

SPRAY TYPE AIR COOLER

Air Cleaning

Humidification

Air Conditioning

Dehumidification

Evaporative Cooling

Spray Type Air Cooler

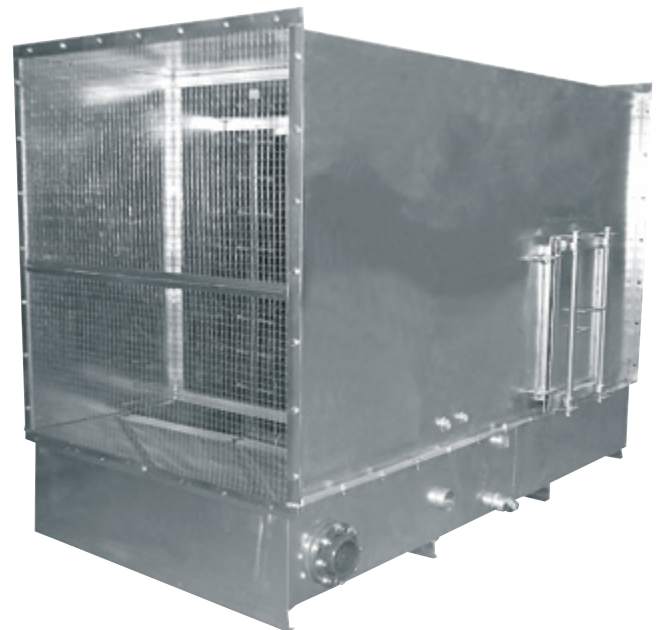
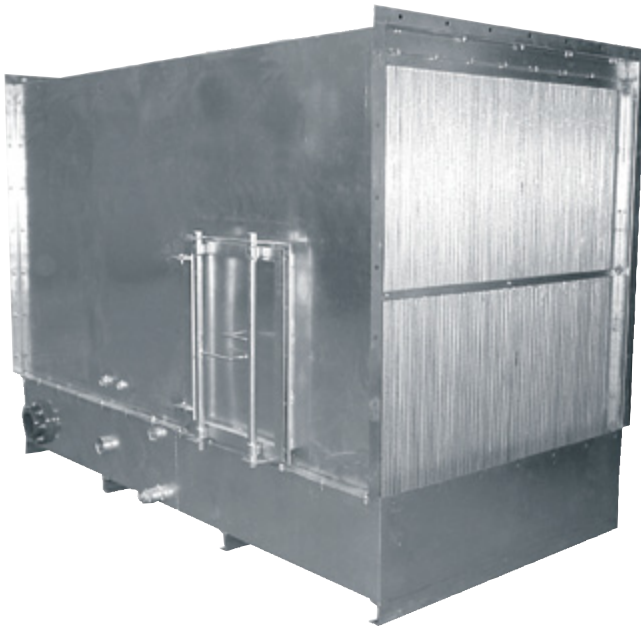
The spray type air cooler is an enclosure containing three elements: a spray bank consisting of nozzles for producing a fine spray from water supplied to them under pressure, an eliminator for removing water from air passing through the air cooler, and a basin for collecting the used water to be returned to the pump for recirculation.

This single device is capable of performing several functions depending upon how the thermodynamic condition of the water is controlled. If we recirculate water and pass outside air through the air cooler we have an evaporative cooler. The recirculated water will stabilize at near the wet bulb temperature, and the temperature difference between the entering and leaving air will approach the wet bulb depression. The evaporative cooler may be used effectively in almost all areas of the United States for spot cooling of personnel working in high-heat producing operations, for general cooling of whole areas of hot operation where large air volumes can be used.

This same cooler can work as a highly efficient heat absorber when provided with chilled water from a mechanically refrigerated chiller or from a well (well water temperature 55°F or lower).

Features

- All air coolers feature two spray banks, one concurrent with and one opposed to the air flow.
- Saturation efficiency is maintained at 90% across the performance range by varying the spray density between 6 and 8 gallons per square foot per minute.
- The assembly is constructed of galvanized steel as standard. A stainless steel housing and/or eliminators are available at additional cost.
- Spray nozzles are polypropylene. Headers and risers are constructed of Schedule 40 PVC.
- Air coolers are equipped with suction screens, sump level monitor, bronze float valve for automatic water level control, and interior vapor-proof marine light fixture with exterior junction box.



