

DEC FLEXIBLE HOSES AND THEIR ACOUSTIC PROPERTIES

DEC International[®] Semi flexible sound attenuators are the solution to the acoustic problems in air treatment and mechanical ventilation systems.

The following types and diameters have been measured in the acoustic laboratory of **PEUTZ BV**:

Type AKUDEC[™] 25

L=600 mm :Ø 80, 100, 125, 150, 160, 200, 250, 315 mm
L=1200 mm :Ø 80, 100, 125, 150, 160, 200, 250, 315 mm

Type AKUDEC[™] 50

L=1200 mm :Ø 80, 100, 125, 150, 160, 200, 250, 315 mm

The sound attenuation and wall reduction levels have been measured for the types and diameters of the above-mentioned lengths.

The measurements were carried out in accordance with the Norm: **ISO 7235:2003** "Acoustics - Laboratory measurement procedures for ducted silencers and air-terminal units - Insertion loss, flow noise and total pressure loss".

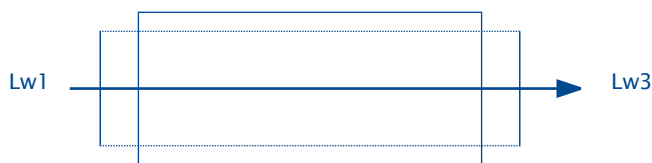
The Norm **ISO 7235** is in all EC countries accepted as European Norm **EN-ISO 7235:2003**

Copies of the original test results are available for inspection on request. The copies of the results remain the property of

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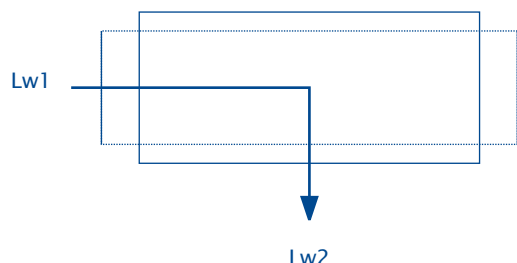
The following explanations refer to the enclosed graphics:

Attenuation



Attenuation is the difference between the acoustic capacity **Lw1** in the test channel in front of the ducting and the acoustic capacity **Lw3** in the test channel after the ducting (averaged over three measuring points).

Wall Reduction



Wall reduction is the difference between the acoustic capacity **Lw1** in the test channel in front of the ducting (averaged over three measuring points) and the radiated acoustic capacity **Lw2** in the reverberant room (averaged over the whole space by using a rotating microphone).

AKUDEC[™] Sound attenuators

The **AKUDEC[™]** sound attenuator from **DEC International[®]** has a perforated and corrugated aluminium innerduct, enclosed within a 25mm (**AKUDEC[™] 50** a 50mm) insulation layer and provided with an aluminium layered outer jacket strengthened with glass fibre. The duct is standard fitted with metal sleeves at both ends to fit to any rigid ductwork or appliance instantly.

Dutch Environment Corporation[®] BV

DEC International[®]

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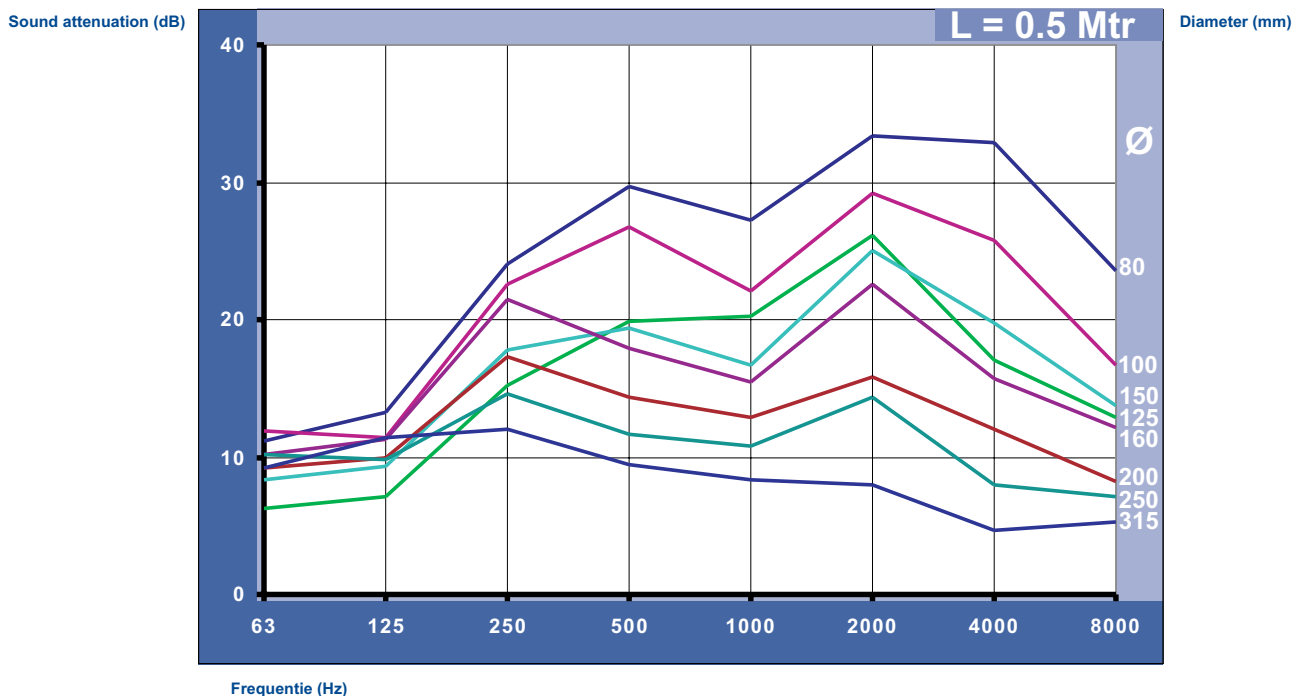
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Reportnumber : A1672-1
Date : 08-2007

