

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

SET CEM CERT

Manufactured by:

Siemens AG

DE – 76181
Karlsruhe,
Germany

has been assessed by Sira Certification Service
and for the conditions stated on this certificate complies with:

**Environment Agency Guidance,
“MCERTS for stack emissions monitoring equipment at industrial installations”
- Continuous emissions monitoring systems (CEMS), Published 20 October 2020
EN 15267-1:2009, EN15267-2:2009, EN 15267-3:2007 & QAL 1 as defined in EN 14181: 2014**

Certification Ranges:

| | | | | | |
|--------------------------------------|--------------------------------|-------------------------|--------------------------|--------------------------|--------------------------|
| CO (mg/m ³) | ULTRAMAT 23 | 0 to 200 ⁽¹⁾ | 0 to 250 ⁽²⁾ | 0 to 1250 ⁽¹⁾ | |
| | ULTRAMAT 6 & ULTRAMAT/OXYMAT 6 | 0 to 75 | 0 to 1000 | | |
| NO _x (mg/m ³) | ULTRAMAT 23 | 0 to 150 ⁽¹⁾ | 0 to 230 ⁽¹⁾ | 0 to 400 ⁽²⁾ | 0 to 613 ⁽²⁾ |
| NO (mg/m ³) | SIPROCESS UV600 | 0 to 50 | | | |
| | ULTRAMAT 23 | 0 to 600 ⁽¹⁾ | | | |
| | ULTRAMAT 6 & ULTRAMAT/OXYMAT 6 | 0 to 100 | 0 to 1000 | | |
| NO ₂ (mg/m ³) | SIPROCESS UV600 | 0 to 50 | | | |
| | ULTRAMAT 23 | 0 to 50 ⁽³⁾ | 0 to 1000 ⁽³⁾ | | |
| SO ₂ (mg/m ³) | SIPROCESS UV600 | 0 to 75 | | | |
| | ULTRAMAT 6 & ULTRAMAT/OXYMAT 6 | 0 to 75 | | | |
| | ULTRAMAT 23 | 0 to 70 ⁽³⁾ | 0 to 75 ⁽³⁾ | 0 to 400 ⁽³⁾ | 0 to 1250 ⁽³⁾ |
| CO ₂ (Vol-%) | ULTRAMAT 23 | 0 to 25 ⁽¹⁾ | | | |
| | SIPROCESS GA700 ULTRAMAT 7 | 0 to 30 | | | |
| O ₂ *P (Vol-%) | ULTRAMAT 23 | 0 to 25 ⁽³⁾ | | | |
| | ULTRAMAT 6 & ULTRAMAT/OXYMAT 6 | 0 to 25 | | | |
| | SIPROCESS GA700 OXYMAT 7 | 0 to 25 | 0 to 5 | | |
| O ₂ *EC (Vol-%) | ULTRAMAT 23 | 0 to 25 ⁽³⁾ | | | |

(1) : refers to ULTRAMAT 23-7MB2355 and ULTRAMAT 23-7MB2357

(2) : refers to ULTRAMAT 23-7MB2358

(3) : refers to ULTRAMAT 23-7MB2355, ULTRAMAT 23-7MB2357 and ULTRAMAT 23-7MB2358

*P : refers to Paramagnetic

*EC : refers to Electro Chemical

Project No.: 80072538
Certificate No: MC160288/04
Initial Certification: 24 March 2016
This Certificate issued: 19 March 2021
Renewal Date: 23 March 2026



Andrew Young
Environmental Team Manager

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service

Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
Tel: +44 (0)1244 670 900



*The MCERTS certificate consists of this document in its entirety.
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Approved Site Application

Any potential user should ensure, in consultation with the manufacturer, that the monitoring system is suitable for the intended application. For general guidance on monitoring techniques refer to the Environment Agency Monitoring Technical Guidance Notes available at www.mcerts.net

On the basis of the assessment and the ranges required for compliance with EU Directives this instrument is considered suitable for use on waste incineration and large coal-fired combustion plant applications. This CEM has been proven suitable for its measuring task (parameter and composition of the flue gas) by use of the QAL 1 procedure specified in EN14181, for LCPD/IED Chapter III and IED Chapter IV applications for the ranges specified. The lowest certified range for each determinand shall not be more than 1.5X the daily average emission limit value (ELV) for IED Chapter IV applications, and not more than 2.5X the ELV for IED Chapter III and other types of application.

Two initial field trials were conducted over 4 months from 25.11.2014 until 18.03.2015 and from 15.04.2014 until 13.08.14, in clean gas in a waste combustion plant; the third field trial ran from 13.11.2015 to 24.5.2016. A fourth field trial was conducted on the ULTRAMAT 23 additional NO₂ and SO₂ ranges, and the SIPROCESS GA700 for CO₂ and O₂ on a waste combustion plant from 06.11.2018 to 13.02.2019.

Basis of Certification

This certification is based on the following Test Report(s) and on Sira's assessment and ongoing surveillance of the product and the manufacturing process:

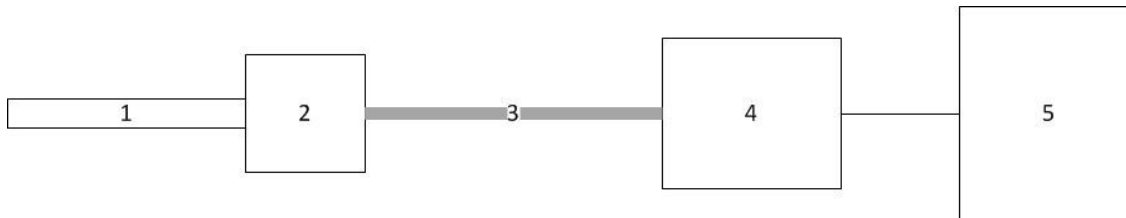
- TUV Report Number 2219424 – March 2015
- TUV Report Number 1797266 – September 2014
- TÜV Report Number 1630664-4a – February 2014
- TÜV Report Number 1630664-4b – February 2014
- TÜV Report Number 936/21230405/C – December 2016
- TÜV Report Number 936/21242490/AE – February 2019

