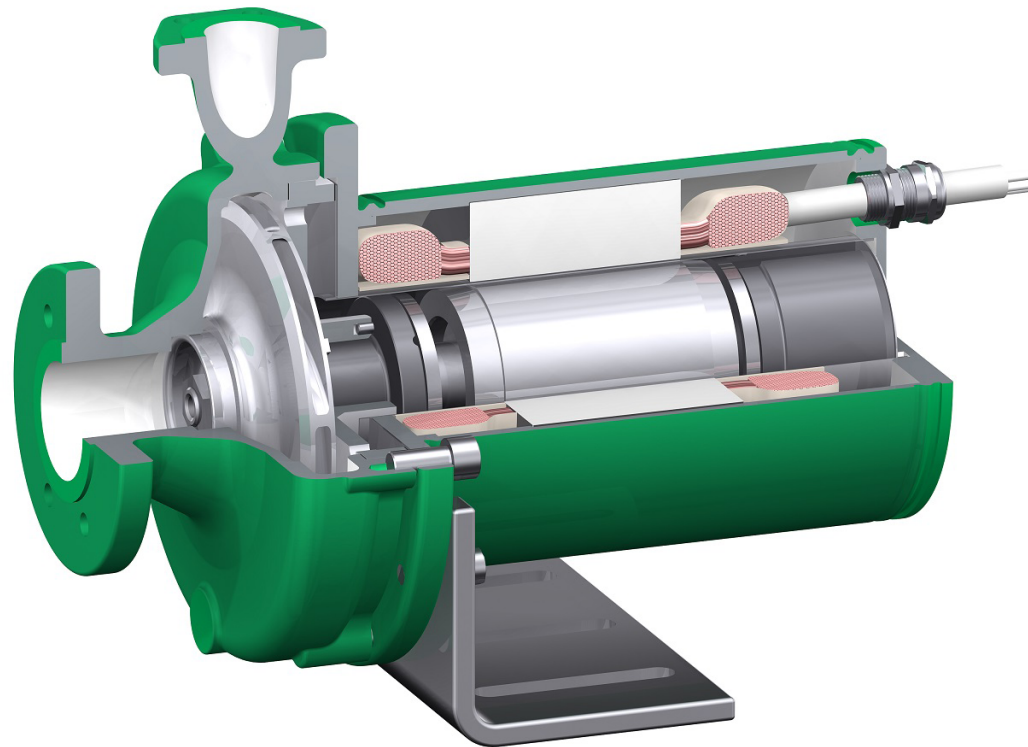


PRODUCT INFORMATION  
CANNED MOTOR PUMP TYPE LC

## RAILWAY / ENERGY

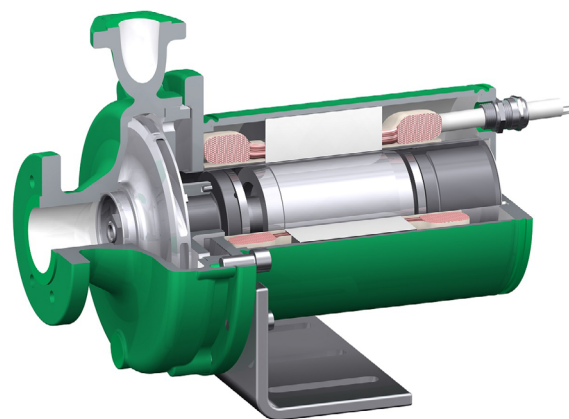


**ZART®**

*simply best balance*

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## Information

### Applications

To cool inverters in applications such as transport and wind turbines demanding long service life and weight benefits.

### Most frequently used pumped medium

A water-glycol mixture is used as the pumped medium in most cases. However, it is also possible to use alternative non-explosive media.

### Directives

The LC series has been designed according to Standard CLC/TS 50537-3 for railway applications. This is also reflected in optimum corrosion protection and highest fire protection according to EN 45545-2.

### Type / design

Horizontal, volute casing pumps without shaft seal in process design with fully enclosed, single-stage and single-flow canned motor. The connection dimensions of the housing correspond to SAE 2" according to ISO 6162-1.

### Drive

The rotor lining – one of our core competencies – is manufactured by impact extrusion and, as a stainless steel alloy, is an essential component of the highly efficient canned motor. The liquid-filled canned motor accelerates to operating speed within seconds and operates wear-free and maintenance-free in continuous operation due to the hydrodynamic plain bearings. The canned motor is low-noise and low-vibration and offers double security against leakage.

|                |                                                           |
|----------------|-----------------------------------------------------------|
| Standard:      | proven standard products available at short notice        |
| Modular:       | flexible modular system with limited choice               |
| Customisation: | individual adaptations according to customer requirements |

