



## SinglePhase-Design

Heat

Exchanger B220Lx72/1P

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Fluid Side 1 : Water

Fluid Side 2 : Water

Flow Type : Counter current

SSP Alias : B220L

DUTY REQUIREMENTS	Unit	Side 1		Side 2
Heat load	kW		307.4	
Inlet temperature	°C	100.00		50.00
Outlet temperature	°C	51.84		70.49
Flow rate	kg/s	1.521		3.584
Max. pressure drop	kPa	20.0		20.0
Thermal length		4.827		2.054

PLATE HEAT EXCHANGER	Unit	Side 1		Side 2
Total heat transfer area	m <sup>2</sup>		7.15	
Heat flux	kW/m <sup>2</sup>		43.0	
Mean temperature difference	K		9.98	
O.H.T.C. (available/required)	W/m <sup>2</sup> ,°C		4310/4310	
Pressure drop -total*	kPa	4.33		20.9
- in ports	kPa	0.293		1.61
Port diameter	mm	50.0		50.0
Number of channels		35		36
Number of plates			72	
Oversurfacing	%		0	
Fouling factor	m <sup>2</sup> ,°C/kW		0.000	
Reynolds number		1175		2162
Port velocity	m/s	0.795		1.86

PHYSICAL PROPERTIES	Unit	Side 1		Side 2
Reference temperature	°C	75.92		60.24
Dynamic viscosity	cP	0.374		0.465
Dynamic viscosity - wall	cP	0.424		0.430
Density	kg/m <sup>3</sup>	974.3		983.1
Heat capacity	kJ/kg,°C	4.196		4.186

Thermal conductivity	W/m,°C	0.6674	0.6546
Min. fluid temperature at wall	°C	50.76	
Max. fluid temperature at wall	°C		80.44
Film coefficient	W/m <sup>2</sup> ,°C	7370	12800
Minimum wall temperature	°C	66.63	65.60
Channel velocity	m/s	0.155	0.353
Shear stress	Pa	6.74	32.2

Disclaimer: Data used in this calculation is subject to change without notice. Calculations intended to show thermal and hydraulic performance, no consideration has been taken to mechanical strength of the product. Product restrictions- such as pressure, temperatures and corrosion resistance- can be found in SWEP product sheets and other technical documentation. SWEP may have patents, trademarks, copyrights or other intellectual property rights covering subject matter in this document. Except as expressly provided in any written license agreement from SWEP, the furnishing of this document does not give you any license to these patents, trademarks, copyrights, or other intellectual property.

\*Excluding pressure drop in connections.