SWEP International AB
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CONDENSER - PERFORMANCE
HEAT EXCHANGER: B8LASHx20/1P

SWEP SSP G8 2022.824.1.0

Date: 01/10/2022

SSP Alias: B8LAS

DUTY REQUIREMENTS		Side 1		Side 2
Fluid		**R410A**		**Water**
Flow type			**Counter-Current**	
Circuit		Inner		Outer
Channel		Narrow		Wide
Heat load	kW		**4.000**	
Inlet vapor quality		**1.000**		
Outlet vapor quality		**0.000**		
Inlet temperature	°C	**60.00**		**43.00**
Condensation temperature (dew)	°C	50.87		
Subcooling	K	**4.00**		
Outlet temperature	°C	46.77		**50.00**
Flow rate	kg/s | m³/h	0.02527		0.4973
Fluid condensed	kg/s	0.02527		

PLATE HEAT EXCHANGER		Side 1		Side 2
Total heat transfer area	m²		0.455	
Heat flux	kW/m²		8.79	
Mean temperature difference	K		3.43	
O.H.T.C. (available/required)	W/m²,°C		2570/2560	
Pressure drop - total*	kPa	5.26		14.2
- in ports (Inlet/Outlet)	kPa	-0.0356/0.0106		0.221
Operating pressure (outlet)	kPa	3110		
Number of channels per pass		9		10
Number of plates			20	
Oversurfacing	%		0	
Fouling factor	m²,°C/kW		0.001	
Port diameter (up/down)	mm	16.0/16.0		16.0/16.0
Recommended inlet connection diameter	mm	3.14 - 7.03		
Recommended outlet connection diameter	mm	4.22 - 8.44		
Reynolds number				644.6
Inlet Port velocity	m/s	0.963		0.687
Channel velocity	m/s	0.268		0.172
Shear stress	Pa			27.6
Largest wall temperature difference	K		0.20	
Min./Max. wall temperature	°C	43.67/50.93		43.59/50.81

**Excluding pressure drop in connections.*

PHYSICAL PROPERTIES		Side 1	Side 2
Reference temperature	°C	50.82	46.50
Liquid • Dynamic viscosity	cP	0.0808	0.581
• Density	kg/m³	904.2	989.6
• Heat capacity	kJ/kg,°C	2.308	4.180
• Thermal conductivity	W/m,°C	0.07962	0.6393
Vapor • Dynamic viscosity	cP	0.0145	
• Density	kg/m³	130.2	
• Heat capacity	kJ/kg,°C	1.661	
• Thermal conductivity	W/m,°C	0.01401	
• Latent heat	kJ/kg	134.9	
Film coefficient	W/m²,°C	4250	11200

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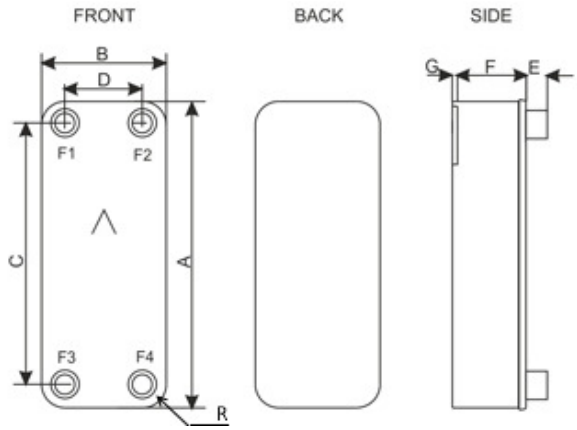
TOTALS		Side 1	Side 2
Total weight (no connections)*	kg	2.02	
Hold-up volume (Inner Circuit)	dm³	0.18	
Estimated refrigerant charge	kg	0.05	
Hold-up volume (Outer Circuit)	dm³	0.24	
Port size F1/P1	mm	16	
Port size F2/P2	mm	16	
Port size F3/P3	mm	16	
Port size F4/P4	mm	16	
Carbon footprint	kg	14.19	

**Weight depends on the selected product.*

DIMENSIONS



A	mm	317.7 ±2
B	mm	76.2 ±1
C	mm	278 ±1
D	mm	40 ±1
E	mm	20 (opt. 45) ±1
F	mm	30.4 ±2.5%
G	mm	6.3 ±1
R	mm	18

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

Disclaimer:
Data used in this calculation is subject to change without notice. SWEP strives to use "best practice" for the calculations leading to the above results. Calculation is intended to show thermal and hydraulic performance, no consideration has been taken to mechanical strength of the product. Product restrictions - such as pressure, temperatures and corrosion resistance- can be found in SWEP product sheets and other technical documentation. SWEP may have patents, trademarks, copyrights or other intellectual property rights covering subject matter in this document. Except as expressly provided in any written license agreement from SWEP, the furnishing of this document does not give you any license to these patents, trademarks, copyrights, or other intellectual property. To the maximum extent permitted by applicable law, the software, the calculations and the results are provided without warranties of any kind, whether express or implied. No advice or information obtained through use of the software (including information provided in the results), will create any warranty not expressly stated in the applicable license terms. Without limiting the foregoing, SWEP does not warrant that the content (including the calculations and the results) is accurate, reliable or correct. SWEP does not warrant that any system comprising heat exchanger and other components, installed on the basis of calculations in this software, will meet your requirements or function to your satisfaction or expectations.