

# CERTIFICATE

## TUV Approved

Certificate number: 0000033291\_03

This certificate replaces certificate 0000033291\_02 dated 2017-07-03

---

<b>Manufacturer:</b>	FAI Instruments s.r.l. Via Aurora, 25 00013 Fonte Nuova (Roma), Italy
<b>Product:</b>	HYDRA Dual Sampler
<b>Components:</b>	PM <sub>10</sub> & PM <sub>2.5</sub>
<b>Test Report:</b>	936/21239764/A of 2017-06-29
<b>Valid until:</b>	2027-07-02

---

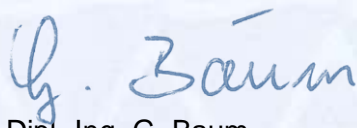
The HYDRA Dual Sampler  
complies with the  
European Standard EN 12341:2014 (PM10 & PM2.5)  
and can be used as a  
Standard / Reference Low Volume Sampler



Tested AMS  
Regular  
Surveillance

www.tuv.com  
ID 0000033291

Cologne, 2022-06-27



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



i.A. Dipl.-Chem. M. Kerpa

---

[www.umwelt-tuv.de](http://www.umwelt-tuv.de) / [www.eco-tuv.com](http://www.eco-tuv.com)  
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.

---

## Overview

In order to show compliance of HYDRA Dual Sampler to the requirements on standard sampler according to EN 12341:2014, the following test points have been investigated and assessed:

- 5.1.1 General, Table 1
- 5.1.2 Standard inlet design
- 5.1.3 Connecting pipe work
- 5.1.4 Filter holder and filter
- 5.1.5 Flow control system
- 5.1.6 Sampling period
- 5.1.7 Leak tightness of the sampling system
- 5.1.8 Storage conditions

The test has been performed as follows:

In 2010:

- Preparation of 1 complete HYDRA Dual Sampler incl. cabinet with cooling device for sampled filters to TUV
- Verification of compliance with the standard for all above mentioned points with traceable measurements (geometric design, flow rate...)
- Check of the efficiency of the ambient temperature compensation, with comparing the ambient and filter temperature at different ambient conditions – this test was performed in the climate chamber.
- Check, if the conditioning of the housing of the instrument can secure the required storage conditions for loaded filters at different ambient temperatures – this test was performed in the climate chamber.

In 2017:

- Performance of additional tests, which could not be derived from 2010 test work. These tests have been carried out with 1 complete HYDRA Dual Sampler at FAI Instruments s.r.l. premises in May 2017.

## Field of Application

The HYDRA Dual Sampler is suitable for continuous ambient air monitoring (stationary operation) as a standard / reference low volume sampler.

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

### Description of the AMS tested

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

The HYDRA Dual Sampler is an automatic and sequential device for dust monitoring on membrane filters. The system is operated with two entirely separate sampling lines. One sampling line can be operated with a PM<sub>10</sub> sampling inlet and the other with a PM<sub>2.5</sub> sampling inlet. Different configurations are possible. Ambient air is sucked via the PM<sub>10</sub> and PM<sub>2.5</sub> sampling inlet with the aid of two pumps. The dust-laden air is then separated by one filter each (1 x PM<sub>10</sub>, 1 x PM<sub>2.5</sub>). As the system is designed as a sequential system, a gravimetric weighing of the dusts on the filters is possible, and the filters can be used for additional analytical procedures such as the detection of heavy metals.

The HYDRA Dual Sampler comprises two sampling inlets (PM<sub>10</sub> & PM<sub>2.5</sub>, without mesh), two inlet tubes, two vacuum pumps, a measuring device, a compressor for compressed air generation and two filter magazines (loading and unloading device) for virgin and sampled filters.

The central unit of the HYDRA Dual Sampler comprises all servo-mechanical parts as well as the pneumatic measuring unit, and all electronic units and microprocessors for system operation, control, and monitoring. The operating panel and system display can be found on the front side of the HYDRA Dual Sampler, whereas all pneumatic and electric ports as well as the communication interfaces can be found on the back. The filter magazines and inlet tubes are installed to the upper side of the HYDRA Dual Sampler.

The current software version is: 02-30.01.18-30.03.00