TORONTECH

# ACTUATOR MEASUREMENT SYSTEM – TORONAMS™ 2500

# Actuator Measurement System – ToronAMS™ 2500

An Actuator Measurement System provides high-precision force measurement in a controlled environment to validate micro-thrust devices and actuator behavior. Actuator Measurement System – ToronAMS™ 2500 combines vacuum simulation, vibration isolation, and high-accuracy thrust evaluation to support reliable thruster and actuator performance assessment.

The platform is designed to reduce external noise sources that can distort micro-force data. A large vacuum chamber supports representative operating conditions for space and vacuum applications. This system enables accurate measurement results that support performance validation and model correlation.

ToronAMS™ 2500 is an Actuator Measurement System built around a vacuum chamber, vibration isolation platform, and high-accuracy thrust evaluation hardware. The vacuum system supports low-pressure testing where micro-thrust and fine actuator outputs can be characterized without atmospheric effects.

The vibration isolation system reduces external disturbance, supporting cleaner measurement signals and better repeatability. High-accuracy thrust evaluation supports micro-force and milli-Newton class measurement ranges for different actuator and thruster classes. The system is suited for R&D, verification, and modeling work where reliable force data is required for design decisions.

## APPLICATIONS

# Actuator Measurement System – ToronAMS™ 2500 Applications

- Micro-thrust measurement and evaluation for electric propulsion components and micro-thrusters
- Actuator force characterization under vacuum conditions for space hardware validation
- Performance verification to support control algorithm development and stability studies
- Data generation for mathematical modeling and model correlation against measured thrust

- Comparative testing across actuator designs, operating points, and hardware revisions
- Lab validation of thrust performance where low noise and high resolution are required

## FEATURES

# Actuator Measurement System – ToronAMS™ 2500 Key Features

- S30408 stainless steel chamber construction supports corrosion resistance and long service life
- Vacuum simulation environment supports representative space or vacuum-condition testing
- Vibration isolation system supports reduced external disturbance for micro-thrust evaluation
- Low natural frequency isolation design supports improved measurement stability
- High-accuracy thrust evaluation supports micro-Newton resolution with fast response time
- Supports both micro-thrust and higher thrust measurement ranges for broader test coverage

## TECHNICAL SPECIFICATIONS

# Actuator Measurement System – ToronAMS™ 2500 Technical Specification

| Specification | Details |
|---|---|
| Vacuum System Chamber | Φ 2500 mm × 4500 mm |
| Krypton Pumping Speed | > 30,000 L/s |
| Maximum Load Capacity of Platform | > 200 kg |
| Operating Environment | Lab / Vacuum Conditions |
| Natural Frequency | ≤ 1 Hz |
| Vibration Isolation Efficiency | ≥ 50% at 2 Hz; ≥ 90% at 4 Hz |
| High-Accuracy Thrust Evaluation Measurement Range (Micro-Thrust) | 0.1 μN to 100 μN |

| Specification | Details |
| --- | --- |
| Noise (10 mHz to 1 Hz) | ≤ 0.1 μN |
| Resolution (Micro-Thrust) | ≤ 0.1 μN |
| Response Time | 100 ms |
| High-Accuracy Thrust Evaluation Measurement Range (Higher Thrust) | 0 to 500 mN |
| Resolution (Higher Thrust) | ≤ 0.1 mN |
| Load Capacity (Higher Thrust) | ≥ 5 kg |

TORONTECH.com

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**Torontech Inc.**
251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

**Torontech, LLC**
601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

**Torontech ME FZE**
Meydan Grandstand, 6th Floor,
Meydan Road, Nad Al Sheba,
Dubai-261440, UAE

Phone: +971 488 19252
Email: me@torontech.com


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