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Product certified

The Set CEM CERT measuring system consists of the following parts:



| 1. Sample Probe | 2. Heated Filter | 3. Heated Sample Line | 4. Gas Conditioning | 5. Analyser |
|--|-------------------------------------|---|------------------------|---|
| Model: M&C SP2000-H with ceramic filter (180°C) | Model: N/A integrated into probe | Model: 4mm ID PTFE line heated to 180°C (50m field test) | Model: M&C CSS V1-S | Model: <ul style="list-style-type: none"> • ULTRAMAT 23-7MB2355 • ULTRAMAT 23-7MB2357 • ULTRAMAT 23-7MB2358 • SIPROCESS UV600 • ULTRAMAT 6 • OXYMAT 6 • ULTRAMAT OXYMAT 6 • SIPROCESS GA700 • ULTRAMAT 7 • SIPROCESS GA700 • OXYMAT 7 |
| Model: Buehler GAS 222.20 with ceramic filter (180°C) | - | - | Buehler EGK 2-19 | - |

Allowable variations could include:

- A different brand or model of sampling system of the same type, provided that there is evidence the alternative system works with similar types of CEM.
- Additional manifolds and heated valves used to allow more than one analyser to share a sampling system.

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This certificate applies to all instruments fitted with software version:

SIPROCESS UV600 – Software version: 9150883_3.003. onwards (Serial No: N1-C2-900101 onwards)

ULTRAMAT 23-7MB2355 – Software version: 2.15.05. onwards (Serial No: N1-E7-928 onwards)

ULTRAMAT 23-7MB2357 – Software version: 2.15.05 onwards (Serial No: N1-B5-208 onwards)

ULTRAMAT 23-7MB2358 – Software version: 2.15.05 onwards (Serial No: N1-E7-261 onwards)

ULTRAMAT 6 – Software version 4.8.5 onwards

OXYMAT 6 – Software version 4.8.5 onwards

ULTRAMAT OXYMAT 6 – Software versions 4.8.5 onwards

SIPROCESS GA700 Ultramat 7 – Software version CALC 1.40.03 / ADU 1.33.00 onwards (Serial no: N1JN000255 onwards)

SIPROCESS GA700 Oxymat 7 – software version CALC 1.40.05 / ADU 1.20.05 onwards (Serial no: N1JN000255 onwards)

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Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: +5°C to +40°C*
Instrument IP rating: IP40

*For use with the ULTRAMAT 23 (7MB2355, 7MB2357 and 7MB2358), the system needs to be equipped with an air conditioning unit.

Note: For outdoor installations the analyser needs to be mounted into an IP65 environment. If the instrument is supplied with an enclosure, then the ambient temperature shall be monitored inside the enclosure to ensure that it stays within the above ambient temperature range.

Results are expressed as error % of certification range, unless otherwise stated.

| Test | Results expressed as % of the certification range | | | | Other results | MCERTS specification |
|--|---|----|----|----|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| Response time | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | | | | | 37s | <200s |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | | | | | 74s | <200s |
| CO (ULTRAMAT 23) - (0 to 250mg/m ³) | | | | | 47s | <200s |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | | | | 30s | <200s |
| CO (ULTRAMAT 23) - (0 to 1250mg/m ³) | | | | | 38s | <200s |
| CO (ULTRAMAT 6) – (0 to 1250mg/m ³) | | | | | 37s | <200s |
| CO (ULTRAMAT 6) – (0 to 3000mg/m ³) | | | | | 45s | <200s |
| CO (ULTRAMAT 23) - (0 to 6000mg/m ³) | | | | | 34s | <200s |
| CO (ULTRAMAT 6) – (0 to 10,000mg/m ³) | | | | | 24s | <200s |
| NO _x (ULTRAMAT 23) – (0 to 400mg/m ³) | | | | | 50s | <200s |
| NO (SIPROCESS UV600) - (0 to 50mg/m ³) | | | | | 29s | <200s |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | | | | | 38s | <200s |
| NO (ULTRAMAT 23) - (0 to 150mg/m ³) | | | | | 53s | <200s |
| NO (SIPROCESS UV600) - (0 to 200mg/m ³) | | | | | 27s | <200s |
| NO (ULTRAMAT 23) – (0-400mg/m ³) | | | | | 48s | <200s |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | | | | | 49s | <200s |
| NO (ULTRAMAT 23) - (0 to 750mg/m ³) | | | | | 53s | <200s |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | | | | 37s | <200s |
| NO (ULTRAMAT 6) – (0 to 2000mg/m ³) | | | | | 35s | <200s |
| NO (SIPROCESS UV600) - (0 to 2000mg/m ³) | | | | | 31s | <200s |
| NO (ULTRAMAT 23) - (0 to 2000mg/m ³) | | | | | 59s | <200s |

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| Test | Results expressed as % of the certification range | | | | Other results | MCERTS specification |
|--|---|----|----|----|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| NO (ULTRAMAT 23) – (0 to 3000mg/m ³) | | | | | 41s | <200s |
| NO (ULTRAMAT 6) – (0 to 10,000mg/m ³) | | | | | 31s | <200s |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | | | | | 26s | <200s |
| NO ₂ (SIPROCESS UV600) – (0 to 500mg/m ³) | | | | | 23s | <200s |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | | | | | 55s | <200s |
| NO ₂ (ULTRAMAT 23) – (0 to 1000mg/m ³) | | | | | 61s | <200s |
| SO ₂ (ULTRAMAT 6) – (0 to 75mg/m ³) | | | | | 55s | <200s |
| SO ₂ (SIPROCESS UV600) – (0 to 75mg/m ³) | | | | | 54s | <200s |
| SO ₂ (SIPROCESS UV600) – (0 to 130mg/m ³) | | | | | 58s | <200s |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | | | | | 58s | <200s |
| SO ₂ (ULTRAMAT 23) – (0 to 75mg/m ³) | | | | | 56s | <200s |
| SO ₂ (ULTRAMAT 23) – (0 to 400mg/m ³) | | | | | 187s | <200s |
| SO ₂ (ULTRAMAT 23) – (0 to 1250mg/m ³) | | | | | 53s | <200s |
| SO ₂ (ULTRAMAT 6) – (0 to 1500mg/m ³) | | | | | 51s | <200s |
| SO ₂ (ULTRAMAT 23) – (0 to 2000mg/m ³) | | | | | 146s | <200s |
| SO ₂ (ULTRAMAT 23) – (0 to 7000mg/m ³) | | | | | 136s | <200s |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | | | | | 30s | <200s |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | | | | | 15s | <200s |
| O ₂ (OXYMAT 6) - (0 to 5 Vol-%) | | | | | 21s | <200s |
| O ₂ (ULTRAMAT 23) - (0 to 5 Vol-%) | | | | | 46s | <200s |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | | | | | 57s | <200s |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | | | | | 25s | <200s |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | | | | | 18s | <200s |
| O ₂ (SIPROCESS GA700) - (0 to 5 Vol-%) | | | | | 15s | <200s |
| Repeatability standard deviation at zero point | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | 0.1 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | 0.23 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | 0.04 | | | | | <2.0% |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | 0.1 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 1250mg/m ³) | 0.03 | | | | | <2.0% |

