Nuts and Dried Fruit
Optical Sorting.
Nuts and Dried Fruit Sorting from Bühler. Equipment and Solutions.

1. The Bühler Advantage
2. Nut and dried fruit applications
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Bühler in partnership with processors.

An integral part of the nut and dried fruit processing industry.

Bühler is a leading global supplier of optical sorting solutions to the food and non-food processing industries and has been at the forefront of pioneering optical sorting technology since 1947.

With a commitment to substantial investment in research and development, Bühler’s proprietary sorting technology delivers excellent results in removing the most challenging defects and foreign materials in a wide range of applications.

Nut and dried fruit processors, whether primary or secondary processors, can be confident of world-class performance when placing Bühler’s SORTEX® optical sorters in their processing line for in-shell, natural, blanched and dried fruit applications.

**Key benefits**

- The most hygienic optical sorters, lowering the risk of contamination
- Exceptional colour, shell and foreign material detection
- Flexible solutions for small and large scale processors
Flexible optical sorting solutions. At all stages of the processing line.

In-shell

SORTEX® optical sorters reduce the levels of foreign materials and rotten kernels amongst in-shell applications to improve the efficiency further down the processing line.

Colour, size and shape grading early on also ensures a consistent input to the cracking and shelling process with only the highest grade nuts being approved as fit for further processing.

Natural

The most subtle visible defects are removed from natural nut applications as well as foreign materials which may have been missed by mechanical cleaners or introduced during further processing.

SORTEX® optical sorters are equipped with the most advanced optical sorting technologies to ensure stringent safety and quality specifications are achieved every time.

Blanched

Adhering skin, foreign material and subtle colour defects especially those enhanced by the blanching process are removed with pinpoint precision for top quality blanched kernels ready for snacks, ingredients and toppings.
Dried fruit applications such as raisins and cranberries can be graded by size and colour whilst hazardous foreign materials such as stones, glass and plastic are removed with force using Bühler’s intelligent ejector technology.
Serious about food safety.
Specialist sorting applications.

Aflatoxin reduction

Bühler has been at the forefront of pioneering aflatoxin reduction since the 1980s’ after tests in Senegal, using the SORTEX® 1161, prove optical sorting could substantially reduce aflatoxin levels amongst ground nuts.

Fast forward 30 years, and Bühler continues to develop the most advanced camera technology to actively target contaminated kernels, helping nut processors meet the legal and maximum permitted levels globally.

Shell and foreign material removal

Bühler’s SORTEX BioVision™ detection system has revolutionised the nut processing industry, helping processors meet strict food safety standards with a zero tolerance approach for shell and foreign materials in the good product stream.

The technology can be positioned at all stages of the processing line, acting as a defence against shell, hull, membrane or foreign materials from the harvest process or as a final barrier against foreign materials such as glass and plastic which often occur during transportation or further processing.
3-in-1 defect and foreign material detection.

**SORTEX® F.**

The industry's most hygienic optical sorter, enhanced for nut and dried fruit processors with a high capacity 1200mm viewing area and built-in climate control and dust extraction kits. Available now with SORTEX BioVision™ technology.

**SORTEX® F.**

The SORTEX F, available with the SORTEX BioVision™ detection system offers processors 3-in-1 detection with advanced camera technology which targets colour defects, shell and foreign materials simultaneously in a unique open design frame which lowers the risk of contamination thanks to its hygienic grade fixings, sloped surfaces and easy cleaning access.

The pioneering sorter can be configured for all areas of the nut and dried fruit processing industry, from primary to secondary processors including manufactures of snacks, nut spreads and nut milks for a versatile solution which focuses on hygienic and efficient sorting, seamlessly, at all stages of the processing line.

- SORTEX BioVision™ detection system
- Adjustable 1200mm double chute
- Open receptacle
- Custom-built colour cameras
- High definition InGaAs²HD cameras
- PROfile™ (shape) technology
- LED-Xenon lighting
- 17 inch touch screen user interface
- Re-sort capabilities
- ProSortX™ operating software
- Climate control system
Shell and foreign material removal.

