Umwelt Bundesamt

TÜVRheinland®
Precisely Right.

CERTIFICATE

of Product Conformity (QAL1)

Certificate No.: 0000051689_01

AMS designation:	PM-1820 WS for dust
Manufacturer:	ENVEA 111, Boulevard Robespierre 78304 Poissy Cedex France
Test Laboratory:	TÜV Rheinland Energy 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 (2009), EN 15267-3 (2007) and EN 14181 (2004).

Certification is awarded in respect of the conditions stated in this certificate (this certificate contains 6 pages).
The present certificate replaces certificate 0000051689 of 19 August 2016.

TÜVRheinland® ZERTIFIZIERT

Suitability Tested
EN 15267
QAL1 Certified
Regular
Surveillance

www.tuv.com
ID 0000051689

Publication in the German Federal Gazette (BAnz) of 01 August 2016

This certificate will expire on:
31 July 2022

German Federal Environment Agency
Dessau, 31 July 2021

Dr. Marcel Langner
Head of Section II 4.1

TÜV Rheinland Energy GmbH
Cologne, 30 July 2021

ppa. Dr. Peter Wilbring

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TÜV Rheinland Energy GmbH
Am Grauen Stein
51105 Köln

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.

Test Report:	936/21232239/A of 12 February 2016
Initial certification:	01 August 2016
Expiry date:	31 July 2022
Certificate:	Renewal (of previous certificate 0000051689 of 19 August 2016 valid until 31 July 2021)
Publication:	BAnz AT 01.08.2016 B11, chapter I number 1.1

Approved application
The tested AMS is suitable for use at combustion plants according to Directive 2010/75/EU, chapter III (13th BImSchV), chapter IV (17th BImSchV), 30th BImSchV, plants in compliance with TA Luft and plants according to the 27th BImSchV. 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 three-month field test at a plant for the thermal recycling of industrial solvents.

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 limit values relevant to the application.

Any potential user should ensure, in consultation with the manufacturer, that this AMS is suitable for the intended purpose.

Basis of the certification
This certification is based on:

- Test report 936/21232239/A of 12 February 2016 by TÜV Rheinland Energie und Umwelt 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 01.08.2016 B11, chapter I number 1.1, UBA announcement of 14 July 2016:

AMS designation:
PM-1820 WS for dust

Manufacturer:
Environnement S.A., Poissy Cedex

Field of application:
For plants requiring official approval and for plants according to the 27th BImSchV

Measuring ranges during performance testing:

Component	Certification range	Supplementary measuring ranges			Unit
Dust	0 – 15	0 – 7.5	0 – 30	0 – 100	SL

0 - 15 scattered light units ≙ 15 mg/m³ dust

Software versions:
Controller Software: 8.45
Sensor Software: 2.06

Restrictions:
None

Notes:
1. The dust concentration is determined in wet flue gas under operational conditions.
2. The maintenance interval is four weeks.

Test Report:
TÜV Rheinland Energie und Umwelt GmbH, Cologne
Report no.: 936/21232239/A of 12 February 2016

Publication in the German Federal Gazette: BAnz AT 26.03.2019 B7, chapter IV 33rd notification, UBA announcement dated 27 February 2019:

33 Notification as regards Federal Environment Agency (UBA) notice of 14 July 2016 (BAnz AT 01.08.2016, chapter I number 1.1)

The current software versions of the measuring system PM-1820 WS for dust of the company Environnement S.A. are:

Controller Software: 9.04
Sensor Software: 2.13

Statement issued by TÜV Rheinland Energy GmbH dated 2 October 2018

Publication in the German Federal Gazette: BAnz AT 24.03.2020 B7, chapter IV 37th notification, UBA announcement dated 24 February 2020:

37 Notification as regards Federal Environment Agency (UBA) notices of 14 February 2016 (BAnz AT 01.08.2016, chapter I number 1.1) and of 27 February 2019 (BAnz AT 26.03.2019 B7, chapter IV 33rd notification)

The company Environnement S.A., Poissy, France, has changed its name and now operates under the name ENVEA.

