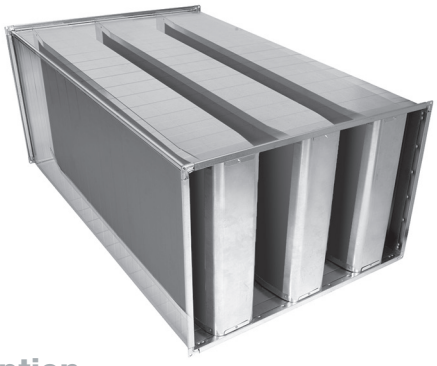
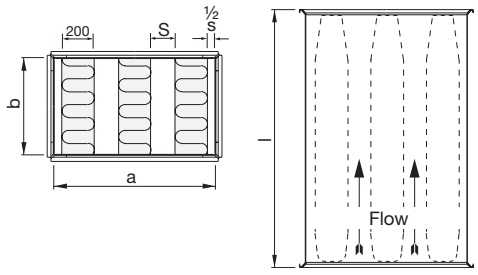
Rectangular straight attenuator SLRS



Description

Rectangular straight attenuator from the Aerodim™ series. SLRS is built with the Aerodim™ attenuator splitter SLRA. The SLRA is manufactured with a frame of galvanized sheet and absorption material type Lindtec™. The splitter is available in a width of 200 mm. Attenuator is equipped with flange profile RJFP or LS.
Due to the aerodynamic design, the SLRS has a low pressure loss and a low generation of flow noise. To calculate the attenuator, you can use our IT-online tool LindQST or DIMsilencer, where width, height, length and splitter distance can be optimized for the best performance.
Tested according to ISO 7235 standard.
SLRS is tested with the whole Lindab smoke evacuation system according to EN 1366-9.

Dimensions



* See how to calculate (S) from a given (a) in the seperate AeroDim-SLRA-SLRS installations instruction page 4.

Order code

Product SLRS 200 S* a b l c

SLRS

Splitter width in mm
200 mm

Splitter distance (S) in mm
Calculate*

Width (a) in mm
Min. - Max. 400 - 2400 mm

Height (b) in mm
Min. - Max. 200 - 2400 mm

Length l_{nom} i mm
MIn. - Max. 500 - 2550 mm

Connection type
e.g. RJFP or LS

Example: SLRS - 200 - 100 - 1200 - 900 - 1000 - RJFP

Technical data examples

Splitter distance S = 60

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz] 63	125	250	500	1k	2k	4k	8k	Pressure value ξ
750	4	9	18	26	35	32	22	16	8,9
1350	6	15	31	46	50	50	36	25	12,0
1500	7	16	34	50	50	50	39	27	12,9
1950	9	21	44	50	50	50	48	32	15,2
2550	11	26	50	50	50	50	50	37	18,5

Splitter distance S = 80

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz] 63	125	250	500	1k	2k	4k	8k	Pressure value ξ
750	3	7	15	23	30	27	18	14	4,9
1350	5	12	26	40	50	48	30	21	6,5
1500	5	14	29	44	50	50	32	22	6,9
1950	7	18	38	50	50	50	40	26	8,1
2550	8	22	47	50	50	50	49	31	9,6

Splitter distance S = 100

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz] 63	125	250	500	1k	2k	4k	8k	Pressure value ξ
750	3	6	13	20	26	22	15	11	2,8
1350	4	11	23	36	50	40	24	17	3,8
1500	5	12	26	40	50	44	27	18	4,0
1905	6	15	33	50	50	50	33	22	4,7
2550	7	19	43	50	50	50	40	26	5,6

Splitter distance S = 120

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz] 63	125	250	500	1k	2k	4k	8k	Pressure value ξ
750	2	6	12	19	23	18	12	9	1,8
1350	4	10	21	33	45	33	20	14	2,4
1500	4	11	23	36	50	36	22	15	2,5
1950	5	14	30	47	50	47	27	18	3,0
2550	6	18	39	50	50	50	33	22	3,5

Splitter distance S = 140

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz] 63	125	250	500	1k	2k	4k	8k	Pressure value ξ
750	2	5	11	17	20	15	10	8	1,1
1350	3	9	19	30	39	27	17	12	1,5
1500	4	10	22	34	44	30	18	12	1,7
1950	4	12	28	44	50	38	22	15	2,0
2550	5	16	36	50	50	49	27	18	2,4

NB. Max. attenuation specified is 50 dB.
Standard lengths (l) : 750, 1350, 1500, 1950, 2550. (shown in table above).
Standard heights (b): 300, 600, 900, 1200,1800.

