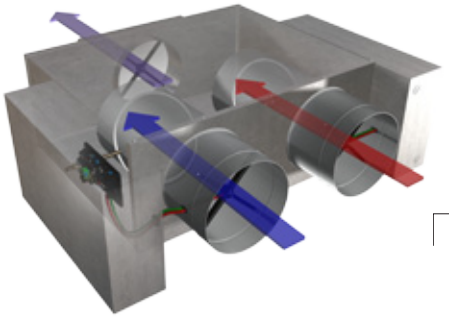
Dual Duct Terminal Units
DPS, DDS Series, DPQ, DDQ Series, DPV, DDV Series, DPM, DDM Series, DPUQ, DDUQ Series

Product Key



DXX X000

Controller Type
- P — Pneumatic
- D — Digital

Configuration
- S — Standard
- Q — Quiet
- V — Non-Mixing
- M — High-Mixing
- UQ — Ultra Quiet

Primary Air Control
- 5. — DDC controls supplied by others
- 8. — Pressure Independent controls by Price.

✔ Product Selection Checklist

1] Select Unit Inlet Size based on control and acoustic parameters.
2] Select Control type (Pneumatic, Digital) based on system design.
3] Select Control Sequence based on system design.

SP300 Velocity Pressure Sensors

Price dual duct terminals are supplied with 3 airflow sensors on mixing models, and 2 airflow sensors on non-mixing models, to suit any potential control sequence without any field modifications. On mixing models, airflow sensors are supplied at both inlets and at the discharge outlet, while for non-mixing models airflow sensors are supplied at both inlets only. The SP300 multipoint velocity pressure sensor directs flow data to the controller. The velocity pressure signals are amplified for increased sensitivity and control response. In addition, the multiple sensing points and center averaging chamber provide a more representative indication of air volume under varying flow conditions. For more information on the SP300 sensor, please refer to Page F39-F41.

PIC Controller

All Price terminals are available with factory supplied, installed and configured Price Intelligent Controllers (PIC).

Price Intelligent Controller (PIC)

The Price Intelligent Controller (PIC) is a universal DDC control package that offers a new level of zone control. An advanced and configurable proportional integral (PI) controller allows for exceptional user comfort and energy efficiency. Installation of the controller and thermostat is simple and error proof with RJ-45 (network type) connections to the thermostat.

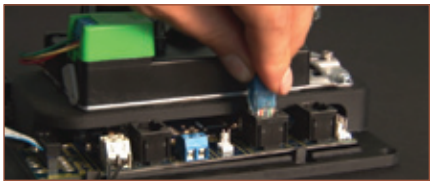
The PIC is available with several thermostat options allowing the designer to match the specific needs of the customer. Every model of thermostat has an RJ-12 service port allowing setup and configuration access without having to access the plenum.

Features:

- Fast and error proof RJ-45 thermostat connections
- 24 VAC binary switched outputs field switchable between hot and common
- Analog (0-10 VDC) outputs configurable for heating, cooling, fan and auxiliary
- Integrated actuator
- Field installable expansion modules for BACnet MS/TP and VAV flow sensing
- Pluggable terminal blocks for easy field wiring
- Diagnostic LED's showing status of each output including damper direction

Price Intelligent Controller (PIC)

PIC Plug and Play



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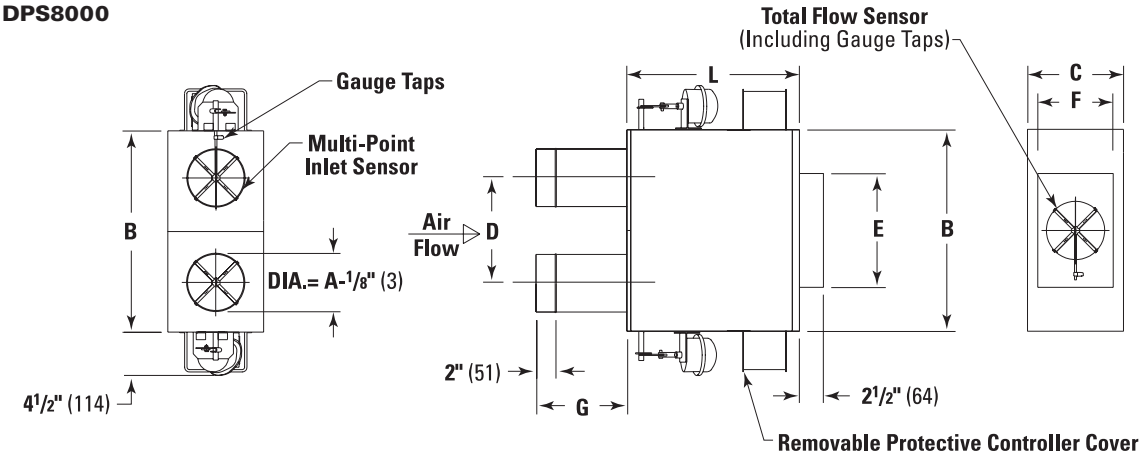
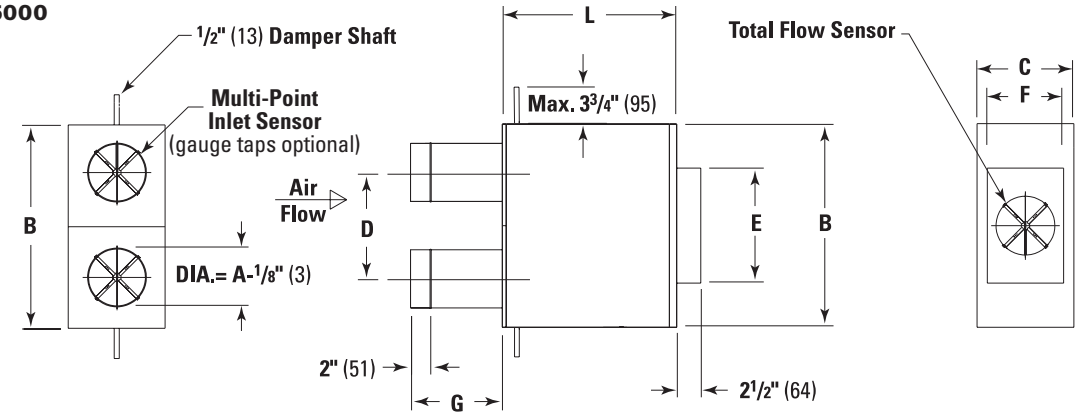
Dimensional Data

Model DPS8000



Model DDS5000



Dimensional Data — IP (in.)/SI [mm]

Unit Size	cfm Range***	[L/s] Range***	Inlet A	B	C	D	Outlet E	F	L	G
4	45- 225	[21 – 106]	4 [102]**	21 [533]	10 [254]	11 [279]	11 7/8 [302]	7 7/8 [200]	18 [457]	11 1/2 [292]
5	63-350	[30 – 165]	5 [127]**	21 [533]	10 [254]	11 [279]	11 7/8 [302]	7 7/8 [200]	18 [457]	11 1/2 [292]
6	66-400	[31-189]	6 [152]	21 [533]	10 [254]	11 [279]	11 7/8 [302]	7 7/8 [200]	18 [457]	9 1/2 [241]
7	99-550	[47-260]	7 [178]	21 [533]	10 [254]	11 [279]	11 7/8 [302]	9 7/8 [251]	18 [457]	9 1/2 [241]
8	132-750	[62-354]	8 [203]	21 [533]	10 [254]	11 [279]	11 7/8 [302]	9 7/8 [251]	18 [457]	9 1/2 [241]
9	167-1000	[79-472]	9 [229]	25 [645]	12 1/2 [318]	13 [330]	13 7/8 [352]	12 3/8 [314]	20 [508]	9 1/2 [241]
10	221-1300	[104-613]	10 [251]	25 [645]	12 1/2 [318]	13 [330]	13 7/8 [352]	12 3/8 [314]	20 [508]	9 1/2 [241]
12	304-1900	[143-897]	12 [305]	29 [737]	15 [381]	15 [381]	15 7/8 [403]	14 7/8 [378]	28 [711]	9 1/2 [241]
14	439-2900	[205-1369]	14 [356]	40 [1016]	17 1/2 [445]	20 1/8 [511]	19 7/8 [505]	17 3/8 [441]	40 3/8 [1026]	4 3/8 [111]
16	568-3500	[268-1652]	16 [406]	48 [1219]	18 [457]	24 1/8 [613]	23 7/8 [606]	17 7/8 [454]	47 1/8 [1197]	4 3/8 [111]

Notes:

- Internal insulation 3/4 in. [19mm] dual density which meets requirements of NFPA 90A and UL181.
- 22 gauge zinc-coated steel housing. Mechanically sealed and gasketed, leak-resistant construction.
- Range of maximum cfm [L/s] settings are for either hot or cold inlets.
- Gauge taps are standard.

** 6 in. diameter duct with 4 in. or 5 in. reducer.

*** Range may vary based on controls and selected controls sequence.

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Dual Duct Terminal Units
DPS, DDS Series, DPQ, DDQ Series, DPV, DDV Series, DPM, DDM Series, DPUQ, DDUQ Series
Controller Type

Liners - Terminal Casing

Price offers an extensive Terminal Unit Liner System to address the issue of terminal unit insulation fibers entering the air stream. Each liner system offers benefits that are designed to meet applications with various lining and insulation requirements.

SM
Solid Metal Liner System
This system integrates a fiberglass insulating material with a solid sheet metal liner constructed from zinc-coated steel.

The solid metal liner system complies with the following industry standards and tests:

- UL 181 (Air Erosion)
- UL 181 (Mold Growth and Humidity)
- UL 723 (25/50) (Flame and Smoke)
- ASTM E 84 (25/50) (Flame and Smoke)
- ASTM C 665 (Fungi Resistance)
- ASTM C 1071 (Physical Properties)

Solid metal liners offer the ultimate protection against exposure of fiberglass particles to the air stream. The fiberglass insulation is completely enclosed in metal all but eliminating the possibility of punctures exposing the fiberglass particles. This system is also resistant to moisture. The encased insulation provides thermal resistance, however, acoustic absorption of discharge noise is significantly reduced.

