

# POLARIS P.H.E. Design Calculation

V10D15

<b>MODEL</b> S121-IS10-330-TMTL80-LIQUID	<b>Hot side</b>	<b>Cold side</b>
Flow Rate (g.p.m.)	3600.00	3600.00
Inlet Temperature (°F)	98.00	85.00
Outlet Temperature (°F)	88.00	94.99
Pressure Drop (PSI)	10.00	10.00
Heat Exchanged (Btu/h)	17894069	
<b>Fluid Properties</b>	<b>Water</b>	<b>Water</b>
Density (Lb/Ft <sup>3</sup> )	62.03	62.06
Specific Heat (Btu/Lb*F)	1.00	1.00
Thermal Conductivity (Btu/h*Ft*F)	0.36	0.36
Mean Viscosity (cP)	0.74	0.76
Wall Viscosity (cP)	0.76	0.74
Inlet Locations	F1	F3
Outlet Locations	F4	F2
<b>Materials / Dimensions</b>		
Plate Arrangement (Passes*Channels)	1 × 164 + 0 × 0	
Plate Arrangement (Passes*Channels)	1 × 165 + 0 × 0	
Number of Plates	330	
Heat Transfer Area (Ft <sup>2</sup> )	4,448.50	
Overall K-value Duty/Clean (Btu/Ft <sup>2</sup> *h*F)	1339 / 1339	
Plate Material	0.0197 inch AISI 304	
Gasket Material / Max. Temp.	NBR HT PRES-TITE	
Max. Design Temperature (°F)	284	
Max. Working/Test Pressure (PSI)	150.0 / 195.0	
Frame Type	IS Length Code: 6	
Connections HOT Side	12" Flange clad with AISI 316 #150	
Connections COLD Side	12" Flange clad with AISI 316 #150	
Total Hold-Up Volume (Ft <sup>3</sup> )	54.59	
Frame Length (Ft)	8.94	Max. No. of Plates 348
Empty Weight (Lb)	10635	
<b>DATE</b>	9/16/2010	
<b>CUSTOMER</b>	BULLOCK, LOGAN & ASSOCIATES	
<b>ADDRESS</b>	ELK GROVE VILLAGE, IL	
<b>CUSTOMER REFERENCE</b>	RUBICON - BATAVIA PLANT	
<b>QUOTE#</b>	D-6361	
<b>ITEM#</b>	1	

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