



Shell-and-tube Condenser Fresh Water - CRF model

High efficiency condenser optimized for R407C/F and R134a applications



Application

The new CRF condenser has been developed for HFC cooling applications at Medium Pressure (PS 30 bar) and High Pressure (PS 48 barg) within Refrigeration, Process Cooling and Air Conditioning. The secondary fluid is usually fresh water that can be in a closed loop with a cooling tower (Tower connection) or in an open loop with a well (City connection). Some applications can use also glycols.

These applications usually require a condensation temperature in a range of $+30 \div +50^{\circ}\text{C}$ depending on the system working condition and its efficiency rating.

Technology

The CRF design has been optimized for R407C/F and R134a refrigerants but it can be also utilized with HFO 1234ze, R410A, R404A and R507.

Thanks to its new high performance tubes, the new headers, the new shell and the new baffles, the Alfa Laval's CRF models provide a maximum efficiency with a low cost/kW.

This is an important step ahead comparing with the current CDEW and CDEW-E models, the new CRF is ready to fight with competition.

Benefits

- High efficient condenser tube which allows an overall performance increase vs CDEW models keeping the water pressure drop at same level.
- Refrigerant connections optimized for R134a to reduce the pressure drop.
- Three tube lengths to match operating conditions with different Temperature approaches.
- Compact design with about 15% - 20% shorter length and weight comparing with existing solution.
- Water flow optimized to reduce the fouling and erosion risks.

Guidelines for quotation

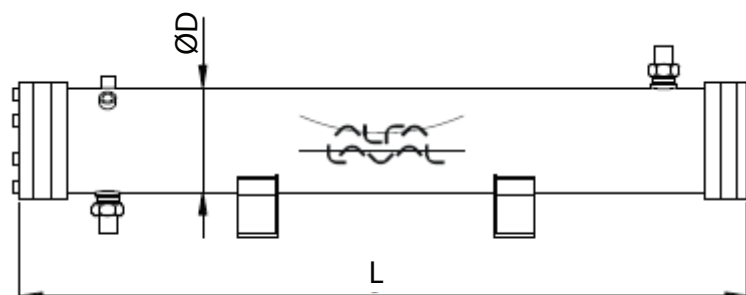
- Thermal sizing: Smart Tube calculation software.
- Pricing: RCPL (Recommended Customer Price List).
- Product information: Available on demand, contact your Alfa Laval local sales organization.

Basic features

- Condensing capacity from 100 to 1200 kW.
- 2 to 4 water passes
- 6 shell diameters (ØD) from 168 to 457 mm
- Total length (L) 1625, 1930, 2235 mm
- Welded supports feet

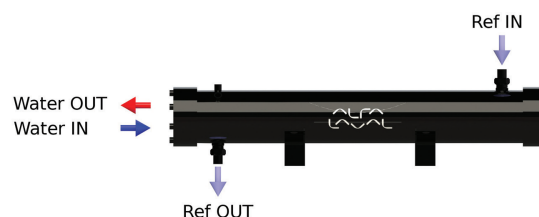
Standard component material

Shell, tube-sheets:	Carbon steel
Headers:	Carbon steel
Tubes	Copper
Baffles:	Carbon steel + Neoprene



Working principle- evaporator mode

- The refrigerant condenses outside of the tubes, shell side.
- The water/brine is flowing inside the tubes, tubes side.



PED (CE) approval

Version	Tubes side				Shell side			
	PS (bar)	TS (°C)	T _{min} (°C)	PT (bar)	PS (bar)	TS (°C)	T _{min} (°C)	PT (bar)
Mid. pressure	10	90	-10	14.3	30	120	-10	42.9
High pressure	16	90	-10	22.9	48	120	-10	68.6

MT = Medium Temperature
 PS = Pressure Service
 TS = Temperature Service
 T_{min} = Temperature minimum
 PT = Pressure Test

- DNV, GL, LR or other marine codes available on request
- ASME approval available on request

Available on request

- Sight glass.
- Dual Refrigerant connections outlet for marine installations.

PCT00206EN 1502

Alfa Laval reserves the right to change specifications without prior notification.

How to contact Alfa Laval

Up-to-date AlfaLaval contact details for all countries are always available on our website on www.alfalaval.com