

TABLE B-1 TO SUBPART B OF PART 53—PERFORMANCE LIMIT SPECIFICATIONS FOR AUTOMATED METHODS

Performance parameter	Units ¹	SO ₂		O ₃ (Std. range)	CO		NO ₂ (Std. range)	Definitions and test procedures
		Std. range ³	Lower range ^{2,3}		Std. range ³	Lower range ^{2,3}		
1. Range	ppm	0-0.5	<0.5	0-0.5	0-50	<50	0-0.5	Sec. 53.23(a).
2. Noise	ppm	0.001	0.0005	0.005	0.2	0.1	0.005	Sec. 53.23(b).
3. Lower detectable limit	ppm	0.002	0.001	0.010	0.4	0.2	0.010	Sec. 53.23(c).
4. Interference equivalent Each interferent Total, all interferents	ppm	±0.005	⁴ ±0.005	±0.02	±1.0	±0.5	±0.02	Sec. 53.23(d).
	ppm	---	---	0.06	---	---	0.04	Sec. 53.23(d).
5. Zero drift, 12 and 24 hour	ppm	±0.004	±0.002	±0.02	±0.5	±0.3	±0.02	Sec. 53.23(e).
6. Span drift, 24 hour 20% of upper range limit 80% of upper range limit	Percent	---	---	±20.0	---	---	±20.0	Sec. 53.23(e)
	Percent	±3.0	±3.0	±5.0	±2.0	±2.0	±5.0	Sec. 53.23(e).
7. Lag time	Minutes	2	2	20	2.0	2.0	20	Sec. 53.23(e).
8. Rise time	Minutes	2	2	15	2.0	2.0	15	Sec. 53.23(e).
9. Fall time	Minutes	2	2	15	2.0	2.0	15	Sec. 53.23(e).
10. Precision 20 % of upper range limit 80 % of upper range limit	ppm	---	---	0.010	---	---	0.020	Sec. 53.23(e).
	Percent	2	2	---	1.0	1.0	---	Sec. 53.23(e).
	ppm	---	---	0.010	---	---	0.030	Sec. 53.23(e).
	Percent	2	2	---	1.0	1.0	---	Sec. 53.23(e).

1. To convert from parts per million (ppm) to µg/m³ at 25 °C and 760 mm Hg, multiply by M/0.02447, where M is the molecular weight of the gas. Percent means percent of the upper measurement range limit.

2. Tests for interference equivalent and lag time do not need to be repeated for any lower range provided the test for the standard range shows that the lower range specification (if applicable) is met for each of these test parameters.

3. For candidate analyzers having automatic or adaptive time constants or smoothing filters, describe their functional nature, and describe and conduct suitable tests to demonstrate their function aspects and verify that performances for calibration, noise, lag, rise, fall times, and precision are within specifications under all applicable conditions. For candidate analyzers with operator-selectable time constants or smoothing filters, conduct calibration, noise, lag, rise, fall times, and precision tests at the highest and lowest settings that are to be included in the FRM or FEM designation.

4. For nitric oxide interference for the SO₂ UVF method, interference equivalent is ±0.0003 ppm for the lower range.