

# **ROBOTICS SAFETY CERTIFICATION**

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### **UL 1740 COMPLIANCE DECLARATION**

**NaviFloor Robotics, Inc.**

**Certificate Number: UL-1740-NF-2023-0472**

**Effective Date: January 15, 2024**

**Expiration Date: January 14, 2025**

### **1. CERTIFICATION SCOPE**

1. This UL 1740 Safety Certification ("Certification") confirms that the

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NaviFloor AMR-1000 Series (Models AMR-1001, AMR-1002, AMR-1003)

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NaviFloor TerrainMapper(TM) Navigation System (Version 4.2)

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NaviFloor FleetControl(TM) Management Software (Version 2.1)

## **2. COMPLIANCE VERIFICATION**

1. Testing Laboratory: Underwriters Laboratories LLC

Testing Facility: UL Tech Center - San Jose

Testing Period: October 1, 2023 - December 15, 2023

2. The following safety requirements have been verified through comp

- a) Emergency stop functions and circuits
- b) Safety-rated monitored stop
- c) Protective stop functions
- d) Speed and separation monitoring
- e) Power and force limiting
- f) Safety-rated soft axis and space limiting
- g) Stability requirements for mobile robots
- h) Environmental operating conditions compliance

### **3. TECHNICAL SPECIFICATIONS**

1. The certified robotic systems incorporate the following safety featur

- a) Redundant safety circuits with monitoring
- b) Category 3 architecture per ISO 13849-1
- c) Performance Level d (PLd) achievement
- d) Safety Integrity Level 2 (SIL 2) compliance
- e) 360-degree LiDAR scanning with minimum 20m range
- f) Real-time obstacle detection and avoidance
- g) Fail-safe braking systems
- h) Automatic speed reduction in human-occupied zones

## **4. OPERATIONAL PARAMETERS**

1. The certification validates operation within the following parameters

- a) Maximum speed: 2.0 m/s

- b) Payload capacity: Up to 1,500 kg
- c) Operating temperature: 0 C to 45 C
- d) Humidity range: 5% to 95% non-condensing
- e) Floor slope tolerance: Up to 5 degrees
- f) Minimum detection distance: 50mm
- g) Emergency stop response time: <100ms

## **5. COMPLIANCE OBLIGATIONS**

1. To maintain certification validity, Company shall:

- a) Maintain quality control processes as documented in QC-NAV-202
- b) Conduct quarterly internal safety audits
- c) Report any safety-related incidents within 24 hours

- d) Implement software updates only after UL review and approval
- e) Maintain comprehensive documentation of all system modifications
- f) Provide operator training according to UL-approved curriculum
- g) Submit to annual recertification inspections

## **6. LIMITATIONS AND DISCLAIMERS**

### **1. This certification:**

- a) Applies only to products manufactured at Company's authorized facilities
- b) Does not cover unauthorized modifications or alterations
- c) Requires strict adherence to maintenance schedules
- d) May be revoked for non-compliance with stated requirements
- e) Must be renewed annually through formal re-assessment

## **7. CERTIFICATION AUTHORITY**

1. This certification is issued by Underwriters Laboratories LLC ("UL")
2. UL reserves the right to:
  - a) Conduct unannounced inspections
  - b) Require additional testing
  - c) Modify certification requirements
  - d) Suspend or revoke certification for cause

## **8. EXECUTION**

IN WITNESS WHEREOF, the authorized representatives of the Company have  
executed this Certification as of the Effective Date.

NAVIFLOOR ROBOTICS, INC.

**By:** \_

Name: Dr. Sarah Chen

Title: Chief Executive Officer

Date: January 15, 2024

UNDERWRITERS LABORATORIES LLC

**By:** \_

Name: Robert A. Thompson

Title: Lead Certification Engineer

Date: January 15, 2024

[UL CERTIFICATION SEAL]



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