

# PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

## ***T300 Gas Filter Correlation CO Analyser / 300E Gas Filter Correlation CO 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 range:

CO                      0 to 100 mg/m<sup>3</sup>

Project number:            80060102  
Certificate number:        Sira MC050069/08  
Initial certification:       27 October 2005  
This certificate issued:    21 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**

Unit 6, Hawarden Industrial Park  
Hawarden, Deeside, CH5 3US  
Tel: +44 (0)1244 670 900



0011



*The MCERTS certificate consists of this document in its entirety.  
For conditions of use, please consider all the information within.  
This certificate may only be reproduced in its entirety and without change  
To authenticate the validity of this certificate please visit [www.csagroupuk.org/mcerts](http://www.csagroupuk.org/mcerts)*

## Certificate contents

Approved site application .....	2
Basis of certification.....	2
Product certified .....	2
Certified performance .....	3
Description.....	5
General notes.....	5

## 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 BS EN 14626. 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 Number 573038/01 dated 18/11/1993  
Teledyne- API, Modification of Method RFNA-1093-093 submitted to US EPA in support for equivalency designation (Model API 300 E) dated September, 2001  
TÜV-Bericht: 936/21207124/B1, Köln, 22.08.2007  
TÜV-Report 936/21218734/C, Cologne, 11 October 2012  
TÜV- Report Addendum II 936/21221556/C, Cologne, March 16, 2013  
TÜV Letter Teledyne\_NumaView\_22012016

## Product certified

The system tested comprised:

A 300E/T300 Gas Filter Correlation CO Analyzer

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

- version 043520000 revision D4 onwards (serial number 153 onwards) for the 300E.
- version 043520001 build 46 onwards and/or NUMAview™ software (serial number 51 onwards) for the T300.

Certificate number: Sira MC050069/08  
This certificate issued: 21 December 2020

## Certified performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: 5 to 40°C

Performance values are expressed as a percentage of the measured value, except for availability and analysis function.

Test	Results expressed as % of measured value				Other results	MCERTS* specification
	<0.5	<1	<2	<4		
Repeatability at zero					0.1 µmol/mol	≤0.3 µmol/mol
Repeatability at hourly limit value					0.1 µmol/mol	≤0.4 µmol/mol
Residual lack of fit at zero					-0.17 µmol/mol	≤0.5 µmol/mol
Lack of fit (largest residual from the linear regression line)			1.6			<4%
Sensitivity coefficient to sample gas pressure					0.18 µmol/mol/kPa	≤0.7 µmol/mol/kPa
Sensitivity coefficient to sample gas temperature					0.01 µmol/mol/K	≤0.3 µmol/mol/K
Sensitivity coefficient to surrounding air temperature					0.03 µmol/mol/K	≤0.3 µmol/mol/K
Sensitivity coefficient to electrical supply voltage					0.01 µmol/mol/V	≤0.3 µmol/mol/V
Interference by H <sub>2</sub> O (at concentration of 19 mmol/mol)					-0.16 µmol/mol	≤1 µmol/mol
Interference by NO (at concentration of 1 µmol/mol)					0.03 µmol/mol	≤0.5 µmol/mol

Certificate number: Sira MC050069/08  
 This certificate issued: 21 December 2020

Test	Results expressed as % of measured value				Other results	MCERTS* specification
	<0.5	<1	<2	<4		
Interference by CO <sub>2</sub> (at concentration of 500 µmol/mol)					0.10 µmol/mol	≤0.5 µmol/mol
Interference by N <sub>2</sub> O (at concentration of 50 nmol/mol)					-0.03 µmol/mol	≤0.5 µmol/mol
Averaging effect		0.8				≤7%
Short term zero drift (over 12h)					-0.02 µmol/mol	≤0.10 µmol/mol
Short term span drift (over 12h)					0.02 µmol/mol	≤0.60 µmol/mol
Response time (rise)					54 s	≤180 s
Response time (fall)					55 s	≤180 s
Difference between rise and fall time					3 s	≤10 s
Difference between sampling and calibration port	-0.05					≤1%
Reproducibility under field conditions <sup>Note 1</sup>				3.47		≤5% averaged over three month period
Long term zero drift (over 3 months) <small>Note 1</small>					0.71 µmol/mol	≤0.5 µmol/mol
Long term span drift (over 3 months) <small>Note 1</small>				-4.96		≤5% of the max of certification range
Period of unattended operation <small>Note 1</small>					4 weeks	3 months not less than 2 weeks
Availability (data capture) <small>Note 1</small>					95.9%	>90%
Combined performance characteristic					14.35%	≤15%

Note 1: Field Test: The 300 E analyser was assessed on the basis of a three month field trial on an urban field test site.

Certificate number: Sira MC050069/08  
 This certificate issued: 21 December 2020

*This certificate may only be reproduced in its entirety and without change  
 To authenticate the validity of this certificate please visit [www.csagroupuk.org/mcerts](http://www.csagroupuk.org/mcerts)*

## Description

The instrument measures low ranges of carbon monoxide by comparing infrared energy absorbed by a sample to that absorbed by a reference gas according to the Beer-Lambert law. This is accomplished with a gas filter wheel which alternately allows a high energy light source to pass through a CO filled chamber and a chamber with no CO present. The light path then travels through a sample cell. The energy loss through the sample cell is compared with the zero reference signal provided by the gas filler to produce a signal proportional to concentration with little effect from interfering gases within the sample. The design produces zero and span stability and a high signal-to-noise ratio allowing sensitivity. The software gives real time indication of numerous operating parameters and provides automatic alarms if diagnostic limits are exceeded. Built-in data acquisition and internal memory allows logging of multiple parameters including average and instantaneous values, calibration data and operating parameters.

## 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 MC050069/08
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.

Certificate number: Sira MC050069/08  
This certificate issued: 21 December 2020