PURITY SCANNER

Inspection and sorting system for plastic pellets
The purity of advanced materials, as they are used in medical technology, semiconductor manufacturing, film extrusion, aerospace and automotive industries as well as the production of medium, high and extra-high voltage cables is a decisive characteristic for the quality of the final product. Therefore, in the chain from production to use, the purity of the plastic granulate is of the utmost priority.

With the PURITY SCANNER, SIKORA provides an unrivaled, user oriented system for 100% online inspection with automatic sorting of plastic pellets at all process levels.

**PURITY SCANNER:**
Unique combination of X-ray and optical technology
The PURITY SCANNER intelligently combines X-ray technology with a dual-axis optical system. This combination assures the detection and sorting of pellets with metallic and organic impurities inside the pellet as well as on its surface. Thus, colored (e.g. black) pellets are reliably inspected. Contaminated pellets are detected and automatically sorted out.

Depending on the application and type of the expected contamination, the client decides if the system will be equipped with X-ray and optical technologies or exclusively with optical technology for material inspection.

**PURITY SCANNER ADVANCED:**
More flexibility for all requirements
The PURITY SCANNER ADVANCED also combines X-ray and optical technologies and detects contamination inside and on the surface of the pellet. Interesting is the flexible adaptive camera concept. Depending on the type of the expected contamination and application, the system can be equipped with different cameras. The concept detects cross contamination by means of color cameras. The user can tailor the system to his requirements with up to five cameras.

A strong competitive advantage
Both the PURITY SCANNER and PURITY SCANNER ADVANCED are specifically tailored to the requirements of the plastics industry. They ensure a constant material quality, minimize the risk of possible claims and eliminate returns due to contaminated material, resulting in a strong competitive advantage and a quick amortization.

**Your benefits**
- Ensures a constant material quality
- Recovers off-spec batches
- Minimizes the risk of claims
- Specifically tailored to the plastics market
- Secures a strong competitive advantage

**X-ray and optical inspection and sorting**

- **Contaminated material**
- **Clean material**

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**PURITY SCANNER**
Pure Material. Best Quality.
PURITY SCANNER
Inspection and sorting ensures material quality.

1. Material feed
2. Transport system
3. X-ray inspection
4. Optical inspection
5. Sorting unit
6. Rejected material
7. Clean material
Innovation: PURITY SCANNER ADVANCED
Flexible camera options for all requirements.

1. Material feed
2. Transport system
3. X-ray inspection
4. Optical inspection
5. Sorting unit
6. Rejected material
7. Clean material
8. Additional optical inspection
(PURITY SCANNER ADVANCED)
9. Color camera
(PURITY SCANNER ADVANCED)
### PURITY SCANNER or PURITY SCANNER ADVANCED

The perfect match for your application.

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Innovative transport system
The pellets are fed into the system through a sealed vibration feeder. In order to ensure highest purity, all materials that get into contact with the pellet stream, are made of stainless steel or PE, perfectly encapsulated and designed to operate with overpressure.

Integration of the system in the production line
Due to their compact dimensions and low construction height, the systems are easy to integrate into any new or existing production line. The devices are designed for throughputs from a few kilograms up to several tons per hour*.

Cleaning Concept
When designing the PURITY SCANNER/ADVANCED, it was of the utmost priority that dust cannot penetrate the device from the outside. However, the device can be opened and cleaned easily.

Application Cleaning Concept
Alternatively to cleaning, it is also possible to quickly exchange the complete transport system with a clean system.

This functional Cleaning Concept was specifically developed for customers who process different materials or colors and clean the system when changing the material.

* see technical specification
Visualization and analysis
The PURITY SCANNER/ADVANCED is combined with a powerful processor system. In the production line, the Professional Data Analysis Management is comfortably operated via the processor system. An additional user interface is not required.

Professional Data Analysis
The Professional Data Analysis Management (PDAM) provides a statistical evaluation of detected contamination, sorted by size and frequency, as well as an image gallery of the pellets that have been detected by the optical and color cameras as well as the X-ray camera.

All data are automatically saved and available in MS Excel format as well as an image file together with information such as time and batch number.

All features at a glance:
- Image gallery of detected pellets with contamination
- Provision of statistics about size and frequency of detected contamination
- Trend overview for visualizing the chronological sequence
- Selection of size classes
- Automatic data storage

Monitor image of detected faults by the PURITY SCANNER ADVANCED:
- Color variations detected by color camera
- Metallic contamination detected by X-ray camera
- Other optical, visible contamination
- Black specs in/on transparent pellets detected by optical cameras

Monitor image of detected faults by the PURITY SCANNER:
- Metallic contamination detected by X-ray camera
- Black specs/yellow discolorations detected by optical cameras

Size class trend of contaminants detected by optical cameras

Size class trend of contaminants detected by X-ray camera
Technical Data

PURITY SCANNER

Application Fields
- Material production
- Granulate production
- Compounding/Masterbatch
- Plastics processing
- Extrusion
- Outsourced sorting

Inspection Methods/Sensor Technologies
PURITY SCANNER: X-ray and optical cameras
PURITY SCANNER ADVANCED:
X-ray, optical and color cameras

Smallest Detectable Contamination Size
X-ray: 50 μm (cube 3D), 50 x 50 x 50 μm
Optics: 50 μm (square 2D), 50 x 50 μm

Throughput
Depending on geometry and specific weight of the material to be inspected, there are throughputs possible from a few kilograms up to one ton/hour* per device. A combination of devices allows for the inspection and sorting of higher throughput capacities.

Permissible Ambient Temperature
+ 15 to + 45 °C

Air Humidity
max. 95 % (without condensation)

Interfaces
RS232, USB
Optional: industrial fieldbus (e.g. Profinet IO, EtherNet/IP, Profibus-DP, CANopen, DeviceNet), LAN, OPC DA/UA

Power Supply
3 ph 400 V AC (± 10 %), 50/60 Hz (± 3 %); 2,700 VA
Compressed air supply: min 6 bar / max. 8 bar / Air quality class 3 (ISO 8573.1)

Dimensions
PURITY SCANNER: 1,958 x 1,012 x 641 mm
PURITY SCANNER ADVANCED: 2,068 x 1,499 x 641 mm
(width x height x depth)

Technical data is subject to change

Company Profile SIKORA AG

SIKORA is a manufacturer and global supplier of innovative measuring, control and testing devices for the wire and cable, hose and tube, sheets, metals as well as optical fiber industries. Furthermore, SIKORA produces and provides inspection, analysis and sorting technology for the plastics industry. The product range includes X-ray and laser devices for the measurement of diameter, eccentricity, ovality and wall thickness, spark testers for the detection of insulation faults, lump detectors for the detection of faults on the product surface, and capacity measuring systems as well as devices for precise length measurement and temperature control.

The measuring and control devices as well as the inspection, analysis and sorting systems for plastic materials are exclusively manufactured at the headquarters in Bremen, Germany. With more than 250 employees worldwide, 14 offices and more than 30 regional representatives all over the world, SIKORA provides customers with innovative product solutions and individual service. Innovation, product quality and customer satisfaction define the daily activities at SIKORA.

* This refers to a system with optical inspection. Systems that combine optical and X-ray technology provide a throughput up to 600 kg/hour per device.