The following thicknesses are available

- **SM -** 3/4 in. [19] thick, R value=3.2

PM
Perforated Metal Liner System
This system integrates a fiberglass insulating material with a perforated metal liner constructed from coated steel. The edges are sealed with metal caps.

The perforated metal liner system complies with the following industry standards and tests:

- UL 181 (Air Erosion)
- UL 181 (Mold Growth and Humidity)
- UL 723 (25/50) (Flame and Smoke)
- ASTM E 84 (25/50) (Flame and Smoke)
- ASTM C 665 (Fungi Resistance)
- ASTM C 1071 (Physical Properties)

The metal perforated liner system provides effective protection against damage of the insulation while maintaining some acoustic value. Small fiberglass particles could conceivably still escape through the perforations and moisture can also be exposed to the insulation.

The following thicknesses are available

- **PM -** 3/4 in. [19] thicks, R value = 3.2

AFPM
Aluminum Foil with Perforated Metal Liner System
This system integrates foil-faced fiberglass insulating material with a perforated metal liner. The edges are sealed with metal end caps to prevent particles from entering the air stream. The double liner system (aluminum foil/perforated metal) complies with the following industry standards and tests:

- UL 181 (Air Erosion)
- UL 181 (Mold Growth and Humidity)
- UL 723 (25/50) (Flame and Smoke)
- ASTM E 84 (25/50) (Flame and Smoke)
- ASTM C 665 (Fungi Resistance)
- ASTM C 1071 (Physical Properties)

The aluminum foil with perforated metal liner system provides effective protection against damage of the liner while maintaining some acoustic value. The aluminum foil prevents fiberglass particles from escaping through the perforations as well as resistance to moisture penetration.

- **AFPM** - 5/8 in. [16] thicks, R-value =2.6

FF50 / FF
Fiber Free Foam Insulation System
This system integrates an engineered foam (**FF50** - 1/2 in. thick / **FF** - 3/4 in. thick) which provides excellent insulating characteristics. The foam edges are self sealing due to the material's composition.

The engineered foam meets the requirements of NFPA 90A complies with the following industry standards and tests:

- UL 181 (Air Erosion)
- UL 181 (Mold Growth and Humidity)
- UL 723 (25/50) (Flame and Smoke)
- ASTM E 84 (25/50) (Flame and Smoke)
- CAN/ULC-102.2-M88 (Flame and Smoke)

Fiber free foam insulation totally eliminates the risk of fiberglass particles entering the air stream while maintaining thermal resistance and acoustic absorption. An important advantage over other liner systems is that even scrapes or punctures will not expose fibers to the air stream. The foam also will not absorb water, reducing the likelihood of mold or bacterial growth. Acoustic absorption of the foam insulation is equivalent to aluminum foil faced insulation.

FB
Foil Board Liner System
This system integrates 4 lb. density rigid fiberglass insulating material with an aluminum foil liner. Exposed edges are coated with NFPA-90A approved sealant.

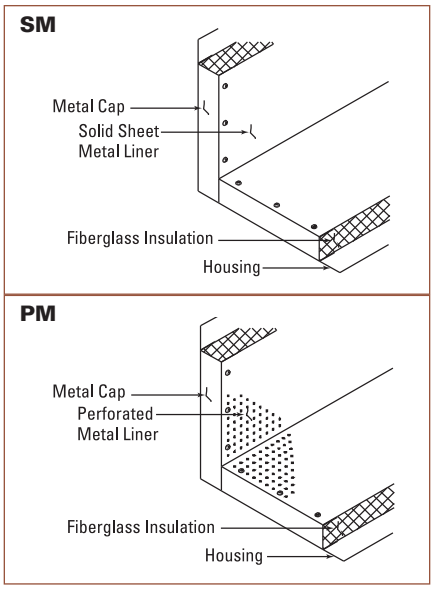
The fiberglass insulation and aluminum foil liner complies with the following industry standards and tests:

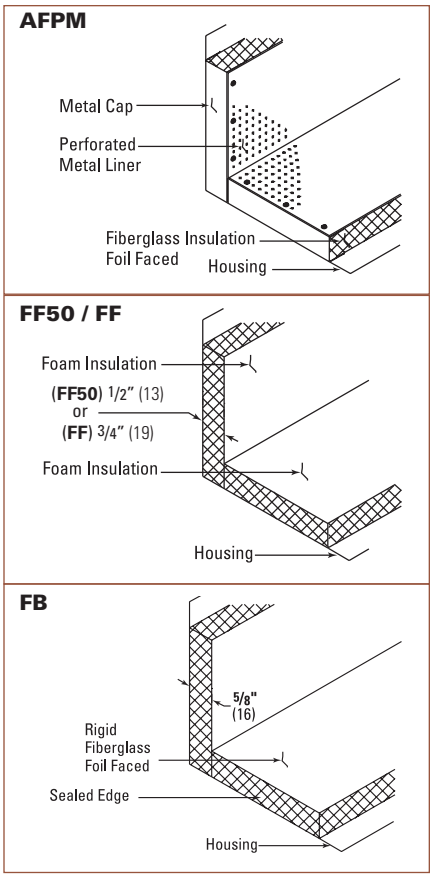
- UL 181 (Air Erosion)
- UL 181 (Mold Growth and Humidity)
- UL 723 (25/50) (Flame and Smoke)
- ASTM E 84 (25/50) (Flame and Smoke)
- ASTM C 665 (Fungi Resistance)
- ASTM C 1071 (Physical Properties)

Acoustic absorption of aluminum foil lined insulation is reduced compared to standard unlined units. The aluminum foil liner is non porous, thereby protecting the insulation from moisture. Damage to the liner can expose fiberglass particles to the air stream.

The following thicknesses are available

- **FB -** 5/8 in. [16] thicks, R-value =2.6





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Cleanroom Construction

CRAF
Cleanroom Aluminum Foil System

This system integrates a 5/8 in. [16] thick 4lb density fiberglass insulating material with an aluminum foil facing. All edges are sealed with metal endcaps and corner angles to prevent particles from entering the air stream.

The liner's integrity is maintained where the damper shaft penetrates the insulation by a flanged nylon bushing.To reduce risk of liner damage during installation, sealed-in-place s-cleats are provided at the discharge collar.

The inlet duct is sealed to the internal insulation with mold resistant caulking which meets ASTM D-4300.

The fiberglass insulation and aluminum foil liner complies with the following industry standards and tests:

- UL 181 (Air Erosion)
- UL 181 (Mold Growth and Humidity)
- UL 723 (25/50) (Flame and Smoke)
- ASTM E 84 (25/50) (Flame and Smoke)
- ASTM C 665 (Fungi Resistance)
- ASTM C 1071 (Physical Properties)

Acoustic absorption of aluminum foil lined insulation is reduced compared to standard unlined units.The aluminum foil liner is non porous, thereby protecting the insulation from moisture. The smooth surface of the liner reduces the risk of micro-organisms being trapped in the material and also facilitates cleaning. Damage to the liner can expose fiberglass particles to the air stream.

CRWF
Cleanroom Woven Fabric System

This system integrates fiberglass insulating material with a woven fabric liner. All edges are sealed with a metal end cap and corner angle to prevent particles from entering the air stream.

The liner's integrity is maintained where the damper shaft penetrates the insulation by a flanged nylon bushing.To reduce risk of liner damage during installation, sealed-in-place s-cleats are provided at the discharge collar.

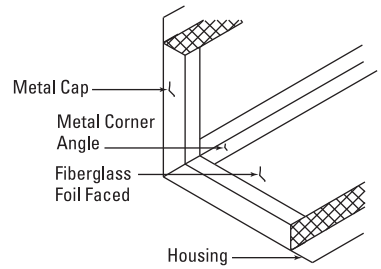
The inlet duct is sealed to the internal insulation with mold resistant caulking which meets ASTM D-4300.

The fiberglass insulation and fabric liner complies with the following industry standards and tests:

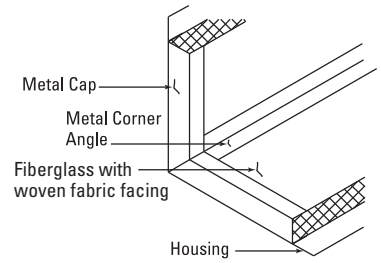
- UL 181 (Air Erosion)
- UL 181 (Mold Growth and Humidity)
- UL 723 (25/50) (Flame and Smoke)
- ASTM E 84 (25/50) (Flame and Smoke)
- ASTM C 665 (Fungi Resistance)
- ASTM C 1071 (Physical Properties)

The woven fabric liner provides acoustic absorption equivalent to aluminum foil faced insulation with slightly improved attenuation at high frequencies. The fabric is more porous than aluminum foil, therefore moisture can be absorbed into the insulation. If the liner is damaged, fiberglass particles can be exposed to the air stream. The woven fabric liner has been specified in certain areas for many years and has a proven track record in health care applications, R value = 2.6.

CRAF



CRWF



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Control Sequences

Typical Dual Duct Control Settings

Diagram 1

In this example, the hot deck and the cold decks are set for unequal calibrated maximum air volumes. When the thermostat is calling for maximum heat, the hot deck damper opens to the calibrated maximum air volume limit, while the cold deck closes to the full shut-off position.

Both the hot deck and the cold deck in this example are calibrated for a minimum flow rate of zero. As room temperature rises following a demand for full heating, the total air volume of the assembly approaches zero. If the room temperature continues to rise, the cold deck damper will begin to open. The cold deck damper will continue to open until either the thermostat is satisfied or the cold deck calibrated maximum air volume setting is reached.

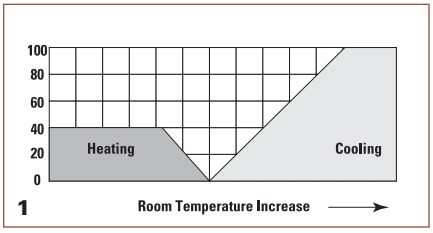


Diagram 2

In this example, the hot and cold decks are again set for unequal calibrated maximum air volumes, however a minimum air volume is also provided. Mixing of the hot and cold deck flows occurs at the minimum setting. The proportion of hot and cold air are indicated by the broken lines. As room temperature decreases, the cold deck is modulated from maximum to minimum set-point. A further decrease in room temperature causes the hot deck damper to open as the cold deck damper closes. A constant minimum airflow is maintained during mixing. On a call for full heat, the cold deck closes and the hot deck increases to its maximum set-point.