**SORTEX® E.**

The SORTEX E is designed for nut and dried fruit processors looking for a hygienic sorting solution at lower processing capacities. Available with Bühler’s advanced SORTEX BioVision™ detection system which detects shell and foreign materials up to 50% smaller than other industry solutions today.

**SORTEX® E.**

The SORTEX E offers processors a high performance sorting experience in a small footprint. Designed to bring the benefits of larger sorters to smaller processors, whilst delivering nothing but the highest quality product at all stages of the processing line.

Available with the advanced SORTEX BioVision™ detection system, state-of-the-art high definition InGaAsIC cameras and PROFile™ detection technologies, the SORTEX E is capable of handling multiple nut and dried fruit varieties for best in class foreign material detection.

- SORTEX BioVision™ detection system
- 600mm chute
- Custom-built colour cameras
- High definition InGaAsIC cameras
- PROFile™ (shape) technology
- SmartEject™ technology
- Broad spectrum lighting
- Re-sort option
- ProSortX™ operating software
6 Colour and foreign material removal.

**SORTEX® A.**

Available in three different frame sizes including the MultiVision™, ColorVision™ InGaAs and DualVision™ inspection systems, the SORTEX A provides nut and dried fruit processors with dedicated customised options to handle unique and challenging sorting requirements, regardless of processing size.

**SORTEX® A.**

Equipped with Bühler’s custom-built inspection and lighting systems, the SORTEX A removes a range of defects including yellows, mould, light, dark and black spots and shrivelled kernels as well as various foreign materials such as glass, stones and plastic.

Featuring Bühler proprietary technologies including Product Tracking, Auto-Calibration, High-Lumen LED Lighting and the new SORTEX ProSortX™ operating system, the SORTEX A offers ease of use, removing the need for manual intervention whilst delivering consistent high sorting performance.

- MultiVision™, DualVision™ and standard inspection systems
- High capacity feeding with up to 5 chutes
- Custom-built colour cameras
- InGaAs cameras
- PROfile™ (shape) technology
- SmartEject™ technology
- Broadband LED lighting
- Re-sort capabilities
- ProSortX™ operating software
Innovative technologies.
Leading the way through innovation.

**SORTEX® BioVision™ technology**

The advanced SORTEX BioVision™ detection system is a unique configuration of detection technologies which includes **BioCam™** combined with either high definition **InGaAs** HD, **colour cameras**, or both.

Innovative **BioCam™** technology targets the spectral and spatial differences between the nut and shell, new high-definition **InGaAs** HD cameras detect foreign materials in the near invisible infrared spectrum and **custom-built visible cameras** remove colour defects including dark, rotten, yellow and spot defects.

**Custom-built visible cameras**

Bühler’s high resolution colour cameras, which are designed and custom-built in house, remove gross and subtle colour defects and reduce aflatoxin contaminated kernels from a variety of applications to increase product quality, safety and uniformity.

**InGaAs** HD technology

The next generation infrared detection technology from Bühler now comes in high definition with double the resolution to detect foreign materials down to half the size. With twice as many pixels, **InGaAs** HD detects the smallest pieces of hazardous materials that cannot be seen in the visible spectrum for an added layer of assurance.
**PROfile™ technology**

PROfile™ technology can intelligently detect and virtually separate touching objects, allowing for higher capacity shape sorting. It can also use a combination of multiple shape parameters to remove stems and under or oversized products at the same time.

**Intelligent Ejector technology**

**SmartEject™** - high speed, high flow ejectors efficiently remove defects with pinpoint precision and accuracy.

**Ejector+ technology**, Bühler’s most powerful ejectors are available on the SORTEX E and SORTEX F optical sorters to remove heavier objects such as stones and glass.

**SORTEX® ProSortX™ operating software**

The latest update of Bühler’s proprietary operating software comes with a fresh new interface that’s modern, clean and intuitive to use. Featuring innovative FingerTipControl™ and all-new Bühler ATOM™ board for faster processing and navigation between screens.
Model variants.

