



1. Information

1.1 Heating

Project number	
Project name	SC 950 kW
Responsible person	Cristian Tudor
date	2021-09-21
Note	
Language	English

2. System data of the solution

2.1 System data, heat exchanger

Heat exchanger	Brazed
Heating capacityQ	950 kW
Minimum overdesign	0.0 %
Medium primary	water
Concentration	100.0 %
Inlet temperature primary side	90.0 °C
Outlet temperature primary side	70.0 °C
Mass flow	11.3 kg/s
Volume flow	42.03 m³/h
Max. pressure loss	25.00 kPa
Medium secondary	water
Concentration	100.0 %
Entrance temperature secondary side	10.0 °C
Outlet temperature secondary side	60.0 °C
Mass flow	4.5 kg/s
Volume flow	16.43 m³/h
Max. pressure loss	25.00 kPa





3. Heat exchanger

3.1 Heat exchanger

Position	Art. No.	Quantity	Article text
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3.1.1	8017600	1	Longtherm RLB-235-90
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Reflex Longtherm

brazed one-way heat exchanger from stainless steel (1.4404) with copper solder vacuum-soldered. Sizes R..B-14 to R..B-110 with threaded connection, R..B-235 with DIN flanged connection. Approval according to Pressure Equipment Directive 2014/68/EC. With CE mark.

Type	RLB-235-90
Number of plates	90
Plate thickness	0.30 mm
Volume primary side (k2/k3)	17.70 l
Volume secondary side (k4/k1)	17.70 l
Plate material	AISI 316L
Sealing material	copper
Max. perm. operating temperature	230 °C
Max. perm. operating pressure	25 bar
Connection	DN80/PN40
Connection material	
Connection variant	pipe
Height	788 mm
Height k2-k3/k4-k1	682 mm
Width	310 mm
Width primary-secondary	204 mm
Depth	232 mm
Weight	115.50 kg
Capacity	950 kW
Inlet temperature k2/k3	10.0 °C
Outlet temperature k2/k3	60.0 °C
Inlet temperature k4/k1	90.0 °C
Outlet temperature k4/k1	70.0 °C
Liquid k2/k3	water
Liquid k4/k1	water
Volume flow k2/k3	16.43 m³/h
Volume flow k4/k1	42.03 m³/h
Pressure loss k2/k3	25.00 kPa
Pressure loss k4/k1	25.00 kPa
Heat exchanger surface	20.7 m²
Pollution factor	0.603 m²K/kW
k-value clean	2926.2 W/m²K
k-value dirty	1058.2 W/m²K
Oversize	176.5 %
Calculated pressure losses k2/k3 // k4/k1	19.60 kPa / 3.53 kPa
Connections Pressure losses k2/ k3 // k4/k1	0.00 kPa / 0.00 kPa
Internal volume flow k2/k3 // k4/k1	42.26 m³/h / 16.35 m³/h
Internal flow rate k2/k3 // k4/k1	0.5 m/s / 0.2 m/s



3. Heat exchanger

3.1 Heat exchanger

Position	Art. No.	Quantity	Article text
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Longtherm RLB-235-90

Reynolds number k2/k3 // k4/k1	4918 / 949
Heat transfer coefficient k2/k3 // k4/k1	0.7 W/m²K / 0.6 W/m²K
Reference temperature k2/k3 // k4/k1	80 °C / 35 °C
Density k2/k3 // k4/k1	973.4 kg/m³ / 996.0 kg/m³
Specific heat capacity k2/k3 // k4/k1	4.2 kJ/kgK / 4.2 kJ/kgK
Thermal conductivity k2/k3 // k4/k1	11397.0 W/mK / 4365.2 W/mK
Viscosity k2/k3 // k4/k1	0.000355 Ns/m² / 0.000720 Ns/m²
Prandtl number k2/k3 // k4/k1	2.3 / 4.9

3.1.2	8301800	1	Reflex Longtherm Iso R_B-235-90
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Reflex Longtherm Protect Heating
thermal insulation, consisting of two sturdy, easy-to-assembly polyurethane semi-shells with connection clips.

Type	R_B-235-90
Colour	black
Outer material	PU rigid foam
Insulation strength	32 mm
Max. perm. operating temperature	135 °C
Height	864 mm
Width	376 mm
Depth	358 mm
Weight	6.80 kg

3.1.3	8290600	1	Reflex Bracket R_B-235
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Reflex Longtherm
Standing support and lifting eyes in a stainless steel set. Comprising two standing feet and two eyes, which are fitted on site on the front and back plate.

Type	R_B-235
Height	75 mm
Width	270 mm
Depth	320 mm
Weight	4.86 kg

3.1.4	6770500	2	Reflex welding connection R_B-235
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Reflex Longtherm
Compac mating flange as welded flange PN 40 inclusive of galvanized 8.8 screws and seals. Suitable for Longtherm plate heat exchanger with Compac flange connections in the set (2 off).



3. Heat exchanger

3.1 Heat exchanger

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Reflex welding connection R_B-235

Type	R_B-235
Inlet connection	DN80/PN40
Diameter	200 mm
Depth	21 mm
Weight	5.18 kg