



## Spectrim with **LUCAi™**

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Intelligent optical sorting & grading platform  
**Now for peaches, nectarines, plums and apricots**

Correctly classify difficult defects like rot, split pit, spurs, softness, physical damage and scars to maximize your crop yields and minimize fruit loss.



# About LUCAi™

Right product, right pack, season after season.

LUCAi™ is a pre-trained deep learning algorithm that classifies the entire piece of fruit. Trained on 20 seasons of in-house stonefruit images, LUCAi™ arrives at your packhouse knowing what defects to look for, how to find them, and the most appropriate classification.

The result is simplicity for operators during set up and operation while also achieving the highest possible performance and accuracy.

Launched as the world's first deep learning product for fruit sorting in 2018, LUCAi™ began by providing precision classification for blueberries. With over 3.300 lanes sold,

LUCAi™'s applications now include apples, blueberries, cherries, citrus, kiwifruit and stonefruit. New applications arrive every year.

## Benefits

### → Improved operational usability

- Reduce operator training from days to hours
- Easier learning curve means faster time to peak performance
- Simpler system means easier to adapt for new defects and varieties

### → Superior sorting accuracy

- Achieve consistency batch-to-batch and shift-to-shift
- Reduce good-in-bad and bad-in-good
- Improved pack quality, brand reputation and customer eating experience

### → Increased throughput

- Improve the efficiency and speed of your overall line with less manual inspection
- Simply pack a greater volume of fruit because LUCAi™ provides your operator with the confidence they need



“The model's ability to handle various fruit types, including plums, peaches, and nectarines, has been very beneficial.”

Packhouse Manager, California



# TOMRA Spectrim with LUCAi™

Spectrim with LUCAi™ is a deep learning-powered optical grading platform that removes >99% of many hard-to-detect plums, nectarines, and peaches defects.

## → High performance hardware

Designed for up to 3 wavelengths and featuring 9 cameras per lane, Spectrim's hardware specifically targets general defects softness, spurs, scars and physical damage.

## → Advanced deep learning

LUCAi™ processes up to 40,000 images per second to assign a unique severity rating for classifications. Having learned from 20 seasons of in-house fruit images, LUCAi™ uses extremely fine differentiation to surpass both existing sorting capabilities.

## → Simplicity and exceptional performance in one

A simple user interface is all that's needed to maintain consistent performance. The combination of increased accuracy and smarter decisions mean the machine requires minimal operator input, so fewer controls to manage.

## Who is it for?

Suitable for high-speed operations sorting peaches, nectarines, plums and apricots.



## Why Spectrim?



Optimal geometry, no mirrors, and target wavelengths ensure complete fruit visibility.

Eliminating shadows and reflections while using emissive lights provides the best lighting conditions.



High color fidelity, high resolution, and low noise deliver the best fruit images.



LUCAi™ can achieve **99%+** detection across a wide range of stonefruit varieties and defects

Spectrim with LUCAi™



**Split Pit**

Represents a 30% improvement over traditional mapping



**Physical Damage**

Represents a 25% improvement over traditional mapping



**Rot**

Represents a 10% improvement over traditional mapping

Spectrim with LUCAi™



**Scars**

Represents a 20% improvement over traditional mapping

VS

Traditional mapping



**Physical Damage**

Incorrectly classified as Scars

As well as >99% detection on spurs, softness, physical damage and split pit, LUCAi™ has very high detection rates on the following defects:

- ✔ Rot
- ✔ Growth Crack
- ✔ Peeled
- ✔ Corking
- ✔ Cat Face
- ✔ Thrip
- ✔ Inking
- ✔ Gummosis
- ✔ Scars
- ✔ Bacteria

# Spectrim with LUCAi™ for your line

## TOMRA 5S Advanced

For high throughput packhouses where food hygiene and trust are essential.

Works with Spectrim with LUCAi™ to manage highly configurable operations with high throughput.

- Multi-lane sorter
- Cross belts to sort more grades
- Food trust design with stainless steel or food safe polymer and easy cleaning

## Existing Line

Compatible with many existing competitor sorting lines.

