



SORTING YOUR IDEAS

# Sensor-based Optical Sorter Plastic Recycling



Lauffer Asia-Pacific AI Optical Sorter Innovation Center  
Lauffer Vision Technology Co., Ltd.



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# About Lauffer

In 2017, the Intelligent Industry Manufacturing Fund led by HFM group (a Chinese stock listed company, Stock Code:603011) acquired 100% of the shares of Lauffer, a German company with a history of over 150 years, and was approved by the relevant departments of the German government. Based on the respective advantages of Germany and China in the mechanical design and artificial intelligence, Lauffer Vision was formally established in August 2018 after nearly half a year of preparation.

Lauffer Asia-Pacific AI Optical Sorter Innovation Center (Lauffer Vision Technology Co., Ltd) is located in Hefei, Anhui, the capital of science and technology in China. The brand new innovation and assembly facility of Lauffer Vision was officially put into use in May 2023. At present, Lauffer Vision has gathered the most competitive R&D, manufacture, sales and service elite teams in EU and China, and is committed to satisfying the variety of optical sorting requirements and user experience.



## 1872

In 1872, Johann Martin Lauffer laid the foundation for today's company with the establishment of a locksmith and mechanical workshop in Mühlen am Neckar. The young company on the edge of the Black Forest specialized in the maintenance and sale of agricultural machinery.



## 1914

In 1914, Ernst Lauffer (sen.) as well as Gottfried and Wihelm Lauffer, the 2nd Generation of the Lauffer family took over the management of the company in Mühlen am Neckar.



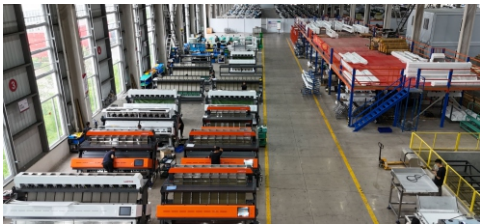
## 1949~1983

In the post-war period from 1949 to 1983, the Lauffer company developed rapidly. Under the leadership of Ernst and Richard Lauffer the product range was extended. Because the space in the original factory in Mühlen could no longer support the growth of the company, the year 1976 marked a further milestone when the company moved to its new production and administration facility in Horb am Neckar.



## 2018

In 2018, the strategic partnership and cooperation with the Chinese HFM Group is announced and implemented. Christof Lauffer and Markus Oechsle continue to form the management team of the company. Prof. Dr. Yan Jianwen, Chairman of the HFM Group, is appointed Chairman of the new Supervisory Board. Meanwhile, Lauffer Aisa-Pacific AI Optical Sorter Innovation Center has been established in Hefei, China with annual manufacturing capacity up to 4000 sets of optical sorting machines.



## 2023

On the occasion of Lauffer Vision's 5th birthday, the brand-new innovation and assembly facility was officially put into use in May 2023, and the annual turnover increased by more than 50% in the same year, marking a new milestone in the company's development.

### Our technologies

 Visible Light Technology	 Infrared Technology
 X-ray Technology	 Laser Technology
 Artificial Intelligence	 Tailor-made Deep Learning

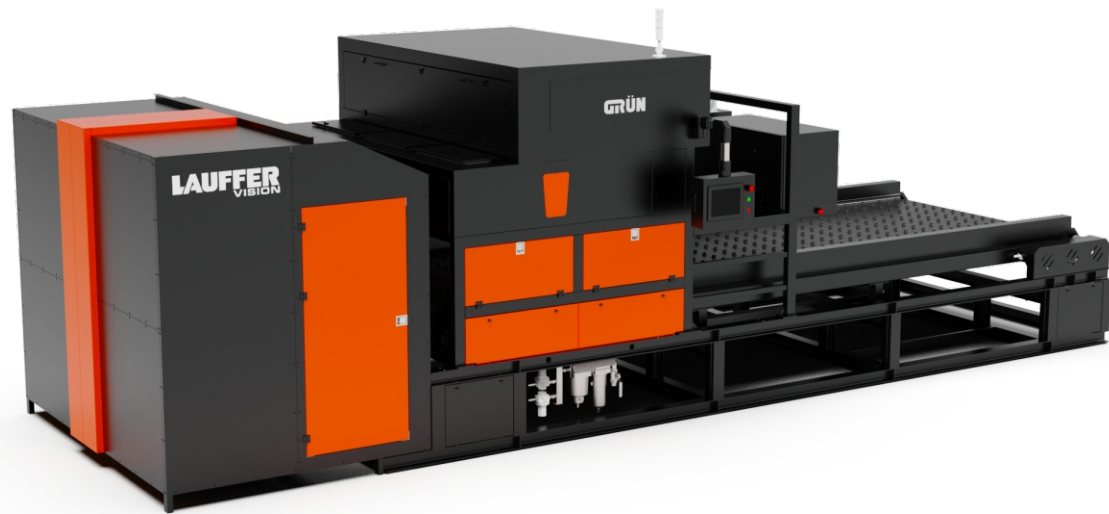
 Plastic Sorting	 Glass Sorting	 Ore Sorting
 Non-ferrous Metal Sorting	 Agricultural Products Sorting	





## Grün HPBI Plastic Bottle Sorter

Powered by Lauffer's advanced full color cameras and infrared cameras as well as AI Deep Learning algorithms, Grün HPBI plastic bottle sorter can be used for efficient detection and separation to waste plastic bottles by different characteristics such as color, polymer type, label and shape, ensuring a high-quality purification of PET bottles or other plastic packaging materials such as PP, PE and HDPE by targeting ejections to achieve an added value of recycling.



