

CONFIRMATION

of Product Conformity (QAL1)

AMS designation: CEMS II ef for CO, NO, NO₂, N₂O, SO₂, HCl, HF, NH₃, CO₂, H₂O, O₂, CH₄, CH₂O and total C

Manufacturer: Gaset Technologies Oy
Pulittitie 8 A 1
00880 Helsinki
Finland

Test Laboratory: TÜV Rheinland Energy GmbH


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

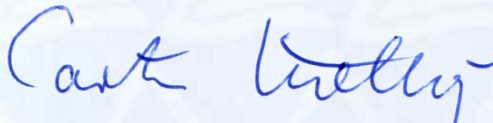
EN 15267-1 (2009), EN 15267-2 (2009), EN 15267-3 (2008) and EN 14181 (2015) as well as EN 14181 (2004)

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 5 pages).

Expiry date: 2 September 2018

TÜV Rheinland Energy GmbH
Cologne, 2 March 2018


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


i. A. Dipl.-Ing. C. Röllig

www.umwelt-tuv.eu
tre@umwelt-tuv.eu
Tel. +49 221 806-5200

TÜV Rheinland Energy GmbH
Am Grauen Stein
51105 Köln

Test institute accredited to EN ISO/IEC 17025:2005 by DAkkS (German Accreditation Body).
This accreditation is limited to the accreditation scope defined in the enclosure to the certificate D-PL-11120-02-00.

Test Report: 936/21225866/D dated 2 October 2017

Confirmation:
2 March 2018

Expiry date: 2 September 2018

Approved application

The tested AMS is suitable for use at combustion plants according to Directive 2010/75/EU, chapter III (13th BImSchV), at waste incineration plants according to Directive 2010/75/EU, chapter IV (17th BImSchV), the 27th BImSchV, TA Luft and other plants requiring official approval. The measured ranges have been selected so as to cater for 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 and a three-month field test at a waste incineration plant.

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 limit values relevant to the application.

Any potential user should ensure, in consultation with the manufacturer, that this AMS is suitable for the installation at which it will be installed.

Basis of the confirmation

This confirmation is based on:

- Test report 936/21225866/D dated 2 October 2017 issued by TÜV Rheinland Energy GmbH
- The ongoing surveillance of the product and the manufacturing process
- Expert testing and approval by an independent body

AMS designation:

CEMS II *ef* for CO, NO, NO₂, N₂O, SO₂, HCl, HF, NH₃, CO₂, H₂O, O₂, CH₄, CH₂O and total C

Manufacturer:

Gasmet Technologies Oy, Helsinki, Finland

Field of application:

For plants requiring official approval

Measuring ranges during performance testing:

Component	Certification range	Supplementary measuring ranges		Unit
CO	0–75	0–300	0–1 500	mg/m ³
NO	0–150	0–600	0–2 000	mg/m ³
NO ₂	0–200	0–500	-	mg/m ³
N ₂ O	0–100	0–500	-	mg/m ³
SO ₂	0–75	0–300	0–1 500	mg/m ³
HCl	0–15	0–90	-	mg/m ³
HF	0–3	0–10	-	mg/m ³
NH ₃	0–15	0–50	-	mg/m ³
O ₂	0–25	-	-	Vol.-%
CO ₂	0–25	-	-	Vol.-%
H ₂ O	0–30	0–40	-	Vol.-%
CH ₄	0–15	0–50	0–150	mg/m ³
CH ₂ O	0–20	0–30	0–90	mg/m ³
total C	0–15	0–500	-	mg/m ³

Software versions:

Calcmnet: 12.20 c/w evaluation module 4.42.2
OXITEC Ver. 1.50 np
Graphite 52M: v2.21 (Calculation Process), v3.1.b (Display Process)

Restrictions:

none

Notes:

1. The maintenance interval is four weeks.
2. Wet test gases should be used for testing HF, HCl, NH₃ and CH₂O.
3. After any plant failure, the sample probe needs to be cleaned.
4. The measuring system is available as variant A (air conditioning unit on top of the measuring rack) and as variant B (air conditioning unit at the back of the measuring rack).

Confirmation:
2 March 2018

5. For applications where O₂ is intended to be measured (optional), the OXITEC 500E SME 5 analyser manufactured by ENOTEC GmbH, Marienheide, Germany, is integrated.
6. The performance test covers the following versions of the AMS:

Rack version	FTIR	O ₂	FID
A	X		X
B	X		X
B	X	X	X

Test Report:

TÜV Rheinland Energy GmbH, Cologne

Report no. 936/21225866/D dated 2 October 2017

Tested product

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

The CEMS II *ef* measuring system comprises the following components:

1) Sampling

- Sampling probe: SP2000H manufactured by M & C, heated to 180 °C, c/w PTFE filter: 2 µm
- heated line: 180 °C c/w 4 mm Teflon hose, 25 m in length, (normally 5 to 30 m)
- Pump: heated to 180 °C, c/w Teflon membrane

2) Analysers

- FTIR: Gasmet CX-4000, cell temperature: 180 °C, cell length: 5 m, IR source: SiC,
- O₂: ZrO₂ measurement cell, OXITEC 500E SME 5 in a 19" slot (optional) manufactured by ENOTEC GmbH running OXITEC software Ver. 1.50 np
- Total C: Graphite 52M total C measuring system manufactured by Environnement running software componentsv2.21 (Calculation Process), v3.1.b (Display Process)

3) Evaluation system:

Standard industrial PC operating Windows 7 Ultimate 32bit
For the purpose of evaluating analyser spectra, spectra are sent to a PC via the RS232 interface where they are processed. The PC is also used for controlling and monitoring sampling and the sample gas flow rate of the analysers.

4) Software:

Calcmnet: 12.20 c/w evaluation module 4.42.2 Calcmnet version 12.19 may also be used.

5) Measuring cabinet

Temperature controlled at about 30°C

Sampling pump, control units, analysers, interface cards for the analogue inputs/outputs and PC.

The measuring rack is available as variant A (dimensions 212/61/70 cm, air conditioning unit on top of the measuring rack) and as variant B (dimensions 210x61x113 cm, air conditioning unit at the back of the measuring rack). Version A provides room for the FTIR and either the oxygen analyser or the FID analyser. The larger version B provides room for both the oxygen and the FID analyser. All other components are the same.

Rack version	FTIR	O ₂	FID
A	X		X
B	X		X
B	X	X	X

The current version of the operation manual is D1.14 dated 4 December 2017.