Aiu Limited

# X8L Tandem-wing eVTOL for Aerial Surveying

Small Size, Large Area

eVTOLを選ぶ理由
Why eVTOL?

eVTOL, blending multi-rotor and fixed-wing technologies, excels in vertical takeoff, landing, and long-distance, high-speed flight with efficient energy use. It serves as a superior alternative to fixed-wing aircraft, particularly in take-off and landing phases. Ideal for mapping and strip inspection, eVTOLs cover larger areas at higher speeds.
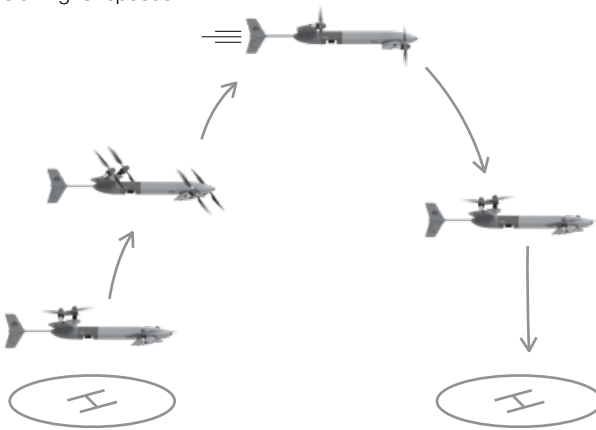
With no runway requirement and simplified manual control, eVTOLs autonomously execute missions, making them versatile and user-friendly.
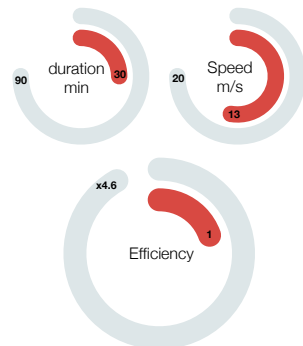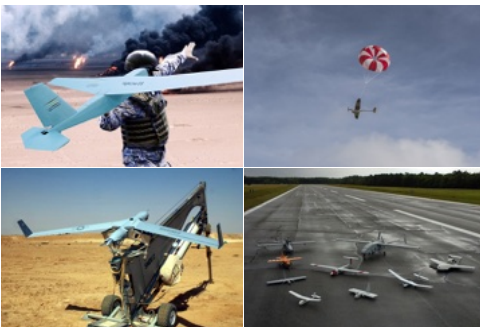
Average Performance of multi-rotors and eVTOLs

製品紹介
Product

The X8L is a compact tandem-wing vertical take-off and landing (VTOL) aircraft, featuring both fixed-wing and multi-rotor flight modes. This eVTOL excels in flight speed and range, making it over five times more efficient in low-altitude remote sensing applications compared to conventional multi-rotor drones.

With dimensions only half that of typical fixed-wing UAVs [1], the X8L is compact enough for single-person backpack operations. Its tool-free assembly and disassembly ensure rapid deployment in field environments. The integrated, swappable payload design supports full autonomous flight, streamlining user operation.

Specifications

Span	1000 mm	**Range**	60 km
Length	1000 mm	**Cruise Speed**	60 km/h
Material	Composite	**Duration**	60 min
Max Takeoff	3000 g	**Wind Resistance**	10 m/s
Max Payload	300 g	**Package Size**	810x280x220 mm

[1] Compare with hybrid eVTOL with the same takeoff weight and duration

Sony ILX-LR1 for High Precision Aerial Survey

The ILX-LR1 is a professional camera with a 61.0 effective megapixel, full-frame image sensor, and full remote operation, designed specifically for industrial applications.

Specifications

Sensor Type	35mm full frame (35.7x23.8mm), Exmor R CMOS
Number of pixels (effective)*1	Still images: Approx. 61.0 megapixels max. Movies: Approx. 50.8 megapixels max.
Number of pixels (total)	Approx. 62.5 megapixels

Efficiency in Single Flight

GSD [2]	Altitude	Coverage [3]
0.9cm/ pixel	100m	180 ha
1.1cm/ pixel	120m	200 ha
5cm/ pixel	530m	900 ha
10cm/ pixel	1,060m	1,500 ha

Parrot Sequoia+ for Smart Agriculture Application

This fully-integrated and highly precise multispectral sensor captures data across four spectral bands, plus visible RGB imagery, in a single flight. With this precise data, you can generate accurate index maps and use them to create high-quality prescriptions—carefully optimizing crop treatments to enhance production quality, increase yields, and reduce costs.

Sensors
Multispectral sensor: 1/3"
RGB camera: 1/2.3"

Multispectral sensor
Four-band

RGB resolution
16 MP
4,608 x 3,456 px
(4:3)

Single-band resolution
1.2 MP
1,280 x 960 px
(4:3)

Multispectral bands
Green (550 nm ± 40 nm)
Red (660 nm ± 40 nm)
Red edge (735 nm ± 10 nm)
Near infrared (790 nm ± 40 nm)

Single-band shutter
Global

RGB shutter
Rolling
6 Hz

RGB FOV
HFOV: 64°
VFOV: 50°
DFOV: 74°

Single-band FOV
HFOV: 62°
VFOV: 49°
DFOV: 74°

Green
Red
Near-infrared
Red-edge
RGB

Efficiency in Single Flight

GSD	Altitude	Coverage [3]
8cm/ pixel	120m	200 ha
10cm/ pixel	140m	260 ha
15cm/ pixel	220m	400 ha
20cm/ pixel	290m	500 ha

[2] Sensor with 40mm lens

[3] The flight condition for max coverage area is light wind, flight time is around 30 mins. The camera should be set to 50% front overlap rate and 35% rear overlap rate.

Founded in 2016, Aiu Technology (Shenzhen) Co., Ltd. focuses on drone research and design.

Since 2019, we have specialized in developing micro-VTOL drones to tackle complex take-off and landing environments, scattered plots, and high-efficiency requirements in remote sensing. We have overcome key technical challenges, such as tandem wing aerodynamics, continuous tilt servos, and variable pitch propellers, achieving a balance of compact size and long range.

Our tilt-rotor UAV, combining practicality and economic value, will be officially deployed in 2024. Its modular design and multi-redundant flight control systems reduce the operational threshold, making it suitable for complex environments. The optimized size allows it to fit into vehicles without disassembly.

We believe in technology's power to enhance productivity and are dedicated to providing efficient and convenient tools for drone applications, including remote sensing mapping, wildlife protection, and emergency rescue.

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