

The Spirit UAV

Model 20-200

Freewing
Flight Technologies, Inc.

Maximum Speed @ Sea Level : 120 mph, 104 kts
 Maximum Speed @ 15,000 ft : 145 mph, 126 knots
 Optimum Loiter Speed : 75 mph, 65 kts
 Maximum Endurance: 5.6 hours
 Service Ceiling : 20,000 ft
 Max Climb @ Sea Level : 3,680 fpm
 Powerplant : Aerrow A200B (20 hp)
 Fuselage Height : 26 in
 Fuselage Length : 84 in
 Overall Height (Boom Up) : 76 in
 Overall Length (Boom Down) : 113 in
 Wingspan : 96 in
 System Weights
 Empty Weight : 100.8 lbs
 Flight Control Electronics : 10 lbs
 Gross Weight : 150 lbs
 Rotor Diameter : 6 ft
 Disc Swept Area : 28.3 ft²
 Rotor Blade Composition : Carbon Fiber
 Rotor RPM : Up to 1100 (9.5 gear ratio)
 Fuel Type : Avgas (heavy fuel planned)
 Fuel Consumption : 2.3 gph @ 100% power — 0.9 gph @ 20% power

Fuel Payload (gals/lbs.)	Endurance (hours)	Mission Payload (lbs.)
5.0/30.5	5.6	18.5
3.5/21.4	3.9	27.7
2.0/12.2	2.2	36.8

- VTOL plus high-speed cruise
- Exclusive patent-pending Tilt-Boom™ technology
- Multimission capability
- Mechanically simple — breakthrough technology
- Inherently stable throughout entire flight envelope
- Freewings neutralize gusts for stable sensor platform
- Benefits from 15 years of earlier freewing development



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Mission Control Station : The Spirit's Mission Control Station (MCS) provides command and control of air vehicles and payloads, display and recording of payload video and air vehicle telemetry and complete mission planning functions. The system is waypoint-programmable, allowing 32 operational waypoints and 5 home waypoints, autonomous navigation with in-flight changes to waypoints and mission plans. The MCS display is built around a PC architecture, using ruggedized COTS equipment, and includes displays and control panels for the air vehicle operator and payload operator, as well as a control box for an external pilot for vertical takeoff and landing. Launch and recovery is done automatically with no external pilot required.

Data Link Band : L/S/C and UHF

Data Link Range : > 100 km



Portable Version of MCS