

# UAV Imager

## 3D Hyperspectral Video Camera

# FirefLEYE

## 185



### Real-time spectral imaging

The FirefLEYE 185 is the workhorse of Cubert's hyperspectral snapshot cameras. With a weight of less than 500g, it is designed for easy implementation onboard a UAV or for an easy-to-handle and flexible measurement experience in the field or laboratory.

The 185 is available in four versions: two light-weighted versions suited for UAV-use, one with industrial housing and one with waterproof housing for underwater use.

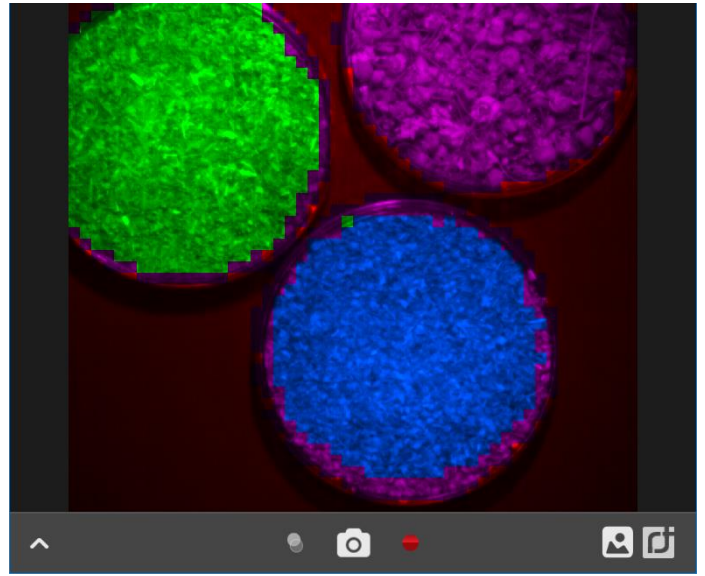
### Lightweight VNIR Imaging Sensor

#### Advantages

- 3D hyperspectral snapshot imager (x, y,  $\lambda$ )
- VNIR coverage (450-950 nm)
- 125 spectral bands
- Lightweight design (490g)
- Full video functionality
- Classification engine
- >60 hyperspectral indices



FirefLEYE 185 onboard RTK-X8



Train the camera to identify distinct materials completely automatically

Spectral Properties	
Wavelength range	450 – 950 nm
Number of bands	125
Spectral resolution / FWHM	8 nm @ 532 nm
Spectral sampling	4 nm
Spatial Properties	
Resolution pan	1000 * 1000 px
Resolution spectral	50 * 50 px
Data cube	2,500 spectra / cube
Optical Properties	
Field of View (FOV)	30°, 20°, 13°, 7°
Macroscopy possible	Yes (close-up lenses)
Microscopy possible	Yes (relay optics)
Sensor Properties	
Detector	Silicon CCD
Sensor size	1 Megapixel
Radiometric resolution	12 bit
Integration time	0.1 – 1000 ms
Frame rate	15 Hz (fps) lab 3 Hz (fps) UAV
Data size	12 MB / data cube
Camera Properties	
Connection	2x GigE
Operation temperature	0 – 40° C
Protection class	IP 40
Power consumption	DC 12 V / 15 W
Size	200 * 67 * 60 mm
Weight	490 g

## Cubert Utils Software Features

To enable time-saving analyses, a complete **hyperspectral index library** for agricultural applications is fully integrated.

Furthermore, a **classification engine** based on machine learning is also available. This easy-to-use software add-on allows online classification directly in the live data stream.

## What you should know

In lab use the FirefLEYE can be equipped with **close-up lenses**, allowing a **macroscopic scale view** with a spot size of only a few mm to cm.

Attaching a **relay lens** to the FirefLEYE provides for full interchangeability to C-mount lenses. Mount the camera on your **microscope or endoscope** without the need of an additional calibration.

An **industrial housing** with IP65 is available to ensure a high robustness for the 185. Upgrade to IP68 and use the 185 **underwater** to a depth of 5m.

Suitable for:

MICROSCOPE

UAV & FIELD

UNDERWATER