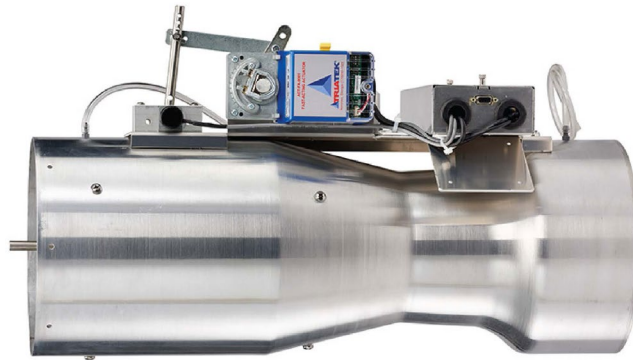


Description

Figure 1: Venturi Air Valve



Venturi Air Valves play a critical role in room pressure containment applications to ensure safety, reliability, and efficiency. Venturi Air Valves are a position-based flow control device that relies on factory calibration instead of real-time flow measurement by a flow sensor. Venturi Air Valves do not feature sensors in the air stream, which allows for safe and reliable operation in various caustic environments where flow sensors need regular maintenance. This robust design gives Venturi Air Valves an advantage in critical environments with many years of reliable service.

Venturi Air Valves are mechanically pressure independent due to a spring-loaded cone design. As the duct pressure fluctuates, the spring-loaded cone assembly rides these pressure waves to maintain a consistent volumetric flow, regardless of the duct static pressure variances. This mechanism provides immediate speed of response to duct pressure changes and does not require actuator movement.

Venturi Air Valves use fast-acting electric actuators that provide a rapid response to changes in conditions and dynamic air flow requirements. This rapid response ensures that room pressure containment is maintained to protect people from airborne threats such as viruses, chemicals, and particulates.

Features and benefits

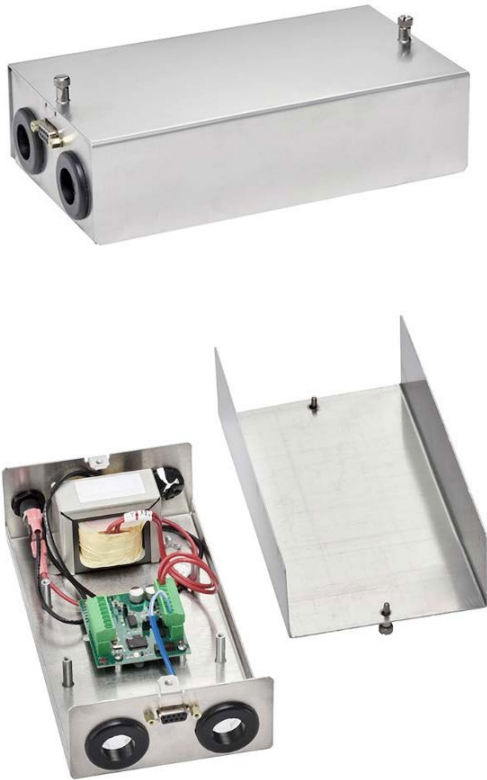
- Medium or low pressure ratings
- Partially closed or full shut-off design
- Valves available in 8 in., 10 in., 12 in., and 14 in. (203 mm, 254 mm, 305 mm, and 355 mm) diameters
- Available with Heresite® coatings
- Kynar® coated valve options are available for special requirements
- Dependable design, without sensors in the air stream, which results in years of reliable maintenance-free service
- Easy to install
- Available as a constant volume or with a fast acting smart actuator
- Mechanically pressure independent in low and medium pressure applications
- Factory calibrated airflow
- Field adjustable Universal Valve Module (UVM) configuration tool

- Low pressure drop
- Gang together for increased flow
- Maintenance-free link with no sensors due to position based CFM
- Calibration for vertical or horizontal positions

Venturi Air Valve options

Universal valve module

Figure 2: Universal valve module

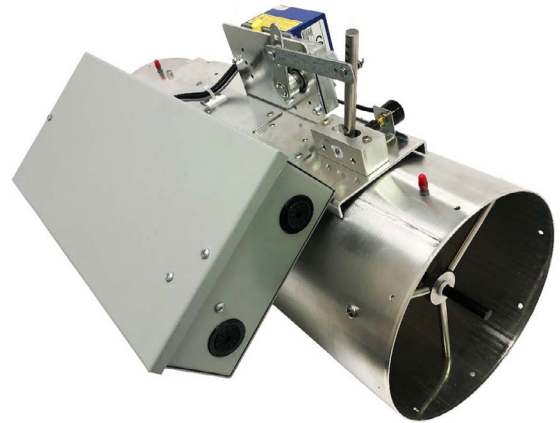


Each Venturi Air Valve comes with a UVM1000 linearization module that provides fast and simple control of the air valve. You can command with a 0 VDC to 10 VDC control signal which scales to represent 0% to 100% of the air valve's minimum to maximum CFM range. The UVM1000 provides a 0 VDC to 10 VDC position feedback signal as confirmation the actuator has been repositioned to meet the target CFM setpoint. For example, if 0 VDC to 10 VDC is equal to 0 CFM to 1000 CFM, a 750 CFM set point requires a 7.5 VDC command signal sent to the UVM1000. The command signal drives the valve to the 750 CFM position and returns a 7.5 VDC position feedback signal as confirmation.

