

Falling Film Evaporator

/ LiquidExtrac Scientific and Industrial Equipment



Falling Film Evaporator

A falling film evaporator is an industrial device to concentrate solutions, especially with heat sensitive components. The fluid will create a film along the tube walls, progressing downwards (falling) – hence the name.

In general the evaporation takes place inside the vertical tubes, which is called shell-and-tube heat exchanger, crowned by a proprietary liquid distribution device. The fluid distributor has to be designed carefully in order to ensure an efficient and uniform distribution of the liquid to all the tubes along which the product flows as a continuous film falls, driven by gravity.

The falling film evaporator is the most commonly used type of film evaporator due to its wide operating range. It is specifically suited to process the products with a low viscosity and a low tendency for fouling. In hemp industry, the falling film evaporator is widely used as evaporation system for ethanol recovery in large scale, and it is much more efficient than rotary evaporator.



FEATURES

High Evaporation Rate

- “In series” plate heat exchanger for higher condensation efficiency

Uniform Heating

- Finely designed vertical shell-and-tube heat exchanger with a concentrically arranged centrifugal separator, to make it perfect for uniform heating

Continuous Feeding and Discharging

- Three centrifugal pumps for continuous feeding and discharging

Compact Structure

- Small footprint, easy to assemble and move

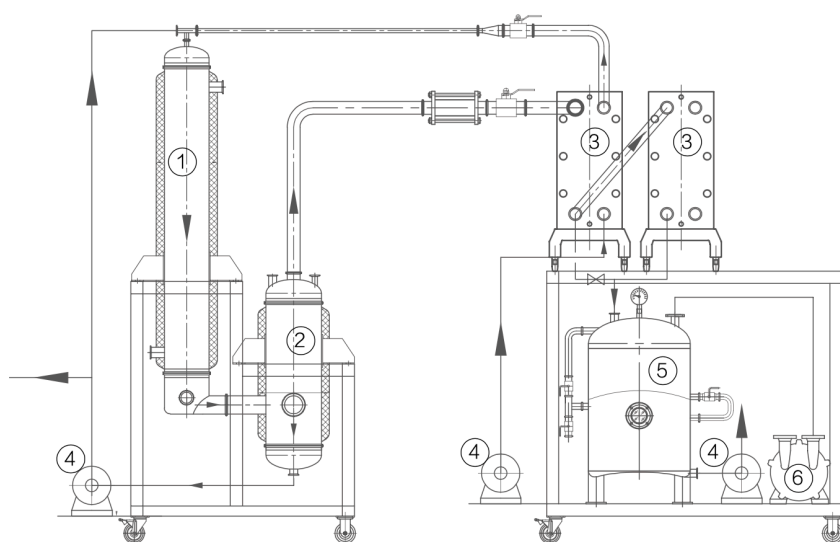
More Details

- Sight-glasses to observe material situation during evaporation process
- Ex-proof electric cabinet
- Durable 304 stainless steel construction
- Real-time Monitoring: vacuum gauge, thermometer and flowmeter
- UL Compatible (Optional)

TECHNICAL DATA

Model	LEFFE-100L	LEFFE-200L	LEFFE-500L	LEFFE-1000L
Evaporation Rate (L/hr)	100	200	500	1000
Evaporator Part Dimension (WxDxH cm)	95x85x250	110 x 90 x 260	120 x 100 x 300	140 x 120 x 300
Condenser Part Dimension (WxDxH cm)	120x85x250	130 x 90 x 250	130 x 100 x 250	130 x 120 x 250
Feeding Pump (kW)	0.37	0.37	0.37	0.75
Discharge Pump (Oil, kW)	0.75	0.75	0.75	0.75
Discharge Pump (Ethanol, kW)	0.75	0.75	0.75	0.75
Panel (kW)	<50	<50	<50	<50
Total Weight (kg)	1000	1300	1500	1800
Total Power (kW)	4	4	6.5	6.5
Electricity	240V, 3 Phase, 60Hz or Customizable			

Structure Display



- ① Shell-and-tube heat exchanger
- ② Oil-air separator
- ③ Plate heat exchanger
- ④ Centrifugal feeding pump
- ⑤ Storage Tank
- ⑥ Water ring vacuum pump

TURNKEY SOLUTION

Storage Tank

Model	LEBC-250L	LEBC-500L	LEBC-1000L
Effective Volume (L)	250	500	1000
Inner Diameter (mm)	700	900	1200
Vessel Pressure (MPa)	-0.1 to ATM	-0.1 to ATM	-0.1 to ATM
Design Temperature (°C)	-80 to 250	-80 to 250	-80 to 250
Jacket Pressure (MPa)	Up to 0.3	Up to 0.3	Up to 0.3
Certification	GMP Standard	GMP Standard	GMP Standard

Water Chiller

Model	LELSJ-12	LELSJ-25	LELSJ-30
Cooling Capacity (kW)	35	69	86
Total Power (kW)	10.5	22	29
Power Supply	480/460V 3P 18A	480/460V 3P 33A	480/460V 3P 37A
Compressor	Efficient inner fin coil type		
Condenser	Scroll type	Scroll type	Scroll type
Water Tank Volume (L)	155	230	230
Refrigerant Type	R407C	R407C	R407C
Refrigerant Throtting Type	Expansion valve	Expansion valve	Expansion valve