

SOUND ATTENUATOR SQUARE-RECTANGLE CSA -M



APPLICATION

CSA-M, dissipative SOUND ATTENUATOR (SILENCER), is designed to provide solutions to all HVAC discharge noise with medium dynamic insertion loss.

FEATURED STANDARD CONSTRUCTION

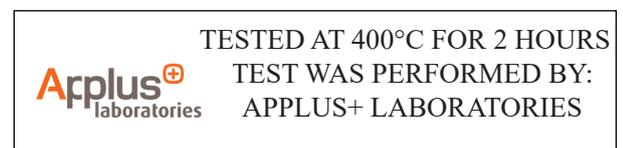
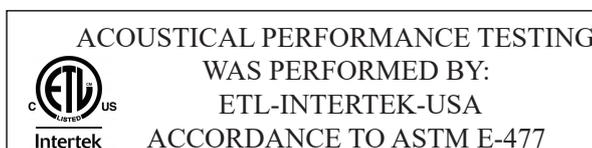
- **FRAME:**
 - Constructed from 20 gauge galvanized frame, formed with lock seams with mastic sealant.
- **SPLITTERS:**
 - Constructed from 22 gauge galvanized frame.
 - 8”(200mm) wide radiussed at one end to minimize air pressure loss and regenerated noise.
 - Filled with acoustic fibers complying with various standards requirements.

The infill is compressed and contained behind a 22 gauge , 4mm hole diameter perforated metal sheet. This protection prevents damage and fiber erosion up to 5900fpm (30m/s).

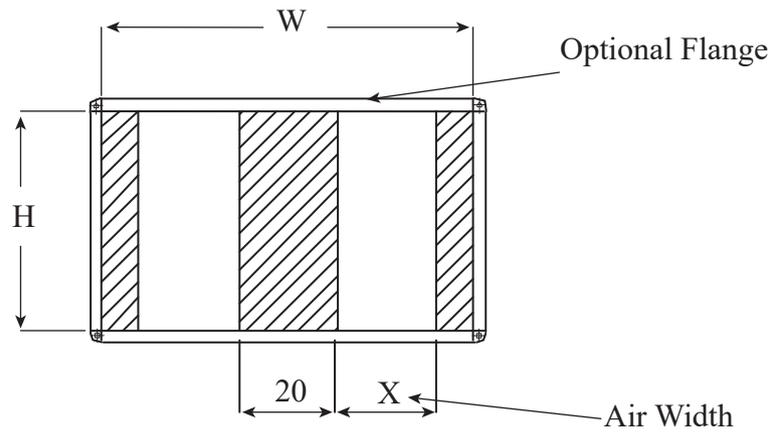
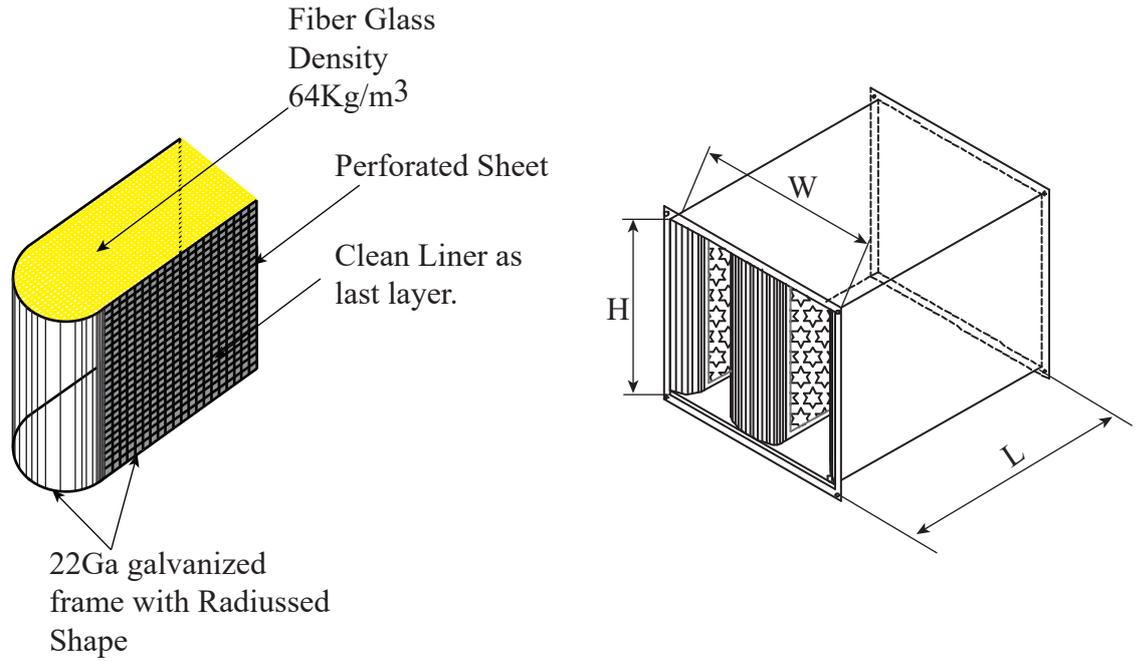
 - Clean liner glass fiber as last layer.
- **AIR WIDTH:**
 - Varies between 3”(75mm), 4”(100mm), 6”(150mm) & 8”(200mm) depending on required insertion loss and pressure drops.
- **SIZES:**
 - Minimum size of 11”(275mm)W x 8”(200mm)H
 - Rectangular silencers with weight that exceed 200Kg (441Lbs) are manufactured as multiple section and field assembled (By others).

OPTIONS

- 18Ga or 16Ga casing & splitters frame.
- Aluminum Construction
- Stainless Steel Construction
- Standard galvanized Duct-mate flange 1-3/8” (35mm) with finished corners.
- Standard Stainless Steel normal duct flange 1-3/8” (35mm) with finished corners. for Stainless Construction.



