Models ASW and ACW

Select a coil for the desired GPM and MBH requirements from the charts for the unit size and the CFM required.

Coil data is based on 125°F (51°C) temperature difference between entering air and entering water. This represents the typical input conditions of 55°F (13°C) entering air (EAT) and 180°F (82°C) entering water (EWT).

Below are listed temperature difference factors for installations that have a different entering air temperature (EAT) and/or different entering water temperature (EWT) from the cataloged values.

Multiply the MBH obtained from the charts on the following pages by the temperature difference factor to obtain the MBH for actual conditions.

The formula for the temperature difference factor is:

$$\text{Temperature Difference factor (TDF)} = \frac{\text{EWT - EAT}}{125}$$

The formula to calculate actual MBH from Charts is:

$$\text{MBH}_{\text{actual}} = \text{TDF} \times \text{MBH}_{\text{from charts}}$$

Temperature Difference	(TDF) Factor	Temperature Difference	(TDF) Factor
80°F (27°C)	0.64	130°F (54°C)	1.04
90°F (32°C)	0.72	140°F (60°C)	1.12
100°F (38°C)	0.80	150°F (66°C)	1.20
110°F (43°C)	0.88	160°F (71°C)	1.28
120°F (49°C)	0.96	170°F (77°C)	1.36

$$\text{Air Temperature Rise} = \frac{\text{MBH x 1,000}}{\text{CFM x 1.08}} \qquad \text{MBH} = \frac{\text{CFM x 1.08 x Air Temp. Rise}}{\text{1,000}}$$

$$\text{Water Temperature Drop} = \frac{\text{MBH}}{\text{.5 x GPM}} \qquad \text{MBH} = \text{GPM x .5 x Water Temp. Drop}$$

GPM = Gallons Per Minute
MBH = 1000 Btu/h (British Thermal Units/Hr.)
EWT = Entering Water Temperature °F
EAT = Entering Air Temperature °F

Optimum water flow for hot water coils is 3 to 6 feet per second (fps)

For the Carnes 1/2" (13mm) O. D. tubes:

$$\text{GPM}_{\text{optimum}} = \frac{\text{Circuits x Flow (fps)}}{1.74}$$

NOTES:

1. *Data based on 180°F (82°C) EWT and 55°F (13°C) EAT.*
2. *Typical fan terminals have 60°F (28°C) - 70°F (21°C) EAT and 180°F (82°C) EWT.*
3. *GPM above or below catalog values are not recommended.*
4. *Standard coils are not recommended for steam use.*
5. *Coil shipped attached to the terminal unit and is uninsulated.*
6. *Coil connections may be ordered as right hand or left hand, determined by facing the averaging flow sensor (inlet of unit) with the supply air hitting the back of your head. Hand of coil may be field reversed.*

COIL DATA — FAN SIZE A - 12-1/2 x 14 Coil

ACW 05 - ASW 05, 06, 07

CFM	1 Row (1 Circuit) GPM	Head Loss	MBH	2 Row (2 Circuit) GPM	Head Loss	MBH
75	0.5	0.17	5.69	1.0	0.17	8.45
	1.0	0.57	6.22	2.0	0.57	8.89
	2.0	1.90	6.53	3.0	1.15	9.05
	3.0	3.86	6.64	5.0	2.81	9.18
	4.0	6.39	6.70	8.0	6.39	9.26
100	0.5	0.17	6.66	1.0	0.17	10.49
	1.0	0.57	7.41	2.0	0.57	11.23
	2.0	1.90	7.87	3.0	1.15	11.49
	3.0	3.86	8.04	5.0	2.81	11.72
	4.0	6.39	8.13	8.0	6.39	11.86
200	0.5	0.17	9.10	1.0	0.17	16.26
	1.0	0.57	10.64	2.0	0.57	18.28
	2.0	1.90	11.65	3.0	1.15	19.07
	3.0	3.86	12.04	5.0	2.81	19.77
	4.0	6.39	12.25	8.0	6.39	20.20
300	0.5	0.17	10.52	1.0	0.17	19.92
	1.0	0.57	12.69	2.0	0.57	23.15
	2.0	1.90	14.17	3.0	1.15	24.49
	3.0	3.86	14.76	5.0	2.81	25.70
	4.0	6.39	15.08	8.0	6.39	26.45
350	0.5	0.17	11.05	1.0	0.17	21.31
	1.0	0.57	13.49	2.0	0.57	25.11
	2.0	1.90	15.18	3.0	1.15	26.71
	3.0	3.86	15.86	5.0	2.81	28.17
	4.0	6.39	16.23	8.0	6.39	29.09