For more information, refer to the *Venturi Air Valve Users Guide*.

Valve mounted room level controller

Figure 3: Valve mounted room level controller



For authorized facility explorer dealers, the Venturi Air Valves can be ordered with a factory mounted room level controller on the valve body. This reduces the need for an additional wall mounted panel in the critical space and makes installation easier. The valve mounted controller becomes the central node in the room for connection to all other devices. It is best practice to designate the location of the controller onto the valve with the easiest access, or the general supply.

Aluminum or stainless steel

Venturi Air Valves are made of aluminum for general exhaust or supply applications. A 316 stainless steel (SS316) option is also available for environments with highly corrosive or dangerous chemicals in the air stream.

Heresite

Figure 4: Heresite coated valve



Heresite is a brown phenolic coating baked on exposed aluminum to minimize corrosion. Heresite coatings provide resistance to a wide range of corrosives.

Kynar

Figure 5: Kynar coated valve



Kynar provides excellent chemical resistance. Kynar is often used as a protective coating in applications where phenolic coating is not sufficient.

Thermal insulation

You can use thermal insulation for supply valves. Thermal insulation decreases energy costs that reduces thermal losses and prevents duct condensation.

Constant volume

Figure 6: Constant volume lateral front Venturi Air Valve



Constant volume (CV) Venturi Air Valves provide a single CFM set point for applications that require only one air flow set point. CV valves do not come with a controller or actuator.

Medium or low pressure

Medium pressure Venturi Air Valves (0.6 in. W.C. to 3 in. W.C.) allow for higher flows for a given valve size, while low pressure Venturi Valves (0.3 in. W.C. to 3 in. W.C.) require a smaller pressure drop across the valve to maintain a constant flow.

Partially closed or full shut-off

Partially closed Venturi Air Valves allow for higher flows for a given valve size, while full shut-off Venturi Valves allow the valve to close completely for zero flow application requirements.

Horizontal or vertical

You can specify how the valve is situated in the duct work. For example, horizontal, vertical upflow, or vertical downflow. Each orientation is calibrated differently to account for the effects of gravity on the spring-loaded cone assembly to ensure mechanical pressure independence is maintained.

Size

Triatek offers 8 in., 10 in., 12 in., and 14 in. diameter valves for a variety of applications.

Figure 7: Venturi Air Valve sizes



Ganged valves

To increase flow, gang valves together.

