

Alfa Laval ALDRUM G3 – for sludge thickening

Rotary drum filter for medium- to- high capacity sludge thickening



Introduction

Alfa Laval ALDRUM G3 sludge thickeners are ideal for the mechanical thickening of sludge needed to optimise downstream processes, including digestion with higher biogas production and more cost- efficient dewatering. The capacities range from 15 to -180 m³/hour.

Application

- All types of municipal wastewater sludge
- Industrial separation, including paper production, and solid waste processing
- Fresh water production at waterworks

The ALDRUM G3 reduces the sludge volume by as much as 90%, thus considerably reducing costs for sludge handling, transport and storage.

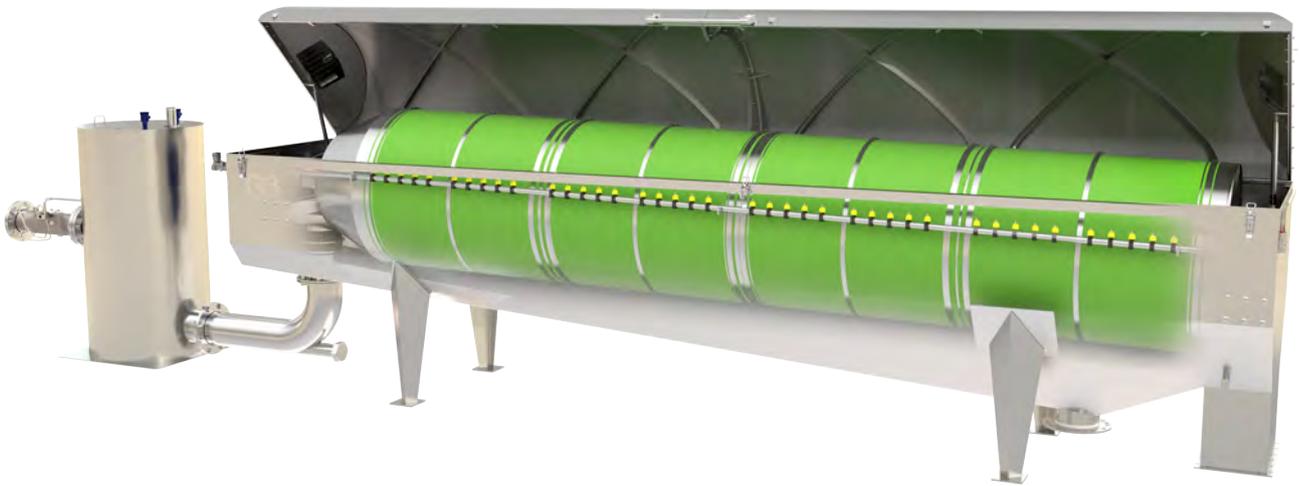
The ALDRUM G3 rotating drum filter is optimised to set new standards for sludge thickening, resulting in greatly improved

capacity and process performance at minimum operating cost. The robust, straightforward design makes the ALDRUM G3 drum thickener a reliable, user-friendly product that only requires a minimum of maintenance. It is available with a range of auxiliary equipment to meet specific customer requirements.

Benefits

ALDRUM G3 sludge thickeners feature a unique design that provides multiple operating benefits. These include:

- Low power requirements
- High capacity and output within a small footprint
- Clean, enclosed, odour-free solution
- Gentle treatment of flocculated feed reduces polymer use
- Filter cloth with a long service life
- One-piece cover with direct access to complete drum
- High-safety design featuring hinged cover and safety switch



Alfa Laval ALDRUM G3 drum thickener configured with a flocculation reactor (optional) and mixing valve (optional)

