# CERTIFICATE OF ACCREDITATION

*This is to attest*

## TCQA LABS PRIVATE LIMITED

2ND FLOOR, BLOCK NO. 492, VILLAGE: UMRAYA, TALUKA: PADRA, DISTRICT: VADODARA
VADODARA, GJ 391440, INDIA

**Calibration Laboratory CL-241**

has met the requirements of AC204, *IAS Accreditation Criteria for Calibration Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Expiration Date March 1, 2026
Effective Date March 24, 2025

International Accreditation Service
Issued under the authority of IAS management

Visit www.iasonline.org for current accreditation information.

# SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

## TCQA LABS PRIVATE LIMITED

www.tcqalabs.com

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*Accredited to ISO/IEC 17025:2017* *Effective Date March 24, 2025*

**CALIBRATION AND MEASUREMENT CAPABILITY (CMC)***

| MEASURED QUANTITY or DEVICE TYPE CALIBRATED | RANGE | UNCERTAINTY[1,2] (±) | CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL) |
|---|---|---|---|
| ***Mechanical*** | | | |
| Gas Flow meter | Up to 4 L/min | 0.063 L/min | Comparison method by using reference mass flow controller |
| ***Electrical – DC/LF*** | | | |
| DC Voltage - Generate[3] | 0 V to 8 V | 0.01 V | Direct method by using Electrical process calibrator and output measured on 6½ digit DMM |
| ***Chemical/Gas*** | | | |
| Automated Measuring Systems/ Continuous Emission Monitoring System/ Gas Analyzer/ Monitor/ Instrument/ Detector/ Equipment $CH_4$ | 0 %v to 5 %v | 0.033 %v | Direct Method by using CRM |
| | 4 mA to 20 mA (Generate[3]) | 0.17 mA | Direct method by using Electrical process calibrator and output measured on 6½ digit DMM |
| | 0 V to 1 V (Generate[3]) | 0.005 V | |
| Automated Measuring Systems/ Continuous Emission Monitoring System/ Gas Analyzer/ Monitor/ Instrument/ Detector/ Equipment $Cl_2$ | 0 PPMv to 200 PPMv | 2.4 parts in $10^6$ by volume | Direct Method by using CRM |
| | 4 mA to 20 mA (Generate[3]) | 0.21 mA | Direct method by using Electrical process calibrator and output measured on 6½ digit DMM |
| | 0 V to 1 V (Generate[3]) | 0.011 V | |

** If information in this CMC is presented in non-SI units, the conversion factors stated in NIST Special Publication 811 "Guide for the Use of the International System of Units (SI)" apply.*

| MEASURED QUANTITY or DEVICE TYPE CALIBRATED | RANGE | UNCERTAINTY[1,2] (±) | CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL) |
|---|---|---|---|
| Automated Measuring Systems/ Continuous Emission Monitoring System/ Gas Analyzer/ Monitor/ Instrument/ Detector/ Equipment CO | 0 %v to 2 %v | 0.039 %v | Direct Method by using CRM |
| | 4 mA to 20 mA (Generate[3]) | 0.067 mA | Direct method by using Electrical process calibrator and output measured on 6½ digit DMM |
| | 0 V to 1 V (Generate[3]) | 0.004 V | |
| Automated Measuring Systems/ Continuous Emission Monitoring System/ Gas Analyzer/ Monitor/ Instrument/ Detector/ Equipment $H_2$ | 0 %v to 4 %v | 1.7 %v | Direct Method by using CRM) |
| | 4 mA to 20 mA (Generate[3]) | 0.051 mA | Direct method by using Electrical process calibrator and output measured on 6½ digit DMM |
| | 0 V to 1 V (Generate[3]) | 0.004 V | |
| Automated Measuring Systems/ Continuous Emission Monitoring System/ Gas Analyzer/ Monitor/ Instrument/ Detector/ Equipment $H_2S$ | 0 PPMv to 200 PPMv | 1.9 parts in $10^6$ by volume | Direct Method by using CRM) |
| | 4 mA to 20 mA (Generate[3]) | 0.073 mA | Direct method by using Electrical process calibrator and output measured on 6½ digit DMM |
| | 0 V to 1 V (Generate[3]) | 0.006 V | |
| Automated Measuring Systems/ Continuous Emission Monitoring System/ Gas Analyzer/ Monitor/ Instrument/ Detector/ Equipment HCl | 0 PPMv to 200 PPMv | 1.9 parts in $10^6$ by volume | Direct Method by using CRM) |
| | 4 mA to 20 mA (Generate[3]) | 0.27 mA | Direct method by using Electrical process calibrator and output measured on 6½ digit DMM |
| | 0 V to 1 V (Generate[3]) | 0.011 V | |
| Automated Measuring Systems/ Continuous Emission Monitoring System/ Gas Analyzer/ Monitor/ Instrument/ Detector/ Equipment $NH_3$ | 0 PPMv to 100 PPMv | 1.2 parts in $10^6$ by volume | Direct Method by using CRM) |
| | 4 mA to 20 mA (Generate[3]) | 0.12 mA | Direct method by using Electrical process calibrator and output measured on 6½ digit DMM |
| | 0 V to 1 V (Generate[3]) | 0.009 V | |
| Automated Measuring Systems/ Continuous Emission Monitoring System/ Gas Analyzer/ Monitor/ Instrument/ Detector/ Equipment NO | 0 PPMv to 2000 PPMv | 21 parts in $10^6$ by volume | Direct Method by using CRM) |
| | 4 mA to 20 mA (Generate[3]) | 0.013 mA | Direct method by using Electrical process calibrator and output measured on 6½ digit DMM |
| | 0 V to 1 V (Generate[3]) | 0.001 V | |