Figure 8: Dual Venturi Air Valve

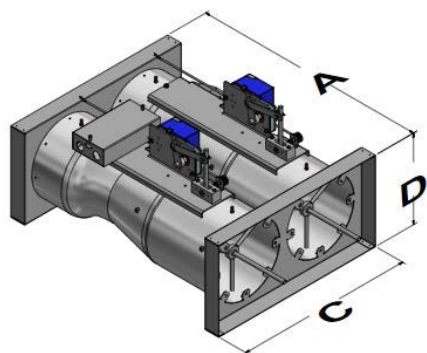


Figure 9: Triple Venturi Air Valve

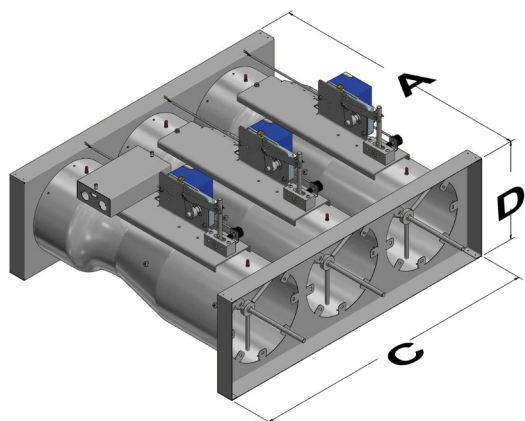


Figure 10: Quad Venturi Air Valve

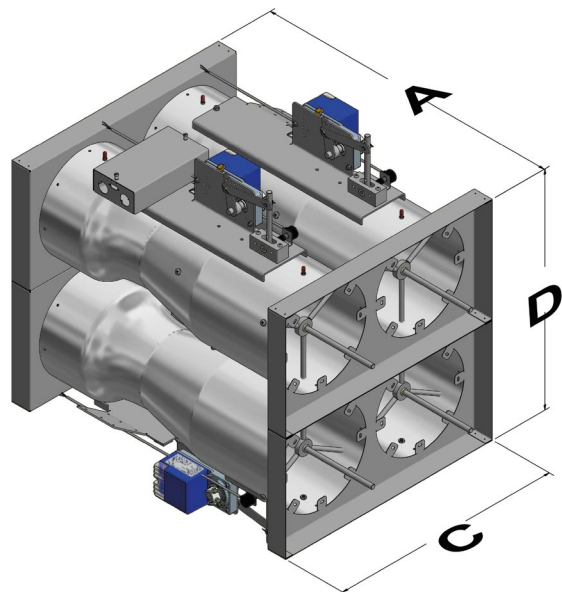


Figure 11: Hex Venturi Air Valve

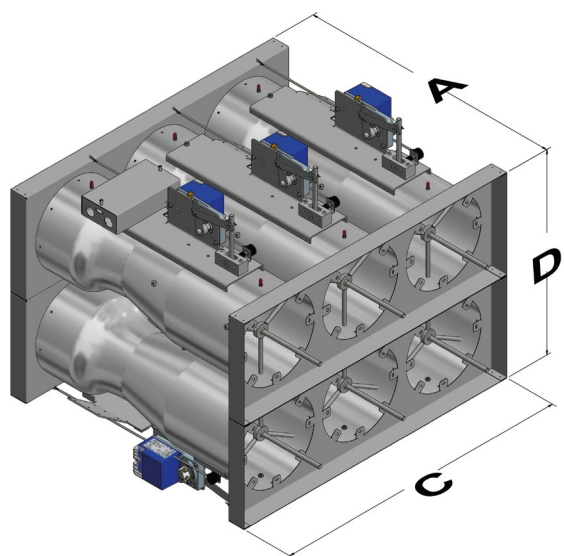


Table 1: Dimensions

Callout	Description
A	Valve length
C	Collar width
D	Collar height

Selection charts

Table 2: Dimensions and weights

Unit size		Weight				Valve diameter		Valve length (A)		Valve height (B)		Collar width (C)		Collar width (D)	
		Aluminum		SS316											
		lb	kg	lb	kg	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
8 in.	1	15	7	20	9	7.75	197	23	584	14	356	N/A			
10 in.	1	20	9	27	12	9.74	247	26	660	16	406				
	2	40	18	54	24	N/A		30	762	17	432	22.63	575	11.44	291
	3	60	27	81	37			30	762	17	432	33.75	857	11.44	291
	4	100	45	135	61			30	762	35	889	22.63	575	22.88	581
	6	140	64	189	86			30	762	35	889	33.75	857	22.88	581
12 in.	1	20	9	27	12	11.68	297	26.8	681	18	457	N/A			
	2	60	27	81	37	N/A		30.8	782	19	483				
	3	80	36	108	49			30.8	782	19	483	40	1016	13.5	343
	4	100	45	135	61			30.8	782	38	965	26.75	679	27	686
	6	150	68	203	92			30.8	782	38	965	40	1016	27	686
14 in.	1	25	11	N/A		13.62	346	30	762	22	559	N/A			
	2	50	23			N/A		34	864	24	610				
	3	75	34					34	864	24	610	48.3	1227	16	406
	4	120	54					34	864	48	1219	32.15	817	32	813
	6	160	73					34	864	48	1219	48.3	1227	32	813

Table 3: Partially closed (PC) Venturi valve flow rates

Unit size		Low pressure 0.3 in. W.C.				Medium pressure 0.6 in. W.C.			
		Minimum flow		Maximum flow		Minimum flow		Maximum flow	
		CFM	Cubic meter per hour (CMH)	CFM	CMH	CFM	CMH	CFM	CMH
8 in.	1	35	59	500	850	35	59	700	1,189
10 in.	1	50	85	550	934	50	85	1,000	1,699
	2	100	170	1,100	1,869	100	170	2,000	3,398
	3	150	255	1,650	2,803	150	255	3,000	5,097
	4	200	340	2,200	3,738	200	340	4,000	6,796
	6	300	510	3,300	5,607	300	510	6,000	10,194
12 in.	1	90	153	1,050	1,784	90	153	1,500	2,549
	2	180	306	2,100	3,568	180	306	3,000	5,097
	3	270	459	3,150	5,352	270	459	4,500	7,646
	4	360	612	4,200	7,136	360	612	6,000	10,194
	6	540	917	6,300	10,704	540	917	9,000	15,291

Table 3: Partially closed (PC) Venturi valve flow rates

Unit size		Low pressure 0.3 in. W.C.				Medium pressure 0.6 in. W.C.			
		Minimum flow		Maximum flow		Minimum flow		Maximum flow	
		CFM	Cubic meter per hour (CMH)	CFM	CMH	CFM	CMH	CFM	CMH
14 in.	1	175	297	1,400	2,379	175	297	2,100	3,568
	2	350	595	2,800	4,757	350	595	4,200	7,136
	3	525	892	4,200	7,136	525	892	6,300	10,704
	4	700	1,189	5,600	9,514	700	1,189	8,400	14,272
	6	1,050	1,784	8,400	14,272	1,050	1,784	12,600	21,408

① **Note:** Minimum flow for SS316 8 in. PC valve is 50 CFM. Minimum flow for SS316 12 in. PC valve is 110 CFM.