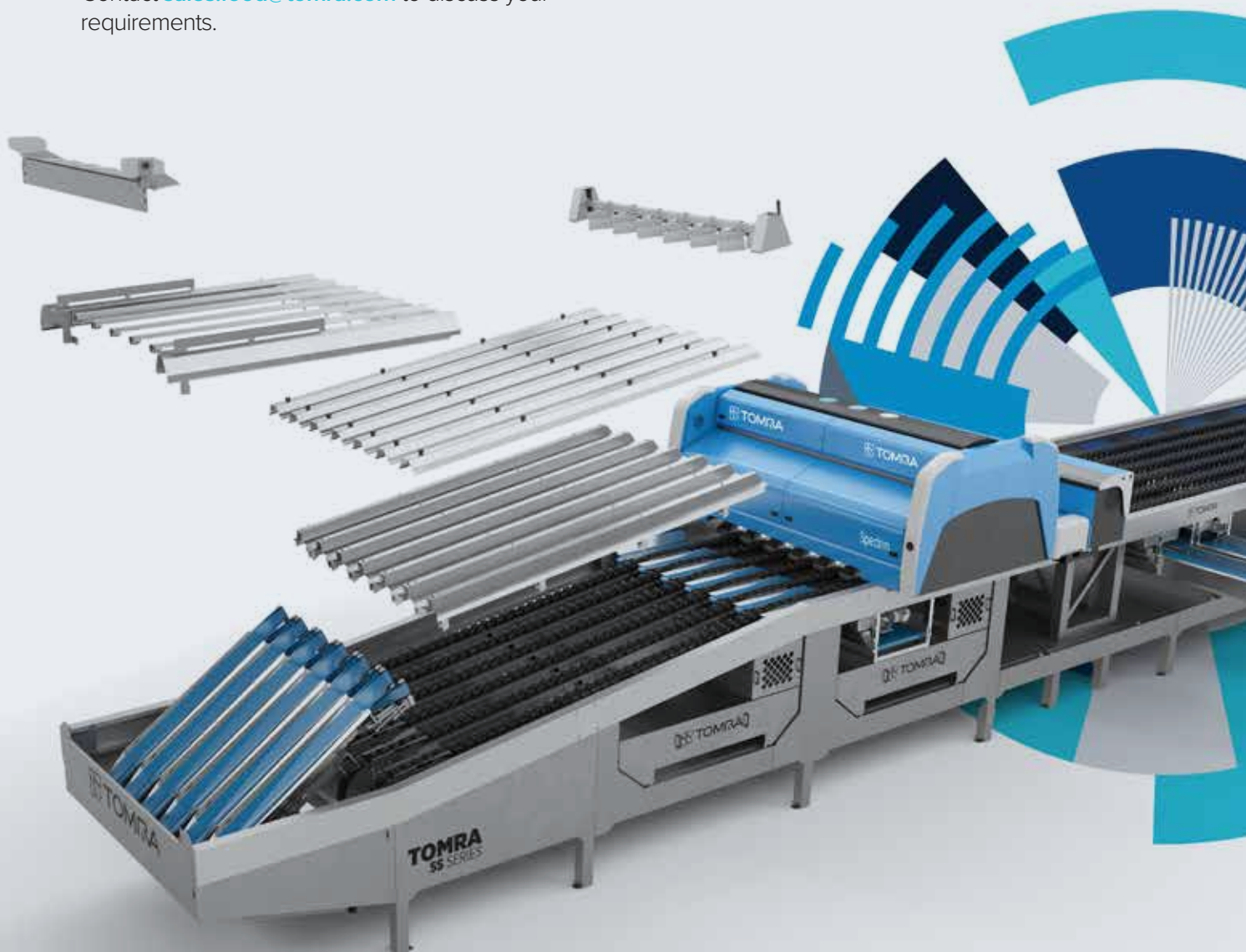
Contact [sales.food@tomra.com](mailto:sales.food@tomra.com) to discuss your requirements.

## TOMRA Single Lane Sorter / Dual Lane Sorter

For small-medium packhouses sorting between 2 to 8 metric tonnes per hour.

Works together with Spectrim with LUCAi™ to pack variety of packaging types and respond to market demands.

- Single or dual lane sorter
- Highly accurate weighing system
- Gentle transportation
- Dual side tipping for reducing system length and footprint





**TOMRA**

Interested in a free demonstration with your own product or require more information?

**Please contact us directly. [www.tomra.com/food](http://www.tomra.com/food)**



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