



SPECIM AFX SERIES

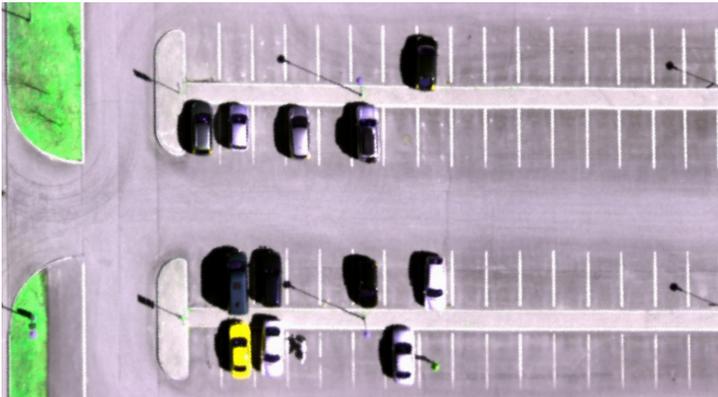
COMPACT ALL-IN-ONE HSI SOLUTION FOR UAS USE



SPECIM AFX SERIES

COMPACT ALL-IN-ONE HSI SOLUTION FOR UAS USE.

Specim AFX series is a hyperspectral imaging solution with an HSI camera based on the award-winning Specim FX cameras, a small and powerful computer, and a high-end GNSS/IMU unit in one compact enclosure. It is a compact and lightweight state-of-the-art system that can be used on multiple drone types – multicopter or fixed-wing, with or without a gimbal.

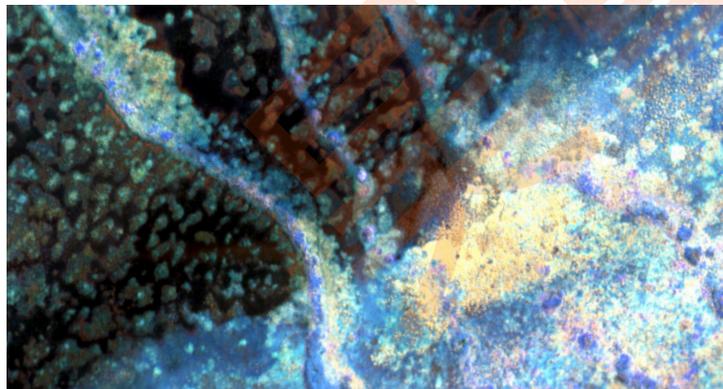
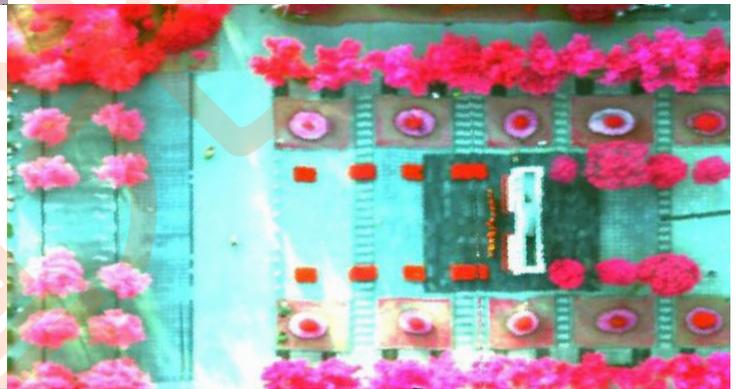


HIGH-QUALITY DATA - EASY ACQUISITION

- Efficient use of light together with image enhancement algorithm results in high data quality
- Fully automated data acquisition following the mission flight plan, making the Specim AFX easy to operate
- Direct georeferencing available

COMPACT SOLUTION, EASY INTEGRATION

- All in one casing, minimal cabling
- Fits various UAVs: multicopter or fixed-wing, with or without gimbal



FOCUS ON WHAT IS RELEVANT

Freely selectable spectral bands allow focusing on application relevant data.

DATA PROCESSING

Specim AFX data can be processed with Specim Caligeo PRO software. It is also fully compatible with the commercial software solutions such as ENVI, which allows fast data analysis and application creation.



SPECIM AFX10

VNIR (400-1000 nm)



Specim AFX10 is a VNIR hyperspectral imaging solution with an HSI camera, a small and powerful computer and a high-end GNSS/IMU unit in one compact enclosure that can be installed on multiple drone types.

SPECIM AFX10 IS SUITED FOR EXAMPLE FOR:

- Vegetation classification and species identification
- Water quality analysis
- Wetlands monitoring
- Wildlife population study

SPECIM AFX17

NIR (900-1700 nm)



Specim AFX17 is a NIR hyperspectral imaging solution with an HSI camera, a small and powerful computer and a high-end GNSS/IMU unit in one compact enclosure that can be installed on multiple drone types.

