

Aspen Exchanger Design and Rating Shell & Tube V12

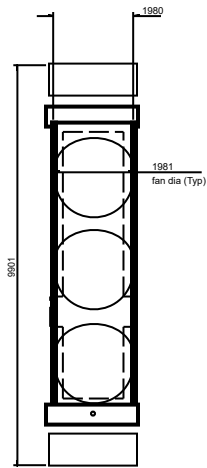
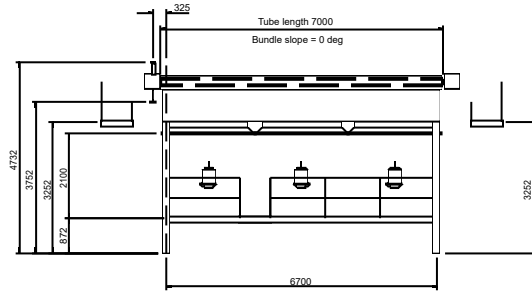
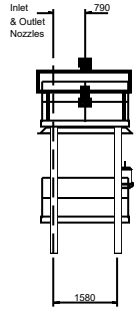
API Sheet

Air-Cooled Heat Exchanger Specification Sheet

1	Company: DELTA GMBH												
2	Location: IRAQ												
3	Service of Unit: AIR CONDENSER (2x50)					Our Reference: MPE007							
4	Item No.:					Your Reference:							
5	Date: 21 Feb 2024		Rev No.: 0		Job No.:								
6	Size & Type		7.6	/	2.16	m	Type	Forced	Number of Bays	1			
7	Surf/Unit-Finned Tube		1275.7	m ²		Bare area/bundle		54.3	m ²	Ratio (Total/Bare)	23.49		
8	Heat exchanged		251.5	kW		MTD, Eff		7.34	°C				
9	Transfer Rate-Finned		25.1	Bare, Service		542.4	Clean	682.2 kcal/(h-m ² -C)					
10	PERFORMANCE DATA - TUBE SIDE												
11	Fluid Circulated					Propane			In / Out				
12	Total Fluid Entering		kg/h	3089		Density, Liq		kg/m ³	/ 435.62				
13			In / Out		Density, Vap		kg/m ³	42.27 /					
14	Temperature		°C	67.94 / 56.43		Specific Heat, Liq		kcal/(kg-C)	/ 0.8543				
15	Liquid		kg/h	0 / 3089		Specific Heat, Vap		kcal/(kg-C)	0.5449 /				
16	Vapor		kg/h	3089 / 0		Therm. Cond, Liq		kcal/(h-m-C)	/ 0.063				
17	Noncondensable		kg/h	0 / 0		Therm. Cond, Vap		kcal/(h-m-C)	0.02 /				
18	Steam		kg/h	/		Freeze Point		°C					
19	Water		/		Bubble / Dew point		°C	56.47	/ 56.69				
20	Molecular wt, Vap		44.09652 / 44.09652		Latent heat		kcal/kg						
21	Molecular wt, NC				Inlet pressure (abs)		bar	19.867					
22	Viscosity, Liq		cp	/ 0.066		Pres Drop, Allow/Calc		bar	0.1	/ 0.09068			
23	Viscosity, Vap		cp	0.0105 /		Fouling resistance		m ² -K/W	0.00017				
24	PERFORMANCE DATA - AIR SIDE												
25	Air Quantity, Total		299246	kg/h		Altitude		0 m					
26	Air Quantity/Fan		25.206	m ³ /s		Temperature In		48 °C					
27	Static Pressure		196	Pa		Temperature Out		50.98 °C					
28	Face Velocity		5.46	m/s	Mass velocity	6	kg/s/m ²	Design Ambient		0 °C			
29	DESIGN-MATERIALS-CONSTRUCTION												
30	Design/Vac./Test Pres		23	/	1	/	25.3	bar	Design temperature 120 °C				
31	TUBE BUNDLE			Header				Tube					
32	Size		m	7.6		Type		Box		Material	SA-334 6		
33	Number/bay		1		Material		SA-516 70		Specifications				
34	Tube Rows		3		Passes		6		OD	25.4	Min Thk. 1.65 mm		
35	Arrangement				Plug Mat.				No./Bun	99	Lng 7 m		
36	Bundles		1	par		Gasket Mat.				Pitch	60 / 51.96 30 Degrees		
37	Bays		1	par		Corr. Allow.		3	mm		FIN		
38	Bundle frame				Inlet nozzle (1)		68.26		mm		Type	L-finned	
39	MISCELLANEOUS					Outlet nozzle (1)		39.7		mm		Material	Aluminum 1060
40	Struct. Mount.				Special Nozzles				OD	57.15	Tks 0.28 mm		
41	Surf. Prep				Rating		Program		No.	433 #/m	Design Temp °C		
42	Louvers				TI		PI		Code	\SME Code Sec VIII Div 1			
43	Vibration Switches				Chem Cleaning				Stamp	No Specs			
44	MECHANICAL EQUIPMENT												
45	Fan, Mfr., Model				Driver, Type			Program		Speed Reducer, Type			
46	No./Bay		3	RPM	321.52		Mfr.		Mfr.&Model				
47	Dia.		1.9812m	Blade(s)		No./Bay		4		No./Bay			
48	Pitch		1.579173	Angle		RPM				Rating		hp	
49	Blade(s)		Hub		Enclosure		0.6858		Ratio				
50	hp/Fan		8.514	kW		MinAmb		V/Phase/Hz		/ /		Support	
51	Control Action on Air Failure-				Louvers								
52	Degree Control of Outlet Process Temperature												
53	Recirculation							Steam Coil				No	
54	Plot Area		m ²		Drawing No.		Wt.Bundle		3543.1	Wt. Unit		3543.1 kg	
55	Notes:												
56													
57													
58													

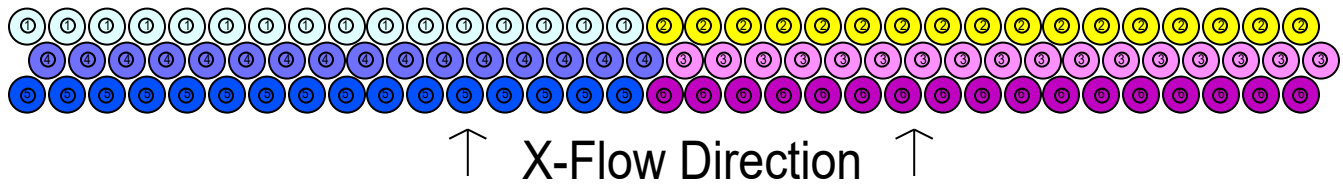
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Setting Plan



Notes:						Company: DELTA GMBH	
						Location: IRAQ	
Scale:						Service of Unit: AIR CONDENSER (2x50) Our Ref:	
						Item No.:	
						Date: 21 Feb 2024 Rev No.: 0 Job No.:	
						<p>Company Name City, State</p>	
Rev:	Date:	Description:	Dwg.:	Chk.:	Appd.:	ASME VIII-1 2024	
						Setting Plan	
						Dwg No.:	
						Air Condenser_2 x 50 1	
						Rev:	

Tube Layout



Bundle Width = 2010.0 mm

Height = 155.9 mm