

Silencers for rectangular ventilation ducts

SLC/SRC/SPC



Description

The SLC and SRC rectangular acoustic duct silencers are intended for sound attenuation in ventilation and air conditioning systems. More often than not they are mounted between the fan and the air supply duct or air exhaust duct and before the air diffusers

The silencer consists of the housing and internal baffles. The housing is made of galvanised steel sheet and has frames at the ends made of sheet metal profiles.

The baffle is rounded on one side and consists of the frame made of galvanised steel sheet and sound-absorbing insert that absorbs the acoustic energy.

The sound-absorbing insert constitutes a combination of non-flammable mineral wool boards. Its external surface is covered with a special abrasion-resistant fabric that protects the mineral wool. The mineral wool boards are covered with black glass fibre veil, the surface of which is adapted to the air flow with the speed of 20 m/s.

The maximum temperature of the thermal energy carrier is 250°C. The product is non-flammable.

With bigger sizes - a or b - the baffles are carried out as combined.

In terms of the design, we distinguish three types of baffles:

L - absorption baffles,

R - absorption-resonator baffles

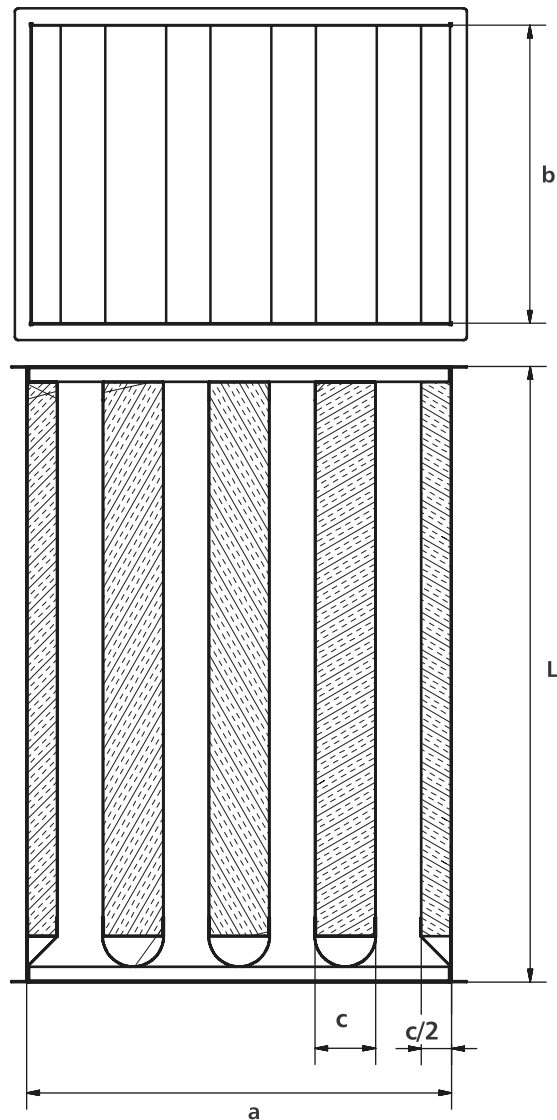
P - absorption-resonator baffles, perforated

Distance *s* between the baffles is 40 - 100 mm.

During the transport, storage and assembly of the silencers, be careful not to damage the surface of the baffles at the installation site.

SLC, SRC and SPC rectangular silencers are mounted in ventilation runs with the vertically positioned baffles.

