

FS60C/62C UAV hyperspectral measurement system



- Dji M350/300RTK is used as the flight bearing platform.
- Ultra-high speed spectral scanning imaging device with high signal-to-noise ratio provides high stability spectral image acquisition.
- The self-developed image processing algorithm with high efficiency and low power consumption can greatly prolong the flight time and reduce the power consumption of the system.
- Through real-time measurement of spectral image information of plants, water bodies, soil and other ground objects, application and precision agriculture, crop growth and yield assessment, forest pest monitoring and fire prevention monitoring, coastline and Marine environment monitoring, lake and watershed environmental monitoring and other applications.
- Compact system design, imaging spectrometer host spectral resolution up to 2.5nm.
- The whole machine consists of: high stability head, hyperspectral imager, embedded data acquisition, processing and storage unit, wireless image transmission system, GPS-RTK navigation system, ground receiving workstation, ground control system, reflectivity calibration board.

Measurement principle

Hyperspectral camera FS-60C

Lighting mode Spectroscopic method Spectral range Spectral band Spectral resolution (FWHM) Slit width Transmission efficiency Stray light Number of spatial pixels Pixel size Imaging speed probe Signal-to-noise ratio Camera output Camera interface attachment ROI Embedded data acquisition Processing storage unit dimension weight Power dissipation

Passive lighting (without light source)
Transmission grating
400-1000nm
1200
2.5 nm
25um
> 60%
< 0.5%
Max. 1920 (software configurable)
5.86 um
Full band 128Hz, after ROI can achieve 3300Hz
CMOS
600/1
USB3.0 or Gigabit network
C-Mount
USB3.0 or Gigabit network
Multiple regions
Embedded processor 512GSSD storage
20.5 cmx18.5 cmx12.9 cm
1200g
40W



- Easy to operate, no need for professional drone operator, can achieve single operation
- The ground station can observe the sampling site of the aircraft in real time and set the preview and correction functions of the route data collected point by point by using the ground station: radiometric correction, reflectivity correction, and area correction support batch processing
- Real-time common vegetation index calculation function
- Support custom real-time analysis model input function
- ENVI is perfectly compatible with multiple data formats

Hyperspectral camera FS-62C

Spectroscopic method	Transmission grating		
Spectral range	900-1700nm		
Spectral channel number	1024		
Spectral resolution (FWHM)	6.5nm		
Slit width	25um		
Transmission efficiency	>60%		
Stray light	< 0.5%		
Number of spatial pixels	1280		
Pixel size	5um	Observation mode	Real-time observation of aircraft sampling sites, hyperspectral images and spectral data by ground stations
Imaging speed	Full band 70Hz, maximum 1800Hz	Correction mode	Radiometric correction, reflectivity correction, and area correction support batch processing
probe	InGaAs	Data format	Compatible with spe, hdr, and scp formats
Signal-to-noise ratio	600/1	Camera size	Less than 135*82*100 mm (L * W * H)
exportation	start		(Including lens and built-in embedded data acquisition and processing unit, excluding head)
Camera interface	C-Mount		Less than 190*129*100 mm (L * W * H)
attachment	Lens, USB cable, power supply		(Including lens and built-in embedded data acquisition and processing unit, including head)
ROI	Multiple regions	Camera weight	≤ 740g (including lens and built-in embedded data acquisition and processing unit, excluding PTZ)
Built-in processing unit	Windows operating system, 8GB		≤ 1085g (including lens and built-in embedded data acquisition and processing unit, including head)
	of RAM 512GB SSD and camera	attachments	Reflectance calibration board
	integrated Design (optional 1TB)	Lens focal length	25mm
Heat dissipation mode	Internal air cooling heat dissipation	Camera scene	> 25°
Mode of operation	Easy to operate, no need for prof- essional drone operation Hand co- ntrol, can achieve single operation	Application software	FIGSPEC UAV real-time flight control software, FIGSPEC Merge puzzle software, FIGSPEC Studion image analysis software

Airborne Hyperspectral Camera Mining Test

The UAV hyperspectral imaging system can quickly collect high-resolution images of the surface by carrying a hyperspectral sensor, capturing the spectral characteristics of different minerals. This enables explorers to quickly identify potential ores and mineralized zones, greatly improving exploration efficiency.



After analyzing the collected data, we get the above group of pictures under different bands.



The above unsupervised clustering algorithm image is obtained through analysis software

Use Airborne Hyperspectral Camera to Photograph Ponds to Obtain NDVI Images and Images of Potassium Permanganate Distribution in the Water



Raw image



NDVI image



Potassium permanganate distribution image

NDVI Image Analysis and Supervised Clustering after Photographing the Forest Using Airborne Hyperspectral Camera



Raw image



NDVI image



Supervision Cluster image

Accessories Introduction

Accessories Description	Quantity	Accessories Description	Quantity
Host	1	Adapter 12V 3A	1
HDMI high-definition cable 0.5m	1	Standard lens	1
USB flash drive	1	Certificate of Conformity & Warranty Card	1
Packing List	1	Ziplock Bags	1
Black aluminum alloy box	1	Outer packaging carton	1
"This side is facing up, please do not turn it upside down; please do not drop this precision instrument."	1		