ILLUSTRATIONS



ACOUSTICAL PERFORMANCE TESTING
 WAS PERFORMED BY:
 ETL-INTERTEK-USA
 ACCORDANCE TO ASTM E-477



TESTED AT 400°C FOR 2 HOURS
 TEST WAS PERFORMED BY:
 APPLUS+ LABORATORIES





SOUND ATTENUATOR

Models CSA-M-20-7.5-L

AIR PERFORMANCE

SILENCER LENGTH (mm)			STATIC PRESSURE LOSS IN Pa						
LENGTH 2400			40	83	185	323	504	725	988
LENGTH 1500			23	45	105	188	293	422	574
LENGTH 1200			21	44	98	175	273	394	536
LENGTH 900			20	43	93	165	258	370	505
LENGTH 600			18	38	83	150	234	338	459
FACE VELOCITY (m/s)			1.78	2.54	3.81	5.08	6.35	7.62	8.89
WIDTH (mm)	HEIGHT (mm)	FACE AREA (m ²)	AIRFLOW (m ³ /s)						
275	300	0.083	0.147	0.210	0.314	0.419	0.524	0.629	0.733
550	350	0.193	0.342	0.489	0.733	0.978	1.222	1.467	1.711
550	300	0.165	0.293	0.419	0.629	0.838	1.048	1.257	1.467
550	450	0.248	0.440	0.629	0.943	1.257	1.572	1.886	2.200
825	300	0.248	0.440	0.629	0.943	1.257	1.572	1.886	2.200
825	450	0.371	0.660	0.943	1.414	1.886	2.357	2.829	3.300
825	600	0.495	0.880	1.257	1.886	2.515	3.143	3.772	4.401
825	750	0.619	1.100	1.572	2.357	3.143	3.929	4.715	5.501
825	900	0.743	1.320	1.886	2.829	3.772	4.715	5.658	6.601
1100	450	0.495	0.880	1.257	1.886	2.515	3.143	3.772	4.401
1100	600	0.660	1.173	1.676	2.515	3.353	4.191	5.029	5.867
1100	750	0.825	1.467	2.096	3.143	4.191	5.239	6.287	7.334
1100	900	0.990	1.760	2.515	3.772	5.029	6.287	7.544	8.801
1100	1000	1.100	1.956	2.794	4.191	5.588	6.985	8.382	9.779
1100	1200	1.320	2.347	3.353	5.029	6.706	8.382	10.058	11.735
1375	450	0.619	1.100	1.572	2.357	3.143	3.929	4.715	5.501
1375	600	0.825	1.467	2.096	3.143	4.191	5.239	6.287	7.334
1375	750	1.031	1.834	2.619	3.929	5.239	6.548	7.858	9.168
1375	900	1.238	2.200	3.143	4.715	6.287	7.858	9.430	11.001
1375	1000	1.375	2.445	3.493	5.239	6.985	8.731	10.478	12.224
1375	1200	1.650	2.934	4.191	6.287	8.382	10.478	12.573	14.669
1375	1350	1.856	3.300	4.715	7.072	9.430	11.787	14.145	16.502
1375	1500	2.063	3.667	5.239	7.858	10.478	13.097	15.716	18.336
1650	600	0.990	1.760	2.515	3.772	5.029	6.287	7.544	8.801
1650	750	1.238	2.200	3.143	4.715	6.287	7.858	9.430	11.001
1650	900	1.485	2.640	3.772	5.658	7.544	9.430	11.316	13.202
1650	1000	1.650	2.934	4.191	6.287	8.382	10.478	12.573	14.669
1650	1200	1.980	3.520	5.029	7.544	10.058	12.573	15.088	17.602
1650	1350	2.228	3.960	5.658	8.487	11.316	14.145	16.974	19.802
1650	1500	2.475	4.401	6.287	9.430	12.573	15.716	18.860	22.003

SOUND ATTENUATOR

Models CSA-M-20-10-L

AIR PERFORMANCE

SILENCER LENGTH (mm)			STATIC PRESSURE LOSS IN Pa.							
LENGTH 2400			15	33	70	125	195	281	383	500
LENGTH 2100			14	29	66	118	184	264	360	470
LENGTH 1800			13	28	62	110	172	248	337	440
LENGTH 1500			12	25	58	103	160	223	314	410
LENGTH 1200			11	23	51	90	141	203	276	360
LENGTH 900			10	18	43	75	117	168	230	300
LENGTH 600			7	15	34	60	94	135	184	230
FACE VELOCITY (m/s)			1.78	2.54	3.81	5.08	6.35	7.62	8.89	10.16
WIDTH (mm)	HEIGHT (mm)	FACE AREA (m ²)	AIRFLOW (m ³ /s)							
300	300	0.090	0.160	0.229	0.343	0.457	0.572	0.686	0.800	0.914
600	300	0.180	0.320	0.457	0.686	0.914	1.143	1.372	1.600	1.829
600	450	0.270	0.480	0.686	1.029	1.372	1.715	2.057	2.400	2.743
600	550	0.330	0.587	0.838	1.257	1.676	2.096	2.515	2.934	3.353
600	600	0.360	0.640	0.914	1.372	1.829	2.286	2.743	3.200	3.658
900	300	0.270	0.480	0.686	1.029	1.372	1.715	2.057	2.400	2.743
900	450	0.405	0.720	1.029	1.543	2.057	2.572	3.086	3.600	4.115
900	500	0.450	0.800	1.143	1.715	2.286	2.858	3.429	4.001	4.572
900	600	0.540	0.960	1.372	2.057	2.743	3.429	4.115	4.801	5.486
900	700	0.630	1.120	1.600	2.400	3.200	4.001	4.801	5.601	6.401
900	800	0.720	1.280	1.829	2.743	3.658	4.572	5.486	6.401	7.315
900	900	0.810	1.440	2.057	3.086	4.115	5.144	6.172	7.201	8.230
1200	300	0.360	0.640	0.914	1.372	1.829	2.286	2.743	3.200	3.658
1200	450	0.540	0.960	1.372	2.057	2.743	3.429	4.115	4.801	5.486
1200	600	0.720	1.280	1.829	2.743	3.658	4.572	5.486	6.401	7.315
1200	750	0.900	1.600	2.286	3.429	4.572	5.715	6.858	8.001	9.144
1200	900	1.080	1.920	2.743	4.115	5.486	6.858	8.230	9.601	10.973
1200	1050	1.260	2.240	3.200	4.801	6.401	8.001	9.601	11.201	12.802
1200	1200	1.440	2.560	3.658	5.486	7.315	9.144	10.973	12.802	14.630
1500	450	0.675	1.200	1.715	2.572	3.429	4.286	5.144	6.001	6.858
1500	600	0.900	1.600	2.286	3.429	4.572	5.715	6.858	8.001	9.144
1500	750	1.125	2.000	2.858	4.286	5.715	7.144	8.573	10.001	11.430
1500	900	1.350	2.400	3.429	5.144	6.858	8.573	10.287	12.002	13.716
1500	1050	1.575	2.800	4.001	6.001	8.001	10.001	12.002	14.002	16.002
1500	1200	1.800	3.200	4.572	6.858	9.144	11.430	13.716	16.002	18.288
1500	1350	2.025	3.600	5.144	7.715	10.287	12.859	15.431	18.002	20.574
1500	1500	2.250	4.001	5.715	8.573	11.430	14.288	17.145	20.003	22.860



