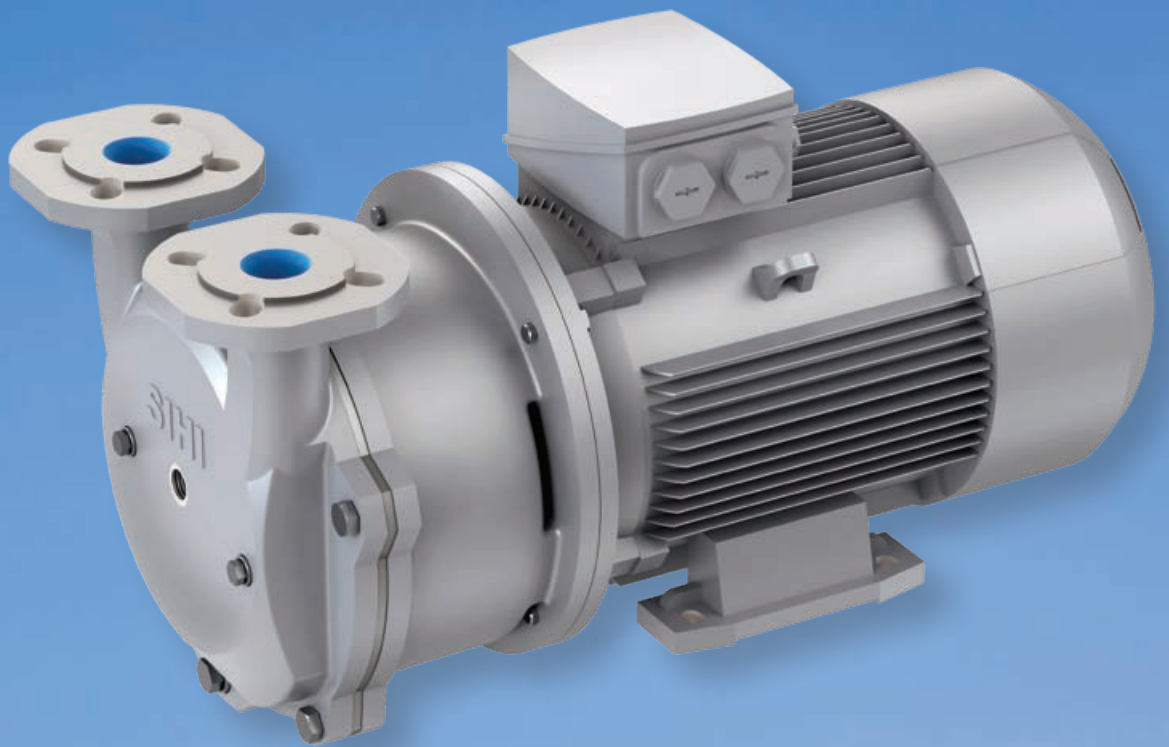




# **SIHI® LEMD** **Compact Liquid Ring** **Vacuum Pump**



*Experience In Motion*

## Reduced lifecycle cost and increase reliability in industrial vacuum pump applications

The SIHI® LEMD range of close-coupled liquid ring vacuum pumps delivers dependable vapor, gas and liquid carryover performance with outstanding reliability in even the toughest applications. Engineered to eliminate unnecessary complexity and use standard electric motors, this robust pump boasts a low total cost of ownership and long service life. Maintenance is easy and spare parts inventory requirements are minimal. And, its compact proportions are ideal for installations with limited space.

But that doesn't mean it's not versatile. The LEMD vacuum pump is able to tackle a broad range of industrial applications — from basic vapors and gases to thermally sensitive and explosive media. Special configurations are available for applications that require steam condensation and additional liquid carryover.

The SIHI LEMD vacuum pump is available in single-stage designs with suction capacities up to 450 m<sup>3</sup>/h (265 cfm) and suction pressures from 33 to 1013 mbar (24 to 760 Torr) without additional boosting equipment. The working range can be extended down to 8 mbar (6 Torr) by connecting a gas ejector to the pump.

