Rectangular Sound Attenuators

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SA 20

amca WORLDWIDE CERTIFIED RATINGS
PRE-FABRICATED SILENCER
SOUND and AIR PERFORMANCE
AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC.®
www.amca.org

Advantages

- Efficient at medium and high frequencies.
- AMCA Certified performance for SA 20 - L900 & SA 20 - L1500
- Approved for installation in Fire Rated ductwork (2h) and Smoke Exhaust ductwork (400°C – 2h).

Aldes Middle East FZE certifies that Sound Attenuator SA20 - L900 and SA20 - L1500 shown herein is licensed to bear AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 1011 and comply with requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to Dynamic insertion loss, Airflow generated noise and Pressure drop.

APPLICATION

- Attenuation of fan / AHU noises propagated through air ducting.
- Highly effective at medium and high frequencies.
- Air exhaust and air supply.

DESCRIPTION

- Aldes sound attenuator assemblies are approved for use in fire rated ductwork systems where a fire rating of up to 2h is specified in terms of stability and integrity criteria of BS 476: Part 24: 1987 for fire exposure from either inside the duct or outside the duct.
- Aldes sound attenuator assemblies are also approved for use in Smoke extract ductwork systems carrying smoke & hot gases up to 400°C for durations up to 2h.

CONSTRUCTION

- Casing and baffles manufactured from galvanized sheets metal of 24 ga. thickness (standard) / 20 ga. thickness (fire rated) with lock formed seams which complies with DW 144 code. Casings have slide on flanges (35mm) as standard.
- The baffle contains incombustible acoustic insulation having flame spread index less than 25 and smoke spread index less than 50. The insulation has a black glass tissue facing and is contained behind perforated sheet of 24 ga. thickness on both sides. This dual protection prevents damage and fibre erosion at high velocities.
- Minimum size: W = 250mm; H = 300mm; L = 600mm
- Maximum size: W = 2300mm; H = 2000mm; L = 2400mm

Note: Larger sizes manufactured and supplied in multi-sections to be assembled at site.

INSTALLATION

- Install directly on a duct section.
- Horizontal / vertical installation.
- Indoor / outdoor.

AVAILABLE OPTIONS

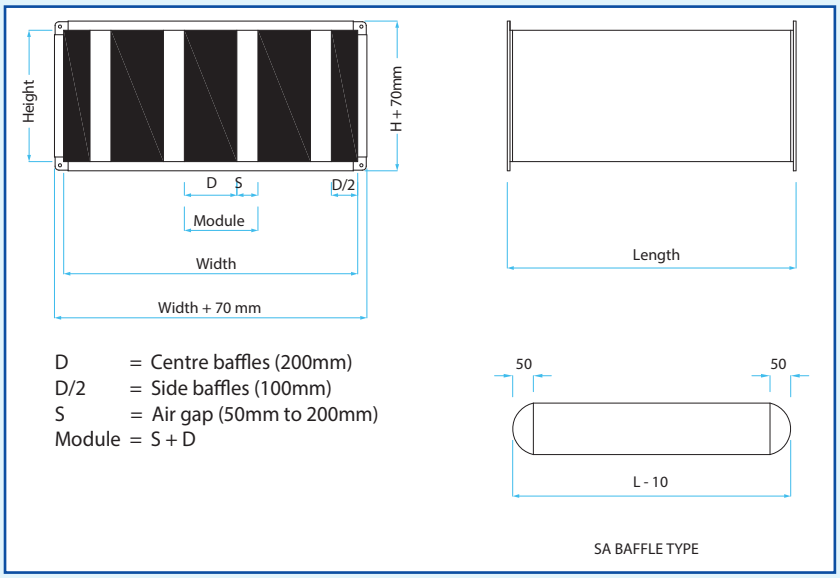
- Other gauges of galvanized steel, SS (304), SS (316L) available upon request.
- Melinex is an impervious thin membrane used to enclose sound absorbent material where clinical conditions are required. This is generally required for the hospitals, clinics, food factories and applications where humidifiers are used.
- Melinex film on both sides reducing contamination risk, code P.

RANGE with a choice of options

Description	Code
SA 20 - L600	
*SA 20 - L900	
SA 20 - L1200	
*SA 20 - L1500	
SA 20 - L1800	
SA 20 - L2100	
SA 20 - L2400	

*Only SA 20-L900 and SA 20-L1500 were tested at AMCA for dynamic insertion loss, airflow generated noise and pressure drop.