Dimensions



Marking example:

Product code: **SLC 100 4 0800 0400 0500**

L-type baffle

R-type baffle

Material

baffle thickness 100

baffle thickness 200

Number of baffles

a width

b height

L length

Marking example:

The silencer with the L-type baffle, 100 mm thick, number of baffles: 4; **SLC-100-4-0800-0400-0500**

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Available materials - marking example

SLC-.....- Z275 galvanized sheet

SLK-.....- 1.4301 / 304 acid-resistant sheet

SLM-.....- 316L - 1.4404/316L acid-resistant sheet

SLA-.....- aluminium sheet from 0.6 to 1.0 mm

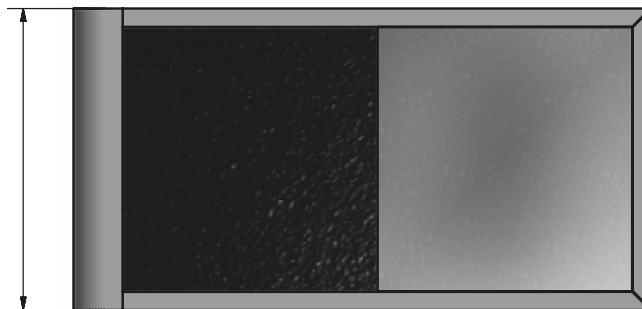
Different type of acid-resistant sheet ☒ please send an inquiry in order to evaluate the production capacities

Dimensions and types of baffles in silencers**SLC**

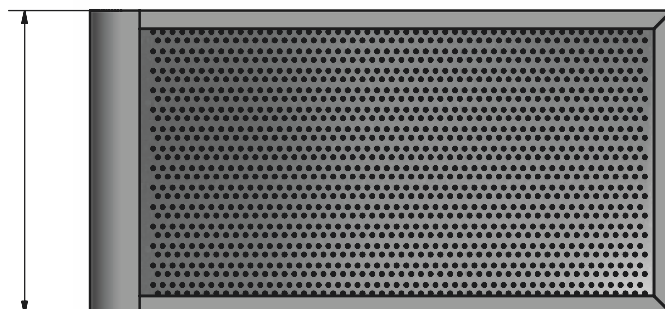
silencer with absorption baffles ☒ steel frame + mineral wool with black glass fibre veil. This type of baffles is applicable mainly in terms of low and medium frequencies.

**SRC**

silencer with absorption-resonator baffles ☒ steel frame + mineral wool with black glass fibre veil + ☒ of the baffle covered with sheet metal. These baffles are used mainly within the medium and high frequencies.

**SPC**

silencer with absorption-resonator baffles ☒ steel frame + mineral wool with black glass fibre veil + the whole baffle covered with perforated sheet with the permeability of 36%.



Silencers for rectangular ventilation ducts

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Production capacity

Material

Z275 galvanized sheet

Aluminium sheet from 0.6 to 1.0 mm

1.4301 acid-resistant sheet

1.4404 acid-resistant sheet

Different type of acid-resistant sheet ☒ please send an inquiry in order to evaluate the production capacities

Number of baffles:

silencer with 3 baffles = 2 solid baffles and 2 half baffles to the side of the duct

silencer with 5 baffles = 4 solid baffles and 2 half baffles to the side of the duct

Baffles

Mineral wool - stone or glass, other e.g. made of foamed PVC or provided by the customer.

The thickness of the baffles from 40 mm to 300 mm using the N3 veil or G9 washable glass fibre veil.

Wool density from 40 to 100 kg/m³

The front of the insulation board is oval owing to which the air vibrations and pressure losses are reduced.

Dimensions

PQ frames - according to the standard dimensions of rectangular ducts - it is possible to provide other frames upon request

The insulation at the front and at the back of the silencer reaches the PQ profile at the end - at the distance of 1 - 3 cm.

