

# PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

***T200 & 200E***  
***Chemiluminescent NO<sub>x</sub> Analyser***

manufactured by:

***Teledyne API***  
9970 Carroll Canyon Road  
San Diego  
California  
92131  
USA

has been assessed by Sira Certification Service  
and for the conditions stated on this certificate complies with:

**MCERTS Performance Standards for Continuous Ambient Air  
Quality Monitoring Systems, Version 10 dated June 2016**

Certification ranges:

NO	0 to 1,200 µg/m <sup>3</sup>
NO <sub>2</sub>	0 to 500 µg/m <sup>3</sup>

Project number: 70047436/ 80060101  
Certificate number: Sira MC050068/12  
Initial certification: 27 October 2005  
This certificate issued: 18 December 2020  
Renewal date: 26 October 2025



Andrew Young  
Environmental Team Manager

MCERTS is operated on behalf of the Environment Agency by

## **Sira Certification Service**

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*The MCERTS certificate consists of this document in its entirety.  
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### Approved site application

*Any potential user should ensure, in consultation with the manufacturer, that the monitoring system is suitable for the intended application. For general guidance on monitoring techniques refer to the Environment Agency technical guidance on monitoring, available at [www.mcerts.net](http://www.mcerts.net)*

All tests have been conducted in accordance with EN 14211. On the basis of these tests this certificate is valid when the instrument is used for urban air quality monitoring and similar applications.

### Basis of certification

This certification is based on the following test report(s) and on Sira's assessment and ongoing surveillance of the product and the manufacturing process:

- TÜV Essen Report No 389004/01 dated 25/07/1996
- Teledyne- API, Inc. Modification of Method RFNA-1194-099 submitted to US EPA in support for equivalency designation (Model API 200 E), dated October, 2002
- TÜV-Report: 936/21205926/A2, Cologne, 22.06.2007
- TÜV-Report 936/21219874/B, Cologne, 11 October 2012
- TÜV- Report Addendum II 936/21221556/B, Cologne, March 16, 2013

### Product certified

The system tested comprised:

A T200/200E Chemiluminescence NO/NO<sub>2</sub>/NO<sub>x</sub> Analyzer.

The M200E measuring System for NO, NO<sub>2</sub> and NO<sub>x</sub> is manufactured by Teledyne API both in its old design 'M200E' and its new design 'T200'. The new design has a new display, a new front plate and offers extended possibilities for communication.

This certificate applies to all instruments fitted with the following software:

- version 044380000 revision G2 onwards (serial number 879 onwards) for the 200E.
- version 041630001 build 46 onwards and/or NUMAview™ software (serial number 51 onwards) for the T200.

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## Certified performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: 0 to 30°C

Performance values are expressed as a percentage of the certification range.

Test	Results expressed as % of measured value				Other results	MCERTS specification
	<0.5	<1	<2	<4		
Repeatability at zero					0.94 nmol/mol	≤1nmol/mol
Repeatability at hourly limit value					1.23 nmol/mol	≤3 nmol/mol
Residual lack of fit at zero					0.5 nmol/mol	≤5 nmol/mol
Lack of fit (largest residual from the linear regression line)		-0.6				≤4%
Sensitivity coefficient to sample gas pressure					0.14 nmol/mol/kPa	≤8 nmol/mol/kPa
Sensitivity coefficient to sample gas temperature					0.04 nmol/mol/K	≤3nmol/mol/K
Sensitivity coefficient to surrounding air temperature					0.52 nmol/mol/K	≤3nmol/mol/K
Sensitivity coefficient to electrical supply voltage					0.03 nmol/mol/V	≤0.3 nmol/mol/V
Converter efficiency					98.0%	≥98%
Interference by H <sub>2</sub> O (at concentration of 19 nmol/mol)					-3.7 nmol/mol	≤5 nmol/mol

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Test	Results expressed as % of measured value				Other results	MCERTS* specification
	<0.5	<1	<2	<4		
Interference by NH <sub>3</sub> (at concentration of 200 nmol/mol)					1.7 nmol/mol	≤5 nmol/mol
Interference by CO <sub>2</sub> (at concentration of 500 μmol/mol)					1.3 nmol/mol	≤5 nmol/mol
Averaging effect					1.0%	≤7%
Short term zero drift (over 12h)					-0.7 nmol/mol	≤2 nmol/mol
Short term span drift (over 12h)					-1.4 nmol/mol	≤6 nmol/mol
Response time (rise)					63 s	≤180 s
Response time (fall)					64 s	≤180 s
Difference between rise and fall time					5 s	≤10 s
Reproducibility under field conditions <sup>Note 1</sup>			1.77			≤5% averaged over three month period
Long term zero drift (over 3 months) <sup>Note 1</sup>					-0.84 nmol/mol	≤5 nmol/mol
Long term span drift (over 3 months) <sup>Note 1</sup>			1.03			≤5% of the max of certification range
Residence time in the analyser					2.5 s	≤3 s
Period of unattended operation <sup>Note 1</sup>					4 weeks	3 months not less than 2 weeks
Availability (data capture) <sup>Note 1</sup>					98.6%	>90%
Combined performance characteristic					7.58%	≤15%

Note 1: Field Test: The 200 E analyser was assessed on the basis of a three month field trial on an urban field test site

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## Description

The instrument uses chemiluminescence detection coupled with a microprocessor running multi-tasking software to provide the sensitivity and stability required for ambient or dilution monitoring for NO/NO<sub>2</sub>/NO<sub>x</sub> monitoring. Measurements are automatically compensated for temperature and pressure changes, while stability is enhanced by circuitry that provides a true zero reference. The instrument also includes built in data acquisition capability providing for the logging of up to one million records including instantaneous concentration values, calibration data and operating parameters such as pressures and temperatures.

## General notes

1. This certificate is based upon the equipment tested. The manufacturer is responsible for ensuring that on-going production complies with the standard(s) and performance criteria defined in this certificate. The manufacturer is required to maintain an approved quality management system controlling the manufacture of the certified product. Both the product and the quality management system shall be subject to regular surveillance according to 'Regulations applicable to the holders of Sira certificates'.
2. The design of the product certified is held and maintained by TÜV Rheinland for certificate No. Sira MC050068/12
3. If a certified product is found not to comply, Sira should be notified immediately at the address shown on this certificate.
4. The certification marks that can be applied to the product or used in publicity material are defined in 'Regulations applicable to the holders of Sira certificates'.
5. This document remains the property of Sira and shall be returned if requested by Sira.

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