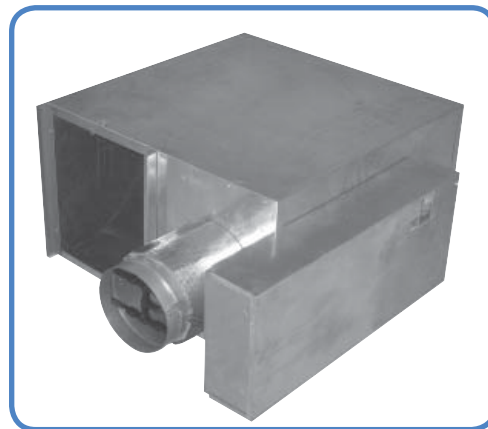


**Models** **ACF w/o Coil**  
**ACW w/Hot Water Coil**  
**ACE w/Electric Coil**

The **Carnes** constant volume fan terminal unit provides constant air volume to the space while retaining the advantages of a variable air volume system.

The primary air control assembly operates in the same manner as a standard throttling control valve when cooling loads are high. As cooling loads diminish the integral blower(s) induces warm ceiling plenum air to maintain constant air volume.



**Features Include:**

- Air flow capacities to 4130 CFM.
- Durable 22 gauge galvanized steel casing construction.
- Bottom access panel for internal components.
- Flange or slip and drive discharge connections.
- Forward curved centrifugal type fan assemblies with thermally protected, Permanent Split Capacitor or ECM type, fractional horsepower motors. Multiple voltages available.
- Adjustable SCR fan speed control.
- Fan/motor assemblies are isolated from the casing using rubber isolators to minimize vibration transmission.
- Low leakage primary air damper design.
- Secondary air filter rack.
- Performance data based on tests conducted in accordance with AHRI Standard 880-2008.
- Air flow switch.
- All units are equipped with pressure independent pneumatic or electronic controls.
- Field adjustable P/E switch with pneumatic controls.
- Tri-Averaging type velocity sensor and calibration chart for measuring air flow through the primary air damper.
- Insulation is 1" thick, 1-1/2 lb. dual density fiberglass with surface treated to prevent air erosion, UL listed and meets NFPA 90A requirements.
- Damper controls and fan controls are located in one enclosure.
- AHRI listed.
- Optional ETL listing.
- Optional secondary air sound baffle. Sound baffle is factory attached to secondary air inlet.
- Optional one to four row hot water coils (Model ACW). Coil is factory attached to the unit discharge.
- Optional one or two stage electric reheat coils (Model ACE). Coil is factory attached to unit discharge.
- Optional secondary air filters, Class I (re-usable) or Class II (throw away).
- Optional non-fused or fused fan disconnect switch.
- Optional foil coated insulation.
- Optional fiber-free liner.
- Optional dual wall.

**Available Modules:**

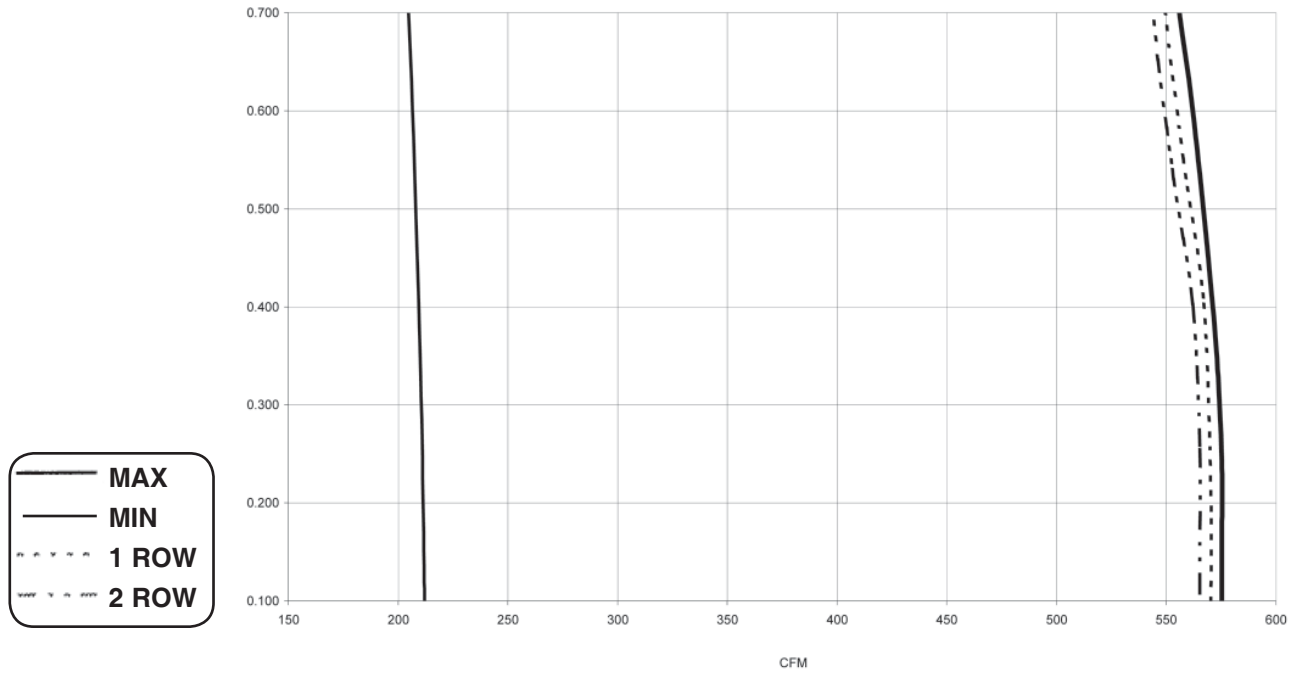
- Basic control unit — **Model ACF.**
- Basic control unit with hot water coil — **Model ACW.**
- Basic control unit with electric coil — **Model ACE.**