DIMENSIONS (mm)



D = Centre baffles (200mm)
D/2 = Side baffles (100mm)
S = Air gap (50mm to 200mm)
Module = S + D

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

Model Dimensions (W x H x L)	Face Velocity		Static Pressure		Octave Band Center Frequency (Hz)							
	(fpm)	(m/s)	(in.wg)	(Pa)	63	125	250	500	1000	2000	4000	8000
SA 20 (**W**24in. x **H**24in. x **L**24in.) (**W**600mm x **H**600mm x **L**600mm)	-1500	-7.62	1.08	269	3	7	15	22	17	14	13	9
	-1000	-5.08	0.48	120	4	6	14	18	18	15	12	8
	-500	-2.54	0.12	30	4	5	13	18	18	15	12	9
	0	0	-	-	3	5	13	17	18	14	12	10
	500	2.54	0.12	30	3	6	12	16	17	14	12	10
	1000	5.08	0.48	120	2	4	11	14	16	14	12	9
	1500	7.62	1.08	269	2	3	12	13	16	14	11	9
	2000	10.16	1.919	478	1	4	11	11	14	13	13	9
SA 20 (**W**24in. x **H**24in. x **L**36in.) (**W**600mm x **H**600mm x **L**900mm) **(AMCA Certified)**	-1500	-7.62	1.15	286	5	10	19	26	24	19	15	10
	-1000	-5.08	0.51	127	5	9	18	26	25	19	14	9
	-500	-2.54	0.13	32	5	8	17	26	25	19	14	10
	0	0	-	-	4	8	17	25	25	18	14	11
	500	2.54	0.13	32	4	8	16	24	24	18	14	11
	1000	5.08	0.51	127	3	7	15	22	23	18	14	11
	1500	7.62	1.15	286	3	6	15	20	22	18	14	11
	2000	10.16	2.1	523	2	6	14	18	20	17	15	11
SA 20 (**W**24in. x **H**24in. x **L**48in.) (**W**600mm x **H**600mm x **L**1200mm)	-1500	-7.62	1.21	301	7	14	24	30	32	24	17	11
	-1000	-5.08	0.538	134	7	13	23	34	33	24	17	11
	-500	-2.54	0.134	33	7	12	22	34	33	23	16	12
	0	0	-	-	6	11	21	33	32	23	17	13
	500	2.54	0.134	33	6	11	20	32	31	23	17	13
	1000	5.08	0.538	134	5	10	19	30	30	23	17	13
	1500	7.62	1.21	301	4	9	19	28	29	22	17	13
	2000	10.16	2.151	536	3	9	18	25	27	22	18	13
SA 20 (**W**24in. x **H**24in. x **L**60in.) (**W**600mm x **H**600mm x **L**1500mm) **(AMCA Certified)**	-1500	-7.62	1.24	309	9	17	28	34	39	29	19	12
	-1000	-5.08	0.56	139	8	16	27	42	40	28	19	12
	-500	-2.54	0.14	35	8	15	26	42	40	27	18	13
	0	0	-	-	7	14	25	41	39	27	19	14
	500	2.54	0.14	35	7	13	24	40	38	27	19	14
	1000	5.08	0.56	139	6	13	23	38	37	27	19	15
	1500	7.62	1.24	309	5	12	22	35	35	26	20	15
	2000	10.16	2.25	560	4	11	21	32	33	26	20	15
SA 20 (**W**24in. x **H**24in. x **L**72in.) (**W**600mm x **H**600mm x **L**1800mm)	-1500	-7.62	1.341	334	11	21	33	38	47	34	21	13
	-1000	-5.08	0.596	148	10	20	32	50	48	33	22	14
	-500	-2.54	0.149	37	10	19	31	50	48	31	20	15
	0	0	-	-	9	17	29	49	46	32	22	16
	500	2.54	0.149	37	9	16	28	48	45	32	22	16
	1000	5.08	0.596	148	8	16	27	46	44	32	22	17
	1500	7.62	1.341	334	6	15	26	43	42	30	23	17
	2000	10.16	2.383	594	5	14	25	39	40	31	23	17
SA 20 (**W**24in. x **H**24in. x **L**84in.) (**W**600mm x **H**600mm x **L**2100mm)	-1500	-7.62	1.406	350	13	24	37	42	54	39	23	14
	-1000	-5.08	0.625	156	11	23	36	58	55	37	24	15
	-500	-2.54	0.156	39	11	22	35	58	55	35	22	16
	0	0	-	-	10	20	33	57	53	36	24	17
	500	2.54	0.156	39	10	18	32	56	52	36	24	17
	1000	5.08	0.625	156	9	19	31	54	51	36	24	19
	1500	7.62	1.406	350	7	18	29	50	48	34	26	19
	2000	10.16	2.499	622	6	16	28	46	46	35	25	19
SA 20 (**W**24in. x **H**24in. x **L**96in.) (**W**600mm x **H**600mm x **L**2400mm)	-1500	-7.62	1.471	366	15	28	42	46	62	44	25	15
	-1000	-5.08	0.654	163	13	27	41	66	63	42	27	17
	-500	-2.54	0.163	41	13	26	40	66	63	39	24	18
	0	0	-	-	12	23	37	65	60	41	27	19
	500	2.54	0.163	41	12	21	36	64	59	41	27	19
	1000	5.08	0.654	163	11	22	35	62	58	41	27	21
	1500	7.62	1.471	366	8	21	33	58	55	38	29	21
	2000	10.16	2.615	651	7	19	32	53	53	40	28	21

