

# Rectangular straight attenuator

# DLDY



## Description

DLDY is fitted with built-in side splitters located outside the fitting dimensions. The products can be manufactured in all standard duct sizes.

## Design

DLDY has an external shell of trapezoidal corrugated sheet for stability and reduced risk of natural oscillation. DLDY is designed for low air resistance with splitter combinations that dampen particularly low-frequency noise well. The type of insulation material is Lindtec which has been developed to provide good noise properties, low weight and to be cleanable.

DLDY meets the requirements of air tightness class C and pressure class 2 according to EN 1507:2006.

Attenuator is equipped with joining profile RJFP20, RJFP30, RJFP40 or LS1.

## Tools for dimensioning and planning

The software lindQST, DIMsilencer and Cadvent offer features for dimensioning and selection of products in an environment with 3D modelling. Computerised planning can be conducted with automatic presentation of noise levels, pressure drop etc.

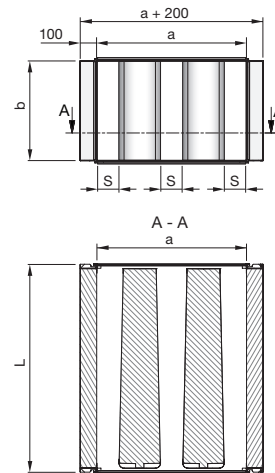
Tested according to ISO 7235 standard.

## Order code

Product	DLDY	a	b	l	d
DLDY					
<b>Width (a) in mm</b>					
400 - 2400 mm					
<b>Height (b) in mm</b>					
300 - 2400 mm					
<b>Length (l) in mm</b>					
500 - 2450 mm					
<b>Code (d)</b>					
Calculate by lindQST or DIMsilencer					

Example: DLDY - 800 x 600 - 650 - 2016

## Dimensions



Material is galvanized steel.

Standard lengths (l) : 650, 1250, 1850, 2450 mm.  
Standard heights (b) : 300, 600, 900 , 1200, 1800 mm.

Special materials and sizes, please contact Lindab sales.

**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 DLDY attenuators.**

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## Manual designing for DLDY

A number of attenuators can be designed manually, for more combinations of attenuators and faster calculations use IT-online tool LindQST or DIMsilencer Manual method of calculation is shown below:

**A** Specify connection dimensions and flow-type location of the attenuator.

Width	800	mm
Height	1000	mm
Length	1350	mm
Location	Exhaust air	

DLDY-800-1000-1350-2016

**B** Specify the sound power level before the attenuator.  
 Read the insertion attenuation from the tables on page 7 – 11.  
 Calculate the sound power level after the attenuator irrespective of the air flow (self generated noise).

### Insertion attenuation

	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Resistance number	Self generated noise number inlet
Sound power level before attenuator	72	73	73	64	62	59	52	44		
Attenuation from table page 7 - 11	3	11	19	31	35	26	19	14	2,8	2,7
Sound power level after attenuator with-out self generated noise	69	62	54	33	27	33	33	30		

**C** Determine the pressure drop with help of the graph on page 4 and table on page 5.  
 In this case we have straight ducts before and after the attenuator.

### Pressure drop

	Area 0,8 m <sup>2</sup>	Air flow 400 l/s
Graph on page 4, use resistance number, area and air velocity	Air velocity 5 m/s	Pressure drop 42 Pa
Correction at disturbance according table on page 5	Factor 1	Pressure drop after correction 42 Pa

**D** Determine the self generated noise from the attenuator at present air flow.  
 Calculate the sound power level after the attenuator inclusive the self generated noise.

### Self generated noise

	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Graph on page 5, use resistance number and air velocity	59	55	54	51	48	45	41	35
Correction for gross cross section area	-1	-1	-1	-1	-1	-1	-1	-1
Self generated noise	58	54	53	50	47	44	40	34
Sound power level after the attenuator (Longarithmical addition of self generated noise and sound power level after the attenuator without self generated noise)	59	63	57	50	47	44	41	35

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The following table can be used for own manual calculations in accordance with the example on the previous page.

## Designing table for DLDY

Width	<input type="text"/>	mm
Height	<input type="text"/>	mm
Length	<input type="text"/>	mm
Location	<input type="text"/>	
<input type="text"/>		

### Insertion attenuation

	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Resistance number	Self generated noise number inlet
Sound power level before attenuator										
Attenuation from table page 7 - 11										
Sound power level after attenuator with-out self generated noise										

### Pressure drop

	Area 0,8 m <sup>2</sup>	Air flow 400 l/s
Graph on page 4, use resistance number, area and air velocity	Air velocity m/s	Pressure drop Pa
Correction at disturbance according table on page 5	Factor	Pressure drop after correction Pa

### Self generated noise

	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Graph on page 6, use resistance number and air velocity								
Correction for gross cross section area								
Self generated noise								
Sound power level after the attenuator								
(Longarithmical addition of self generated noise and sound power level after the attenuator without self generated noise)								

