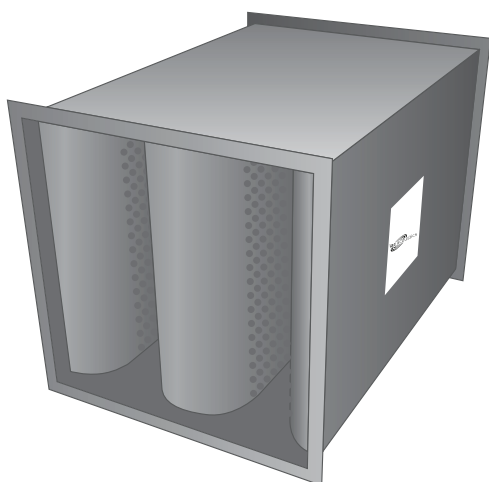


## Quiet-Duct® Silencer Type: LFS

Superior Low Frequency Silencers with Forward and Reverse Flow Ratings



LFS silencers are advantageous where low frequency DIL requirements are high in HVAC systems. In some systems high frequency attenuation may be provided by the system components or may not be needed.

### Supplied as Standard

- Aerodynamic inlet and discharge to splitter elements to reduce pressure drop and conserve energy
- Perforated galvanised steel facings to all splitter elements to protect acoustic media from damage and erosion

### Designating Silencers (Example)

Model: 5LFS-600-600

Length	Type	Width	Height
1500mm	LFS	600mm	600mm

Standard modular widths are multiples of 300mm, other widths are also available.

### Weight

Average weight 85kg/m<sup>3</sup>

### Self-Noise Power Levels dB re: 10<sup>-12</sup> Watts (for a 0.37m<sup>2</sup> face area silencer)

IAC LFS Model	Octave Band	1	2	3	4	5	6	7	8
	Hz	63	125	250	500	1K	2K	4K	8K
	Silencer Face Velocity, m/s								
LFS All Lengths	-10	58	54	58	61	62	63	65	63
	-7.5	51	49	53	56	56	59	60	53
	-5	45	42	45	43	45	49	44	37
	+5	46	42	45	43	45	49	44	37
	+7.5	56	54	57	56	52	56	57	51
	+10	68	64	65	66	61	61	64	61

### Face Area Adjustment Factors (add or subtract from Lw values above)

Quiet-Duct® Face Area, m <sup>2</sup> *	0.05	0.09	0.19	0.37	0.74	1.5	3.0	6.0	12.0
Lw Adjustment Factor, dB	-9	-6	-3	0	+3	+6	+9	+12	+15

\* For intermediate face areas, interpolate to the nearest whole number

### Aerodynamic Performance

IAC Model	Length (mm)	Static Pressure Drop N/m <sup>2</sup>							
		10	12	17	22	27	35	42	50
LFS	900	10	12	17	22	27	35	42	50
	1500	10	15	20	25	32	40	47	55
	2100	10	15	20	25	33	40	50	57
	3000	10	15	22	27	35	45	52	65
Silencer Face Velocity, m/s		1.27	1.52	1.78	2.03	2.29	2.54	2.79	3.05

Dynamic Insertion Loss (DIL) Ratings: Forward (+) / Reverse (-) Flow

IAC LFS Model (length in mm)	Octave Band	1	2	3	4	5	6	7	8
	Hz	63	125	250	500	1K	2K	4K	8K
	Silencer Face Velocity, m/s	Dynamic Insertion Loss, dB							
3LFS (900)	-10	8	14	25	29	27	20	16	12
	-5	7	13	23	28	26	20	16	14
	0	8	13	23	28	27	21	17	14
	+5	9	12	22	28	27	21	18	14
	+10	7	11	21	25	25	21	17	14
4LFS (1200)	-10	11	19	31	36	35	24	18	13
	-5	10	17	29	35	34	24	19	15
	0	11	17	28	34	34	25	20	15
	+5	11	16	27	32	34	24	20	15
	+10	9	14	25	29	31	25	19	15
5LFS (1500)	-10	13	23	36	42	42	28	19	14
	-5	13	21	35	41	41	28	21	15
	0	13	20	33	39	41	28	22	16
	+5	12	19	31	36	40	27	22	16
	+10	10	17	28	33	37	29	20	16
6LFS (1800)	-10	14	24	38	46	47	32	21	15
	-5	14	23	39	45	45	32	23	16
	0	13	22	37	43	44	31	24	16
	+5	12	21	34	40	43	30	24	17
	+10	10	20	33	39	41	32	22	17
7LFS (2100)	-10	14	25	40	50	51	35	22	16
	-5	14	24	42	49	49	35	24	17
	0	13	24	40	47	47	34	25	17
	+5	12	23	37	44	45	33	25	17
	+10	10	22	37	44	45	34	24	17
8LFS (2400)	-10	16	27	42	51	52	38	23	16
	-5	15	27	45	50	50	38	26	18
	0	15	26	43	49	49	38	27	18
	+5	14	25	40	47	48	38	28	19
	+10	12	23	40	47	48	39	28	19
9LFS (2700)	-10	17	28	44	51	52	40	24	17
	-5	17	29	47	51	52	42	27	18
	0	16	28	46	50	51	42	30	20
	+5	15	26	44	49	50	42	32	21
	+10	14	24	43	50	50	43	32	22
10LFS (3000)	-10	19	30	46	52	53	43	25	17
	-5	18	32	50	52	53	45	29	19
	0	18	30	49	52	53	46	32	21
	+5	17	28	47	52	53	47	35	23
	+10	16	25	46	53	53	48	36	24

Quiet-Duct® Rectangular LFS Silencer

Note

- The tabulated airflow in m/s is based upon tests conducted in the IAC Acoustics R&D Laboratory, in accordance with applicable sections of internationally recognised airflow test codes. These codes require specific lengths of straight duct both upstream and downstream of the test specimen. Non-compliance with these codes can add from ½ to several velocity heads depending on specific conditions. The downstream measurements are made far enough downstream to include static regain. Therefore, if silencers are installed immediately before or after elbows, transitions or at the intake or discharge of a system, sufficient allowance to compensate for these factors must be included when calculating the operating static pressure loss through the silencer. See pages 10 & 11 for further details.
- Silencer Face Area is the cross-sectional area at the silencer entrance or exit
- Face velocity (FV) in m/s is the airflow in m³/s divided by the silencer face area in m²
- Pressure drop (PD) for any face velocity can be calculated from the equation: PD = (Actual FV / Catalogue FV)² x (Catalogue PD)