Key Technology®

Advancing
Together

Digital Sorting Technology Overview

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Advancing Together

SORTING
EXCELLENCE

PROCESSING
KNOWLEDGE

CONVEYING
EFFICIENCY

Applying our **process** knowledge and our **application expertise** in **sorting and conveying**, we **deliver innovative** automation systems that help our customers worldwide succeed by **increasing yield, improving quality,** and **enhancing productivity**. We **partner** with food processing companies of all sizes by offering a **broad range of products** to meet their needs. **Ongoing collaboration** with our customers makes us the **ultimate partner of choice.**

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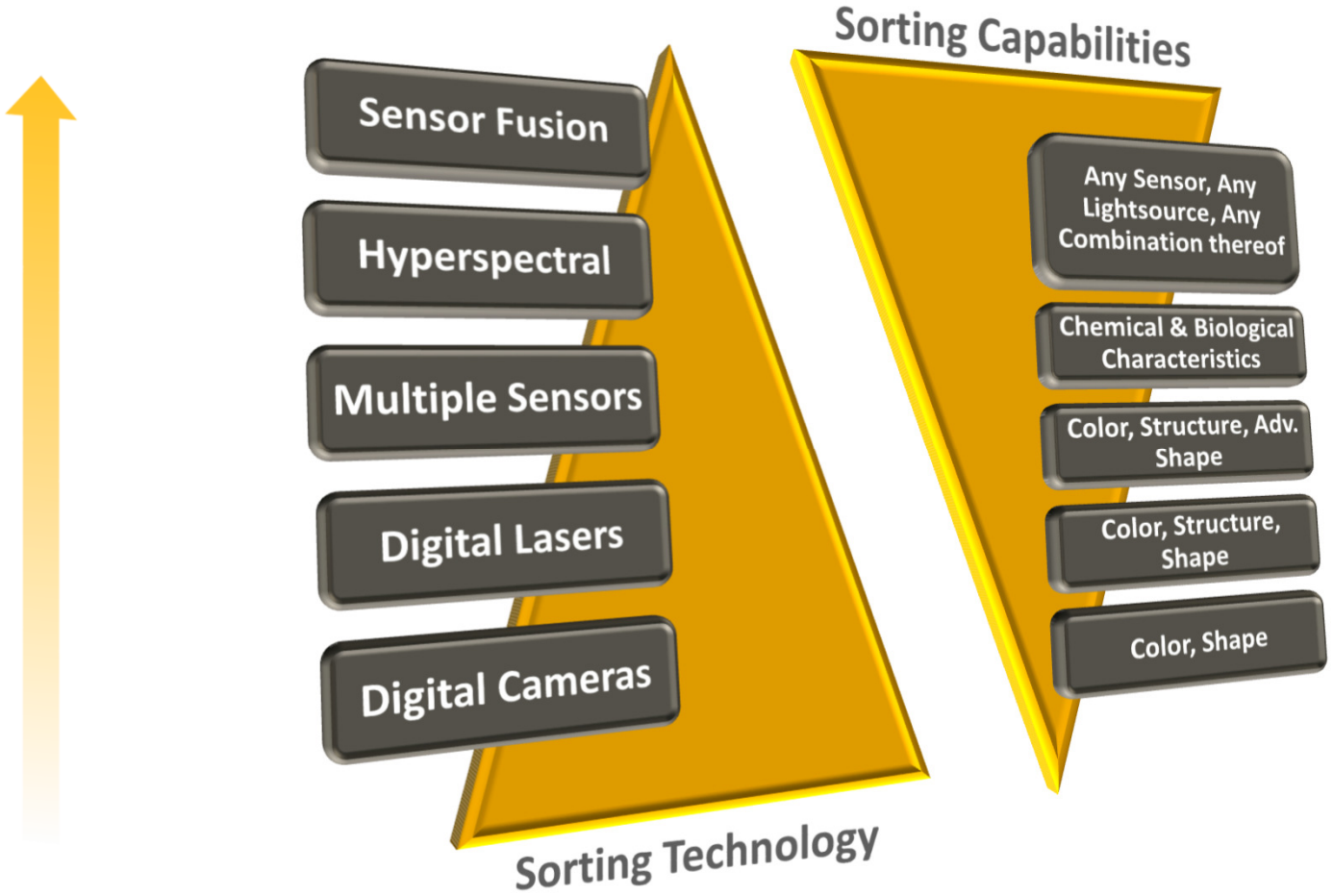
Sorting Excellence

Key Technology sorters are the most versatile sorters on the market, tackling the highest demands set by the leading processors.



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Chute-Fed Sorter Family

SPYDER®
Digital Laser Sorter

VERYX™

PYTHON®
Smart Laser Sorter

CAYMAN®
BioPrint® Sorter

Veo™

TAURYS®
Advanced Laser Sorter

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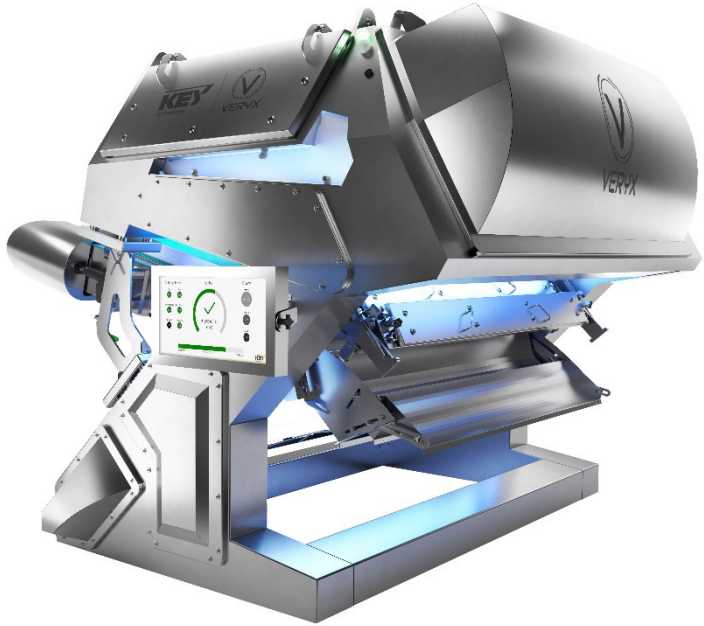
Belt-Fed Sorter Family

Tegra®



VERYX™

Optyx®

Manta™

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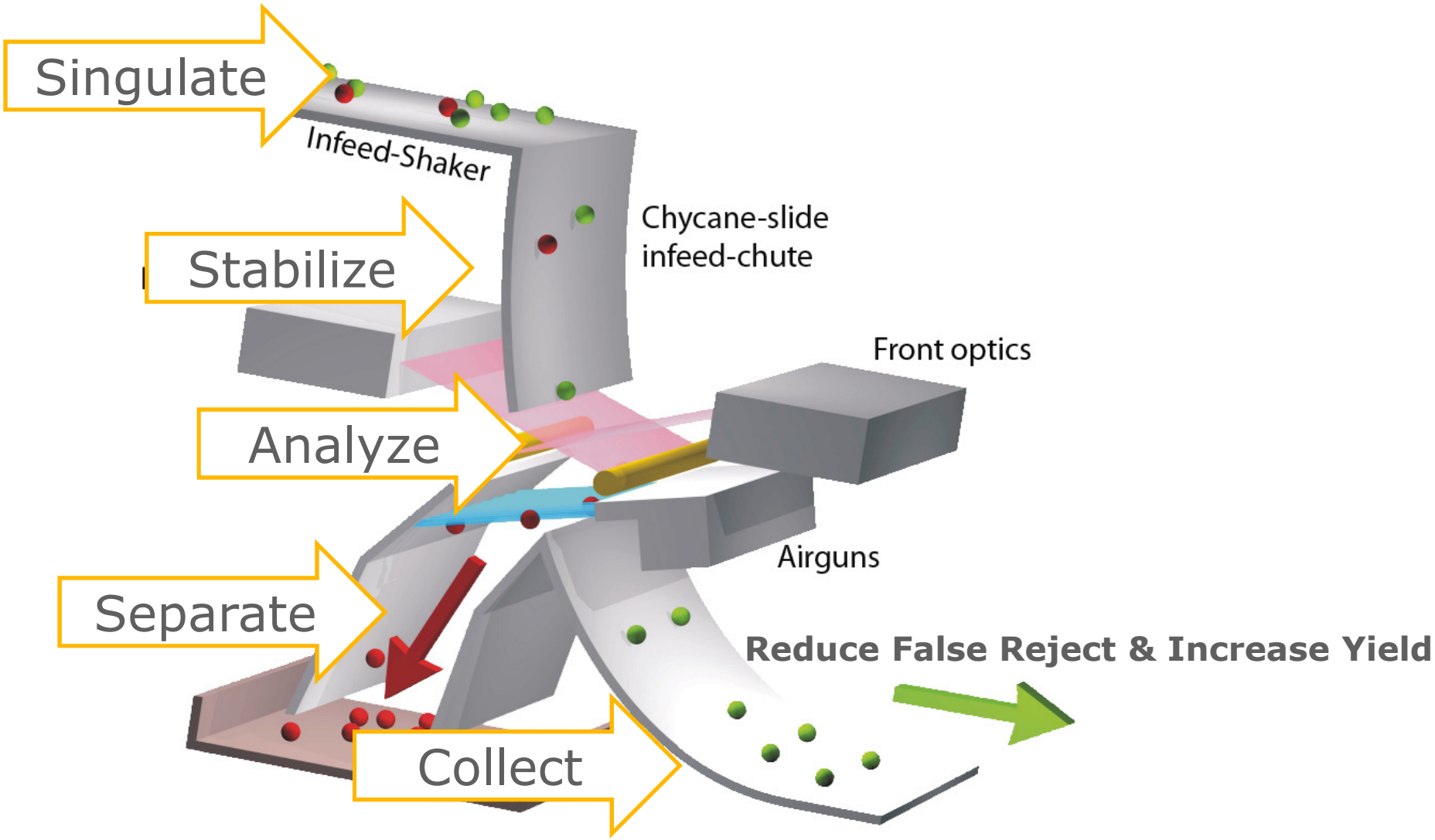
Keys To Sorting Excellence



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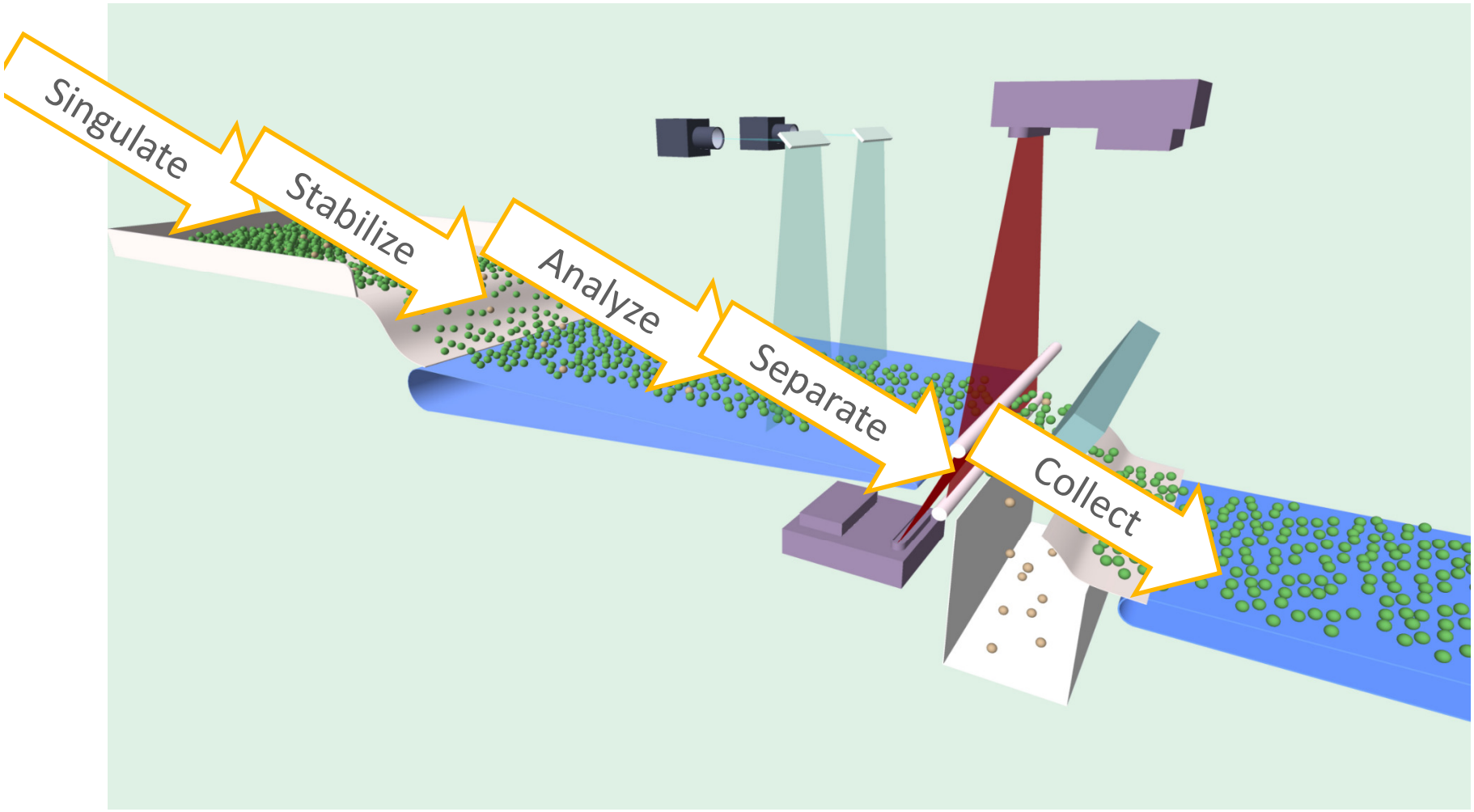
Keys To Sorting Excellence



Reduce False Reject & Increase Yield

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Singulate

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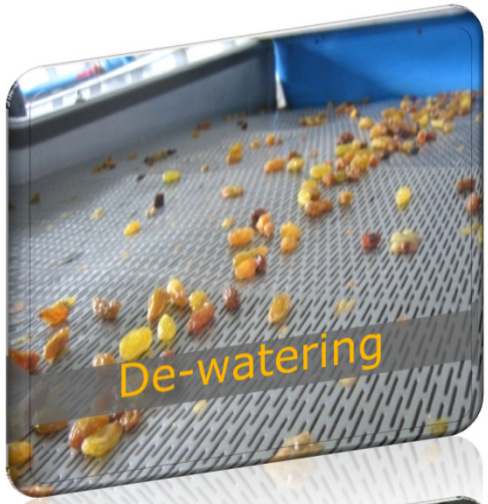
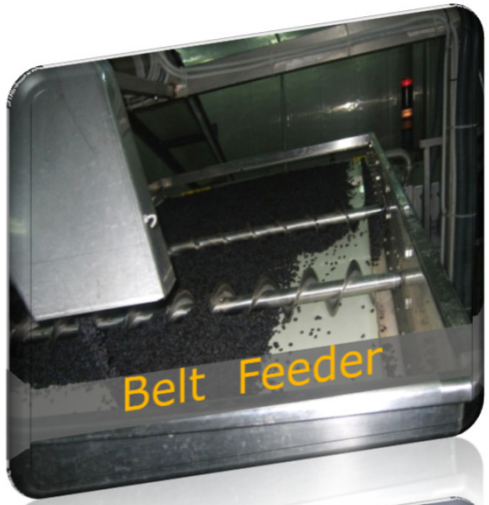
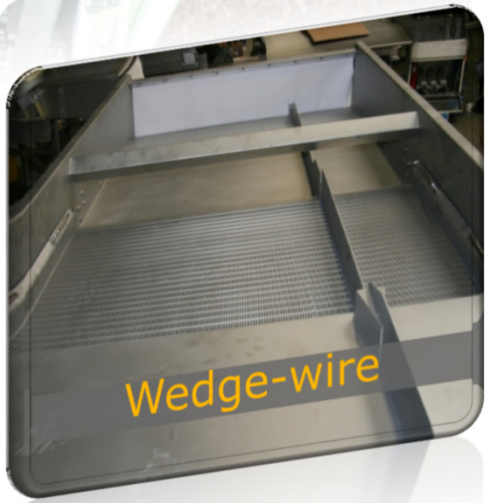
Product Handling Features







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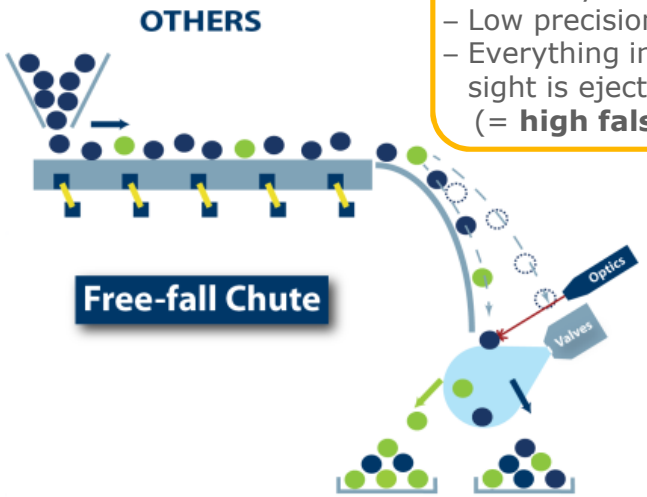
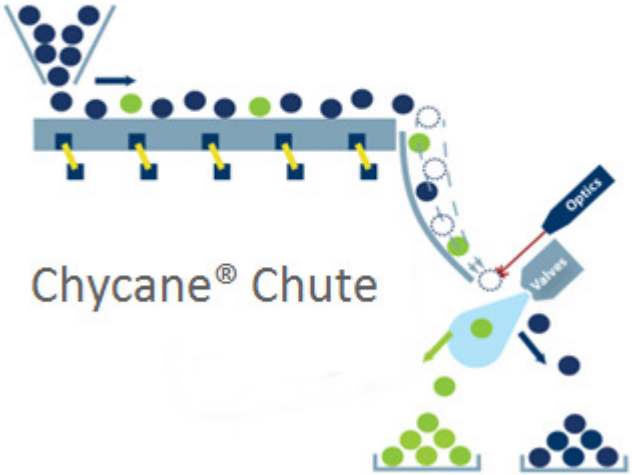
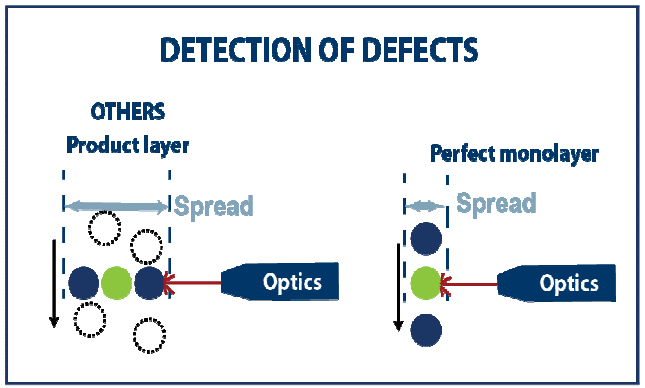
Stabilize - Chycane® Chute

– Inconsistent Trajectory
– Far away from product
– Low precision ejection
– Everything in ejector field of sight is ejected
(= **high false reject**)







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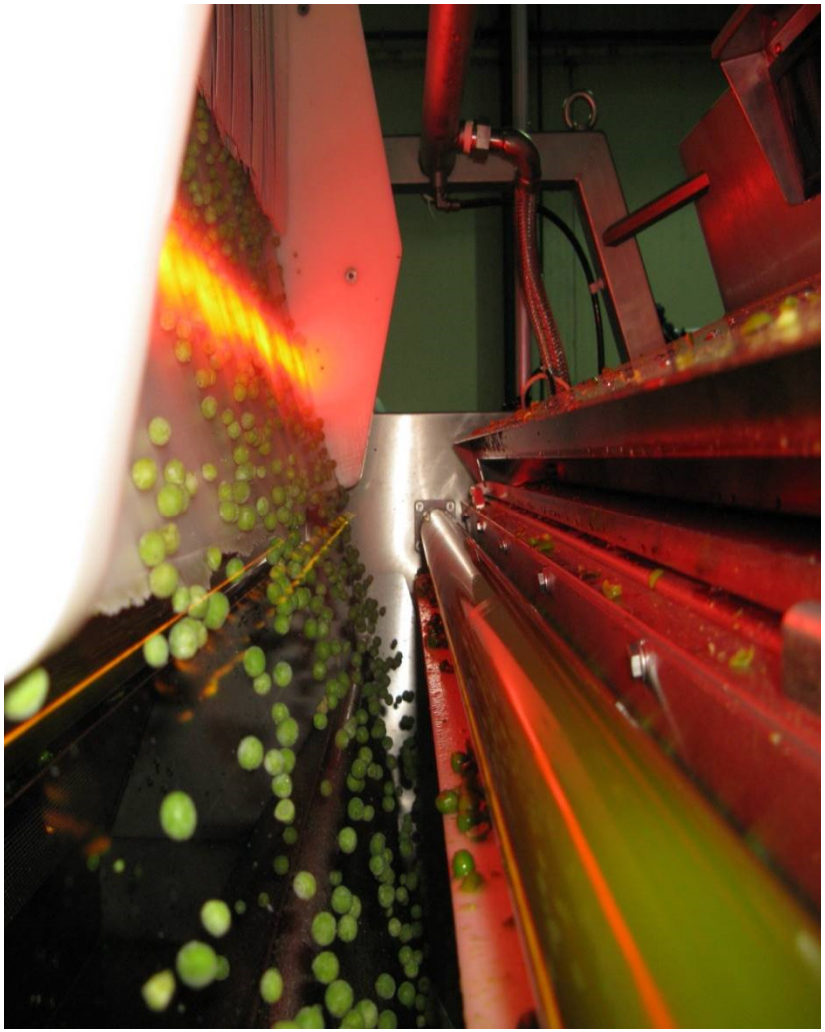
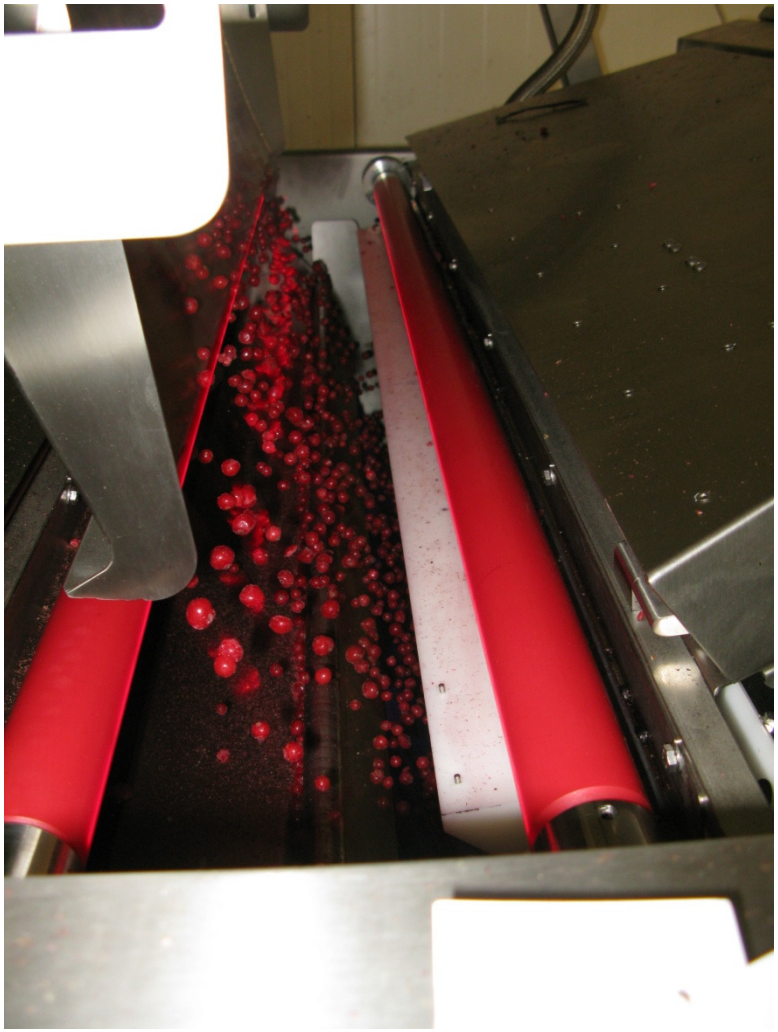
Chycane® Chute





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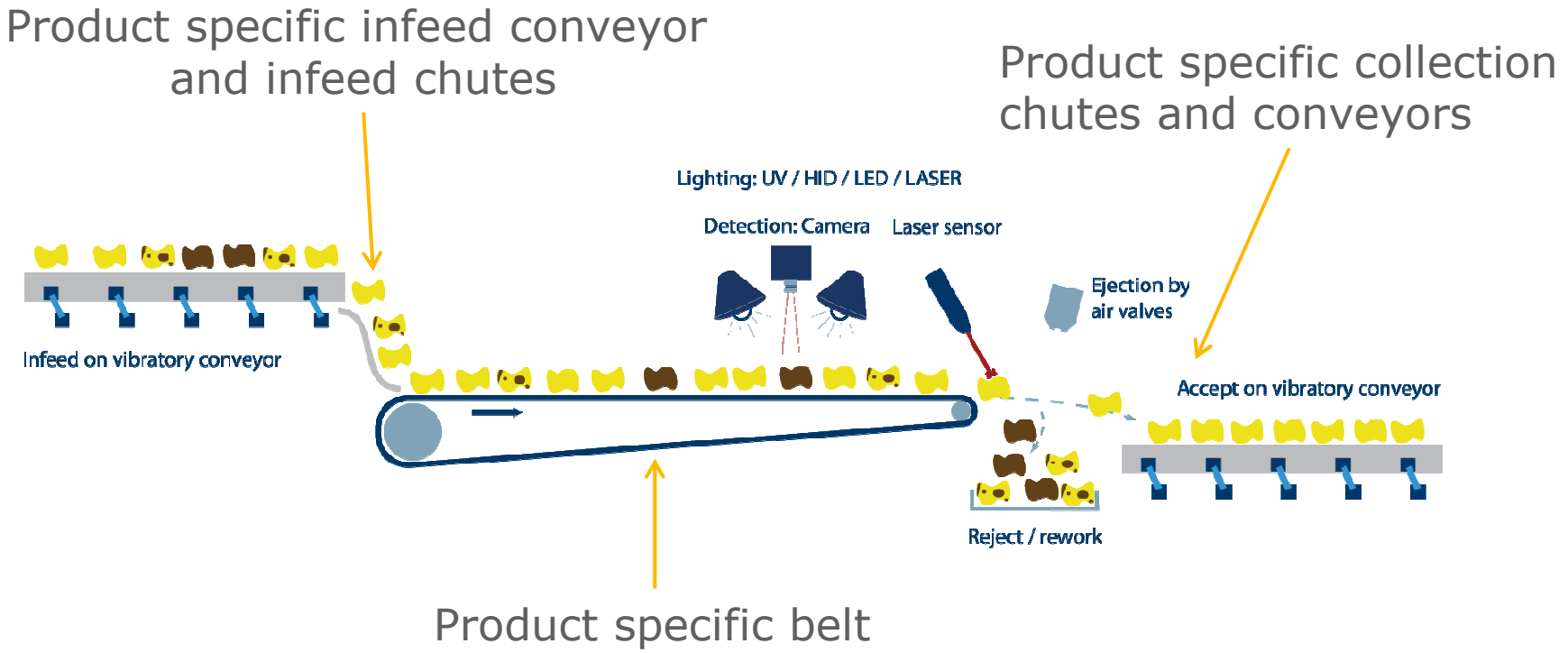
Belt Stabilize



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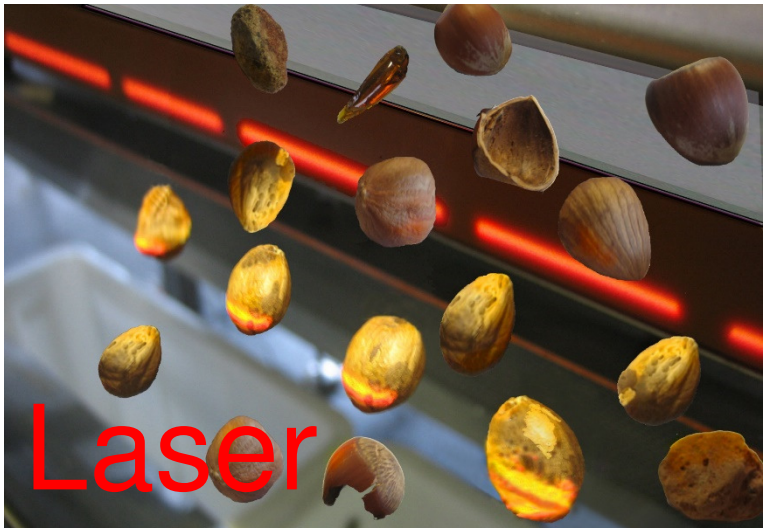
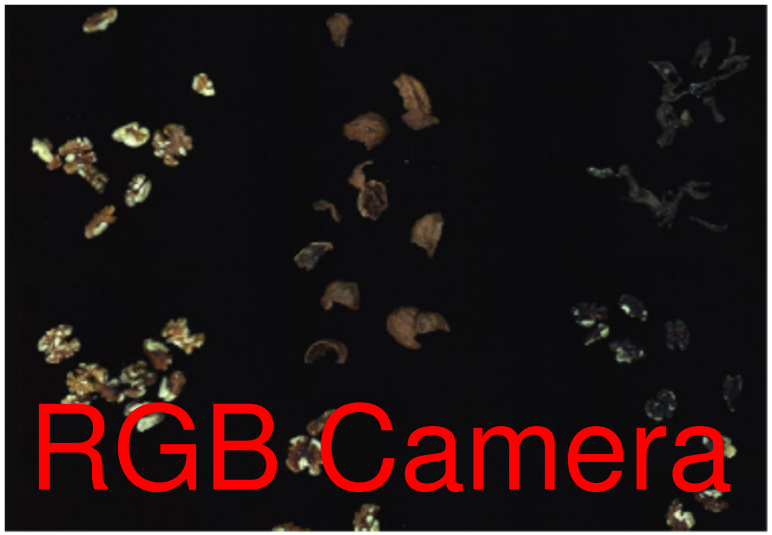
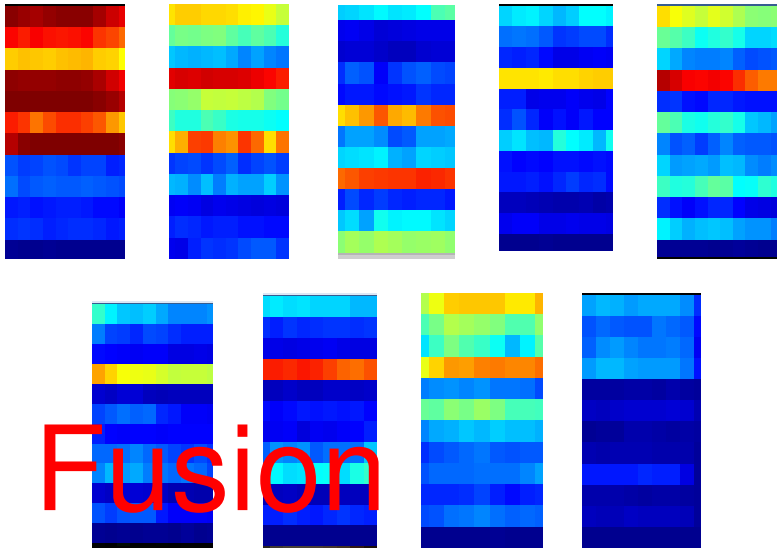
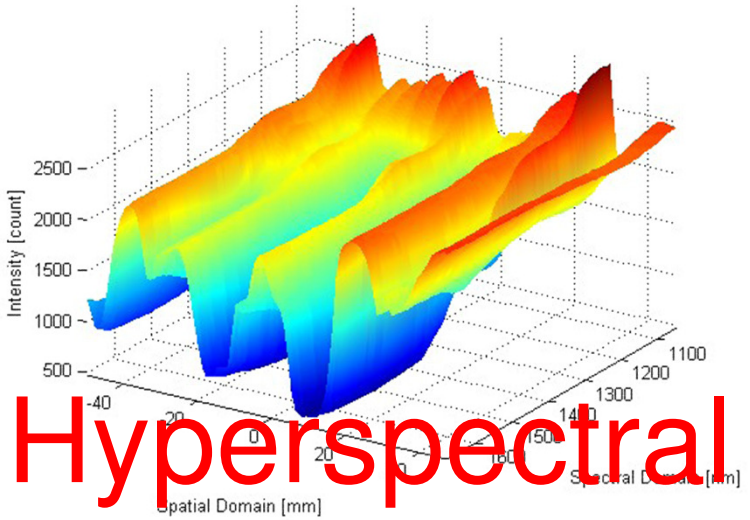
Analyze









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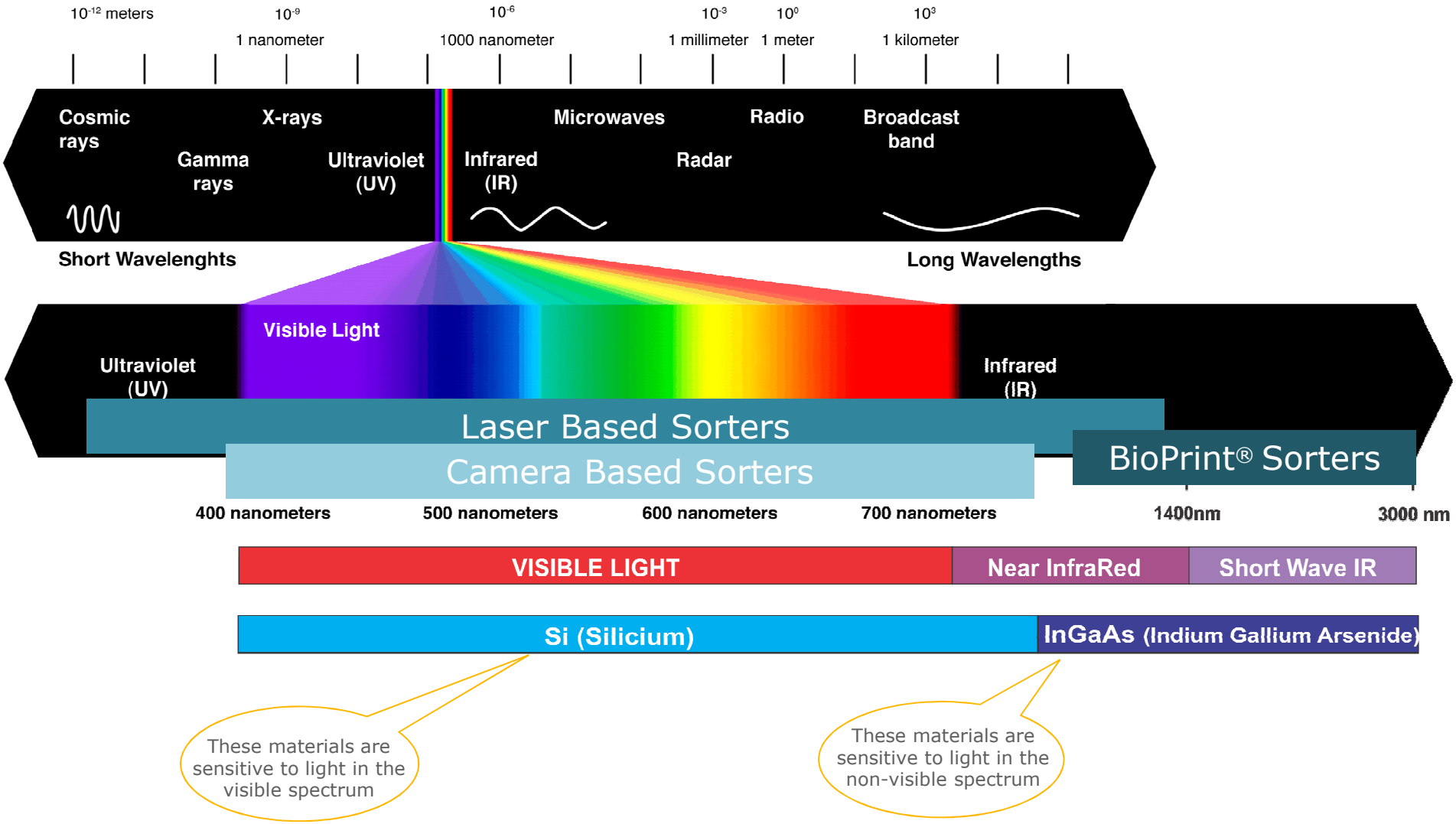
Imaging



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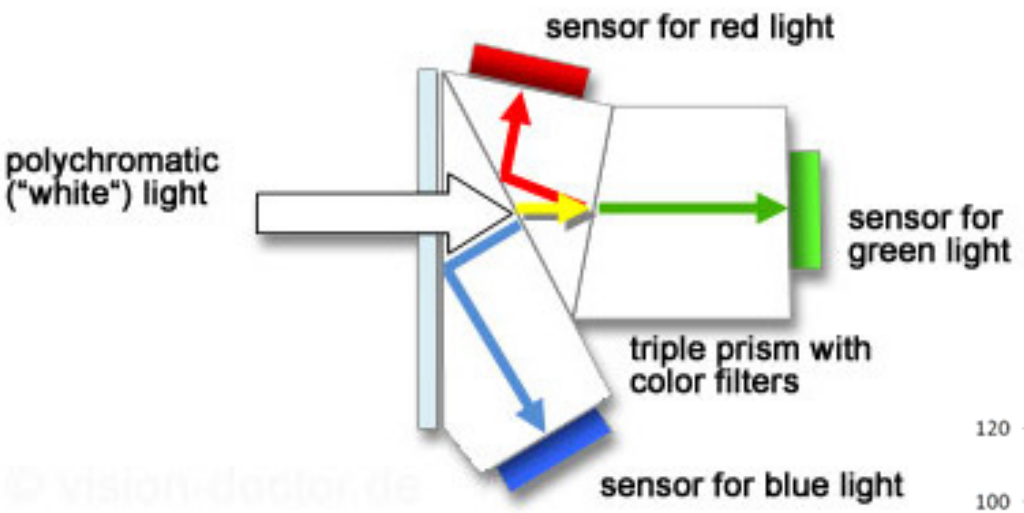
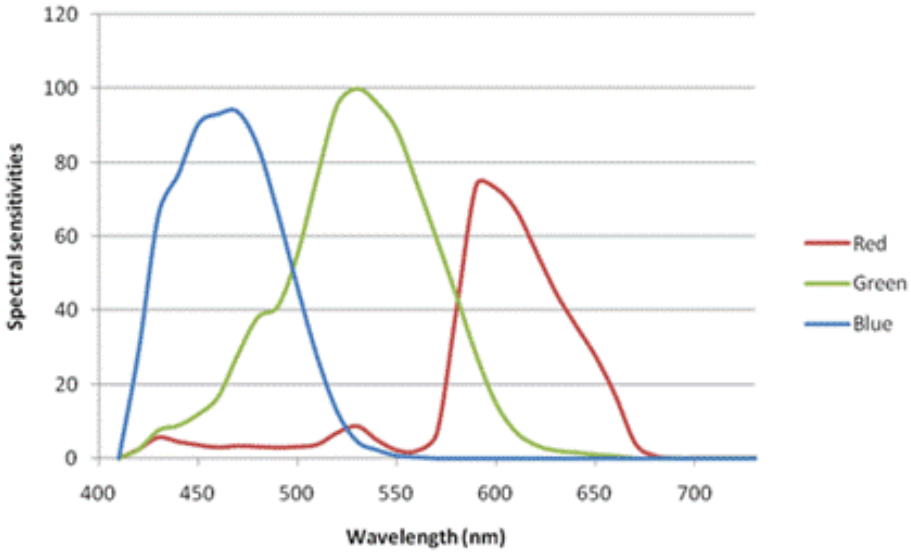
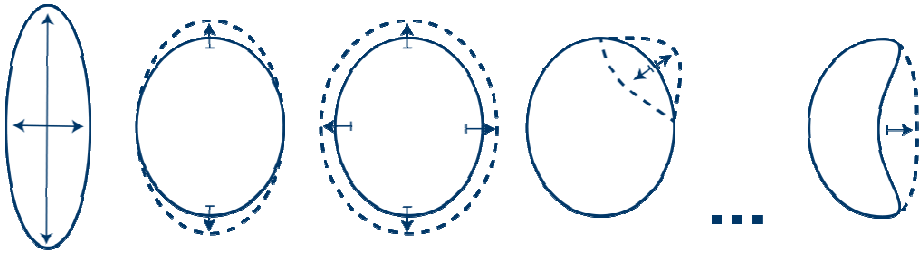
Color Sorting



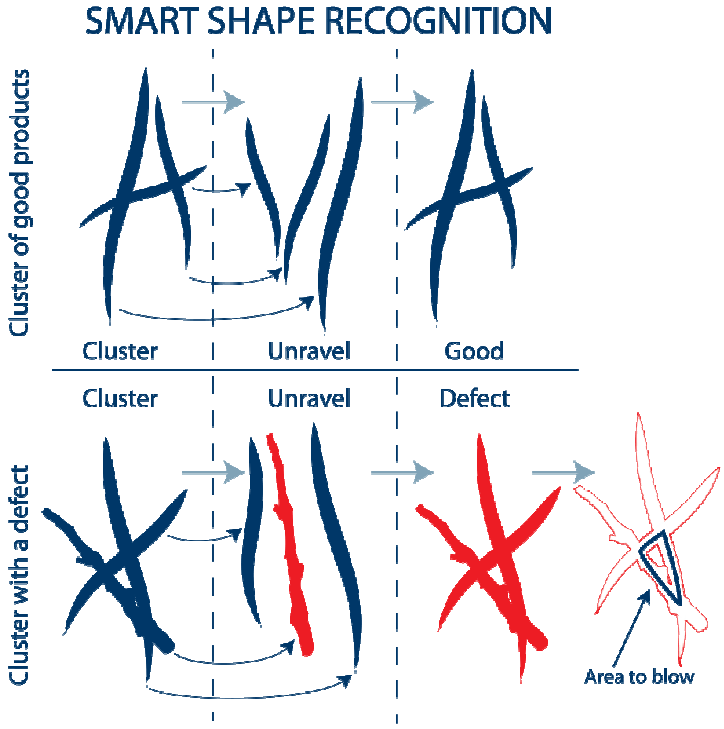


Smart Shape Algorithms

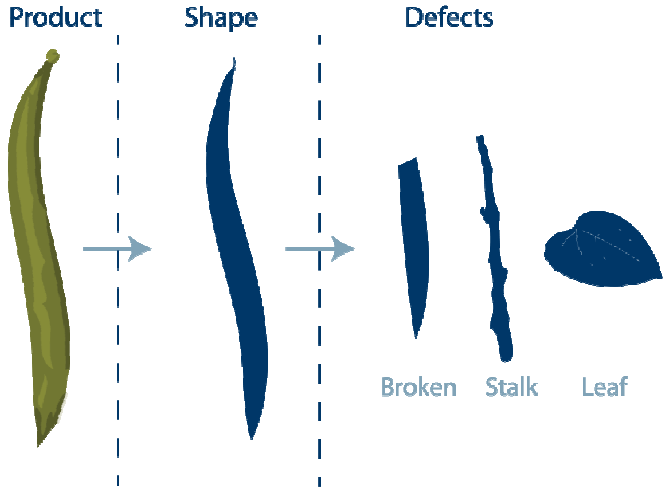
Smart Shape Algorithms

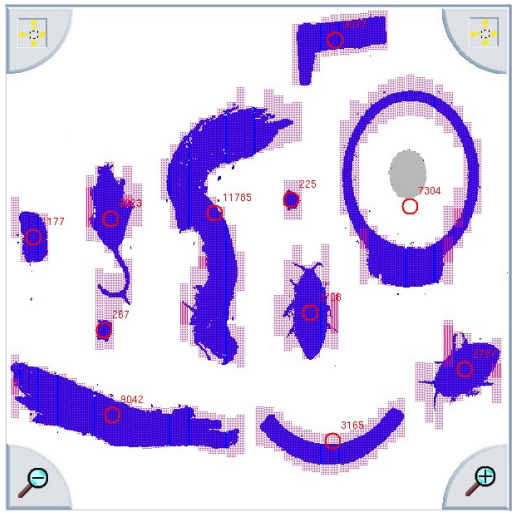


SMART SHAPE RECOGNITION



SMART SHAPE RECOGNITION





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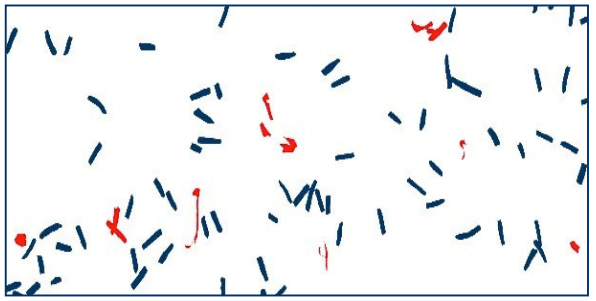
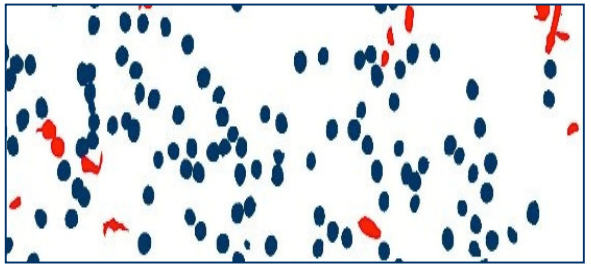
Advanced Shape Recognition

Good Mis-shaped

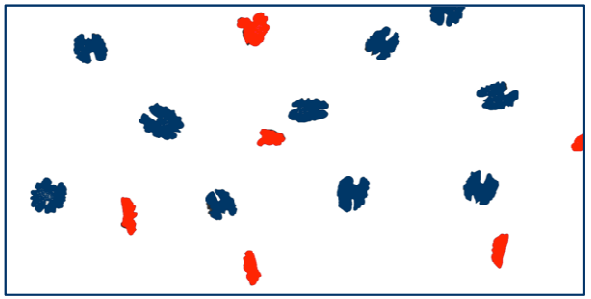
Advanced Shape on Green Beans



Advanced Shape on Green Peas



Advanced Shape on Walnuts



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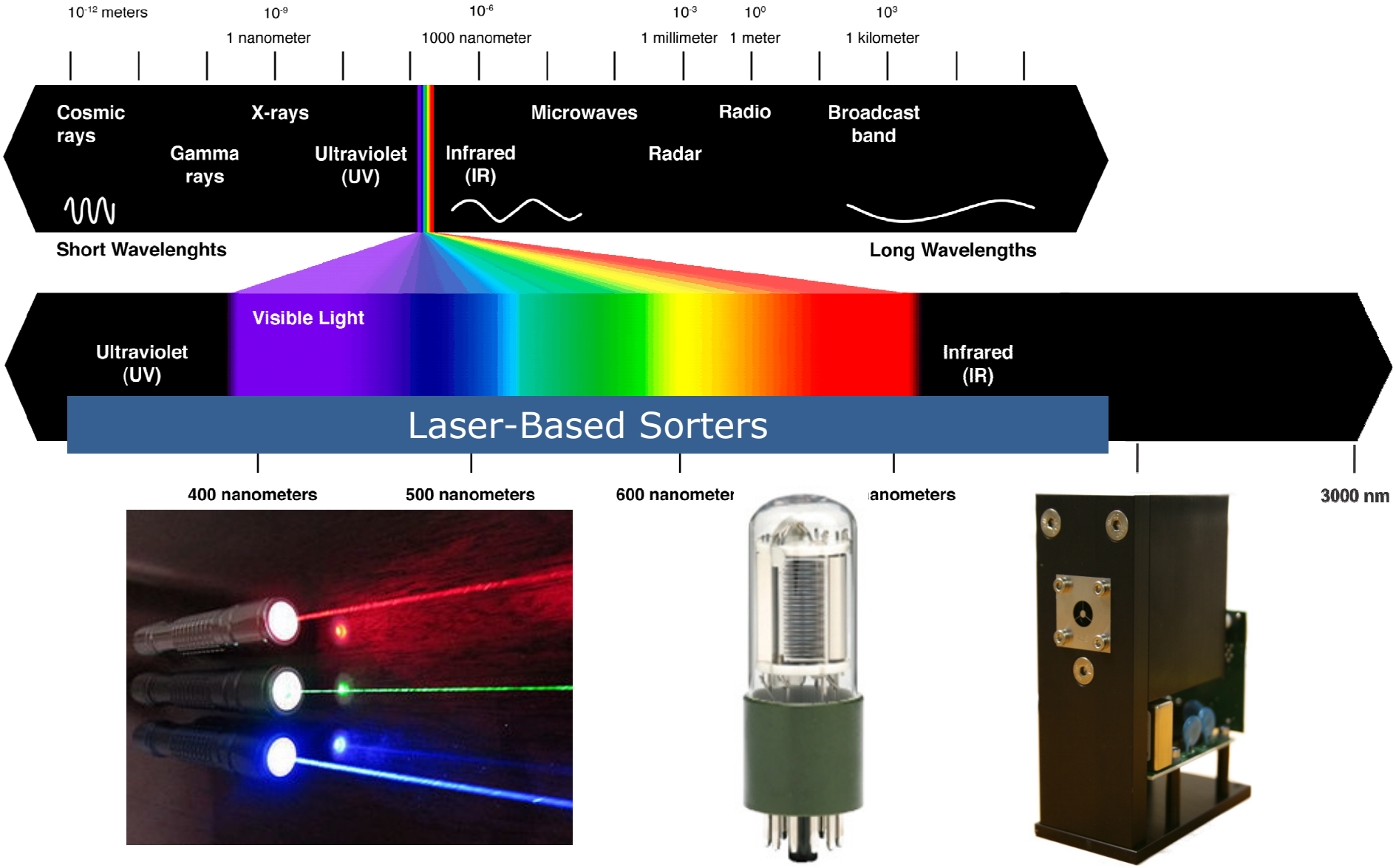
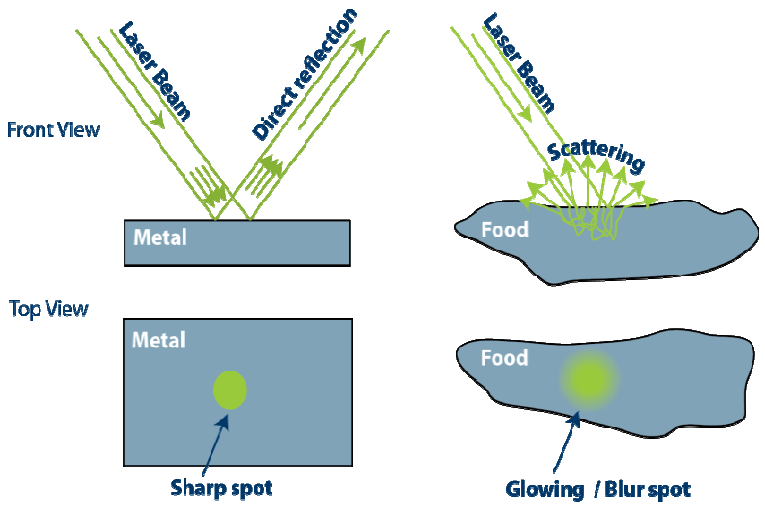
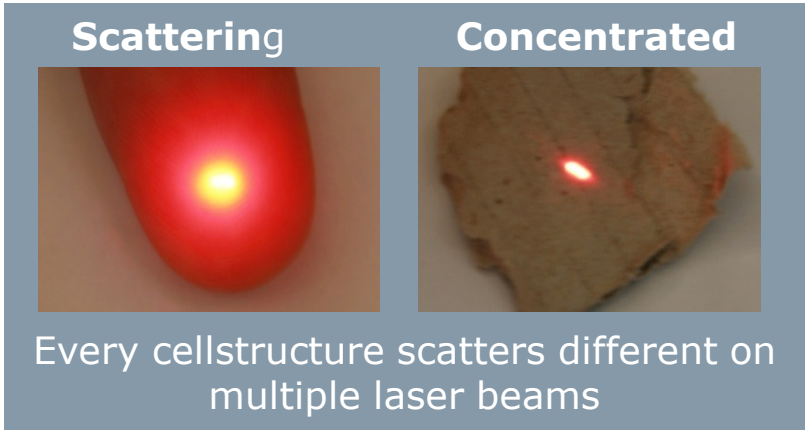
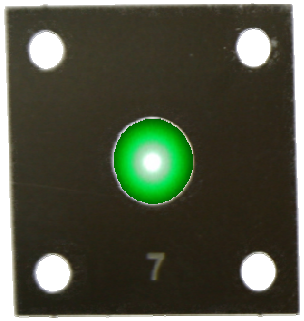
Analyze - Laser



Laser Scattering Principle

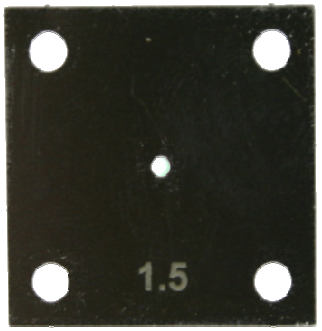






REFLECTION

SCATTERING



ANTI-SCATTERING

Color Sorting

Surface Structure Sorting

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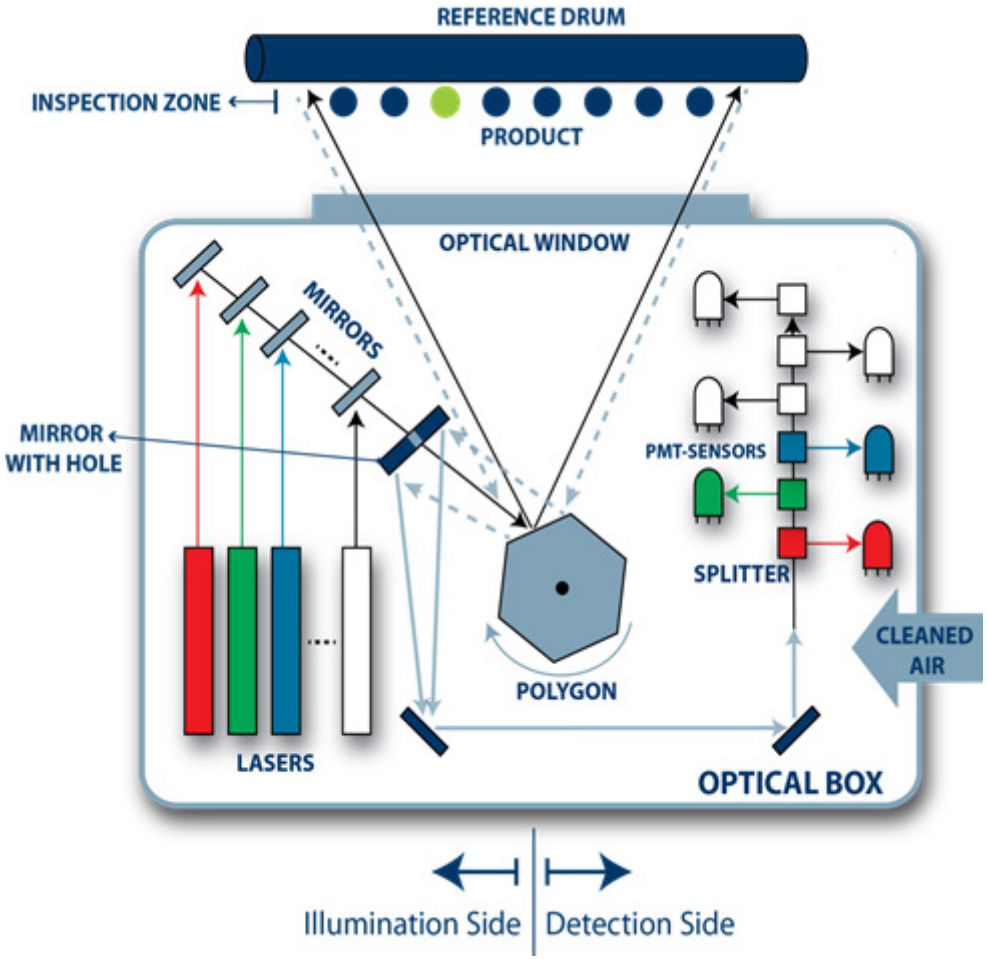
High Speed Scanning

LASER illumination:
- Efficient
- Concentrated

Selection of wavelengths
In the broad spectrum UV, VIS, NIR & IR:
- UV for Fluorescence → Toxins
- VIS for color information
- NIR for foreign object independent from color
- ENIR/SWIR for water & oil content

Multiple PMT detectors as Sensors
- PMT= Most sensitive optical sensor
- Spot intensity = Color
- Scatter information = Texture

Rotating mirror (Polygon) to scan the product
- > 2000 scans per second
- Scan width = 680 mm & 1200 mm



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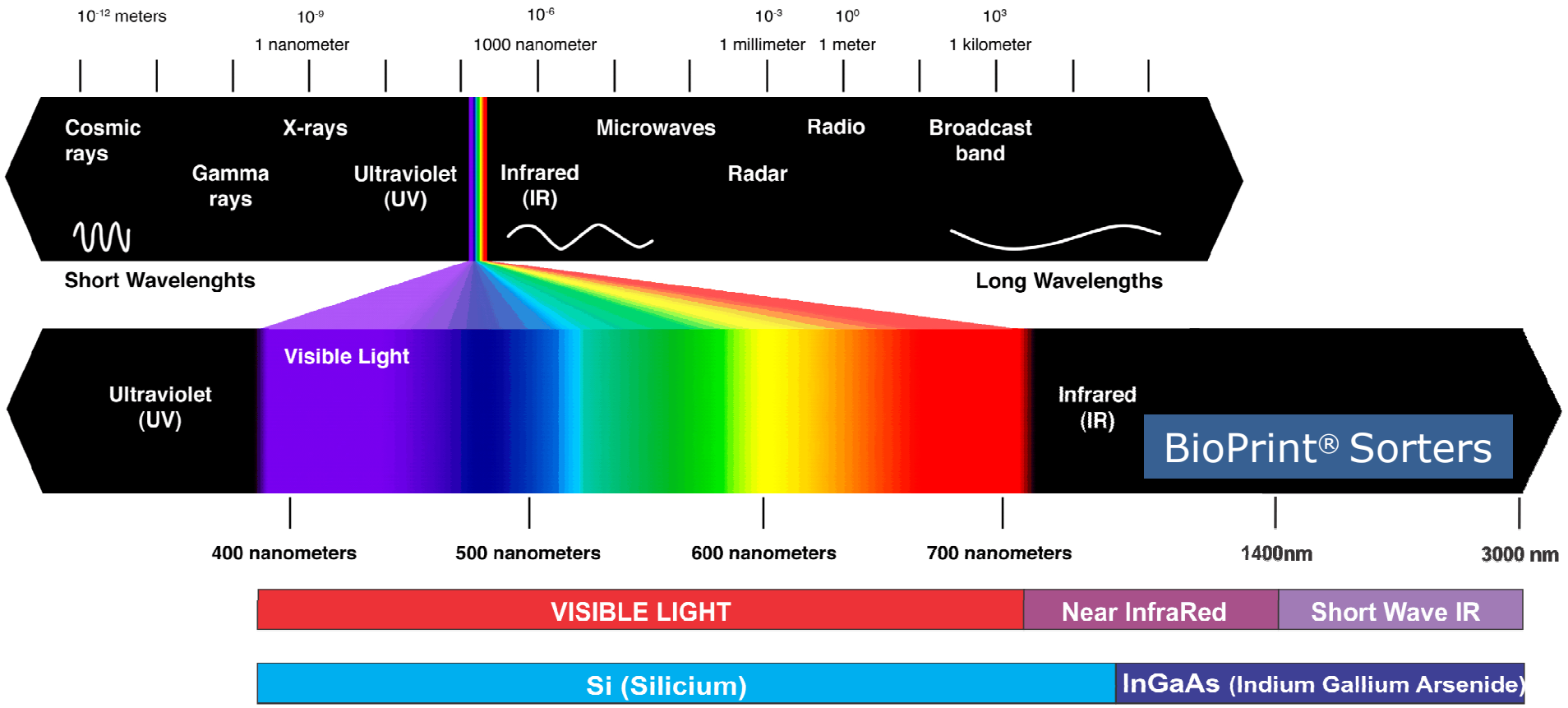
Analyze - Hyperspectral



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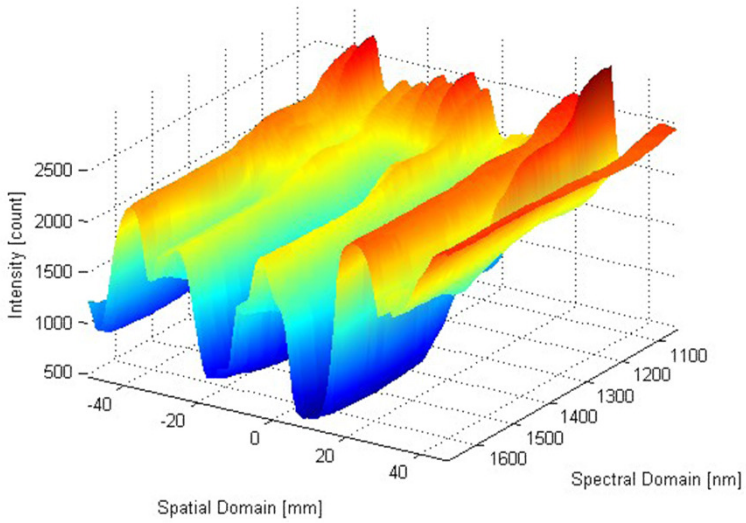
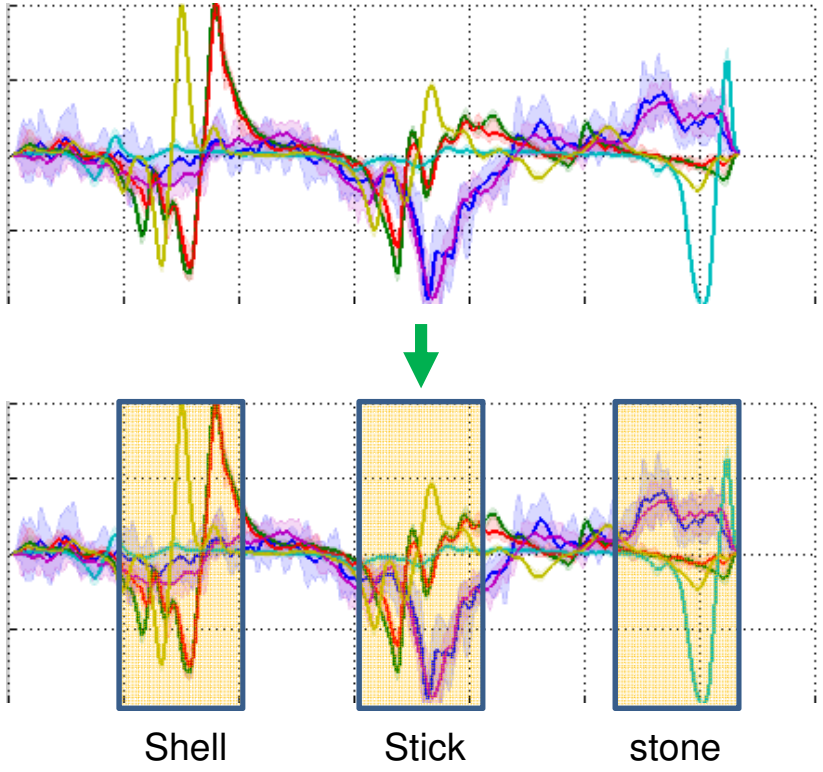
BioPrint® - “DNA” Profiler



Hyperspectral



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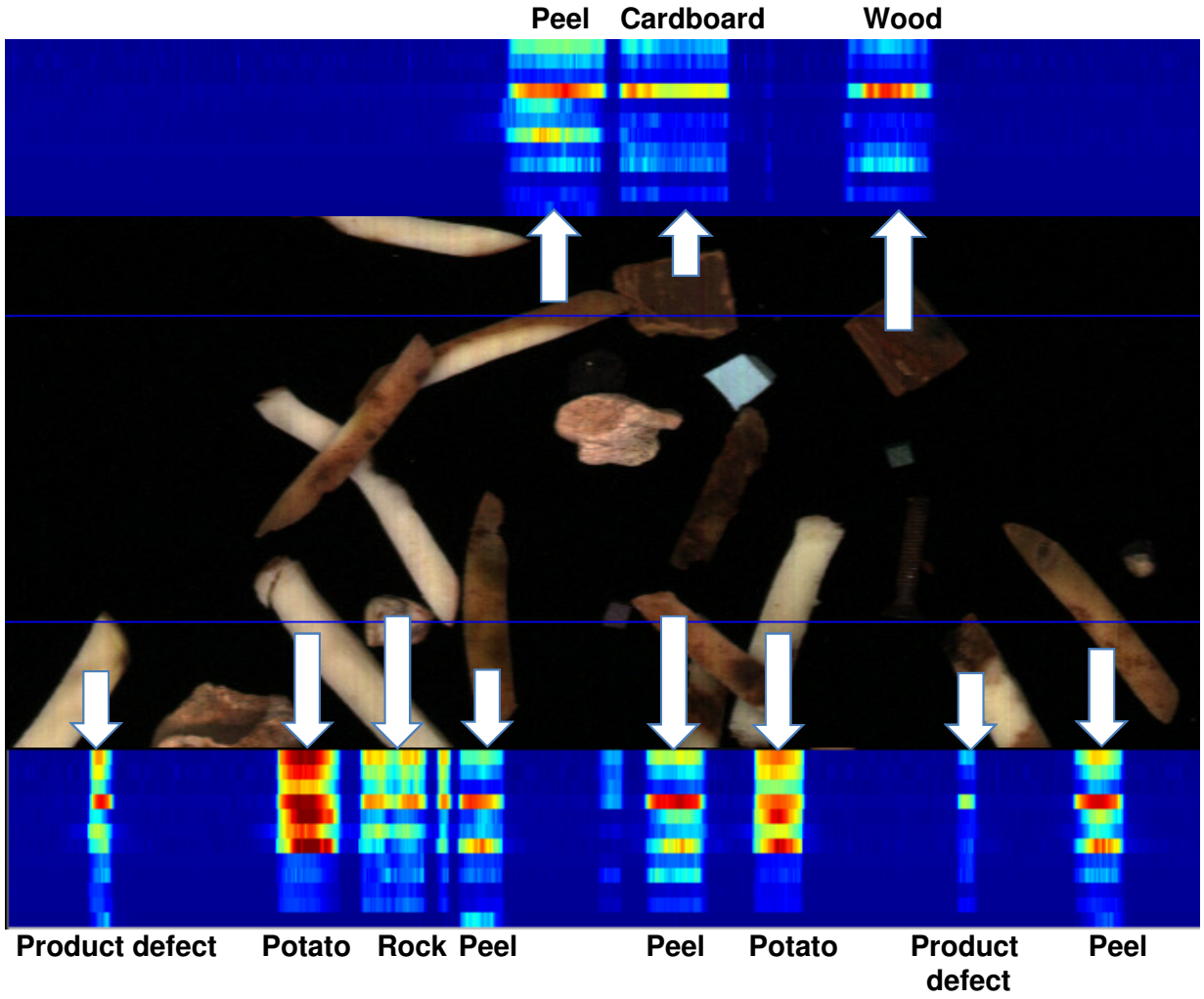
Analyze – Sensor Pixel Fusion™



Up to 12 channels of fused camera and laser scanner information

Up to 12 channels of fused camera and laser scanner information

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Analyze – Digital Signal Processing

Digital sensors provide a continuous and uninterrupted stream of data which needs to be processed on the fly.

Special dedicated hardware processes this flood of data in real time and drives the necessary ejection system to eliminate the unwanted material from the product stream.

Dedicated DSP processors and in field programmable devices (FPGA) provide real time processing and flexibility.

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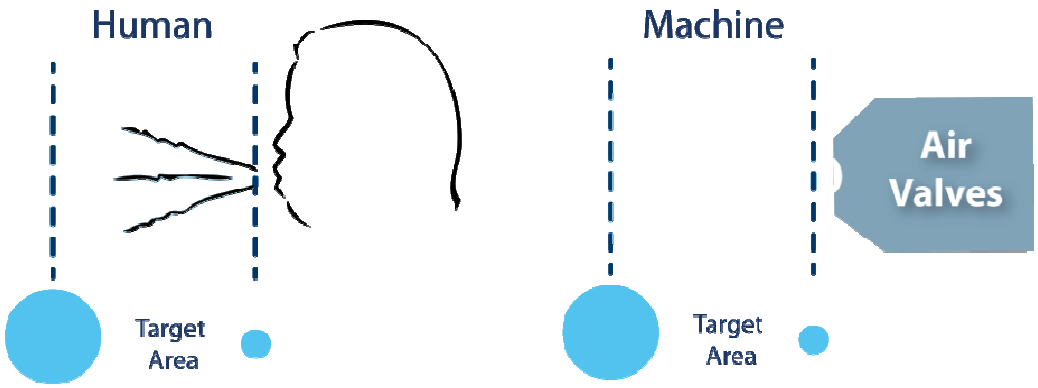
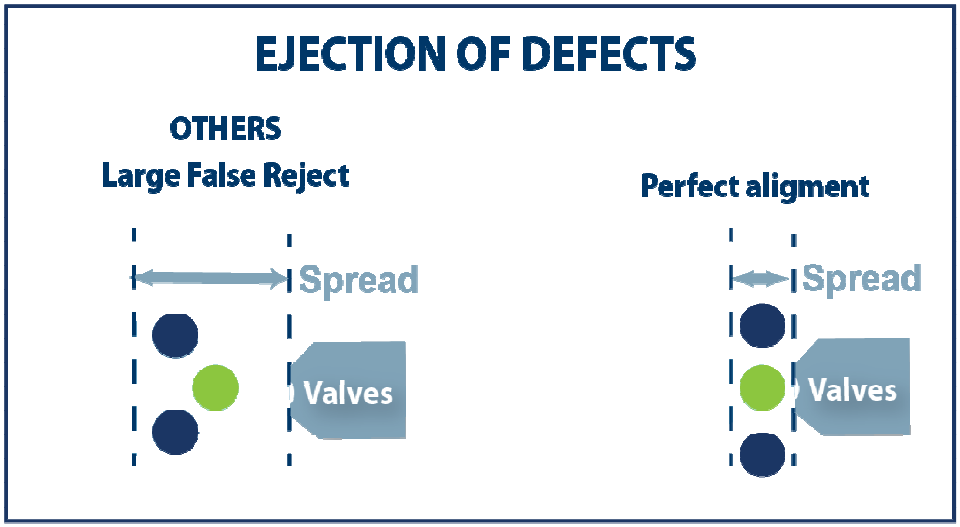
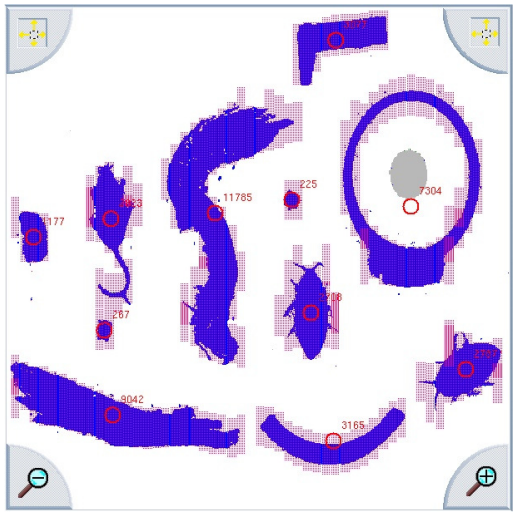
Separate

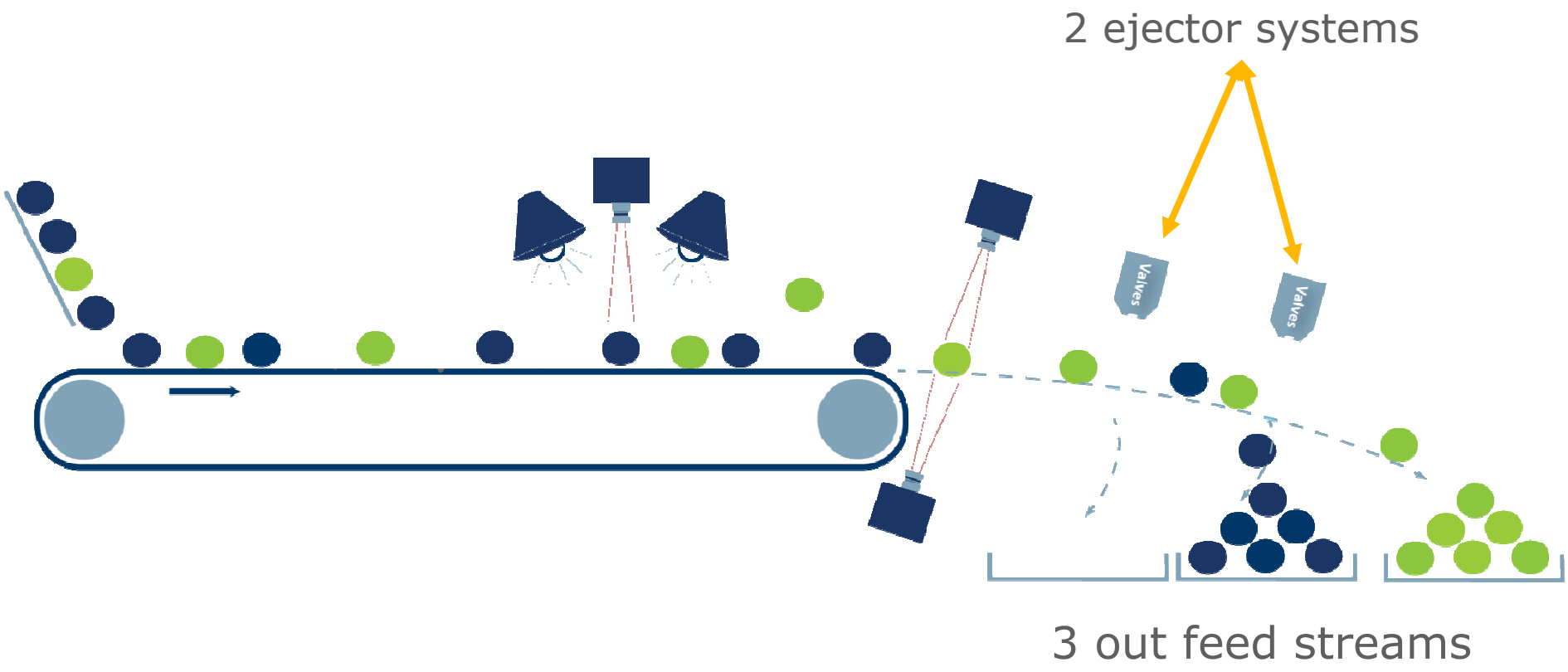
Conical air movement







Separate – Three Way Sorting



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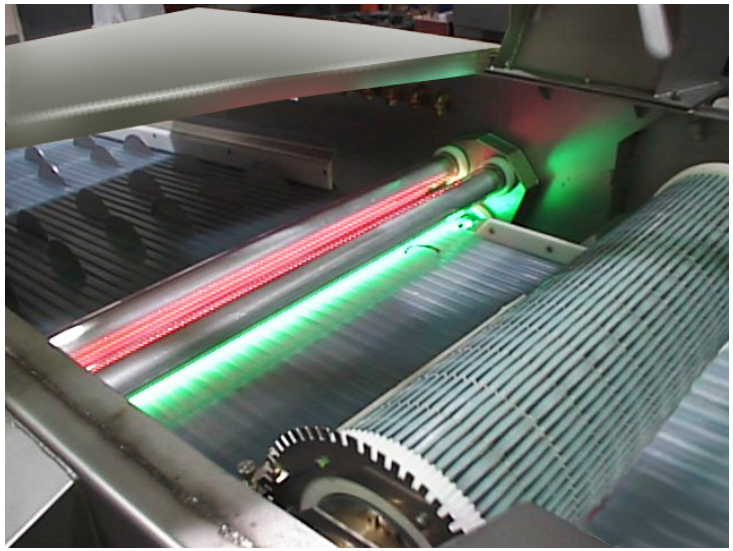
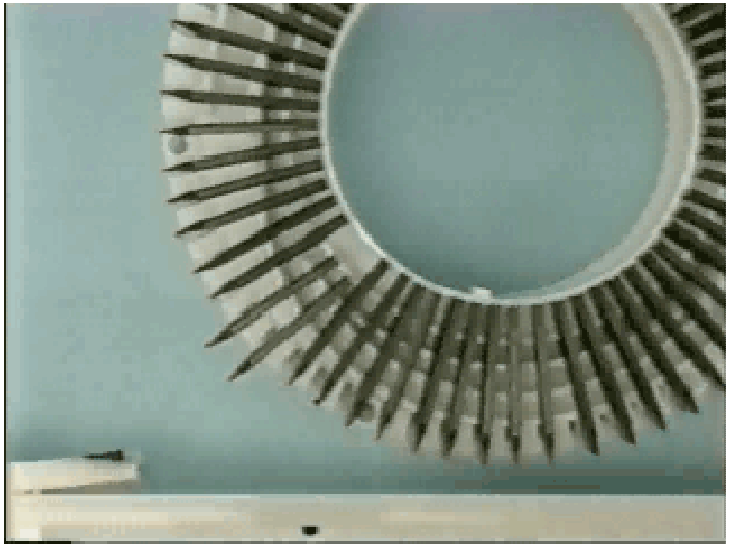
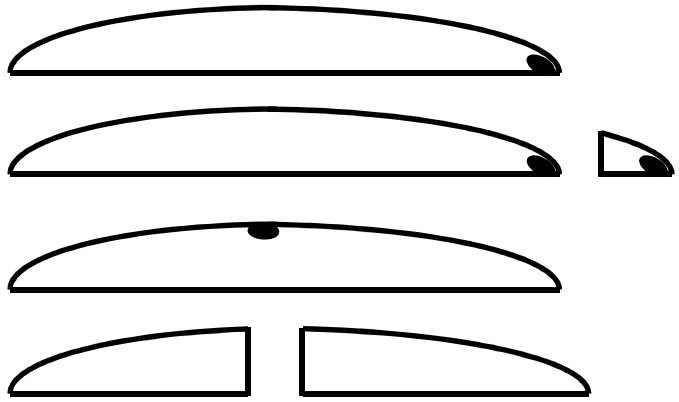
Separate - ADR®







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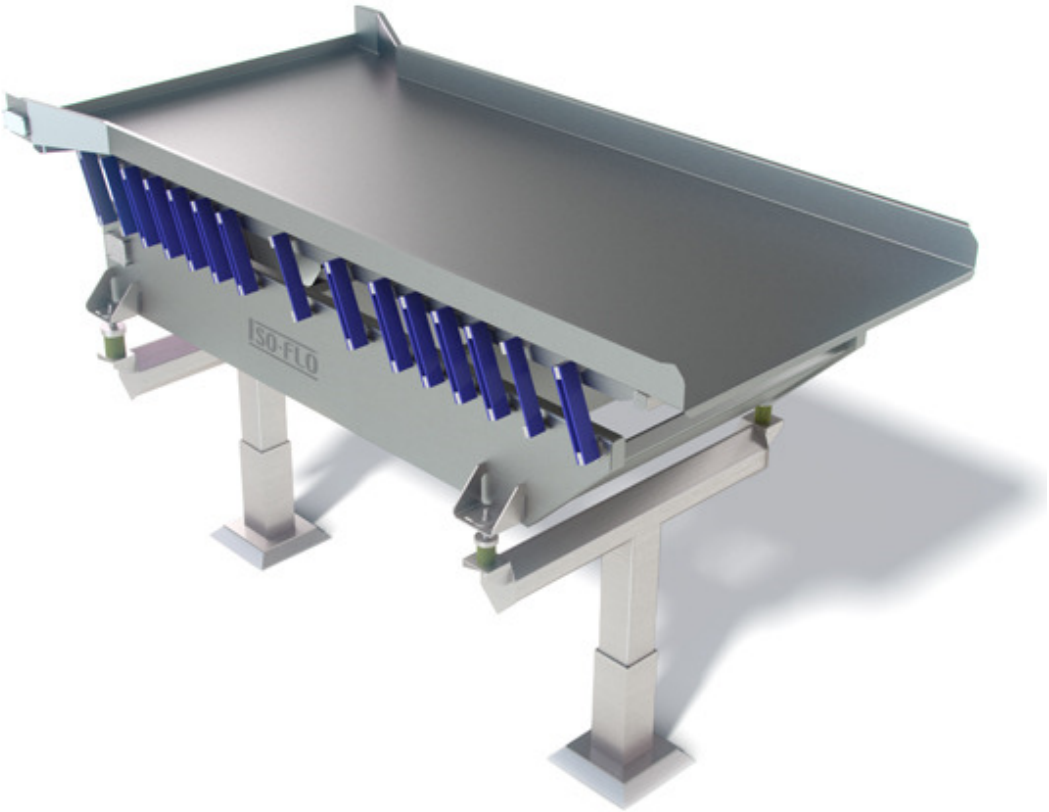
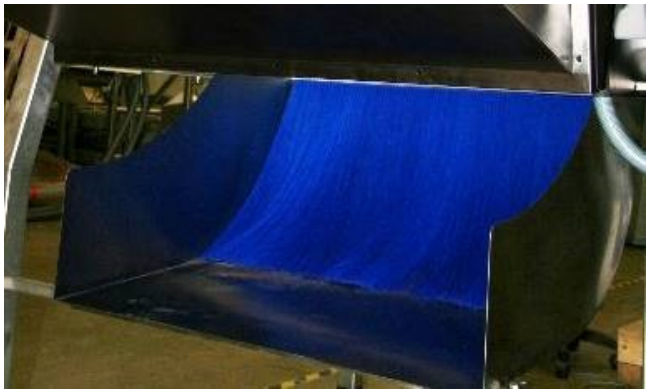
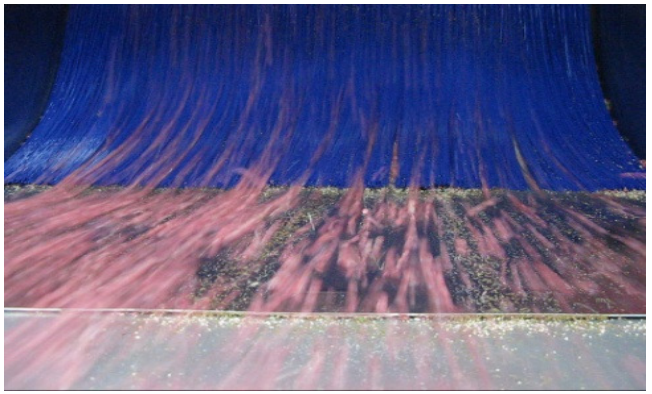
Collect







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