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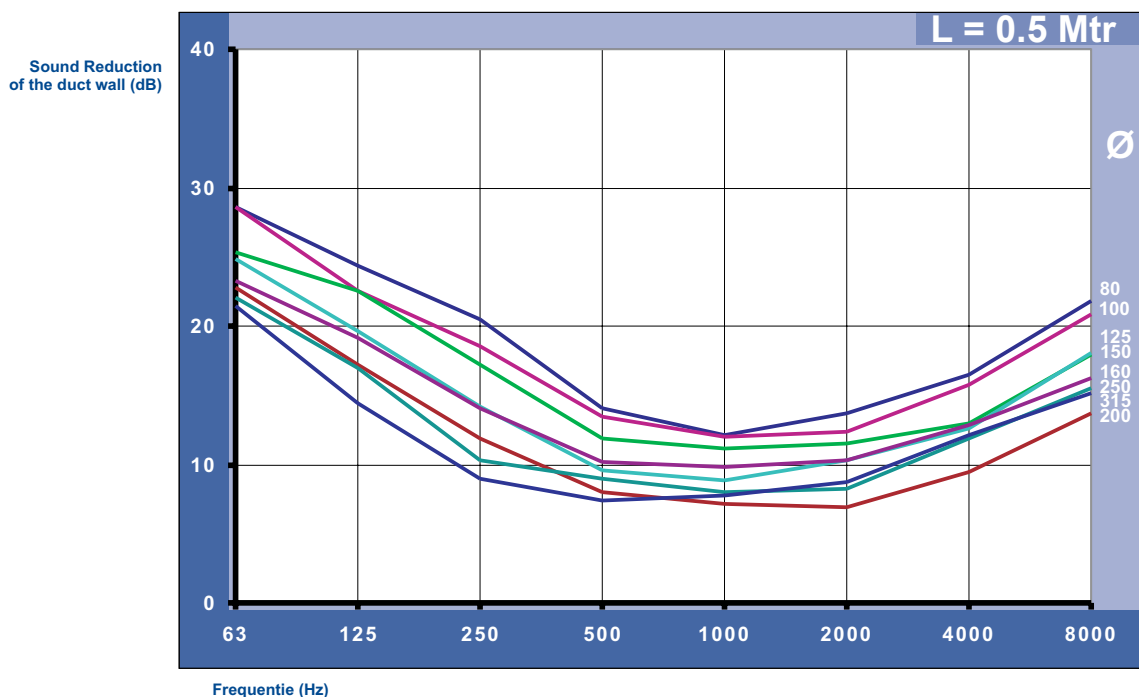
AKUDEC25



