Safe Food.
Clean Food.

Fruit & Vegetables
Outstanding Performance.
Fruit and vegetable sorting from Buhler Sortex.

Buhler Sortex is the global leader in optical sorting solutions for food processors of any size, who demand the highest standards of quality and cleanliness in produce of every kind. Its extensive experience in sorting fruit and vegetables and a continuing commitment to substantial investment in R&D ensures that the growing range of SORTEX optical sorters set the standards by which industry performance is judged. A large claim, perhaps, but one which over 20,000 customers in 140 countries endorse.

Processing Lines

Buhler Sortex offer fresh and frozen fruit and vegetable processors, the greatest possible flexibility in placing sorters at almost any point in the processing line. Depending on individual requirements, this could be at any stage, with the product unblanched, blanched, frozen or in the packing line.

Before Blanching

The sorter is used to optimise removal of colour defects while removing extraneous vegetable matter (EVM) and foreign material (FM) that comes from the field. Before blanching, the product is generally washed and air cleaned using little energy and incurring no additional processing costs. The cost of any good product rejected is also low. If there is a high input contamination, early removal will allow better use of the downstream blancher and freezer tunnel, so higher line capacities can be achieved. Buhler’s PROfile technology allows detection and removal of EVM in unblanched product.

After Blanching

Within this location, the colour sorter can be set up to optimise removal of colour defects to improve product quality while at the same time removing EVM and FM. Some colour defects are emphasised from the blanching process and are therefore easier for the sorter to detect and remove. Other minor colour defects, such as khaki peas and green discolouration in carrots are often reduced after the blanching process. Buhler recommends sorting before blanching to reduce the risk of microbiological contamination prior to freezing.
After Freezing

At this stage, the sorter would be set up to optimise the removal of colour defects, EVM and FM to improve product quality. As there is now no water in the product, the process is more hygienic and would therefore require less cleaning. Shape sorting is more efficient with frozen products because the sorters can be tuned more precisely. The sorter utilises the chute feed system with no moving parts, giving an even product flow.

The sorter also fits perfectly into the bulk to bulk cleaning process which is often carried out on frozen products.

In the Packing Line

At the final stage of the process, additional FM such as wood, plastic and cardboard can enter the product stream. To enable a simplified operation, Buhler’s optics package, enhanced with InGaAs technology is optimised to detect these FM with the use of just one set-up. The product can also be further improved with additional colour and shape sorting to ensure the highest level of quality.
Enhanced SORTEX K2A/K2P.
For the ultimate product quality in your process line.

The SORTEX K range uses leading edge technology to deliver effective solutions to processors in the freezing, canning and fresh industries. The sorter is able to inspect product in a blanched, unblanched or frozen state. Its PROfile technology enables clear detection of EVM by measuring multiple shape features on unblanched products. InGaAs cameras can be added for packing line requirements.

- 12.1” user-friendly touch screen interface
- Bichromatic visible cameras
- InGaAs technology (Optional)
- PROfile technology
- Pre-set sorting modes
- Single phase supply with low power consumption
- External USB port for data retrieval

- Double sided viewing gives detection of subtle defects from two sides
- Stable operation offers consistent performance without the need for daily calibration
- The precise ejectors give high yields at high capacity
- Stainless steel open construction facilitates cleaning and ensures high hygienic standards

- K2A - For frozen process lines, a UHMW PE chute feed system is used to deliver the product efficiently to the optical vision system
- K2P - For fresh process lines the Powerslide™ conveyor can be used to deliver fresh product to the optical vision system
- The sorter enables FM and EVM removal with excellent detection in blanched, unblanched or frozen products
SORTEX K2A/K2P specifications:

### Technical details

<table>
<thead>
<tr>
<th></th>
<th>Air requirements</th>
<th>Power consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Optimum</td>
<td>Maximum</td>
</tr>
<tr>
<td>SORTEX K2A</td>
<td>102 psi (7 bar)</td>
<td>116 psi (8 bar)</td>
</tr>
<tr>
<td></td>
<td>65 l/sec</td>
<td>4.5 kW (Total)</td>
</tr>
<tr>
<td>SORTEX K2P</td>
<td>65 l/sec</td>
<td>6.0 kW (Total)</td>
</tr>
</tbody>
</table>

