hot water coils

APPLICATION

- Hot water (glycol)-to-air heat exchanger
- Attached to air terminal to provide heat into a space
- Typically used in perimeter zones

PRODUCT FEATURES

- Designed for maximum heat transfer and low water pressure drops using single and multi-circuited designs.
- Performance data per AHRI Standard 410.
- Factory pressure tested for leaks with dry nitrogen to 500 psi for tubing with a rated burst pressure of 2500 psi.
- 20 gauge galvanized sheet metal casing with 18 gauge end plates
- 1/2" O.D. copper tubes, .016" wall thickness, mechanically expanded in fins. Manifolds are minimum .028" wall thickness.
- Aluminum corrugated fins with rippled edges, .0055" thick, 10 per inch.
- Connections are male solder headers. Refer to submittal sheet for diameter.
- Factory installed to air terminal

OPTIONS

- Right hand or left hand connections – factory configured
- 1, 2, and 4 row coils (see specific model for availability)
- Clean-out access doors factory installed in air terminal casing.
- "Steam" construction available. Contact your local Anemostat representative.

PERFORMANCE NOTES

- Data is based on AHRI 410 test standards. Water flows below the allowed lower limit may reduce heat transfer due to laminar water flow through tubes.

Model EZT Single Duct with 2 row hot water coil, right hand header connections

Table 18: Hot Water Heating Coil Performance – Inlet Sizes 05, 06

	Water Flow (GPM)	Water PD (ft. w.g.)		AIR FLOW CFM 50	100	150	200	250	300	350	400	450
5", 6" EZT 1 Row	0.50	0.2	MBH	3.6	5.5	6.8	7.7	8.5	9.2	9.8	10.2	10.7
	1.00	0.6		3.8	6.0	7.5	8.8	9.9	10.8	11.6	12.3	13.0
	2.00	1.9		3.9	6.3	8.0	9.5	10.8	11.9	12.9	13.8	14.6
	3.00	3.9		4.0	6.4	8.2	9.8	11.2	12.3	13.4	14.4	15.3
	4.00	6.5		4.0	6.4	8.3	9.9	11.3	12.6	13.7	14.7	15.7
5", 6" EZT 2 Row	1.00	0.3	MBH	5.5	8.9	11.5	13.6	15.2	16.6	17.8	18.9	19.8
	2.00	1.1		5.6	9.5	12.6	15.1	17.2	19.1	20.7	22.2	23.5
	3.00	2.4		5.7	9.7	13.0	15.7	18.0	20.1	21.9	23.6	25.1
	4.00	4.1		5.7	9.8	13.2	16.0	18.4	20.6	22.6	24.4	26.1
	5.00	6.2		5.8	9.9	13.3	16.2	18.7	21.0	23.0	24.9	26.6
5", 6" EZT 4 Row	3.00	0.5	MBH	6.9	12.7	17.7	22.0	25.7	29.0	32.0	34.7	37.2
	4.00	0.8		6.9	12.9	18.0	22.5	26.4	30.0	33.3	36.2	38.9
	5.00	1.3		6.9	12.9	18.2	22.8	26.9	30.6	34.1	37.2	40.1
	6.00	1.8		6.9	13.0	18.3	23.0	27.2	31.1	34.6	37.9	40.9
	7.00	2.4		7.0	13.0	18.4	23.1	27.5	31.4	35.0	38.4	41.5

Table 19: Hot Water Heating Coil Performance – Inlet Sizes 07, 08

	Water Flow (GPM)	Water PD (ft. w.g.)		AIR FLOW CFM 100	200	300	400	500	600	700	800	900
7", 8" EZT 1 Row	0.50	0.2	MBH	5.8	8.3	10.0	11.1	12.1	12.8	13.4	13.9	14.3
	1.00	0.6		6.3	9.5	11.7	13.4	14.8	15.9	16.9	17.8	18.5
	2.00	2.1		6.6	10.2	12.9	15.0	16.7	18.2	19.5	20.7	21.7
	3.00	4.2		6.8	10.5	13.3	15.6	17.5	19.2	20.6	22.0	23.2
	4.00	7.0		6.8	10.7	13.6	15.9	18.0	19.7	21.3	22.7	24.0
7", 8" EZT 2 Row	1.00	0.3	MBH	9.4	14.5	17.9	20.4	22.4	24.0	25.3	26.4	27.4
	2.00	1.1		10.0	16.0	20.4	23.9	26.7	29.1	31.2	33.0	34.6
	3.00	2.4		10.2	16.6	21.4	25.4	28.6	31.4	33.9	36.1	38.1
	4.00	4.2		10.3	16.9	22.0	26.2	29.7	32.8	35.5	37.9	40.1
	5.00	6.4		10.3	17.1	22.4	26.7	30.4	33.6	36.5	39.1	41.4
7", 8" EZT 4 Row	2.00	0.2	MBH	12.8	22.0	28.8	34.2	38.5	42.0	45.1	47.6	49.9
	3.00	0.5		13.0	22.9	30.6	36.8	42.1	46.5	50.3	53.7	56.7
	4.00	0.9		13.1	23.3	31.5	38.3	44.1	49.1	53.4	57.3	60.8
	6.00	1.9		13.3	23.8	32.5	39.9	46.3	52.0	57.0	61.5	65.6
	8.00	3.2		13.3	24.1	33.1	40.8	47.6	53.6	59.0	63.9	68.3

