

ASIO X

TECHNICAL SPECIFICATIONS

ASIO SOLUTION CONTENT

- 1x ASIO X Drone
- 1x 2.4GHz Remote Controller
- 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 Pre-flight and post-flight checklist
- 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: 1 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 (L16.7 in, H12 in, W16 in)	Wind speed resistance	Up to 3 m/s (10 ft/s)
Payload sensors	In Gimbal: 1x RGB 4K camera, 1x IR camera 1x 3D Time of Flight (ToF) Lidar In Drone: 1x Radar 4x Gas sensors 2x Global shutter camera	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, 1x radar, 2x global shutter cameras (VIO)
Operating temperature	0°C to 40°C (32°F to 104°F)	Operating frequencies	2.4GHz ISM Band : 2402 – 2472 MHz
Mass (aka: Weight)	1.150kg (2.53 lbs)	EIRP	EU : < 20 dBm / USA : < 23 dBm
Noise level	80dBA at 1m (3.2 ft) - 66dBA at 10m (32.8 ft)	Protection	Dust and water projections Designed for IP42 *
Control algorithms	Flight stabilization, Height Lock, Wall Lock, Tube Lock, Recovery, Rewind, Autoland, Position stabilization (6DoF)	Certifications	CE, FCC
LEDs intensity	Up to 40,000 Lumens	Data storage	Onboard SD card (FAT32 format, 256 GB, min. U3)

REMOTE CONTROLLER

Screen size	5.5"	Connectivity	microUSB, Wifi 2.4GHz
Screen mirroring	Yes	Operating frequencies	2.4GHz ISM Band : 2402 – 2472 MHz
Joysticks	2 (Throttle-Yaw and Pitch-Roll)	EIRP	EU : < 20 dBm / USA : < 23 dBm
Mass (aka: Weight)	515 g (18 oz)	Battery life	4 h
Operating temperature	0°C to 45°C (32°F to 115°F)	Encryption	AES 128
Resolution	Full HD (1920 x 1080 px)	Certifications	CE / FCC / SRRC
Screen brightness	1000 nit	Controls	7x physical buttons
Range	Range depends on confined space geometry and materials. E.g. straight steel penstock: +1km - E.g. straight concrete sewer channel: 250m		

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	4056 x 3040 px	Field of view	153° diagonal, 121° horizontal
Video recording	4K, 30fps	Video streaming	720p, 30 fps	Effective resolution	0.2mm at 30cm (1ft)
Formats	Video: MP4; pictures: JPG				

IR CAMERA

Sensor type	FLIR Lepton 3.5 (radiometric)	Sensitivity	<50 mK	Data recording	MP4 video, 9fps
Sensor resolution	160 x 120 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
POV	150° diagonal, 127° Horizontal, 172° D x 127° H combined	Video recording	2xHD, 10fps

3D LIDAR

3D LiDar FOV	106° x 86°	3D LiDar recording	5 fps / ~200 000 pps
3D LiDar range	0.1 - 7m		

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%
Lower Explosive Limit (LEL)	0 ~ 100% LEL (or) 0 ~ 5% vol CH4	0.01% LEL	± 5% of reading	≤ 20% LEL (HC) or 1% vol CH4
Hydrogen Sulphide (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.