

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

↑ level / dB

0 dB

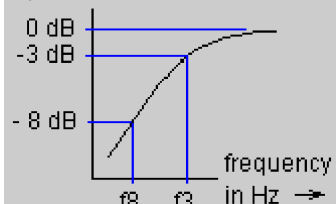
-3 dB

-8 dB

frequency
in Hz →

f8

f3



Calculate Cabinet

Volume in litre: 1)

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

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

Efficiency in dB (1W/1m):

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: $\alpha = (Qtc/Qts)^2 - 1$, $V_{box} = V_{as} / \alpha$

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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

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:

Recalculate Qts

Qts_{old} of driver only:

Qts_{new} with cable, coil, ...:

The original formulas kindly provided by [Manfred Hoffbauer, mh-audio](#).

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