Table 4: Full shut-off (FS) Venturi valve flow rates

Unit size		Low pressure - 0.3 in. W.C.				Medium pressure 0.6 in. W.C.			
		Minimum flow		Maximum flow		Minimum flow		Maximum flow	
		CFM	CMH	CFM	CMH	CFM	CMH	CFM	CMH
8 in.	1	0	0	400	680	0	0	600	1,019
10 in.	1	0	0	450	765	0	0	850	1,444
	2	0	0	900	1,529	0	0	1,700	2,888
	3	0	0	1,350	2,294	0	0	2,550	4,332
	4	0	0	1,800	3,058	0	0	3,400	5,777
	6	0	0	2,700	4,587	0	0	5,100	8,665
12 in.	1	0	0	750	1,274	0	0	1,100	1,869
	2	0	0	1,500	2,549	0	0	2,200	3,738
	3	0	0	2,250	3,823	0	0	4,400	7,476
	4	0	0	3,000	5,097	0	0	8,800	14,951
	6	0	0	4,500	7,646	0	0	17,600	29,903

Table 5: SS316 PC Venturi valve flow rates

Unit size		Low pressure 0.3 in. W.C.				Medium pressure 0.6 in. W.C.			
		Minimum flow		Maximum flow		Minimum flow		Maximum flow	
		CFM	CMH	CFM	CMH	CFM	CMH	CFM	CMH
8 in.	1	50	85	500	850	50	85	700	1,189
10 in.	1	50	85	550	934	50	85	1,000	1,699
	2	100	170	1,100	1,869	100	170	2,000	3,398
	3	159	255	1,650	2,803	150	255	3,000	5,097
	4	200	340	2,200	3,738	200	340	4,000	6,796
	6	300	510	3,300	5,607	300	510	6,000	10,194
12 in.	1	110	187	1,050	1,784	110	187	1,400	2,379
	2	220	374	2,100	3,568	220	374	2,800	4,757
	3	330	561	3,150	5,352	330	561	4,200	7,136
	4	440	748	4,200	7,136	440	748	5,600	9,514
	6	660	1,121	6,300	10,704	660	1,121	8,400	14,272

① Note:

- Full shutoff low pressure valves are not available in vertical upflow orientation.
- Vertical upflow low pressure valves maintain flow from 0.4 in. W.C. to 3 in. W.C.

Table 6: Triatek actuator options

Valve body diameter	Triatek SKU	Torque	Fail safe options
14 in.	SM060-TK7	70 in. lb. (5.6 Nm)	Fail safe through charged capacitor
8 in., 10 in., 12 in.	BM060-TK6	50 in. lb. (5.6 Nm)	Fail safe through charged capacitor
14 in.	SM00-TK7	70 in. lb. (8 Nm)	No fail safe. Fails in last position
8 in, 10 in., 12 in.	BM00-TK6	50 in. lb. (8 Nm)	No fail safe. Fails in last position

Ordering information

Table 7: Ordering guide

Feature	Code letter or number and description	Product code number example: VVN10HNFAFULU
Brand	VV = Triatek	VV
Ganged	N = Not ganged 2 = Dual 3 = Triple 4 = Quad 6 = Hexa F = Flanged	N
Size	08 = 8 in. 10 = 10 in. 12 = 12 in. 14 = 14 in.	10
Material	A = Aluminum H = Heresite S = SS316 K = Kynar	H
Insulation	N = No insulation I = Insulated	N
Actuator	CV = Constant volume FA = Fast acting SA = Special actuator	FA
Type	P = Partially closed F = Full shut-off	F
Airflow	H = Horizontal U = Upflow D = Downflow	U
Pressure	L = Low pressure 0.3 in. W.C. to 3 in. W.C. M = Medium pressure 0.6 in. W.C. to 3 in. W.C.	L
Linearization module	U = Universal Valve Module (UVM) N = None (CV valves only) M = BAC-MSTP+UVM I = BAC-IP+UVM	U

Note:

- You cannot gang flanged valves together.
- Contact Triatek Sales for Kynar valve requirements.
- When you order constant volume (CV) valves, include the required flow volume. Specify CFM for this purpose.
- Constant volume valves do not come with a UVM or any electronic components.
- 14 in. valves are not available in full shut-off (Type = F) or SS316 (Material = S) at this time.
- Low pressure (Pressure = L), full shutoff (Type = F) valves are not available in vertical upflow orientation (Airflow=U).
- Vertical upflow (Airflow = U) low pressure (Pressure = L) valves maintain flow from 0.4 in. W.C. to 3 in. W.C.

Technical specifications

Table 8: Technical specifications

Specification	Description
Aluminum shell thickness	14 gauge (0.0641 in.)
Stainless steel shell thickness	18 gauge (0.05 in.)
Air flow setpoint accuracy	± 5% or 10 CFM; whichever is greater
Internal assembly construction materials	Stainless steel shaft and struts with Teflon® PTFE bearings
Operating range	32°F to 150°F (0°C to 65°C) 10% to 90% non-condensing RH
Performance	• Pressure independent over a 0.3 in. W.C. to 3 in. W.C. for low pressure and 0.6 in. W. C. to 3 in. W.C. for medium pressure applications. • Volume control accurate to ±5% of airflow command signal. • No additional straight duct runs needed before or after valve. • Response time to change in command signal: <1 second. • Response time to change in duct static pressure: <1 second.