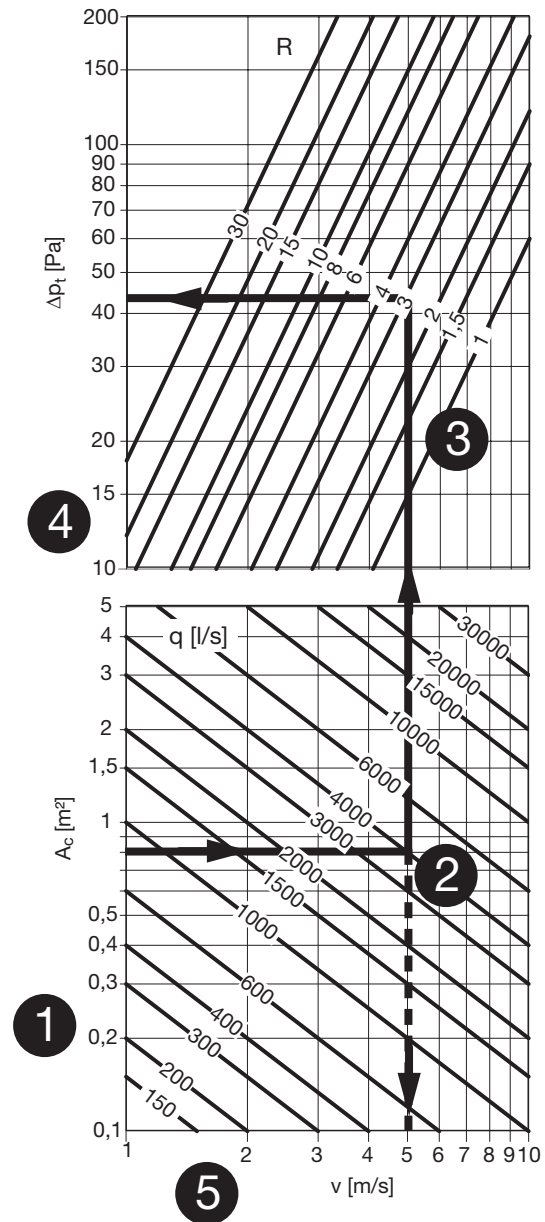
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## Pressure drop

Follow the directions below and the adjoining graph.

- 1 Calculate the gross cross section area  $a \times b$  in  $m^2$ .
- 2 Go horizontal in the graph to the present air flow, l/s.
- 3 Go up to the resistance number achieved from the tables on page 7 – 11.
- 4 Read the pressure drop over the attenuator, at straight duct connection before and after the attenuator, (factor 1,0). For other modes of connection see the table for correction on page 5.
- 5 Air flow velocity, which is used at the calculation of the self generated noise, can be read here.



# Rectangular straight attenuator

# DLDY

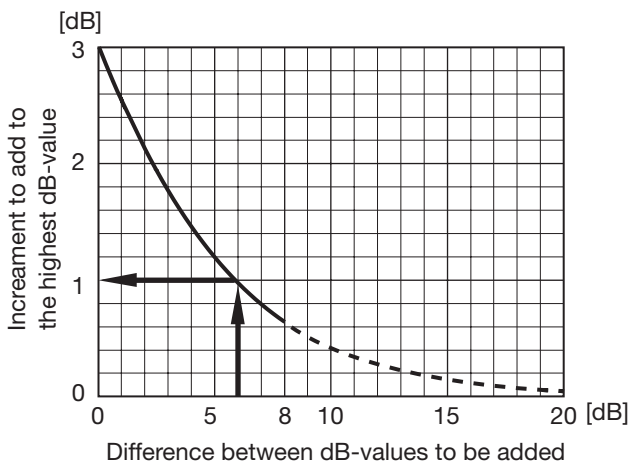
## Pressure drop

Present pressure drop = Read pressure drop × below factor  
 D = The largest connection side (a or b) of the attenuator.

The table contains of a selection of the most common disturbance cases.

Before the attenuator				Attenuator	After the attenuator				Factor
Distance before the attenuator					Distance after the attenuator				
3xD	2xD	1xD	0xD		0xD	1xD	2xD	3xD	
Duct				Attenuator	Duct				1,0
<del>Bend</del>				Attenuator	Duct				1,1
	<del>Bend</del>			Attenuator	Duct				1,2
		<del>Bend</del>		Attenuator	Duct				1,4
			<del>Bend</del>	Attenuator	Duct				1,5
				Duct	Attenuator		<del>Bend</del>		1,2
				Duct	Attenuator	<del>Bend</del>			1,3
<del>Bend</del>				Attenuator		<del>Bend</del>			1,3
<del>Bend</del>				Attenuator	<del>Bend</del>				1,4
	<del>Bend</del>			Attenuator		<del>Bend</del>			1,5
	<del>Bend</del>			Attenuator	<del>Bend</del>				1,6
		<del>Bend</del>		Attenuator		<del>Bend</del>			1,7
		<del>Bend</del>		Attenuator	<del>Bend</del>				1,8
			<del>Bend</del>	Attenuator		<del>Bend</del>			1,9
			<del>Bend</del>	Attenuator	<del>Bend</del>				2,0
				Chamber	Attenuator	Duct branch			2,0
				Duct	Attenuator	Chamber			3,0
				Chamber	Attenuator	Chamber			3,5

## Logarithmic addition



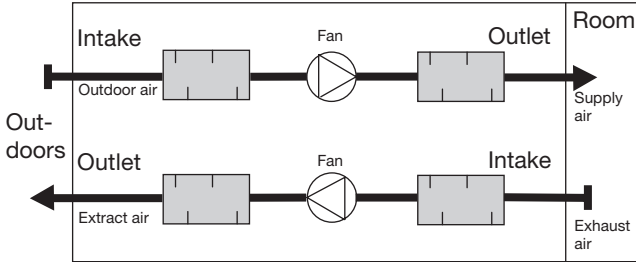
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## Self generated noise per frequency band

