

### Models AVW and ABW

Select a one or two row coil for the desired GPM and MBH requirements from the graphs for the unit size and the CFM required.

Coil data is based on 125° (51°C) temperature difference between entering air and entering water. This represents the typical input conditions of 55° (13°C) entering air (EAT) and 180° (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 tables on the following pages by the temperature difference factor to obtain the MBH for actual conditions.

*The formula for the temperature difference factor is:*

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

*The formula to calculate actual MBH from tables is:*

$$\text{MBH actual} = \text{TDF} \times \text{MBH from tables}$$

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

**Use the following formulas to convert temperature rise to MBH or vice versa:**

$$\text{Air Temperature Rise} = \frac{\text{MBH} \times 1,000}{\text{CFM} \times 1.08}$$

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

$$\text{Water Temperature Drop} = \frac{\text{MBH}}{.5 \times \text{GPM}}$$

$$\text{MBH} = \text{GPM} \times .5 \times \text{Water Temp. Drop}$$

- GPM = Gallons Per Minute
- MBH = 1000 Btu/h (British Thermal Units/Hour)
- 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:*

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

- NOTES:**
1. Data is based on 180°F (82°C) EWT and 55°F (13°C) EAT.
  2. GPM above or below catalog values not recommended.
  3. Standard coils are not recommended for steam use.
  4. Coil is shipped attached to the terminal unit and is uninsulated.
  5. 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 - **AVW 05** — 8 x 12 Coil

CFM	1-Row (1 Circuit)				2-Row (1 Circuit)			
	GPM	Head Loss	MBH	Coil APD	GPM	Head Loss	MBH	Coil APD
<b>75</b>	0.5	0.09	4.47		0.5	0.18	6.93	
	1.0	0.30	4.91		1.0	0.62	7.61	
	1.5	0.61	5.09	0.004	1.5	1.26	7.88	0.008
	2.0	1.00	5.18		2.0	2.08	8.02	
	3.0	2.04	5.28		3.0	4.23	8.16	
<b>100</b>	0.5	0.09	5.10		0.5	0.18	8.20	
	1.0	0.30	5.70		1.0	0.62	9.21	
	1.5	0.61	5.94	0.004	1.5	1.26	9.61	0.013
	2.0	1.00	6.07		2.0	2.08	9.83	
	3.0	2.04	6.22		3.0	4.23	10.06	
<b>200</b>	0.5	0.09	6.69		0.5	0.18	11.38	
	1.0	0.30	7.77		1.0	0.62	13.57	
	1.5	0.61	8.24	0.019	1.5	1.26	14.50	0.041
	2.0	1.00	8.50		2.0	2.08	15.03	
	3.0	2.04	8.80		3.0	4.23	15.60	
<b>300</b>	0.5	0.09	7.64		0.5	0.18	13.19	
	1.0	0.30	9.08		1.0	0.62	16.31	
	1.5	0.61	9.73	0.035	1.5	1.26	17.72	0.084
	2.0	1.00	10.10		2.0	2.08	18.52	
	3.0	2.04	10.52		3.0	4.23	19.41	
<b>350</b>	0.5	0.09	7.99		0.5	0.18	13.85	
	1.0	0.30	9.59		1.0	0.62	17.38	
	1.5	0.61	10.32	0.061	1.5	1.26	18.99	0.131
	2.0	1.00	10.74		2.0	2.08	19.92	
	3.0	2.04	11.21		3.0	4.23	20.96	

