

Rectangular straight silencer

SLRS



Description

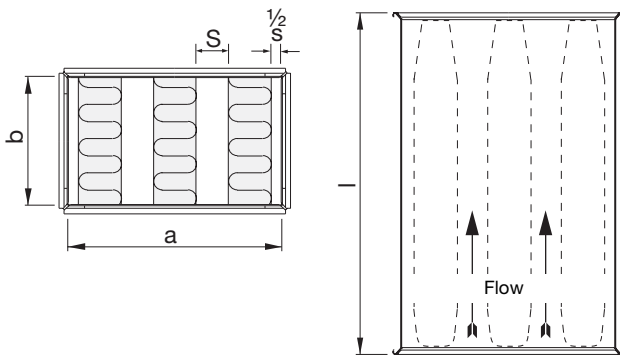
Rectangular straight silencer from the Aerodim™ series. SLRS is built with the Aerodim™ silencer splitter SLRA. The SLRA is manufactured with a frame of galvanized sheet and absorption material type Lindtec™. The splitter is available in a width of 200 mm. Silencer is equipped with flange profile RJFP or LS.

Due to the aerodynamic design, the SLRS has a low pressure loss and a low generation of flow noise. To calculate the silencer, you can use our IT-program lindQST or DIMsilencer, where splitter distance, length and height 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 separate AeroDim-SLRA-SLRS installations instruction page 4.

Order code

Product	SLRS	200	bbb*	cccc	dddd	aaaa	bb
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} in mm							
Min. - Max. 500 - 2550 mm							
Connection type							
e.g. LS or RJFP 20, 30 or 40							

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

Technical data examples

Splitter distance S = 60

Length l _{nom} [mm]	Insertion loss [dB] for centre frequency [Hz]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
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]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
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]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
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]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
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]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
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).

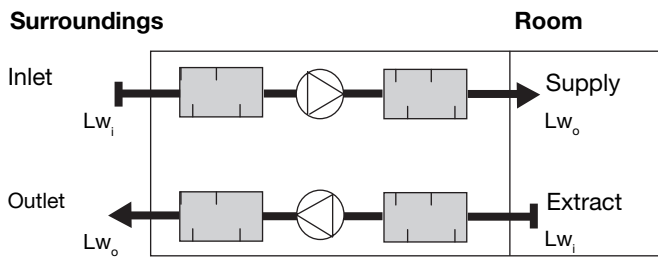
Special materials and sizes, please contact Lindab sales.

The pressure loss Δp in Pa can be calculated from the pressure value ξ: $\Delta p = 0,6 \times v^2 \times \xi$, where (v) is the velocity on the face area of the silencer.

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Technical data



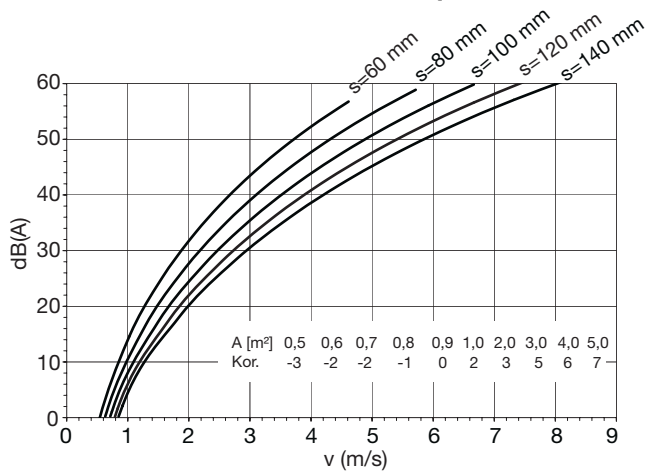
The flow noise and pressure loss is dependent on the velocity (v) on the face area (A) of the silencer.

However, the noise generated at the inlet of the silencer Lw_i is higher than the noise generated at the outlet of the silencer Lw_o . It is therefore crucial to use the correct value depend on the placement of the silencer in the duct system, cf. drawing.

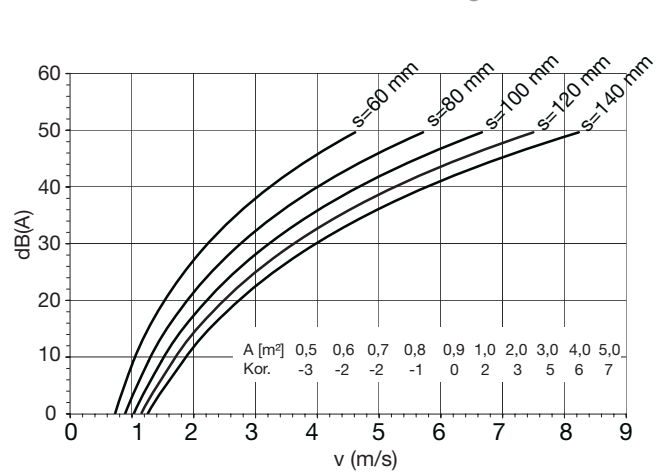
When calculating the silencer for:

