

# TECHNICAL MANUAL

**Document ID:** TM-SKYWATCH-002

**System:** Horizon-200

**Contractor:** SkyWatch Industries LLC

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## 1.0 OVERVIEW

This technical manual 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 **1279 km** with standard fuel load. This approaches the OVERWATCH program threshold requirement. Mission endurance at optimal cruise altitude is 20 hours with 75% payload loading.

### *2.2 Payload Capacity*

Maximum payload capacity is **216 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 35% mean aerodynamic chord.

### *2.3 Altitude Performance*

Service ceiling is 50,608 ft MSL, providing standoff capability in contested airspace. Optimal cruise altitude for ISR missions is 36,641 ft, balancing sensor performance with fuel efficiency.

## 3.0 SYSTEM DESCRIPTION

### *3.1 Airframe*

The airframe features a high-aspect-ratio wing optimized for endurance. Wingspan is 27.2 meters with a length of 11.4 meters.

### **3.2 Propulsion**

Power is provided by a heavy-fuel piston engine with 90 horsepower output. Fuel capacity is 725 liters.

### **3.3 Avionics and Control**

Flight control is provided by a redundant dual autopilot system with SATCOM 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	1279 km	BELOW
Payload	300 kg	400 kg	216 kg	BELOW
Ceiling	45,000 ft	50,000 ft	50,608 ft	EXCEEDS OBJ

## **5.0 SUMMARY**

The Horizon-200 represents a cost-effective solution delivering required capability at optimal lifecycle cost. Performance specifications of 1279 km range and 216 kg payload capacity demonstrate strong alignment with OVERWATCH program needs.

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