Noise emissions under normal operating conditions <85 dB

### Dimensions

<table>
<thead>
<tr>
<th></th>
<th>Width (mm, in)</th>
<th>Length (mm, in)</th>
<th>Height (mm, in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SORTEX K2A</td>
<td>(1200, 47)</td>
<td>(3360, 132)</td>
<td>(2440, 96)</td>
</tr>
<tr>
<td>SORTEX K2P</td>
<td>(1200, 47)</td>
<td>(3360, 132)</td>
<td>(2440, 96)</td>
</tr>
</tbody>
</table>
SORTEX E1D.
High performance in a small footprint.

The latest addition to the SORTEX E range, the SORTEX E1D, offers a high performance sort in a small footprint. It has been designed to bring the benefits of larger sorters to smaller processors whilst delivering high quality sorting in the freezing process. A combination of technologies and options allow for processors to tailor the sorter’s inspection system to their specific needs. It is capable of inspecting product for discoloured or misshaped product, subtle blemishes, FM or EVM, or any combination.

- The small footprint aids installation in areas with limited space where high performance is required
- Advanced PROfile technology enables accurate removal of defective material by using hardware processing to measure multiple shape characteristics of each object in milliseconds.
- High quality colour sorting permits both gross and subtle colour blemishes to be removed
- An optical filter changer is linked to the modes which automatically selects the correct filter required
- 12.1" user-friendly touch screen user interface
- Bichromatic visible camera technology
- InGaAs technology (Optional)
- PROfile technology
- Halogen foreground lighting
- Pre-set sorting modes
- Single phase supply with low power consumption
- Built-in reject conveyor
- Transfer vibrator
- Double sided viewing allows detection of subtle defects from two sides as more of the product is visible
- The stainless steel open construction design ensures high hygiene standards and easy cleaning
- The UHMW PE chute feed system (no moving parts) delivers frozen product to the optical vision system efficiently
- Stable operation offers consistent performance without the need for daily calibration
SORTEX E1D Specifications:

Technical details

<table>
<thead>
<tr>
<th></th>
<th>Power consumption (200-240 V; 50/60 Hz single phase)</th>
<th>Air requirements*</th>
</tr>
</thead>
<tbody>
<tr>
<td>SORTEX E1D</td>
<td>2 kW (Total)</td>
<td>Typically 32 l/sec for colour sorting</td>
</tr>
<tr>
<td>Vibrator</td>
<td>1 kW (Total)</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions and Weight

<table>
<thead>
<tr>
<th></th>
<th>Machine (With Vibrator)</th>
<th>Width (mm, in)</th>
<th>Length (mm, in)</th>
<th>Height (mm, in)</th>
<th>Weight (kg, lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Chute</td>
<td>Short Chute</td>
<td>1650, 65</td>
<td>2930, 115</td>
<td>2050, 81</td>
<td>748, 1650</td>
</tr>
<tr>
<td>Long Chute</td>
<td>Long Chute</td>
<td>1650, 65</td>
<td>3040, 120</td>
<td>2240, 88</td>
<td>753, 1660</td>
</tr>
</tbody>
</table>

* The compressed air consumption of the sorter varies depending upon throughput and input contamination

Accept

Reject
The SORTEX E1A has been developed for the packing line for FM removal by combining enhanced InGaAs technology with bichromatic cameras and shape recognition. Enhanced InGaAs cameras are uniquely capable of ensuring the safety of your product by removing packaging FM in the packing room. The high detection efficiency of this new technology provides clean and safe product with maximum yield.

- Efficient detection of packaging FM with enhanced InGaAs technology removes plastic, wood and cardboard
- The UHMW PE chute feed delivers frozen product to the optical vision system
- High speed ejectors efficiently remove defects with minimal loss of good product
- Easy wash down with the stainless steel open construction design ensures maximum hygiene levels
- A wide range of products can be sorted using one pre-set mode
- Stable operation offers consistent performance without the need for daily calibration
- PROfile technology allows detection of defective material in real time through the measurement of multiple shape features on each object
- Colour measurement parameters can be adjusted very precisely to separate subtle colour differences
SORTEX E1A Specifications:

**Technical details**

<table>
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<th>Air requirements*</th>
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</thead>
<tbody>
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<td>SORTEX E1A</td>
<td>2 kW (Total)</td>
<td>Typically 32 1/sec for colour sorting</td>
</tr>
<tr>
<td>Vibrator</td>
<td>1 kW (Total)</td>
<td></td>
</tr>
</tbody>
</table>

* The compressed air consumption of the sorter varies depending upon throughput and input contamination

**Dimensions and Weight**

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<tr>
<th>Machine</th>
<th>Width (mm, in)</th>
<th>Length (mm, in)</th>
<th>Height (mm, in)</th>
<th>Weight (kg, lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Chute</td>
<td>1490, 59</td>
<td>2790, 110</td>
<td>2080, 82</td>
<td>585, 1290</td>
</tr>
<tr>
<td>Long Chute</td>
<td>1650, 65</td>
<td>3040, 120</td>
<td>2240, 89</td>
<td>590, 1300</td>
</tr>
</tbody>
</table>
Inspection systems use a vital combination of technologies to achieve 'Safe Food, Clean Food'. Removing blemishes, misshapes and FM.

**Custom-designed cameras**
Most optical sorters use off-the-shelf cameras however, Buhler takes a different approach. Buhler’s cameras are designed and built in-house to meet customers specific needs. High resolution optics sensors deliver the colour registration needed to detect the most subtle colour defects. When combined with InGaAs technology these sensors allow the sorters to detect many commonly found foreign materials that compromise the safety and cleanliness of your product.

**InGaAs Technology**
The SORTEX E and K ranges offer the first optical sorters to bring enhanced InGaAs technology to frozen fruit and vegetable packing lines. InGaAs detects a wider range of contaminants than previously possible and is particularly effective in identifying stray fragments of common packaging materials both in single products and complex vegetable mixes.

**PROfile Technology**
The advanced shape detection system that has proved so successful on previous sorter models, has been taken to an even more advanced level. PROfile technology can intelligently detect and virtually separate touching objects, allowing for a higher capacity shape sorting. Another added feature of the Profile technology is the possibility of using a combination of multiple shape parameters to remove stems and under or oversized fruit and vegetables at the same time.
SORTEX Total Care.
Secure tomorrow’s profits today.

SORTEX Total Care offers local support at three distinct levels to customers anywhere in the world. Buhler Sortex is passionate about delivering services in a way that best suits customers’ operations regardless of where they are located. Our Total Care packages offer the widest choice of services at varying cost and service levels, to meet every customer’s exact needs.

Three Support Packages

GOLD
Ensure Maximum Uptime
Total Care Gold offers the most comprehensive support to ensure that your investment is fully protected. It promises maximum uptime and delivers proactive support of the highest quality. It is designed for those customers whose sorter is critical to production.

SILVER
Minimise Downtime
Total Care Silver ensures high quality focused services that maintain the sorter in optimum condition. The Total Care Silver package offers extensive service features that address sorter maintenance and guard against problems.

BRONZE
Essential Support
Total Care Bronze offers a valuable level of cost effective protection to areas of prime concern. Self-selectable service features can create a programme that best suits operational requirements.

Anyware – Global Support Delivered Locally.

Anyware is part of the SORTEX Total Care Gold package. The Anyware software is a communications tool that enables Buhler to monitor the performance of the sorter via an internet connection. The link can be GSM, IP network, or a standard analogue telephone connection. The system has many levels of security to ensure integrity and a safe environment.

- Anyware Alerts
- Anyware Fault Alerts
- Anyware Automated Health Checks
- Anyware Manual Health Checks
- Connectivity

ANYWARE - GLOBAL SUPPORT DELIVERED LOCALLY.

ANYWARE IS PART OF THE SORTEX TOTAL CARE GOLD PACKAGE. THE ANYWARE SOFTWARE IS A COMMUNICATIONS TOOL THAT ENABLES BUHLER TO MONITOR THE PERFORMANCE OF THE SORTER VIA AN INTERNET CONNECTION. THE LINK CAN BE GSM, IP NETWORK, OR A STANDARD ANALOGUE TELEPHONE CONNECTION. THE SYSTEM HAS MANY LEVELS OF SECURITY TO ENSURE INTEGRITY AND A SAFE ENVIRONMENT.