SOUND ATTENUATOR

Models CSA-M-20-15-L

AIR PERFORMANCE

SILENCER LENGTH (mm)			STATIC PRESSURE LOSS IN Pa						
LENGTH 3000			15	33	60	94	135	184	240
LENGTH 2400			13	28	53	82	115	161	210
LENGTH 1800			10	25	45	70	100	138	180
LENGTH 1500			8	23	38	59	85	115	150
LENGTH 1200			8	20	34	53	78	103	135
LENGTH 900			8	18	30	47	68	92	120
LENGTH 600			5	13	23	35	50	69	90
FACE VELOCITY (m/s)			2.54	3.81	5.08	6.35	7.62	8.89	10.16
WIDTH (mm)	HEIGHT (mm)	FACE AREA (m ²)	AIRFLOW (m ³ /s)						
350	300	0.105	0.267	0.400	0.533	0.667	0.800	0.933	1.067
350	350	0.123	0.311	0.467	0.622	0.778	0.933	1.089	1.245
700	300	0.210	0.533	0.800	1.067	1.334	1.600	1.867	2.134
700	450	0.315	0.800	1.200	1.600	2.000	2.400	2.800	3.200
700	500	0.350	0.889	1.334	1.778	2.223	2.667	3.112	3.556
700	700	0.490	1.245	1.867	2.489	3.112	3.734	4.356	4.978
1050	300	0.315	0.800	1.200	1.600	2.000	2.400	2.800	3.200
1050	450	0.473	1.200	1.800	2.400	3.000	3.600	4.201	4.801
1050	600	0.630	1.600	2.400	3.200	4.001	4.801	5.601	6.401
1050	750	0.788	2.000	3.000	4.001	5.001	6.001	7.001	8.001
1050	900	0.945	2.400	3.600	4.801	6.001	7.201	8.401	9.601
1050	1000	1.050	2.667	4.001	5.334	6.668	8.001	9.335	10.668
1400	450	0.630	1.600	2.400	3.200	4.001	4.801	5.601	6.401
1400	700	0.980	2.489	3.734	4.978	6.223	7.468	8.712	9.957
1400	800	1.120	2.845	4.267	5.690	7.112	8.534	9.957	11.379
1400	900	1.260	3.200	4.801	6.401	8.001	9.601	11.201	12.802
1400	1000	1.400	3.556	5.334	7.112	8.890	10.668	12.446	14.224
1400	1200	1.680	4.267	6.401	8.534	10.668	12.802	14.935	17.069
1400	1350	1.890	4.801	7.201	9.601	12.002	14.402	16.802	19.202
1400	1500	2.100	5.334	8.001	10.668	13.335	16.002	18.669	21.336
1750	450	0.788	2.000	3.000	4.001	5.001	6.001	7.001	8.001
1750	600	1.050	2.667	4.001	5.334	6.668	8.001	9.335	10.668
1750	750	1.313	3.334	5.001	6.668	8.334	10.001	11.668	13.335
1750	900	1.575	4.001	6.001	8.001	10.001	12.002	14.002	16.002
1750	1050	1.838	4.667	7.001	9.335	11.668	14.002	16.335	18.669
1750	1200	2.100	5.334	8.001	10.668	13.335	16.002	18.669	21.336
1750	1350	2.363	6.001	9.001	12.002	15.002	18.002	21.003	24.003
1750	1500	2.625	6.668	10.001	13.335	16.669	20.003	23.336	26.670



SOUND ATTENUATOR

Models CSA-M-20-20-L

AIR PERFORMANCE

SILENCER LENGTH (mm)			STATIC PRESSURE LOSS IN Pa						
LENGTH 3000			8	17	28	56	68	92	120
LENGTH 2400			8	12	23	40	48	65	90
LENGTH 1800			5	11	20	36	44	60	78
LENGTH 1500			5	10	18	33	40	54	70
LENGTH 1200			5	9	16	30	37	50	65
LENGTH 900			5	8	15	23	33	44	60
FACE VELOCITY (m/s)			2.54	3.81	5.08	6.35	7.62	8.89	10.16
WIDTH (mm)	HEIGHT (mm)	FACE AREA (m ²)	AIRFLOW (m ³ /s)						
400	300	0.120	0.305	0.457	0.610	0.762	0.914	1.067	1.219
400	400	0.160	0.406	0.610	0.813	1.016	1.219	1.422	1.626
800	300	0.240	0.610	0.914	1.219	1.524	1.829	2.134	2.438
800	450	0.360	0.914	1.372	1.829	2.286	2.743	3.200	3.658
800	600	0.480	1.219	1.829	2.438	3.048	3.658	4.267	4.877
800	700	0.560	1.422	2.134	2.845	3.556	4.267	4.978	5.690
800	800	0.640	1.626	2.438	3.251	4.064	4.877	5.690	6.502
1200	300	0.360	0.914	1.372	1.829	2.286	2.743	3.200	3.658
1200	450	0.540	1.372	2.057	2.743	3.429	4.115	4.801	5.486
1200	600	0.720	1.829	2.743	3.658	4.572	5.486	6.401	7.315
1200	750	0.900	2.286	3.429	4.572	5.715	6.858	8.001	9.144
1200	900	1.080	2.743	4.115	5.486	6.858	8.230	9.601	10.973
1200	1000	1.200	3.048	4.572	6.096	7.620	9.144	10.668	12.192
1200	1050	1.260	3.200	4.801	6.401	8.001	9.601	11.201	12.802
1200	1200	1.440	3.658	5.486	7.315	9.144	10.973	12.802	14.630
1600	450	0.720	1.829	2.743	3.658	4.572	5.486	6.401	7.315
1600	600	0.960	2.438	3.658	4.877	6.096	7.315	8.534	9.754
1600	750	1.200	3.048	4.572	6.096	7.620	9.144	10.668	12.192
1600	900	1.440	3.658	5.486	7.315	9.144	10.973	12.802	14.630
1600	1000	1.600	4.064	6.096	8.128	10.160	12.192	14.224	16.256
1600	1200	1.920	4.877	7.315	9.754	12.192	14.630	17.069	19.507
1600	1350	2.160	5.486	8.230	10.973	13.716	16.459	19.202	21.946
1600	1500	2.400	6.096	9.144	12.192	15.240	18.288	21.336	24.384
2000	450	0.900	2.286	3.429	4.572	5.715	6.858	8.001	9.144
2000	600	1.200	3.048	4.572	6.096	7.620	9.144	10.668	12.192
2000	750	1.500	3.810	5.715	7.620	9.525	11.430	13.335	15.240
2000	900	1.800	4.572	6.858	9.144	11.430	13.716	16.002	18.288
2000	1000	2.000	5.080	7.620	10.160	12.700	15.240	17.780	20.320
2000	1200	2.400	6.096	9.144	12.192	15.240	18.288	21.336	24.384
2000	1350	2.700	6.858	10.287	13.716	17.145	20.574	24.003	27.432
2000	1500	3.000	7.620	11.430	15.240	19.050	22.860	26.670	30.480



SOUND ATTENUATOR

Models CSA-M-20-7.5-L

AIR PERFORMANCE

SILENCER LENGTH (Inch)			STATIC PRESSURE LOSS IN INCH Wg.						
LENGTH 96"			0.158	0.330	0.740	1.290	2.016	2.900	3.951
LENGTH 60"			0.092	0.180	0.420	0.750	1.172	1.687	2.297
LENGTH 48"			0.086	0.175	0.390	0.700	1.094	1.575	2.144
LENGTH 36"			0.081	0.170	0.370	0.660	1.031	1.480	2.021
LENGTH 24"			0.074	0.150	0.330	0.600	0.938	1.350	1.838
FACE VELOCITY (fpm)			350	500	750	1000	1250	1500	1750
WIDTH (inch)	HEIGHT (inch)	FACE AREA (Ft ²)	AIRFLOW (Cfm)						
11	12	0.92	322	460	690	920	1150	1380	1610
22	12	1.83	640.5	915	1372.5	1830	2287.5	2745	3202.5
22	18	2.75	962.5	1375	2062.5	2750	3437.5	4125	4812.5
22	24	3.67	1284.5	1835	2752.5	3670	4587.5	5505	6422.5
33	12	2.75	962.5	1375	2062.5	2750	3437.5	4125	4812.5
33	18	4.13	1445.5	2065	3097.5	4130	5162.5	6195	7227.5
33	24	5.5	1925	2750	4125	5500	6875	8250	9625
33	30	6.88	2408	3440	5160	6880	8600	10320	12040
33	36	8.25	2887.5	4125	6187.5	8250	10313	12375	14438
44	18	5.5	1925	2750	4125	5500	6875	8250	9625
44	24	7.33	2565.5	3665	5497.5	7330	9162.5	10995	12828
44	30	9.17	3209.5	4585	6877.5	9170	11463	13755	16048
44	36	11	3850	5500	8250	11000	13750	16500	19250
44	40	12.22	4277	6110	9165	12220	15275	18330	21385
44	48	14.67	5134.5	7335	11003	14670	18338	22005	25673
55	18	6.88	2408	3440	5160	6880	8600	10320	12040
55	24	9.17	3209.5	4585	6877.5	9170	11463	13755	16048
55	30	11.46	4011	5730	8595	11460	14325	17190	20055
55	36	13.75	4812.5	6875	10313	13750	17188	20625	24063
55	40	15.28	5348	7640	11460	15280	19100	22920	26740
55	48	18.33	6415.5	9165	13748	18330	22913	27495	32078
55	54	20.63	7220.5	10315	15473	20630	25788	30945	36103
55	60	22.92	8022	11460	17190	22920	28650	34380	40110
66	24	11	3850	5500	8250	11000	13750	16500	19250
66	30	13.75	4812.5	6875	10313	13750	17188	20625	24063
66	36	16.5	5775	8250	12375	16500	20625	24750	28875
66	40	18.33	6415.5	9165	13748	18330	22913	27495	32078
66	48	22	7700	11000	16500	22000	27500	33000	38500
66	54	24.75	8662.5	12375	18563	24750	30938	37125	43313
66	60	27.5	9625	13750	20625	27500	34375	41250	48125