COIL DATA — FAN SIZE B - 12-1/2 x 14 Coil

ACW 06 - ASW 06, 07, 08

CFM	1 Row (1 Circuit) GPM	Head Loss	MBH	2 Row (2 Circuit) GPM	Head Loss	MBH
110	0.5	0.17	6.99	1.0	0.17	11.23
	1.0	0.57	7.83	2.0	0.57	12.08
	2.0	1.90	8.34	3.0	1.15	12.40
	3.0	3.86	8.54	5.0	2.81	12.67
	4.0	6.39	8.64	8.0	6.39	12.83
200	0.5	0.17	9.10	1.0	0.17	16.26
	1.0	0.57	10.64	2.0	0.57	18.28
	2.0	1.90	11.65	3.0	1.15	19.07
	3.0	3.86	12.04	5.0	2.81	19.77
	4.0	6.39	12.25	8.0	6.39	20.2
300	0.5	0.17	10.52	1.0	0.17	19.92
	1.0	0.57	12.69	2.0	0.57	23.15
	2.0	1.90	14.17	3.0	1.15	24.49
	3.0	3.86	14.76	5.0	2.81	25.70
	4.0	6.39	15.08	8.0	6.39	26.45
400	0.5	0.17	11.51	1.0	0.17	22.52
	1.0	0.57	14.19	2.0	0.57	26.84
	2.0	1.90	16.08	3.0	1.15	28.69
	3.0	3.86	16.85	5.0	2.81	30.40
	4.0	6.39	17.27	8.0	6.39	31.48
500	0.5	0.17	12.25	1.0	0.17	24.50
	1.0	0.57	15.37	2.0	0.57	29.79
	2.0	1.90	17.63	3.0	1.15	32.11
	3.0	3.86	18.56	5.0	2.81	34.29
	4.0	6.39	19.08	8.0	6.39	35.69

COIL DATA — FAN SIZE C - 12-1/2 x 14 Coil

ACW 07 - ASW 07, 08, 10

CFM	1 Row (1 Circuit) GPM	Head Loss	MBH	2 Row (2 Circuit) GPM	Head Loss	MBH
140	0.5	0.17	7.83	1.0	0.17	13.18
	1.0	0.57	8.93	2.0	0.57	14.41
	2.0	1.90	9.61	3.0	1.15	14.88
	3.0	3.86	9.87	5.0	2.81	15.29
	4.0	6.39	10.01	8.0	6.39	15.53
200	0.5	0.17	9.10	1.0	0.17	16.26
	1.0	0.57	10.64	2.0	0.57	18.28
	2.0	1.90	11.65	3.0	1.15	19.07
	3.0	3.86	12.04	5.0	2.81	19.77
	4.0	6.39	12.25	8.0	6.39	20.2
400	0.5	0.17	11.51	1.0	0.17	22.52
	1.0	0.57	14.19	2.0	0.57	26.84
	2.0	1.90	16.08	3.0	1.15	28.69
	3.0	3.86	16.85	5.0	2.81	30.40
	4.0	6.39	17.27	8.0	6.39	31.48
600	0.5	0.17	12.84	1.0	0.17	26.08
	1.0	0.57	16.34	2.0	0.57	32.24
	2.0	1.90	18.94	3.0	1.15	35.00
	3.0	3.86	20.02	5.0	2.81	37.63
	4.0	6.39	20.62	8.0	6.39	39.33
700	0.5	0.17	13.33	1.0	0.17	27.39
	1.0	0.57	17.16	2.0	0.57	34.33
	2.0	1.90	20.07	3.0	1.15	37.50
	3.0	3.86	21.29	5.0	2.81	40.54
	4.0	6.39	21.98	8.0	6.39	42.54