	D= 80		D=100		D= 125		D= 150		D= 160		D=200		D= 250		D= 315	
	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.
50 Hz	12.1		10.5		6.2		10.9		10.9		9.4		8.3		9.6	
63 Hz	14.3	11.2	14.9	11.9	6	6.3	5.5	8.3	7.7	10.2	7.9	9.2	16.3	10.2	12.2	9.2
80 Hz	8.9		11.3		6.7		10.7		14.4		10.6		9.4		7.2	
100 Hz	8.8		7.0		3.6		5.3		7.4		6.7		6.9		8.1	
125 Hz	26.5	13.3	18.8	11.4	10.0	7.1	14.9	9.3	14.4	11.3	12.1	10.0	10.3	9.8	13.4	1104.0
160 Hz	21.7		21.9		13.0		16.6		22.9		16.0		17.5		18.3	
200 Hz	20.3		19.7		12.4		14.5		20.6		15.9		15.6		13.0	
250 Hz	28.1	24.1	26.0	22.6	18.1	15.2	22.0	17.8	24.4	21.5	20.4	17.3	15.9	14.6	13.1	12.0
315 Hz	30.8		25.1		17.6		20.9		20.6		16.8		13.0		10.5	
400 Hz	34.6		28.3		19.0		22.0		19.5		15.4		12.9		10.4	
500 Hz	30.1	29.7	28.1	26.8	23.2	19.9	20.0	19.4	17.9	17.9	15.0	14.3	11.9	11.7	9.1	9.4
630 Hz	27.2		24.9		18.8		17.4		16.7		13.0		10.7		8.8	
800 Hz	26.4		22.6		19.6		15.8		14.9		12.8		10.0		8.3	
1000 Hz	27.4	27.2	21.8	22.1	20.8	20.3	16.7	16.7	15.6	15.5	13.1	12.9	10.9	10.8	7.9	8.3
1250 Hz	28.1		22.0		20.6		17.7		16.2		12.8		11.6		8.8	
1600 Hz	30.4		25.8		22.3		22.0		19.8		15.0		15.6		9.2	
2000 Hz	34.1	33.4	31.0	29.2	28.8	26.1	26.3	25.0	24.4	22.6	16.1	15.8	15.9	14.3	9.1	8.0
2500 Hz	42.4		37.6		38.8		31.2		26.2		16.4		12.3		6.3	
3150 Hz	48.0		41.3		28.7		24.8		20.6		14.6		10.7		5.9	
4000 Hz	37.7	32.9	29.5	25.8	19.7	17.1	21.4	19.8	17.2	15.7	12.8	12.0	7.3	8.0	4.8	4.7
5000 Hz	28.7		21.8		13.3		16.8		12.7		9.9		6.9		3.7	
6300 Hz	22.8		17.3		13.1		14.5		12.7		8.4		6.8		5.0	
8000 Hz	23.3	23.5	16.6	16.7	13.1	12.9	14.3	13.8	12.4	12.1	8.3	8.2	7.3	7.1	5.1	5.3
10000 Hz	24.5		16.3		12.5		12.8		11.2		7.9		7.2		5.9	
Di	30dB		26dB		22dB		21dB		19dB		14dB		12dB		8dB	

Di = Average Attenuation (dB)

