

40 C.F.R. § 205.54-2

Sound data acquisition system.

(a) Systems employing tape recorders and graphic level recorders may be established as equivalent to a Type I —ANSI S1.4–1971 sound level meter for use in determining compliance with this regulation by meeting the requirements of this section (§ 205.54–2(b)). This sound data acquisition system qualification procedure is based primarily on ANSI S6.1–1973.

(1) *Performance requirements* — (i) *System frequency response*. It is required that the overall steady-state frequency response of the data acquisition system shall be within the tolerances prescribed in Table 205.1 when measured in accordance with section (2). The tolerances in Table 205.1 are applicable to either flat or A-weighted response. (See paragraph (a)(3)(iii) of this section.)

(ii) *Detector response*. To ensure that a (true) rms indication is provided, the difference between the level indicated for a 1000 Hz sinusoidal signal equivalent to a sound level of 86 dB (rms) and the level indicated for an octave band of random noise of equal energy as the sinusoidal signal centered at 1000 Hz shall be no greater than 0.5 dB. A true rms voltmeter shall be used to determine equivalence of two input signals.

(iii) *Indicating meter*. If an indicating meter is used to obtain sound levels or band pressure levels, it must meet the requirements of paragraphs (a)(1)(ii) and (vi)(B) of this section and the following.

Table 205.1—System Response Data

Freq. (hertz)	A-weighted response (Re-1000 Hz, dB)	Tolerance (decibels)	
		Plus—	Minus—
31.5	-39.4	1.5	1.5
40.0	-34.6	1.5	1.5
50.0	-30.2	1.0	1.0
63.0	-26.2	1.0	1.0
80.0	-22.5	1.0	1.0
100.0	-19.1	1.0	1.0
125.0	-16.1	1.0	1.0
160.0	-13.4	1.0	1.0
200.0	-10.9	1.0	1.0

250.0		-8.6	1.0	1.0
315.0		-6.6	1.0	1.0
400.0		-4.8	1.0	1.0
500.0		-3.2	1.0	1.0
630.0		-1.9	1.0	1.0
800.0		-.8	1.0	1.0
1,000.0		0	1.0	1.0
1,250.0		.6	1.0	1.0
1,600.0		1.0	1.0	1.0
2,000.0		1.2	1.0	1.0
2,500.0		1.3	1.0	1.0
3,150.0		1.2	1.0	1.0
4,000.0		1.0	1.0	1.0
5,000.0		.5	1.5	2.0
6,300.0		-.1	1.5	2.0
8,000.0		-1.1	1.5	3.0
10,000.0		-2.5	2.0	4.0
12,500.0		-4.3	3.0	6.0

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