CONDENSER - PERFORMANCE
HEAT EXCHANGER: B85Hx70/1P

SWEP SSP G8 2022.824.1.0

Date: 01/10/2022

SSP Alias: B85

DUTY REQUIREMENTS

		Side 1		Side 2
Fluid		**R410A**		**Water**
Flow type			**Counter-Current**	
Circuit		Inner		Outer
Heat load	kW		**35.00**	
Inlet vapor quality		**1.000**		
Outlet vapor quality		**0.000**		
Inlet temperature	°C	**60.00**		**43.00**
Condensation temperature (dew)	°C	51.30		
Subcooling	K	**4.00**		
Outlet temperature	°C	47.20		**50.00**
Flow rate	kg/s | m³/h	0.2234		4.351
Fluid condensed	kg/s	0.2234		

PLATE HEAT EXCHANGER

		Side 1	Side 2
Total heat transfer area	m²	4.08	
Heat flux	kW/m²	8.58	
Mean temperature difference	K	4.02	
O.H.T.C. (available/required)	W/m²,°C	2140/2130	
Pressure drop - total*	kPa	0.905	13.4
- in ports (Inlet/Outlet)	kPa	-0.148/0.0464	0.939
Operating pressure (outlet)	kPa	3150	
Number of channels per pass		34	35
Number of plates		70	
Oversurfacing	%	0	
Fouling factor	m²,°C/kW	0.001	
Port diameter (up/down)	mm	33.0/33.0	33.0/33.0
Recommended inlet connection diameter	mm	9.27 - 20.7	
Recommended outlet connection diameter	mm	12.6 - 25.1	
Reynolds number			1041
Inlet Port velocity	m/s	1.97	1.41
Channel velocity	m/s	0.266	0.185
Shear stress	Pa		21.9
Largest wall temperature difference	K	0.18	
Min./Max. wall temperature	°C	43.62/51.27	43.53/51.09

Excluding pressure drop in connections.

PHYSICAL PROPERTIES

		Side 1	Side 2
Reference temperature	°C	51.26	46.50
Liquid • Dynamic viscosity	cP	0.0801	0.581
• Density	kg/m³	900.8	989.6
• Heat capacity	kJ/kg,°C	2.334	4.180
• Thermal conductivity	W/m,°C	0.07928	0.6393
Vapor • Dynamic viscosity	cP	0.0146	
• Density	kg/m³	132.3	
• Heat capacity	kJ/kg,°C	1.678	
• Thermal conductivity	W/m,°C	0.01404	
• Latent heat	kJ/kg	133.7	
Film coefficient	W/m²,°C	3260	12400

TOTALS

	Side 1	Side 2

TOTALS

		Side 1	Side 2
Total weight (no connections)*	kg	10.83 - 11.66	
Hold-up volume (Inner Circuit)	dm³	3.2	
Estimated refrigerant charge	kg	1.01	
Hold-up volume (Outer Circuit)	dm³	3.29	
Port size F1/P1	mm	33	
Port size F2/P2	mm	33	
Port size F3/P3	mm	33	
Port size F4/P4	mm	33	
Carbon footprint	kg	81.92	

Weight depends on the selected product.

DIMENSIONS
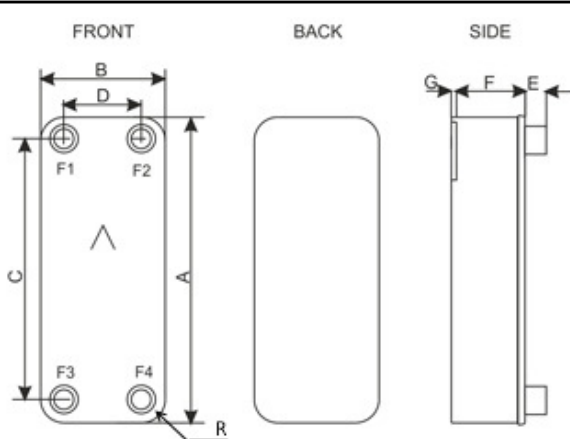
A*	mm	524 - 526 ±2
B*	mm	117 - 119 ±1
C	mm	470 ±1
D	mm	63 ±1
E*	mm	20 - 27 / 45 ±1
F*	mm	132.8 - 138.8 ±3%
G	mm	6 ±1
R	mm	23

Dimensions depend on the selected product.

This is a schematic sketch. For correct drawings please use the order drawing function or contact your SWEP representative.