

# Elbow silencers

# BSLGU



## Description

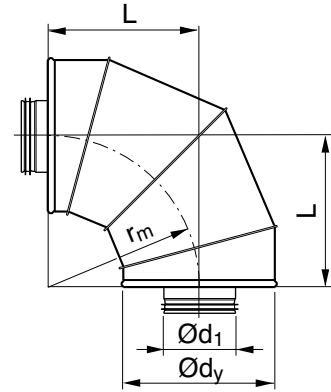
The BSLGU elbow silencer is developed for use in duct systems where space considerations or other circumstances prevent the use of straight silencers, e.g. SLGU.

The elbow silencer is made of 2 gored elbows. The inner elbow is made of perforated steel sheet. The space between is filled with inorganic glass fiber absorption material. There is a fiber retention system between the perforated inner shell and the glass fiber material in order to prevent the erosion of fiberglass into the airstream.

BSLGU silencers are supplied with Lindab Safe® end treatment as standard.

The BSLGU elbow silencers are available in 2" insulation thickness from 4" through 12" diameter and 4" thickness from 4" insulation through 24" diameter.

## Dimension



$$r_m = 1.0 \times \text{Ø}d_y$$

$$L = \text{Ø}d_1 + (2 \times i)$$

$$\text{Ø}d_y = \text{Ø}d_1 + (2 \times i)$$

$i$  = insulation thickness (inch)

## Ordering example



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## Acoustical Performance – Net Insertion Loss

Octave band	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	
Frequency (Hz)	63	125	250	500	1K	2K	4K	8K	63	125	250	500	1K	2K	4K	8K	
Ød <sub>1</sub> (in)	Velocity (fpm)	Net Insertion Loss (Decibels)								Net Insertion Loss (Decibels)							
L (in)		BSLGU 02								BSLGU 04							
3	-6000	8	7	16	27	31	37	32	24	11	17	27	35	34	44	38	27
	-4000	6	7	16	26	30	38	32	24	10	16	27	35	34	44	38	28
	-2000	7	5	15	26	29	36	32	25	11	15	26	34	34	43	38	28
	0	6	6	14	25	28	36	31	25	10	14	26	33	33	43	38	28
	+2000	6	6	13	24	27	35	30	25	11	12	25	32	34	42	36	29
	+4000	8	5	13	23	26	34	29	24	11	13	24	31	33	41	36	30
	+6000	8	5	12	22	25	33	28	24	11	12	22	30	32	40	36	32
4	-6000	7	6	15	27	31	36	31	23	10	16	27	34	35	43	36	26
	-4000	6	6	15	26	30	36	31	23	10	15	27	34	35	43	36	27
	-2000	6	5	14	25	29	35	31	24	10	14	26	33	35	42	36	27
	0	5	5	13	24	28	35	30	24	9	13	25	32	34	42	36	27
	+2000	6	5	12	23	27	34	29	24	10	12	24	31	34	41	35	28
	+4000	7	4	12	22	26	33	28	23	10	12	23	30	33	40	35	29
	+6000	7	4	11	21	25	32	27	23	10	11	21	29	32	39	35	30
5	-6000	6	6	15	27	32	35	30	22	10	16	27	34	36	42	35	26
	-4000	6	6	15	26	31	35	30	22	10	15	27	34	36	42	35	27
	-2000	6	5	14	25	30	34	30	23	10	14	26	33	36	41	35	27
	0	5	5	13	24	29	34	29	23	8	13	25	32	35	41	34	26
	+2000	6	5	12	23	28	33	28	23	10	12	24	31	35	40	34	27
	+4000	7	4	11	21	26	32	27	22	10	12	22	30	33	39	34	28
	+6000	7	4	11	20	25	31	26	22	10	11	21	29	32	38	34	29
6	-6000	5	5	14	27	32	34	29	21	9	15	27	33	37	41	33	25
	-4000	6	5	14	26	31	33	29	21	10	14	27	33	37	41	33	26
	-2000	5	5	13	24	30	33	29	22	9	13	26	32	37	40	33	26
	0	4	4	12	23	29	33	28	22	7	12	24	31	36	40	32	25
	+2000	6	4	11	22	28	32	27	22	9	12	23	30	35	39	33	26
	+4000	6	3	10	20	26	31	26	21	9	11	21	29	33	38	33	27
	+6000	6	3	10	19	25	30	25	21	9	10	20	28	32	37	33	27
7	-4000	5	5	14	26	33	33	28	20	9	15	27	33	38	41	32	24
	-3000	6	5	13	25	32	32	28	20	9	14	27	33	38	41	32	25
	-2000	5	5	12	24	31	32	28	21	9	13	26	32	38	40	32	25
	0	4	4	12	23	30	32	27	21	7	12	24	31	37	39	31	24
	+2000	6	4	11	22	29	31	26	21	9	12	23	30	36	39	32	25
	+3000	6	3	10	20	27	30	25	20	9	11	21	28	35	38	32	26
	+4000	6	3	10	19	26	29	24	20	9	10	20	28	34	37	32	26
8	-5000	5	5	13	24	33	31	26	19	8	14	26	32	39	40	31	23
	-4000	5	4	12	24	33	30	26	19	8	13	26	32	39	40	31	23
	-2000	5	4	11	23	32	30	26	20	8	12	25	31	38	39	31	24
	0	4	4	11	23	31	30	26	20	7	11	24	30	37	38	30	23
	+2000	5	4	10	22	30	30	25	20	8	11	23	29	37	38	30	23
	+4000	5	3	10	20	27	29	24	19	8	10	20	27	36	37	30	24
	+5000	5	3	10	19	27	28	23	19	8	10	20	27	35	36	30	24
L (in)		BSLGU 02								BSLGU 04							
9	-4000	5	5	13	24	29	29	24	18	8	14	26	32	40	39	30	22
	-3000	5	4	12	24	33	29	25	19	8	13	26	32	40	39	30	22

