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Overall Summary

Calculation mode		Design
Exchanger type		Standard axial flow
Overall heat transfer calculated	**kW**	690.1
Overall surface area ratio		1.15
Mean temperature difference	**°K**	3.79
UA value of calculated duty	**W/K**	182063.4
Core length	**mm**	1705.1
Core width	**mm**	1070.89
Number of layers per exchanger		146
Number of fins		5
Core depth(stack height)	**mm**	1171.4
Number of exchangers in parallel		1

Overall Summary

Main stream number		Stream 1	Stream 2	Stream 3
Stream name		0HPa>>1HPa	1MPa>>0MPc	1LPa>>0LPa
Stream type		Hot	Cold	Cold
Flow direction		End A to B (down)	End B to A (up)	End B to A (up)
Number of layers per exchanger		49	37	60
Total mass flow rate	**kg/s**	0.9074	0.442	0.4555
Heat load	**kW**	-690	339.9	350.2
Percent of specified heat load		100	100	100
Area Ratio		1.15	1.01	1.29
Inlet temperature	**°K**	300	148.89	148.89
Outlet temperature	**°K**	153.59	296.97	296.97
Outlet temperature from input	**°K**	153.59	296.97	296.97
Inlet pressure	**bar**	19.74	5.12	1.14766
Outlet pressure	**bar**	19.71472	5.07171	1.09767
Pressure drop (friction)	**bar**	0.02528	0.04829	0.04999
Percent of allowed pressure drop		50.55	96.58	99.98
Allowed pressure drop	**bar**	0.05	0.05	0.05
Estimated pressure drop	**bar**	0.05	0.05	0.04545

Thermal Performance - Streams

Main stream number		Stream 1	Stream 2	Stream 3
Stream name		0HPa>>1HPa	1MPa>>0MPc	1LPa>>0LPa
Flow direction		End A to B (down)	End B to A (up)	End B to A (up)
Total mass flow rate	**kg/s**	0.9074	0.442	0.4555
Heat load	**kW**	-690	339.9	350.2
Heat load per layer	**kW**	-14.1	9.2	5.8
Inlet temperature	**°K**	300	148.89	148.89
Outlet temperature	**°K**	153.59	296.97	296.97
Bubble point	**°K**			
Dew point	**°K**			
Inlet quality(vapor mass fraction)		1	1	1
Outlet quality(vapor mass fraction)		1	1	1
Inlet specific enthalpy	**J/kg**	1579569	790120	788856
Outlet specific enthalpy	**J/kg**	819166	1559106	1557824
Fouling resistance	**m² K/W**	0	0	0
Minimum [T-Twall]	**°K**	1.61	1.42	1.42
Mean [T-Twall]	**°K**	2.08	-1.77	-1.77
Mean heat transfer coefficient	**W/(m² K)**	733.8	572.7	342.3
Mean fin efficiency		0.92	0.78	0.63
Solution method		Design	Design	Design
Heat load as fraction of maximum	**-**			
Theoretical maximum heat load	**kW**			

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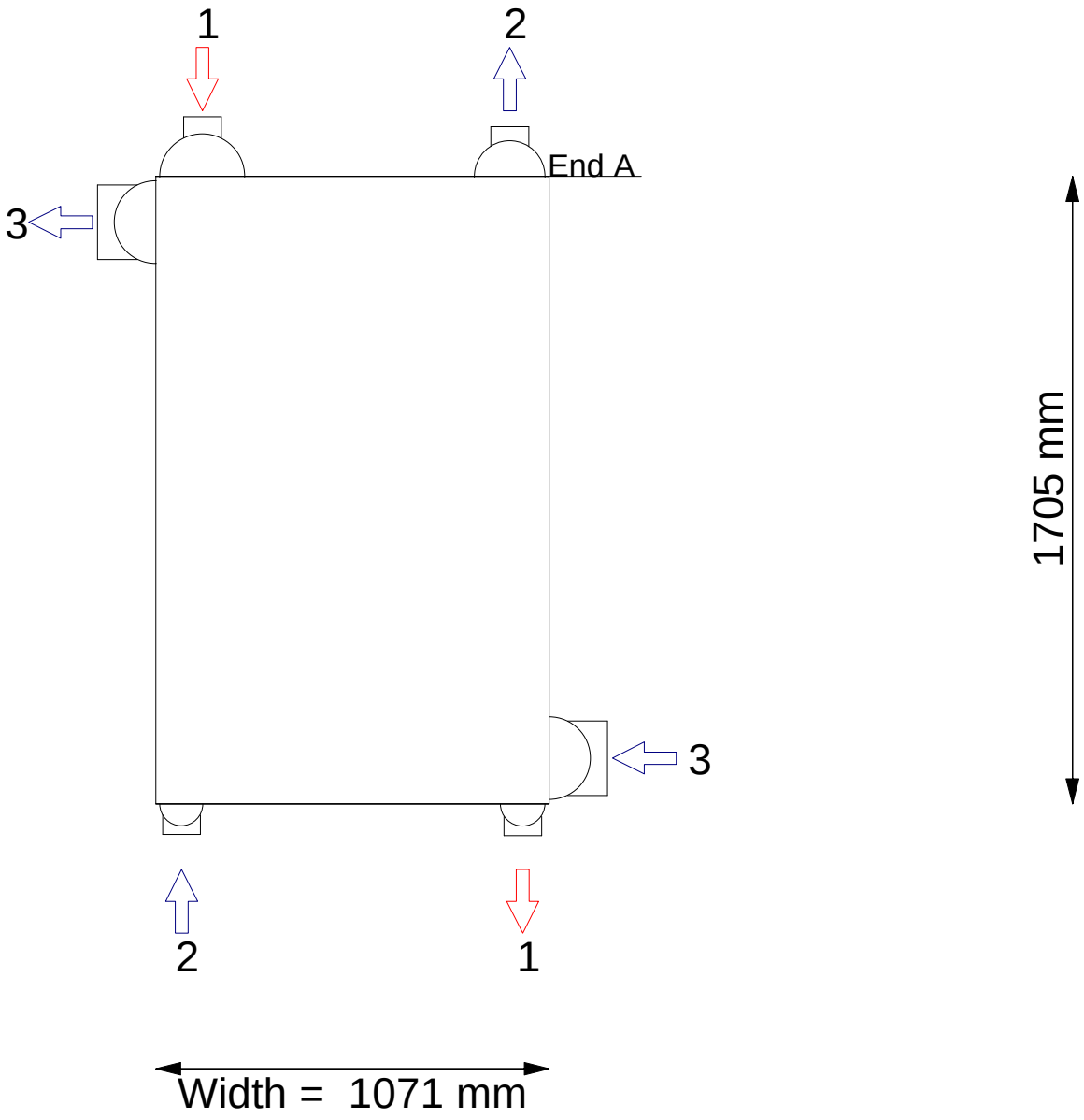
Pressure Change - Streams

