



Lynx Linescan InGaAs camera

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Outline

- Lynx camera introduction
- Applications in food sorting

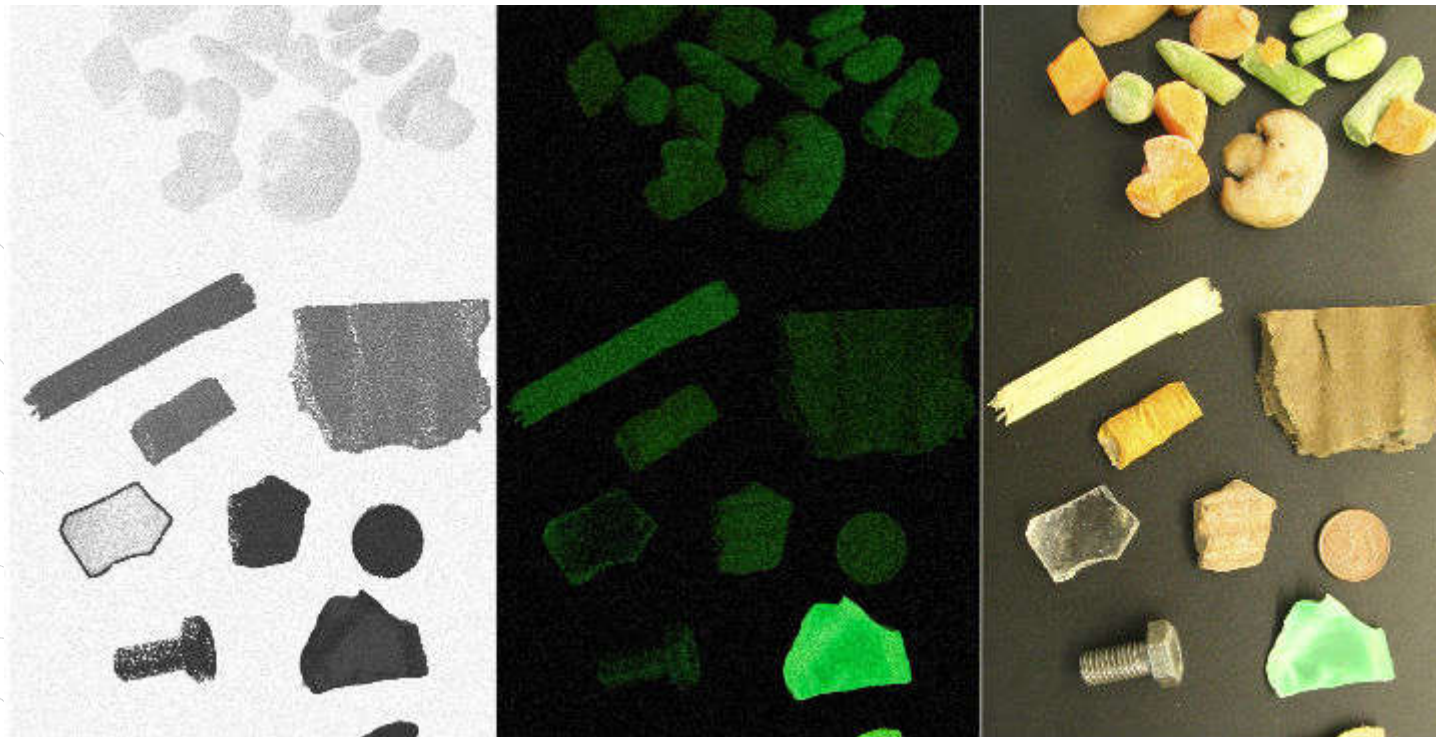
Lynx

- Uncooled InGaAs linescan camera
- Spectral response ~800 – 1700 nm
 - Lynx 512 (40 kHz line rate)
25 μm pixel pitch
 - Lynx 1024 (40 kHz line rate)
12.5 μm pixel pitch
 - Lynx 2048 (10 kHz line rate)
12.5 μm pixel pitch
- Camera interface
 - CameraLink
 - GigE Vision



Food sorting

- Sorting based on water content
 - Frozen fruit and vegetable (vs. plastic, cardboard, metal...)