### Typical industries

- Health care
- Food and beverage
- Polymers
- Ceramics
- Textiles
- Pulp and paper
- Electronics

### Typical applications

- Sterilization
- Drying
- Degassing
- Deodorization
- Deoxygenation
- Filtration
- Transfer



LEMD 162

## Benefits summary

- Superior vapor and gas handling performance
- Cool operation with near isothermal compression
- High volumetric flow rate
- Application versatility
- Outstanding reliability
- Extended service life
- Simple maintenance
- Cavitation- and corrosion-resistant impeller
- Additional liquid carryover
- Low spare parts inventory requirements
- Small footprint
- ATEX Category 2 without flame-arresters

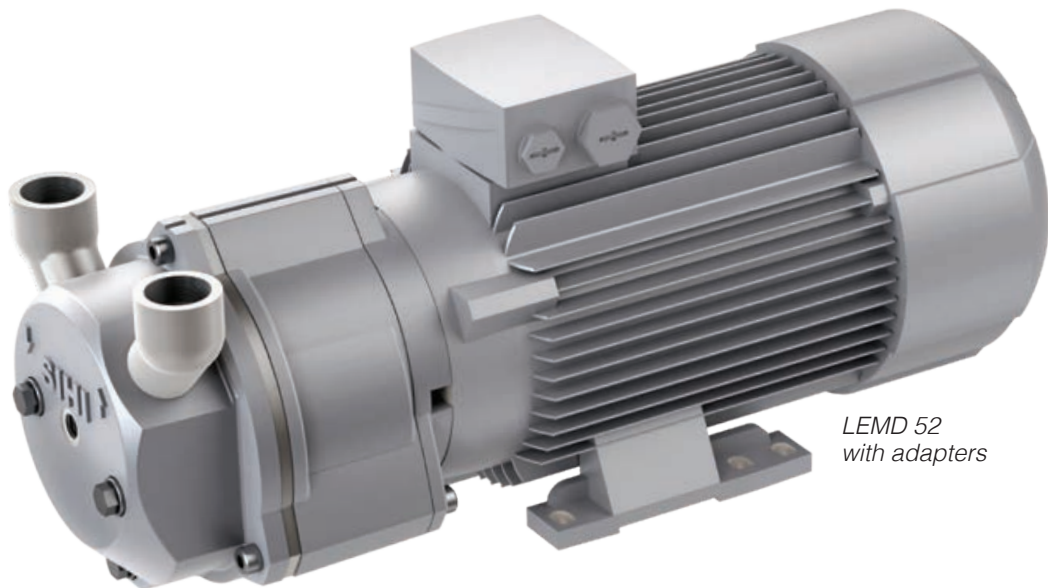
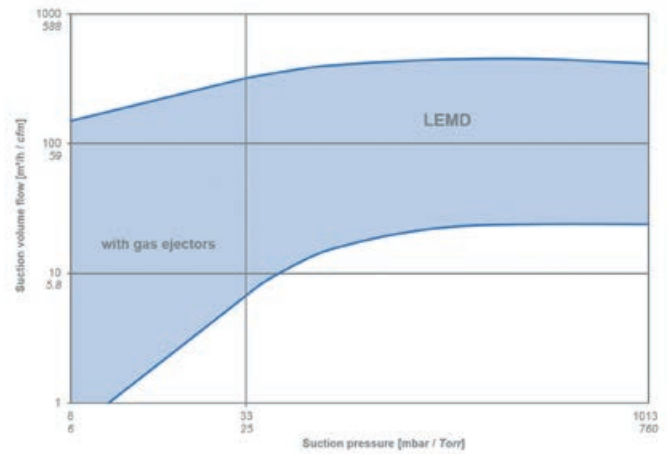
## Operating parameters

- Suction volume flow: up to 450 m<sup>3</sup>/h (265 cfm)
- Suction pressure: 33 to 1013 mbar (24 to 760 Torr)
- Inlet gas temperature: up to 200°C (392°F)

