

AOS UL8 V5 Frame

Status: ordered (CNC Drones) — 2026-09-03

Designer: AOS RC (Chris Rosser)

Buy (cut-to-order): CNC Drones — AOS UL8 (~\$128)

What it is

The AOS UL8 V5 is an 8" long-range quadrotor airframe. It is the mechanical backbone of this build: arms, motor mounts, stack mounting, and camera cage.

Key traits:

- Props up to 8"
- Flight-controller stack: 30.5 / 25.5 / 20 mm
- X-Cell soft-mount (anti-vibration) for the stack
- Motor mount diameter ■16–19 mm (fits our V2808-class motors)
- Frame weight about 227 g including hardware
- 7075 aluminium cam cage
- CNC kit does not include TPU/3D prints — print those yourself (or buy from Rotor Waypoint / Brain3D)

Why we chose it

We need a proven 8" long-range frame that cleanly fits a full Holybro Pixhawk stack, not a freestyle toy frame.

- Designed for efficient cruise and payload headroom on 6S / 8S class builds
- Official stack sizes match Pixhawk 6X Mini (30.5×30.5 mm)
- Soft-mounted stack helps IMU quality for ArduPilot
- Cut-to-order carbon from CNC Drones is a known, repeatable source
- Cine variants (UL8/UL10 Cine) were skipped: a BMPCC 6K is out of scope (too heavy for this platform)

Motor note: AOS often recommends ~1100 KV on 6S for this size. Our planned V2808 1300KV is more aggressive — we will verify thrust and efficiency before locking props/battery.

What we are building

This frame becomes a long-range ArduPilot Copter on Xenobyte:

Layer	Choice
Airframe	AOS UL8 V5 (this part)
Autopilot	Pixhawk 6X Mini + PM02D
Positioning	Micro M9N + H-RTK F9P Helical (dual GPS / RTK path)
Low-speed aid	H-Flow (optical flow + rangefinder)
Avoidance	LDRobot LD-06 360° LiDAR
Radio	RadioMaster TX16S MK3 MAX + ELRS
Power / props	6S2P Li-ion class, 8×4.2×3 props (planned)

Goal: a reliable outdoor / beyond-visual-line-of-sight-capable research and mapping-style platform — not a cinema drone.

Specs (short)

- Props: up to 8"
- Motor mount: ■16–19 mm
- Recommended motors (AOS): 2808–3210 @ ~1100 KV (6S) / ~825 KV (8S)
- Frame weight: ~227 g incl. hardware
- 3D prints: not in the CNC kit

Sources

- Official design: aos-rc.com — AOS UL8 V5
- Shop: cncdrones.com — AOS UL8

Related

- Cine variants (not ordered): UL8 Cine / UL10 Cine — only if a much lighter camera is added later