The performance specifications are nominal and conform to acceptable industry standard. For application at conditions beyond these specifications, consult your local Triatek representative. Air Distribution Technologies, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

Sound power data

Table 9: 8 inch

Airflow (CFM)	Pressure (inWC)	8in					
		Sound Power in dB ref 10 ⁻¹² Watts					
		Octave Band Center Frequency in Hz					
		125	250	500	1000	2000	4000
50	0.3	36	34	30	21	15	14
100		40	36	33	25	20	17
150		42	38	35	27	20	15
200		47	43	39	30	24	19
250		51	46	43	35	32	22
300		53	48	45	38	39	26
350		54	50	48	42	41	30
400		56	53	51	44	45	32
450		60	55	53	47	47	36
500		61	57	54	48	49	36
50	0.6	37	37	37	33	25	20
100		44	42	40	35	27	23
150		49	47	44	36	30	24
200		53	48	47	39	34	28
250		57	52	50	42	40	30
300		57	54	52	46	46	33
350		58	55	53	47	48	34
400		61	56	55	50	52	36
450		63	59	57	53	54	39
500		63	60	59	56	56	41
50	1.0	40	39	37	40	39	31
100		45	45	43	41	40	31
150		50	49	48	42	40	32
200		55	52	51	44	41	34
250		57	55	53	47	42	36
300		60	56	55	49	47	37
350		60	58	57	52	50	39
400		64	59	59	56	53	41
450		64	61	59	59	53	43
500		65	62	62	63	56	45
50	1.5	41	42	41	42	45	39
100		48	47	46	44	46	40
150		53	53	51	46	47	41
200		56	55	54	48	47	41
250		58	57	56	51	47	42
300		60	59	58	53	49	43
350		62	61	60	56	51	44
400		65	63	61	60	54	46
450	1.5	66	63	63	61	54	46
500		65	65	64	63	55	47
50	2.0	40	41	40	45	48	47
100		47	47	47	47	49	48
150		53	53	52	49	49	49
200		55	56	54	50	49	48
250		59	58	59	53	50	47
300		61	61	60	55	52	47
350		62	62	62	58	54	47
400		64	64	64	60	56	49
450		65	65	64	62	57	49
500		67	66	65	65	58	50
50	2.5	38	38	36	39	44	46
100		49	48	46	47	52	51
150		52	54	54	51	52	52
200		56	56	56	52	52	51
250		60	60	60	55	53	50
300		62	60	60	57	54	50
350		63	64	64	60	56	50
400		65	66	65	62	58	52
450		67	65	65	62	58	51
500		67	68	67	66	60	53
50	3.0	38	40	37	40	47	49
100		49	50	48	48	53	55
150		54	53	53	52	54	55
200		59	56	56	54	54	54
250		61	59	60	57	54	53
300		63	63	62	59	56	53
350		65	64	65	61	58	53
400		65	66	67	64	60	54
450		67	67	68	65	61	54
500		67	68	68	66	63	55

Table 10: 10 inch

Airflow (CFM)	Pressure (inWC)	10in					
		Sound Power in dB ref 10 ⁻¹² Watts					
		Octave Band Center Frequency in Hz					
		125	250	500	1000	2000	4000
100	0.3	37	34	30	21	15	13
150		39	37	32	24	18	14
200		42	38	35	28	21	16
250		46	42	38	31	24	18
300		49	43	39	33	27	18
350		47	46	43	37	35	21
400		50	46	44	40	38	23
450		52	49	50	45	44	32
500		53	49	49	45	44	32
100	0.6	42	40	39	36	26	20
150		46	44	41	36	28	22
200		48	46	43	37	32	25
250		50	46	43	38	32	25
300		42	40	39	36	26	20
350		46	44	41	36	28	22
400		48	46	43	37	32	25
450		50	46	43	38	32	25
500		52	49	47	41	35	28
100	1.0	42	43	40	41	39	29
150		45	45	43	43	40	31
200		48	47	45	43	40	32
250		50	49	47	44	40	32
300		42	43	40	41	39	29
350		45	45	43	43	40	31
400		48	47	45	43	40	32
450		50	49	47	44	40	32
500		54	51	48	44	41	34
100	1.5	43	42	42	44	46	38
150		47	48	46	46	47	40
200		50	50	49	47	46	40
250		51	52	50	47	45	40
300		43	42	42	44	46	38
350		47	48	46	46	47	40
400		50	50	49	47	46	40
450		51	52	50	47	45	40
500		54	55	52	48	46	40
100	2.0	42	42	42	44	49	46
150		48	48	48	48	50	48
200		52	52	50	49	50	48
250		51	53	50	49	49	48
300		42	42	42	44	49	46
350		48	48	48	48	50	48
400		52	52	50	49	50	48
450		51	53	50	49	49	48
500		57	56	53	51	49	47
100	2.5	41	42	41	45	50	50
150		47	49	48	48	53	52
200		52	52	51	50	53	52
250		51	54	52	50	52	51
300		41	42	41	45	50	50
350		47	49	48	48	53	52
400		52	52	51	50	53	52
450		51	54	52	50	52	51
500		55	55	53	52	52	50
100	3.0	39	43	41	46	51	53
150		49	50	49	49	55	55
200		51	52	52	51	54	55
250		51	55	53	52	54	54
300		39	43	41	46	51	53
350		49	50	49	49	55	55
400		51	52	52	51	54	55
450		51	55	53	52	54	54
500		55	56	55	53	54	54

