

Press Release

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UNISENSOR is presenting a revolutionary plastic sorting system for the first time at K 2016

POWERSORT 360 sorts black plastics at 10 tons per hour

POWERSORT 360 separates different types of plastic – regardless of their color – with an exceptionally high throughput of up to 10 tons per hour. This is made possible by a unique technology and a revolutionary machine design. The main field of application is the processing of shredder fractions with a high percentage of black plastics.

Black and dark plastics place the highest demands on plastic separation. They are commonly found in electronic waste and in the automotive industry and they quickly push conventional technologies to their limits. For profitable recycling a separation into the different plastic types is crucial.

Flexible sorting system for all types of plastic with grain sizes of 15 to 75 mm

The POWERSORT 360 sorting system takes over this challenging task. Plastics can be detected in any stream using this new system. This ensures that mixed material streams can be split into fractions of ABS, PS, PC-ABS, PP, etc. or be cleaned of unwanted plastics such as PVC. Contaminants such as wood, rubber, glass, rocks and metal can also be separated.

The black materials do not need to be separated from the colored materials and the material stream does not need to be presorted in any other way. Upstream regrinding of material is also eliminated. The system can process shredder fractions with grain sizes of 15 to 75 mm directly.

Unique sorting technology – laser spectroscopy

The detection method used has been tried and tested for plastic sorting applications. As the big brother to the POWERSORT 200 system, which is well-established in the area of PET flake sorting, the POWERSORT 360 also analyses material streams using laser spectroscopy – a unique technology in plastic sorting. The system uses a powerful laser light to excite the molecules in the plastic parts. Then, the light spectrum that the individual parts are emitting is analyzed.

Each material has a specific spectrum, i.e. a specific physical fingerprint, which acts as a unique identifier. The optical design with a powerful laser light source and an extremely high signal processing speed ensure that one million spectra can be generated and evaluated every second.

8 high performance sorters in one machine

The special geometry of the system combines eight high-performance sorters

Contact Person
Oliver Krieg (Marketing)

Contact UNISENSOR
Am Sandfeld 11
76149 Karlsruhe, Germany
T +49 (0)721 97884-0
F +49 (0)721 97884-44
o.krieg@unisensor.de
www.unisensor.de

in a single machine, which makes the best use of the laser system and the sensor technology. It consists of eight segments arranged in a circle. The high-energy laser system and the sensor system technology are located in the center of this circle. Together, the eight segments create an effective material scanning width of four meters. Up to eight different sorting tasks can take place simultaneously using these segments. To do this, the stream is guided over multiple segments in series. Alternatively, the plastic stream can run across all eight segments in parallel with a very high throughput up to 10 tons per hour.

High sorting quality, efficiency and flexibility

Thanks to its compact, rotationally symmetric design the system has a small footprint of less than 20 m². Factors such as potential moisture, dust, different grain sizes, the varying material densities of one plastic type and colors have no influence on efficiency. The system offers excellent sorting quality and efficiency as well as a high throughput. It is highly configurable and can be adapted exactly to customer-specific sorting tasks.

World Premiere at K 2016

UNISENSOR will be presenting POWERSORT 360 for the first time ever at K 2016 in Düsseldorf, Germany, at stand C24 in hall 9.

About UNISENSOR

UNISENSOR Sensorsysteme GmbH specializes in the development and production of innovative, optoelectronic measuring systems and machines. The company's product portfolio includes worldwide patented systems for the recycling, beverage, gas and printing industries.

Over 25 years ago, Prof. Gunther Krieg paved the way for extraordinary innovations with the founding of the company and his many years of experience in the field of optoelectronics and sensor technology. Since then, a team of highly skilled employees, in close collaboration with the industry and technical colleges and universities, has been developing groundbreaking technical solutions and products that are used around the globe and set new standards in process technology.

Additional information can be found at www.unisensor.de