COIL DATA - **AVW 06** — 8 x 12 Coil

CFM	1-Row (1 Circuit)				2-Row (1 Circuit)			
	GPM	Head Loss	MBH	Coil APD	GPM	Head Loss	MBH	Coil APD
<b>110</b>	0.5	0.09	5.32		0.5	0.18	8.63	
	1.0	0.30	5.97		1.0	0.62	9.77	
	1.5	0.61	6.24	0.006	1.5	1.26	10.23	0.016
	2.0	1.00	6.38		2.0	2.08	10.48	
	3.0	2.04	6.54		3.0	4.23	10.74	
<b>200</b>	0.5	0.09	6.69		0.5	0.18	11.38	
	1.0	0.30	7.77		1.0	0.62	13.57	
	1.5	0.61	8.24	0.016	1.5	1.26	14.50	0.051
	2.0	1.00	8.50		2.0	2.08	15.03	
	3.0	2.04	8.80		3.0	4.23	15.60	
<b>300</b>	0.5	0.09	7.64		0.5	0.18	13.19	
	1.0	0.30	9.08		1.0	0.62	16.31	
	1.5	0.61	9.73	0.037	1.5	1.26	17.72	0.101
	2.0	1.00	10.10		2.0	2.08	18.52	
	3.0	2.04	10.52		3.0	4.23	19.41	
<b>400</b>	0.5	0.09	8.28		0.5	0.18	14.41	
	1.0	0.30	10.04		1.0	0.62	18.30	
	1.5	0.61	10.84	0.044	1.5	1.26	20.11	0.145
	2.0	1.00	11.31		2.0	2.08	21.16	
	3.0	2.04	11.84		3.0	4.23	22.35	
<b>500</b>	0.5	0.09	8.79		0.5	0.18	15.32	
	1.0	0.30	10.81		1.0	0.62	19.84	
	1.5	0.61	11.74	0.095	1.5	1.26	22.01	0.241
	2.0	1.00	12.29		2.0	2.08	23.28	
	3.0	2.04	12.92		3.0	4.23	24.74	

**GPM above or below catalog values not recommended**  
*Data Based on 180°F EWT and 55°F EAT*

COIL DATA - **AVW, ABW 06, 07** — 10 x 12 Coil

CFM	1-Row (1 Circuit)				2-Row (2 Circuit)			
	GPM	Head Loss	MBH	Coil APD	GPM	Head Loss	MBH	Coil APD
<b>140</b>	0.5	0.12	6.71		1.0	0.12	11.86	
	1.0	0.41	7.63		2.0	0.41	13.04	
	2.0	1.36	8.22	0.011	3.0	0.82	13.50	0.025
	3.0	2.77	8.45		4.0	1.36	13.75	
	4.0	4.59	8.57		5.0	2.02	13.91	
<b>200</b>	0.5	0.12	7.70		1.0	0.12	14.34	
	1.0	0.41	8.97		2.0	0.41	16.17	
	2.0	1.36	9.81	0.017	3.0	0.82	16.91	0.045
	3.0	2.77	10.14		4.0	1.36	17.31	
	4.0	4.59	10.32		5.0	2.02	17.57	
<b>400</b>	0.5	0.12	9.63		1.0	0.12	19.30	
	1.0	0.41	11.74		2.0	0.41	22.93	
	2.0	1.36	13.24	0.053	3.0	0.82	24.51	0.150
	3.0	2.77	13.86		4.0	1.36	25.40	
	4.0	4.59	14.20		5.0	2.02	25.99	
<b>600</b>	0.5	0.12	10.72		1.0	0.12	22.14	
	1.0	0.41	13.43		2.0	0.41	27.15	
	2.0	1.36	15.46	0.114	3.0	0.82	29.42	0.320
	3.0	2.77	16.31		4.0	1.36	30.74	
	4.0	4.59	16.79		5.0	2.02	31.61	
<b>700</b>	0.5	0.12	11.12		1.0	0.12	23.19	
	1.0	0.41	14.09		2.0	0.41	28.78	
	2.0	1.36	16.34	0.136	3.0	0.82	31.36	0.397
	3.0	2.77	17.29		4.0	1.36	32.87	
	4.0	4.59	17.83		5.0	2.02	33.87	

