

DIN EN 14212:2012-11 (E)

Ambient air - Standard method for the measurement of the concentration of sulphur dioxide by ultraviolet fluorescence

Contents		Page
Foreword		4
1	Scope	5
2	Normative references	5
3	Terms and definitions	6
4	Abbreviated terms	11
5	Principle	11
5.1	General	11
5.2	Measuring principle	11
5.3	Type approval test	12
5.4	Field operation and quality control	12
6	Sampling	13
6.1	General	13
6.2	Sampling location	13
6.3	Sampling system	13
6.4	Control and regulation of sample flow rate	14
6.5	Sampling pump for the manifold	14
7	Analyser equipment	15
7.1	General	15
7.2	Selective traps for interfering agents	15
7.3	Optical assembly	15
7.4	Pressure measurement	15
7.5	Flow rate indicator	15
7.6	Sampling pump for the analyser	16
7.7	Internal sulphur dioxide span source	16
7.8	Particle filter	16
8	Type approval of ultraviolet fluorescence sulphur dioxide analysers	16
8.1	General	16
8.2	Relevant performance characteristics and performance criteria	17
8.3	Design change	18
8.4	Procedures for determination of the performance characteristics during the laboratory test	19
8.5	Determination of the performance characteristics during the field test	29
8.6	Type approval and uncertainty calculation	33
9	Field operation and ongoing quality control	34
9.1	General	34
9.2	Suitability evaluation	34
9.3	Initial installation	36
9.4	Ongoing quality assurance/quality control	37
9.5	Calibration of the analyser	39
9.6	Checks	40
9.7	Maintenance	44
9.8	Data handling and data reports	45

9.9	Measurement uncertainty	45
10	Expression of results	46
11	Test reports and documentation	46
11.1	Type approval test	46
11.2	Field operation	47
	Annex A (normative) Test of lack of fit	49
	Annex B (informative) Sampling equipment	51
	Annex C (informative) Ultraviolet fluorescence analyser	53
	Annex D (informative) Manifold testing	54
	Annex E (normative) Type approval	56
	Annex F (informative) Calculation of uncertainty in field operation at the hourly limit value	75
	Annex G (informative) Calculation of uncertainty in field operation at the daily limit value	83
	Annex H (informative) Calculation of uncertainty in field operation at the annual critical level	93
	Annex I (informative) Significant technical changes	103
	Bibliography	104