

Specification Sheet Air Cooled Heat Exchanger

Client	Tiger	Service	Water Cooler	Item No.
Location	Water Bundle	Manufacturer	Smithco	Inq. No.
Unit	Water cooler With Gas Bundle	Job No.	140300 Water Bundle	P.O. No.

1	Bay Size	24 ft x 6.66667 ft	Type	Forced	No. Bays	1
2	Surface Area per Unit:	Finned Tube 20979.1 ft ²	Bare Tube	992.743 ft ²		
3	Duty	3.4538E+06 Btu/h	MTD Eff. (Cross)	41.4583 °F		
4	Transfer Rate	Btu/(h*ft ² *°F)	Finned	4.33856	Bare	91.6847
			Service	3.97099	Clean	4.90484
5	PERFORMANCE DATA - TUBE SIDE					
6	Fluid Name (inlet stream name):	Physical Properties of Fluid		Inlet		Outlet
7	5			Liquid	Vapor	Liquid Vapor
8	Total Flow	43770.3 lb/h	Mass Flow	lb/h	43770.3	43770.3
9	Vapor Condensed	lb/h	Temperature	°F	200	120
10	Noncondensables	lb/h	Density	lb/ft ³	60.166	61.6932
11	Inlet Pressure	415 psia	Viscosity	cP	0.303218	0.573756
12	Spec. Pressure Drop	5 psi	Mol. Wt.	lb/lbmol	18.0153	18.0153
13	Calc. Pressure Drop	0.0776921 psi	Spec. Heat	Btu/(lb*°F)	0.9937	0.981567
14	Average h	273.484 Btu/(h*ft ² *°F)	Th. Cond.	Btu/(h*ft ² *°F)	0.388821	0.367605
15	Fouling Resistance	0.001 (h*ft ² *°F)/Btu	Bubble Point	°F	Pour Point	°F
16	Avg. Latent Heat	Btu/lb	Lethal Service	Yes / No		
17	PERFORMANCE DATA - AIR SIDE					
18	Mass Flow	568367 lb/h	Temperature In/Out (°F)	100 / 125.645	Pressure / Altitude	14.7 psia /
19	Average h	10.3964 Btu/(h*ft ² *°F)	Fan Mass Velocity	3.14092 lb/(ft ² *s)	Static Pressure Loss	0.0223346 psi
20	Flow per Fan	568367 lb/h	Fan Face Velocity	43.0465 ft/s	Velocity Press. Loss	0.0138544 psi
21	DESIGN - MATERIALS - CONSTRUCTION					
22	Design Pressure:	Test Pressure:		Design Temperature:		
23	TUBE BUNDLE		HEADER		TUBE	
24	Size:	24 ft x 6.66667 ft x 0.90211 ft	Material:	Material: Carbon Steel A214 Wld.		
25	No./Bay:	1	Type:	Type: Straight OD: 1 in		
26	No. Tube Rows:	5	No. Passes:	2	Corr. Allow.(In/Out) in 0 / 0	
27	Arrangement	Parallel Series	Slope wrt Horizontal:	0 °	Min. Thick. in/BWG: 0.083 / 14	
28	Bundles	1	Plug Mat.:	No./Bundle 158 Length 24 ft		
29	Bays	1	Gasket Mat.:	Pitch 2.5 in 30 Triangle		
30	Bundle Frame:	Corrosion Allow:		FIN		
31	MISCELLANEOUS		In Nozzle No./Diam.:	1 / 8 in	Material: Aluminum 1060 B209 Plate, sheet A91060 O T3 BPVC	
32	Struct. Mount.	Grade / Piperack	Out Nozzle No./Diam.:	1 / 8 in	OD: 2.25 in	
33	Surface Prep:		Special Nozzles:	Stock Thk. 0.018 in		
34	Louvers:	Automatic / Manual	Rating & Facing:	900 # RTJ	No./in 10 1/in	
35	Vibration Switches:	Yes / No	TI:	Fin Design Temp.:		
36	:		PI:	Code: ASME Stamp: Yes		
37			SPECS.			
38	MECHANICAL EQUIPMENT					
39	FAN		DRIVER		SPEED REDUCER	
40	Mfr.:	Model	Type:	Type:		
41	No./Bay:	1 rpm:	Mfr.:	Mfr.:		
42	Diameter:	8 ft No. Blades:	Model:	Model:		
43	Pitch	Man. Adj. / Auto	No./Bay:	No./Bay:		
44	Angle:		Power/Driver:	AGMA Rating:		
45	Blade Material:		rpm:	Ratio:		
46	Hub Material:		Enclosure:	Support: Structure / Pedestal		
47	Power/Fan, Design:	29.9475 hp	Volt/Phase/Cycle:	/ /		
48	Power/Fan, Min. Amb.:					
49	Control Action on Air Failure:	Fan Pitch		Min / Max / Lockup	Louvers	
50	Degree Control of Outlet Process Temp. (Max. Cooling):	Open / Close / Lockup				
51	Recirculation:	None / Internal / Ext. Over Side / Ext. Over End	Steam Coil: Yes / No			
52	Plot Area:	Proposal Drawing No.				
53	Bundle Weight:	Shipping Wt:				
54	Remarks: 9% excess area					
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