## Interchangeability with LEM series

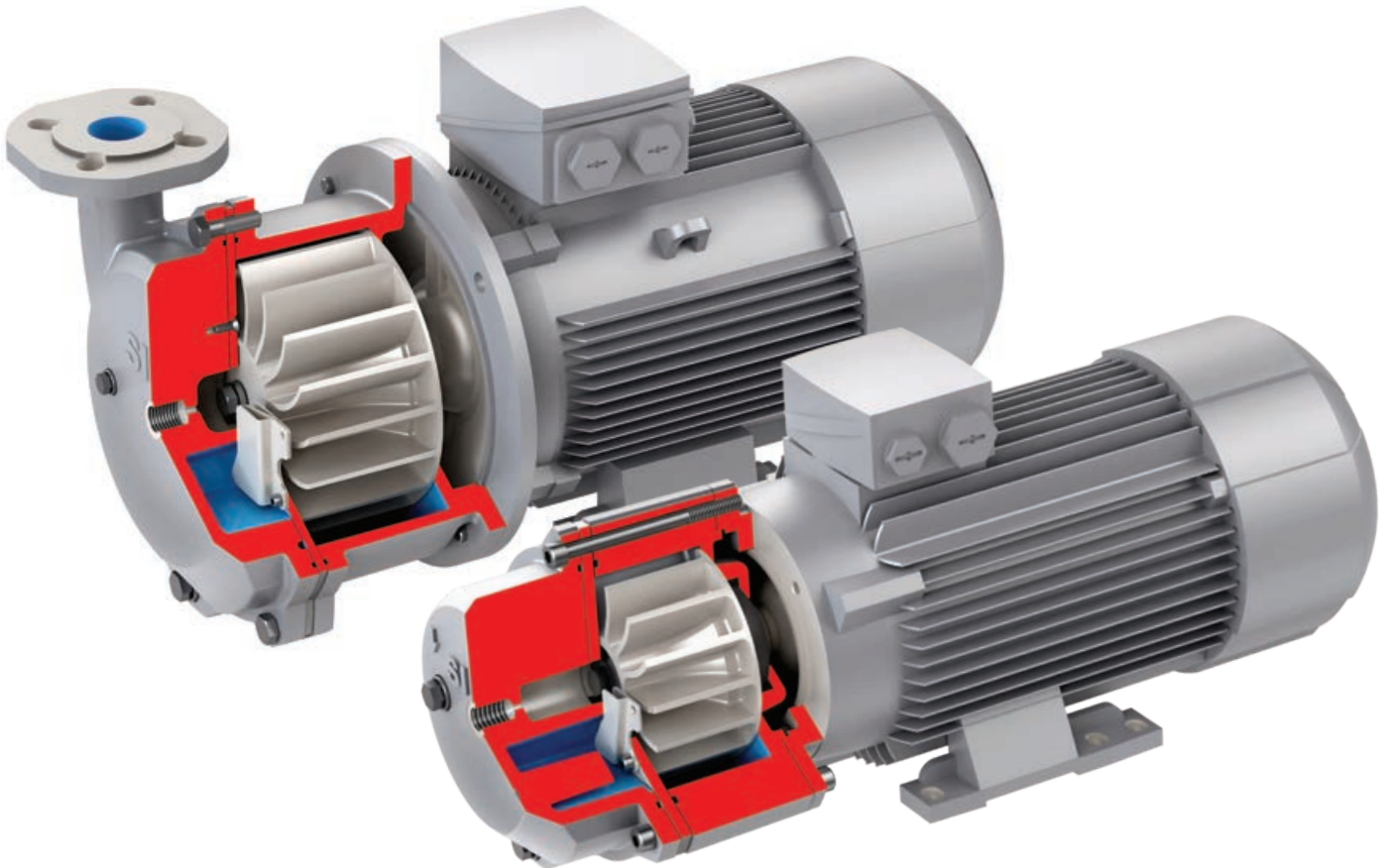
- Same pump performance
- No impact on system performance
- No process changes necessary

## Performance envelope



## SIHI LEMD: performance through design

The SIHI LEMD compact, single-stage vacuum pump is expressly designed for the varied vacuum applications found in health care, food and beverage processing, plastics production and other general industries. Available in eight sizes with discharge outlets from 25 to 65 mm (1 to 2.5 in), the LEMD offers outstanding application versatility without compromising performance or reliability. And, its robust but simple design keeps total cost of ownership and maintenance requirements low.