Table 20: Hot Water Heating Coil Performance – Inlet Sizes 09, 10

	Water Flow (GPM)	Water PD (ft. w.g.)		AIR FLOW CFM 300	425	550	675	800	925	1050	1175	1300
9", 10" EZT 1 Row	0.50	0.2	MBH	11.6	13.4	14.6	15.6	16.4	17.1	17.7	18.1	18.6
	1.00	0.8		13.6	16.2	18.2	19.8	21.2	22.3	23.4	24.3	25.1
	2.00	2.7		14.9	18.1	20.7	22.8	24.7	26.4	27.8	29.2	30.4
	3.00	5.6		15.4	18.8	21.7	24.1	26.2	28.1	29.8	31.3	32.7
	4.00	9.3		15.7	19.2	22.2	24.8	27.0	29.1	30.9	32.5	34.1
9", 10" EZT 2 Row	1.00	0.4	MBH	20.5	24.2	27.0	29.2	31.0	32.5	33.8	34.8	35.8
	2.00	1.3		23.2	28.4	32.5	36.0	38.9	41.4	43.6	45.6	47.3
	3.00	2.8		24.3	30.1	34.9	38.9	42.4	45.5	48.2	50.7	52.9
	4.00	4.9		24.9	31.0	36.2	40.6	44.5	47.9	50.9	53.7	56.3
	5.00	7.4		25.2	31.6	37.0	41.7	45.8	49.4	52.7	55.7	58.5
9", 10" EZT 4 Row	2.00	0.3	MBH	31.9	39.8	46.0	50.9	55.0	58.5	61.5	64.0	66.3
	4.00	1.1		34.4	44.3	52.5	59.6	65.7	71.1	75.9	80.2	84.1
	6.00	2.3		35.3	45.9	55.1	63.1	70.1	76.5	82.2	87.4	92.1
	8.00	3.9		35.7	46.8	56.4	64.9	72.5	79.4	85.7	91.4	96.7
	10.00	5.8		36.0	47.3	57.3	66.1	74.1	81.3	87.9	94.0	99.7

1 MBH = 1,000 BTU / HR
GPM = Gallons / Min
CFM = Cubic Feet / Min
See page B-24 for calculation details.

Note: All selections based on 180°F EWT and 55°F EAT (125°ΔT). For other ΔT's adjust capacities by the following factors:

ΔT	65	75	85	95	105	115	125	135	145	155	165
Factor	.51	.59	.67	.75	.83	.92	1.00	1.08	1.17	1.25	1.33

Table 21: Hot Water Heating Coil Performance – Inlet Size 12

	Water Flow (GPM)	Water PD (ft. w.g.)		AIR FLOW CFM 400	600	800	1000	1200	1400	1600	1800	2000
12" EZT 1 Row	1.00	0.1	MBH	15.9	18.8	20.8	22.4	23.7	24.7	25.6	26.4	27.0
	2.00	0.3		18.4	22.4	25.6	28.0	30.1	31.9	33.4	34.7	35.9
	3.00	0.5		19.4	24.1	27.7	30.7	33.2	35.4	37.3	39.0	40.5
	4.00	0.9		20.0	25.0	29.0	32.3	35.1	37.5	39.7	41.6	43.4
	5.00	1.4		20.4	25.7	29.9	33.4	36.4	39.0	41.3	43.4	45.3
12" EZT 2 Row	1.00	0.4	MBH	26.2	31.3	34.8	37.4	39.4	41.1	42.4	43.5	44.4
	2.00	1.6		30.4	38.1	43.9	48.5	52.3	55.5	58.2	60.5	62.6
	3.00	3.3		32.1	40.9	47.9	53.6	58.3	62.5	66.1	69.2	72.0
	4.00	5.6		33.0	42.5	50.1	56.5	61.9	66.6	70.8	74.5	77.8
	5.00	8.5		33.6	43.5	51.6	58.4	64.2	69.3	73.9	78.0	81.7
12" EZT 4 Row	2.00	0.4	MBH	41.6	52.9	61.1	67.3	72.1	76.0	79.2	81.9	84.2
	4.00	1.3		45.5	60.5	72.6	82.4	90.7	97.8	103.9	109.3	114.0
	6.00	2.7		46.9	63.4	77.1	88.7	98.6	107.4	115.1	122.0	128.2
	8.00	4.6		47.6	64.9	79.5	92.0	103.0	112.8	121.5	129.4	136.5
	10.00	7.0		48.0	65.8	81.0	94.2	105.8	116.3	125.6	134.2	142.0