Performance Data

MODEL	FACE AREA (FT ²)	CFM	NOMINAL FACE VELOCITY	STATIC PRESSURE LOSS	SPRAY VOLUME GPM	PSI	PUMP HP	SATURATION EFFICIENCY %
AC404P	15.0	12000	800	0.32	105	23	3	90
		15000	1000	0.45	110	26	3	90
AC604P	22.8	17500	768	0.25	155	23	3	90
		20000	877	0.32	162	25	3	90
		22500	987	0.41	167	27	5	90
AC606P	34.2	25000	730	0.25	229	23	7½	90
		30000	877	0.32	243	25	7½	90
		35000	1023	0.45	250	27	7½	90
AC806P	45.9	40000	871	0.32	326	26	7½	90
		45000	980	0.42	340	28	10	90
		50000	1089	0.52	350	29	10	90
AC808P	61.2	55000	899	0.33	441	26	15	90
		60000	980	0.40	447	27	15	90
		65000	1062	0.46	459	29	15	90
AC1008P	75.6	70000	926	0.38	544	23	15	90
		75000	992	0.45	560	24	15	90
		80000	1058	0.52	570	25	15	90
AC1010P	94.5	85000	900	0.38	680	23	15	90
		90000	952	0.44	690	24	15	90
		100000	1058	0.53	716	25	15	90

FOR EVAPORATIVE COOLING APPLICATION:

$$\text{Leaving Dry Bulb Temperature} = \text{Entering Dry Bulb} - \text{Saturation Efficiency} \times (\text{Entering Dry Bulb} - \text{Entering Wet Bulb})$$

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Design Temperature Conditions

STATE	CITY	MAX. DESIGN TEMP.	
		DB (°F)	WB (°F)
Alabama	Birmingham	96	78
Arizona	Phoenix	109	76
Arkansas	Little Rock	99	80
California	Fresno	102	72
	Los Angeles	93	72
	Sacramento	101	72
Colorado	Denver	93	64
Connecticut	Hartford	86	75
Delaware	Wilmington	92	77
Florida	Jacksonville	96	79
	Miami	91	79
Georgia	Atlanta	94	77
Idaho	Boise	96	68
Illinois	Chicago	94	79
Indiana	Fort Wayne	92	77
Iowa	Davenport	94	78
Kansas	Wichita	101	77
Kentucky	Louisville	95	79
Louisiana	Shreveport	99	79
Maine	Portland	87	74

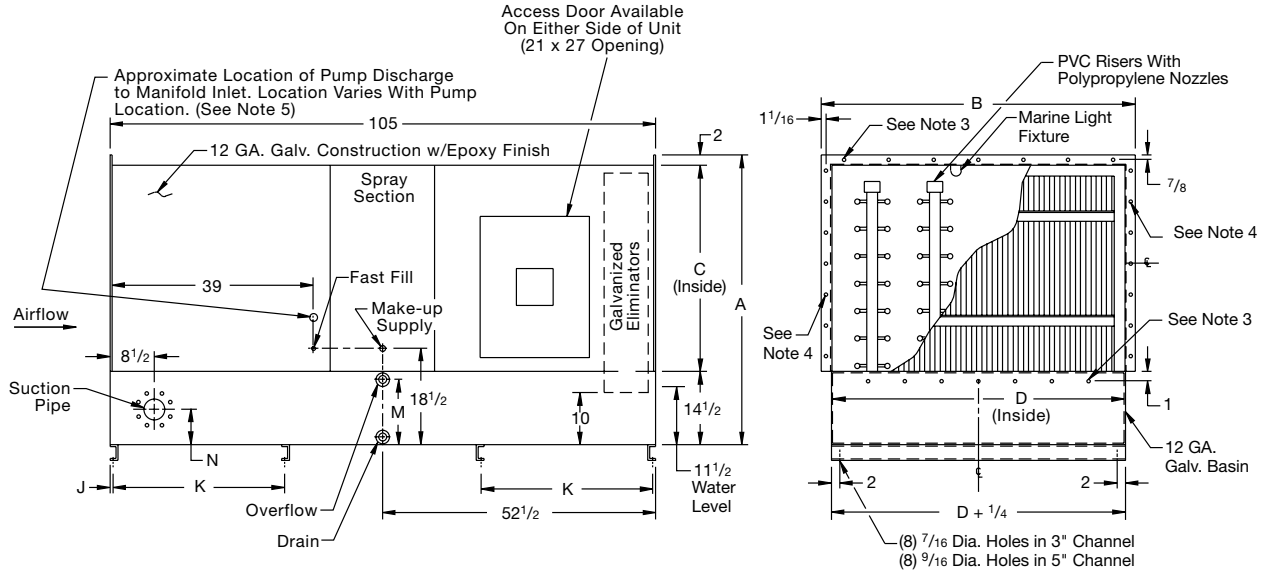
STATE	CITY	MAX. DESIGN TEMP.	
		DB (°F)	WB (°F)
Maryland	Baltimore	94	78
Massachusetts	Boston	91	75
Michigan	Detroit	91	76
Minnesota	Minneapolis	92	77
Mississippi	Meridian	97	80
Missouri	Kansas City	99	78
	St. Louis	98	78
Montana	Billings	94	67
	Helena	91	64
Nebraska	Lincoln	99	78
	Omaha	94	78
Nevada	Las Vegas	108	71
New Hampshire	Concord	90	74
New Jersey	Newark	94	77
New Mexico	Albuquerque	96	66
New York	Buffalo	88	74
	New York	92	76
	Rochester	91	75
North Carolina	Asheville	89	75
North Dakota	Bismarck	95	73

