



# PERRY JOHNSON LABORATORY ACCREDITATION, INC.

## Certificate of Accreditation

*Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:*

***Altiorlab S.r.l.***

*Via Tasso, 5, Barlassina, MB Italy 20285*

*(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:*

**ISO/IEC 17025:2017  
& Meets Requirements of ANSI/NCSL Z540-1-1994  
& ANSI/NCSI Z540.3-2006 Sub Clause 5.3**

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (as outlined by the joint ISO-ILAC-IAF Communiqué dated April 2017):

***Chemical and Mechanical Calibration***  
*(As detailed in the supplement)*

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen  
President

*Initial Accreditation Date:*

November 05, 2023

*Issue Date:*

November 05, 2023

*Expiration Date:*

January 31, 2026

*Accreditation No.:*

121341

*Certificate No.:*

L23-806

Perry Johnson Laboratory  
Accreditation, Inc. (PJLA)  
755 W. Big Beaver, Suite 1325  
Troy, Michigan 48084

*The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: [www.pjilabs.com](http://www.pjilabs.com)*



# Certificate of Accreditation: Supplement

**Altiorlab S.r.l.**

Via Tasso, 5, Barlassina, MB Italy 20285  
 Contact Name: Sig. Mauro Petrone Phone: 348 6705140

*Accreditation is granted to the facility to perform the following calibrations:*

## Chemical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY ( $\pm$ )	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Total Organic Carbon (TOC) Analyzer (OQ) Operational Qualification System Suitability <sup>FO</sup>			Internal SOP PLAC10 TOC solution Certified Reference Material (CRM) ISO 11352 USP 643 EP 2.2.44 ICH - Validation of analytical procedures: text and methodology Q2(R1) USP 39 - 1058 ASTM D 1193
Efficienza di risposta Response efficiency RE $RE = (R_{ss} - R_w) / (R_s - R_w) * 100$ R <sub>w</sub> - TOC of Reagent water R <sub>s</sub> - TOC of USP Sucrose R <sub>ss</sub> - TOC of USP Benzoquinone	85 % to 115 %	0.03 % of reading	
Limite di risposta/ Limit response	≤ 500 µg/kg (ppb) Carbon / Litre	3.6 µg/kg (ppb) Carbon / Litre	Internal SOP PLAC10 TOC solution Certified Reference Material (CRM) ISO 11352 JP 2.59 USP 39 - 1058 ASTM D 1193
Total Organic Carbon (TOC) Analyzer (OQ) Operational Qualification <sup>FO</sup>			
Sodium dodecyl benzenesulfonate SDBS	SDBS ≥ 450 µg/kg (ppb) Carbon / Litre	1.5 µg/kg (ppb) Carbon / Litre	
TOC of Reagent Water RW	TOC of RW ≤ 250 µg/kg (ppb) Carbon / Litre	0.72 µg/kg (ppb) Carbon / Litre	
LOQ Limit of Quantification	LOQ ≤ 50 µg/kg (ppb) Carbon / Litre	8 µg/kg (ppb) Carbon / Litre	
Total Organic Carbon (TOC) Analyzer (PQ) Performance Qualification <sup>FO</sup>			Internal SOP PLAC10 TOC and IC solution Certified Reference Material (CRM) ISO 11352 USP 39 - 1058 ASTM D 1193 Manufacturer specifications
Precision	250 µg/kg (ppb) Carbon / Litre to	$2 \times 10^{-7}$ µg/kg (ppb) Carbon / Litre	
Accuracy	1 mg (ppm) /kg Carbon / Litre of TOC	3.1 % of reading	
Total Organic Carbon (TOC) Analyzer (OQ) Operational Qualification <sup>FO</sup>			Manufacturer specifications
Single Point TOC Calibration			
Precision	500 µg (ppb)/kg Carbon / Litre to 1 mg (ppm)	$2 \times 10^{-7}$ µg/kg (ppb) Carbon / Litre	
Accuracy	Carbon / Litre	3,1 % of reading	
Total Organic Carbon (TOC) Analyzer (OQ) Operational Qualification <sup>FO</sup>			Manufacturer specifications
Single Point IC Calibration			
Precision	500 µg/kg (ppb) Carbon / Litre to 1 mg (ppm) Carbon	$3 \times 10^{-7}$ µg/kg (ppb) Carbon / Litre	
Accuracy	/ Litre of Inorganic Carbon	0.9 % of reading	