Table 22: Hot Water Heating Coil Performance – Inlet Size 14

	Water Flow (GPM)	Water PD (ft. w.g.)		AIR FLOW CFM 500	800	1100	1400	1700	2000	2300	2600	2900
14" EZT 1 Row	2.00	0.3	MBH	24.0	30.2	34.8	38.3	41.1	43.5	45.5	47.3	48.8
	3.00	0.6		25.5	32.7	38.1	42.5	46.0	49.1	51.7	54.0	56.1
	4.00	1.1		26.3	34.1	40.1	45.0	49.0	52.5	55.6	58.3	60.7
	5.00	1.6		26.9	35.1	41.4	46.7	51.0	54.9	58.2	61.2	63.9
	6.00	2.3		27.2	35.7	42.4	47.9	52.5	56.6	60.1	63.3	66.2
14" EZT 2 Row	2.00	0.5	MBH	37.9	48.4	55.8	61.3	65.6	69.2	72.1	74.5	76.7
	3.00	1.1		40.5	53.2	62.5	69.9	75.8	80.8	85.0	88.6	91.8
	4.00	1.8		42.0	55.9	66.5	75.0	82.0	88.0	93.2	97.7	101.7
	6.00	3.8		43.5	58.9	70.9	80.9	89.3	96.5	102.9	108.6	113.7
	8.00	6.4		44.3	60.5	73.4	84.1	93.4	101.4	108.6	115.0	120.8
14" EZT 4 Row	4.00	1.0	MBH	57.4	79.3	95.7	108.6	118.9	127.4	134.5	140.6	145.9
	6.00	2.1		59.4	84.0	103.5	119.5	132.8	144.2	154.0	162.5	170.1
	8.00	3.5		60.5	86.5	107.8	125.5	140.7	153.8	165.4	175.6	184.8
	10.00	5.3		61.1	88.0	110.4	129.4	145.8	160.1	172.9	184.3	194.6
	12.00	7.4		61.5	89.1	112.2	132.0	149.3	164.6	178.2	190.5	201.7

Table 23: Hot Water Heating Coil Performance – Inlet Size 16

	Water Flow (GPM)	Water PD (ft. w.g.)		AIR FLOW CFM 600	1025	1450	1875	2300	2725	3150	3575	4000
16" EZT 1 Row	2.00	0.3	MBH	28.3	36.5	42.1	46.3	49.6	52.3	54.6	56.5	58.2
	3.00	0.7		30.2	39.9	46.8	52.1	56.4	60.0	63.1	65.8	68.2
	4.00	1.2		31.3	41.8	49.6	55.7	60.7	64.9	68.5	71.7	74.6
	5.00	1.7		32.0	43.1	51.4	58.1	63.5	68.2	72.3	75.9	79.1
	6.00	2.4		32.5	44.1	52.8	59.8	65.6	70.7	75.1	79.0	82.5
16" EZT 2 Row	2.00	0.6	MBH	44.3	57.6	66.2	72.4	77.0	80.6	83.5	86.0	88.0
	3.00	1.2		47.8	64.4	75.9	84.5	91.2	96.7	101.3	105.2	108.6
	4.00	2.0		49.7	68.2	81.6	91.9	100.2	107.1	112.9	118.0	122.4
	6.00	4.1		51.8	72.5	88.1	100.6	110.9	119.6	127.2	133.8	139.7
	8.00	6.9		52.8	74.8	91.8	105.5	117.0	126.9	135.6	143.2	150.2
16" EZT 4 Row	4.00	1.1	MBH	68.0	96.6	116.7	131.5	142.8	151.8	159.2	165.3	170.5
	6.00	2.2		70.7	103.8	128.6	148.0	163.7	176.7	187.6	197.0	205.1
	8.00	3.8		72.1	107.5	135.1	157.4	175.9	191.5	204.9	216.6	226.9
	10.00	5.7		73.0	109.8	139.3	163.4	183.8	201.3	216.5	230.0	241.9
	12.00	7.9		73.5	111.4	142.1	167.6	189.4	208.3	224.9	239.6	252.8