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|---|---|----|----|----|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| NO (SIPROCESS UV600) – (0 to 50mg/m ³) | 0.23 | | | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | 0.4 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | 0.31 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | 0.06 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | 0.04 | | | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | 0.1 | | | | | <2.0% |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | 0.04 | | | | | <2.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | 0.0 | | | | | <2.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 75mg/m ³) | 0.07 | | | | | <2.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 75mg/m ³) | 0.4 | | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | 0.0 | | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 400mg/m ³) | 0.20 | | | | | <2.0% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.04 | | | | | <2.0% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | 0.0 | | | | | <2.0% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.02 | | | | | <0.2% |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | 0.01 | | | | | <0.2% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | 0.02 | | | | | <0.2% |
| Repeatability standard deviation at reference point | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | 0.1 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | 0.05 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | 0.04 | | | | | <2.0% |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | 0.1 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 1250mg/m ³) | 0.1 | | | | | <2.0% |
| NO (SIPROCESS UV600) – (0 to 50mg/m ³) | 0.45 | | | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | 0.4 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | 0.22 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | 0.06 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | 0.1 | | | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | 0.3 | | | | | <2.0% |

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|--|---|-------|-------|----|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | 0.11 | | | | | <2.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | 0.1 | | | | | <2.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 75 mg/m ³) | 0.32 | | | | | <2.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 75mg/m ³) | 0.4 | | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | 0.1 | | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 400 mg/m ³) | 0.20 | | | | | <2.0% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.1 | | | | | <2.0% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | 0.0 | | | | | <2.0% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.02 | | | | | <0.2% |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | 0.05 | | | | | <0.2% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | 0.01 | | | | | <0.2% |
| Lack-of-fit | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | | 0.53 | | | | <2.0% |
| CO (ULTRAMAT 23) - (0 to 200mg/m ³) | -0.22 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | 0.47 | | | | | <2.0% |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | -0.30 | | | | | <2.0% |
| CO (ULTRAMAT 23) - (0 to 1250mg/m ³) | 0.48 | | | | | <2.0% |
| CO (ULTRAMAT 6) – (0 to 1250mg/m ³) | | 0.56 | | | | <2.0% |
| CO (ULTRAMAT 6) – (0 to 3000mg/m ³) | | 0.50 | | | | <2.0% |
| CO (ULTRAMAT 23) - (0 to 6000mg/m ³) | -0.35 | | | | | <2.0% |
| CO (ULTRAMAT 6) – (0 to 10,000mg/m ³) | -0.24 | | | | | <2.0% |
| NO _x (ULTRAMAT 23) – (0 to 400mg/m ³) | 0.26 | | | | | <2.0% |
| NO (SIPROCESS UV600) - (0 to 50mg/m ³) | | -0.51 | | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | | | -1.60 | | | <2.0% |
| NO (ULTRAMAT 23) - (0 to 150mg/m ³) | | -0.83 | | | | <2.0% |
| NO (SIPROCESS UV600) - (0 to 200mg/m ³) | 0.42 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | -0.17 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | | 0.50 | | | | <2.0% |
| NO (ULTRAMAT 23) - (0 to 750mg/m ³) | | -0.51 | | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | 0.70 | | | | <2.0% |

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| | <0.5 | <1 | <2 | <5 | | |
| NO (ULTRAMAT 6) – (0 to 2000mg/m ³) | -0.45 | | | | | <2.0% |
| NO (SIPROCESS UV600) - (0 to 2000mg/m ³) | -0.44 | | | | | <2.0% |
| NO (ULTRAMAT 23) - (0 to 2000mg/m ³) | -0.20 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 3000mg/m ³) | -0.30 | | | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 10,000mg/m ³) | 0.24 | | | | | <2.0% |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | | 0.97 | | | | <2.0% |
| NO ₂ (SIPROCESS UV600) – (0 to 500mg/m ³) | 0.32 | | | | | <2.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | | | 1.2 | | | <2.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 1000mg/m ³) | -0.50 | | | | | <2.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 75mg/m ³) | | | -1.47 | | | <2.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 75mg/m ³) | | 0.93 | | | | <2.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 130mg/m ³) | | 0.81 | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | | 0.57 | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 75mg/m ³) | | 0.53 | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 400mg/m ³) | | 0.91 | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 1250mg/m ³) | | -0.56 | | | | <2.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 1500mg/m ³) | 0.47 | | | | | <2.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 2000mg/m ³) | | 0.95 | | | | <2.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 7000mg/m ³) | -0.41 | | | | | <2.0% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.40 | | | | | <2.0% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | | | 1.67 | | | <2.0% |
| O ₂ (OXYMAT 6) - (0 to 5 Vol-%) | -0.02 | | | | | <0.2% |
| O ₂ (ULTRAMAT 23) - (0 to 5 Vol-%) | 0.03 | | | | | <0.2% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.10 | | | | | <0.2% |
| O ₂ (ULTRAMAT 6) - (0 to 25 Vol-%) | 0.02 | | | | | <0.2% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | 0.10 | | | | | <0.2% |
| O ₂ (SIPROCESS GA700) - (0 to 5 Vol-%) | 0.02 | | | | | <0.2% |

