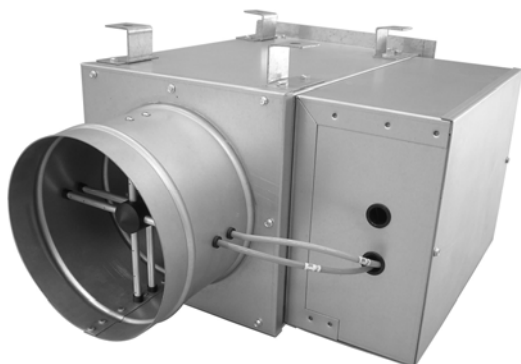


TUV Series Variable Air Volume Terminal Units



Features and Benefits

0.8 mm Galvanized steel for entire casing

- Provides rigid construction to reduce shipping and storage damages
- Precise dimensions to reduce leakage rates

Low Leakage

- Less than 1% of maximum specified air volume leakage at 1 kPa inlet static pressure for energy efficient and comfort operation

Insulation with Erosion-Resistant Material

- 20 mm fiberglass insulation to UL, NFPA and ARI standards for occupant-friendly operation

Range of Full Capacities

- 40 ~ 5200 CFM in 11 sizes to meet most of the designer requirements

General

The TUV Series variable air volume terminal units are designed specifically for the HVAC market and are ideal for providing energy-efficient and comfort in-door environment by varying the supply volume of conditioned air.

Casings of TUV Series boxes are assembled from precisely machined 0.8 mm galvanized sheet metal components which help improve the dimension accuracy and meeting the design operating specifications after installation. This also makes TUV Series boxes less vulnerable during transportation, storage handling and installation.

All TUV Series boxes employ a cross flow multi-point inlet velocity pressure sensor for efficient and proper air flow measurement. Output signal from this sensor is for direct connection to VAV controllers.

20 mm thick fiberglass insulation with erosion-resistant material is standard provision of TUV Series boxes in accordance with UL, NFPA and ARI standards for safety and noise level requirements. Insulation to meet other specifications are available upon request.

TUV Series boxes come in different configurations including single duct, dual duct, series fan powered and parallel fan powered boxes to meet the designers' requirements. All installation, calibration, testing and commissioning work of VAV controls employed are carried out and completed in factory to avoid field mistakes.

Together with a comprehensive range of various capacities, the TUV Series boxes provide the HVAC market with a line of efficient, economical, durable and occupant-friendly variable air volume terminal units.

Specifications

Product Model Numbers	Refer to Table 1	
Standard Air Flow	40 to 5200 CFM in 11 sizes	
End Connections	Refer to dimensions in Table 2	
Leakage	Box casing: < 1% of maximum air flow Damper: < 1% of maximum air flow	
Sound Levels	Refer to Table 5	
Operating Air Temperature Limits	-5°C to 50°C	
Mounting	Ceiling	
Construction Materials	Casing	0.8 mm galvanized steel sheet
	Damper	Galvanized steel
	Damper shaft	Steel
	Damper Bearing	Self lubricate type
	Damper Seal	EVA
	Multi-point air flow sensor	Aluminum
	Insulation	20 mm thick Fiberglass with 56 kg/m³ core density
Optional Controls	BACnet MS/TP Network	DVC Series or DZNT Series DDC Controllers
Fan Motor for Fan Powered Boxes	Type	Permanent split capacitor
	Power Supply	220 V 50/60 Hz
	Horse Power	Primary Air Inlet 06 = 1/8 HP
		08 = 1/4 HP
		10 = 1/2 HP
		12 = 3/4 HP
		14 & 16 = 1 HP
Optional Hot Water Reheat Coil	1-row and 2-row coils	Refer to Table 3
Optional Electric Re-heater	1.4 to 64.3 kW	Refer to Table 4

*The performance specifications above are nominal and subject to tolerances and application variables of generally acceptable industry standards.
The manufacturer shall not be liable for damages resulting from misapplication or misuse of its products.*

Table 1 - Variable Air Volume Terminal Unit Selection Table

VAV Type	Terminal Type	Duct Connection	Inlet/Primary Pressure	Single Duct Inlet Size (Inches)	Max. Return Air in CFM (00 = NA)	Options	Actuator Control Signal	Re-Heat Type	Capacity of Re-Heat
TUV Series	1 = Single Duct 2 = Dual Duct * 3 = Series Fan Power 4 = Parallel Fan Power	L= Left-hand type R= Right-hand type	I = Independent D= Dependent	04	00	N = Bare Box A = Box with Actuator only E = Box with electronic control set D = Box with Delta Controls BACnet MS/TP control set M = Box with Matrix Lon control set	0 = Not Applicable 3 = 3-wire Floating 4 = 0-10 VDC	X = No heater W = Hot water coil (See Table 3) EB = 120 VAC 1Φ Electric Heater EU = 220 VAC 1Φ Electric Heater (See Table 4)	For hot water coil: 1 = 1 row 2 = 2 rows For electric heater: 1.4 to 64.3 kW 0 = No heater nor heating coil
				05	00				
				06	00 or 01 = 700^				
				07	00				
				08	00 or 02 = 1200^				
				09	00				
				10	00 or 03 = 2000^				
				12	00 or 04 = 2400^				
				14	00 or 05 = 3200^				
				16	00 or 05 = 3200^				
				18	00				

Data marked with an * are reserved for future use.

Data marked with an ^ are only applicable to fan power boxes.

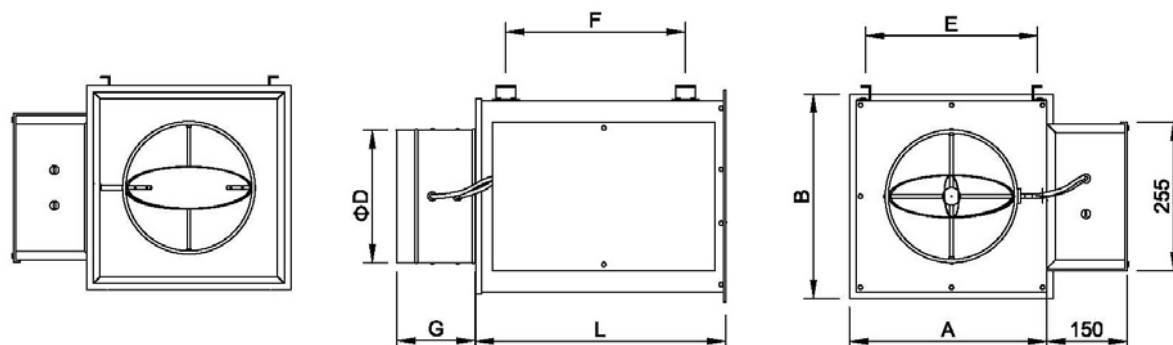
VAV Box Selection Examples:

Example 1: 12" single duct box with left-hand connection, pressure independent inlet air, with floating input actuator only and 1-row hot water coil
 = TUV-1-L-I-12-00-B1-3-W-1

Example 2: 10" series fan powered box with right-hand connection, pressure independent primary air, maximum return air 2000 CFM, with Delta Controls BACnet MS/TP control set, 0-10 VDC input actuator and 1-row hot water coil
 = TUV-3-R-I-10-03-D-4-W-1

Example 3: 16" parallel fan powered box with left-hand connection, pressure independent primary air, maximum return air 3200 CFM, with Matrix Lon control set, 0-10 VDC input actuator and 220 VAC 1Φ 25.7 kW electric heater
 = TUV-4-L-I-16-05-B2-4-EU-25.7

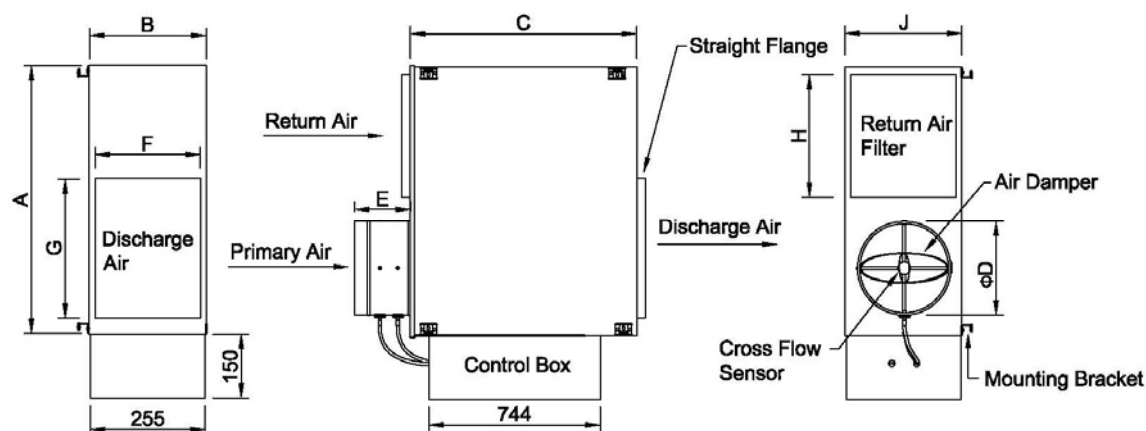
Table 2 - TUV Series Variable Air Volume Terminal Unit Dimensions



Single Duct Terminal Unit									
Model	Air Flow (CFM)		Dimensions (mm)						
	Min.	Max.	A	B	E	F	L	G	ΦD
04	40	200	209	228	169	284	402	134	99
05	70	400							124
06	100	600							149
07	125	800	260	260	220				175
08	164	1000							200
09	226	1300							226
10	275	1600	311	324	271				251
12	400	2300							302
14	525	3200							352
16	700	4200	463	482	423				403
18	880	5200	516	516	476	335	453	98	456

Note:

For dimensions of terminal units with hot water or electric reheat coils, consult the manufacturer.



Series Fan Power Terminal Unit												
Model	Air Flow (CFM)			Dimensions (mm)								
	Primary Air		Return Air									
	Min.	Max.	Max.	A	B	C	E	F	G	H	J	ΦD
06	100	600	700	605	355	710	134	251	305	230	302	149
08	164	1050	1200	753	446	760		312	352	326	390	200
10	275	1650	2000	910	446	811		381	403	326	390	251
12	400	2350	2400	1010	510	963		440	502	530	452	302
14	525	3200	3200	1163	510	963		456	610	530	452	352
16	700	4200	3200	1163	510	963		456	610	530	452	403

Parallel Fan Power Terminal Unit												
Model	Air Flow (CFM)			Dimensions (mm)								
	Primary Air		Return Air									
	Min.	Max.	Max.	A	B	C	E	F	G	H	J	ΦD
06	100	600	700	740	355	580	134	251	305	230	302	149
08	164	1050	1200	855	446	620		312	352	326	390	200
10	275	1650	2000	980	446	750		381	403	326	390	251
12	400	2350	2400	980	510	900		440	502	530	452	302
14	525	3200	3200	1080	510	900		456	610	530	452	352
16	700	4200	3200	1080	510	930		456	610	530	452	403

