

PAYLOAD. RANGE. COST.



The HeliDroid™ AutoCopter

The **HeliDroid™** AutoCopter: The CNC-UAV Platform Uniquely Suited to Your Specification Requirements.

Introducing the HeliDroid™ AutoCopter, a CNC-UAV offering a unique combination of control, construction, performance and cost parameters.

The HeliDroid AutoCopter is a technology platform based on the proven Composite FX one-man XE airframe, now purpose-built for automatic flight. With tens of thousands of flight hours on the manned airframe and components, the HeliDroid uses tried and true construction methods, systems integration, and mechanical systems that provide unparalleled useful load and price point.



AUTOMATIC CONTROL **CNC UAV Platform**

Just as Computer Numeric Control (CNC) revolutionized the machine tool industry in the 1960s and 1970s, the HeliDroid uses modern automation combined with rugged, precision components for dependable VTOL operation. Easily programmable flight plans open markets and opportunities.

Guidance

Guidance systems detect deviations from programmed flight path caused by external factors. Microwave ground sensors, GPS, UHF radios and other equipment are all optional and enable the HeliDroid to operate beyond line of sight.

AutoPilot

The autopilot system maintains the flight path directed by the Guidance system and can be operated in manual, GPS, or automatic modes. Mission Planner programming can be governed by GPS, Cell, Satellite. Automatic takeoff and landing standard. Terrain following software is available.

PROVEN AIRFRAME CONSTRUCTION

Engine

The HeliDroid is powered by an 800cc, two-cylinder, two-stroke engine that is liquid cooled, with electronic fuel injection and mechanical oil injection. With 90 HP output, the machine can operate at 100% duty cycle continuously, consuming just 6 gallons of 93 Octane pump gas per hour. Open engine access allows for fast and easy servicing.

Airframe

The all-composite monocoque construction airframe has been statically tested to +/- 6G with zero defects, and naturally absorbs the many vibrations during flight without experiencing fatigue. The E-Glass/Vinyl Ester combination has proven to be more durable, economical and safer than comparable carbon fiber designs.

Servos / Electronics

A combination of powerful linear and rotary servo actuators control pitch, roll, yaw, tail position and throttle, producing remarkably precise, stable and smooth flight characteristics.

UNMATCHED PERFORMANCE

Endurance

The HeliDroid can fly routinely for long, over the horizon missions on the 12-gallon standard fuel cell, consuming just 6 gallons per hour on average. Mission range, depending upon payload and conditions, is as much as 150 miles (one-way). Optional 20-gallon fuel cell available.

Payload

A useful load of 400lb (180Kg) must conform to aircraft CG (Center of Gravity) requirements.