ACOUSTICAL PERFORMANCE TESTINGS
WERE PERFORMED BY:
ETL-ITS IN
ACCORDANCE TO ASTM E477



**SOUND ATTENUATOR
SQUARE-RECTANGLE**

CSA -M-20-10-L

Air Flow Performance-CSA-M-20-10-L

SILENCER LENGTH			STATIC PRESSURE LOSS IN INCH Wg.							
LENGTH 96"			0.061	0.130	0.281	0.500	0.781	1.125	1.530	2.000
LENGTH 84"			0.058	0.118	0.264	0.470	0.734	1.058	1.439	1.880
LENGTH 72"			0.054	0.110	0.248	0.440	0.688	0.990	1.348	1.760
LENGTH 60"			0.047	0.100	0.210	0.380	0.594	0.840	1.164	1.520
LENGTH 48"			0.044	0.090	0.200	0.360	0.563	0.810	1.103	1.440
LENGTH 36"			0.038	0.077	0.174	0.310	0.484	0.697	0.949	1.240
LENGTH 24"			0.028	0.060	0.130	0.230	0.359	0.520	0.704	0.920
FACE VELOCITY (fpm)			350	500	750	1000	1250	1500	1750	2000
WIDTH (inch)	HEIGHT (inch)	FACE AREA (Ft ²)	AIRFLOW (Cfm)							
			350	500	750	1000	1250	1500	1750	2000
12	12	1	350	500	750	1000	1250	1500	1750	2000
24	12	2	700	1000	1500	2000	2500	3000	3500	4000
24	18	3	1050	1500	2250	3000	3750	4500	5250	6000
24	21	3.5	1225	1750	2625	3500	4375	5250	6125	7000
24	24	4	1400	2000	3000	4000	5000	6000	7000	8000
36	12	3	1050	1500	2250	3000	3750	4500	5250	6000
36	18	4.5	1575	2250	3375	4500	5625	6750	7875	9000
36	20	5	1750	2500	3750	5000	6250	7500	8750	10000
36	24	6	2100	3000	4500	6000	7500	9000	10500	12000
36	28	7	2450	3500	5250	7000	8750	10500	12250	14000
36	32	8	2800	4000	6000	8000	10000	12000	14000	16000
36	36	9	3150	4500	6750	9000	11250	13500	15750	18000
48	12	4	1400	2000	3000	4000	5000	6000	7000	8000
48	18	6	2100	3000	4500	6000	7500	9000	10500	12000
48	24	8	2800	4000	6000	8000	10000	12000	14000	16000
48	30	10	3500	5000	7500	10000	12500	15000	17500	20000
48	36	12	4200	6000	9000	12000	15000	18000	21000	24000
48	42	14	4900	7000	10500	14000	17500	21000	24500	28000
48	48	16	5600	8000	12000	16000	20000	24000	28000	32000
60	18	7.5	2625	3750	5625	7500	9375	11250	13125	15000
60	24	10	3500	5000	7500	10000	12500	15000	17500	20000
60	30	12.5	4375	6250	9375	12500	15625	18750	21875	25000
60	36	15	5250	7500	11250	15000	18750	22500	26250	30000
60	42	17.5	6125	8750	13125	17500	21875	26250	30625	35000
60	48	20	7000	10000	15000	20000	25000	30000	35000	40000
60	54	22.5	7875	11250	16875	22500	28125	33750	39375	45000
60	60	25	8750	12500	18750	25000	31250	37500	43750	50000



**SOUND ATTENUATOR
SQUARE-RECTANGLE**

CSA-M-20-15-L

Air Flow Performance-CSA-M-20-15-L

SILENCER LENGTH			STATIC PRESSURE LOSS IN INCH Wg						
LENGTH 120"			0.060	0.130	0.240	0.375	0.540	0.735	0.960
LENGTH 96"			0.050	0.110	0.210	0.328	0.460	0.643	0.840
LENGTH 72"			0.040	0.100	0.180	0.281	0.400	0.551	0.720
LENGTH 60"			0.030	0.090	0.150	0.234	0.340	0.459	0.600
LENGTH 48"			0.030	0.080	0.135	0.211	0.310	0.413	0.540
LENGTH 36"			0.030	0.070	0.120	0.188	0.270	0.368	0.480
LENGTH 24"			0.020	0.050	0.090	0.141	0.200	0.276	0.360
FACE VELOCITY (fpm)			500	750	1000	1250	1500	1750	2000
WIDTH (inch)	HEIGHT (inch)	FACE AREA (Ft ²)	AIRFLOW (Cfm)						
14	12	1.17	583	875	1167	1458	1750	2042	2333
14	14	1.36	681	1021	1361	1701	2042	2382	2722
28	12	2.33	1167	1750	2333	2917	3500	4083	4667
28	18	3.50	1750	2625	3500	4375	5250	6125	7000
28	20	3.89	1944	2917	3889	4861	5833	6806	7778
28	28	5.44	2722	4083	5444	6806	8167	9528	10889
42	12	3.50	1750	2625	3500	4375	5250	6125	7000
42	18	5.25	2625	3938	5250	6563	7875	9188	10500
42	24	7.00	3500	5250	7000	8750	10500	12250	14000
42	30	8.75	4375	6563	8750	10938	13125	15313	17500
42	36	10.50	5250	7875	10500	13125	15750	18375	21000
42	40	11.67	5833	8750	11667	14583	17500	20417	23333
56	18	7.00	3500	5250	7000	8750	10500	12250	14000
56	27	10.50	5250	7875	10500	13125	15750	18375	21000
56	32	12.44	6222	9333	12444	15556	18667	21778	24889
56	36	14.00	7000	10500	14000	17500	21000	24500	28000
56	40	15.56	7778	11667	15556	19444	23333	27222	31111
56	48	18.67	9333	14000	18667	23333	28000	32667	37333
56	54	21.00	10500	15750	21000	26250	31500	36750	42000
56	60	23.33	11667	17500	23333	29167	35000	40833	46667
70	18	8.75	4375	6563	8750	10938	13125	15313	17500
70	27	13.13	6563	9844	13125	16406	19688	22969	26250
70	32	15.56	7778	11667	15556	19444	23333	27222	31111
70	36	17.50	8750	13125	17500	21875	26250	30625	35000
70	40	19.44	9722	14583	19444	24306	29167	34028	38889
70	48	23.33	11667	17500	23333	29167	35000	40833	46667
70	54	26.25	13125	19688	26250	32813	39375	45938	52500
70	60	29.17	14583	21875	29167	36458	43750	51042	58333



