Design and manufacturing
of machine vision and sensor-based
sorting equipment

On-site and remote technical support

Spare parts

Training

Equipment and software updates / upgrades

Second-hand equipment

Renting / leasing service

PICVISA Test Centre
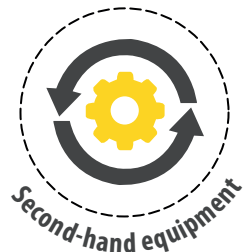
PICVISA
OPTICAL SORTING

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Sistema de
Gestión
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007

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ID 9105023403

PYME INNOVADORA

PICVISA
OPTICAL SORTING

ECOPACK

Optical sorting equipment
for a wide range of material sorting

Wide spectrum **machine-vision**.

Versatility, speed and precision *when identifying and separating materials according to their chemical composition, shapes and colours.*

Industry 4.0: *self-monitoring and connectivity, data management and computer control.*

Hyperspectral machine vision *technology and fast data processing.*

① Feeding conveyor
② Machine-vision camera and sensors
③ Separation with compressed air
④ Separation chamber
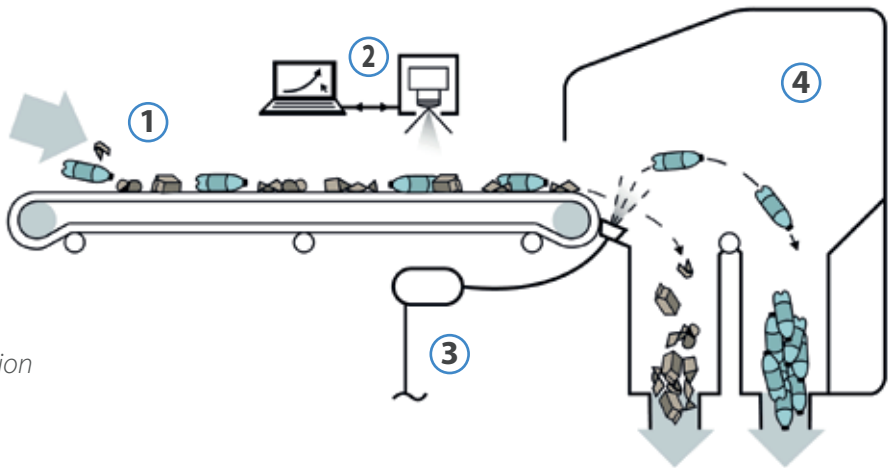
High resolution for:

● *Machine vision and/or sensor identification*
● *Ejection separation with compressed air.*

Wide variety of equipment configurations *depending on separation objectives and materials to be processed.*

Applications and materials		Technologies*		
		NIR	VIS	EM
Plastic packaging	Polymer separation (PET, HDPE, HDPE, PP, PS, PVC, EPS, ABS) and beverage cartons	√	√	
PET/PE recycling	Colour sorting	√	√	
Plastic film (PEBD, PP,...)	Sorting by material type	√		
Paper & Cardboard (P&C)	P&C recovery from a mixed stream and sorting of cartons and boxes	√	√	
Refuse-Derived Fuel (RDF)	PVC and other impurities removal	√		
Construction and Demolition waste (C&D)	Recovery of wood and polymers	√	√	√
Wood recycling	Removal of impurities (polymers, P&C)	√		√
Metal recycling	Removal of impurities	√	√	√
Other applications	Please check with PICVISA	√	√	√

(*)Technologies applied individually or in combination: NIR = Near-Infrared spectrometry ; VIS = Visual light and colours ; EM = Electromagnetic sensors / induction.

● High production capacity and availability under demanding industrial conditions.
● High recovery (efficiency) and purity rates of targeted materials.
● Short payback period.
● Versatility and flexibility when separating different materials with the same optical sorter. Easy programming and reprogramming.
● Computer-aided calibration for high reliability and production stability.
● Easy maintenance and cheap spare parts.
● Direct online customer support service with remote connection.
● Real-time access to sorted material statistics (dedicated interface, online accessibility).
● Testing capacity with Customer materials at PICVISA's own test centre.**

(**) PICVISA provides its Customers, in Calaf (Barcelona, Spain), with 800 sqm test centre, fully equipped with mechanical and machine vision means, for a wide range of material sorting.

