

Alfa Laval Oils and fats vacuum dryer

Removal of residual moisture from oils and fats

Introduction

The enzymatic degradation of oils and fats is closely related to undesirable levels of moisture, and the resulting water activity. Even tiny amounts of moisture affect product quality and appearance. If there is even as little as 0.5% moisture present, the oil or fat product quickly loses clarity and becomes opaque. This is why deep dehydration is an important precautionary measure for the particularly sensitive oils and fats that feature in the production of foodstuffs.

The Alfa Laval Oils and fats vacuum dryer is designed to continuously remove residual moisture from processed oils and fats of virtually all kinds. Reducing the water content from 0.5% to as low as 0.05% plays a big role in improving oil quality, resulting in better revenue along with a better market reputation.

Application

- Fish and seafood processing
- Meat and poultry processing.

Benefits

- Greater clarity of oils and fats
- Better product quality, resulting in longer shelf life and revenue margins
- Fully compliant with EU as well as US foodstuff regulations
- Compact, “plug & play” unit that is easy to install and bring on line quickly.

Design

This compact Oils and fats vacuum dryer is available in two different standard sizes, each delivered as a complete, integrated unit, ready to be connected. It consists of:

- A pre-heater that uses steam to heat the oil to the optimal stripping temperature, using a plate heat exchanger
- A vacuum dryer, in which the oil is expanded under carefully controlled vacuum conditions to strip out any undesirable moisture that might be present
- A liquid ring vacuum pump that maintains the vacuum in the dryer unit
- A centrifugal pump, featuring a frequency drive, to discharge the oil from the dryer and pump it further in the process
- A control panel featuring PLC with a touch-screen user interface
- All necessary valves and instruments



The compact, integrated design of the Oils and fats vacuum dryer makes it easier to install even in restricted spaces.

Certification

- CE marking in accordance with EU Directive 2006/42/EC
- Compliance with these specific EU Directives:
 - EN 1935/2004 on materials and articles intended to come in contact with food
 - EN 2023/2006 Good Manufacturing Practice for materials and articles intended to come in contact with food
 - EN 10/2011 Plastic materials and articles intended to come in contact with food.

Options

- Two different Vacuum dryers are available as standard, with throughputs of 1000 kg/hour (2200 lbs/hour) and 4500 kg/hour (10000 lbs/hour).
- Siemens or Allen-Bradley control system.

Technical data

Oil processing capacity	Up to 1000 kg/hour (2200 lbs/hour)	Up to 4500 kg/hour (10000 lbs/hour)
Moisture reduction	From 0.5% to 0.05%	From 0.5% to 0.05%
Steam consumption	Approx. 24 kg/hour (53 lbs/hour) of steam @6 bar (87 psi), assuming the oil enters the system at more than 70°C	Approx. 75 kg/hour (110 lbs/hour) of steam @6 bar (87 psi), assuming the oil enters the system at more than 70°C
Sealing water consumption (for liquid ring pump)	Approx. 800 litres/hour (3.5 gal/minute)	Approx. 1000 litres/hour (4.4 gal/minute)
Installed power	4.1 kW	10 kW
Power consumption	Approx. 2 kW	Approx. 5 kW

Dimensional drawing

Approximate dimensions in mm (in).

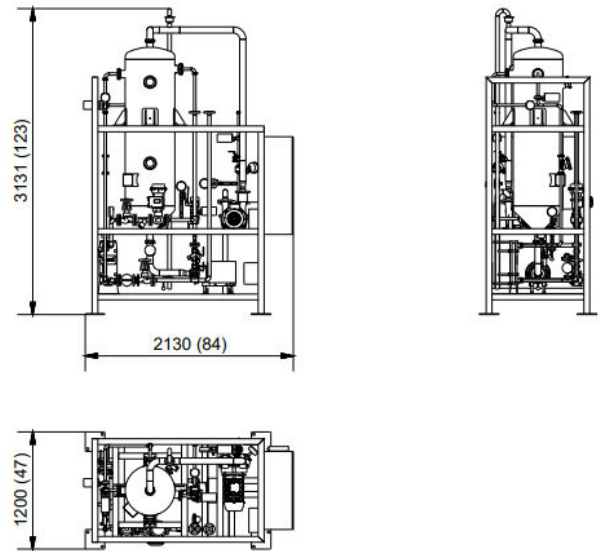


Figure1. Capacity up to 1000 kg/hour (2200 lbs/hour)

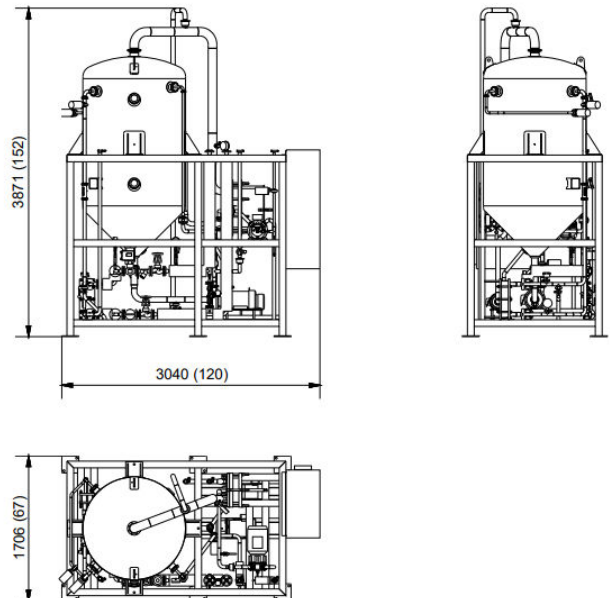


Figure2. Capacity up to 4500 kg/hour (10000 lbs/hour)

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