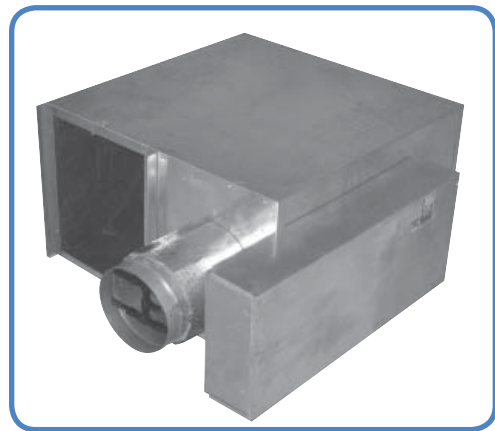


**Models** **ACF w/o Coil**  
**ACW w/Hot Water Coil**  
**ACE w/Electric Coil**

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:**

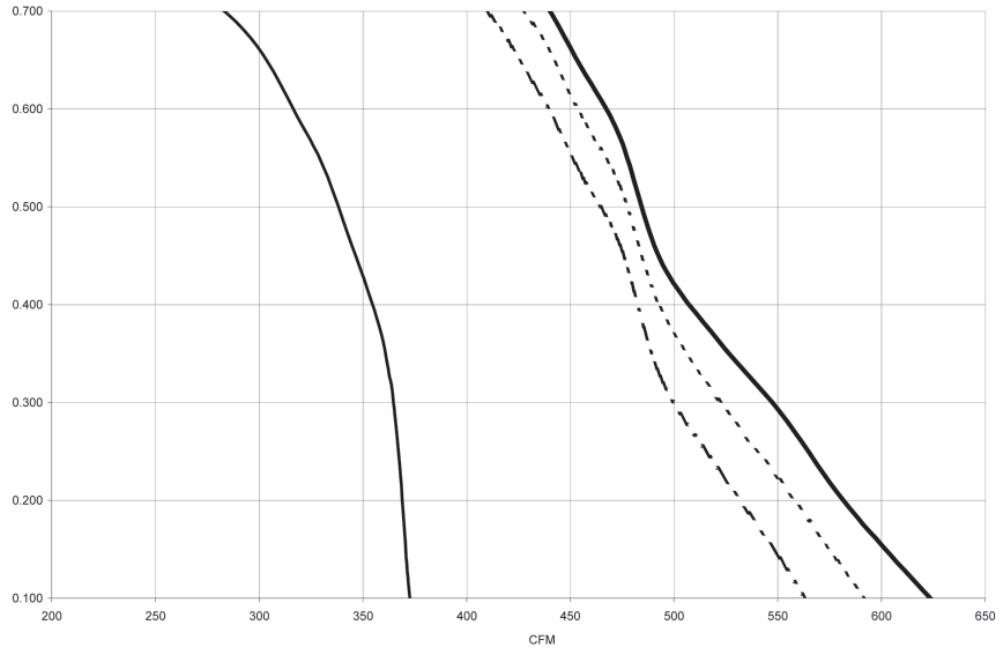
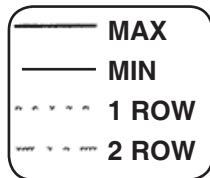
- Basic control unit — **Model ACF.**
- Basic control unit with hot water coil — **Model ACW.**
- Basic control unit with electric coil — **Model ACE.**



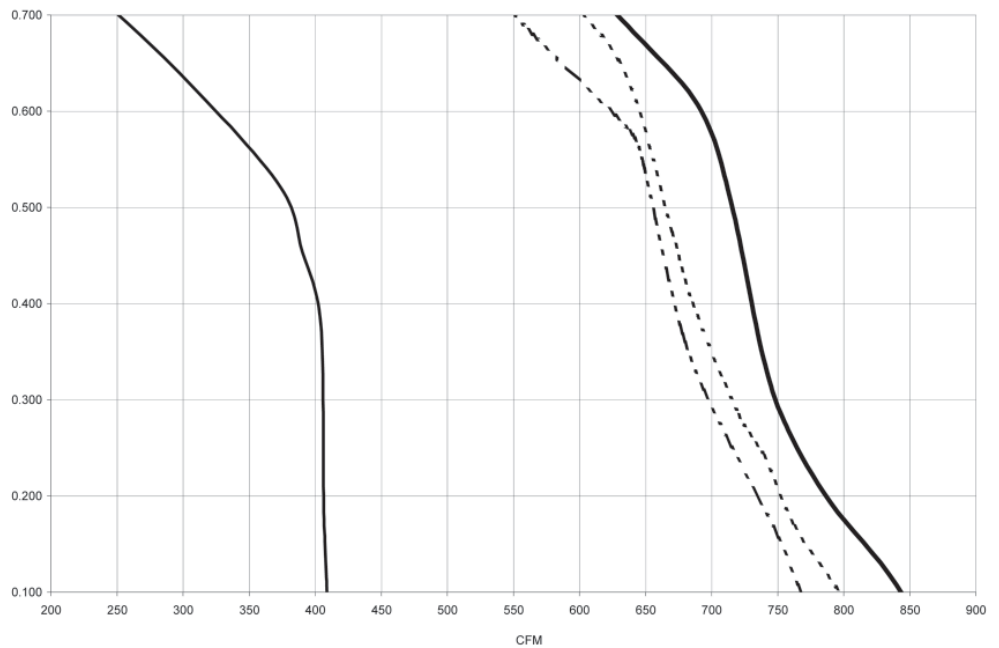
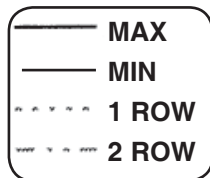
IAQ Insulation  
Available

## FAN CURVES CFM vs EXTERNAL STATIC PRESSURE

FAN SIZE B — AC 06  
1/6 HP Motor PSC



FAN SIZE C — AC 07  
1/6 HP Motor PSC

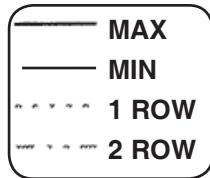
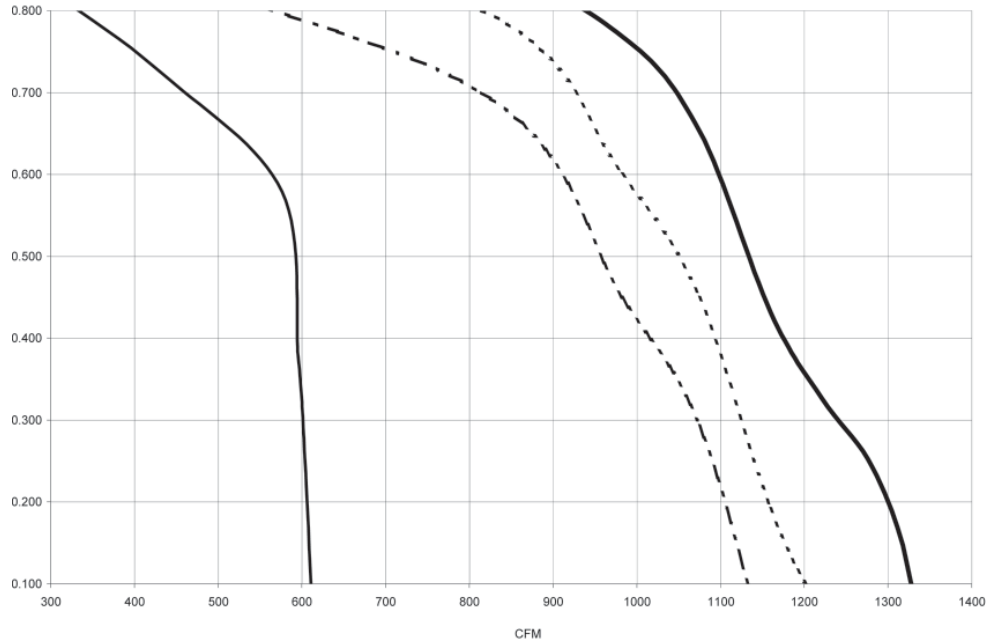


