

CONDENSER - RATING

HEAT EXCHANGER: B8THx20/1P

SWEP SSP G8 2024.116.2.0

Date: 07/03/2024

SSP Alias: B8T

DUTY REQUIREMENTS		Side 1	Side 2
Fluid		R410A	Water
Flow type		Counter-Current	
Circuit		Inner	Outer
Heat load	kW		5,000
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	94,85	0,8675
Fluid condensed	kg/h	94,85	

PLATE HEAT EXCHANGER		Side 1	Side 2
Total heat transfer area	m²		0,414
Heat flux	kW/m²		12,1
Mean temperature difference	K		7,44
O.H.T.C. (available/required)	W/m², °C		1640/1620
Pressure drop - total*	kPa	-0,164	7,21
- in ports (Inlet/Outlet)	kPa	-0,0320/7,71e-3	0,473
Operating pressure (outlet)	kPa	2720	
Number of channels per pass		9	10
Number of plates			20
Oversurfacing	%		1
Fouling factor	m², °C/kW		0,008
Port diameter (up/down)	mm	17,5/17,5	17,5/17,5
Recommended inlet connection diameter	mm	3,51 - 7,84	
Recommended outlet connection diameter	mm	4,21 - 8,42	
Reynolds number			956,6
Inlet Port velocity	m/s	1,00	1,00
Channel velocity	m/s	0,184	0,165
Shear stress	Pa		21,4
Largest wall temperature difference	K		0,27
Min./Max. wall temperature	°C	36,22/41,20	36,06/41,04

*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	109,1	
• 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	2040	10000

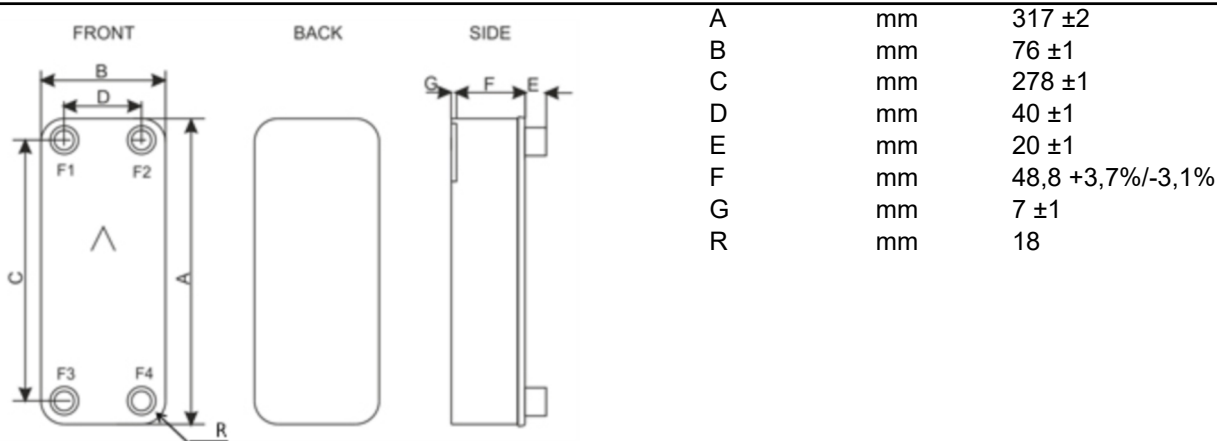
TOTALS		Side 1	Side 2
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TOTALS		Side 1	Side 2
Total weight (no connections)*	kg		2,35
Hold-up volume (Inner Circuit)	dm ³		0,35
Estimated refrigerant charge	kg		0,11
Hold-up volume (Outer Circuit)	dm ³		0,39
Port size F1/P1	mm		16
Port size F2/P2	mm		16
Port size F3/P3	mm		16
Port size F4/P4	mm		16
Carbon footprint	kg		16,51

*Weight depends on the selected product.

DIMENSIONS



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

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