Table 11: 12 inch

Airflow (CFM)	Pressure (inWC)	12in					
		Sound Power in dB ref 10 ⁻¹² Watts					
		Octave Band Center Frequency in Hz					
		125	250	500	1000	2000	4000
200	0.3	41	43	32	23	17	14
300		43	41	35	27	23	17
400		44	44	38	31	24	18
500		53	48	42	35	29	21
600		52	50	44	39	35	29
700		52	50	44	40	32	24
800		56	53	49	43	37	27
900		56	57	51	46	41	31
1000		59	58	51	48	45	35
200	0.6	45	47	39	34	29	23
300		50	49	42	38	33	28
400		54	51	43	39	33	28
500		55	52	48	43	37	31
600		45	47	39	34	29	23
700		50	49	42	38	33	28
800		54	51	43	39	33	28
900		55	52	48	43	37	31
1000		56	52	46	41	34	27
200	1.0	45	49	43	41	35	31
300		50	54	47	43	38	34
400		55	53	48	45	40	36
500		56	56	52	49	43	38
600		45	49	43	41	35	31
700		50	54	47	43	38	34
800		55	53	48	45	40	36
900		56	56	52	49	43	38
1000		56	57	53	51	44	39
200	1.5	46	50	47	46	45	37
300		52	55	50	48	45	40
400		55	59	52	50	46	41
500		57	60	54	53	48	43
600		46	50	47	46	45	37
700		52	55	50	48	45	40
800		55	59	52	50	46	41
900		57	60	54	53	48	43
1000		60	62	57	55	49	44
200	2.0	46	52	50	50	51	44
300		51	56	52	51	50	43
400		55	60	54	53	50	44
500		58	62	56	55	52	46
600		46	52	50	50	51	44
700		51	56	52	51	50	43
800		55	60	54	53	50	44
900		58	62	56	55	52	46
1000		61	63	59	57	53	47
200	2.5	47	53	49	52	53	50
300		51	56	53	53	53	49
400		54	59	55	55	54	49
500		57	61	57	57	54	49
600		47	53	49	52	53	50
700		51	56	53	53	53	49
800		54	59	55	55	54	49
900		57	61	57	57	54	49
1000		61	64	60	59	55	50
200	3.0	47	51	49	54	56	54
300		51	57	55	55	55	54
400		53	59	56	56	55	53
500		57	62	59	59	56	53
600		47	51	49	54	56	54
700		51	57	55	55	55	54
800		53	59	56	56	55	53
900		57	62	59	59	56	53
1000		58	64	61	60	57	52

Table 12: 14 inch

Airflow (CFM)	Pressure (inWC)	14in					
		Sound Power in dB ref 10 ⁻¹² Watts					
		Octave Band Center Frequency in Hz					
		125	250	500	1000	2000	4000
200	0.3	42	41	31	22	16	13
300		48	45	40	37	31	20
400		48	46	41	38	32	22
500		50	49	44	43	38	25
600		51	50	43	43	39	27
700		53	53	47	48	45	35
800		54	52	47	49	46	37
900		57	54	49	50	48	41
1000		55	55	50	50	49	43
1100		56	56	50	50	49	44
1200		57	58	51	52	50	45
1300		58	56	52	52	50	45
1400		58	58	53	54	51	47
200	0.6	43	47	40	35	27	21
300		53	53	47	44	38	30
400		53	51	46	44	37	30
500		57	53	48	47	41	34
600		53	54	49	47	43	35
700		55	55	50	49	44	37
800		55	55	52	51	46	40
900		59	56	53	53	48	42
1000		59	58	53	54	49	44
1100		59	58	55	56	49	46
1200		63	61	55	58	50	48
1300		63	62	56	59	50	48
1400		63	62	57	60	51	49
200	1.0	45	47	47	45	39	31
300		57	54	50	47	41	35
400		57	55	49	48	42	36
500		57	55	50	49	43	36
600		57	57	52	50	44	38
700		58	56	53	51	46	39
800		60	57	54	53	47	41
900		60	60	55	54	49	43
1000		61	61	57	56	50	46
1100		60	60	57	57	51	47
1200		66	63	59	61	52	49
1300		64	63	60	63	53	49
1400		66	67	61	64	53	50
200	1.5	50	49	51	50	49	40
300		57	61	53	52	47	41
400		60	61	53	52	47	41
500		60	62	54	54	48	42

600	1.5	59	60	54	54	49	42
700		61	61	56	56	50	43
800		61	63	56	57	51	45
900		63	62	59	59	53	47
1000		62	64	60	60	54	48
1100		64	64	61	61	55	49
1200	2.0	66	65	61	62	55	50
1300		64	65	61	63	56	50
1400		67	66	63	65	57	52
200		49	51	50	55	53	46
300		58	62	55	55	50	45
400		58	62	55	55	50	44
500	2.5	60	63	56	56	51	45
600		62	63	56	57	52	45
700		62	65	58	57	52	45
800		63	63	58	60	55	47
900		65	64	60	61	56	49
1000		65	65	61	61	56	50
1100	3.0	66	66	62	63	58	50
1200		67	67	64	64	59	52
1300		65	66	63	65	59	52
1400		67	69	65	66	60	53
200		50	51	50	57	56	51
300		60	62	57	57	52	48
400	3.0	60	63	57	57	53	48
500		61	63	58	58	54	48
600		62	63	59	59	55	48
700		60	65	60	60	55	48
800		66	66	60	62	56	50
900		65	65	61	63	58	51
1000	3.0	66	66	62	65	59	51
1100		66	67	63	65	60	52
1200		69	67	63	66	60	53
1300		69	68	64	67	61	54
1400		71	70	66	67	63	55
200	3.0	49	51	51	59	59	56
300		60	62	59	58	54	51
400		60	63	58	59	55	51
500		60	63	60	60	56	51
600		63	65	60	60	56	51
700		63	67	61	63	57	51
800	3.0	64	67	62	63	59	52
900		66	68	63	64	59	52
1000		65	67	63	66	60	53
1100		67	68	64	66	61	54
1200		67	70	64	67	62	55
1300		69	70	66	68	63	56
1400	3.0	70	71	67	69	64	56