Table 3: Hot Water Reheat Coil Details

Size	Number of Rows	Water Flow Rate (l/s)	Water Resistance (mm H ₂ O)	Air Flow Capacity (CFM)	100	200	300	400	500
				Pressure Drop (mm H ₂ O)	0.8	1.3	2.5	3.8	5.3
5 & 6	1 row	0.03	2	Heating Capacity (kW)	1.6	2	2.3	2.5	2.8
		0.06	7.4		1.8	2.2	2.7	3	3.3
		0.13	24.9		2.1	2.6	3.2	3.8	4
		0.32	85.1		2.4	3.3	4	4.5	5
				Pressure Drop (mm H ₂ O)	1.3	2.3	4.8	7.4	10.2
	2 rows	0.06	2	Heating Capacity (kW)	2.6	3.6	4.3	4.9	5.4
		0.13	7.4		3.1	4.3	5.1	5.8	6.4
		0.32	37.1		3.9	5.4	6.4	7.3	8.1
		0.64	126.2		4.7	6.4	7.6	8.7	9.6
Size	Number of Rows	Water Flow Rate (l/s)	Water Resistance (mm H ₂ O)	Air Flow Capacity (CFM)	300	400	500	630	700
				Pressure Drop (mm H ₂ O)	0.5	1	2	3.3	5.1
7 & 8	1 row	0.03	2.8	Heating Capacity (kW)	2.7	3	3.2	3.5	3.7
		0.06	9.4		3.2	3.5	3.8	4.1	4.4
		0.13	32.5		3.6	4.1	4.5	4.9	5.3
		0.32	110.5		4.5	5.2	5.7	6.2	6.6
				Pressure Drop (mm H ₂ O)	1	1.8	3.8	6.4	9.9
	2 rows	0.06	2.8	Heating Capacity (kW)	5.2	5.8	6.2	6.7	7.1
		0.13	9.4		6.3	6.7	7.3	7.9	8.5
		0.32	48.3		7.6	8.4	9.2	10	10.7
		0.64	138.7		9	9.9	10.9	11.9	12.7
Size	Number of Rows	Water Flow Rate (l/s)	Water Resistance (mm H ₂ O)	Air Flow Capacity (CFM)	300	500	700	900	1100
				Pressure Drop (mm H ₂ O)	1.3	2	3	4.3	6.1
10	1 row	0.03	1.3	Heating Capacity (kW)	3	3.7	4.3	4.8	5.3
		0.06	13.5		3.5	4.4	5.2	5.8	6.3
		0.13	45.7		4.2	5.3	6.1	6.9	7.5
		0.32	130		5.3	6.6	7.7	8.6	9.4
				Pressure Drop (mm H ₂ O)	2.3	3.6	6.1	8.4	11.9
	2 rows	0.06	2	Heating Capacity (kW)	5.7	7.1	8.3	9.3	10.1
		0.13	7.4		6.8	8.4	9.9	11	12.1
		0.32	37.1		8.5	10.7	12.4	13.9	15.2
		0.64	126.2		10.1	12.7	14.7	16.5	18
Size	Number of Rows	Water Flow Rate (l/s)	Water Resistance (mm H ₂ O)	Air Flow Capacity (CFM)	600	800	1000	1200	1400
				Pressure Drop (mm H ₂ O)	1	1.8	2.5	3.8	5.1
12	1 row	0.03	5.3	Heating Capacity (kW)	4.6	5.2	5.7	6.2	6.7
		0.06	17.8		5.4	6.2	6.8	7.4	7.9
		0.13	60.7		6.5	7.4	8.1	8.8	9.4
		0.32	181.1		8.1	9.3	10.2	11.1	11.9
				Pressure Drop (mm H ₂ O)	1.8	3.6	4.8	7.4	9.9
	2 rows	0.06	5.3	Heating Capacity (kW)	8.8	10	11	12	12.8
		0.13	17.8		10.4	11.9	13.1	14.2	15.2
		0.32	64.5		13.1	14.9	16.5	17.8	19.1
		0.64	205		15.6	17.7	19.6	21.2	22.7

Size	Number of Rows	Water Flow Rate (l/s)	Water Resistance (mm H ₂ O)	Air Flow Capacity (CFM)	800	1200	1600	2000	2400
				Pressure Drop (mm H ₂ O)	1.5	3	4.6	5.3	6.9
14	1 row	0.03	6.1	Heating Capacity (kW)	5.6	6.7	7.7	8.5	9.2
		0.06	21.1		6.7	8	9.1	10.1	10.9
		0.13	71.6		8	9.6	10.8	12	13
		0.32	218.9		10	12	13.6	15.1	16.3
				Pressure Drop (mm H ₂ O)	2.8	5.3	8.9	10.2	13.2
	2 rows	0.06	6.1	Heating Capacity (kW)	11.4	13.5	15.3	16.8	18.2
		0.13	21.1		13.4	15.9	18	19.9	21.5
		0.32	81		16.7	19.5	22.5	24.8	26.9
		0.64	261.1		19.7	23.5	26.7	29.4	31.8
Size	Number of Rows	Water Flow Rate (l/s)	Water Resistance (mm H ₂ O)	Air Flow Capacity (CFM)	1000	1400	1800	2200	2600
				Pressure Drop (mm H ₂ O)	1	1.8	2.8	3.8	5.1
16	1 row	0.03	7.6	Heating Capacity (kW)	6.9	8	8.9	9.7	10.5
		0.06	23.5		8.1	9.5	10.6	11.6	12.5
		0.13	64.5		9.7	11.3	12.6	13.7	14.8
		0.32	230.1		12.2	14.1	15.8	17.2	18.6
				Pressure Drop (mm H ₂ O)	1.8	3.6	4.8	7.4	9.9
	2 rows	0.06	7.6	Heating Capacity (kW)	13.1	15.2	17.1	18.6	20.1
		0.13	26.4		15.6	18.1	20.3	22.2	23.9
		0.32	107.9		19.6	22.8	25.5	27.8	30
		0.64	276.9		23.3	27	30.3	33.1	35.7
Size	Number of Rows	Water Flow Rate (l/s)	Water Resistance (mm H ₂ O)	Air Flow Capacity (CFM)	2000	2500	3000	3500	4000
				Pressure Drop (mm H ₂ O)	1.8	2.3	3.3	4.6	5.6
18	1 row	0.03	6.9	Heating Capacity (kW)	14	15.4	16.8	7.9	20.1
		0.06	23.1		16.6	18.3	19.9	21.3	23.9
		0.13	91.7		20.9	23.1	25	26.8	30
		0.32	272.5		24.8	27.4	29.7	31.8	35.6
				Pressure Drop (mm H ₂ O)	3.3	4.3	6.4	9.1	10.9
	2 rows	0.06	1.5	Heating Capacity (kW)	22.5	24.9	27	28.9	32.3
		0.13	6.9		26.8	29.6	32.1	34.3	38.4
		0.32	34.3		33.6	37.2	40.3	43.2	48.3
		0.64	117.1		40	44.2	47.9	51.3	57.4

Notes on Hot Water Re-heat Coils :

1. 1-row or 2-row hot water coil and motorized control valve are supplied as specified.
2. Coil is housed in a galvanized steel frame with DN15 connecting pipe size.
3. All coils are tested to 1.7 MPa system pressure.
4. All data in Table 3 is calculated based on a hot water supply temperature of 100°C and entering air temperature of 30.6°C.