Rectangular ventilation silencer - 3 baffles

SLC**Acoustic measurement of baffles for
the SLC-100-3-490-390-500 silencer**

Type	height [mm]	width [mm]	width [mm]	the duct [m/s]	between the [m/s]	Gap width [mm]
SLC-100-3-490-390-500	390	500	100	2.1	10.0	40

Design: 2 central baffles + 2 side baffles

Average acoustic power level: 53.3 dB

Average weighted acoustic power level: 37.7 dB (A)

Average frequency in octave	Measured value dB	Calculated value dB
63	2.7	2.9
125	4.0	4.1
250	12.4	10.9
500	24.2	22.3
1000	34.5	34.9
2000	30.1	29.1
4000	19.3	20.2
8000	18.3	18.4

No.	dynamic pres- sure [Pa]	[m ³ /s]	speed in the gap [m/s]	pressure drop - substitutive duct [Pa]	pressure drop - tested sample [Pa]	resultant pres- sure drop [Pa]	[-]
1	0.4	0.4	10.0	1.3	27.2	25.9	0.45
2	0.5	0.5	12.0	1.7	44.1	42.4	0.51
3	0.8	0.6	15.0	2.9	68.2	65.3	0.50
4	1.5	0.8	20.0	5.5	117.8	112.3	0.48
5	2.3	1.0	25.0	8.3	186.0	177.7	0.49

zeta arithmetic mean: 0.49

Table 6. Report P-TA 31/2014 according to DIN EN ISO 7235

Ambient pressure: 980 hPa

Duct temperature: 21,2° C

Air density: 1.16 kg/m³

Rectangular ventilation silencer 4 baffles

SLC

Acoustic measurement of baffles for the SLC-100-4-490-590-1500 silencer

Type	height [mm]	width [mm]	the duct [m/s]	between the [m/s]	Gap width [mm]	
SLC-100-4-490-590-1500	590	1500	100	2,1	10,0	60

Average acoustic power level: 51,73 dB

Average weighted acoustic power level: 41,3 dB (A)

Average frequency in octave	Measured value dB	Calculated value dB
63	2,7	2,9
125	4,0	4,1
250	12,4	10,9
500	24,2	22,3
1000	34,5	34,9
2000	30,1	29,1
4000	19,3	20,2
8000	18,3	18,4

Table 1. Insertion loss Report P-TA 31/2014 – according to DIN EN ISO 7235

No.	dynamic pressure [Pa]	[m³/s]	speed in the gap [m/s]	pressure drop - substitutive duct [Pa]	pressure drop - tested sample [Pa]	resultant pressure drop [Pa]	[-]
1	1.8	0.9	10.0	2.9	47.2	44.3	0.78
2	2.7	1.1	12.0	4.1	68.2	64.1	0.78
3	4.2	1.3	15.0	6.4	106.2	99.8	0.78
4	7.4	1.8	20.0	11.6	181.0	169.4	0.74
5	11.6	2.2	25.0	18.8	304.0	285.2	0.80

Zeta arithmetic mean: 0.78

Table 12. Raport P-TA 31/2014 wg DIN EN ISO 7235

Ambient pressure: 965 hPa

Duct temperature: 21,6° C

Air density: 1,14 kg/m³

Rectangular ventilation silencer 3 baffles

SLC

Acoustic measurement of baffles for the SLC-100-3-490-470-500 silencer

Type	height [mm]	width [mm]	the duct [m/s]	between the [m/s]	Gap width [mm]	
SLC-100-3-470-490-500	470	500	100	3,8	10,0	90

Average acoustic power level: 56,2 dB

Average weighted acoustic power level: 47,3 dB (A)

Average frequency in octave	Measured value dB	Calculated value dB
63	2,7	2,9
125	4,0	4,1
250	12,4	10,9
500	24,2	22,3
1000	34,5	34,9
2000	30,1	29,1
4000	19,3	20,2
8000	18,3	18,4

Table 1. Insertion loss Report P-TA 31/2014 – according to DIN EN IZO 7235

No.	dynamic pressure [Pa]	speed in the gap [m/s]	pressure drop - substitutive duct [Pa]	pressure drop - tested sample [Pa]	resultant pressure drop [Pa]	[-]	
1	1.8	0.9	10.0	3.8	36.9	33.1	0.59
2	2.6	1.1	12.0	5.5	53.8	48.3	0.59
3	4.1	1.4	15.0	8.6	84.5	75.9	0.60
4	7.3	1.8	20.0	14.1	144.0	129.9	0.57
5	11.5	2.3	25.0	25.6	235.0	209.4	0.59

