

## End-Suction Split-Coupled Pump

# GRUNDFOS **LCSE**

The Grundfos LCSE end-suction, split-coupled pump with integrated motor, drive, and control serves as the industry standard in performance, quality, and durability. Together with various sensors, these products allow for dynamic and intelligent solutions—and now Proportional Pressure control—to many industrial and commercial building applications. With a selection of 21 sizes available, the LCSE provides all the benefits of an LCS pump, enhanced by an integrated motor and variable frequency drive, all made by one supplier.

The integrated variable frequency motor (MLE) is available with permanent magnet motors and exceed IE5 efficiency levels set by International Electro Technical Commission, currently the highest efficiency worldwide for electrical motors. NEMA Premium Efficient motors are equivalent to IE3, meaning these MLE motors are two levels above NEMA Premium Efficiency. The combined motor and VFD efficiency is higher than a NEMA Premium motor alone.



### KEY FEATURES AND BENEFITS

- **NEW FEATURE:** Proportional Pressure control is now available on this end-suction pump with the addition of the pump-mounted Differential Pressure (DPI) sensor that works with the Grundfos integrated MLE motor. This control mode will help you to optimize your system based on actual demand with the easiest and most cost-efficient installation possible
- Plug-and-pump solution speeds installation, commissioning and startup due to integrated components
- Provides seamless integration with Grundfos MLE integrated motor, drive and control for an all-in-one solution
- Large, graphical display control interface (HMI) on MLE motor allows control of all settings without need of separate interface device (GO Remote) and provides user friendly operation
- No alignment required between the pump and motor eliminates laser alignment costs and reduces installation time
- Optimized, space-saving design has 35% smaller footprint than frame mount design
- No baseplate grouting required
- Axially split, rigid coupling enhances ease of service with reduced maintenance costs
- Spacer coupling allows rapid mechanical seal access without motor removal for service friendly design

- Double volute design lowers life cycle costs and prolongs seal and bearing life
- Integrally cast diffuser vane reduces turbulence and need for suction guides
- Balanced impellers reduce noise and vibration for quieter operation and prolonged seal and bearing life
- Single source responsibility ensures one manufacturer for pump, motor, drive and control

### APPLICATIONS

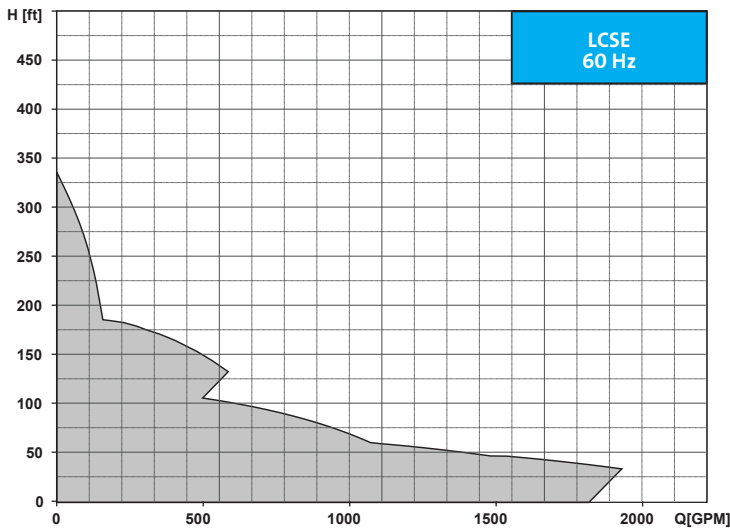
- Chilled water
- Condensed water
- Hot water
- District heating/cooling
- HVAC
- Process water
- Light industrial
- Water utility

**TECHNICAL DATA**

LCSE	
<b>FLOW, Q:</b>	max. 1900 gpm
<b>HEAD, H:</b>	max. 380 ft
<b>LIQUID TEMPERATURE:</b>	10°F to 275°F
<b>WORKING PRESSURE:</b>	max. 175 psi
<b>HP RANGE / SPEED:</b>	3 to 30 hp / 3600 rpm
	3 to 20 hp / 1800 rpm
<b>DISCHARGE SIZES:</b>	1 to 6 in.

LCSE CONTROL MODES	PERMANENT MAGNET MLE	ASYNCHRONOUS MLE
	2 POLE: 3-15 hp	2 POLE: 20-30 hp
	4 POLE: 3-10 hp	4 POLE: 15-20 hp
Proportional Pressure	•	
Constant Flow	•	•
Constant Pressure	•	•
Constant Differential Pressure	•	
Constant Temperature	•	•

**PERFORMANCE DATA**



**THE PERFECT MOTOR IS HALF THE SOLUTION**

For an intelligent pumping solution, the motor is half the story. Our E-motors (MLE) are frequency converter controlled motors that have been designed specifically for use with Grundfos pumps, and they feature unique functionalities that allow for complete system optimization. The new MLE permanent magnet (ECM) motor offers an additional 7-10% decrease in energy cost over NEMA Premium motors with industry standard variable frequency drives.

**ULTIMATE FLEXIBILITY AND EFFICIENCY**

The MLE motors can be operated to meet any individual needs for a specific solution. This makes them an excellent choice for a number of applications within heating, cooling, ventilation and industrial processes – each of which are characterized by varying demands, different control needs, and varying number of operating hours.

**NEW FUNCTIONALITIES FOR ADVANCED SOLUTIONS\***

<b>Real Time Clock**</b> Allows for calendar function for e.g. automatic system stop during weekends	<b>Manual Speed Operation Mode</b> Even while under external signal control, you can switch to manual speed operation mode to test the pump's operation
<b>2 Analogue Inputs</b> Get Delta P and Delta T control with two sensors	<b>PT100/1000 Input**</b> Get temperature and differential temperature control at a low cost
<b>Timer Functions on Digital Inputs</b> For each digital input you can activate and set a delay time and a duration time	<b>Predefined Set-Point**</b> Get dynamic response to different operation profiles
<b>1 Analogue Output**</b> Get relevant parameter information in real time	

\* New functionalities are only applicable to the Permanent Magnet MLE range

\*\* Advanced functional module FM300 is required for these functionalities

Visit [grundfos.us/pei](http://grundfos.us/pei) to learn more about Department of Energy (DOE) pump energy index (PEI) requirements and PEI ratings on specific Grundfos models.