

UAV METEOROLOGICAL MONITORING SYSTEM

Y8 Meteor



Introduction

Our team independently develops and assembles the UAV and monitoring equipment. Optional modules can be mounted on the top or belly of the airframe: dedicated UAV ultrasonic weather sensor, visibility monitor, and binocular thermal imaging night vision system.

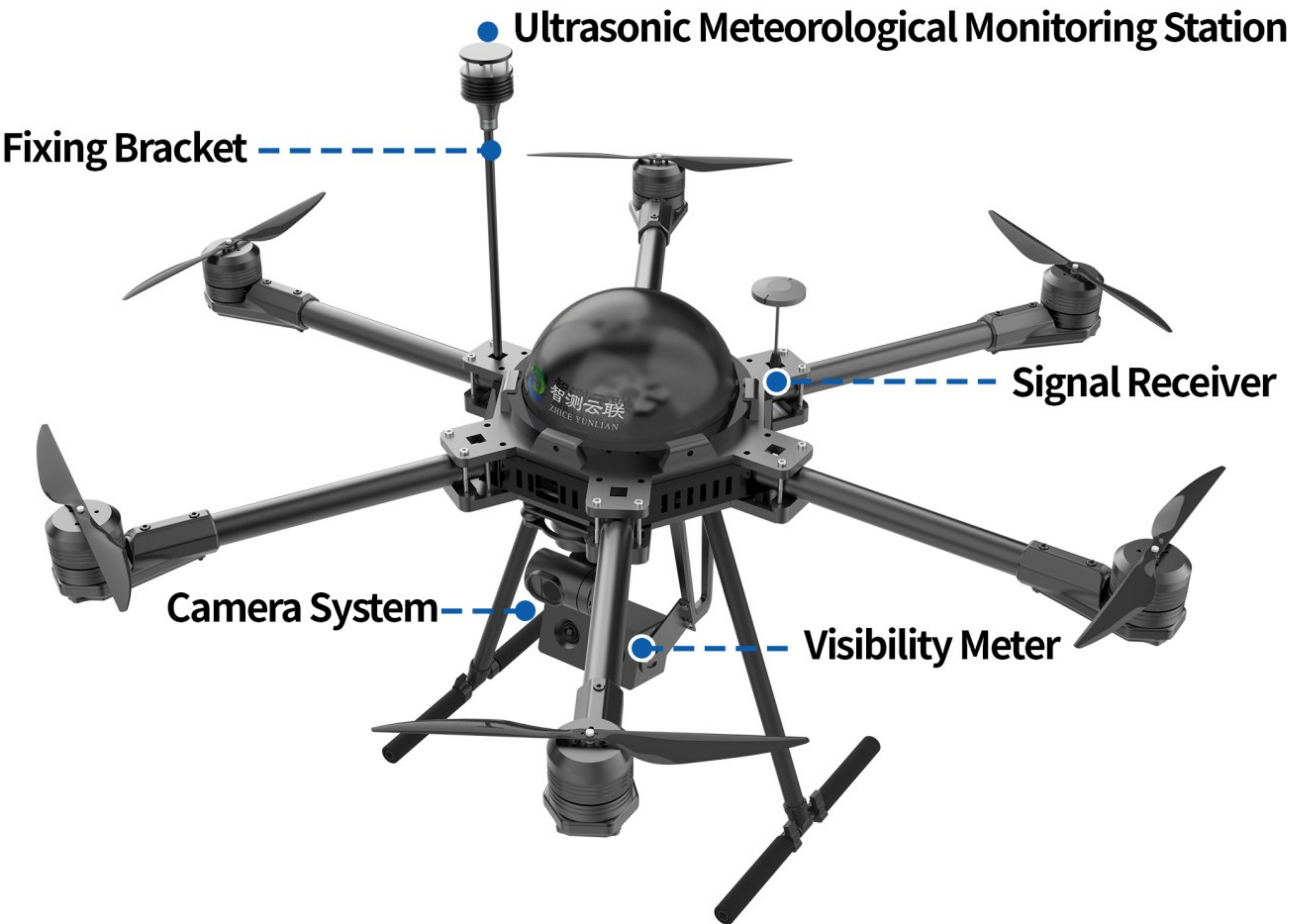
The ultrasonic weather sensor accurately captures core parameters such as temperature, humidity, wind speed and wind direction. The visibility monitor ensures data validity in complex weather conditions, and the thermal imaging system enables all-weather blind-spot-free observation.