		Stream 1	Stream 2	Stream 3
Stream name		0HPa>>1HPa	1MPa>>0MPc	1LPa>>0LPa
Inlet nozzle	**bar**	-0.00227	-0.00231	-0.00282
Inlet distributor friction	**bar**	-0.00484	-0.00879	-0.00148
Inlet distributor gravity	**bar**	0	0	0
Main fin friction	**bar**	-0.01168	-0.02624	-0.03743
Main fin gravity	**bar**	0.00394	-0.00105	-0.00023
Redistributor(s) friction	**bar**			
Redistributor(s) gravity	**bar**			
Outlet distributor friction	**bar**	-0.00498	-0.00978	-0.00491
Outlet distributor gravity	**bar**	0	0	0
Outlet nozzle	**bar**	-0.00151	-0.00118	-0.00336
Total friction	**bar**	-0.02528	-0.04829	-0.04999
Total gravity	**bar**	0.00394	-0.00105	-0.00023
Total acceleration	**bar**	0.00002	-0.00003	-0.00001
Pressure change (total)	**bar**	-0.02528	-0.04829	-0.04999
Predicts pressure below minimum permitted				

Exchanger Diagram

Job Title:



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Exchanger - Overall Geometry

Number of exchangers in parallel		1
Number of exchangers per unit		1
Number of layers per exchanger		146
Orientation		Horizontal, horizontal parting sheets
Core length	**mm**	1705.1
Core width	**mm**	1070.89
Core depth(stack height)	**mm**	1171.4
Number of X-flow passes		0
Number of layer groups		1
Distributor length - end A	**mm**	378.26
Main heat transfer length	**mm**	948.57
Distributor length - end B	**mm**	378.26
Internal (effective) width	**mm**	1047.89
Side bar width	**mm**	11.5
Parting sheet thickness	**mm**	1
Cap sheet thickness	**mm**	5
Exchanger metal		Aluminum
Exchanger weight - empty	**kg**	1886
Exchanger weight - full of water	**kg**	3263.6
Exchanger weight - operating	**kg**	1888.9

Inlet Distributors

		Dist. 1	**Dist. 2**	**Dist. 3**
Stream number		1	2	3
Inlet distributor: Type		End (corner)	End (corner)	Indirect (side)
Inlet header location		Left	Left	Right
Dimension a (axial length)	**mm**	366.76	366.76	225.45
Dimension b	**mm**	231.97	118.24	523.95
Inlet nozzle diameter	**mm**	102.26	102.26	202.74
Number of inlet nozzles/unit		3	2	1
Header diameter - inlet	**mm**	261.97	148.24	255.45
Fin code number for pad 1		3	4	5
Distributor fin type		Perforated	Perforated	Perforated
Distributor fin height	**mm**	5.1	5.1	9.63
Distributor fin thickness	**mm**	0.61	0.51	0.51
Distributor fin frequency	**#/m**	236	236	236
Fin code number for pad 2		3	4	5
Distributor surface area	**m²**			
% area for heat transfer				

Outlet Distributors

		Dist. 1	Dist. 2	Dist. 3
Stream number		1	2	3
Outlet distributor: Type		End (corner)	End (corner)	Indirect (side)
Outlet header location		Right	Right	Left
Dimension a (axial length)	**mm**	366.76	366.76	225.45
Dimension b	**mm**	122.26	193.03	523.95
Outlet nozzle diameter	**mm**	102.26	102.26	202.74
Number of outlet nozzles/unit		2	3	1
Header diameter - outlet	**mm**	152.26	223.03	255.45
Fin code number for pad 1		3	4	5
Distributor fin type		Perforated	Perforated	Perforated
Distributor fin height	**mm**	5.1	5.1	9.63
Distributor fin thickness	**mm**	0.61	0.51	0.51
Distributor fin frequency	**#/m**	236	236	236
Fin code number for pad 2		3	4	5
Distributor surface area	**m²**			
% area for heat transfer				