COIL DATA - **AVW, ABW 08** — 10 x 12 Coil

CFM	1-Row (1 Circuit)				2-Row (2 Circuit)			
	GPM	Head Loss	MBH	Coil APD	GPM	Head Loss	MBH	Coil APD
<b>185</b>	0.5	0.12	7.49		1.0	0.12	13.79	
	1.0	0.41	8.67		2.0	0.41	15.46	
	2.0	1.36	9.45	0.014	3.0	0.82	16.13	0.041
	3.0	2.77	9.76		4.0	1.36	16.50	
	4.0	4.59	9.92		5.0	2.02	16.73	
<b>400</b>	0.5	0.12	9.63		1.0	0.12	19.30	
	1.0	0.41	11.74		2.0	0.41	22.93	
	2.0	1.36	13.24	0.044	3.0	0.82	24.51	0.165
	3.0	2.77	13.86		4.0	1.36	25.40	
	4.0	4.59	14.20		5.0	2.02	25.99	
<b>600</b>	0.5	0.12	10.72		1.0	0.12	22.14	
	1.0	0.41	13.43		2.0	0.41	27.15	
	2.0	1.36	15.46	0.088	3.0	0.82	29.42	0.347
	3.0	2.77	16.31		4.0	1.36	30.74	
	4.0	4.59	16.79		5.0	2.02	31.61	
<b>800</b>	0.5	0.12	11.47		1.0	0.12	24.09	
	1.0	0.41	14.66		2.0	0.41	30.20	
	2.0	1.36	17.12	0.135	3.0	0.82	33.07	0.555
	3.0	2.77	18.17		4.0	1.36	34.76	
	4.0	4.59	18.77		5.0	2.02	35.88	
<b>1000</b>	0.5	0.12	12.04		1.0	0.12	25.54	
	1.0	0.41	15.62		2.0	0.41	32.59	
	2.0	1.36	18.45	0.187	3.0	0.82	35.98	0.820
	3.0	2.77	19.69		4.0	1.36	37.99	
	4.0	4.59	20.39		5.0	2.02	39.34	

COIL DATA - **AVW, ABW 10** — 12-1/2 x 14 Coil

CFM	1-Row (1 Circuit)				2-Row (2 Circuit)			
	GPM	Head Loss	MBH	Coil APD	GPM	Head Loss	MBH	Coil APD
<b>300</b>	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	0.019	3.0	1.15	23.49	0.039
	3.0	3.86	14.76		5.0	2.81	25.70	
	4.0	6.39	15.08		8.0	6.39	26.45	
<b>500</b>	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	0.044	3.0	1.15	32.12	0.092
	3.0	3.86	18.56		5.0	2.81	34.29	
	4.0	6.39	19.08		8.0	6.39	35.69	
<b>800</b>	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	0.095	3.0	1.15	39.70	0.207
	3.0	3.86	22.43		5.0	2.81	43.14	
	4.0	6.39	23.19		8.0	6.39	45.41	
<b>1200</b>	0.5	0.17	14.94		1.0	0.17	31.68	
	1.0	0.57	20.06		2.0	0.57	41.65	
	2.0	1.90	24.21	0.195	3.0	1.15	46.53	0.421
	3.0	3.86	26.03		5.0	2.81	51.39	
	4.0	6.39	27.07		8.0	6.39	54.68	
<b>1500</b>	0.5	0.17	15.56		1.0	0.17	33.32	
	1.0	0.57	21.25		2.0	0.57	44.66	
	2.0	1.90	26.00	0.291	3.0	1.15	50.36	0.644
	3.0	3.86	28.12		5.0	2.81	56.14	
	4.0	6.39	29.34		8.0	6.39	60.12	

COIL DATA - **AVW, ABW 12** — 15 x 16 Coil

CFM	1-Row (2 Circuit)				2-Row (3 Circuit)			
	GPM	Head Loss	MBH	Coil APD	GPM	Head Loss	MBH	Coil APD
<b>430</b>	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	0.019	6.0	1.65	35.69	0.055
	4.0	1.22	20.29		8.0	2.73	36.51	
	5.0	1.80	20.70		10.0	4.03	37.03	
<b>800</b>	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	0.051	6.0	1.65	49.85	0.153
	4.0	1.22	26.49		8.0	2.73	51.52	
	5.0	1.80	27.21		10.0	4.03	52.59	
<b>1200</b>	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	0.100	6.0	1.65	60.08	0.313
	4.0	1.22	30.91		8.0	2.73	62.55	
	5.0	1.80	31.91		10.0	4.03	64.16	
<b>1800</b>	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	0.209	6.0	1.65	70.92	0.649
	4.0	1.22	35.63		8.0	2.73	74.43	
	5.0	1.80	36.96		10.0	4.03	76.74	
<b>2300</b>	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	0.314	6.0	1.65	77.72	0.988
	4.0	1.22	38.61		8.0	2.73	81.98	
	5.0	1.80	40.19		10.0	4.03	84.80	

