

CONDENSER - RATING

HEAT EXCHANGER: B80Hx80/1P

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		72,60
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	1377	12,60
Fluid condensed	kg/h	1377	

PLATE HEAT EXCHANGER		Side 1	Side 2
Total heat transfer area	m²		4,68
Heat flux	kW/m²		15,5
Mean temperature difference	K		7,38
O.H.T.C. (available/required)	W/m², °C		2420/2100
Pressure drop - total*	kPa	1,40	50,0
- in ports (Inlet/Outlet)	kPa	-0,516/0,131	7,96
Operating pressure (outlet)	kPa	2720	
Number of channels per pass		39	40
Number of plates			80
Oversurfacing	%		15
Fouling factor	m², °C/kW		0,063
Port diameter (up/down)	mm	33,0/33,0	33,0/33,0
Recommended inlet connection diameter	mm	13,4 - 29,9	
Recommended outlet connection diameter	mm	16,0 - 32,1	
Reynolds number			2243
Inlet Port velocity	m/s	4,10	4,09
Channel velocity	m/s	0,398	0,387
Shear stress	Pa		89,4
Largest wall temperature difference	K		0,33
Min./Max. wall temperature	°C	35,71/40,79	35,56/40,62

*Excluding pressure drop in connections.

PHYSICAL PROPERTIES		Side 1	Side 2
Reference temperature	°C	44,96	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	3530	17600

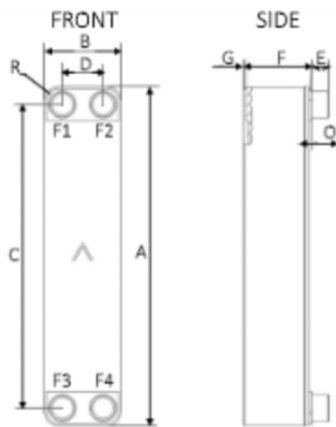
TOTALS		Side 1	Side 2
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TOTALS		Side 1	Side 2
Total weight (no connections)*	kg		15,21 - 18,69
Hold-up volume (Inner Circuit)	dm ³		4,17
Estimated refrigerant charge	kg		1,48
Hold-up volume (Outer Circuit)	dm ³		4,28
Port size F1/P1	mm		33
Port size F2/P2	mm		33
Port size F3/P3	mm		33
Port size F4/P4	mm		33
Carbon footprint	kg		110,64

*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	183,2 - 191,2 ±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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