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BSL GU

## Acoustical Performance – Net Insertion Loss

Octave band	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	
Frequency (Hz)	63	125	250	500	1K	2K	4K	8K	63	125	250	500	1K	2K	4K	8K	
Ød <sub>1</sub> (in)	Velocity (fpm)	Net Insertion Loss (Decibels)							Net Insertion Loss (Decibels)								
	-2000	5	4	11	23	33	29	25	19	8	12	25	31	39	38	30	23
	0	4	4	11	23	32	29	25	19	7	11	24	30	38	37	29	22
	+2000	5	4	10	22	31	29	24	19	8	11	23	29	38	37	29	22
	+3000	5	3	10	20	29	28	23	18	8	10	21	27	37	37	29	23
	+4000	5	3	10	20	28	27	22	18	8	10	20	27	36	36	29	23
10	-4000	4	5	12	24	24	27	22	17	7	13	26	31	41	38	28	21
	-3000	4	4	11	24	33	27	23	18	7	13	25	31	41	38	28	21
	-2000	4	4	10	23	33	27	23	18	7	12	24	30	40	37	28	21
	0	3	4	10	22	32	27	23	18	6	11	23	29	39	36	28	21
	+2000	4	4	10	21	31	27	23	18	7	11	22	28	38	36	28	21
	+3000	4	3	9	20	30	27	22	17	7	10	21	27	38	36	28	21
	+4000	4	3	9	20	29	26	21	17	7	10	20	27	37	35	28	21
12	-4000	3	5	11	24	34	25	19	15	6	12	25	30	42	36	25	19
	-3000	2	4	10	23	34	25	19	16	7	11	25	30	42	36	26	20
	-2000	3	4	10	23	34	25	20	16	7	11	24	30	42	35	26	19
	0	2	4	9	22	33	24	20	16	5	10	23	28	41	35	26	19
	+2000	2	4	9	22	33	24	20	16	6	10	22	27	40	34	26	19
	+3000	2	3	8	20	31	24	19	14	6	10	21	26	40	34	26	18
	+4000	2	3	8	20	31	24	19	14	5	9	21	26	40	34	26	18
14	-4000									5	11	25	30	39	24	25	19
	-3000									5	11	25	30	39	34	25	19
	-2000									5	11	24	29	38	34	25	19
	0									4	10	24	29	38	33	24	19
	+2000									4	10	23	29	36	30	23	18
	+3000									4	9	22	28	36	30	23	18
	+4000									4	9	21	27	35	30	22	19
16	-4000									4	10	25	31	36	32	23	19
	-3000									4	10	25	30	36	32	23	18
	-2000									4	10	24	30	36	31	23	18
	0									3	9	24	30	36	31	23	18
	+2000									3	9	23	29	36	30	23	18
	+3000									3	9	22	28	36	30	23	18
	+4000									3	9	21	27	35	30	22	18
18	-4000									4	10	25	31	33	30	22	18
	-3000									3	10	24	31	34	30	22	18
	-2000									3	10	24	30	34	30	22	18
	0									2	9	24	30	34	29	22	18
	+2000									3	9	22	28	34	29	22	18
	+3000									3	8	21	27	33	29	22	17
	+4000									2	8	21	28	33	28	21	17
	L (in)	BSL GU 02							BSL GU 04								
20	-3000									3	9	25	33	33	30	23	18
	-2000									3	9	24	33	33	30	23	18
	-1000									3	8	24	33	33	30	23	18
	0									2	8	24	32	33	29	23	18
	+1000									2	8	23	32	33	29	23	18
	+2000									2	8	22	31	33	29	23	18

