SEA NEXT COLOR SORTER

WORKING PROCESS
1. The product to sort is loaded into the in-feed hopper,
2. it moves along the vibrating plate until it flows into
3. a sloping chute where it is individually checked and sorted by state-of-the-art cameras
4. (Hi-resolution 2048 pixel CCD cameras for standard version and
5. eventual additional NIR and/or InGaAs cameras) situated in the front and rear of the flow. Based on the signals received from the optical system, the sorter software controls
6. the ejectors which physically separates the unwanted products
7. out of the conforming ones, which naturally reach their outlet
8. The rejected products are instead deviated by a jet of compressed air produced by the relevant ejector and discharged in the front side hopper.

In automatic re-pass versions, the sorted or rejected product is automatically conveyed to another section of the machine for undergoing an identical process. Re-sorting and reverse sorting configurations are available.

TECHNICAL CHARACTERISTICS
OPTICAL SYSTEM:
- Double vision system, with high-definition 2048 pixel CCD cameras in front and rear side of product’s flow, allows the perfect control and sorting accuracy. Available versions with double-camera, NIR and InGaAs additional cameras.
- Characteristics of the high-resolution cameras:
  - Possibility to have up to 4 cameras per chute for monochrome, bi-chrome, UV, NIR and InGaAs configurations
  - Optical resolution: 0.1 mm
  - Possibility to handle up to 4 thresholds of dark and clear sensibility simultaneously, with defects size control
  - Extreme flexibility in image processing, with the sorter sensitivity setting based on colour/transparency and dimension of defects to sort out

LED RGB lighting with automatic change of lighting source and LED background system

EJECTION SYSTEM
- N.54 Solenoid valves each chute for the ejection of the product to be discarded (one every 5mm.). Working speed up to 1,000 cycles/sec. granted for 2,000 million of cycles
- Adjustment-filter unit to eliminate condensation

ELECTRONIC SYSTEM
- The hardware system is organized with easily replaceable electronic boards, using the ultimate SMD and FBGA technologies. Self-control functions (auto-diagnostics and auto-calibration) ensure an excellent operational stability
- Program settings and adjustments are performed through a user-friendly software
- Easy and fast product changeovers
- 15 inches display with full-colour and multilingual touch-screen
- The Windows 7 embedded graphic interface assures an easy connection to company network and to remote assistance systems.
- Ethernet or WiFi connection allow real time monitor and servicing via web
**MECHANICS**
- SEA NEXT is available from 1 to 7 chutes, and into narrower frame for 1.5 version.
- Reversible chutes: flat on one side and with 4 kind of grooves on the other side
- Tilting and airtight optical boxes prevent dust ingress
- Vortex cooling system to keep the optical boxes internal temperature within the safe working limits
- Ready for connection to dust extraction system
- Automatic cleaning system
- Leave 1 meter of empty space around the sorting machine
- Keep the sorter far from dusty environment, direct sunlight and strong lights

**TECHNICAL DATA:**
- Machine standard color: White RAL 9010
- Power supply: 230 VAC 50/60 Hz single phase
- Environmental temperature: between +3 °C and +35 °C
- Environmental humidity: < 95% (without condensation)
- CE Conformity to European Union Directives:
  - 2006/42/CE on safety of machinery
  - 2004/108/CE on electromagnetic compatibility
  - 2006/95/CE on low voltage electrical material
- ATEX certification available upon request (not standard)
- Compatibility with UL and CSA Regulations

**EXTERNAL DEVICES REQUIRED FOR THE SORTER PROPER FUNCTIONING:**
For the sorter proper functioning, the user has to provide and install:
- 230 V – 50 Hz Power supply
- An adequate voltage stabilizer (strongly required)
- Pneumatic system composed of: rotary compressor, tank, drier, filter 5 μm, filter 1 μm, filter 0.01 μm (strictly required)
- Minimum 1 inch air supply hose
- Machine supporting frame
- Additional loading and discharging hoppers
- Product conveyors
- Fast internet connection

### POSSIBLE OPTICAL CONFIGURATIONS

<table>
<thead>
<tr>
<th>Front</th>
<th>Back</th>
<th>Description</th>
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<tbody>
<tr>
<td>M</td>
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<td>Monochromatic standard version</td>
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<tr>
<td>N</td>
<td>N</td>
<td>Monochromatic NIR version</td>
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<tr>
<td>M</td>
<td>M</td>
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<tr>
<td>M</td>
<td>N</td>
<td>Monochromatic + NIR</td>
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<tr>
<td>M</td>
<td>R</td>
<td>Monochromatic + InGaAs</td>
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<tr>
<td>D</td>
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<td>Double camera version</td>
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<tr>
<td>M</td>
<td>N</td>
<td>Monochromatic + InGaAs (front/back)</td>
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<tr>
<td>M</td>
<td>R</td>
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<tr>
<td>M</td>
<td>M</td>
<td>Monochromatic + NIR (front) + InGaAs (back)</td>
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**MONOCHROMATIC 2048 PIXEL CCD CAMERA**

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**Table:**

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<th>NEXT 1.5</th>
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CIMBRIA S.R.L.
Via Colombarotto 2 | 40026 Imola BO | ITALIA | Phone: +39 0542 361423 | info@seasort.com

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