### Operating data

|                            | LC32-125                                        | LC32-160                                        |
|----------------------------|-------------------------------------------------|-------------------------------------------------|
| Pump capacity [Q]:         | up to 15.9 m <sup>3</sup> /h<br>up to 266 l/min | up to 19.2 m <sup>3</sup> /h<br>up to 320 l/min |
| Pumping head [H]:          | up to 25 m                                      | up to 38 m                                      |
| Motor output:              | 1.8 kW (optional 1.0 kW)                        | 3.0 kW                                          |
| Nominal pressure:          | 10 bar                                          | 10 bar                                          |
| Operating temperature [t]: | −40 °C to +80 °C                                | −40 °C to +80 °C                                |

(extended performance range available on request)

### Pump and hydraulics designations

#### LC 32 – 160 AGX3.0 Harting plug

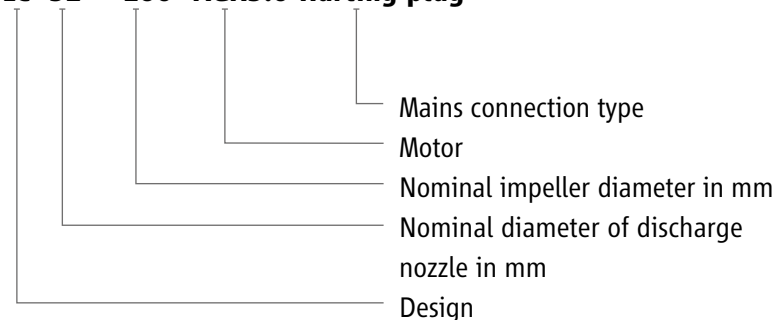


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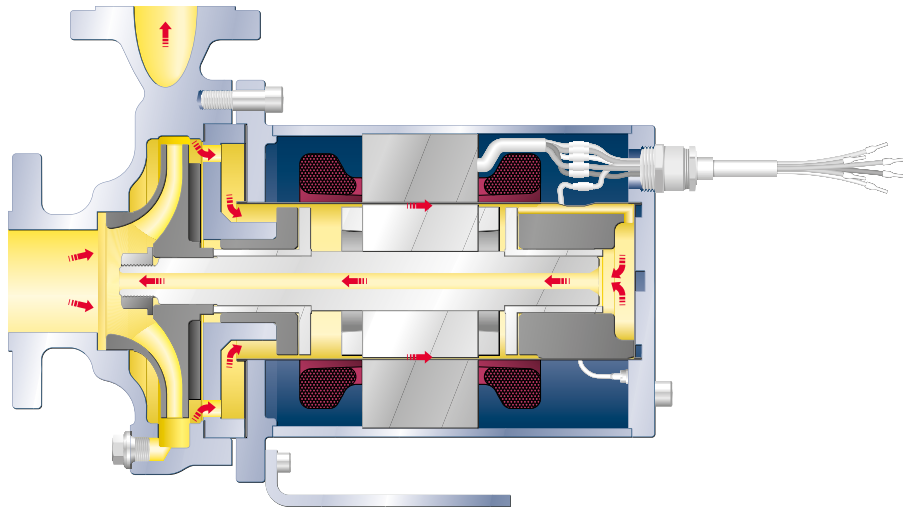
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## How the LC pump works

To cool the motor and lubricate the plain bearings, part of the flow is branched off at the periphery of the impeller and, after flowing through the motor, returned to the suction side of the impeller through the hollow shaft. This design is suitable for pumping non-critical liquids with low vapour pressure.



Partial flow return to the suction side

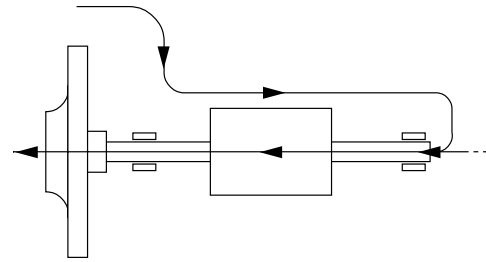


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## Bearings

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The hermetically sealed design requires the arrangement of bearings in the pumped liquid. Therefore, only hydrodynamic plain bearings are used in HERMETIC pumps. With correct operational mode, these bearings have the advantage that there is no contact between the bearing sliding surfaces. As a result, they are wear-free and maintenance-free in continuous operation. A service life of 20 years is common for hermetically sealed pumps.

In refrigeration engineering, carbon graphite is used as the bearing bush material that can withstand particularly high radial and axial loads. In addition, the material has a high resistance to elevated and low temperatures and high fatigue strength.

