



**Engineered
Acoustics**

by Nailor Industries Inc.



Silencers

For most up-to-date catalog information, please visit www.engineeredacoustics.com

Contents

	Page No.
Features, Description, Sizes and Options	
Circular Dissipative Silencers	S1
CBB-LP • Circular Broad Band - Low Pressure Insertion Loss	
CBB-MP • Circular Broad Band - Medium Pressure Insertion Loss	
CBB-HP • Circular Broad Band - High Pressure Insertion Loss	
Rectangular Dissipative Silencers	S1
RBB-LP • Rectangular Broad Band - Low Pressure Insertion Loss	
RBB-MP • Rectangular Broad Band - Medium Pressure Insertion Loss	
RBB-HP • Rectangular Broad Band - High Pressure Insertion Loss	
Performance Data	
Circular Dissipative Silencers	
CBB-LP • Circular Broad Band - Low Pressure Insertion Loss	S2
CBB-MP • Circular Broad Band - Medium Pressure Insertion Loss	S3
CBB-HP • Circular Broad Band - High Pressure Insertion Loss	S4
Rectangular Dissipative Silencers	
RBB-LP • Rectangular Broad Band - Low Pressure Insertion Loss	S5
RBB-MP • Rectangular Broad Band - Medium Pressure Insertion Loss	S6
RBB-HP • Rectangular Broad Band - High Pressure Insertion Loss	S7
Submittal Data Request Sheet	
Circular Dissipative Silencers	
CBB-LP, MP and HP • Circular Broad Band	S8
Rectangular Dissipative Silencers	
CBB-LP, MP and HP • Rectangular Broad Band	S9

Models:

Circular Dissipative Silencer

CBB-LP Low Pressure

CBB-MP Medium Pressure

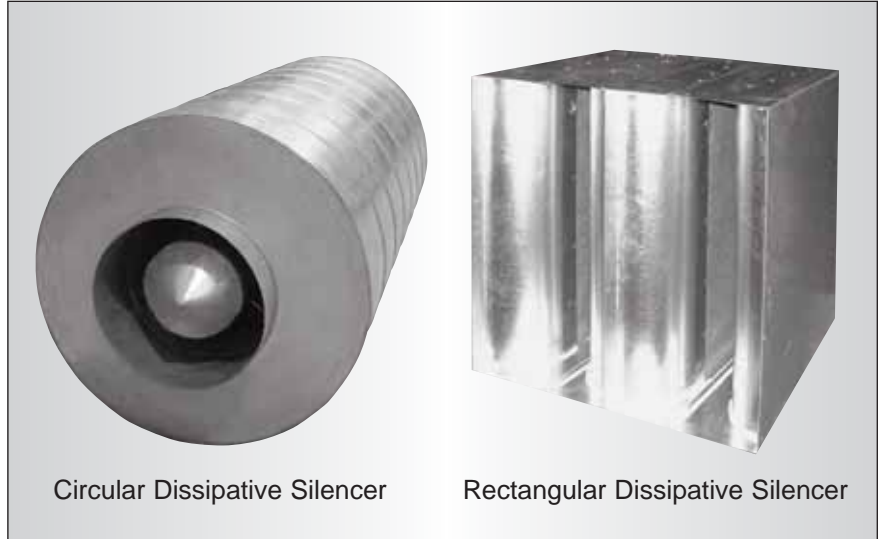
CBB-HP High Pressure

Rectangular Dissipative Silencer

RBB-LP Low Pressure

RBB-MP Medium Pressure

RBB-HP High Pressure



Circular Dissipative Silencer

Rectangular Dissipative Silencer

FEATURES AND BENEFITS OF ENGINEERED ACOUSTICS:

Engineered Acoustics' dissipative rectangular and circular duct silencers are designed to offer superior acoustic and aerodynamic performance. Rectangular models utilize acoustical splitters, sometimes called baffles, for broad-band attenuation. Perforated metal protects the glass fiber from erosion by the airflow. Similarly circular models have acoustical center-bodies, sometimes referred to as pods. They also incorporate glass fiber external to the duct connection size.

Splitters in rectangular models vary in quantity and thickness, and air passages also vary in size. Circular models vary in center body diameter, air passage width and external body dimension. The splitters and center bodies are aerodynamically shaped to minimize pressure drop.

The latest in control components and options provide maximum flexibility with a wide scope for cost effective innovation.

DESCRIPTION:

- Engineered Acoustics' dissipative, circular and rectangular duct silencers are designed to offer superior acoustic and aerodynamic performance.

- All performance data is independently tested using a 24"x24" (610x610) rectangular sample.

