

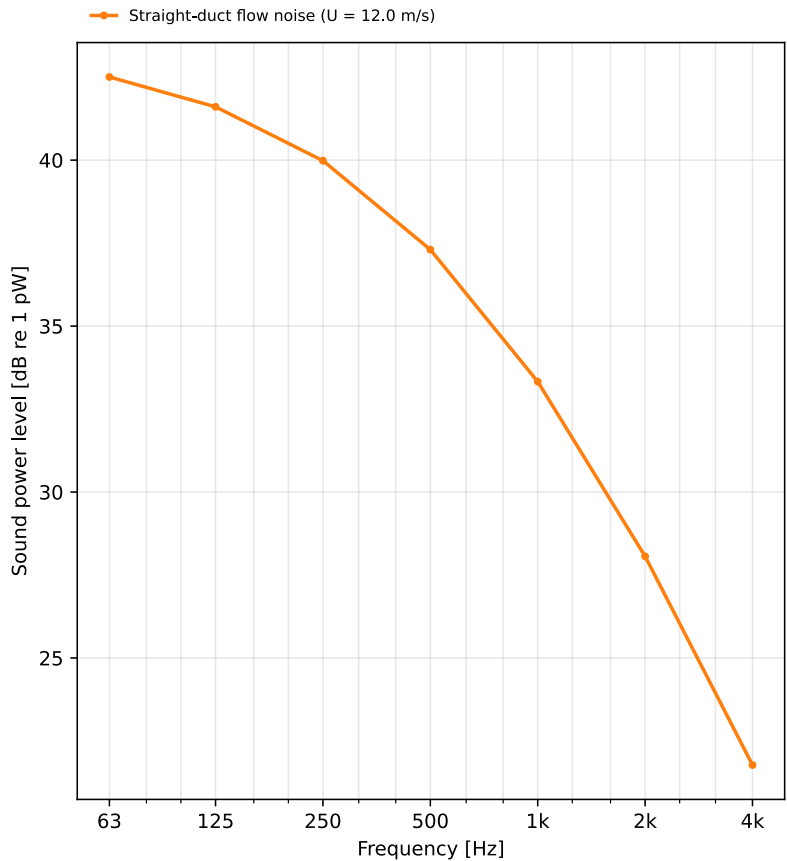
HVAC duct noise spectrum

Determination of the flow-generated (regenerated) octave-band sound power level of a duct element (Bies, Hansen & Howard, Engineering Noise Control 5th ed., Chapter 8, section 8.15; VDI 2081-1).

Client:	Example client	Noise source:	Straight supply duct, 0.04 m2 cross-section
Test environment:	Air-handling plant room (example)	Instrumentation:	In-duct sound power (ISO 5136 method)
Temperature [°C]:	21	Ambient pressure [kPa]:	101.2
Date of test:	2026-07-22		

Octave-band regenerated sound power levels

f [Hz]	L_W [dB]
63	42.5
125	41.6
250	40.0
500	37.3
1000	33.3
2000	28.1
4000	21.8



A-weighted sound power level $L_{WA} = 38.8$
dB(A) re 1 pW

Overall sound power level $L_W = 47.0$ dB re 1 pW
Straight-duct flow noise (U = 12.0 m/s)

Result vs requirement: $L_{WA} = 38.8$ dB(A), required ≤ 45.0 dB(A) → **PASS**

L_W is the flow-generated octave-band sound power level radiated by the element (Chapter 8, section 8.15; VDI 2081-1), referenced to the reference sound power 1 pW.

The A-weighted level L_{WA} combines the band levels with the ISO 3744:2010 Annex E A-weighting corrections C_A (Tables E.1/E.2).

Laboratory: Phonometry reference example

Report no.: EXAMPLE-HVAC

Date: 2026-07-22

Operator: phonometry Signature: _____

■ The results relate only to the tested specimen.
Generated by phonometry.