(Other lengths and heights are available. See min. - max. dimensions in order code. Note that you can exceed the max. dimensions by building together several SLRA/SLRS. See the AeroDim installation instruction for more details).

Special materials and sizes, please contact Lindab sales. The pressure loss Δp in Pa can be calculated from the pressure value ξ: $\Delta p = 0{,}6 \times v2 \times \xi$, where (v) is the velocity on the face area of the attenuator.

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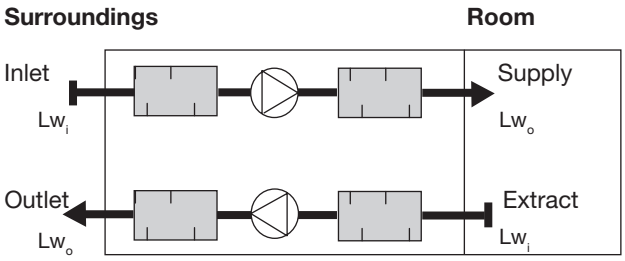
Technical data



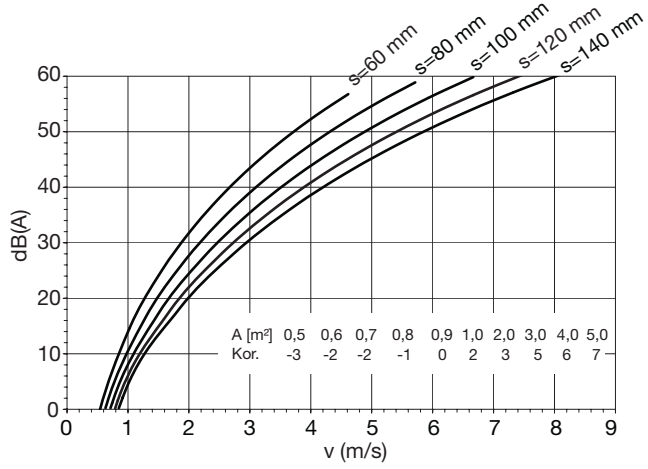
The flow noise and pressure loss is dependent on the velocity (v) on the face area(A) of the attenuator.

However, the noise generated at the inlet of the attenuator Lw$_i$ is higher than the noise generated at the outlet of the attenuator Lw$_o$. It is therefore crucial to use the correct value depend on the placement of the attenuator in the duct system, cf. drawing.

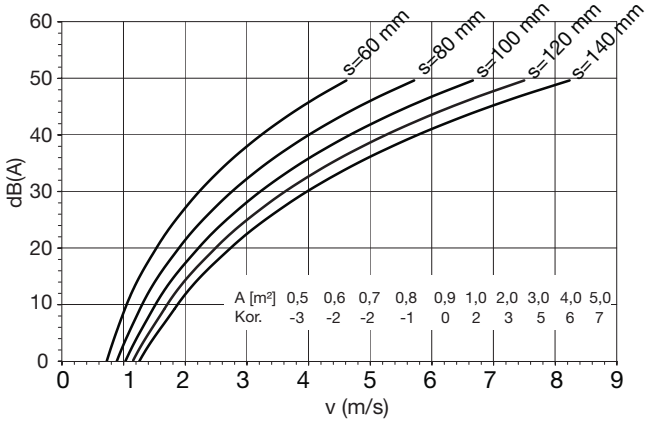
When calculating the attenuator for:

- supply and outlet - use outlet noise Lw$_o$
- inlet and exhaust - use inlet noise Lw$_i$

