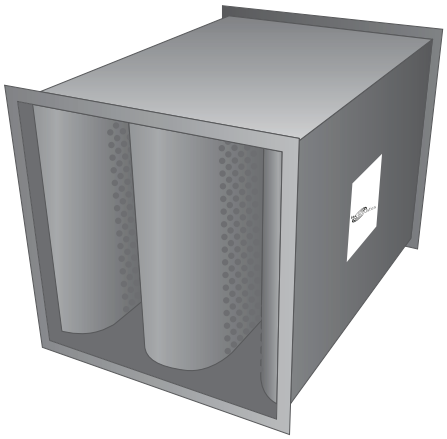
Clean-Flow™ Quiet-Duct® Silencer Type: HMS

Low Frequency with Forward and Reverse Flow Ratings



Standard modular widths are multiples of 375mm, other widths are also available.

HMS silencers are designed for air handling systems that require the ultimate in cleanliness and hygiene. They are **non-erosive** – to eliminate carry-over of inorganic particulate matter from the silencer. **Non-pregnable** – to prevent or minimise the absorption of gases and / or entry of Brownian particles into the fill. **Cleanable** – non-removable fill permits periodic cleaning of exposed surfaces with soft brush vacuum cleaner, optional removable parts also permit cleaning of concealed surfaces and replacement of acoustic fill.

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: 5HMS-750-450

Length	Type	Width	Height
1500mm	HMS	750mm	450mm

Self-Noise Power Levels dB re: 10^{-12} Watts (for a 0.22m² face area silencer)

IAC HMS 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							
HMS All Lengths (mm)	-15	67	63	61	66	61	64	67	67
	-10	60	56	56	536	57	59	58	49
	-5	46	45	45	41	50	51	43	23
	+5	44	32	36	34	31	32	29	21
	+10	63	54	52	50	47	48	47	44
	+15	74	64	60	58	56	58	59	57

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

Quiet-Duct® Face Area, m²*	0.03	0.06	0.11	0.22	0.45	0.90	1.80	3.60	7.20
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/m²							
HMS	900	15	20	25	30	35	42	50	57
	1500	20	25	30	37	42	50	60	67
	2100	25	30	37	45	55	65	75	85
	3000	30	37	47	57	67	77	90	105
Silencer Face Velocity, m/s		4.06	4.57	5.08	5.59	6.10	6.60	7.11	7.62

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

IAC HMS 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							
3HMS (900)	-20	4	6	10	15	18	22	16	8
	-10	5	6	9	15	17	21	17	8
	0	5	6	9	15	17	18	17	8
	+10	4	4	8	14	17	17	16	8
	+20	4	3	7	13	16	18	17	8
4HMS (1200)	-20	5	8	13	22	24	26	20	9
	-10	5	7	12	21	23	25	20	9
	0	5	8	11	19	22	23	20	9
	+10	4	6	10	19	22	22	19	10
	+20	4	5	9	18	22	23	20	10
5HMS (1500)	-20	6	10	15	29	29	30	23	9
	-10	4	8	14	27	29	29	23	9
	0	4	9	13	25	29	28	23	10
	+10	3	7	11	24	27	27	22	12
	+20	3	6	10	22	28	28	22	12
6HMS (1800)	-20	7	13	18	30	30	35	26	10
	-10	6	10	16	30	32	34	26	10
	0	6	11	15	29	32	33	25	11
	+10	5	9	14	27	30	31	23	13
	+20	5	9	13	26	31	32	24	13
7HMS (2100)	-20	8	15	21	31	30	39	28	11
	-10	7	12	18	33	35	38	28	11
	0	7	13	17	32	34	37	26	12
	+10	7	11	16	30	33	34	24	13
	+20	6	11	15	29	34	35	26	14
8HMS (2400)	-20	9	15	22	31	32	39	29	12
	-10	7	13	20	33	35	40	30	12
	0	9	13	19	32	34	38	27	13
	+10	8	11	18	31	33	36	25	14
	+20	7	12	17	30	33	36	27	15
9HMS (2700)	-20	10	14	24	30	34	40	31	14
	-10	10	13	22	32	36	41	31	13
	0	10	14	21	33	35	40	29	14
	+10	9	12	21	31	34	38	27	15
	+20	8	12	19	30	33	36	29	17
10HMS (3000)	-20	11	14	25	30	36	40	32	15
	-10	11	14	24	32	36	43	33	14
	0	12	14	23	33	35	41	30	15
	+10	10	12	23	32	34	40	28	16
	+20	9	13	21	31	32	37	30	18

Note

- The tabulated air flow in m^3/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^3/s) divided by the Face Area (m^2)
- Pressure drop for any face velocity can be calculated from the equation: PD=(Actual FV/catalogue FV)^2 x (Catalogue PD)