

SPECIM



A Konica Minolta Company

**FREE WEBINAR:
SWIR HYPERSPECTRAL IMAGING FOR SEED
ANALYSIS & QUALITY INSPECTION**

AGENDA

- Welcome & introduction to Specim
- SWIR hyperspectral imaging with Specim: camera offering and system considerations
- Demonstration: high-resolution seed analysis with SX25 and macro lens
- CRA-W Damien Vincke
- Q&A

SPECIM TODAY

FOUNDED IN **1995**

+12 000
SPECTROGRAPHS
+
SPECTRAL CAMERAS
DELIVERED

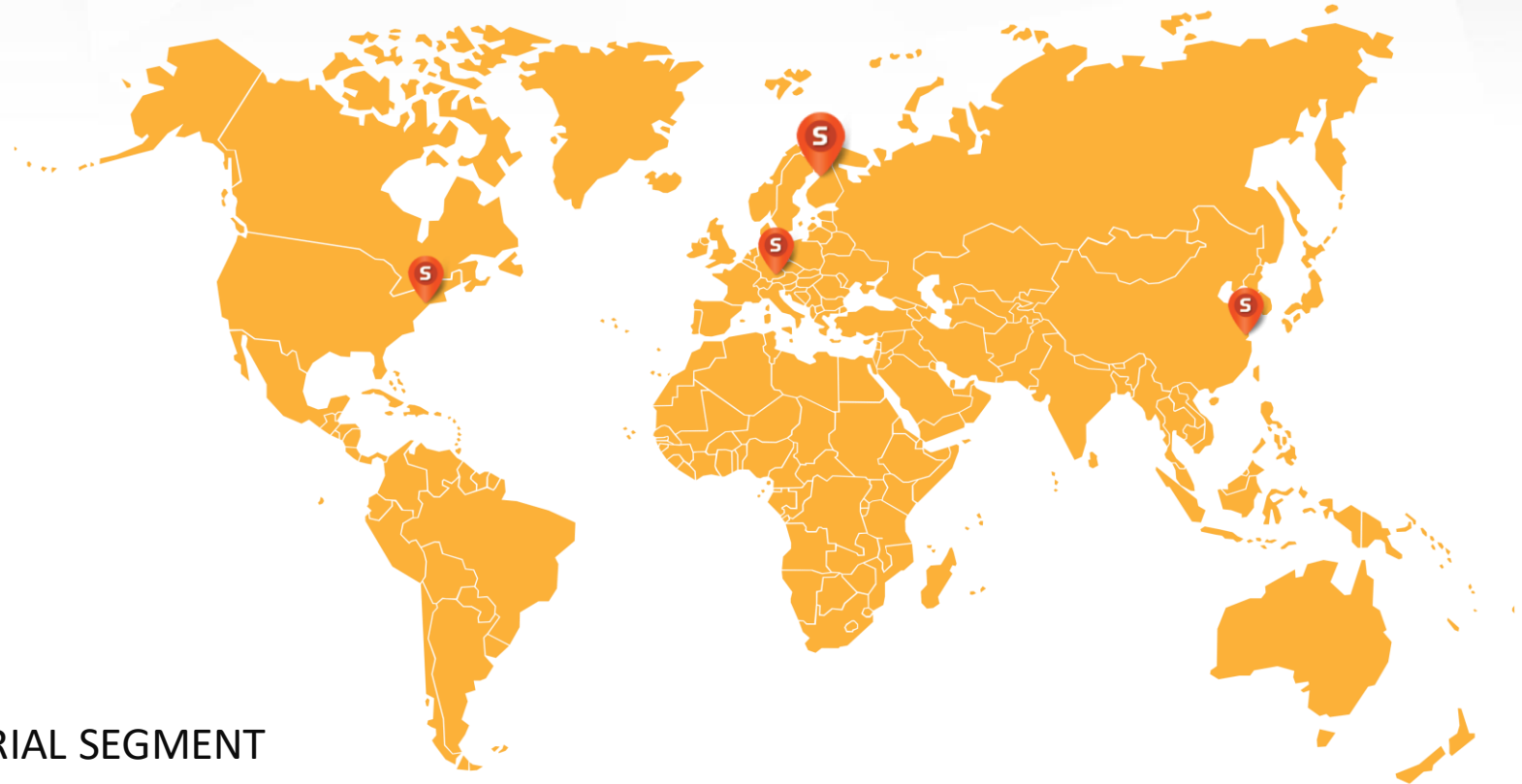


PERSONNEL CIRCA **90**

>20% CAGR IN INDUSTRIAL SEGMENT

PART OF
KONICA MINOLTA
SINCE 2020

 HEAD OFFICE
OULU, FINLAND



SPECIM LOCATIONS
MUNICH, NEW JERSEY, SHANGHAI
+ WORLDWIDE DISTRIBUTOR NETWORK

CAMERA PORTFOLIO

	VNIR 400– 1 000 nm	NIR/SWIR 900 – 2 500 nm	MWIR 3 000 – 5 000 nm	LWIR 8 000 – 12 500 nm
TYPICAL APPLICATIONS	Colour, Fruit & Veg, Skin & Tissue, Plants, Film, Water	Sorting, Recycling, Chemical Waste, Pharma, Quality	Black Plastic, Surfaces, Minerals, Detection	Mining, Detection, Gas, Geothermal
Specim IQ	SPECIM IQ 			
Specim FX	Specim FX10 	Specim FX17 	Specim FX50 	Specim FX120 
Specim GX		Specim GX17 		
Specim SX		Specim SX25 		
