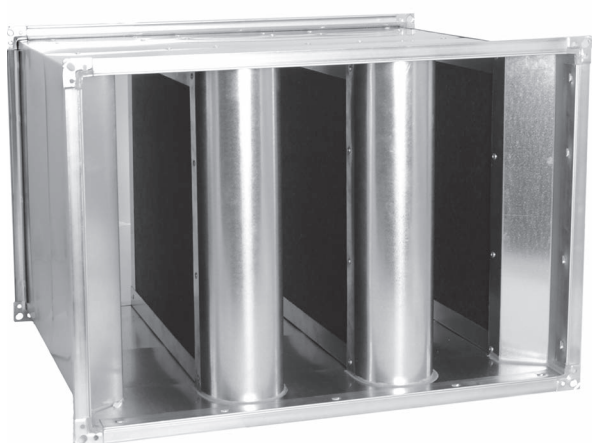


Rectangular duct silencers **SLC/SRC/SPC**



Description

The SLC and SRC rectangular duct silencers reduce the noise level in ventilation and A/C systems. This silencer type is usually installed between a fan and an air supply or exhaust duct, and upstream of air supply vents.

All silencers are made of a housing and inner baffles. The housing is made from galvanized steel sheet and its ends are framed with steel sheet angles.

All baffles inside the silencer have a round breast at one end and comprise a galvanized steel frame with a sound-insulating insert which absorbs the acoustic energy from the air flow. The sound-insulating insert is a set of non-flammable mineral wool panels. The outer surface of the sound-insulating insert is lined with a special abrasion-resistant textile to protect the mineral wool from wear and tear. The mineral wool panels are finished with a glass fibre lining in black; this lining is suitable for systems with a maximum air flow rate of 20 m/s. The maximum heat medium temperature is 250°C. The product is non-flammable.

The products with larger dimensions a and/or b feature compound baffles.

There are three baffle design types:

L — sound-absorbing baffles;

R — sound-absorbing resonator baffles;

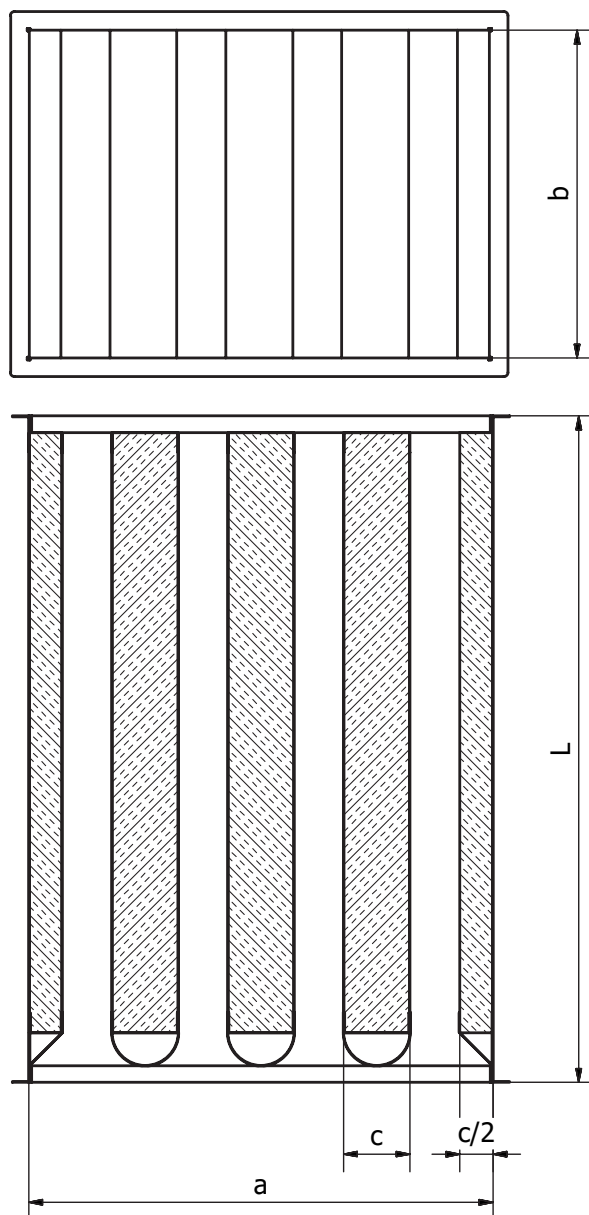
P — perforated sound-absorbing resonator baffles

The baffle spacing s ranges from 40 to 100 mm.