GPM above or below catalog values not recommended

Data Based on 180°F EWT and 55°F EAT

COIL DATA - **AVW, ABW 14** — 17-1/2 x 20 Coil

CFM	1-Row (2 Circuit)				2-Row (3 Circuit)			
	GPM	Head Loss	MBH	Coil APD	GPM	Head Loss	MBH	Coil APD
<b>600</b>	1.0	0.15	21.04		2.0	0.33	40.70	
	2.0	0.50	25.38		4.0	1.10	46.97	
	3.0	1.02	27.27	0.029	6.0	2.24	49.52	0.056
	4.0	1.68	28.34		8.0	3.71	50.91	
	5.0	2.49	29.03		10.0	5.48	51.79	
<b>1000</b>	1.0	0.15	24.50		2.0	0.33	50.37	
	2.0	0.50	30.73		4.0	1.10	60.74	
	3.0	1.02	33.60	0.059	6.0	2.24	65.20	0.128
	4.0	1.68	35.26		8.0	3.71	67.71	
	5.0	2.49	36.35		10.0	5.48	69.31	
<b>1600</b>	1.0	0.15	27.48		2.0	0.33	58.86	
	2.0	0.50	35.76		4.0	1.10	74.04	
	3.0	1.02	39.76	0.132	6.0	2.24	80.92	0.294
	4.0	1.68	42.13		8.0	3.71	84.89	
	5.0	2.49	43.72		10.0	5.48	87.48	
<b>2400</b>	1.0	0.15	29.88		2.0	0.33	65.67	
	2.0	0.50	40.12		4.0	1.10	85.65	
	3.0	1.02	45.28	0.279	6.0	2.24	95.17	0.633
	4.0	1.68	48.41		8.0	3.71	100.78	
	5.0	2.49	50.53		10.0	5.48	104.50	
<b>3100</b>	1.0	0.15	31.31		2.0	0.33	69.67	
	2.0	0.50	42.86		4.0	1.10	92.96	
	3.0	1.02	48.84	0.425	6.0	2.24	104.40	0.954
	4.0	1.68	52.53		8.0	3.71	111.25	
	5.0	2.49	55.04		10.0	5.48	115.82	

COIL DATA - **AVW, ABW 16** — 18 x 24 Coil

CFM	1-Row (2 Circuit)				2-Row (3 Circuit)			
	GPM	Head Loss	MBH	Coil APD	GPM	Head Loss	MBH	Coil APD
<b>780</b>	1.0	0.17	24.68		2.0	0.38	48.61	
	2.0	0.57	30.59		4.0	1.27	57.55	
	3.0	1.17	33.23	0.021	6.0	2.58	61.26	0.053
	4.0	1.93	34.74		8.0	4.26	63.31	
	5.0	2.85	35.72		10.0	6.30	64.61	
<b>1600</b>	1.0	0.17	29.72		2.0	0.38	63.01	
	2.0	0.57	39.11		4.0	1.27	79.92	
	3.0	1.17	43.65	0.065	6.0	2.58	87.59	0.187
	4.0	1.93	46.35		8.0	4.26	92.00	
	5.0	2.85	48.14		10.0	6.30	94.87	
<b>2400</b>	1.0	0.17	32.27		2.0	0.38	70.33	
	2.0	0.57	43.91		4.0	1.27	92.79	
	3.0	1.17	49.80	0.135	6.0	2.58	103.51	0.420
	4.0	1.93	53.38		8.0	4.26	109.83	
	5.0	2.85	55.80		10.0	6.30	114.01	
<b>3600</b>	1.0	0.17	34.59		2.0	0.38	76.91	
	2.0	0.57	48.63		4.0	1.27	105.46	
	3.0	1.17	56.07	0.264	6.0	2.58	119.83	0.828
	4.0	1.93	60.71		8.0	4.26	128.51	
	5.0	2.85	63.88		10.0	6.30	134.35	
<b>4200</b>	1.0	0.17	35.42		2.0	0.38	79.21	
	2.0	0.57	50.40		4.0	1.27	110.19	
	3.0	1.17	58.48	0.346	6.0	2.58	126.09	1.068
	4.0	1.93	63.56		8.0	4.26	135.79	
	5.0	2.85	67.06		10.0	6.30	142.36	

