The radiated and discharge sound power levels of each unit at varying air flow rates and inlet static pressures are shown in the performance data tables. Disregarding other factors and/or equipment that could contribute to the resultant sound levels in the occupied space, these ratings along with the acoustical environment in which the unit operates will determine the perceived sound level.

Sound generated within the terminal and emitted through the discharged air (Discharge Sound) will be attenuated by any ductwork downstream of the terminal. The sound emitted through the casing of the terminal (Radiated Sound) will be attenuated by the room's ceiling. Depending on the application, the radiated and/or discharge sound levels will determine the perceived resultant sound level in the occupied space. The occupied space itself will provide further attenuation depending on the acoustical characteristics of the walls, ceiling, floors, and internal furnishings.

All manufacturers make certain assumptions about the acoustical environment in which the air terminal is installed and then apply these conditions to the terminal's Sound Power (Lw) ratings to determine the resultant Sound Pressures (Lp) and perceived sound levels in the occupied space. While the AHRI certified Sound Power ratings can accurately be compared from one manufacturer to another at only one air flow rate and inlet pressure, the Noise Criteria (NC) values predicted will be dependent upon the acoustical assumptions made.

When selecting terminals, check the attenuation assumptions before comparing or selecting based on Noise Criteria (NC) values. AHRI Standard 885 "*Procedure for Estimating Occupied Space Sound Levels in the Application of Air Terminals and Air Outlets*" , Appendix E attenuation assumptions are used when estimating the NC levels. The attenuation assumptions from Appendix E in this standard are shown in Table 2.

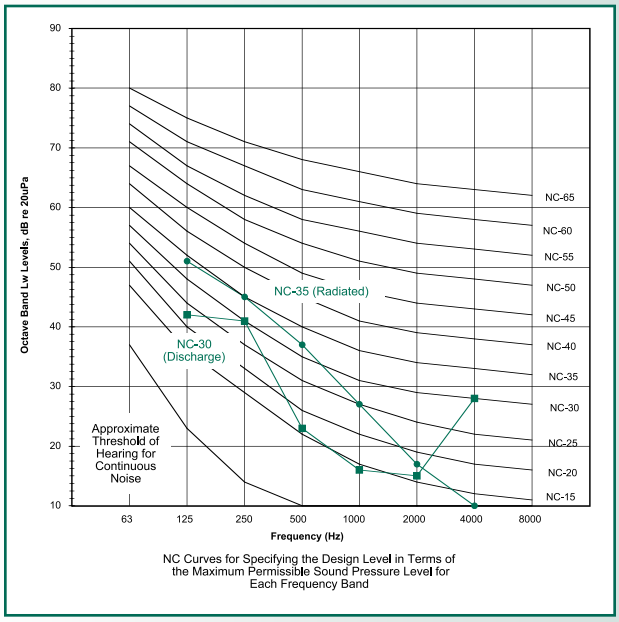
Anemostat's ***FLO*** software allows the user to make changes to the assumptions used in calculating room sound pressure levels.

Table 3: Typical NC Design Values

Occupancy	NC
Hotel Rooms	25 - 35
Conference Rooms	25 - 35
Open Plan Offices	<40
Classrooms	25 - 35
Churches	25 - 35
Hospital Wards	30 - 40
Gymnasiums	40 - 50
Libraries	30 - 40
Courtrooms, Unamplified	25 - 35

The NC curves are intended to reflect a human's percieved noise comfort. Plotting the anticipated sound pressure by octave band and determining the tangent NC curve reached throughout all octave bands (using the acoustical assumptions) will indicate the estimated NC value in the space

Example of NC Curve Plot



NC Curves for Specifying the Design Level in Terms of the Maximum Permissible Sound Pressure Level for Each Frequency Band

Model EST-7512 • 1800 CFM • 1" Inlet Ps • .25" DSP

	Octave Band Mid-Frequency, Hz					
	125	250	500	1K	2K	4K
Octave Band	2	3	4	5	6	7
Radiated Sound Power, dB	69	64	57	53	48	46
AHRI 885 Attenuation, dB	-18	-19	-20	-26	-31	-36
Plot Sound Pressure, dB	51	45	37	27	17	10
Radiated Noise Criteria (NC)	34	35	32	25	17	-
Discharge Sound Power, dB	71	71	64	67	67	67
AHRI 885 Attenuation, dB	-29	-30	-41	-51	-52	-39
Plot Sound Pressure, dB	42	41	23	16	15	28
Discharge Noise Criteria (NC)	22	30	16	-	-	30

Notes:
1. Size EST-7512 (see tables 39 and 40)
2. Radiated sound in the 250 Hz (third octave) is the controlling band

Table 2: AHRI Attenuation Table

	Octave Band Mid-Frequency, Hz					
	125	250	500	1K	2K	4K
	2	3	4	5	6	7
Radiated Sound Path (Type 2: Mineral Fiber Tile, 10 lbs/ft3)	18	19	20	26	31	36
Discharge Sound Path (<300 CFM)	24	28	39	53	59	40
Discharge Sound Path (300-700 CFM)	27	29	40	51	53	39
Discharge Sound Path (>700 CFM)	29	30	41	51	52	39

Sound Performance

An important consideration in building design is the acoustics. Like room temperature, humidity, and air speed, acoustics effect the overall comfort of occupants within a space. Fan terminals located in the ceiling produce sound. Table 38 represents the estimation of occupied space sound levels yielding Noise Criteria (NC) values in accordance with AHRI Standard 885 "*Procedure for Estimating Occupied Space Sound Levels in the Application of Air Terminals and Air Outlets*". These are predictions based on one acoustical model as describe in Appendix E of this standard entitled "*Typical Sound Attenuation Values - Normative*" and are listed in Table 2. This data is not a substitute for an acoustical analysis or room mock-up of each specific installation, but is presented based on what might be considered a typical installation. See AHRI Standard 885 for accuracy of predictions using this method.