The baffle surfaces should be protected against damage during transport, storage and on-site installation of the silencers.

The SLC, SRC and SPC rectangular duct silencers are installed in the ductwork with the baffles upright.

Dimensions



Rectangular duct silencers

SLC/SRC/SPC

Description

Available materials — Product code examples

SLC-..... — Z275 galvanized steel sheet
 SLK-..... — 1.4301/304 stainless steel sheet
 SLM-.....-316L — 1.4404/316L stainless steel sheet
 SLA-..... — 0.8 to 1.0 mm thick aluminium sheet

Other stainless steel sheet grades: please submit a request for quotation to determine manufacturability.

Product code example:

Product code: SLC - 10 - 04 - 0800 - 0400 - 0500

Type L baffle

Type R baffle

Type P baffle

Material

c — 100 baffle thickness

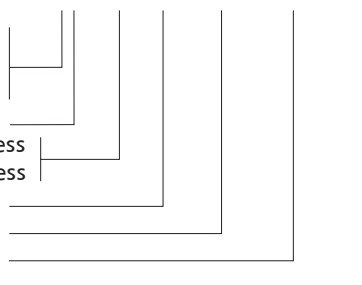
c — 200 baffle thickness

Number of baffles

width a

height b

length L



Product code example:

Silencer with 100 mm thick type L baffle, 4 baffles:

SLC-100-4-0800-0400-0500

Manufacturability

Material:

Z275 galvanized steel sheet

0.8 to 1.0 mm thick aluminium sheet

1.4301 stainless steel sheet

1.4404 stainless steel sheet

Other stainless steel sheet grades: please submit a request for quotation to determine manufacturability.

Number of baffles:

Silencer with 1 baffle: 2 half-baffles at the duct sides

Silencer with 2 baffles: 1 full baffle + 2 half-baffles at the duct sides

Silencer with 3 baffles: 2 full baffles + 2 half-baffles at the duct sides

Silencer with 5 baffles: 4 full baffles + 2 half-baffles at the duct sides

Baffles:

Mineral wool: rock or glass wool; other insulators, e.g. expanded PVC or as supplied by the customer.

Baffle thickness: 40 mm to 300 mm with type N3 lining or type G9 washable lining.

Mineral wool density: 40 to 100 kg/m³.

The baffle front breast is curved to reduce the air flow turbulence and pressure loss.

Dimensions:

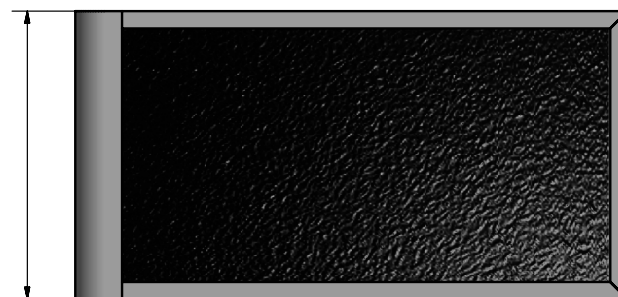
PQ frames: see the standard dimensions of square ducts. Other versions are available on request.

Front-to-back baffles: stops 1 to 3 cm before the PQ angle at the edge.

