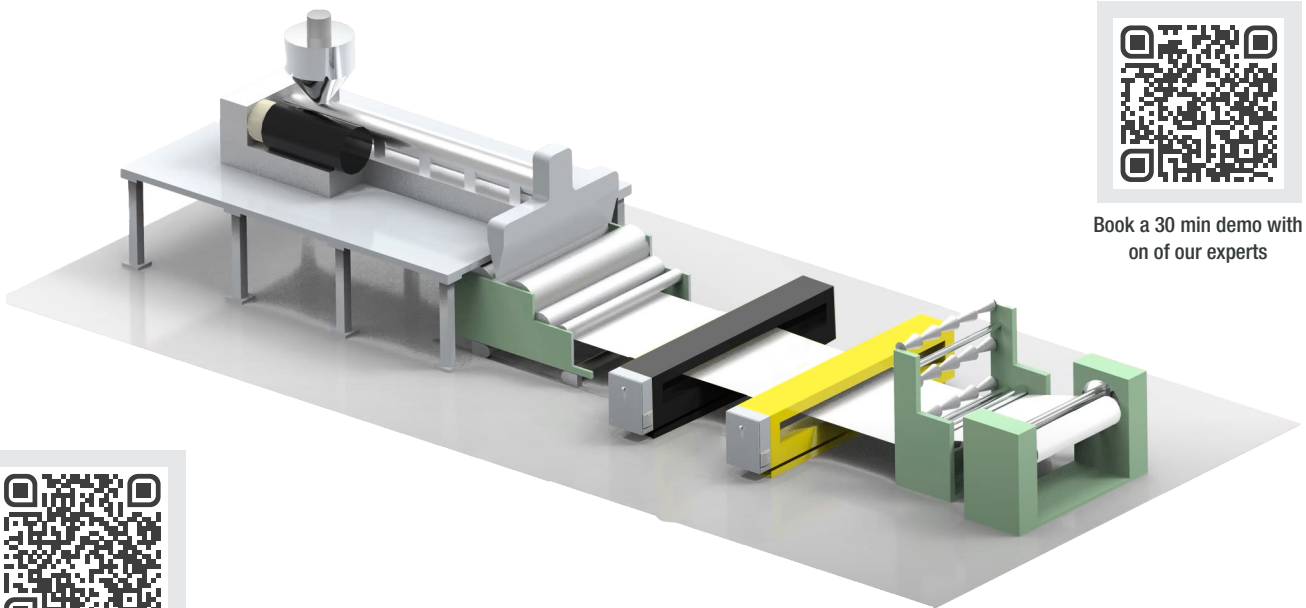
- ✓ **No Radiation, No Training, No Costs:** Our solutions require no specialized training or costly safety measures, ensuring seamless integration into your production process.
- ✓ **Elimination of Cooling Requirements:** Operate efficiently without the need for additional cooling, reducing energy consumption and maintenance overheads.
- ✓ **No Bulb Replacement Hassles:** Bid farewell to the hassle of bulb replacements, ensuring uninterrupted operation and cost savings.
- ✓ **Minimal Service Requirements:** Enjoy enhanced reliability and longevity, minimizing downtime and maximizing productivity.

## Different types of plastic

- ✓ Transparent and non-transparent plastics
- ✓ Cast films and sheets
- ✓ Extruded plastic sheets
- ✓ Synthetic foam extrusion
- ✓ Plastics with carbon or metallic components
- ✓ Artificial leather



## Trusted by industry leaders



Book a 30 min demo with  
on of our experts



Explore our wide-range  
product brochure



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