Sound power level, inlet: Lw$_i$



Sound power level, outlet: Lw$_o$



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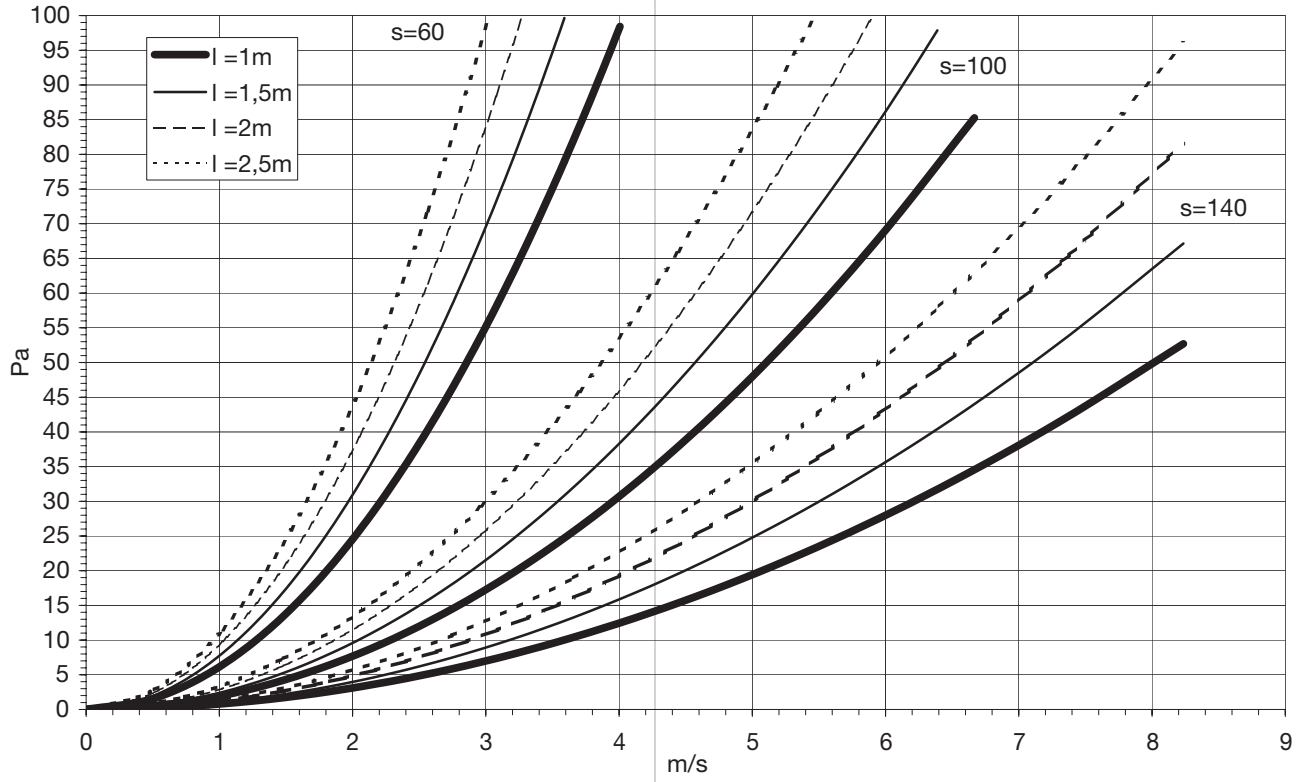
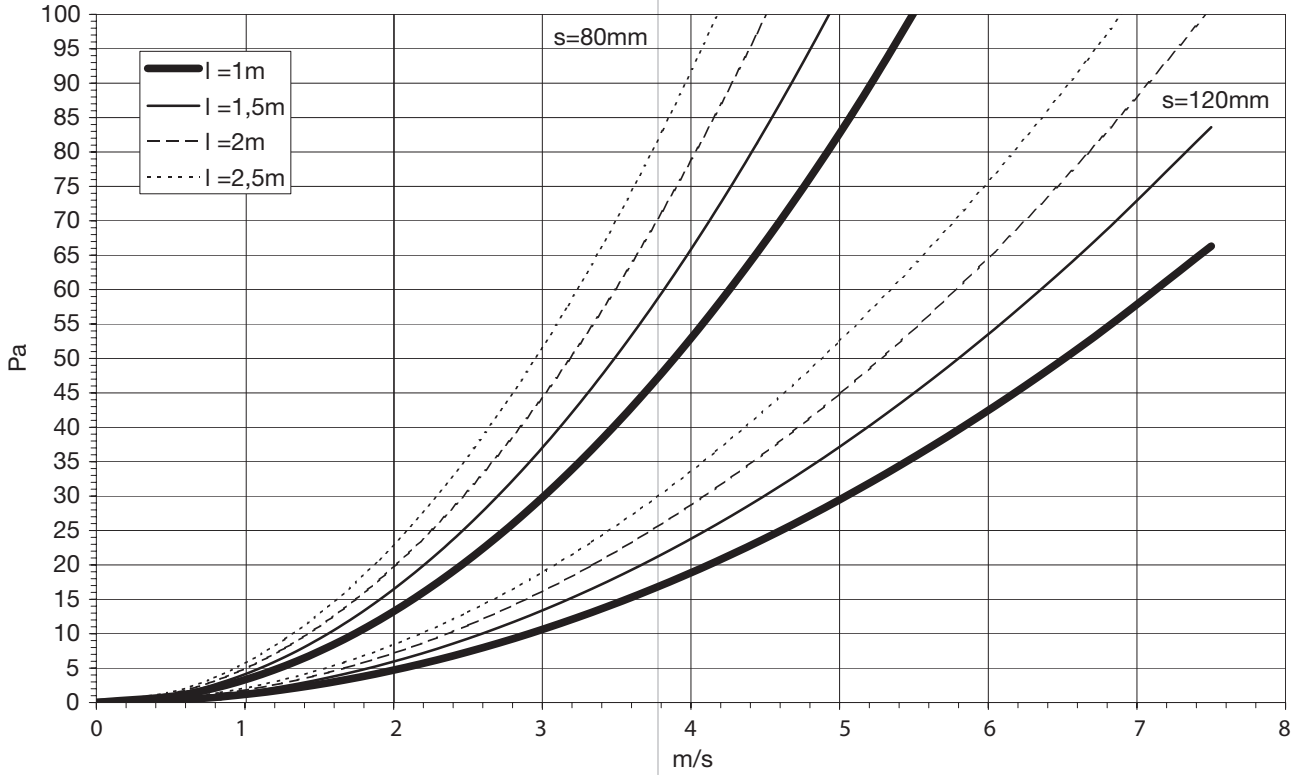
Pressure loss