Specim AFX	Specim AFX10 	Specim AFX17 		
SISU	SisuROCK 			
SPECTRAL CAMERAS	FENIX 	SWIR 		

ACCESSORIES



LabScanner 40 x 20

Small scanner frame for laboratory use.



LabScanner 100 x 50

Large scanner frame for laboratory use.



RS50 Rotary Stage Scanner

Scan an image of a stationary target or scenery in the lab and field. Maximum payload 50 kg.



AGRICULTURAL RESEARCH

- Seeds, kernels, plants
 - Classification
 - Diseases
 - Plant breeding
- Animal feed research
- Durum wheat classification
 - Vitreous Kernels content
 - High protein and gluten
 - Hard grain
- Sorting to vitreous and non-vitreous kernels
 - Patch quality and price

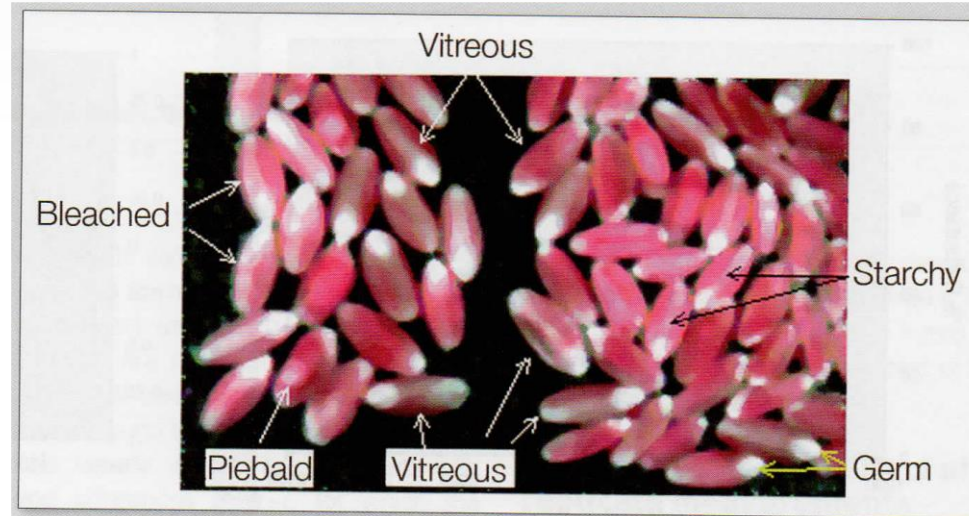


Figure 3. Colour image representation of CWAD wheat scanned with the hyperspectral system showing vitreous, starchy and bleached kernels; Germ areas appear as bright white spots on the kernel ends.

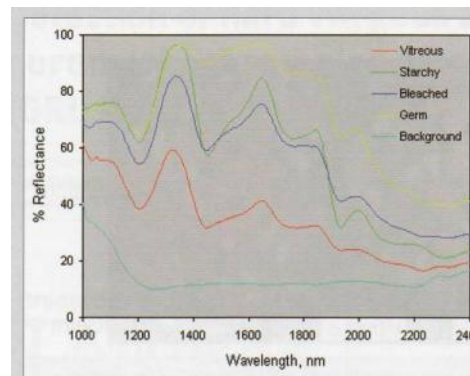


Figure 4. Spectral characteristics of selected regions in the hyperspectral image.

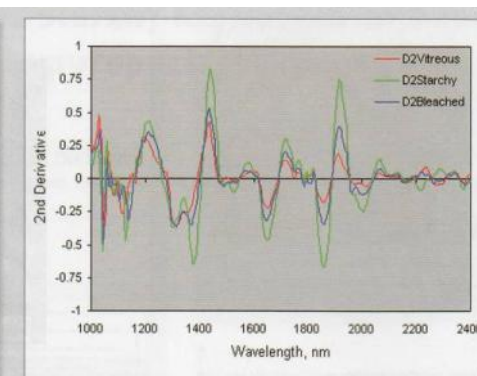


Figure 5. Second-order derivative of spectra for vitreous, starchy and bleached kernels.

