

# GRUNDFOS

## END SUCTION PUMPS

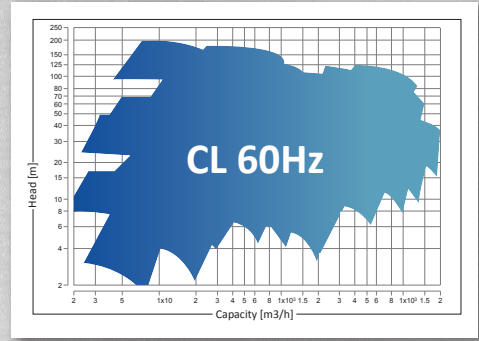
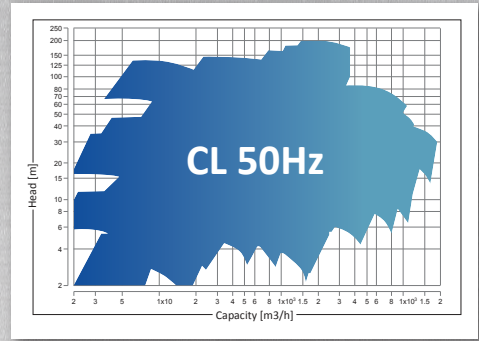
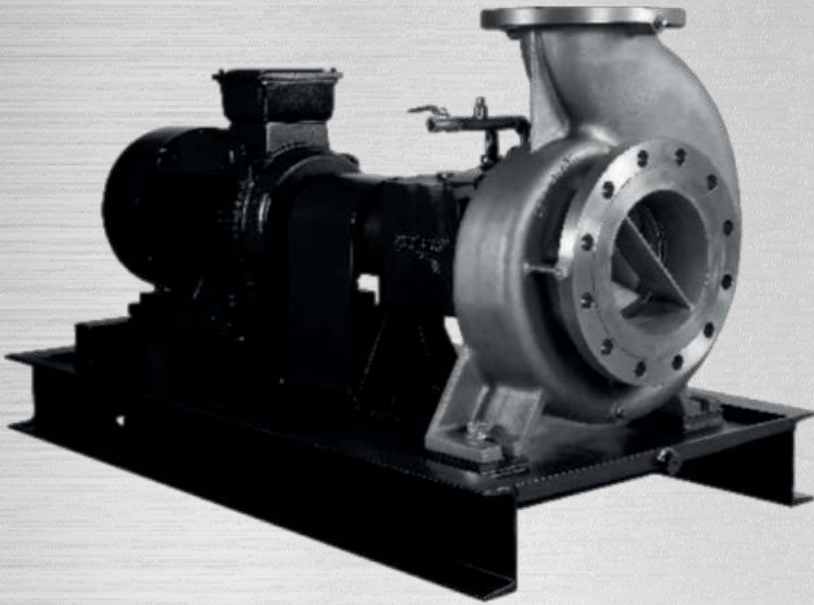
### TYPE CL/LF



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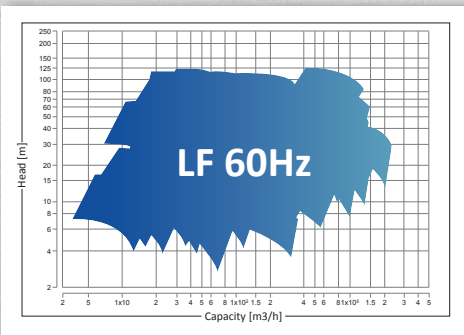
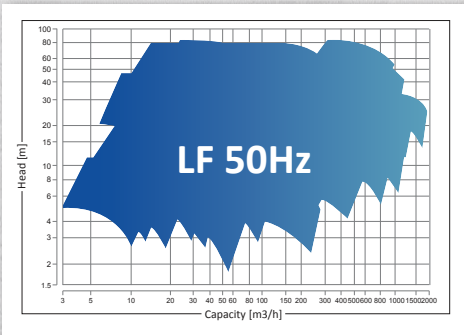
**GRUNDFOS** 

# CL END SUCTION

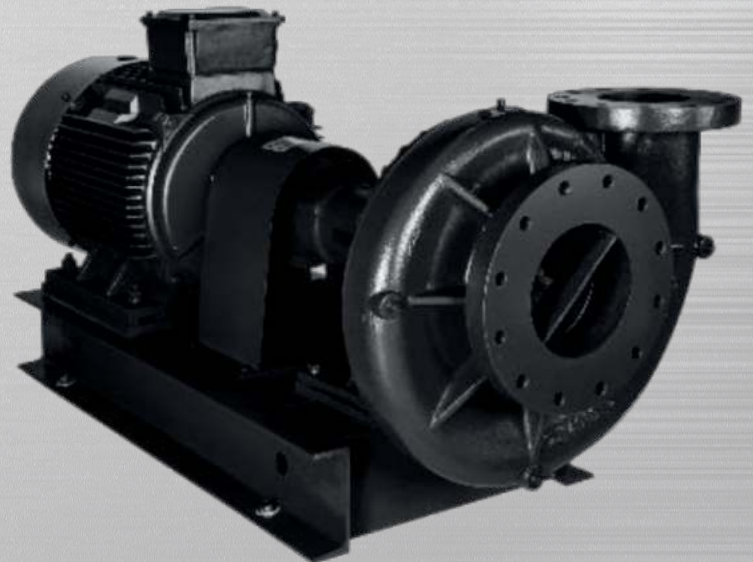


## Technical Data

Flow Q:	max. 2400m <sup>3</sup> /hr
Head H:	max. 250m
Fluid Temperature:	up to 150°C
Power:	0.37kW - 355kW
Discharge Sizes:	20 - 300mm