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Total Organic Carbon (TOC) Analyzer (OQ) Operational Qualification Multi Point TOC Calibration <sup>FO</sup>			Internal SOP PLAC10 TOC and IC solution Certified Reference Material (CRM) ISO 11352 USP 39 - 1058 ASTM D 1193 Manufacturer specifications
Coefficiente di determinazione Determination coefficient R <sup>2</sup>	250 µg/kg (ppb) Carbon / Litre to	1 x 10 <sup>-3</sup> (dimensionless quantity)	
Precision	50 mg (ppm) Carbon / Litre	3 x 10 <sup>-4</sup> µg/kg (ppb) Carbon / Litre	
Accuracy	1 mg/kg (ppm) Carbon / Litre to 50 mg/kg (ppm) Carbon / Litre of Inorganic Carbon	2.1 % of reading	
Total Organic Carbon (TOC) Analyzer (PQ) Performance Qualification <sup>FO</sup>			Internal SOP PLAC10 TOC solution Certified Reference Material (CRM) ISO 11352 ICH - Validation of analytical procedures: text and methodology Q2(R1) USP 39 - 1058 ASTM D 1193
Linearità/ Linearity Coefficiente di determinazione Determination coefficient R <sup>2</sup>	250 µg/kg (ppb) Carbon / Litre to 750 µg/kg (ppb) Carbon / Litre	1,7 x 10 <sup>-5</sup> (dimensionless quantity)	
Limit of detection (LOD)		17 µg/kg (ppb) Carbon / Litre	
Limit of quantification (LOQ)		17 µg/kg (ppb) Carbon / Litre	
Total Organic Carbon (TOC) Analyzer (PQ) Performance Qualification Specificità/ Specificity <sup>FO</sup>			Internal SOP PLAC10 TOC solution Certified Reference Material (CRM) ISO 11352 ICH - Validation of analytical procedures: text and methodology Q2(R1) USP 39 - 1058 ASTM D 1193 Manufacturer specifications
TOC of Methanol MeOH	85 % to 115 %	12 % of reading	
TOC of Nicotinamide Nic	85 % to 115 %	0.23 % of reading	
TOC of Potassium Hydrogen Phthalate KHP	85 % to 115 %	0.14 % of reading	
Total Organic Carbon (TOC) Analyzer Robustezza/ Robusteness <sup>FO</sup>	85 % to 115 %	0.02 % of reading	Internal SOP PLAC10 TOC solution Certified Reference Material (CRM) ISO 11352 ICH - Validation of analytical procedures: text and methodology Q2(R1) USP 39 - 1058 ASTM D 1193 Manufacturer specifications
RR = (R <sub>ss</sub> - R <sub>w</sub> ) / (R <sub>s</sub> - R <sub>w</sub> )*100			
R <sub>w</sub> - TOC of Reagent water			
R <sub>s</sub> - TOC of USP Sucrose			
R <sub>ss</sub> - TOC of USP Benzoquinone			



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## Chemical

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Total Organic Carbon (TOC) Analyzer (OQ) Operational Qualification Conduttività/ Conductivity <sup>FO</sup>  Single point calibration	Up to 25 $\mu$ S/cm	$2 \times 10^{-2}$ $\mu$ S/cm	Internal SOP PLAC10 USP 645 EP 2.2.38 JP 2.51 Conductivity solution Certified Reference Material (CRM)
Total Organic Carbon (TOC) Analyzer (OQ) Operational Qualification <sup>FO</sup>  Conduttività/ Conductivity Multipoint			Resistor Thermocouple USP 39 - 1058 ASTM D 1193 ASTM D 5391
Coefficiente di determinazione Determination coefficient $R^2$	100 $\mu$ S/cm to 718 $\mu$ S/cm	$1.7 \times 10^{-5}$ (dimensionless quantity)	Manufacturer specifications
Precision		$4 \times 10^{-4}$ $\mu$ S/cm	

## Mechanical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY ( $\pm$ )	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Air Sampler <sup>FO</sup>	Up to 300 L/min	1.8 % of reading	Internal SOP PLAC30 Anemometer Reference Standard Manufacturer specifications
Flowmeter air <sup>FO</sup>	Up 300 L/min	0.2 % of reading	Internal SOP PLAC40 Flowmeter Reference Standard Manufacturer specifications

1. The CMC (Calibration and Measurement Capability) stated for calibrations included on this scope of accreditation represents the smallest measurement uncertainty attainable by the laboratory when performing a more or less routine calibration of a nearly ideal device under nearly ideal conditions. It is typically expressed at a confidence level of 95 % using a coverage factor  $k$  (usually equal to 2). The actual measurement uncertainty associated with a specific calibration performed by the laboratory will typically be larger than the CMC for the same calibration since capability and performance of the device being calibrated and the conditions related to the calibration may reasonably be expected to deviate from ideal to some degree.
2. The laboratories range of calibration capability for all disciplines for which they are accredited is the interval from the smallest calibrated standard to the largest calibrated standard used in performing the calibration. The low end of this range must be an attainable value for which the laboratory has or has access to the standard referenced. Verification of an indicated value of zero in the absence of a standard is common practice in the procedure for many calibrations but by its definition it does not constitute calibration of zero capacity.



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3. The presence of a superscript FO means that the laboratory performs calibration of the indicated parameter both at its fixed location, mobile laboratory and onsite at customer locations.
4. Measurement uncertainties obtained for calibrations performed at customer sites can be expected to be larger than the measurement uncertainties obtained at the laboratories fixed location for similar calibrations. This is due to the effects of transportation of the standards and equipment and upon environmental conditions at the customer site which are typically not controlled as closely as at the laboratories fixed location.