- NOTES:**
1. External static pressure (ESP) consists of down stream duct work, coils, flex duct, etc.
  2. Pressure drop due to heating coils are treated as external static pressure
  3. For proper operation, the downstream ESP must be at least 0.20" w.g.

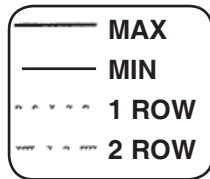
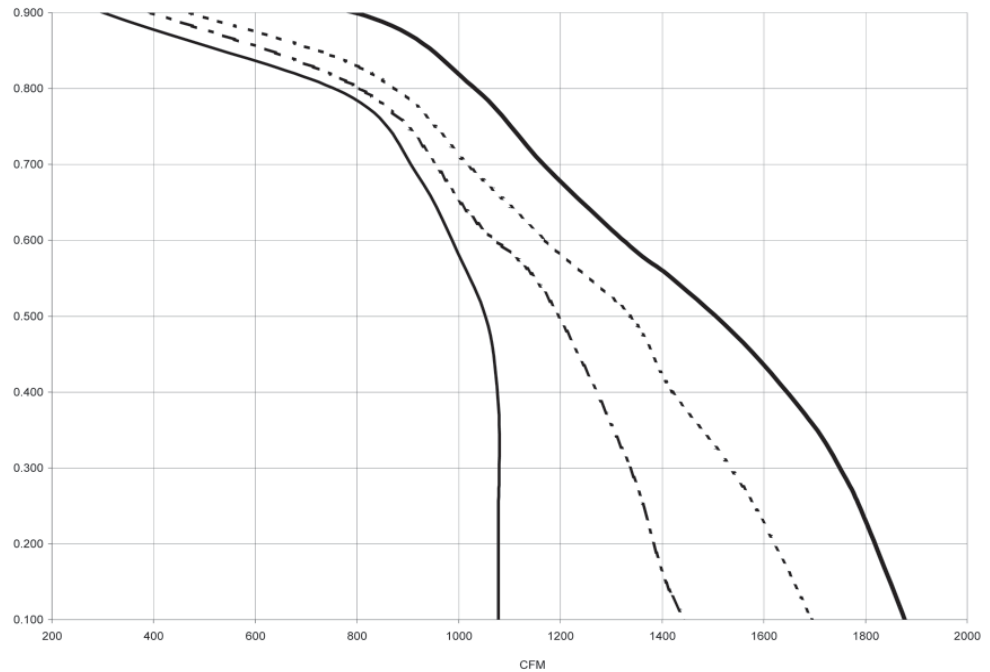
Fan Powered Units