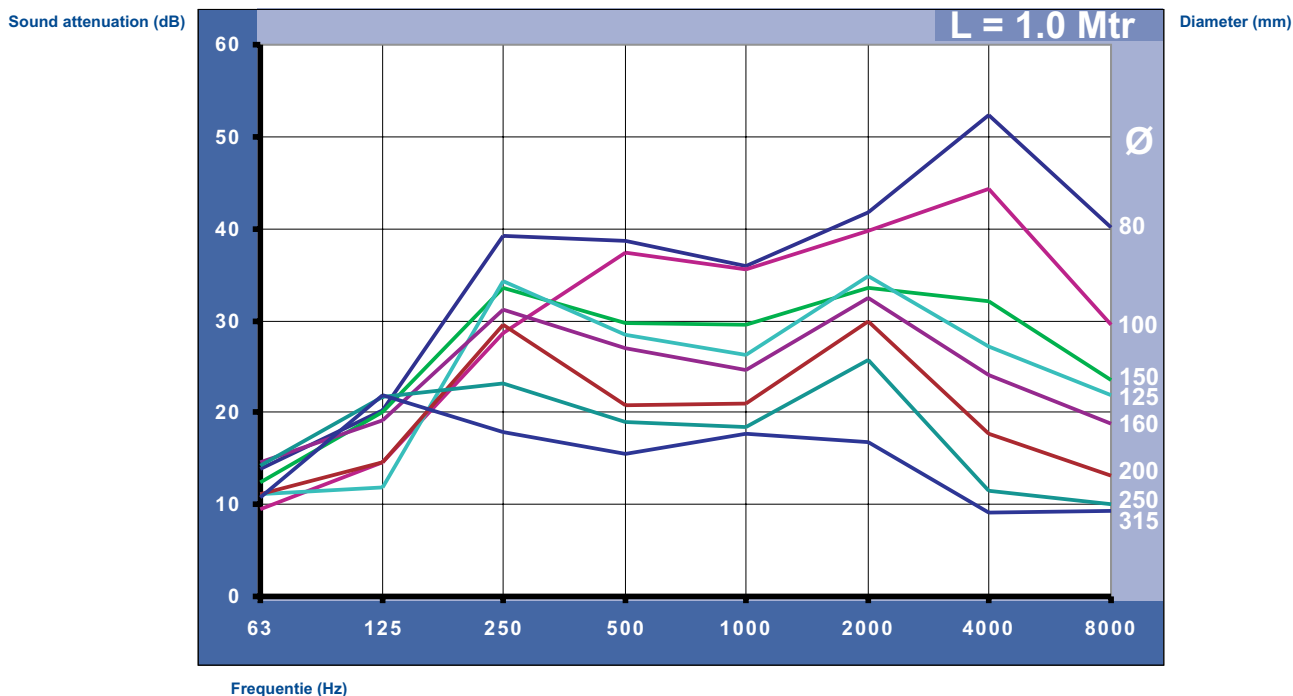
AKUDEC25



	D= 80		D=100		D= 125		D= 150		D= 160		D=200		D= 250		D= 315	
	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.
50 Hz	33.3		32.3		30.1		27.1		25.4		23.7		24.8		24.8	
63 Hz	29.1	28.6	28.9	28.6	28.3	25.3	28.9	24.8	25.6	23.3	23.5	22.8	23.9	22.1	21.5	21.4
80 Hz	26.1		26.5		21.9		21.9		20.8		21.5		19.6		19.5	
100 Hz	24.4		22.4		23.7		21.4		21.0		18.8		19.2		17.6	
125 Hz	25.1	24.4	23.7	22.6	23.0	22.5	19.5	19.6	19.2	19.2	17.4	17.2	17.1	17.0	14.3	14.4
160 Hz	23.8		21.9		21.2		18.3		18.0		15.9		15.5		12.6	
200 Hz	22.5		20.5		20.1		16.8		17.1		13.7		13.4		10.4	
250 Hz	20.6	20.5	18.2	18.6	17.1	17.2	13.9	14.2	13.9	14.1	11.7	11.9	9.4	10.3	8.4	9.0
315 Hz	19.1		17.5		15.6		12.8		12.4		10.9		9.3		8.6	
400 Hz	16.3		15.9		13.8		10.9		10.9		8.9		9.2		7.1	
500 Hz	14.4	14.1	13.9	13.5	11.5	11.9	9.5	9.6	10.3	10.2	8.0	8.0	9.5	9.0	7.8	7.4
630 Hz	12.4		11.7		11.0		8.6		9.4		7.3		8.3		7.2	
800 Hz	12.1		12.0		10.3		8.2		9.0		6.5		7.5		7.4	
1000 Hz	12.2	12.1	11.8	12.0	11.5	11.2	8.9	8.9	9.7	9.8	8.0	7.2	8.6	8.0	8.2	7.7
1250 Hz	12.1		12.1		12.0		9.7		11.0		7.1		8.0		7.6	
1600 Hz	13.6		12.0		12.8		10.5		11.9		7.6		8.3		8.9	
2000 Hz	13.7	13.7	12.3	12.4	11.4	11.5	10.2	10.3	9.2	10.3	6.7	6.9	8.0	8.3	8.1	8.7
2500 Hz	13.8		13.0		10.5		10.3		10.1		6.6		8.5		9.1	
3150 Hz	14.6		14.2		12.0		10.9		11.5		7.8		10.4		11.0	
4000 Hz	16.8	16.5	16.2	15.8	12.8	13.0	12.5	12.6	12.5	12.9	9.6	9.5	11.9	11.9	11.9	12.1
5000 Hz	19.2		17.9		14.7		15.5		15.5		11.9		14.4		14.0	
6300 Hz	20.9		19.3		16.5		16.7		15.7		12.4		14.6		14.1	
8000 Hz	21.6	21.8	21.3	20.8	18.3	18.0	18.5	18.1	17.1	16.3	14.7	13.7	16.5	15.5	16.2	15.2
10000 Hz	23.3		22.3		19.8		19.6		16.3		14.4		15.6		15.6	
Dt	13dB		13dB		12dB		10dB		10dB		7dB		9dB		8dB	

Dt = Average Sound Reduction of the duct wall (dB)