SOUND ATTENUATOR

Models CSA-M-20-20-L

AIR PERFORMANCE

SILENCER LENGTH			STATIC PRESSURE LOSS IN INCH Wg.						
LENGTH 120"			0.030	0.068	0.110	0.225	0.270	0.367	0.480
LENGTH 96"			0.030	0.048	0.090	0.158	0.190	0.259	0.360
LENGTH 72"			0.020	0.044	0.078	0.146	0.175	0.238	0.310
LENGTH 60"			0.020	0.040	0.070	0.133	0.160	0.218	0.280
LENGTH 48"			0.020	0.037	0.065	0.122	0.146	0.199	0.260
LENGTH 36"			0.020	0.032	0.060	0.093	0.130	0.177	0.240
FACE VELOCITY (fpm)			500	750	1000	1250	1500	1750	2000
WIDTH (inch)	HEIGHT (inch)	FACE AREA (Ft ²)	AIRFLOW (Cfm)						
16	12	1.33	665	997.5	1330	1662.5	1995	2327.5	2660
16	16	1.78	890	1335	1780	2225	2670	3115	3560
32	12	2.67	1335	2002.5	2670	3337.5	4005	4672.5	5340
32	18	4	2000	3000	4000	5000	6000	7000	8000
32	24	5.33	2665	3997.5	5330	6662.5	7995	9327.5	10660
32	28	6.22	3110	4665	6220	7775	9330	10885	12440
32	32	7.11	3555	5332.5	7110	8887.5	10665	12443	14220
48	12	4	2000	3000	4000	5000	6000	7000	8000
48	18	6	3000	4500	6000	7500	9000	10500	12000
48	24	8	4000	6000	8000	10000	12000	14000	16000
48	30	10	5000	7500	10000	12500	15000	17500	20000
48	36	12	6000	9000	12000	15000	18000	21000	24000
48	40	13.33	6665	9997.5	13330	16663	19995	23328	26660
48	42	14	7000	10500	14000	17500	21000	24500	28000
48	48	16	8000	12000	16000	20000	24000	28000	32000
64	18	8	4000	6000	8000	10000	12000	14000	16000
64	24	10.67	5335	8002.5	10670	13338	16005	18673	21340
64	30	13.33	6665	9997.5	13330	16663	19995	23328	26660
64	36	16	8000	12000	16000	20000	24000	28000	32000
64	40	17.78	8890	13335	17780	22225	26670	31115	35560
64	48	21.33	10665	15998	21330	26663	31995	37328	42660
64	54	24	12000	18000	24000	30000	36000	42000	48000
64	60	26.67	13335	20003	26670	33338	40005	46673	53340
80	18	10	5000	7500	10000	12500	15000	17500	20000
80	24	13.33	6665	9997.5	13330	16663	19995	23328	26660
80	30	16.67	8335	12503	16670	20838	25005	29173	33340
80	36	20	10000	15000	20000	25000	30000	35000	40000
80	40	22.22	11110	16665	22220	27775	33330	38885	44440
80	48	26.67	13335	20003	26670	33338	40005	46673	53340
80	54	30	15000	22500	30000	37500	45000	52500	60000
80	60	33.33	16665	24998	33330	41663	49995	58328	66660



ACOUSTICAL PERFORMANCE TESTINGS
WERE PERFORMED BY:
ETL-ITS IN
ACCORDANCE TO ASTM E477



SOUND ATTENUATOR

Models CSA-M-20-7.5-L

ACOUSTIC PERFORMANCE

SILENCER LENGTH	FACE VELOCITY Fpm	STATIC PRESSURE DROP Inch. Wg (Pa)	OCTAVE BAND CENTER FREQ (Hz.)							
			63	125	250	500	1000	2000	4000	8000
			INSERTION LOSS (dB)							
LENGTH 96" (2400mm)	-1500	2.9 (725)	13	22	49	58	61	57	54	35
	-1000	1.29 (323)	12	21	49	58	61	57	54	36
	-750	0.74 (185)	11	20	48	57	60	57	55	37
	-500	0.33 (83)	10	19	47	57	60	57	55	38
	0	---	11	18	46	57	60	57	55	41
	500	0.33 (83)	10	17	44	56	60	57	56	42
	750	0.74 (185)	9	17	42	56	60	57	57	42
	1000	1.29 (323)	8	16	42	55	59	56	57	43
	1500	2.9 (725)	8	16	40	55	59	56	58	43
LENGTH 60" (1500mm)	-1500	1.687(422)	8	16	35	43	50	50	38	23
	-1000	0.75 (188)	8	16	35	43	50	50	38	24
	-750	0.42 (105)	7	16	33	42	49	50	38	24
	-500	0.18 (45)	7	15	32	41	49	49	38	25
	0	---	6	15	32	41	48	49	39	27
	500	0.18 (45)	5	14	31	39	46	48	38	29
	750	0.42 (105)	5	14	30	37	45	46	38	29
	1000	0.75 (188)	4	13	29	36	44	45	38	30
	1500	1.687(422)	4	13	28	35	43	45	37	30
LENGTH 48" (1200mm)	-1500	1.575 (394)	8	14	28	34	41	43	32	21
	-1000	0.70 (175)	8	13	28	34	41	43	32	22
	-750	0.39 (98)	7	13	27	34	40	43	32	22
	-500	0.175 (44)	7	12	26	33	40	43	32	22
	0	---	6	12	25	32	39	43	33	24
	500	0.175 (44)	5	12	25	31	37	42	33	25
	750	0.39 (98)	4	12	24	29	36	41	33	25
	1000	0.70 (175)	4	11	23	29	36	40	33	26
	1500	1.575 (394)	4	11	23	28	35	40	32	26
LENGTH 36" (900mm)	-1500	1.48 (370)	8	10	21	25	32	36	27	19
	-1000	0.66 (165)	8	10	21	25	32	36	27	19
	-750	0.37 (93)	7	10	20	25	31	36	26	19
	-500	0.17 (43)	7	10	19	24	31	36	26	19
	0	---	6	9	18	23	29	36	27	20
	500	0.17(43)	5	9	18	22	28	35	28	21
	750	0.37 (93)	5	9	18	21	27	35	28	21
	1000	0.66 (165)	4	9	17	21	27	34	28	21
	1500	1.48 (370)	4	8	17	20	26	34	26	22



