Sound attenuator splitter with resonating plate

TUNE-RA



Description

TUNE-RA is the sound absorbing element inside the TUNE-RS sound attenuators.

TUNE-RA is manufactured with a frame in galvanized sheet metal and with a sound absorbing core of mineral wool. The sides of the splitters are partly covered with resonating plates and glass fleece cover, specifically tuned to enhance sound attenuation in critical fan noise lower frequency range.

- Available in thicknesses 100, 150, 200, and 230 mm.
- Improved sound attenuation at lower frequencies due to resonating plates.
- Cleanable with rotating nylon brush, vacuum cleaner, and damp cloth.
- Hygienic approved VDI 6022 and DIN 1946-4.

Technical data concluded in accordance with ISO 7235.

For special requirements, please contact Lindab sales

Order code

Product **TUNE-RA** **B** **b** **l**

TUNE-RA

Splitter width (B) in mm

100, 150, 200 or 230 mm

Height (b) in mm

Min. - Max. 200-2400 mm

(Single TUNE-RA splitter max. 1200 mm*)

Length (l) in mm

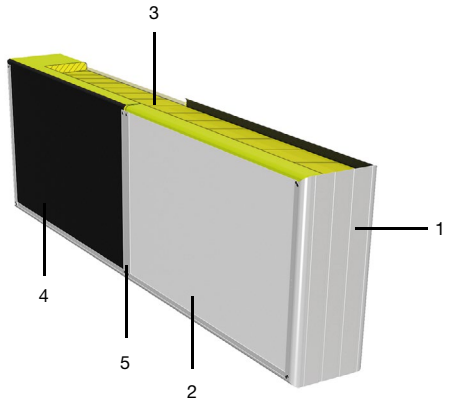
Min. - Max. 450 - 2500 mm

Example: TUNE-RA - 200 - 900 - 1500

In case that height >1200 mm the splitter will be made in 2 pieces.

* The max. height can be increased by stacking two splitters on top of each other.

Schematic illustration



1. Splitter frame
2. Resonating plates
3. Mineral wool
4. Mineral wool glass fleece cover
5. Divider

The absorption material is covered with black glass fleece and resonating plates (50 / 50) on the outer surfaces of the visible splitter.

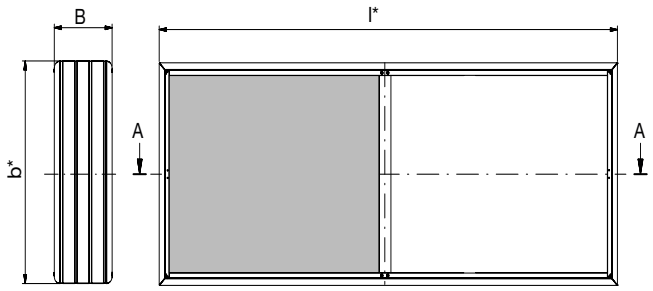
Tools for dimensioning and planning

NOTE that dimensioning your silencer is a delicate balance between numbers of splitters (n) and pressure loss over the sound attenuator. More splitters give a higher attenuation, but also a higher pressure loss in duct. A higher pressure loss will result in a higher energy consumption to make system run.
See how to find the numbers of splitters (n) in duct and how to calculate (S) from a given (a) in the separate rectangular / splitters installation instruction.
To calculate the attenuator you can use our IT-online tool LindQST, where splitter distance, length and height can be optimized for the best performance..

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Dimensions



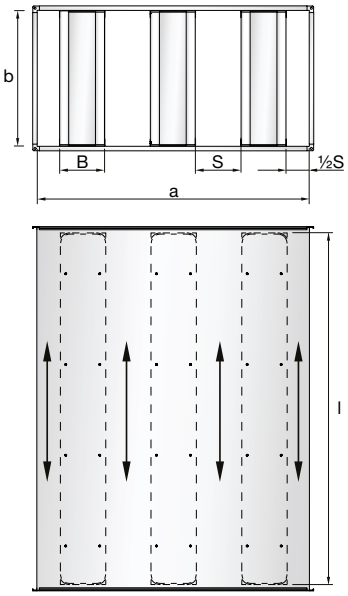
B = 100, 150, 200, or 230 mm

b* = Manufactured height of the splitter is duct height -5 mm

l* = Manufactured length of splitter is duct length -50 mm

Example: Duct 900w x600h x 1500l, splitter size 595 x 1450 mm

TUNE-RA in duct



Length of splitter should be 50 mm shorter than length of duct.
Due to the symmetrical construction of the TUNE-RA, no special concerns are needed when installing the splitter. Even the airflow direction can later be changed without having to turn the splitter around.

