

CERTIFICATE

on Product Conformity (QAL1)

Number of Certificate: 0000035013

Certified AMS: PCME STACK 181 WS for dust

Manufacturer: PCME Ltd.
60 Edison Road
St. Yves
Cambs
PE273 GH
United Kingdom

Test Institute: TÜV Rheinland Energie und Umwelt GmbH

**This is to certify that the AMS has been tested
and found to comply with:**

**EN 15267-1: 2009, EN 15267-2: 2009, EN 15267-3: 2008
and EN 14181: 2004**

Certification is awarded in respect of the conditions stated in this certificate
(see also the following pages).



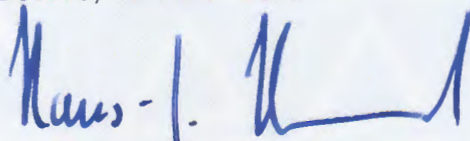
- EN 15267-3 tested
- QAL1 certified
- TUV approved
- Annual inspection

Publication in the German Federal Gazette
(BAnz.) of 02 March 2012

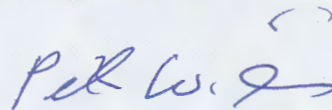
The certificate is valid until:
01 March 2017

Umweltbundesamt
Dessau, 16 March 2012

TÜV Rheinland Energie und Umwelt GmbH
Köln, 15 March 2012



i. A. Dr. Hans-Joachim Hummel



ppa. Dr. Peter Wilbring

www.umwelt-tuv.de / www.eco-tuv.com
teu@umwelt-tuv.de
Tel. +49 221 806-2756

TÜV Rheinland Energie und Umwelt GmbH
Am Grauen Stein
51105 Köln

Accreditation according to EN ISO/IEC 17025 and certified according to ISO 9001:2008.

Test report:	936/21216218/A of 14 October 2011
First certification:	02 March 2012
Validity ends:	01 March 2017
Publication:	BAnz. 02 March 2012, No. 36, p. 920, chapter I, No. 1.2

Approved application

The tested AMS is suitable for use at combustion plants according to EC directive 2001-80-EC, at waste incineration plants according to EC directive 2000-76-EC and other plants requiring official approval. The tested ranges have been chosen with respect to the wide application range of the AMS.

The suitability of the AMS for this application was assessed on the basis of a laboratory test and a three months field test at plant for thermal recycling of industrial solvents.

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

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 certification

This certification is based on:

- test report 936/21216218/A dated 14 October 2011 of TÜV Rheinland Energie und Umwelt GmbH
- suitability announced by the German Environmental Agency (UBA) as the relevant body
- the ongoing surveillance of the product and the manufacturing process
- publication in the German Federal Gazette (BAnz. 02 March 2012, No. 36, p. 920, chapter I, No. 1.2, announcement by UBA from 23 February 2012)

AMS name:

PCME STACK 181 WS for dust

Manufacturer:

PCME Ltd., St. Ives, Cambs, England

Field of application:

For measurements at plants requiring official approval (i. e. plants in 2000-76-EC, waste incineration directive and 2001-80-EC large combustion plants directive)

Measuring ranges during the suitability test:

Component	Certification range	Supplementary measurement ranges			Unit
Dust	0 - 15	0 - 7,5	0 - 30	0 - 100	SL

0 – 15 Scattered light units (SL) \triangleq 15 mg/m³ dust

Software versions:

Control Unit: 8.00

Wet Stack Monitor: 2.00

Restrictions:

None

Notes:

1. Dust concentration is measured in wet flue gas under operating conditions.
2. The maintenance interval is four weeks.

Test report:

TÜV Rheinland Energie und Umwelt GmbH, Köln

Report-No.: 936/21216218/A dated 14 October 2011

Certified product

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

The measuring system PCME STACK 181 WS is an extractive dust measuring system.

The complete system consists of the main unit, a scattered light sensor and a control unit. The PCME STACK WS 181 operates as a bypass system. The dust concentration is determined by the principle of scattered light measurement.

The system continuously takes samples of exhaust gas containing wet water drops, by creating a measuring flow over the PCME QAL 181 sensor head through an air current over an air hopper causing a pressure difference. From the exhaust gas a partly gas flow is sucked using a measuring gas probe. The sample gas flow is lead over a heat chamber, which causes the water drops to evaporate, which eliminates their influence on the dust measuring values. The temperature of the sample gas flow is approx. 280 °C.

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 Energie und Umwelt 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 can be applied to the product or used in publicity material for the certified product.

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

The relevant version of this certificate and the validity is also accessible on the internet Address: **qal1.de**.

Certification of PCME STACK 181 WS for dust is based on the documents listed below and the regular, continuous monitoring of the Quality Management System of the manufacturer:

Initial certification according to EN 15267

Certificate No. 0000035013: 16 March 2012

Validity of the certificate: 01 March 2017

Test report: 936/21216218/A of 14 October 2011
TÜV Rheinland Energie und Umwelt GmbH, Köln

Publication: BAnz. 02 March 2012, No. 36, p. 920, chapter I, No. 1.2:
Announcement by UBA from 23 February 2012

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

Measuring system

Manufacturer	PCME Ltd.
Name of measuring system	PCME STACK 181 WS
Serial number of the candidates	38654 / 38655
Measuring principle	Scattered light extractiv

Test report

Test laboratory	TÜV Rheinland
Date of report	2011-10-14

Measured component

Certification range	Staub	0 - 15 mg/m ³
---------------------	-------	--------------------------

Calculation of the combined standard uncertainty

Tested parameter

	u	u ²
Standard deviation from paired measurements under field conditions *	u _D 0.127 mg/m ³	0.016 (mg/m ³) ²
Lack of fit	u _{lof} 0.081 mg/m ³	0.007 (mg/m ³) ²
Zero drift from field test	u _{d,z} 0.130 mg/m ³	0.017 (mg/m ³) ²
Span drift from field test	u _{d,s} -0.217 mg/m ³	0.047 (mg/m ³) ²
Influence of ambient temperature at span	u _t 0.006 mg/m ³	0.000 (mg/m ³) ²
Influence of supply voltage	u _v 0.021 mg/m ³	0.000 (mg/m ³) ²
Influence of sample gas flow	u _p 0.078 mg/m ³	0.006 (mg/m ³) ²
Uncertainty of reference material at 70% of certification range	u _{rm} 0.121 mg/m ³	0.015 (mg/m ³) ²

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

Combined standard uncertainty (u _c)	$u_c = \sqrt{\sum (u_{max,j})^2}$	0.33 mg/m ³
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	0.64 mg/m ³

Relative total expanded uncertainty

Requirement of 2000/76/EC and 2001/80/EC	U in % of the ELV 10 mg/m³	6.4
Requirement of EN 15267-3	U in % of the ELV 10 mg/m ³	30.0
	U in % of the ELV 10 mg/m ³	22.5