Table 4: Electric Re-Heater Details

Inlet Size	Electric Re-heater Data					
5" & 6"	Air Flow (CFM)	100	200	300	400	500
	Max. Power (kW)	1.4	2.9	4.3	5.7	7.1^
7" & 8"	Air Flow (CFM)	300	400	500	600	700
	Max. Power (kW)	4.3	5.7	7.1	8.6	10.0
10"	Air Flow (CFM)	300	500	700	900	1100
	Max. Power (kW)	4.3	7.1	10.0	12.9	15.7
12"	Air Flow (CFM)	600	800	1000	1200	1400
	Max. Power (kW)	8.6	11.4	14.3	17.1	20.0
14"	Air Flow (CFM)	800	1200	1600	2000	2400
	Max. Power (kW)	11.4	11.7	22.9	28.6	34.3
16"	Air Flow (CFM)	1000	1400	1800	2200	2600
	Max. Power (kW)	14.3	20.0	25.7	31.4	37.1
18"	Air Flow (CFM)	2000	2500	3000	3500	4484
	Max. Power (kW)	28.6	35.7	42.9	50.0	64.3

Notes on Electric Reheaters:

1. Electric re-heater with all the necessary safety devices is supplied as specified.
2. All heating element is nickel-plated.
3. A minimum air flow of 70 CFM per kW across the heater must be maintained.
4. Data marked with an ^ are not applicable to #5 boxes.

Table 5: Single Duct Terminal Units - Radiated Sound Power Level Details

			125 Pa (0.5"W.G.)														250 Pa (1.0"W.G.)														500 Pa (2.0"W.G.)														750 Pa (3.0"W.G.)													
Unit Size	Air Flow		Octave Band														Octave Band														Octave Band														Octave Band													
	CFM	l/s	2	3	4	5	6	7								2	3	4	5	6	7								2	3	4	5	6	7								2	3	4	5	6	7											
4"	60	28	44	34	27	22	--	--								45	38	31	26	24	22								47	38	34	30	29	26								48	39	36	32	32	29											
	120	57	48	40	34	27	23	--								50	42	37	32	28	24								51	44	41	36	32	28								52	46	43	38	35	31											
	160	76	51	45	38	31	25	21								52	47	42	35	30	26								54	49	45	40	35	30								55	50	47	42	37	33											
	200	94	53	48	41	34	26	22								55	50	45	38	31	27								58	52	48	42	36	31								57	53	50	46	39	34											
5"	100	47	47	35	29	23	--	--								49	38	33	27	23	20								51	41	37	32	29	27								52	42	39	34	33	31											
	200	94	54	41	34	28	22	--								56	44	38	32	28	24								58	47	42	37	34	31								59	49	44	39	37	35											
	300	142	58	46	38	31	25	--								60	49	42	36	31	26								62	51	46	40	37	33								63	53	48	43	40	37											
	400	189	62	49	41	34	28	21								64	52	45	38	33	28								66	55	48	43	39	35								67	56	51	45	42	39											
6"	100	47	47	35	31	25	20	--								50	38	36	29	26	22								53	43	38	34	32	28								55	45	40	37	36	32											
	200	94	50	40	36	29	24	--								54	44	39	34	30	25								57	48	43	38	36	31								59	50	45	41	39	35											
	300	142	53	43	39	32	26	20								56	47	43	37	32	26								60	51	46	41	38	33								62	53	49	44	42	36											
	400	189	55	45	42	34	28	22								58	49	45	39	34	28								62	53	49	43	40	34								64	56	51	46	43	38											
7"	600	283	57	48	44	36	29	23								60	51	47	41	35	29								64	55	51	45	42	35								66	58	53	48	45	39											
	200	94	50	37	31	28	22	--								52	42	37	32	26	20								54	47	42	36	30	26								56	50	46	38	33	29											
	350	165	53	41	34	31	25	--								56	45	40	35	29	24								58	50	46	39	34	29								59	53	49	41	36	32											
	500	236	56	43	36	34	28	21								58	48	42	37	32	26								60	53	48	41	36	31								62	56	51	44	39	34											
8"	650	307	58	45	38	35	30	23								60	50	44	39	34	28								62	55	50	43	38	33								64	68	53	45	41	36											
	800	378	60	47	40	37	31	24								62	52	46	41	36	29								64	57	51	45	40	34								65	60	55	47	42	37											
	200	94	53	41	34	29	25	24								57	46	40	35	31	32								60	51	46	40	37	40								62	54	49	43	41	44											
	400	189	56	44	36	31	26	25								59	49	42	37	32	32								62	54	48	42	39	40								64	56	51	45	42	45											
9"	600	283	57	46	38	33	27	25								60	51	43	38	33	33								64	56	49	43	40	41								66	58	53	47	43	46											
	800	378	58	47	39	34	28	25								62	52	45	39	34	33								65	57	51	45	41	41								67	60	54	48	44	46											
	1000	472	60	49	40	35	29	26								63	54	46	41	35	34								67	58	52	46	41	42								69	62	55	49	45	46											
	300	142	50	37	32	27	21	--								54	45	39	33	28	26								57	52	46	40	34	33								59	56	50	44	38	37											
10"	550	260	51	40	34	30	23	19								55	47	41	36	30	27								58	55	48	43	36	34								61	58	53	46	40	38											
	800	378	52	41	35	31	24	20								56	48	42	37	31	27								59	56	49	44	37	35								62	60	54	47	41	38											
	1050	495	53	42	36	32	25	21								57	49	43	38	32	28								61	57	50	45	38	36								63	61	55	48	42	39											
	1300	613	55	44	38	33	27	22								58	51	45	40	33	29								62	58	52	46	39	38								64	63	56	50	43	39											
12"	400	189	50	39	32	26	23	22								53	46	38	32	27	27								57	52	46	37	32	33								59	56	50	41	35	36											
	700	330	52	42	35	29	25	23								55	48	42	34	30	29								59	54	48	40	35	34								61	59	52	43	38	38											
	1000	472	53	43	37	31	27	24								57	50	44	37	32	30								61	56	50	42	37	35								63	60	54	45	39	39											
	1300	613	55	45	39	33	29	25								58	51	45	38	33	31								62	57	52	44	38	36								64	61	56	47	41	40											
14"	1600	755	56	46	40	34	30	26								59	52	47	40	35	32								63	58	53	45	40	37								66	62	57	48	42	40											
	700	330	49	44	37	31	24	20								53	49	43	37	29	25								58	55	50	42	34	30								60	58	53	45	37	33											
	1100	519	52	45	39	34	27	22								56	51	45	40	32	27								61	57	52	45	37	32								63	60	55	48	40	36											
	1500	708	54	47	41	36	30	24								59	52	47	42	35	29								63	58	53	47	40	34								65	61	57	50	43	37											
16"	1900	897	56	48	42	38	32	25								61	53	48	43	37	31								65	59	54	49	42	36								67	62	58	52	45	39											
	2300	1085	58	49	43	40	34	27								62	54	49	46	39	32								66	60	55	50	44	37								69	63	59	53	47	40											
	800	378	52	44	35	30	22	--								56	50	40	35	28	22								59	55	46	40	33	28								62	59	48	43	38	31											
	1400	661	58	47	41	34	28	22								60	53	46	40	33	28								64	59	51	45	38	33								66	62	55	48	41	36											
18"	2000	944	59	49	45	38	32	26								63	55	51	43	37	31								66	61	56	48	42	37								69	65	59	51	45	40											
	2600	1227	61	51	49	40	36	29								65	57	54	46	40	34								68	63	59	51	45	40								71	66	62	54	48	43											
	3200	1510	63	52	51	42	38	31								67	58	57	48	43	36								71	64	62	53	48	42								73	68	65	56	51	45											
	1000	472	54	46	39	34	29	25								58	52	44	39	34	30								61	57	48	44	39	35								64	60	51	47	41	37											
16"	1640	774	57	48	44	38	33	28								61	54	49	43	38	33								64	60	53	47	43	38								67	63	56	50	45	41											
	2280	1076	58	50	48	41	37	31								63	56	53	45	41	36								67	61	57	50	46	41								69	66	60	53	48	44											
	2920	1378	61	52	51	43	39	33								66	57	56	47	44	38								69	63	60	52	48	43								71	68	63	55	51	46											
	3560	1680	63	53	54	45	41	35								67	58	58	49	46	40								70	64	63	54	50	46								73	68	66	57	53	48											
18"	4200	1982	64	54	56	46	43	37								68	60	61	51	48	42								72	65	65	56	52	47								74	69	68	58	55	50											

