OIL COALESCER FILTER PACK

OCFX Series

Capacity up to 220 m³/hr

UNITED INTERNATIONAL
HYDRO ENG. TECH

Oil Coalescer Filter Pack are common oil separation systems due to their simplicity, modularity, and economic cost. Oil Coalescer Cabinet Filter have no moving parts, the configuration of plates simply enhances the coalescence of small droplets making them larger which is reflected in a faster rise rate according to Stoke's Law.

GENERAL DESCRIPTION & PRINCIPLE OF WORK

Oil Coalescer Filter Pack is a device used to separate fluid mixtures into individual using the principle of coalescence. Coalescence is a process whereby fluid molecules agglomerate (come together) to form a larger whole. Coalescing filters can separate particulate components of mixtures at a comparable efficiencies. Any heavy solids present in the water being treated, or sludge, in theory should fall into the sludge compartment of the OWS unit. As oil droplets coalesce into to larger droplets, the buoyancy of the droplets increases. This is reflected in the known rise time for a given size of oil droplet. The more efficient the coalescence action of the media, the larger the oil droplets become. Oil Coalescer Filter Pack can be used to eliminate the need for chemicals in odor-control scrubbers, or improve oil removal efficiency in compact oil-water separators. The main function is to enhance the oil-water separation systems by capturing the small oil droplets of the oily water stream, enlarge their size, and help to float the oil to the top surface. Moreover, it can collect other suspended solids also that pass throw plates and enhance the water stream overall parameters.

GENERAL TECHNICAL DATA	
ITEM	**DESCRIPTION OR VALUE**
Specific Surface Area:	423 m^2/m^3
Void Fraction:	87%
Bulk Density:	120 kg/m^3
UMP-Pack Material:	Polypropylene
Temperature Limit:	93°C

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UMP-PACK COALESCING MEDIA

This media provides a suitable surface for oil droplets to meet and grow, or coalesce, into larger droplets. As oil droplets grow in size the buoyancy of the droplets increase. The droplets rise towards the surface of the water due to the fact that the specific gravity of oil is less than the specific gravity of water. In this way the oil will form a layer that can be separated from the water by skimming action before the water is reused or discharged.

UMP-PACK Oil Water Separation Coalescing Media European Union/Water Separation Test

EN 858-1 Test Procedure	
Light liquid Density:	0.85 g/cm³*
Water:	Potable or Purified Surface Water
Solubility of light liquid:	Nil, Unsaponifiable
Water turn over:	Minimum four volumes of test unit
Liquid flux:	25-40 m³/m²-h
Max. residual light liquid:	5 mg/L**

EN 858-1 Test Results	
Depth UMP-PACK	610 mm
Inlet Oil Concentration:	4,250 mg/L
Liquid Flux:	31.1 m³/m²-h
Outlet Oil Concentration:	0.98 mg/L***
Oil Droplets > 20µ:	None observed

With all rounded elements, the entire surface area of 423 m²/m³ of UMP-PACK is available to support oil droplet coalescence. As a result, there is no need for any type of 2nd stage polishing to achieve needed oil removal. This fact is based upon UMP-PACK fulfilling the European Union's EN 858-1, Test Method for Class I Coalescing Separator.

* Fuel oil, per ISO 8217, designation ISO-F-DMA.

** Hydrocarbon content analysis with prescribed Infrared Spectroscopy procedure.

*** Average of five repetitions, data range 0.9–1.1 mg/L.

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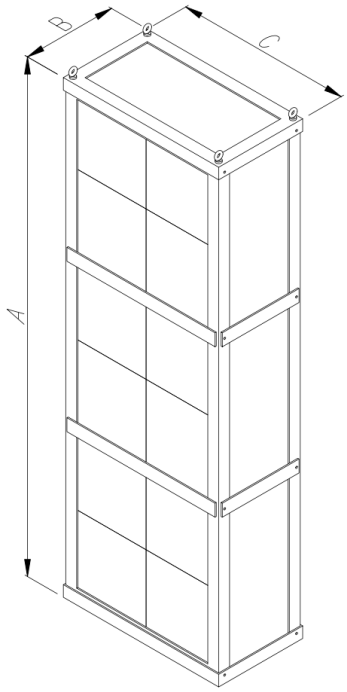
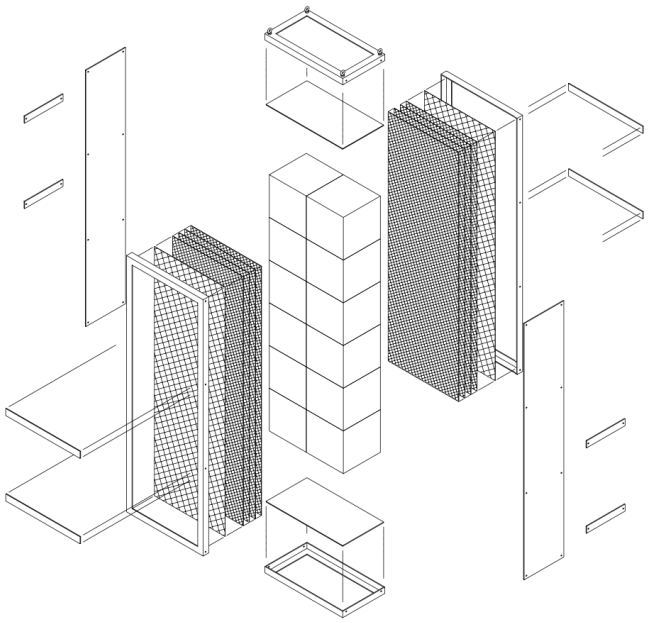


Oil Coalescer Filter



Oil Coalescer Filter Components

Model	Flow Rate (M³/HR)	Cubes No.	Cabinet Material	Pack Material	Height (A) (MM)	Depth (B) (MM)	Width (C) (MM)	Effective Volume Per Pack (M³)	Total Effective Area (M²)
OCFX-140	140	16	SS-316	PP*	1240	620	620	0.45	192
OCFX-160	160	20	SS-316	PP*	1550	620	620	0.57	240
OCFX-180	180	24	SS-316	PP*	1860	620	620	0.68	288
OCFX-200	200	28	SS-316	PP*	2170	620	620	0.79	336
OCFX-220	220	32	SS-316	PP*	2480	620	620	0.91	384

* Polypropylene Material

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