

## VARISORT+

Flexible sorting system for plastic bottles and trays

- Reliable detection and sorting of polymer types, colors, shapes, metals and foreign materials
- Flexible system configuration: sensors, working widths, illumination, two-/three-chute design
- Optional integration of FLASH technology for best detection of color and bottles with additives
- High system availability combined with only minimal cleaning and maintenance costs
- Profitable sorting process



## The challenge

Inconsistency in the availability and quality of input materials poses the biggest challenge for sorting processes in plastics recycling. Input materials of poor quality can often lead to

- Reduced material throughput
- Excessive loss of good material
- High degree of impurity in sorted material fractions
- Frequent downtime for cleaning and maintenance

Each of these factors decreases the efficiency, and thus from the profitability, of sorting and recycling processes.

## Performance characteristics

VARISORT+ offers an efficient, flexible, and profitable solution for sorting various material streams.

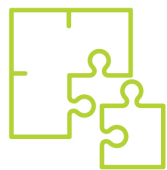
### Efficient

- Reliable detection and sorting of polymer types, colors, shapes, metals and foreign materials
- Material throughput rate up to 8 t/h
- Newly redesigned machine is optimized for high system availability, quick cleaning, and minimal maintenance
- Up to 99% removal accuracy for a high degree of purity in sorted fractions



### Flexible

- Combine up to three sensors (N = near-infrared, C = color/shape, M = metal)
- **NEW:** Optional integration of **FLASH technology** for best detection of color and bottles with additives
- Conveyor belt can be supplied by the customer or by the equipment manufacturer
- Range of working widths: 1024 mm, 1536 mm, 1920 mm, 2816 mm
- Optional **three-chute design** enables simultaneous sorting into three material fractions
- Subsequent sensor upgrades possible at any time



### Profitable

- Excellent sorting results, even with low-quality materials
- High system availability combined with only minimal cleaning and maintenance costs
- Flexible system configuration
- Profitable sorting process



## Sensor and software features

VARISORT+ has a modular design that allows for the combination of up to three sensors: C, M, and N. The **installation of additional sensors is always possible** at a later date.

### Color and shape detection (C-Sensor)

Color and shape detection (C) is carried out through a separate camera system, allowing for the sensor to be optimally configured for each sorting job. Innovative illumination options enable economical and process reliable sorting:

#### BASIC

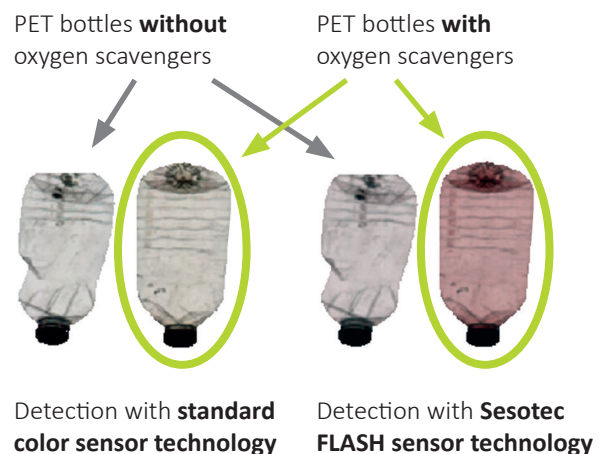
Color detection is carried out through a combination of the C-Sensor and the NIR-Sensor. This ensures **the most economical solution** as well as **the least maintenance**. This combination is ideal for heavily soiled material with many contaminants and after washing lines.