## Features

- ◆ Innovative integration of color detection, polymer detection and AI Deep Learning technology
- ◆ Powerful sorting by color, polymer type, label and shape at the same time
- ◆ Superior recovery of PET clear/light blue
- ◆ Enhanced performance in recognition of label and brand
- ◆ Compatibility of pre-washing sorting and post-washing sorting
- ◆ Flexibility of re-sorting

## Applications

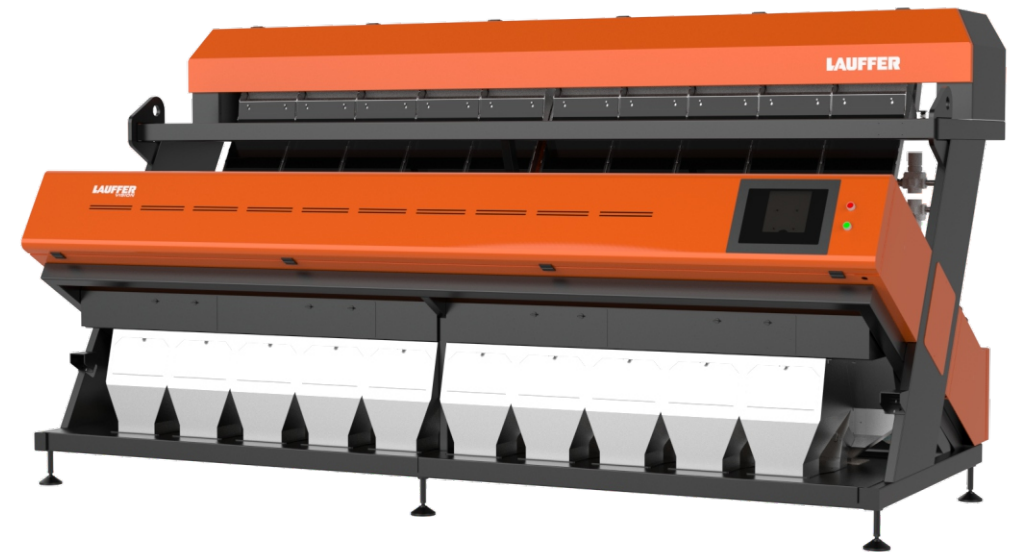


## Specifications

	Model	Belt Width (mm)	Air Nozzle	Throughput (t/h)	Air Pressure (Mpa)	Air Consumption (m³/min)	Power (kw)	Unpacked Weight (kg)	Dimension (mm)
Grün	HPBI1	1200	88	1.5-2.0	0.6-0.8	<3.5	7.0	4000	9600×2000×2900
	HPBI2	2000	160	3.0-4.0	0.6-0.8	<6.5	7.5	5000	9600×2900×2900
	HPBI3	2800	224	4.0-7.0	0.6-0.8	<9.0	12	6500	9600×3700×2900

## Grün VPC Plastic Flake Color Sorter

Powered by Lauffer's advanced full color cameras, Grün VPC Plastic Flake Color Sorter can be used for efficient detection and separation to plastic cap flakes and bottle flakes by color, ensuring a high-quality purification of plastic flake of targeting color to achieve an added value of recycling.



## Features

- ◆ 15-inch touch screen panel and intuitive HMI for easy and simple operation.
- ◆ Advanced Full Color Camera Inspection System for even subtle color variation.
- ◆ Higher intensity LED Illumination System for better detection of targeting colors and optional multi-dimensional cameras for effective solution to light-yellow, light-blue and aluminum flakes.
- ◆ Long-life and high-speed ejectors designed and produced in-house, ensuring the performance, the serviceability and the sustainability.
- ◆ High-capacity feed system with enhanced design of infeed vibrator.
- ◆ Field-proven Dust Control System for tough working conditions in waste plastic processing plants.