TBO and Maintenance Costs

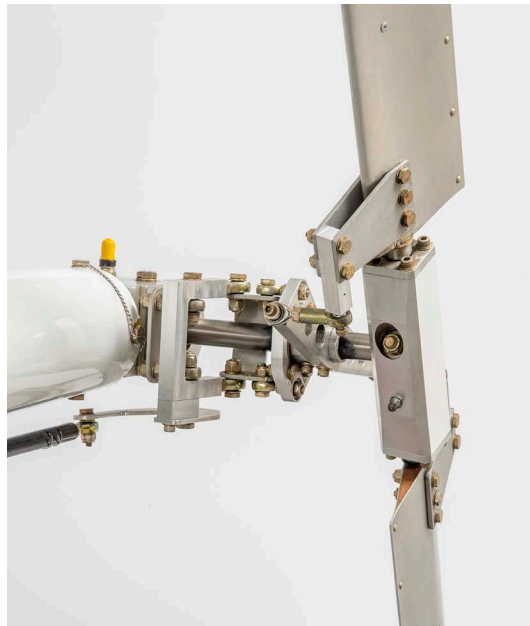
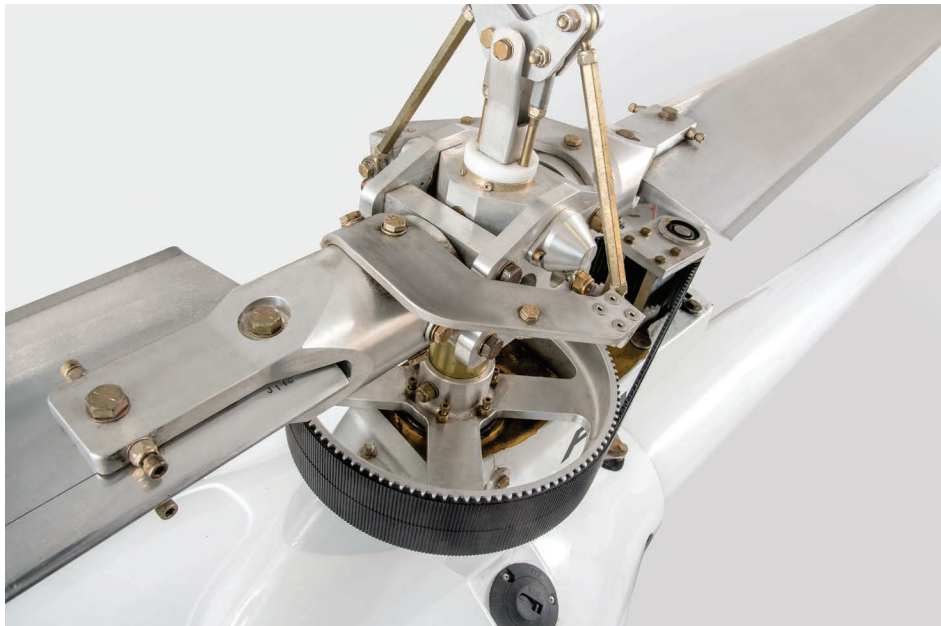
The HeliDroid has a 500-hour Time Before Overhaul (TBO), at which time all belts, bearings and blades must be replaced. Including TBO costs, typical operating costs average \$50 USD per hour*, including fuel.



The **HeliDroid** AutoCopter: Ready to Become What You Need It to Be.

An Easily Adapted & Flexible VTOL Platform.





Rotor System

The man-rated semi-rigid underslung two rotor system has been for decades the simplest, most cost effective and efficient method for VTOL rotorcraft. On average, less than 1 hour of maintenance is required per 25 flight hours. Its 19’-6” rotor diameter and 40” tail rotor deliver exceptional lift and control capability.

Gearbox / Transmissions

The gear reduction transmission of the UAV main rotor employs two cogged belts, enabling dependable reductions with very low weight. Wet (oil bath) gearboxes enable the tail rotor to hold the craft steady in 35-40 MPH cross winds.

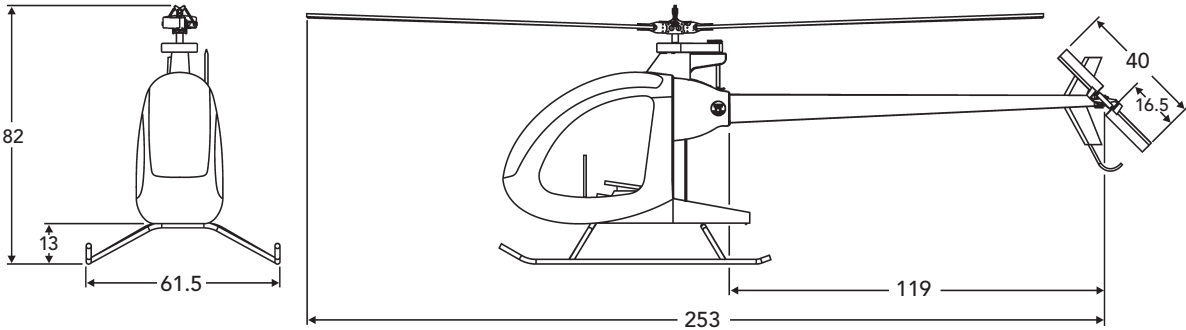
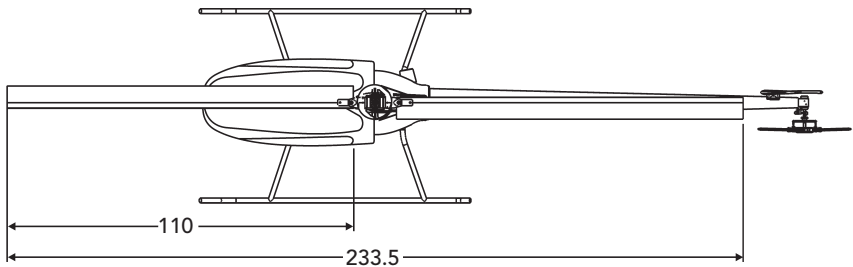
Payload Compartment

