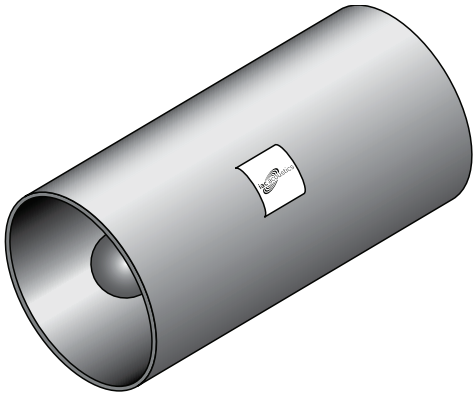
Conic-Flow® Silencer Type: NL

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 acoustic elements to protect acoustic media from damage and erosion

Designating Silencers: Example

Model: 300-NL-1000

Pipe Diameter	Type	Length
300mm	NL	1000mm

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 NL 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-NL-1000	-20	2	5	10	11	17	15	9	8
	-10	1	3	9	11	16	15	9	9
	0	1	3	9	11	16	15	10	10
	+10	1	3	9	11	15	15	10	10
	+20	1	3	8	10	14	15	10	10
600-NL-1950	-20	5	11	14	17	18	14	10	8
	-10	3	10	12	16	17	14	10	9
	0	3	10	12	16	17	14	11	10
	+10	3	9	11	15	16	14	11	10
	+20	3	9	11	15	16	14	11	10
900-NL-2950	-20	6	12	16	18	16	12	9	6
	-10	4	11	14	17	15	12	9	7
	0	4	11	14	17	15	12	10	8
	+10	10	13	16	15	12	10	8	6
	+20	4	10	13	16	15	13	11	8
1200-NL-3900	-20	8	13	18	17	14	10	8	4
	-10	5	11	16	16	14	10	9	6
	0	5	11	16	16	14	11	9	7
	+10	5	11	15	15	14	11	9	7
	+20	5	11	15	15	14	11	10	7
1500-NL-4900	-20	10	14	18	17	11	9	6	4
	-10	7	13	16	16	11	9	7	5
	0	7	13	16	16	11	10	7	6
	+10	7	13	15	15	11	10	7	6
	+20	7	13	15	15	11	10	8	7

Self-Noise Power Levels dB re: 10^{-12} Watts (for a 0.28m² face area silencer)

IAC NL 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							
NL All Pipe Diameters (mm)	-15	60	59	59	58	59	58	53	43
	-10	53	51	51	51	51	50	41	32
	-5	40	38	38	38	38	36	20	20
	+5	39	35	32	32	30	25	21	20
	+10	52	48	46	46	45	42	39	26
	+15	59	56	54	54	53	52	50	40

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

Conic-Flow® Face Area, m²*	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					Static Pressure Drop, N/m²									
					without optional energy saving tail cone									
Pipe Diameter (mm)	Silencer Face Area m²	Length (mm)	Weight (kg)		25	37	50	62	75	100	125	149	187	249
					with optional energy saving tail cone									
					22	34	45	56	66	88	111	125	165	216
					Airflow in m³/s									
300	0.070	1000	18		0.65	0.80	0.92	1.03	1.13	1.30	1.45	1.59	1.78	2.07
350	0.095	1150	25		0.89	1.10	1.27	1.42	1.55	1.79	2.01	2.19	2.45	2.83
400	0.125	1300	34		1.20	1.47	1.69	1.89	2.07	2.40	2.68	2.94	3.28	3.78
450	0.160	1450	43		1.56	1.91	2.21	2.47	2.71	3.12	3.50	3.83	4.28	4.94
500	0.195	1600	50		1.94	2.38	2.75	3.08	3.37	3.89	4.35	4.76	5.33	6.15
550	0.240	1800	57	Type	2.41	2.95	3.40	3.80	4.16	4.81	5.37	5.89	6.59	7.61
600	0.285	1950	64	NL	2.89	3.54	4.09	4.57	5.00	5.78	6.47	7.08	7.90	9.14
650	0.330	2100	91		3.41	4.18	4.84	5.41	5.90	6.82	7.64	8.35	9.34	10.82
700	0.385	2250	116		3.96	4.84	5.61	6.28	6.84	7.93	8.87	9.67	10.86	12.55
750	0.440	2450	141		4.56	5.60	6.46	7.22	7.91	9.12	10.20	11.20	12.49	14.44
800	0.500	2600	166		5.22	6.39	7.38	8.26	9.05	10.44	11.69	12.79	14.30	16.52
900	0.635	2950	193		6.64	8.14	9.39	10.50	11.48	13.29	14.85	16.27	18.17	20.99
1000	0.785	3250	218		8.26	10.14	11.71	13.07	14.31	16.53	18.48	20.27	22.65	26.14
1100	0.950	3600	257		10.11	12.39	14.28	15.97	17.50	20.22	22.59	24.78	27.65	31.95
1200	1.130	3900	295		12.14	14.86	17.17	19.21	21.03	24.27	27.18	29.73	33.25	38.41
1300	1.325	4250	336		14.38	17.63	20.36	22.76	24.93	28.77	32.19	35.26	39.39	45.52
1400	1.540	4550	536		16.76	20.60	23.69	26.58	39.15	33.52	37.60	41.21	45.85	53.17
1500	1.765	4900	745		19.31	23.69	27.30	30.55	33.50	38.62	43.20	47.38	52.90	61.10

Note

- The tabulated air flow in m³/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 (m³/s) divided by the Face Area (m²)
- Pressure drop for any face velocity can be calculated from the equation: PD=(Actual FV/catalogue FV)² x (Catalogue PD)
- Other diameters and lengths are available, please contact IAC with your specific requirements.