

SAFETY ASSESSMENT REPORT

Document ID: SAR-ARCTURUS-002

System: Aurora-P

Contractor: Arcturus Dynamics International

Date: 17 July 2025

1.0 INTRODUCTION

This safety assessment 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 **1450 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 **291 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 47,221 ft MSL, providing standoff capability in contested airspace. Optimal cruise altitude for ISR missions is 44,792 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 25.9 meters with a length of 11.4 meters.

3.2 Propulsion

Power is provided by a turbodiesel engine with 116 horsepower output. Fuel capacity is 626 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	1450 km	BELOW
Payload	300 kg	400 kg	291 kg	BELOW
Ceiling	45,000 ft	50,000 ft	47,221 ft	MEETS

5.0 SUMMARY

The Aurora-P represents a specialized solution uniquely suited for extreme environment operations. Performance specifications of 1450 km range and 291 kg payload capacity demonstrate strong alignment with OVERWATCH program needs.

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