

UNCLASSIFIED // FOR OFFICIAL USE ONLY

# SYSTEM SPECIFICATION DOCUMENT

**Document ID:** SSD-FALCON-002

**System:** Raptor-MQ

**Contractor:** Falcon Defense Systems Inc.

**Date:** 02 April 2025

## 1.0 OVERVIEW

This system specification document describes the Raptor-MQ unmanned aerial system developed by Falcon Defense Systems Inc.. 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 Raptor-MQ achieves a maximum operational range of **1831 km** with standard fuel load. This meets the OVERWATCH program threshold requirement. Mission endurance at optimal cruise altitude is 21 hours with 75% payload loading.

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

Maximum payload capacity is **340 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 22% to 34% mean aerodynamic chord.

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

Service ceiling is 48,784 ft MSL, providing standoff capability in contested airspace. Optimal cruise altitude for ISR missions is 36,209 ft, balancing sensor performance with fuel efficiency.

## 3.0 SYSTEM DESCRIPTION

### ***3.1 Airframe***

The airframe features a composite construction optimized for endurance. Wingspan is 19.0 meters with a length of 9.9 meters.

### **3.2 Propulsion**

Power is provided by a turboprop engine with 147 horsepower output. Fuel capacity is 768 liters.

### **3.3 Avionics and Control**

Flight control is provided by a redundant triple autopilot system with hybrid SATCOM/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;Raptor-MQ&lt;/b&gt;</b>	<b>&lt;b&gt;Status&lt;/b&gt;</b>
Range	1500 km	2000 km	1831 km	MEETS
Payload	300 kg	400 kg	340 kg	MEETS
Ceiling	45,000 ft	50,000 ft	48,784 ft	MEETS

## **5.0 SUMMARY**

The Raptor-MQ represents a proven, low-risk solution with extensive operational heritage. Performance specifications of 1831 km range and 340 kg payload capacity demonstrate strong alignment with OVERWATCH program needs.

**UNCLASSIFIED // FOR OFFICIAL USE ONLY**