



# CERTIFICATE OF ACCREDITATION

**The ANSI National Accreditation Board**

Hereby attests that

**TSI Instruments Limited**  
**Stirling Road, Cressex Business Park**  
**High Wycombe, Buckinghamshire, UK HP12 3ST**

Fulfills the requirements of

**ISO/IEC 17025:2017**

In the field of

**CALIBRATION**

This certificate is valid only when accompanied by a current scope of accreditation document.  
The current scope of accreditation can be verified at [www.anab.org](http://www.anab.org).

A handwritten signature in black ink, appearing to be 'J. Stine', is positioned above a horizontal line.

Jason Stine, Vice President

Expiry Date: 09 July 2028

Certificate Number: AC-3002



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory  
quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017**

**TSI Instruments Limited**

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**CALIBRATION**

ISO/IEC 17025 Accreditation Granted: **29 May 2026**

Certificate Number: **AC-3002** Certificate Expiry Date: **9 July 2028**

**Chemical Quantities**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Air-born particle size detection and concentration counting efficiencies/ Condensation Particle Counters (CPC/PNC) <sup>1</sup>	Particle Size		Electrometer, 3068B CPC, 3750/3772  ISO 27891:2015
	10 nm	0.09	
	15 nm	0.074	
	23 nm	0.15	
	41 nm	0.1	
	55 nm	0.12	
	Particle Concentration Range @ 55 nm		
	300 counts/cm <sup>3</sup>	0.12	
	600 counts/cm <sup>3</sup>	0.12	
	1 000 counts/cm <sup>3</sup>	0.12	
	2 000 counts/cm <sup>3</sup>	0.12	
	4 000 counts/cm <sup>3</sup>	0.068	
	6 000 counts/cm <sup>3</sup>	0.12	
	8 000 counts/cm <sup>3</sup>	0.082	
	10 000 counts/cm <sup>3</sup>	0.12	
25 000 counts/cm <sup>3</sup>	0.062		
50 000 counts/cm <sup>3</sup>	0.076		
Linearity (Slope) for 55 nm particles			
(0.90 to 1.1)			
@ 10 000 cm <sup>-3</sup>	0.032		
@ 50 000 cm <sup>-3</sup>	0.035		

### Chemical Quantities

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Gas Analyzers <sup>2</sup>	0 parts in 10 <sup>-6</sup> CO 35 parts in 10 <sup>-6</sup> CO 100 parts in 10 <sup>-6</sup> CO 200 parts in 10 <sup>-6</sup> CO	1 part in 10 <sup>-6</sup> CO 1.3 parts in 10 <sup>-6</sup> CO 2 parts in 10 <sup>-6</sup> CO 2.3 parts in 10 <sup>-6</sup> CO	Comparison to Certified Reference Materials, Mass Flow Meter
Gas Analyzers <sup>2</sup>	0 parts in 10 <sup>-6</sup> CO <sub>2</sub> 500 parts in 10 <sup>-6</sup> CO <sub>2</sub> 1 000 parts in 10 <sup>-6</sup> CO <sub>2</sub> 3 000 parts in 10 <sup>-6</sup> CO <sub>2</sub> 5 000 parts in 10 <sup>-6</sup> CO <sub>2</sub>	2.8 parts in 10 <sup>-6</sup> CO <sub>2</sub> 13 parts in 10 <sup>-6</sup> CO <sub>2</sub> 20 parts in 10 <sup>-6</sup> CO <sub>2</sub> 50 parts in 10 <sup>-6</sup> CO <sub>2</sub> 52 parts in 10 <sup>-6</sup> CO <sub>2</sub>	Comparison to Certified Reference Materials, Mass Flow Meter

### Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Air Velocity	Thermal Anemometers 0 m/s (0.18 to 1.25) m/s (1.26 to 7.5) m/s (7.6 to 50) m/s	0.015 m/s 0.48 % of reading + 0.015 m/s 1.2 % of reading + 0.038 m/s 1.2 % of reading + 0.1 m/s	Comparison to Wind Tunnel, Barometer, Manometers
	Vane Anemometers 0.5 m/s 0.75 m/s 1.0 m/s 2.5 m/s 5.0 m/s 7.5 m/s 15 m/s 30 m/s	0.31 % of reading + 0.02 m/s 0.31 % of reading + 0.024 m/s 0.31 % of reading + 0.03 m/s 0.31 % of reading + 0.061 m/s 0.31 % of reading + 0.085 m/s 0.31 % of reading + 0.12 m/s 0.31 % of reading + 0.2 m/s 0.31 % of reading + 0.4 m/s	Comparison to Gold Standard Vane Anemometer
Pressure – Gage	(-1 to 4) kPa	3.4 Pa	Comparison to Pressure Transducer
Pressure – Absolute	(60 to 135) kPa	0.7 % of reading + 1.2 Pa	Comparison to Barometer
Pneumatic Differential Pressure (Low Flow Meter)	(-153 to 153) cmH <sub>2</sub> O	0.33 cmH <sub>2</sub> O	Comparison to PPC4-ui A1.4 Ms/A200Kp Pressure Controller
Pneumatic Differential Pressure (High Flow Meter)	(-11 to 50) psig (50 to 152) psig	0.077 psi 0.45 psi	Comparison to PPC4-ui A1.4 Ms/A200Kp Pressure Controller

**Mass and Mass Related**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Volumetric Flowrate (Flow Meter; Gas Type: Air, CO <sub>2</sub> , O <sub>2</sub> , N <sub>2</sub> )	(0.01 to 0.02) slpm (>0.02 to 0.05) slpm (>0.05 to 0.10) slpm (>0.10 to 0.20) slpm (>0.20 to 0.40) slpm (>0.40 to 0.80) slpm (>0.80 to 1.60) slpm (>1.60 to 3.00) slpm	6.1 % of reading 4.1 % of reading 2.4 % of reading 2 % of reading 1.5 % of reading 1.2 % of reading 1.1 % of reading 1 % of reading	Comparison to Flow Calibrator w/Small Bronkhorst Pressure/Temperature Measurement System
	(>3 to 300) slpm	0.81 % of reading	
Pneumatic Barometric Pressure (Volumetric Flowrate Meter, Low & High)	(14 to 23) psia	0.07 psi	Comparison with Pressure calibrator

**Thermodynamics**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Temperature – Source	0 °C 60 °C	0.19 °C 0.19 °C	Comparison to Calibration Baths
Temperature – Volumetric Flowrate meter	(19 to 23) °C	0.25 °C	Comparison to Platinum Resistance Thermometer
Relative Humidity – Measuring Equipment	(10 to 90) %RH @ 25 °C	2.5 %RH	Comparison to Thunder Scientific 2500 Humidity Chamber

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 ( $k=2$ ), corresponding to a confidence level of approximately 95%.

Notes:

1. Unitless linear measure.
2. Parts per million (ppm) refers to parts in 10<sup>6</sup>.



Jason Stine, Vice President