Certificate No: MC160288/04
 This Certificate issued: 19 March 2021

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| Test | Results expressed as % of the certification range | | | | Other results | MCERTS specification |
|--|---|-----|------|-------|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| Influence of ambient temperature zero point (+5°C to +40°C) | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | | | | 2.1 | | <5.0% |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | 0.1 | | | | | <5.0% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | -0.3 | | | | | <5.0% |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | | 1.1 | | | <5.0% |
| CO (ULTRAMAT 23) – (0 to 1250mg/m ³) | | 0.9 | | | | <5.0% |
| NO (SIPROCESS UV600) – (0 to 50mg/m ³) | -0.33 | | | | | <5.0% |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | | | 1.8 | | | <5.0% |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | 0.4 | | | | | <5.0% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | -0.2 | | | | | <5.0% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | | | -1.8 | | | <5.0% |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | 0.9 | | | | <5.0% |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | | | 1.81 | | | <5.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | 0.2 | | | | | <5.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 75mg/m ³) | | | | -2.42 | | <5.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 75mg/m ³) | | | | 3.3 | | <5.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | -0.2 | | | | | <5.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 400mg/m ³) | | | | -2.40 | | <5.0% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.2 | | | | | <5.0% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | 0.0 | | | | | <5.0% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | -0.08 | | | | | <0.5% |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | -0.08 | | | | | <0.5% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | -0.10 | | | | | <0.5% |
| Influence of ambient temperature reference point (+5°C to +40°C) | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | | | | 2.1 | | <5.0% |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | | 0.6 | | | | <5.0% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | 0.13 | | | | | <5.0% |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | | 1.1 | | | <5.0% |

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| Test | Results expressed as % of the certification range | | | | Other results | MCERTS specification |
|---|---|------|------|------|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| CO (ULTRAMAT 23) – (0 to 1250mg/m ³) | | | 1.5 | | | <5.0% |
| NO (SIPROCESS UV 600) – (0 to 50mg/m ³) | 0.16 | | | | | <5.0% |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | | | -1.6 | | | <5.0% |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | | 0.7 | | | | <5.0% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | -0.08 | | | | | <5.0% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | | | | -2.3 | | <5.0% |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | | 1.3 | | | <5.0% |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | | | | 2.37 | | <5.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | | | 1.8 | | | <5.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 75mg/m ³) | | | | 3.87 | | <5.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 75mg/m ³) | | | | 3.3 | | <5.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | | | -1.9 | | | <5.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 400 mg/m ³) | -0.23 | | | | | <5.0% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | | | | 2.0 | | <5.0% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | | -1.0 | | | | <5.0% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.21 | | | | | <0.5% |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | -0.15 | | | | | <0.5% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | -0.24 | | | | | <0.5% |
| Influence of sample gas flow for extractive CEMS (zero) | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | 0.1 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | 0.09 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | 0.13 | | | | | <2.0% |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | 0.1 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 1250mg/m ³) | -0.1 | | | | | <2.0% |
| NO (SIPROCESS UV600) – (0 to 50mg/m ³) | 0.14 | | | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | 0.2 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | 0.36 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | -0.08 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | 0.1 | | | | | <2.0% |

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| Test | Results expressed as % of the certification range | | | | Other results | MCERTS specification |
|---|---|-------|----|----|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | -0.1 | | | | | <2.0% |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | 0.06 | | | | | <2.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | 0.1 | | | | | <2.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 75mg/m ³) | -0.23 | | | | | <2.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 75mg/m ³) | 0.0 | | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | 0.0 | | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 400mg/m ³) | -0.23 | | | | | <2.0% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.0 | | | | | <2.0% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | 0.0 | | | | | <2.0% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.02 | | | | | <0.2% |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | 0.0 | | | | | <0.2% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | 0.04 | | | | | <0.2% |
| Influence of sample gas flow for extractive CEMS (reference) | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | -0.3 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | -0.09 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | -0.21 | | | | | <2.0% |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | 0.2 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 1250mg/m ³) | -0.2 | | | | | <2.0% |
| NO (SIPROCESS UV600) – (0 to 50mg/m ³) | -0.47 | | | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | -0.2 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | 0.44 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | | -0.7 | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | 0.2 | | | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | -0.1 | | | | | <2.0% |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | -0.26 | | | | | <2.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | -0.2 | | | | | <2.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 75mg/m ³) | | -0.61 | | | | <2.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 75 mg/m ³) | -0.3 | | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | 0.1 | | | | | <2.0% |

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| Test | Results expressed as % of the certification range | | | | Other results | MCERTS specification |
|---|---|-------|-------|----|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| SO ₂ (ULTRAMAT 23) – (0 to 400mg/m ³) | | | -1.0 | | | <2.0% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.0 | | | | | <2.0% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | 0.0 | | | | | <2.0% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.0 | | | | | <0.2% |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | 0.0 | | | | | <0.2% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | 0.0 | | | | | <0.2% |
| Influence of voltage variations (zero) (196V to 253V) | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | 0.1 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | | -0.71 | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | | | -1.1 | | | <2.0% |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | 0.1 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 1250mg/m ³) | 0.2 | | | | | <2.0% |
| NO (SIPROCESS UV600) – (0 to 50mg/m ³) | 0.44 | | | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | -0.4 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | | | -1.21 | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | | -0.7 | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | 0.2 | | | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | -0.6 | | | | <2.0% |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | 0.15 | | | | | <2.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | 0.1 | | | | | <2.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 75mg/m ³) | -0.17 | | | | | <2.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 75mg/m ³) | | | 1.0 | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | 0.1 | | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 400 mg/m ³) | | | -1.0 | | | <2.0% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | -0.1 | | | | | <2.0% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | 0.0 | | | | | <2.0% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | -0.03 | | | | | <0.2% |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | -0.03 | | | | | <0.2% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | 0.01 | | | | | <0.2% |

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|---|---|-------|-------|----|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| Influence of voltage variations (reference) (196V to 253V) | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | 0.1 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | | -0.73 | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | | | -1.0 | | | <2.0% |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | 0.1 | | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 1250mg/m ³) | 0.0 | | | | | <2.0% |
| NO (SIPROCESS UV600) – (0 to 50mg/m ³) | -0.46 | | | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | 0.4 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | | | -1.83 | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | | | 1.4 | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | 0.2 | | | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | -0.5 | | | | <2.0% |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | | -0.81 | | | | <2.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | 0.1 | | | | | <2.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 75mg/m ³) | | 0.6 | | | | <2.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 75mg/m ³) | | 0.8 | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | 0.1 | | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 400mg/m ³) | | | 1.2 | | | <2.0% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.1 | | | | | <2.0% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | 0.0 | | | | | <2.0% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.01 | | | | | <0.2% |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | 0.05 | | | | | <0.2% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | 0.01 | | | | | <0.2% |
| Influence of vibration | | | | | No effect | To be reported |
| Cross-sensitivity at zero with interferents: O ₂ , H ₂ O, CO, CO ₂ , CH ₄ , N ₂ O, NO, NO ₂ , NH ₃ , SO ₂ , HCl | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | | 0.53 | | | | <4.0% |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | | | 1.60 | | | <4.0% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | | | 1.50 | | | <4.0% |