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TUNE-RA

Technical data

Splitter Width (B) = 100

Splitter distance (S) = 60 mm

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
550	3	3	9	17	19	14	10	8	4,3
1050	3	5	16	29	35	21	14	12	5,4
1550	4	7	24	41	>50	29	18	15	6,5
2050	4	9	32	>50	>50	37	21	19	7,6
2550	5	12	39	>50	>50	44	25	22	8,7

Splitter Width (B) = 150

Splitter distance (S) = 60 mm

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
550	3	5	12	20	21	14	10	9	8,2
1050	4	9	23	33	34	21	15	13	10,5
1550	6	13	34	46	48	28	19	16	12,9
2050	7	17	44	>50	>50	35	23	19	15,2
2550	9	21	>50	>50	>50	42	28	23	17,6

Splitter Width (B) = 100

Splitter distance (S) = 100 mm

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
550	2	2	6	13	11	8	6	5	1,6
1050	2	3	12	21	21	13	9	8	2,1
1550	3	5	18	30	30	18	11	10	2,5
2050	3	6	23	39	40	22	14	12	2,9
2550	3	7	29	47	50	27	16	15	3,3

Splitter Width (B) = 150

Splitter distance (S) = 100 mm

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
550	2	3	9	15	14	9	7	6	2,8
1050	3	6	18	24	23	14	9	9	3,6
1550	4	9	26	34	32	18	12	11	4,4
2050	6	11	34	43	41	22	15	13	5,2
2550	7	14	43	>50	50	27	18	15	6,0

Splitter Width (B) = 100

Splitter distance (S) = 140 mm

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
550	2	2	5	10	8	6	5	4	0,9
1050	2	3	10	18	15	9	7	6	1,1
1550	2	4	15	25	22	13	8	8	1,3
2050	2	5	19	32	28	16	10	10	1,5
2550	3	6	24	39	35	19	12	11	1,7

Splitter Width (B) = 150

Splitter distance (S) = 140 mm

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
550	2	3	8	12	11	7	5	5	1,4
1050	3	5	15	20	18	10	7	7	1,8
1550	4	7	22	27	25	13	9	8	2,2
2050	5	9	29	35	31	17	11	10	2,6
2550	6	11	36	43	38	20	13	12	3,0

NB. Max. attenuation specified is 50 dB in the tables above.

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 velo-city on the face area of the attenuator.

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Technical data

Splitter Width (B) = 200

Splitter distance (S) = 60 mm

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
550	3	6	16	20	22	15	11	10	17,5
1050	5	12	26	35	31	21	15	14	20,3
1550	7	19	36	50	40	27	19	17	23,2
2050	9	25	46	>50	50	33	23	20	26,1
2550	10	31	>50	>50	>50	40	27	23	29,0

Splitter Width (B) = 230

Splitter distance (S) = 60 mm

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
550	3	6	19	21	24	16	12	11	21,7
1050	6	13	31	34	36	23	16	14	25,1
1550	8	19	42	47	49	30	20	17	28,3
2050	11	25	>50	>50	>50	37	24	20	31,8
2550	14	31	>50	>50	>50	44	28	23	35,2

Splitter Width (B) = 200

Splitter distance (S) = 100 mm

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
550	2	5	13	14	15	10	7	7	5,7
1050	4	9	21	24	22	14	10	9	6,6
1550	5	13	28	34	29	18	13	11	7,5
2050	6	18	36	44	36	22	15	14	8,5
2550	7	22	44	>50	43	26	18	16	9,4

Splitter Width (B) = 230

Splitter distance (S) = 100 mm

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
550	2	5	14	15	15	10	8	7	6,4
1050	4	10	23	24	23	15	11	9	7,4
1550	6	15	32	33	31	20	13	12	8,3
2050	8	19	41	42	39	24	16	14	9,3
2550	10	24	49	>50	48	29	19	16	10,3

Splitter Width (B) = 200

Splitter distance (S) = 140 mm

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
550	2	4	11	11	12	7	6	5	2,7
1050	3	7	17	18	18	10	8	7	3,2
1550	4	11	24	26	23	13	10	9	3,6
2050	5	14	31	34	29	16	12	10	4,0
2550	6	18	37	42	34	19	14	12	4,5

Splitter Width (B) = 230

Splitter distance (S) = 140 mm

Length l_{nom} [mm]	Insertion loss [dB] for centre frequency [Hz]								Pressure value ξ
	63	125	250	500	1k	2k	4k	8k	
550	2	4	12	12	11	8	6	6	3,1
1050	3	8	19	19	17	11	8	7	3,6
1550	5	12	26	26	23	15	10	9	4,0
2050	6	16	33	33	29	18	12	11	4,4
2550	8	20	41	41	35	22	14	12	4,9

NB. Max. attenuation specified is 50 dB in the tables above.