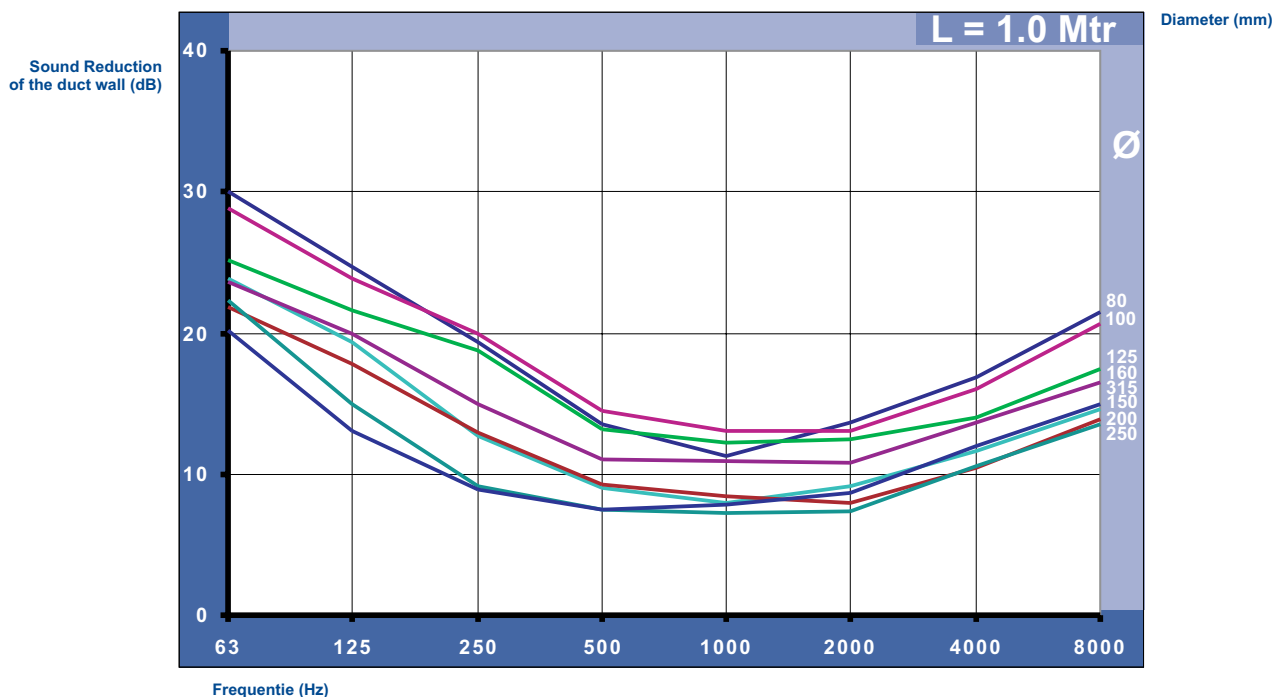
AKUDEC25



	D= 80		D=100		D= 125		D= 150		D= 160		D=200		D= 250		D= 315	
	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.
50 Hz	13.6		7.3		10.5		10.2		12.4		9.3		11.5		8.8	
63 Hz	17.0	13.8	10.8	9.5	12.9		9.7	11.1	14.3	14.6	10.0	11.1	16.9	14.2	12.7	10.8
80 Hz	12.2		11.9		15.1	12.4	15.1		20.2		17.6		16.2		11.8	
100 Hz	15.6		10.4		16.9		7.2	11.8	14.6		10.0		18.3		19.8	
125 Hz	29.5	20.2	18.6	14.5	20.6	20.1	21.2	11.8	27.3	19.1	23.8	14.6	23.3	21.7	22.7	21.9
160 Hz	36.8		28.6		34.0		27.4		34.4		33.5		30.5		24.4	
200 Hz	35.1		24.1		29.9		31.9		29.6		29.7		24.8		17.3	
250 Hz	47.0	39.3	38.4	28.6	37.7	33.6	40.7	34.2	34.9	31.1	33.7	29.5	22.6	23.1	20.3	17.9
315 Hz	45.7		38.6		39.3		33.9		30.5		27.2		22.2		16.9	
400 Hz	41.4		39.7		33.0		31.1		27.9		21.9		20.7		15.6	
500 Hz	38.8	38.6	38.4	37.4	29.3	29.8	29.0	28.5	27.1	27.0	21.1	20.7	18.8	18.9	15.2	15.5
630 Hz	36.8		35.4		28.4		26.6		26.1		19.4		17.6		15.7	
800 Hz	35.4		37.1		29.1		24.7		24.2		20.3		16.6		15.5	
1000 Hz	35.7	36.0	35.1	35.6	30.2	29.5	27.1	26.3	24.3	24.7	21.1	21.0	18.6	18.4	18.0	17.7
1250 Hz	37.1		35.0		29.4		27.7		25.6		21.8		21.4		21.3	
1600 Hz	39.8		36.6		31.1		32.2		29.5		27.5		29.6		24.1	
2000 Hz	42.0	41.8	42.4	39.8	34.2	33.6	36.1	34.9	34.1	32.5	34.0	30.0	30.5	25.7	19.3	16.7
2500 Hz	45.1		44.4		37.8		39.3		37.5		30.9		22.1		13.2	
3150 Hz	49.7		47.7		40.5		35.6		33.3		23.1		17.0		11.6	
4000 Hz	54.1	52.4	49.0	44.3	38.2	32.1	30.4	27.2	26.6	24.0	19.9	17.7	11.9	11.4	8.6	9.2
5000 Hz	55.5		40.8		27.9		23.5		20.3		14.5		8.8		8.2	
6300 Hz	40.8		30.5		23.8		21.2		19.6		12.9		9.2		7.9	
8000 Hz	40.8	40.2	29.9	29.5	24.6	23.6	22.2	21.8	18.8	18.7	14.0	13.2	9.9	10.1	9.8	9.3
10000 Hz	39.3		28.4		22.7		22.0		17.8		12.7		11.4		10.6	
Di	39dB		36dB		32dB		30dB		29dB		23dB		20dB		17dB	

Di = Average Attenuation (dB)

