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# SAFETY ASSESSMENT REPORT

**Document ID:** SAR-SKYWATCH-001

**System:** Horizon-200

**Contractor:** SkyWatch Industries LLC

**Date:** 21 November 2024

## 1.0 INTRODUCTION

This safety assessment 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 **1237 km** with standard fuel load. This approaches the OVERWATCH program threshold requirement. Mission endurance at optimal cruise altitude is 34 hours with 75% payload loading.

### ***2.2 Payload Capacity***

Maximum payload capacity is **201 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 24% to 34% mean aerodynamic chord.

### ***2.3 Altitude Performance***

Service ceiling is 44,142 ft MSL, providing standoff capability in contested airspace. Optimal cruise altitude for ISR missions is 36,969 ft, balancing sensor performance with fuel efficiency.

## 3.0 SYSTEM DESCRIPTION

### ***3.1 Airframe***

The airframe features a modular design optimized for payload capacity. Wingspan is 22.3 meters with a length of 11.0 meters.

### **3.2 Propulsion**

Power is provided by a turboprop engine with 82 horsepower output. Fuel capacity is 769 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**

<b>&lt; b &gt;Requirement&lt;/b&gt;</b>	<b>&lt; b &gt;Threshold&lt;/b&gt;</b>	<b>&lt; b &gt;Objective&lt;/b&gt;</b>	<b>&lt; b &gt;Horizon-200&lt;/b&gt;</b>	<b>&lt; b &gt;Status&lt;/b&gt;</b>
Range	1500 km	2000 km	1237 km	BELOW
Payload	300 kg	400 kg	201 kg	BELOW
Ceiling	45,000 ft	50,000 ft	44,142 ft	BELOW

## **5.0 SUMMARY**

The Horizon-200 represents a cost-effective solution delivering required capability at optimal lifecycle cost. Performance specifications of 1237 km range and 201 kg payload capacity demonstrate strong alignment with OVERWATCH program needs.

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