Table 2: AHRI Attenuation Table

		Octave Band Mid-Frequency, Hz					
		125	250	500	1K	2K	4K
	Octave Band	2	3	4	5	6	7
Radiated Sound Path (All Sizes)	Environmental Effect	-2	-1	0	0	0	0
	Type 2: Mineral Fiber Tile, 10 lbs/ft3)	-16	-18	-20	-26	-31	-36
	Total dB Attenuation / Reduction	-18	-19	-20	-26	-31	-36
Discharge Sound Path (<300 CFM) Small VAV Box	Environmental Effect	-2	-1	0	0	0	0
	Discharge Duct 5' Lined	-2	-6	-12	-25	-29	-18
	End Reflection	-10	-5	-2	-1	0	0
	Flex Duct 5'	-5	-10	-18	-19	-21	-12
	Space Effect	-5	-6	-7	-8	-9	-10
	Sound Power Division	0	0	0	0	0	0
	Total dB Attenuation / Reduction	-24	-28	-39	-53	-59	-40
Discharge Sound Path (300-700 CFM) Medium VAV Box	Environmental Effect	-2	-1	0	0	0	0
	Discharge Duct 5' Lined	-2	-4	-10	-20	-20	-14
	End Reflection	-10	-5	-2	-1	0	0
	Flex Duct 5'	-5	-10	-18	-19	-21	-12
	Space Effect	-5	-6	-7	-8	-9	-10
	Sound Power Division	-3	-3	-3	-3	-3	-3
	Total dB Attenuation / Reduction	-27	-29	-40	-51	-53	-39
Discharge Sound Path (>700 CFM) Large VAV Box	Environmental Effect	-2	-1	0	0	0	0
	Discharge Duct 5' Lined	-2	-3	-9	-18	-17	-12
	End Reflection	-10	-5	-2	-1	0	0
	Flex Duct 5'	-5	-10	-18	-19	-21	-12
	Space Effect	-5	-6	-7	-8	-9	-10
	Sound Power Division	-5	-5	-5	-5	-5	-5
	Total dB Attenuation / Reduction	-29	-30	-41	-51	-52	-39

Notes:

1. NC values are calculated based on procedures outlined in AHRI standard 885, appendix E as shown in table 2 above
2. Min. ΔPs is the static pressure drop through the primary air valve at which a given air flow can be maintained with the damper set in full open position
3. All static pressures are measured in inches w.g.
4. All data represents conditions @ 0.25 inches w.g. downstream / external static pressure

Table 38: NC Values & Min. Static

Cabinet Size	Inlet Size	Fan CFM	Min ΔPs	RADIATED				DISCHARGE
				Fan Only	Primary Inlet Static Pressure			Fan Only
					.50"	1"	2"	
17	05	100	.02	<20	<20	<20	22	<20
		150	.04	<20	<20	<20	24	<20
		200	.07	<20	<20	22	26	20
		250	.11	<20	<20	24	27	21
		300	.15	20	20	25	28	<20
	06	100	.03	<20	<20	<20	21	<20
		200	.10	<20	<20	22	26	20
		300	.11	20	20	25	28	<20
		400	.18	25	25	28	33	29
		500	.27	27	27	31	35	31
	07	100	.02	<20	<20	<20	21	<20
		200	.06	<20	<20	<20	23	20
		250	.10	<20	<20	21	24	21
		350	.10	22	24	25	28	23
		450	.11	26	27	29	32	30
		500	.13	27	30	32	34	31
	08	100	.01	<20	<20	<20	22	<20
		200	.03	<20	<20	20	23	20
		300	.07	20	21	24	26	<20
		350	.10	22	24	26	28	23
		450	.10	26	27	30	32	30
		500	.10	27	30	32	34	31
33	05	200	.07	<20	<20	<20	<20	<20
		250	.11	<20	<20	<20	<20	<20
		300	.15	<20	<20	<20	<20	<20
	06	200	.10	<20	<20	<20	<20	<20
		300	.11	<20	<20	<20	21	<20
		400	.18	<20	<20	<20	25	<20
		450	.22	<20	<20	20	27	<20
		500	.27	<20	<20	21	28	<20
	07	250	.10	<20	<20	<20	<20	<20
		350	.10	<20	<20	<20	21	<20
		450	.11	<20	<20	<20	25	<20
		550	.15	21	<20	22	28	<20
		650	.21	24	22	26	31	<20
		700	.24	25	24	27	33	<20
	08	400	.04	<20	<20	22	27	<20
		500	.07	<20	21	25	28	<20
		600	.10	24	22	26	31	<20
		700	.13	25	24	27	33	<20
		800	.16	26	25	28	34	<20
		900	.20	27	27	31	37	<20
	09	500	.07	<20	21	24	29	<20
		550	.08	21	22	25	31	<20
		600	.10	24	24	26	32	<20
		800	.14	26	29	31	35	<20
		900	.17	27	31	34	38	<20
		1000	.22	28	32	35	39	<20
		1100	.25	31	33	38	40	<20
	10	500	.07	<20	24	25	29	<20
		550	.08	21	25	26	31	<20
		600	.10	24	26	27	31	<20
		800	.10	26	28	31	35	<20
		1000	.14	28	31	34	38	<20
		1100	.17	31	32	37	39	<20

Table 38: NC Values & Min. Static

Cabinet Size	Inlet Size	Fan CFM	Min ΔPs	RADIATED				DISCHARGE
				Fan Only	Primary Inlet Static Pressure			Fan Only
					.50"	1"	2"	
50	08	500	.06	<20	20	25	31	<20
		600	.09	20	22	26	32	<20
		700	.11	21	24	27	32	20
		800	.14	22	26	29	34	21
		900	.19	25	27	30	35	22
	09	600	.10	20	22	26	32	<20
		700	.12	21	24	27	32	20
		800	.14	22	26	29	34	21
		900	.17	25	27	30	35	22
		1000	.22	27	28	31	35	25
		1100	.25	28	31	33	36	26
	10	600	.04	20	22	26	32	<20
		800	.06	22	26	29	34	21
		1000	.10	27	28	31	35	25
		1100	.11	28	31	33	36	26
		1200	.13	28	33	34	38	27
		1300	.14	29	35	37	39	28
		1400	.16	31	37	38	40	29
	12	600	.04	20	22	25	31	<20
		800	.06	22	26	27	33	21
		1000	.10	27	29	31	35	25
		1200	.11	28	32	34	38	27
		1400	.14	31	37	37	40	29
		1600	.17	35	40	40	41	33
	14	700	.04	21	24	26	33	20
		800	.05	22	26	28	34	21
		1000	.08	27	29	31	37	25
		1100	.10	28	31	33	38	26
		1300	.12	29	34	35	40	28
		1600	.18	35	39	40	44	33
75	09	700	.12	<20	<20	20	31	<20
		800	.14	<20	<20	21	31	<20
		900	.17	21	21	22	32	<20
		1000	.22	22	22	23	32	<20
		1100	.25	23	23	25	33	<20
	10	800	.08	<20	<20	21	31	<20
		1000	.10	22	22	23	32	<20
		1200	.13	23	24	26	33	20
		1400	.16	27	27	28	34	24
		1600	.21	29	31	31	35	27
	12	800	.04	<20	<20	21	31	<20
		1000	.07	22	22	23	32	<20
		1200	.10	23	24	26	33	20
		1400	.11	27	27	28	34	24
		1600	.13	29	31	31	35	27
		1800	.17	32	33	34	37	31
		2000	.20	34	37	37	38	32
	14	800	.04	<20	20	24	31	<20
		1000	.07	22	22	26	32	<20
		1200	.10	23	24	27	33	20
		1400	.11	27	26	30	35	24
		1700	.15	30	31	32	38	30
		2000	.20	34	35	35	40	32