In addition to hardware equipment, we support customized development of dedicated platforms, which can be connected to the government Kylin operating system and transmit collected data in real time.



Structure

★ Customized UAV solutions available on demand



Equipment List



UAV



Ultrasonic
Weather Station



Visibility Meter



Camera System





Parameters

Device	Measurement Specifications
Micro Weather Station	Wind speed: 0~70m/s (starting wind speed ≤0.5m/s) Wind direction: 0~359°Temperature: -50℃~+80℃ Humidity: 0.0% RH~100.0% RH Air pressure: 300hPa~1100hPa
UAV	Maximum level flight speed: 15m/s Maximum vertical climbing speed: 5m/s Endurance: customized on demand Remote control distance: 5-20km
Visibility Meter	Measurement range: 10m~20km
Camera System	AI wide-angle camera: 48 megapixels Telephoto camera: 13 megapixels Infrared thermal imaging sensor

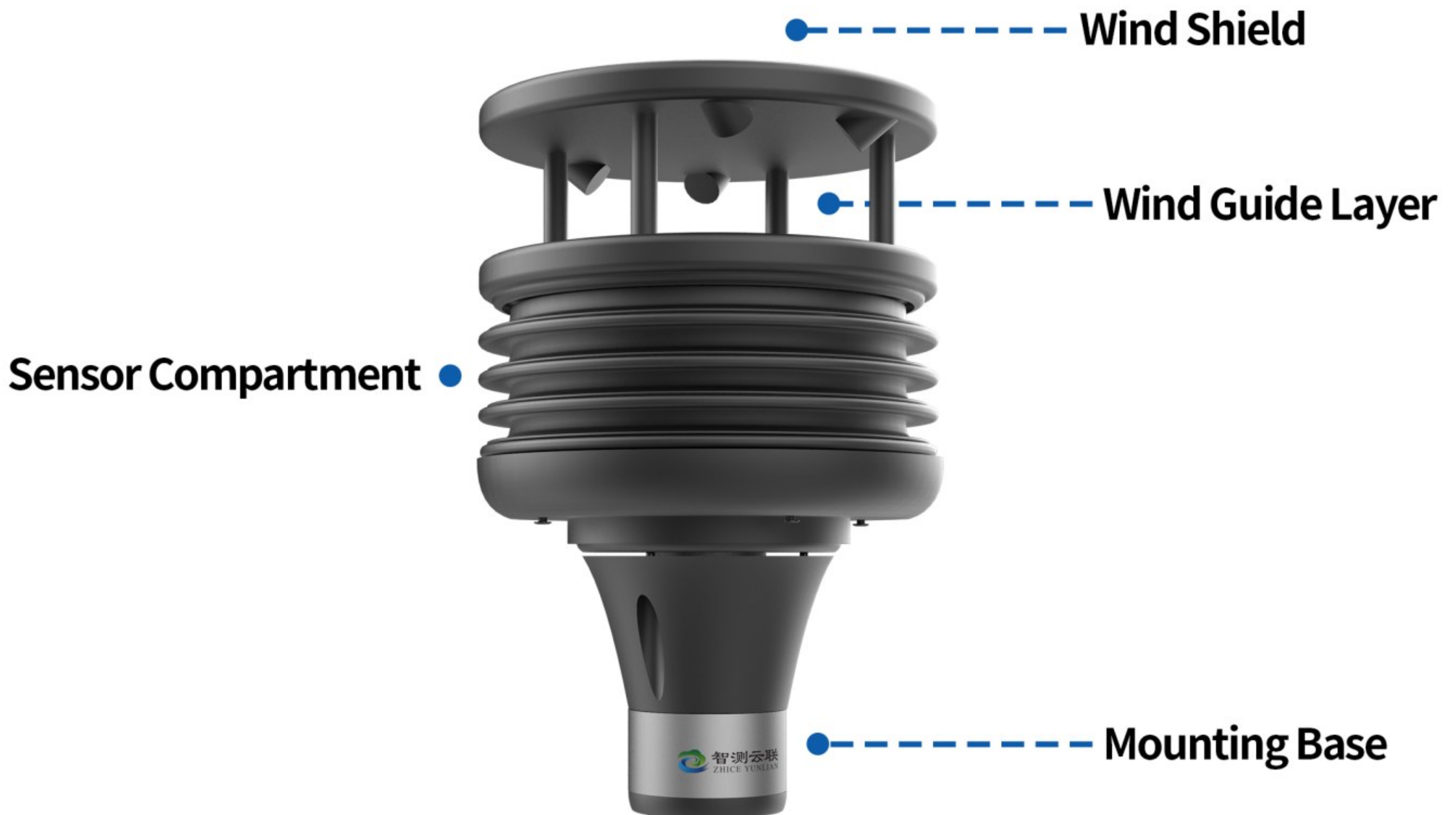
Product Packing List

- Weather station
- UAV (including flight platform, remote controller, semi-solid battery, fast charger)
- Beidou signal receiver
- Optional equipment (1. Visibility meter; 2. Camera system)

Product Cleaning Instructions

1. If dust accumulates on the instrument, gently wipe it with a cloth dampened with biodegradable mild detergent.
2. Do not use solvent-based reagents. Wipe carefully to avoid scratching the instrument surface.
3. If snow or ice accumulates on the instrument surface, wait for it to melt naturally. Never remove it forcibly with tools.