Ready to accept your payload of choice, the base platform provides ~20 cubic feet of internal space. Access doors on both sides swing open 180° for easy access.



Optional Payload Compartments

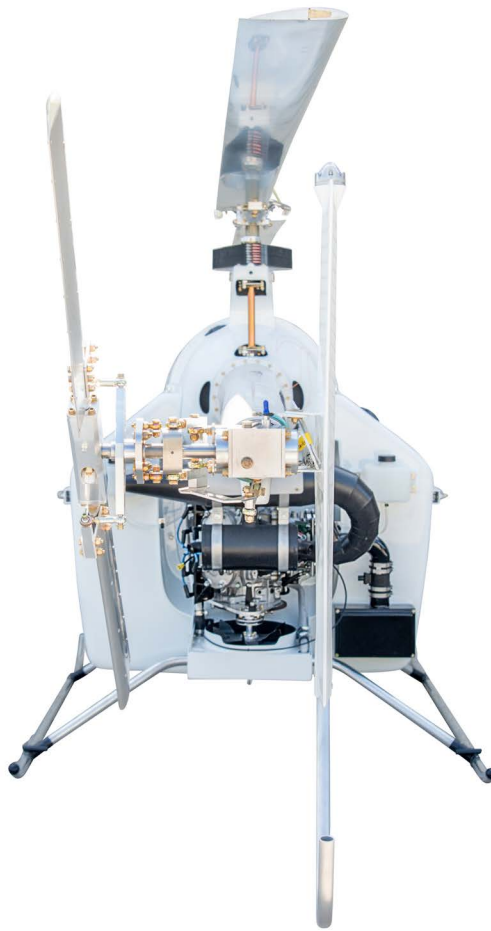
Two side-mount 20 gallon compartments, which can hold liquids or solids.



**dimensions are in inches.*

Glossary		
CG	Center of Gravity	
CNC	Computer Numeric Controlled	
TBO	Time Before Overhaul	
UAV	Unmanned Aerial Vehicle	
VTOL	Vertical Takeoff & Landing	

Engine	CFX800	—
Empty Weight	460 lbs	209 kg
Maximum Gross Weight	1000 lbs	455 kg
Length, Airframe	16’	4.8 m
Overall Length	21’ 7”	6.5 m
Width, Airframe	62”	1.8 m
Height	82”	2.1 m
Main Rotor Diameter	19’ 6”	6.0 m
Tail Rotor Diameter	40”	1.0 m
Maximum Air Speed	95 mph	152 kph
Cruise Air Speed	80 mph	128 kph
RPM Main Rotor	590 rpm	—
RPM Tail Rotor	2670 rpm	—
Climb Rate (estimated)	1200 ft/min	365 m/m
Fuel Capacity	12 gal	45 L
Fuel Burn (estimated)	6 gal/hr	23 L/hr
Fuel Capacity w/ Aux. Tank	20 gal	76 L
Flight Duration	1.75 hrs	—
Flight Duration w/ Aux. Tank	3.3 hrs	—
Aircraft Electrical System	12V / 20A	—



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