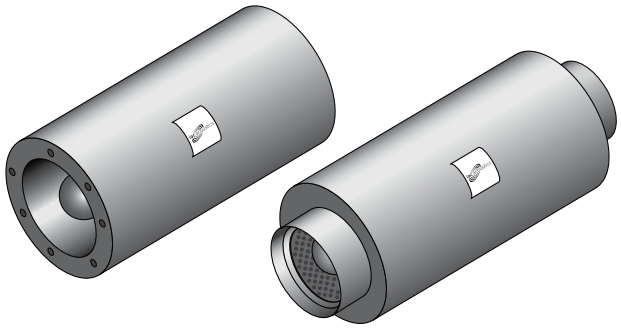
Conic-Flow® Silencer Type: CS

With Forward and Reverse Flow Ratings



Supplied as Standard

- Aerodynamic inlet cone 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-CS-900

Pipe Diameter	Type	Length
300mm	CS	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

Pipe Diameter - IAC Model - length (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-CS-900	-20	9	13	22	32	36	35	31	21
	-10	7	10	19	31	34	35	32	26
	0	6	10	18	31	34	36	33	27
	+10	4	9	16	30	34	37	33	27
	+20	3	8	14	29	33	39	33	27
600-CS-1200	-20	10	12	20	34	43	34	20	11
	-10	8	11	18	34	40	35	22	13
	0	7	11	18	30	38	36	23	17
	+10	5	11	18	26	36	37	24	20
	+20	4	10	17	25	34	37	27	21
900-CS-1800	-20	11	16	22	36	38	28	19	11
	-10	10	15	20	35	37	29	21	12
	0	10	15	20	35	37	30	22	15
	+10	9	14	19	35	36	31	23	17
	+20	8	13	18	33	35	32	24	18
1200-CS-2400	-20	12	18	23	37	36	20	13	11
	-10	11	17	21	36	35	22	14	12
	0	11	17	21	35	35	24	17	14
	+10	10	16	20	34	35	26	20	16
	+20	9	14	19	34	35	27	21	17
1500-CS-3000	-20	13	20	25	38	33	16	11	10
	-10	12	19	24	36	32	18	12	11
	0	12	18	24	36	32	21	15	13
	+10	11	17	23	35	31	23	17	15
	+20	10	15	22	35	31	24	18	16

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

IAC CS 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							
CS All Pipe Diameters (mm)	-15	57	58	58	57	56	57	56	52
	-10	50	49	51	49	46	47	45	39
	-5	38	34	39	35	29	30	26	20
	+5	44	43	37	37	38	38	20	20
	+10	56	54	50	50	50	50	41	31
	+15	63	60	57	57	57	57	53	47

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						
						92	137	184	229	277	369	461
						with optional energy saving tail cone						
Pipe Diameter (mm)	Silencer Face Area m²	Body Diameter (mm)	Length (mm)	Weight (kg)		59	91	121	151	180	242	304
						Airflow in m³/s						
300	0.070	500	900	34		0.84	1.03	1.19	1.34	1.46	1.68	1.90
350	0.095	550	900	39		1.16	1.42	1.64	1.85	2.02	2.32	2.61
400	0.125	600	900	48		1.55	1.90	2.19	2.46	2.70	3.10	3.48
450	0.160	650	900	55		2.03	2.49	2.88	3.21	3.53	4.07	4.55
500	0.195	700	1000	61		2.52	2.94	3.56	3.97	4.35	5.04	5.63
550	0.240	750	1100	68	Type	3.11	3.81	4.39	4.93	5.37	6.21	6.96
600	0.285	800	1200	75	CS	3.75	4.60	5.31	5.95	6.51	7.50	8.40
650	0.330	850	1300	84		4.43	5.41	6.26	7.00	7.64	8.84	9.91
700	0.385	900	1400	91		5.16	6.30	7.27	8.20	8.91	10.31	11.60
750	0.440	950	1500	139		5.91	7.24	8.36	9.32	10.25	11.82	12.98
800	0.500	1000	1600	191		6.78	8.29	9.58	10.78	11.76	13.55	15.24
900	0.635	1100	1800	241		8.62	10.57	12.17	13.72	14.95	17.23	19.40
1000	0.785	1200	2000	291		10.74	13.12	15.17	17.06	18.57	21.48	24.13
1100	0.950	1300	2200	373		13.13	16.07	18.55	20.86	22.72	26.26	29.50
1200	1.130	1400	2400	450		15.73	19.27	22.25	24.90	27.25	31.47	35.18
1300	1.325	1500	2600	532		18.73	22.88	26.46	29.56	32.36	37.47	41.77
1400	1.540	1600	2800	611		21.86	26.66	30.91	34.68	37.70	43.73	48.75
1500	1.765	1700	3000	755		25.04	30.75	35.60	40.02	43.48	50.09	56.58

Note

- The tabulated air flow in m³/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 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.