Silencer baffle types

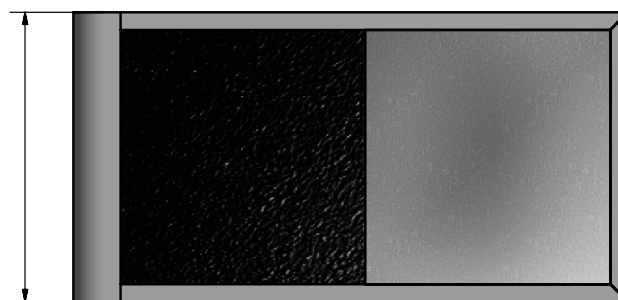
SLC

Silencer with sound-absorbing baffles — steel frame + mineral wool in lining: This baffle type is generally used for sound insulation at low and medium frequencies.



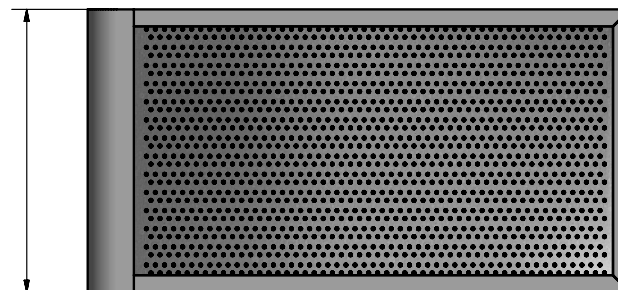
SRC

Silencer with perforated sound-absorbing resonator baffles — steel frame + mineral wool in lining + ½ of baffle length covered with steel sheet: This baffle type is generally used for sound insulation at medium and high frequencies.



SPC

Silencer with perforated sound-absorbing resonator baffles — steel frame + mineral wool in lining + baffle covered over its entire length with perforated steel sheet at an open surface area ratio of 36%:



3-baffle rectangular duct silencer

SLC

Sound performance measurement of the SLC-100-3-390-490-500 silencer

Product code	Height (mm)	Baffle length (mm)	Baffle width (mm)	Flow rate in the duct (m/s)	Baffle gap flow (m/s)	Baffle gap width (mm)
SLC-100-3-390-490-500	390	500	100	2.1	10.0	40

Components:
2 middle baffles + 2 side baffles

Mean sound power level: 53.3 dB
Mean A-weighted sound power level: 37.7 dB (A)

Mean octave frequency (Hz)	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, Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

No.	Dynamic pressure (Pa)	Volumetric flow rate (m³/s)	Air volume in baffle gaps (m/s)	Pressure loss over substitute duct (Pa)	Pressure loss over specimen (Pa)	Resulting pressure loss (Pa)	zeta** (-)
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

Arithmetic mean zeta: 0.49
Table 6. Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

Ambient pressure: 980 hPa
Duct internal temperature: 21.2°C
Air density: 1.16 kg/m³

4-baffle rectangular duct silencer

SLC**Sound performance measurements for the SLC-100-4-590-490-1500 silencer**

Product code	Height (mm)	Baffle length (mm)	Baffle width (mm)	Flow rate in the duct (m/s)	Baffle gap flow (m/s)	Baffle gap width (mm)
SLC-100-4-590-490-1500	590	1500	100	2.1	10.0	60

Components:

3 middle baffles + 2 side baffles

Mean sound power level: 51.73 dB

Mean A-weighted sound power level: 41.3 dB (A)

Mean octave frequency (Hz)	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, Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

No.	Dynamic pressure (Pa)	Volumetric flow rate (m³/s)	Air volume in baffle gaps (m/s)	Pressure loss over substitute duct (Pa)	Pressure loss over specimen (Pa)	Resulting pressure loss (Pa)	zeta** (-)
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

Arithmetic mean zeta: 0.49

Table 12. Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

Ambient pressure: 965 hPa

Duct internal temperature: 21.6°C

Air density: 1.14 kg/m³

3-baffle rectangular duct silencer

SLC

Sound performance measurements for the SLC-100-3-470-490-500 silencer

Product code	Height (mm)	Baffle length (mm)	Baffle width (mm)	Flow rate in the duct (m/s)	Baffle gap flow (m/s)	Baffle gap width (mm)
SLC-100-3-470-490-500	470	500	100	3.8	10.0	90

Components:

2 middle baffles + 2 side baffles

Mean sound power level: 56.2 dB

Mean A-weighted sound power level: 47.3 dB (A)

Mean octave frequency (Hz)	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, Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

No.	Dynamic pressure (Pa)	Volumetric flow rate (m³/s)	Air volume in baffle gaps (m/s)	Pressure loss over substitute duct (Pa)	Pressure loss over specimen (Pa)	Resulting pressure loss (Pa)	zeta** (-)
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

Arithmetic mean zeta: 0.59

Table 18. Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

Ambient pressure: 955 hPa

Duct internal temperature: 21.6°C

Air density: 1.13 kg/m³

5-baffle rectangular duct silencer

SLC**Sound performance measurements for the SLC-100-5-830-490-500 silencer**

Product code	Height (mm)	Baffle length (mm)	Baffle width (mm)	Flow rate in the duct (m/s)	Baffle gap flow (m/s)	Baffle gap width (mm)
SLC-100-5-830-490-500	830	500	100	3.9	10.0	80

Components:

4 middle baffles + 2 side baffles

Mean sound power level: 52.2 dB

Mean A-weighted sound power level: 44.8 dB (A)

Mean octave frequency (Hz)	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, Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

No.	Dynamic pressure (Pa)	Volumetric flow rate (m³/s)	Air volume in baffle gaps (m/s)	Pressure loss over substitute duct (Pa)	Pressure loss over specimen (Pa)	Resulting pressure loss (Pa)	zeta** (-)
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

Arithmetic mean zeta: 0.46

Table 24. Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

Ambient pressure: 980 hPa

Duct internal temperature: 21.6°C

Air density: 1.16 kg/m³

4-baffle rectangular duct silencer

SLC

Sound performance measurements for the SLC-100-4-590-490-500 silencer

Product code	Height (mm)	Baffle length (mm)	Baffle width (mm)	Flow rate in the duct (m/s)	Baffle gap flow (m/s)	Baffle gap width (mm)
SLC-100-4-590-490-500	590	500	100	3.0	10.0	60

Components:
3 middle baffles + 2 side baffles

Mean sound power level: 52.2 dB
Mean A-weighted sound power level: 43.8 dB (A)

Mean octave frequency (Hz)	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, Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

No.	Dynamic pressure (Pa)	Volumetric flow rate (m³/s)	Air volume in baffle gaps (m/s)	Pressure loss over substitute duct (Pa)	Pressure loss over specimen (Pa)	Resulting pressure loss (Pa)	zeta** (-)
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	0.53
3	4.1	1.4	15.0	6.5	71.3	64.8	0.51
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

Arithmetic mean zeta: 0.51
Table 30. Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

Ambient pressure: 960 hPa
Duct internal temperature: 21.4 °C
Air density: 1.14 kg/m³

4-baffle rectangular duct silencer

SLC**Sound performance measurements for the SLC-100-4-510-490-500 silencer**

Product code	Height (mm)	Baffle length (mm)	Baffle width (mm)	Flow rate in the duct (m/s)	Baffle gap flow (m/s)	Baffle gap width (mm)
SLC-100-4-510-490-500	510	500	100	3.9	10.0	100

Components:

3 middle baffles + 2 side baffles

Mean sound power level: 55.0 dB

Mean A-weighted sound power level: 45.1 dB (A)

Mean octave frequency (Hz)	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, Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

No.	Dynamic pressure (Pa)	Volumetric flow rate (m³/s)	Air volume in baffle gaps (m/s)	Pressure loss over substitute duct (Pa)	Pressure loss over specimen (Pa)	Resulting pressure loss (Pa)	zeta** (-)
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

Arithmetic mean zeta: 0.47

Table 36. Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

Ambient pressure: 960 hPa

Duct internal temperature: 21.1 °C

Air density: 1.14 kg/m³

6-baffle rectangular duct silencer

SLC

Sound performance measurements for the SLC-100-6-1100-490-500 silencer

Product code	Height (mm)	Baffle length (mm)	Baffle width (mm)	Flow rate in the duct (m/s)	Baffle gap flow (m/s)	Baffle gap width (mm)
SLC-100-6-1100-490-500	1100	500	100	4.4	10.0	100