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## Acoustical Performance – Net Insertion Loss

Octave band	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Frequency (Hz)	63	125	250	500	1K	2K	4K	8K	63	125	250	500	1K	2K	4K	8K
Ød <sub>1</sub> (in)	Velocity (fpm)	Net Insertion Loss (Decibels)							Net Insertion Loss (Decibels)							
	+3000								2	8	21	30	33	29	22	18
22	-3000								3	9	24	36	32	30	23	19
	-2000								3	8	24	36	32	30	23	18
	-1000								2	8	23	35	32	30	23	18
	0								2	8	23	35	32	29	23	18
	+1000								2	8	22	34	33	29	23	18
	+2000								1	7	22	34	33	29	23	18
	+3000								2	7	21	33	33	29	23	18
24	-3000								3	8	23	39	31	29	23	19
	-2000								3	8	23	39	31	29	23	19
	-1000								3	8	23	39	31	29	23	18
	0								2	7	22	38	31	29	23	18
	+1000								2	7	21	37	32	29	23	18
	+2000								3	7	21	37	32	29	23	18
	+3000								2	7	21	36	33	29	23	18

### Notes:

- Net insertion loss, self-generated noise and pressure drop data were obtained through tests conducted by an independent testing laboratory in accordance with ASTM Standard E477-96, entitled "Standard Method of Testing Duct Liner Materials and Prefabricated Silencers for Acoustical and Airflow Performance." Test specimens whose inside diameters correspond to 6", 12", 18", 24", 30", 36", and 42" and whose lengths correspond to the minimum and maximum lengths catalogued were tested and reported. All data presented for other diameters and lengths were interpolated or extrapolated.
- Velocity, indicated as fpm, is determined by dividing the air flow through the silencer (ft<sup>3</sup>/min) by the cross sectional area of the silencer face (ft<sup>2</sup>) calculated using the silencer clear inside diameter. Return/exhaust air is indicated as (-) fpm and supply air is indicated as (+) fpm. 0 fpm is the "no flow" condition.
- The pressure drop performance data obtained from ASTM E477-96 "Standard Method of Testing Duct Liner Materials and Prefabricated Silencers for Acoustical and Airflow Performance" are tested at simulated ideal ducted inlet and ducted outlet conditions. Any deviations from these ideal conditions on actual silencer installations should be accounted for in the form of additional pressure loss.
- The self-generated noise for elbow silencers and straight silencers without a baffle is too low to be measured by ASTM E477-96. The measurements obtained for these silencers are equal to or less than the corresponding single wall duct reference condition or within +/- 10dB per ASTM E477-96 section 9.1.2.