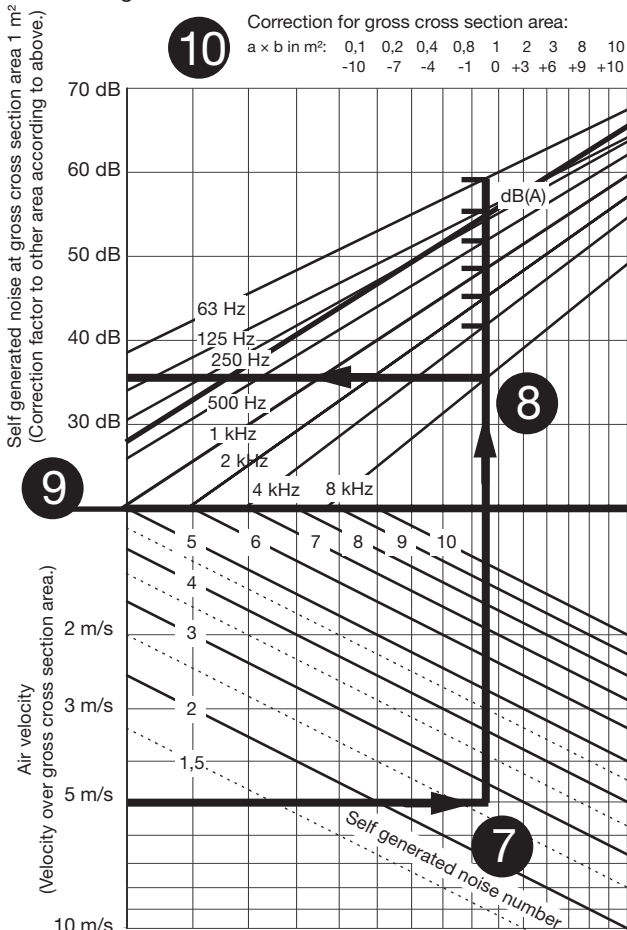
Follow the directions below and the adjoining graph.

- Decide from the location of the attenuator whether it is the supply or exhaust graph that shall be used. (Rule of memory - the side that leads away from the fan, i.e. at supply air the outlet graph is used and at exhaust air the in-take graph.)



- Go horizontally into the present graph, at present air velocity, to the self generated noise number.
- Then go vertically up to the crossing of the different frequency band lines.
- Read the self generated noise, at gross cross section area 1 m<sup>2</sup>, for each frequency band straight out to the left. In the example only the 8000 Hz-reading is shown.
- Add or subtract the correction for the present gross cross section area.

Self generated noise in intake DLD/DLDR/DLDY



## Sound power level after the attenuator

The sound power level after the attenuator can be calculated for all frequencies by a logarithmical addition of:

”The self generated noise” and ”The sound power level before the attenuator”.

The shown example gives at 8000 Hz:

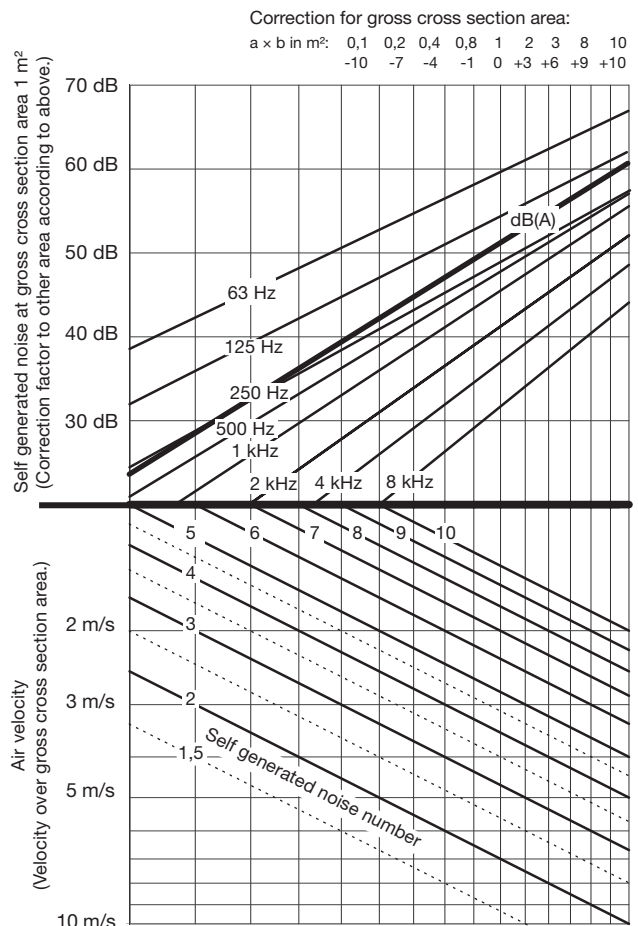
$$\text{Self generated noise} = 35 \text{ dB} - 1 \text{ dB} = 34 \text{ dB}$$

$$\text{Sound power level before the attenuator} - \text{the attenuation: } 44 \text{ dB} - 14 \text{ dB} = 30 \text{ dB}$$

$$\text{Logarithmic addition of } 34 \text{ and } 30 = 35 \text{ dB}$$

(See graph for logarithmical addition on page 5.)

