CERTIFICADO ◆ 인증서 ◆ CERTIFICATO ◆ 認証書 ◆ CERTIFICATE ◆ 认证证书 ◆ ZERTIFIKAT

Umwelt Bundesamt

Certificate number: 3448437-ts

Certificate

of product conformity (QAL 1)

Certificate number: 3448437-ts

AMS	Solar Cemnex for TOC
Manufacturer	Signal Group Ltd Standards House, Doman Road, Camberley, Surrey GU15 3DF United Kingdom
Test institute	TÜV SÜD Industrie Service GmbH

This is to certify that the AMS has been tested and found to comply with: DIN EN 15267-1:2009, DIN EN 15267-2:2023, DIN EN 15267-3:2024 and DIN EN 14181:2015.

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

DIN EN 15267 TÜV SÜD Eignungsprüfung Valid until 09-2031 Produktion überwacht

Certificate No.: 3448437-ts

Publication in the German Federal Gazette (BAnz) of 03.09.2026

Umweltbundesamt
Dessau, 07.09.2026

Dr. Marcel Langner
Head of Section II 4

This certificate will expire on: 02.09.2031

TÜV SÜD Industrie Service GmbH
Testing laboratory Emission measurement/ calibration
Munich, 04.09.2026

Simon Gerstlacher

TÜV®

Certificate No.: 3448437-ts

Test report	3448437_V2 from 10th October 2025
Initial certification	03.09.2026
Certificate validity until	02.09.2031 (5 Years)
Publication	BAnz AT 03.09.2026 B7, Chapter I, No. 1.1

Approved application

The tested AMS is suitable for use at plants requiring official approval according with Directive 2010/75/EU, chapter III (13. BImSchV:2021), with Directive 2010/75/EU chapter IV (17. BImSchV:2024), according with 30. BImSchV:2022, according with TA Luft:2021, as well as plants according with the 27. BImSchV:2013 and according with the Directive 2010/75/EU Chapter III Annex V (44. BImSchV:2021).

The suitability of the AMS for this application was assessed based on a laboratory test and a field test of the Solar Cemnex TOC measuring system lasting over three months at a plant according to Directive 2010/75/EU chapter IV (17. BImSchV).

The measuring system is approved for ambient temperatures between +5 °C to +40 °C.

The AMS publication, the suitability test and the performance of the uncertainty calculations were conducted based on the provisions valid at the time of testing. Due to possible amendments to legal foundations every user should ensure before use of the AMS that it is suitable for monitoring the applicable limit values.

The operator should consult the manufacturer to ensure that the AMS is suitable for the plant where it is being installed.

Note / Disclaimer

The legal provisions referenced do not necessarily reflect the current state of applicable legislation in all cases. Each user is responsible, where appropriate and in coordination with the competent authority, for ensuring that the AMS complies with the legal requirements applicable to its intended purpose. Furthermore, it cannot be excluded that the legal provisions governing the use of measuring equipment for emissions monitoring may change during the period of validity of the certificate.

Basis of the certification

This certificate is based on:

- TÜV SÜD Industrie Service GmbH test report 3448437_V2 from 10th October 2025
- Suitability announcement 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 03.09.2026 B7, Chapter I, No. 1.1, Announcement by UBA from 23.07.2026)

AMS: Solar Cemnex for TOC

Manufacturer: Signal Group Ltd, Camberley, United Kingdom

Suitability: For installations requiring a permit under the 13th BImSchV, the 17th BImSchV, the 30th BImSchV, TA Luft, as well as the 27th BImSchV and the 44th BImSchV.

Measurement ranges in the suitability test:

Component	Certification range	Supplementary measurement range	Unit
TOC	0 – 15	0 – 30	mg/m³

Software versions:

Analyzer: V1.530
Tablet GUI: V1.20

Restriction:

None

Notes:

1. The maintenance interval is eight days.
2. The AMS shall be adjusted at the zero point at intervals of 24 hours by the automatic calibration function.
3. Zero gas and combustion air shall be supplied via a connection to synthetic air (purity grade 5.0).
4. A hydrogen/helium mixture (40% H_2, 60% He) shall be used as the fuel gas.
5. The analog data output is provided as a voltage signal. For long cable runs, the signal should be checked for measurement distortions or inaccuracies caused by signal degradation.

Test report: TÜV SÜD Industrie Service GmbH, Munich

Report No.: 3448437_V2 from 10th October 2025

Certified product

The certificate applies to AMS that comply with the following description:

The entire tested TOC system Solar Cemnex consists of the sample gas extraction probe including PTFE-filter, heated sample line, temperature regulator for the heated line and the analyzer with a microcomputer and a detachable display connected via WLAN, as well as the valve box for switching between zero gas and test gas.

