

CONDENSER - RATING

HEAT EXCHANGER: B80Hx40/1P

SWEP SSP G8 2024.116.2.0

Date: 07/03/2024

SSP Alias: B80

DUTY REQUIREMENTS		Side 1	Side 2
Fluid		R410A	Water
Flow type		Counter-Current	
Circuit		Inner	Outer
Heat load	kW		38,70
Inlet vapor quality		1,000	
Outlet vapor quality		0,000	
Inlet temperature	°C	70,00	35,00
Condensation temperature (dew)	°C	45,00	
Subcooling	K	3,00	
Outlet temperature	°C	41,90	40,00
Flow rate	kg/h m³/h	734,1	6,714
Fluid condensed	kg/h	734,1	

PLATE HEAT EXCHANGER		Side 1	Side 2
Total heat transfer area	m²		2,28
Heat flux	kW/m²		17,0
Mean temperature difference	K		7,37
O.H.T.C. (available/required)	W/m², °C		2500/2300
Pressure drop - total*	kPa	2,26	50,0
- in ports (Inlet/Outlet)	kPa	-0,152/0,0365	2,24
Operating pressure (outlet)	kPa	2720	
Number of channels per pass		19	20
Number of plates			40
Oversurfacing	%		8
Fouling factor	m², °C/kW		0,034
Port diameter (up/down)	mm	33,0/33,0	33,0/33,0
Recommended inlet connection diameter	mm	9,76 - 21,8	
Recommended outlet connection diameter	mm	11,7 - 23,4	
Reynolds number			2391
Inlet Port velocity	m/s	2,19	2,18
Channel velocity	m/s	0,436	0,413
Shear stress	Pa		102
Largest wall temperature difference	K		0,34
Min./Max. wall temperature	°C	35,73/40,78	35,57/40,61

*Excluding pressure drop in connections.

PHYSICAL PROPERTIES		Side 1	Side 2
Reference temperature	°C	44,95	37,50
Liquid • Dynamic viscosity	cP	0,0899	0,685
• Density	kg/m³	947,3	993,2
• Heat capacity	kJ/kg, °C	2,033	4,178
• Thermal conductivity	W/m, °C	0,08406	0,6270
Vapor • Dynamic viscosity	cP	0,0143	
• Density	kg/m³	108,9	
• Heat capacity	kJ/kg, °C	1,490	
• Thermal conductivity	W/m, °C	0,01363	
• Latent heat	kJ/kg	149,3	
Film coefficient	W/m², °C	3600	18400

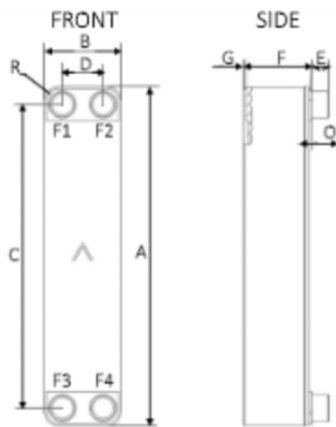
TOTALS		Side 1	Side 2
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TOTALS		Side 1	Side 2
Total weight (no connections)*	kg		8,65 - 12,13
Hold-up volume (Inner Circuit)	dm ³		2,03
Estimated refrigerant charge	kg		0,72
Hold-up volume (Outer Circuit)	dm ³		2,14
Port size F1/P1	mm		33
Port size F2/P2	mm		33
Port size F3/P3	mm		33
Port size F4/P4	mm		33
Carbon footprint	kg		64,54

*Weight depends on the selected product.

DIMENSIONS



A	mm	526 ±2
B	mm	119 ±1
C	mm	470 ±1
D	mm	63 ±1
E	mm	27 (opt. 45) ±1
F*	mm	93,6 - 101,6 ±2,5%
G*	mm	2 - 6 ±1
O	mm	4
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.

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