Cabinet Size	Inlet Size	Fan CFM	Min ΔPs	RADIATED				DISCHARGE
				Fan Only	Primary Inlet Static Pressure			Fan Only
					.50"	1"	2"	
10	10	800	.08	23	22	26	31	<20
		1000	.10	25	25	27	32	<20
		1200	.13	27	26	30	33	<20
		1400	.16	30	29	31	34	22
		1600	.19	32	32	34	37	25
	12	800	.04	23	22	26	31	<20
		1000	.05	25	25	27	32	<20
		1200	.08	27	26	30	33	<20
		1400	.11	30	29	31	34	22
		1600	.14	32	32	34	37	25
		1700	.15	32	32	34	38	27
		1800	.17	34	34	34	38	28
	14	1000	.05	25	25	29	32	<20
		1400	.11	30	30	32	34	22
		1600	.14	32	32	35	37	25
		1900	.18	35	36	36	38	30
		2100	.21	36	38	38	39	32
		2300	.25	39	40	40	41	34
		2400	.26	39	41	41	43	35
	16	1200	.08	27	29	29	30	<20
		1400	.10	30	31	31	32	22
		1600	.13	32	32	32	34	25
		1700	.15	32	34	34	35	27
		1800	.17	34	35	35	36	28
		2000	.20	35	36	36	38	31
		2200	.24	38	38	38	39	33
		2400	.27	39	39	39	40	35
20	14	2000	.18	32	34	40	44	23
		2100	.20	33	35	41	44	24
		2150	.21	34	35	41	45	25
		2200	.22	34	35	41	45	25
		2250	.23	34	36	42	46	26
		2300	.24	35	37	43	46	26
		2350	.25	35	37	43	47	27
		2400	.26	36	38	44	47	27
	16	2000	.14	32	33	39	42	23
		2200	.17	34	34	40	44	25
		2400	.20	36	36	42	46	27
		2600	.24	38	38	44	48	29
		2800	.28	39	40	46	50	31
		3000	.32	41	42	48	52	33
		3200	.36	43	44	50	54	35
		3400	.41	45	45	52	56	37

Notes:

1. NC values are calculated based on procedures outlined in AHRI standard 885, appendix E as shown in table 2 above
2. Min. ΔPs is the static pressure drop through the primary air valve at which a given air flow can be maintained with the damper set in full open position
3. All static pressures are measured in inches w.g.
4. All data represents conditions @ 0.25 inches w.g. downstream / external static pressure

Table 39: Radiated Fan + Primary Sound Power Data (dB)

