



# **SPECIM**



**A Konica Minolta Company**

**— PRODUCTS —**



# SPECIM

Specim is a globally leading supplier in hyperspectral imaging. As a true pioneer and forerunner in this field, we celebrated our 25th anniversary in 2020. Our international team of 70+ professionals, with expertise in optics, electronics, software, and machine vision, serves the market with the broadest range of hyperspectral cameras, imaging spectrographs, systems, and accessories. We are known as a trusted partner with products and support of superb quality and cost-efficiency.

With our strategy, "Spectral imaging made easy," our customers can rely on our technology and products' scalability. It will allow our customers to keep improving the performance and competitiveness of their solutions and develop application solutions quicker.

Our products are globally used by our OEM customers in machine vision systems, inspecting food or pharmaceuticals production quality, sorting waste, or measuring printed color accuracy. Our products are chosen by numerous research labs, including world recognized centers and installed and operated in drones and

large scale remote sensing airplanes.

Our customers are typically machine builders, integrators, and other industrial OEMs and research teams in private, academic, and government organizations.

Customer's demand for fast and accurate information and a high return on investment drives our product design. They strive to gather information to improve quality, increase value, and make sustainable choices.

Our products provide our customers with the data they can trust and act upon, whether in the industrial surrounding, research laboratory, or field.

Our headquarters are located in Oulu, Finland. We also have sales offices in the U.S., China and Spain. With our comprehensive reseller network, we can serve you in your country and your language.

Specim has been a part of Konica Minolta's Sensing Business Unit since December 2020.

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## REAL PARTNERSHIP – EXCELLENT RESULTS

Specim can offer you a continuous, long term partnership that will help you get the most out of your imaging system.

Specim in-house expertise:

- Scalable production, maintenance, calibration and repair services
- Superior know-how in optics, electronics, software and mechanics
- A strong team to solve application related challenges



# SPECIMONE

SpecimONE spectral imaging platform revolutionizes hyperspectral technology adaptation to industrial sorting applications. With SpecimONE machine builders, vision systems integrators and other OEM's can classify different materials based on their spectral signature off-line and apply those classification models into your in-line system in real-time. The result is a new industrial sorting application without coding or in-depth knowledge of spectral imaging.

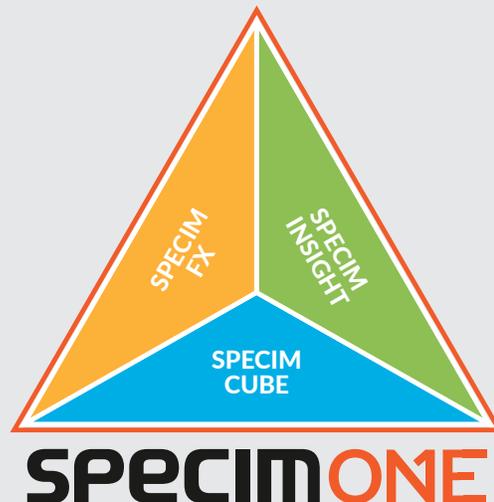


## Benefits:

- Shorter time to market reduces prototyping/proof of concept phase
- The flexibility of hyperspectral imaging technology allows an unlimited amount of applications
- Compatible with major industrial standards, seamless integration with machine vision systems (e.g., Halcon, Sherlock)
- Single point of contact with a global presence
- Specim's proprietary platform means no dependencies on third-party hardware or software

## SpecimONE platform includes:

- Industry-proven Specim FX cameras
- Powerful image processing hardware, SpecimCUBE
- SpecimINSIGHT software to build classification models for your sorting application



# SPECTRAL CAMERAS

Specim is the leading industrial HSI camera manufacturer for machine builders and integrators globally. We develop cameras to fulfill demanding industrial customer requirements while remaining the perfect solution for scientific research & development and governmental projects.

Whether working in a laboratory, industrial facility, or in the field, we got you covered. Specim offers a wide variety of high-quality hyperspectral cameras that include visible, VNIR and NIR, SWIR, MWIR, and LWIR ranges.

The camera models vary in terms of spectral and spatial resolution, spectral response, imaging speed, and configuration options. Contact us for the optimal solution for your application.

