

# Aspen Exchanger Design and Rating      Shell & Tube V12

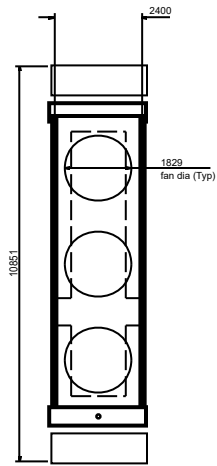
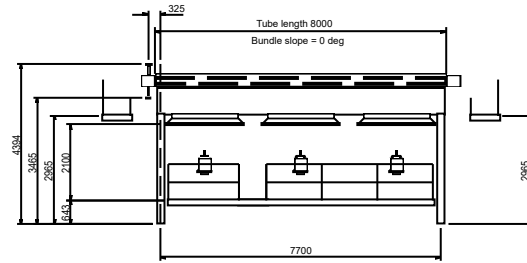
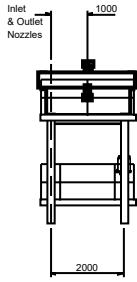
API Sheet

## Air-Cooled Heat Exchanger Specification Sheet

1	Company: DELTA GMBH										
2	Location: IRAQ										
3	Service of Unit: Air Condenser					Our Reference: SQ22000551					
4	Item No.: TBA					Your Reference:					
5	Date: 13 Oct 2023		Rev No.: 1		Job No.:						
6	Size & Type		8.6 / 2.58 m		Type		Forced		Number of Bays 1		
7	Surf/Unit-Finned Tube		1748.8 m <sup>2</sup>		Bare area/bundle		74.4 m <sup>2</sup>		Ratio (Total/Bare) 23.49		
8	Heat exchanged		637.8 kW		MTD, Eff		8.73 °C				
9	Transfer Rate-Finned		42.7 Bare, Service		981.4 Clean		1138 W/(m <sup>2</sup> -K)				
10	<b>PERFORMANCE DATA - TUBE SIDE</b>										
11	Fluid Circulated Ammonia					In / Out					
12	Total Fluid Entering		kg/h 2000		Density, Liq		kg/m <sup>3</sup>		/ 571.06		
13			In / Out		Density, Vap		kg/m <sup>3</sup>		13.22 /		
14	Temperature		°C 83.7 / 50.23		Specific Heat, Liq		kJ/(kg-K)		/ 5.028		
15	Liquid		kg/s 0 / 0.5556		Specific Heat, Vap		kJ/(kg-K)		2.584 /		
16	Vapor		kg/s 0.5556 / 0		Therm. Cond, Liq		W/(m-K)		/ 0.4301		
17	Noncondensable		kg/s 0 / 0		Therm. Cond, Vap		W/(m-K)		0.0374 /		
18	Steam		kg/s /		Freeze Point		°C				
19	Water		/		Bubble / Dew point		°C		50.74 / 51.11		
20	Molecular wt, Vap		17.032 / 17.032		Latent heat		kJ/kg				
21	Molecular wt, NC				Inlet pressure (abs)		bar		20.8		
22	Viscosity, Liq		mPa-s / 0.0792		Pres Drop, Allow/Calc		bar		0.5 / 0.20165		
23	Viscosity, Vap		mPa-s 0.0123 /		Fouling resistance		m <sup>2</sup> -K/W		0.0001		
24	<b>PERFORMANCE DATA - AIR SIDE</b>										
25	Air Quantity, Total		455841 kg/h		Altitude		0 m				
26	Air Quantity/Fan		37.438 m <sup>3</sup> /s		Temperature In		40 °C				
27	Static Pressure		254 Pa		Temperature Out		44.99 °C				
28	Face Velocity		5.93 m/s		Mass velocity		6.69 kg/s/m <sup>2</sup>		Design Ambient 0 °C		
29	<b>DESIGN-MATERIALS-CONSTRUCTION</b>										
30	Design/Vac./Test Pres		23 / / bar		Design temperature		120 °C				
31	<b>TUBE BUNDLE</b>			<b>Header</b>			<b>Tube</b>				
32	Size		m 8.6		Type		Box		Material Carbon Steel		
33	Number/bay		1		Material		Carbon Steel		Specifications		
34	Tube Rows		3		Passes		8		OD 25.4 Min Thk. 1.65 mm		
35	Arrangement				Plug Mat.				No./Bun 120 Lng 8 m		
36	Bundles		1 par		Gasket Mat.				Pitch 60 / 51.96 30 Degrees		
37	Bays		1 par		Corr. Allow.		3 mm		<b>FIN</b>		
38	Bundle frame				Inlet nozzle ( 1 )		53.98 mm		Type L-finned		
39	<b>MISCELLANEOUS</b>			Outlet nozzle ( 1 )		22.28 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 Yes Specs		
44	<b>MECHANICAL EQUIPMENT</b>										
45	Fan, Mfr., Model			Driver, Type Program			Speed Reducer, Type				
46	No./Bay 3		RPM		Mfr.		Mfr. & Model				
47	Dia. 1.828m		Blade(s)		No./Bay		No./Bay				
48	Pitch		Angle		RPM		Rating hp				
49	Blade(s)		Hub		Enclosure		Ratio				
50	hp/Fan 20.934 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 <sup>2</sup>		Drawing No.		Wt. Bundle 4151.6		Wt. Unit 4151.6 kg		
55	Notes:										
56											
57											
58											

# Aspen Exchanger Design and Rating Shell & Tube V12

## Setting Plan



Notes:

Company: DELTA GMBH

Location: IRAQ

Service of Unit: Air Condenser

Our Referen

Item No.: TBA

Your Reference:

Date: 13 Oct 2023

Rev No.: 1 Job No.:

Company Name  
City, State

Scale:

Rev.	Date	Description	Dwg.	Chk.	Appd.	ASME VIII-1 2023

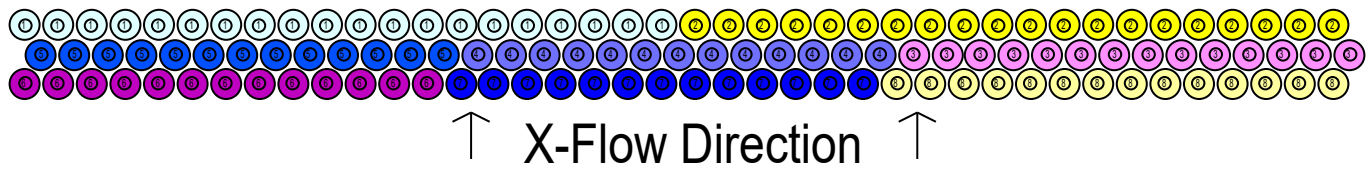
Setting Plan

Dwg No.:

Air Condenser 1

Rev:

Tube Layout



Bundle Width = 2430.0 mm

Height = 155.9 mm