				Radiated Sound Power Levels (dB re: 10-12 watts) FAN = PRIMARY CFM																			
Unit Size	Inlet Size	Fan CFM	Min ΔPs	.50" Inlet Ps							1" Inlet Ps							2" Inlet Ps						
				2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
17	05	100	.02	51	47	39	33	31	27	<20	54	51	42	36	36	34	<20	57	54	46	41	43	40	22
		150	.04	53	48	40	34	32	28	<20	55	53	44	38	37	34	<20	58	55	48	42	44	40	24
		200	.07	55	50	42	36	33	29	<20	57	54	45	39	38	35	22	60	57	49	43	44	41	26
		250	.11	56	51	43	37	34	30	<20	58	55	46	40	39	36	24	61	58	50	44	44,5	42	27
		300	.15	57	52	44	38	35	31	20	59	56	47	41	40	37	25	62	59	51	45	45	43	28
	06	100	.03	50	46	38	32	30	25	<20	53	50	42	36	36	33	<20	56	53	46	41	42	39	21
		200	.10	55	50	42	36	33	29	<20	57	54	45	39	38	35	22	60	57	49	43	44	41	26
		300	.11	57	52	44	38	35	31	20	59	56	47	41	40	37	25	62	59	51	45	45	43	28
		400	.18	62	56	48	42	37	33	25	63	59	50	44	42	38	28	66	63	54	47	46	44	33
		500	.27	64	58	50	44	39	35	27	65	61	52	46	44	39	31	68	65	56	49	46	45	35
	07	100	.02	49	45	39	33	29	25	<20	50	47	42	38	36	33	<20	53	50	47	48	46	44	21
		200	.06	53	49	42	36	32	28	<20	54	51	45	40	38	35	<20	56	53	49	49	47	45	23
		250	.10	55	51	44	37	34	30	<20	56	53	46	41	39	36	21	58	55	50	50	48	46	24
		350	.10	60	55	47	41	37	33	24	61	56	49	45	42	39	25	62	59	52	51	49	48	28
		450	.11	64	58	49	43	40	36	27	65	60	51	47	44	42	29	66	62	54	52	50	49	32
		500	.13	66	60	51	45	42	38	30	67	62	52	48	45	43	32	68	64	55	53	51	50	34
	08	100	.01	52	45	41	33	29	27	<20	54	49	42	37	35	33	<20	55	51	48	40	40	39	22
		200	.03	55	49	43	35	32	29	<20	57	52	44	39	37	35	20	58	54	49	42	42	41	23
		300	.07	59	53	45	38	35	31	21	61	55	46	41	39	37	24	62	57	51	44	44	43	26
		350	.10	61	55	46	40	36	32	24	62	57	48	42	41	38	26	63	59	52	45	45	44	28
		450	.10	64	58	48	42	39	34	27	66	60	49	44	42	40	30	67	62	53	47	46	46	32
		500	.10	66	60	49	43	40	35	30	68	62	50	45	43	41	32	69	64	54	48	47	47	34
33	05	200	.07	43	42	35	31	26	23	<20	45	46	38	34	31	29	<20	48	49	42	38	37	35	<20
		250	.11	44	43	36	32	27	24	<20	46	47	39	35	32	30	<20	49	50	43	39	38	36	<20
		300	.15	45	43	37	33	28	25	<20	47	47	40	36	33	31	<20	50	50	44	40	38	37	<20
	06	200	.10	43	39	29	26	23	19	<20	48	45	35	29	29	29	<20	52	51	42	32	36	35	<20
		300	.11	45	42	31	28	24	21	<20	50	47	37	31	31	31	<20	54	53	45	34	37	37	21
		400	.18	50	45	35	32	27	23	<20	54	50	40	34	33	32	<20	58	56	47	36	38	38	25
		450	.22	51	47	36	33	29	25	<20	55	52	41	35	34	33	20	59	58	49	37	39	39	27
		500	.27	53	48	37	35	31	28	<20	57	53	42	36	35	35	21	60	59	50	38	40	40	28
	07	250	.10	43	40	31	27	24	20	<20	47	44	36	31	30	30	<20	50	49	43	39	40	40	<20
		350	.10	47	44	34	31	27	23	<20	51	47	38	35	33	34	<20	54	53	46	40	42	42	21
		450	.11	51	47	36	34	29	26	<20	55	51	41	37	36	36	<20	58	56	48	41	42	43	25
		550	.15	55	51	39	36	32	29	<20	59	54	43	39	38	38	22	62	59	49	42	43	44	28
		650	.21	58	54	42	39	35	31	22	62	57	45	41	39	39	26	64	61	51	43	44	44	31
		700	.24	60	55	43	40	36	32	24	64	58	46	42	40	40	27	66	63	52	43	44	45	33
	08	400	.04	53	51	39	36	32	29	<20	59	54	44	40	37	37	22	61	58	49	44	43	43	27
		500	.07	55	53	41	38	34	31	21	60	56	45	42	38	38	25	62	59	50	45	44	44	28
		600	.10	57	54	44	40	36	33	22	61	57	47	43	40	39	26	64	61	52	46	45	45	31
		700	.13	59	55	46	42	38	35	24	63	58	49	44	42	41	27	66	63	54	48	47	47	33
		800	.16	61	56	48	44	40	37	25	64	59	50	45	43	42	28	67	64	55	49	48	48	34
		900	.20	63	58	51	46	42	39	27	65	61	52	47	45	43	31	69	66	57	50	49	49	37
	09	500	.07	59	53	43	39	35	27	21	59	55	45	43	41	34	24	62	60	50	48	47	43	29
		550	.08	60	54	44	40	36	28	22	60	56	46	44	42	35	25	63	61	51	49	48	44	31
		600	.10	59	55	45	41	37	30	24	61	57	47	45	43	37	26	64	62	52	50	49	45	32
		800	.14	65	59	49	45	41	34	29	66	61	51	48	45	39	31	68	65	55	52	51	46	35
		900	.17	66	61	51	48	43	37	31	68	64	52	49	47	41	34	70	67	56	53	52	47	38
		1000	.22	66	62	52	49	45	40	32	69	65	54	51	48	43	35	71	68	57	54	53	49	39
		1100	.25	66	63	54	50	48	42	33	71	67	56	52	50	45	38	73	69	58	55	54	50	40
	10	500	.07	57	55	43	38	33	28	24	58	56	46	43	40	36	25	60	60	51	49	47	44	29
		550	.08	58	56	44	39	34	29	25	59	57	47	44	41	37	26	61	61	52	49	48	45	31
		600	.10	59	57	45	40	36	30	26	61	58	48	45	42	38	27	62	61	53	50	49	46	31
		800	.10	63	59	48	44	39	34	28	64	61	50	47	44	40	31	66	65	55	52	50	48	35
		1000	.14	66	61	52	48	44	39	31	68	64	53	48	47	43	34	70	67	57	53	52	50	38
		1100	.17	67	62	54	49	46	41	32	70	66	55	50	48	44	37	71	68	58	54	53	51	39
50	08	500	.06	57	52	45	43	35	33	20	62	55	47	43	40	41	25	67	59	53	47	47	48	31
		600	.09	59	54	47	44	37	34	22	63	56	49	44	41	41	26	68	60	54	48	48	48	32
		700	.11	60	55	48	45	38	36	24	64	57	50	45	42	42	27	68	61	55	49	48	49	32
		800	.14	62	57	50	46	39	37	26	65	59	51	46	43	43	29	69	62	56	50	49	49	34
		900	.19	63	58	51	47	41	38	27	66	60	53	47	44	44	30	70	63	57	51	49	50	35
	09	600	.10	59	54	47	44	37	34	22	63	56	49	44	41	41	26	68	60	54	48	48	48	32
		700	.12	60	55	48	45	38	36	24	64	57	50	45	42	42	27	68	61	55	49	48	49	32
		800	.14	62	57	50	46	39	37	26	65	59	51	46	43	43	29	69	62	56	50	49	49	34
		900	.17	63	58	51	47	41	38	27	66	60	53	47	44	44	30	70	63	57	51	49	50	35
		1000	.22	64	59	52	47	42	39	28	67	61	54	48	45	44	31	70	64	58	52	50	50	35
		1100	.25	66	61	54	49	43	40	31	68	63	55	50	46	45	33	71	65	59	53	51	51	36
	10	600	.04	59	54	47	44	37	34	22	63	56	49	44	41	41	26	68	60	54	48	48	48	32
		800	.06	62	57	50	46	39	37	26	65	59	51	46	43	43	29	69	62	56	50	49	49	34
		1000	.10	64	59	52	47	42	39	28	67	61	54	48	45	44	31	70	64	58	52	50	50	35
		1100	.11	66	61	54	49	43	40	31	68	63	55	50	46	45	33	71	65	59	53	51	51	36
		1200	.13	67	63	55	51	44	42	33	69	64	56	51	47	46	34	72	67	60	54	51	51	38
		1300	.14	69	65	57	52	46	43	35	70	66	58	52	48	47	37	73	68	61	55	52	52	39
		1400	.16	71	66	59	53	47	45	37	72	67	59	53	49	48	38	73	69	62	55	52	52	40
	12	600	.04	59	54	47	42	35	30	22	60	55	51	45	40	39	25	62	61	55	49	47	48	31
		800	.06	62	57	50	45	38	34	26	63	58	53	47	42	41	27	64	63	57	51	48	49	33
		1000	.10	65	60	52	47	41	37	29	66	61	55	49	45	43	31	67	65	59	53	50	50	35
		1200	.11	66	62	55	50	44	40	32	67	64	57	51	46	45	34	68	67	60	54	51	51	38
		1400	.14	70	66	58	52	46	43	37	70	66	59	53	48	46	37	70	69	62	56	52	51	40
		1600	.17	72	69	60	54	49	46	40	72	69	61	55	50	48	40	73	70	63	57	53	52	41
	14	700	.04	59	55	50	45	36	32	24	63	57	51	46	40	39	26	65	63	55	48	45	45	33
		800	.05	61	57	51	46	38	34	26	64	59	52	47	41	40	28	66	64	56	49	46	46	34
		1000	.08	63	60	53	48	40	37	29	66	61	54	49	43	42	31	68	66	58	51	48	47	37
		1100	.10	65	61	54	49	42	38	31	67	63	55	50	44	43	33	69	67	59	52	49	48	38
		1300	.12	67	64	56	51	44	41	34	69	65	57	52	46	44	35	71	69	60	54	50	49	40
		1600	.18	71	68	60	54	48	45	39	73	69	61	55	50	47	40	74	72	63	57	52	51	44