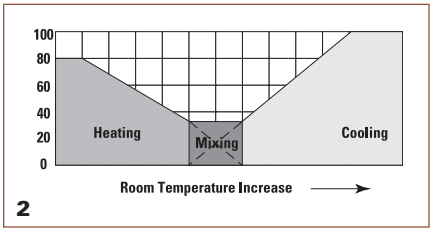


Diagram 3

This diagram illustrates a constant volume application. The hot and cold deck calibrated maximum air volumes are set for the same maximum airflow rate. At a thermostat signal for maximum cooling, the cold deck flow will be at maximum set-point and the hot deck flow at zero. As the room temperature begins to decrease, the thermostat signal will decrease reducing the flow through the cold deck. The hot deck controller begins to open the hot deck damper to maintain a constant discharge volume. As the cold deck flow is reduced further, the hot deck flow increases until the cold deck is shut off. The proportions of hot and cold air are indicated by the broken lines.

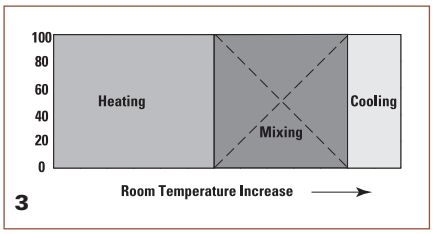
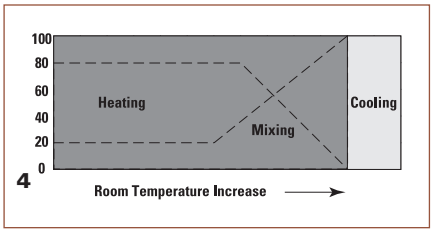


Diagram 4

This diagram illustrates a constant volume application similar to diagram three, however the cold deck is calibrated with a minimum set-point of 20%. When the thermostat calls for full heating, the total supply volume will consist of 20% cold deck and 80% hot deck. The proportions of hot and cold air are indicated by the broken lines.



Flow Sensor Orientation

Dual Duct Terminal is supplied with SP300 flow sensors on both inlet ducts. Also for all models except for DPV/DDV one downstream total flow SP300 sensor is always mounted at the discharge. For pneumatic and electronic sequences the cold deck inlet sensor and downstream total flow sensors are utilized for all standard constant and variable volume configurations. The hot deck inlet sensor is not used.

When controls are supplied by factory or are field mounted, the appropriate sensors required will depend on the model of controls and application. To accommodate all variations and allow future field modification, both inlet and downstream sensors are supplied as standard.

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Selection Guidelines

When sizing dual duct terminal units, the table of **calibrated air volume ranges** should be consulted to verify that the air quantity proposed for a given unit size, is compatible with the capabilities of the controller. To illustrate, we will comment with reference to the control diagrams on page F222.

In Diagrams 1 – 4 for the unit size selected, the maximum cold deck air volume proposed must fall within the limits of the calibrated maximum air volume range as listed in the table for that unit size. Similarly, the hot deck air volume proposed must also fall within these same air volume range limits. If both air volumes proposed do not fall within these limits, consideration should be given to selecting a smaller unit size and/or modifying the proposed air volumes to bring them within the listed limits.

In Diagram 2, the mixed air volume is equal to the minimum hot and cold deck value. This volume must fall within the minimum values listed in the table.

In Diagram 4, the minimum cold deck value must fall within the minimum values listed in the table.

A standard unit is supplied with both the hot and the cold inlets of the same size. Where there is a large difference between the maximum hot and the maximum cold air quantities, and the smaller maximum air quantity is at or below the lower limit for the calibrated maximum air volume range for that unit size unequal inlets should be considered. Each inlet would then be sized to accommodate the maximum air quantity required through that inlet. When unequal inlet sizes are used, the casing size will be governed by the larger inlet size, in accordance with the dimensional table on pages F215-F219.

Calibrated Air Volume Ranges — Pneumatic (CP101) Controller

Unit Size	HD and CD L/S Min.	HD and CD L/S Max.	HD and CD cfm Min.	HD and CD cfm Max.
4	21-106	35-106	45-225	75-225
5	30-165	54-165	63-350	115-350
6	31-189	64-189	66-400	135-400
7	47-260	87-260	99-550	185-550
8	62-354	116-354	132-750	245-750
9	79-472	151-472	167-1000	320-1000
10	104-613	201-613	221-1300	425-1300
12	147-897	285-897	313-1900	605-1900
14	204-1369	439-1369	431-2900	930-2900
16	268-1652	562-1652	568-3500	1190-3500

Calibrated Air Volume Ranges — Digital Controls

Unit Size	L/s Min-Max	cfm Min-Max
4	21-106	45-225
5	30-165	63-350
6	31-189	66-400
7	47-260	99-550
8	62-354	132-750
9	79-472	167-1000
10	104-613	221-1300
12	143-897	304-1900
14	205-1369	439-2900
16	268-1652	568-3500

DPQ Notes:

Factory calibrated controls must be selected within the above flow range limits. A minimum value of zero is also available. When an auxiliary flow setting is specified, the value must be greater than the minimum setting and within the range limits.

On controls mounted by Price but supplied by others, the air volume ranges are guidelines only.

*Selection of airflow limits below the listed values is not recommended. Stability and accuracy may not be acceptable at lower than recommended airflow limits. The actual performance will vary depending on the terminal unit controls supplied.

*Minimum airflow limit is based on min .02 in. w.g. differential pressure signal from airflow sensor. Selection of airflow limits below the listed values is not recommended. Stability and accuracy may not be acceptable at lower than recommended airflow limits. The actual performance will vary depending on the terminal unit controls supplied. Maximum airflow limit is based on max 1.0 in. w.g. differential pressure signal from the airflow sensor.

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Typical Selection Guide

Unit Size	Airflow cfm	Airflow L/s	Min. ΔPs Across Unit Basic Unit in.w.g	Min. ΔPs Across Unit Basic Unit Pa	Min. ΔPt. Basic Unit in.w.g	Min. ΔPt. Basic Unit Pa	Discharge NC Basic Unit ΔPs Across Unit 0.5 in.w.g 125Pa	1.0 in.w.g 1250Pa	1.5 in.w.g 375Pa	3.0 in.w.g 750Pa	Radiated NC Basic Unit ΔPs Across Unit 0.5 in.w.g 125Pa	1.0 in.w.g 250Pa	1.5 in.w.g 375Pa	3.0 in.w.g 750Pa
4	75	35	0.07	17	0.12	29	--	--	--	--	--	--	--	--
	100	47	0.12	30	0.20	50	--	--	--	--	--	--	--	--
	150	71	0.26	65	0.44	110	--	--	21	23	--	--	--	--
	200	94	0.47	117	0.79	198	--	26	27	29	--	--	21	23
	225	106	0.59	147	1.00	249	*	29	30	31	*	21	22	25
5	150	71	0.12	30	0.19	48	--	--	--	20	--	--	--	--
	200	94	0.21	52	0.34	84	--	--	22	26	--	--	--	21
	250	118	0.32	80	0.52	130	--	24	27	31	--	--	--	23
	300	142	0.46	114	0.75	187	--	24	27	31	--	--	21	25
	350	165	0.63	157	1.03	255	*	27	30	34	*	21	23	27
6	200	94	0.18	45	0.24	60	--	--	20	24	--	--	--	--
	250	118	0.28	70	0.37	93	--	22	25	29	--	--	--	21
	300	142	0.40	100	0.53	133	--	22	25	29	--	--	--	23
	350	165	0.54	134	0.72	180	*	26	28	33	*	--	--	25
	400	189	0.71	177	0.95	236	*	29	31	36	*	--	21	27
7	200	94	0.08	20	0.11	28	--	--	--	22	--	--	--	--
	300	142	0.17	42	0.24	60	--	--	21	27	--	--	--	--
	400	189	0.31	77	0.44	108	--	24	27	33	--	--	20	24
	500	236	0.48	119	0.68	168	--	29	32	38	--	23	25	29
	550	260	0.58	144	0.82	203	*	31	34	40	*	25	27	31
8	350	165	0.14	35	0.19	48	--	--	21	28	--	--	--	23
	450	212	0.23	57	0.32	78	--	22	26	32	--	--	21	25
	550	260	0.35	87	0.48	119	--	26	29	35	--	22	25	29
	700	330	0.57	142	0.78	193	--	30	33	39	22	26	29	33
	750	354	0.65	162	0.89	221	*	28	32	38	*	28	30	34
9	400	189	0.10	25	0.14	36	--	--	--	24	--	--	--	24
	550	260	0.19	47	0.27	68	--	21	24	30	--	--	22	28
	700	330	0.31	77	0.45	111	--	25	29	34	--	22	25	31
	900	425	0.52	129	0.74	185	--	28	31	37	--	25	29	35
	1000	472	0.64	159	0.92	228	*	30	33	39	*	27	30	36
10	500	236	0.11	27	0.15	38	--	--	22	28	--	--	--	26
	700	330	0.22	55	0.30	75	--	24	27	34	--	--	23	29
	900	425	0.36	90	0.50	123	--	25	29	35	--	23	26	33
	1100	519	0.54	134	0.74	185	*	29	32	39	*	25	29	35
	1300	614	0.75	187	1.03	257	*	31	35	41	*	28	31	38
12	700	330	0.09	22	0.13	32	--	--	--	26	--	--	--	25
	1000	472	0.19	47	0.27	67	--	--	23	30	--	--	22	29
	1300	614	0.31	77	0.44	110	--	23	27	34	--	22	26	33
	1600	755	0.48	119	0.68	170	--	27	31	38	--	25	29	35
	1900	897	0.67	167	0.95	237	*	30	34	41	*	27	31	38
14	1000	472	0.09	22	0.13	33	--	--	21	28	--	--	21	28
	1475	696	0.20	50	0.30	74	--	--	24	30	--	21	25	33
	2100	991	0.41	102	0.60	150	--	26	30	37	--	25	30	37
	2425	1144	0.55	137	0.81	201	*	29	33	39	*	27	31	39
	2900	1369	0.79	197	1.16	289	*	32	36	43	*	29	34	41
16	1200	566	0.11	27	0.15	36	--	--	21	29	--	--	21	28
	1775	838	0.24	60	0.32	79	--	--	22	31	--	--	24	32
	2350	1109	0.42	105	0.56	139	--	22	26	33	--	24	28	35
	2800	1321	0.60	149	0.80	198	*	25	29	35	*	27	30	37
	3500	1652	0.93	231	1.24	308	*	28	32	39	*	30	33	40