- Engineered Acoustics' designs and manufactures silencers for virtually any application, as well as custom designs to meet any special need.

- Applications include return, supply, and exhaust ductwork, in addition to, fan plenums and air handling units.

- Constructed with a standard outer casing of 22 gauge (0.85) galvanized steel, all external seams are lock formed and sealed to withstand up to 10" w.g. (2.5kPa) pressure differential.

- Each internal "pod" includes a solid 22 gauge (0.85) elliptical nosepiece, transparent perforated metal, and is exceptionally tapered to minimize dynamic pressure loss and maximize static pressure regain.

- The inorganic, odorless, vermin and moisture proof, absorption media is compressed a minimum of 5% to eliminate voids and prevent settling.

- The incombustible filler material does not exceed the fire hazard classifications in accordance with NFPA 90A and UL 181.

- Silencer models include: Circular Dissipative Broadband – Low Pressure, Medium Pressure, and High Pressure. Rectangular Broadband – Low Pressure, Medium Pressure, and High Pressure.

SIZES:

- Circular Dissipative silencer connection sizes 12", 24", and 36"

- Rectangular Dissipative Silencer lengths available in 36", 60", and 84"

STANDARD FEATURES:

- Constructed with a standard outer casing of 22 gauge (0.85 mm) galvanized steel

- All external seams are lock formed and sealed to withstand up to 10" w.g. (2.5kPa) pressure differential.

- Each internal "pod" includes a solid 22 gauge (0.85) elliptical nosepiece, transparent perforated metal, and is exceptionally tapered to minimize dynamic pressure loss and maximize static pressure regain.

- Baffles are filled with inorganic, odorless, vermin, and moisture proof, absorption media is compressed a minimum of 5% to eliminate voids and prevent settling.

- Galvanized aerodynamically shaped nose at inlet

- Centerbody pods are centered in air stream and supported by steel brackets

- Perforated galvanized baffles are complete with perforated diffuser tail

Options:

- High temperature sealant

- Field or Factory assembled multiple modules

- TDF Flange one or both ends

- 2" flange one or both ends

- 18 gauge (1.31 mm) outer casing construction

Performance Data • Insertion Loss Octave Band (Hz) Model: CBB-LP • Circular Broad Band - Low Pressure Insertion Loss

Connection Size	Length	Face Velocity	Static Pressure Drop	Octave Band (Hz)							
				63	125	250	500	1000	2000	4000	8000
12	36	-2000	0.45	8	15	26	41	58	60	60	46
		-1000	0.15	8	15	26	41	57	60	60	46
		0	0	8	15	25	40	55	60	60	46
		+1000	0.15	8	15	24	39	53	60	60	46
		+1500	0.33	8	15	24	38	53	60	60	46
24	72	-2000	0.35	10	18	38	50	60	61	49	29
		-1000	0.13	10	18	38	49	60	60	49	29
		0	0	10	18	37	48	60	59	49	29
		+1000	0.13	10	18	36	47	59	58	49	29
		+1500	0.29	10	18	35	46	58	57	49	29
36	108	-2000	0.37	13	24	44	58	60	56	36	23
		-1000	0.12	13	24	44	58	60	56	36	23
		0	0	13	24	43	57	60	55	36	23
		+1000	0.12	13	24	41	56	59	54	36	23
		+1500	0.27	13	24	40	55	58	53	36	23

Self Generated Noise

Face Velocity (fpm)	Octave Band (Hz)							
	63	125	250	500	1000	2000	4000	8000
-1500	59	52	44	43	45	47	44	42
-1000	54	47	39	38	40	42	39	37
+1000	53	46	39	37	37	39	37	35
+1500	58	51	44	42	42	44	42	40

Face Area Correction Factors

Area	1.5	3	6	12	24	48
PWL (dB)	-3	0	+3	+6	+9	+12

Performance Data • Insertion Loss Octave Band (Hz)
Model: CBB-MP • Circular Broad Band - Medium Pressure Insertion Loss

Connection Size	Length	Face Velocity	Static Pressure Drop	Octave Band (Hz)							
				63	125	250	500	1000	2000	4000	8000
12	36	-2000	0.20	7	11	20	32	46	49	46	28
		-1000	0.04	7	11	20	32	46	49	47	29
		0	0	7	11	20	31	44	49	47	30
		+1000	0.04	7	11	20	31	43	49	47	31
		+2000	0.16	7	11	20	30	42	49	48	32
24	72	-2000	0.18	8	14	28	42	55	52	32	19
		-1000	0.04	8	14	28	42	55	52	32	20
		0	0	8	14	28	41	53	52	33	21
		+1000	0.04	8	14	28	41	52	52	33	21
		+2000	0.15	8	14	28	40	51	52	34	23
36	108	-2000	0.16	12	20	33	48	54	39	25	15
		-1000	0.03	12	20	33	48	54	39	25	15
		0	0	12	20	33	47	52	39	26	17
		+1000	0.03	12	20	33	47	51	39	26	18
		+2000	0.13	12	20	33	46	50	39	27	19

