Real-Time Spectral Imaging: introducing the FireflEYE SE

S185

Easy and realiable imaging spectrometerfor UAV

Principal applications

- UAV applications
- Precision agriculture
- Archaeology
- Precision farming
- Vegetation monitoring
- Hyperspectral stereo photogrammetry
- 3D-hyperspectral surface models
- Spectral mobile mapping

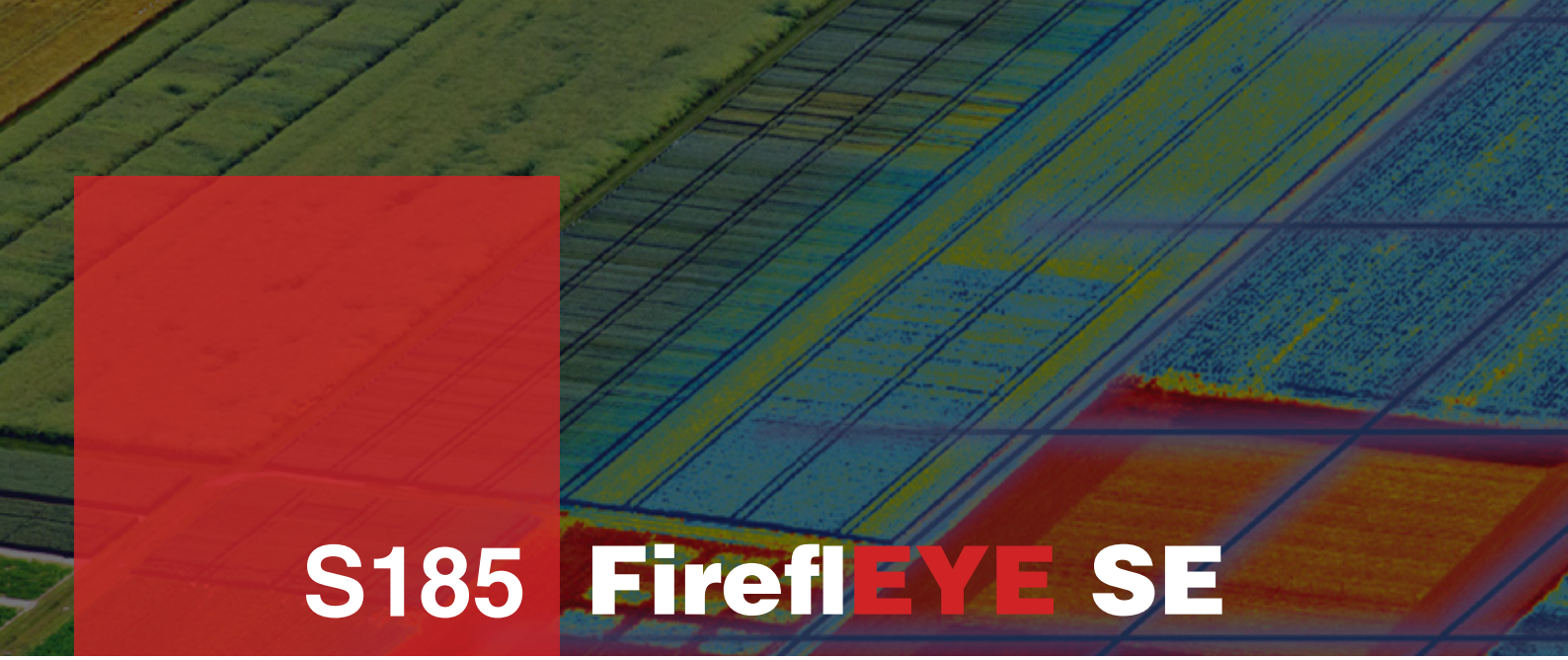
Short facts

The S 185 FireflEYE SE uses our revolutionary fullframe imaging technology where you have accurate hyperspectral data over the whole field of view. It combines the precision of hyperspectral cameras with the ease of use of snapshot cameras.
The device provides the smartest access to hyperspectral aerial images, with complete hyperspectral cubes captured with global shutter in 1/1000 of a second, without the need of an IMU.
During flight, the pre-processed information is transferred wireless from the S 185 FireflEYE SE to the ground station allowing the user to start analysing the acquired aerial hyperspectral images.

Special features

- Full frame hyperspectral imaging in the VIS-NIR
- No moving artifacts due to low integration time
- WiFi remote control of all parameters
- Real-Time hyperspectral preview on the ground
- Hyperspectral video

Revolution of Digital Imaging



S185 FireflEYE SE

Spectral properties	
Wavelength range	450 nm - 950 nm
Spectral channels	125
Spectral sampling	4 nm
Spectral data	2500 Spectras / Cube
Camera properties	
Resolution	1000*1000 Pixel
Detector	Silicon Sony ICX285
Digitalization	12 bit
Measurement time	0.1 ms up to 10 000 ms
Camera interface	2x Gigabit Ethernet
Hyperspectral cube rate	up to 5 cubes/s
Optical properties	
Objective	selectable
Lens adapter	C-Mount
Ground resolution	selectable mm-m
Physical properties	
Environmental conditions	Not condensing
Operating temperature	0°C up to +40°C
Weight (without lens)	appr. 490 g
Power	15W

The information above may be subject of changes

What you should know?

The S 185 FireflEYE SE uses a unique technology, which establishes a fair balance between spatial and spectral resolution. The result is an imaging spectrometer with no need for scanning (e.g. push broom technology) or image combination after fast filter shifts. Cubert's technology provides clean hyperspectral images out of the box without any moving artifacts.
During the development of the S 185 FireflEYE SE we miniaturized our laboratory platform. The weight is reduced from 3000 g to around 500 g. This was achieved by the use of lightweight and stable materials like aluminium and kevlar. Due to the absence of any moving part, the camera provides a lightweight and stable platform. In combination with an industry-grade processing unit for the airborne data storage and the ground communication, we achieve a ready to fly weight of as low as 890 g.

Cubert...

... was one of the first companies to help pioneer Snapshot Hyperspectral imaging. In 2011, Cubert presented the first high-resolution snapshot hyperspectrometer. Since this time, Cubert's technological basis has rapidly evolved.
Today our snapshot imaging spectrometers range is from multispectral cameras to high precision hyperspectral cameras.

cubert