## Specim FX Series

Specim FX series cameras are the first hyperspectral instruments designed specifically for industrial use. The cameras' high frame rate meets the industry speed requirements, and robust structure and small size allow flexible installation location.



Specim FX series cameras give reliable classification results based on the target's chemical composition. The non-contact, non-destructive optical method offers 100% imaging coverage. Inspect various end products and different system properties without changing the camera.

### **Specim FX Series benefits:**

- Easy integration
- Unified, comparable data
- Focus on the relevant wavelength range with multiple regions of interest (MROI) feature
- Firmware upgradeable



## Specim FX10

Specim FX10 camera series is designed for industrial and laboratory use. Specim FX10 collects data in the visible and near-infrared VNIR region (400-1000 nm). The color optimized Specim FX10c camera in the 400-780 nm region.



## Specim FX17

Specim FX17 camera is designed for industrial and laboratory use. It collects hyperspectral data in the near-infrared NIR region (900 to 1700 nm).



## Specim FX50

Specim FX50 is a high-speed, accurate, and efficient camera specifically designed for industrial environments. Specim FX50 is the only hyperspectral camera available on the market, covering the full MWIR spectral range 2.7 – 5.3  $\mu\text{m}$  required to detect black plastics.



## SWIR

Specim's high-speed hyperspectral camera in the SWIR range (1000 – 2500 nm) has 384 spatial pixels and achieves image rates up to 400 frames per second using CameraLink connection.



## Specim IQ

Specim IQ is the world's first mobile hyperspectral camera that allows you to analyze material samples anywhere, in seconds. Endless application possibilities in the VNIR range (400 - 1000 nm) e.g. food, vegetation, art, life sciences.



## Fenix

In a single continuous image, FENIX spectral camera delivers the best hyperspectral data ever seen over VNIR, NIR, and SWIR wavelengths.



## LWIR HS

LWIR HS spectral camera integrates an uncooled detector and optics. It is a compact (only 3.5kg) and versatile tool for a wide variety of applications in industrial environments.



## OWL

Specim's thermal sensor OWL covers the contiguous spectral range from 7.6 to 12.3  $\mu\text{m}$  in 96 channels and has the sensitivity to detect and classify even gases.



## PFD4K-65-V10E

With its high resolution, high image rate, flexible wavelength selection, and rugged structure, Spectral Camera PFD is an excellent tool for industrial measurements.



## sCMOS-50-V10E

With its extremely low noise, high resolution, high image rate, and rugged structure Spectral Camera sCMOS is an excellent tool for various scientific and commercial applications.

# SPECTROGRAPHS

Integrators and machine builders have installed thousands of Specim ImSpector imaging spectrographs on a wide variety of Inspection, Sorting, and other machine vision solutions currently in daily use.

Specim's ImSpector imaging spectrographs offer a distortion-free image with the highest optical performance on the market. We optimize each model for spectral resolution, detector size, spatial resolution, and imaging speeds required for the most demanding applications.



## ImSpector V8

Standard series spectrograph designed for the VIS spectral range 380 - 800 nm.



## ImSpector V10E

Enhanced series spectrograph designed for the VNIR spectral range 400 - 1000 nm.



## ImSpector V10H

Standard series spectrograph designed for the VNIR spectral range 400 - 1000 nm.



## ImSpector N17E

Enhanced series spectrograph designed for the NIR spectral range 900 - 1700 nm.

# AIRBORNE SYSTEMS

Specim provides complete systems ready to be installed and operated onboard manned or unmanned airborne platforms. Specim airborne systems include high-end spectral cameras, support for various GNSS/IMU sensors, data acquisition, power units, and software solutions for data acquisition and pre-processing.



## Specim AFX Series

Specim AFX series is an airborne spectral imaging solution based on our successful Specim FX series. It is a compact all-in-one device with an HSI camera, powerful computer, and a high-end GNSS/IMU unit.



## AisaFENIX 1K

Specim's AisaFENIX 1K, the full spectrum hyperspectral camera is an ideal solution for remote sensing of the environment and other aerial survey applications. The AisaFENIX 1K hyperspectral sensor with 1024 spatial pixels takes the productivity of hyperspectral imaging to an entirely new level.



## AisaFENIX

AisaFENIX delivers the highest quality hyperspectral data available in VNIR, and SWIR wavelengths in a single continuous image.



