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Calculator for Loudspeakers with Closed Cabinet

Closed Cabinet

Q factor Qts to be entered with two decimals
Please enter decimal separators as "."

----------------------------- Driver ------------------------------   -------- Loudspeaker ------

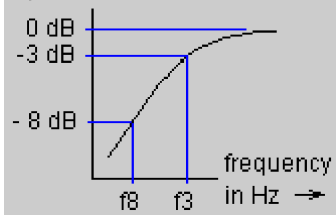| Resonance frequency fs in Hz:	Equivalent volume of compliance Vas in litre:	Total driver Q factor Qts:	total Q factor Qtc: Recommended: 0.71
25	131.5	0.54	0.71

Calculate Cabinet

Volume in litre: 131.1 (180) 1)

Cut-off frequency f3 (-3dB) in Hz: 38

Cut-off frequency f8 (-8dB) in Hz: 25

Efficiency in dB (1W/1m): 88

1) Calculation is our recommended value for damped speakers. A bigger volume is possible.
Non-damped speakers are calculated in brackets according to the formular: $\alpha = (Qtc/Qts)^2-1$, Vbox=Vas/α

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Total Q factor Qts correction

Resistors, cables or a coils that are being used to connect a loudspeaker show a DC resistance. This DC resistance has an influence on total Q facto Qts and, therefore, needs to be considered. The following calculator makes it a little bit easier for you; the result is automatically entered into to calculator at the top.

Qts correction calculator
(Qts-Correction)

Q factors Qes, Qms to be entered with two decimals
Please enter decimal separators as "."

----------------------------- Driver ------------------------------   ----- Crossover, Cable -----

Electrical Q factor Qes:	Mechanical Q factor Qms:	DC resistance Re:	Coil's DC resistance R ... in Ohm:
0.57	4.7	6.6	0.4

Recalculate Qts

Qts $_{old}$ of driver only: 0.51

Qts $_{new}$ with cable, coil, ...: 0.54

The original formulas kindly provided by Manfred Hoffbauer, mh-audio.

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