## FAN CURVES CFM vs EXTERNAL STATIC PRESSURE

FAN SIZE D — AC 08  
1/4 HP Motor PSC



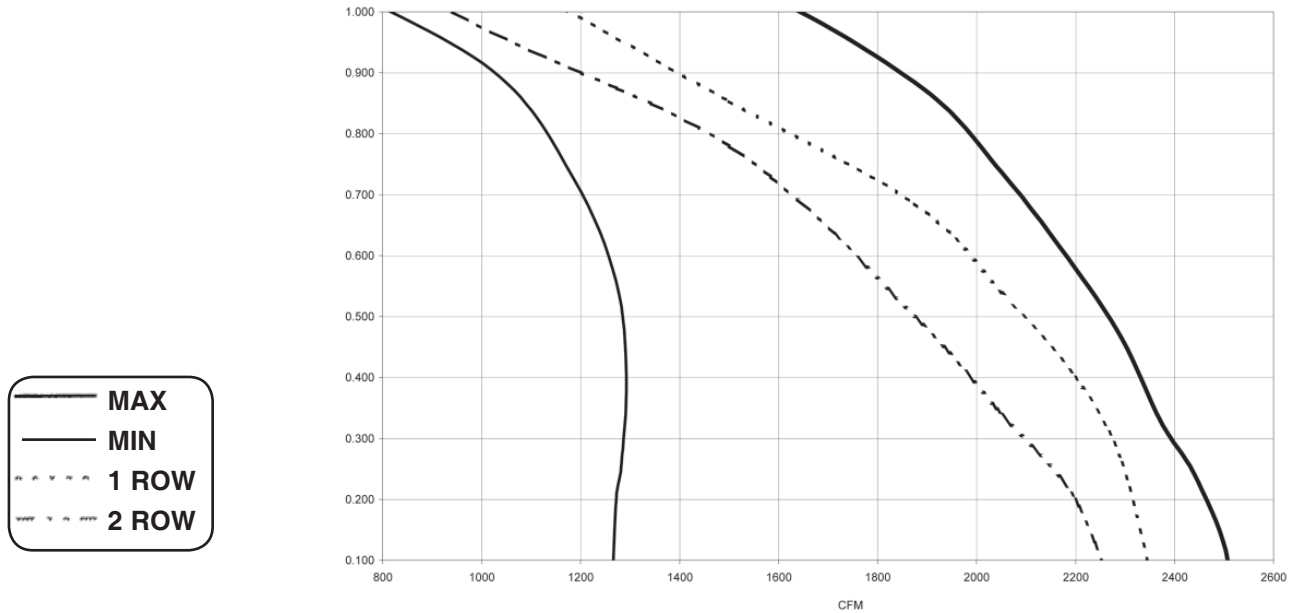
FAN SIZE E — AC 10  
1/2 HP Motor PSC



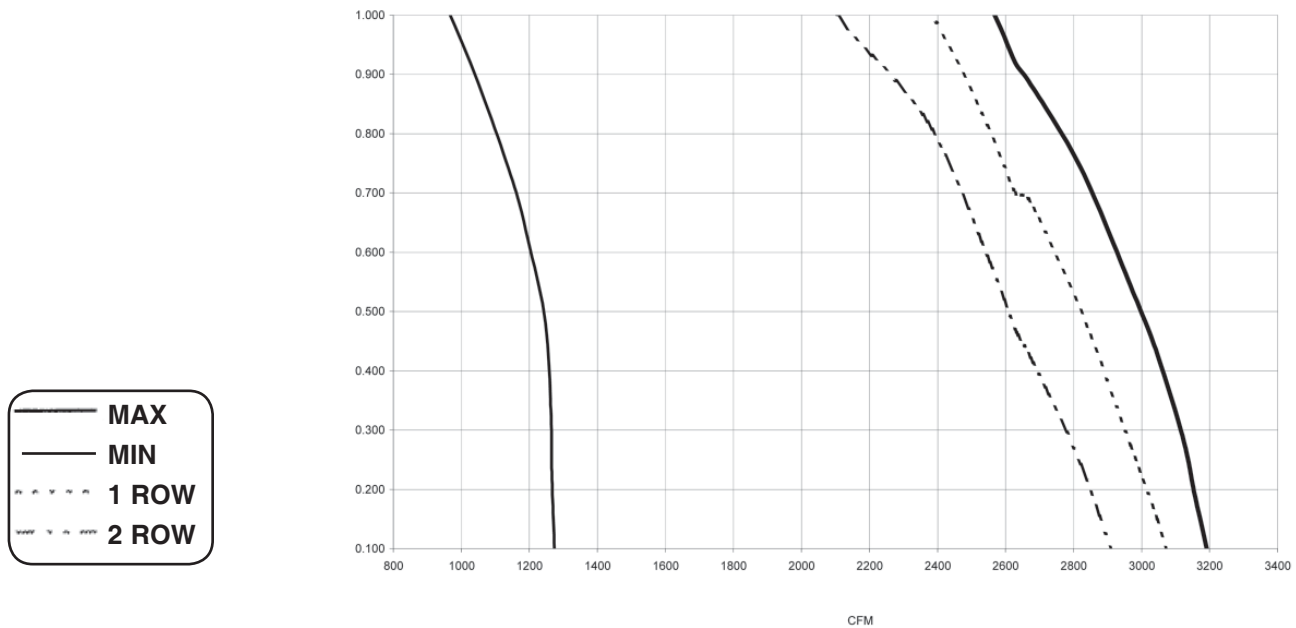
- NOTES:
1. External static pressure (ESP) consists of down stream duct work, coils, flex duct, etc.
  2. Pressure drop due to heating coils are treated as external static pressure
  3. For proper operation, the downstream ESP must be at least 0.20" w.g.

## FAN CURVES CFM vs EXTERNAL STATIC PRESSURE

**FAN SIZE F — AC 12**  
3/4 HP Motor PSC



**FAN SIZE G — AC 14/16**  
1 HP Motor PSC

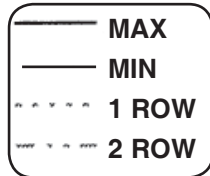
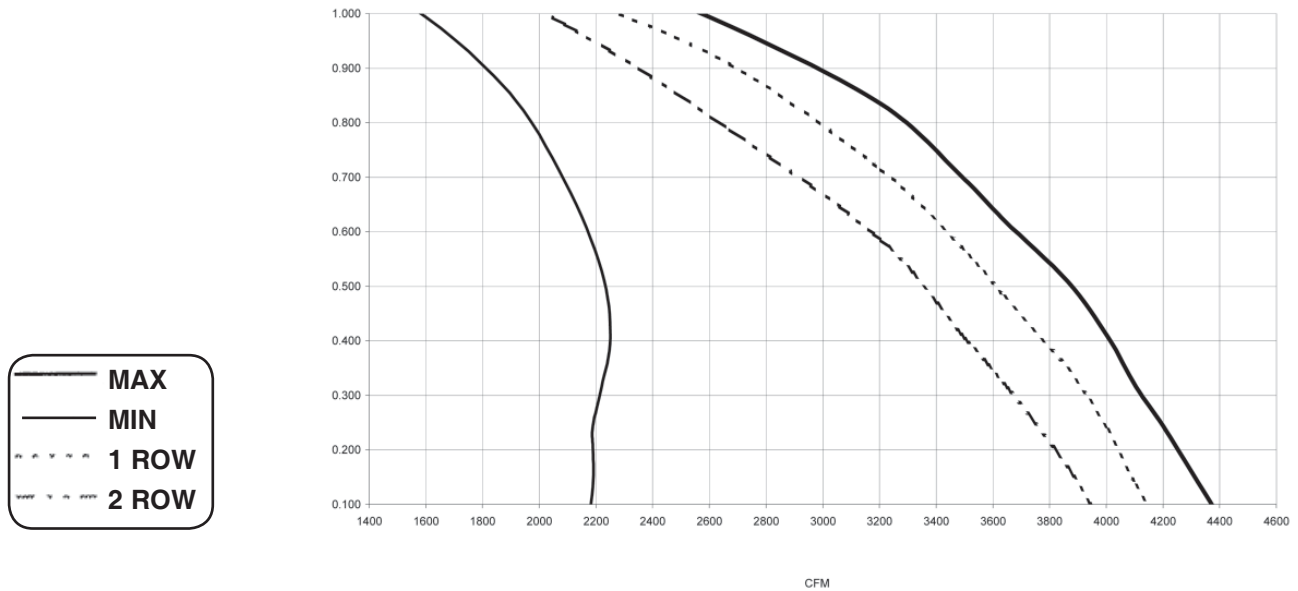


- NOTES:**
1. External static pressure (ESP) consists of down stream duct work, coils, flex duct, etc.
  2. Pressure drop due to heating coils are treated as external static pressure
  3. For proper operation, the downstream ESP must be at least 0.20" w.g.

Fan Powered Units

## FAN CURVES CFM vs EXTERNAL STATIC PRESSURE

FAN SIZE J — AC 16  
(2) 3/4 HP Motor PSC



- NOTES:**
1. External static pressure (ESP) consists of down stream duct work, coils, flex duct, etc.
  2. Pressure drop due to heating coils are treated as external static pressure
  3. For proper operation, the downstream ESP must be at least 0.20" w.g.

## Model ACWJ

### Fan Power Terminal Units - 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>	350	0.151	22	23	24	26	27	31	32	32	32	32
	425	0.232	27	28	27	28	28	35	35	35	35	35
	475	0.292	30	31	31	31	31	36	37	37	37	37
	550	0.376	33	33	33	33	35	41	41	41	41	41
<b>7</b> <b>(C)</b>	450	0.112	17	15	18	19	22	19	20	24	28	33
	550	0.153	26	26	26	26	27	21	24	26	30	34
	650	0.220	30	30	30	31	32	26	32	30	33	36
	750	0.300	32	34	34	34	34	45	43	40	40	40
<b>8</b> <b>(D)</b>	850	0.183	22	26	27	27	30	31	35	36	37	40
	1000	0.255	26	30	31	31	32	36	39	41	42	43
	1150	0.332	28	32	35	36	36	36	41	44	46	46
	1275	0.411	30	35	37	37	37	40	44	46	48	49
<b>10</b> <b>(E)</b>	1200	0.115	17	18	20	22	24	28	29	34	35	40
	1325	0.142	22	24	25	26	27	33	34	36	39	42
	1450	0.168	26	27	27	28	30	35	37	37	41	45
	1575	0.196	32	35	35	36	37	43	45	46	48	49
<b>12</b> <b>(F)</b>	1800	0.171	19	27	31	32	35	27	37	43	45	49
	1900	0.178	24	31	35	37	39	33	40	46	48	52
	2000	0.196	29	35	39	39	41	37	44	48	50	54
	2100	0.206	35	39	41	41	44	43	49	52	56	57
<b>14/16</b> <b>(G)</b>	2400	0.127	20	25	28	30	33	39	42	44	46	48
	2550	0.146	24	28	31	33	35	41	42	45	48	52
	2700	0.159	31	33	36	37	40	44	44	48	50	53
	2860	0.171	36	40	41	42	44	50	50	53	56	56
<b>16</b> <b>(J)</b>	3000	0.143	34	36	38	40	43	46	43	46	48	52
	3300	0.183	36	38	39	41	44	47	50	52	53	56
	3500	0.221	37	41	42	43	47	47	53	54	55	58
	3700	0.251	39	44	44	46	48	48	55	55	56	59