The Solar Cemnex detects organically bound carbon using a flame ionization detector (FID). For this purpose, the sample gas is supplied to the analyzer via a sample gas probe heated to 190 °C and a sample gas line with a PTFE hose, also heated to 190 °C. Sample gas transport is achieved with a heated pump with a controlled overpressure on the pump outlet side. For operation of the flame ionization detector, a hydrogen/helium mixture (grade 5.0) is additionally required as fuel gas, and synthetic air (grade 5.0) as combustion air.

The entire system consists of the following components:

Analyzer:

Manufacturer:	Signal Group Ltd
System:	Solar Cemnex
Software-Version:	Analyzer V1.530 Tablet GUI V1.20
Measurement principle:	Flame ionization detector

Probe

Manufacturer:	Signal Group Ltd
Type:	Heated pre-filter 363SM
Filter:	PTFE Filter, Carbon hydrogen free 3 µm; heated to 190 °C
Regulator:	in the probe head

Regulator for heated line

Manufacturer:	Signal Group Ltd
Type:	Temperature Controller 540

Heated line

Manufacturer:	Signal Group Ltd
Tube:	PTFE, ID ¼ inch (6,35 mm)
Temperature:	190 °C
Length:	20,0 m
Regulator:	external

Valve box for zero and span gas procedure

Manufacturer:	Signal Group Ltd
Type:	301XC

General notes

This certificate is based on the analyser tested. The manufacturer is responsible for the continuous compliance of the production to the DIN EN 15267 requirements. The manufacturer is required to maintain an approved quality management system to control the manufacture of the certified product. Regular monitoring must be conducted on both the product and the quality management systems.

If the product from the current production series no longer complies with the certified product, the Environmental Service Department of TÜV SÜD Industrie Service GmbH must be informed (address see footnote).

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 on the product or used in publicity material for the certified product.

This document and the certification mark shall remain the property of TÜV SÜD Industrie Service GmbH.

Should the publication be revoked, this certificate will become invalid. This document must be returned when the period of validity has elapsed and at the request of TÜV SÜD Industrie Service GmbH and the certification mark may no longer be used.

The current version of the certificate and its expiration is also accessible on the internet at **qal1.de**.

Document trail:

The certification of the measuring system Solar Cemnex is based on the following documents and the regular continuous monitoring of the manufacturer's quality management system:

Initial certification to DIN EN 15267:

Certificate No. 3448437-ts	03rd September 2026
Certificate validity until	02nd September 2031 (5 Years)

Test report: 3448437_V2 from 10.10.2025,
TÜV SÜD Industrie Service GmbH
Publication: BAnz AT 03.09.2026 B7, Chapter I, No. 1.1,
Announcement by UBA from 23.07.2026

Calculation of total uncertainty for the measuring system Solar Cemnex for QAL1 testing to DIN EN 14181 and DIN EN 15267-3

Total uncertainty for the measurement component TOC in the measurement range 0-15 mg/m³

Performance characteristic	*Uncertainty*	*Value standard uncertainty mg/m³*	*Square of standard uncertainty (mg/m³)²*
Lack-of-fit	u_{lof}	0,036	0,0013
Zero drift from field test	$u_{d,z}$	-0,217	0,0471
Span drift from field test	$u_{d,s}$	-0,208	0,0433
Influence of ambient temperature at span	u_t	0,279	0,0778
Influence of sample gas pressure	u_p		
Influence of sample gas flow	u_f	0,158	0,0250
Influence of supply voltage	u_v	0,146	0,0213
Cross-sensitivity (interference)	u_i	0,312	0,0973
Repeatability standard deviation at span	$u_r = s_r$	0,024	$u_r < u_d$
Standard deviation from paired measurements under field cond.	$u_d = s_d$	0,153	0,0234
Uncertainty of reference material 2 % by 70% of CR	u_{rm}	0,121	0,0147
Excursion of measurement beam	u_{mb}		
Converter efficiency for AMS measuring Nox / Hg	u_{ce}		
Response factors (TOC)	u_{rf}	0,000	0,0000
		Total	0,3512
Combined standard uncertainty	$u_c = \sqrt{\sum (u_i)^2}$	0,5926	mg/m³
Total expanded uncertainty	$U_{0,95} = 1,96 \times u_c$	1,1615	mg/m³
Relativ expanded uncertainty	U	**11,6**	% ELV
Permissible uncertainty of EN 15267-3	(of ELV 10 mg/m³)	**22,5**	% ELV
Complied with requirements relating to the measurement uncertainty		**yes**	regarding EN 15267-3
Permissible uncertainty 13. / 17. BImSchV	(of ELV 10 mg/m³)	**30**	% ELV
Complied with requirements relating to the measurement uncertainty		**yes**	regarding 13. / 17. BImSchV