PICVISA

ECOPICK

TRANSFORMING THE RECYCLING INDUSTRY

Improves **PRODUCTIVITY** and **SAFETY**

Increases the **QUALITY OF VALUABLE MATERIAL**

**SCALABLE** to any industry and **ADAPTABLE** to any material

PLUG AND PLAY: our technical service will get the solution up and running from day one

CHARACTERISTICS

* customisable for each solution

Model	Ecopick 2.0
Vision system	RGB and/or NIR sensors, 3D
Robotic arm	1
Gripping system	Via suction cup, mixed suction and magnet system, revolver with double suction cup
Picking	1 pick/second
Overall dimensions	2200x 3553,5 x 2600 mm
Maximum working width	1200
Maximum object size	A3
Maximum object weight	4 kg
Maximum nº of hoppers	8
Belt speed	0,5 - 1m/s
Air consumption	64 l/min
Availability	> 95%

PICVISA
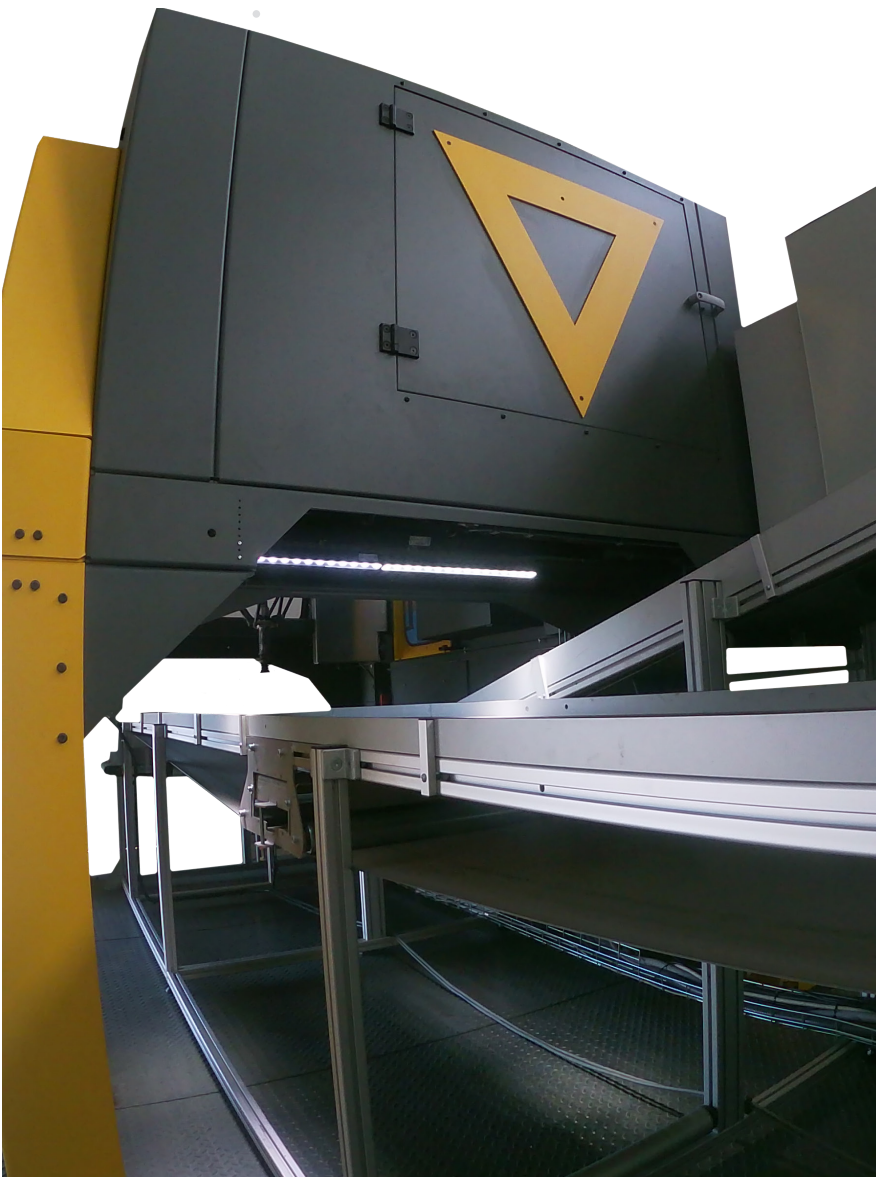
ARTIFICIAL INTELLIGENCE

With algorithms of Deep Learning and Reinforcement Learning

MACHINE VISION

RGB and/or NIR sensors, 3D.

ROBOTICS

Gripping by clamp, suction cup, magnet, etc.

ADAPTABLE TO DIFFERENT APPLICATIONS

SORTING

ECOPICK can be adapted to recognise and separate any recoverable material.