Zeta arithmetic mean: 0.59

Table 18. Raport P-TA 31/2014 wg DIN EN IZO 7235

Ambient pressure: 955 hPa

Duct temperature: 21,6° C

Air density: 1,13 kg/m³

Acoustic measurement of baffles for the SLC-100-5-490-830-500 silencer

Type	height [mm]	[mm]	width [mm]	the duct [m/s]	between the [m/s]	Gap width [mm]
SLC-100-5-490-830-500	830	500	100	3,9	10,0	80

Average acoustic power level: 52,2 dB

Average weighted acoustic power level: 44,8 dB (A)

Average frequency in octave	Measured value dB	Calculated value dB
63	2,7	2,9
125	4,0	4,1
250	12,4	10,9
500	24,2	22,3
1000	34,5	34,9
2000	30,1	29,1
4000	19,3	20,2
8000	18,3	18,4

Table 1. Insertion loss Report P-TA 31/2014 – according to DIN EN ISO 7235

No.	dynamic pressure [Pa]	[m³/s]	speed in the gap [m/s]	pressure drop - substitutive duct [Pa]	pressure drop - tested sample [Pa]	resultant pressure drop [Pa]	[-]
1	5.9	1.6	10.0	5.9	32.2	26.3	0.45
2	8.6	1.9	12.0	8.7	47.3	38.6	0.46
3	13.4	2.4	15.0	14.1	78.8	64.7	0.50
4	23.8	3.2	20.0	25.8	128.0	102.2	0.44
5	37.1	4.0	25.0	40.6	204.0	163.4	0.45

Zeta arithmetic mean: 0,46

Table 24. Raport P-TA 31/2014 wg DIN EN ISO 7235

Ambient pressure: 980 hPa

Duct temperature: 21,2°C

Air density: 1,16 kg/m³

Rectangular ventilation silencer ☒ 4 baffles

SLC

Acoustic measurement of baffles for the SLC-100-4-490-590-500 silencer

Type	height [mm]	[mm]	width [mm]	the duct [m/s]	between the [m/s]	Gap width [mm]
SLC-100-4-490-590-500	590	500	100	3,0	10,0	60

Average acoustic power level: 52,2 dB

Average weighted acoustic power level: 43,8 dB (A)

Average frequency in octave	Measured value dB	Calculated value dB
63	2,7	2,9
125	4,0	4,1
250	12,4	10,9
500	24,2	22,3
1000	34,5	34,9
2000	30,1	29,1
4000	19,3	20,2
8000	18,3	18,4

Table 1. Insertion loss Report P-TA 31/2014 – according to DIN EN IZO 7235

No.	dynamic pressure [Pa]	[m³/s]	speed in the gap [m/s]	pressure drop - substitutive duct [Pa]	pressure drop - tested sample [Pa]	resultant pressure drop [Pa]	[-]
1	1.8	0.9	10.0	2.8	32.5	29.7	0.52
2	2.7	1.1	12.0	4.2	47.2	43.	0.53
3	4.1	1.4	15.0	6.5	71.3	64.8	.051
4	7.4	1.8	20.0	11.8	124.0	112.2	0.49
5	11.5	2.3	25.0	18,5	205.0	186.5	0.53

Zeta arithmetic mean: 0,51

Table 30. Raport P-TA 31/2014 ☒ wg DIN EN IZO 7235

Ambient pressure: 960 hPa

Duct temperature: 21,4° C

Air density: 1,14 kg/m³

Rectangular ventilation silencer 4 baffles

SLC

Acoustic measurement of baffles for the SLC-100-4-490-510-500 silencer

Type	height [mm]	width [mm]	width the duct [mm]	the duct [m/s]	between the [m/s]	Gap width [mm]
SLC-100-4-490-510-500	510	500	100	3,9	10,0	100