Performance Notes:

1. NCs are derived from sound power levels, which are obtained in accordance with AHRI Standard 880-2011 and ASHRAE Standard 130-2008.
2. NCs are derived from sound power levels which include duct end corrections per AHRI Standard 880 -2011. Please refer to page F25 for more details.
3. Blank spaces (--) indicate NCs less than 20.
4. Asterisks (*) indicate minimum static pressure of the unit exceeds the minimum operating pressure across the unit.
5. Airflow is given in L/s and cfm.
6. ΔPs is the difference in static pressure from inlet to discharge of the unit.
7. ΔPs for terminal units with electric coil is equal to basic unit. Resistance of the coil elements is negligible.
8. ΔPt is the difference in total pressure from inlet to discharge of the unit.
9. For a detailed explanation of static and total pressure drop refer to page F64.
10. Pressure is given in Pa and in. w.g.
11. NC values are calculated based on typical attenuation values outlined in Appendix E, AHRI Standard 885-2008, "A Procedure for Estimating Occupied Space Sound Levels in the Application of Air Terminals and Air Outlets."

Typical Attenuation Values:

Radiated Sound

Total Deduction	Octave Band Mid Frequency, Hz.					
	125	250	500	1000	2000	4000
All Sizes	18	19	20	26	31	36

Discharge Sound

Total Deduction	Octave Band Mid Frequency, Hz.					
	125	250	500	1000	2000	4000
< 300 cfm	24	28	39	53	59	40
300 – 700 cfm	27	29	40	51	53	39
> 700 cfm	29	30	41	51	52	39

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimetre.

Typical Selection Guide – No Lined Ductwork

Unit Size	Airflow cfm	Airflow L/s	Min. ΔPs Across Unit Basic Unit in.w.g.	Min. ΔPs Across Unit Basic Unit Pa	Min. ΔPt. Basic Unit in.w.g.	Min. ΔPt. Basic Unit Pa	Discharge NC Basic Unit ΔPs Across Unit 0.5 in.w.g 125 Pa	1.0 in.w.g 250 Pa	1.5 in.w.g. 375 Pa	3.0 in.w.g. 750 Pa	Radiated NC Basic Unit ΔPs Across Unit 0.5 in.w.g 125 Pa	1.0 in.w.g 250 Pa	1.5 in.w.g. 375 Pa	3.0 in.w.g. 750 Pa
4	75	35	0.07	17	0.12	29	—	—	—	—	—	—	—	—
	100	47	0.12	30	0.20	50	—	—	—	—	—	—	—	—
	150	71	0.26	65	0.44	110	23	25	26	28	—	—	—	—
	200	94	0.47	117	0.79	198	30	31	32	34	—	—	21	23
	225	106	0.59	147	1.00	249	*	34	35	36	*	21	22	25
5	150	71	0.12	30	0.19	48	—	—	22	28	—	—	—	—
	200	94	0.21	52	0.34	84	—	24	27	32	—	—	—	21
	250	118	0.32	80	0.52	130	25	29	32	36	—	—	—	23
	300	142	0.46	114	0.75	187	25	29	32	36	—	—	21	25
	350	165	0.63	157	1.03	255	*	32	35	40	*	21	23	27
6	200	94	0.18	45	0.24	60	—	23	26	31	—	—	—	—
	250	118	0.28	70	0.37	93	23	28	30	34	—	—	—	21
	300	142	0.40	100	0.53	133	23	28	30	34	—	—	—	23
	350	165	0.54	134	0.72	180	*	31	33	38	*	—	—	25
	400	189	0.71	177	0.95	236	*	34	36	41	*	—	21	27
7	200	94	0.08	20	0.11	28	—	22	26	32	—	—	—	—
	300	142	0.17	42	0.24	60	—	24	27	33	—	—	—	—
	400	189	0.31	77	0.44	108	24	29	33	38	—	—	20	24
	500	236	0.48	119	0.68	168	29	34	37	43	—	23	25	29
	550	260	0.58	144	0.82	203	*	36	39	45	*	25	27	31
8	350	165	0.14	35	0.19	48	—	26	31	39	—	—	—	23
	450	212	0.23	57	0.32	78	21	28	33	41	—	—	21	25
	550	260	0.35	87	0.48	119	25	31	34	42	—	22	25	29
	700	330	0.57	142	0.78	193	29	35	39	45	22	26	29	33
	750	354	0.65	162	0.89	221	*	34	37	43	*	28	30	34
9	400	189	0.10	25	0.14	36	—	26	30	38	—	—	—	24
	550	260	0.19	47	0.27	68	21	28	32	40	—	—	22	28
	700	330	0.31	77	0.45	111	25	31	34	42	—	22	25	31
	900	425	0.52	129	0.74	185	27	33	36	42	—	25	29	35
	1000	472	0.64	159	0.92	228	*	35	38	44	*	27	30	36
10	500	236	0.11	27	0.15	38	20	28	33	41	—	—	—	26
	700	330	0.22	55	0.30	75	23	30	35	43	—	—	23	29
	900	425	0.36	90	0.50	123	24	30	34	43	—	23	26	33
	1100	519	0.54	134	0.74	185	*	34	37	44	*	25	29	35
	1300	614	0.75	187	1.03	257	*	37	40	46	*	28	31	38
12	700	330	0.09	22	0.13	32	23	31	35	43	—	—	—	25
	1000	472	0.19	47	0.27	67	22	30	35	43	—	—	22	29
	1300	614	0.31	77	0.44	110	24	32	37	45	—	22	26	33
	1600	755	0.48	119	0.68	170	25	33	38	46	—	25	29	35
	1900	897	0.67	167	0.95	237	*	35	39	47	*	27	31	38
14	1000	472	0.09	22	0.13	33	25	32	36	43	—	—	21	28
	1475	696	0.20	50	0.30	74	27	34	38	46	—	21	25	33
	2100	991	0.41	102	0.60	150	29	36	40	48	—	25	30	37
	2425	1144	0.55	137	0.81	201	*	37	41	49	*	27	31	39
	2900	1369	0.79	197	1.16	289	*	38	42	50	*	29	34	41
16	1200	566	0.11	27	0.15	36	23	32	36	44	—	—	21	28
	1775	838	0.24	60	0.32	79	25	33	38	46	—	—	24	32
	2350	1109	0.42	105	0.56	139	27	35	39	48	—	24	28	35
	2800	1321	0.60	149	0.80	198	*	36	40	48	*	27	30	37
	3500	1652	0.93	231	1.24	308	*	37	41	49	*	30	33	40

Performance Notes:

1. NCs are derived from sound power levels, which are obtained in accordance with AHRI Standard 880-2011 and ASHRAE Standard 130-2008.
2. NCs are derived from sound power levels which include duct end corrections per AHRI Standard 880 -2011. Please refer to page F25 for more details.
3. Blank spaces (--) indicate NCs less than 20.
4. Asterisks (*) indicate minimum static pressure of the unit exceeds the minimum operating pressure across the unit.
5. Airflow is given in L/s and cfm.
6. ΔPs is the difference in static pressure from inlet to discharge of the unit.
7. ΔPs for terminal units with electric coil is equal to basic unit. Resistance of the coil elements is negligible.
8. ΔPt is the difference in total pressure from inlet to discharge of the unit.
9. For a detailed explanation of static and total pressure drop refer to page F64.
10. Pressure is given in Pa and in. w.g.
11. NC values are calculated based on procedures outlined in AHRI Standard 885- 2008, "A Procedure for Estimating Occupied Space Sound Levels in the Application of Air Terminals and Air Outlets."

Radiated Sound is based on a 5/8 in. mineral fiber tile ceiling per AHRI 885-2008, Appendix E typical attenuation values.

Total Deduction	Octave Band Mid Frequency, Hz.					
	125	250	500	1000	2000	4000
All Sizes	18	19	20	26	31	36

Discharge Sound is based on environmental effect, end reflection, flex duct effect, space effect, and sound power division. No deductions for lined duct are included. These calculations are not covered by AHRI 885-2008 Appendix E.

Total Deduction	Octave Band Mid Frequency, Hz.					
	125	250	500	1000	2000	4000
< 300 cfm	22	22	27	28	30	22
300 – 700 cfm	25	25	30	31	33	25
> 700 cfm	27	27	32	33	35	27

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimetre.

Typical Selection Guide

NC levels presented in the Typical Selection Guide are based on typical attenuation values as outlined in AHRI Standard 885-2008, Appendix E. AHRI Standard 885-2008, Appendix E provides typical sound attenuation values for air terminal discharge sound and air terminal radiated sound. The typical attenuation values are recommended for use by manufacturers to estimate application sound levels.

In product catalogs the end use environments are not known and the factors presented in AHRI Standard 885-2008 are provided as typical attenuation values. Use of these values will allow better comparison between manufacturers and give the end user a value which will be expected to be applicable for many types of spaces.

Following is a detailed description of the typical attenuation values used to determine NC levels.

Radiated Sound

Table E-1 of Appendix E provides typical radiated sound attenuation values for three types of ceilings: **Type 1** – Glass Fiber; **Type 2** – Mineral Fiber; **Type 3** – Solid Gypsum Board.

Since Mineral Fiber tile ceilings are the most common construction used in commercial buildings, the attenuation values in the Typical Selection Guide are based on Type 2 – Mineral Fiber.

The following table provides the calculation method for the radiated sound total attenuation values based on AHRI Standard 885-2008.

