

HEAT EXCHANGER CALCULATION

GEA WTT Baltics Brazelect PRO 2015.2

Date : 23.05.2016

Design Calculation – GBS 525H- 40X

Input Data :

Design Duty :

		Side 1	Side 2
Fluid Name	:	Water	Water
Inlet Temperature	°C :	85	50
Outlet Temperature	°C :	55	70
Mass Flow Rate	kg/s :	0,638	0,958
Pressure	bar :	-	-
Max. Acceptable Pressure Drop	kPa :	20	20

Physical Properties of Fluid :

Reference Temperature	°C :	70	60
Viscosity	mPas :	0,403	0,465
Viscosity Wall	mPas :	0,431	0,438
Density	kg/m ³ :	977,1	982,2
Specific Heat Capacity	kJ/kg,°C :	4,178	4,174
Thermal Conductivity	W/m,°C :	0,662	0,653

Designed Plate Heat Exchanger :

Heat Load	kW :	80	
Total Heat Transfer Area	m ² :	2,66	
Log Mean Temperature Difference	°C :	9,1	
Overall H.T.C.	W/m ² ,°C :	5104/3304	
Calculated Pressure Drop	kPa :	6,8	13,5
Number of Channels	:	1*19H	1*20H
Connection Diameter	mm :	25	25
Number of Heat Transfer Units	NTU :	3,296	2,197
Total Number of Plates	:		40
Oversurfacing	% :		54
Fouling Factor	m ² ,°C/kW :		0,107