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|--|---|------|-------|-------|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| NO (SIPROCESS UV600) – (0 to 50mg/m ³) | | | | 2.42 | | <4.0% |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | | | | 3.06 | | <4.0% |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | | | | -4.00 | | <4.0% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | | | 1.40 | | | <4.0% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | | | 1.17 | | | <4.0% |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | 0.33 | | | | | <4.0% |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | | | | 2.29 | | <4.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | | | | 3.22 | | <4.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 75mg/m ³) | | | | 3.67 | | <4.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 75mg/m ³) | | | | 2.67 | | <4.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | | | | 3.27 | | <4.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 400mg/m ³) | | | | -2.00 | | <4.0% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.0 | | | | | <4.0% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | 0.0 | | | | | <4.0% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.28 | | | | | <0.4% |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | 0.24 | | | | | <0.4% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | 0.0 | | | | | <0.4% |
| Cross-sensitivity at reference with interferents: O ₂ , H ₂ O, CO, CO ₂ , CH ₄ , N ₂ O, NO, NO ₂ , NH ₃ , SO ₂ , HCl | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | | | 1.33 | | | <4.0% |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | | | 1.73 | | | <4.0% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | | 0.8 | | | | <4.0% |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | 0.86 | | | | <4.0% |
| CO (ULTRAMAT 23) – (0 to 1250mg/m ³) | | | -1.87 | | | <4.0% |
| NO (SIPROCESS UV600) – (0 to 50mg/m ³) | | | | 3.35 | | <4.0% |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | | | | 3.20 | | <4.0% |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | | | | 3.33 | | <4.0% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | | | | -3.00 | | <4.0% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | | | | -2.84 | | <4.0% |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | | | 3.31 | | <4.0% |

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|---|---|----|-------|-------|---|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | | | | -3.69 | | <4.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | | | -1.4 | | | <4.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 75mg/m ³) | | | | -2.13 | | <4.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 75mg/m ³) | | | | -3.73 | | <4.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | | | | -3.00 | | <4.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 400mg/m ³) | | | | 3.00 | | <4.0% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | | | -1.20 | | | <4.0% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | | | 1.34 | | | <4.0% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.32 | | | | | <0.4% |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | 0.2 | | | | | <0.4% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | 0.0 | | | | | <0.4% |
| Convertor efficiency for NO _x | | | | | 95.1% | >95% |
| Measurement uncertainty | | | | | Guidance - at least 25% below max permissible uncertainty | |
| CO (ULTRAMAT 6) – (For an ELV of 50mg/m ³) | | | | | 6.5% | <7.5% (10%) |
| CO (ULTRAMAT 23) – (For an ELV of 100mg/m ³) | | | | | 6.4% | <7.5% (10%) |
| CO (ULTRAMAT 6) – (For an ELV of 500mg/m ³) | | | | | 7.1% | <7.5% (10%) |
| CO (ULTRAMAT 23) – (For an ELV of 600mg/m ³) | | | | | 6.9% | <7.5% (10%) |
| NO _x (ULTRAMAT 23) – (For an ELV of 130.4mg/m ³) | | | | | 14.5% | <15% (20%) |
| NO (SIPROCESS UV600) – (For an ELV of 32.6mg/m ³) | | | | | 9.7% | <15% (20%) |
| NO (ULTRAMAT 6) – (For an ELV of 40mg/m ³) | | | | | 14.7% | <15% (20%) |
| NO (ULTRAMAT 23) – (For an ELV of 65.2mg/m ³) | | | | | 14.0% | <15% (20%) |
| NO (ULTRAMAT 23) – (For an ELV of 130.4mg/m ³) | | | | | 14.8% | <15% (20%) |
| NO (ULTRAMAT 23) – (For an ELV of 40mg/m ³) | | | | | 13.8% | <15% (20%) |
| NO ₂ (SIPROCESS UV600) – (For an ELV of 50mg/m ³) | | | | | 7.0% | <15% (20%) |
| NO ₂ (ULTRAMAT 23) – (For an ELV of 0 to 33.3mg/m ³) | | | | | 8.3% | <15% (20%) |
| SO ₂ (SIPROCESS UV600) – (For an ELV of 50mg/m ³) | | | | | 11.5% | <15% (20%) |
| SO ₂ (ULTRAMAT 6) – (For an ELV of 40mg/m ³) | | | | | 11.3% | <15% (20%) |
| SO ₂ (ULTRAMAT 23) – (For an ELV of 46.6mg/m ³) | | | | | 8.4% | <15% (20%) |
| SO ₂ (ULTRAMAT 23) – (For an ELV of 200mg/m ³) | | | | | 12.5% | <15% (20%) |

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 This Certificate issued: 19 March 2021

