TÜVRheinland®
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CONFIRMATION

of Product Conformity (QAL1)

Approved AMS:	ProCeas LaserCEM for CO, NO, NO_2, SO_2, HCl, HF, NH_3, CH_4, O_2 and H_2O
Manufacturer:	AP2E 110 Avenue Galilée 13593 Aix-en-Provence France
Test Institute::	TÜV Rheinland Energy & Environment GmbH

This is to certify that the AMS has been tested according to the standards EN 15267-1 (2009), EN 15267-2 (2009), EN 15267-3 (2007) as well as EN 14181 (2014).

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: 14 August 2024

TÜV Rheinland Energy & Environment GmbH
Cologne, 15 March 2024

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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.

Confirmation:
15 February 2024

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Test Report:	EuL/21250153/B dated 25 September 2023
Initial certification:	22 July 2019
Expiry date:	14 August 2024

Approved application
The tested AMS is suitable for use at plants according to Directive 2010/75/EC, chapter III (combustion plants / 13th BImSchV:2021), chapter IV (waste incineration plants / 17th BImSchV:2021), Directive 2015/2193/EC (44th BImSchV:2022), 30th BImSchV:2019 and TA Luft:2021. The measured ranges have been selected so as to ensure as broad a field of application as possible.

The suitability of the AMS for this application was assessed on the basis of a laboratory test, a six-month field test at a waste incineration plant and a six-month field test at a power plant with co-incineration of waste.

The AMS is approved for an ambient temperature range of +5 °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 emission limit values and oxygen concentration 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/21250153/B dated 25 September 2023
  issued by TÜV Rheinland Energy GmbH
- The ongoing surveillance of the product and the manufacturing process
- Expert testing and approval by an independent body
- Suitability announced by the relevant body.

AMS designation:
ProCeas LaserCEM for CO, NO, NH_3, O_2, H_2O, SO_2, HCl, HF, NO_2 and CH_4

Manufacturer:
AP2E, Aix-en-Provence, Frankreich

Field of application:
Modular measuring system for plants requiring official approval.

Measuring ranges during performance testing:

Component/ Modul	Certification range	additional range		Unit
CO	0 - 75	0 - 1,249	-	mg/m³
CO(L)	0 - 30	0 - 250	-	mg/m³
NO	0 - 78	0 - 150	0 - 2,008	mg/m³
NH_3	0 - 15	0 - 45	0 - 76	mg/m³
H_2O	0 - 30	0 - 40	-	Vol.-%
O_2	0 - 21	-	-	Vol.-%
SO_2	0 - 75	0 - 2,858	-	mg/m³
HCl	0 - 15	0 - 98	-	mg/m³
HF	0 - 1.5	0 - 10	-	mg/m³
NO_2	0 - 40	0 - 100	-	mg/m³
CH_4	0 - 5	0 - 20	-	mg/m³

Software version:
1.0.21 (SpectrumAnalyzer) or 3.0.8.85 (DataAnalyser)

Restrictions:
When using the NO component, the HCl concentration in the waste gas must not exceed 50 mg/m³.

Notes:
1. Wet test gases must be used when testing NH_3, HCl, HF and H_2O.
2. The maintenance interval is three months.
3. The maintenance work is to be distributed over several days in order to comply with the criteria for downtimes at plants according to the 13th BImSchV and 17th BImSchV.
4. Each measured component represents a module. Each module bears the name of the component measured with it. All modules can be combined in any way.
5. Supplementary test (extension of the maintenance interval, qualification of a new software generation and a QAL3-Tool, modification of the Cupboard back panel) with regard to the announcements of the Federal Environment Agency (UBA) of 24 February 2020 (BAnz AT 24.03.2020 B7, chapter I number 3.1) and of 5 July 2023 (BAnz AT 02.08.2023 B7, chapter I number 3.4.

Test Institute:
TÜV Rheinland Energy GmbH, Cologne
Report No.: EuL/21250153/B dated 25 September 2023

Tested product

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

The LaserCEM measuring device is a modular multi-component measuring device that operates at low pressure. The measuring principle is based on infrared laser spectroscopy. This combines a resonator enhanced absorption spectroscopy with optical feedback (OFCEAS; Optical Feedback Cavity Enhanced Absorption Spectroscopy) and a low pressure sampling technique (LPS).

The sample gas preparation consists of a heated CEM probe. Sampling here is via a critical nozzle and a 2-µm filter made of sintered stainless steel. A heated sample gas line equipped with a PTFE core is connected to the probe.

The measuring system tested here consists of:

- Gas sampling probe CEM with critical nozzle and 2 µm filter.
- Heated sample gas line, temperature 80 °C (self-regulating), inner diameter approx. 6 mm, material PFA, length max. 35 m
- Analytical cabinet with:
  - Analyzer modules LaserCEM
  - Sample gas hoses
  - Pump (vacuum)
  - interface module
  - Measurement outputs and various electrical components

With the exception of the heatable gas sampling probe and the heatable sample gas line, all components are located together with the electrical distribution and modules in a lockable measuring cabinet.

The measuring device is available in 2 different versions, which mainly differ in the size of the measuring cabinet. Due to the different heights of the cabinets, adjustments had to be made to the sample gas paths and other arrangements of components such as changeover valves for feeding dry test gases. In addition, the interface module for connecting dry test gases and the switchover options at the front have been expanded for the 38U design.

Optionally, the measuring system has a so-called QAL3 functionality, which allows all channels to be tested with a surrogate gas. For this purpose, a special test gas mixture (100 ppm CH4, 10 % by volume O2, remainder N2) and nitrogen must be connected to the measuring device. The measuring device then carries out a so-called QAL3 cycle at an adjustable interval.