Self generated noise in outlet DLD/DLDR/DLDY



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Width a mm	Code	Length l mm	Static insertion attenuation / octave band [dB]								Resis- tance number	Self gen- erated noise number Intake	Self gen- erated noise number Outlet
			63	125	250	500	1000	2000	4000	8000			
400	2009	650	2	5	9	18	21	16	13	10	1,0	2,0	1,6
400	2010	650	3	7	11	23	26	20	16	12	2,5	2,7	2,0
400	2009	1250	2	9	16	30	36	27	19	14	1,2	2,0	1,6
400	2010	1250	4	12	21	38	46	34	25	19	2,8	2,7	2,0
400	2009	1850	3	12	24	43	51	38	26	19	1,3	2,0	1,6
400	2010	1850	5	16	31	53	60	49	33	25	3,2	2,7	2,0
500	2012	650	2	5	9	17	17	13	10	8	1,1	2,0	1,7
500	2013	650	3	7	11	20	21	16	13	10	2,2	2,5	2,0
500	2014	650	4	9	14	25	26	20	16	12	4,7	3,3	2,5
500	2012	1250	3	9	16	28	29	22	16	12	1,2	2,0	1,7
500	2013	1250	4	12	20	34	36	27	19	14	2,4	2,5	2,0
500	2014	1250	6	15	26	41	46	34	25	19	5,3	3,3	2,5
500	2012	1850	4	13	24	39	42	31	21	16	1,3	2,0	1,7
500	2013	1850	5	16	30	47	51	38	26	19	2,6	2,5	2,0
500	2014	1850	8	21	38	58	60	49	33	25	5,9	3,3	2,5
600	2012	650	2	6	11	22	28	21	17	13	3,1	3,0	2,0
600	2013	650	2	5	7	13	12	10	8	6	0,6	1,7	1,5
600	2015	650	2	6	9	15	14	11	9	7	1,1	2,0	1,7
600	2016	650	3	7	11	18	17	13	10	8	2,0	2,4	2,0
600	2017	650	4	9	13	22	21	16	13	10	3,8	3,0	2,4
600	2012	1250	3	11	20	36	49	36	26	19	3,8	3,0	2,0
600	2013	1250	2	8	14	22	22	16	12	9	0,7	1,7	1,5
600	2015	1250	3	10	16	25	25	18	13	10	1,2	2,0	1,7
600	2016	1250	4	12	20	30	29	22	16	12	2,2	2,4	2,0
600	2017	1250	6	15	24	36	36	27	19	14	4,1	3,0	2,4
600	2012	1850	4	15	30	50	60	51	35	26	4,4	3,0	2,0
600	2013	1850	3	11	20	30	31	22	15	11	0,7	1,7	1,5
600	2015	1850	4	14	24	36	36	26	18	13	1,3	2,0	1,7
600	2016	1850	6	17	29	42	42	31	21	16	2,4	2,4	2,0
600	2017	1850	8	21	35	50	51	38	26	19	4,5	3,0	2,4
700	2012	650	2	5	9	18	20	15	12	9	1,6	2,3	1,8
700	2013	650	3	8	12	23	28	21	17	13	4,8	3,5	2,3
700	2016	650	3	6	9	14	12	10	8	6	1,1	2,0	1,8
700	2017	650	3	7	10	16	14	11	9	7	1,9	2,3	2,0
700	2012	1250	3	9	17	30	35	26	19	14	1,9	2,3	1,8
700	2013	1250	4	13	23	38	49	36	26	19	5,7	3,5	2,3
700	2016	1250	4	10	16	24	22	16	12	9	1,2	2,0	1,8
700	2017	1250	5	12	19	27	25	18	13	10	2,0	2,3	2,0
700	2012	1850	3	12	24	41	50	36	25	19	2,2	2,3	1,8
700	2013	1850	6	18	34	53	60	51	35	26	6,5	3,5	2,3
700	2016	1850	5	14	24	33	31	22	15	11	1,3	2,0	1,8
700	2017	1850	6	17	28	38	36	26	18	13	2,2	2,3	2,0
800	2016	650	2	6	10	19	20	15	12	9	2,5	2,7	2,0
800	2017	650	4	9	14	24	28	21	17	13	6,9	4,0	2,7
800	2019	650	3	6	9	13	11	9	7	5	1,2	2,0	1,8
800	2016	1250	3	11	19	31	35	26	19	14	2,8	2,7	2,0
800	2017	1250	6	15	26	40	49	36	26	19	8,0	4,0	2,7
800	2019	1250	4	11	16	22	19	14	10	8	1,2	2,0	1,8
800	2016	1850	4	15	28	44	50	36	25	19	3,2	2,7	2,0
800	2017	1850	7	20	37	56	60	51	35	26	9,1	4,0	2,7
800	2019	1850	5	15	24	31	27	19	13	10	1,3	2,0	1,8
800	2016	2450	5	19	36	56	60	47	31	23	3,5	2,7	2,0
800	2017	2450	9	26	49	60	60	44	33	33	10,3	4,0	2,7
800	2019	2450	6	19	31	40	35	24	16	12	1,4	2,0	1,8
900	2015	650	2	4	7	13	13	10	8	6	0,7	1,8	1,5
900	2017	650	2	6	9	15	15	12	10	7	1,5	2,3	1,8
900	2019	650	3	7	11	20	20	15	12	9	3,5	3,0	2,3
900	2020	650	4	10	15	25	28	21	17	13	9,4	4,5	3,0
900	2015	1250	2	7	13	21	22	16	12	9	0,8	1,8	1,5
900	2017	1250	3	9	16	26	27	20	14	11	1,7	2,3	1,8