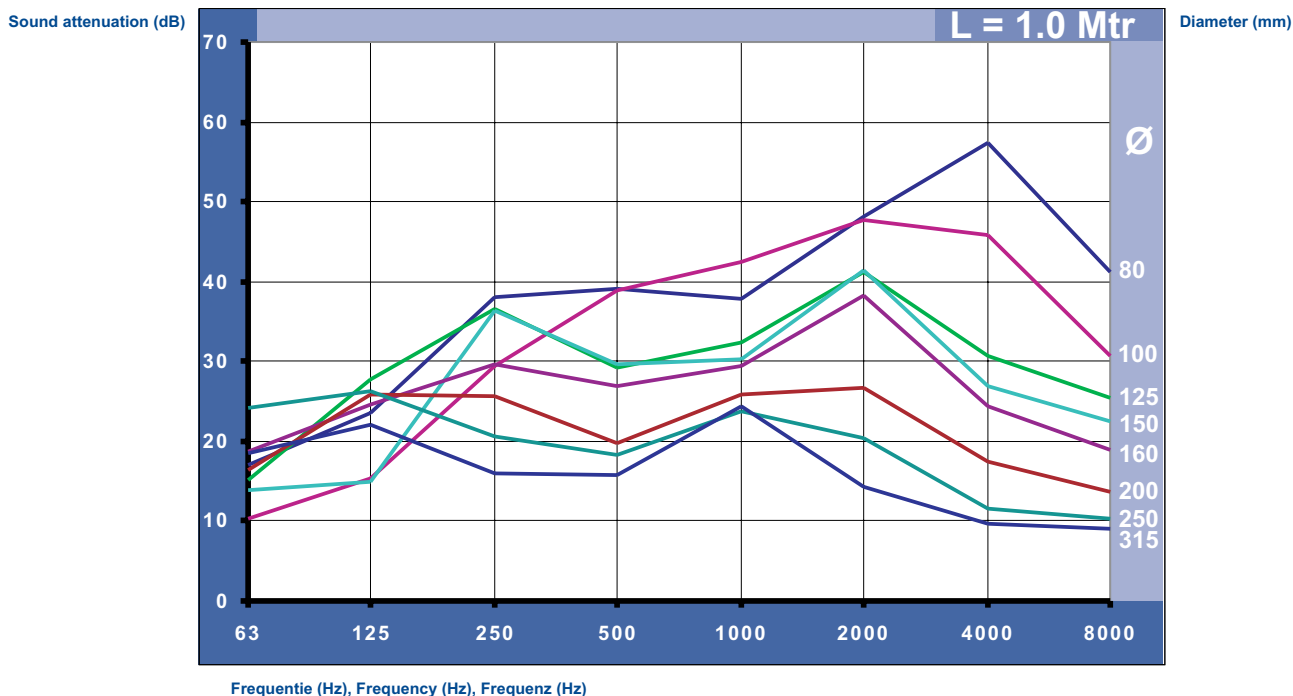
AKUDEC25



	D= 80		D=100		D= 125		D= 150		D= 160		D=200		D= 250		D= 315	
	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.
50 Hz	34.8		31.8		32.2		29.5		27.1		24.8		26.9		27.5	
63 Hz	30.9	30.0	29.4	28.8	26.3	25.2	24.8	23.9	25.7	23.6	22.6	21.8	22.6	22.3	20.9	20.2
80 Hz	27.3		26.6		22.2		21.1		20.8		19.5		19.9		17.3	
100 Hz	24.2	24.7	24.5	23.9	22.8	21.6	20.9	19.4	21.1	19.9	20.1	17.8	17.3	15.0	15.3	13.0
125 Hz	25.7		23.4		21.2		19.2		19.5		18.1		14.6		12.8	
160 Hz	24.4		23.8		21.0		18.4		19.2		16.2		13.9		11.7	
200 Hz	21.3	19.3	21.5	20.0	20.3	18.7	16.1	12.7	18.1	15.0	14.9	12.9	12.0	9.1	9.6	8.9
250 Hz	19.4		19.4		19.1		12.5		15.1		12.8		8.2		8.6	
315 Hz	17.9		19.4		17.2		11.0		13.2		11.7		8.0		8.5	
400 Hz	15.1	13.5	16.8	14.5	14.7	13.2	10.0	9.0	11.3	11.0	10.1	9.3	7.7	7.5	7.3	7.5
500 Hz	14.2		14.3		12.9		8.8		11.2		9.3		8.1		7.8	
630 Hz	11.8		13.1		12.4		8.3		10.5		8.7		6.7		7.3	
800 Hz	11.0	11.3	13.4	13.1	11.8	12.2	7.5	8.0	10.0	10.9	7.9	8.4	6.5	7.2	7.3	7.8
1000 Hz	11.4		13.3		12.3		8.0		11.0		9.1		7.9		8.4	
1250 Hz	11.4		12.7		12.4		8.6		12.0		8.2		7.4		7.7	
1600 Hz	13.2	13.6	12.7	13.0	13.3	12.5	9.1	9.1	12.3	10.8	9.1	8.0	7.8	7.4	9.1	8.7
2000 Hz	13.6		13.1		12.1		8.9		9.8		7.7		7.2		8.1	
2500 Hz	14.2		13.3		12.1		9.4		10.7		7.3		7.3		9.0	
3150 Hz	15.1	16.9	14.7	16.0	13.1	14.0	10.3	11.6	12.2	13.6	9.0	10.5	9.4	10.6	11.0	12.0
4000 Hz	17.3		16.0		14.0		11.8		13.4		10.7		10.5		11.9	
5000 Hz	19.1		17.8		15.0		13.3		15.8		12.5		12.4		13.6	
6300 Hz	20.6	21.5	19.3	20.7	15.7	17.5	13.6	14.6	15.8	16.5	13.0	13.9	12.4	13.5	13.9	15.0
8000 Hz	21.1		20.9		18.2		15.3		17.6		14.6		14.3		15.8	
10000 Hz	23.0		22.5		19.6		15.2		16.4		14.4		14.1		15.4	
Dt	13dB		14dB		13dB		9dB		11dB		9dB		8dB		9dB	

