

CERTIFICATE

of product conformity (QAL 1)

Certificate number: 3003564_01-ts

Certified AMS iFiD Rack for TOC**Manufacturer** Testa GmbH
Kathi-Kobus-Straße 15
80797 Munich
Germany**Test institute** TÜV SÜD Industrie Service GmbH

This is to certify that the AMS has been tested and found to comply with the standards
DIN EN 15267-1:2009, DIN EN 15267-2:2023, DIN EN 15267-3:2008 and
DIN EN 14181:2015.

Certification applies to the conditions listed in this certificate
(the certificate consists of 9 pages).

This certificate replaces certificate 3003564-ts dated
05 May 2021.



Certificate No.: 3003564_01-ts

Publication in the German Federal Gazette
(BAnz) of 03 May 2021**This certificate will expire on:**
02 May 2031Umweltbundesamt
Dessau, 30 April 2026TÜV SÜD Industrie Service GmbH
Testing laboratory emission measurement/
calibration
Munich, 29 April 2026
Dr. Marcel Langner
Head of Section II 4
Simon Gerstlacher

Certificate number: 3003564_01-ts

Test report	3003564 from 03 August 2020
Initial certification	03 May 2021
Certification validity until	02 May 2021 (5 years)
Certificate	Re-issuance (previous certificate No. 3003564-ts dated 05 May 2021, valid until 02 May 2026)
Publication	BAnz AT 03 May 2021 B9, chapter I, no. 2.1

Approved application

The tested AMS is suitable for use at plants requiring authorisation (13. BImSchV:2021, the 17. BImSchV:2024, the 30. BImSchV:2022 and the TA-Luft:2021) and plants in accordance with the 44. BImSchV:2021. The suitability for this application was assessed based on a laboratory test and a field test of the AMS iFiD Rack lasting over more than three months at plant according to Directive 2010/75/EU chapter IV (17. BImSchV). The measuring system is approved for ambient temperatures between +5 °C bis +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 values.

The operator should consult the manufacturer to ensure that the AMS is suitable for the plant at which it is to be installed.

Note / Disclaimer

The cited legal regulations do not necessarily reflect the current state of legislation at the time of certification in all cases. Each user should, if necessary and in coordination with the competent authority, ensure that this AMS meets the legal requirements for the intended purpose of use. Furthermore, it cannot be ruled out that legal regulations governing the use of a measuring device for monitoring emissions may change during the validity period of the certificate.

Certification basis

This certificate is based on:

- TÜV SÜD Industrie Service GmbH test report 3003564 from 03 August 2020
- Suitability announcement by the German Federal Environmental Agency as relevant body
- The ongoing surveillance of the product and the manufacturing process

Certificate number: 3003564_01-ts

- Publication in the German Federal Gazette (BAnz AT 03 May 2021 B9, chapter I, no. 2.1, UBA publication from 31 March 2021)

AMS: iFiD Rack for TOC

Manufacturer: Testa GmbH, Munich

Suitability: For plants requiring authorisation and plants in compliance with the 44. BImSchV

Measurement ranges in the suitability test:

Component	Certification range	Supplementary measurement ranges			Unit
		Measurement range 2	Measurement range 3	Measurement range 4	
TOC	0 – 15	0 – 30	0 – 150	0 – 500	mg/m ³

Software versions: Testa CE: 1.76
DGA: 2.0
I/O: 2.0
QPC: 2.0

Restrictions:

None

Notes:

- The maintenance interval is four weeks.
- The AMS should be aligned at an interval of 24 hours using the automatic alignment function at zero and span point.
- The provision with zero gas can be realised by connecting synthetic air (5.0) or by using the internal zero gas air treatment.

Test report: TÜV SÜD Industrie Service GmbH, Munich
Report no.: 3003564 from 03 August 2020

- Publication in the German Federal Gazette (BAnz AT 5 August 2021 B5, Chapter IV, Notification 54, UBA publication from 29 June 2021)

54 Notification regarding the announcement of the German Environment Agency dated 31 March 2021 (Federal Gazette BAnz AT 03 May 2021 B9, Chapter I, No. 2.1)

The current software version for the Testa CE software module of the iFiD Rack Total Carbon measuring system from Testa GmbH, Munich, is version 1.77.

Version Testa CE 1.76 may also be used.