HAZARDOUS WASTE
Separation of:

Thermometers
Aerosols
Injectables
Batteries
Canisters

VALUABLES
Recovery of:

PET Bottle
HDPE Bottle
Tray
Film
Cans
Tetrabrik
Paper
Cardboard
Glass
Textile

QUALITY CONTROL

ECOPICK can be configured to perform purification tasks on final product streams.

PET
Separation of:

PET bottles vs. trays vs. improper

PEAD
Separation of:

HDPE bottles vs. silicone tubes vs. film vs. improper

ALUMINIUM
Separation of:

Aluminium cans vs. other metals vs. improper

TETRABRIK
Separation of:

Tetrabrik vs. improper

PAPER CARDBOARD
Separation of:

Paperboard vs. packaging vs. improper

FILM
Separation of:

Film vs. bottles vs. improper

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1 CONTACT

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2 OUR REFERENCES

Ask for a visit to one of our installed units.

3 TEST CENTRE

Before you invest, test your equipment in our Test Centre.

4 CONFIGURE YOUR ROBOT

We are flexible, we adapt to your plant

www.picvisa.com

follow us

PICVISA

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.

Artificial Intelligence: Optional Brain add-on for deep learning.

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
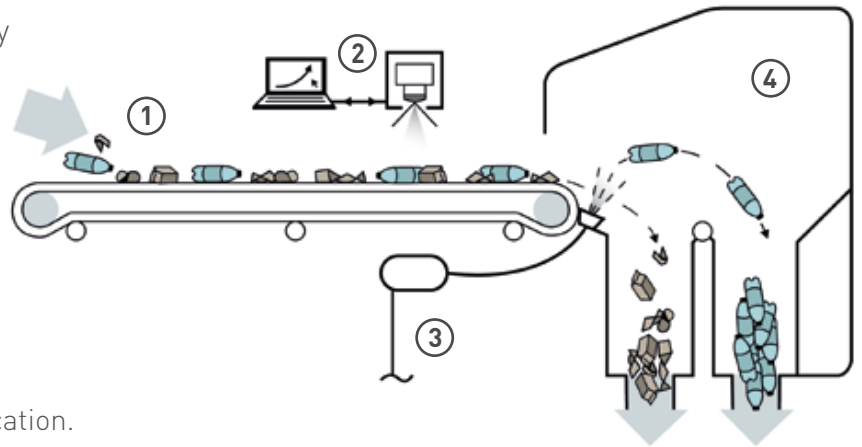
High resolution for:

● 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**	**AI**
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; AI = Artificial intelligence.

● 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. ●

Main features of the optical sorters
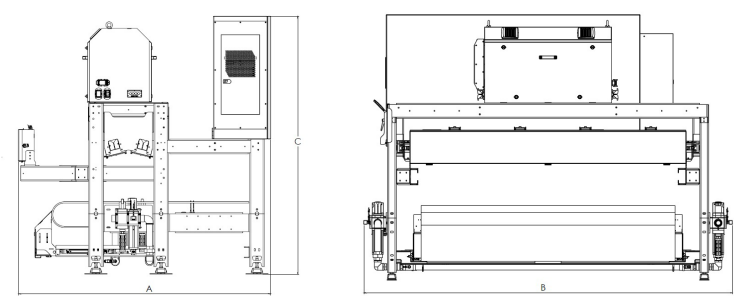
Dimensions and total weight of equipment					
Optical sorter	Width	A	B	C	Approx. weight
EP 1000	1.000 mm	1.870 mm	2.013 mm	2.099 mm	1.044 Kg
EP 1500	1.500 mm	1.891 mm	2.307 mm	2.099 mm	1.250 Kg
EP 2000	2.000 mm	1.923 mm	2.722 mm	2.099 mm	1.568 Kg
EP 2500	2.500 mm	1.923 mm	3.221 mm	2.335 mm	1.822 Kg
EP 3000	3.000 mm	1.923 mm	3.721 mm	2.099 mm	2.190 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]
EP1000	64	15,6 mm	1.000 lpm	2,65 kW
EP1500	96	15,6 mm	1.500 lpm	3,45 kW
EP2000	128	15,6 mm	2.000 lpm	4,25 kW
EP2500	160	15,6 mm	2.500 lpm	5,05 kW
EP3000	192	15,6 mm	3.000 lpm	5,85 kW

(1) Power without acceleration belt

Options

- ● One or more NIR, VIS machine vision cameras or artificial intelligence.
- ● 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.

