

Data Sheet

Micro Plate Heat Exchanger Type **C55(L)-EU**

For more efficient Chillers



30% lower hold-up volume, significant reduction in refrigerant and smaller CO₂ footprint, compared with a traditional BPHE

The C55L-E is an evaporator optimized for R410A for use in high-efficiency chillers with capacities of 10-65 kW. The heat exchanger features innovative Micro Plate technology that improves heat transfer and reduces the amount of material used.

To meet demands for higher seasonal efficiency, the C55L-E is designed to work efficiently and increase comfort in modern buildings without increasing the carbon footprint. Helping chillers perform more efficiently, it reduces both energy costs and environmental impact.

The low hold-up volume reduces the system refrigerant charge and offers valuable savings.

Thanks to the mixing chamber, the innovative refrigerant distribution device, the C55(L)-EU is applicable with all refrigerant types.

Features:

- Minimal refrigerant hold-up volume: Smaller refrigerant charge
- High heat transfer: For a more efficient chiller
- Minimal pressure losses on secondary side: Less pump power
- Smaller footprint: Enabling more compact chiller
- Reduced CO₂ footprint: Environmentally friendly with high heat transfer and minimal refrigerant charge

Portfolio overview

C55L-EU: Evaporator optimized for R410A, R32, R452B and R454B

C55-EU: Evaporator for low/medium density refrigerants PS: 30bar

Table 1: Designation

a Applications C: chiller D: universal H: heat pump HDW: heat pump double wall	d Specific duty E= evaporator C= condenser Plate design Omit L: L-type M: M-type H: H-type W: W-type X: Asymmetric Z: Z flow Configuration Omit: single D: Dual circuit U: Mixing chamber	e Distributor version Omit B F Plate stacking sequence Omit: a-b-a... R: b-a-b...
b Platform* 22,30,55,62,118... *heat exchanging surface per plate 1/1000 m ²		
c Pressure Service Omit: 30bar L: 45/49bar		f Number of plates** **Rule: -Single: even number -Dual: even number not multiple of 4

Application

The C55(L)-EU is single circuit evaporators specifically designed for highly efficient chiller systems. The evaporator is design to operate also in reversable systems in condenser mode, in co or counter current flow configuration.

Thanks to the mixing chamber, the innovative refrigerant distribution device, the C55(L)-EU is applicable with all refrigerant types.

Media

Refrigerants

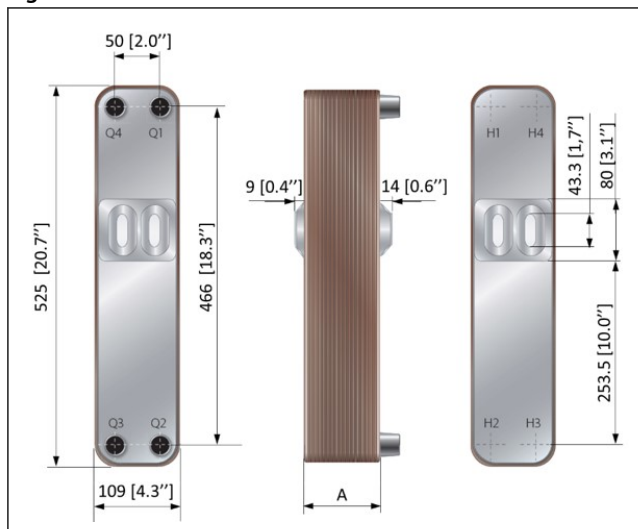
R410A, R32, R452B, R454B

For other refrigerants please contact your Danfoss Sales representative.

Product specification

Dimensions

Figure 1: Dimensions



A:

C55L-EU: $11.5 + 1.74 \times N$ [0.45+0.07 x N]

C55-EU: $9.5 + 1.74 \times N$ [0.37+0.07 x N]

N: Number of Plate

Operating conditions

Preconditions:

N = number of plates

Max number of plates: 110

Pressure and temperature data*:

Min. working temperature: -196 °C (-320 °F)

Max. working temperature: 200 °C (390 °F)

Max. working pressure:

C55L-EU: 45bar (653psi)

C55-EU: 30 bar (435psi)

Weight*

C55L-EU: $2.67+0.135 \times N$ [kg] / $5.9+0.3 \times N$ [lb]

C55-EU: $2.32+0.135 \times N$ [kg] / $5.11+0.3 \times N$ [lb]

