TÜVRheinland®
Precisely Right.

# CONFIRMATION

## of Product Conformity (QAL1)

| | |
|---|---|
| **Approved AMS:** | LasIR HF-HCl-$H_2O$ for HF, HCl and $H_2O$ |
| **Manufacturer:** | Unisearch Associates<br>96 Bradwick Drive<br>Concord, Ontario / L4K 1K8<br>Canada |
| **Test Institute::** | TÜV Rheinland Energy & Environment GmbH |

**This is to certify that the AMS has been tested according to the standards**

**EN 15267-1 (2009), EN 15267-2 (2023), EN 15267-3 (2007) as well as EN 14181 (2014).**

The AMS underwent independent expert testing and was accepted.
This confirmation is valid up to the publication of the certificate,
but no longer than 6 months from the date of issue
(this document contains 4 pages).

**This confirmation is valid until: 15 November 2024**

TÜV Rheinland Energy & Environment GmbH
Cologne, 31 May 2024

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

i. A. Dipl.-Ing. C. Röllig


| | |
|---|---|
| **www.umwelt-tuv.eu**<br>tre@umwelt-tuv.eu<br>Tel. +49 221 806-5200 | TÜV Rheinland Energy & Environment GmbH<br>Am Grauen Stein<br>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.

**Confirmation:**
31 Mai 2024

TÜVRheinland®
Precisely Right.

**Test Report:** EuL/21257618/B dated 20 February 2023

**Expiry date:** 15 November 2024

**Approved application:**
The tested AMS is suitable for use at plants according to Directive 2010/75/EC, chapter III (combustion plants / 13th BImSchV:2021), chapter IV (waste incineration plants / 17th BImSchV:2021), Directive 2015/2193/EC (44th BImSchV:2021), 30th BImSchV:2019, TA Luft:2021 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 each a twelve-month field test on a waste incineration plant (HCl/H2O) and a plant for the production of aluminium by fused-salt electrolysis (HF).

The AMS is approved for an ambient temperature range of Analysatoren +5 °C to 40 °C and Measuring heads -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 intended purpose.

**Note:**
The legal regulations mentioned do not correspond to the current state of legislation in every case. 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 confirmation**
This confirmation is based on:

- Test report EuL/21257618/B dated 20 February 2023 issued by TÜV Rheinland Energy & Environment GmbH
- The ongoing surveillance of the product and the manufacturing process
- Expert testing and approval by an independent body

**AMS designation:**
LasIR HF-HCl-$H_2O$ for HF, HCl and $H_2O$

**Manufacturer:**
Unisearch Associates, Concord, Kanada

**Field of application:**
For plants requiring approval according to the 13th BImSchV, the 17th BImSchV, the 44th BImSchV, the 30th BImSchV, the TA-Luft as well as plants according to the 27th BImSchV

**Measuring ranges during performance testing:**

| Component | Certification range | Supplementary measuring ranges | | Unit |
|---|---|---|---|---|
| HF | 0 – 5* | 0 – 10* | 0 – 50* | mg/m³*m |
| HCl | 0 – 15* | 0 – 90* | - | mg/m³*m |
| $H_2O$ | 0 – 30* | 0 – 40* | 0 – 50* | Vol.-%*m |

* related to a measuring path length of 1.0 m

**Software version:**
4.96

**Restrictions:**
none

**Notes:**

1. The testing of HF and HCl can be carried out with dry test gases from pressurised gas cylinders and an unheated test gas cell.
2. The maintenance interval is six months.
3. The measuring system is operated with dual-pass optical units.
4. If the tested measuring path length of 1 m is exceeded, it must be checked on site when installing the measuring system whether the minimum requirement for cross-sensitivity according to DIN EN 15267-3 is still met.
5. The measuring system can also be operated with the FFTR option

**Test Institute:** TÜV Rheinland Energy & Environment GmbH, Cologne
Report No.: EuL/21257618/B dated 20 February 2024

TÜVRheinland®
Precisely Right.

## Tested product

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

The LasIR measuring system is based on the principle of light absorption of a tunable diode laser in the near infrared range. It is designed for the insitu measurement of HF (laser module 1) and HCl/$H_2O$ (laser module 2) in waste gas emissions. The core of the LasIR measuring system are the two laser diodes, which serve as a light source in the near infrared range. These diodes emit a light beam in a narrow but adjustable wavelength spectrum. The high spectral resolution and the adjustability of the laser diodes make it possible to measure the optical absorption of a single rotation/vibration line in the spectrum of the molecules to be measured. As a result, the gas under test is clearly identified and there is a high degree of differentiation from interfering gases.

The measuring system consists of the following components:

- LasIR control/analysis unit with 2 laser modules (HF & HCl/$H_2O$)
- Transmitter and receiver unit with purging device
- Reflector unit with flushing device
- Optical cables (between control/analysis unit and transmitter/receiver unit)
- Unheated test gas cell / sample gas cell (length 12.5 cm)
- Heated sample gas cell (length 1 m)