



DOLPHIN RADIATORS & COOLING SYSTEM LTD.

P.O.BOX 1424, SHARJAH, UAE

TEL: 00971 6 5432526

FAX: 00971 6 5432415

E-MAIL: dolcool@emirates.net.ae

WEBSITE: www.dolphinheattransfer.com

DOLPHIN FRESH WATER SHELL AND TUBE EVAPORATOR

INTRODUCTION

Dolphin offers Shell & Tube Evaporators. These components utilize the latest technology tubing available.

FRESH WATER DX SHELL & TUBE EVAPORATORS

Dolphin Evaporators are designed specifically for refrigerant evaporation. Refrigerant R-22 boils rapidly against the surface, reducing the overall vessel size.

The evaporators are carefully engineered to provide excellent heat transfer rates, effective refrigerant boiling and assured oil carry-through. Shell circuits are engineered to provide high performance with a low pressure drop to conserve the required pumping power.

The Direct Expansion Evaporators are designed for optimum heat transfer rates and features rolled-in copper tubes and removable heads. Shell side baffling is selected for high operating efficiency and reasonable fluid pressure drops.

Compliance with the ASME codes and quality controlled manufacturing make the cooler suitable for a wide variety of virtually trouble free fluid cooling applications.

FEATURES OF DOLPHIN SHELL & TUBE EVAPORATORS

- High performance tubes for more economical cooling
- Serviceable through tube design, removable heads
- Controlled refrigerant velocities for positive oil return and low refrigerant pressure drop
- Rolled-In copper tubes
- Shell side baffling provided for high operating efficiency and reasonable fluid pressure drops

MATERIAL OF CONSTRUCTION

The Dolphin Evaporator is a Direct Expansion liquid cooler. The heat exchangers are designed with removable heads and copper tubes for use with refrigerant R-22. The tube side of the heat exchangers are designed and tested according to ASME code.

SHELL

Stell pipe shells. Shells are shot blasted and cleaned before assembly. Diameter of the shell may range from 8" to 20" depending upon the tonnage (from 5 TR to 70 TR). Higher capacities are also possible, for other capacities, kindly provide the details on the form attached.

TUBES

Tubes shall be of copper diameter 3/8", 1/2", 5/8". Tubes shall be roller expanded into multiple grooved tube sheet holes.



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TUBE SHEETS

Tube sheets shall be flanged, carbon steel fabricated to ASME specifications SA 516-Gr 70.

BAFFLES

Hot rolled steel, galvanized plated for reduced corrosion.

HEADS

Fabricated ring and cover type steel heads to ASME Specification SA 516-Gr 70 or equivalent.

GASKETS

Die-cut medium density elastomer compatible with the refrigerant and typical oils used with the refrigerant. Gasketed joints to be adequate for pressure application and shall not leak (using a leak testing pressure) at established test pressure of 1.25 times design working pressure.

CODES AND DESIGN PRESSURES

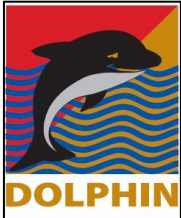
The refrigerant side is constructed in accordance with the latest edition of ASME Section VIII, Division I for pressure vessels. [Tube side \(refrigerant side\) design pressure is 250 psig at 100 ° F.](#) [Shell side fluid design pressure is 150 psig at 120 ° F](#)

TEST PRESSURE

Both shell and tube sides of all Direct Expansion Evaporators are pneumatically tested at [1.25 times the design working pressure](#) to comply with ASME code and assure reliable service.

FINISH

Exterior surfaces are painted with gray enamel paint. The surface shall be adequate to prevent rusting, can be used as a base for insulation adhesive or can be used as a primer.