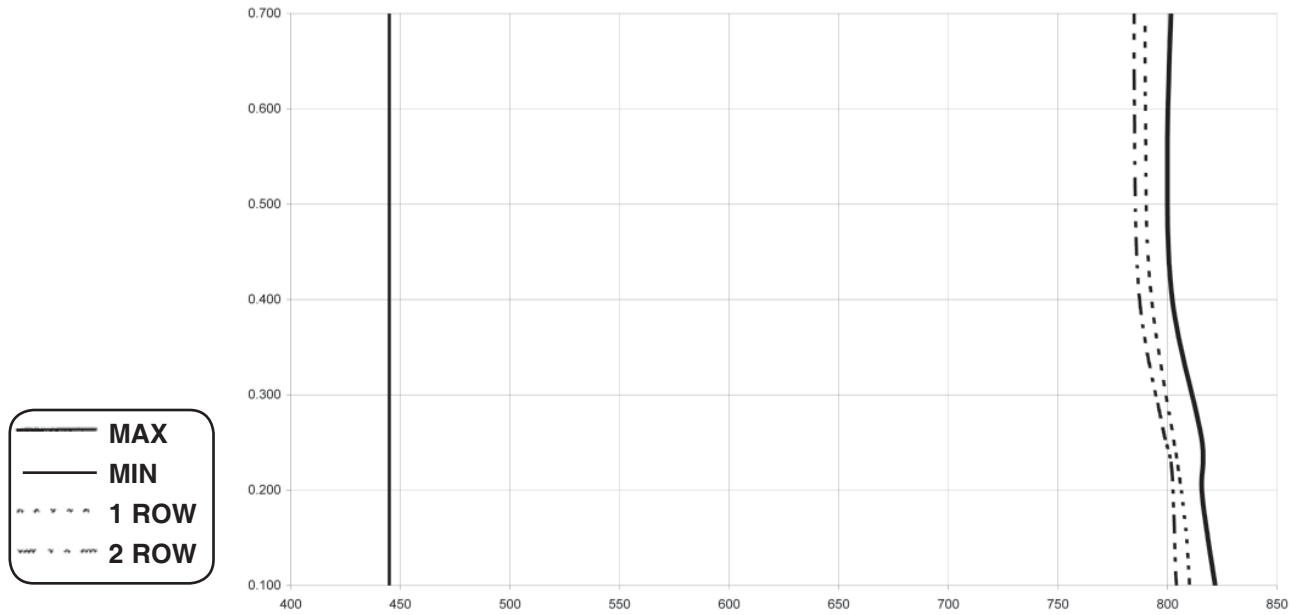
IAQ Insulation  
Available

## FAN CURVES CFM vs EXTERNAL STATIC PRESSURE

Fan Size B — AC 06  
1/3 HP ECM Motor



Fan Size C — AC 07  
1/3 HP ECM Motor

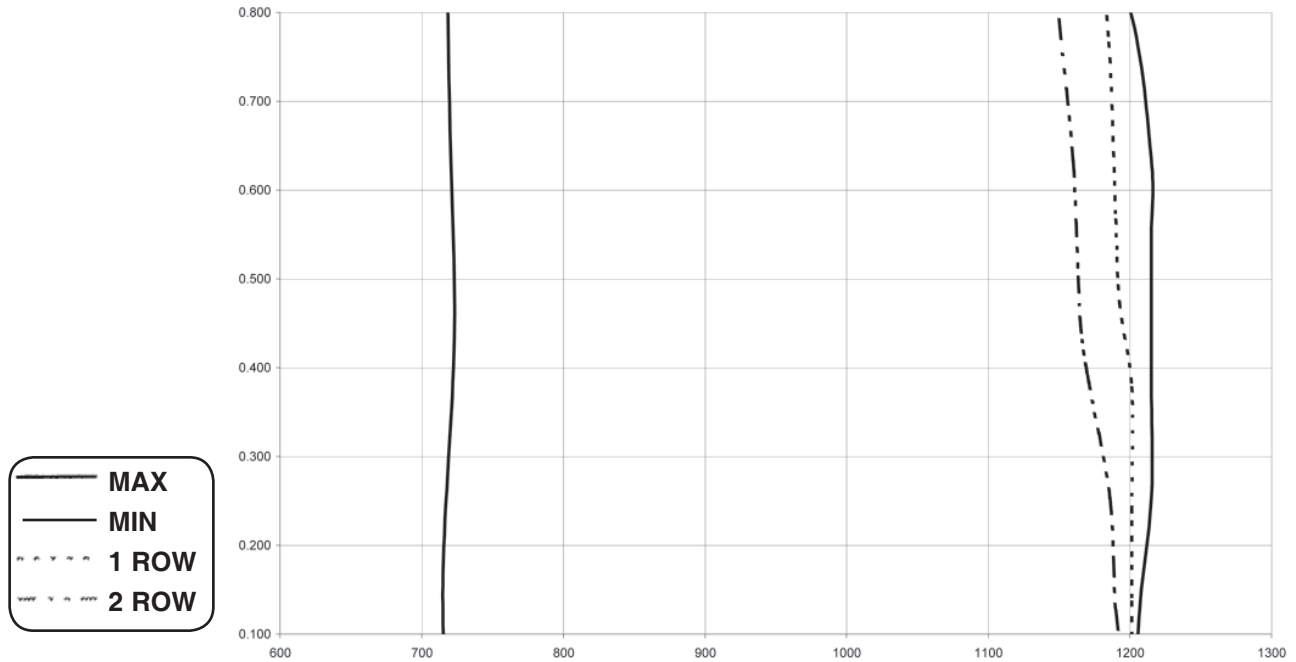


**NOTES:** 1. The ECM is designed to maintain a constant air flow as the static pressure changes.  
2. The ECM maintains the static pressure more accurately when close to the maximum flow for the unit. For this reason selection of a unit at the top of its range is recommended.

