CUMULUS - YOUR AGRICULTURAL DRONE

Cumulus V1 is a fully autonomous light weight drone for civil applications ranging from precision agriculture to accurate mapping and surveying.

Cumulus V1 is easily transportable and provides exceptionally large terrain coverage due to its 2 ½ hours flight time and 58km/h cruising speed.

The aircraft is made from the best carbon fiber and kevlar, which makes it one of the most robust UAVs on the market.

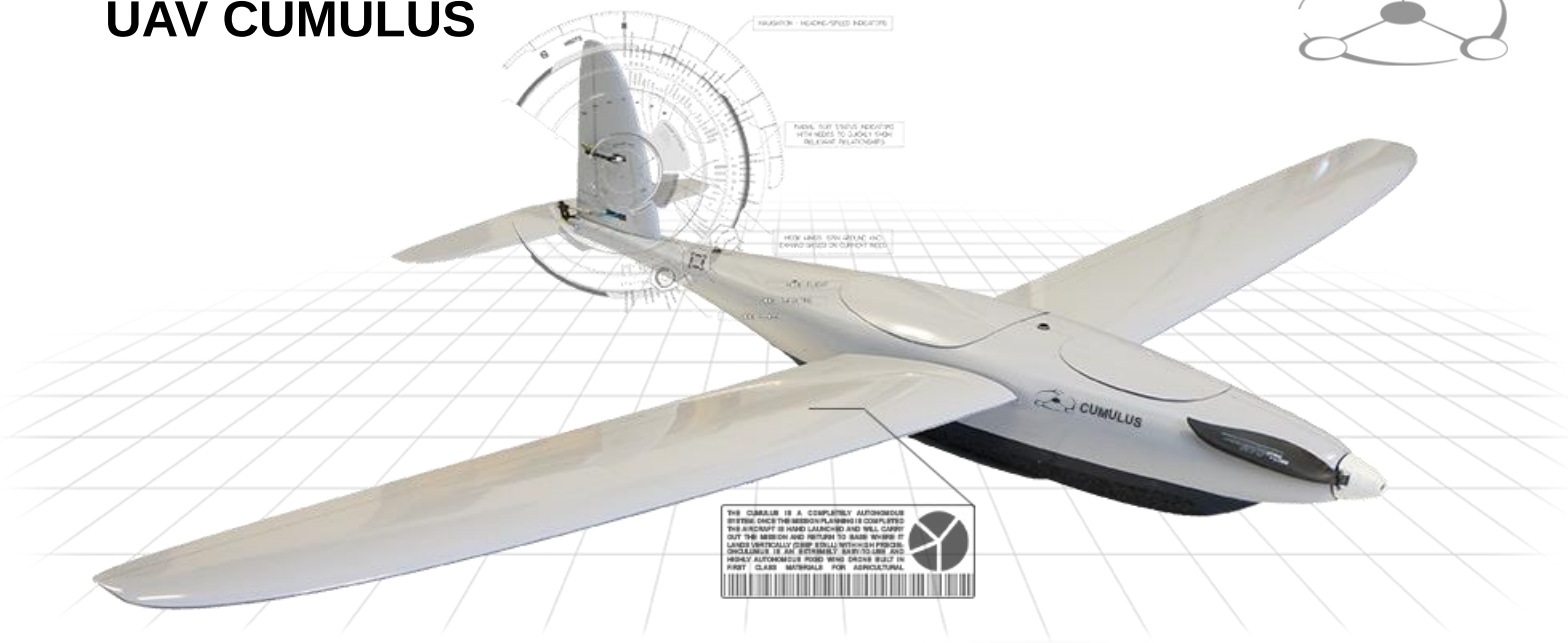
With its large payload capacity, the Cumulus V1 can handle a payload up to 500g with various possibilities for customization.

UNIQUE FEATURES

Hand launch and automated retrieval The Cumulus V1 can be launched by hand without any launching mechanism and retrieved by automated landing procedure.
Mapping The Cumulus V1 is made for mapping missions and has long endurance for greater coverage (40km^2) - fast and effectively
Optional payload Modular payload options, ranging from RGB to Multispectral sensors.With its two sensors, multi-spectral and sunshine, Sequoia analysis plants´ vitality by capturing the amount of light they absorb reflect.
Autonomous vertical landing Fully autonomous vertical landing without the need of any landing equipment or crane. The Cumulus V1 uses controlled deep stall for landing and a 10m x 10m landing area
High Precision Combining the flight performance and endurance of the Cumulus V1 with high precision PPK/RTK GPS, which means improved time-efficiency and higher output quality.
Detachable wings & tail For easy and compact transport, wings and tail can be detached

MAIN BENEFITS
Ruggedized
Versatile payload
Deployment time <5 min
Top speed 108 km/h (30 m/s)
Flight Time 150 min
Hand launched
Deep-stall landing within 10×10 m
Product liability
1 Year Warranty
2 Year Extended Warranty Care+ (optional)
2 Year Service Plan (optional)