Dt = Average Sound Reduction of the duct wall (dB)

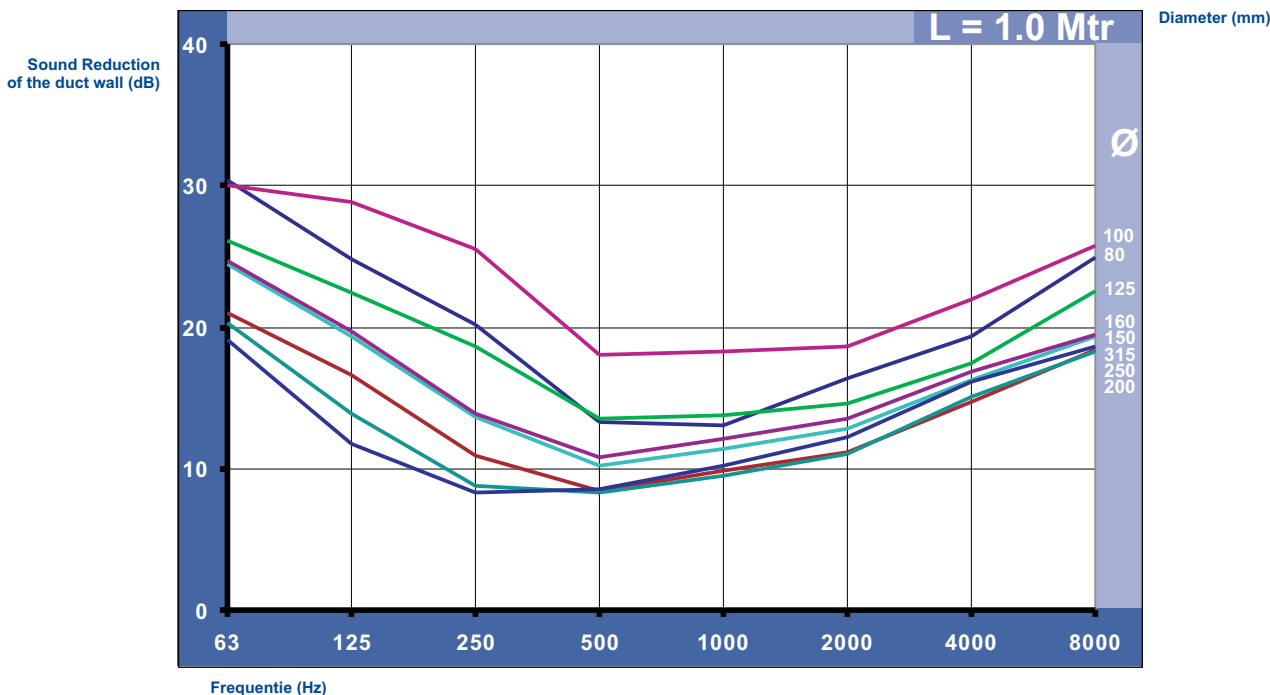
AKUDEC50



	D= 80		D=100		D= 125		D= 150		D= 160		D=200		D= 250		D= 315	
	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.
50 Hz	18.4		8.3		12.7		12.5		16.7		13.3		20.4		17.9	
63 Hz	19.2	17.1	11.6	10.3	16.3	15.2	13.5	13.9	18.0	18.7	17.2	16.5	28.9	24.1	18.9	18.5
80 Hz	15.0		12.0		18.7		16.9		25.3		28.0		28.8		18.8	
100 Hz	19.0		11.6		24.7		10.5		20.2		21.8		26.4		22.9	
125 Hz	33.5	23.6	17.5	15.3	28.3	37.7	23.6	15.0	30.8	24.5	33.1	25.8	26.4	26.3	25.0	22.1
160 Hz	39.4		29.0		40.9		29.1		37.1		30.8		26.1		20.0	
200 Hz	34.6		24.9		34.3		34.8		29.1		24.6		21.0		15.9	
250 Hz	42.4	38.0	38.6	29.4	41.6	36.6	42.4	36.3	32.8	29.7	29.9	25.7	20.8	20.5	17.4	16.0
315 Hz	41.5		41.3		36.7		35.1		18.4		24.5		19.9		15.0	
400 Hz	41.4		37.3		30.5		32.1		27.5		19.9		19.1		14.8	
500 Hz	38.4	39.2	40.1	38.8	29.5	29.3	30.5	29.6	26.7	27.0	19.7	19.8	17.9	18.3	15.5	15.8
630 Hz	38.4		39.4		28.5		27.4		26.8		19.7		18.1		17.7	
800 Hz	36.1		40.0		30.2		27.2		27.6		22.5		20.1		21.1	
1000 Hz	37.4	37.8	44.5	42.5	33.4	32.4	31.8	30.2	29.6	29.4	28.0	25.8	26.0	23.7	28.6	24.4
1250 Hz	41.3		44.8		35.2		35.0		32.4		32.0		33.5		27.3	
1600 Hz	45.7		44.8		37.8		40.8		38.6		34.9		29.8		20.0	
2000 Hz	48.4	48.1	49.1	47.8	43.2	41.1	43.5	41.5	40.4	38.3	28.2	26.7	22.2	20.3	15.8	14.3
2500 Hz	53.3		53.9		47.0		40.7		36.7		23.4		16.8		11.3	
3150 Hz	57.1		54.7		44.8		32.2		30.1		20.0		14.6		11.6	
4000 Hz	61.4	47.4	49.4	45.9	34.0	30.7	28.2	27.0	26.2	24.3	19.3	17.4	12.5	11.6	8.8	9.6
5000 Hz	55.6		42.1		26.7		24.2		21.1		14.9		9.3		9.0	
6300 Hz	43.6		32.9		25.7		23.4		20.3		14.1		9.8		7.9	
8000 Hz	42.1	41.3	31.9	30.6	26.7	25.5	23.7	22.4	19.7	18.9	14.6	13.6	10.1	10.3	9.6	9.1
10000 Hz	39.3		28.4		24.4		20.8		17.4		12.4		11.2		10.2	
Di	41dB		40dB		34dB		33dB		31dB		24dB		20dB		17dB	