- 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<sup>3</sup>) 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<sup>3</sup> - 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 - 1 Row Coil**

Inlet (Fan) Size	Air Flow CFM	Fan Only Octave Band							Primary Air							Primary Air							Primary Air							Primary Air						
		Fan Only Octave Band							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					
<b>6</b> (B)	350	69	61	59	56	55	51	70	62	59	57	56	52	71	62	60	57	57	52	72	62	60	58	57	53	73	63	61	58	58	53					
	425	73	63	62	58	58	54	74	65	63	59	59	56	73	65	63	60	59	56	74	65	63	60	59	56	74	65	63	60	60	56					
	475	75	65	64	61	60	57	76	67	65	62	61	58	76	67	64	62	61	58	76	67	64	62	61	58	76	67	65	62	62	58					
	550	78	69	67	64	63	60	78	70	67	64	63	61	78	69	67	64	63	61	78	69	67	64	64	61	79	70	67	64	64	61					
<b>7</b> (C)	450	65	59	55	54	51	46	64	57	56	55	53	47	66	58	57	56	54	49	67	60	58	57	56	51	69	62	59	58	57	52					
	550	72	64	60	60	57	54	72	63	61	60	58	54	72	64	61	60	59	54	72	64	62	60	60	56	73	65	62	61	60	57					
	650	75	67	63	63	61	58	75	68	64	63	62	58	75	68	65	63	62	58	76	69	65	64	63	59	77	69	66	65	64	61					
	750	79	73	66	66	64	62	79	75	67	66	64	61	79	75	68	66	65	62	79	75	68	67	66	63	79	75	69	67	66	63					
<b>8</b> (D)	850	71	63	63	63	60	56	74	66	66	66	63	60	75	66	66	66	63	60	75	66	67	66	63	60	77	68	67	67	64	61					
	1000	74	66	67	66	63	59	77	68	69	69	66	63	78	69	69	69	66	63	78	69	69	69	67	64	79	71	70	70	67	64					
	1150	76	68	69	68	65	62	79	71	71	71	69	66	81	71	71	71	69	66	82	72	71	71	69	66	82	73	72	72	69	66					
	1275	77	69	70	70	67	64	81	72	72	73	71	67	83	74	72	73	70	67	83	74	73	73	70	67	83	74	73	73	71	68					
<b>10</b> (E)	1200	65	58	61	58	57	53	66	60	62	60	59	54	68	62	62	61	60	56	71	63	64	62	61	57	73	67	67	64	63	59					
	1325	67	60	65	62	61	58	70	64	66	63	63	60	72	66	67	64	64	61	74	67	68	65	65	62	75	69	69	67	66	63					
	1450	70	63	70	65	64	62	73	66	70	66	66	63	73	67	69	66	66	63	75	69	70	67	67	64	77	71	71	69	68	65					
	1575	76	70	74	73	72	69	78	73	77	75	74	72	79	74	77	75	74	72	82	76	78	75	75	73	83	77	79	76	75	73					
<b>12</b> (F)	1800	67	58	63	62	59	55	75	67	67	66	63	59	78	69	69	68	66	63	79	70	71	70	68	64	81	73	72	71	69	65					
	1900	69	62	67	66	63	60	78	69	70	69	67	64	81	72	72	71	70	67	83	74	73	72	71	68	84	76	74	73	71	68					
	2000	74	67	71	71	68	65	81	73	74	73	71	68	84	74	75	74	72	70	84	76	76	75	73	71	86	78	76	75	73	71					
	2100	79	73	76	77	74	72	84	76	78	77	75	73	86	78	79	78	76	74	86	79	79	78	76	74	88	81	80	79	77	74					
<b>14/16</b> (G)	2400	70	61	66	57	55	49	72	68	68	62	61	56	76	70	69	65	65	60	77	72	70	67	66	61	80	74	74	68	68	63					
	2550	72	67	67	61	60	56	74	70	72	66	65	60	78	72	74	68	68	64	80	74	74	70	69	65	81	76	76	71	70	66					
	2700	78	69	76	67	66	63	79	74	77	71	70	67	82	75	77	73	72	69	83	77	78	73	73	70	85	79	78	75	74	71					
	2860	82	77	78	77	75	73	84	80	80	78	77	74	85	81	80	79	77	75	86	82	81	79	78	75	88	83	82	79	78	75					
<b>16</b> (J)	3000	78	75	73	76	73	71	80	77	74	77	74	73	82	78	76	79	77	75	83	80	76	80	79	77	85	83	78	82	81	78					
	3300	79	76	75	77	74	73	82	79	76	78	76	74	82	79	77	80	78	76	85	81	78	82	80	78	87	84	79	83	83	80					
	3500	80	77	76	79	75	74	84	81	78	80	78	77	85	82	79	82	80	78	87	83	79	83	81	79	89	86	81	84	84	82					
	3700	82	79	78	80	77	76	85	84	80	82	80	79	87	84	81	83	81	80	88	85	82	84	83	81	90	89	83	86	86	84					

- 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.