STATE	CITY	MAX. DESIGN TEMP.	
		DB (°F)	WB (°F)
Ohio	Cincinnati	92	77
	Cleveland	91	76
Oklahoma	Tulsa	101	79
Oregon	Portland	90	69
Pennsylvania	Philadelphia	93	77
	Pittsburgh	91	74
Rhode Island	Providence	89	75
South Carolina	Charleston	94	81
South Dakota	Rapid City	95	71
Tennessee	Memphis	98	80
Texas	Austin	100	78
	Dallas	102	78
	Houston	97	80
Utah	Salt Lake City	97	66
Vermont	Burlington	88	74
Virginia	Lynchburg	93	77
	Richmond	95	79
Washington	Seattle	85	69
West Virginia	Parkersburg	93	77
Wisconsin	Milwaukee	90	76
Wyoming	Cheyenne	89	63

These values will be met or exceeded 1% of the summer months June through September.



Dimensional Data



NOTES:

1. Overflow, drain, suction, and make-up piping available on either side.
2. Suction screens provided.
3. (E) 7/16" diameter holes spaced at 8 5/8" C to C from C (typ. each end).
4. (F) 7/16" diameter holes spaced at 8 5/8" C to C from C (typ. each end).
5. Pump and motors are available, but not provided as standard equipment. Location is also optional.
6. Lifting lugs (4) are provided (welded to basin).
7. Specify location of door, pump, motor, and piping by LH or RH when facing discharge side of unit. LH shown (standard).

SIZE	FACE AREA (FT ²)	DIMENSIONS (INCHES)											SUCT. PIPE SIZE	GALS PER MIN. NOM.	M/U PIPE SIZE	FAST PIPE SIZE	OVER FLOW PIPE SIZE	DRAIN PIPE SIZE	APPROX. WEIGHT	
		A	B	C	D	E	F	J	K	L	M	N							DRY	WET
AC404P	15.0	55 1/2	60 3/8	39	56 3/8	7	5	1 9/32	33 19/32	3"	12 1/2	4 3/4	4	115	3/4	1	2	2	2000	4800
AC604P	22.8	75 1/2	60 3/8	59	56 3/8	7	7	1 9/32	33 19/32		4.1#	12 1/2	4 3/4	4	175	3/4	1	2	2	2340
AC606P	34.2	75 1/2	88 3/8	59	84 3/8	9	7	1 9/32	33 19/32	5"	12 1/2	4 3/4	4	250	3/4	1	2	2	3270	7610
AC806P	45.9	95 1/2	88 3/8	79	84 3/8	9	9	3/4	33 1/8		13	5 3/4	6	350	3/4	1	3	3	3490	7830
AC808P	61.2	95 1/2	116 3/4	79	112 3/4	13	9	3/4	33 1/8	9.0#	13	5 3/4	6	455	3/4	1	3	3	4810	10550
AC1008P	75.6	121 1/2	116 3/4	105	112 3/4	13	11	3/4	33 1/8		13	5 3/4	6	585	3/4	1	3	3	5500	11240
AC1010P	94.5	121 1/2	144 3/4	105	140 3/4	17	11	3/4	33 1/8		13	5 3/4	6	690	3/4	1	3	3	6670	13810

Dimensions are not to be used for construction.



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