Datasheet

Fox⁶

The versatile Multirotor for productive Surveying, Mapping and Inspection jobs

Fox⁶ is the versatile multirotor granting full redundancy with 6 carbon blades. Its solid structure, in-flight stability and various payload options up to 1 kg allows a wide variety of projects. Fully automatic, Fox can carry out photogrammetry missions of up to 50ha and is the perfect tool for sizeable mapping missions as well as for static work and volume measurements.

Multipurpose & productive

- Up to 25 minutes endurance
- Up to 1kg payload
- Up to 50 ha scanning area
- Wind resistant 50km/h

Versatile applications

- Surveying & Mapping, Inspection, Videography
- Bridges, vegetation, buildings, construction, as built...
- 3D modeling, Volume, Data georeferencing…
- RGB, IR, multispectral, LIDAR payload options

Direct Georeferencing

- RTK/PPK modes with DroneBox RTK
- 0,03 m X-Y; 0,05 m Z accuracy
- No need for ground control points

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Fox⁶

Powered by DroneBox

DroneBox incorporates the navigation function with GNSS and inertial sensors, the communication modules but is also the mind master of the drone hosting the powerful firmware for all critical functions such as navigation and flight management, sensors management, communication management, and data logging.

DroneBox is the "plug & play" precision navigation and measurement device usable across the Heliceo product range. Moving a single DroneBox around allows to optimize the investment performing data acquisition with multiple vehicles and sensors.

DroneBox comes in 2 options i.e DroneBox Slim for meter positioning accuracy and DroneBox RTK for centimeter GNSS positioning allowing direct georeferencing without need for ground control points (GCP).

Features	DroneBox Slim	DroneBox RTK
Hardware		
◦ Material	Composite & ABS	Composite & ABS
◦ Dimensions	130 x 170 x 270 (mm)	130 x 170 x 270 (mm)
◦ Weight	0,550 Kg	0,667 Kg
◦ Temperature range	-10 °C to +60°C	-10 °C to +60°C
Navigation		
◦ Satellites	Single band L1 GPS Navigation	Dual band L1/L2 GPS/Glonass
◦ RTK	No	Yes
◦ PPK	No	Yes
◦ Precision	1 to 3 m	0,03 m X-Y; 0,05 m Z
◦ IMU	MEMS 3D Attitude 1 °	MEMS 3D Attitude 1 °
Firmware		
◦ Flight management	Autopiloting, navigation, flight plan change, ..	Autopiloting, navigation, flight plan change, ..
◦ Communication management	GNSS board, camera, inertial components, time synchronization and others.	Positions, photos, time, inertial data and others.
◦ Data logging	On-board autopilot, Telemetry, GNSS, ..	On-board autopilot, Telemetry, GNSS, ...

Features

Key features

- Large footprint high precision imagery
- 6 rotors redundant flight control and propulsion
- Centimeter grade GSD imagery resolution
- GCP free RTK accuracy with DroneBox RTK
- Versatile choice of payloads and sensors
- Very short set-up time

Operation

Type	Multirotor / 6 carbon blades
Setting up and start	Less than 3 minutes
Take-off & landing	Full Automatic (or manual)
Flight management	Full Automatic (or manual)
Endurance	Up to 25 min (1)
Cruise speed	30 km/h (18 mph)
Maximum speed	50km/h (31 mph)
Maximum climb/sink rate	Up to 3.0m/s (1)
Flight height (typical)	30 m to 150 m / Above ground level (AGL)
Maximum altitude	2000 m (3 280 ft)
Radio link range	Up to 2 km (1.25 mi)
Crossing distance	Up to 10 km (6.2 mi)
Wind resistance	50km/h (31 mph)
Temperature range	- 10 °C to +45°C

Hardware & Communication

Material	Carbon structure, Aluminimum gimbal, Composite DroneBox
Dimensions	1,120m x 1,400m x 0,530m
Motors	6 brushless motors
Weight	
◦ Without payload	6.0kg
◦ Max Take-off (MTOW)	7.5kg
◦ Max Payload	1.0kg
Gimbal	Frontal Gyroscope controlled 2 axis
Batteries	Lithium - 1 x 16 000 mAh
Parachute (option)	Mechanical (2.0s) or Pyrotechnic (1.0s)
Radios	
◦ Remote control	2.4 GHz and others (please ask)
◦ Telemetry	433-868-933 Mhz and others (please ask)
◦ Video (FPV) option	5.8 Ghz and others (please ask)
Mission modes	Manual ; Stabilize ; Auto ; Loiter ; Alt Hold ; RTL

Data collection & Software

Payloads	Sony Alpha 6000 and others (please ask)
Typical scanning area	Up to 50 ha (123 acres) (2)
Software	
◦ Mission Planning	HASK - Planner
◦ GNSS Processing	HASK - Geoprocessor
◦ Image processing (option)	Pix4DMapper Pro or MicMac or others
Output data	Image files, log data Densified cloud 3D data *(LAS, LAZ, PLY, XYZ)* 3D textured mesh *(FBX, OBJ, DXF, PLY, 3D PDF)* Orthophotos *(GEOTIFF)*, Digital Terrain Model DSM & DTM *(XYZ, LAS, LAZ)* Contour lines *(SHP, PDF, DXF)*

(1) Weather and playload dependant (2) Flight 150m high

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