

# CERTIFICATE

## of Product Conformity (QAL1)

Certificate number: 0000051689

**Certified AMS:** PM-1820 WS for dust

**Manufacturer:** Environnement S.A.,  
111, Boulevard Robespierre  
78304 Poissy Cedex  
France

**Test Institute:** 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 (2007)  
and EN 14181 (2004)**

Certification is awarded in respect of the conditions stated in this certificate  
(this certificate contains 6 pages).

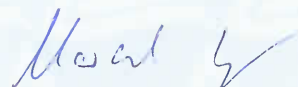


Suitability Tested  
EN 15267  
QAL1 Certified  
Regular  
Surveillance

www.tuv.com  
ID 0000051689

Publication in the German Federal Gazette  
(BAnz.) of 1 August 2016

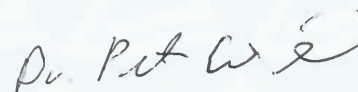
German Federal Environment Agency  
Dessau, 19 August 2016



Dr. Marcel Langner  
Head of Section II 4.1

This certificate will expire on:  
31 July 2021

TÜV Rheinland Energy GmbH  
Cologne, 18 August 2016



ppa. Dr. Peter Wilbring

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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

**Certificate:**  
0000051689 / 19 August 2016

**Test report:** 936/21232239/A of 12 February 2016  
**Initial certification:** 1 August 2016  
**Expiry date:** 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 (13. BImSchV), at waste incineration plants according to Directive 2010/75/EU, chapter IV (17. BImSchV) and other plants requiring official approval. The measured ranges have been selected considering 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.

The notification of suitability of the AMS, performance testing, and the uncertainty calculation have been effected on the basis of the regulations valid at the time of performance testing. As changes in legal regulations are possible, any potential user should ensure that this AMS is suitable for monitoring the limit value 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 certification**

This certification is based on:

- Test report 936/21232239/A of 12 February 2016 of 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: BAnz AT 01.08.2016 B11, chapter I number 1.1  
Announcement by UBA from 14 July 2016:

**AMS designation:**

PM-1820 WS for dust

**Manufacturer:**

Environnement S.A., Poissy Cedex

**Field of application:**

For measurements at plants requiring official approval and plants according to 27<sup>th</sup> BImSchV

**Measuring ranges during the suitability test:**

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

0 – 15 Scattered light units (SL)  $\hat{=}$  15 mg/m<sup>3</sup> dust

**Software version:**

Controller Software 8.45

Sensor Software 2.06

**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, Cologne

Report No.: 936/21232239/A of 12 February 2016

### **Certified product**

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

The measuring system PM-1820 WS for dust 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 operates as a bypass system. The dust concentration is determined by the principle of scattered light measurement.

The system continuously takes samples of wet exhaust gas containing water drops, by creating an air flow over the PM-1820 WS 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 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 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 Energy 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 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: [qal1.de](http://qal1.de).

Certification of PM-1820 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. 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  
Announcement by UBA from 14 July 2016

**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**

Test laboratory	936/21216218A
Date of report	TÜV Rheinland
	2011-10-14

**Measured component**

Certification range	Dust
	0 - 15 mg/m <sup>3</sup>

**Calculation of the combined standard uncertainty**

**Tested parameter**

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

\* The larger value is used :

"Repeatability standard deviation at span" or

"Standard deviation from paired measurements under field conditions"

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

**Relative total expanded uncertainty**

**Requirement of 2010/75/EU**

Requirement of EN 15267-3

<b>U in % of the ELV 10 mg/m<sup>3</sup></b>	<b>6.4</b>
<b>U in % of the ELV 10 mg/m<sup>3</sup></b>	<b>30.0</b>
U in % of the ELV 10 mg/m <sup>3</sup>	22.5

The performance test were carried out with the identical measuring device PCME QAL 181 WS (formerly: PCME STACK 181 WS) of PCME Ltd.