Design and manufacturing
of machine vision, artificial intelligence
and sensor-based sorting equipment

On-site and remote technical support
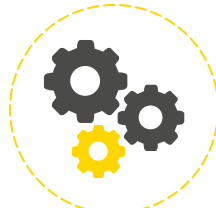
Spare parts

Training

Equipment and software updates / upgrades

Second-hand equipment

Renting / leasing service
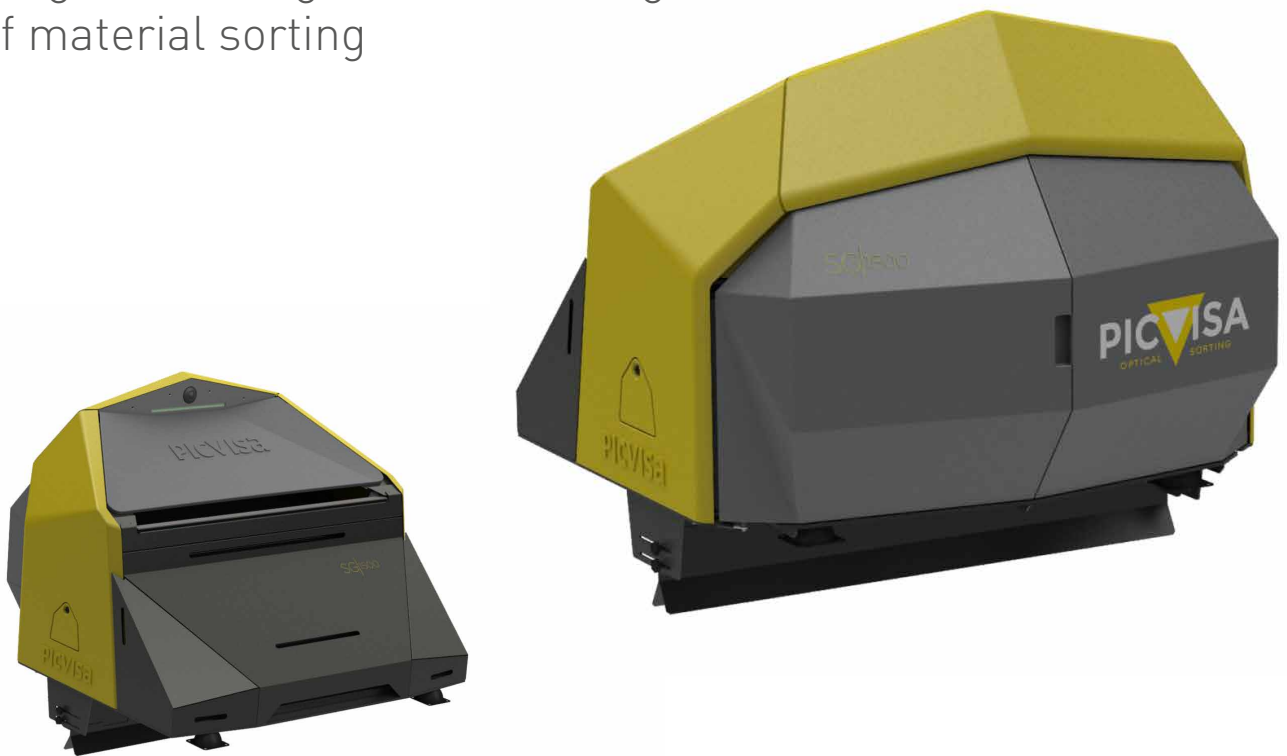
PICVISA Test Centre

PICVISA

PIC▽ISA

ECO**GLASS**

Optical sorting equipment
for glass sorting and 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.

Artificial Intelligence: Optional Brain add-on for deep learning.

Machine vision technology and fast data processing.

1. Vibratory feeder
2. Machine-vision and sensors
3. Separation with compressed air
4. Separation chamber
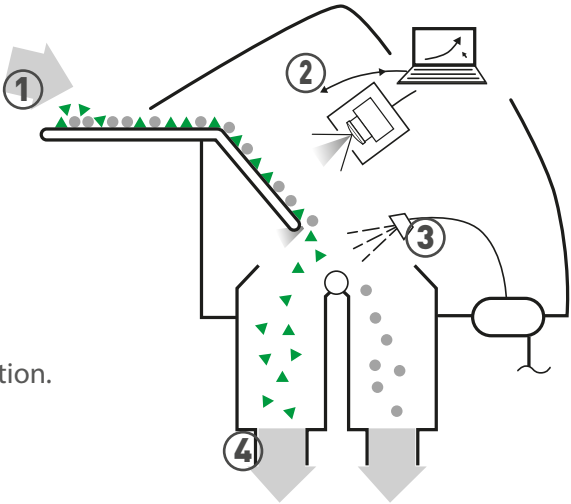
High resolution for:

- Machine vision, artificial intelligence and/or sensor identification.
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Wide variety of equipment configurations depending on separation objectives and materials to be processed.