Table 39: Radiated Fan + Primary Sound Power Data (dB)

				Radiated Sound Power Levels (dB re: 10-12 watts) FAN = PRIMARY CFM																			
Unit Size	Inlet Size	Fan CFM	Min ΔPs	.50" Inlet Ps							1" Inlet Ps							2" Inlet Ps						
				2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
75	09	700	.12	53	49	44	40	35	30	<20	57	51	46	41	40	37	20	64	61	52	47	47	45	31
		800	.14	54	50	45	41	36	31	<20	58	52	47	42	41	38	21	65	61	53	47	47	45	31
		900	.17	56	51	47	42	37	33	21	59	53	48	43	42	39	22	66	62	54	48	48	46	32
		1000	.22	57	52	48	43	38	34	22	60	54	49	44	42	39	23	66	62	54	49	48	46	32
		1100	.25	58	54	49	44	39	35	23	62	56	50	45	43	40	25	67	63	55	50	49	47	33
	10	800	.08	54	50	45	41	36	31	<20	58	52	47	42	41	38	21	65	61	53	47	47	45	31
		1000	.10	57	52	48	43	38	34	22	60	54	49	44	42	39	23	66	62	54	49	48	46	32
		1200	.13	59	55	50	45	40	36	24	63	57	51	46	44	41	26	67	63	55	50	49	47	33
		1400	.16	62	58	52	48	42	38	27	64	59	53	48	45	42	28	69	64	57	51	50	48	34
		1600	.21	66	61	55	50	44	40	31	67	61	55	51	47	44	31	70	65	58	53	51	49	35
	12	800	.04	54	50	45	41	36	31	<20	58	52	47	42	41	38	21	65	61	53	47	47	45	31
		1000	.07	57	52	48	43	38	34	22	60	54	49	44	42	39	23	66	62	54	49	48	46	32
		1200	.10	59	55	50	45	40	36	24	63	57	51	46	44	41	26	67	63	55	50	49	47	33
		1400	.11	62	58	52	48	42	38	27	64	59	53	48	45	42	28	69	64	57	51	50	48	34
		1600	.13	66	61	55	50	44	40	31	67	61	55	51	47	44	31	70	65	58	53	51	49	35
		1800	.17	68	63	57	52	47	43	33	69	64	57	53	48	46	34	71	66	59	54	52	50	37
		2000	.20	70	66	59	54	48	45	37	71	66	59	54	50	47	37	72	67	60	55	53	51	38
	14	800	.04	55	50	46	41	36	29	20	61	55	49	46	41	37	24	66	61	55	51	48	44	31
		1000	.07	58	52	48	43	38	32	22	63	57	51	47	43	38	26	67	62	56	52	48	45	32
		1200	.10	60	54	50	45	40	34	24	64	58	52	49	44	40	27	68	63	57	53	49	46	33
		1400	.11	62	57	52	47	42	36	26	66	60	54	50	45	41	30	70	64	58	54	50	47	35
		1700	.15	67	60	55	50	45	41	31	68	62	57	51	47	43	32	72	66	60	55	51	48	38
		2000	.20	70	64	58	53	48	44	35	70	64	59	54	49	46	35	74	68	61	57	52	50	40
10	10	800	.08	60	52	47	40	35	30	22	63	53	47	41	38	35	26	65	61	53	47	46	44	31
		1000	.10	62	54	49	42	37	32	25	64	55	49	43	40	37	27	66	62	54	48	47	45	32
		1200	.13	63	56	51	44	39	35	26	66	57	51	45	42	39	30	67	63	55	49	48	46	33
		1400	.16	65	58	52	46	41	37	29	67	59	53	47	43	41	31	68	64	57	51	49	47	34
		1600	.19	68	61	55	49	44	40	32	69	62	56	50	47	44	34	71	66	59	53	51	50	37
	12	800	.04	60	52	47	40	35	30	22	63	53	47	41	38	35	26	65	61	53	47	46	44	31
		1000	.05	62	54	49	42	37	32	25	64	55	49	43	40	37	27	66	62	54	48	47	45	32
		1200	.08	63	56	51	44	39	35	26	66	57	51	45	42	39	30	67	63	55	49	48	46	33
		1400	.11	65	58	52	46	41	37	29	67	59	53	47	43	41	31	68	64	57	51	49	47	34
		1600	.14	68	61	55	49	44	40	32	69	62	56	50	47	44	34	71	66	59	53	51	50	37
		1700	.15	68	62	56	50	45	41	32	69	63	57	51	48	45	34	71	67	60	54	52	50	38
		1800	.17	69	63	57	51	46	42	34	69	64	58	52	49	46	34	71	67	60	54	52	51	38
	14	1000	.05	62	55	49	43	38	33	25	65	55	49	43	40	37	29	66	62	54	48	47	45	32
		1400	.11	66	59	53	47	42	37	30	68	59	53	47	44	41	32	69	64	57	51	49	47	34
		1600	.14	68	61	55	49	44	40	32	70	62	55	50	46	43	35	71	66	59	53	51	49	37
		1900	.18	71	64	58	52	47	43	36	71	64	58	52	48	46	36	72	67	60	55	52	50	38
		2100	.21	72	66	60	54	49	45	38	72	66	60	54	50	47	38	73	68	62	56	53	51	39
		2300	.25	74	68	61	56	51	47	40	74	68	62	56	51	49	40	75	69	63	57	54	52	41
		2400	.26	75	69	62	57	52	48	41	75	69	63	57	52	50	41	76	70	64	58	55	53	43
	16	1200	.08	65	54	50	42	37	33	29	65	56	50	44	40	37	29	66	59	54	49	45	43	30
		1400	.10	67	56	52	45	40	36	31	67	58	52	46	42	39	31	68	61	56	51	47	45	32
		1600	.13	68	59	54	47	42	38	32	68	60	54	48	44	41	32	69	63	57	52	48	46	34
		1700	.15	69	60	55	48	43	39	34	69	61	55	49	45	42	34	70	64	58	53	49	47	35
		1800	.17	70	61	56	50	44	41	35	70	62	56	51	46	43	35	71	65	59	54	50	48	36
		2000	.20	71	64	59	52	47	43	36	71	64	59	53	48	45	36	72	66	60	55	51	49	38
		2200	.24	72	66	60	54	48	45	38	72	66	60	54	49	46	38	73	68	61	56	52	50	39
		2400	.27	73	68	62	56	50	47	39	73	68	62	56	51	48	39	74	69	63	57	53	51	40
20	14	2000	.18	68	64	55	50	48	45	34	73	69	62	56	53	52	40	76	72	66	59	57	55	44
		2100	.20	69	65	56	51	49	46	35	74	70	63	57	54	53	41	77	73	67	60	58	56	44
		2150	.21	70	65	56	51	50	46	35	74	70	63	57	54	53	41	77	73	67	61	59	56	45
		2200	.22	70	65	57	52	50	46	35	75	70	64	57	55	53	41	78	73	67	61	59	57	45
		2250	.23	71	66	57	52	51	47	36	75	71	64	58	55	54	42	78	74	68	62	60	57	46
		2300	.24	71	66	57	52	51	47	37	75	71	64	58	55	54	43	78	74	68	62	60	57	46
		2350	.25	72	66	58	53	52	47	37	76	71	65	58	56	54	43	79	74	68	63	61	58	47
		2400	.26	72	67	58	53	52	48	38	76	72	65	59	56	55	44	79	75	69	63	61	58	47
	16	2000	.14	66	63	55	49	46	44	33	71	68	61	55	52	50	39	74	71	65	58	55	53	42
		2200	.17	68	64	57	51	48	45	34	73	69	63	56	54	51	40	76	72	66	60	57	55	44
		2400	.20	70	66	58	52	50	47	36	74	71	64	58	55	53	42	77	74	68	62	59	56	46
		2600	.24	71	67	60	54	51	49	38	76	73	66	60	57	55	44	79	76	69	63	60	58	48
		2800	.28	73	69	61	56	53	51	40	78	74	67	61	59	57	46	80	77	70	65	62	60	50
		3000	.32	75	70	63	58	55	52	42	79	76	68	63	60	59	48	82	79	72	67	64	62	52
		3200	.36	76	72	65	59	57	54	44	81	78	70	65	62	60	50	84	81	73	68	65	64	54
		3400	.41	78	73	66	61	59	56	45	82	79	71	66	64	62	52	85	82	75	70	67	65	56