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| Test | Results expressed as % of the certification range | | | | Other results | MCERTS specification |
|---|---|----|----|----|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| CO ₂ (ULTRAMAT 23) - (For an ELV of 25Vol-%) | | | | | 7.3% | <7.5% (10%) |
| CO ₂ (SIPROCESS GA700) - (For an ELV of 30 Vol-%) | | | | | 3.2% | <7.5% (10%) |
| O ₂ (ULTRAMAT 23) - (For an ELV of 25Vol-%) | | | | | 2.1% | <7.5% (10%) |
| O ₂ (OXYMAT 6) - (For an ELV of 25Vol-%) | | | | | 2.0% | <7.5% (10%) |
| O ₂ (SIPROCESS GA700) - (For an ELV of 25 Vol-%) | | | | | 2.1% | <7.5% (10%) |
| Calibration function (field) | | | | | | |
| CO (ULTRAMAT 6) - (0 to 75mg/m ³) | | | | | 0.96 | >0.90 |
| CO (ULTRAMAT 23) - (0 to 200mg/m ³) | | | | | 0.97 | >0.90 |
| CO (ULTRAMAT 23) - (0 to 250mg/m ³) | | | | | 0.99 | >0.90 |
| CO (ULTRAMAT 6) - (0 to 1000mg/m ³) | | | | | 0.99 | >0.90 |
| CO (ULTRAMAT 23) - (0 to 1250mg/m ³) | | | | | 0.99 | >0.90 |
| NO (SIPROCESS UV600) - (0 to 50mg/m ³) | | | | | 0.94 | >0.90 |
| NO (ULTRAMAT 6) - (0 to 100mg/m ³) | | | | | 0.99 | >0.90 |
| NO (ULTRAMAT 23) - (0 to 150mg/m ³) | | | | | 0.95 | >0.90 |
| NO (ULTRAMAT 23) - (0 to 400mg/m ³) | | | | | 0.91 | >0.90 |
| NO (ULTRAMAT 23) - (0 to 600mg/m ³) | | | | | 0.99 | >0.90 |
| NO (ULTRAMAT 6) - (0 to 1000mg/m ³) | | | | | 0.99 | >0.90 |
| NO ₂ (SIPROCESS UV600) - (0 to 50mg/m ³) | | | | | 0.98 | >0.90 |
| NO ₂ (ULTRAMAT 23) - (0 to 50mg/m ³) | | | | | 0.99 | >0.90 |
| SO ₂ (SIPROCESS UV600) - (0 to 75mg/m ³) | | | | | 0.95 | >0.90 |
| SO ₂ (ULTRAMAT 6) - (0 to 75mg/m ³) | | | | | 0.98 | >0.90 |
| SO ₂ (ULTRAMAT 23) - (0 to 70mg/m ³) | | | | | 0.99 | >0.90 |
| SO ₂ (ULTRAMAT 23) - (0 to 400mg/m ³) | | | | | 0.99 | >0.90 |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | | | | | 0.93 | >0.90 |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | | | | | 0.94 | >0.90 |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | | | | | 0.96 | >0.90 |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | | | | | 0.96 | >0.90 |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | | | | | 0.94 | >0.90 |

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|--|---|-------|-------|----|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| Response time (field) | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | | | | | 44s | <200s |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | | | | | 95s | <200s |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | | | | | 65s | <200s |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | | | | 42s | <200s |
| CO (ULTRAMAT 23) – (0 to 1250mg/m ³) | | | | | 47s | <200s |
| NO (SIPROCESS UV600) – (0 to 50mg/m ³) | | | | | 48s | <200s |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | | | | | 45s | <200s |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | | | | | 85s | <200s |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | | | | | 67s | <200s |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | | | | | 51s | <200s |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | | | | 47s | <200s |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | | | | | 78s | <200s |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | | | | | 59s | <200s |
| SO ₂ (SIPROCESS UV600) – (0 to 75 mg/m ³) | | | | | 85s | <200s |
| SO ₂ (ULTRAMAT 6) – (0 to 75 mg/m ³) | | | | | 57s | <200s |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | | | | | 62s | <200s |
| SO ₂ (ULTRAMAT 23) – (0 to 400 mg/m ³) | | | | | 188s | <200s |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | | | | | 43s | <200s |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | | | | | 18s | <200s |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | | | | | 58s | <200s |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | | | | | 41s | <200s |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | | | | | 20s | <200s |
| Lack-of-fit (field) | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | | | 1.60 | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | | 0.68 | | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | | -0.83 | | | | <2.0% |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | | 1.10 | | | <2.0% |
| CO (ULTRAMAT 23) – (0 to 1250mg/m ³) | | | -1.44 | | | <2.0% |
| NO (SIPROCESS UV600) – (0 to 50mg/m ³) | | 0.9 | | | | <2.0% |

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|---|---|-------|-------|----|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | | | -1.70 | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | 0.23 | | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | | -0.62 | | | | <2.0% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | | | -1.67 | | | <2.0% |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | | 1.00 | | | <2.0% |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | | | 1.0 | | | <2.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | | | -1.6 | | | <2.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 75 mg/m ³) | | | 1.0 | | | <2.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 75 mg/m ³) | | | -1.87 | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | | 0.97 | | | | <2.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 400 mg/m ³) | | 0.96 | | | | <2.0% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | | | 1.60 | | | <2.0% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | | | 1.67 | | | <2.0% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.10 | | | | | <0.2% |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | -0.15 | | | | | <0.2% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | -0.13 | | | | | <0.2% |
| Maintenance interval | | | | | *Note 1 | >8 days |
| CO (ULTRAMAT 23-7MB2355 & 7MB2357) (0 to 200 / 0 to 250 / 0 to 1250 mg/m ³) | | | | | 12 months | |
| CO (ULTRAMAT 23-7MB2358) (0 to 200 / 0 to 250 / 0 to 1250 mg/m ³) | | | | | 6 months | |
| CO (ULTRAMAT 6 & ULTRAMAT/OXYMAT 6) (0 to 75 / 0 to 1000 mg/m ³) | | | | | 6 months | |
| NO _x (ULTRAMAT 23) (0 to 150 / 0 to 230 / 0 to 400 / 0 to 613 mg/m ³) | | | | | 12 months | |
| NO (SIPROCESS UV600 (0 to 50 mg/m ³) | | | | | 2 weeks | |
| NO (ULTRAMAT 23 (0 to 600 mg/m ³) | | | | | 6 months | |
| NO (ULTRAMAT 6 & ULTRAMAT/OXYMAT 6) (0 to 100 / 0 to 1000 mg/m ³) | | | | | 6 months | |
| NO ₂ (SIPROCESS UV600) (0 to 50 mg/m ³) | | | | | 2 weeks* | |
| NO ₂ (ULTRAMAT 23) (0 to 50 mg/m ³) | | | | | 4 weeks | |
| SO ₂ (SIPROCESS UV600) (0 to 75 mg/m ³) | | | | | 2 weeks* | |
| SO ₂ (ULTRAMAT 23) (0 to 70 / 0 to 75 / 0 to 400 / 0 to 1250 mg/m ³) | | | | | 6 months | |
| CO ₂ (ULTRAMAT 23) (0 to 25 Vol-%) | | | | | 6 months | |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | | | | | 4 weeks | |