# Rectangular straight attenuator

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Width a mm	Code	Length l mm	Static insertion attenuation / octave band [dB]								Resistance number	Self generated noise number Intake	Self generated noise number Outlet
			63	125	250	500	1000	2000	4000	8000			
900	2019	1250	4	12	21	33	35	26	19	14	4,0	3,0	2,3
900	2020	1250	7	16	28	41	49	36	26	19	10,8	4,5	3,0
900	2015	1850	2	10	19	29	32	23	16	12	0,9	1,8	1,5
900	2017	1850	4	13	24	36	39	28	19	14	1,9	2,3	1,8
900	2019	1850	6	17	30	46	50	36	25	19	4,4	3,0	2,3
900	2020	1850	9	23	41	58	60	51	35	26	12,2	4,5	3,0
900	2015	2450	3	13	24	38	41	29	19	14	1,0	1,8	1,5
900	2017	2450	4	17	31	46	50	36	24	18	2,1	2,3	1,8
900	2019	2450	7	22	40	59	60	47	31	23	4,9	3,0	2,3
900	2020	2450	11	30	53	60	60	60	44	33	13,6	4,5	3,0
1000	2015	650	1	4	6	11	11	9	7	5	0,5	1,7	1,4
1000	2018	650	2	5	8	13	13	10	8	6	1,1	2,0	1,7
1000	2020	650	3	6	10	16	15	12	10	7	2,2	2,5	2,0
1000	2021	650	4	8	12	20	20	15	12	9	4,7	3,3	2,5
1000	2022	650	5	11	16	25	28	21	17	13	12,2	5,0	3,3
1000	2015	1250	2	6	11	18	19	14	10	7	0,6	1,7	1,4
1000	2018	1250	3	8	14	22	22	16	12	9	1,2	2,0	1,7
1000	2020	1250	4	11	18	27	27	20	14	11	2,4	2,5	2,0
1000	2021	1250	5	14	23	34	35	26	19	14	5,3	3,3	2,5
1000	2022	1250	8	18	30	42	49	36	26	19	13,9	5,0	3,3
1000	2015	1850	2	9	17	26	27	19	13	10	0,7	1,7	1,4
1000	2018	1850	3	12	21	31	32	23	16	12	1,3	2,0	1,7
1000	2020	1850	5	15	26	38	39	28	19	14	2,6	2,5	2,0
1000	2021	1850	7	19	33	47	50	36	25	19	5,9	3,3	2,5
1000	2022	1850	11	25	44	59	60	51	35	26	15,7	5,0	3,3
1000	2015	2450	2	12	22	33	35	24	16	12	0,7	1,7	1,4
1000	2018	2450	4	15	28	40	41	29	19	14	1,4	2,0	1,7
1000	2020	2450	6	19	34	49	50	36	24	18	2,9	2,5	2,0
1000	2021	2450	9	25	44	60	60	47	31	23	6,4	3,3	2,5
1000	2022	2450	14	33	57	60	60	60	44	33	17,4	5,0	3,3
1100	2018	650	2	7	12	22	29	22	17	13	5,0	3,7	2,2
1100	2019	650	2	5	7	12	11	9	7	5	0,8	1,8	1,6
1100	2021	650	2	6	9	14	13	10	8	6	1,5	2,2	1,8
1100	2023	650	3	7	10	17	15	12	10	7	2,9	2,8	2,2
1100	2024	650	4	9	13	21	20	15	12	9	6,2	3,7	2,8
1100	2018	1250	3	11	22	36	50	38	27	20	6,2	3,7	2,2
1100	2019	1250	2	8	13	20	19	14	10	7	0,9	1,8	1,6
1100	2021	1250	3	10	16	23	22	16	12	9	1,6	2,2	1,8
1100	2023	1250	5	12	19	28	27	20	14	11	3,2	2,8	2,2
1100	2024	1250	6	15	24	35	35	26	19	14	6,8	3,7	2,8
1100	2018	1850	4	16	32	50	60	53	37	27	7,4	3,7	2,2
1100	2019	1850	3	11	19	27	27	19	13	10	1,0	1,8	1,6
1100	2021	1850	4	13	23	32	32	23	16	12	1,8	2,2	1,8
1100	2023	1850	6	17	28	39	39	28	19	14	3,5	2,8	2,2
1100	2024	1850	9	21	36	49	50	36	25	19	7,5	3,7	2,8
1100	2018	2450	5	20	42	60	60	60	46	34	8,5	3,7	2,2
1100	2019	2450	3	14	25	35	35	24	16	12	1,0	1,8	1,6
1100	2021	2450	5	17	31	42	41	29	19	14	1,9	2,2	1,8
1100	2023	2450	7	22	37	50	50	36	24	18	3,8	2,8	2,2
1100	2024	2450	11	27	47	60	60	47	31	23	8,2	3,7	2,8
1200	2023	650	2	5	8	12	11	9	7	5	1,1	2,0	1,7
1200	2024	650	4	8	13	23	25	19	15	11	6,9	4,0	2,7
1200	2025	650	3	7	9	14	13	10	8	6	2,0	2,4	2,0
1200	2027	650	4	8	11	17	15	12	10	7	3,8	3,0	2,4
1200	2023	1250	3	9	14	20	19	14	10	7	1,2	2,0	1,7
1200	2024	1250	5	14	24	39	43	32	23	17	8,0	4,0	2,7
1200	2025	1250	4	11	17	24	22	16	12	9	2,2	2,4	2,0
1200	2027	1250	5	13	21	29	27	20	14	11	4,1	3,0	2,4
1200	2023	1850	4	12	21	29	27	19	13	10	1,3	2,0	1,7
1200	2024	1850	7	20	36	54	60	45	31	23	9,1	4,0	2,7
1200	2025	1850	5	15	25	34	32	23	16	12	2,4	2,4	2,0