1Notes:

1. Min. Ps is the static pressure drop through the primary air valve at which a given air flow can be maintained with the damper set in full open position.
2. All data represents conditions @ 0.25 inches w.g. downstream static pressure.
3. All sound data is measured in accordance with industry Standard AHRI - 880.

Table 39B: Radiated Fan + Primary Sound Power Data (dB)

Model EST		MIN ΔPs	Radiated Sound Power Levels (dB re: 10-12 watts) FAN = PRIMARY CFM																			
			0.5" Inlet Ps							1.0" Inlet Ps							2.0" Inlet Ps						
Unit	CFM		2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
1706	200	.10	51	45	36	29	28	24	<20	53	49	39	32	33	30	<20	56	52	43	36	39	36	20
	300	.11	53	47	38	31	30	26	<20	55	51	41	34	35	32	<20	58	54	45	38	40	38	22
	400	.18	58	51	42	35	32	28	20	59	54	44	37	37	33	22	62	58	48	40	41	39	27
	450	.22	60	53	43	36	34	30	22	61	56	45	38	38	34	25	63	59	49	41	42	40	28
	500	.27	61	54	44	38	36	33	23	62	57	47	39	39	36	26	64	60	50	42	43	41	29
1707	250	.10	51	46	38	30	29	25	<20	52	48	40	34	34	31	<20	54	50	44	43	43	41	<20
	350	.10	56	50	41	34	32	28	<20	57	51	43	38	37	34	<20	58	54	46	44	44	43	22
	450	.11	60	53	43	36	35	31	22	61	55	45	40	39	37	24	62	57	48	45	45	44	26
	500	.13	62	55	45	38	37	33	24	63	57	46	41	40	38	25	64	59	49	46	46	45	28
	550	.15	63	57	46	39	38	34	26	64	58	47	42	41	39	27	65	60	50	46	46	45	29
1708	350	.10	57	50	40	33	31	27	<20	58	52	42	35	36	33	20	59	54	46	38	40	39	22
	400	.10	59	52	41	34	33	28	20	60	54	43	36	37	34	22	61	56	47	39	41	40	24
	450	.10	60	53	42	35	34	29	22	62	55	43	37	37	35	25	63	57	47	40	41	41	26
	550	.10	64	57	44	37	36	31	27	65	58	45	38	39	36	29	66	60	48	41	42	42	30
	600	.10	65	59	45	39	37	32	29	66	59	46	40	40	37	30	67	61	49	42	43	43	31
3306	200	.10	39	34	23	19	18	14	<20	44	40	29	22	24	24	<20	48	46	36	25	31	30	<20
	300	.11	41	37	25	21	19	16	<20	46	42	31	24	26	26	<20	50	48	39	27	32	32	<20
	400	.18	46	40	29	25	22	18	<20	50	45	34	27	28	27	<20	54	51	41	29	33	33	<20
	450	.22	47	42	30	26	24	20	<20	51	47	35	28	29	28	<20	55	53	43	30	34	34	21
	500	.27	49	43	31	28	26	23	<20	53	48	36	29	30	30	<20	56	54	44	31	35	35	22
3307	250	.10	39	35	25	20	19	15	<20	43	39	30	24	25	25	<20	46	44	37	32	35	35	<20
	350	.10	43	39	28	24	22	18	<20	47	42	32	28	28	29	<20	50	48	40	33	37	37	<20
	450	.11	47	42	30	27	24	21	<20	51	46	35	30	31	31	<20	54	51	42	34	37	38	<20
	550	.15	51	46	33	29	27	24	<20	55	49	37	32	33	33	<20	58	54	43	35	38	39	22
	650	.21	54	49	36	32	30	26	<20	58	52	39	34	34	34	20	60	56	45	36	39	39	25
3308	600	.10	53	49	38	33	31	28	<20	57	52	41	36	35	34	20	60	56	46	39	40	40	25
	700	.13	55	50	40	35	33	30	<20	59	53	43	37	37	36	21	62	58	48	41	42	42	27
	800	.16	57	51	42	37	35	32	<20	60	54	44	38	38	37	22	63	59	49	42	43	43	28
	850	.18	58	52	44	38	36	33	20	61	55	45	39	39	38	24	64	60	50	43	43	44	29
	900	.20	59	53	45	39	37	34	21	61	56	46	40	40	38	25	65	61	51	43	44	44	31
3309	600	.10	55	50	39	34	32	25	<20	57	52	41	38	38	32	20	60	57	46	43	44	40	26
	800	.14	61	54	43	38	36	29	23	62	56	45	41	40	34	25	64	60	49	45	46	41	29
	900	.17	62	56	45	41	38	32	25	64	59	46	42	42	36	28	66	62	50	46	47	42	32
	1000	.22	62	57	46	42	40	35	26	65	60	48	44	43	38	29	67	63	51	47	48	44	33
	1100	.25	62	58	48	43	43	37	27	67	62	50	45	45	40	32	69	64	52	48	49	45	34
3310	600	.10	55	52	39	33	31	25	20	57	53	42	38	37	33	21	58	56	47	43	44	41	25
	700	.10	57	53	41	35	33	27	21	59	55	43	39	38	34	23	60	58	48	44	45	42	27
	800	.10	59	54	42	37	34	29	22	60	56	44	40	39	35	25	62	60	49	45	45	43	29
	1000	.14	62	56	46	41	39	34	25	64	59	47	41	42	38	28	66	62	51	46	47	45	32
	1100	.17	63	57	48	42	41	36	26	66	61	49	43	43	39	31	67	63	52	47	48	46	33