	Octave Band Mid Frequency, Hz					
	125	250	500	1000	2000	4000
Environmental Effect	2	1	0	0	0	0
Ceiling/Space Effect	16	18	20	26	31	36
Total Attenuation Deduction	18	19	20	26	31	36

The ceiling/space effect assumes the following conditions:

1. 5/8 in. tile, 20 lb/ft^3 density.
2. The plenum is at least 3 ft deep.
3. The plenum space is either wide (over 30 ft) or lined with insulation.
4. The ceiling has no significant penetration directly under the unit.

Discharge Sound

Table E-1 of Appendix E provides typical discharge sound attenuation values for three sizes of terminal units.

1. Small box – defined as a unit with discharge duct of approximately 8 in. x 8 in. and capacity less than 300 cfm.
2. Medium box – defined as a unit with discharge duct of approximately 12 in. x 12 in. and capacity between 300 – 700 cfm.
3. Large box – defined as a unit with discharge duct of approximately 15 in. x 15 in. and capacity of greater than 700 cfm.

The following tables provide the calculation method for the discharge sound and total attenuation values based on AHRI Standard 885-2008.

Small Box	Octave Band Mid Frequency, Hz					
Max Airflow < 300 cfm	125	250	500	1000	2000	4000
Environmental Effect	2	1	0	0	0	0
5 ft [1.5 m] Duct Lining	2	6	12	25	29	18
End Reflection	10	5	2	1	0	0
5 ft [1.5 m], 8 in [200 mm] Flex Duct	6	10	18	19	21	12
Space Effect	5	6	7	8	9	10
Sound Power Division	0	0	0	0	0	0
Total Attenuation Deduction	24	28	39	53	59	40

Medium Box	Octave Band Mid Frequency, Hz					
Airflow 300-700 cfm	125	250	500	1000	2000	4000
Environmental Effect	2	1	0	0	0	0
5 ft [1.5 m] Duct Lining	2	4	10	20	20	14
End Reflection	10	5	2	1	0	0
5 ft [1.5 m], 8 in [200 mm] Flex Duct	5	10	18	19	21	12
Space Effect	5	6	7	8	9	10
Sound Power Division	3	3	3	3	3	3
Total Attenuation Deduction	27	29	40	51	53	39

Large Box	Octave Band Mid Frequency, Hz					
Airflow > 700 cfm	125	250	500	1000	2000	4000
Environmental Effect	2	1	0	0	0	0
5 ft [1.5 m] Duct Lining	2	3	9	18	17	12
End Reflection	10	5	2	1	0	0
5 ft [1.5 m], 8 in [200 mm] Flex Duct	5	10	18	19	21	12
Space Effect	5	6	7	8	9	10
Sound Power Division	5	5	5	5	5	5
Total Attenuation Deduction	29	30	41	51	52	39

For a complete explanation of the attenuation factors and the procedures for calculating room NC levels, please refer to AHRI Standard 885-2008.

NC vs. Sound Power Levels – Compare Them Carefully

Price represents the sound performance data for the DPS, DDS/DPQ, DDQ/DPM, DDM series of dual duct terminals in two manners.

The laboratory attained discharge and radiated sound power levels for each unit at various flows and inlet static pressures is presented in the Acoustical Data tables. This data is derived in accordance with AHRI Standard 880 and shows the 'raw' sound power levels of the terminal in the second through seventh octave bands with NO attenuation allowances. This data includes AHRI standard ratings which are on record with the Air-Conditioning Refrigeration Institute.

Price also offers this Typical Application and Selection Guide to assist you in selecting the proper size and configuration of terminal for your needs. The attenuation allowances listed are based on values suggested in AHRI Standard 885-2008, Appendix E. The suggested attenuation allowances are intended to be representative of typical jobsite construction. If your conditions differ significantly from these it is recommended you utilize the sound power level data on pages F149-F150 and the procedures outlined in AHRI Standard 885-2008.

If the NC levels listed in the Price catalog are being compared to other manufacturers' cataloged NC information, a careful review of the other manufacturers' attenuation allowances must be made. If allowances other than recommended AHRI Standard 885-2008, Appendix E are used, a fair comparison of NC levels cannot be performed.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimetre.

Discharge Sound Data

Sound Power Levels Lw dB re 10^{-12} Watts

Unit Size	Airflow L/s	Airflow cfm	0.5 in. w.g. [125 Pa] Octave Band 2	3	4	5	6	7	1.0 in. w.g. [250 Pa] Octave Band 2	3	4	5	6	7	1.5 in. w.g. [375 Pa] Octave Band 2	3	4	5	6	7	3.0 in. w.g. [750 Pa] Octave Band 2	3	4	5	6	7
4	35	75	51	42	34	23	26	17	53	44	36	24	28	21	53	45	37	25	29	23	55	47	39	27	31	27
	47	100	56	47	39	28	31	23	57	49	41	30	33	27	58	50	42	31	34	29	59	51	44	32	36	33
	71	150	63	54	47	36	38	31	64	55	48	38	40	35	65	56	49	39	41	37	66	58	51	40	44	41
	94	200	68	59	52	42	43	36	69	60	53	43	45	40	70	61	54	44	47	43	71	63	56	46	49	47
	106	225	*	*	*	*	*	*	71	62	56	46	48	43	72	63	57	47	49	45	73	65	58	48	51	49
5	71	150	55	46	39	33	32	26	59	50	43	36	37	33	61	52	45	38	39	37	64	56	49	42	44	44
	94	200	60	50	43	36	36	29	64	54	47	40	40	36	66	56	49	42	43	40	69	60	54	46	47	47
	118	250	64	54	46	39	39	32	67	57	50	43	43	39	69	60	53	45	46	43	73	63	57	49	50	50
	142	300	67	56	49	42	41	34	70	60	53	45	46	41	72	62	55	48	48	45	76	66	59	51	53	52
	165	350	*	*	*	*	*	*	73	63	55	47	47	43	75	65	57	50	50	47	78	69	61	53	55	54
6	94	200	59	50	42	35	36	32	62	53	46	38	40	38	64	55	48	40	43	41	68	59	52	43	46	47
	118	250	63	53	46	38	39	35	66	56	50	41	43	41	68	58	52	43	45	44	71	62	56	47	49	50
	142	300	66	56	49	41	41	37	69	59	53	44	45	43	71	61	55	46	48	47	74	65	59	49	51	53
	165	350	*	*	*	*	*	*	72	61	56	46	47	46	74	63	58	48	50	49	77	67	61	51	53	55
	189	400	*	*	*	*	*	*	74	63	58	48	49	47	76	65	60	50	51	51	79	69	64	53	55	57
7	94	200	55	49	39	32	38	31	59	53	43	35	41	37	61	56	46	37	43	41	66	60	50	40	47	48
	142	300	61	55	46	38	42	35	66	59	50	42	46	42	68	61	53	43	48	45	72	66	57	47	52	52
	189	400	66	58	51	43	46	38	70	63	55	46	49	45	73	65	57	48	52	48	77	69	62	51	55	55
	236	500	70	61	55	47	49	40	74	66	59	50	52	47	77	68	61	52	54	51	81	72	65	55	58	57
	260	550	*	*	*	*	*	*	76	67	60	52	53	48	78	69	63	54	55	52	82	74	67	57	59	58
8	165	350	61	54	46	41	43	37	66	59	51	45	48	45	68	62	54	48	50	50	73	67	59	52	55	58
	212	450	64	56	49	44	45	39	69	62	54	48	49	47	72	65	57	51	52	51	76	70	62	55	57	59
	260	550	67	59	52	46	46	40	72	64	57	51	51	48	74	67	60	53	54	53	79	72	65	58	59	61
	330	700	70	61	55	49	48	41	75	66	60	54	53	49	78	69	63	56	56	54	82	74	68	61	60	62
	354	750	*	*	*	*	*	*	76	67	61	55	53	50	78	70	64	57	56	55	83	75	69	62	61	63
9	189	400	59	50	42	38	41	36	63	55	47	42	46	44	66	58	49	44	49	49	70	63	54	49	53	56
	260	550	63	53	48	42	44	39	68	59	52	46	49	47	70	62	54	49	51	51	75	67	59	53	56	59
	330	700	67	56	52	46	46	41	71	62	56	50	51	48	74	65	58	52	54	53	78	70	63	56	58	60
	425	900	71	59	56	49	48	43	75	65	60	53	53	50	78	68	63	56	56	55	82	73	67	60	61	62
	472	1000	*	*	*	*	*	*	77	66	62	55	54	51	79	69	64	57	57	56	84	74	69	61	61	63
10	236	500	61	51	45	42	44	38	66	56	50	46	49	47	69	59	52	48	51	52	73	64	57	52	56	60
	330	700	65	55	50	45	46	40	70	60	55	49	51	49	73	63	58	52	54	54	78	68	62	56	58	62
	425	900	68	58	54	48	48	42	73	63	59	52	52	50	76	66	61	55	55	55	81	71	66	59	60	63
	519	1100	*	*	*	*	*	*	76	65	62	54	54	51	79	68	64	57	57	56	84	74	69	61	61	65
	614	1300	*	*	*	*	*	*	78	67	64	56	55	52	81	70	67	58	58	57	86	76	72	62	62	66
12	330	700	58	50	43	38	43	41	63	56	47	42	48	49	66	59	50	45	51	54	72	65	54	49	56	62
	472	1000	62	54	50	43	46	43	68	60	54	48	51	51	71	63	57	50	54	56	77	69	61	54	59	64
	614	1300	66	57	55	47	48	44	72	63	59	51	53	52	75	66	62	54	56	57	80	72	66	58	61	65
	755	1600	69	59	59	50	50	45	74	65	63	54	55	54	78	68	66	57	58	58	83	74	70	61	63	67
	897	1900	*	*	*	*	*	*	77	67	67	57	56	54	80	70	69	59	59	59	85	76	73	63	64	68
14	472	1000	59	51	45	41	46	45	64	57	49	46	51	53	67	60	51	48	53	57	72	66	55	53	58	64
	696	1475	64	56	53	46	49	47	69	61	57	50	54	55	72	65	59	53	56	59	77	70	63	57	61	66
	991	2100	69	60	60	50	52	50	74	65	63	54	56	57	77	69	66	57	59	61	82	74	69	61	63	69
	1144	2425	*	*	*	*	*	*	76	67	66	56	57	58	79	70	68	58	60	62	84	76	72	63	64	69
	1369	2900	*	*	*	*	*	*	79	69	70	58	58	59	82	72	72	61	61	63	87	78	76	65	65	70
16	566	1200	58	51	44	40	45	44	64	57	49	45	50	52	67	60	52	48	53	57	72	65	57	53	58	65
	838	1775	63	56	51	44	48	46	68	61	56	49	53	54	71	64	58	52	56	59	76	70	63	57	61	67
	1109	2350	66	58	55	47	49	47	71	64	60	53	55	55	74	67	63	56	58	60	79	72	67	61	63	68
	1321	2800	*	*	*	*	*	*	73	66	63	55	56	56	76	69	66	58	59	61	81	74	70	63	64	69
	1652	3500	*	*	*	*	*	*	75	68	67	57	57	57	78	71	69	60	60	62	84	77	74	65	65	70

