

CLEAN ROOM PARTICLE COUNT CERTIFICATION

Facility: Polar Dynamics Robotics Manufacturing Center

Location: 4521 Innovation Drive, Dover, Delaware 19901

Certification Date: January 11, 2024

Report Number: CCR-2024-011

1. CERTIFICATION AUTHORITY

This Clean Room Particle Count Certification (the "Certification") is issued by TechPure Environmental Services, Inc., an ISO 17025:2017 accredited testing laboratory (Certification #45921), with its principal place of business at 789 Metrology Way, Philadelphia, PA 19103 (the "Certifying Authority").

2. SUBJECT FACILITY

1 The certification applies to Clean Room Suite A-7 (the "Subject Facility") located within the Polar Dynamics Robotics Manufacturing Center, specifically designated for the assembly and calibration of IceNav(TM) sensor arrays and cold-resistant actuator systems.

2 Clean Room Classification: ISO Class 6 (Fed. Std. 209E Class 1,000)

3 Total Square Footage: 2,850 square feet

4 Room Pressure Differential: +0.05" WC (water column)

5 Temperature Range: 68 F ± 2 F

6 Relative Humidity: 45% ± 5%

3. TESTING METHODOLOGY

1 Particle counting was performed using calibrated MetOne HHPC 6+ portable particle counters (Serial #MT29847, Calibration Date: 12/15/2023).

2 Testing conducted in accordance with:

- ISO 14644-1:2015 Clean rooms and associated controlled environments
- ISO 21501-4:2018 Light scattering airborne particle counter calibration
- Fed. Std. 209E Clean Room and Work Station Requirements

3 Sampling Protocol:

- Minimum of 12 sampling locations as per ISO 14644-1 Annex B
- Sample volume: 1.0 ft³ per location
- Sample duration: 1 minute per location
- Height: 4 feet above floor level
- Operational State: "As-Is" during normal production conditions

4. TEST RESULTS

1 Particle Count Results (particles per cubic foot):

- 0.3 m: 8,245 (Limit: 10,000)
- 0.5 m: 2,931 (Limit: 3,520)
- 1.0 m: 832 (Limit: 1,000)
- 5.0 m: 29 (Limit: 35)

2 Air Change Rate:

- Measured: 42 air changes per hour
- Required: Minimum 40 air changes per hour

3 HEPA Filter Performance:

- Filter Efficiency: 99.99% at 0.3 m
- Last DOP Test Date: December 28, 2023
- Next scheduled test: June 28, 2024

5. CERTIFICATION STATEMENT

Based on the test results obtained, TechPure Environmental Services, Inc. hereby certifies that the Subject Facility meets or exceeds all requirements for ISO Class 6 clean room operation as specified in ISO 14644-1:2015 and Fed. Std. 209E Class 1,000.

6. CERTIFICATION PERIOD

1 This certification is valid for six (6) months from the date of issuance.

2 Expiration Date: July 11, 2024

3 Next scheduled certification: Prior to July 11, 2024

7. LIMITATIONS AND CONDITIONS

1 This certification is valid only for the specific Subject Facility identified herein.

2 The certification remains valid provided that:

- a) No significant modifications are made to the clean room infrastructure
- b) Preventive maintenance schedules are maintained
- c) Daily monitoring logs indicate consistent performance
- d) No reportable contamination events occur

3 This certification may be invalidated by:

- a) Failure of any critical system component
- b) Changes to air handling systems
- c) Modifications to room structure or layout
- d) Breach of containment protocols

8. EXECUTION

IN WITNESS WHEREOF, this Certification has been duly executed by an authorized representative of the Certifying Authority on the date first written above.

TechPure Environmental Services, Inc.

By: _

Name: Dr. Michael Robertson, Ph.D.

Title: Lead Certification Engineer

License: PE-ENV-45921

Date: January 11, 2024

Witnessed By: _

Name: Sarah Nordstrom

Title: COO, Polar Dynamics Robotics, Inc.

Date: January 11, 2024

[SEAL OF CERTIFYING AUTHORITY]