FLIGHT TEST REPORT

Document ID: FTR-ARCTURUS-001
System: Aurora-P
Contractor: Arcturus Dynamics International
Date: 29 January 2025

1.0 INTRODUCTION

This flight test report describes the Aurora-P unmanned aerial system developed by Arcturus Dynamics International. 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 Aurora-P achieves a maximum operational range of **1574 km** with standard fuel load. This meets the OVERWATCH program threshold requirement. Mission endurance at optimal cruise altitude is 27 hours with 75% payload loading.

2.2 Payload Capacity

Maximum payload capacity is **293 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 35% mean aerodynamic chord.

2.3 Altitude Performance

Service ceiling is 48,041 ft MSL, providing standoff capability in contested airspace. Optimal cruise altitude for ISR missions is 36,347 ft, balancing sensor performance with fuel efficiency.

3.0 SYSTEM DESCRIPTION

3.1 Airframe

The airframe features a composite construction optimized for payload capacity. Wingspan is 18.2 meters with a length of 11.5 meters.

3.2 Propulsion

Power is provided by a heavy-fuel piston engine with 132 horsepower output. Fuel capacity is 405 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	Aurora-P	Status
Range	1500 km	2000 km	1574 km	MEETS
Payload	300 kg	400 kg	293 kg	BELOW
Ceiling	45,000 ft	50,000 ft	48,041 ft	MEETS

5.0 SUMMARY

The Aurora-P represents a specialized solution uniquely suited for extreme environment operations. Performance specifications of 1574 km range and 293 kg payload capacity demonstrate strong alignment with OVERWATCH program needs.