

01

Vision Processing Excellence

The UCY F-series Flake Sorter sets a new benchmark in PET flake sorting performance. Equipped with three ultra-fast 4K cameras, the system captures exceptionally detailed images at high speeds, ensuring unparalleled accuracy in detecting and classifying PET flakes.

These advanced cameras are complemented by a specially engineered multispectral LED lighting system, developed entirely in-house by UCY Technologies. This innovative illumination technology significantly enhances the visibility of typical features of input constituent materials in PET applications, enabling precise differentiation between contaminants such as additives, foreign polymers, and color variations in PET in real time even at the highest throughputs. It is also maintenance free for years on end — ensuring consistent performance without the need for regular expensive spare parts for the optical system, greatly improving your ROI.

Unlike generic sorting systems designed for multiple applications, the optical system of the UCY F-series Flake Sorter is purpose-built exclusively for PET sorting, ensuring optimized performance without compromises.

02

Cutting-Edge Artificial Intelligence

At the heart of the F-series Flake Sorter is an advanced artificial intelligence system designed to continuously learn and adapt in real-time. This sophisticated AI software rapidly analyzes visual data from the high-resolution imaging system, accurately classifying flakes of different polymer types, colors and shapes.

Thanks to UCY Technologies' proprietary machine-learning algorithms, the sorting system seamlessly adapts to changing input conditions, maintaining consistently high accuracy and throughput all without requiring any manual intervention for the likes of calibration, white balance or similar tasks that can be error-prone in practice. This results in superior sorting quality, reduced downtime, and greater efficiency — setting new industry standards in PET recycling.

03

The Recycler's Experience

UCY Technologies was founded on the vision of improving on the state of the art in plastic recycling. As part of the larger UCY Group and close associate of the German STF Group, we know the ins and outs of the recycling business including all the issues running entire production lines ourselves. That is why we set out to eliminate as many typical frustrations as possible, creating a seamlessly integrated and reliable machine that we are proud to use in our own lines as well as offer to our customers.

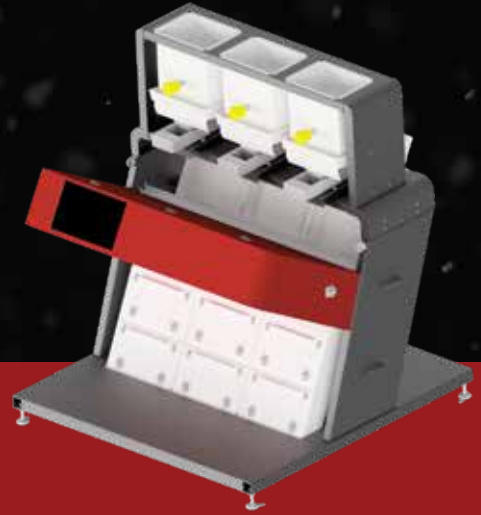
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Technical Data

UCY F-series Flake Sorter



> STANDARD SETUP

- 3 sorting tracks of 480 mm width each
- Colour, polymer as well as additive detection are always included

> COMPRESSED AIR SUPPLY

- In accordance with ISO8573-1:2010 classes of at least [7:4:4], lubricated operation possible
- Operating pressure typically 6 bar

> COOLING AND ENVIRONMENT CONDITIONS

- 1200 W external liquid-to-air chiller included; existing customer chiller may be adaptable
- Operating temperature: + 5 ... +40 °C
- Relative humidity: 5% - 95% (non-condensing)

> DIMENSIONS AND POWER SUPPLY

WIDTH LxWxH [MM]	2000 x 2000 x 2300
POWER INPUT	230 V, 50 Hz 32 A

> FEATURES

- Multispectral fluoro-activating lighting unit
- AI-based classification with continuous training and adaptation to current input conditions
- Resort Track (different sorting profiles across the width of the conveyor belt)
- 4G/5G modem for standalone remote access

> INTERFACES / PLC STATE SIGNALING

- Internet connection is optional and recommended
 - Obligatory for remote support via VPN as well as Cloud-based features
 - Connection either via Ethernet to customer's network or alternatively via a built-in 4G/5G modem (extra fees may apply in the latter case)
- Options for signaling of machine state to PLC
 - Two output bits (SORTING ACTIVE and ERROR) and one input bit (ENABLE SORTING) signaled via OPC UA over Ethernet
 - Protocol alternative: EtherCAT
 - Integration of other fieldbus systems and customized SCADA integration possible on request

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