

CERTIFICATE

of Product Conformity (QAL1)

Certificate No: 0000038496_03

Certified AMS: QAL 181 for dust

Manufacturer: ENVEA UK Ltd. (PCME Ltd.)
ENVEA House, Rose & Crown Road
Swavesey / Cambridge CB24 4RB
United Kingdom

Test Institute: TÜV Rheinland Energy & Environment GmbH

**This is to certify that the AMS has been tested
and found to comply with the standards
EN 15267-1 (2009), EN 15267-2 (2023), EN 15267-3 (2007)
as well as EN 14181 (2014).**

Certification is awarded in respect of the conditions stated in this certificate
(this certificate contains 9 pages).
The present certificate replaces certificate 0000038496_02 dated 2 June 2021.



Suitability Tested
EN 15267
QAL1 Certified
Regular
Surveillance

www.tuv.com
ID 0000038496

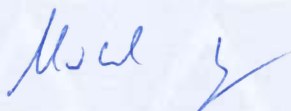
Publication in the German Federal Gazette
(BAnz) of 3 May 2021

German Environment Agency

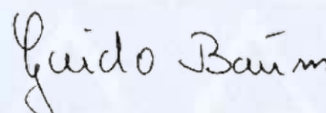
Dessau, 3 May 2026

This certificate will expire on:
2 May 2031

TÜV Rheinland
Energy & Environment GmbH
Cologne, 2 May 2026



Dr. Marcel Langner
Head of Section II 4



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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 the certificate D-PL-11120-02-00.

Test report:	936/21247872/A dated 11 September 2020
Initial certification:	5 March 2013
Expiry date:	2 May 2031
Certificate:	Renewal (of previous certificate 0000038496_02 of 2 June 2021 valid until 2 May 2026)
Publication:	BAnz AT 03.05.2021 B9, chapter I No. 1.1

Approved application

The tested AMS is suitable for use at plants according to Directive 2010/75/EC, chapter III (combustion plants / 13th BImSchV:2020), chapter IV (waste incineration plants / 17th BImSchV:2013), Directive 2015/2193/EC (44th BImSchV:2019), TA Luft:2002, 30th BImSchV:2019 and 27th BImSchV:2013. 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 and a ten-month field test at a waste incineration plant.

The AMS is approved for an ambient temperature range of -20 °C to +50 °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 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.

Note

The legal regulations mentioned correspond to the current state of legislation during certification. 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 certification

This certification is based on:

- Test report 936/21247872/A dated 11 September 2020 of TÜV Rheinland Energy GmbH
- Suitability announced by the German Federal Environment Agency (UBA) as the relevant body
- The ongoing surveillance of the product and the manufacturing process

Publication in the German Federal Gazette: BAnz AT 03.05.2021 B9, chapter I No. 1.1,
Announcement by UBA dated 31 March 2021:

AMS designation:

PCME QAL 181 for dust

Manufacturer:

ENVEA UK Ltd., Swavesey, UK

Field of application:

For measurements at plants requiring official approval and plants according to 27th
BImSchV

Measuring ranges during the performance test:

Component	Certification range	Supplementary measurement ranges			Unit
Dust	0 – 7.5	0 – 15	0 – 100	0 – 200	mg/m ³

Software versions:

Sensor Software	3.4
Optional Control Units:	
Interface Modul / MultiController:	9.04
ProController:	2.26
NetController:	1.04

Restrictions:

None

Notes:

1. The maintenance interval is three months.
2. The dust concentration is determined in wet flue gas under operational conditions.
3. Supplementary testing (lower certification range) as regards Federal Environment Agency (UBA) notices of 12 February 2013 (BAnz AT 05.03.2013 B10, chapter I number 1.1) and of 27 May 2020 (BAnz AT 31.07.2020 B10, chapter II notification 4).

Test Report: TÜV Rheinland Energy GmbH, Cologne

Report No.: 936/21247872/A dated 11 September 2020

Publication in the German Federal Gazette: BAnz AT 20.03.2023 B6, Chap. IV notification 19, Announcement by UBA dated 21 February 2023:

19 Notification as regards Federal Environment Agency (UBA) notice of 31 March 2021 (BAnz AT 03.05.2021 B9, chapter I number 1.1)

The current software versions of the PCME QAL 181 measuring system for dust from the company ENVEA UK Ltd. are:

Sensor Software: 3.4
Control units:
Interface Module/MultiController: 9.04
ProController: 2.27
netController: 1.04

Statement issued by TÜV Rheinland Energy GmbH dated 16 September 2022

Publication in the German Federal Gazette: BAnz AT 10.05.2024 B7, Chap. V notification 17, Announcement by UBA dated 19 March 2024:

17 Notification as regards Federal Environment Agency (UBA) notices of 31 March 2021 (BAnz AT 03.05.2021 B9, chapter I number 1.1) and of 21 February 2023 (BAnz AT 20.03.2023 B6, chapter IV notification 19)

The PCME QAL 181 measuring system for dust from ENVEA UK Ltd. can now also be fitted with a newly designed housing cover with embossed ENVEA design.

