

Your ideal development tool!

LCI's D-Velpac® evaporator system includes a pilot-scale thin-film evaporator with packaged components mounted on a free-standing support frame.

- Sturdy, stainless steel construction
- Fixed clearance rotor (wiper blade option available upon request)
- Step-down sheaves for variable rotor speed
- Quick disassembly/assembly for ease in cleaning and inspection
- Counter-current vapor-liquid flow operation
- 150# ANSI Flanges for all process connections
- Explosion-proof motor

Customize your solution!

In addition to the thin film evaporator, the basic D-Velpac® system includes a rotor drive, vapor pipe/condenser bonnet, and condenser. Upgrades are also available to add concentrate and distillate tanks, sight glasses, process valves, local instrumentation, and a vacuum pump as needed.

Lease or purchase today!

LCI's D-Velpac® system provides an inexpensive means to evaluate thin film evaporation on pilot-scale quantities of material for your development or existing products within your own facility.

Perfect for Scale-up!

Process data collected from the D-Velpac® can be used to scale-up to production-scale thin-film evaporators in your existing plant or for new capital project. Samples taken during processing on the D-Velpac® can be analyzed and used to validate the process. Pilot-scale trials enable you to fine-tune your evaporation/concentration process with minimal product loss and downtime.

Call or email LCI to discuss your application and the benefits of the D-Velpac® today!



LCI Corporation D-Velpac® Evaporator System



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D-Velpac® Thin-film Evaporator

How it works...

The feed material is metered into the thin-film evaporator at a steadily controlled rate by a feed system suitable for the particular feed material. Upon entering the evaporator, the feed is immediately distributed onto the thermal wall by the feed distribution ring.

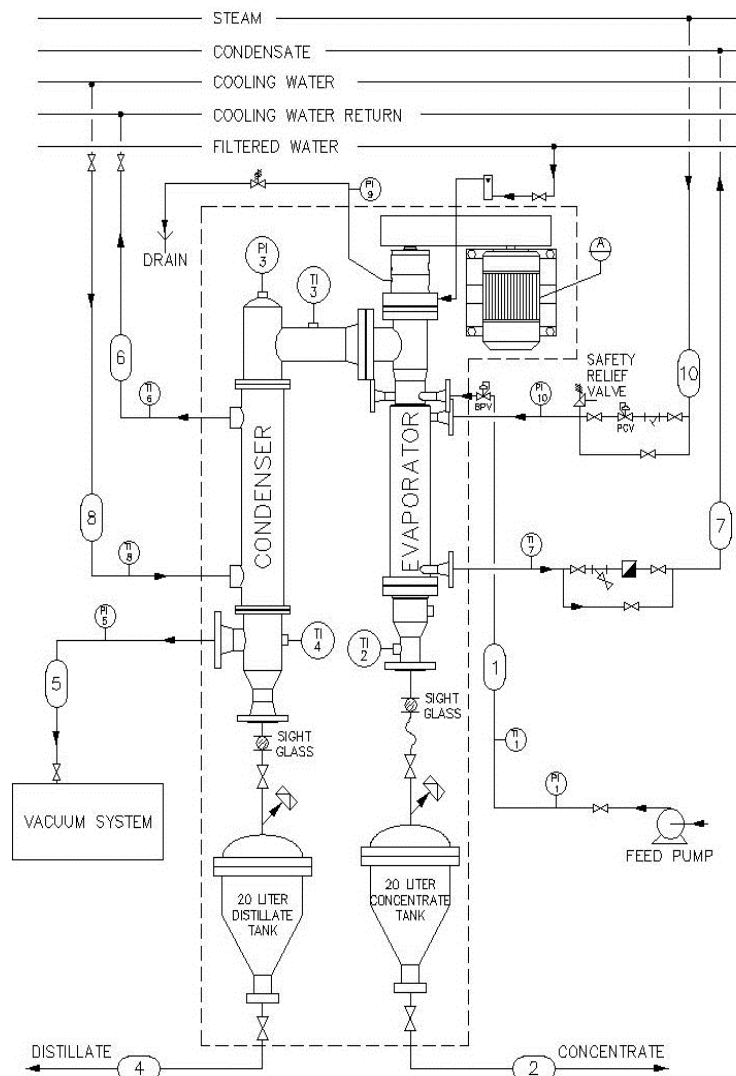
The descending product is maintained in a turbulent, thin liquid film by rotor action. Under these very favorable heat and mass transfer conditions, rapid evaporation occurs. Vapor travels counter-current to the liquid flow through the open vapor channels of the rotor and exits at the top vapor pipe. Vapor is subsequently condensed in the surface condenser.

Condensed vapor (distillate) flows out of the surface condenser into a batch receiver.

The concentrate exits through the bottom cone of the evaporator into a batch receiver. The concentrate and distillate receivers can be emptied by isolating, venting, and draining the product with manual valves.

Capacity of the plant can be varied over wide ranges by changing the process conditions such as feed rate, composition, internal pressure/vacuum, and heating medium temperature.

Many thin-film processes operate under vacuum. Condensing steam or hot liquid (oil or water) are typically used as the heating medium in the evaporator jacket depending on availability and process requirements.



What can you use this for?

The list of applications and benefits is extensive. They include, but are not limited to:

- Concentration of aqueous or organic solutions
- Dehydration/devolatilization of organics
- Distillation of organics
- Stripping VOC's, monomer, residual reactants
- Column reboiling
- Solvent reclaiming
- Deodorization
- Reaction of heat sensitive, viscous, and fouling materials

FAST FACTS

Feed Rate	25-250 lb/hr (11-113 kg/hr)
Evaporator Area	1.4 ft ²
Materials of Construction	316SS
Design Pressure/Temp.	Process: FV to 50 psig @ 650°F Jacket: 200 psig @ 394°F/ 100 psig @ 650°F
Viscosity	50,000 cP max.



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