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|--|---|-----|----|------|--|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| O ₂ *P (ULTRAMAT 23) (0 to 25 Vol-%) | | | | | 6 months | |
| O ₂ *P (ULTRAMAT 6 & ULTRAMAT/OXYMAT 6) (0 to 25 Vol-%) | | | | | 6 months | |
| O ₂ *P (SIPROCESS GA700) (0 to 25 / 0 to 5 Vol-%) | | | | | 4 weeks | |
| O ₂ *EC (ULTRAMAT 23) (0 to 25 Vol-%) | | | | | 6 months | |
| Zero and Span drift requirement | The AMS has a means of automatic checking and as necessary readjustment of the zero point. The deviations are recorded; a status signal is set should the level exceed the permissible limit. The deviations in the indicative drift test in the laboratory were within the permissible tolerance limits. | | | | Clause 6.13 & 10.13 Manufacturer shall provide a description of the technique to determine & compensate for zero and span drift | |
| Change in zero point over maintenance interval | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | | | | -1.5 | | <3.0% |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | | | | 1.0 | | <3.0% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | | | | 1.7 | | <3.0% |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | 0.6 | | | | <3.0% |
| CO (ULTRAMAT 23) – (0 to 1250mg/m ³) | | 0.5 | | | | <3.0% |
| NO (SIPROCESS UV600) – (0 to 50mg/m ³) | | | | | 3.0 | <3.0% |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | | | | | 2.4 | <3.0% |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | | 0.9 | | | | <3.0% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | | | | 1.4 | | <3.0% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | | | | 1.1 | | <3.0% |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | | | 1.0 | | <3.0% |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | | | | | 2.1 | <3.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | | 0.6 | | | | <3.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 75 mg/m ³) | | | | | -2.8 | <3.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 75 mg/m ³) | | | | | 2.2 | <3.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | | 0.8 | | | | <3.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 400 mg/m ³) | | | | | -2.9 | <3.0% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | | | | | -2.0 | <3.0% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | 0.1 | | | | | <3.0% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | -0.09 | | | | | <0.2% |

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|---|---|----|------|------|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | -0.06 | | | | | <0.2% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | -0.05 | | | | | <0.2% |
| Change in reference point over maintenance interval | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | | | 1.0 | | | <3.0% |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | | | 1.1 | | | <3.0% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | | | | 2.1 | | <3.0% |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | | | -2.3 | | <3.0% |
| CO (ULTRAMAT 23) – (0 to 1250mg/m ³) | | | 1.1 | | | <3.0% |
| NO (SIPROCESS UV600) – (0 to 50mg/m ³) | | | | -2.4 | | <3.0% |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | | | 1.3 | | | <3.0% |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | | | | 2.6 | | <3.0% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | | | 1.4 | | | <3.0% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | | | 1.9 | | | <3.0% |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | | 1.9 | | | <3.0% |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | | | | -2.8 | | <3.0% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | | | | -2.6 | | <3.0% |
| SO ₂ (SIPROCESS UV600) – (0 to 75mg/m ³) | | | | -2.9 | | <3.0% |
| SO ₂ (ULTRAMAT 6) – (0 to 75mg/m ³) | | | | 2.3 | | <3.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | | | | -2.7 | | <3.0% |
| SO ₂ (ULTRAMAT 23) – (0 to 400mg/m ³) | | | | <3.0 | | <3.0% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | | | -1.8 | | | <3.0% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | 0.5 | | | | | <3.0% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | -0.12 | | | | | <0.2% |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | -0.14 | | | | | <0.2% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | -0.12 | | | | | <0.2% |
| Availability | | | | | | |
| SIPROCESS UV600 | | | | | 96.2% | >95% |
| ULTRAMAT 23 | | | | | 97.7% | >95% |
| ULTRAMAT 6 | | | | | 99.2% | >95% |

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|--|---|------|------|-----|---------------|----------------------|
| | <0.5 | <1 | <2 | <5 | | |
| OXYMAT 6 | | | | | 99.2% | >95% |
| SIPROCESS GA700 | | | | | 98.9% | >95% |
| Reproducibility | | | | | | |
| CO (ULTRAMAT 6) – (0 to 75mg/m ³) | | | 1.60 | | | <3.3% |
| CO (ULTRAMAT 23) – (0 to 200mg/m ³) | | 0.58 | | | | <3.3% |
| CO (ULTRAMAT 23) – (0 to 250mg/m ³) | | | 1.30 | | | <3.3% |
| CO (ULTRAMAT 6) – (0 to 1000mg/m ³) | 0.4 | | | | | <3.3% |
| CO (ULTRAMAT 23) – (0 to 1250mg/m ³) | 0.3 | | | | | <3.3% |
| NO _x (ULTRAMAT 23) – (0 to 400mg/m ³) | | 0.5 | | | | <3.3% |
| NO (SIPROCESS UV600) – (0 to 50mg/m ³) | | | 1.40 | | | <3.3% |
| NO (ULTRAMAT 6) – (0 to 100mg/m ³) | | | 1.2 | | | <3.3% |
| NO (ULTRAMAT 23) – (0 to 150mg/m ³) | | 0.81 | | | | <3.3% |
| NO (ULTRAMAT 23) – (0 to 400mg/m ³) | | 0.90 | | | | <3.3% |
| NO (ULTRAMAT 23) – (0 to 600mg/m ³) | 0.4 | | | | | <3.3% |
| NO (ULTRAMAT 6) – (0 to 1000mg/m ³) | | | 1.2 | | | <3.3% |
| NO ₂ (SIPROCESS UV600) – (0 to 50mg/m ³) | | | 1.5 | | | <3.3% |
| NO ₂ (ULTRAMAT 23) – (0 to 50mg/m ³) | 0.4 | | | | | <3.3% |
| SO ₂ (SIPROCESS UV600) – (0 to 75 mg/m ³) | | | 1.5 | | | <3.3% |
| SO ₂ (ULTRAMAT 6) – (0 to 75mg/m ³) | | | | 2.8 | | <3.3% |
| SO ₂ (ULTRAMAT 23) – (0 to 70mg/m ³) | | 0.8 | | | | <3.3% |
| SO ₂ (ULTRAMAT 23) – (0 to 400 mg/m ³) | | | 1.2 | | | <3.3% |
| CO ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | | 0.6 | | | | <3.3% |
| CO ₂ (SIPROCESS GA700) - (0 to 30 Vol-%) | 0.3 | | | | | <3.3% |
| O ₂ (ULTRAMAT 23) - (0 to 25 Vol-%) | 0.08 | | | | | <0.2% |
| O ₂ (OXYMAT 6) - (0 to 25 Vol-%) | 0.16 | | | | | <0.2% |
| O ₂ (SIPROCESS GA700) - (0 to 25 Vol-%) | 0.17 | | | | | <0.2% |

Note 1: For the SIPROCESS UV600-7MB2621 analyser, the maintenance interval is 2 weeks, but can be extended to six months for the component SO₂ and 3 months for the component NO₂ by way of weekly checks using the internal calibration cell. When adding additional modules to the Set CEM CERT 7MB1957 measuring system, each combination of modules needs to be checked for functionality as part of testing proper installation and the maintenance interval has to be determined.