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Width a mm	Code	Length l mm	Static insertion attenuation / octave band [dB]								Resistance number	Self generated noise number Intake	Self generated noise number Outlet
			63	125	250	500	1000	2000	4000	8000			
1200	2027	1850	7	19	31	40	39	28	19	14	4,5	3,0	2,4
1200	2023	2450	4	16	28	37	35	24	16	12	1,4	2,0	1,7
1200	2024	2450	9	25	47	60	60	59	39	29	10,3	4,0	2,7
1200	2025	2450	6	20	33	43	41	29	19	14	2,5	2,4	2,0
1200	2027	2450	9	24	40	52	50	36	24	18	4,8	3,0	2,4
1300	2018	650	2	4	7	12	12	10	8	6	0,8	1,9	1,5
1300	2021	650	2	6	9	15	15	12	9	7	1,8	2,4	1,9
1300	2022	650	3	8	13	23	29	22	17	13	7,8	4,3	2,6
1300	2023	650	3	7	11	19	19	15	12	9	4,3	3,3	2,4
1300	2026	650	3	7	10	15	13	10	8	6	2,6	2,6	2,2
1300	2018	1250	2	7	13	20	21	15	11	8	0,9	1,9	1,5
1300	2021	1250	3	9	16	25	26	19	14	10	2,0	2,4	1,9
1300	2022	1250	5	13	24	38	50	38	27	20	9,4	4,3	2,6
1300	2023	1250	5	12	21	32	34	25	18	14	4,9	3,3	2,4
1300	2026	1250	5	12	19	25	22	16	12	9	2,8	2,6	2,2
1300	2018	1850	2	10	18	28	30	21	15	11	1,0	1,9	1,5
1300	2021	1850	4	13	24	35	37	27	18	14	2,2	2,4	1,9
1300	2022	1850	6	19	36	53	60	53	37	27	11,0	4,3	2,6
1300	2023	1850	6	17	31	45	49	36	24	18	5,4	3,3	2,4
1300	2026	1850	6	17	27	35	32	23	16	12	3,0	2,6	2,2
1300	2018	2450	3	13	24	36	39	27	18	13	1,1	1,9	1,5
1300	2021	2450	4	17	31	45	48	34	23	17	2,5	2,4	1,9
1300	2022	2450	8	24	47	60	60	60	46	34	12,6	4,3	2,6
1300	2023	2450	7	22	41	58	60	46	31	23	6,0	3,3	2,4
1300	2026	2450	8	22	36	45	41	29	19	14	3,2	2,6	2,2
1400	2021	650	1	4	6	11	11	9	7	5	0,6	1,8	1,5
1400	2022	650	2	5	8	15	17	13	10	8	1,6	2,3	1,8
1400	2026	650	3	7	10	17	16	13	10	8	2,9	2,8	2,2
1400	2028	650	4	9	13	22	22	17	13	10	7,2	4,0	2,8
1400	2029	650	3	7	9	13	11	9	7	5	1,9	2,3	2,0
1400	2021	1250	2	7	12	18	19	14	10	7	0,7	1,8	1,5
1400	2022	1250	2	8	15	26	29	21	15	12	1,9	2,3	1,8
1400	2026	1250	4	11	19	28	28	21	15	11	3,3	2,8	2,2
1400	2028	1250	6	15	25	36	38	28	20	15	8,2	4,0	2,8
1400	2029	1250	4	11	17	22	19	14	10	7	2,0	2,3	2,0
1400	2021	1850	2	9	17	26	26	19	13	10	0,8	1,8	1,5
1400	2022	1850	3	12	23	36	41	30	21	15	2,2	2,3	1,8
1400	2026	1850	5	16	27	39	40	29	20	15	3,7	2,8	2,2
1400	2028	1850	8	21	36	51	54	40	27	20	9,2	4,0	2,8
1400	2029	1850	5	15	25	30	27	19	13	10	2,2	2,3	2,0
1400	2021	2450	2	12	22	33	34	24	16	12	0,9	1,8	1,5
1400	2022	2450	3	15	30	46	54	38	26	19	2,4	2,3	1,8
1400	2026	2450	6	20	36	50	52	37	25	18	4,0	2,8	2,2
1400	2028	2450	10	27	47	60	60	52	35	26	10,2	4,0	2,8
1400	2029	2450	7	20	32	39	35	24	16	12	2,3	2,3	2,0
1500	2021	650	2	5	8	14	14	11	9	7	1,3	2,1	1,7
1500	2022	650	2	6	10	19	22	17	13	10	3,1	3,0	2,0
1500	2027	650	3	6	9	15	14	11	9	7	2,2	2,5	2,0
1500	2029	650	3	8	12	19	18	14	11	8	4,7	3,3	2,5
1500	2030	650	5	11	15	25	25	19	15	11	12,2	5,0	3,3
1500	2021	1250	2	8	14	23	25	19	14	10	1,5	2,1	1,7
1500	2022	1250	3	10	19	32	39	29	21	16	3,8	3,0	2,0
1500	2027	1250	4	10	17	25	24	18	13	10	2,4	2,5	2,0
1500	2029	1250	5	13	22	31	31	23	16	12	5,3	3,3	2,5
1500	2030	1250	8	18	28	41	43	32	23	17	13,9	5,0	3,3
1500	2021	1850	3	11	21	33	36	26	18	13	1,7	2,1	1,7
1500	2022	1850	4	14	27	45	56	41	28	21	4,4	3,0	2,0
1500	2027	1850	5	14	25	34	34	25	17	13	2,6	2,5	2,0
1500	2029	1850	7	19	32	43	44	32	22	16	5,9	3,3	2,5
1500	2030	1850	10	25	41	58	60	45	31	23	15,7	5,0	3,3
1500	2021	2450	3	14	27	42	47	33	22	16	1,9	2,1	1,7