The PM-1820 WS measuring system manufactured by ENVEA has remained otherwise unchanged.

Statement issued by TÜV Rheinland Energy GmbH dated 1 October 2019

Certified product
This certification applies to automated measurement systems conforming to the following description:

The measuring system PM-1820 WS is an extractive dust measuring system.

The complete system consists of the main unit, a scattered light sensor and a control unit. The PM-1820 WS works as a bypass system. The dust concentration is determined by the principle of scattered light measurement.

The system continuously samples moist exhaust gas containing water droplets by creating a mass flow over the PM-1820 WS sensor head using a pressure differential generated by air flow over an air funnel. A partial gas flow is extracted from the waste gas via a measuring gas probe. The sample gas flow is passed over a heating chamber, which evaporates the water droplets and thus eliminates their influence on the dust readings. The temperature of the sample gas stream is approximately 280 °C.

General remarks

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 manufacturing process for 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 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 document as well as the certification mark remains property of TÜV Rheinland Energy GmbH. Upon revocation of the publication the certificate loses its validity. After the expiration of the certificate and on request of TÜV Rheinland Energy GmbH this document shall be returned and the certificate mark must no longer be used.

The relevant version of this certificate and its expiration date are also accessible on the internet at **qal1.de**.

Document history

Certification of the PM-1820 WS measuring system is based on the documents listed below and the regular, continuous surveillance of the manufacturer's quality management system:

Initial certification according to EN 15267

Certificate no. 0000051689: 19 August 2016
Expiry date of the certificate: 31 July 2021
Test report 936/21232239/A of 12 February 2016
TÜV Rheinland Energie und Umwelt GmbH, Cologne
Publication: BAnz AT 01.08.2016 B11, chapter I number 1.1
UBA announcement dated 14 July 2016

Notifications in accordance with EN 15267

Statement issued by TÜV Rheinland Energy GmbH dated 2 October 2018
Publication: BAnz AT 26.03.2019 B7, chapter IV notification 33
UBA announcement dated 27 February 2019
(New software version)

Statement issued by TÜV Rheinland Energy GmbH dated 1 October 2019
Publication: BAnz AT 24.03.2020 B7, chapter IV notification 37
UBA announcement dated 24 February 2020
(New company name)

Renewal of the certificate

Certificate no. 0000051689_01: 31 July 2021
Expiry date of the certificate: 31 July 2022

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

Measuring system					
Manufacturer			Environnement S.A.		
Name of measuring system			PM-1820 WS		
Serial number of the candidates			38654 / 38655		
Measuring principle			Scattered light extractiv		
Test report			936/21216218A		
Test laboratory			TÜV Rheinland		
Date of report			2011-10-14		
Measured component			Dust		
Certification range			0 - 15	mg/m³	

Calculation of the combined standard uncertainty

Tested parameter		u		u²	
Standard deviation from paired measurements under field conditions *	u_D	0.127	mg/m³	0.016	(mg/m³)²
Lack of fit	u_{lof}	0.081	mg/m³	0.007	(mg/m³)²
Zero drift from field test	$u_{d,z}$	0.130	mg/m³	0.017	(mg/m³)²
Span drift from field test	$u_{d,s}$	-0.217	mg/m³	0.047	(mg/m³)²
Influence of ambient temperature at span	u_t	0.006	mg/m³	0.000	(mg/m³)²
Influence of supply voltage	u_v	0.021	mg/m³	0.000	(mg/m³)²
Influence of sample gas flow	u_D	0.078	mg/m³	0.006	(mg/m³)²
Uncertainty of reference material at 70% of certification range	u_{rm}	0.121	mg/m³	0.015	(mg/m³)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/m³
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	0.64	mg/m³

Relative total expanded uncertainty	**U in % of the ELV 10 mg/m³**	**6.4**
Requirement of 2010/75/EU	**U in % of the ELV 10 mg/m³**	**30.0**
Requirement of EN 15267-3	U in % of the ELV 10 mg/m³	22.5

The performance test was carried out with the identical measuring system PCME QAL 181 WS (previously: PCME STACK 181 WS) from PCME Ltd.