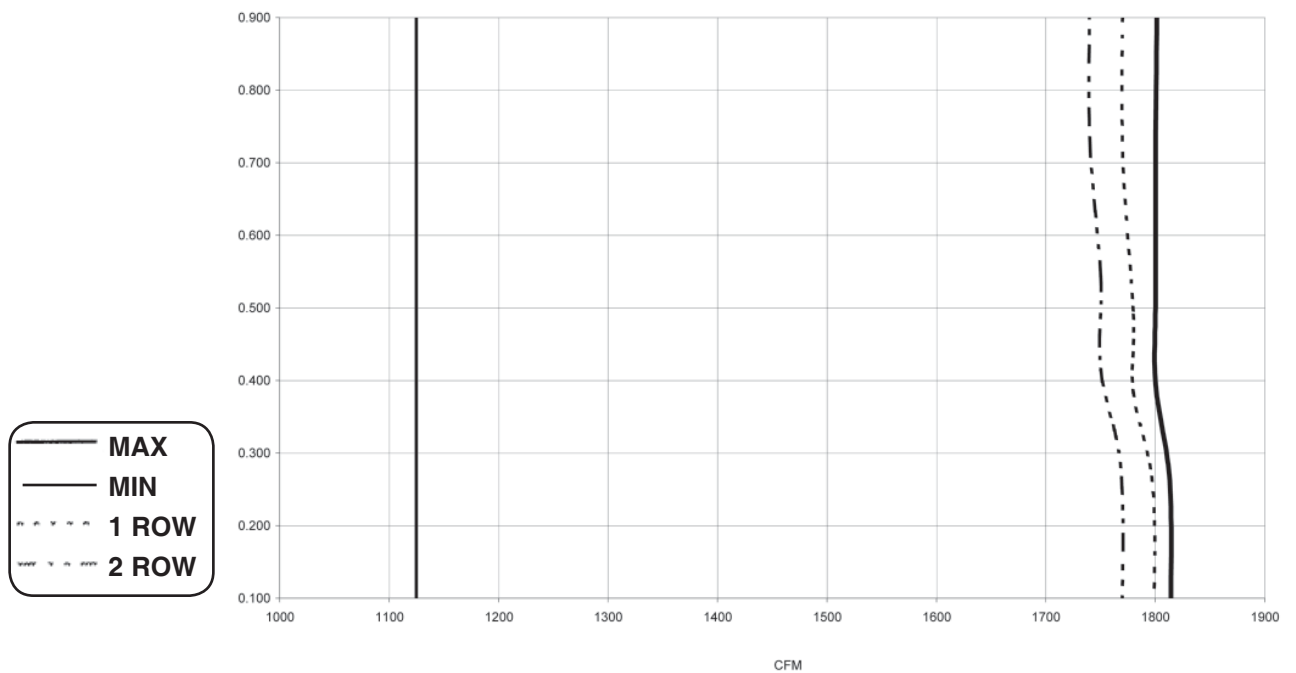
Fan Powered Units

## FAN CURVES CFM vs EXTERNAL STATIC PRESSURE

Fan Size D — AC 08  
1/3 HP ECM Motor



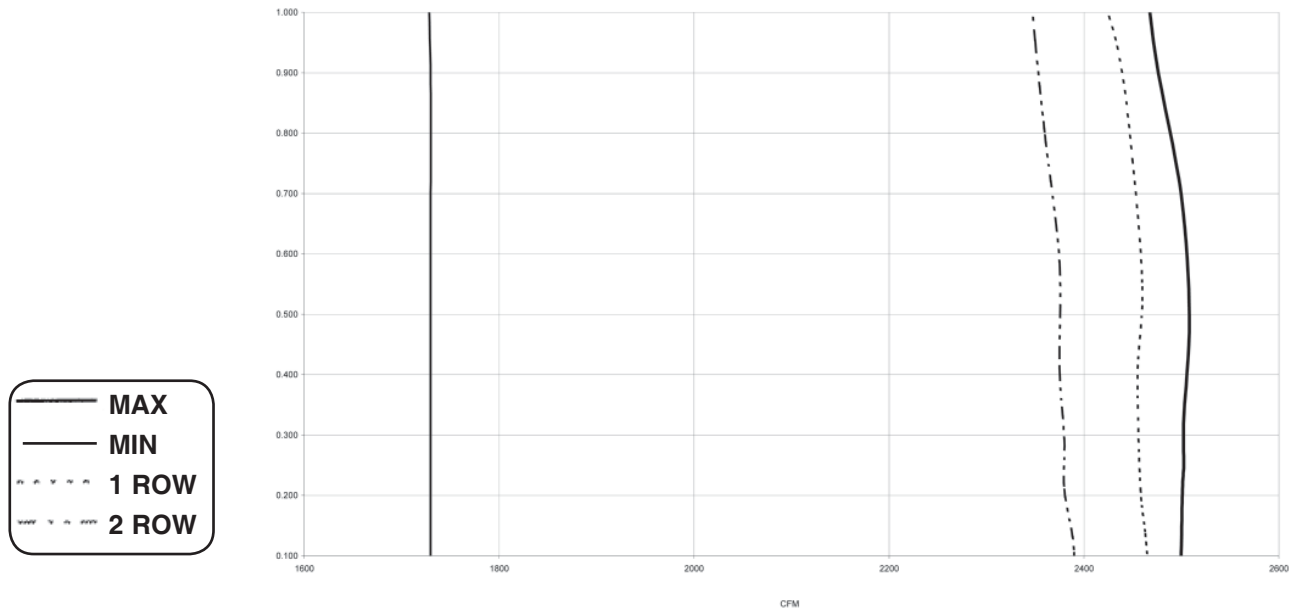
Fan Size E — AC 10  
1 HP ECM Motor



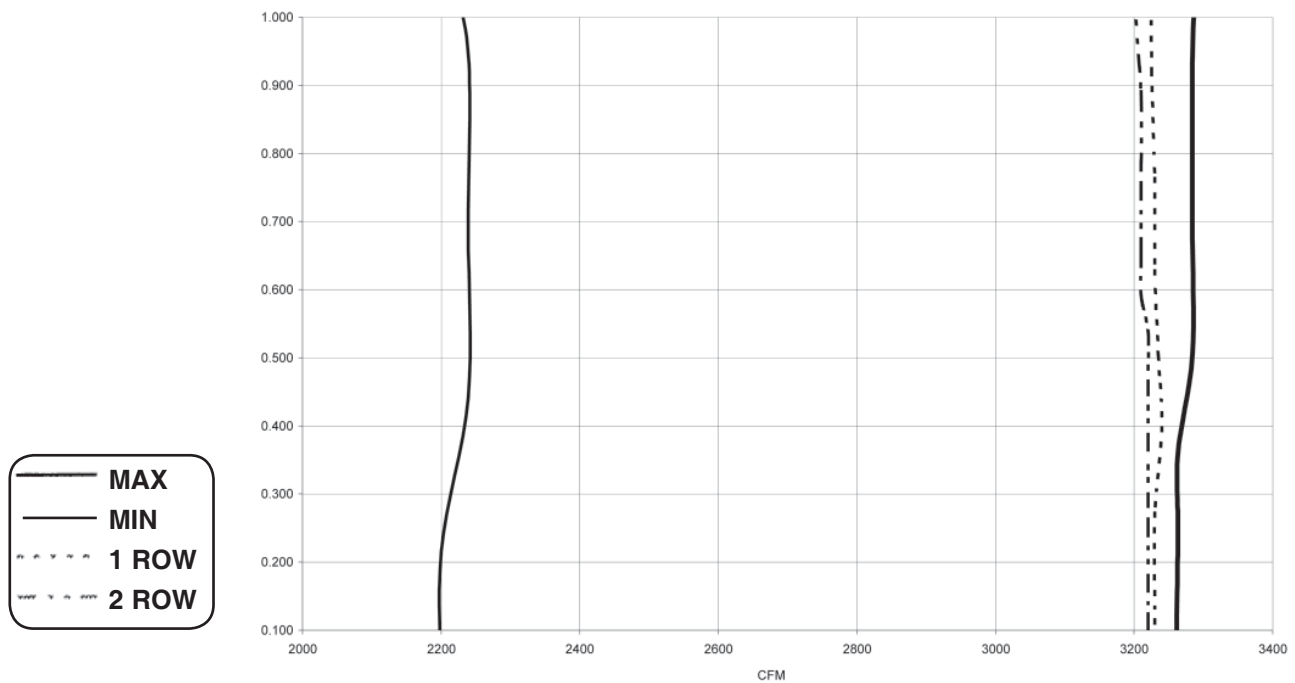
**NOTES:** 1. The ECM is designed to maintain a constant air flow as the static pressure changes.  
2. The ECM maintains the static pressure more accurately when close to the maximum flow for the unit. For this reason selection of a unit at the top of its range is recommended.

## FAN CURVES CFM vs EXTERNAL STATIC PRESSURE

Fan Size F — AC 12  
1 HP ECM Motor



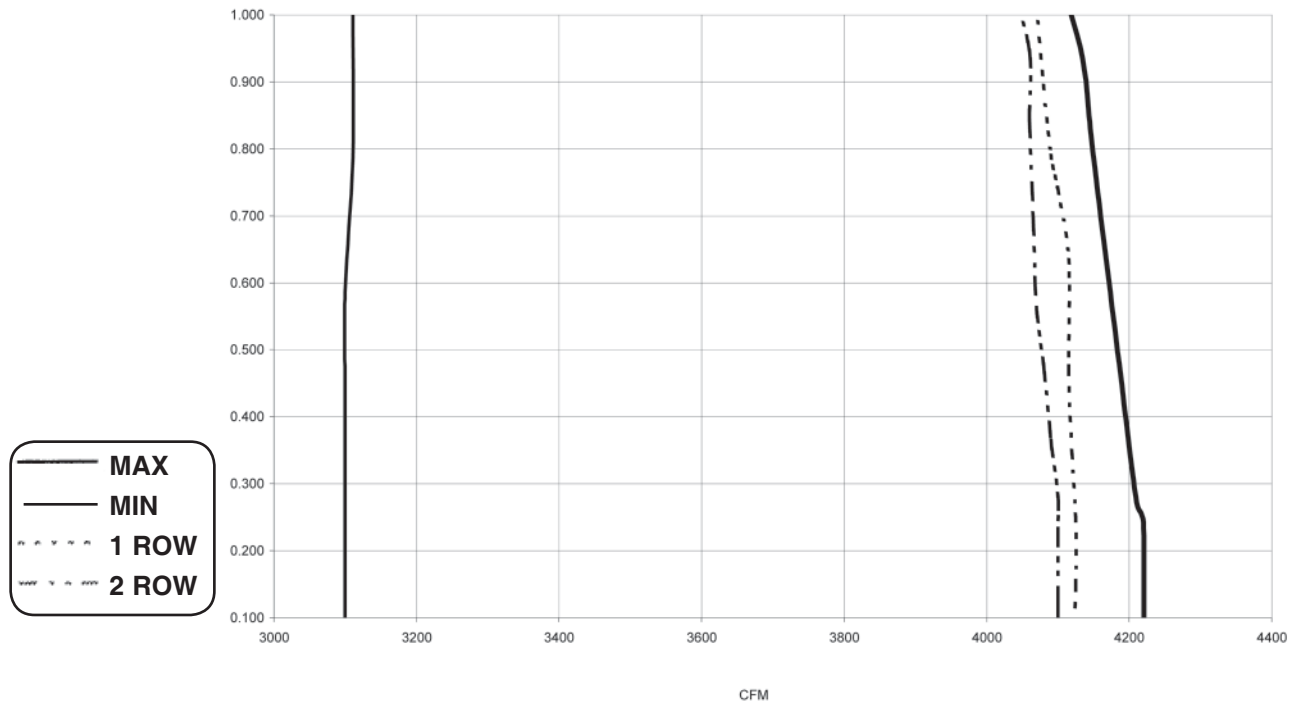
Fan Size H — AC 14  
2X 3/4 HP ECM Motor



- NOTES:**
1. The ECM is designed to maintain a constant air flow as the static pressure changes.
  2. The ECM maintains the static pressure more accurately when close to the maximum flow for the unit. For this reason selection of a unit at the top of its range is recommended.

## FAN CURVES CFM vs EXTERNAL STATIC PRESSURE

Fan Size J — AC 16  
(2) 1 HP ECM Motor



**NOTES:**

1. The ECM is designed to maintain a constant air flow as the static pressure changes.
2. The ECM maintains the static pressure more accurately when close to the maximum flow for the unit. For this reason selection of a unit at the top of its range is recommended.

## Model ACWJ

### Fan Power Terminal Units - ECM - 1 Row Coil

Unit Size	Air Flow CFM	Min. $\Delta P_s$ in w.g.	Discharge Sound Max. NC					Radiated Sound Max. NC				
			Fan Only	0.5" w.g.	1.0" w.g.	1.5" w.g.	3.0" w.g.	Fan Only	0.5" w.g.	1.0" w.g.	1.5" w.g.	3.0" w.g.
<b>6</b> <b>(B)</b>	375	0.174	20	26	26	27	30	30	33	33	33	35
	425	0.232	27	32	32	32	33	35	36	37	37	39
	475	0.293	30	35	36	36	36	37	41	41	41	43
	550	0.377	36	40	40	40	40	43	45	45	45	45
<b>7</b> <b>(C)</b>	650	0.219	30	33	33	33	36	37	37	37	39	41
	700	0.253	30	33	33	33	36	37	40	41	41	43
	750	0.292	32	36	36	36	37	41	41	43	44	45
	800	0.336	33	37	37	37	37	44	45	45	45	46
<b>8</b> <b>(D)</b>	950	0.219	22	28	30	30	30	33	39	40	41	42
	1050	0.277	25	31	32	33	33	34	42	44	44	44
	1100	0.310	26	32	33	33	35	35	43	44	47	47
	1200	0.365	28	33	36	36	36	37	44	46	48	48
<b>10</b> <b>(E)</b>	1450	0.156	26	29	29	31	34	36	40	43	44	48
	1550	0.174	28	30	30	33	36	39	43	44	46	49
	1650	0.201	30	31	31	34	37	40	45	45	48	50
	1800	0.243	31	33	35	36	40	41	48	48	50	53
<b>12</b> <b>(F)</b>	2200	0.221	35	38	41	43	45	44	50	54	57	58
	2300	0.233	36	39	43	44	48	44	52	54	57	59
	2400	0.265	37	39	43	45	48	45	52	56	57	61
	2500	0.286	37	41	43	45	49	46	53	56	58	61
<b>14</b> <b>(H)</b>	2800	0.164	30	35	37	38	42	41	43	44	47	52
	2900	0.173	30	35	38	40	42	42	42	46	48	52
	3000	0.188	31	36	38	40	43	43	44	47	48	53
	3200	0.223	33	38	41	42	46	45	47	47	49	49
<b>16</b> <b>(J)</b>	3700	0.284	37	34	37	40	44	48	46	49	50	54
	3900	0.313	39	35	38	41	46	50	47	50	52	55
	4050	0.333	40	37	40	41	46	50	49	52	53	56
	4200	0.354	41	38	41	42	46	52	52	53	55	58

- NOTES:**
1.  $\Delta P_s$  static pressure difference from inlet to discharge.
  2. The lowest value of  $\Delta P_s$  is the minimum pressure required to deliver CFM shown with primary damper in wide open position.
  3.  $\Delta P_s$  does not include hot water or electric coils.
  4. (—) indicates NC levels less than 10.