#### CLEAR

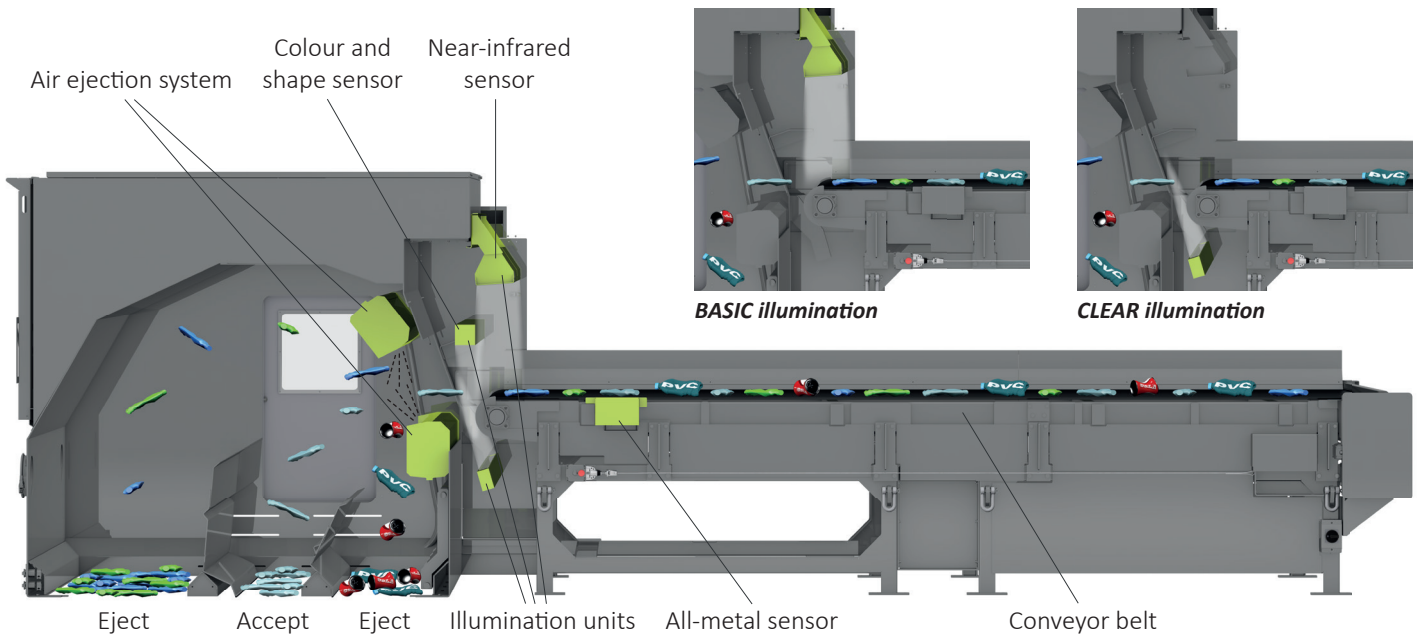
Color detection is carried out via a separate LED transmitted light unit, enabling **excellent object detection** as well as **highly accurate color differentiation** in transparent materials. This solution is ideal for sorting applications requiring precise color sorting with only minimal debris and labels.

#### FLASH

Both a top light and a transparency unit are used for color detection, **combining the advantages of both systems**. A **special lighting and camera device** is installed, enabling the system to recognize even the most challenging materials, such as **difficult-to-distinguish colors** (e.g. opaque, opaque white, silver, and light gold) and **functional materials** (e.g. barrier bottles, additives, TiO<sub>2</sub>).



# Function description



## Function description VARISORT+ with **FLASH illumination**

### Metal detection (M-Sensor)

The Sesotec all-metal sensor (M) reliably detects even the  **tiniest metallic contaminants**, regardless of their magnetic properties.

### Polymer type detection (N-Sensor)

The Sesotec NIR-Sensor (N) makes use of **high-resolution spectral analysis**, setting the standard for precise differentiation of polymer types. In addition to **reliably identifying main materials** (e.g. PET), the NIR-Sensor also detects **labels** (e.g. PET+PVC) and **specialty materials** (e.g. PET-G, PET trays, flame retardants, LDPE, and HDPE). As a static sensor with no rotating parts, there is **no risk of mechanical wear**.

### Additional features

VARISORT+ is operated via **touchscreen with intuitive controls** that allow for quick and easy configuration. The **intelligent operating software SesoDesk uses Octa-Core technology** to carry out parallel signal processing of all sensor data, enabling the greatest possible flexibility even in the most challenging sorting jobs.

The **optimal synchronization between conveyor belt and air ejection system** with the integrated high-speed valves ensure reliable separation of the different fractions. An integrated reservoir of treated and compressed air keeps the valves fully operational at all times. The entire system is fine-tuned according to optimum values for air pressure and energy usage.

## VISUDESK visualization software

With optional VISUDESK visualization software, you can **see all process and usage data from your Sesotec sorting and metal detection devices in one comprehensive dashboard**. This is possible by means of an **OPC UA machine communication protocol** implemented in each device as well as your company server. The **browser-based interface** is **accessible both on desktop and mobile**.

This dashboard provides a **comprehensive overview of your entire sorting line** as well as information about **specific groups of devices**, enabling you to **quickly create equipment configurations** and **automate product changes**.

Seamless backwards compatibility is possible via established VISUTEK protocols. **Customizable e-mail and text alerts** keep you informed about critical developments in the machine status.

## Service

### Remote Access

Problems on machines can often be remedied via remote access. Sesotec service technicians have direct access to your machines via Ethernet connection and can carry out error analysis, optimization and parameter settings. Many of our devices offer this functionality as standard.



### Remote Support with Augmented Reality

Pictures tell more than a thousand words - and in addition to telephone support and remote access, Sesotec also offers video support with augmented reality. For video support, you simply download a free app on smartphone / tablet and send us the access data. Our support center will then guide you through the troubleshooting process step by step until the incident is solved.



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