Statement by TÜV SÜD Industrie Service GmbH dated 4 May 2021

Certificate number: 3003564_01-ts

- Publication in the German Federal Gazette (BAnz AT 20 March 2023 B6, Chapter IV, Notification 42, UBA publication from 21 February 2023)

42 Notification regarding the announcement of the German Environment Agency dated 31 March 2021 (BAnz AT 03.05.2021 B9, Chapter I Number 2.1) and from 29 June 2021 (BAnz AT 05 August 2021 B5, Chapter IV 54. Notification)

The iFiD Rack measuring system from Testa GmbH, Munich, for the measurement of TOC may alternatively be equipped with the following touch display and corresponding controller:

Touch display:

Manufacturer: Raspberry Pi Ltd.
Type: Raspberry Pi Touch Display 7"

Controller:

Manufacturer: Raspberry Pi Ltd.
Type: Raspberry Pi 4 Model B

For the use of the Raspberry Pi 4 Model B controller with the Raspberry Pi Touch Display 7", the software Testa Display 3.0 is used instead of Testa CE 1.77.

Statement by TÜV SÜD Industrie Service GmbH dated 31 August 2022

- Publication in the German Federal Gazette (BAnz AT 19 May 2025 B3, Chapter IV, Notification 42, UBA publication from 2 April 2025)

42 Notification regarding the announcement of the German Environment Agency dated 31 March 2021 (BAnz AT 03.05.2021 B9, Chapter I Number 2.1) and from 21 February 2023 (BAnz AT 20 March 2023 B6, Chapter IV 42. Notification)

The iFiD Rack measuring system from Testa GmbH, Munich, for the measurement of TOC, has been equipped since the manufacturing month January 2025 with plug connectors from HARTING Electronics GmbH for six-pin connectors and from Würth Elektronik eiSos GmbH & Co. KG for ten-pin connectors on the connection board (backplane).

For the iFiD Rack measuring system from Testa GmbH, Munich, for the measurement of TOC, deviations of the external control loops of ± 10 K from the setpoint result in the status "Malfunction" being output at the corresponding digital output and displayed on the screen as of the AMS manufactured from January 2025 on. For this functionality, software Testa Display 3.1 is required.

Statement by TÜV SÜD Industrie Service GmbH dated 29 August 2024

- Publication in the German Federal Gazette (BAnz AT 31 October 2025 B3, Chapter IV, Notification 34, UBA publication from 31 October 2025)

34 Notification regarding the announcement of the German Environment Agency dated 31 March 2021 (BAnz AT 03.05.2021 B9, Chapter I Number 2.1) and from 02 April 2025 (BAnz AT 03 May 2025 B6, Chapter IV 42. Notification)

The iFiD Rack measuring system from Testa GmbH, Munich, for the measurement of TOC can also be operated in the measuring range of 0–3000 mg/m³C.

Statement by TÜV SÜD Industrie Service GmbH dated 12 February 2025.

Certificate number: 3003564_01-ts

- Publication in the German Federal Gazette (BAnz AT 10 July 2026 B5, Chapter VI Notification 9, UBA publication from 18 May 2026)

9 Notification regarding the announcement of the German Environment Agency dated 31 March 2021 (BAnz AT 03.05.2021 B9, Chapter I Number 2.1) and from 2 April 2025 (BAnz AT 19 May 2025 B3, Chapter IV 42. Notification))

The iFiD Rack measuring system from Testa GmbH, Munich, for the measurement of TOC may alternatively be equipped with a heated ejector for sample gas conveyance.

As of the manufacturing month March 2026, the iFiD Rack measuring system from Testa GmbH, Munich, for the measurement of TOC is equipped with a surge protection device, type MSB6-400/LD, manufactured by CITEL Electronics GmbH, and a ferrite shielding, type WE 742 711 31, manufactured by Würth Elektronik, for protection against HF interference of the analog signal.

Statement by TÜV SÜD Industrie Service GmbH dated 20 October 2025.

Certified Product

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

The entire tested measuring system iFiD Rack consists of the sampling probe with titanium filter, the heated measurement gas line, the analyser with microcomputer and display.

The measuring system iFiD Rack detects organic bonded carbon by using a flame-ionisation-detector. For this the measurement gas is fed to the analyser over a sampling gas probe, heated to 180 °C and a sample gas line with PTFE seal, heated to 180 °C. The measurement gas feed is realized by means of an air-jet injector. For the operation of the flame ionisation detector, hydrogen (5.0) is additionally required as fuel gas and synthetic air (5.0) or ambient air, which is treated within the analyser by means of activated carbon and catalyst, as fuel air.