Table 13: 2x12 inch

Actual Airflow	Actual DSP	2x12in					
		Sound Power Levels in dB ref 10 ⁻¹² Watts					
		Octave Band Center Frequency in Hz					
cfm	in wc	125	250	500	1000	2000	4000
175	0.177	44	37	29	22	22	27
202	0.235	49	39	33	24	22	27
600	0.301	54	44	43	37	30	30
1015	0.293	54	48	48	42	34	33
1399	0.31	59	52	51	46	39	35
1815	0.294	61	56	55	52	48	38
2201	0.338	65	61	59	56	49	43
2607	0.483	69	66	64	62	57	52
3001	0.683	72	68	68	67	63	59
180	0.185	48	37	29	22	21	26
202	0.233	46	39	32	24	22	27
616	0.601	57	50	50	46	39	37
1013	0.606	60	54	55	51	44	41
1428	0.613	64	58	58	54	47	43
1815	0.629	67	61	61	57	50	45
2212	0.59	69	63	62	60	54	48
2593	0.607	70	65	65	63	59	55
3006	0.671	72	68	68	67	63	59
180	0.202	49	37	30	22	20	26
205	0.245	47	39	34	24	22	26
603	1.021	58	55	55	53	45	42
997	0.996	64	58	59	57	50	47
1409	1.02	68	62	63	61	54	50
1828	1	71	65	65	63	56	51
2199	1.041	74	68	67	66	58	53
2611	0.986	75	69	69	68	59	55
3012	1.016	76	71	70	70	62	59
181	0.235	47	39	33	23	21	26
207	0.309	47	41	38	27	22	26
604	1.507	59	58	58	57	51	46
1018	1.501	66	63	62	62	56	51
1419	1.508	71	66	66	66	59	55

1821	1.507	73	68	68	68	61	56
2208	1.528	76	71	70	70	63	58
2597	1.529	78	72	72	72	64	59
3015	1.521	80	74	74	75	66	61
182	0.209	49	38	31	23	21	26
200	0.256	48	40	34	25	21	26
591	2.017	60	59	60	60	55	50
1008	2.029	66	66	65	65	60	55
1431	1.994	72	69	68	69	63	58
1811	2.012	74	71	70	71	65	60
2197	2.027	77	73	72	74	67	62
2627	1.993	80	75	74	76	68	63
2998	2.018	82	77	76	78	70	65
183	0.207	51	38	31	23	21	26
206	0.265	50	40	35	25	22	26
593	2.539	61	60	62	62	58	54
1017	2.505	67	67	67	68	62	58
1396	2.525	72	71	69	71	66	61
1783	2.564	75	73	72	74	68	63
2209	2.565	78	75	74	76	70	65
2624	2.499	80	76	76	78	72	66
2998	2.484	82	78	77	80	73	67
181	0.188	47	37	29	22	21	26
202	0.25	48	40	34	24	21	26
599	3.016	62	61	63	64	60	57
994	3.037	67	68	68	69	65	60
1387	3.023	72	72	71	73	68	63
1797	3.008	76	75	73	76	71	65
2200	3.001	79	76	75	78	72	67
2642	2.95	81	78	77	80	74	69
2973	3.047	84	80	79	82	75	70