NIR

(900-1700 nm)



Specim FX17

SWIR

(1000-2500 nm)



Specim SWIR



Specim SX25

SEEDS

Background

- Germination probability is crucial (mentioned in the package when you buy seeds)
- Green house farmers: buy high volume -> buy premium seeds
- Example, with Tomatoes
 - Premium seeds: 1 eur / seed
 - Which produces 17 kg of tomatoes (= about 17 eur)
 - Comparison : 1 tomato seed weight 0.002 – 0.004 g; Let say 0.003 g.
 - In 1 kg, there are 330 000 seeds. -> 330 000 eur / kg
 - Gold has now a value of 135 000 eur / kg

Seeds have very high values!



TOMATO SEEDS WITH FX10 AND SX25



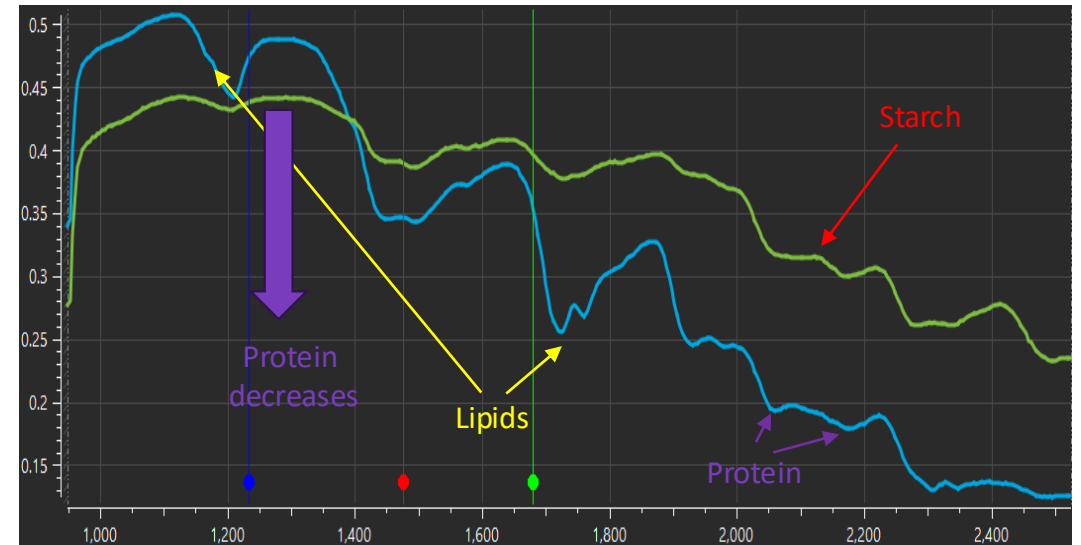
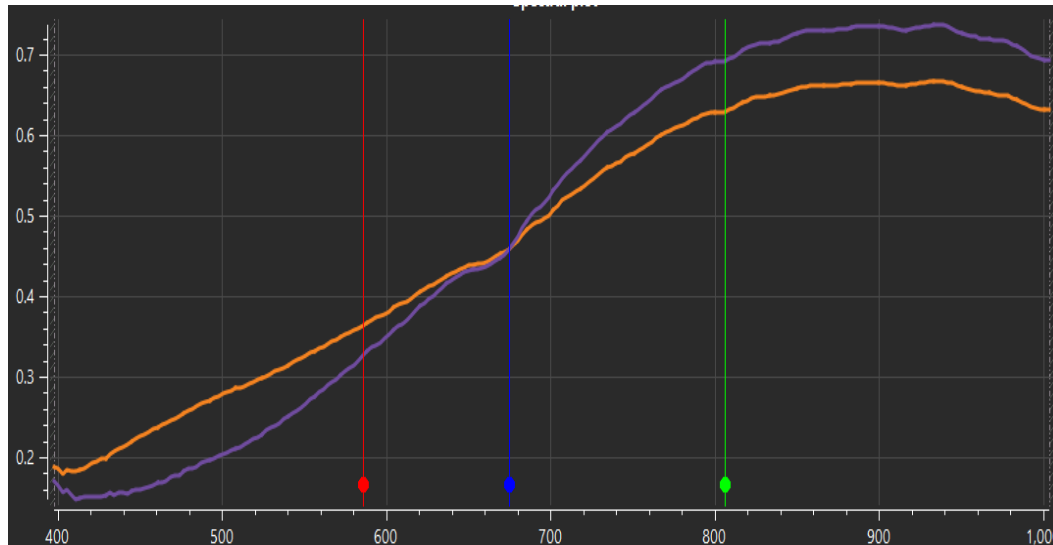
Specim FX10



Specim SX25



Specim SWIR



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FOLLOW US ON LINKEDIN FOR:

INSIGHTS INTO HYPERSPECTRAL IMAGING
CASE STUDIES & REAL-WORLD APPLICATIONS
UPCOMING WEBINARS & EVENTS



FOLLOW US

SPECIM DEMO

CRA-W

Q&A

THANK YOU!

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