## Applications



## Specifications

	Model	Chute	Air Nozzle	Throughput (t/h)	Air Pressure (Mpa)	Air Consumption (m³/min)	Power (kw)	Unpacked Weight (kg)	Dimension (mm)
Grün	VPC 1	1	64	0.4-0.8	0.6-0.8	<1.0	0.9	680	1255×1670×1995
	VPC 4	4	256	1.5-3.0	0.6-0.8	<2.0	2.9	1160	2170×1854×1995
	VPC 6	6	384	2.0-4.0	0.6-0.8	<3.0	4.4	1450	2800×1854×1995
	VPC 8	8	512	3.0-6.0	0.6-0.8	<4.0	5.9	1700	3430×1854×1995
	VPC10	10	640	4.0-8.0	0.6-0.8	<5.0	7.3	2050	4070×1854×1995



## Grün VPMC Plastic Flake Polymer Sorter

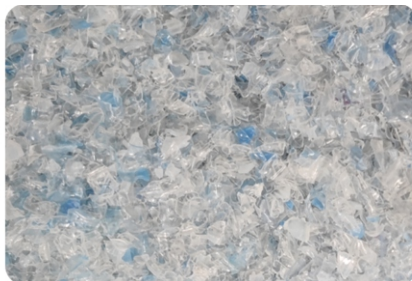
Powered by Lauffer's advanced full color cameras and infrared cameras, Grün VPMC Plastic Flake Polymer Sorter can be used for efficient detection and separation to plastic bottle flakes by multi-dimensional and innovative combination of color detection and polymer type detection, ensuring a high-quality purification of plastic flake of targeting features to achieve an added value of recycling.



## Features

- ◆ 15-inch touch screen panel and intuitive HMI for easy and simple operation.
- ◆ Powerful sorting by color and polymer type at the same time due to advanced Full Color Camera Inspection System and InGaAs Infrared Camera Inspection System.
- ◆ Higher intensity LED Illumination System for better detection of targeting colors and polymer types (PET/PVC/PP/PE/PC/HDPE/PMMA/ABS...)
- ◆ Long-life and high-speed ejectors designed and produced in-house, ensuring the performance, the serviceability and the sustainability
- ◆ High-capacity feed system with enhanced design of infeed vibrator.
- ◆ Field-proven Dust Control System and reliable Air-cooling System for tough working conditions in waste plastic processing plants.

## Applications



## Specifications

	Model	Chute	Air Nozzle	Throughput (t/h)	Air Pressure (Mpa)	Air Consumption (m³/min)	Power (kw)	Unpacked Weight (kg)	Dimension (mm)
Grün	VPMC 1	1	64	0.2-0.8	0.6-0.8	<0.5	1.3	660	1135×1928×2385
	VPMC 4	4	256	0.8-3.0	0.6-0.8	<2.0	4.2	1250	2150×1928×2385
	VPMC 6	6	384	1.0-4.0	0.6-0.8	<3.0	6.2	1850	2825×1928×2385
	VPMC 8	8	512	2.0-6.0	0.6-0.8	<4.0	8.2	2300	3518×1928×2385

## Grün VPF Aging Plastic Flake Sorter

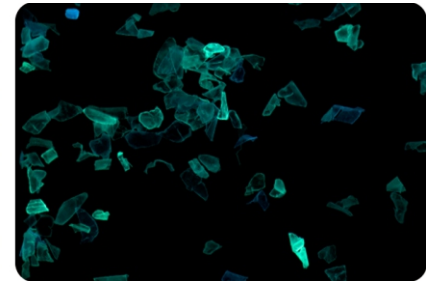
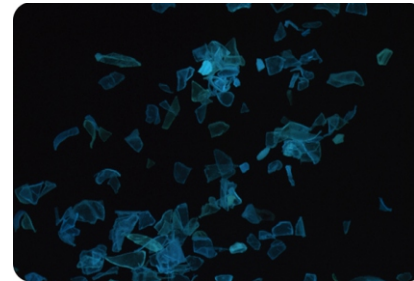
Heat, sunlight, oxygen and humidity can cause plastics to degrade over time. Thanks to the innovative combination of Laufer's Ultraviolet Inspection System and sensitive fluorescence sensors, Grün VPF Aging Plastic Flake Sorter can be used for efficient detection and separation to aging and fluorescent flakes, ensuring a high-quality purification of AAA level rPET flakes to achieve an added value of recycling.



## Features

- ◆ 15-inch touch screen panel and intuitive HMI for easy and simple operation.
- ◆ Innovative combination of Ultraviolet Inspection System and sensitive fluorescence sensors exclusive for detection of aging and fluorescent flakes.
- ◆ Higher intensity LED Illumination System for better detection of targeting aging and fluorescent flakes especially light-yellow ones.
- ◆ Long-life and high-speed ejectors designed and produced in-house, ensuring the performance, the serviceability and the sustainability.
- ◆ High-capacity feed system with enhanced design of infeed vibrator.
- ◆ Field-proven Dust Control System for tough working conditions in waste plastic processing plants.

## Applications



## Specifications

	Model	Chute	Air Nozzle	Throughput (t/h)	Air Pressure (Mpa)	Air Consumption (m³/min)	Power (kw)	Unpacked Weight (kg)	Dimension (mm)
Grün	VPF 4	4	256	1.2-2.0	0.6-0.8	<2.0	2.9	1160	2170×1854×1995
	VPF 6	6	384	2.0-4.0	0.6-0.8	<3.0	4.4	1450	2800×1854×1995
	VPF 8	8	512	2.2-3.2	0.6-0.8	<4.0	5.9	1700	3430×1854×1995
	VPF10	10	640	3.0-4.0	0.6-0.8	<5.0	7.3	2050	4070×1854×1995