Notes:
1. Min. Ps is the static pressure drop through the primary air valve at which a given air flow can be maintained with the damper set in full open position.
2. All data represents conditions @ 0.25 inches w.g. downstream static pressure.
3. All sound data is measured in accordance with industry Standard AHRI - 880.

Table 39B: Radiated Fan + Primary Sound Power Data (dB)

Model EST		MIN ΔPs	Radiated Sound Power Levels (dB re: 10-12 watts) FAN = PRIMARY CFM																				
			0.5" Inlet Ps							1.0" Inlet Ps							2.0" Inlet Ps						
Unit	CFM		2	3	4	5	6	7	NC	2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
5010	1000	.10	60	54	46	40	37	34	22	63	56	48	41	40	39	26	66	59	52	45	45	45	30
	1100	.11	62	56	48	42	38	35	25	64	58	49	43	41	40	27	67	60	53	46	46	46	31
	1200	.13	63	58	49	44	39	37	27	65	59	50	44	42	41	29	68	62	54	47	46	46	32
	1300	.14	65	60	51	45	41	38	29	66	61	52	45	43	42	31	69	63	55	48	47	47	34
	1400	.16	67	61	53	46	42	40	31	68	62	53	46	44	43	32	69	64	56	48	47	47	34
5012	1000	.10	61	55	46	40	36	32	24	62	56	49	42	40	38	25	63	60	53	46	45	45	29
	1100	.10	62	56	48	42	38	34	25	63	58	50	43	41	39	27	64	61	54	47	46	46	31
	1200	.11	62	57	49	43	39	35	26	63	59	51	44	41	40	28	64	62	54	47	46	46	32
	1400	.14	66	61	52	45	41	38	31	66	61	53	46	43	41	31	66	64	56	49	47	46	34
	1600	.17	68	64	54	47	44	41	34	68	64	55	48	45	43	34	69	65	57	50	48	47	35
5014	1100	.10	61	56	48	42	37	33	25	63	58	49	43	39	38	27	65	62	53	45	44	43	32
	1200	.11	62	58	49	43	38	35	27	64	59	50	44	40	39	28	66	63	54	46	45	44	33
	1300	.12	63	59	50	44	39	36	28	65	60	51	45	41	39	29	67	64	54	47	45	44	34
	1400	.13	65	60	52	45	41	38	29	67	62	53	46	43	40	31	68	65	55	48	46	45	35
	1500	.15	66	61	53	46	42	39	31	68	63	54	47	44	41	33	69	66	56	49	46	45	37
7512	1200	.10	55	50	44	38	35	31	<20	59	52	45	39	39	36	21	63	58	49	43	44	42	27
	1400	.11	58	53	46	41	37	33	21	60	54	47	41	40	37	22	65	59	51	44	45	43	29
	1600	.13	62	56	49	43	39	35	25	63	56	49	44	42	39	26	66	60	52	46	46	44	30
	1800	.17	64	58	51	45	42	38	27	65	59	51	46	43	41	29	67	61	53	47	47	45	31
	2000	.20	66	61	53	47	43	40	31	67	61	53	47	45	42	31	68	62	54	48	48	46	32
7514	1200	.10	56	49	44	38	35	29	<20	60	53	46	42	39	35	22	64	58	51	46	44	41	27
	1300	.10	57	51	45	39	36	30	<20	61	54	47	43	40	36	23	65	59	52	47	45	42	29
	1400	.11	58	52	46	40	37	31	20	62	55	48	43	40	36	25	66	59	52	47	45	42	30
	1700	.15	63	55	49	43	40	36	26	64	57	51	44	42	38	27	68	61	54	48	46	43	32
	2000	.20	66	59	52	46	43	39	30	66	59	53	47	44	41	30	70	63	55	50	47	45	35
1012	1600	.14	64	56	49	42	39	35	27	65	57	50	43	42	39	29	67	61	53	46	46	45	31
	1700	.15	64	57	50	43	40	36	27	65	58	51	44	43	40	29	67	62	54	47	47	45	32
	1800	.17	65	58	51	44	41	37	29	65	59	52	45	44	41	29	67	62	54	47	47	46	32
	1900	.18	66	59	52	45	42	38	30	66	60	53	46	44	42	30	68	63	55	48	48	46	33
	2000	.20	67	60	53	46	43	39	31	67	61	54	47	45	42	31	69	63	56	48	48	47	34
1014	1600	.14	64	56	49	42	39	35	27	66	57	49	43	41	38	30	67	61	53	46	46	44	31
	1900	.18	67	59	52	45	42	38	31	67	59	52	45	43	41	31	68	62	54	48	47	45	32
	2000	.19	68	60	53	46	43	39	32	68	60	53	46	44	42	32	69	63	55	49	48	46	33
	2100	.21	68	61	54	47	44	40	32	68	61	54	47	45	42	32	69	63	56	49	48	46	34
	2300	.25	70	63	55	49	46	42	35	70	63	56	49	46	44	35	71	64	57	50	49	47	36
1016	1800	.17	66	56	50	43	39	36	30	66	57	50	44	41	38	30	67	60	53	47	45	43	31
	1900	.19	67	58	52	44	41	37	30	67	58	52	45	42	39	30	68	61	54	48	46	44	32
	2000	.20	67	59	53	45	42	38	31	67	59	53	46	43	40	31	68	61	54	48	46	44	32
	2200	.24	68	61	54	47	43	40	32	68	61	54	47	44	41	32	69	63	55	49	47	45	34
	2400	.27	69	63	56	49	45	42	34	69	63	56	49	46	43	34	70	64	57	50	48	46	35

