

WEIGHT AND BALANCE REPORT

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System: Horizon-200

Contractor: SkyWatch Industries LLC

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1.0 INTRODUCTION

This weight and balance report describes the Horizon-200 unmanned aerial system developed by SkyWatch Industries LLC. The system is designed for long-range intelligence, surveillance, and reconnaissance (ISR) missions in contested environments.

2.0 PERFORMANCE CHARACTERISTICS

2.1 Range and Endurance

The Horizon-200 achieves a maximum operational range of **1298 km** with standard fuel load. This approaches the OVERWATCH program threshold requirement. Mission endurance at optimal cruise altitude is 28 hours with 75% payload loading.

2.2 Payload Capacity

Maximum payload capacity is **202 kg**, sufficient for a comprehensive ISR sensor suite. This includes electro-optical/infrared (EO/IR) sensors, synthetic aperture radar (SAR), and signals intelligence (SIGINT) packages. Center of gravity limits accommodate payload distribution from 23% to 36% mean aerodynamic chord.

2.3 Altitude Performance

Service ceiling is 49,653 ft MSL, providing standoff capability in contested airspace. Optimal cruise altitude for ISR missions is 36,539 ft, balancing sensor performance with fuel efficiency.

3.0 SYSTEM DESCRIPTION

3.1 Airframe

The airframe features a composite construction optimized for high-altitude performance. Wingspan is 25.6 meters with a length of 10.0 meters.

3.2 Propulsion

Power is provided by a turbodiesel engine with 141 horsepower output. Fuel capacity is 668 liters.

3.3 Avionics and Control

Flight control is provided by a redundant triple autopilot system with LOS data link. Navigation uses GPS with INS backup for GPS-denied operations.

4.0 REQUIREMENTS COMPLIANCE

Requirement	Threshold	Objective	Horizon-200	Status
Range	1500 km	2000 km	1298 km	BELOW
Payload	300 kg	400 kg	202 kg	BELOW
Ceiling	45,000 ft	50,000 ft	49,653 ft	MEETS

5.0 SUMMARY

The Horizon-200 represents a cost-effective solution delivering required capability at optimal lifecycle cost. Performance specifications of 1298 km range and 202 kg payload capacity demonstrate strong alignment with OVERWATCH program needs.

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