Applications and materials		Technologies*				
		VIS	NIR	EM	UV	AI
Glass	Removal of impurities (CSP) and sorting of glass by colour	√			√	
Municipal solid waste (MSW)	Glass recovery from compost or the rejects of compost refining	√				
Slags. incineration bottom-ash	Glass and metals recovery	√		√	√	
Refuse-derived fuel (RDF)	Glass, plastics and metals recovery	√	√	√		
Construction and Demolition waste (C&D)	Withdrawal of PVC and other impurities	√	√			
Minerals, ores, mining by-products	Recovery of glass, metals, aggregates, etc.	√	√	√		
Minerals, ores, mining by-products	Purification and colour separation	√		√	√	
Metal recycling	Removal of impurities	√	√			
Other applications	Please check with PICVISA	√	√	√	√	√

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Industry 4.0:

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

High-resolution dvalve-block for pneumatic ejection: Standard (EG /SG) and Fines (SGF)

ECOGLASS (EG and SG) product range	Model	Width	Amount of air jets	Air jet pitch
STANDARD	**EG600**	600 mm	118	5.2 mm
	EG1000	1000 mm	192	5.2 mm
	SG1500	1500 mm	240	6.2 mm
FINES	**SGF600**	600 mm	144	4.2 mm
	SGF1000	1000 mm	240	4.2 mm
	SGF1500	1500 mm	360	4.2 mm

Examples of air consumption and power of equipment
ECOGLASS Glass sorting: hollow and container glass, cullet, flat glass, MSW glass, etc.

Optical sorter	Material's features			Nominal throughput	Air consumption per valve-bloc		Power			
Width	Infeed glass	Target material	Density		Standard (EG/SG)	Fines (SGF)	EG: 1 v.-block	EG: 2 v.-blocks	SGF: 1 v.-block	Vibratory feeder
(mm)			(kg/m³)	(t/h)	(lpm/bloq.)	(lpm/bloq.)	(kW)	(kW)	(kW)	(kW)
600	Container	CSP	1000	5,0	1000	1200	1.1	1.4	2.3	0.9
600	Container	Colour (<30 %)	1000	4,0	2000	2300	1.1	1.4	2.3	0.9
600	Flat glass	CSP	1500	5,0	1000	1200	1.1	1.4	2.3	0.9
600	MSW: 1st	Glass	750	2,0	2000	2300	1.1	1.4	4.5	0.9
600	MSW: 2nd	CSP	900	3,0	1000	1200	1.1	1.4	4.5	0.9
600	Fine glass	CSP	500	1,5	N/A	1200	N/A	N/A	2.3	0.9
1000	Container	CSP	1000	10,0	1500	1900	1.2	2.1	3.8	4.2
1000	Container	Colour (<30 %)	1000	8,0	3000	3800	1.2	2.1	3.8	4.2
1000	Flat glass	CSP	1500	10,0	1500	1900	1.2	2.1	3.8	4.2
1000	MSW: 1st	Glass	750	4,0	3000	3800	1.2	2.1	7.5	4.2
1000	MSW: 2nd	CSP	900	6,0	1500	1900	1.2	2.1	7.5	4.2
1000	Fine glass	CSP	500	3,0	N/A	1900	N/A	N/A	3.8	4.2
1500	Container	CSP	1000	15,0	2300	2800	1.6	3.1	5.7	3.8
1500	Container	Colour (<30 %)	1000	12,0	4600	5800	1.6	3.1	5.7	3.8
1500	Flat glass	CSP	1500	15,0	2300	2800	1.6	3.1	5.7	3.8
1500	MSW: 1st	Glass	750	6,0	4600	5800	1.6	3.1	11.3	3.8
1500	MSW: 2nd	CSP	900	9,0	2300	2800	1.6	3.1	11.3	3.8
1500	Fine glass	CSP	500	5,0	N/A	2800	N/A	N/A	5.7	3.8

Left-side row group labels:
- EG 600 (118 air-jets) / SGF 600 (144 air-jets)
- EG 1000 (192 air-jets) / SGF 1000 (240 air-jets)
- SG 1500 (240 air-jets) / SGF 1500 (360 air-jets)

- Moisture is limited to 1% of the infeed material.
- Container glass or hollow glass includes bottles & jars, flaconnage and tableware.
- Flat glass may be issued from building & demolition waste, as well as car manufacturing & end-of-life vehicles (ELV) wastes.
- Glass issued from MSW may be treated by two optical sorters: 1st sorter ejects glass and 2nd sorter ejects CSP.
- CSP impurities: ceramics, stones and porcelain.
- Colour sorting considers 30% maximum content of the target colour.
- The "EG" model includes 1 electro-valve for every 2 air-jets (air-jet pitch of 5.2 mm) and the "SG" model includes 1 electro-valve per air-jet (air-jet pitch of 4.2 mm or 6.2mm).

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PICVISA

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CERTIFICADO

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