# Rectangular straight attenuator

# DLDY

Width a mm	Code	Length l mm	Static insertion attenuation / octave band [dB]								Resistance number	Self generated noise number Intake	Self generated noise number Outlet
			63	125	250	500	1000	2000	4000	8000			
1500	2022	2450	5	18	36	58	60	53	35	26	5,0	3,0	2,0
1500	2027	2450	6	19	33	44	45	31	21	16	2,9	2,5	2,0
1500	2029	2450	8	24	42	56	57	41	28	20	6,4	3,3	2,5
1500	2030	2450	13	32	55	60	60	59	39	29	17,4	5,0	3,3
1600	2023	650	2	4	7	13	13	10	8	6	1,0	2,0	1,6
1600	2024	650	2	5	9	17	19	15	12	9	2,3	2,7	1,9
1600	2025	650	3	7	12	22	29	22	18	13	6,1	4,0	2,3
1600	2028	650	2	6	8	13	12	10	8	6	1,7	2,3	1,9
1600	2030	650	3	7	10	16	15	12	9	7	3,4	2,9	2,3
1600	2032	650	4	9	13	21	19	15	12	9	7,5	4,0	2,9
1600	2023	1250	2	7	13	21	23	17	12	9	1,2	2,0	1,6
1600	2024	1250	3	9	17	29	34	25	18	13	2,8	2,7	1,9
1600	2025	1250	4	12	22	36	50	38	27	21	7,6	4,0	2,3
1600	2028	1250	3	10	16	22	21	15	11	8	1,9	2,3	1,9
1600	2030	1250	5	12	19	27	26	19	14	10	3,7	2,9	2,3
1600	2032	1250	7	15	25	34	34	25	18	14	8,4	4,0	2,9
1600	2023	1850	2	10	19	30	32	23	16	12	1,3	2,0	1,6
1600	2024	1850	3	13	25	40	48	35	24	18	3,2	2,7	1,9
1600	2025	1850	5	16	32	50	60	54	37	28	9,1	4,0	2,3
1600	2028	1850	4	13	23	31	30	21	15	11	2,0	2,3	1,9
1600	2030	1850	6	17	28	38	37	27	18	14	4,1	2,9	2,3
1600	2032	1850	9	22	36	48	49	36	24	18	9,3	4,0	2,9
1600	2023	2450	3	13	26	38	42	29	20	14	1,5	2,0	1,6
1600	2024	2450	4	16	33	52	60	45	30	22	3,6	2,7	1,9
1600	2025	2450	6	21	43	60	60	60	47	35	10,6	4,0	2,3
1600	2028	2450	5	17	30	40	39	27	18	13	2,2	2,3	1,9
1600	2030	2450	7	22	37	49	48	34	23	17	4,4	2,9	2,3
1600	2032	2450	11	28	47	60	60	46	31	23	10,2	4,0	2,9
1800	2026	650	2	5	8	14	15	12	9	7	1,5	2,3	1,7
1800	2027	650	2	6	10	19	22	16	13	10	3,1	3,0	2,0
1800	2032	650	3	7	10	17	17	13	10	8	3,5	3,0	2,3
1800	2034	650	3	6	9	13	11	9	7	6	2,0	2,4	2,0
1800	2035	650	4	9	14	23	23	18	14	11	9,4	4,5	3,0
1800	2036	650	3	8	11	16	14	11	9	7	3,8	3,0	2,4
1800	2026	1250	2	8	15	24	26	19	14	11	1,7	2,3	1,7
1800	2027	1250	3	10	18	32	38	28	20	15	3,8	3,0	2,0
1800	2032	1250	4	12	19	28	29	21	15	12	4,0	3,0	2,3
1800	2034	1250	4	10	16	22	20	15	10	8	2,2	2,4	2,0
1800	2035	1250	6	16	26	38	41	30	22	16	10,8	4,5	3,0
1800	2036	1250	5	13	20	26	24	18	13	10	4,1	3,0	2,4
1800	2026	1850	3	11	21	34	38	27	19	14	1,9	2,3	1,7
1800	2027	1850	4	14	27	44	54	40	27	20	4,4	3,0	2,0
1800	2032	1850	5	16	28	40	41	30	21	15	4,4	3,0	2,3
1800	2034	1850	5	15	24	31	28	20	14	10	2,4	2,4	2,0
1800	2035	1850	9	22	38	53	58	42	29	22	12,2	4,5	3,0
1800	2036	1850	7	18	29	37	34	25	17	13	4,5	3,0	2,4
1800	2026	2450	3	14	28	43	49	35	23	17	2,2	2,3	1,7
1800	2027	2450	4	18	35	57	60	51	34	25	5,0	3,0	2,0
1800	2032	2450	7	21	37	51	54	38	26	19	4,9	3,0	2,3
1800	2034	2450	6	19	32	39	36	25	17	12	2,5	2,4	2,0
1800	2035	2450	11	28	50	60	60	55	37	27	13,6	4,5	3,0
1800	2036	2450	8	23	38	47	45	31	21	16	4,8	3,0	2,4
2000	2027	650	2	4	7	12	12	10	8	6	1,0	2,0	1,6
2000	2028	650	2	5	9	16	17	13	11	8	2,0	2,5	1,8
2000	2029	650	2	6	11	20	24	18	14	11	4,0	3,3	2,1
2000	2035	650	3	8	13	21	22	17	13	10	6,9	4,0	2,7
2000	2038	650	3	7	9	13	11	9	7	5	2,3	2,5	2,1
2000	2039	650	5	10	15	24	23	18	14	11	12,2	5,0	3,3
2000	2027	1250	2	7	13	21	22	16	12	9	1,2	2,0	1,6
2000	2028	1250	2	9	16	26	30	22	16	12	2,3	2,5	1,8
2000	2029	1250	3	10	20	34	42	31	22	17	4,9	3,3	2,1

