

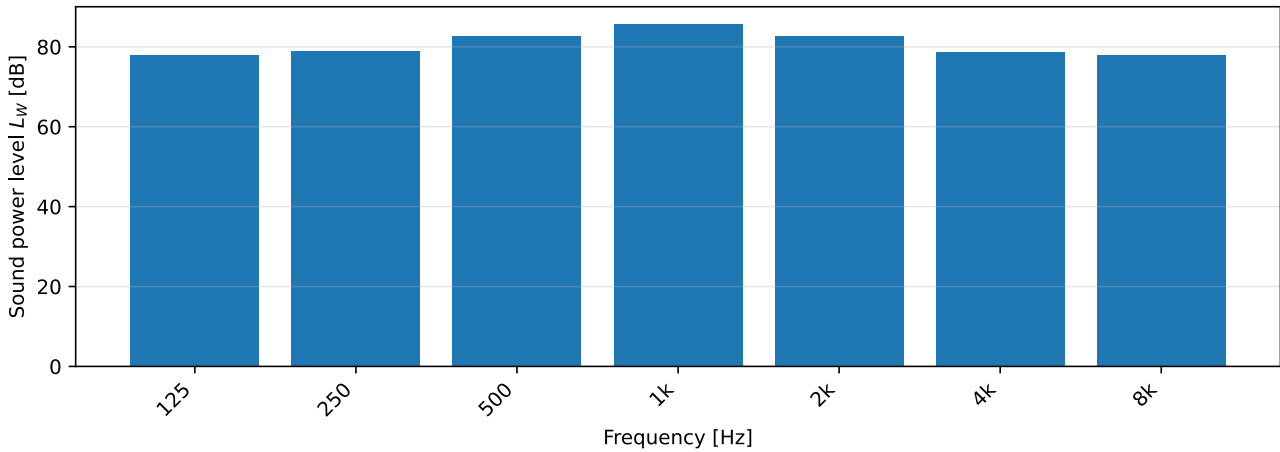
Sound power determination

Determination of the sound power level from sound pressure over an enveloping measurement surface in an anechoic or hemi-anechoic room (ISO 3745:2012, precision method, accuracy grade 1).

Client:	Example manufacturing plant	Noise source:	Mid-frequency-peaked machine (guide example)
Test environment:	Qualified anechoic room, 40-position hemisphere array	Date of test:	2026-08-05

Octave-band sound power levels

f [Hz]	L _p [dB]	L _w [dB]
125	70.1	78.0
250	71.2	79.0
500	74.7	82.6
1000	77.9	85.8
2000	74.7	82.6
4000	70.9	78.7
8000	70.1	78.0



Sound power level L_{WA} = 89.3 dB(A) re 1 pW

Total L_w = 90.1 dB re 1 pW
Expanded uncertainty U = 4.1 dB
Measurement surface S = 6.28 m²

$L_w = L_p + 10 \lg(S/S_0) + C_1 + C_2 + C_3$, $S_0 = 1 \text{ m}^2$ (ISO 3745:2012 Eq. 14/15). Applied meteorological corrections $C_1 = -0.13 \text{ dB}$, $C_2 = 0.00 \text{ dB}$, $C_3 = 0.0 \text{ dB}$.

The A-weighted sound power level L_{WA} combines the band levels with the A-weighting band corrections of ISO 3745:2012 Annex C (Eq. C.1). Levels are referenced to the reference sound power 1 pW.

Laboratory: Phonometry reference example

Report no.: EXAMPLE-3745

Date: 2026-08-05

Notes: Precision grade: Annex E hemisphere array at r = 1 m, meteorological corrections at the 23 C / 101,325 kPa reference, expanded uncertainty from the Clause 10.5 example.

Operator: phonometry Signature: _____

■ The results relate only to the tested specimen.

Generated by phonometry.