Table 14: 3x12 inch

Actual Airflow	Actual DSP	3x12in					
		Sound Power Levels in dB ref 10^-12 Watts					
		Octave Band Center Frequency in Hz					
cfm	in wc	125	250	500	1000	2000	4000
271	0.176	47	37	29	23	21	26
509	0.304	50	42	40	33	28	27
1006	0.303	54	47	46	41	34	32
1517	0.294	59	52	51	46	38	34
2004	0.304	64	57	55	50	44	38
2517	0.308	67	61	58	55	50	43
3010	0.286	69	64	62	59	56	49
3510	0.307	72	67	65	63	59	54
3997	0.296	75	69	67	66	61	57
273	0.207	49	50	34	24	21	26
508	0.615	51	48	47	43	34	32
1008	0.611	60	53	53	49	42	39
1498	0.61	63	57	57	53	46	42
2001	0.598	68	61	60	56	49	44
2611	0.63	72	65	64	60	54	48
3023	0.594	74	67	66	63	57	51
3513	0.631	75	69	68	66	61	55
4008	0.588	78	72	70	69	63	59
269	0.193	48	42	30	23	21	26
495	1.013	53	51	52	50	43	38
1016	1.018	61	57	57	55	48	44
1495	1.007	66	60	61	59	52	47
2023	1.034	70	64	64	62	55	50
2525	1.023	74	67	67	65	58	52
2987	1.061	77	70	69	68	60	55
3510	1.013	79	73	71	70	62	58
4011	1.015	81	75	74	73	65	61
269	0.173	47	37	29	22	21	26
515	1.503	55	52	55	54	50	44
1025	1.507	61	61	60	59	53	48
1497	1.516	67	64	64	64	57	52
2021	1.501	71	67	67	67	60	55
2495	1.551	74	70	70	70	63	57
2981	1.588	78	73	72	72	65	59
3490	1.545	80	75	74	74	66	61
4018	1.587	83	77	76	77	68	63
277	0.212	48	47	33	24	22	27
494	2.071	56	54	56	57	55	50
1008	2.025	62	63	62	63	57	52
1504	2.01	68	67	66	67	61	55
2003	2.013	72	70	69	70	64	58
2518	2.018	75	72	72	73	67	60
2973	2.06	78	74	74	75	69	62
3510	2.052	81	77	76	77	70	64
3983	2.05	84	79	78	79	71	66
274	0.192	51	39	30	24	21	26
509	2.549	57	55	57	59	58	55
1033	2.582	63	63	64	65	60	55
1508	2.586	68	69	68	69	64	58
2052	2.482	72	72	71	72	67	61
2535	2.499	76	74	73	75	69	63
3012	2.613	78	76	75	77	72	65
3539	2.446	82	78	77	79	73	66
4016	2.587	84	81	79	82	75	68
276	0.221	52	43	33	25	22	26
487	3.057	56	56	58	60	60	59
1061	3.025	64	65	66	67	62	58
1488	3.031	68	69	69	71	66	60
2001	2.99	72	73	72	74	69	63
2510	3.052	76	75	75	77	72	65
3013	3.032	79	77	77	79	74	67
3479	3.082	82	79	78	81	75	69
3963	3.099	84	81	80	83	77	70

Table 15: 4x12 inch

Actual Airflow	Actual DSP	4x12in					
		Sound Power Levels in dB ref 10 ⁻¹² Watts					
		Octave Band Center Frequency in Hz					
cfm	in wc	125	250	500	1000	2000	4000
369	-0.005	48	27	22	20	20	26
503	0.276	50	40	37	30	24	26
1008	0.303	53	44	44	38	31	29
1511	0.299	56	48	48	43	36	32
2008	0.314	61	52	52	47	39	36
2512	0.286	63	55	54	50	43	37
3016	0.31	66	59	58	54	48	42
3518	0.308	69	62	60	57	52	45
4025	0.297	72	64	63	61	56	50
364	0.198	49	37	31	23	21	26
525	0.456	51	45	44	37	28	28
1020	0.603	58	50	50	47	39	35
1523	0.602	62	53	54	52	44	40
2027	0.6	64	57	57	55	47	43
2489	0.707	68	60	61	59	51	46
3042	0.556	70	62	62	60	52	47
3480	0.668	73	65	65	63	56	50
4052	0.617	76	67	67	66	59	53
367	0.233	49	40	34	26	22	26
501	0.445	51	45	44	36	28	28
1004	1.045	59	55	55	54	46	42
1535	0.985	65	58	59	58	50	46
2024	1.001	68	60	62	61	53	49
2530	1.032	70	63	64	64	56	51
2972	1.109	73	66	67	67	59	54
3493	1.052	76	68	68	68	60	55
4049	1.036	78	70	70	70	62	57
366	0.249	48	40	35	26	21	26
508	1.576	54	50	54	54	53	47
1079	1.51	60	58	59	59	52	47
1491	1.553	65	62	62	62	56	50
1999	1.536	69	64	65	65	59	53
2553	1.51	72	67	67	68	61	56
3001	1.561	74	69	69	70	64	58
3488	1.561	77	70	71	72	65	59
3992	1.578	79	72	73	74	67	61
366	0.246	50	41	35	25	22	26
501	2.015	55	51	54	56	57	52
1037	2.05	61	59	61	62	56	51
1496	2.007	65	64	64	65	59	53
2027	2.037	70	67	67	69	62	57
2550	2.024	72	69	69	71	65	59
3035	2.015	75	71	71	73	67	61
3499	2.047	77	72	73	75	69	63
3958	2.137	79	74	75	77	71	65
360	0.209	48	38	32	24	21	26
511	2.503	55	52	55	58	59	58
1012	2.506	61	59	62	63	59	55
1510	2.505	66	65	66	67	62	56
1991	2.531	70	68	69	71	65	59
2517	2.485	73	71	71	73	68	61
3000	2.59	75	73	73	75	70	64
3503	2.56	78	74	74	77	72	65
3947	2.521	80	76	76	79	73	67
364	0.205	48	38	31	24	21	26
500	3.031	55	52	55	59	60	62
990	3.031	62	60	63	65	61	58
1502	3.046	66	65	67	69	64	59
1983	3.036	70	69	70	72	67	61
2500	3.016	73	72	72	75	70	64
3027	2.992	76	74	74	77	72	66
3521	3.003	78	75	76	79	74	68
3969	3.1	80	77	77	81	75	69

North American Emissions Compliance

United States

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case users will be required to correct the interference at their own expense.

Canada

This Class (A) digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe (A) respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Contact Information

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