NC Levels are derived from tests conducted in accordance with AHRI Standard 880-2008 and are calculated in accordance with AHRI Standard 885-2008 as application data based on the following:

**Discharge NC levels are based on —**

- a) 5 foot rectangular duct lined with 1" fiberglass insulation.
- b) 5 foot lined flex duct (8" diameter).
- c) Flow division.
- d) Space effect factor (2400ft<sub>3</sub>) at 5 feet from outlet.
- e) End reflection.
- f) Environmental adjustment factor.

**Radiated NC levels are based on —**

- a) Plenum/ceiling effect - 5/8" mineral fiber tile, 35 lb/ft<sub>3</sub> - 3 foot plenum
- b) Environmental adjustment factor.

NC is not part of the AHRI 880 Certified Program.

Fan Powered Units

**Sound Data (Sound Power by Octave Band)**

**Discharge Sound Power**

**Model ACWJ**

**Fan Power Terminal Units - ECM - 1 Row**

Fan Powered Units

Inlet (Fan) Size	Air Flow CFM	Fan Only Octave Band							Primary Air							Primary Air							Primary Air							Primary Air						
		P <sub>s</sub> (0.5 w.g.) Octave Band							P <sub>s</sub> (1.0 w.g.) Octave Band							P <sub>s</sub> (1.5 w.g.) Octave Band							P <sub>s</sub> (3.0 w.g.) 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	2	3	4	5	6	7					
6 (B)	375	68	59	56	54	52	48	72	61	59	56	56	51	72	61	59	56	56	51	73	63	61	58	57	53	75	64	62	59	58	54					
	425	73	63	61	58	57	53	77	66	63	60	60	57	77	66	63	61	60	57	77	66	64	61	60	57	78	67	65	62	61	58					
	475	75	65	63	62	60	57	79	69	66	63	62	59	80	69	66	63	63	60	80	69	66	63	63	60	80	70	67	64	64	61					
	550	80	69	68	65	64	61	83	74	70	67	66	64	83	74	70	67	66	64	83	74	70	67	66	64	83	74	71	67	67	64					
7 (C)	650	75	66	63	62	60	57	78	70	67	66	64	61	78	70	67	66	65	62	78	70	67	66	65	62	80	71	69	68	67	64					
	700	77	67	65	64	62	59	80	71	69	68	66	63	80	71	69	68	66	64	80	71	69	68	67	64	82	73	71	69	68	66					
	750	79	69	67	66	64	62	82	73	71	69	68	65	82	73	71	69	68	66	82	74	71	69	68	66	83	75	73	71	70	67					
	800	80	72	69	68	66	63	83	75	73	71	69	67	83	75	73	71	69	67	83	75	73	71	69	68	83	76	73	71	70	69					
8 (D)	950	70	63	65	63	62	58	76	68	69	68	67	64	77	69	69	67	67	64	77	69	69	67	67	64	77	70	69	67	67	64					
	1050	71	64	67	65	64	61	78	71	71	71	70	67	79	71	71	70	69	66	80	72	71	70	69	66	80	73	71	70	69	66					
	1100	73	66	68	66	65	62	79	72	73	71	71	68	80	72	72	71	70	68	80	73	72	71	70	68	81	73	72	71	70	68					
	1200	75	67	69	68	67	64	80	73	74	73	72	70	82	75	74	73	72	70	82	75	74	73	72	70	82	76	74	73	72	70					
10 (E)	1450	70	64	68	67	65	62	74	68	70	68	68	65	76	70	71	69	68	65	78	73	72	70	69	66	80	75	73	71	70	67					
	1550	71	66	70	68	67	64	77	71	72	69	69	66	77	72	73	70	70	67	79	74	74	71	71	68	82	76	75	72	72	69					
	1650	73	69	71	70	68	66	78	73	74	71	71	68	78	73	74	71	71	68	80	75	75	72	72	69	83	77	76	74	73	70					
	1800	74	70	73	72	70	68	80	74	76	74	73	70	81	75	76	74	73	71	82	76	77	74	74	71	85	80	78	75	75	72					
12 (F)	2200	77	75	76	76	74	72	82	79	79	77	76	74	86	81	80	78	77	75	87	82	81	79	78	76	89	83	82	79	79	77					
	2300	78	76	77	77	75	73	84	79	79	78	77	74	87	81	81	79	78	76	88	83	82	80	79	77	91	84	83	80	79	77					
	2400	79	76	78	78	76	74	84	79	80	78	78	75	87	82	82	79	79	76	89	83	82	80	79	77	91	85	83	81	80	78					
	2500	79	77	78	78	77	74	85	81	81	79	78	76	87	83	82	80	79	77	89	83	83	80	79	77	92	85	84	81	80	78					
14 (H)	2800	73	70	70	71	69	66	79	76	72	74	71	68	82	78	74	75	72	70	82	79	74	75	73	70	84	82	76	77	74	72					
	2900	75	71	71	72	69	67	80	76	73	74	72	69	82	79	74	75	73	70	83	80	75	76	73	71	11	82	76	78	75	72					
	3000	75	72	72	73	70	68	80	77	74	75	72	70	81	79	75	76	73	71	83	80	75	77	74	72	85	83	77	78	75	73					
	3200	78	74	73	75	72	70	82	79	75	76	74	71	83	81	76	78	75	73	85	82	77	78	76	73	87	85	78	79	77	74					
16 (J)	3700	81	76	77	78	75	74	79	75	74	75	72	70	82	78	76	78	76	73	84	80	77	80	79	75	87	84	79	83	82	78					
	3900	82	79	78	80	77	76	80	76	75	76	73	71	83	79	77	79	77	74	85	81	79	81	80	76	89	85	80	83	83	80					
	4050	83	80	80	81	78	77	82	78	76	77	75	73	84	80	78	79	78	76	85	81	80	81	80	78	90	85	81	84	84	82					
	4200	84	81	80	82	79	78	82	79	77	78	75	74	85	81	79	80	79	77	86	82	80	81	80	78	89	85	82	84	84	83					

- NOTES:**
1. Based on tests conducted in accordance with AHRI Standard 880-2008.
  2.  $\Delta P_s$  static pressure difference from inlet to discharge.
  3.  $\Delta P_s$  is the minimum pressure required to deliver CFM shown with primary damper in wide open position.
  4. Dash (—) indicates db level less than 10.



