

Data Sheet

Micro Plate Heat Exchanger Type **C117L-EZD**

For more efficient Chillers

**21% lower hold-up volume enables significant reduction in refrigerant charge.**

C117L-EZD is an evaporator optimized for R410A for use in high-efficiency chillers with capacities of 50-200 kW, and standard efficiency chillers with capacities of 50-250 kW.

The Z-pattern channel plate technology pushes the performance of heat exchangers to the limits by fully mixing the liquid and gas refrigerant through a "zigzag" flow, which increases the heat transfer coefficient. At the same time, inheriting from the dimple plate pattern of the previous generation of MPHE, C117L-EZD reduces the water side pressure drop and the amount of material used. In the reversible mode of the chiller as a condenser, C117L-EZD also has outstanding performance

To meet demands for higher seasonal efficiency, the C117L-EZD is designed to work efficiently and increase comfort in modern commercial 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.

Features:

- Improved heat transfer - equals higher efficiency chillers
- Reduced water side pressure drop – equals higher efficiency chillers
- Minimal hold-up volume - equals less refrigerant charge
- Smaller footprint - enables more compact chillers
- High heat transfer and minimal refrigerant charge - equals a reduced CO₂ footprint

Portfolio overview

- C117L-EZD: High efficiency evaporator optimized for R410A, R452B and R454B
- C117L-EZD-B: Standards efficiency evaporator for R410A
- C117-EZD: Evaporator for medium density refrigerants
- C117-EZD-B: Evaporator for medium density refrigerants

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 C117L-EZD is true dual evaporators specifically designed for high efficient chiller systems dedicated to comfort applications, cooling-industrial process, data centers. The evaporators are design to operate also in reversible systems in condenser mode, in co or counter current flow configuration.

The models are characterized by different distributor system the make the evaporator optimized for the high-density refrigerants. All models can run with high efficiency also in condenser mode.

Media

Max water flow (@6m/s): 49.4m³/h

Refrigerants

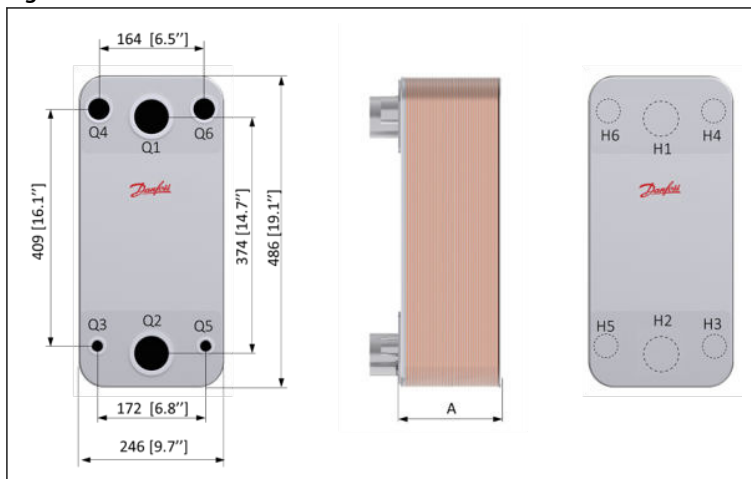
R410A, R452B, R454B, R407C

For other refrigerants please contact your Danfoss Sales representative.

Product specification

Dimensions

Figure 1: Dimensions



A:

C117L-EZD(-B): $13 + 1.64 \times N$ [0.51 + 0.064 x N]

C117-EZD(-B): $11 + 1.64 \times N$ [0.43 + 0.064 x N]

N: Number of Plate

Operating conditions

Preconditions:

N = number of plates

Max number of plates: 250

Pressure and temperature data*:

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

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

Max. working pressure: 45 bar (653psi) refrigerant side / 25 bar (363psi) water side

*For details, refer to the topic. [Third party approvals](#)

Weight*

C117L-EZD(-B): $6.15 + 0.27 \times N$ [kg] / $13.6 + 0.595 \times N$ [lb]

C117-EZD(-B): $5.34 + 0.27 \times N$ [kg] / $11.8 + 0.595 \times N$ [lb]

N: Number of Plate

*Excluding connections and accessories

Material specification

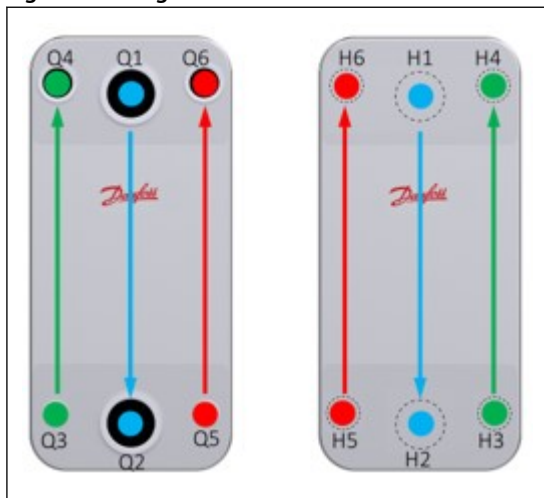
Table 2: Standard materials

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]: primary, first circuit

Q5-Q6 [H5-H6]: primary, second circuit

Hold up volume

Q1-Q2: $0.163 \times N/2$ [l] / $0.043 \times N/2$ [gal]

Q3-Q4: $0.128 \times (N-2)/4$ [l] / $0.034 \times (N-2)/4$ [gal]

Q5-Q6: $0.128 \times (N-2)/4$ [l] / $0.034 \times (N-2)/4$ [gal]

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.

Configuring and calculating products

C117(L)-EZD(-B) 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

Circuits	Connection type options	Connection size option(in.)
Q1 - Q2 (water-brine side)	BSP Gas male	1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2,
	BSP Gas female	1/2
	DIN R male	2, 2 1/2
	NPT	2, 2 1/2
	Victaulic	2, 2 1/2
Q3 - Q5 (Refrigerant inlet)	Soldering	3/8, 1/2, 5/8, 3/4, 7/8
Q4-Q6 (Refrigerant outlet)	Soldering	5/8, 3/4, 7/8, 1 1/8, 1 3/8, 1 1/2, 2, 2 1/2

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 C117L-EZD

Table 3: Stud bolts:

Stud bolt position	Bolt sizes
110x300 mm, middle 100x140 mm, middle	M8x20, M8x25, M8x30

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

The list contains all approvals registered for this product type. Individual code numbers may have some or all of these approvals, some local approvals may not be in the list, and approvals change over time. Check status on www.danfoss.com or contact your local Danfoss representative if in doubt.

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

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