COIL DATA — FAN SIZE D - 12-1/2 x 14 Coil

ACW 08 - ASW 08, 10

CFM	1 Row (1 Circuit) GPM	Head Loss	MBH	2 Row (2 Circuit) GPM	Head Loss	MBH
185	0.5	0.17	8.82	1.0	0.17	15.57
	1.0	0.57	10.26	2.0	0.57	17.39
	2.0	1.90	11.19	3.0	1.15	18.11
	3.0	3.86	11.54	5.0	2.81	18.72
	4.0	6.39	11.74	8.0	6.39	19.11
400	0.5	0.17	11.51	1.0	0.17	22.52
	1.0	0.57	14.19	2.0	0.57	26.84
	2.0	1.90	16.08	3.0	1.15	28.69
	3.0	3.86	16.85	5.0	2.81	30.40
	4.0	6.39	17.27	8.0	6.39	31.48
600	0.5	0.17	12.84	1.0	0.17	26.08
	1.0	0.57	16.34	2.0	0.57	32.24
	2.0	1.90	18.94	3.0	1.15	35.00
	3.0	3.86	20.02	5.0	2.81	37.63
	4.0	6.39	20.62	8.0	6.39	39.33
800	0.5	0.17	13.74	1.0	0.17	28.50
	1.0	0.57	17.88	2.0	0.57	36.14
	2.0	1.90	21.07	3.0	1.15	39.70
	3.0	3.86	22.43	5.0	2.81	43.14
	4.0	6.39	23.19	8.0	6.39	45.41
1000	0.5	0.17	14.41	1.0	0.17	30.28
	1.0	0.57	19.08	2.0	0.57	39.18
	2.0	1.90	22.78	3.0	1.15	43.43
	3.0	3.86	24.38	5.0	2.81	47.62
	4.0	6.39	25.29	8.0	6.39	50.42

- Data based on 180°F entering water temperature and 55°F entering air temperature
- **CAUTION: GPM above or below catalog limits is NOT recommended**

COIL DATA — FAN SIZE E - 15 x 16 Coil

ACW 10 - ASW 10, 12, 14

	1 Row (2 Circuit)			2 Row (3 Circuit)		
CFM	GPM	Head Loss	MBH	GPM	Head Loss	MBH
300	1.0	0.11	13.80	2.0	0.24	25.12
	2.0	0.36	15.77	4.0	0.81	27.56
	3.0	0.74	16.58	6.0	1.65	28.50
	4.0	1.22	17.04	8.0	2.73	29.01
	5.0	1.80	17.33	10.0	4.03	29.32
500	1.0	0.11	16.66	2.0	0.24	32.70
	2.0	0.36	19.68	4.0	0.81	37.14
	3.0	0.74	20.99	6.0	1.65	38.94
	4.0	1.22	21.73	8.0	2.73	39.93
	5.0	1.80	22.21	10.0	4.03	40.56
800	1.0	0.11	19.26	2.0	0.24	39.86
	2.0	0.36	23.48	4.0	0.81	46.88
	3.0	0.74	25.38	6.0	1.65	49.85
	4.0	1.22	26.49	8.0	2.73	51.52
	5.0	1.80	27.21	10.0	4.03	52.59
1200	1.0	0.11	21.44	2.0	0.24	45.97
	2.0	0.36	26.87	4.0	0.81	55.75
	3.0	0.74	29.41	6.0	1.65	60.08
	4.0	1.22	30.91	8.0	2.73	62.55
	5.0	1.80	31.91	10.0	4.03	64.16
1500	1.0	0.11	22.61	2.0	0.24	49.25
	2.0	0.36	28.77	4.0	0.81	60.76
	3.0	0.74	37.72	6.0	1.65	65.98
	4.0	1.22	33.47	8.0	2.73	68.99
	5.0	1.80	34.65	10.0	4.03	70.96