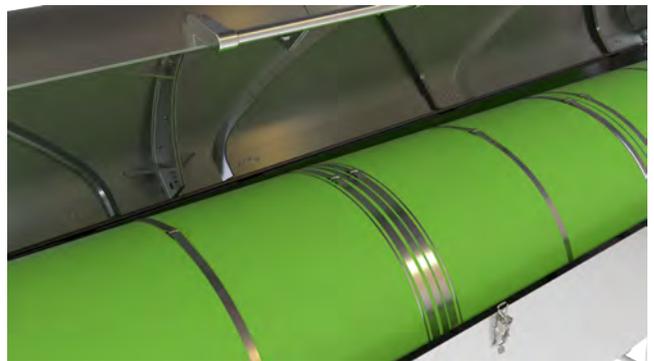
Working principle

The ALDRUM G3 works by conveying flocculated sludge through a slowly rotating drum filter. The sludge remains inside the drum, while the water passes through the filter cloth.

Integrated scrolls inside the drum filter determine the liquid level between baffles. This increases capacity and separation efficiency because the liquid pond is higher, while the sludge is transported from one compartment to the next. Scrolling also drains the drum after operation.

Water consumption is low as a result of intermittent cleaning with spray nozzles. This flushes the drum, using either potable water, final effluent or treated filtrate.

The ALDRUM G3 can be adjusted to suit specific sludge thickening requirements. Optimal thickening is achieved by varying the feed rate, the polymer type and dosage, drum speed and spraying interval. The best possible flocculation is achieved by installing optional equipment that includes flocculation reactor and/or a mixing valve fitted upstream of the drum thickener.



The ALDRUM G3 filter cloth is extremely durable

Design features



Integrated scrolls increase capacity and separation efficiency

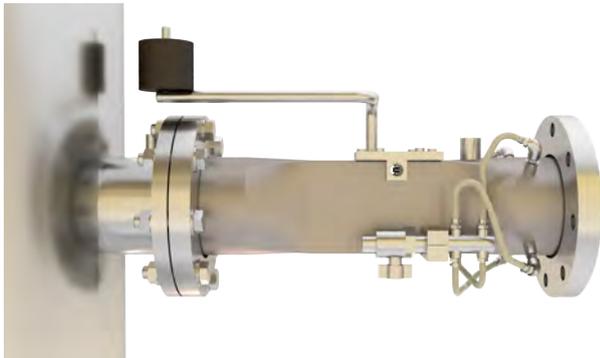
The ALDRUM G3 provides a high solids load capacity due to the unique conveyor design, featuring integrated scrolls that increases separation efficiency in the drum.

The feed inlet pipe adaptor ensures very gentle treatment of the sludge being processed. This results in polymer

consumption reductions of as much as 10%, while at the same time making sure of high recovery rates for most types of sludges.

This, combined with the gentle treatment of the sludge, ensures superior performance as well as low polymer consumption. The one-piece cover is active lift due to the integrated gas struts in each side. Safety switches are fitted on both sides.

ALDRUM G3 drum thickeners are renowned for their robust, straightforward design, extremely durable filter cloth, and low maintenance requirements. They are also equipped with an integrated Cleaning-in-place (CIP) flushing system. The benefits include easy operation, limited maintenance and maximum uptime.



Polymer mixing valve (optional) reduces polymer consumption

Optional equipment to meet your exact requirements

Additional, optional equipment is available to enable ALDRUM G3 sludge thickeners to meet specific operating requirements:

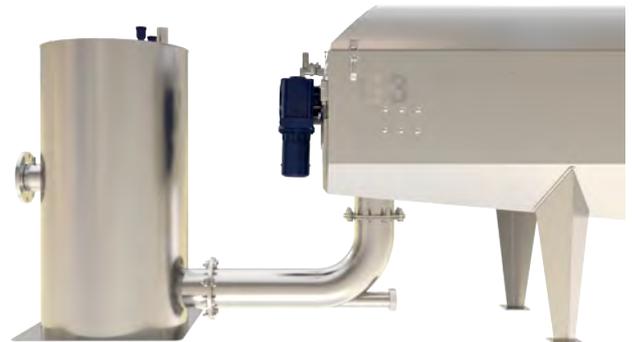
- Polymer mixing valve:**
 Ensures thorough mixing of polymer and sludge to ensure effective flocculation using minimal amounts of polymer. The valve can be installed directly onto the inlet of the drum thickener, or before the flocculation reactor.
- Flocculation reactor, with or without agitator:**
 Simple open reactor that kick-starts the creation of large, strong flocs. Can be installed directly onto the inlet of the drum thickener
- Feed inlet pipe adaptor:**
 A connection to the flocculation reactor with a sampling point included
- Sludge hopper:**
 Leads the thickened sludge to the sludge pump in a controlled, efficient manner