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Description

Set CEM Cert is a modular, multi-component continuous emission monitoring system for flue gases. The sample gas is taken from the gas duct by use of a gas sampling and led to the measuring system via a heated sample gas line.

Subsequent analysis of the gas concentrations is carried out by individual gas analyser modules according to desired measuring component and measuring range.

The tested Set CEM Cert system comprised the following analysers:

- ULTRAMAT 23 – 7MB2355 for 1 measuring component out of 4 (CO, CO₂, NO, SO₂) or the 2 components NO₂ and SO₂
- ULTRAMAT 23 – 7MB2357 for 2 measuring components out of 4 (CO, CO₂, NO, SO₂) or the 2 components NO₂ and SO₂ and 1 measuring component out of 4 (CO, CO₂, NO, SO₂)
- ULTRAMAT 23 – 7MB2358 for 3 measuring components (CO, NO, SO₂) or the 2 components NO₂ and SO₂ and 2 measuring component out of 4 (CO, CO₂, NO, SO₂)
- ULTRAMAT 23 – 7MB235x – Z – T13 (x=5, 7, 8) including paramagnetic O₂ measurement
- ULTRAMAT 23 – 7MB235x – Z – T23 (x=5, 7, 8) including electrochemical O₂ measurement
- SIPROCESS UV600 for NO, NO₂, and SO₂ measurement
- ULTRAMAT 6 for 1 or 2 measuring component out of 3 (CO, NO, SO₂)
- OXYMAT 6 for O₂ measurement
- ULTRAMAT OXYMAT 6 for measuring O₂ and 1 component out of 3 (CO, NO SO₂)
- SIPROCESS GA700 ULTRAMAT 7 for measuring CO₂
- SIPORCESS GA700 OXYMAT 7 for measuring O₂

Additional measuring ranges:

| Component | Analyser | Certification range | Additional Ranges | | Unit |
|---------------------------------|---|--|--|--|-------------------|
| CO | ULTRAMAT 23-7MB2355 | 0 – 200 | 0 – 1250 | - | mg/m ³ |
| | ULTRAMAT 23-7MB2357 | 0 – 1250 | 0 – 6000 | - | mg/m ³ |
| | ULTRAMAT 23-7MB2358 | 0 – 250 | 0 – 1250 | - | mg/m ³ |
| | ULTRAMAT 6 | 0 – 75 0 - 1000 | 0 - 1250 0 – 10,000 | 0 - 3000 - | mg/m ³ |
| | ULTRAMAT/OXYMAT 6 | 0 – 75 0 - 1000 | 0 – 1250 0 – 10,000 | - - | mg/m ³ |
| NO _x | ULTRAMAT 23-7MB2355 | 0 – 150 ¹⁾ 0 – 230 ²⁾ | 0 – 750 ¹⁾ 0 – 1150 ²⁾ | 0 – 2000 ¹⁾ 0 – 3067 ²⁾ | mg/m ³ |
| | ULTRAMAT 23-7MB2357 | 0 – 150 ¹⁾ 0 – 230 ²⁾ | 0 – 400 ¹⁾ 0 – 613 ²⁾ | 0 – 2000 ¹⁾ 0 – 3067 ²⁾ | mg/m ³ |
| | ULTRAMAT 23-7MB2358 | 0 – 400 ¹⁾ 0 – 613 ²⁾ | 0 – 2000 ¹⁾ 0 – 3067 ²⁾ | - - | mg/m ³ |
| NO | SIPROCESS UV600 | 0 – 50 | 0 – 200 | 0 – 2000 | mg/m ³ |
| | ULTRAMAT 23-7MB2355 | 0 - 600 | 0 - 3000 | - | mg/m ³ |
| | ULTRAMAT 23-7MB2357 | 0 – 100 0 – 1000 | 0 – 2000 0 – 10,000 | - | mg/m ³ |
| | ULTRAMAT/OXYMAT 6 | 0 – 100 0 – 1000 | 0 – 2000 0 – 10,000 | - | mg/m ³ |
| NO ₂ | SIPROCESS UV600 | 0 – 50 | 0 – 500 | - | mg/m ³ |
| SO ₂ | ULTRAMAT 23-7MB235x ³⁾ | 0 – 400 | 0 – 2000 | 0 – 7000 | mg/m ³ |
| | SIPROCESS UV600 | 0 – 75 | 0 – 130 | 0 – 2000 | mg/m ³ |
| | ULTRAMAT 6 | 0 - 75 | 0 - 1500 | - | mg/m ³ |
| | ULTRAMAT/OXYMAT 6 | 0 - 75 | 0 - 1500 | - | mg/m ³ |
| CO ₂ | ULTRAMAT 23-7MB2355 | 0 - 25 | - | - | mg/m ³ |
| | ULTRAMAT 23-7MB2357 | 0 - 25 | - | - | mg/m ³ |
| O ₂ paramagnetic | ULTRAMAT 23-7MB235x – Z – T13 ³⁾ | 0 – 25 | - | - | Vol.-% |
| | OXYMAT 6 | 0 – 25 | 0 – 5 | - | Vol.-% |
| | ULTRAMAT/OXYMAT 6 | 0 – 25 | 0 – 5 | - | Vol.-% |
| O ₂ electro chem. | ULTRAMAT 23-7MB235x – Z – T23 ³⁾ | 0 – 25 | 0 – 5 | - | Vol.-% |

¹⁾ denoted as NO ²⁾ denoted NO₂ ³⁾ 7MB235x = 7MB2355, 7MB2357, 7MB2358

Certificate No: MC160288/04
This Certificate issued: 19 March 2021

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2. The design of the product certified is held and maintained by TUV Rheinland for certificate No. Sira MC160288/03.
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