Notes:
1. Min. Ps is the static pressure drop through the primary air valve at which a given air flow can be maintained with the damper set in full open position.
2. All data represents conditions @ 0.25 inches w.g. downstream static pressure.
3. All sound data is measured in accordance with industry Standard AHRI - 880.

Table 40: Radiated & Discharge Fan Only Sound Power Data (dB).

Unit Size	Fan CFM	**Radiated** Fan Only Sound Power Levels, dB Octave Band							**Discharge** Fan Only Sound Power Levels, dB Octave Band						
		2	3	4	5	6	7	NC	2	3	4	5	6	7	NC
17	100	47	46	37	31	25	22	<20	60	54	49	45	40	34	<20
	200	51	50	40	34	28	24	<20	64	58	52	49	45	40	20
	250	52	51	41	35	29	25	<20	65	59	53	50	46	41	21
	300	53	52	43	37	31	27	20	66	60	54	51	47	42	<20
	350	57	54	45	38	32	28	22	70	62	56	54	50	47	23
	400	61	56	47	39	33	29	25	74	64	58	57	53	51	29
	500	63	58	49	41	35	31	27	76	68	61	60	56	55	31
33	300	41	43	36	32	24	21	<20	41	43	36	32	24	21	<20
	400	49	48	40	34	26	23	<20	49	48	40	34	26	23	<20
	500	51	50	42	36	28	25	<20	51	50	42	36	28	25	<20
	600	54	55	44	39	31	27	24	54	55	44	39	31	27	<20
	700	55	56	46	41	33	29	25	55	56	46	41	33	29	<20
	800	56	57	47	43	35	31	26	56	57	47	43	35	31	<20
	900	58	58	49	46	37	34	27	58	58	49	46	37	34	<20
	1000	60	59	50	47	39	36	28	60	59	50	47	39	36	<20
	1100	62	61	52	48	41	38	31	62	61	52	48	41	38	<20
50	600	58	52	45	41	31	27	20	63	61	55	55	53	49	<20
	700	59	53	46	42	33	29	21	65	62	57	56	55	51	20
	800	60	54	48	44	35	31	22	66	64	58	58	56	53	21
	900	61	56	49	45	37	33	25	68	65	59	59	58	55	22
	1000	62	58	51	47	39	35	27	70	67	61	61	60	58	25
	1100	63	59	52	48	40	37	28	71	68	62	63	61	60	26
	1200	64	59	53	49	42	38	28	72	69	63	64	63	61	27
	1300	65	60	54	50	43	40	29	73	70	65	65	64	62	28
	1400	66	61	56	51	45	41	31	75	71	66	67	66	63	29
	1500	67	63	57	52	46	43	33	76	73	67	68	67	67	32
	1600	68	65	58	54	48	45	35	78	74	68	70	69	68	33
75	800	56	50	46	42	32	27	<20	65	58	52	55	53	48	<20
	1000	58	53	48	44	35	30	22	66	61	55	58	56	53	<20
	1200	60	54	49	45	37	32	23	68	63	57	60	58	55	20
	1400	63	58	53	49	40	37	27	71	66	59	62	61	58	24
	1600	64	59	54	51	43	38	29	73	69	62	65	64	62	27
	1700	66	60	55	52	44	40	30	74	71	63	66	65	66	30
	1800	67	62	56	53	45	41	32	75	72	64	67	67	67	31
	2000	69	63	57	54	47	44	34	76	73	66	69	69	68	32
10	800	61	52	46	41	30	26	23	63	57	53	53	52	49	<20
	1000	62	54	48	43	33	29	25	65	60	55	55	54	52	<20
	1200	64	56	50	45	36	32	27	67	62	57	58	57	55	<20
	1400	66	58	52	47	39	35	30	69	65	59	60	59	58	22
	1600	68	60	54	49	42	38	32	71	67	61	63	62	60	25
	1700	68	61	55	50	43	39	32	73	69	62	64	63	62	27
	1800	69	62	56	51	44	40	34	74	70	63	65	64	64	28
	1900	70	63	57	52	45	41	35	75	71	64	67	66	66	30
	2000	70	64	58	53	47	43	35	76	72	65	68	67	67	31
	2100	71	65	58	54	48	44	36	76	73	66	69	68	68	32
	2200	72	66	59	55	49	45	38	77	74	67	70	69	69	33
	2300	73	67	60	56	50	46	39	78	75	68	71	70	71	34
	2400	73	68	61	57	51	47	39	80	76	69	72	71	72	35
20	2000	66	62	56	48	45	42	32	69	65	64	62	60	58	23
	2200	68	64	58	50	47	45	34	70	67	66	64	62	60	25
	2400	69	65	59	52	49	47	36	72	69	68	66	64	62	27
	2600	71	67	60	55	51	49	38	74	70	69	68	66	65	29
	2800	72	68	62	57	53	52	39	76	72	71	69	67	67	31
	3000	74	70	63	59	55	54	41	77	74	72	71	69	69	33
	3200	75	72	65	61	57	56	43	79	76	74	73	71	71	35
	3400	76	73	66	63	59	58	45	81	78	75	75	73	74	37

1Notes:

1. Min. Ps is the static pressure drop through the primary air valve at which a given air flow can be maintained with the damper set in full open position.
2. All data represents conditions @ 0.25 inches w.g. downstream static pressure.
3. All sound data is measured in accordance with industry Standard AHRI - 880.