Self Generated Noise

Face Velocity (fpm)	Octave Band (Hz)							
	63	125	250	500	1000	2000	4000	8000
-3000	63	56	50	57	56	57	55	52
-1500	49	42	38	43	43	42	36	31
+1500	48	41	38	42	40	39	34	29
+3000	62	55	50	56	53	54	53	50

Face Area Correction Factors

Area	1.5	3	6	12	24	48
PWL (dB)	-3	0	+3	+6	+9	+12

Performance Data • Insertion Loss Octave Band (Hz) Model: CBB-HP • Circular Broad Band - High Pressure Insertion Loss

Connection Size	Length	Face Velocity	Static Pressure Drop	Octave Band (Hz)							
				63	125	250	500	1000	2000	4000	8000
12	36	-4000	0.27	7	11	18	28	38	41	33	20
		-1000	0.01	6	9	17	27	38	41	33	20
		0	0	5	9	17	26	37	41	34	20
		+1000	0.01	4	8	17	25	37	41	34	20
		+4000	0.24	3	8	16	24	36	41	35	20
24	72	-4000	0.31	8	14	25	37	46	36	22	17
		-1000	0.02	7	12	24	36	46	36	22	17
		0	0	7	12	24	35	45	36	23	17
		+1000	0.02	6	12	24	34	45	36	23	17
		+4000	0.27	5	11	23	33	44	36	24	17
36	108	-4000	0.30	12	18	29	41	41	28	18	14
		-1000	0.02	11	18	29	40	41	28	18	14
		0	0	10	17	28	39	40	28	19	14
		+1000	0.02	9	16	27	38	40	28	19	14
		+4000	0.26	8	15	26	37	39	28	20	14

Self Generated Noise

Face Velocity (fpm)	Octave Band (Hz)							
	63	125	250	500	1000	2000	4000	8000
-5000	73	66	61	70	69	67	68	66
-3000	60	53	49	58	56	56	52	46
+3000	59	52	49	57	53	53	50	44
+5000	72	65	61	69	66	64	66	64

Face Area Correction Factors

Area	1.5	3	6	12	24	48
PWL (dB)	-3	0	+3	+6	+9	+12

Performance Data • Insertion Loss Octave Band (Hz)

Model: RBB-LP • Rectangular Broad Band - Low Pressure Insertion Loss

Length	Face Velocity	Static Pressure Drop	Octave Band (Hz)							
			63	125	250	500	1000	2000	4000	8000
36	-2000	0.20	1	5	10	18	25	19	13	9
	-1000	0.07	1	5	9	19	25	19	13	10
	0	0	2	4	9	18	25	19	14	10
	+2000	0.19	2	4	8	16	24	19	15	10
	+2500	0.30	1	4	8	16	24	19	15	10
60	-2000	0.30	1	9	15	31	41	30	17	8
	-1000	0.10	2	9	14	31	42	31	17	9
	0	0	2	7	13	30	45	33	19	12
	+2000	0.27	2	6	12	27	42	34	21	12
	+2500	0.42	1	6	12	26	41	33	20	12
84	-2000	0.40	4	13	23	40	44	38	21	11
	-1000	0.12	4	11	20	42	47	40	23	11
	0	0	4	10	19	41	49	42	26	15
	+1000	0.10	3	9	18	40	49	42	27	15
	+2000	0.38	3	9	17	39	47	40	27	16

Self Generated Noise

Face Velocity (fpm)	Octave Band (Hz)							
	63	125	250	500	1000	2000	4000	8000
-2000	66	61	57	61	63	67	59	52
-1000	55	51	48	52	56	49	42	32
+1000	58	49	40	39	34	27	24	22
+2000	62	59	52	50	51	54	53	48

Face Area Correction Factors

Area PWL (dB)	0.5	1	2	4	8	16	32	64	128	256
	-8	-6	-3	0	+3	+6	+9	+12	+15	+18

Performance Data • Insertion Loss Octave Band (Hz)