Micro Weather Station

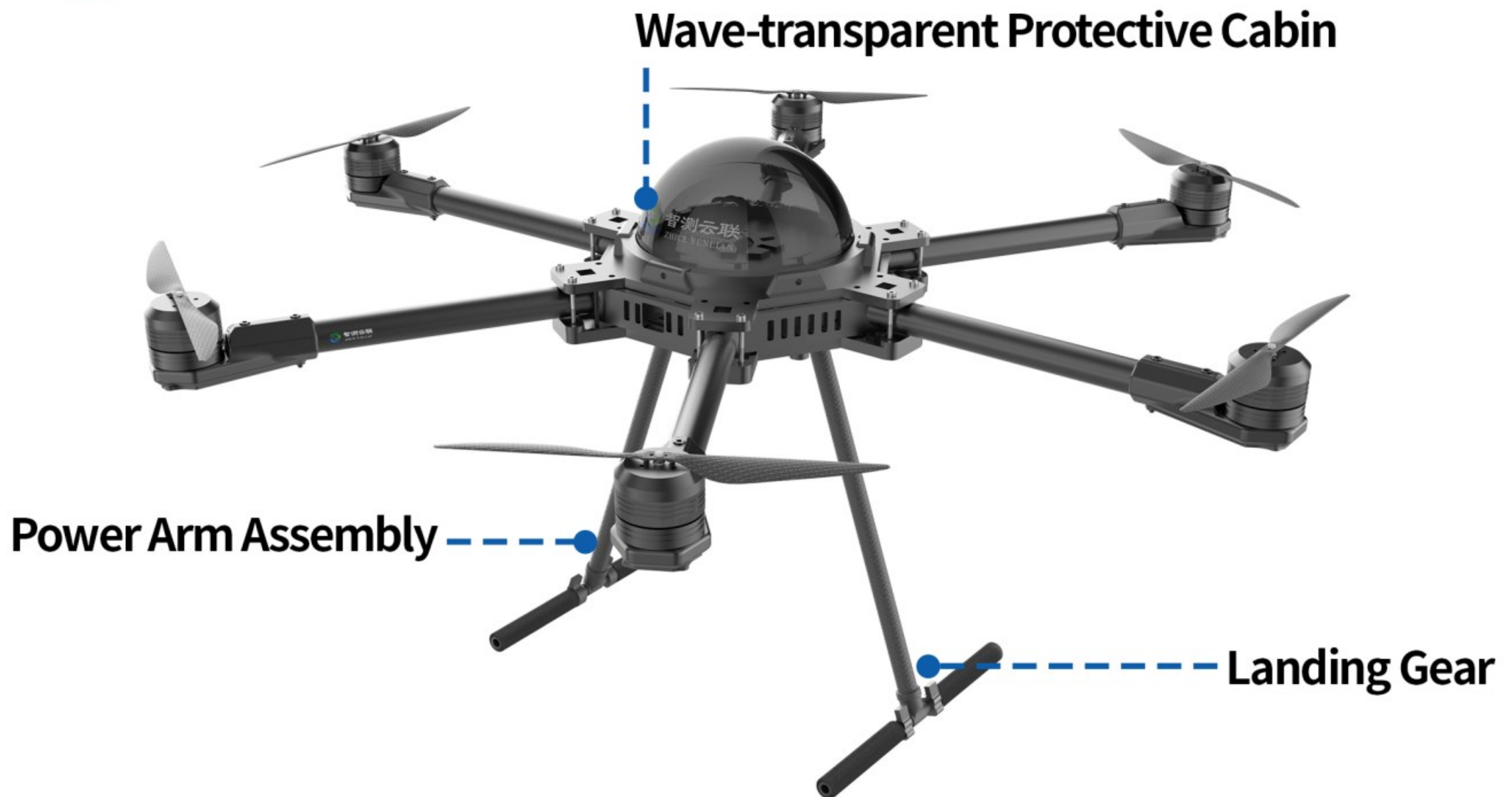


! Specifications

Parameter	Measurement Range	Resolution	Accuracy
Wind Speed	0~70m/s Starting wind speed $\leq 0.5\text{m/s}$	0.1m/s	$\pm(0.3 + 0.03V)$ m/sV = actual wind speed
Wind Direction	0°~359°	1°	$\pm 3^\circ$ (at wind speed $\geq 2\text{m/s}$)
Temperature	-50°C~+80°C	0.1°C	$\pm 0.1^\circ\text{C}$ (-20°C~+60°C) $\pm 0.3^\circ\text{C}$ (full range)
Humidity	0.0%RH~100.0%RH	0.1%RH	$\pm 2\%\text{RH}$ ($\leq 80\%\text{RH}$) $\pm 5\%\text{RH}$ ($> 80\%\text{RH}$)
Air Pressure	300hPa~1100hPa	0.1hPa	$\pm 0.5\text{hPa}$ (0°C~40°C) $\pm 1.0\text{hPa}$ (full range)

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UAV



Default Product Specifications

UAV

Electric six-rotor layout, 850mm unfolded wheelbase;
dimensions 930×820×540mm (unfolded) / 530×410×540mm (folded);
equipped with Bogie K9 flight controller, 3.2kg empty weight, 10kg max takeoff weight;
15m/s max level speed, 5m/s max climbing speed, standard 18-inch propellers.

Remote Controller

5.5-inch 1080P high-brightness screen, Qualcomm 6nm processor,
Android 13 OS; 194.3×282.2×94.9mm, 683g;
built-in 4G, 64GB storage; 2.4G/5.8G dual-band 12-channel frequency hopping, 5–20km control range;
operating temp -10°C~55°C, with Type-C charging port, serial port, USB and SIM slot.