## Models and variants

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<th>SORTEX F</th>
<th>SORTEX E</th>
<th>SORTEX A</th>
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<td>SORTEX BioVison™</td>
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<tr>
<td>Flexible Colour Cameras</td>
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<td>InGaAs HDV</td>
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<tr>
<td>PROfile™ technology</td>
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<td>LED-Xenon lighting</td>
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<td>Halogen lighting</td>
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<td>Broadband LED lighting</td>
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<tr>
<td>Climate Control</td>
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<tr>
<td>SORTEX ProSortX™</td>
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<td>Remote access</td>
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<td>CE Certification</td>
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- Standard ■
- Optional □

For the full feature list, contact your local representative.

## Dimensions, air and power requirements

<table>
<thead>
<tr>
<th>Feature</th>
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<th>SORTEX E</th>
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<tbody>
<tr>
<td>Width (mm/in)</td>
<td>2216, 87</td>
<td>1514, 60</td>
<td>1000</td>
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<tr>
<td>Length (mm/in)</td>
<td>2985, 117</td>
<td>3194, 126</td>
<td>1708</td>
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<tr>
<td>Height (mm/in)</td>
<td>2112, 83</td>
<td>2657, 105</td>
<td>2088</td>
</tr>
<tr>
<td>Weight (kg/lb)</td>
<td>1205, 2645</td>
<td>680, 1500</td>
<td>500</td>
</tr>
<tr>
<td>Typical air requirements (L/min)*</td>
<td>65</td>
<td>32</td>
<td>8</td>
</tr>
<tr>
<td>Typical Power consumption (kW)**</td>
<td>6kW</td>
<td>2.5kW</td>
<td>1.5kW</td>
</tr>
</tbody>
</table>

- Includes infeed vibrator
- One module
- Two/Three module
- Four/Five module

* Figures will vary based on throughput and input contamination levels.
** Figures will vary based on machine specifications.
Bühler’s worldwide Customer Care organisation delivers the highest quality local support ensuring optical sorters perform at maximum possible efficiency, deliver optimum productivity and make the best return on investment.

The SORTEX Spare Parts promise.
Customer satisfaction is our priority. This is why we strive to deliver spare and wear parts within 48 hours, doing our best to limit your downtime and maximise your profitability.

For customers who require spare parts available on site, Bühler’s technologists have created appropriate spares kits for the different machinery available.
TotalCare™ Performance protection.

TotalCare™ allows customers to create their own service package, composed of individual service features that best suit their needs. Customers can create a tailored programme from a variety of packages. Contract options vary from basic to fully comprehensive cover. This way, investments can remain fully protected.

Customers can tailor their individual package from the following options:

**TotalCare Protect**
**Minimise Downtime**
Based on an agreed number of annual visits, Bühler engineers will replace key wear parts, provide consultation and advise on future maintenance requirements.
Protecting Investment.

**TotalCare Perform**
**Performance Optimisation**
Aspiring to keep downtime to under 24 hours, sorters will be safeguarded against any failed components. Bühler engineers will ensure first-rate performance once the repair is carried out.
Repair and Optimise.

**TotalCare PerformPLUS**
**Ejector Refurbishment**
Making certain that sorters are running at peak performance, ejectors are replaced when the stipulated life-cycle is reached.
Performance is maintained for the future.
Maximum Capacity and Quality.

**TotalCare Anyware**
**Supervised Functionality**
Provides a working record of operational information as well as reports that enable machine health to be monitored and preventative maintenance scheduled.
Maintain Optimised Performance.

**TotalCare AnywarePRO**
**Remote Access and Assistance**
Sorter performance can be viewed remotely by customers and Bühler engineers. Faults can be diagnosed and performance optimised in any location using a laptop, tablet or smartphone.
Ultimate control.

*All contracts are available for variable durations*

**SORTEX upgrade kits.**

Suitable for those who are seeking to upgrade sorters with an additional module, new features or software updates.

New technologies and innovations are continuously in development. Upgrade kits allow customers with existing machinery to enhance their production line with the very latest proprietary optical sorting technology.