FLYBOTIX

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, W16in)	**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		

* Certification pending

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)	**Sensivity**	<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
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%
Methane (CH4)	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.