Average acoustic power level: 55,0dB

Average weighted acoustic power level: 45,1 dB (A)

Average frequency in octave	Measured value dB	Calculated value dB
63	2,7	2,9
125	4,0	4,1
250	12,4	10,9
500	24,2	22,3
1000	34,5	34,9
2000	30,1	29,1
4000	19,3	20,2
8000	18,3	18,4

Table 1. Insertion loss Report P-TA 31/2014 – according to DIN EN ISO 7235

No.	dynamic pressure [Pa]	speed in the gap [m³/s]	speed in the gap [m/s]	pressure drop - substitutive duct [Pa]	pressure drop - tested sample [Pa]	resultant pressure drop [Pa]	[-]
1	2.3	1.0	10.0	4.2	31.2	27.0	0.47
2	3.3	1.2	12.0	6.3	43.4	37.1	0.45
3	5.1	1.5	15.0	9.1	69.5	60.4	0.47
4	9.1	2.0	20.0	16.3	117.0	100.7	0.44
5	14.2	2.5	25.0	27.5	201.0	173.5	0.49

Zeta arithmetic mean: 0,47

Table 36. Raport P-TA 31/2014 wg DIN EN ISO 7235

Ambient pressure:960 hPa

Duct temperature:21,1°C

Air density: 1,14 kg/m³

Rectangular ventilation silencer 6 baffles

SLC**Acoustic measurement of baffles for the SLC-100-6-490-1100-500 silencer**

Type	height [mm]	width [mm]	width the duct [mm]	the duct [m/s]	between the [m/s]	Gap width [mm]
SLC-100-6-490-1100-500	1100	500	100	4,4	10,0	100

Average acoustic power level: 52,0 dB

Average weighted acoustic power level: 44,9 dB (A)

Average frequency in octave	Measured value dB	Calculated value dB
63	2,7	2,9
125	4,0	4,1
250	12,4	10,9
500	24,2	22,3
1000	34,5	34,9
2000	30,1	29,1
4000	19,3	20,2
8000	18,3	18,4

Table 1. Insertion loss Report P-TA 31/2014 – according to DIN EN ISO 7235

No.	dynamic pressure [Pa]	[m ³ /s]	speed in the gap [m/s]	pressure drop - substitutive duct [Pa]	pressure drop - tested sample [Pa]	resultant pressure drop [Pa]	[-]
1	14.4	2.5	10.0	13.2	37.5	24.3	0.42
2	20.7	3.0	12.0	18.0	51.8	33.8	0.41
3	32.3	3.8	15.0	28.1	76.0	47.9	0.37
4	57.5	5.0	20.1	49.1	133.0	83.9	0.36
5	89.8	6.3	25.1	76.9	217.0	140.1	0.39

Zeta arithmetic mean: 0,39

Table 42. Report P-TA 31/2014 wg DIN EN ISO 7235

Ambient pressure: 967 hPa

Duct temperature: 21,6 °C

Air density: 1,14 kg/m³

Acoustic measurement of baffles for the SLC-200-4-490-1100-50 silencer

Type	height [mm]	[mm]	width [mm]	the duct [m/s]	between the [m/s]	Gap width [mm]
SLC-200-4-490-1100-50	1100	500	200	2,5	10,0	95

Average acoustic power level: 52,2 dB

Average weighted acoustic power level: 41,8 dB (A)

Average frequency in octave	Measured value dB	Calculated value dB
63	2,7	2,9
125	4,0	4,1
250	12,4	10,9
500	24,2	22,3
1000	34,5	34,9
2000	30,1	29,1
4000	19,3	20,2
8000	18,3	18,4