SPECIM AFX17 IS SUITED FOR EXAMPLE FOR:

- Moisture, nutrition and fertilizer analysis from the soil
- Advanced vegetation species identification
- Plant health and stress studies
- Forest fires detection

SPECIM AFX SERIES

TECHNICAL SPECIFICATIONS



SPECIM AFX10

SPECIM AFX17

Spectral range

400 – 1000 nm

900 – 1700 nm

Spectral sampling

2.68 nm

3.5 nm

Spectral resolution

5.5 nm

8.0 nm

Spectral bands

Up to 224

Up to 224

Spatial pixels

1024

640

Field of View

38 deg

38 deg

F/#

1.7

1.7

Frame rate

Up to 330 fps

Up to 670 fps

Dimensions

131 x 152 x 202 mm

131 x 152 x 202 mm

Weight

2.5 kg

2.5 kg



SPECIM FX SERIES

SMALL, FAST & AFFORDABLE HYPERSPECTRAL CAMERAS
SPECIFICALLY DESIGNED FOR INDUSTRIAL MACHINE VISION



SPECIM FX SERIES

See the invisible, collect more information than is available with any other inspection method.

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

SPECIM FX SERIES BENEFITS

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

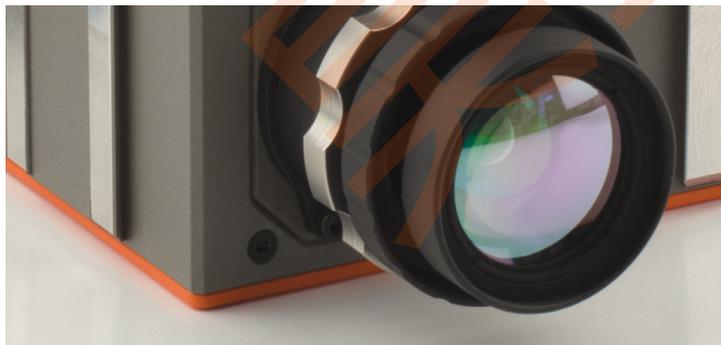


EASY INTEGRATION

Specim FX cameras can be installed on existing and new sorting lines. The material identification result, pixel by pixel, is available through a standard interface to commercial machine vision systems. Data analysis results are communicated to the sorting machines, such as robot hands or air jet, through commercial machine vision solution softwares.

UNIFIED, COMPARABLE DATA

Unified wavelength calibration between individual Specim FX cameras guarantees that the data received from different units is comparable. Different units in one system work seamlessly together, and extending the system by adding cameras is easy - there is no need for calibration.



FOCUS ON THE RELEVANT

The multiple region of interest (MROI) feature allows focusing on the areas that are relevant, which reduces the amount of recorded data. The MROI areas can be flexibly selected and even changed on the fly, based on the application needs.

FIRMWARE UPGRADABLE

Get the latest version of Specim FX firmware and update the camera onsite, quickly and easily, with the software package provided by Specim.



SPECIM FX10

VNIR



Specim FX10 camera series is designed for industrial and laboratory use. Specim FX10 cameras work in a line-scan mode in the visible and near-infrared (VNIR) area; Specim FX10 in the 400-1000 nm region, and the color optimized Specim FX10c camera in the 400-780 nm region.

SPECIM FX10 CAMERAS ARE BEST SUITED FOR:

- Vegetation & agriculture
- Phenotyping
- Color & density in printing
- Display & light source inspection
- Food quality

SPECIM FX17

NIR



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

SPECIM FX17 IS BEST SUITED FOR:

- Food & feed quality
- Waste sorting
- Recycling
- Moisture measurement
- Threat detection, Security

SPECIM FX50

MWIR



Specim FX50 is a high-speed, accurate and efficient camera specifically designed for industrial environments. It works in a line-scan mode and collects hyperspectral data in the Medium Wavelength Infrared (MWIR) region (2.7-5.3 μm).

SPECIM FX50 IS BEST SUITED FOR:

- Black plastic sorting
- Geology & mining
- Metal industry

SPECIM FX SERIES

TECHNICAL SPECIFICATIONS



	SPECIM FX10	SPECIM FX17	SPECIM FX50
Spectral Range	400 – 1000 nm	900 – 1700 nm	2.7 – 5.3 μm
Spectral Bands	224	224	154
Spectral FWHM	5.5 nm	8 nm	35 nm
Spatial Sampling	1024 px	640 px	640 px
Frame Rate	330 FPS with full frame 9900 FPS with 1 band selected	670 FPS with full frame 15 000 FPS with 4 bands selected	380 FPS (Full image with default binning)
FOV	38° (Other options available)	38° (Other options available)	24° / 45° / 60°
F-number	F/1.7	F/1.7	F/2.0
Camera SNR	600:1	1000:1	1600:1 (Dynamic range with 1.5 ms integration time)
Camera Interface	GigE Vision, CameraLink	GigE Vision, CameraLink	GigE Vision, Custom ethernet
Dimensions	150 x 85 x 71 mm	150 x 85 x 75 mm	280 x 202 x 169 mm
Weight	1.26 kg	1.56 kg	7 kg
Integrated shutter	Yes	Yes	Yes

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