SOUND ATTENUATOR

Models CSA-M-20-7.5-L

ACOUSTIC PERFORMANCE

SILENCER LENGTH	FACE VELOCITY Fpm	STATIC PRESSURE DROP Inch. Wg (Pa)	OCTAVE BEND CENTER FREQ (Hz.)							
			63	125	250	500	1000	2000	4000	8000
			INSERTION LOSS (dB)							
LENGTH 24" (600mm)	-1500	1.35 (338)	5	7	13	15	18	21	17	13
	-1000	0.60 (150)	5	7	12	15	17	20	17	13
	-750	0.33 (83)	5	7	12	14	17	20	16	12
	-500	0.15 (38)	5	6	11	14	16	20	16	12
	0	---	4	6	11	14	16	20	17	13
	500	0.15 (38)	4	6	11	13	15	19	17	14
	750	0.33 (83)	3	5	11	13	15	19	17	14
	1000	0.60 (150)	3	5	11	13	15	19	17	14
	1500	1.35 (338)	3	5	10	12	14	18	17	14

AIRFLOW- GENERATED SOUND POWER LEVELS								
FACE VELOCITY	OCTAVE BEND CENTER FREQ (Hz.)							
	1	2	3	4	5	6	7	8
	63	125	250	500	1000	2000	4000	8000
-1500	79	70	54	53	55	65	69	61
-1000	71	57	45	45	51	59	57	51
-500	55	41	33	37	42	38	30	23
500	55	48	49	50	48	41	34	22
1000	71	63	59	62	63	60	58	50
1500	81	78	67	69	71	70	69	64

FACE AREA ADJUSTMENT FACTORS							
FACE AREA (Ft ²)	0.5	1	2	4	8	16	32
Adjustment Factor (dB)	-9	-6	-3	0	3	6	9

Self generated power levels listed in the table require adjustment for silencer or silencer banks with face area other than 4 Ft². Add or subtract the following factors to all octave bands.



SOUND ATTENUATOR SQUARE-RECTANGLE

CSA -M-20-10-L

Acoustic Performance - CSA-M-20-10-L

SILENCER LENGTH	FACE VELOCITY Fpm	STATIC PRESSURE DROP Inch.Wg (Pa)	OCTAVE BAND CENTER FREQ (Hz.)							
			63	125	250	500	1000	2000	4000	8000
			INSERTION LOSS (dB)							
LENGTH 96"	-1500	1.125 (281)	8	17	41	53	58	55	32	19
	-1000	0.5 (125)	7	16	41	53	58	55	32	20
	-750	0.281 (70)	7	16	41	53	58	55	32	20
	-500	0.13 (33)	7	15	41	53	58	55	32	21
	0	---	7	15	40	52	59	55	34	24
	500	0.13 (33)	6	14	39	51	56	54	36	27
	750	0.281 (70)	6	14	40	51	55	54	36	27
	1000	0.5 (125)	6	13	37	50	55	55	37	29
	1500	1.125 (281)	6	13	37	50	55	55	37	30
LENGTH 84"	-1500	1.058 (265)	8	17	37	48	57	57	39	22
	-1000	0.47 (118)	7	16	37	48	57	56	39	23
	-750	0.264 (66)	7	15	36	48	56	56	40	23
	-500	0.118 (30)	7	15	35	47	56	55	40	24
	0	---	7	14	35	47	55	55	42	27
	500	0.118 (30)	6	13	35	46	54	54	43	27
	750	0.264 (66)	6	13	34	46	54	54	43	27
	1000	0.47 (118)	6	13	34	45	53	53	43	28
	1500	1.058 (265)	6	12	33	45	53	53	43	29
LENGTH 72"	-1500	0.99 (248)	7	14	33	45	51	52	36	22
	-1000	0.44 (110)	6	14	33	45	51	52	36	22
	-750	0.248 (62)	6	13	32	43	50	52	37	22
	-500	0.11 (28)	6	13	33	43	50	51	37	23
	0	---	6	13	32	42	50	51	38	24
	500	0.11 (28)	5	12	32	42	50	51	38	25
	750	0.248 (62)	5	12	32	42	49	51	38	25
	1000	0.44 (110)	5	12	31	40	48	50	39	26
	1500	0.99 (248)	4	11	31	40	46	50	38	27
LENGTH 60"	-1500	0.84 (210)	5	12	30	37	44	40	23	13
	-1000	0.38 (95)	5	11	29	36	44	40	23	13
	-750	0.21 (53)	5	11	28	36	44	40	23	14
	-500	0.1 (25)	4	11	28	36	44	40	24	14
	0	---	4	11	28	36	43	41	25	17
	500	0.1 (25)	4	11	27	34	42	41	25	19
	750	0.21 (53)	4	11	26	34	41	41	26	19
	1000	0.38 (95)	4	11	26	33	41	41	26	20
	1500	0.84 (210)	3	10	25	31	41	41	27	21



SOUND ATTENUATOR SQUARE-RECTANGLE

CSA -M-20-10-L

Acoustic Performance - CSA-M-20-10-L

SILENCER LENGTH	FACE VELOCITY Fpm	STATIC PRESSURE DROP Inch.Wg (Pa)	OCTAVE BAND CENTER FREQ (Hz.)							
			63	125	250	500	1000	2000	4000	8000
			INSERTION LOSS (dB)							
LENGTH 48"	-1500	0.81 (203)	6	12	23	31	37	39	24	15
	-1000	0.36 (90)	6	12	23	31	37	39	25	16
	-750	0.203 (51)	5	11	22	30	37	39	25	16
	-500	0.09 (23)	5	10	22	30	37	39	20	17
	0	---	5	9	22	29	36	39	22	17
	500	0.09 (23)	4	9	21	28	35	39	22	18
	750	0.203 (51)	4	8	21	28	34	39	22	18
	1000	0.36 (90)	4	8	20	27	34	39	27	18
	1500	0.81 (203)	3	7	20	27	34	39	28	19
LENGTH 36"	-1500	0.697 (174)	6	7	19	22	25	24	15	11
	-1000	0.31 (78)	5	7	18	22	25	23	15	10
	-750	0.174 (44)	5	7	17	22	25	23	14	10
	-500	0.077 (19)	4	6	16	21	25	23	14	10
	0	---	4	6	17	21	25	23	15	11
	500	0.077 (19)	4	6	17	20	24	23	16	12
	750	0.174 (44)	4	6	16	20	23	23	16	13
	1000	0.31 (78)	4	7	16	19	23	23	16	13
	1500	0.697 (174)	3	6	15	19	22	23	17	13
LENGTH 24"	-1500	0.54 (135)	4	5	11	13	14	15	10	8
	-1000	0.24 (60)	4	5	11	13	14	14	10	8
	-750	0.135 (34)	3	4	11	13	14	14	10	7
	-500	0.06 (15)	3	4	11	13	14	14	10	7
	0	---	2	4	10	13	14	14	11	9
	500	0.06 (15)	2	4	10	12	14	14	11	9
	750	0.135 (34)	2	4	10	12	13	14	11	9
	1000	0.24 (60)	2	4	10	12	13	14	11	10
	1500	0.54 (135)	1	4	9	12	13	14	11	10

AIRFLOW- GENERATED SOUND POWER LEVELS								
FACE VELOCITY	OCTAVE BAND CENTER FREQ (Hz.)							
	1	2	3	4	5	6	7	8
	63	125	250	500	1000	2000	4000	8000
-1500	70	60	58	58	59	60	58	51
-1000	60	54	51	52	53	51	46	37
-500	57	42	39	39	34	25	18	21
500	57	43	38	38	34	25	19	21
1000	59	54	52	52	52	50	45	35
1500	70	63	59	59	59	58	57	51

FACE AREA ADJUSTMENT FACTORS							
FACE AREA (Ft²)	0.5	1	2	4	8	16	32
Adjustment Factor (dB)	-9	-6	-3	0	3	6	9

Self generated power levels listed in the table require adjustment for silencer or silencer banks with face area other than 4 Ft². Add or subtract the following factors to all octave bands.