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Fan Powered Units

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

**Radiated Sound Power**

**Model ACWJ**

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

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)	350	67	59	50	45	41	37	68	59	50	46	43	38	68	59	52	48	44	40	68	59	53	49	46	43	68	61	56	52	50	50					
	425	70	61	52	47	44	41	70	62	53	49	45	41	70	62	54	49	46	42	70	62	54	50	47	44	70	69	57	54	51	51					
	475	71	63	54	50	46	43	72	64	55	50	47	43	72	64	56	51	48	44	72	64	56	52	49	46	72	64	58	55	52	51					
	550	75	65	57	53	50	46	75	67	58	53	50	47	75	67	58	53	50	47	75	67	59	54	51	48	75	67	60	56	54	52					
7 (C)	450	58	50	42	38	33	23	58	52	46	42	37	29	61	56	50	46	43	40	62	57	54	48	47	45	64	60	58	54	52	53					
	550	59	53	44	40	35	27	62	56	49	44	40	32	63	57	52	47	45	41	65	60	55	50	48	45	67	63	59	55	53	53					
	650	63	56	46	43	39	32	68	61	52	48	44	38	66	61	54	49	46	41	68	63	56	51	49	46	70	65	61	57	55	54					
	750	78	67	56	53	51	48	76	68	58	54	53	48	74	67	58	53	51	46	74	67	60	54	52	48	74	68	63	58	56	54					
8 (D)	850	67	62	54	48	46	42	70	65	57	53	51	48	71	66	59	53	51	48	71	67	59	54	52	49	72	69	63	58	55	53					
	1000	69	66	55	51	49	46	73	68	60	57	54	51	74	70	62	57	54	51	75	71	63	57	55	52	76	72	65	60	57	55					
	1150	71	66	58	54	52	48	75	70	62	58	57	54	77	73	64	59	57	54	78	74	64	59	57	54	78	74	67	61	59	56					
	1275	74	69	59	55	54	51	77	72	64	60	59	56	78	74	65	61	59	56	79	76	67	61	59	56	80	77	68	63	60	58					
10 (E)	1200	64	59	52	48	47	42	64	60	54	50	48	43	68	64	57	52	49	45	70	65	60	55	51	47	73	69	65	60	55	52					
	1325	69	63	58	51	50	46	69	64	59	53	52	48	71	66	60	55	53	50	73	67	62	56	53	50	75	71	66	61	57	54					
	1450	70	64	58	54	53	49	72	67	60	56	55	52	72	67	61	57	55	52	74	70	63	58	56	53	78	72	67	62	58	56					
	1575	76	70	63	61	59	57	78	73	67	63	62	60	78	74	67	63	62	60	80	76	68	64	63	61	81	77	70	66	64	61					
12 (F)	1800	64	57	53	49	46	41	72	67	59	55	50	45	76	70	62	58	53	49	78	73	65	60	54	51	80	77	70	65	58	55					
	1900	69	61	57	53	50	46	74	69	62	57	53	49	79	72	65	60	56	53	80	75	66	61	57	54	82	79	71	65	60	57					
	2000	72	66	61	58	55	52	77	72	65	60	57	54	80	75	67	62	59	56	82	76	67	63	60	57	85	80	72	67	61	59					
	2100	76	72	66	64	60	58	81	76	70	66	63	61	83	78	70	66	63	61	86	80	71	67	63	61	87	82	74	69	64	62					
14/16 (G)	2400	73	59	56	46	42	37	71	67	66	52	49	43	75	70	68	56	52	48	78	74	65	58	54	50	80	76	71	63	58	54					
	2550	75	65	62	51	47	43	74	69	66	55	52	47	78	72	68	58	55	51	80	75	68	60	56	52	83	78	72	64	59	55					
	2700	77	66	63	56	53	51	77	71	68	59	56	53	80	75	68	61	58	55	82	76	70	62	59	56	84	79	72	65	61	58					
	2860	82	74	69	64	62	60	82	78	71	66	64	61	84	79	71	66	64	61	86	80	71	66	64	61	86	82	74	68	65	62					
16 (J)	3000	78	74	68	67	63	59	76	72	67	66	62	57	78	74	69	68	64	60	80	76	71	69	66	61	83	79	75	72	68	63					
	3300	79	75	69	69	64	60	82	78	72	70	67	63	83	79	73	72	68	64	84	80	74	72	69	65	86	83	77	75	73	68					
	3500	79	75	69	69	65	61	84	80	73	72	68	65	85	81	74	73	70	66	85	82	75	74	71	67	88	84	78	76	74	69					
	3700	80	76	70	70	66	62	85	82	75	74	70	67	85	82	75	74	71	68	86	83	76	75	72	68	89	85	79	77	75	71					

- 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



## Model ACWJ

### Fan Power Terminal Units - 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>	350	0.153	24	27	28	28	28	32	33	33	33	33
	425	0.227	28	30	31	31	31	36	36	36	36	36
	475	0.294	30	31	31	32	32	39	37	37	37	39
	550	0.377	35	35	36	36	36	41	43	43	43	43
<b>7</b> <b>(C)</b>	450	0.106	17	15	17	19	22	21	22	25	27	34
	550	0.159	23	24	24	24	27	24	27	28	30	34
	650	0.221	30	28	28	28	31	28	31	31	33	36
	750	0.305	34	35	35	35	36	36	39	39	39	39
<b>8</b> <b>(D)</b>	850	0.184	20	24	26	26	28	31	35	36	36	38
	1000	0.253	27	30	31	31	32	35	38	41	41	43
	1150	0.343	30	32	33	35	35	36	41	44	44	46
	1275	0.418	31	32	35	36	37	37	43	46	47	48
<b>10</b> <b>(E)</b>	1050	0.088	13	16	18	19	22	24	30	33	34	40
	1150	0.106	19	21	23	24	25	28	31	34	36	40
	1250	0.123	25	27	28	28	29	34	35	37	39	42
	1350	0.143	30	30	31	32	32	38	41	43	43	46
<b>12</b> <b>(F)</b>	1400	0.089	15	20	23	26	28	24	33	37	40	46
	1500	0.101	19	23	27	28	32	31	36	39	41	46
	1600	0.113	23	27	30	31	32	32	39	43	44	48
	1730	0.120	31	32	35	36	37	41	44	48	49	49
<b>14/16</b> <b>(G)</b>	2300	0.128	22	22	27	28	32	40	37	43	44	49
	2450	0.136	27	28	31	32	35	44	43	45	46	50
	2600	0.140	33	32	35	36	37	48	46	49	52	53
	2750	0.145	41	39	40	41	41	53	53	53	54	46
<b>16</b> <b>(J)</b>	3000	0.115	34	37	39	40	43	43	47	48	50	53
	3300	0.133	36	40	40	42	46	45	49	50	52	54
	3500	0.175	37	41	42	43	46	46	50	52	53	57
	3700	0.215	37	43	43	44	48	47	53	54	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<sup>3</sup>) 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<sup>3</sup> - 3 foot plenum
- b) Environmental adjustment factor.