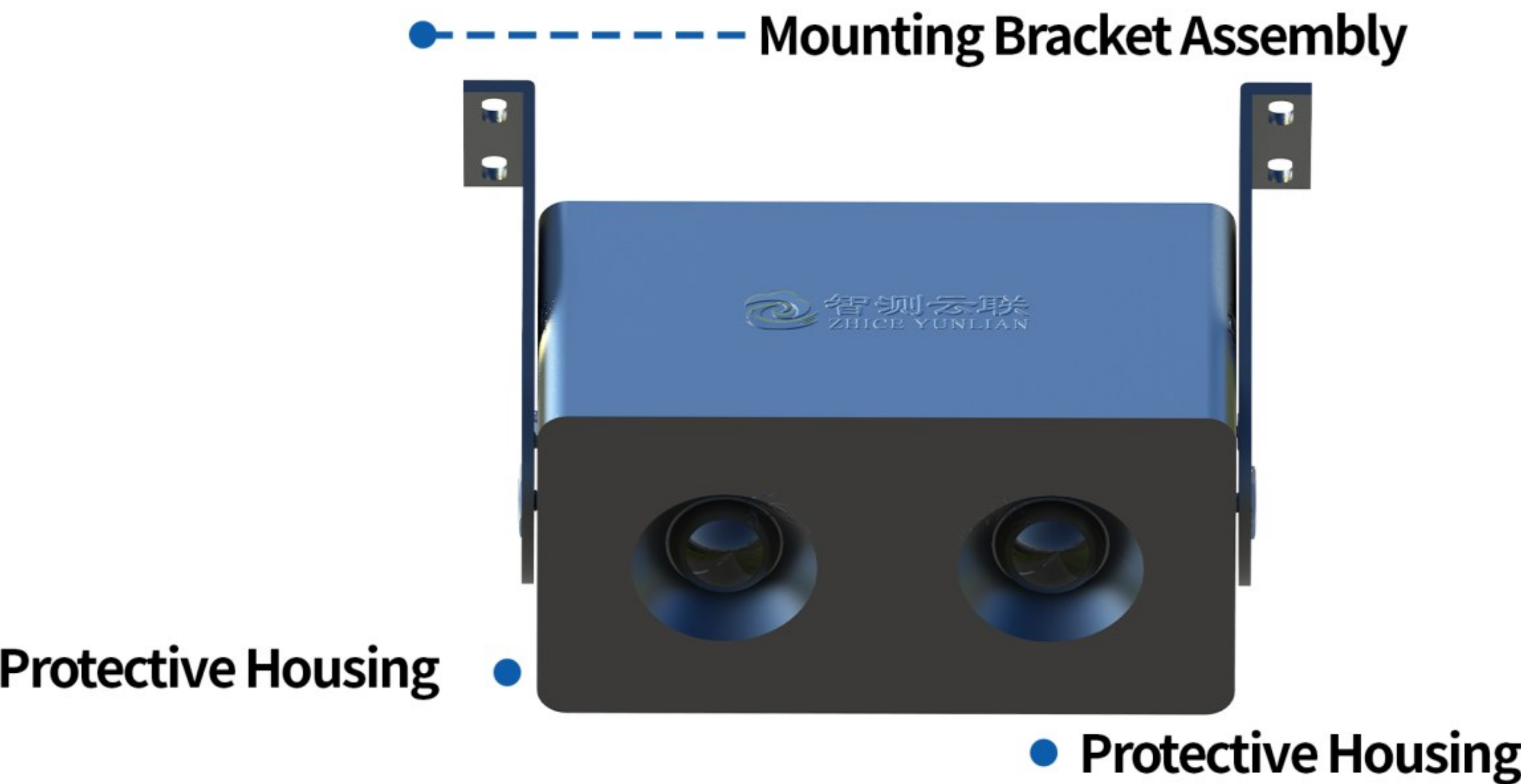
Battery

Standard 6S lithium battery pack, 28000mAh capacity, 76×67×194mm, 2.05kg, 5C discharge rate.