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 attenuator.

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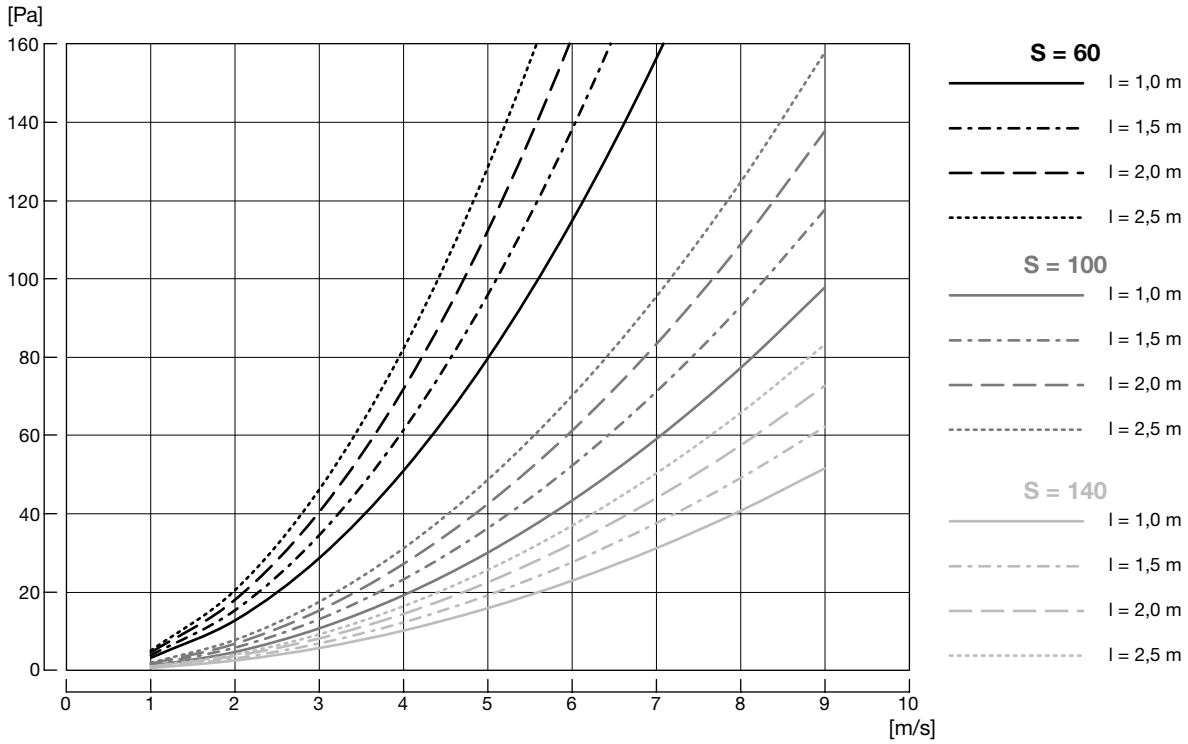
TUNE-RA