Table 6: Single Duct Terminal Units - Outlet Sound Power Level Details

			125 Pa (0.5"W.G.)										250 Pa (1.0"W.G.)										500 Pa (2.0"W.G.)										750 Pa (3.0"W.G.)						
Unit Size	Air Flow		Octave Band										Octave Band										Octave Band										Octave Band						
	CFM	l/s	2	3	4	5	6	7				2	3	4	5	6	7				2	3	4	5	6	7				2	3	4	5	6	7				
4"	60	28	48	44	40	37	35	29				50	47	45	41	41	37				51	49	49	48	47	44				52	50	52	49	51	49				
	120	57	56	52	46	43	40	33				57	54	51	47	46	41				59	56	54	52	52	48				58	58	58	56	55	52				
	160	76	61	57	50	46	42	36				62	59	54	51	48	43				64	62	59	56	54	51				64	63	62	58	58	56				
	200	94	64	61	53	49	44	38				66	63	57	54	50	45				67	66	62	59	56	52				68	67	64	61	60	57				
5"	100	47	48	43	42	38	37	32				51	47	47	43	41	39				54	53	52	48	47	46				55	53	52	51	53	51				
	200	94	55	50	47	43	40	35				57	53	52	48	47	42				60	57	56	53	52	50				62	60	58	56	56	54				
	300	142	59	54	50	46	42	37				61	58	55	51	49	45				64	62	60	55	54	52				66	64	63	58	58	56				
	400	189	62	57	53	49	44	38				65	61	58	54	50	48				67	65	62	59	56	53				68	67	66	61	60	58				
6"	100	47	47	43	37	36	34	27				51	48	44	42	41	35				56	53	49	48	47	43				57	56	50	51	50	47				
	200	94	52	48	41	41	37	30				55	53	47	46	44	38				59	58	53	52	50	45				62	61	58	55	54	50				
	300	142	54	52	46	44	39	32				58	57	51	49	46	40				62	60	56	55	52	47				66	65	60	58	56	52				
	400	189	57	55	48	46	41	33				61	60	54	52	47	41				66	65	59	57	54	49				67	68	63	61	57	53				
7"	200	94	51	49	41	41	38	34				55	55	48	47	44	41				60	59	55	52	51	48				63	61	59	56	55	52				
	350	165	54	53	45	44	40	36				58	58	52	48	46	43				64	62	59	55	53	50				67	64	63	59	57	54				
	500	236	57	55	48	46	41	37				60	61	55	51	48	46				66	64	61	57	54	52				70	66	65	61	58	56				
	650	307	59	58	50	47	42	39				62	60	57	53	49	46				68	66	64	59	55	53				72	68	66	62	59	57				
8"	200	94	53	51	44	42	39	35				57	56	51	48	45	42				63	61	58	54	52	49				66	64	62	57	56	54				
	400	189	55	53	46	44	40	36				59	58	53	50	47	43				66	63	60	56	53	51				68	66	64	58	57	55				
	600	283	57	54	48	46	41	37				61	60	55	51	47	44				67	65	62	57	54	52				70	67	66	61	58	56				
	800	378	58	56	50	47	42	38				62	60	57	53	48	45				68	66	64	59	55	53				72	68	68	62	59	57				
9"	1000	472	60	57	51	48	42	39				64	63	58	54	49	46				69	68	65	60	56	54				73	70	70	63	59	58				
	300	142	56	52	45	44	40	37				60	59	54	51	48	46				67	64	62	59	56	53				71	67	67	62	60	57				
	550	260	58	54	47	46	42	39				63	61	56	53	50	47				69	67	64	61	57	55				74	69	68	66	62	58				
	800	378	59	55	48	47	43	40				64	63	57	54	51	48				68	70	65	62	58	56				70	75	70	66	63	60				
10"	1050	495	60	56	49	48	43	40				64	63	57	55	51	48				71	69	66	62	58	56				75	71	71	67	63	60				
	1300	613	62	56	50	49	44	41				66	64	59	57	51	49				72	70	67	64	59	57				76	73	72	68	64	61				
	400	189	55	51	48	47	44	40				59	57	55	52	51	48				64	63	61	57	57	55				67	66	65	59	61	59				
	700	330	57	53	50	49	45	41				61	59	57	54	52	49				66	65	63	59	58	56				70	68	67	62	62	61				
12"	1000	472	59	56	52	51	46	42				63	61	58	56	53	50				68	67	65	61	59	57				71	70	69	64	63	62				
	1300	613	61	56	53	52	47	43				65	63	60	57	53	50				69	68	66	62	60	58				73	72	70	65	64	62				
	1600	755	62	57	54	54	47	44				66	64	61	58	54	51				71	70	67	63	61	59				74	73	71	66	64	63				
	700	330	56	55	52	48	44	40				61	60	58	54	51	47				68	66	64	60	57	53				72	68	68	64	61	57				
14"	1100	519	59	57	53	50	46	42				64	63	60	56	52	48				70	68	66	62	58	55				73	72	70	66	63	59				
	1500	708	61	57	55	51	47	43				67	64	61	57	54	50				72	71	68	64	61	57				75	74	71	67	65	60				
	1900	897	63	58	56	53	48	45				68	65	62	58	55	51				74	71	69	65	62	58				77	75	72	69	66	62				
	2300	1085	66	59	57	54	50	46				70	65	63	60	56	52				75	72	70	66	63	59				78	76	73	70	67	63				
16"	800	378	56	53	48	46	42	38				62	60	54	53	49	45				68	67	60	59	56	51				72	70	65	63	59	55				
	1400	661	59	55	52	49	46	41				65	63	58	55	52	48				72	70	64	62	59	55				75	74	68	66	62	58				
	2000	944	62	57	56	50	48	43				68	65	62	57	54	50				74	72	66	64	61	57				78	76	71	68	65	61				
	2600	1227	64	59	58	52	49	45				70	66	64	58	56	52				76	73	70	66	62	59				80	78	74	70	66	63				
18"	3200	1510	66	60	60	53	51	47				71	67	66	60	57	53				78	75	72	67	64	60				82	79	76	71	68	64				
	1000	472	59	53	51	48	45	40				65	60	57	55	52	47				71	67	62	62	59	54				75	71	66	65	63	58				
	1640	774	62	56	55	50	47	42				68	63	60	57	54	49				75	70	66	64	61	56				78	74	69	68	65	60				
	2280	1076	64	58	58	51	49	44				71	65	63	58	56	51				77	72	68	65	62	58				81	76	72	69	66	62				
20"	2920	1378	66	59	57	53	50	46				73	66	65	60	57	53				79	73	71	67	64	59				83	77	75	71	68	64				
	3560	1680	66	61	60	54	51	47				74	67	65	61	58	54				81	74	73	68	65	61				84	78	77	72	68	65				
	4200	1982	70	62	60	55	52	48				76	68	66	62	58	55				82	75	75	69	66	62				86	79	78	73	70	66				
	1200	566	66	64	61	59	57	50				68	67	66	64	61	56				73	72	70	69	66	62				75	74	73	72	69	65				
22"	2000	944	70	68	65	62	60	53				73	72	69	67	65	59				77	76	74	72	70	65				79	78	76	75	73	68				
	2800	1321	73	71	68	64	62	56				76	75	72	69	67	61				80	79	76	74	72	67				82	81	79	77	75	71				
	3600	1699	75	73	70	66	64	58				79	77	74	71	69	63				82	81	78	76	74	68				84	84	81	79						