N: Number of Plate

*Excluding connections and accessories

Material specification

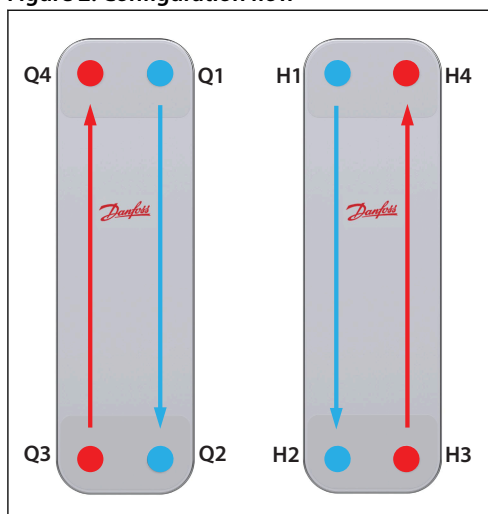
Table 2: Standard materials

Item	Material	Specification
Cover plates	Stainless steel	AISI 304L
Plates	Stainless steel	AISI 316L
Connections	Stainless steel	AISI 304L
Brazing filler	Pure copper	Cu

Other material combinations are available on request. Please contact your Danfoss sales representative for more information.

Configuration flow

Figure 2: Configuration flow



Parallel flow:

Q1 - Q2 [H1 - H2]: brine/secondary side

Q3 - Q4 [H3 - H4]: refrigerant/primary side

Hold up volume

Q1-Q2: $0.082 \times N/2$ [l]

Q3-Q4: $0.07 \times (N-2)/2$ [l]

N: Number of Plate

Ordering

Global or local standard code numbers can be accessed via Store.Danfoss.com on local subsites, with full set of technical data as well as relevant assets such as documentation and drawings. Since the portfolio may contain different types depending on country, this document contains only a summarized list of standard code numbers with a few data relevant for the product selection.

Configuring and calculating products

The C55(L)-EU can be easily customized based on the application needs; model size can be evaluated using Hexact software. For details, product configuration and code creation please contact your Danfoss Sales representative.

Mechanical connections

Table 3: Mechanical connections

Circuits	Connection type options	Connection size option [in.]
Q1 - Q2 (water-brine side)	BSP Gas male	1/2, 3/4, 1, 1 1/4
	BSP Gas female	1/2, 3/4, 1
	DIN R male	1, 1 1/4
	NPT	3/4, 1, 1 1/4
	Victaulic	1 1/4
Q3 (Refrigerant inlet)	Soldering	3/8, 1/2, 5/8
Q4 (Refrigerant outlet)	Soldering	5/8, 3/4, 7/8, 1 1/8, 1 3/8

Accessories and spare parts

MPHE products are not serviceable, i.e. cannot be taken apart and repaired, and there are no spare parts program. As for accessories, stud bolts, feet on front and/or back cover plates for mounting support and handling are available upon request.

Micro plate heat exchanger, type C55(L)-EU

Table 4: Stud bolts

Stud bolt position	Bolt sizes
327 mm, middle	M8x20mm M8x25mm M8x30mm

Contact your Danfoss sales representative for further information.

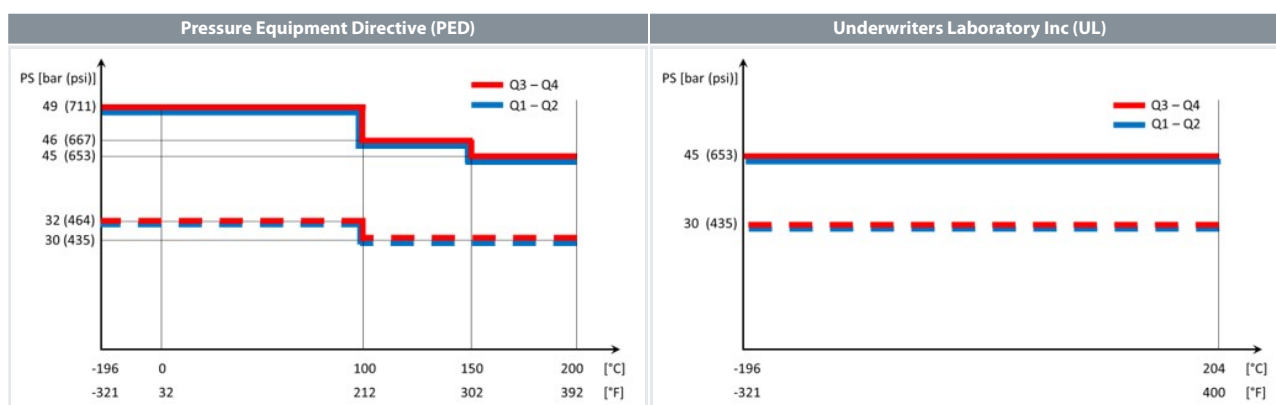
Certificates, declarations, and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

Some approvals may change over time. You can check the most current status at danfoss.com or contact your local Danfoss representative if you have any questions.

Third party approvals

All MPHE and BPHE are certified to European Pressure Equipment Directive (PED) and are approved by Underwriters Laboratories (UL).



Other certifications are available upon request: Kraia, EAC, UA, AS; for others and more details please contact your local Danfoss representative.

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