

ASIO X NDAA

TECHNICAL SPECIFICATIONS

- 1x ASIO X Drone
- 1x UXV Ground Control Station
- 2x 256GB microSD Card (U3)
- 2x Spare pair of propellers
- 3x Battery and safety transport bag
- 1x Battery charger
- 1x Toolbox
- 1x User manual
- 1x Safety vest
- 1x Transport box

DRONE

Configuration	Dual coaxial propellers	Flight time	Up to 20 minutes
Motors	2 brushless motors (Swiss made Maxon motors)	Propellers	Two propellers, Ø13"
Tilt system	Patented Electromagnetic tilting system (no swashplate, no servomotor)	Max speed	Assisted: 2 m/s (3.2 ft/s) Manual: 5 m/s (23 ft/s)
Navigation LEDs	2: red (port), green (starboard)	Lighting LEDs	8 panels
Dimensions	L425mm, H305mm, W406mm, Ø459mm (L16.7 in, H12 in, W16in, Ø18.1in)	Wind speed resistance	Up to 3 m/s (10 ft/s)
Payload sensors	In Gimbal: 1x RGB 4K camera 1x IR camera In Drone: 1x Radar 4x Gas sensors	Gimbal tilt	180° (±90°)
Materials	Carbon fiber composites, Aluminum, Thermoplastics	Sensors	2x IMUs (High-grade + fallback), 1x magnetometer, 1x barometer, 6x distance sensors, 4 x optical flow sensors, 2x global shutter cameras (VIO)
Operating temperature	0°C to 40°C (32°F to 104°F)	Operating frequencies	2.4 GHz ISM Band
Mass (aka: Weight)	1.150kg (2.53 lbs)	Maximum Radio Output Power	< 32 dBm
Noise level	80dBA at 1m (3.2 ft) - 66dBA at 10m (32.8 ft)	Protection	Dust and water projections Design for IP42 *
Control algorithms	Flight/position stabilization (6DoF), Height Lock, Tube Lock, Recovery, Rewind, Autoland	USA Compliance	NDAA FY 2024
LEDs intensity	Up to 40,000 Lumens	Data storage	Onboard SD card (FAT32 format, 256 GB, min. U3)

GROUND CONTROL STATION

Manufacturer	UXV	Model	Navigator Tab 5
Screen size	8"	Joysticks	2x 2-axis joystick with push button 2x 1-axis joystick with push button
Resolution	1920 x 1200 px (WUXGA)	Buttons	12x push buttons
Battery life	4 h (charge through USB-C)	Screen brightness	600 nit
Mass (aka: Weight)	953 g (2.10 lbs)	Mounting options	4 Point Harness
Dimension	12.12 x 5.39 x 2.48 inches 308 x 137,8 x 63,75mm	USA Compliance	NDAA FY 2024, Blue UAS

RADIO MODULE

Type	Doodle Labs NDAA 2024 compliant radio
Operating frequencies	2.4 GHz ISM Band
Encryption	128-bit AES / 256-bit AES
Maximum Radio Output Power	< 32 dBm
Range	Range depends on confined space geometry and materials. E.g. straight steel penstock: +250m - E.g. straight concrete sewer channel: 150m
USA Compliance	NDAA FY 2024, Blue UAS

BATTERY PACK

Battery type	Lithium Polymer (LiPo)	Nominal voltage	19 V	Lifetime	100 charge cycles
Energy	74.1 Wh	Capacity	3900 mAh	Plane transportation	Approved for carry-on luggage
Charging time	1.10 h (100%), 40 min (80%)	Storage temperature	-25°C to 35°C (-13°F to 95°F)	Safety transport bag	Yes
Type	Smart Battery	Certification	CE / FCC / UN38.3		

RGB CAMERA

Sensor type	Sony CMOS Rolling shutter	Sensor size	1/2.3"	Depth of field	30cm (1ft) to infinity
Sensor resolution	12.3 MP	Still pictures resolution	4K	Field of view	153° diagonal, 121° horizontal
Video recording	4K, Full HD, 30 fps	Video streaming	HD (720p), 30 fps	Effective resolution	0.2mm at 30cm (1ft)

IR CAMERA

Sensor type	FLIR Lepton 3.5 (radiometric)	Sensitivity	<50 mK	Data recording	MP4 video, 9fps
Sensor resolution	160 x120 px	Wavelength	8µm to 14µm	Field of view	71° diagonal, 57° horizontal
Temperature range	-10°C to 400°C (14°F to 750°F)				

GIMBAL

Maximum upwards inclination	+90°	Total FOV	273° vertical, 121° horizontal	Unobstructed FOV	vertical : 185°, horizontal: 121° at 0° pitch, 50° at +-90° pitch
Frontal view	93° diagonal, 121° horizontal	Stabilization	Active Pitch stabilization, Passive vibration damping		

LIGHTING LEDs

Max luminosity	40,000 lumens	LED light temperature	4000K, CRI 70	Nominal power	2x 15W (eq. 3min flight time reduction) at 100%
Dimmable	0-100% (levels > 20% available in strobe mode)	Orientation	Left / right / front up / down (dimmed by software)		

VIO CAMERAS

VIO camera type (2x)	Global shutter RGB	Resolution	Up to 1280 x 800 px	FOV	150° diagonal, 127° Horizontal, 172° D x 127° H combined
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GAS SENSORS

Gas Measurements	Detection Range	Resolution	Precision	CSE Class 1 Limits Default Alarm Settings
Oxygen (O2)	0 ~ 25% Vol.	0.1%	± 0.5% of reading O2	> 19.5 ~ <= 23.5%
Methane (CH4)	0 ~ 100% LEL (or) 0 ~ 5% vol CH4	0.01% LEL	± 5% of reading	<= 20% LEL (HC) or 1% vol CH4
Hydrogen Sulfide (H2S)	0 ~ 200 ppm	0.1 ppm	± 5% of reading	< 5 ppm
Carbon Monoxide (CO)	0 ~ 1000 ppm	0.1 ppm	± 5% of reading	< 25 ppm

Calibration: monthly (human safety) to yearly (qualitative measurements). Calibration app and hardware provided, excluding gas bottle

THERMO-HYGROMETER

Environment	Detection Range	Resolution	Sensitivity	Accuracy
Temperature	-20°C ~ +85°C	0.01°C	/	± 0.5°C
Relative Humidity	20% ~ 80% rH	0.01%	0.004% rH/LSB	± 3.5% rH

TRANSPORT CASE

Dimensions	66x54x39 cm3	Materials	Plastic
Empty weight	11.5 kg	Total weight	16kg

Flybotix reserves the right to change these specifications or discontinue individual features without prior notice. Flybotix shall not be obligated to implement such modifications in equipment that has previously been sold, ordered or been delivered.