A Participating Member in the AHRI 880 Certification Program

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 - 2 Rows Coil**

Fan Powered Units

Inlet (Fan) Size	Air Flow CFM	Fan Only Octave Band							Primary Air							Primary Air							Primary Air							Primary Air						
		Fan Only Octave Band							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)	350	71	62	59	56	56	52	73	62	60	57	57	53	74	63	60	57	57	53	74	63	60	58	58	54	74	63	61	58	58	54					
	425	74	64	61	58	58	55	75	65	62	59	60	56	76	65	62	59	60	56	76	65	63	60	60	56	76	66	63	60	60	57					
	475	75	66	63	61	60	57	76	67	63	61	61	58	76	67	64	61	61	58	77	67	64	61	61	58	77	68	64	61	62	59					
	550	79	69	66	64	63	60	79	69	66	63	63	61	80	69	66	63	63	61	80	70	67	63	63	61	80	70	67	64	64	61					
7 (C)	450	65	57	54	53	51	45	64	57	56	55	54	48	66	60	57	56	55	50	67	60	58	57	57	51	69	61	59	58	57	52					
	550	70	62	59	58	56	51	71	63	60	59	58	54	71	63	60	59	58	54	71	64	61	60	60	55	73	66	62	61	60	56					
	650	75	67	63	62	60	57	74	68	63	62	61	58	73	67	63	62	61	58	74	67	64	63	62	59	76	69	65	64	63	60					
	750	79	75	66	65	64	61	79	76	67	66	64	62	79	76	67	66	65	62	79	76	67	66	65	63	80	77	68	67	66	63					
8 (D)	850	64	62	64	63	60	56	73	64	65	65	63	59	74	64	65	65	63	59	74	65	66	65	63	59	76	67	67	67	64	60					
	1000	75	67	66	66	63	59	77	67	68	68	66	62	78	68	68	68	66	62	78	69	68	68	66	62	79	71	69	69	67	63					
	1150	77	68	68	68	65	61	79	69	69	70	68	64	80	70	70	70	68	64	81	70	70	70	68	64	81	72	71	71	68	65					
	1275	78	69	69	69	67	63	79	70	71	72	70	66	81	72	71	71	69	66	82	73	71	71	69	66	83	74	72	72	70	67					
10 (E)	1050	63	56	58	56	55	49	65	59	61	58	58	52	67	61	62	59	59	54	69	62	62	61	60	55	70	65	64	62	61	56					
	1150	66	60	63	60	59	55	67	62	64	61	61	57	71	64	65	73	73	59	72	65	66	63	63	60	73	68	67	65	65	61					
	1250	70	64	67	64	64	61	71	66	69	66	66	63	74	68	69	66	66	64	75	68	70	67	67	64	75	70	71	68	68	65					
	1350	73	69	71	69	69	66	75	70	73	70	70	67	77	71	73	70	71	68	78	73	74	71	71	69	79	73	74	71	71	69					
12 (F)	1400	64	57	60	58	56	51	70	63	64	62	61	56	72	65	65	63	62	57	74	66	65	64	63	58	76	69	67	65	65	59					
	1500	66	59	63	61	59	55	72	65	66	64	64	59	75	67	67	65	65	61	76	69	67	66	65	61	79	70	68	67	66	62					
	1600	69	63	65	65	63	59	75	68	69	67	66	62	77	70	69	68	67	63	78	71	70	68	68	64	79	73	70	69	68	64					
	1730	76	70	72	72	71	68	79	73	73	71	71	68	81	74	74	72	71	68	82	75	74	72	72	69	83	76	75	72	72	69					
14/16 (G)	2300	71	63	67	59	54	48	71	64	66	62	59	53	75	68	68	65	63	58	76	70	71	67	64	59	79	72	72	68	66	61					
	2450	75	64	72	63	60	56	76	68	72	67	65	61	78	71	72	69	67	63	79	72	73	70	68	64	81	74	75	71	69	65					
	2600	80	68	74	68	65	62	79	72	75	71	69	66	81	75	76	73	71	67	82	75	76	73	71	68	83	77	77	74	72	69					
	2750	86	76	78	77	74	72	84	79	79	78	75	73	85	79	79	78	76	73	86	80	80	79	76	73	86	81	80	79	77	74					
16 (J)	3000	78	75	73	76	73	71	81	78	75	78	75	74	83	79	76	79	78	76	83	80	77	81	79	77	86	83	78	82	81	79					
	3300	78	76	74	77	74	73	82	80	76	79	77	75	84	80	77	80	79	77	84	82	78	82	80	78	86	85	79	83	82	80					
	3500	79	78	75	77	74	73	83	81	78	80	78	76	84	82	79	81	79	78	86	83	79	82	81	79	89	85	80	84	83	81					
	3700	80	78	76	78	76	74	85	83	79	81	79	77	86	83	79	82	81	79	87	84	80	83	82	80	89	87	81	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