UAV CUMULUS

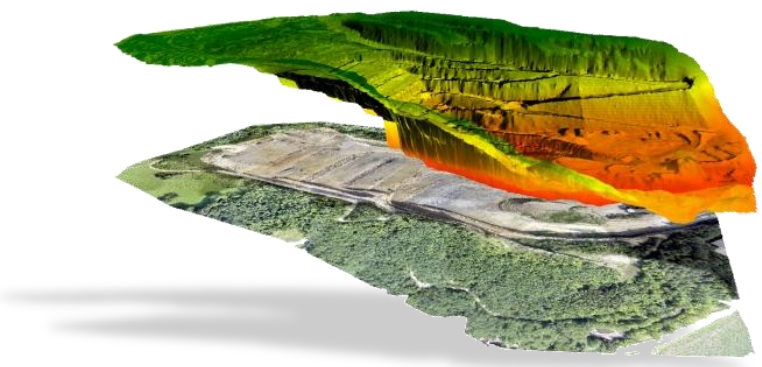


SURVEYING & MAPPING
Time-saving and cost-effective GIS drone for gathering geo-referenced digital aerial images, which enables you to focus your energy on using and analyzing data, rather than working out how to gather it.

MINING
Worker safety is of paramount importance to anyone involved in mining industry. By allowing Cumulus to collect accurate spatial geographic data, the system can vastly reduce risk by minimizing the time staff spend on site.

AGRICULTURE
Cumulus UAV provides the ability to optimize inputs and to drive down costs. Whole-field, in-season, current condition data is one of the most valuable pieces of information for farmers, which is exactly what Cumulus' GIS delivers.

NON-GOVERNMENTAL
Severe damage to infrastructures and high casualties caused by natural disasters call upon great organizations of volunteers who has devoted their own lives to save others. Areas are often large and unmanageable but the Cumulus V1 counteract this by aerial mapping from the sky.



MAPPING

The Cumulus is the perfect aerial mapping UAV, with long endurance and easy launch capabilities. Sky-Watch recommends Agisoft Photoscan software to generate the proper map material when you have collected your imagery.

UAV CUMULUS

SPECIFICATIONS

Autonomous flight	Hand-launch, autonomous flight and landing.
Fail-safes	Automatic return-to-home and/or emergency landing in case of critical battery status or lost connection.
Assisted manual control	Hand controller for flying or to adjust position, land or take-off; automated in-flight self stabilization.
Portability	Easy to carry, compact and light weight

DIMENSIONS	L x W x D	WEIGHT
Cumulus V1	1070mm x 1650mm x 170mm	1,100g (max 2,200g)
Cumulus V1 Transport cases (Pelicase 1740)	1122mm x 328mm x 308mm	12,200g
Cumulus V1 Ground Station (toughbook)	298,5mm x 191,8mm x 20,1mm	1,230g
Cumulus V1 Battery	140mm x 70mm x 40mm	580g
Cumulus V1 Payload capacity	N/A	500g

SUPPORTED MAPPING PAYLOADS		
Sony RX-100	20,2 MP	Daylight, RGB
Sony R10C	20,1 MP	Daylight, RGB
Parrot Sequoia	16 MP / 1,2MP mono band	Multispectral

TELEMETRY	
Module	Encrypted duplex communication
Antenna type	Omni directional vertical
Radio frequency	433 or 915MHz
Transmission range	Standard configuration up to 10km (Line of sight).
Transmission power	Up to 0,5Watt

UAV CUMULUS

SPECIFICATIONS

PAYLOAD OPTIONS

SONY RX-100 MAPPING/STILL PHOTO PAYLOAD
- 20,2 MP still photos
- Sensor: CMOS
- Sensor size: 116.16mm2 (13.20mm x 8.80mm)
- f/1.8 (wide) / f/4.9 (tele) - f/11

SONY R10C MAPPING/STILL PHOTO PAYLOAD
- 20,1 MP still photos
- Sensor: EXMOR CMOS
- Sensor size: 357.28mm2 (23.20mm x 15.40mm)
- Standard 16mm lens (20mm optional

PARROT SEQUOIA MULTI-SPECTRAL PAYLOAD

16 MP RGB rolling shutter
- Definition: 4608x3456 pixels
- HFOV: 63.9
- VFOV: 50.1- DFOV: 73.5

4 bands separate
- Green (550 BP 40)
- Rouge (660 BP 40)
- Red Edge (735 BP 10)
- Near Infrared (790 BP 40)

4 camera mono-band 1,2MP global shutter
- Definition: 1280x960 pixels
- HFOV: 70.6
- VFOV: 52.6
- DFOV: 89.6

Sunshine sensor
- 4 spectral sensors with the same filters as the body
- GPS + IMU + Magnetometer
- SD Card

PERFORMANCE		
Max flight time	Up to 150 min	
Ground Station battery time	Up to 480min standard	
Max speed (ground speed)	30m/s	108km/h
Max wind tolerance	12m/s	
Optimal cruise speed (ground speed)	17m/s	61.2km/h
Stall speed	8m/s	28.8km/h
Service ceiling	3500m ASL	11,483ft ASL
Maximum landing altitude	3000m ASL	9,843ft ASL
Maximum operating temp.	45Co	
Minimum operating temp.	-20Co	
Auto land battery voltage	12.7V	
Charger power supply	12V DC or 100-240V AC	
Cumulus battery voltage	14.8V	
Cumulus battery capacity	8750mAh	
Nominel coverage (single flight)	3,5km2	(120m alt. AGL.)
Maximum coverage (single flight)	80km2	(2.500m alt. AGL.)
Dataset, absolute horizontal/verticalaccuracy (no GCPs		PPK/RTK edition accuracy (no GCPs) L1-module
Maximum landing area needed	10x10m	