Note: The Insertion Loss (IL) is in dB.

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Generated Sound Power Level - Forward Flow (+) / Reverse Flow (-):

Model Dimensions (W x H x L)	Face Velocity		Static Pressure		Octave Band Center Frequency (Hz)							
	(fpm)	(m/s)	(in.wg)	(Pa)	63	125	250	500	1000	2000	4000	8000
SA 20 (**W**24in. x **H**24in. x **L**24in.) (**W**600mm x **H**600mm x **L**600mm)	-1500	-7.62	1.08	269	68	64	65	65	61	60	58	54
	-1000	-5.08	0.48	120	69	58	57	55	53	51	44	39
	-500	-2.54	0.12	30	68	44	44	45	39	26	20	23
	500	2.54	0.12	30	68	46	36	39	35	25	19	24
	1000	5.08	0.48	120	67	54	51	52	51	52	46	38
	1500	7.62	1.08	269	68	66	61	58	59	61	60	55
	2000	10.16	1.919	478	80	72	68	66	64	65	68	63
SA 20 (**W**24in. x **H**24in. x **L**36in.) (**W**600mm x **H**600mm x **L**900mm) **(AMCA Certified)**	-1500	-7.62	1.15	286	67	63	64	65	61	60	58	54
	-1000	-5.08	0.51	127	68	57	57	55	53	51	45	39
	-500	-2.54	0.13	32	68	45	44	44	38	26	20	23
	500	2.54	0.13	32	68	47	36	38	35	25	19	24
	1000	5.08	0.51	127	67	55	51	51	51	51	46	38
	1500	7.62	1.15	286	69	66	61	58	58	60	59	54
	2000	10.16	2.1	523	80	72	68	66	64	65	67	63
SA 20 (**W**24in. x **H**24in. x **L**48in.) (**W**600mm x **H**600mm x **L**1200mm)	-1500	-7.62	1.21	301	66	62	64	65	61	60	59	55
	-1000	-5.08	0.538	134	68	57	57	56	54	52	46	40
	-500	-2.54	0.134	33	68	46	44	43	37	26	20	24
	500	2.54	0.134	33	68	48	37	38	35	25	19	24
	1000	5.08	0.538	134	68	56	51	51	51	51	46	38
	1500	7.62	1.21	301	71	66	61	58	58	60	59	54
	2000	10.16	2.151	536	80	73	68	66	64	65	67	63
SA 20 (**W**24in. x **H**24in. x **L**60in.) (**W**600mm x **H**600mm x **L**1500mm) **(AMCA Certified)**	-1500	-7.62	1.24	309	65	61	63	65	61	60	59	55
	-1000	-5.08	0.56	139	67	56	57	56	54	52	47	40
	-500	-2.54	0.14	35	68	47	44	44	38	26	20	23
	500	2.54	0.14	35	68	49	37	37	35	25	19	24
	1000	5.08	0.56	139	68	57	51	50	51	50	46	38
	1500	7.62	1.24	309	72	66	61	58	57	59	58	53
	2000	10.16	2.25	560	80	73	68	66	64	65	66	63
SA 20 (**W**24in. x **H**24in. x **L**72in.) (**W**600mm x **H**600mm x **L**1800mm)	-1500	-7.62	1.341	334	64	60	63	65	61	60	60	56
	-1000	-5.08	0.596	148	67	56	57	57	55	53	48	41
	-500	-2.54	0.149	37	68	48	44	41	35	26	20	25
	500	2.54	0.149	37	68	50	38	37	35	25	19	24
	1000	5.08	0.596	148	69	58	51	50	51	50	46	38
	1500	7.62	1.341	334	74	66	61	58	57	59	58	53
	2000	10.16	2.383	594	80	74	68	66	64	65	66	63
SA 20 (**W**24in. x **H**24in. x **L**84in.) (**W**600mm x **H**600mm x **L**2100mm)	-1500	-7.62	1.406	350	63	59	62	65	61	60	60	56
	-1000	-5.08	0.625	156	66	55	57	57	55	53	49	41
	-500	-2.54	0.156	39	68	49	44	40	34	26	20	25
	500	2.54	0.156	39	68	51	38	36	35	25	19	24
	1000	5.08	0.625	156	69	59	51	49	51	49	46	38
	1500	7.62	1.406	350	75	66	61	58	56	58	57	52
	2000	10.16	2.499	622	80	74	68	66	64	65	65	63
SA 20 (**W**24in. x **H**24in. x **L**96in.) (**W**600mm x **H**600mm x **L**2400mm)	-1500	-7.62	1.471	366	62	58	62	65	61	60	61	57
	-1000	-5.08	0.654	163	66	55	57	58	56	54	50	42
	-500	-2.54	0.163	41	68	50	44	39	33	26	20	26
	500	2.54	0.163	41	68	52	39	36	35	25	19	24
	1000	5.08	0.654	163	70	60	51	49	51	49	46	38
	1500	7.62	1.471	366	77	66	61	58	56	58	57	52
	2000	10.16	2.615	651	80	75	68	66	64	65	65	63