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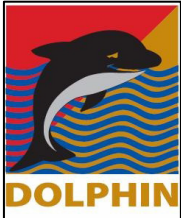
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PERFORMANCE DATA FOR FRESH WATER SHELL AND TUBE EVAPORATORS

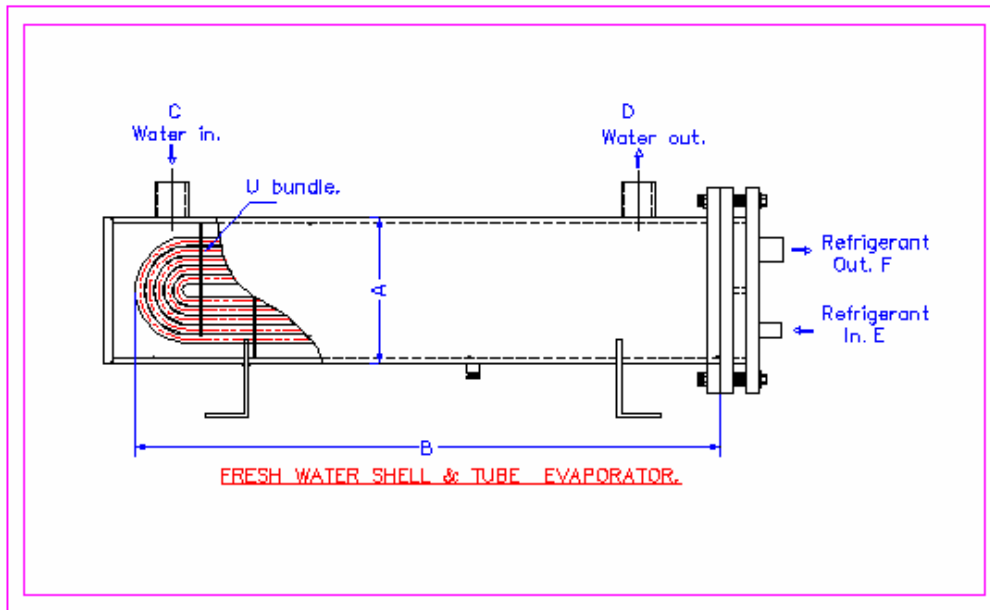
DOLPHIN ITEM #.	RATED TONS	WATER FLOW RATE, LPM	WATER PRESSURE DROP, KPa
DOL.EVA001	5	50.75	2.78
DOL.EVA002	10	101.70	4.20
DOL.EVA003	15	152.5	4.30
DOL.EVA004	20	203.4	8.20
DOL.EVA005	25	254.2	7.60
DOL.EVA006	30	305.0	7.20
DOL.EVA007	40	402.6	8.70
DOL.EVA008	50	508.4	10.73
DOL.EVA009	60	602.9	11.80
DOL.EVA010	70	703.35	8.30

- a. R-22 Refrigerant, water on the fluid side
- b. Entering water temperature 12 °C
- c. Leaving water temperature 7 °C
- d. R-22 Evaporation temperature 2 °C



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DIMENSIONAL DATA

(All Dimensions are in mm unless otherwise specified)

DOLPHIN ITEM #.	A	B	C	D	E	F
DOL.EVA001	8"	840	25.4	25.4	12.7	31.8
DOL.EVA002	8"	1300	38.1	38.1	12.7	50.8
DOL.EVA003	10"	1350	50.8	50.8	19.0	50.8
DOL.EVA004	10"	2000	50.8	50.8	25.4	63.5
DOL.EVA005	12"	2000	50.8	50.8	25.4	50.8
DOL.EVA006	12"	2000	76.2	76.2	25.4	50.8
DOL.EVA007	14"	2000	76.2	76.2	25.4	50.8
DOL.EVA008	16"	2000	76.2	76.2	25.4	76.2
DOL.EVA009	18"	2000	76.2	76.2	25.4	76.2
DOL.EVA010	20"	2000	101.6	101.6	25.4	76.2



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QUOTE REQUEST FORM FOR FRESH WATER EVAPORATOR

Evaporator

To: _____

Customer: _____

From: _____

Contact: _____

Date: _____

Phone/Fax: _____

Subject: _____

Address: _____

Technical Details: (Please provide the data as much as possible)

Load-Total Heat Rejection (Ton or kW): _____

Refrigerant: _____

Evaporation Temp.: _____

Entering Water Temp.: _____

Leaving Water Temp.: _____

Water Flow Rate: _____

Fouling Factor: _____

Max. Water Pressure Drop: _____

Design Pressure (Shell): _____

Design Pressure (Tube): _____

Design Temp.: _____

Dimensional Limitations: _____

Other Conditions: _____

Original Manufacturer and Model Number: _____