A Participating Member in the AHRI 880 Certification Program

**Sound Data (Sound Power by Octave Band)**

**Radiated Sound Power**

**Model ACWJ**

**Fan Power Terminal Units - ECM - 1 Row**

Inlet (Fan) Size	Air Flow CFM	Fan Only Octave Band							Primary Air							Primary Air							Primary Air							Primary Air						
									P <sub>s</sub> (0.5 w.g.) Octave Band							P <sub>s</sub> (1.0 w.g.) Octave Band							P <sub>s</sub> (1.5 w.g.) Octave Band							P <sub>s</sub> (3.0 w.g.) 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	2	3	4	5	6	7	2	3	4	5	6
6 (B)	375	66	57	47	44	40	37	69	60	52	48	44	41	69	60	52	48	44	41	69	60	54	50	47	44	70	62	57	53	51	50					
	425	70	60	51	48	44	40	74	63	55	50	47	44	72	63	55	50	47	44	72	63	56	52	48	46	73	65	58	54	52	50					
	475	72	62	54	51	46	43	75	66	57	53	50	47	75	66	57	53	50	47	75	66	58	53	50	47	76	67	60	56	54	51					
	550	76	66	58	54	51	48	78	70	61	57	53	50	78	70	62	57	54	50	78	70	62	57	54	51	78	71	63	59	56	53					
7 (C)	650	72	63	53	50	47	44	72	64	56	52	49	46	72	65	57	53	50	46	73	67	59	54	51	49	75	69	62	58	55	54					
	700	72	64	54	51	48	45	74	68	59	54	51	48	75	68	59	55	52	49	75	68	60	55	52	50	76	70	63	59	56	54					
	750	75	66	56	53	50	47	75	69	60	56	53	50	76	69	61	56	53	50	77	70	62	57	54	51	78	72	64	60	57	55					
	800	77	69	58	55	52	50	78	70	62	57	55	52	78	72	63	58	56	53	78	73	64	59	56	53	79	73	65	61	58	56					
8 (D)	950	68	63	56	51	49	46	73	68	59	56	54	52	73	69	61	56	54	52	74	70	61	56	54	52	75	71	63	59	57	54					
	1050	69	64	56	52	51	48	74	71	62	58	56	54	76	73	63	58	56	54	77	73	64	58	56	54	77	73	65	61	58	56					
	1100	70	65	57	53	52	49	76	71	62	59	57	55	77	73	64	59	57	55	78	75	65	59	57	55	78	75	66	61	58	56					
	1200	72	67	59	56	54	51	77	72	64	61	59	57	78	74	66	61	59	57	79	76	66	61	59	57	80	76	68	63	60	58					
10 (E)	1450	71	65	59	56	54	50	74	69	62	58	60	53	76	70	63	60	57	54	77	72	65	61	58	55	80	75	68	64	60	56					
	1550	73	66	60	58	56	52	76	71	63	60	58	55	77	72	64	61	59	55	79	73	66	62	60	56	81	76	69	65	61	58					
	1650	74	68	61	59	57	54	78	72	65	62	60	56	78	73	65	62	60	56	80	75	67	63	61	57	82	77	69	65	62	59					
	1800	75	70	64	61	59	56	80	75	67	64	62	58	80	75	68	64	62	59	82	76	68	65	62	59	84	79	71	67	64	60					
12 (F)	2200	77	72	66	63	61	58	82	75	69	65	63	60	85	78	71	66	64	61	87	80	72	67	65	61	88	82	75	68	66	63					
	2300	77	72	67	64	62	59	83	76	70	65	64	60	85	79	72	67	65	62	87	80	72	67	65	62	89	82	75	69	66	63					
	2400	78	73	68	64	62	59	83	77	71	66	65	61	86	80	72	67	65	62	87	81	73	68	66	62	90	84	76	70	67	63					
	2500	79	74	68	64	63	59	84	77	71	67	65	62	86	80	72	67	66	62	88	81	73	68	66	63	90	84	76	70	67	64					
14 (H)	2800	74	70	65	63	60	55	75	72	65	63	60	55	76	73	68	65	62	58	78	75	69	67	64	59	81	79	74	71	68	63					
	2900	75	71	66	63	60	56	75	71	65	62	59	55	78	74	68	66	63	58	79	76	70	67	64	60	82	79	74	71	68	64					
	3000	76	71	66	64	61	57	77	73	67	64	61	57	78	75	69	66	63	59	79	76	70	68	65	60	82	80	74	71	69	64					
	3200	78	73	68	66	63	59	78	75	68	65	62	58	79	75	69	67	64	60	80	77	71	68	66	61	83	81	75	72	70	65					
16 (J)	3700	79	76	70	69	66	62	77	74	68	66	62	58	80	77	71	69	66	61	81	78	72	71	67	63	84	81	76	74	71	66					
	3900	80	78	71	71	67	63	78	75	70	68	64	60	81	78	71	70	67	63	83	79	73	72	68	64	85	82	77	75	72	67					
	4050	81	78	72	72	68	64	80	77	71	68	65	61	82	79	72	71	68	64	83	80	74	72	68	64	86	83	77	75	72	68					
	4200	82	79	72	72	68	64	81	79	72	70	67	63	84	80	74	72	69	65	84	82	75	73	70	68	87	84	77	76	73	68					

- NOTES:**
1. Based on tests conducted in accordance with AHRI Standard 880-2008.
  2. Δ P<sub>s</sub> static pressure difference from inlet to discharge.
  3. Δ P<sub>s</sub> is the minimum pressure required to deliver CFM shown with primary damper in wide open position.
  4. Dash (—) indicates db level less than 10.



A Participating Member in the AHRI 880 Certification Program

Fan Powered Units



## Model ACWJ

### Fan Power Terminal Units - ECM - 2 Rows Coil

Unit Size	Air Flow CFM	Min. $\Delta P_s$ in w.g.	Discharge Sound Max. NC					Radiated Sound Max. NC				
			Fan Only	0.5" w.g.	1.0" w.g.	1.5" w.g.	3.0" w.g.	Fan Only	0.5" w.g.	1.0" w.g.	1.5" w.g.	3.0" w.g.
<b>6</b> <b>(B)</b>	375	0.172	23	27	30	30	30	30	35	35	35	36
	425	0.233	28	32	32	32	33	35	39	39	39	40
	475	0.292	31	36	36	36	36	39	43	43	43	43
	550	0.368	37	41	41	41	41	45	46	46	46	46
<b>7</b> <b>(C)</b>	650	0.207	30	33	33	33	36	37	36	36	36	40
	700	0.254	28	33	33	33	36	40	40	40	40	44
	750	0.297	32	36	36	36	37	43	41	43	43	44
	800	0.340	35	37	37	39	39	45	44	44	44	46
<b>8</b> <b>(D)</b>	950	0.216	23	30	30	30	31	35	40	42	42	42
	1050	0.277	25	32	31	31	31	36	41	44	44	44
	1100	0.299	26	32	33	35	35	37	43	44	46	46
	1200	0.371	29	35	35	35	36	38	44	46	48	48
<b>10</b> <b>(E)</b>	1450	0.155	27	29	30	31	34	37	41	43	45	48
	1550	0.178	29	30	31	33	35	39	45	45	48	50
	1650	0.203	30	31	32	34	39	40	45	45	48	50
	1800	0.244	32	34	35	36	40	41	48	49	49	53
<b>12</b> <b>(F)</b>	2000	0.176	34	36	37	40	41	43	49	52	53	56
	2100	0.193	35	36	40	40	43	43	49	52	54	58
	2200	0.216	35	37	40	41	43	43	50	53	54	58
	2300	0.242	35	39	40	41	44	43	50	53	56	59
<b>14</b> <b>(H)</b>	2800	0.166	30	36	38	38	42	41	43	46	46	52
	2900	0.184	31	36	40	41	43	43	44	46	48	53
	3000	0.191	32	37	40	41	44	43	46	47	48	53
	3200	0.224	34	38	41	43	46	46	47	49	49	54
<b>16</b> <b>(J)</b>	3700	0.271	38	35	38	40	44	49	47	50	52	55
	3900	0.302	40	37	40	42	46	50	49	52	53	56
	4050	0.322	40	38	42	43	47	50	50	53	54	57
	4200	0.349	41	41	42	44	47	50	52	54	56	58

- NOTES:**
1.  $\Delta P_s$  static pressure difference from inlet to discharge.
  2. The lowest value of  $\Delta P_s$  is the minimum pressure required to deliver CFM shown with primary damper in wide open position.
  3.  $\Delta P_s$  does not include hot water or electric coils.
  4. (—) indicates NC levels less than 10.

NC Levels are derived from tests conducted in accordance with AHRI Standard 880-2008 and are calculated in accordance with AHRI Standard 885-2008 as application data based on the following:

**Discharge NC levels are based on —**

- a) 5 foot rectangular duct lined with 1" fiberglass insulation.
- b) 5 foot lined flex duct (8" diameter).
- c) Flow division.
- d) Space effect factor (2400ft<sub>3</sub>) at 5 feet from outlet.
- e) End reflection.
- f) Environmental adjustment factor.

**Radiated NC levels are based on —**

- a) Plenum/ceiling effect - 5/8" mineral fiber tile, 35 lb/ft<sub>3</sub> - 3 foot plenum
- b) Environmental adjustment factor.

NC is not part of the AHRI 880 Certified Program.

