

HEAT EXCHANGER CALCULATION

GEA WTT Baltics Brazelect PRO 2015.1

Date : 2015/03/02

Design Calculation -- GBS525M- 30

Input Data :

Design Duty :

		Side 1	Side 2
Fluid Name	:	Water	Water
Inlet Temperature	°C :	80	40
Outlet Temperature	°C :	45	60
Mass Flow Rate	kg/s :	0.65	1.138
Pressure	bar :	-	-
Max. Acceptable Pressure Drop	kPa :	20	20

Physical Properties of Fluid :

Reference Temperature	°C :	62.5	50
Viscosity	mPas :	0.448	0.546
Viscosity Wall	mPas :	0.494	0.504
Density	kg/m ³ :	981	986.8
Specific Heat Capacity	kJ/kg, °C :	4.175	4.174
Thermal Conductivity	W/m, °C :	0.655	0.642

Designed Plate Heat Exchanger :

Heat Load	kW :	95	
Total Heat Transfer Area	m ² :	1.96	
Log Mean Temperature Difference	°C :	10.82	
Overall H.T.C.	W/m ² , °C :	4733/4480	
Calculated Pressure Drop	kPa :	4.5	11.8
Number of Channels	:	1*14M	1*15M
Connection Diameter	mm :	25	25
Number of Heat Transfer Units	NTU :	3.235	1.848
Total Number of Plates	:		30
Oversurfacing	% :		6
Fouling Factor	m ² , °C/kW :		0.012