Control system

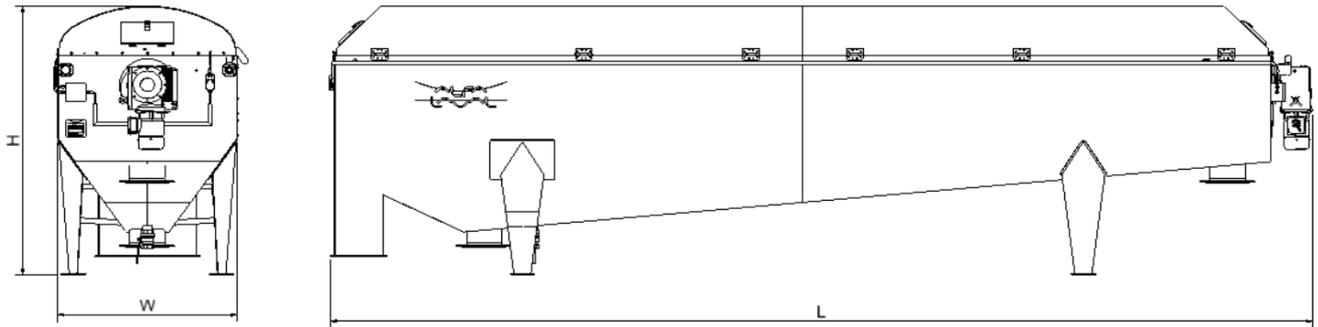
- Advanced control system:**
 All-in-one control solution. For the drum thickener as well as the feed pump, sludge pump, polymer pump level monitoring in the flocculation reactor, and the sludge hopper.
- Basic control system:**
 Straightforward, user-friendly relay-based control of the drum thickener, including level monitoring in the flocculation reactor (if fitted)



ALDRUM G3 advanced control panel



ALDRUM G3 with flocculation reactor (optional) improves floc formation



Technical specifications

Dimensions	ALDRUM G3 Maxi	ALDRUM G3 Mega	ALDRUM G3 Mega Duo*
Length (L) (mm/inches)	4,715 / 186	6,086 / 240	6,086 / 240
Width (L) (mm/inches)	957 / 38	1,110 / 44	2,679 / 106
Height (L) (mm/inches)	1,361 / 54	1,744 / 69	1,744 / 69
Weight (dry) (kg/lbs)	730 / 1,606	1,280 / 2,816	2,560 / 5,652
Capacity (m3/hour)	15-45	30-90	60-180

* Mega Duo comprises two (2) ALDRUM G3 Mega units in parallel (side by side)

Materials

Cover	GRP	Bearings	HDPE
Casing	AISI316	Filter cloth	Polyester
Drum	AISI316	Spray nozzles	AISI303
Legs	AISI304	Material used in other non-wetted parts	Aluminium, brass

Typical performance

Type of sludge	Discharge dry solids (%)	Filtrate quality (mg/litre suspended solids)	Polymer consumption
Primary	3-10	50-400	1-3 kg / tDS / (2-6 lbs/dT)
Mixed (50% primary/50% secondary)	3-8	50-400	1-4 kg / tDS / (2-8 lbs/dT)
WAS (waste activated sludge)	3-6	50-400	2-5 kg / tDS / (4-10 lbs/dT)

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