COIL DATA — FAN SIZE F - 15 x 16 Coil

ACW 12 - ASW 12, 14, 16

	1 Row (2 Circuit)			2 Row (3 Circuit)		
CFM	GPM	Head Loss	MBH	GPM	Head Loss	MBH
430	1.0	0.11	15.81	2.0	0.24	30.42
	2.0	0.36	18.50	4.0	0.81	34.19
	3.0	0.74	19.64	6.0	1.65	35.69
	4.0	1.22	20.29	8.0	2.73	36.51
	5.0	1.80	20.07	10.0	4.03	37.03
800	1.0	0.11	19.26	2.0	0.24	39.86
	2.0	0.36	23.48	4.0	0.81	46.88
	3.0	0.74	25.38	6.0	1.65	49.85
	4.0	1.22	26.49	8.0	2.73	51.52
	5.0	1.80	27.21	10.0	4.03	52.29
1200	1.0	0.11	21.44	2.0	0.24	45.97
	2.0	0.36	26.87	4.0	0.81	55.75
	3.0	0.74	29.41	6.0	1.65	60.08
	4.0	1.22	30.91	8.0	2.73	62.55
	5.0	1.80	31.91	10.0	4.03	64.16
1800	1.0	0.11	23.54	2.0	0.24	51.87
	2.0	0.36	30.33	4.0	0.81	64.90
	3.0	0.74	33.64	6.0	1.65	70.92
	4.0	1.22	35.63	8.0	2.73	74.43
	5.0	1.80	36.96	10.0	4.03	76.74
2300	1.0	0.11	24.77	2.0	0.24	55.29
	2.0	0.36	32.45	4.0	0.81	70.51
	3.0	0.74	36.28	6.0	1.65	77.72
	4.0	1.22	38.61	8.0	2.73	81.98
	5.0	1.80	40.19	10.0	4.03	84.80

COIL DATA — FAN SIZE G - 17-1/2 x 24 Coil

ACW 14/16

	1 Row (2 Circuit)			2 Row (3 Circuit)		
CFM	GPM	Head Loss	MBH	GPM	Head Loss	MBH
600	1.5	0.48	25.85	2.0	0.73	40.36
	2.0	0.84	27.48	4.0	2.83	46.16
	3.0	1.83	29.34	6.0	6.24	48.47
	4.0	3.18	30.38	8.0	8.75	49.72
	5.0	4.89	31.03	10.0	13.49	50.51
1000	1.5	0.48	31.72	2.0	0.73	51.47
	2.0	0.84	34.28	4.0	2.83	61.75
	3.0	1.83	37.29	6.0	6.24	66.10
	4.0	3.18	39.00	8.0	8.75	68.51
	5.0	4.89	40.12	10.0	13.49	70.05
1600	1.5	0.48	37.10	2.0	0.73	61.52
	2.0	0.84	40.74	4.0	2.83	77.47
	3.0	1.83	45.14	6.0	6.24	84.64
	4.0	3.18	47.73	8.0	8.75	88.74
	5.0	4.89	49.44	10.0	13.49	91.39
2400	1.5	0.48	41.54	2.0	0.73	69.52
	2.0	0.84	46.24	4.0	2.83	91.34
	3.0	1.83	52.11	6.0	6.24	101.73
	4.0	3.18	55.63	8.0	8.75	107.83
	5.0	4.89	58.00	10.0	13.49	111.85
3100	1.5	0.48	44.19	2.0	0.73	74.11
	2.0	0.84	49.61	4.0	2.83	99.94
	3.0	1.83	56.50	6.0	6.24	112.71
	4.0	3.18	60.70	8.0	8.75	120.34
	5.0	4.89	63.55	10.0	13.49	125.43