**Sound Data (Sound Power by Octave Band)**

**Discharge Sound Power**

**Model ACWJ**

**Fan Power Terminal Units - ECM - 2 Rows**

Inlet (Fan) Size	Air Flow CFM	Fan Only Octave Band						Primary Air						Primary Air						Primary Air						Primary Air					
								P <sub>s</sub> (0.5 w.g.) Octave Band						P <sub>s</sub> (1.0 w.g.) Octave Band						P <sub>s</sub> (1.5 w.g.) Octave Band						P <sub>s</sub> (3.0 w.g.) 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	2	3	4	5	6	7
6 (B)	375	70	59	57	54	53	49	73	64	61	58	58	55	73	63	61	58	58	55	73	63	61	59	59	55	75	65	63	70	70	57
	425	74	64	61	59	58	55	77	67	64	62	61	58	77	67	64	62	61	58	77	68	65	62	62	59	78	69	66	63	63	60
	475	76	67	64	62	61	58	80	71	67	64	64	62	80	71	67	64	64	62	80	71	68	64	64	62	80	71	68	65	65	63
	550	81	71	68	66	65	63	84	75	71	68	68	66	84	75	71	68	68	66	84	75	71	68	68	66	84	75	72	68	68	66
7 (C)	650	75	65	62	62	60	57	78	70	67	66	65	62	78	70	67	66	65	62	78	70	67	66	65	62	80	72	69	68	67	64
	700	76	67	64	64	62	59	80	72	69	68	66	64	80	72	69	68	66	64	80	72	69	68	66	64	82	74	71	69	68	66
	750	79	69	66	66	64	61	82	73	71	69	67	65	82	73	71	69	68	66	82	73	71	69	68	66	83	75	72	71	70	67
	800	81	71	68	67	66	63	83	75	72	70	69	66	83	75	73	71	70	67	84	76	73	71	70	67	84	76	73	72	70	68
8 (D)	950	71	63	65	64	62	59	77	68	69	68	67	64	77	69	69	68	67	64	77	70	69	68	67	64	78	70	71	68	67	64
	1050	72	65	67	66	64	61	79	70	71	70	69	67	78	71	71	70	69	67	78	71	71	70	69	67	78	72	72	70	69	67
	1100	74	67	67	67	65	62	79	72	72	72	71	68	80	72	72	71	70	68	81	73	73	71	70	68	81	73	73	71	70	68
	1200	76	68	69	69	67	65	81	73	74	73	72	69	82	74	73	72	72	69	82	75	73	72	71	69	82	75	74	72	71	69
10 (E)	1450	71	66	69	68	66	63	75	69	71	69	69	65	76	71	72	70	69	66	78	72	72	70	70	67	80	75	73	71	71	68
	1550	72	68	70	70	68	65	76	71	72	70	70	67	78	72	73	71	70	68	79	74	73	71	71	68	81	76	75	73	72	69
	1650	73	68	71	71	69	66	78	73	74	72	72	68	79	73	74	72	72	69	80	75	75	73	72	70	84	78	76	74	74	71
	1800	75	71	73	73	71	69	80	75	76	74	73	70	81	75	76	74	73	71	82	76	77	74	74	71	85	79	78	76	75	72
12 (F)	2000	77	73	75	76	73	71	82	76	77	76	74	72	83	77	78	77	75	73	85	79	78	77	76	73	86	80	78	77	76	73
	2100	78	74	75	76	74	72	82	77	77	77	75	72	85	78	78	77	75	73	85	79	78	77	76	74	87	81	79	77	76	74
	2200	78	74	75	76	74	72	83	77	78	77	75	73	85	79	78	77	75	73	86	80	79	77	76	74	87	82	79	78	77	74
	2300	78	74	76	77	74	72	84	77	77	77	75	73	85	79	79	78	76	74	86	80	79	78	77	74	88	82	79	78	77	74
14 (H)	2800	75	72	71	72	69	67	80	77	73	74	72	70	82	79	75	75	72	71	83	79	75	76	73	71	86	82	77	77	75	73
	2900	75	73	71	72	70	68	81	77	74	75	72	70	82	80	75	76	73	72	85	81	76	76	74	73	86	83	77	78	75	74
	3000	77	73	72	74	71	69	82	78	75	75	73	71	83	80	76	77	74	73	85	81	77	77	75	73	87	84	78	79	76	74
	3200	79	75	74	75	73	71	82	79	76	77	74	73	85	81	77	78	76	74	86	83	78	79	76	74	88	85	79	80	77	76
16 (J)	3700	80	78	77	79	76	75	80	76	74	76	73	72	82	78	76	79	77	75	84	80	77	81	79	77	87	84	80	83	82	80
	3900	82	80	78	80	77	76	82	78	76	77	75	74	85	80	78	80	78	76	86	82	79	81	80	78	89	85	81	84	83	81
	4050	84	80	79	80	78	77	83	79	77	78	76	74	86	82	79	81	79	77	86	83	80	82	81	79	89	86	81	84	84	82
	4200	84	81	79	81	79	78	85	81	79	80	78	76	86	82	79	81	80	78	88	84	80	83	82	80	90	86	82	85	85	83

- NOTES:**
1. Based on tests conducted in accordance with AHRI Standard 880-2008.
  2. Δ P<sub>s</sub> static pressure difference from inlet to discharge.
  3. Δ P<sub>s</sub> is the minimum pressure required to deliver CFM shown with primary damper in wide open position.
  4. Dash (—) indicates db level less than 10.