1 MBH = 1,000 BTU / HR
GPM = Gallons / Min
CFM = Cubic Feet / Min
See page B-24 for calculation details.

Note: All selections based on 180°F EWT and 55°F EAT (125°ΔT). For other ΔT's adjust capacities by the following factors:

ΔT	65	75	85	95	105	115	125	135	145	155	165
Factor	.51	.59	.67	.75	.83	.92	1.00	1.08	1.17	1.25	1.33

Table 24: Hot Water Heating Coil Performance – Inlet Size 24x16

	Water Flow (GPM)	Water PD (ft. w.g.)		AIR FLOW CFM 1000	1750	2500	3250	4000	4750	5500	6250	7000
24"x16" EZT 1 Row	2.00	1.1	MBH	44.4	56.6	64.5	70.2	74.5	77.9	80.7	83.0	85.0
	3.00	2.4		48.2	63.4	73.8	81.5	87.7	92.7	96.9	100.5	103.6
	4.00	4.0		50.3	67.3	79.3	88.5	95.9	102.1	107.3	111.9	115.9
	5.00	5.9		51.6	69.9	83.0	93.3	101.6	108.6	114.7	120.0	124.6
	6.00	8.2		52.6	71.7	85.7	96.7	105.8	113.5	120.1	125.9	131.2
24"x16" EZT 2 Row	2.00	0.4	MBH	64.2	79.7	88.5	94.2	98.1	101.1	103.4	105.2	106.7
	3.00	0.8		72.0	93.9	107.5	117.0	124.0	129.4	133.8	137.4	140.4
	4.00	1.3		76.5	102.5	119.7	132.2	141.8	149.3	155.6	160.8	165.2
	6.00	2.7		81.3	112.5	134.4	151.1	164.3	175.2	184.4	192.2	199.0
	8.00	4.5		83.9	118.1	142.9	162.3	178.1	191.3	202.5	212.3	220.9
24"x16" EZT 4 Row	2.00	0.6	MBH	87.1	105.2	113.1	117.2	119.7	121.2	122.4	123.1	123.7
	3.00	1.3		99.9	130.7	147.3	157.2	163.8	168.3	171.6	174.1	176.1
	4.00	2.1		106.6	146.2	170.1	185.8	196.8	204.8	211.0	215.7	219.6
	6.00	4.4		113.4	163.4	197.6	222.3	240.9	255.4	267.0	276.5	284.5
	8.00	7.3		116.7	172.6	213.1	243.9	268.1	287.7	303.9	317.5	329.1

Note: All selections based on 180°F EWT and 55°F EAT (125°ΔT). For other ΔT's adjust capacities by the following factors:

ΔT	65	75	85	95	105	115	125	135	145	155	165
Factor	.51	.59	.67	.75	.83	.92	1.00	1.08	1.17	1.25	1.33

Reheat Coil Definitions

CFM = Ft^3 / minute
BTUH = BTU / hour
1 MBH = 1,000 BTU's / hour = 1,000 BTUH
GPM = Gallons / minute
EAT = Entering Air Temperature,°F
LAT = Leaving Air Temperature,°F
ΔT_A = Differential air temperature,°F = LAT - EAT
EWT = Entering Water Temperature,°F
LWT = Leaving Water Temperature,°F
ΔT_W = Differential water temperature,°F = EWT - LWT
kW = Kilowatt
1 kW = 3412 BTU / HR

Water Coil Equations

BTUH = CFM x 1.08 x ΔT_A = CFM x 1.08 x (LAT – EAT)
ΔT_A = MBH x 926 / CFM
ΔT_W = MBH x 2 / GPM

Electric Coil Equations

kW = CFM x ΔT_A / 3,160 = CFM x (LAT – EAT) / 3,160
ΔT_A = 3160 x kW / CFM

Sizing Reheat Coils:

1. Knowing the heating load of the space (BTUH or MBH), room temp setpoint, and the air flow rate during heating (based on minimum ventilation rates, max recommended discharge temps for best ADPI, etc.), determine the supply air temperature required to satisfy the load:

   Supply Air Temp = (MBH x 926 / CFM) + Room Temp Setpoint

2. The Supply Air Temp into the space is the required Leaving Air Temperature from the coil (assuming no duct heat loss). Applying energy transfer equations for electric or hot water coils determines performance characteristics required to select the coil:

   Water Coils: BTUH = CFM x 1.08 x (LAT – EAT)

   Electric Coils: kW = CFM x (LAT – EAT) / 3,160