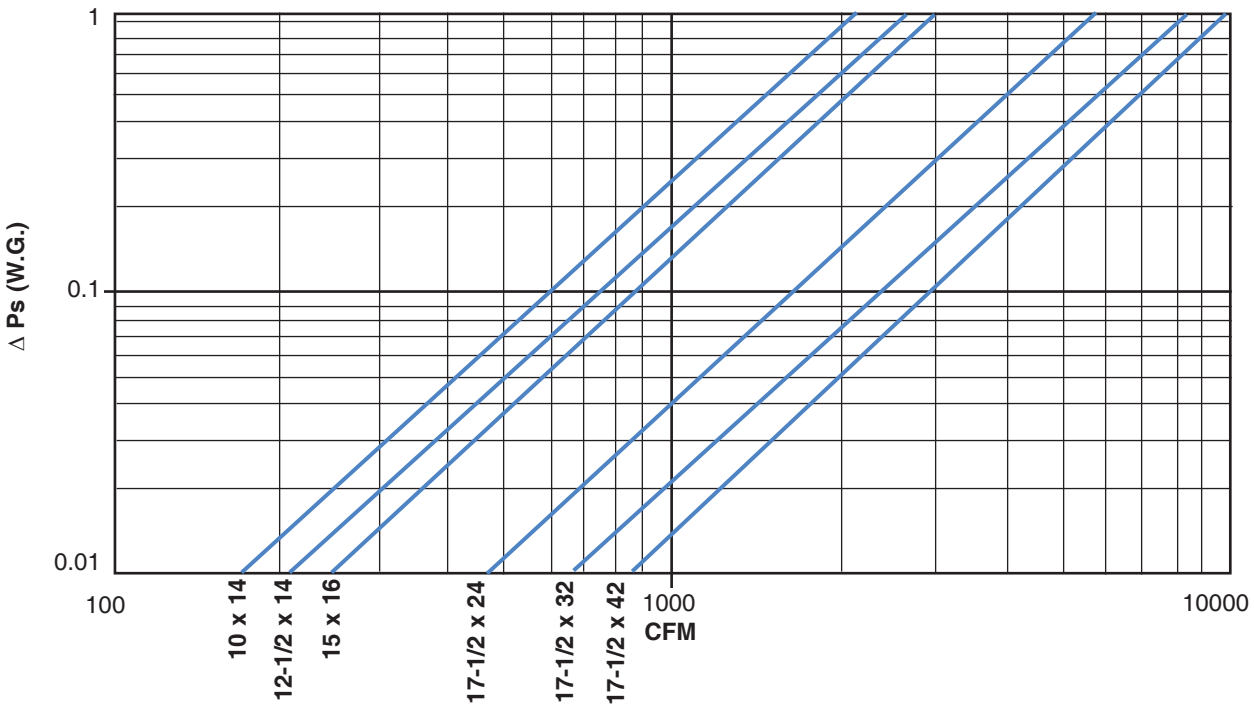
COIL DATA — FAN SIZE H/J - 17-1/2 x 42 Coil

