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CONFIRMATION

of Product Conformity (QAL1)

Approved AMS:	APNA-380 for NO, NO_2 and NO_x
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 14211 (2012), EN 14211 (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: 31 December 2025

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/31262682/B dated 7 February 2025

Expiry date: 31 December 2025

Approved application

The tested AMS is suitable for continuous immission measurement of NO, NO_2 and NO_x 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° 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/31262682/B 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:
APNA-380 for NO, NO_2 and NO_x

Manufacturer:
Horiba Europe GmbH, Oberursel, Deutschland

Field of application:
For the continuous determination of ambient air concentrations of nitrogen oxides in outdoor air in stationary use

Measuring ranges during performance testing:

Component	Certification range	Unit
NO	0 - 1.200	µg/m³
NO_2	0 - 500	µg/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 DIN EN 14211:2024
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/31262682/B dated 7 February 2025

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Tested product

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

The APNA-380 nitrogen oxide analyser determines the concentration of nitrogen oxide (NO), total nitrogen oxide (NO_x, the sum of NO and NO_2) and nitrogen dioxide (NO_2) in a sample drawn into the instrument.

The measuring principle is based on the detection of chemiluminescence occurring during the reaction of nitrogen oxide (NO) with ozone (O_3).
NOx chemiluminescence refers to the specific chemiluminescence reaction that occurs when nitrogen oxides (NO_x) are present in a sample gas and react with ozone (O_3). This reaction leads to the emission of light, which can be measured and used for quantitative analyses in various applications.

The chemiluminescence reaction with NOx and ozone can be summarised as follows:

Oxidation of NO to NO_2: NO reacts with ozone (O_3) in the presence of excess oxygen to form nitrogen dioxide (NO_2) and oxygen gas.

$$NO + O_3 \rightarrow NO_2^* + O_2$$

Energy transfer:
The electronically excited NO_2 molecules then undergo an energy transfer with other gas molecules or collision partners such as helium, which leads to the transfer of excess energy to these partners.

Light emission:
When the excited NO_2 molecule is de-excited, it emits excess energy in the form of light. The emitted light typically falls into the visible or near-infrared part of the electromagnetic spectrum.
By detecting and measuring the intensity of this chemiluminescent light, it is possible to quantify the concentration of NO_x in the sample gas.

Gerätetechnische Daten APNA-380:

Measuring range:	Maximum 0-20 ppm (selectable)
Units:	ppb / ppm / µg/m³ / mg/m³
Measured compounds:	Nitrogen oxides
Sample flow:	approx. 0.7 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:	140 W; maximum 190 W
Dimensions (L x W x H)	568 x 430 x 221 mm
Weight:	approx. 18 kg