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

**Radiated Sound Power**

**Model ACWJ**

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

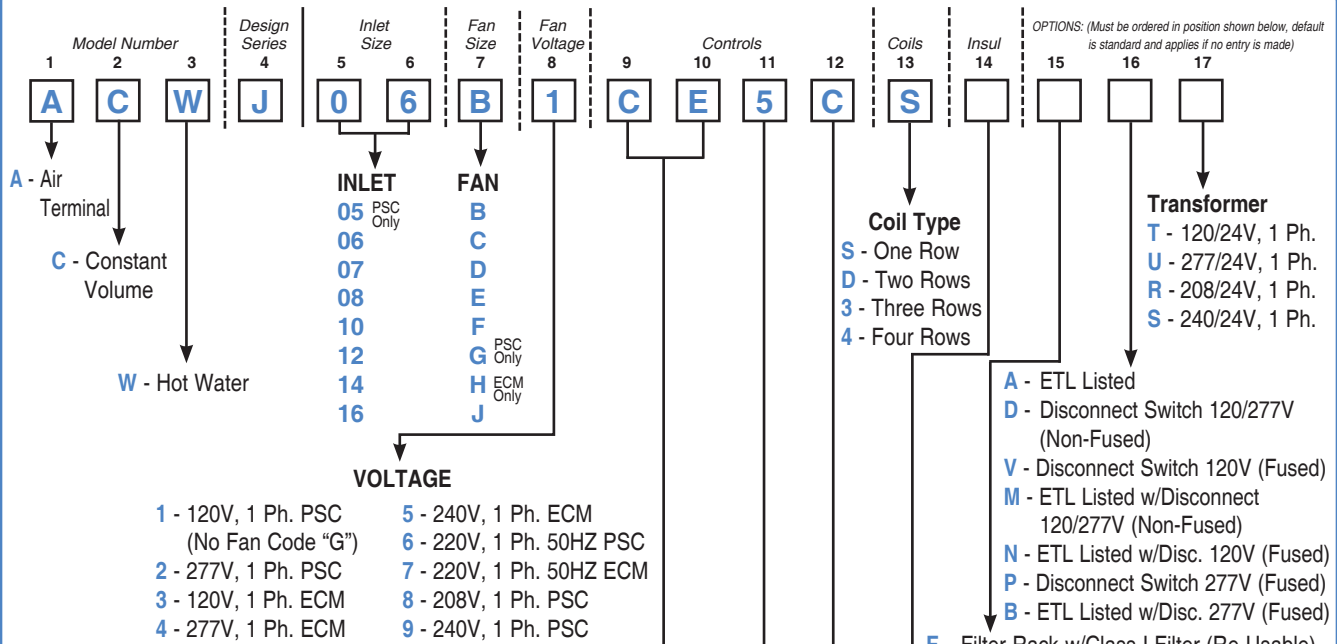
Inlet (Fan) Size	Air Flow CFM	Fan Only Octave Band							Primary Air							Primary Air							Primary Air							Primary Air						
									P <sub>s</sub> (0.5 w.g.) Octave Band							P <sub>s</sub> (1.0 w.g.) Octave Band							P <sub>s</sub> (1.5 w.g.) Octave Band							P <sub>s</sub> (3.0 w.g.) Octave 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					
<b>6</b> (B)	350	68	58	49	45	41	37	69	59	50	46	43	39	69	59	51	48	44	41	69	59	52	49	46	43	69	61	55	52	50	50					
	425	71	62	51	48	44	41	71	62	53	49	45	42	71	62	54	49	46	43	71	62	54	50	47	45	71	63	57	54	51	50					
	475	73	63	53	50	46	43	72	63	54	50	47	44	72	63	55	51	48	45	72	63	56	51	49	46	73	63	58	55	52	51					
	550	75	65	56	53	49	47	76	66	57	53	49	47	76	66	58	53	50	48	76	67	59	54	51	49	76	67	59	55	53	51					
<b>7</b> (C)	450	57	53	42	38	32	24	57	54	46	43	37	31	60	57	50	46	43	40	62	58	53	48	46	44	64	61	59	54	51	53					
	550	59	56	44	40	35	30	62	58	49	44	39	33	64	59	52	47	43	40	65	61	55	50	47	45	67	63	59	56	53	53					
	650	62	59	46	43	38	33	67	62	52	48	43	38	67	62	54	50	46	42	68	63	57	51	48	46	70	65	61	57	54	53					
	750	71	62	52	48	45	42	73	67	57	52	49	46	73	67	58	53	50	47	73	67	60	54	51	49	73	68	63	58	55	54					
<b>8</b> (D)	850	66	62	53	49	47	43	69	65	58	54	51	48	71	66	59	54	51	48	71	66	60	54	52	49	72	59	63	58	55	53					
	1000	69	65	56	51	49	46	72	68	60	56	54	51	73	70	61	56	54	51	75	70	62	56	54	52	76	72	64	60	57	55					
	1150	70	66	57	52	51	48	74	70	61	58	56	53	75	73	63	59	56	53	77	73	65	59	56	54	78	74	66	61	58	56					
	1275	72	67	59	54	52	50	76	71	63	60	58	55	78	74	65	60	58	55	79	75	66	60	58	55	80	76	68	62	59	57					
<b>10</b> (E)	1050	62	55	50	46	44	38	64	59	55	49	47	41	66	62	58	52	48	44	68	64	59	54	50	46	71	68	65	59	54	51					
	1150	65	59	53	49	48	43	67	62	55	52	50	46	69	64	58	54	51	47	71	65	60	55	52	48	73	69	65	60	56	52					
	1250	69	64	56	54	53	49	70	65	60	55	54	51	72	67	60	56	55	52	73	68	62	57	55	53	75	71	66	61	58	55					
	1350	71	68	59	58	56	54	75	70	62	61	59	56	76	71	63	61	59	57	76	71	65	61	59	57	78	74	67	63	60	58					
<b>12</b> (F)	1400	62	55	50	47	44	37	68	63	57	53	49	43	71	67	60	54	50	45	73	69	62	56	52	47	76	74	68	62	56	52					
	1500	66	58	56	51	48	42	71	65	57	55	51	46	73	68	61	56	53	48	75	70	63	58	54	49	77	74	68	63	57	53					
	1600	68	62	56	54	51	46	73	68	60	57	54	50	76	71	62	58	55	51	77	72	64	59	56	52	79	76	69	63	58	55					
	1730	75	69	62	60	58	55	77	71	64	62	59	56	80	74	66	62	59	56	81	76	67	63	59	56	81	77	70	65	60	57					
<b>14/16</b> (G)	2300	74	58	57	45	40	34	71	64	62	52	48	43	75	70	67	57	53	50	77	73	67	58	54	51	81	77	71	63	58	55					
	2450	77	64	62	52	47	44	76	69	67	56	53	51	78	72	69	59	56	53	79	74	70	60	57	55	82	78	72	64	60	58					
	2600	80	69	67	56	53	50	79	72	69	59	56	54	81	74	68	61	58	56	83	76	68	62	59	56	84	79	72	65	61	59					
	2750	84	75	67	64	60	59	84	77	69	65	62	59	84	78	69	65	62	60	85	79	70	65	63	61	86	81	73	67	64	62					
<b>16</b> (J)	3000	76	72	66	65	61	57	79	75	68	68	64	60	80	76	70	69	66	61	82	77	72	70	67	63	84	80	75	73	69	65					
	3300	78	73	67	66	62	58	81	77	70	69	66	62	82	78	71	70	67	63	83	79	73	71	68	64	85	81	76	74	71	67					
	3500	78	74	67	67	63	59	82	78	71	70	67	63	83	79	72	72	69	65	84	80	74	73	70	66	87	82	77	75	72	68					
	3700	79	75	68	68	64	60	84	80	72	72	68	65	85	81	74	73	70	66	85	82	74	74	71	67	88	84	78	76	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

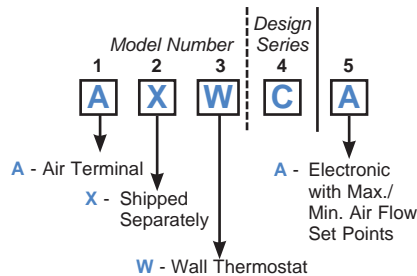
Fan Powered Units



- 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

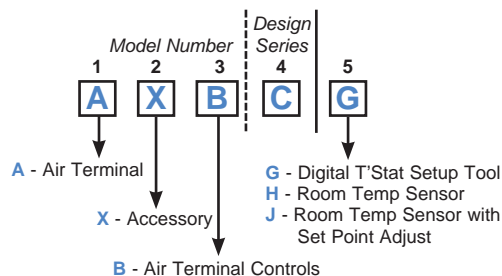
**NOTE:** Hand of controls is determined by facing the averaging flow sensor (inlet of the unit) with the supply air hitting the back of your head.