The entire system consists of the following components:

Analyser:

Manufacturer:	Testa GmbH
Type:	iFiD Rack
Software:	Testa CE: 1.76 DGA: 2.0 I/O: 2.0 QPC: 2.0
Measurement principle:	Flame-ionisation detector

Probe:

Manufacturer:	Testa GmbH
Type:	iFiD Filter
Filter:	Titanium filter 5 µm, heated at 180°C
Controller:	integrated in the analyser

Heated line:

Manufacturer:	Testa GmbH
Type:	iFiD Line
Heating temperature:	180°C
Diameter:	40 mm
Tube:	PTFE, 4 mm ID
Controller:	integrated in the analyser

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 Engineering 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 History:

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

Initial certification in accordance with DIN EN 15267:

Certificate no. 3003564-ts	03 May 2021
Certificate validity until	02 May 2026 (5 years)

Report no.: 3003564 from 03 August 2020,
TÜV SÜD Industrie Service GmbH
Publication: BAnz AT 03 May 2021 B9, chapter I no. 2.1,
UBA publication from 31 March 2021

Notification

Statement by TÜV SÜD Industrie Service GmbH dated 4 May 2021
Publication: Federal Gazette BAnz AT 05 August 2021 B5, Chapter IV, 54. Notification,
UBA publication dated 29 June 2021 (software modification)

Notification

Statement by TÜV SÜD Industrie Service GmbH dated 31 August 2022
Publication: Federal Gazette BAnz AT 20.03.2023 B6, Chapter IV, 42. Notification,
UBA publication dated 21 February 2023 (software modification, hardware modification)

Certificate number: 3003564_01-ts

Notification

Statement by TÜV SÜD Industrie Service GmbH dated 29 August 2024
Publication: Federal Gazette BAnz AT 19.05.2025 B3, Chapter IV, 42. Notification,
UBA publication dated 2 April 2025 (software modification, hardware modification)

Notification

Statement by TÜV SÜD Industrie Service GmbH dated 12 February 2025
Publication: Federal Gazette BAnz AT 31.10.2025 B5, Chapter IV, Notification 34,
UBA publication dated 31 October 2025 (additional measuring range)

Notification

Statement by TÜV SÜD Industrie Service GmbH dated 20 October 2025
Publication: Federal Gazette BAnz AT 10.07.2026 B5, Chapter VI, Notification 9,
UBA publication dated 18 May 2026 (alternative heated ejector; additional surge and HF protection)

Certificate re-issuance:

Certificate-No. 3299856_01-ts 03.05.2026
Certificate valid until 02.05.2031 (5 Years)

Calculation of total uncertainty for QAL1 testing according to DIN EN 14181 and DIN EN 15267-3 for the measuring system iFiD Rack

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

<i>Performance characteristic</i>	<i>Uncertainty</i>	<i>Value standard uncertainty mg/m³</i>	<i>Square of standard uncertainty (mg/m³)²</i>
Lack-of-fit	u_{lof}	0,036	0,0013
Zero drift from field test	$u_{d,z}$	-0,035	0,0012
Span drift from field test	$u_{d,s}$	0,165	0,0272
Influence of ambient temperature at span	u_t	0,041	0,0017
Influence of sample gas pressure	u_p		
Influence of sample gas flow	u_f	-0,083	0,0069
Influence of supply voltage	u_v	0,007	0
Cross-sensitivity (interference)	u_i	0,338	0,1142
Repeatability standard deviation at span	$u_r = s_r$	0,011	$u_r < du$
Standard deviation from paired measurements under field cond.	$u_d = s_d$	0,061	0,0037
Uncertainty of reference material 2 % by 70% of CR	u_{rm}	0,1212	0,0147
Excursion of measurement beam	u_{mb}		
Converter efficiency for AMS measuring NOx	u_{ce}		
Variation of response factors (TOC)	u_{rf}	0,205	0,042
		total	0,2129
Combined standard uncertainty	$u_c = \sqrt{\sum (u_i)^2}$	0,4614	mg/m ³
Total expanded uncertainty	$U_{0,95} = 1,96 \times u_c$	0,9043	mg/m ³
Relativ expanded uncertainty	U	9,0	% ELV
Permissible uncertainty of EN 15267-3	(of ELV 10 mg/m ³)	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/m ³)	30	% ELV
Complied with requirements relating to the measurement uncertainty		yes	regarding 13. / 17. BImSchV