Industry 4.0 :

Computer-aided calibration and control. ●
Local and remote connectivity. ●

PICVISA
OPTICAL SORTING

Main features *of the optical sorters*
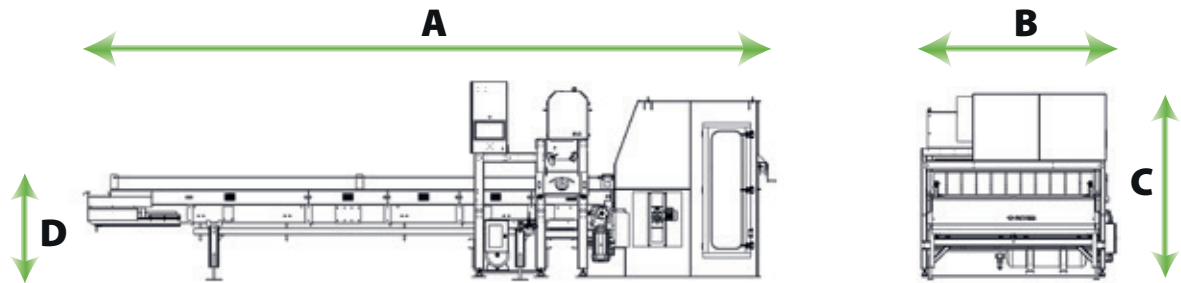
A   B   C   D

Dimensions and total weight of equipment						
Optical sorter	Width	A	B	C	D	Approx. weight
EP 1000	1 000 mm	7 530 mm	1 297 mm	2 458 mm	1 248 mm	2 650 Kg
EP 1500	1 500 mm	7 530 mm	1 797 mm	2 458 mm	1 248 mm	3 300 Kg
EP 2000	2 000 mm	7 530 mm	2 297 mm	2 458 mm	1 248 mm	3 900 Kg
EP 2500	2 500 mm	7 530 mm	2 797 mm	2 458 mm	1 248 mm	4 500 Kg
EP 3000	3 000 mm	7 530 mm	3 297 mm	2 458 mm	1 248 mm	5 100 Kg

High-resolution *valve-block for pneumatic ejection*

Table of possible valve-block solutions		
Valve-block resolution	Air jet pitch	Electro-valves / Air jets
Standard - STD 1:2	15.6 mm	1 electro-valve for 2 air jets
High resolution - HR 1:1	15.6 mm	1 electro-valve for 1 air jet
High resolution - HR 1:2	7.8 mm	1 electro-valve for 2 air jets
Very high resolution - VHR 1:1	7.8 mm	1 electro-valve for 1 air jet

Air pressure : 6 to 8 bars

Compressed air consumption and power *for the solution of a Standard STD valve-block*

Optical sorter	Amount of air jets	Air jet pitch	Approx. airconsumption (STD case)	Power [1]	Power [2]
EP1000	64	15.6 mm	1 000 lpm	2.65 kW	4.65 kW
EP1500	96	15.6 mm	1 500 lpm	3.45 kW	6.45 kW
EP2000	128	15.6 mm	2 000 lpm	4.25 kW	8.25 kW
EP2500	160	15.6 mm	2 500 lpm	5.05 kW	10.05 kW
EP3000	192	15.6 mm	3 000 lpm	5.85 kW	10.85 kW

[1] Power without feeding conveyor; [2] Power with feeding conveyor. Power supply 230 V - 50 Hz single-phase.

Options

● *One or more NIR and/or VIS machine vision cameras.*
● *High-resolution camera for small-sized elements.*
● *Inductive sensors for metals.*
● *High or very high blowing resolution valve-block.*
● *Multi-channel: double or triple-track for simultaneous sorting of two or three material streams (up to 9 sorting operations) on a same optical sorter.*
● *Different levels of ingress protection of control boards.*