A Participating Member in the AHRI 880 Certification Program

Fan Powered Units

**Sound Data (Sound Power by Octave Band)**

**Radiated Sound Power**

**Model ACWJ**

**Fan Power Terminal Units - ECM - 2 Rows**

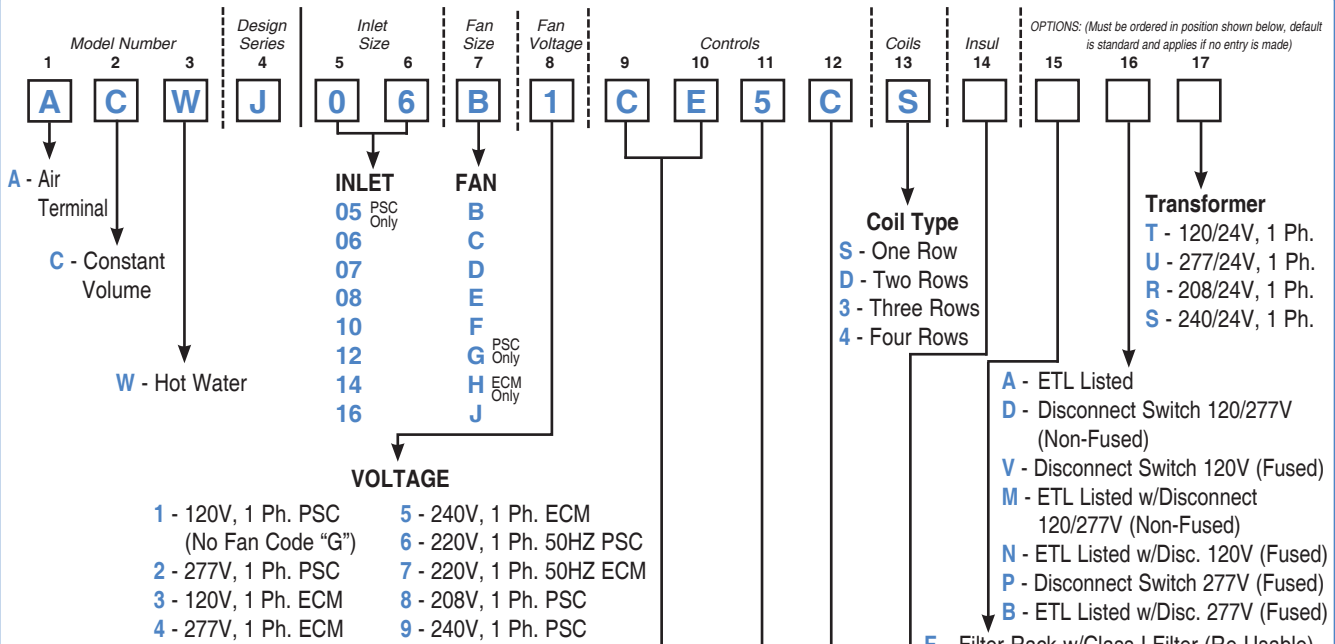
Fan Powered Units

Inlet (Fan) Size	Air Flow CFM	Fan Only Octave Band						Primary Air						Primary Air						Primary Air						Primary Air					
								P <sub>s</sub> (0.5 w.g.) Octave Band						P <sub>s</sub> (1.0 w.g.) Octave Band						P <sub>s</sub> (1.5 w.g.) Octave Band						P <sub>s</sub> (3.0 w.g.) 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	2	3	4	5	6	7
6 (B)	375	66	58	48	44	39	36	70	61	52	47	44	41	70	61	52	49	45	42	70	61	54	50	47	44	71	63	57	53	50	50
	425	70	62	52	50	44	41	73	64	54	51	47	45	73	64	55	51	47	45	73	64	56	52	48	47	74	66	58	55	52	51
	475	73	64	54	51	47	45	76	67	57	53	50	48	76	67	58	53	50	48	76	67	58	54	51	49	76	68	60	56	54	52
	550	78	68	58	54	50	49	79	71	61	56	53	51	79	71	62	57	53	52	79	71	62	57	53	52	79	71	63	58	55	54
7 (C)	650	72	63	53	49	46	44	71	64	56	52	49	47	71	65	57	53	50	48	71	66	59	54	50	49	74	68	62	58	55	54
	700	74	64	55	52	49	46	74	66	58	54	51	49	74	68	59	55	52	50	74	68	61	55	52	51	77	70	63	59	56	55
	750	76	66	57	53	50	48	75	68	60	55	53	51	76	70	61	56	53	52	76	70	61	57	53	52	77	72	64	60	57	56
	800	78	69	59	55	53	51	77	70	62	58	55	53	77	72	63	59	56	54	77	72	64	59	55	54	79	73	65	61	58	57
8 (D)	950	69	65	56	52	50	47	73	69	60	56	54	52	74	71	61	56	54	52	74	71	62	57	55	53	75	71	64	60	57	54
	1050	70	66	57	54	52	50	74	70	62	58	57	55	76	73	63	58	57	55	77	73	64	59	57	55	77	73	65	61	58	56
	1100	71	67	59	55	52	51	76	71	63	59	58	56	77	73	64	60	58	56	78	74	65	60	58	56	78	74	66	61	59	57
	1200	72	68	60	56	54	52	77	72	64	61	59	57	78	74	66	61	59	57	80	76	66	61	59	57	80	76	68	63	60	58
10 (E)	1450	72	66	59	57	55	51	75	70	62	59	57	53	76	71	63	60	58	54	78	72	65	61	59	55	80	75	68	64	60	57
	1550	73	67	61	59	56	53	78	72	64	61	59	56	78	73	65	62	60	56	80	74	66	63	60	57	82	77	70	65	62	58
	1650	74	68	62	60	58	54	78	73	65	62	60	56	78	73	66	62	60	57	80	75	67	63	61	58	82	77	70	65	62	59
	1800	75	70	63	61	59	56	80	74	66	64	62	58	81	76	68	64	62	59	81	76	68	65	62	59	84	79	71	67	64	61
12 (F)	2200	75	69	63	61	59	56	81	74	67	63	62	58	83	76	68	64	62	59	84	78	69	64	63	59	86	81	73	67	64	60
	2300	76	70	64	61	60	57	81	75	68	64	62	58	83	76	69	64	62	59	85	78	70	65	63	59	88	81	73	67	64	60
	2400	76	70	64	61	60	57	82	76	68	64	62	59	84	77	69	64	63	59	85	78	70	65	63	59	88	81	73	67	64	61
	2500	76	70	64	62	60	57	82	75	68	64	63	59	84	78	69	65	63	60	86	79	70	65	64	60	89	82	74	68	65	61
14 (H)	2800	74	70	65	63	60	56	76	72	65	63	60	56	77	74	68	65	63	58	78	74	70	67	64	59	81	79	74	71	68	63
	2900	76	71	66	64	60	57	76	73	66	64	60	56	77	74	68	66	63	59	79	76	70	67	65	60	82	80	74	71	68	64
	3000	76	72	66	65	61	58	77	74	67	64	61	57	78	75	69	66	64	60	80	76	70	68	65	61	83	80	75	71	69	64
	3200	77	74	68	66	63	60	78	75	68	66	62	59	80	77	70	67	65	61	80	77	71	69	66	62	83	81	75	72	70	65
16 (J)	3700	81	77	70	69	66	62	79	75	69	66	64	60	82	78	71	69	66	62	82	79	73	70	68	63	85	82	76	73	71	66
	3900	82	78	71	70	67	63	81	77	70	67	65	61	82	79	72	70	68	64	83	80	74	71	69	65	86	82	77	74	72	68
	4050	82	78	72	70	67	64	82	78	71	68	66	62	84	80	73	71	69	65	85	81	74	72	70	66	87	83	78	75	73	69
	4200	82	78	72	70	67	64	83	79	72	69	67	64	84	81	74	72	70	66	86	82	75	73	71	67	88	84	79	75	74	70

- NOTES:**
1. Based on tests conducted in accordance with AHRI Standard 880-2008.
  2. Δ P<sub>s</sub> static pressure difference from inlet to discharge.
  3. Δ P<sub>s</sub> is the minimum pressure required to deliver CFM shown with primary damper in wide open position.
  4. Dash (—) indicates db level less than 10.



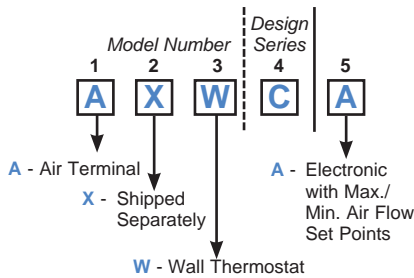
A Participating Member in the AHRI 880 Certification Program



- VOLTAGE**
- |  |                          |
|--|--------------------------|
| 1 - 120V, 1 Ph. PSC<br>(No Fan Code "G") | 5 - 240V, 1 Ph. ECM      |
| 2 - 277V, 1 Ph. PSC                      | 6 - 220V, 1 Ph. 50HZ PSC |
| 3 - 120V, 1 Ph. ECM                      | 7 - 220V, 1 Ph. 50HZ ECM |
| 4 - 277V, 1 Ph. ECM                      | 8 - 208V, 1 Ph. PSC      |
|  | 9 - 240V, 1 Ph. PSC      |
- CONTROL TYPE**
- CE - Pneumatic Actuator by Carnes, Reset Controller by Carnes
  - CX - Pneumatic Actuator by Carnes, (Multi-function) Reset Controller by Carnes
  - ET - Analog Electronic Velocity Controller with Integral Damper Actuator
  - DD - SimplyVAV, DDC by Carnes for Staged Heat
  - DM - SimplyVAV, DDC by Carnes for Modulating Heat
  - DO - DDC Provided by Others, Mounted and Wired by Carnes, with Carnes Inlet Sensor, with 3/8" Damper Shaft, with Enclosure
  - DE - No Damper Controls. Enclosure with Carnes Inlet Sensor and Bare 3/8" Damper Shaft

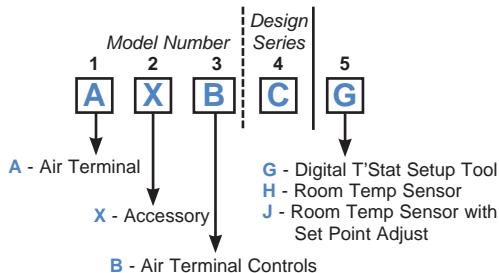
**NOTE:** Hand of controls is determined by facing the averaging flow sensor (inlet of the unit) with the supply air hitting the back of your head.

▼ **Electronic Thermostat**



A Carnes Electronic Thermostat **must be ordered** with the ET Electronic Control Option.

▼ **Direct Digital Control (DD/DC/DM)**



**ACTUATOR VENDOR**

- C - Carnes OEM
- D - DDC Actuator (DO Option Only)
- N - Not Applicable (DE Option Only)

