

Company: ECS Consultants
Attention: Dominic Walker
Email: d.walker@ecs-ecs.co.uk
Date: 08-Apr-2021

QUOTE REF: 2005751

PROJECT: 22/057 Bellamy Court & Burnage Lane

Dear Dominic,

We thank you for your enquiry and have pleasure in providing our quotation for the supply of noise control equipment for the above project.

Rectangular and cylindrical duct silencers from IAC Acoustic Company provide effective and predictable noise reduction at substantial savings over other methods due to our products being laboratory developed and tested under controlled conditions.

In most cases, the use of duct lining alone cannot sufficiently attenuate the noise from air handling equipment. The high volume production of quality-controlled standardised components brings our duct silencers within budget of any project. Structural design assures a long and trouble free life.

Optional Extras:

- Circular spigot ends
- Slide on flanges
- Angle flanges
- Vertical or horizontal splitter orientation
- Melinex wrapped infill
- Glass cloth wrapped infill
- Honeycomb stand-off for Clean-Flow™ silencers
- Hospital specification – Mylar and honeycomb
- Casing thicknesses in a range of sizes
- Double skinned construction
- Polyester powder coating
- Chlorinated rubber paint
- Construction materials, including galvanised mild steel, stainless steel and aluminium.
- Integral inlet and outlet plenums.

Terms and Conditions of Quotation :

We have assumed the order would be placed in the form of a purchase order and have not included for any terms and conditions associated with a formal contract. At present our proposals have been produced in accordance with the standard IAC terms and conditions, which are available to view by clicking the following link <https://www.iacacoustics.global/iac-terms-conditions-supply-install/>

Delivery Time:	See attached quotation
Delivery:	Not Included.
Payment Terms:	100% Payment Upfront.
Validity:	Quotation valid for 14 Days
VAT:	All prices are exclusive of VAT
Installation:	Not included unless specified on quotation
Construction:	To HVAC DW144 medium pressure unless noted otherwise.

We trust the enclosed is of interest and look forward to hearing from you in due course. Should you have any questions or require any further information in the meantime, please do not hesitate to contact us.

Yours sincerely,
For **IAC Acoustic Company UK Ltd**

Gill Budd
Internal Sales

Quotation Reference: 2005751

Date: 08-04-2021

Project: 22/057 Bellamy Court & Burnage Lane

Item	Location	Model No.	Dimensions (mm)			Vol m³/s	P.D Pa.	Approx. Weight Kgs	No. Off	FLOW	DYNAMIC INSERTION LOSS (dB)								Price Each £	Total Price £	Comments
			W	H	L						63	125	250	500	1k	2k	4k	8k			
001	Bellamy Court	3SM	700	300	900	0.837	32	27	2	+	5	8	14	27	33	30	23	15	182.86	365.72	S/F12/D1/P0/W1/V
002	Burnage Lane	3MS	700	350	900	1.206	24	28	1	+	4	6	12	21	24	21	16	11	197.14	197.14	S/F12/D1/P0/W1/V
																			Sub-Total	562.86	
																			Delivery	Ex-Works	
																			Total Price	562.86	

General Information

Delivery Time: 2 Weeks from Approval of Drawings

Construction: To HVAC DW144 medium pressure unless noted otherwise.

Payment Terms: 100% Payment Upfront

Quote: This quotation is valid for 14 days

VAT: All prices are exclusive of VAT

NB: Please see Delivery Information and Sales Terms for more information

Comment Codes:

D1 = Material - Galvanised

F12 = Flanges - 20mm Cleat

P0 = Paint - None

S = Infill Facing - Scrim Faced

V = Splitter Orientation - Vertical

W1 = End Covers - PVC

Delivery Information

Where Industrial Acoustics Company Ltd offer products inclusive of delivery, the quoted price is for a single delivery using standard delivery services (unless stated in quotation).

Standard Delivery Services

The standard delivery assumes that no specific delivery conditions apply and includes for a part or full load delivery.

Delivery Vehicle

The standard delivery vehicle is generally a 40 foot vehicle using a curtain side. Vehicles are not fitted with tail lifts or HI-AB's as standard.

Delivery Timing

Delivery will be scheduled by IAC Ltd during normal working days and hours (Monday to Friday, 07.00 – 17.00) IAC will advise intended delivery date usually 2-3 days prior.

Packing

Items will usually be delivered un-palletted unless otherwise stated on the quotation.

Offloading

Vehicles are not provided with offloading facilities, and no allowance is made for offloading vehicles on site. The customer is responsible for offloading and must ensure that suitable facilities are available at the delivery site.

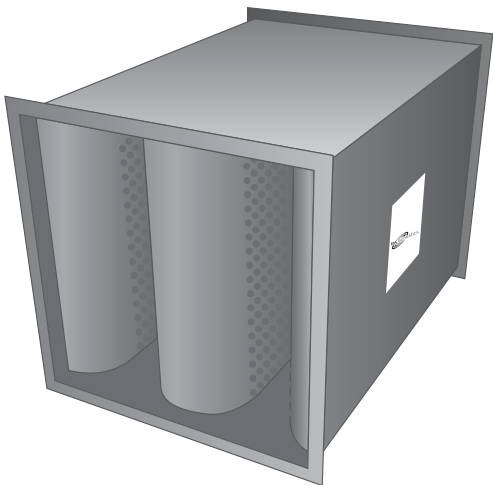
Special Delivery Services

Customers may request the following special services at additional cost:

- Phased deliveries
- Tail lift vehicles
- HI-AB vehicles
- Small delivery vehicles
- Specific day
- AM / PM delivery or specific time slots
- Security clearance deliveries (where driver/ vehicle details are required)
- Packing of equipment in specific batches
- Loading equipment in specific order
- Equipment on pallets
- Delivery out of normal working hours (as stated above), weekends or Public/Bank holidays
- Overseas delivery
- Special packing for overseas delivery

Whilst every endeavour is made to adhere to agreed delivery dates or times, these cannot be guaranteed due to possible unforeseen circumstances beyond our control.