Model: RBB-MP • Rectangular Broad Band - Medium Pressure Insertion Loss

Length	Face Velocity	Static Pressure Drop	Octave Band (Hz)							
			63	125	250	500	1000	2000	4000	8000
36	-1500	0.18	2	6	12	21	29	23	13	7
	-1000	0.09	2	6	11	21	29	23	13	7
	0	0	2	5	10	21	28	23	16	10
	+1000	0.07	2	4	10	20	28	23	16	10
	+2000	0.28	1	4	9	18	27	23	15	10
60	-1500	0.26	3	10	17	35	45	36	20	11
	-1000	0.12	4	9	16	35	46	38	22	11
	0	0	5	9	16	35	47	41	25	14
	+1000	0.10	5	8	15	34	47	41	26	14
	+2000	0.41	4	7	15	33	46	39	26	14
84	-1500	0.30	8	12	24	40	46	40	26	15
	-1000	0.15	8	12	23	42	47	41	27	15
	0	0	6	11	21	43	49	45	29	16
	+1000	0.13	7	10	20	42	49	46	29	16
	+1500	0.28	6	9	19	41	46	44	30	17

Self Generated Noise

Face Velocity (fpm)	Octave Band (Hz)							
	63	125	250	500	1000	2000	4000	8000
-1500	61	55	54	58	60	62	56	48
-1000	54	50	49	52	55	55	47	37
+1000	54	50	42	42	39	36	34	29
+2000	60	59	59	52	52	55	56	52

Face Area Correction Factors

Area PWL (dB)	0.5	1	2	4	8	16	32	64	128	256
	-8	-6	-3	0	+3	+6	+9	+12	+15	+18

Performance Data • Insertion Loss Octave Band (Hz)

Model: RBB-HP • Rectangular Broad Band - High Pressure Insertion Loss

Length	Face Velocity	Static Pressure Drop	Octave Band (Hz)							
			63	125	250	500	1000	2000	4000	8000
36	-1500	0.50	3	9	16	26	30	27	18	11
	-1000	0.23	3	8	15	26	31	28	19	12
	0	0	3	6	14	27	36	31	21	13
	+1000	0.21	3	6	13	25	35	31	21	13
	+2000	0.83	2	6	12	23	32	30	19	11
60	-1000	0.39	9	14	22	40	44	45	31	15
	-500	0.11	10	13	21	42	46	48	33	17
	0	0	8	12	21	42	49	50	35	20
	+1000	0.37	8	11	19	40	48	50	36	20
	+1500	0.84	6	10	18	39	47	49	35	19
84	-1000	0.40	9	18	31	39	43	45	33	19
	-500	0.21	10	17	30	42	46	48	37	22
	0	0	10	16	26	45	49	51	38	23
	+1000	0.38	9	14	25	44	47	48	37	22
	+1500	0.86	7	14	25	44	45	46	35	20

Self Generated Noise

Face Velocity (fpm)	Octave Band (Hz)							
	63	125	250	500	1000	2000	4000	8000
-1500	63	58	57	62	66	71	68	61
-1000	55	51	51	56	61	63	57	49
+1000	50	49	43	44	41	40	42	38
+2000	66	62	58	56	56	60	55	62

Face Area Correction Factors

Area PWL (dB)	0.5	1	2	4	8	16	32	64	128	256
	-8	-6	-3	0	+3	+6	+9	+12	+15	+18

Engineered Acoustics is part of the Nailor Family of Air Control and Air Distribution Equipment

The Nailor Family of Products Include:
(Pictured from left to right)

Air Handlers by Thermal Corporation

Silencers by Engineered Acoustics

Duct Heaters by Heatmasters

**Specialty Clean Room, Hospital and
Operating Room Systems** by Nailor

Air Control Dampers by Nailor

**Fire Dampers and Combination
Fire/Smoke Dampers** by Nailor

Industrial Dampers by Nailor

Grilles, Registers and Diffusers by Nailor

Single Duct Terminal Units by Nailor

Dual Duct Terminal Units by Nailor

Fan Powered Terminal Units by Nailor

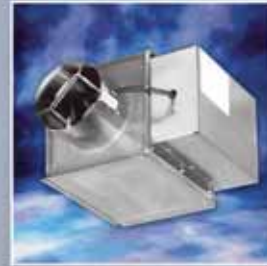
Underfloor Air Distribution Systems by Nailor

Single Duct Terminal Units by Nailor

Dual Duct Terminal Units by Nailor

Fan Powered Terminal Units by Nailor

Underfloor Air Distribution Systems by Nailor





**Engineered
Acoustics**

by Nailor Industries Inc.



Silencers

For most up-to-date catalog information, please visit www.engineeredacoustics.com