



## MAMBA TECHNICAL SPECIFICATIONS



VERSION 1.2

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OUTREACH ROBOTICS

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3000 BLVD DE L'UNIVERSITÉ | SHERBROOKE | QUEBEC | CANADA, J1K 0A5

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**AERIAL SUSPENDED PLATFORM**

CONFIGURATION	Four propulsion units, Antagonist configuration, Planar orientation
DIMENSIONS (FOLDED)	23 X 14 X 14 Inches
DIMENSIONS (UNFOLDED)	55 X 15 X 14 Inches
SUSPENSION ROPE	Low-Stretch Polyester Rope 1,600 lbs capacity
MOTORS	8x DJI 2312E BLDC Motors (specsheet <a href="#">here</a> )
MOTOR MAX CURRENT	20 A
MOTOR MAX PEAK CURRENT	30 A
PROPELLERS	DJI Z-BLADE 9450
TOTAL WEIGHT	2.7 kg
MAX FLIGHT TIME	25 min (using a DJI M300)
MAX DISPLACEMENT SPEED	5 m/s
HORIZONTAL REACH	3 m using a 10 m rope, 4 m using a 15 m rope
MAX WIND RESISTANCE	10 m/s (Taxi mode) 15 m/s (Attitude hold mode)
FLIGHT CONTROLLER	CUAV X7 flight controller (specsheet <a href="#">here</a> )
SENSORS	Accelerometer/Gyroscope: ICM-20689 Accelerometer/Gyroscope: ICM-20649 Accelerometer/Gyroscope: BMI088 Magnetometer: RM3100 Barometer: MS5611*2
MATERIALS	Carbon fiber composites, Carbon fiber reinforced Nylon 3D printing, aeronautical grade aluminum, 18-8 Stainless Steel fasteners
OPERATING TEMP.	-10 °C to 50 °C
FLIGHT MODES	TAXI - Low power displacement mode ATTI HOLD - Attitude mode
FAIL-SAFE	Low battery level warning
OPERATING FREQUENCY	Splash and dust resistant
NOISE LEVEL	99 dB(A) max @ 1m

**REMOTE CONTROLLER**

MODEL	Herelink system (see specsheet <a href="#">here</a> )
TRANSMISSION DISTANCE	FCC 20km CE / SRRC 12km Image transmission delay: ≤ 110ms Image transmission: 720p@30fps 1080p@30 / 60fps transmission, signal bandwidth 20MHz / 10MHz
FREQUENCY BAND	2.4GHz ISM Receive sensitivity: -99dBm@20MHz BW Interference recovery: < 1s
MEMORY	Air Unit: LPDDR3: 1GB, Ground Station: LPDDR3: 2GB
SCREEN	5.46 inch 1080P, 16 million colors, capacitive touch screen

WIRELESS

Bluetooth (disabled) / WIFI / GPS / 2.4G map transmission ground

**MAIN CAMERA**

MODEL	Hawkeye 4K NakedCam V4.0
SENSOR	SONY 12MP
VIDEO FORMATS	.mp4/H.265
RESOLUTION	4K 50/30FPS, 2.5K 4:3 50/30FPS, 2.5K 16:9 50FPS, 1080P 50/30FPS
MOVIE FOV	170° horizontal
TOTAL VERTICAL FOV	2.71 mm focal length Fixed focal
MEMORY	MicroSD card 8-64G (U1 or above)
WEIGHT	26.8g

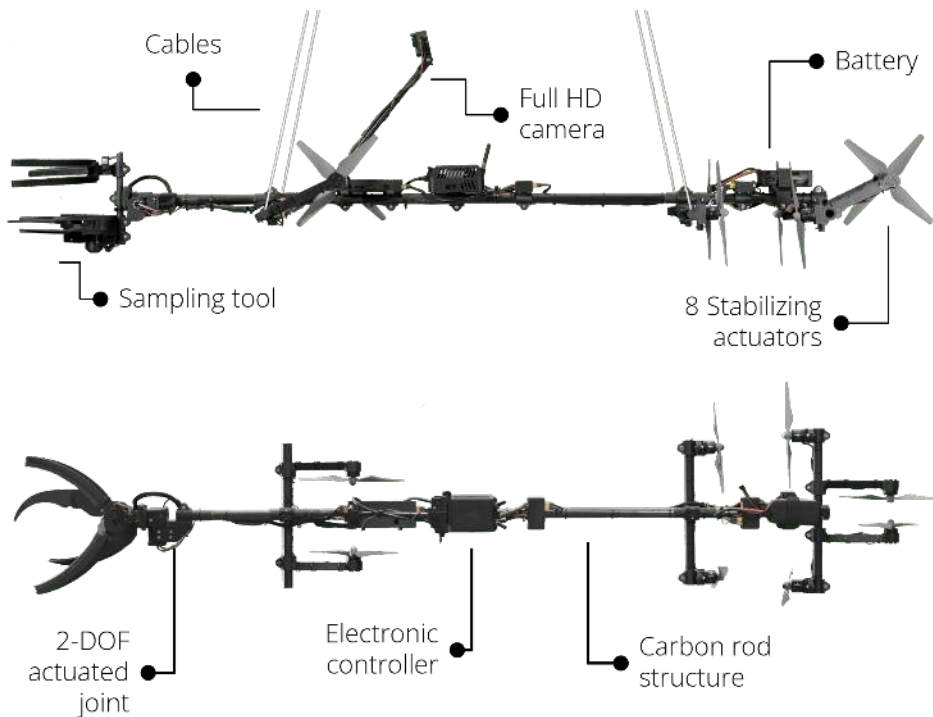


Figure 1. Mamba Orthogonal Side and Top Views