Performance Notes:

1. Test data obtained in accordance with AHRI Standard 880-2011 and ASHRAE Standard 130-2008.
2. Sound power levels include duct end corrections per AHRI Standard 880-2011. Please refer to page F25 for more details.
3. Airflow given in L/s and cfm.
4. Pressure is given in Pa and in.w.g.
5. AHRI certified data is highlighted in blue. All other data are application ratings.
6. Application ratings are outside the scope of the AHRI 880 Certification Program.
7. Asterisks (*) indicate minimum static pressure of the unit exceeds the minimum operating pressure across the unit.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimetre.

Radiated Sound Data

Sound Power Levels Lw dB re 10^{-12} Watts

Unit Size	Airflow L/s	Airflow cfm	0.5 in. w.g. [125 Pa] Octave Band 2	3	4	5	6	7	1.0 in. w.g. [250 Pa] Octave Band 2	3	4	5	6	7	1.5 in. w.g. [375 Pa] Octave Band 2	3	4	5	6	7	3.0 in. w.g. [750 Pa] Octave Band 2	3	4	5	6	7
4	35	75	44	34	30	23	20	--	44	36	32	26	25	22	44	37	33	28	28	27	45	38	35	32	33	35
	47	100	46	37	34	26	22	--	47	39	36	30	28	23	47	40	37	32	31	28	47	41	39	36	36	36
	71	150	50	41	40	31	26	17	50	43	42	35	31	25	50	44	43	37	34	30	51	45	45	40	40	38
	94	200	52	44	43	34	29	18	53	46	46	38	34	26	53	47	47	40	37	31	53	48	49	44	42	39
	106	225	*	*	*	*	*	*	54	47	47	39	35	27	54	48	48	42	38	32	54	49	50	45	43	40
5	71	150	46	37	34	25	21	--	48	40	38	30	27	23	49	42	40	32	30	27	51	44	44	36	35	35
	94	200	49	40	37	28	24	17	51	43	41	32	29	25	52	44	43	35	32	29	54	47	47	39	37	36
	118	250	51	42	39	30	25	18	53	45	43	34	31	26	55	47	45	37	34	30	57	49	49	41	39	37
	142	300	53	44	41	32	27	19	55	47	45	36	32	27	57	48	47	38	35	31	59	51	51	43	41	38
	165	350	*	*	*	*	*	*	57	48	47	37	33	27	58	50	49	40	36	32	60	53	53	44	42	39
6	94	200	44	37	32	26	22	--	47	40	37	31	28	23	48	42	40	34	31	27	50	46	45	39	36	34
	118	250	48	39	34	27	23	--	50	43	39	32	29	24	51	45	42	35	32	28	54	49	48	40	37	35
	142	300	51	41	36	28	24	18	53	45	41	33	30	25	54	47	44	36	33	29	57	51	49	41	38	35
	165	350	*	*	*	*	*	*	55	47	43	34	30	25	57	49	46	37	34	29	59	52	51	42	39	36
	189	400	*	*	*	*	*	*	57	48	44	35	31	26	59	50	47	38	34	30	61	54	52	43	40	37
7	94	200	42	34	28	25	21	--	45	38	33	30	26	21	47	41	36	32	30	26	50	45	41	37	35	35
	142	300	49	39	33	29	25	--	52	43	38	33	30	24	54	46	41	36	33	29	57	50	46	41	38	38
	189	400	53	42	36	31	27	17	57	47	41	36	33	26	58	49	44	39	36	31	61	53	49	43	41	40
	236	500	57	45	39	33	29	19	60	49	44	38	35	28	62	52	47	41	38	33	65	56	52	45	43	42
	260	550	*	*	*	*	*	*	62	51	45	39	35	28	64	53	48	41	38	34	67	57	53	46	44	42
8	165	350	50	40	34	29	25	21	53	45	40	35	30	27	55	48	43	38	33	30	59	52	49	43	39	35
	212	450	54	43	37	31	27	24	57	47	42	36	32	29	59	50	46	39	35	32	62	55	51	45	40	38
	260	550	56	45	39	32	28	26	60	50	44	38	34	31	62	52	47	41	37	35	65	57	53	46	42	40
	330	700	60	47	41	34	30	29	63	52	46	39	35	34	65	55	50	42	38	37	68	60	55	48	44	42
	354	750	*	*	*	*	*	*	64	53	47	40	36	35	66	56	50	43	39	38	69	60	56	48	44	43
9	189	400	49	37	32	28	25	19	53	44	37	33	30	28	56	48	41	35	33	33	61	55	46	40	39	41
	260	550	52	40	36	31	27	21	57	47	41	35	32	29	60	51	44	38	36	34	64	57	50	43	41	43
	330	700	55	42	38	33	28	22	59	49	44	38	34	30	62	53	47	40	37	35	67	59	52	45	43	44
	425	900	57	44	41	35	30	23	62	51	47	40	36	32	65	55	50	42	39	37	70	61	55	47	44	45
	472	1000	*	*	*	*	*	*	63	52	48	41	36	32	66	56	51	43	39	37	71	62	56	48	45	46
10	236	500	49	40	35	29	26	20	54	46	40	35	32	29	57	50	44	38	36	34	62	57	49	43	42	43
	330	700	52	42	39	32	28	22	57	49	44	37	34	30	60	52	47	40	37	35	65	59	53	46	43	44
	425	900	55	44	41	33	29	23	60	50	47	39	35	31	63	54	50	42	38	36	68	61	56	47	44	45
	519	1100	*	*	*	*	*	*	62	52	49	40	36	32	65	56	52	43	39	37	70	62	58	49	45	46
	614	1300	*	*	*	*	*	*	64	53	51	41	36	33	67	57	54	44	40	38	72	64	60	50	46	47
12	330	700	48	39	35	26	24	20	53	46	39	31	30	28	56	49	41	35	34	33	61	56	46	40	40	41
	472	1000	51	43	39	31	27	22	57	49	43	36	33	30	60	52	46	39	36	35	65	59	50	44	42	43
	614	1300	54	45	42	34	28	24	60	51	47	39	34	32	63	55	49	42	38	37	68	61	53	48	44	45
	755	1600	56	47	45	37	30	25	62	53	49	42	36	33	65	57	52	45	39	38	70	63	56	50	45	46
	897	1900	*	*	*	*	*	*	64	54	51	44	37	34	67	58	54	47	40	39	72	64	58	53	46	47
14	472	1000	49	42	36	31	29	23	55	49	41	36	34	31	58	52	44	39	37	35	64	58	49	44	42	43
	696	1475	53	46	40	34	31	25	59	52	45	39	36	33	62	55	49	42	39	37	68	62	54	47	44	45
	991	2100	57	48	44	37	33	27	62	55	49	42	38	34	66	58	53	45	41	39	71	64	58	50	46	46
	1144	2425	*	*	*	*	*	*	64	56	51	43	39	35	67	59	54	46	42	39	73	66	60	51	47	47
	1369	2900	*	*	*	*	*	*	65	57	53	45	40	36	69	61	56	48	43	40	75	67	62	53	48	48
16	566	1200	49	42	35	29	25	22	54	49	40	34	30	29	57	52	43	37	32	33	63	59	48	42	37	39
	838	1775	53	45	41	33	30	27	58	51	46	38	35	33	61	55	49	41	37	37	67	62	54	46	42	44
	1109	2350	55	47	45	36	33	30	61	53	50	41	38	37	64	57	53	44	41	41	70	64	58	49	46	47
	1321	2800	*	*	*	*	*	*	63	55	52	43	40	39	66	58	55	46	43	43	72	65	61	51	48	49
	1652	3500	*	*	*	*	*	*	65	56	55	45	43	41	68	60	59	48	46	45	74	66	64	53	51	52

Performance Notes:

1. Test data obtained in accordance with AHRI Standard 880-2011 and ASHRAE Standard 130-2008.
2. Sound power levels include duct end corrections per AHRI Standard 880-2011. Please refer to page F25 for more details.
3. Airflow given in L/s and cfm.
4. Pressure is given in Pa and in.w.g.
5. AHRI certified data is highlighted in blue. All other data are application ratings.
6. Application ratings are outside the scope of the AHRI 880 Certification Program.
7. Asterisks (*) indicate minimum static pressure of the unit exceeds the minimum operating pressure across the unit.
8. Dashes (--) indicate sound power levels below 36-29-26-22-19-17 for each octave band; values below these sound power levels are considered below significance per AHRI 880.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimetre.