Table 1. Insertion loss Report P-TA 31/2014 – according to DIN EN IZO 7235

No.	dynamic pressure [Pa]	[m³/s]	speed in the gap [m/s]	pressure drop - substitutive duct [Pa]	pressure drop - tested sample [Pa]	resultant pressure drop [Pa]	[-]
1	4.7	1.4	10.0	3.9	41.1	37.2	0.65
2	6.7	1.7	12.0	5.6	58.4	52.8	0.64
3	10.6	2.1	15.0	9.7	91.6	81.9	0.63
4	18.7	2.9	20.0	16.8	168.0	151.2	0.66
5	29.3	3.6	25.0	25.5	261.0	235.5	0.65

Zeta arithmetic mean: 0,64

Table 48. Raport P-TA 31/2014 wg DIN EN IZO 7235

Ambient pressure: 975 hPa

Temperatura w kanale 21,6o C

Air density: 1,15 kg/m³

Acoustic measurement of baffles for the SLC-200-4-490-1140-1500 silencer

Type	height [mm]	width [mm]	the duct [m/s]	between the [m/s]	Gap width [mm]	
SLC-200-4-490-1140-1500	1140	1500	200	3,0	10,0	110

Average acoustic power level: 51,0 dB

Average weighted acoustic power level: 39,8 dB (A)

Average frequency in octave	Measured value dB	Calculated value dB
63	2,7	2,9
125	4,0	4,1
250	12,4	10,9
500	24,2	22,3
1000	34,5	34,9
2000	30,1	29,1
4000	19,3	20,2
8000	18,3	18,4

Table 1. Insertion loss Report P-TA 31/2014 – according to DIN EN IZO 7235

No.	dynamic pressure [Pa]	speed in the gap [m/s]	pressure drop - substitutive duct [Pa]	pressure drop - tested sample [Pa]	resultant pressure drop [Pa]	[-]	
1	6.2	1.6	10.0	5.2	57.7	52.5	0.92
2	8.9	2.0	12.0	7.7	81.9	74.2	0.91
3	14.0	2.5	15.0	12.4	126.0	113.6	0.88
4	24.9	3.3	20.0	22.1	231.0	208.9	0.91
5	38.9	4.1	25.0	34.1	358.0	323.9	0,91

Zeta arithmetic mean: 0,91

Table 54. Raport P-TA 31/2014 wg DIN EN IZO 7235

Ambient pressure: 967 hPa

Duct temperature: 21,6o C

Air density: 1,14 kg/m³

Acoustic measurement of baffles for the SLC-200-2-490-470-500

Type	height [mm]	width [mm]	width the duct [mm]	the duct [m/s]	between the [m/s]	Gap width [mm]
SLC-200-2-490-470-500	470	500	200	1,3	10,0	30

Average acoustic power level: 50,3 dB

Average weighted acoustic power level: 36,8 dB (A)

Average frequency in octave	Measured value dB	Calculated value dB
63	2,7	2,9
125	4,0	4,1
250	12,4	10,9
500	24,2	22,3
1000	34,5	34,9
2000	30,1	29,1
4000	19,3	20,2
8000	18,3	18,4

Table 1. Insertion loss Report P-TA 31/2014 – according to DIN EN ISO 7235

No.	dynamic pressure [Pa]	[m³/s]	speed in the gap [m/s]	pressure drop - substitutive duct [Pa]	pressure drop - tested sample [Pa]	resultant pressure drop [Pa]	[-]
1	0.2	0.3	10.0	0.4	23.3	22.9	0.41
2	0.3	0.4	12.0	0.6	36.1	35.6	0.44
3	0.5	0.5	15.0	0.8	56.8	56.0	0.44
4	0.8	0.6	20.0	1.6	101.0	99.4	0.44
5	1.3	0.8	25.0	2.5	158.0	155.5	0.44

Zeta arithmetic mean: 0,43

Table 60. Raport P-TA 31/2014 wg DIN EN ISO 7235

Ambient pressure: 955 hPa

Duct temperature: 21,1 °C

Air density: 1,13 kg/m³