



## QAL1 Report

### Description of evaluated measurement procedure

Automated Measuring System (AMS) based on  
Analyzer module serial number (optional)  
Quotation or order number  
Intended for monitoring of  
Applicable EU directive  
Name of plant  
Gas to be measured  
Smallest range of AMS  
Largest range of AMS (optional)  
Smallest certified range for AMS

EL3000-Uras26 CO (150)

3.342690.4

CC2

Large combustion plant

2001/80/EC

Enipower Ravenna

CO

75,0

mg/m<sup>3</sup>

75,0

mg/m<sup>3</sup>

150,00

mg/m<sup>3</sup>

### Test value and required quality at that value

Emission Limit Value, ELV

30

mg/m<sup>3</sup>

Test concentration

30,0

mg/m<sup>3</sup>

Limiting value according directive or standard

2001/80/EC, 2000/76/EC and EN15267-3

Required measurement quality as 95% confidence interval

10

% of ELV

Shortest averaging time of measured values

30

minutes

Required response time

25

% of shortest averaging time

Field conditions of operation used in the uncertainty assessment

Ambient temperature range

Min. value

5

Max. value

30

°C

Ambient pressure range

980

1030

hPa

Flow range

50

90

l/h

Voltage range

190,00

250,00

V

Accuracy of test gas according TÜV report

2,01

%

Internal diameter of sample gas line

4

mm

Length of sample gas line

50

m

Average flow of sample gas

70

l/h

Time between (automatic) span adjustment

7

days

Ranges of chemical interferents for

Component

O<sub>2</sub>

H<sub>2</sub>O

CO

CO<sub>2</sub>

CH<sub>4</sub>

N<sub>2</sub>O

NO

NO<sub>2</sub>

NH<sub>3</sub>

HCl

SO<sub>2</sub>

Combustion process

Min. value

Max. value

3

21

Vol. %

1

30

Vol. %

0

300

mg/m<sup>3</sup>

0

15

Vol. %

0

50

mg/m<sup>3</sup>

0

20

mg/m<sup>3</sup>

0

300

mg/m<sup>3</sup>

0

30

mg/m<sup>3</sup>

0

20

mg/m<sup>3</sup>

0

50

mg/m<sup>3</sup>

0

200

mg/m<sup>3</sup>



## QAL1 Report

(continued)

### Contributing partial standard uncertainties and reference to their origins

Selectivity others (largest sum)	1,05	mg/m <sup>3</sup>
Lack of fit	0,08	mg/m <sup>3</sup>
Drift at span point	0,03	mg/m <sup>3</sup>
Drift at zero point		mg/m <sup>3</sup>
Pressure dependence	0,58	mg/m <sup>3</sup>
Temperature dependence	0,43	mg/m <sup>3</sup>
Flow dependence	0,01	mg/m <sup>3</sup>
Voltage dependence	0,00	mg/m <sup>3</sup>
Repeatability	0,31	mg/m <sup>3</sup>
Uncertainty of response factors	0,00	mg/m <sup>3</sup>
Uncertainty of converter efficiency (SCC-K NOx converter)	0,00	mg/m <sup>3</sup>
Response time	93	seconds
Origin of data	TÜV report no.: 1243485a (2009-2)	
Long-term drift of calibration cell	0,00	mg/m <sup>3</sup>
Origin of data	TÜV report no.: 821029 (06/2006)	
Uncertainty of SRM	0,00	mg/m <sup>3</sup>
Standard Reference Method (SRM), Reference	Ion chromatography, EN 14791	
Uncertainty of cylinder gas	0,35	mg/m <sup>3</sup>

Origin of data TÜV report no.: 1243485a (2009-2)

### Determination and assessment of expanded uncertainty

	2001/80/EC and 2000/76/EC		EN15267-3
Expanded uncertainty	2,67		mg/m <sup>3</sup>
Required measurement quality as 95% confidence interval	3,00	2,25	mg/m <sup>3</sup>
<b>Confidence interval met</b>	NO		
	EN14181	EN15267-3	
Total response time	125		seconds
Required response time	450	200	seconds
<b>Response time met</b>	YES		

Conclusion

**The AMS is NOT ACCEPTABLE**

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