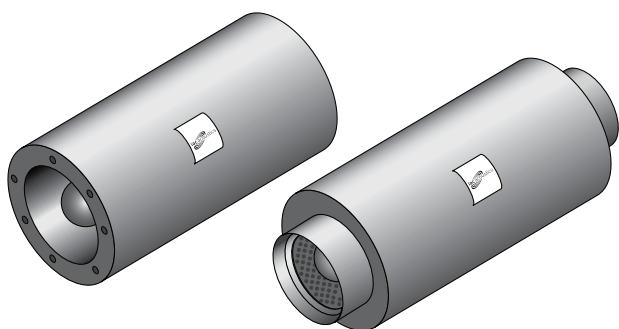


# Low Frequency Conic-Flow® Silencer Type: FCL

Low Frequency With Forward and Reverse Flow Ratings



**Supplied as Standard**

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

**Designating Silencers: Example**

Model: 300-FCL-900

Pipe Diameter	Type	Length
300mm	FCL	900mm

**Options:** Energy saver tail cone provides a significant decrease in pressure drop, resulting in a 33% decrease in silencer energy consumption, with no effect on the silencer acoustic characteristics. See page 46 for additional information.

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

IAC FCL Model (pipe diameter 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							
300-FCL-900	-20	8	17	25	30	35	34	23	18
	-10	8	16	23	29	34	34	25	19
	0	8	15	22	27	33	31	26	21
	+10	8	14	20	25	32	27	26	23
	+20	7	12	18	23	31	29	27	23
600-FCL-1200	-20	9	16	26	31	35	21	15	12
	-10	9	15	24	29	33	21	16	13
	0	8	14	23	28	34	23	19	15
	+10	7	13	21	26	34	25	21	16
	+20	6	12	20	24	32	25	21	17
900-FCL-1800	-20	11	20	29	33	30	20	17	12
	-10	10	19	28	33	29	21	18	13
	0	9	17	26	32	29	23	19	15
	+10	8	15	24	31	29	25	20	16
	+20	7	13	21	26	34	25	21	16
1200-FCL-2400	-20	12	22	33	37	30	17	13	11
	-10	12	20	31	36	30	18	15	13
	0	11	19	29	35	30	20	17	15
	+10	9	17	27	33	29	22	18	16
	+20	9	16	24	32	28	23	18	17
1500-FCL-3000	-20	15	26	36	38	29	15	11	10
	-10	14	24	34	37	29	16	12	11
	0	13	22	33	36	28	19	15	14
	+10	11	20	31	35	27	21	17	16
	+20	10	18	28	35	26	20	17	17

### Self-Noise Power Levels dB re: 10<sup>-12</sup> Watts (for a 0.28m<sup>2</sup> face area silencer)

IAC FCL 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	Self-Noise Power Levels, dB							
FCL All Pipe Diameters (mm)	-15	56	56	55	56	55	55	50	45
	-10	47	47	47	47	45	45	37	29
	-5	31	32	32	31	30	30	20	20
	+5	39	35	32	32	30	25	20	20
	+10	52	48	46	46	45	42	39	25
	+15	60	56	54	54	53	52	50	40

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

Conic-Flow® Face Area, m <sup>2</sup> *	0.07	0.14	0.28	0.56	1.11	2.23
Lw Adjustment Factor, dB	-6	-3	0	+3	+6	+9

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

### Physical and Aerodynamic Performance

Physical Data					Type FCL	Static Pressure Drop, N/m <sup>2</sup>									
Pipe Diameter (mm)	Silencer Face Area (m <sup>2</sup> )	Body Diameter (mm)	Length (mm)	Weight (kg)		without optional energy saving tail cone									
						25	37	50	62	75	100	125	149	187	249
						with optional energy saving tail cone									
						20	30	40	50	60	79	100	121	155	201
					Airflow in m <sup>3</sup> /s										
300	0.070	700	900	45	0.84	1.03	1.19	1.34	1.46	1.68	1.90	2.07	2.31	2.68	
350	0.095	750	900	50	1.16	1.42	1.64	1.85	2.02	2.32	2.61	2.85	3.2	3.69	
400	0.125	800	900	60	1.55	1.90	2.19	2.46	2.70	3.10	3.48	3.80	4.26	4.92	
450	0.160	850	900	68	2.03	2.49	2.88	3.21	3.53	4.07	4.55	4.98	6.09	6.82	
500	0.195	900	1000	76	2.52	2.94	3.56	3.97	4.35	5.04	5.63	6.16	6.89	7.95	
550	0.240	950	1100	85	3.11	3.81	4.39	4.93	5.37	6.21	6.96	7.62	8.53	9.86	
600	0.285	1000	1200	95	3.75	4.60	5.31	5.95	6.51	7.50	8.40	9.20	10.26	11.89	
650	0.330	1050	1300	106	4.43	5.41	6.26	7.00	7.64	8.84	9.91	10.86	12.19	14.02	
700	0.385	1100	1400	116	5.16	6.30	7.27	8.20	8.91	10.31	11.60	12.60	14.26	16.40	
750	0.440	1150	1500	170	5.91	7.24	8.36	9.32	10.25	11.82	12.98	14.49	16.21	18.64	
800	0.500	1200	1600	225	6.78	8.29	9.58	10.78	11.76	13.55	15.24	16.57	18.68	21.56	
900	0.635	1300	1800	273	8.62	10.57	12.17	13.72	14.95	17.23	19.40	21.13	23.78	27.44	
1000	0.785	1400	2000	340	10.74	13.12	15.17	17.06	18.57	21.48	24.13	26.25	29.65	34.12	
1100	0.950	1500	2200	432	13.13	16.07	18.55	20.86	22.72	26.26	29.50	32.15	36.07	41.72	
1200	1.130	1600	2400	518	15.73	19.27	22.25	24.90	27.25	31.47	35.18	38.55	43.11	49.79	
1300	1.325	1700	2600	609	18.73	22.88	26.46	29.56	32.36	37.47	41.77	45.77	51.25	59.13	
1400	1.540	1800	2800	698	21.86	26.66	30.91	34.68	37.70	43.73	48.75	53.32	60.07	69.37	
1500	1.765	1900	3000	851	25.04	30.75	35.60	40.02	43.48	50.09	56.58	61.50	69.37	80.03	

### Note

- The tabulated air flow in m<sup>3</sup>/s is based upon tests 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 0.5 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 the system, sufficient allowance to compensate for these factors must be included when calculating the operating static pressure loss through the silencer. See pages 10 and 11 for further details.
- Face Velocity is the airflow (m<sup>3</sup>/s) divided by the Face Area (m<sup>2</sup>)
- Pressure drop for any face velocity can be calculated from the equation: PD=[Actual FV/catalogue FV]<sup>2</sup> x (Catalogue PD)
- Other diameters and lengths are available, please contact IAC with your specific requirements.

Conic-Flow® Tubular FCL Silencers