

# AFX17 hyperspectral NIR camera



## COMPACT ALL-IN-ONE SOLUTION

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. It is a state-of-the-art solution weighing only 2.4 kg that can be used on multiple drone types – multirotor or fixed-wing, with or without a gimbal. Data is acquired automatically following the waypoints on a flight plan, making the Specim AFX17 easy to operate.

## FEATURES

- All in one HSI solution for UAVs
- Spectral range NIR from 900 to 1700 nm
- Supports gimballed or gimballess mounting
- Multiple spectral ROI enables both hyperspectral and application-specific multispectral configurations
- Fore lens aberrations are fully characterized
- Significantly less smile and keystone
- Ability to collect more light
- Full real-time and post-mission position and orientation solution for direct georeferencing

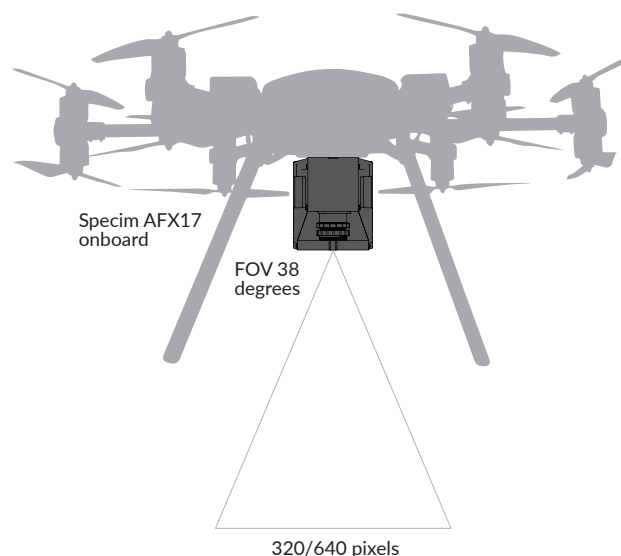
## GNSS/IMU PERFORMANCE

- Specim AFX17 system acquires GNSS/IMU data in real-time
- Position @ 1 Hz
- Attitude @ 50 Hz
- PPS synced time stamps @ 1 Hz
- Higher accuracy post-processed data with POSPAC UAV

	SPS	Post-Processed
Position (m)	1.5 - 3.0	0.02 - 0.05
Velocity (m/s)	0.05	0.015
Roll & Pitch (deg)	0.04	0.025
True Heading (deg)	0.30	0.080

CaliGeo PRO can use both real-time and post-processed data.

## IMAGE COVERAGE AND RESOLUTION

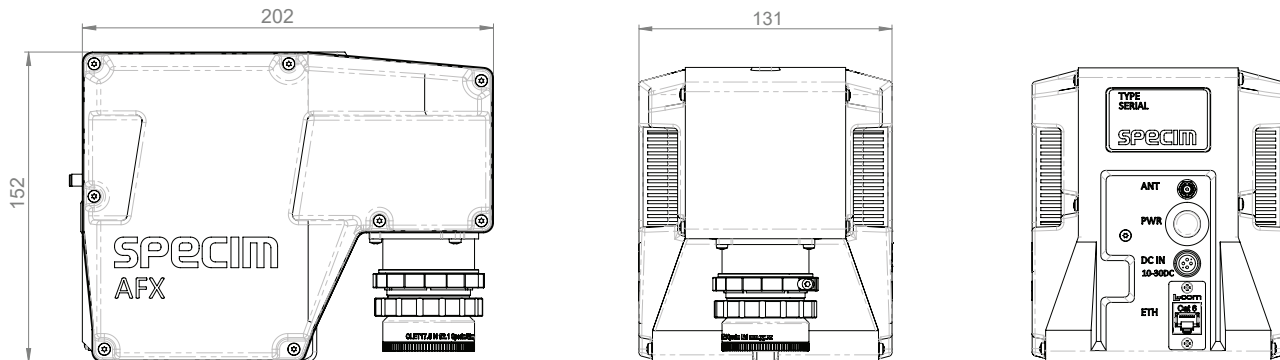


### Ground coverage and sampling distance (resolution) scale with altitude

Height	Swath	GSD (when spatial binning is 1)	GSD (when spatial binning is 2)
50 m	35 m	5.5 cm	11 cm
100 m	70 m	11 cm	22 cm
150 m	105 m	16.5 cm	33 cm

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## SIZE



## TECHNICAL SPECIFICATIONS

Spectral Range	900 – 1700 nm	
Spectral sampling	3.5 nm	
Spectral resolution	8.0 nm	
Fore lens focal length	18 mm	
Field of view	38 deg	
F/#	1.7	
Spectral bands	224	Binned by 2
Spatial pixels	640	
Spectral binning options	1, 2, 4, 8	
Spatial binning options	1, 2	
Multiple ROI	User-selectable	
Maximum frame rate	670 fps	Full frame
Dynamic range	3400	
SNR	1200:1	Binned by 1 spectrally, 1 spatially
Power input	10-30 VDC	Use the supplied battery or drone/gimbal power
Power consumption	24 W	Typical
Connectors	ANT, DC IN, ETH	GPS Antenna, Power In, Web UI / Data download
Storage temperature	-20 ... +50C	
Operating temperature	+5 ... +40C	
Relative humidity	5 – 90 %	Non-condensing
Drone options	Multirotor with gimbal Multirotor, no gimbal Fixed Wing UAV	Any drone with adequate payload capacity can be used
Gimbal	Optimized for MoVI pro	Other suitable gimbals may also be used
Gimbal weight	2.2 – 2.7 kg	Typical gimbal solution
Operating height	50 – 150 m	Typical, local limitations apply
GNSS/IMU	Trimble APX-15	
GPS Antenna	Trimble AV 14	
Dimensions (W x H x L)	131 x 152 x 202 mm	
Weight (without gimbal)	2.4 kg	
Weight (with gimbal)	5.1 kg	Typical gimbal solution