Technical data

Pressure loss

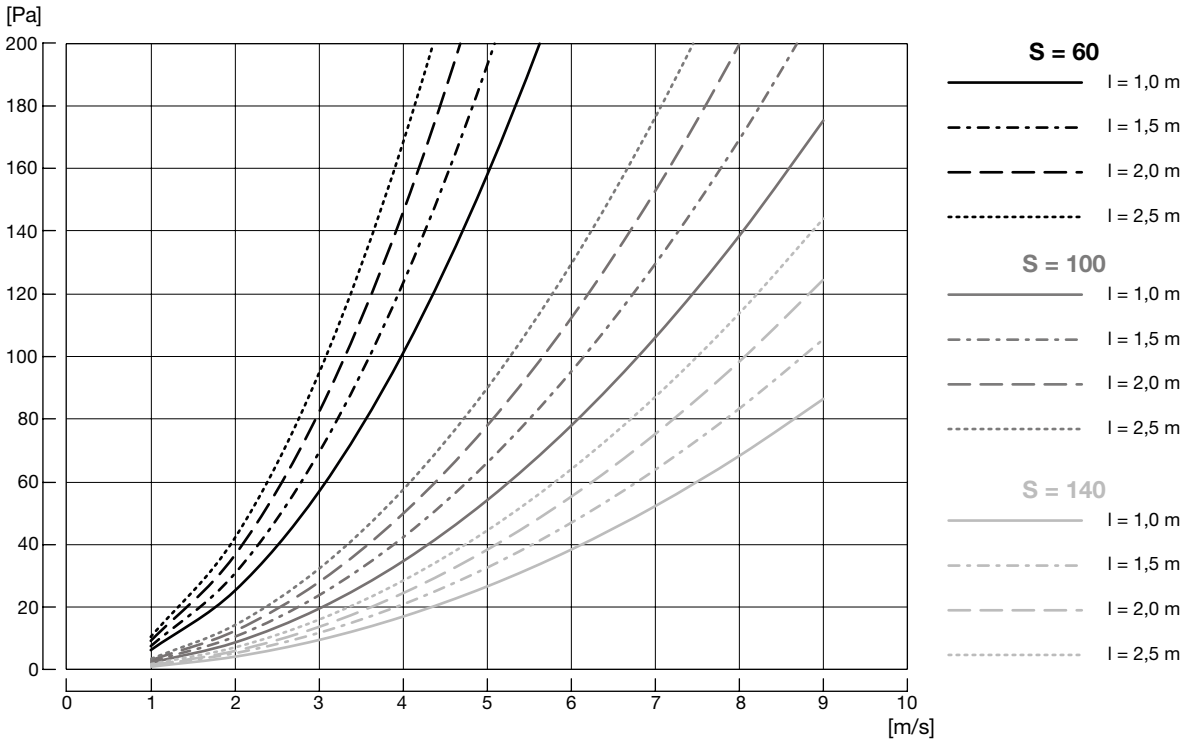
TUNE-RS with splitter width (B) = 100

(S) is distance between splitters.



TUNE-RS with splitter width (B) = 150

(S) is distance between splitters.



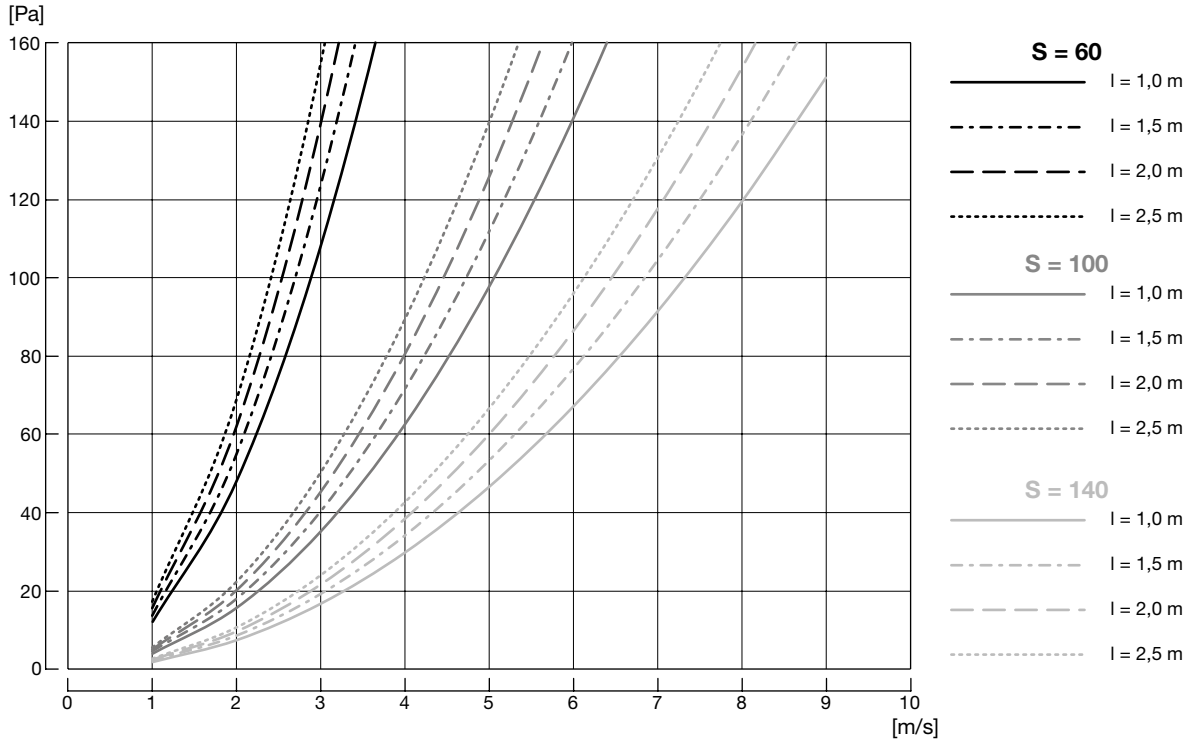
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Technical data

TUNE-RS with splitter width (B) = 200

(S) is distance between splitters.



TUNE-RS with splitter width (B) = 230

(S) is distance between splitters.