| MEASURED QUANTITY or DEVICE TYPE CALIBRATED | RANGE | UNCERTAINTY[1,2] (±) | CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL) |
|---|---|---|---|
| Automated Measuring Systems/ Continuous Emission Monitoring System/ Gas Analyzer/ Monitor/ Instrument/ Detector/ Equipment $NO_2$ | 0 PPMv to 2000 PPMv | 12 parts in $10^6$ by volume | Direct Method by using CRM) |
| | 4 mA to 20 mA (Generate[3]) | 0.17 mA | Direct method by using Electrical process calibrator and output measured on 6½ digit DMM |
| | 0 V to 1 V (Generate[3]) | 0.004 V | |
| Automated Measuring Systems/ Continuous Emission Monitoring System/ Gas Analyzer/ Monitor/ Instrument/ Detector/ Equipment $O_2$ | 0 %v to 25 %v | 0.06 %v | Direct Method by using CRM |
| | 4 mA to 20 mA (Generate[3]) | 0.012 mA | Direct method by using Electrical process calibrator and output measured on 6½ digit DMM |
| | 0 V to 1 V (Generate[3]) | 0.001 V | |
| Automated Measuring Systems/ Continuous Emission Monitoring System/ Gas Analyzer/ Monitor/ Instrument/ Detector/ Equipment $SO_2$ | 0 PPMv to 2000 PPMv | 20 parts in $10^6$ by volume | Direct Method by using CRM |
| | 4 mA to 20 mA (Generate[3]) | 0.012 mA | Direct method by using Electrical process calibrator and output measured on 6½ digit DMM |
| | 0 V to 1 V (Generate[3]) | 0.001 V | |
| Automated Measuring Systems/ Continuous Emission Monitoring System/ Gas Analyzer/ Monitor/ Instrument/ Detector/ Equipment VOC | 0 PPMv to 2000 PPMv | 23 parts in $10^6$ by volume | Direct Method by using CRM) |
| | 4 mA to 20 mA (Generate[3]) | 0.030 mA | Direct method by using Electrical process calibrator and output measured on 6½ digit DMM |
| | 0 V to 1 V (Generate[3]) | 0.005 V | |
| Automated Measuring Systems/ Continuous Emission Monitoring System/ Gas Analyzer/ Monitor/ Instrument/ Detector/ Equipment $CO_2$ | 0 %v to 50 %v | 0.5 %v | Direct Method by using CRM |
| | 4 mA to 20 mA (Generate[3]) | 0.013 mA | Direct method by using Electrical process calibrator and output measured on 6½ digit DMM |
| | 0 V to 1 V (Generate[3]) | 0.001 V | |

[1]The uncertainty covered by the Calibration and Measurement Capability (CMC) is expressed as the expanded uncertainty having a coverage probability of approximately 95 %. It is the smallest measurement uncertainty that a laboratory can achieve within its scope of accreditation when performing calibrations of a best existing device. The measurement uncertainty reported on a calibration certificate may be greater than that provided in the CMC due to the behavior of the calibration item and other factors that may contribute to the uncertainty of a specific calibration.

[2]When uncertainty is stated in relative terms (such as percent, a multiplier expressed as a decimal fraction or in scientific notation), it is in relation to instrument reading or instrument output, as appropriate, unless otherwise indicated.

[3]Capability is suitable for the calibration of measuring devices in the stated ranges.

VOC = volatile organic compounds
PM = particulate matter
%v = percent by volume
PPMv = parts in $10^6$ by volume