

AIRCRAFT DESCRIPTION: DragonEye UAS

Specifications: The DragonEye UAS described here is controlled by the radio control system instead of the autopilot computer normally used. The radio control system is a 72 MHz Futaba 7CAP seven-channel transmitter and receiver operating in the pulse-coded modulation (PCM) mode. This is a high reliability system that has good rejection of interference and noise, and features a fail-safe mode that puts the aircraft in a circling flight at reduced throttle.

Builder:	AeroVironment/GTRI
Wing Span:	45 inches
Length:	36 inches
Height:	11 inches
Weight:	5 pounds
Power plant:	twin electric motors powered by battery
Maximum speed:	35 knots
Cruising speed:	30 knots
Range:	5 kilometers
Service Ceiling:	300 to 500 feet AGL
Flight Time:	15 – 30 minutes
Airfoil type:	reflexed
Control surfaces:	elevons (combined ailerons/elevators)
Construction:	composite Kevlar fiberglass and foam
Control link:	72 MHz PCM radio control (Futaba 7CAP)

Notes:

The manufacturer's data sheet for the military autonomous DragonEye is provided on the following page.

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DRAGON EYE

Dragon Eye, the choice of the U.S. Marine Corps, is a fully autonomous, back-packable, bungee-launched small UAS designed to provide “over-the-next-hill” tactical reconnaissance and surveillance information.

With a wingspan of 3.75 feet and a weight of 5.9 pounds, the Dragon Eye provides aerial observation at line-of-sight ranges up to 5 kilometers. Using GPS navigation, the Dragon Eye autonomously flies a route of operator-programmable waypoints. The Dragon Eye’s electric motors provide an extremely low noise signature, and the small wingspan makes it difficult to detect in flight.

Dragon Eye’s payloads are capable of real-time, high-resolution color or infrared imaging. In addition to viewing imagery in real time, this small UAS enables the operator to “click” capture and store still images on the mission-programming computer.

Mission Descriptions	USMC Light Infantry, Dismounted Urban Warfare
Features	Fully Autonomous Operation, In-Flight Reprogramming, Small Size, Lightweight, Bungee-Launched, Waypoint Navigation, Laptop Mapping, Image Capture.
Payloads	Dual Forward- and Side-Look EO Camera Nose, Forward- and Side-Look Low Light Camera Nose and Side-Look IR Camera Nose.
Endurance	45–60 minutes (Single Use Battery)
Range	5 km
Speed	35 km/h
Operating Altitude (Typ.)	100–500 ft AGL
Span	3.75 ft (1.1 m)
Length	3 ft (0.9 m)
Weight	5.9 lb (2.7 kg)
Launch Method	Bungee-Launched
Recovery Method	Conventional Horizontal Landing