

High Resolution Hyperspectral Video Camera with Pansharpener

ULTRIS 20 Plus



Advantages

- Two-sensor hyperspectral video camera (x, y, λ)

- Panchromatic extension for the award winning ULTRIS 20

- Spatial resolution **pan**:
1880x1880 px (>3.5 MP)

- Spatial resolution **spectral**:
410x410 px
(168,100 spectra per cube)

- Pansharpener data cube size:
1880 x 1880 x 100 (x-y- λ)

See the difference in high resolution

Pansharpener, or image fusion, is a well-known image enhancement technique in satellite remote sensing or earth observation. At Cubert we developed our own image fusion technique to increase the spatial resolution of our hyperspectral images. This is extremely beneficial for UAV flights and mobile mapping, as it allows analyses on leaf level of vegetation. The ULTRIS 20 Plus is our latest UAV hyperspectral camera with pansharpener extension.



ULTRIS True Color, native resolution,
410x410 pixel, 100 spectral bands



ULTRIS Plus True Color, pansharpened product
(factor 4.6, bicubic),
1880x1800 pixel, 100 spectral bands

Distance (flight height)	0.5 m	1 m	5 m	10 m	50 m	100 m
GSD Spectral Sensor	0.09 cm	0.17 cm	0.85 cm	1.7 cm	8.5 cm	17 cm
GSD Pan Sensor	0.02 cm	0.04 cm	0.19 cm	0.4 cm	1.9 cm	3.7 cm
Image Coverage	0.35x0.35 m	0.7x0.7 m	3.5x3.5 m	7x7 m	35x35 m	70x70 m

What you should know

The **ULTRIS 20 Plus** is especially designed for UAV applications, the table above gives an overview on the resolution per pixel (ground sampling distance) for different flight heights. Of course you can use the hyperspectral video imager in the field or in the lab – the non-scanning snapshot allows you to take the complete data cube within a few milliseconds.

Spectral Properties	
Wavelength range	450±10 – 850±10 nm
Spectral sampling	4 nm
Sampled bands	100
Spectral resolution / FWHM	12 nm @ 532 nm
Wavelength accuracy	0.5 nm
Spatial Properties	
Resolution pan	1880 * 1880 px
Resolution spectral	410 * 410 px
Data cube	168,100 spectra / cube
Optical Properties	
Field of View (FOV)	Typ. 35°

Sensor Properties	
Detector	Silicon CMOS
Sensor size	20 Megapixel
Radiometric resolution	12 bit
Integration time	0.1 – 1000 ms
Frame rate	Up to 8 Hz (cubes / s)
Data size (raw)	40 MB / data cube
Camera Properties	
Connection	1-3 GigE
Operation temperature	5 – 65° C
Protection class	IP 40
Power consumption	DC 12 V / 10 W
Size (S20)	60 * 107 * 95 mm
Weight (S20)	< 630 g