Noise reduction of an enclosed booth · NIC according to ASTM E413

SPB33D – soundproof booth, double layer

Noise reduction of the **complete assembled booth** · SPB33 with double-layer walls, 100 × 100 × 200 cm

BOOTH NOISE REDUCTION

NIC = 29

Weighted rating EN ISO 717-1 (calculation)

28 dB $(C; C_{tr})$ = (−1; −7) dB

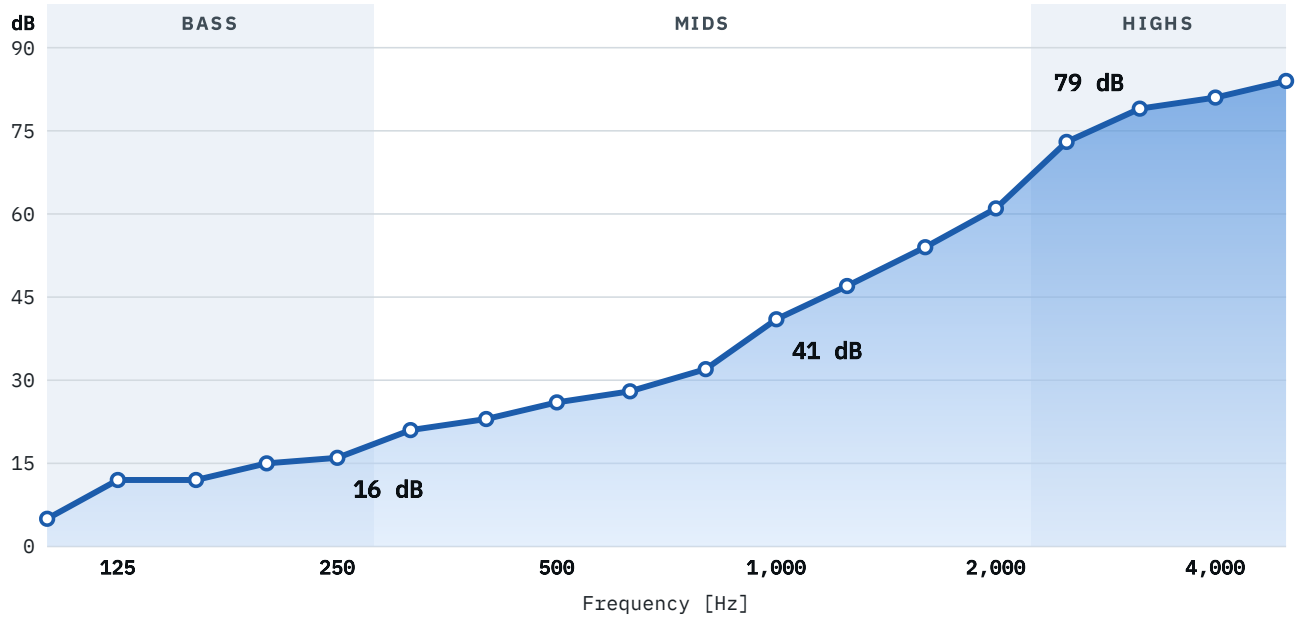
1. Measured noise reduction in one-third octave bands

F [HZ]	100	125	160	200	250	315	400	500	630	800	1,000	1,250	1,600	2,000	2,500	3,150	4,000	5,000
NR [dB]	5	12	12	15	16	21	23	26	28	32	41	47	54	61	73	79	81*	84*

Source of values: report RAL™-NR19-003, page 6 (annex to this document). Values marked * are shown as corrected in the report.

Octave bands from the report (125–160 / 200–315 / 400–630 / 800–1250 / 1600–2500 / 3150–5000 Hz): 8 / 17 / 25 / 36 / 57 / 81 dB.

2. Noise reduction by frequency



booth noise reduction measured in the laboratory (in decibels)

3. Calculation according to EN ISO 717-1

F [HZ]	NR [DB]	SHIFTED REF. CURVE [DB]	UNFAVOURABLE DEVIATION [DB]
100	5	9	4
125	12	12	–
160	12	15	3
200	15	18	3
250	16	21	5
315	21	24	3
400	23	27	4
500	26	28	2
630	28	29	1
800	32	30	–
1,000	41	31	–
1,250	47	32	–
1,600	54	32	–
2,000	61	32	–
2,500	73	32	–
3,150	79	32	–
Sum of unfavourable deviations (100–3,150 Hz) — limit of the standard ≤ 32 dB			**25**

The EN ISO 717-1 procedure was applied to the booth noise reduction values measured by the ASTM E596 method (informative calculation, not a measurement according to EN ISO 11957). The reference curve is shifted in steps of 1 dB until the sum of unfavourable deviations no longer exceeds 32 dB; the value of the shifted curve at 500 Hz is 28 dB. Adaptation terms C = −1 dB (pink noise) and C_{tr} = −7 dB (traffic noise) express the influence of the noise source spectrum.