# LF END SUCTION



## Technical Data

Flow Q:	max. 2200m <sup>3</sup> /hr
Head H:	max. 125m
Fluid Temperature:	up to 120°C
Power:	0.37kW - 355kW
Discharge Sizes:	20 - 300mm

# INDUSTRY STANDARD IN PERFORMANCE, QUALITY AND DURABILITY

With an expanded selection available, Grundfos end suction, single stage pumps is the smartest choice for several reasons.

- Low life-cycle costs
- High efficiency for reduced operation costs
- Compensated double volute design for reduced radial loads, minimized shaft deflection, and prolonged seal and bearing life
- Mechanical design for reduced maintenance and minimal downtime
- Back pull out design for ease of maintenance and servicing
- Wide range of sizes to meet precise application requirements
- Quiet operation

Advanced features incorporated as standard on Grundfos end suction pumps ensure optimum performance and reliability. These features, as well as optional features that meet specialized needs, are available on the broadest line of high efficiency pumps offered to the industry.

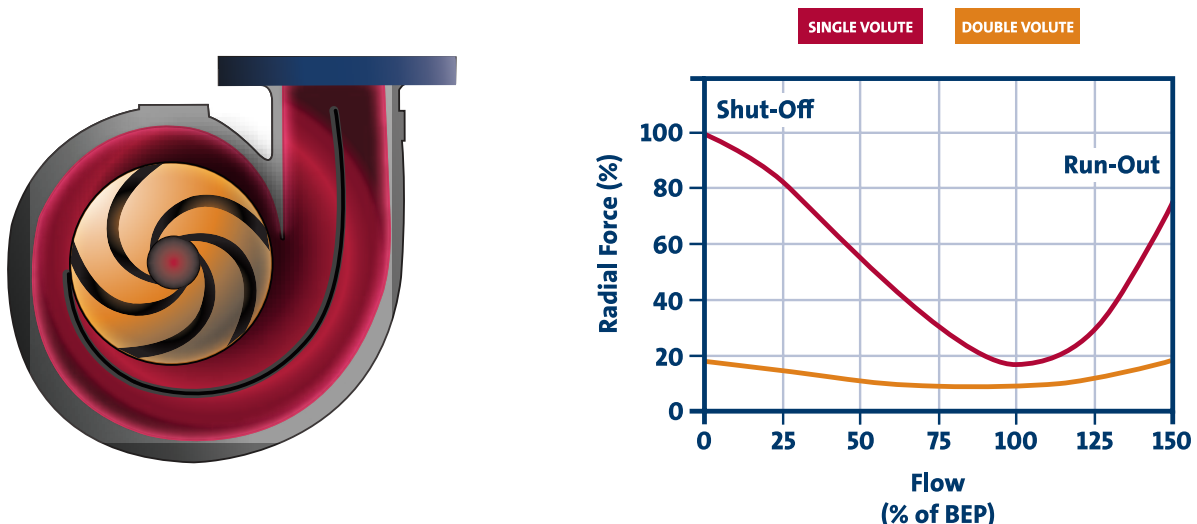
An innovative pump and impeller design produces a higher operating efficiency – up to 90% - and provides a wider band of best operating efficiency, even during conditions of off-design operation.

The Grundfos LF and CL pumps utilize a double volute design that offers a distinct advantage over single volute designs. The double volute design incorporates two cutwaters located at 180°, which divide the flow into two geometrically similar regions of the volute.

This design ensures that the resultant hydraulic radial loads are equal and opposed and thereby nullified. As a result, the net radial force is maintained at a very low level throughout the operating range of the pump, and shaft deflection is kept to a minimum. Pump operation thus remains stable throughout the entire performance curve with minimum shaft deflection, and prolongs seal, bearing, and shaft life.

## COMPARISON CHART

Typical radial force vs. design capacity with single and double volute



# Features and Benefits

## GRUNDFOS CL/LF LONG COUPLED END SUCTION PUMP

<b>Footed Bearing Frame</b>	Enhances ease of maintenance and provides proper support of rotating equipment during servicing
<b>Permanently Sealed for Life Bearings</b>	Reduce environmental contaminants and pump maintenance
<b>Back Pull - Out Design</b>	Enables maintenance without disturbing piping
<b>Double Volute Design</b>	Reduces radial loads, internal recirculation, and turbulence, which increases efficiency, lowers life cycle costs and prolongs seal and bearing life
<b>Integrally Cast Diffuser Vane</b>	Reduces turbulence and pre-rotation by providing laminar flow into oversized impeller eye, resulting in decreased need for extended horizontal suction pipe runs, elbows or suction guides
<b>Francis Vane Impeller Design</b>	Increases efficiency and reduces NPSHr
<b>Bronze Case Wear Rings</b>	Extend pump life and increase pump efficiency Provide simple and inexpensive renewal
<b>Impellers</b>	Static and dynamically balanced to ISO 1940 for reduced noise and vibration Hydraulically balanced to decrease thrust loads and prolong seal and bearing life