

CONDENSER - RATING

HEAT EXCHANGER: B80Hx50/1P

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		47,80	
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	906,7		8,293
Fluid condensed	kg/h	906,7		

PLATE HEAT EXCHANGER		Side 1		Side 2
Total heat transfer area	m²		2,88	
Heat flux	kW/m²		16,6	
Mean temperature difference	K		7,37	
O.H.T.C. (available/required)	W/m², °C		2480/2250	
Pressure drop - total*	kPa	2,04		50,1
- in ports (Inlet/Outlet)	kPa	-0,229/0,0560		3,42
Operating pressure (outlet)	kPa	2720		
Number of channels per pass		24		25
Number of plates			50	
Oversurfacing	%		10	
Fouling factor	m², °C/kW		0,041	
Port diameter (up/down)	mm	33,0/33,0		33,0/33,0
Recommended inlet connection diameter	mm	10,9 - 24,3		
Recommended outlet connection diameter	mm	13,0 - 26,0		
Reynolds number				2363
Inlet Port velocity	m/s	2,70		2,69
Channel velocity	m/s	0,426		0,408
Shear stress	Pa			99,2
Largest wall temperature difference	K		0,34	
Min./Max. wall temperature	°C	35,72/40,78		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	109,0		
• 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	3570		18200

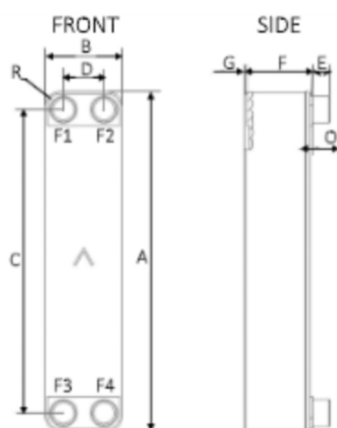
TOTALS	Side 1	Side 2
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TOTALS		Side 1	Side 2
Total weight (no connections)*	kg		10,29 - 13,77
Hold-up volume (Inner Circuit)	dm ³		2,57
Estimated refrigerant charge	kg		0,91
Hold-up volume (Outer Circuit)	dm ³		2,68
Port size F1/P1	mm		33
Port size F2/P2	mm		33
Port size F3/P3	mm		33
Port size F4/P4	mm		33
Carbon footprint	kg		76,07

*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	116 - 124 ±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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