SOUND ATTENUATOR
SQUARE-RECTANGLE

CSA-M-20-15-L

Acoustic Performance-CSA-M-20-15-L

SILENCER LENGTH	FACE VELOCITY (Fpm)	STATIC PRESSURE DROP Inch.Wg (Pa)	OCTAVE BAND CENTER FREQ (Hz.)							
			63	125	250	500	1000	2000	4000	8000
			INSERTION LOSS (dB)							
LENGTH 120"	-1500	0.54 (135)	5	19	37	48	56	52	28	16
	-1000	0.24 (60)	5	18	37	48	56	52	28	17
	-750	0.13 (33)	6	18	37	48	56	52	29	18
	-500	0.06 (15)	6	18	36	47	56	52	30	20
	0	---	6	17	34	46	56	52	31	22
	500	0.06 (15)	5	16	34	45	56	52	32	22
	750	0.13 (33)	5	15	33	45	55	52	32	23
	1000	0.24 (60)	5	15	33	45	53	53	33	24
	1500	0.54 (135)	4	15	32	45	53	53	34	24
LENGTH 96"	-1500	0.46 (115)	8	14	33	41	54	46	22	13
	-1000	0.21 (53)	7	13	32	41	54	46	23	14
	-750	0.11 (28)	7	13	31	41	54	46	24	14
	-500	0.05 (13)	6	12	31	40	54	46	24	16
	0	---	6	12	29	39	53	47	26	19
	500	0.05 (13)	5	11	28	38	53	47	28	19
	750	0.11 (28)	5	11	28	38	53	47	28	19
	1000	0.21 (53)	5	11	28	37	53	47	29	20
	1500	0.46 (115)	5	10	27	37	53	47	30	21
LENGTH 72"	-1500	0.4 (100)	6	11	26	33	45	37	19	12
	-1000	0.18 (45)	6	10	25	33	45	38	20	12
	-750	0.1 (25)	6	10	25	32	45	38	20	12
	-500	0.04 (10)	5	10	24	32	44	38	21	13
	0	---	5	10	23	31	43	38	21	15
	500	0.04 (10)	4	10	23	30	42	39	23	15
	750	0.1 (25)	4	9	22	30	42	39	23	15
	1000	0.18 (45)	4	9	22	29	42	39	24	16
	1500	0.4 (100)	4	8	21	29	41	39	25	16
LENGTH 60"	-1500	0.34 (85)	5	10	23	29	40	33	17	11
	-1000	0.15 (38)	5	9	22	29	40	34	18	11
	-750	0.09 (23)	5	9	22	28	40	34	18	11
	-500	0.03 (8)	4	9	21	28	39	34	19	12
	0	---	4	9	20	27	38	34	19	13
	500	0.03 (8)	4	9	20	26	37	35	20	13
	750	0.09 (23)	3	8	19	26	36	35	21	13
	1000	0.15 (38)	3	8	19	25	36	35	21	14
	1500		3	7	18	25	35	35	22	14



**SOUND ATTENUATOR
SQUARE-RECTANGLE
CSA-M-20-15-L**

Acoustic Performance-CSA-M-20-15-L

SILENCER LENGTH	FACE VELOCITY (Fpm)	STATIC PRESSURE DROP Inch.Wg (Pa)	OCTAVE BAND CENTER FREQ (Hz.)							
			63	125	250	500	1000	2000	4000	8000
			INSERTION LOSS (dB)							
LENGTH 48"	-1500	0.31 (78)	5	8	20	24	31	26	14	9
	-1000	0.135 (34)	5	8	19	24	31	27	15	9
	-750	0.08 (20)	5	8	19	23	31	27	15	9
	-500	0.03 (8)	4	8	18	23	30	27	16	10
	0	---	4	7	17	22	30	27	16	11
	500	0.03 (8)	4	7	17	22	29	28	17	11
	750	0.08 (20)	3	7	17	21	28	28	18	11
	1000	0.135 (34)	3	7	17	21	28	28	18	12
	1500	0.31 (78)	3	6	16	21	28	28	19	12
LENGTH 36"	-1500	0.27 (68)	5	6	16	18	21	19	11	6
	-1000	0.12 (30)	5	6	16	18	21	20	11	6
	-750	0.07 (18)	4	6	15	18	21	20	12	7
	-500	0.03 (8)	4	6	15	17	21	20	12	8
	0	---	4	5	14	17	21	20	13	9
	500	0.03 (8)	3	5	14	17	21	20	14	9
	750	0.07 (18)	3	5	14	16	20	20	14	9
	1000	0.12 (30)	3	4	14	16	20	20	14	9
	1500	0.27 (68)	3	4	13	16	20	20	15	9
LENGTH 24"	-1500	0.2 (50)	4	4	8	10	13	12	8	6
	-1000	0.09 (23)	4	4	8	9	13	12	8	6
	-750	0.05 (13)	4	4	7	9	13	12	9	6
	-500	0.02 (5)	3	4	7	9	13	12	9	7
	0	---	3	4	7	9	13	12	9	7
	500	0.02 (5)	3	3	7	9	12	12	9	7
	750	0.05 (13)	2	3	7	9	12	12	9	7
	1000	0.09 (23)	2	3	7	9	12	12	9	7
	1500	0.2 (50)	2	2	7	9	12	12	9	7

AIRFLOW- GENERATED SOUND POWER LEVELS								
FACE VELOCITY	OCTAVE BAND CENTER FREQ (Hz.)							
	1	2	3	4	5	6	7	8
	63	125	250	500	1000	2000	4000	8000
-1500	67	57	52	52	56	55	49	39
-1000	58	49	47	48	48	43	34	23
-500	55	41	31	26	21	16	18	22
500	56	42	31	27	21	17	18	21
1000	57	50	47	47	46	42	34	23
1500	66	59	54	55	55	53	49	41

FACE AREA ADJUSTMENT FACTORS							
FACE AREA (Ft ²)	0.5	1	2	4	8	16	32
Adjustment Factor (dB)	-9	-6	-3	0	3	6	9

Self generated power levels listed in the table require adjustment for silencer or silencer banks with face area other than 4 Ft². Add or subtract the following factors to all octave bands.