### Standard electric motors

The SIHI LEMD uses standard electric motors to provide application flexibility. It easily accommodates different voltages, frequencies and protection classes. Off-the-shelf availability means lead times are short and downtime is minimized.

- IMB 34 and 35 standard design
- IEC IE3, IE4 and NEMA premium efficiency
- Compliant with multiple global standards, including: ATEX, CSA, UR and CC

### Engineered polymer impeller extends life

Corrosion- and cavitation-resistant impeller made from non-reinforced plastic ensures high reliability and long service life under the toughest working conditions.

- Cavitation damage is minimized
- Prevents corrosion
- 316 stainless steel impeller available



### Compact and configurable

The small footprint of the SIHI LEMD pump is ideal for installations where space is limited. Configurable inlet and outlet connections simplify installation.

- Threaded inlet and outlet connections at the vertical, 45°, 90° (with adapters) or horizontal position are available for all sizes up to 105 m³/h (62 cfm)
- Flanged inlet and outlet connections are available in sizes from 105 m³/h to 450 m³/h (62 to 265 cfm)

### Maintenance friendly

The LEMD has been engineered to reduce complexity. That improves reliability and simplifies maintenance.

- Motor bearings greased for lifetime
- Long-life mechanical seal
- O-ring sealing
- Corrosion-resistant impeller

### Near-isothermal compression increases safety

The LEMD vacuum pump safely handles thermally sensitive and explosive media because it is engineered for near-isothermal compression. That means process temperatures stay under control and risks are reduced.

### ATEX-ready design

ATEX-ready design requires no special piping, adaptors or fittings so installation is fast and easy. Monitoring devices are easily fitted. Enables simple and cost-effective monitoring for ATEX up to Zone 1.

- Built-in measurement connections
- Level monitoring for startup
- Temperature monitoring during operation



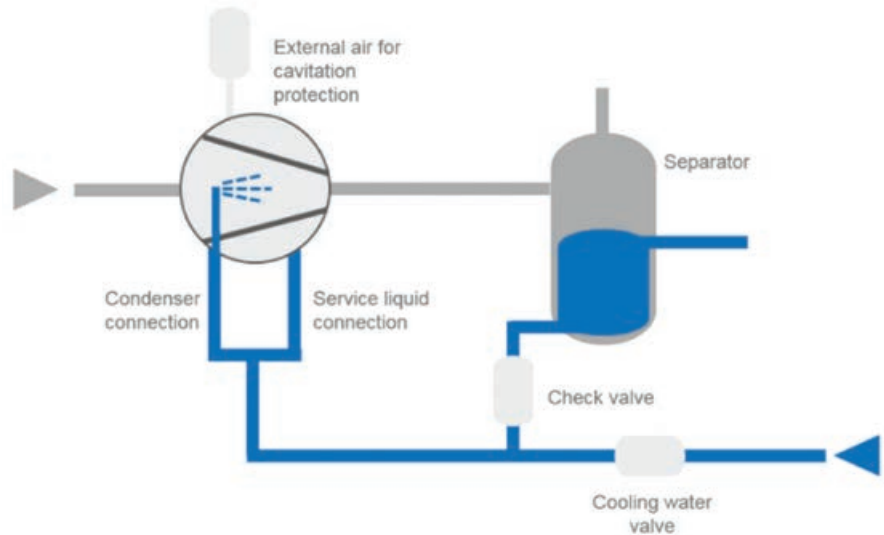
# Special configurations

## Steam condensation for sterilization

For the sterilization process in the health care industry, the SIHI LEMD Steam vacuum pump is available. This special configuration is able to condense steam internally, with peak condensing power to 100 kW. Installation of a plate-type condenser and piping is not required, resulting in lower installation costs and space savings.