COIL DATA - **AVW 18, ABW 18** — 17-1/2 x 32 Coil

CFM	1-Row (2 Circuit)				2-Row (3 Circuit)			
	GPM	Head Loss	MBH	Coil APD	GPM	Head Loss	MBH	Coil APD
<b>1100</b>	1.5	0.44	35.90		2.0	0.47	61.04	
	2.0	0.72	39.40		4.0	1.59	75.40	
	3.0	1.47	43.60	0.027	6.0	3.24	81.59	0.051
	4.0	2.43	46.05		8.0	5.36	85.06	
	5.0	3.59	47.65		10.0	7.92	87.28	
<b>2300</b>	1.5	0.44	43.95		2.0	0.47	76.60	
	2.0	0.72	49.54		4.0	1.59	102.63	
	3.0	1.47	56.62	0.096	6.0	3.24	115.08	0.185
	4.0	2.43	60.93		8.0	5.36	122.40	
	5.0	3.59	63.83		10.0	7.92	127.23	
<b>3600</b>	1.5	0.44	48.40		2.0	0.47	84.42	
	2.0	0.72	55.45		4.0	1.59	118.70	
	3.0	1.47	64.67	0.208	6.0	3.24	136.19	0.390
	4.0	2.43	70.45		8.0	5.36	146.80	
	5.0	3.59	74.41		10.0	7.92	153.94	
<b>4500</b>	1.5	0.44	50.47		2.0	0.47	87.82	
	2.0	0.72	58.28		4.0	1.59	126.39	
	3.0	1.47	68.67	0.303	6.0	3.24	146.71	0.555
	4.0	2.43	75.28		8.0	5.63	159.24	
	5.0	3.59	79.86		10.0	7.92	167.75	
<b>5500</b>	1.5	0.44	52.26		2.0	0.47	90.62	
	2.0	0.72	60.77		4.0	1.59	133.10	
	3.0	1.47	72.26	0.406	6.0	3.24	156.12	0.759
	4.0	2.43	79.67		8.0	5.36	170.52	
	5.0	3.59	84.85		10.0	7.92	180.40	

COIL DATA - **AVW 24, ABW 24** — 17-1/2 x 32 Coil

CFM	1-Row (2 Circuit)				2-Row (3 Circuit)			
	GPM	Head Loss	MBH	Coil APD	GPM	Head Loss	MBH	Coil APD
<b>1480</b>	1.5	0.44	39.23		2.0	0.47	67.66	
	2.0	0.72	43.52		4.0	1.59	86.35	
	3.0	1.47	48.78	0.045	6.0	3.24	94.75	0.086
	4.0	2.43	51.89		8.0	5.36	99.54	
	5.0	3.59	53.96		10.0	7.92	102.64	
<b>3200</b>	1.5	0.44	47.26		2.0	0.47	82.49	
	2.0	0.72	53.92		4.0	1.59	114.55	
	3.0	1.47	62.55	0.130	6.0	3.24	130.63	0.299
	4.0	2.43	67.92		8.0	5.36	140.30	
	5.0	3.59	71.58		10.0	7.92	146.78	
<b>4800</b>	1.5	0.44	51.06		2.0	0.47	88.75	
	2.0	0.72	59.09		4.0	1.59	128.57	
	3.0	1.47	69.83	0.245	6.0	3.24	149.74	0.540
	4.0	2.43	76.69		8.0	5.36	162.86	
	5.0	3.59	81.46		10.0	7.92	171.80	
<b>6000</b>	1.5	0.44	53.00		2.0	0.47	91.75	
	2.0	0.72	61.82		4.0	1.59	135.93	
	3.0	1.47	73.81	0.342	6.0	3.24	160.17	0.740
	4.0	2.43	81.58		8.0	5.63	175.44	
	5.0	3.59	87.04		10.0	7.92	185.95	
<b>7300</b>	1.5	0.44	54.63		2.0	0.47	94.15	
	2.0	0.72	64.15		4.0	1.59	142.15	
	3.0	1.47	77.28	0.516	6.0	3.24	169.22	1.098
	4.0	2.43	85.91		8.0	5.36	186.53	
	5.0	3.59	92.02		10.0	7.92	198.56	

**GPM above or below catalog values not recommended**  
*Data Based on 180°F EWT and 55°F EAT*