**▼ Electronic Thermostat**



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

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



**ACTUATOR VENDOR**

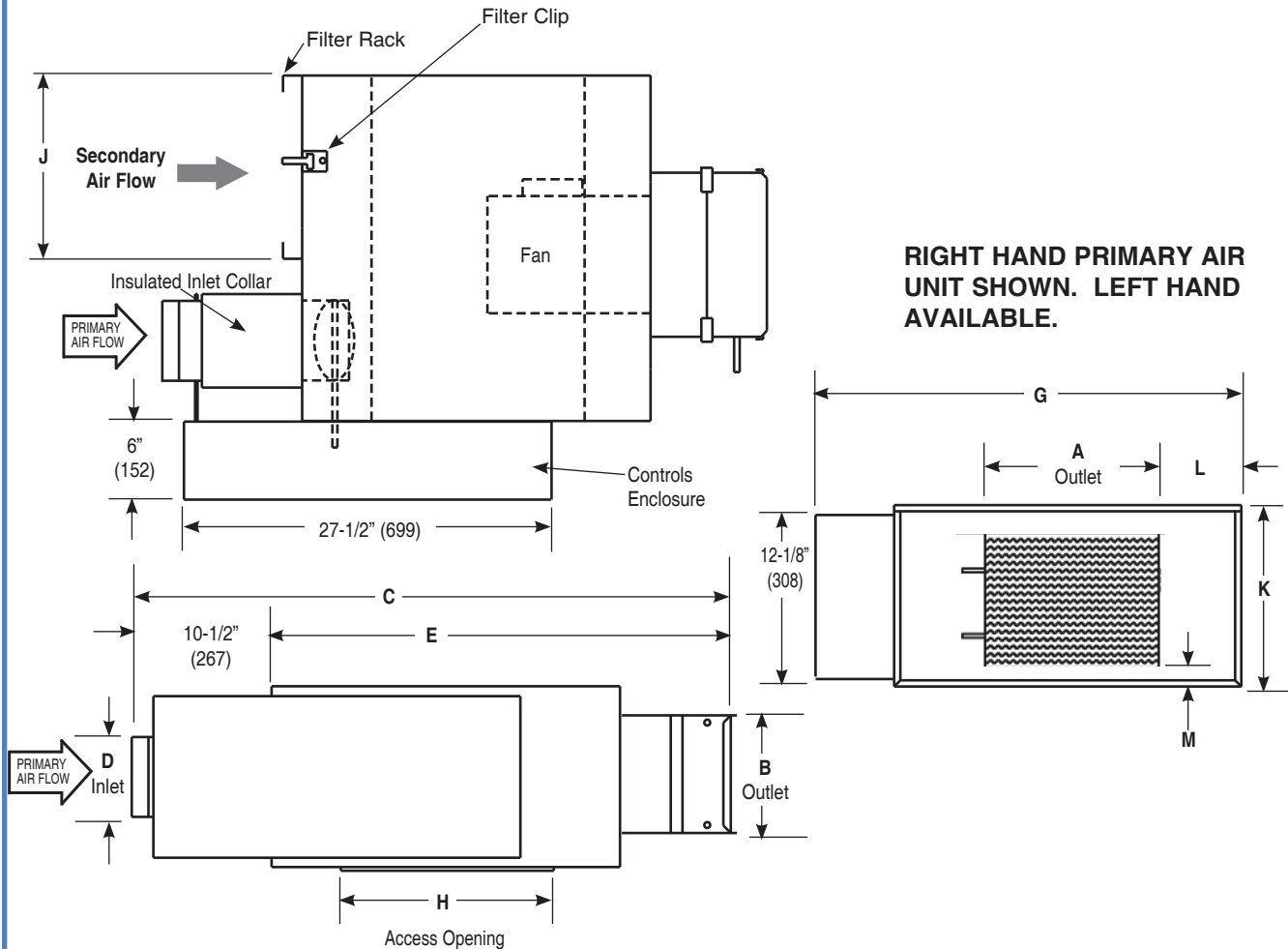
- C - Carnes OEM
- D - DDC Actuator (DO Option Only)
- N - Not Applicable (DE Option Only)

**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 - G — PSC



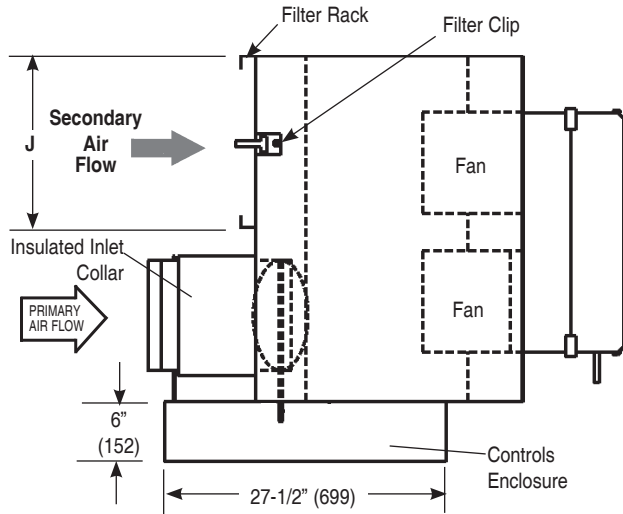
DIMENSIONS LISTED IN INCHES (Millimeters)

Fan Size	Inlet Size	Primary CFM (L/s)	Sec. CFM @ .25" E.S.P. (L/s)	Fan H.P.	Outlet		1 Row C	2 Row C	Inlet D	1 Row E	2 Row E	G	H	J	K	L	M
					A	B											
B	05	350 (165)	550 (260)	1/6					4-7/8 (124)								
B	06	500 (236)	550 (260)	1/6	14 (356)	12-1/2 (318)	50-7/16 (1281)	51-13/16 (1316)	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)	750 (354)	1/6					6-7/8 (175)								
D	08	1000 (472)	1275 (602)	1/4					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)	1780 (840)	1/2	16 (406)	15 (381)	50-13/16 (1291)	52-3/16 (1326)	9-7/8 (251)	40-5/16 (1024)	41-11/16 (1059)		22 (559)	20-3/4 (527)	17-1/2 (445)		
F	12	2300 (1086)	2430 (1147)	3/4			50-9/16 (1284)	52 (1321)	11-7/8 (302)	40-1/16 (1018)	41-1/2 (1054)	41-3/4 (1048)	21-3/4 (552)	19-3/4 (502)			
G	14	3100 (1463)	3100 (1463)	1	24 (610)	17-1/2 (445)	57 (1448)	57-3/8 (1457)	13-7/8 (352)	46-1/2 (1181)	46-7/8 (1191)	45-13/16 (1164)	27-3/4 (705)	17-3/4 (451)	20 (508)	9-1/2 (241)	
G	16	4200 (1982)								15-7/8 (403)							

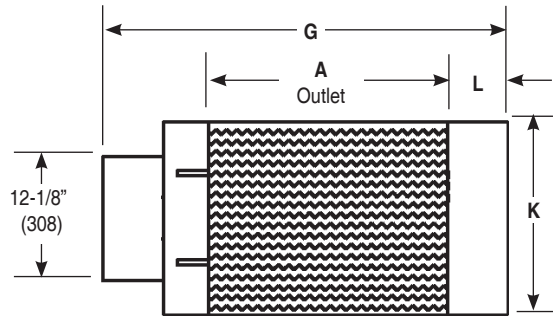
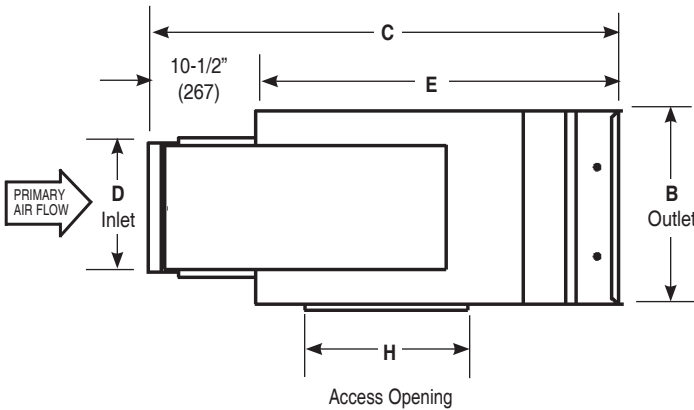
Note: Outlet is designed for slip and drive duct connection.

• FAN SIZE J — PSC

Fan Powered Units



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 C	2 Row C	Inlet D	1 Row E	2 Row E	G	H	J	K	L
					A	B										
J	16	4200 (1982)	4130 (1949)	3/4 (2)	42 (1067)	17-1/2 (445)	50-1/4 (1276)	51-1/2 (1308)	15-7/8 (403)	39-3/4 (1010)	41 (1041)	56 (1422)	17-3/4 (451)	27-7/8 (708)	18-1/4 (463)	4 (102)

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