



Falcon Fixed-Wing

Capabilities

Falcon is a tactical, fixed wing, unmanned aerial vehicle (UAV). The Falcon is designed around a modular payload and airframe design concept allowing for multi-mission capabilities, easy setup, and simple logistics for long term support. Falcon is single person portable system which may be operated by a single individual and is transported in a custom soft bag with backpack straps, shoulder sling, and hand holds for easy transport. Falcon and Falcon Hover utilize interoperable components including shared payloads, shared batteries, and a shared ground control station.

Falcon is bungee launched using a single bungee cord attached to any object/structure that can withstand the pull force of 15lbs (8kg). Example launch attach points include trailer hitches, roots, branches, tree trunks, brush, fence posts, a stake in the ground, and even a person holding the end of the bungee. The bungee launch provides most of the energy for launch thereby reducing the physical strength requirements to launch the aircraft. The bungee launch also directs the aircraft along a desired launch path and gains altitude rapidly allowing for operations in tightly constrained locations including forested areas, narrow paths, roadways, parks, parking lots, etc.



Photo Credit: Falcon Unmanned

Falcon uses a parachute recovery as the primary landing method however a secondary landing method is a conventional belly landing. The parachute recovery allows for recovery in constrained environments as well as areas with rugged ground cover. During a parachute recovery the aircraft lands motor first.

DOI UAS Specifications

Communications: Secure Digital Datalink (Up to 256 bit AES encryption)

Autopilot: Pixhawk Autopilot by 3D Robotics

Sensor Suite: Ublox GPS, Barometric Pressure Sensor, Dynamic Pressure Sensor, Redundant 3 Axis Accelerometers, Redundant 3 Axis Rate Gyros

Control Modes: GPS Waypoint Navigation and Multiple Semi-Autonomous Flight Modes

Launch Method: Bungee Hand Launch / Bungee Rail Launch

Recovery Method: Parachute or Belly Landing

Endurance: 60+ min (operations/mission dependent)

Assembly: Less than 2 min

Ready to Launch: Less than 10 minutes

Take Off Weight: Up to 12 lb (Payload Dependent)

Payload Weight: Up to 2.5lbs

Flight Endurance Range: 30-60 miles

Communications Range: 6+ miles (terrain / antenna dependent)

Dash Speed: 45 knots

Cruise Speed: 27 knots

Operating Altitude: Up to 2000 ft AGL

Service Ceiling: Tested to 12,000 ft, estimated maximum altitude of 15,000 ft MSL

Assembled Dimensions: 96" width (span) x 17" height x 54" length

Packed Dimensions: 14" width x 7" height x 54" length

[For more information](#)