- supply and outlet - use outlet noise Lw_o
- inlet and exhaust - use inlet noise Lw_i

Sound power level, inlet: Lw_i



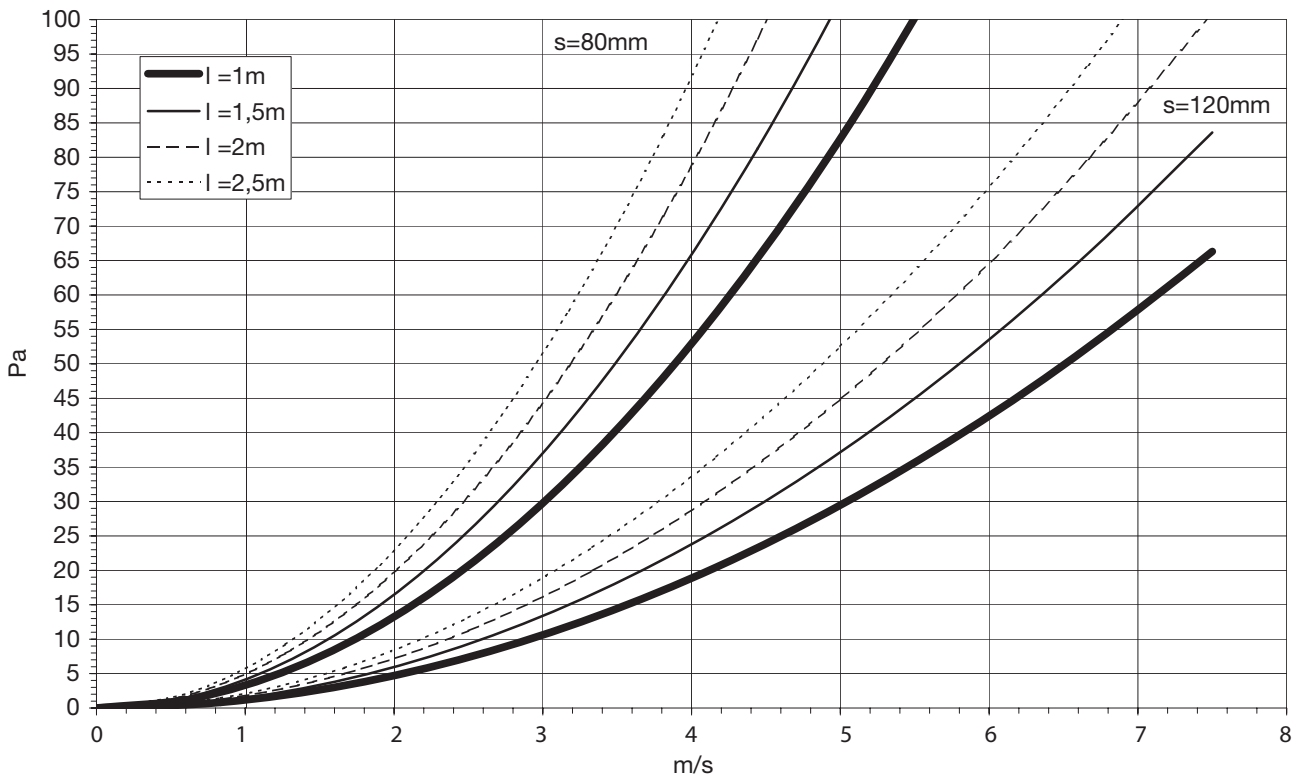
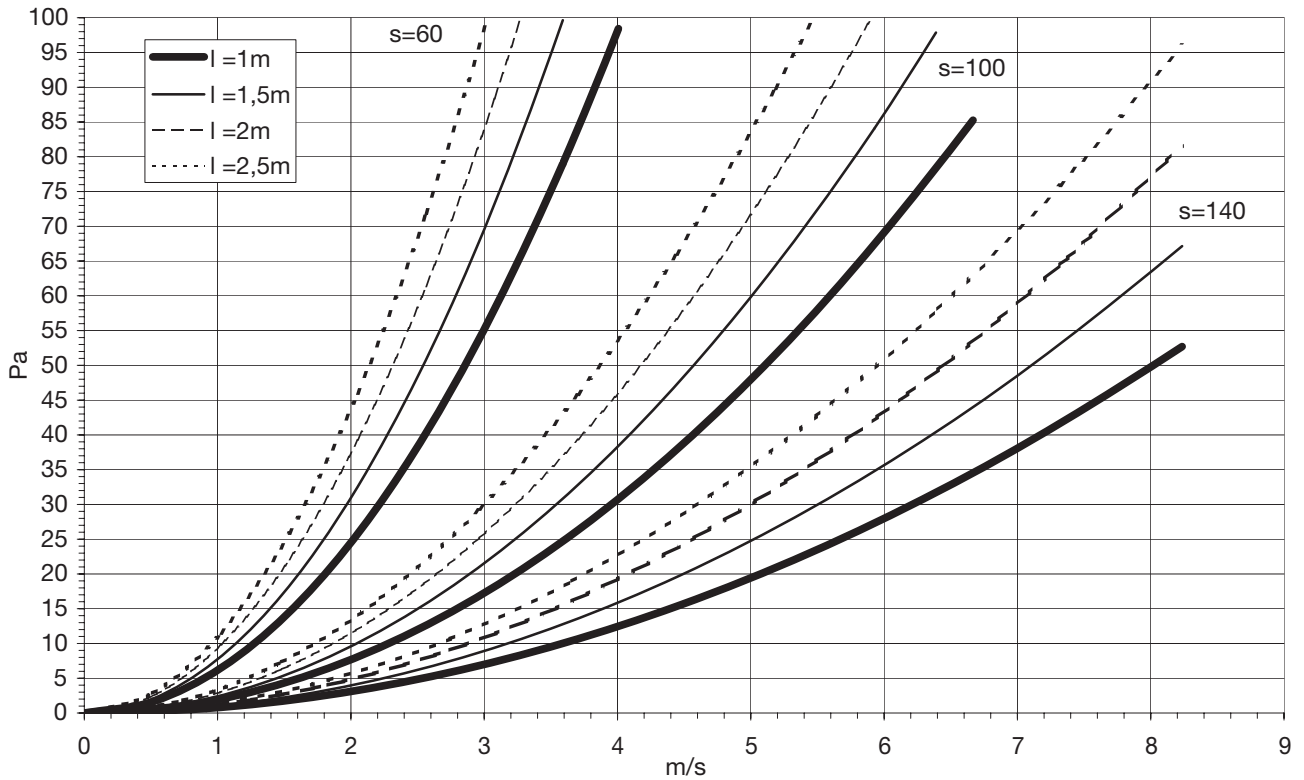
Sound power level, outlet: Lw_o



