

YUSENSE®



Long Focal Length and Large Image Frame

AQ600

5-Band Universal Video Multispectral Camera

5-Band Universal Video Multispectral AQ600



Five 3.2m pixel multi-spectral channels, one 12.3m pixel RGB, sapphire optical window, large aperture, low distortion, broad-band transmission, all-glass lens, aluminum alloy body, video-level detection and result output meet the application needs of precision agriculture, forestry monitoring, river and lake ecology, target recognition and other industries.

■ Product Features

- ◆ Five Multi-spectral bands and one RGB sensor.
- ◆ 3.2 megapixel multispectral and 12.3 megapixel RGB.
- ◆ Multi-spectral 12bit global shutter and RGB 8bit shutter.
- ◆ Gigabit network port /TTL serial port
- ◆ Downlink light sensor(DLS).
- ◆ Calculate reflectance in real time.
- ◆ Fastest 1s synchronous imaging in all bands.
- ◆ 128GB SSD flash drive, supports a maximum of 2TB SSD.
- ◆ Multiple trigger modes for external, timing, and overlap ratio.
- ◆ Compatible with multi-type rotary-wing and fixed-wing UAV platform.

■ Spectral Remote Sensing Hardware System CW15 + AQ600

Integration of Remote Sensing and Mapping

It is equipped with a multi-spectral camera AQ600 and a small mapping camera to acquire high-definition RGB and multi-spectral images at the same time.

Multi-directional Obstacle Avoidance to Ensure Flight

Load embedded design, the whole machine can be folded and disassembled without tools. Easy to deploy.

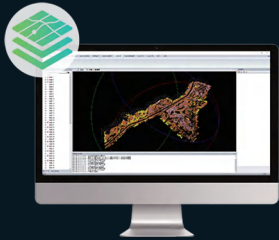


Long Endurance, High Adaptability, Suitable for Large Area Remote Sensing

Taking off and landing at an altitude of 4,800m @ force 5 wind, cruising at an altitude of 7,500m @ force 6 wind, maximum working endurance of 6 hours @ 1kg under typical working conditions, perfect system monitoring and warning, perfect obstacle avoidance system assistance, field safety is guaranteed.

Applicable groups: government and enterprise users, large and medium-sized farmers, remote sensing service teams.

■ Data Preprocessing Software Yusense Map



Yusense Map is a powerful, easy-to-operate multi-spectral image processing software for UAVs. Without too much manual intervention, it can complete a series of tasks such as camera parameter reading, aerial triangulation, Band alignment, orthophoto generation and precise DSM.

Band alignment: Photogrammetric theoretical adjustment solution, automatic precise matching of homonymous image points, and sub-pixel multi-channel registration.

split joint: Automatic aerial triangulation, high-precision screening of matching points, seamless orthophoto stitching.

Multi-source data processing: It can process multi-spectral, thermal infrared, visible light and other data.

Spectral index calculation: Support free editing of index formula.

High-precision radiometric correction: Accurate radiation correction, synchronous calculation of real reflectivity, scientific restoration of the essential characteristics of the target.

■ Typical Application



Condition monitoring

By using vegetation factors such as NDVI and LAI, quantifying the consistency of vegetation canopy status at different spatial scales, and using characteristic spectra of vegetation in different health states to quantitatively assess vegetation growth, which can provide data support for irrigation, fertilization, plant protection, yield evaluation and other work.



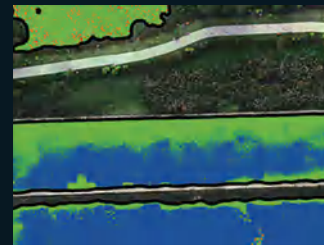
Discolored pine monitoring

Using spectrum and texture information to achieve efficient suppression of the environmental background of soil, withered grass and other objects and high-precision identification of color-change pine. By accurately extracting the location, spatial distribution and canopy area of color-changing pine trees, we can provide data support for the management of diseased trees.



Black and smelly water monitoring

By referring to the evaluation standard of surface black and smelly water, using the characteristic spectrum of black and smelly water to construct the classification index to achieve black and smelly water classification inversion and spatial information statistics. This technology can assist in analyzing the influence of domestic sewage and industrial wastewater on surrounding water, and finally help pollution source investigation and water environment assessment.



Water eutrophication monitoring

Referring to the eutrophic state evaluation standard, the classification index is constructed by using the characteristic spectrum to realize the classification inversion and spatial information statistics of water eutrophication, to assist the analysis of the impact of farmland wastewater, fishery and aquaculture on the surrounding water body, and to assist the investigation of pollution sources and water environment assessment.

■ Product Parameters

Band configuration	Five Multi-spectral bands and one RGB sensor	Power supply mode ^[2]	12V
Target surface size	MS: 1/1.8"; RGB: 1/2.3"	Power consumption	≤16W@12V
Effective pixels	MS: 3.2Mpx; RGB: 12.3Mpx	Image format	MS:16bit original TIFF image & 8bit reflectance JPG; RGB: 8bit JPG
Shutter type	Global shutter/Shutter	Video format	MP4
Quantitative figures	MS: 12bit; RGB: 8bit	Data processing software	Yusense Map/Yusense Map Plus
Viewing Angle	MS: 48.8°×37.5°; RGB: 47.4°×36.4°	Control method	WIFI (WEB interface access)/Ethernet/UART
GSD	MS: 5.28cm@h120m; RGB: 2.60cm@h120m	Picture mode	External trigger, Timed trigger, Overlap rate trigger, Cascade trigger
Image size	MS:109m×82m@h120m; RGB: 106m×79m@h120m	Frequency of taking pictures ^[3]	Picture mode:1Hz, Video mode:20Hz
Spectral band ^[1]	450nm@30nm, 555nm@27nm, 660nm@22nm, 720nm@10nm,840nm@30nm, RGB	Storage medium	Standard 128GB solid state USB disk, supporting up to 2TB capacity, USB3.1 high-speed storage device
Optical window	Sapphire optical window	Operating ambient temperature	-10°C~+50°C(Relative wind speed ≥1m/s)
Size	≤80mm×80mm×78mm	Storage Environment Temperature	-30°C~+70°C
Weight	≤415g	Environmental humidity	RH(%)≤85%(Non condensation)
Installation interface	8×M3	Product certification	CE、FCC、RoHS


Note: [1] Standard wavelength, The following 18 wavelengths are allowed to be assembled and customized (consult YUSENSE marketing personnel for detailed assembly method and cost): 410nm @ 35nm, 450nm @ 30nm, 490nm @ 25nm, 530nm @ 27nm, 555nm @ 27nm, 570nm @ 32nm, 610nm @ 30nm, 650nm @ 27nm, 660nm @ 22nm, 680nm @ 25nm, 720nm @ 10nm, 720nm @ 15nm (high pass), 750nm @ 10nm, 780nm @ 13nm, 800nm @ 35nm, 840nm @ 30nm, 900nm @ 35nm, 940nm @ 30nm (tolerance ± 5 nm).


[2] Please consult the marketing staff of Yuchen for details if other voltages are used for power supply.


[3] Test results of USB storage media with data transmission speed rating of U3 or above (read and write speed ≥ 400MB/s).

Let every drone have the right spectral camera

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