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CONFIRMATION

of Product Conformity (QAL1)

Approved AMS:	APMA-380 for CO
Manufacturer:	Horiba Europe GmbH Hans-Mess-Strasse 6 61440 Oberursel Germany
Test Institute::	TÜV Rheinland Energy & Environment GmbH

This is to certify that the AMS has been tested according to the standards

VDI 4202-1 (2018), EN 14626 (2012), EN 14626 (2024) as well as EN 15267-1 (2009) and EN 15267-2 (2023).

The AMS underwent independent expert testing and was accepted.
This confirmation is valid up to the publication of the certificate,
but no longer than 6 months from the date of issue
(this document contains 4 pages).

This confirmation is valid until: 30 April 2026

TÜV Rheinland Energy & Environment GmbH
Cologne, 4 July 2025

i. V. Dipl.-Ing. G. Baum

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Test institute accredited to EN ISO/IEC 17025 by DAkkS (German Accreditation Body).
This accreditation is limited to the accreditation scope defined in the enclosure to certificate D-PL-11120-02-00.

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Test Report:	EuL/21262682/A dated 7 February 2025
Expiry date:	30 April 2026

Approved application
The tested AMS is suitable for continuous immission measurement of CO in stationary use.

The suitability of the AMS for this application was assessed on the basis of a laboratory test and a three month field test.

The AMS is approved for an ambient temperature range of +0 °C to +40 °C.

The notification of suitability of the AMS, performance testing and the uncertainty calculation have been effected on the basis of the regulations applicable at the time of testing. As changes in legal provisions are possible, any potential user should ensure that this AMS is suitable for monitoring the measured values relevant to the application.

Any potential user should ensure, in consultation with the manufacturer, that this AMS is suitable for the intended purpose.

Note
The legal regulations mentioned do not correspond to the current state of legislation in every case. Each user should, if necessary, in consultation with the competent authority, ensure that this AMS meets the legal requirements for the intended use. In addition, it cannot be ruled out that legal regulations governing the use of a measuring device for emission monitoring may change during the lifetime of the certificate.

Basis of the confirmation
This confirmation is based on:

- Test report EuL/21262682/A dated 7 February 2025 issued by TÜV Rheinland Energy & Environment GmbH
- The ongoing surveillance of the product and the manufacturing process
- Expert testing and approval by an independent body

AMS designation:
APMA-380 for CO

Manufacturer:
Horiba Europe GmbH, Oberursel, Deutschland

Field of application:
For continuous ambient air monitoring of CO (stationary operation)

Measuring ranges during performance testing:

Component	Certification range	Unit
CO	0–100	mg/m³

Software version:

A7:	P2002638B	1.01
M4:	P2002642A	1.00
Analyzer:	P2002584B	1.02
FPGA:	P2002759A	1.01

Restrictions:
none

Notes:
1. The measuring system also fulfils the requirements of EN 14626:2024
2. The test report on the suitability test can be viewed on the Internet at www.qal1.de.

Test Institute:
TÜV Rheinland Energy & Environment GmbH, Cologne
Report No.: EuL/21262682/A dated 7 February 2025

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Tested product

This confirmation applies to automated measurement systems conforming to the following description:

The APMA-380 ambient air monitoring system is a continuous carbon monoxide analyser. The measuring principle is based on non-dispersive infrared photometry. The device was developed for the continuous measurement of carbon monoxide in ambient air

The measuring principle is based on the determination of light absorption by the gas to be measured in the wavelength ranges characteristic of the gas. The evaluation is carried out by measuring the absorption on the basis of the dependence between the gas concentration and the amount of absorbed light according to Lambert-Beer's law:

$$I = I_0 * e^{-(\alpha L c)}$$

I	Intensity with absorption
I_0	Light intensity without absorption
L	Path travelled by the light during absorption
c	Concentration of the absorbing gas, in this case CO
α	Absorption coefficient (this provides information about the degree of absorption)

The non-dispersive infrared absorption method (NDIR), which is the measuring principle of the APMA-380, utilises the property that CO absorbs infrared rays in a specific wavelength range. The CO concentration is measured by alternately introducing a sample gas and a reference gas that does not contain CO into the measuring cell in a constant cycle and amplifying the signal difference between the two gases. If no CO is present in the sample gas, there is no signal difference between the sample gas and the reference gas. Accordingly, the zero point is always stable and no zero point drift occurs. The detectors consist of a detector for measurement, which mainly measures CO, and a detector for interference correction, which mainly measures moisture, which is a component of the interference gas. The product is designed to obtain extremely accurate readings by using these two detectors for measurement and simultaneous interference correction.

Technical data APMA-380:

Measuring range:	Maximum 0-300 ppm (selectable)
Units:	ppm / mg/m³
Measured compounds:	Carbon monoxide
Sample flow:	approx. 1.5 litres/min (during the test)
Outputs:	Ethernet TCP/IP
	Modbus
	Serial interface, RS232
	0 - 1/5/10 Volt analogue
	4 - 20 mA analogue
	USB INTERFACE
Input voltage:	100 V to 240 V, 50 Hz or 60 Hz
Power: 90 W;	maximum 130 W
Dimensions (L x W x H):	568 x 430 x 221 mm
Weight:	approx. 16 kg