Discharge Sound Data

Unit Size	Airflow L/s	Airflow cfm	Sound Power Levels Lw dB re 10^{-12} Watts																							
			0.5 in. w.g. [125 Pa] Octave Band						1.0 in. w.g. [250 Pa] Octave Band						1.5 in. w.g. [375 Pa] Octave Band						3.0 in. w.g. [750 Pa] Octave Band					
			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	75	35	53	44	35	26	31	21	55	46	37	27	33	25	55	47	38	28	34	27	57	49	40	30	36	31
	100	47	58	49	40	31	36	27	59	51	42	33	38	31	60	52	43	34	39	33	61	53	45	35	41	37
	150	71	65	56	48	39	43	35	66	57	49	41	45	39	67	58	50	42	46	41	68	60	52	43	49	45
	200	94	70	61	53	45	48	40	71	62	54	46	50	44	72	63	55	47	52	47	73	65	57	49	54	51
	225	106	*	*	*	*	*	*	73	64	57	49	53	47	74	65	58	50	54	49	75	67	59	51	56	53
5	150	71	57	48	40	36	37	30	61	52	44	39	42	37	63	54	46	41	44	41	66	58	50	45	49	48
	200	94	62	52	44	39	41	33	66	56	48	43	45	40	68	58	50	45	48	44	71	62	55	49	52	51
	250	118	66	56	47	42	44	36	69	59	51	46	48	43	71	62	54	48	51	47	75	65	58	52	55	54
	300	142	69	58	50	45	46	38	72	62	54	48	51	45	74	64	56	51	53	49	78	68	60	54	58	56
	350	165	*	*	*	*	*	*	75	65	56	50	52	47	77	67	58	53	55	51	80	71	62	56	60	58
6	200	94	61	52	43	38	41	36	64	55	47	41	45	42	66	57	49	43	48	45	70	61	53	46	51	51
	250	118	65	55	47	41	44	39	68	58	51	44	48	45	70	60	53	46	50	48	73	64	57	50	54	54
	300	142	68	58	50	44	46	41	71	61	54	47	50	47	73	63	56	49	53	51	76	67	60	52	56	57
	350	165	*	*	*	*	*	*	74	63	57	49	52	50	76	65	59	51	55	53	79	69	62	54	58	59
	400	189	*	*	*	*	*	*	76	65	59	51	54	51	78	67	61	53	56	55	81	71	65	56	60	61
7	200	94	57	51	40	35	43	35	61	55	44	38	46	41	63	58	47	40	48	45	68	62	51	43	52	52
	300	142	63	57	47	41	47	39	68	61	51	45	51	46	70	63	54	46	53	49	74	68	58	50	57	56
	400	189	68	60	52	46	51	42	72	65	56	49	54	49	75	67	58	51	57	52	79	71	63	54	60	59
	500	236	72	63	56	50	54	44	76	68	60	53	57	51	79	70	62	55	59	55	83	74	66	58	63	61
	550	260	*	*	*	*	*	*	78	69	61	55	58	52	80	71	64	57	60	56	84	76	68	60	64	62
8	350	165	63	56	47	44	48	41	68	61	52	48	53	49	70	64	55	51	55	54	75	69	60	55	60	62
	450	212	66	58	50	47	50	43	71	64	55	51	54	51	74	67	58	54	57	55	78	72	63	58	62	63
	550	260	69	61	53	49	51	44	74	66	58	54	56	52	76	69	61	56	59	57	81	74	66	61	64	65
	700	330	72	63	56	52	53	45	77	68	61	57	58	53	80	71	64	59	61	58	84	76	69	64	65	66
	750	354	*	*	*	*	*	*	78	69	62	58	58	54	80	72	65	60	61	59	85	77	70	65	66	67
9	400	189	61	52	43	41	46	40	65	57	48	45	51	48	68	60	50	47	54	53	72	65	55	52	58	60
	550	260	65	55	49	45	49	43	70	61	53	49	54	51	72	64	55	52	56	55	77	69	60	56	61	63
	700	330	69	58	53	49	51	45	73	64	57	53	56	52	76	67	59	55	59	57	80	72	64	59	63	64
	900	425	73	61	57	52	53	47	77	67	61	56	58	54	80	70	64	59	61	59	84	75	68	63	66	66
	1000	472	*	*	*	*	*	*	79	68	63	58	59	55	81	71	65	60	62	60	86	76	70	64	66	67
10	500	236	63	53	46	45	49	42	68	58	51	49	54	51	71	61	53	51	56	56	75	66	58	55	61	64
	700	330	67	57	51	48	51	44	72	62	56	52	56	53	75	65	59	55	59	58	80	70	63	59	63	66
	900	425	70	60	55	51	53	46	75	65	60	55	57	54	78	68	62	58	60	59	83	73	67	62	65	67
	1100	519	*	*	*	*	*	*	78	67	63	57	59	55	81	70	65	60	62	60	86	76	70	64	66	69
	1300	614	*	*	*	*	*	*	80	69	65	59	60	56	83	72	68	61	63	61	88	78	73	65	67	70
12	700	330	60	52	44	41	48	45	65	58	48	45	53	53	68	61	51	48	56	58	74	67	55	52	61	66
	1000	472	64	56	51	46	51	47	70	62	55	51	56	55	73	65	58	53	59	60	79	71	62	57	64	68
	1300	614	68	59	56	50	53	48	74	65	60	54	58	56	77	68	63	57	61	61	82	74	67	61	66	69
	1600	755	71	61	60	53	55	49	76	67	64	57	60	58	80	70	67	60	63	62	85	76	71	64	68	71
	1900	897	*	*	*	*	*	*	79	69	68	60	61	58	82	72	70	62	64	63	87	78	74	66	69	72
14	1000	472	61	53	46	44	51	49	66	59	50	49	56	57	69	62	52	51	58	61	74	68	56	56	63	68
	1475	696	66	58	54	49	54	51	71	63	58	53	59	59	74	67	60	56	61	63	79	72	64	60	66	70
	2100	991	71	62	61	53	57	54	76	67	64	57	61	61	79	71	67	60	64	65	84	76	70	64	68	73
	2425	1144	*	*	*	*	*	*	78	69	67	59	62	62	81	72	69	61	65	66	86	78	73	66	69	73
	2900	1369	*	*	*	*	*	*	81	71	71	61	63	63	84	74	73	64	66	67	89	80	77	68	70	74
16	1200	566	60	53	45	43	50	48	66	59	50	48	55	56	69	62	53	51	58	61	74	67	58	56	63	69
	1775	838	65	58	52	47	53	50	70	63	57	52	58	58	73	66	59	55	61	63	78	72	64	60	66	71
	2350	1109	68	60	56	50	54	51	73	66	61	56	60	59	76	69	64	59	63	64	81	74	68	64	68	72
	2800	1321	*	*	*	*	*	*	75	68	64	58	61	60	78	71	67	61	64	65	83	76	71	66	69	73
	3500	1652	*	*	*	*	*	*	77	70	68	60	62	61	80	73	70	63	65	66	86	79	75	68	70	74

Performance Notes:

1. Test data obtained in accordance with AHRI Standard 880-2011 and ASHRAE Standard 130-2008.
2. Sound power levels include duct end corrections per AHRI Standard 880-2011. Please refer to page F25 for more details.
3. Airflow given in L/s and cfm.
4. Pressure is given in Pa and in.w.g.
5. All data are application ratings. Application ratings are outside the scope of the AHRI 880 Certification Program.
6. Asterisks (*) indicate minimum static pressure of the unit exceeds the minimum operating pressure across the unit.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimetre.