SOUND ATTENUATOR

Models CSA-M-20-20-L

ACOUSTIC PERFORMANCE

SILENCER LENGTH	FACE VELOCITY Fpm	STATIC PRESSURE DROP Inch. Wg (Pa)	OCTAVE BAND CENTER FREQ (Hz.)							
			63	125	250	500	1000	2000	4000	8000
			INSERTION LOSS (dB)							
LENGTH 120" (3000mm)	-2000	0.48 (120)	8	15	30	39	53	35	16	7
	-1500	0.27 (68)	8	15	30	38	52	36	17	8
	-1000	0.11 (28)	8	15	29	38	52	36	18	8
	-500	0.03 (8)	7	14	29	38	53	37	19	9
	0	---	7	14	27	37	52	39	21	10
	500	0.03 (8)	7	13	27	36	51	39	22	12
	1000	0.11 (28)	6	13	26	35	51	40	23	13
	1500	0.27 (60)	6	12	25	34	51	40	24	14
	2000	0.48 (120)	6	12	25	34	50	39	25	15
LENGTH 96" (2400mm)	-2000	0.36 (90)	6	12	26	33	46	30	13	6
	-1500	0.19 (48)	6	12	26	32	46	31	14	6
	-1000	0.09 (28)	5	12	25	32	46	31	14	7
	-500	0.03 (8)	5	12	25	32	46	31	15	7
	0	---	5	11	25	31	45	32	16	9
	500	0.03 (8)	4	11	24	30	44	33	17	11
	1000	0.09 (28)	4	11	23	30	43	33	18	12
	1500	0.19 (48)	4	10	22	29	41	34	19	12
	2000	0.36 (90)	3	10	20	25	41	34	20	13
LENGTH 72" (1800mm)	-2000	0.31 (78)	6	10	21	28	39	26	11	5
	-1500	0.175 (44)	6	10	21	28	39	26	12	5
	-1000	0.078 (20)	5	10	21	27	39	27	12	5
	-500	0.02 (5)	5	9	19	27	39	27	13	6
	0	---	4	9	19	26	38	28	15	9
	500	0.02 (5)	4	8	18	25	37	29	15	10
	1000	0.078 (20)	4	8	18	25	36	29	16	11
	1500	0.175 (44)	3	7	18	24	36	30	16	11
	2000	0.31 (78)	3	6	17	23	36	30	17	11
LENGTH 60" (1500mm)	-2000	0.28 (70)	6	9	18	23	32	21	9	4
	-1500	0.16 (40)	6	9	18	23	32	21	10	4
	-1000	0.07 (18)	5	9	18	22	31	22	11	5
	-500	0.02 (5)	5	8	17	22	31	22	11	6
	0	---	4	7	16	21	31	24	14	9
	500	0.02 (5)	4	7	15	20	30	24	14	10
	1000	0.07 (18)	4	7	15	20	29	25	15	11
	1500	0.16 (40)	3	7	15	19	29	25	15	11
	2000	0.28 (70)	3	6	14	18	28	25	16	11



SOUND ATTENUATOR

Models CSA-M-20-20-L

ACOUSTIC PERFORMANCE

SILENCER LENGTH	FACE VELOCITY (Fpm)	STATIC PRESSURE DROP Inch. Wg (Pa)	OCTAVE BEND CENTER FREQ (Hz.)							
			63	125	250	500	1000	2000	4000	8000
			INSERTION LOSS (dB)							
LENGTH 48" (1200mm)	-2000	0.26 (65)	5	8	15	18	25	17	8	3
	-1500	0.146 (37)	5	8	15	18	25	17	9	4
	-1000	0.065 (16)	5	7	14	17	24	18	10	4
	-500	0.02 (5)	5	7	14	17	24	18	10	7
	0	---	4	6	13	16	24	19	12	7
	500	0.02 (5)	4	6	13	15	24	19	12	8
	1000	0.065 (16)	3	6	12	15	23	20	12	8
	1500	0.146 (37)	3	5	12	14	23	20	13	9
	2000	0.26 (65)	3	5	12	14	22	20	13	9
LENGTH 36" (900mm)	-2000	0.24 (60)	5	6	11	13	18	12	5	2
	-1500	0.13 (33)	5	6	11	13	18	12	5	3
	-1000	0.06 (15)	5	6	10	12	18	13	6	4
	-500	0.02 (5)	5	6	10	12	18	13	7	5
	0	---	4	5	10	12	18	14	8	6
	500	0.02 (5)	4	5	9	11	17	14	9	7
	1000	0.06 (15)	3	5	9	11	17	15	9	7
	1500	0.13 (33)	3	4	9	11	17	15	10	8
	2000	0.24 (60)	2	4	9	11	16	15	10	8

AIRFLOW- GENERATED SOUND POWER LEVELS								
FACE VELOCITY	OCTAVE BEND CENTER FREQ (Hz.)							
	1	2	3	4	5	6	7	8
	63	125	250	500	1000	2000	4000	8000
-2000	67	56	51	52	54	49	44	34
-1000	59	48	45	45	41	35	26	23
-500	54	42	31	24	22	17	20	23
500	55	40	30	24	21	17	20	23
1000	60	48	44	41	40	36	29	23
2000	73	65	59	57	57	58	55	49

FACE AREA ADJUSTMENT FACTORS							
FACE AREA (Ft²)	0.5	1	2	4	8	16	32
Adjustment Factor (dB)	-9	-6	-3	0	3	6	9

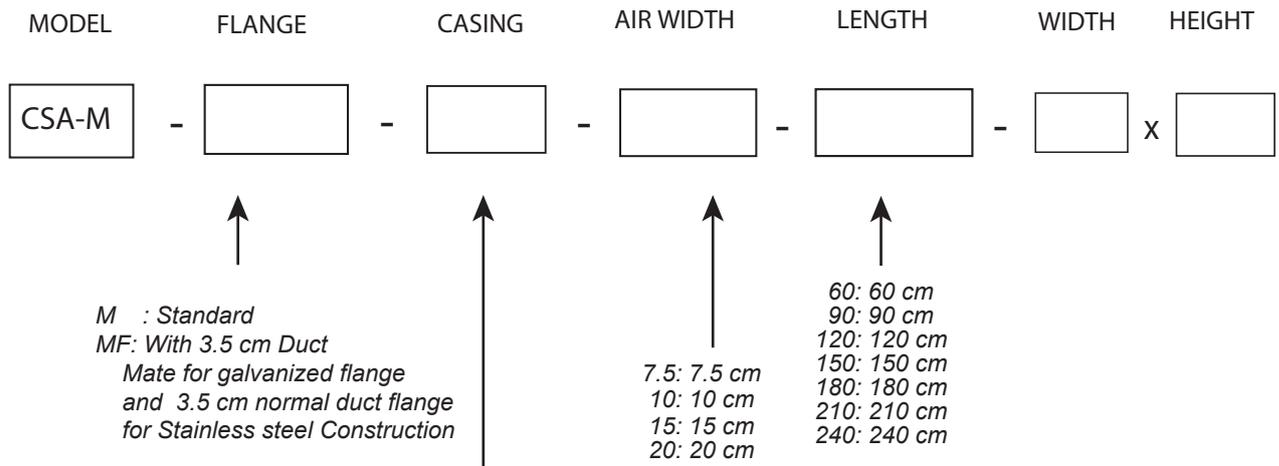
Self generated power levels listed in the table require adjustment for silencer or silencer banks with face area other than 4 Ft². Add or subtract the following factors to all octave bands.

SOUND ATTENUATOR

SQUARE-RECTANGLE

CSA -M

ORDERING INFORMATION



- 20 : 20 Gauge Galvanized (Standard)
- 18 : 18 Gauge Galvanized
- 16 : 16 Gauge Galvanized
- SS10 : 304 Stainless Steel Construction
1.0 mm thickness
- SS12 : 304 Stainless Steel Construction
1.2 mm thickness
- SS15 : 304 Stainless Steel Construction
1.5 mm thickness

N.B: - For more information, please check the submittal sheet

Sizes:

- Width: Minimum size of 11" (275mm)
- Height: Minimum size of 8" (200mm)
- Rectangular silencers with weight that exceed 200Kg (441Lbs) are manufactured as multiple section and field assembled (By others).