Quiet-Duct® Silencer Type: SM
With Forward and Reverse Flow



- 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: 5SM-660-600

Length	Type	Width	Height
1500mm	SM	660mm	600mm

Weight
Average weight 95kg/m³

Standard modular widths are multiples of 330mm, other widths are also available.

Self-Noise Power Levels dB re: 10⁻¹² Watts (for a 0.4m² face area silencer)

IAC SM 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								
SM All Lengths	-10	66	61	60	64	61	63	65	61
	-5	52	50	49	49	54	55	50	35
	-2.5	68	39	38	34	47	47	35	<20
	+2.5	33	24	31	27	27	30	<20	<20
	+5	52	44	46	44	42	44	39	29
	+10	71	65	60	60	57	59	58	53

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

Quiet-Duct® Face Area, m²*	0.05	0.1	0.2	0.4	0.8	1.6	3.2	6.4	12.8
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							
SM	900	8	13	19	25	33	42	52	63
	1500	10	15	22	29	39	49	60	73
	2100	11	17	25	34	44	56	69	99
	3000	13	20	29	40	52	65	81	116
Silencer Face Velocity, m/s		2.03	2.54	3.05	3.56	4.06	4.57	5.08	5.59

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

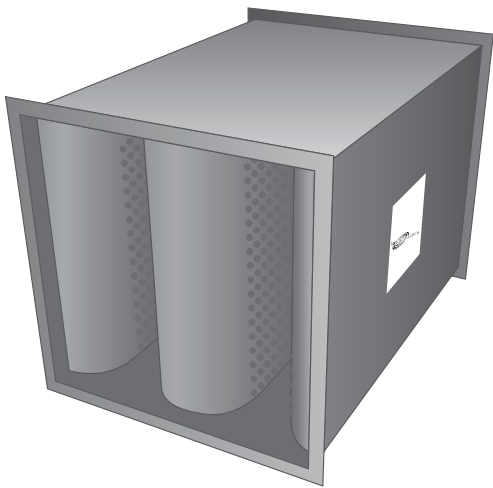
IAC SM Model (length in mm)	Octave Band	1	2	3	4	5	6	7	8
	Hz	63	125	250	500	1K	2K	4K	8K
	Silencer Face Velocity, m/s	Dynamic Insertion Loss, dB							
3SM (900)	-10	6	10	18	30	35	30	20	12
	-5	5	10	16	30	34	30	21	13
	0	5	9	15	29	34	30	22	14
	+5	5	8	14	27	33	30	23	15
	+10	5	7	13	25	32	30	23	15
4SM (1200)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

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)

Quiet-Duct® Silencer Type: MS

With Forward and Reverse Flow Ratings



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: 5MS-750-600

Length	Type	Width	Height
1500mm	MS	750mm	600mm

Weight

Average weight 85kg/m³

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

Self-Noise Power Levels dB re: 10⁻¹² Watts (for a 0.23m² face area silencer)

IAC MS 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								
MS All Lengths	-15	67	63	61	66	61	64	67	67
	-10	60	56	56	56	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	0.12	0.23	0.46	0.9	1.8	3.6	7.2
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							
MS	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	6.1	6.6	7.11	7.62

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

IAC MS 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							
3MS (900)	-20	5	7	14	24	27	20	12	9
	-10	6	7	13	24	26	19	13	9
	0	5	7	13	23	25	20	15	10
	+10	4	6	12	21	24	21	16	11
	+20	3	5	11	18	23	22	17	11
4MS (1200)	-20	6	10	18	31	35	26	16	10
	-10	6	9	16	30	35	25	16	10
	0	5	9	16	29	34	26	18	11
	+10	4	8	15	28	33	27	19	13
	+20	3	7	14	25	32	28	20	13
5MS (1500)	-20	7	12	21	38	43	32	19	10
	-10	5	10	19	36	43	31	19	10
	0	5	10	18	35	43	32	21	12
	+10	4	9	17	34	42	33	22	14
	+20	3	8	16	32	40	34	22	15
6MS (1800)	-20	8	15	25	40	45	37	22	12
	-10	6	12	22	39	47	36	22	12
	0	6	12	21	39	47	37	24	14
	+10	6	11	20	38	46	39	25	16
	+20	5	10	19	36	45	40	26	17
7MS (2100)	-20	8	17	28	41	46	41	24	13
	-10	7	14	25	42	50	40	24	13
	0	7	14	24	42	50	42	26	15
	+10	7	13	23	41	49	44	28	17
	+20	6	11	21	40	49	45	30	19
8MS (2400)	-20	9	18	30	42	48	43	26	15
	-10	8	16	28	43	51	43	27	14
	0	8	15	27	43	51	45	29	16
	+10	8	14	26	42	50	47	31	18
	+20	7	12	24	41	49	47	33	20
9MS (2700)	-20	11	20	33	42	50	45	29	16
	-10	10	17	31	44	51	47	30	16
	0	10	17	30	44	51	48	33	18
	+10	9	16	29	44	50	49	35	20
	+20	8	13	26	43	48	48	37	22
10MS (3000)	-20	12	21	35	43	52	47	31	18
	-10	11	19	34	45	52	50	33	17
	0	11	18	33	45	52	51	36	19
	+10	10	17	32	45	51	52	38	21
	+20	9	14	29	44	48	50	40	23

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)