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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 silencer A.

This is illustrated in the following example:
 SLRS 900x600 mm, Length 1.5 metre
 3 splitters, distance 100 mm.

Flow = $7776 \text{ m}^3/\text{h} = 2.16 \text{ m}^3/\text{s}$.
 Area A = $0.9 \text{ m} \times 0.6 \text{ m} = 0.54 \text{ m}^2$

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

Pressure loss:

Pressure loss = 39 Pa.

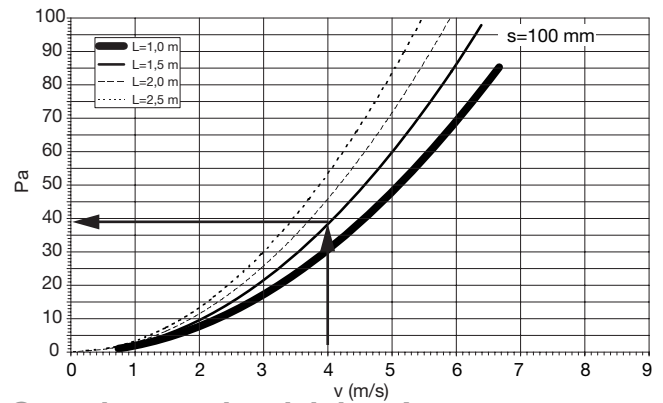
Flow noise from inlet:

$L_{w_i} = 44 \text{ dB(A)} - 3 = 41 \text{ dB(A)}$
 (-3 from area correction)

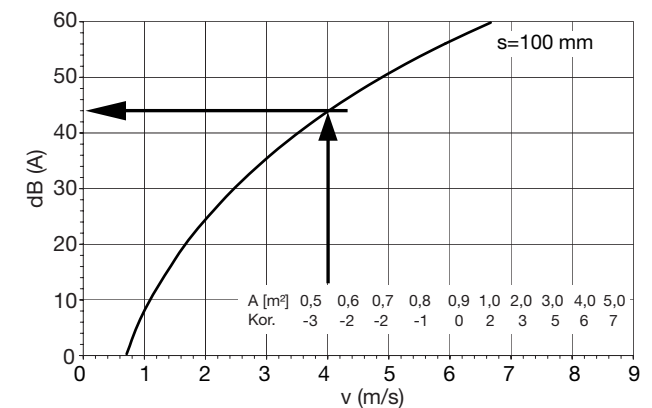
Flow noise from outlet:

From graph:
 $L_{w_o} = 36 \text{ dB(A)} - 3 = 33 \text{ dB(A)}$
 (-3 from area correction)

Pressure loss



Sound power level, inlet: L_{w_i}



Sound power level, outlet: L_{w_o}