## AisaOWL

Specim's airborne thermal hyperspectral sensor AisaOWL, covers the full LWIR spectral range from 7.7 to 12.3  $\mu\text{m}$  in nearly hundred spectral bands with excellent spectral and spatial imaging performance.



## AisaIBIS

AisaIBIS a robust and very high spectral resolution hyperspectral imager for field and airborne measurement of sun-induced fluorescence from plants.



## AisaKESTREL 10 & 16

The first professional-quality hyperspectral solutions, intended for UAVs and other platforms of limited payload size.

# GEOLOGY SYSTEMS

Hyperspectral imagery is a powerful technology to locate minerals that are exposed or weathered in residual soil areas.

The leading airborne application of hyperspectral imagery provides mineral mapping for exploration clients in the mining, oil, gas, and geothermal sectors over large and often remote and inaccessible areas.

Geological samples, such as drill cores, can rapidly be mapped for nearly all commercial interest minerals with hyperspectral imaging. Specim's SisuROCK generates an image where each pixel contains a full spectrum, unique to each mineral of interest.

Specim customers have reported achieving savings worth hundreds of millions of dollars by using HSI technology.



## SisuRock

SisuROCK is a fully automated hyperspectral core imaging instrument for easy and high-speed scanning of drill cores and other geological samples. It is capable of imaging a single drill core in a high-resolution mode or a whole core box in a high-speed scanning mode.



## SisuSCS - Single Core Scanner

SisuSCS is the answer for the users who essentially need hyperspectral core imaging but produce a limited amount of cores per year. The SisuSCS provides the same functionalities compared to full-scale SisuROCK but on a smaller scale. The small size makes it a more portable and ideal research tool for a core like samples.

# SOFTWARE

Specim offers software solutions for capturing data and creating models. We can also recommend commercial software solutions that are compatible with Specim cameras.

For machine builders and integrators, we have Lumo SDK – Offering an easy to use and high-performance SW interface for application development.



## SpecimINSIGHT

SpecimINSIGHT is an off-line software tool that allows users to browse and explore data, create and validate classification models. Part of the SpecimONE spectral imaging platform.



## Specim IQ Studio

Specim IQ Studio gives you the possibility to control the Specim IQ camera remotely and handle the Specim IQ data. You can process the hyperspectral data, and create applications for the Specim IQ.



## Lumo family

Lumo product family is a selection of data acquisition software for Specim cameras, scanners and airborne systems.



## CaliGeoPRO

CaliGeoPRO is a data processing tool to radiometrically correct and georeference hyperspectral data acquired with Specim AISA and AFX series sensors.

# ACCESSORIES

Specim provides several accessories for its spectral cameras and airborne systems. From scanner frames, illumination, rotary stages, lenses, to filters, we got you covered.



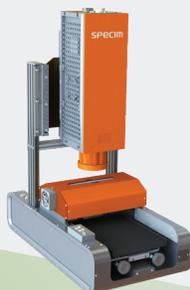
## LabScanner 40 x 20

Specim LabScanner 40 x 20 is a small scanner frame for laboratory use.



## LabScanner 100 x 50

Specim LabScanner 100 x 50 is a large scanner frame for laboratory use.



## SisuCHEMA

SisuCHEMA is a chemical imaging analyzer, characterized by speed, simplicity and superior performance for qualitative and quantitative results in e.g. food, forensics, pharmaceutical and agricultural applications.



## SisuSCS

SisuSCS is the answer for the users who essentially need hyperspectral core imaging but produce a limited amount of cores per year. The SisuSCS provides the same functionalities compared to full-scale SisuROCK but on a smaller scale. The small size makes it a more portable and ideal research tool for a core like samples.



## RS10 Rotary Stage

With RS10, Specim hyperspectral cameras can be easily used to scan an image of a stationary target or scenery in the lab and field. Maximum payload 10 kg.



## RS50 Rotary Stage

With RS50, Specim hyperspectral cameras can be easily used to scan an image of a stationary target or scenery in the lab and field. Maximum payload 50 kg.



## ArtScanner

A large scanner frame designed for scanning cultural inheritance artifacts such as paintings, manuscripts, maps, and old photos.

# LOCATIONS / SALES

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