ACW 14/16

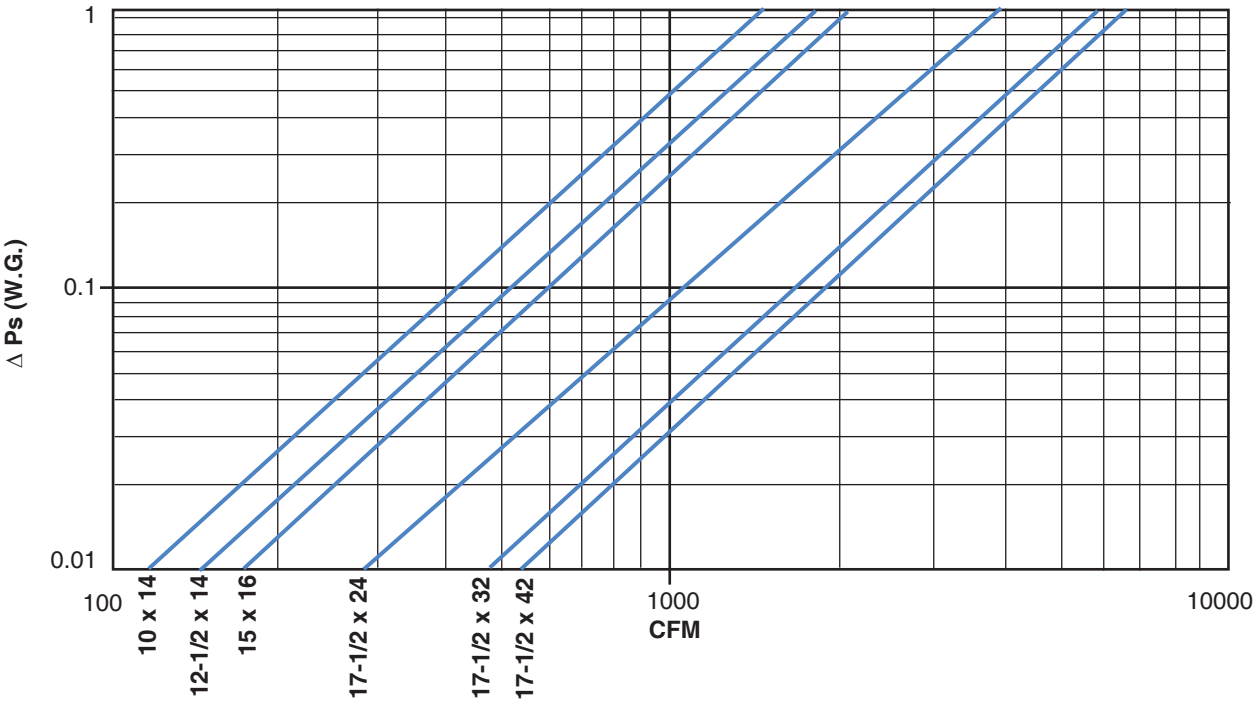
	1 Row (2 Circuit)			2 Row (3 Circuit)		
CFM	GPM	Head Loss	MBH	GPM	Head Loss	MBH
780	1.5	0.74	35.67	2.0	1.01	53.33
	2.0	1.28	38.44	4.0	3.85	62.78
	3.0	2.80	41.64	6.0	8.47	66.60
	4.0	4.86	43.42	8.0	12.64	68.67
	5.0	7.47	44.57	10.0	19.46	69.97
1600	1.5	0.74	46.60	2.0	1.01	72.81
	2.0	1.28	51.71	4.0	3.85	93.39
	3.0	2.80	57.96	6.0	8.47	102.62
	4.0	4.86	61.59	8.0	12.64	107.86
	5.0	7.47	64.00	10.0	19.46	111.25
2400	1.5	0.74	52.40	2.0	1.01	82.72
	2.0	1.28	59.15	4.0	3.85	111.79
	3.0	2.80	67.66	6.0	8.47	125.75
	4.0	4.86	72.80	8.0	12.64	133.94
	5.0	7.47	76.25	10.0	19.46	139.33
3600	1.5	0.74	57.70	2.0	1.01	91.20
	2.0	1.28	62.22	4.0	3.85	129.76
	3.0	2.80	77.36	6.0	8.47	149.65
	4.0	4.86	84.30	8.0	12.64	161.73
	5.0	7.47	89.04	10.0	19.46	169.85
4200	1.5	0.74	59.55	2.0	1.01	94.02
	2.0	1.28	68.76	4.0	3.85	136.29
	3.0	2.80	80.97	6.0	8.47	158.70
	4.0	4.86	88.67	8.0	12.64	172.50
	5.0	7.47	93.97	10.0	19.46	181.84

- Data based on 180°F entering water temperature and 55°F entering air temperature
- **CAUTION: GPM above or below catalog limits is NOT recommended**