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Calculation example

Pressure loss and flow noise depend on the velocity on the face area of the attenuator A.

This is illustrated in the following example:
SLRS 900 x 600 mm, Length 1.5 metre
3 splitters, distance 100 mm.

Flow = 7776 m^3/h = 2.16 m^3/s.
Area A = 0.9 m × 0.6 m = 0.54 m^2

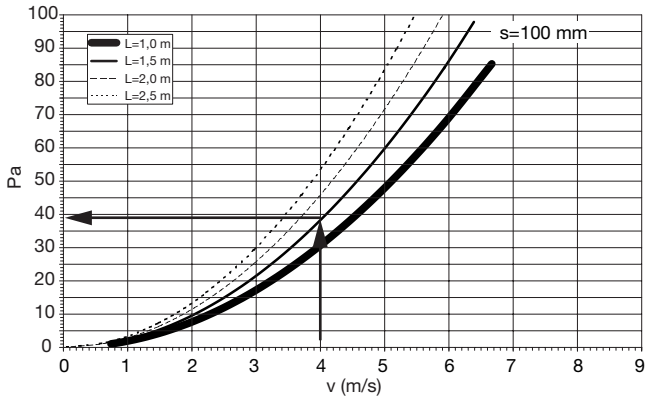
$$\text{Face velocity} = \frac{2{,}16\ m^3/s}{0{,}54\ m^2} = 4 m/s$$

Pressure loss:
Pressure loss = 39 Pa.

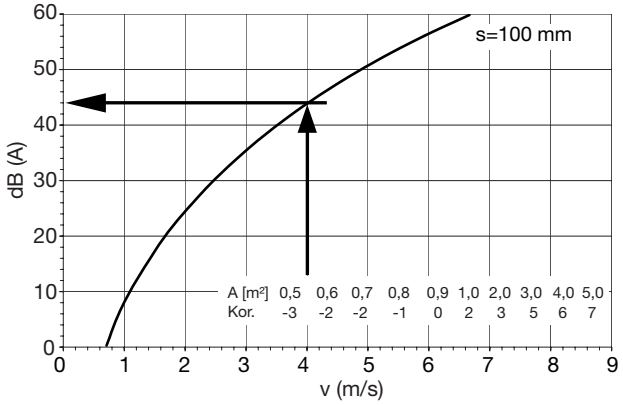
Flow noise from inlet:
Lw_i = 44 dB(A) -3 = 41 dB(A)
(-3 from area correction)

Flow noise from outlet:
From graph:
Lw_o = 36 dB(A) -3 = 33 dB(A)
(-3 from area correction)

Pressure loss



Sound power level, inlet: Lw_i



Sound power level, outlet: Lw_o