The optional control units, ProController and netController, for the measuring system can be fitted with an alternative Traco Power TPP 65-251 power supply unit.

Statement issued by TÜV Rheinland Energy GmbH dated 7 August 2023

Publication in the German Federal Gazette: BAnz AT 19.05.2025 B3, Chap. IV notification 49, Announcement by UBA dated 2 April 2025:

49 Notification as regards Federal Environment Agency (UBA) notices of 31 March 2021 (BAnz AT 03.05.2021 B9, chapter I number 1.1) and of 19 March 2024 (BAnz AT 10.05.2024 B7, chapter V notification 17)

The PCME QAL 181 measuring system for dust from ENVEA UK Ltd. now has the device name QAL 181.

The NetController control unit has a revised main circuit board. The new software version for the NetController control unit of the QAL 181 measuring system is as follows:

Controller Software 1.09

For the external reference filters (audit units) for the measuring system, which can be used for QAL3 activities, measuring system settings and linearity tests, Schott NEXTREMA glass-ceramic can now be used in addition to the OPALIKA material originally used.

Statement issued by TÜV Rheinland Energy & Environment GmbH
dated 20 December 2024

Certified product

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

The QAL 181 measuring system is a dust monitor which uses the scattered light principle (forward scattering) to determine dust concentrations.

The sensor probe is mounted directly at the waste gas duct. Particles entering the measurement flow at the end of the probe will scatter light emitted by the laser beam. The forward-scattered light cone is transmitted to the detector's electronics at the far end of the probe outside the waste gas duct via a quartz rod.

The instrument is continually supplied with purge air in order to prevent dust molecules from entering the instrument. The QAL 181 analyser is equipped with an automatic zero point check, a span point check and contamination checks. The control unit records results of these checks.

For span checks, a scattering body is automatically entered into the laser beam in order to test the sensor response to scattered light directly.

A "Pro-Scatter" audit unit, which is available optionally, is required for linearity tests of the instrument (AST and QAL2).

General notes

This certificate is based upon the equipment tested. The manufacturer is responsible for ensuring that on-going production complies with the requirements of the EN 15267. 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 systems shall be subject to regular surveillance.

If a product of the current production does not conform to the certified product, TÜV Rheinland Energy & Environment GmbH must be notified at the address given on page 1.

A certification mark with an ID-Number that is specific to the certified product is presented on page 1 of this certificate. This certification mark may be applied to the product or used in advertising materials for the certified product.

This document as well as the certification mark remains property of TÜV Rheinland Energy & Environment GmbH. With revocation of the publication the certificate loses its validity. After the expiration of the certificate and on requests of the TÜV Rheinland Energy & Environment GmbH this document shall be returned and the certificate mark must not be employed anymore.

The relevant version of this certificate and its expiration is also accessible on the internet: [**gal1.de**](http://gal1.de).

History of documents

Certification of QAL 181 is based on the documents listed below and the regular, continuous monitoring of the Quality Management System of the manufacturer:

Basic test

Test report: 936/21204255/A dated 7 July 2006
TÜV Rheinland Immissionsschutz und Energiesysteme GmbH
Publication: BAnz. 14 October 2006, No. 194, p. 6715, chapter I number 1.2
UBA announcement dated 12 September 2006

Notifications

Statement issued by TÜV Rheinland Immissionsschutz und Energiesysteme GmbH dated 10 October 2008
Publication: BAnz. 11 March 2009, No. 38, p. 899, chapter IV notification 11
UBA announcement dated 19 February 2009
(Changing system name)

Statement issued by TÜV Rheinland Immissionsschutz und Energiesysteme GmbH dated 31 March 2009
Publication: BAnz. 25 August 2009, No. 125, p. 2929, chapter III notification 14
UBA announcement dated 3 August 2009
(Software changes)

Statement issued by TÜV Rheinland Immissionsschutz und Energiesysteme GmbH dated 16 October 2009
Publication: BAnz. 12 February 2010, No. 24, p. 553, chapter IV notification 17
UBA announcement dated 25 January 2010
(Hardware changes)

Statement issued by TÜV Rheinland Energie und Umwelt GmbH dated 12 October 2011
Publication: BAnz. 02 March 2012, No. 36, p. 920, chapter V notification 9
UBA announcement dated 23 February 2012
(Soft- and hardware changes)