4. Underlying laboratory measurement

Laboratory	Riverbank Acoustical Laboratories, 1512 S Batavia Ave, Geneva, IL, USA — NVLAP accreditation (Lab Code 100227-0), ISO/IEC 17025:2017
Report	RAL™-NR19-003, measured 13 November 2019
Method	ASTM E596-96 (2016): laboratory measurement of the noise reduction of an enclosed booth; single-number rating NIC according to ASTM E413
Specimen	SPB 33-D – double layer interior blanket vocal booth (booth with double-layer walls), assembled booth 100 × 100 × 200 cm

5. Notice

This document was issued by VocalBoothToGo-EU s.r.o. It is not a laboratory report and Riverbank Acoustical Laboratories is not its author. The NIC value is taken from the laboratory report; the weighted rating according to EN ISO 717-1 is a calculation from the measured one-third octave values (ASTM E596 method), not a measurement according to EN ISO 11957.

The results apply to the tested SPB33 booth in the stated version. The laboratory's original report is attached unchanged as an annex (excerpt: pages 6 and 8 of 9).

Annex: Riverbank Acoustical Laboratories report RAL™-NR19-003 (excerpt, 2 pages of 9, original).

Prepared by: VocalBoothToGo-EU s.r.o.

Date: 7 October 2026

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An AALION Technical Center

Test Report

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Vocal Booth To Go
2019-11-13

TEST RESULTS

Noise reduction values are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages. The maximum uncertainties for noise reduction levels recommended in ASTM E596-96 (2016) are as follows: 125 Hz to 160 Hz, 3.0 dB; 200 Hz to 250 Hz, 2.0 dB; 315 Hz to 4,000 Hz, 1.0 dB.

Frequency (Hz)	Noise Reduction (NR)		Octave Band Noise Reduction (NR_{oct})	Measurement Uncertainty (Δ_{NR})
100	5			
125	12		8	2.68
160	12			4.17
200	15			2.62
250	16		17	2.20
315	21			1.43
400	23			1.62
500	26		25	2.43
630	28			2.28
800	32			3.40
1000	41		36	2.71
1250	47			2.68
1600	54			3.78
2000	61		57	3.07
2500	73			3.47
3150	79			6.10
4000	81	*	81	6.99
5000	84	*		
NIC	**29**			

** Noise Reduction at marked frequency band corrected due to proximity to ambient sound pressure levels*

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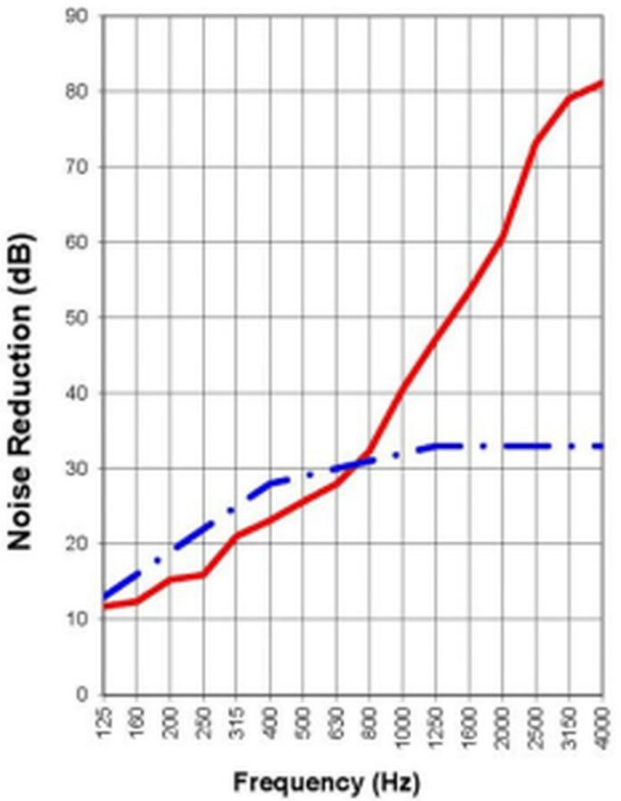
Vocal Booth To Go
2019-11-13

NOISE REDUCTION REPORT

SPB 33-D double layer interior blanket vocal booth



NIC= 29

NOISE REDUCTION (dB)
NOISE ISOLATION CLASS CONTOUR

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