Table 7: Series Fan Power Terminal Units - Radiated Sound Power Level Details

			FAN ONLY						125 Pa (0.5"W.G.)						250 Pa (1.0"W.G.)						375 Pa (1.5"W.G.)					
Unit Size	Air Flow		Octave Band						Octave Band						Octave Band						Octave Band					
	CFM	l/s	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7
6"	300	142	58	58	49	42	35	32	57	58	49	44	41	38	59	59	52	47	47	45	60	60	53	49	50	48
	400	189	60	60	52	45	38	37	60	58	51	46	43	40	61	61	54	49	48	47	62	61	56	51	52	51
	500	236	63	61	56	48	41	40	62	60	53	48	45	42	63	62	56	51	50	49	64	62	58	53	53	53
	600	283	65	62	57	50	44	44	64	61	55	49	46	44	65	62	58	52	51	50	66	63	59	54	54	54
8"	500	236	59	59	48	48	42	37	58	57	51	48	46	43	61	60	54	51	51	50	63	61	56	53	54	53
	600	283	60	60	50	49	44	40	60	58	52	50	47	44	63	60	56	52	52	51	64	62	57	54	55	55
	800	378	62	61	52	51	46	43	62	59	58	51	48	45	64	61	56	53	53	52	65	62	58	55	56	56
	900	425	63	62	54	52	48	45	63	59	58	52	49	46	65	61	57	54	54	53	66	63	59	56	57	57
	1000	472	64	63	56	54	50	47	64	59	54	53	50	47	66	62	58	56	56	54	67	63	60	57	57	57
10"	800	378	67	59	54	48	44	41	67	58	55	48	47	44	68	61	57	51	51	49	68	62	59	53	53	53
	1000	472	69	61	56	51	48	46	69	61	57	51	49	47	70	63	59	54	53	52	71	65	61	56	56	56
	1200	566	71	63	58	53	51	50	71	63	58	53	52	49	72	65	61	56	55	54	73	67	62	57	57	57
	1400	661	73	65	59	56	54	53	73	64	60	55	53	51	74	67	62	57	57	57	75	69	63	59	59	59
	1600	755	74	66	60	57	56	56	75	66	61	56	56	55	76	69	63	59	58	58	76	70	65	61	61	61
12"	1100	519	70	63	57	53	50	47	74	65	59	55	54	52	74	66	61	56	56	55	74	66	61	57	56	56
	1400	661	71	68	61	58	56	56	74	69	62	59	58	56	74	70	64	60	59	59	74	68	63	59	58	58
	1700	802	71	68	61	58	56	56	74	69	62	59	58	56	74	70	64	60	59	59	75	70	65	61	60	60
	2000	944	71	71	63	60	58	58	74	71	64	61	60	58	75	72	65	62	61	60	75	72	66	62	62	62
	2300	1085	72	73	64	62	61	60	74	73	65	62	61	60	75	73	66	63	62	62	75	73	67	64	63	63
14"	2000	944	76	71	63	60	60	59	76	71	63	60	60	58	77	72	64	61	61	61	77	73	65	62	62	62
	2300	1085	77	72	64	62	61	61	77	72	64	61	61	61	77	73	65	62	62	62	78	73	66	63	63	63
	2600	1227	77	72	65	63	63	63	78	72	64	62	62	62	78	73	66	63	63	63	79	73	67	64	64	64
	2900	1369	77	73	65	64	64	64	78	73	65	63	63	63	79	73	67	64	65	65	79	74	67	65	65	65
	3200	1510	78	74	66	66	66	66	79	73	66	64	64	64	79	74	67	65	65	65	80	74	68	66	66	66
16"	3000	1416	73	70	67	60	56	52	73	72	67	61	57	54	76	74	66	62	58	56	77	75	69	62	58	56
	3300	1557	75	72	68	62	58	56	76	74	68	63	60	57	78	76	69	64	60	58	79	77	70	64	61	58
	3600	1699	76	74	68	64	60	58	77	76	70	64	62	59	80	78	71	65	63	60	81	79	72	66	63	60
	3900	1840	77	76	69	65	62	60	79	78	71	66	64	62	81	79	72	67	65	52	83	80	73	67	65	63
	4200	1982	79	78	70	67	64	62	81	79	72	67	66	64	83	81	73	68	67	64	84	82	74	69	67	65

Notes:

1. All test data are obtained in accordance with ADC/ARI standards.
2. All data are recorded without corrections for architectural material absorption, duct attenuation or ceiling transmission loss.

