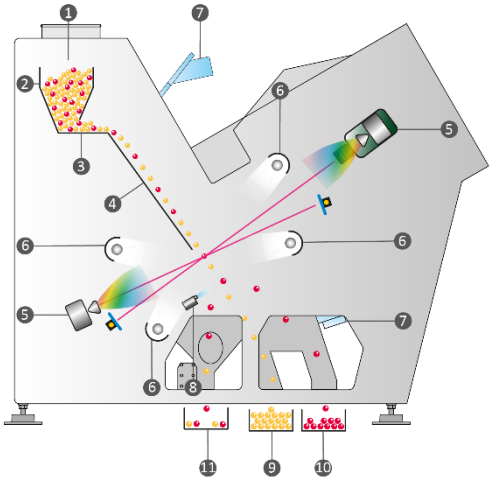
Optical Sorting

SEA.XL

The Cimbria SEA.XL optical sorters feature a revolutionary vision system that merges Full-Color Multifrequency technology with advanced infrared hyperspectral imaging, delivering unmatched precision in detecting colors and even the slightest variations in chemical composition.



PROCESS

1. Product input to select
2. Loading hopper
3. Vibrating feeder
4. Feed chute
5. Inspection system
6. Product lighting system
7. Suction system
8. Pneumatic ejection system
9. Selected product
10. Rejected product
11. Rebound product

SPECIFICATIONS

- Available in 2, 4, 6 channel configurations
- SEA.XL 2 has two feed chutes that can operate independently for revision where needed
- SEA's models. XL with 4 and 6 channels can be split allowing for more complex reselection diagrams
- Possibility of partializing the chute to better adapt the workflows to the specific needs of the customer

MECHANICS

- Hermetic and pressurized optical boxes prevent dust ingress
- Programmable automatic cleaning system
- The cooling system ensures an ideal temperature inside the optical boxes
- The air knife, installed as standard on the rear side, has the task of removing dust and product residues from the glass of the optical boxes, thus preventing false rejects.
- Ready for connection to the extraction system
- The new design makes the sorting machine extremely compact, yet easy to access and maintain

EJECTION SYSTEM

- 126 solenoid valves in the version. SEA.XL 2
- 252 solenoid valves in the SEA version. SEA.XL 4
- 378 solenoid valves in the SEA version. SEA.XL 6
- Working speed of up to 1,000 cycles/s guaranteed up to 2 billion opening/closing cycles
- Ejection time and duration adjustable as required

OPTICAL SYSTEM

Thanks to the new patented layout concept, this innovative machine enables unprecedented selection capabilities, both in terms of color defects and the chemical composition of the product, achieving quality standards never before attained. Particular attention has been paid to minimizing maintenance downtime, resulting in a doubling of the useful lifespan of the illuminator spotlights.

- The vision system combines the highest hyperspectral technology with multi-frequency cameras in the visible and NIR with a logic of exclusive innovation.
- In addition to chemical composition, nature and color control can also be focused on the size and shape of defects, standard skills in sorting machines SEA.XL.
- Precision guaranteed by the **BRAIN™ Artificial Intelligence algorithm**

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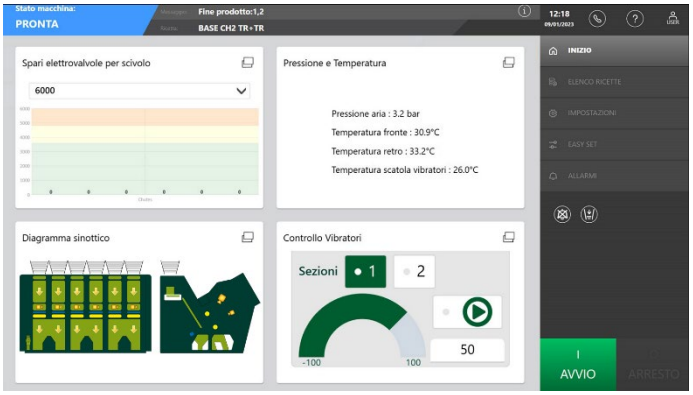