# Rectangular straight attenuator

# DLDY

Width a mm	Code	Length l mm	Static insertion attenuation / octave band [dB]								Resis- tance number	Self gen- erated noise number Intake	Self gen- erated noise number Outlet
			63	125	250	500	1000	2000	4000	8000			
2000	2035	1250	5	14	23	36	39	29	21	16	8,0	4,0	2,7
2000	2038	1250	4	11	17	22	19	14	10	7	2,5	2,5	2,1
2000	2039	1250	8	17	28	39	41	30	22	16	13,9	5,0	3,3
2000	2027	1850	2	10	19	29	31	22	15	11	1,3	2,0	1,6
2000	2028	1850	3	12	23	37	43	31	21	16	2,6	2,5	1,8
2000	2029	1850	4	15	29	48	60	44	30	22	5,8	3,3	2,1
2000	2035	1850	7	19	34	50	56	41	28	21	9,1	4,0	2,7
2000	2038	1850	6	16	25	30	26	19	13	10	2,7	2,5	2,1
2000	2039	1850	10	24	40	55	58	42	29	22	15,7	5,0	3,3
2000	2027	2450	3	13	25	37	40	28	19	14	1,5	2,0	1,6
2000	2028	2450	4	16	31	47	55	40	27	20	3,0	2,5	1,8
2000	2029	2450	5	19	38	60	60	57	38	28	6,7	3,3	2,1
2000	2035	2450	8	25	45	60	60	53	35	26	10,3	4,0	2,7
2000	2038	2450	7	20	33	39	34	24	16	12	2,9	2,5	2,1
2000	2039	2450	13	31	53	60	60	55	37	27	17,4	5,0	3,3
2200	2030	650	1	4	6	11	10	9	7	5	0,8	1,8	1,5
2200	2031	650	2	5	8	14	14	11	9	7	1,4	2,2	1,7
2200	2032	650	2	6	9	17	19	15	12	9	2,5	2,8	1,9
2200	2038	650	3	7	11	17	17	13	10	8	3,9	3,1	2,3
2200	2041	650	4	10	14	24	24	18	15	11	11,2	4,9	3,1
2200	2042	650	4	9	12	18	17	13	10	8	6,2	3,7	2,8
2200	2030	1250	2	7	12	18	18	14	10	7	0,9	1,8	1,5
2200	2031	1250	2	8	14	23	25	18	13	10	1,6	2,2	1,7
2200	2032	1250	3	9	17	29	33	25	18	13	3,0	2,8	1,9
2200	2038	1250	4	12	20	29	29	22	16	12	4,5	3,1	2,3
2200	2041	1250	7	16	27	39	42	31	23	17	13,0	4,9	3,1
2200	2042	1250	6	14	23	30	29	21	15	12	6,8	3,7	2,8
2200	2030	1850	2	9	17	26	26	18	13	9	1,0	1,8	1,5
2200	2031	1850	3	11	21	32	35	25	17	13	1,8	2,2	1,7
2200	2032	1850	3	13	25	40	47	35	24	18	3,5	2,8	1,9
2200	2038	1850	5	16	29	40	42	31	21	16	5,0	3,1	2,3
2200	2041	1850	9	22	39	55	60	44	30	23	14,8	4,9	3,1
2200	2042	1850	8	20	33	43	41	30	21	15	7,5	3,7	2,8
2200	2030	2450	2	12	23	33	34	23	16	11	1,1	1,8	1,5
2200	2031	2450	3	14	27	41	46	32	22	16	2,0	2,2	1,7
2200	2032	2450	4	17	33	52	60	45	30	22	4,0	2,8	1,9
2200	2038	2450	7	21	38	52	55	39	26	19	5,5	3,1	2,3
2200	2041	2450	11	29	51	60	60	57	38	29	16,6	4,9	3,1
2200	2042	2450	10	26	43	55	54	38	26	19	8,2	3,7	2,8



## Good Thinking

**At Lindab**, good thinking is a philosophy that guides us in everything we do. We have made it our mission to create a healthy indoor climate – and to simplify the construction of sustainable buildings. We do that by designing innovative products and solutions that are easy to use, as well as offering efficient availability and logistics. We are also working on ways to reduce our impact on our environment and climate. We do that by developing methods to produce our solutions using a minimum of energy and natural resources, and by reducing negative effects on the environment. We use steel in our products. It's one of few materials that can be recycled an infinite number of times without losing any of its properties. That means less carbon emissions in nature and less energy wasted.

**We simplify construction**