**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]