

DEX

Direct
Expansion
Evaporators



FARAD
HEAT EXCHANGERS

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Direct Expansion Evaporators, DEX

DEX is a shell and tube refrigerant evaporator by Farad, for use in refrigeration systems. Refrigerant flows inside the tubes and water flows outside the tubes. This evaporator type is especially suitable for refrigerating systems where compressor oil is recirculated with the refrigerant, because high speed in the tubes ensures oil return to the compressor. One, two or three independent cooling circuits can be accommodated for connection with up to three compressors.

The DEX evaporator is optimized for use with R407c, but is capable of handling all types of hydro fluorocarbon (HFC) and hydro chlorofluorocarbon (HCFC) refrigerants. On the shell side flows water or water mixed with antifreeze such as ethylene or propylene glycol.

Design Data

Standard conditions	Tube side				Shell side			
	PD [barg]	TD [°C]	Tmin [°C]	PT [barg]	PD [barg]	TD [°C]	Tmin [°C]	PT [barg]
	30	90	-10	33	10	90	-10	14.5

PD: design pressure, TD: design temperature, Tmin: minimum design temperature, PT: test pressure

Applications

Where there is a need for chilled water with a temperature of -10 °C to +10 °C the DEX evaporator is required.

- ✓ Building central cooling
- ✓ Marine accommodation space cooling
- ✓ Industrial chilled water use

Benefits

- ✓ Quality copper and steel suppliers
- ✓ Two to four weeks for order fulfillment
- ✓ Customization upon customer request
- ✓ Two year warranty

FARAD works with all classification societies to gain approval for on board installation. For land-based application the CE stamp is applied.

Capacity and pressure drop table with R407c

Model	Operational performance				Number of Circuits		
	Qn (kw)	Wnom (m ³ /h)	Wmax (m ³ /h)	DPnom (bar)	Single	Double	Triple
125-A	20	3,4	5	0,09	x	-	-
125-B	35	6	9	0,27	x	-	-
150-A	50	8,5	11	0,27	x	x	-
150-B	65	11,2	14,4	0,3	x	x	-
150-C	85	14,6	18	0,46	x	x	-
175-A	105	18	22	0,32	x	x	-
200-A	125	21,4	30	0,29	x	x	x
200-B	170	29,2	35	0,44	x	x	x
200-C	200	34,3	50	0,5	x	x	x
250-A	255	43,7	53	0,43	x	x	x
250-B	300	51,5	60	0,51	x	x	x
250-C	360	61,7	65	0,5	x	x	x
300-A	410	70,3	100	0,31	x	x	x
300-B	470	80,6	100	0,39	x	x	x
300-C	510	87,5	100	0,46	x	x	x
350-A	570	97,8	120	0,51	x	x	x
350-B	610	105	120	0,55	x	x	x
400-A	680	117	160	0,36	-	x	x
400-B	770	132	160	0,47	-	x	x
400-C	900	154	165	0,58	-	x	x
450-A	1000	172	205	0,74	-	x	x
450-B	1100	189	220	0,65	-	x	x
450-C	1200	206	220	0,91	-	x	x

*Qn: Nominal capacity, Wnom: Nominal water flow rate,
Wmax: Maximum water flow rate, DPnom: Pressure drop at nominal flow*

Capacities calculated with the following nominal conditions

Nominal Conditions	
Refrigerant: R407c	Superheating = 5 °C
Water temperature in = 12 °C	T condensing, dew = 45 °C
Water temperature out = 7 °C	T vaporizing, dew = 2,75 °C
Subcooling = 3 °C	Fouling factor = 0,000043 m ² .W/K



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