Radiated Sound Data

Unit Size	Airflow L/s	Airflow cfm	Sound Power Levels Lw dB re 10^{-12} Watts																			
			0.5 in. w.g. [125 Pa] Octave Band						1.0 in. w.g. [250 Pa] Octave Band						1.5 in. w.g. [375 Pa] Octave Band						3.0 in. w.g. [750 Pa] Octave Band					
			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	75	35	44	34	30	23	20	--	44	36	32	26	25	22	44	37	33	28	28	27	45	38	35	32	33	35
	100	47	46	37	34	26	22	--	47	39	36	30	28	23	47	40	37	32	31	28	47	41	39	36	36	36
	150	71	50	41	40	31	26	17	50	43	42	35	31	25	50	44	43	37	34	30	51	45	45	40	40	38
	200	94	52	44	43	34	29	18	53	46	46	38	34	26	53	47	47	40	37	31	53	48	49	44	42	39
	225	106	*	*	*	*	*	*	54	47	47	39	35	27	54	48	48	42	38	32	54	49	50	45	43	40
5	150	71	46	37	34	25	21	--	48	40	38	30	27	23	49	42	40	32	30	27	51	44	44	36	35	35
	200	94	49	40	37	28	24	17	51	43	41	32	29	25	52	44	43	35	32	29	54	47	47	39	37	36
	250	118	51	42	39	30	25	18	53	45	43	34	31	26	55	47	45	37	34	30	57	49	49	41	39	37
	300	142	53	44	41	32	27	19	55	47	45	36	32	27	57	48	47	38	35	31	59	51	51	43	41	38
	350	165	*	*	*	*	*	*	57	48	47	37	33	27	58	50	49	40	36	32	60	53	53	44	42	39
6	200	94	44	37	32	26	22	--	47	40	37	31	28	23	48	42	40	34	31	27	50	46	45	39	36	34
	250	118	48	39	34	27	23	--	50	43	39	32	29	24	51	45	42	35	32	28	54	49	48	40	37	35
	300	142	51	41	36	28	24	18	53	45	41	33	30	25	54	47	44	36	33	29	57	51	49	41	38	35
	350	165	*	*	*	*	*	*	55	47	43	34	30	25	57	49	46	37	34	29	59	52	51	42	39	36
	400	189	*	*	*	*	*	*	57	48	44	35	31	26	59	50	47	38	34	30	61	54	52	43	40	37
7	200	94	42	34	28	25	21	--	45	38	33	30	26	21	47	41	36	32	30	26	50	45	41	37	35	35
	300	142	49	39	33	29	25	--	52	43	38	33	30	24	54	46	41	36	33	29	57	50	46	41	38	38
	400	189	53	42	36	31	27	17	57	47	41	36	33	26	58	49	44	39	36	31	61	53	49	43	41	40
	500	236	57	45	39	33	29	19	60	49	44	38	35	28	62	52	47	41	38	33	65	56	52	45	43	42
	550	260	*	*	*	*	*	*	62	51	45	39	35	28	64	53	48	41	38	34	67	57	53	46	44	42
8	350	165	50	40	34	29	25	21	53	45	40	35	30	27	55	48	43	38	33	30	59	52	49	43	39	35
	450	212	54	43	37	31	27	24	57	47	42	36	32	29	59	50	46	39	35	32	62	55	51	45	40	38
	550	260	56	45	39	32	28	26	60	50	44	38	34	31	62	52	47	41	37	35	65	57	53	46	42	40
	700	330	60	47	41	34	30	29	63	52	46	39	35	34	65	55	50	42	38	37	68	60	55	48	44	42
	750	354	*	*	*	*	*	*	64	53	47	40	36	35	66	56	50	43	39	38	69	60	56	48	44	43
9	400	189	49	37	32	28	25	19	53	44	37	33	30	28	56	48	41	35	33	33	61	55	46	40	39	41
	550	260	52	40	36	31	27	21	57	47	41	35	32	29	60	51	44	38	36	34	64	57	50	43	41	43
	700	330	55	42	38	33	28	22	59	49	44	38	34	30	62	53	47	40	37	35	67	59	52	45	43	44
	900	425	57	44	41	35	30	23	62	51	47	40	36	32	65	55	50	42	39	37	70	61	55	47	44	45
	1000	472	*	*	*	*	*	*	63	52	48	41	36	32	66	56	51	43	39	37	71	62	56	48	45	46
10	500	236	49	40	35	29	26	20	54	46	40	35	32	29	57	50	44	38	36	34	62	57	49	43	42	43
	700	330	52	42	39	32	28	22	57	49	44	37	34	30	60	52	47	40	37	35	65	59	53	46	43	44
	900	425	55	44	41	33	29	23	60	50	47	39	35	31	63	54	50	42	38	36	68	61	56	47	44	45
	1100	519	*	*	*	*	*	*	62	52	49	40	36	32	65	56	52	43	39	37	70	62	58	49	45	46
	1300	614	*	*	*	*	*	*	64	53	51	41	36	33	67	57	54	44	40	38	72	64	60	50	46	47
12	700	330	48	39	35	26	24	20	53	46	39	31	30	28	56	49	41	35	34	33	61	56	46	40	40	41
	1000	472	51	43	39	31	27	22	57	49	43	36	33	30	60	52	46	39	36	35	65	59	50	44	42	43
	1300	614	54	45	42	34	28	24	60	51	47	39	34	32	63	55	49	42	38	37	68	61	53	48	44	45
	1600	755	56	47	45	37	30	25	62	53	49	42	36	33	65	57	52	45	39	38	70	63	56	50	45	46
	1900	897	*	*	*	*	*	*	64	54	51	44	37	34	67	58	54	47	40	39	72	64	58	53	46	47
14	1000	472	49	42	36	31	29	23	55	49	41	36	34	31	58	52	44	39	37	35	64	58	49	44	42	43
	1475	696	53	46	40	34	31	25	59	52	45	39	36	33	62	55	49	42	39	37	68	62	54	47	44	45
	2100	991	57	48	44	37	33	27	62	55	49	42	38	34	66	58	53	45	41	39	71	64	58	50	46	46
	2425	1144	*	*	*	*	*	*	64	56	51	43	39	35	67	59	54	46	42	39	73	66	60	51	47	47
	2900	1369	*	*	*	*	*	*	65	57	53	45	40	36	69	61	56	48	43	40	75	67	62	53	48	48
16	1200	566	49	42	35	29	25	22	54	49	40	34	30	29	57	52	43	37	32	33	63	59	48	42	37	39
	1775	838	53	45	41	33	30	27	58	51	46	38	35	33	61	55	49	41	37	37	67	62	54	46	42	44
	2350	1109	55	47	45	36	33	30	61	53	50	41	38	37	64	57	53	44	41	41	70	64	58	49	46	47
	2800	1321	*	*	*	*	*	*	63	55	52	43	40	39	66	58	55	46	43	43	72	65	61	51	48	49
	3500	1652	*	*	*	*	*	*	65	56	55	45	43	41	68	60	59	48	46	45	74	66	64	53	51	52

Performance Notes:

1. Test data obtained in accordance with AHRI Standard 880-2011 and ASHRAE Standard 130-2008.
2. Sound power levels include duct end corrections per AHRI Standard 880-2011. Please refer to page F25 for more details.
3. Airflow given in L/s and cfm.
4. Pressure is given in Pa and in.w.g.
5. All data are application ratings. Application ratings are outside the scope of the AHRI 880 Certification Program.
6. Asterisks (*) indicate minimum static pressure of the unit exceeds the minimum operating pressure across the unit.
7. Dashes (--) indicate sound power levels below 36-29-26-22-19-17 for each octave band; values below these sound power levels are considered below significance per AHRI 880.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimetre.

AHRI Certification Rating Points

DPS, DDS - Standard Model

Unit Size	Rated Airflow		Minimum Operating Pressure Required		Radiated Sound Power Level, dB at 1.5 in. w.g. [375 Pa] Octave Band						Discharge Sound Power Level, dB at 1.5 in. w.g. [375 Pa] Octave Band					
	L/s	cfm	Pa.	in. Water	2	3	4	5	6	7	2	3	4	5	6	7
4	71	150	67	0.27	50	44	43	37	34	30	65	56	49	39	41	37
5	118	250	80	0.32	55	47	45	37	34	30	69	60	53	45	46	43
6	189	400	177	0.71	59	50	47	38	34	30	76	65	60	50	51	51
7	260	550	144	0.58	64	53	48	41	38	34	78	69	63	54	55	52
8	330	700	142	0.57	65	55	50	42	38	37	78	69	63	56	56	54
9	425	900	129	0.52	65	55	50	42	39	37	78	68	63	56	56	55
10	519	1100	134	0.54	65	56	52	43	39	37	79	68	64	57	57	56
12	755	1600	119	0.48	65	57	52	45	39	38	78	68	66	57	58	58
14	991	2100	102	0.41	66	58	53	45	41	39	77	69	66	57	59	61
16	1321	2800	149	0.60	66	58	55	46	43	43	76	69	66	58	59	61

DPQ, DDQ - Quiet Model

Unit Size	Rated Airflow		Minimum Operating Pressure Required		Radiated Sound Power Level, dB at 1.5 in. w.g. [375 Pa] Octave Band						Discharge Sound Power Level, dB at 1.5 in. w.g. [375 Pa] Octave Band					
	L/s	cfm	Pa.	in. Water	2	3	4	5	6	7	2	3	4	5	6	7
4	71	150	57	0.23	51	45	44	37	34	30	60	51	42	26	22	19
5	118	250	72	0.29	57	48	45	38	35	30	67	57	47	32	25	20
6	189	400	159	0.64	62	51	47	39	36	32	73	62	54	37	29	25
7	260	550	129	0.52	64	55	50	43	39	36	75	66	56	40	31	33
8	330	700	124	0.5	64	56	51	44	39	36	76	67	57	43	33	35
9	425	900	107	0.43	65	57	52	44	39	37	76	66	57	43	34	41
10	519	1100	114	0.46	65	58	52	45	39	37	77	66	57	43	35	43
12	755	1600	105	0.42	65	59	52	45	39	37	77	66	57	45	41	46
14	991	2100	107	0.43	68	60	55	47	43	41	74	67	58	45	47	53
16	1321	2800	142	0.57	68	60	57	48	45	45	73	67	59	47	50	53

DPM, DDM - High-Mixing Model

Unit Size	Rated Airflow		Minimum Operating Pressure Required		Radiated Sound Power Level, dB at 1.5 in. w.g. [375 Pa] Octave Band						Discharge Sound Power Level, dB at 1.5 in. w.g. [375 Pa] Octave Band					
	L/s	cfm	Pa.	in. Water	2	3	4	5	6	7	2	3	4	5	6	7
4	71	150	52	0.21	56	51	41	34	31	31	61	45	37	37	32	28
5	118	250	47	0.19	56	50	42	35	31	26	66	49	39	39	35	29
6	189	400	102	0.41	59	55	46	39	34	29	70	57	46	46	43	40
7	260	550	109	0.44	63	52	44	37	35	31	73	60	52	51	48	45
8	330	700	122	0.49	64	52	45	37	33	33	76	63	54	53	51	46
9	425	900	100	0.4	62	54	47	39	34	31	75	60	55	51	51	46
10	519	1100	137	0.55	62	55	47	38	31	27	76	61	56	51	50	49
12	755	1600	92	0.37	64	56	47	39	35	37	77	62	53	51	49	42
14	991	2100	129	0.52	70	55	51	41	36	30	78	64	60	55	53	49
16	1321	2800	109	0.44	70	59	53	45	39	34	76	64	60	54	52	48

DPUQ, DDUQ - Ultra Quiet Model

Unit Size	Rated Airflow		Minimum Operating Pressure Required		Radiated Sound Power Level, dB at 1.5 in. w.g. [375 Pa] Octave Band						Discharge Sound Power Level, dB at 1.5 in. w.g. [375 Pa] Octave Band					
	L/s	cfm	Pa.	in. Water	2	3	4	5	6	7	2	3	4	5	6	7
4	71	150	2	0.01	57	45	41	34	30	26	62	47	35	22	24	27
5	118	250	15	0.06	60	46	42	36	33	31	64	49	35	23	29	33
6	189	400	124	0.50	61	49	45	38	36	34	69	56	43	30	34	37
7	260	550	109	0.44	64	54	47	42	37	32	73	60	45	33	37	39
8	330	700	112	0.45	64	53	48	43	39	35	73	60	45	36	39	40
9	425	900	97	0.39	63	54	48	45	41	37	74	59	45	37	41	42
10	519	1100	100	0.40	64	56	49	46	42	37	76	60	47	39	43	46
12	755	1600	90	0.36	65	56	51	45	43	40	70	60	47	41	45	48
14	991	2100	90	0.36	68	59	55	46	43	39	72	60	49	43	48	51
16	1321	2800	134	0.54	69	60	53	47	43	38	71	59	47	42	44	45

Performance Notes:

1. L/s, liters per second.
2. cfm, cubic feet per minute.
3. Pa, Pascals gauge.
4. Sound power levels expressed in decibels, (dB) re 10^{-12} watts.
5. Sound power levels include duct end corrections per AHRI Standard 880-2011. Please refer to page F25 for more details.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimetre.