

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