Components:

5 middle baffles + 2 side baffles

Mean sound power level: 52.0 dB

Mean A-weighted sound power level: 44.9 dB (A)

Mean octave frequency (Hz)	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, Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

No.	Dynamic pressure (Pa)	Volumetric flow rate (m³/s)	Air volume in baffle gaps (m/s)	Pressure loss over substitute duct (Pa)	Pressure loss over specimen (Pa)	Resulting pressure loss (Pa)	zeta** (-)
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

Arithmetic mean zeta: 0.39

Table 42. Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

Ambient pressure: 967 hPa

Duct internal temperature: 21.6°C

Air density: 1.14 kg/m³

4-baffle rectangular duct silencer

SLC**Sound performance measurements for the SLC-200-4-1100-490-500 silencer**

Product code	Height (mm)	Baffle length (mm)	Baffle width (mm)	Flow rate in the duct (m/s)	Baffle gap flow (m/s)	Baffle gap width (mm)
SLC-200-4-1100-490-500	1100	500	200	2.5	10.0	95

Components:

3 middle baffles + 2 side baffles

Mean sound power level: 52.2 dB

Mean A-weighted sound power level: 41.8 dB (A)

Mean octave frequency (Hz)	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, Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

No.	Dynamic pressure (Pa)	Volumetric flow rate (m³/s)	Air volume in baffle gaps (m/s)	Pressure loss over substitute duct (Pa)	Pressure loss over specimen (Pa)	Resulting pressure loss (Pa)	zeta** (-)
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

Arithmetic mean zeta: 0.64

Table 48. Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

Ambient pressure: 975 hPa

Duct internal temperature: 21.6°C

Air density: 1.15 kg/m³

4-baffle rectangular duct silencer

SLC

Sound performance measurements for the SLC-200-4-1140-490-1500 silencer

Product code	Height (mm)	Baffle length (mm)	Baffle width (mm)	Flow rate in the duct (m/s)	Baffle gap flow (m/s)	Baffle gap width (mm)
SLC-200-4-1140-490-1500	1140	1500	200	3.0	10.0	110

Components:
3 middle baffles + 2 side baffles

Mean sound power level: 51.0 dB
Mean A-weighted sound power level: 39.8 dB (A)

Mean octave frequency (Hz)	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, Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

No.	Dynamic pressure (Pa)	Volumetric flow rate (m³/s)	Air volume in baffle gaps (m/s)	Pressure loss over substitute duct (Pa)	Pressure loss over specimen (Pa)	Resulting pressure loss (Pa)	zeta** (-)
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

Arithmetic mean zeta: 0.91
Table 54. Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

Ambient pressure: 967 hPa
Duct internal temperature: 21.6°C
Air density: 1.14 kg/m³

2-baffle rectangular duct silencer

SLC**Sound performance measurements for the SLC-200-2-470-490-500 silencer**

Product code	Height (mm)	Baffle length (mm)	Baffle width (mm)	Flow rate in the duct (m/s)	Baffle gap flow (m/s)	Baffle gap width (mm)
SLC-200-2-470-490-500	470	500	200	1.3	10.0	30

Components:

1 middle baffle + 2 side baffles

Mean sound power level: 50.3 dB**Mean A-weighted sound power level:** 36.8 dB (A)

Mean octave frequency (Hz)	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, Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

No.	Dynamic pressure (Pa)	Volumetric flow rate (m³/s)	Air volume in baffle gaps (m/s)	Pressure loss over substitute duct (Pa)	Pressure loss over specimen (Pa)	Resulting pressure loss (Pa)	zeta** (-)
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

Arithmetic mean zeta: 0.43

Table 60. Test Report no. P-TA 31/2014, ref. DIN EN ISO 7235

Ambient pressure: 955 hPa**Duct internal temperature:** 21.1 °C**Air density:** 1.13 kg/m³