### Features

- Integrated pre-condenser with high performance up to 100 kW
- External condenser can be omitted
- Up to 40% less water consumption than systems with external condenser
- Installation ease with fewer sensors and valves plus simplified controls

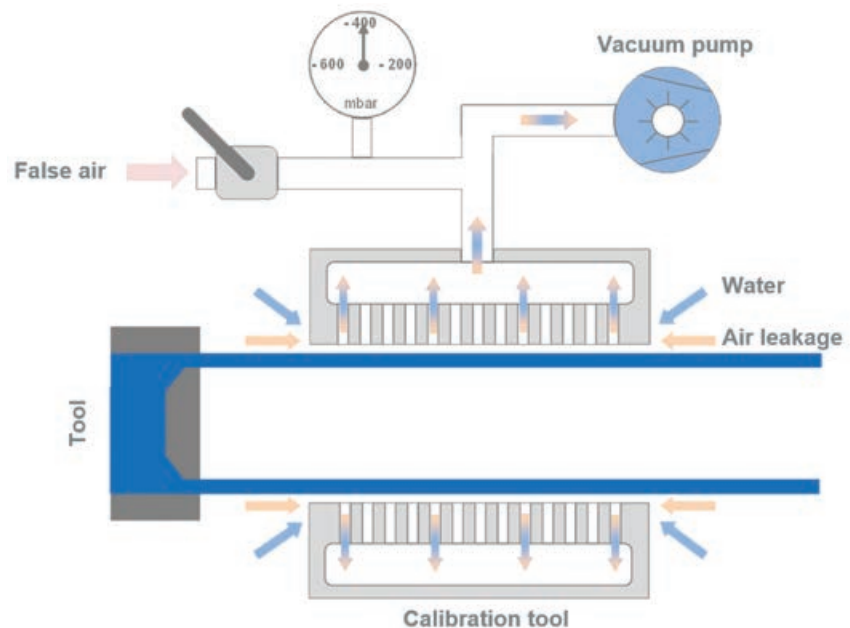


## Additional liquid carryover for calibration

For profile calibration in rubber and plastics manufacturing, Flowserve offers the SIHI LEMD Cavac. This special configuration is able to handle high quantities of additional liquid carryover without a liquid-gas separator. The SIHI LEMD Cavac can operate down to 20 Hz, reducing energy consumption significantly.

### Features

- Liquid carryover up to 4 m<sup>3</sup>/h (2.35 cfm)
- Up to 70% reduction in power consumption for improved production efficiency
- No additional liquid pump needed
- Reduced piping and labor requirements for installation



# Available IPS condition and performance monitoring

## Condition monitors

Economical, easy to install and maintain, with local data logging and short-range *Bluetooth*® wireless and local visual alert capabilities to optimize maintenance practices.



IPS Beacon™ 2



IPS Beacon Pulse™

## Wireless

Cost-effective, long-range wireless data acquisition and transmission, providing information for equipment maintenance optimization and condition monitoring.



IPS Node



IPS Multi-Port 103

## Predictive analysis

High-speed data acquisition and predictive analytic capabilities for flow control equipment.



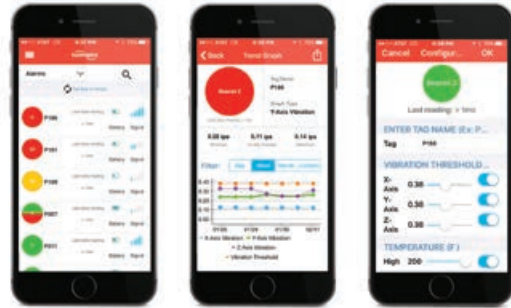
IPS APEX™



IPS Detect

## IPS Mobile Insight™

Access real-time equipment performance data on a handheld device, configure devices while in the field, and upload field data to the cloud with the touch of a button.



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## IPS Insight platform

Cloud-based or locally hosted platform leveraging deep predictive analytics based on both OEM engineering algorithms and machine learning to help optimize system performance, better understand potential failure modes, and help avoid unplanned downtime. Not only can you now know when an asset might fail, but also how it might fail.





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