

## Single Phase - Performance Heat Exchanger : E8Tx40

Fluid Side 1 : Water  
Fluid Side 2 : Water

Flow Type : Counter-Current

<b>DUTY REQUIREMENTS</b>		<b>Side 1</b>	<b>Side 2</b>
Heat load	kW	39.09	
<b>Inlet temperature</b>	<b>°C</b>	<b>60.00</b>	<b>10.00</b>
<b>Outlet temperature</b>	<b>°C</b>	<b>21.94</b>	<b>43.02</b>
Flow rate	l/min	15.00	17.00
Max. pressure drop	kPa	50.0	50.0
Thermal length		2.66	2.31
<b>PLATE HEAT EXCHANGER</b>		<b>Side 1</b>	<b>Side 2</b>
Total heat transfer area	m <sup>2</sup>	0.874	
Heat flux	kW/m <sup>2</sup>	44.7	
Mean temperature difference	K	14.32	
O.H.T.C. (available/required)	W/m <sup>2</sup> ,°C	3130/3120	
<b>Pressure drop -total*</b>	<b>kPa</b>	<b>2.77</b>	<b>3.44</b>
- in ports	kPa	0.729	0.966
Port diameter	mm	16.0	16.0
Number of channels		19	20
Number of plates		40	
Oversurfacing	%	0	
Fouling factor	m <sup>2</sup> ,°C/kW	0.000	
Reynolds number		552	451
Port velocity	m/s	1.23	1.41
<b>PHYSICAL PROPERTIES</b>		<b>Side 1</b>	<b>Side 2</b>
Reference temperature	°C	40.97	26.51
Dynamic viscosity	cP	0.642	0.861
Dynamic viscosity - wall	cP	0.732	0.743
Density	kg/m <sup>3</sup>	991.9	996.6
Heat capacity	kJ/kg,°C	4.179	4.179
Thermal conductivity	W/m,°C	0.6319	0.6097
Min. fluid temperature at wall	°C	16.44	
Max. fluid temperature at wall	°C		50.96
Film coefficient	W/m <sup>2</sup> ,°C	6780	6690
Minimum wall temperature	°C	34.14	33.43
Channel velocity	m/s	0.0893	0.0973
Shear stress	Pa	6.47	7.84

**TOTALS**

Total weight (no connections)	kg	3.39
Hold-up volume, inner circuit	dm <sup>3</sup>	0.741
Hold-up volume, outer circuit	dm <sup>3</sup>	0.780
PortSize F1/P1	mm	16.0
PortSize F2/P2	mm	16.0
PortSize F3/P3	mm	16.0
PortSize F4/P4	mm	16.0
NND F1/P1	mm	16.0
NND F2/P2	mm	16.0
NND F3/P3	mm	16.0
NND F4/P4	mm	16.0
Carbon Footprint	kg	23.8

**DIMENSIONS**

A	mm	315 +/-2
B	mm	73 +/-1
C	mm	278 +/-1
D	mm	40 +/-1
E	mm	12.10 (opt. 20.10) +/-1
F	mm	87.10 +0.5%/- 1.5%
G	mm	7 +/-1
Q	mm	2
R	mm	16