

UNCLASSIFIED // FOR OFFICIAL USE ONLY

# PERFORMANCE TEST REPORT

**Document ID:** PTR-ARCTURUS-009

**Classification:** UNCLASSIFIED // FOR OFFICIAL USE ONLY

**Test Date:** 20 May 2025

**Test Location:** Edwards AFB / Yuma Proving Ground

**Test Conductor:** DT&E;

## SYSTEM UNDER TEST

**System:** Aurora-P

**Manufacturer:** Arcturus Dynamics International

**Serial Number:** ARCTURUS-PT-0009

**Configuration:** Block 1 Production Standard

## TEST OBJECTIVES

1. Validate operational range under mission-representative conditions
2. Verify payload capacity and center-of-gravity limitations
3. Assess endurance at various altitudes and payload configurations
4. Evaluate data link performance and reliability
5. Confirm environmental operating envelope

## TEST RESULTS SUMMARY

### RANGE TESTING

**Flight Profile:** Standard ISR mission profile with 4 waypoint navigation

**Conditions:** Standard day, winds 10 knots

**Fuel Load:** 90% maximum capacity

**Result:** 1448 km achieved

**Specification:** 1500 km required (threshold)

**Status:** MARGINAL

### PAYLOAD TESTING

**Configuration:** Full ISR suite with EO/IR/SAR sensors

**Measured Capacity:** 291 kg

**Specification:** 300 kg required (threshold)

**Status:** FAIL

**Center of Gravity:** Tested at 28% MAC (within 22-35% limits)

## ***ENDURANCE TESTING***

**Altitude:** 45040 ft MSL

**Payload:** 75% of maximum tested capacity

**Measured Endurance:** 24 hours

**Specification:** 24 hours required

**Status:** PASS

# DETAILED TEST ANALYSIS

## **SERVICE CEILING VERIFICATION**

**Maximum Altitude Achieved:** 41,060 ft MSL  
**Engine Performance at Ceiling:** 92% rated power  
**Rate of Climb at Ceiling:** 179 ft/min  
**Status:** BELOW THRESHOLD

## **DATA LINK ASSESSMENT**

**System Type:** SATCOM Ku-band  
**Range Tested:** 186 km line-of-sight  
**Throughput:** 70 Mbps sustained  
**Latency:** 170 ms average  
**Packet Loss:** 0.94%  
**Status:** MEETS REQUIREMENTS

## **ANOMALIES AND DEFICIENCIES**

No significant anomalies noted during testing.

## **CONCLUSIONS**

The Aurora-P demonstrated mixed performance across tested parameters. Measured range of 1448 km and payload capacity of 291 kg partially meet OVERWATCH program requirements. Unique cold-weather capabilities provide essential operational flexibility for Arctic and high-latitude missions.

**Test Director:** Cdr J. Morrison  
**QA Representative:** D. Williams

**UNCLASSIFIED // FOR OFFICIAL USE ONLY**