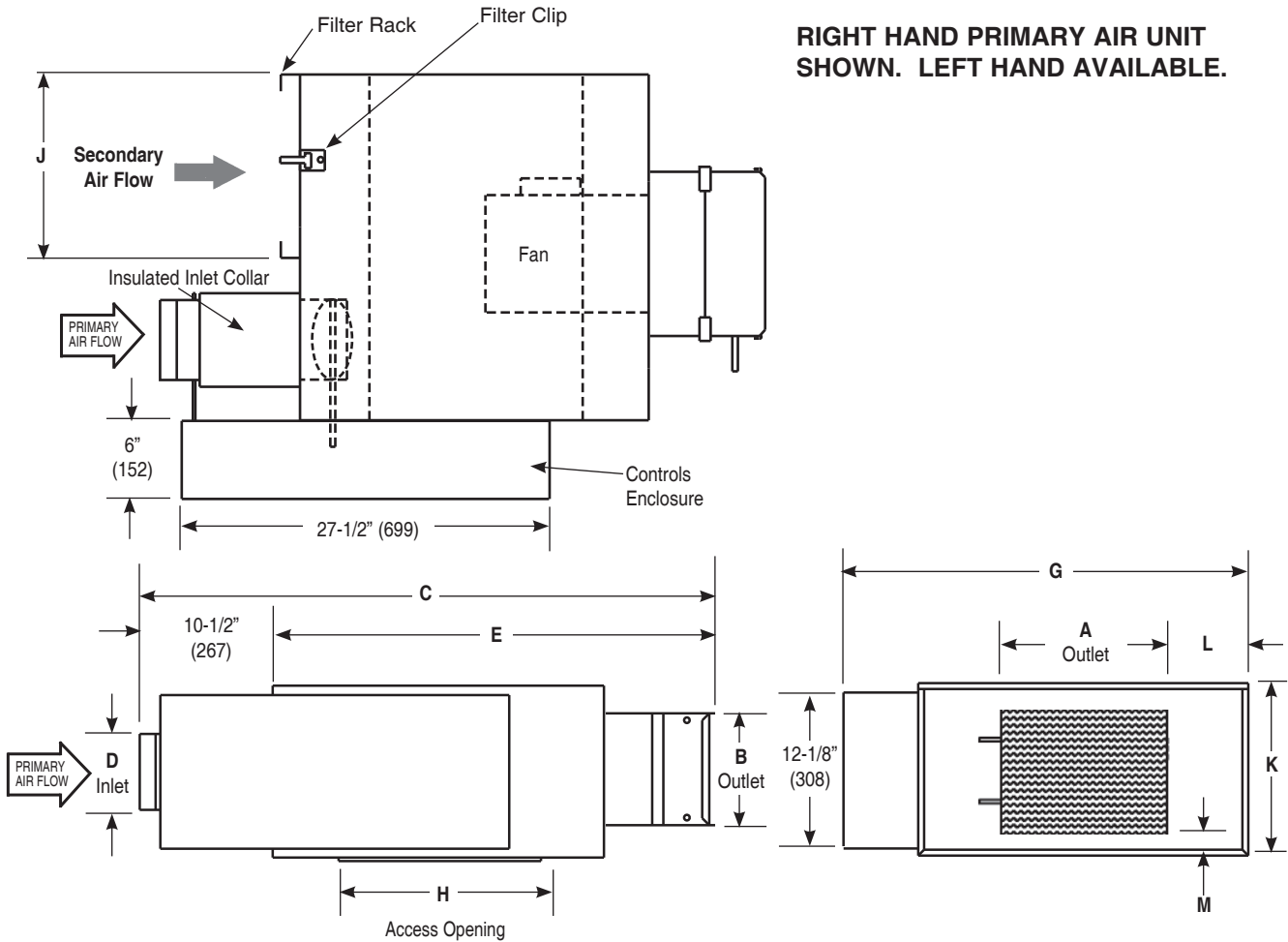
**CONTROLS AND DAMPER ARRANGEMENT**

- \*1 - Normally Open - Right Hand Controls (Electronic/DO, DE, ET) (All Pneumatic Control Types for Reverse Acting Thermostat)
- \*2 - Normally Open - Left Hand Controls (Electronic/DO, DE, ET) (All Pneumatic Control Types for Reverse Acting Thermostat)
- 3 - Normally Closed - Right Hand Controls (All Pneumatic Control Types for Direct Acting Thermostat)
- 4 - Normally Closed - Left Hand Controls (All Pneumatic Control Types for Direct Acting Thermostat)
- 5 - Normally Open - Right Hand Controls (All Pneumatic Control Types for Direct Acting Thermostat)
- 6 - Normally Open - Left Hand Controls (All Pneumatic Control Types for Direct Acting Thermostat)
- 7 - Normally Closed - Right Hand Controls (All Pneumatic Control Types for Reverse Acting Thermostat)
- 8 - Normally Closed - Left Hand Controls (All Pneumatic Control Types for Reverse Acting Thermostat)

\* Electronic and DDC Units **DO NOT** fail open. '1' or '2' is used for Right or Left Hand Only. Electronic Units are shipped with the Damper in the Open Position.

**FAN SIZES B - F — ECM**

**RIGHT HAND PRIMARY AIR UNIT SHOWN. LEFT HAND AVAILABLE.**

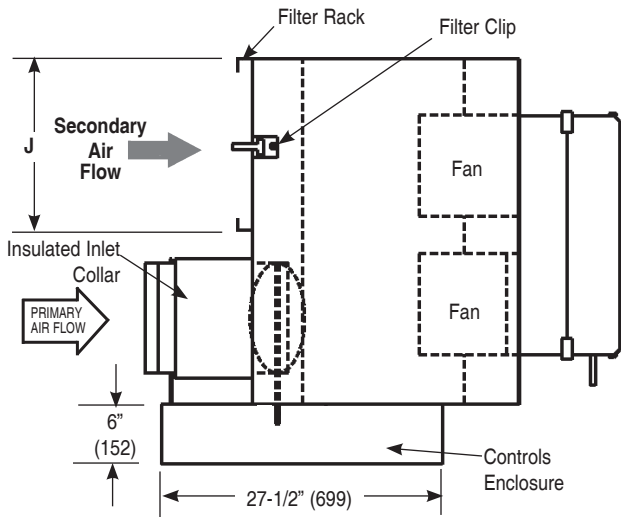


**DIMENSIONS LISTED IN INCHES (Millimeters)**

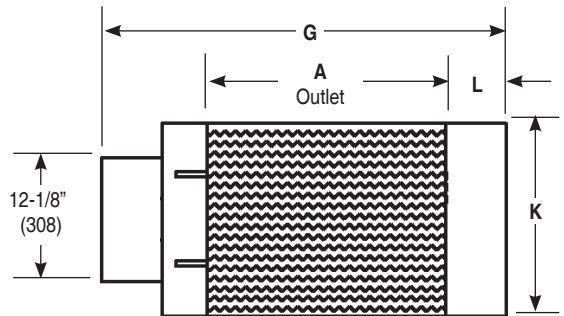
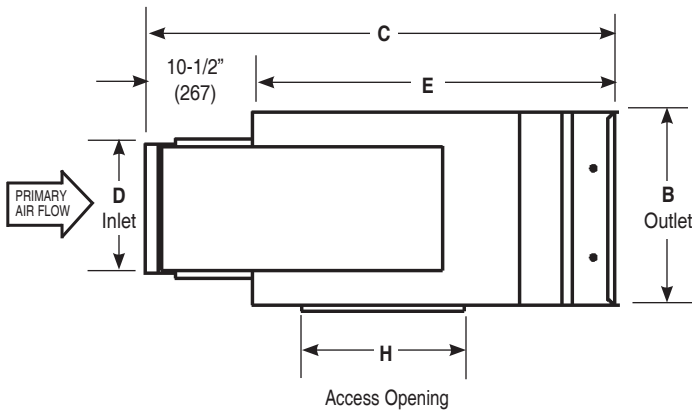
Fan Size	Inlet Size	Primary CFM (L/s)	Sec. CFM @ .25" E.S.P. (L/s)	Fan H.P.	Outlet		1 Row	2 Row	Inlet		1 Row	2 Row	G	H	J	K	L	M
					A	B	C	C	D	E	E							
B	06	500 (236)	550 (260)	1/3					5-7/8 (149)	39-1/16 (992)	40-7/16 (1027)	29-15/16 (760)	19-5/8 (498)	13-3/4 (349)	15 (381)	4-15/16 (125)		
C	07	700 (330)	800 (378)	1/3	14 (356)	12-1/2 (318)	50-7/16 (1281)	51-13/16 (1316)	6-7/8 (175)									
D	08	1000 (472)	1200 (566)	1/3					7-7/8 (200)	39-1/4 (997)	40-5/8 (1032)	35-3/4 (908)	20 (508)	15-3/4 (400)		8 (203)		
E	10	1500 (708)	1800 (850)	1	16 (406)	15 (381)	50-13/16 (1291)	52-3/16 (1326)	9-7/8 (251)	40-5/16 (1024)	41-11/16 (1059)	41-3/4 (1048)	22 (559)	20-3/4 (527)	17-1/2 (445)	9-1/2 (241)		
F	12	2300 (1086)	2500 (1180)	1			50-9/16 (1284)	52 (1321)	11-7/8 (302)	40-1/16 (1018)	41-1/2 (1054)		21-3/4 (552)	19-3/4 (502)				

**Note:** Outlet is designed for slip and drive duct connection.

• FAN SIZES H and J — ECM



RIGHT HAND PRIMARY AIR UNIT AND COIL CONNECTIONS SHOWN. LEFT HAND AVAILABLE.



DIMENSIONS LISTED IN INCHES (Millimeters)																
Fan Size	Inlet Size	Primary CFM (L/s)	Sec. CFM @ .25" E.S.P. (L/s)	Fan H.P.	Outlet		1 Row	2 Row	Inlet D	1 Row	2 Row	G	H	J	K	L
					A	B	C	C		E	E					
H	14	3100 (1462)	3200 (1510)	1 (2)	42 (1067)	17-1/2 (445)	50-1/4 (1276)	51-1/2 (1308)	13-7/8 (352)	39-3/4 (1010)	41 (1041)	56 (1422)	17-3/4 (451)	27-7/8 (708)	18-1/4 (463)	4 (102)
J	16	4200 (1982)	4200 (1982)	1 (2)					15-7/8 (403)							

Note: Outlet is designed for slip and drive duct connection.

Fan Powered Units