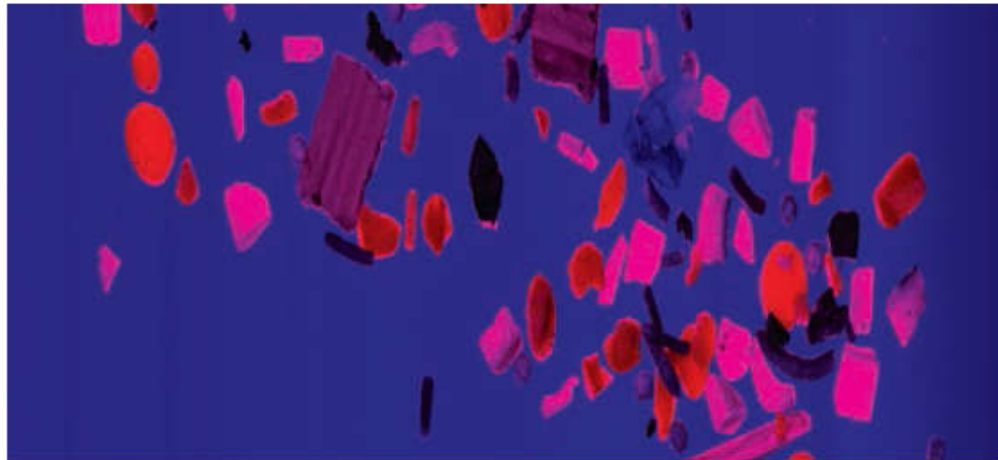
Food sorting

- Colour defects and shape sorting: visible detectors
- InGaAs detectors for foreign material detection



Food sorting

- Foreign material
 - Packaging
 - Plastic
 - Cardboard

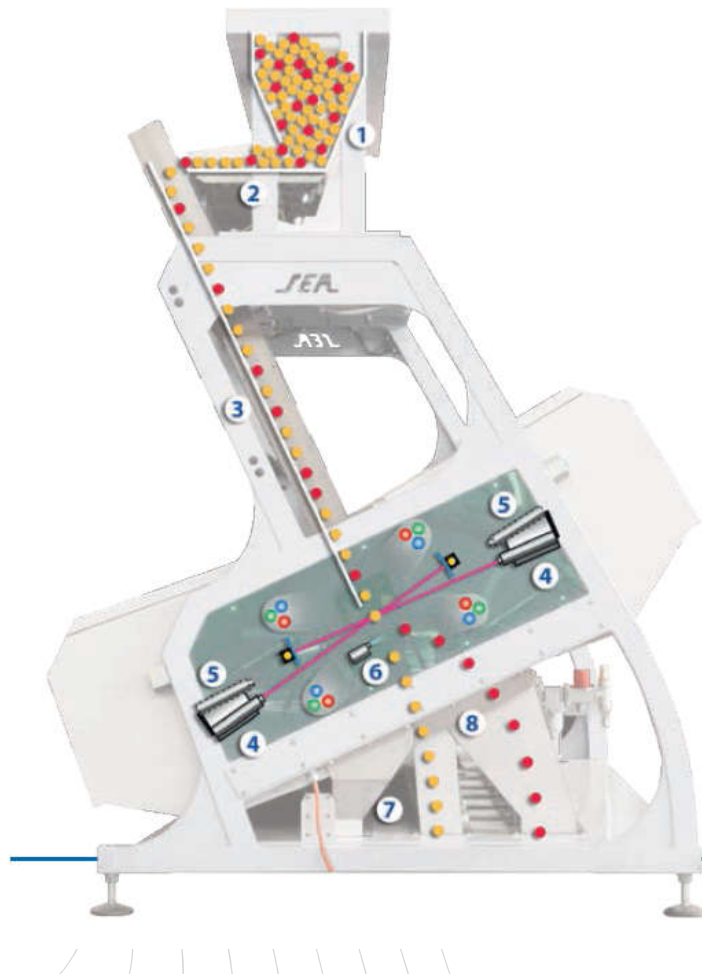


Product with FM seen through visible wavelengths



Product with FM seen through InGaAs sensors

Food sorting: operation



OPERATION

- 1 Input product is loaded into the in-feed hopper,
- 2 it moves along the vibrating plate
- 3 until it flows on to a sloping chute where it is individually checked and sorted by state-of-the-art cameras
- 4 (CCD cameras for standard version and
- 5 additional cameras for bichromatic, NIR and InGaAs versions) situated in the front and rear of the flow.
- 6 Depending on the signals received by the optical device, the sorter software controls the pneumatic device,
- 7 which physically separates the unwanted products out of the conforming ones which naturally reach their discharging hopper.
- 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.