Fast Charger

100–240V input, 1080W total output (dual 540W channels);
1.0–20.0A charging current per channel, supports fast / balance / storage modes;
compatible with 6S×2 batteries, 202×272×118.6mm, 4.88kg.

Visibility Meter



! Product Specifications

Monitoring Parameter	Description
Visibility	Standard range: 10m–10km; extendable to 20km for some models Error $\leq \pm 2\%$ within 1km; error $\leq \pm 10\%$ between 1km and 10km
1-minute Average Visibility	Calculated based on real-time monitoring data, providing data support for short-term weather visibility judgment
10-minute Average Visibility	Stable time-period average value, meeting standard data requirements for meteorological observation, traffic control and other scenarios
Optical Pollution Correction Data	Indirectly corrects optical interference caused by dust and light drizzle through built-in protection and algorithms, assisting in calibrating visibility measurements



Camera System (Fully Customizable)

Wide-angle Camera (Basic)

Material: aluminum alloy
Operating temperature: -25° to 70°
Stabilization axis: 3-axis
Working voltage: 7V
Control angle: roll -45°~45°, pitch 0°~90°, pan -100°~100°
Angle jitter: $\pm 0.1^\circ$
Control signal: PWM, SBUS, serial communication
File storage: SD card
Video output resolution: 1080P
Lens: 2.4mm
Video output resolution: 1080P-25fps
Image resolution: 1080P-25fps
Image format: JPEG
Working modes: photo, video
Crosshair aiming system
(real-time ground-station aiming)

Telephoto Camera

Image sensor: 1/2.5-inch CMOS
Lens: FOV21.5
Aperture: F/3.0
Equivalent focal length: 120mm
Camera focal length: 14.46mm, equivalent 120mm
Focus range: 10m to infinity
Digital zoom: 5-30x
ISO range: 100-6400 (video), 100-6400 (photo)
Shutter speed: 1/8000s to 2s
Maximum video resolution: 3840×2160@30fps
Maximum video bitrate: 100Mbps
Effective pixels: 13 million
Maximum photo size: 4000×3000
Image format: JPEG
Shooting modes:
single shot (8MP/12MP),
timed shot (8MP/12MP, 1/2/5/10/30/60s)

AI Wide-angle Camera

Image sensor: 1/2-inch CMOS, 48 megapixels
Digital zoom: 1-5x
Lens: FOV79°, aperture F/1.6
Focal length: 4.71mm
Equivalent focal length: 24mm; focus range: 1m to infinity
ISO range: 100-26500 (video), 100-6400 (photo)
Shutter speed: 1/8000s to 2s
Frame rate:
3840×2160@30fps / @25fps / @24fps;
2720×1528@050fps / @030fps / @25fps / @024fps;
1920×1080@60fps / @50fps / @30fps / @25fps / @24fps
Video format: MP4, maximum bitrate 100Mbps
Effective pixels: 48 million
Maximum photo size: 8064×6048
Shooting modes:
single shot (8MP/12MP/48MP),
timed shot (8MP/2MP, 1/2/5/10/30/60s)
Image format: JPEG
File system: FAT32 / exFAT
AI functions: front-end recognition, back-end recognition,
visual tracking

Thermal Imaging Sensor

Frame rate: 30Hz
Resolution: 640×480@30fps
Focal length: 19mm
Equivalent focal length: 80mm; DFOV: 30.7
Aperture: F1.1
Focus range: 7.6m to infinity
Color palettes:
white-hot / black-hot / jungle / iron-red / rainbow / polar
/ glow / gold / red-hot / medical / gold
Image format: JPEG (8-bit), R-JPEG (16-bit)
Video bitrate: 6Mbps
Video format: MP4
Photo modes: single shot,
timed shot (JPG 2/3/5/7/10/15/20/30/60s)
Infrared wavelength: 8μm to 14μm