USER INTERFACE

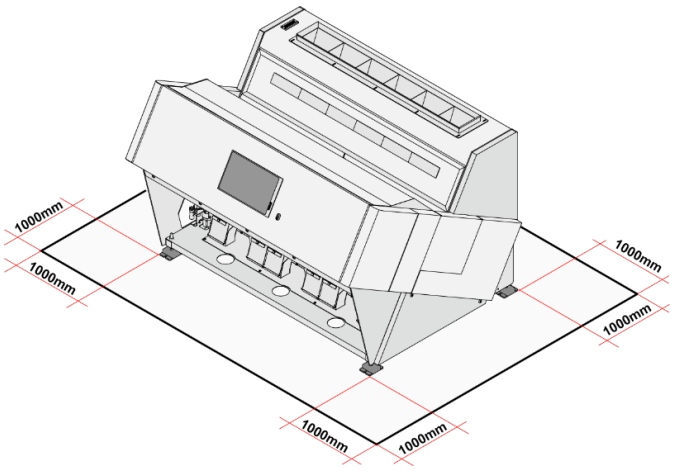
- 21.5" capacitive color touch screen that allows perfect visibility even in low light conditions
- The customizable multilingual interface is very intuitive
- HMI allows quick and easy editing of recipes
- Main information and functions:
  - Machine status (vibrator on/off and sensitivity for each section)
  - Possibility to store an unlimited number of recipes in the machine
  - Hopper product level control (sensors)
  - Real-time statistics and calculation of scraps per second
  - Alarms and suggestions to identify any errors and restore machine functionality
- Ethernet connection for real-time monitoring and on-line technical assistance

SEA.XL CONFIGURATIONS.

Model	Setup
SEA.XL 2	**1** x SWIR **hyperspectral camera** **4** x **RGB** Full-Color cameras
SEA.XL 4	**2** x SWIR **hyperspectral cameras** **8** x Full-Color **RGB** cameras
SEA.XL 6	**3** x SWIR **hyperspectral cameras** **12** x **RGB** Full-Color cameras

EXTERNAL EQUIPMENT REQUIRED FOR PROPER OPERATION*

- Standard power supply 230 V – 50/60 Hz
- Voltage stabilizer (strictly necessary)
- Pneumatic system consisting of rotary compressor, tank, filters and dehumidifier class:
  - ISO 8573-1:2010 [5:4:3] for NON-FOOD PRODUCTS
  - ISO 8573-1:2010 [1.2.1] for FOOD PRODUCTS
- Minimum diameter 1" compressed air supply hose
- Support frame
- Loading and unloading hoppers (optional supply of Cimbria)
- Product transport systems
- Fast Internet connection



**** The Customer shall be responsible for the supply and installation of the aforementioned components.***

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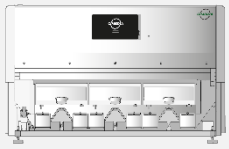
TECHNICAL DATA

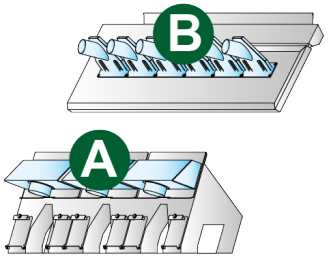
- White RAL 9003 standard colour (custom colours optional)
- Ambient temperature in the working area min +5°C max +40°C
- IP 55 protection
- CE Certificate of Conformity
- 2006/42/EC on machinery safety
- 2014/30/EC on electromagnetic compatibility
- Compatible with UL and CSA standards

MACHINE TECHNICAL DATA

		SEA.XL 2	SEA.XL 4	SEA.XL 6
				
Vibratory feeders		2	4	6
Chute width 300 mm	**mm**	600	1200	1800
Hyperspectral SWIR cameras		1	2	3
RBG Full-Color Cameras		4	8	12
Solenoid valves/channel	**N°**	126	252	378
Compressed air consumption (max. 6 bar)	**l/min**	700	1400	2100
	m3/h	42	84	126
Compressed air hose	**Ø**	1”		
Power/ Frequency	**V/Hz**	230V – 50/60Hz - 1 Ph (L + N + PE)		
Power consumption (max.)	**KW**	1,4	2,2	3,0
Current consumption (max.)	**At**	6,2	9,7	13,3

SUCTION SYSTEM

	SEA. XL 2		SEA. XL 4		SEA. XL 6	
	N°	**m³/h**	**N°**	**m³/h**	**N°**	**m³/h**
Air intake output (A) 120Ø	1	1000	2	2000	3	3000
Infeed air intake (B) 80Ø (optional)	2	600	4	1200	6	1800



** The user must guarantee, near the intake ports, an air head of 150 mm H²O*
*** Minimum flow rates required for the machine to process a highly polluted product*

DIMENSIONS (mm/in)

	SEA. XL 2		SEA. XL 4		SEA. XL 6	
	mm	**in**	**mm**	**in**	**mm**	**in**
Width	1330	52,36	1960	77	2590	102
Depth	1985	78,15	1985	78,15	1985	78,15
Height	1720	67,72	1720	67,72	1720	67,72

WEIGHT (Kg/lbs)

	SEA. XL 2		SEA. XL 4		SEA. XL 6	
	Kg	**Lbs**	**Kg**	**Lbs**	**Kg**	**Lbs**
Weight	1100	2425	1550	3418	1650	3640

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