Initial certification according to EN 15267

Certificate No. 0000038496_00: 22 March 2013
Expiry date of the certificate: 4 March 2018
Test report: 936/21220334/A dated 28 September 2012
TÜV Rheinland Energie und Umwelt GmbH
Publication: BAnz AT 05.03.2013 B10, chapter I number 1.1
UBA announcement dated 12 February 2013

Notifications

Statement issued by TÜV Rheinland Energie und Umwelt GmbH dated 22 October 2015
Publication: BAnz AT 14.03.2016 B7, chapter V notification 25
UBA announcement dated 18 February 2016
(Software changes)

Renewal of certificates

Certificate No. 0000038496_01: 5 March 2018
Expiry date of the certificate: 4 March 2023

Notifications

Statement issued by TÜV Rheinland Energy GmbH dated 18 August 2017
Publication: BAnz AT 26.03.2018 B8, chapter V notification 31
UBA announcement dated 21 February 2018
(Software changes)

Statement issued by TÜV Rheinland Energy GmbH dated 2 October 2018
Publication: BAnz AT 26.03.2019 B7, chapter IV notification 48
UBA announcement dated 27 February 2019
(Software changes)

Statement issued by TÜV Rheinland Energy GmbH dated 4 December 2019
Publication: BAnz AT 24.03.2020 B7, chapter IV notification 40
UBA announcement dated 24 February 2020
(Various changes)

Statement issued by TÜV Rheinland Energy GmbH dated 11 March 2020
Publication: BAnz AT 31.07.2020 B10, chapter II notification 4
UBA announcement dated 27 May 2020
(Soft- and hardware changes)

Supplementary testing according to EN 15267

Certificate No. 0000038496_02: 2 June 2021
Expiry date of the certificate: 2 May 2026
Test report: 936/21247872/A dated 11 September 2020
TÜV Rheinland Energy GmbH
Publication: BAnz AT 03.05.2021 B9, chapter I number 1.1
UBA announcement dated 31 March 2021

Notifications

Statement issued by TÜV Rheinland Energy GmbH dated 16 September 2022
Publication: BAnz AT 20.03.2023 B6, chapter IV notification 19
UBA announcement dated 21 February 2023
(Software changes)

Statement issued by TÜV Rheinland Energy GmbH dated 7 August 2023
Publication: BAnz AT 10.05.2024 B7, chapter V notification 17
UBA announcement dated 19 March 2024
(Hardware changes)

Statement issued by TÜV Rheinland Energy & Environment GmbH
dated 20 December 2024
Publication: BAnz AT 19.05.2025 B3, chapter IV notification 49
UBA announcement dated 2 April 2025
(Soft- and hardware changes and system name change)

Renewal of certificates

Certificate No. 0000038496_03: 3 May 2026
Expiry date of the certificate: 2 May 2031

Calculation of overall uncertainty according to EN 14181 and EN 15267-3

Measuring system

Manufacturer	ENVEA UK Ltd.
AMS designation	PCME QAL 181
Serial number of units under test	70764 / 70765
Measuring principle	forward scatter

Test report

Test laboratory	936/21247872/A
Date of report	TÜV Rheinland 2020-09-11

Measured component

Certification range	Dust 0 - 7.5 mg/m ³
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Calculation of the combined standard uncertainty

Tested parameter

			u^2
Standard deviation from paired measurements under field conditions *	u_D	0.073 mg/m ³	0.005 (mg/m ³) ²
Lack of fit	u_{lof}	-0.040 mg/m ³	0.002 (mg/m ³) ²
Zero drift from field test	$u_{d,z}$	0.052 mg/m ³	0.003 (mg/m ³) ²
Span drift from field test	$u_{d,s}$	0.074 mg/m ³	0.005 (mg/m ³) ²
Influence of ambient temperature at span	u_t	0.055 mg/m ³	0.003 (mg/m ³) ²
Influence of supply voltage	u_v	0.006 mg/m ³	0.000 (mg/m ³) ²
Uncertainty of reference material at 70% of certification range	u_{rm}	0.061 mg/m ³	0.004 (mg/m ³) ²

* The larger value is used :
"Repeatability standard deviation at set point" or
"Standard deviation from paired measurements under field conditions"

Combined standard uncertainty (u_c)	$u_c = \sqrt{\sum (u_{max, j})^2}$	0.15 mg/m ³
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	0.29 mg/m ³

Relative total expanded uncertainty

Requirement of 2010/75/EU	U in % of the ELV 5 mg/m³	5.8
Requirement of EN 15267-3	U in % of the ELV 5 mg/m³	30.0
	U in % of the ELV 5 mg/m³	22.5