1 ROW
AIR PRESSURE DROP

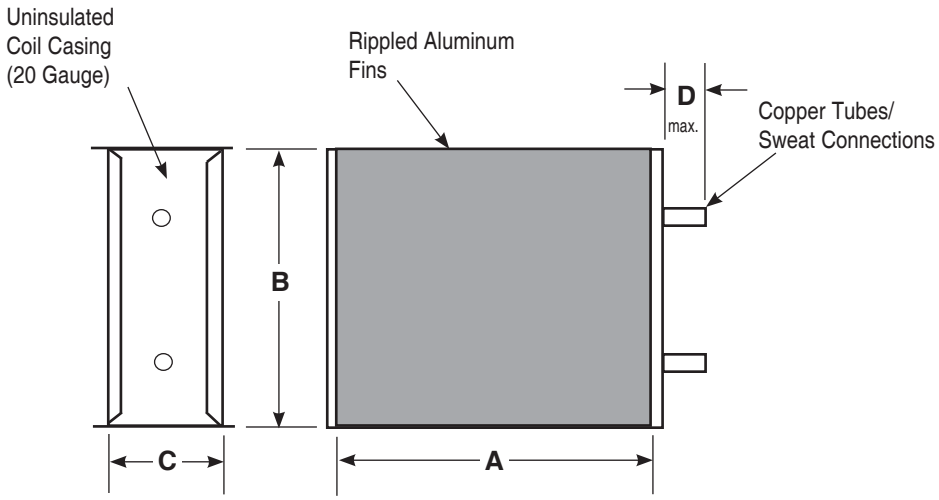


2 ROW
AIR PRESSURE DROP



NOTES: *1. Δ P_S is the static pressure drop of the **Water Coil Only** and does not include the terminal unit.*
*2. Δ P_S for the terminal units is shown under the unit **Performance Data** section of this catalog.*

RIGHT HAND SHOWN.



FAN POWERED UNITS

COIL DIMENSIONS (Listed in Inches)										
ACWH ASWH Size	ACWQ Size	ACWJ Size	Coil Size		C		1 Row Coil	2 Row Coil	O.D. Connection	
			A	B	1 Row	2 Row	D. Max	D. Max	1 Row	2 Row
U1-U4*	---	---	12	10	3-1/8	4-1/2	3	3	1/2	5/8
---	A,B,C	---	14	10	3-1/8	4-1/2	3	3	1/2	5/8
A,B,C,D,U5*	D	B-D	14	12-1/2	3-1/8	4-1/2	3	3	1/2	5/8
E,F	E,F	E,F	16	15	3-1/8	4-1/2	3-1/2	4	5/8	7/8
---	---	G	24	17-1/2	3-1/8	4-1/2	3-1/2	4	5/8	7/8
---	---	H,J	42	17-1/2	3-1/8	4-1/2	3-1/2	4	5/8	7/8

COIL DIMENSIONS (Listed in Millimeters)										
ACWH ASWH Size	ACWQ Size	ACWJ Size	Coil Size		C		1 Row Coil	2 Row Coil	O.D. Connection	
			A	B	1 Row	2 Row	D. Max	D. Max	1 Row	2 Row
U1-U4*	---	---	305	254	79	114	76	76	13	16
---	A,B,C	---	356	254	79	114	76	76	13	16
A,B,C,D,U5*	D	B-D	356	318	79	114	76	76	13	16
E,F	E,F	E,F	406	381	79	114	89	102	16	22
---	---	G	609	445	79	114	89	102	16	22
---	---	H,J	1066	445	79	114	89	102	16	22

NOTES:
1. *Coil connection may be ordered as right hand or left hand, determined by facing the averaging flow sensor (inlet of unit) with the supply air hitting the back of your head.*
2. *Coil is provided with slip and drive connection and is uninsulated.*
3. *Standard coils are not recommended for steam.*
4. *Fin spacing for all coils is 10 fins per inch.*
5. *All coils are constructed using 1/2" O. D. staggered copper tubes, rippled aluminum fins and 20 gauge galvanized steel frame.*
6. *GPM above or below catalog values are not recommended.*

* *Underfloor and low profile units are obsolete.*