Note: Sound power levels are in dB referenced 10^{-12} Watts.

Face Area Adjustment Factors:

For given face areas, add or subtract the relevant values from all Octave band frequencies to adjust airflow generated sound power levels.

Face Area (sq.ft.)	0.5	1	2	4	8	16	32	64	128	256
Adjustment Factor (dB)	-9	-6	-3	0	+3	+6	+9	+12	+15	+18

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Static Pressure Drop

Attenuator Length (ft)	Attenuator Length (mm)	Static Pressure Drop															
2	600	(in.wg)	0.060	0.090	0.120	0.210	0.300	0.390	0.480	0.630	0.780	0.930	1.080	1.290	1.500	1.710	1.919
		(Pa)	15	22	30	52	75	97	120	157	194	232	269	321	374	426	478
3	900	(in.wg)	0.065	0.098	0.130	0.225	0.320	0.415	0.510	0.670	0.830	0.990	1.150	1.388	1.625	1.863	2.100
		(Pa)	16	24	32	56	80	103	127	167	207	247	286	346	405	464	523
4	1200	(in.wg)	0.067	0.101	0.134	0.235	0.336	0.437	0.538	0.706	0.874	1.042	1.210	1.446	1.681	1.916	2.151
		(Pa)	17	25	33	59	84	109	134	176	218	260	301	360	419	477	536
5	1500	(in.wg)	0.070	0.105	0.140	0.245	0.350	0.455	0.560	0.730	0.900	1.070	1.240	1.493	1.745	1.998	2.250
		(Pa)	17	26	35	61	87	113	139	182	224	267	309	372	435	498	560
6	1800	(in.wg)	0.075	0.112	0.149	0.261	0.373	0.485	0.596	0.783	0.969	1.155	1.341	1.602	1.862	2.123	2.383
		(Pa)	19	28	37	65	93	121	148	195	241	288	334	399	464	529	594
7	2100	(in.wg)	0.078	0.117	0.156	0.274	0.391	0.508	0.625	0.821	1.016	1.211	1.406	1.680	1.953	2.226	2.499
		(Pa)	19	29	39	68	97	127	156	204	253	302	350	418	486	554	622
8	2400	(in.wg)	0.082	0.123	0.163	0.286	0.409	0.532	0.654	0.859	1.063	1.267	1.471	1.757	2.043	2.329	2.615
		(Pa)	20	31	41	71	102	132	163	214	265	316	366	438	509	580	651
Face Velocity		(fpm)	250	375	500	625	750	875	1000	1125	1250	1375	1500	1625	1750	1875	2000
		(m/s)	1.270	1.905	2.540	3.175	3.810	4.445	5.080	5.715	6.350	6.985	7.620	8.255	8.890	9.525	10.160