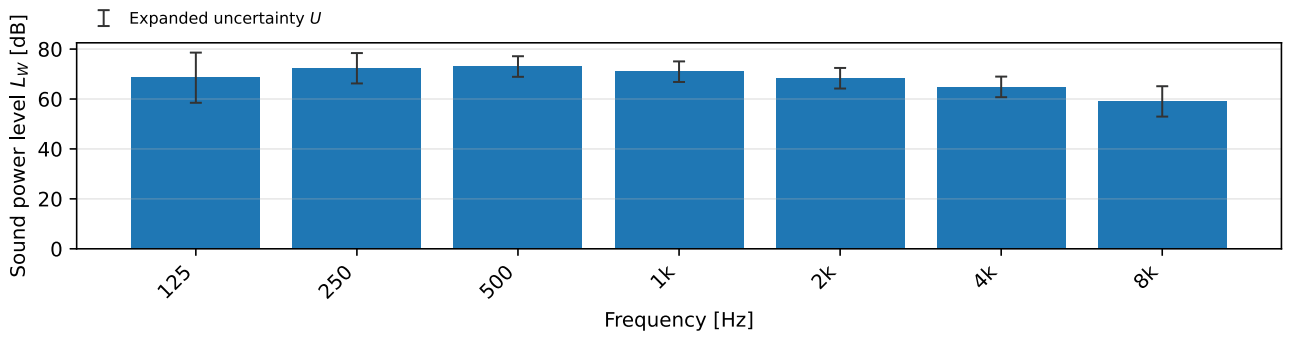
Sound power determination

Determination of the sound power level from the mean sound pressure level in a special reverberation test room, direct method (ISO 3743-2:2018, engineering method, accuracy grade 2).

Client:	Example office equipment maker	Noise source:	Desktop printer, continuous printing
Test environment:	Special reverberation test room, V = 72 m3, Tnom = 0.77 s	Instrumentation:	Class 1 sound level meter (IEC 61672-1), s/n 0042
Temperature [°C]:	22	Relative humidity [%]:	48
Ambient pressure [kPa]:	101.2	Date of test:	2026-09-25

Octave-band sound power levels

f [Hz]	L_p [dB]	L_W [dB]
125	61.8	68.5
250	65.6	72.5
500	66.3	73.0
1000	64.2	71.0
2000	61.6	68.5
4000	58.1	65.0
8000	52.3	59.0



Sound power level L_{WA} = **75.8 dB(A)** re 1 pW

Total L_W = 78.3 dB re 1 pW
From the octave bands (Annex F): L_{WA} = 75.8 dB(A)
Determination method: direct method (Formula 9), V = 72.0 m^3, T_{nom} = 0.77 s
Expanded uncertainty U = 4.1 dB, coverage factor k = 2

Result vs requirement: L_{WA} = 75.8 dB(A), declared limit ≤ 77.0 dB(A) → **PASS**

The mean level L_p is the energy average over the microphone positions and source locations (Formula 8), each level corrected for background noise by Table 4 at its own position (9.8); $L_W = L_p - 10\ \lg(T_{nom}/T_0) + 10\ \lg(V/V_0) - 13$ dB (Formula 9). The levels are at the meteorological conditions of the test; C2 = –0.01 dB (Annex E) carries them to the reference conditions. The band levels L_W are tabulated to the nearest one-half decibel (12.5 d).

$U = k\ \sigma_{tot}$, $\sigma_{tot} = \sqrt{(\sigma_{R0}^2 + \sigma_{omc}^2)}$ with σ_{R0} = 2.0 dB (Table 5, A-weighted) and σ_{omc} = 0.5 dB; k = 2 gives a coverage probability of 95 %. The A-weighted sound power level L_{WA} is Formula (9) applied to the mean A-weighted sound pressure level (clause 4); the octave-band total combines the band levels with the corrections of ISO 3743-2:2018 Annex F (Table F.1, Formula F.1). Levels are referenced to the reference sound power 1 pW.

Laboratory: Phonometry reference example
Report no.: EXAMPLE-3743-2
Date: 2026-09-25
Notes: Two source locations for the 500 Hz octave (Table 3).
Operator: phonometry Signature: _____

■ The results relate only to the tested specimen.

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