Di = Average Attenuation (dB)

AKUDEC50



	D= 80		D=100		D= 125		D= 150		D= 160		D=200		D= 250		D= 315	
	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.
50 Hz	38.1		34.0		32.3		29.3		28.1		23.2		23.5		24.5	
63 Hz	31.2	30.4	29.8	30	26.7	26.1	26.2	24.6	25.7	24.7	21.7	21	20.5	20.3	18.9	19.1
80 Hz	27.8		28.0		23.4		21.5		22.3		19.1		18.3		16.9	
100 Hz	25.1		28.6		22.4		20.1		21.5		19.0		16.1		14.8	
125 Hz	25.3	24.8	28.7	28.8	22.3	22.4	19.3	19.4	19.3	18.7	16.9	16.6	13.6	13.9	11.6	11.8
160 Hz	24.1		29.0		22.6		18.9		18.8		14.8		12.6		10.1	
200 Hz	22.0		28.4		21.1		16.8		17.6		12.8		11.0		8.4	
250 Hz	20.5	20.2	26.0	25.5	18.5	18.6	13.4	13.7	13.7	13.9	10.7	10.9	8.0	8.8	8.0	8.3
315 Hz	18.8		23.4		17.0		12.1		12.0		9.7		8.0		8.6	
400 Hz	15.4		19.3		15.0		10.2		11.1		8.3		7.6		7.7	
500 Hz	13.5	13.3	17.6	18.0	12.9	13.5	10.1	10.2	10.9	10.8	8.4	8.4	8.9	8.3	9.2	8.6
630 Hz	11.8		17.4		12.7		10.4		10.5		8.5		8.5		9.2	
800 Hz	12.5		18.8		13.1		10.6		10.8		8.7		8.7		9.8	
1000 Hz	13.3	13.0	18.1	18.3	14.1	13.8	11.6	11.4	12.2	12.1	10.7	9.8	10.2	9.5	10.6	10.2
1250 Hz	13.4		18.0		14.4		12.3		13.7		10.2		9.8		10.2	
1600 Hz	16.1		18.1		15.4		12.8		14.6		11.2		10.9		11.9	
2000 Hz	16.5	16.4	18.6	18.6	14.4	14.6	12.5	12.8	12.4	13.5	10.7	11.1	10.6	11.0	11.8	12.2
2500 Hz	16.5		19.3		14.1		13.1		13.8		11.3		11.5		12.9	
3150 Hz	17.2		20.6		16.1		14.5		15.2		13.1		13.6		15.0	
4000 Hz	20.1	19.4	21.9	21.9	17.3	17.5	16.9	16.3	14.8	16.9	14.8	14.7	15.1	15.1	16.0	16.2
5000 Hz	22.8		23.6		19.7		18.2		17.3		17.3		17.2		18.0	
6300 Hz	24.0		24.5		21.0		19.3		18.0		18.0		17.8		18.7	
8000 Hz	24.9	24.9	26.1	25.7	23.0	22.5	21.0	19.3	19.8	19.5	19.8	18.4	19.7	18.3	20.2	18.6
10000 Hz	25.9		26.8		24.2		18.0		17.6		17.6		17.6		17.4	
Dt	15dB		19dB		14dB		12dB		13dB		10dB		10dB		11dB	

Dt = Average Sound Reduction of the duct wall (dB)