Table 8: Series Fan Power Terminal Units - Outlet Sound Power Level Details

			FAN ONLY						125 Pa (0.5"W.G.)						250 Pa (1.0"W.G.)						375 Pa (1.5"W.G.)					
Unit Size	Air Flow		Octave Band						Octave Band						Octave Band						Octave Band					
	CFM	I/s	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7
6"	300	142	62	58	58	54	51	48	60	56	57	56	52	48	61	57	58	56	52	48	61	58	59	56	52	49
	400	189	66	61	61	58	56	53	62	59	60	59	56	52	63	60	61	59	56	53	64	61	61	59	56	53
	500	236	68	64	64	61	59	57	64	61	63	61	58	56	65	62	63	61	59	57	66	63	64	62	59	57
	600	283	70	66	66	64	62	61	66	63	64	63	61	59	67	64	65	64	61	60	67	64	66	64	62	60
8"	500	236	62	60	60	59	54	51	63	58	62	59	56	53	64	59	62	60	55	54	65	60	62	61	56	54
	600	283	64	60	63	61	57	56	65	59	64	61	57	56	66	61	64	62	58	57	67	61	64	63	58	57
	800	378	66	61	65	63	59	58	67	61	65	63	59	58	68	62	66	64	60	59	69	63	66	64	60	60
	900	425	67	62	67	65	62	61	68	62	67	65	61	61	69	63	67	66	62	62	70	64	67	66	62	62
	1000	472	69	63	68	66	64	64	70	63	69	66	63	63	71	64	69	67	64	64	72	65	69	68	64	64
10"	800	378	68	61	63	62	57	55	68	61	64	63	58	56	69	63	65	65	60	57	70	64	66	65	60	58
	1000	472	71	64	66	66	62	60	72	65	67	67	63	61	73	66	68	68	64	62	73	67	69	69	65	63
	1200	566	74	66	69	70	65	64	75	67	70	70	66	65	75	69	71	72	68	66	76	70	71	72	68	67
	1400	661	76	69	71	73	68	67	77	69	72	73	69	68	78	71	73	74	71	69	78	72	74	75	71	70
	1600	755	78	71	73	75	71	70	79	71	74	75	72	71	80	73	75	77	73	72	80	74	75	77	74	73
12"	1100	519	73	66	66	65	62	60	72	66	66	66	62	61	72	67	66	66	62	61	72	67	66	66	63	61
	1400	661	76	70	68	68	65	64	75	70	69	69	66	65	75	70	69	70	66	65	75	70	69	70	67	65
	1700	802	78	73	71	71	69	68	78	73	72	72	69	68	78	74	72	73	70	69	78	74	72	73	70	69
	2000	944	80	75	73	74	72	71	80	76	74	75	73	72	80	77	74	75	73	72	80	77	74	75	73	72
	2300	1085	81	78	75	76	74	74	83	79	77	77	76	74	83	79	77	78	76	75	82	80	77	78	76	75
14"	2000	944	77	74	74	72	70	71	79	72	73	72	71	70	80	73	73	72	71	71	80	73	74	73	72	71
	2300	1085	78	76	75	74	72	73	80	74	74	73	72	72	81	74	75	74	73	73	81	75	75	74	73	73
	2600	1227	79	77	76	75	74	74	81	75	75	75	74	74	82	76	76	75	75	74	82	76	76	76	75	75
	2900	1369	79	78	77	77	75	76	82	76	77	76	75	75	83	77	77	77	76	76	83	77	77	77	77	76
	3200	1510	80	80	78	78	77	77	83	77	78	77	77	77	84	78	78	78	78	77	84	78	78	78	78	78
16"	3000	1416	75	69	72	72	69	67	77	72	73	72	69	68	79	74	74	73	70	68	80	74	74	73	70	68
	3300	1557	77	72	74	74	71	70	79	74	75	75	72	70	81	76	76	75	72	71	82	77	76	75	73	71
	3600	1699	79	74	76	77	74	73	81	76	77	77	74	73	82	78	78	77	75	73	83	78	78	77	75	74
	3900	1840	81	76	77	79	76	75	82	78	78	78	76	75	84	79	79	79	77	75	85	80	80	79	77	76
	4200	1982	83	78	79	81	79	78	84	80	80	80	78	77	85	81	81	80	79	77	86	82	81	81	79	78

Notes:

1. All test data are obtained in accordance with ADC/ARI standards.
2. All data are recorded without corrections for architectural material absorption, duct attenuation or ceiling transmission loss.

