MISTRAL VISION + DUAL VISION: A leap forward in plastics sorting performances

Optical sorting is the essential solution for the recovery of recyclable materials from the waste stream. It is used on waste from curbside collection and all through the waste recycling process. All industries benefit from recycling when is done efficiently. PELLENC Selective Technologies designs, manufactures and markets optical sorting machines for household and industrial waste. The sorted products come from the packaging, electronics, IT, automotive and construction markets.

The solutions supplied by PELLENC ST impact plastic recovery in MRF and the plastic recycling industry. Pellenc ST has used its patented expertise in spectroscopy to produce its new combined sorting machine for the detection of both material and colour: The Mistral Dual Vision.

This new sorting machine can constitute families of materials by combining the type of resin and its colour. It can separate 3 fractions of plastics in a MRF - light PET, dark PET and HDPE - in one single operation. Other applications require simultaneous sorting of the material and the colour, such as electronic and electrical waste (WEEE).

The plastic recycling industry relies on the separation of clear and light blue PET and on the separation of white and natural HDPE. The same machine also sorts PVC and PS labels and sleeves with great accuracy in parallel, allowing a PVC content of less than 10ppm and eliminating other contaminants such as residual metal fractions.

MISTRAL DUAL VISION combines two technologies patented by Pellenc ST, infrared spectroscopy and colour spectroscopy. The two technologies work together on the same pixel and merge the data regarding the nature of the material and its colour. With the new Pellenc ST patented SPIN spectrometer it is now possible to select the optimum wavelength. Thanks to ultra high-performance lighting and the very high quality of the optical signal, all materials and colours are detected right down to dark objects and those with little colour. Performances are significantly improved - with a gain of 5 to 10 points in performances - allowing a resulting quality close to raw materials.
Colour spectrometry technology can also be singled out on the MISTRAL VISION machine. This new machine detects the colours of plastics using a scanner and a spectrometer. MISTRAL VISION allows various colours of plastics to be sorted simultaneously, such as light blue and clear PET plastics or natural and opaque HDPE plastics. Dark-coloured plastics such as green and brown are also detected and sorted.

These two new machines include new 2nd generation software which provides real time data management for families of resins and colours. The 2G software is more user-friendly and uses a simplified menu based on a touch screen with clickable icons. A display of the sorting conveyor is possible in order to fine-tune the settings still further. The interface also allows remote control without stopping the production line.

The entire MISTRAL DUAL VISION and VISION system is designed to facilitate installation and maintenance.

Today, Pellenc ST sorting technologies are prepared to respond to the main issues of plastic recycling by demonstrating their ability to adapt to the sorting of different types of waste. They constitute the ideal solutions to meet the future sorting requirements for curbside collection.