Table 9: Parallel Fan Power Terminal Units - Radiated Sound Power Level Details

Unit Size			125 Pa (0.5"W.G.)							250 Pa (1.0"W.G.)							375 Pa (1.5"W.G.)						
	Air Flow		Octave Band							Octave Band							Octave Band						
	CFM	l/s	2	3	4	5	6	7		2	3	4	5	6	7		2	3	4	5	6	7	
6"	300	142	49	41	40	40	38	31		50	42	40	39	39	37		51	43	45	47	47	45	
	400	189	49	43	39	40	39	35		51	43	40	42	42	37		52	46	46	48	48	46	
	500	236	50	46	43	43	42	36		53	45	44	46	44	38		53	49	48	50	50	48	
	600	283	52	49	47	47	46	39		54	47	46	48	45	39		54	51	51	52	51	49	
8"	500	236	53	48	49	45	42	35		55	50	49	46	43	39		56	52	50	48	47	45	
	600	283	54	51	51	49	44	39		57	53	53	52	46	39		59	53	53	50	49	46	
	800	378	58	54	57	53	49	42		59	54	56	57	50	42		61	56	55	52	52	47	
	900	425	59	57	58	56	51	45		60	57	58	59	53	46		63	59	58	57	54	51	
	1000	472	60	59	60	59	53	47		62	58	62	60	55	48		64	60	58	58	56	53	
10"	800	378	50	47	45	44	41	33		56	50	45	46	46	41		58	55	57	56	53	50	
	1000	472	51	48	47	47	42	33		56	52	46	46	48	42		60	60	59	59	54	52	
	1200	566	52	52	53	52	43	34		52	58	48	48	49	43		61	63	61	61	56	53	
	1400	661	53	53	54	51	44	36		53	58	49	49	50	44		62	63	62	60	57	53	
	1600	755	54	53	54	52	45	36		56	58	50	50	51	46		62	65	63	62	58	54	
12"	1100	519	60	60	55	51	47	47		58	52	49	43	41	38		63	59	53	50	48	47	
	1400	661	62	61	57	52	48	48		59	53	50	44	42	38		64	59	55	51	48	48	
	1700	802	63	62	59	54	50	49		61	55	52	46	45	40		66	61	56	52	50	49	
	2000	944	64	63	60	56	53	51		63	59	54	49	49	43		67	62	58	54	51	49	
	2300	1085	66	64	61	56	54	52		64	60	56	52	51	46		68	63	59	56	53	51	
14"	2000	944	62	56	52	50	44	38		65	59	57	53	50	41		70	67	64	60	58	52	
	2300	1085	63	57	53	52	48	39		65	60	59	54	50	42		71	68	65	61	59	53	
	2600	1227	65	57	54	53	48	40		65	61	60	55	51	44		72	69	66	61	59	53	
	2900	1369	64	59	55	53	50	41		66	62	60	56	52	46		74	70	67	62	59	53	
	3200	1510	66	60	57	54	52	41		67	63	61	56	53	47		75	71	58	62	60	54	
16"	3000	1416	66	58	54	53	50	42		70	64	63	63	60	57		74	70	69	68	63	61	
	3300	1557	66	59	56	54	51	43		73	65	64	64	61	58		75	71	69	67	64	61	
	3600	1699	67	60	57	55	51	44		74	67	65	65	62	58		75	72	69	66	64	61	
	3900	1840	68	61	58	55	52	45		75	68	66	65	62	59		76	73	71	69	66	62	
	4200	1982	69	62	59	56	54	46		76	69	67	65	63	60		77	74	71	70	67	64	

Notes:

1. All test data are obtained in accordance with ADC/ARI standards.
2. All data are recorded without corrections for architectural material absorption, duct attenuation or ceiling transmission loss.

Table 10: Parallel Fan Power Terminal Units - Outlet Sound Power Level Details

Unit Size			125 Pa (0.5"W.G.)							250 Pa (1.0"W.G.)							375 Pa (1.5"W.G.)						
	Air Flow		Octave Band							Octave Band							Octave Band						
	CFM	l/s	2	3	4	5	6	7		2	3	4	5	6	7		2	3	4	5	6	7	
6"	300	142	55	50	46	52	42	38		57	53	50	52	43	41		57	52	51	53	44	42	
	400	189	55	52	47	53	43	39		58	54	50	54	44	42		59	55	52	55	46	44	
	500	236	56	54	49	54	44	43		60	55	52	56	46	43		61	56	54	57	48	45	
	600	283	56	57	52	56	46	47		62	57	53	57	47	45		62	63	55	58	49	46	
8"	500	236	56	56	53	49	46	44		64	59	56	53	47	46		65	58	57	54	48	45	
	600	283	57	58	55	51	48	46		66	61	58	55	49	48		67	62	58	56	51	49	
	800	378	57	60	57	53	50	48		69	64	60	57	53	52		69	65	61	58	56	53	
	900	425	57	62	58	55	52	50		70	66	62	58	56	54		71	66	62	60	57	54	
	1000	472	57	64	59	57	53	53		73	69	64	59	58	56		73	71	63	62	59	56	
10"	800	378	65	58	50	48	45	44		64	58	55	54	48	44		65	59	55	48	46	45	
	1000	472	66	59	53	49	49	47		67	60	57	56	51	48		68	61	57	51	49	48	
	1200	566	66	61	54	53	52	51		69	62	59	58	53	50		69	62	59	56	55	54	
	1400	661	67	62	56	55	54	53		70	64	60	60	55	52		70	63	59	57	56	55	
	1600	755	68	63	56	56	55	54		71	65	61	62	55	53		71	65	61	58	57	56	
12"	1100	519	65	56	52	49	48	47		66	58	56	52	49	47		68	63	60	58	52	51	
	1400	661	66	60	54	53	49	50		67	59	57	56	52	51		69	64	61	60	56	54	
	1700	802	66	61	56	58	57	57		69	61	59	60	56	58		72	66	63	63	59	58	
	2000	944	67	62	58	58	56	56		71	64	61	66	64	61		74	68	65	64	63	62	
	2300	1085	67	63	60	59	58	56		74	65	63	67	65	63		76	70	65	65	64	60	
14"	2000	944	68	63	60	58	54	49		73	70	65	62	58	52		74	70	66	63	60	56	
	2300	1085	68	64	61	59	55	50		74	71	67	64	60	55		74	71	67	64	61	57	
	2600	1227	69	66	62	60	57	51		75	72	69	66	61	57		75	72	69	67	62	57	
	2900	1369	70	67	63	62	58	52		75	73	70	68	62	58		76	73	71	68	64	59	
	3200	1510	70	68	64	63	60	53		76	74	72	70	64	60		77	74	73	71	65	61	
16"	3000	1416	69	67	59	57	55	54		74	72	68	65	61	54		77	75	73	71	68	67	
	3300	1557	70	69	61	60	59	57		75	74	70	67	63	55		78	77	73	71	68	67	
	3600	1699	72	70	62	62	60	60		76	75	71	68	66	56		79	78	75	72	70	69	
	3900	1840	73	71	63	62	60	62		77	75	72	69	67	57		80	79	76	74	72	71	
	4200	1982	74	72	64	63	62	62		78	76	73	70	69	60		81	80	78	75	73	71	

Notes:

1. All test data are obtained in accordance with ADC/ARI standards.
2. All data are recorded without corrections for architectural material absorption, duct attenuation or ceiling transmission loss.

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