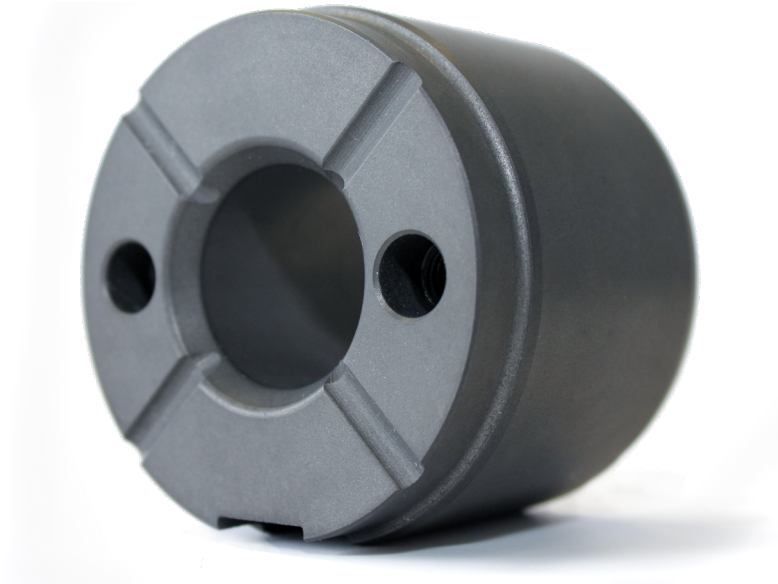


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2950 rpm 50 Hz

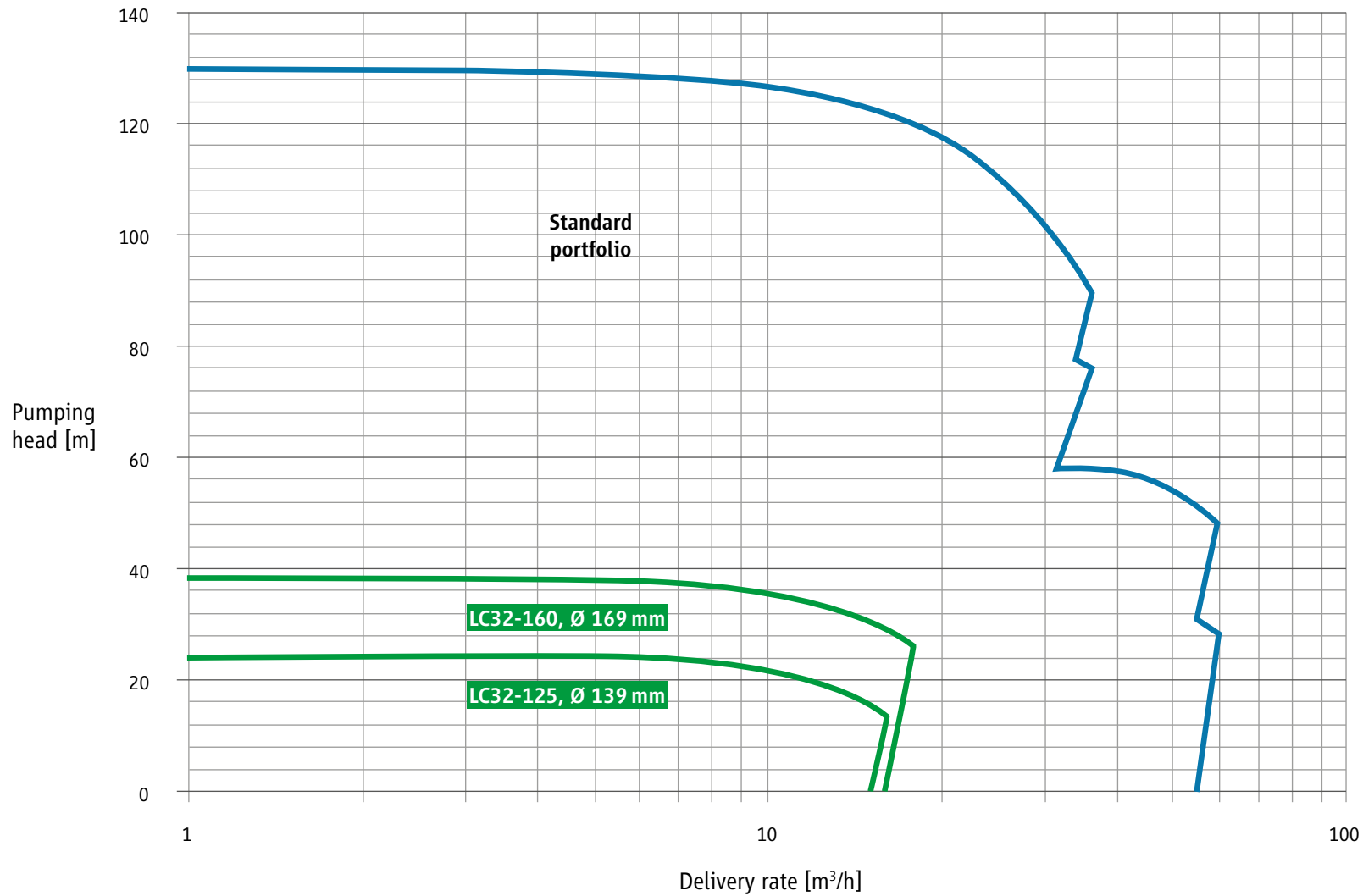


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3500 rpm 60 Hz

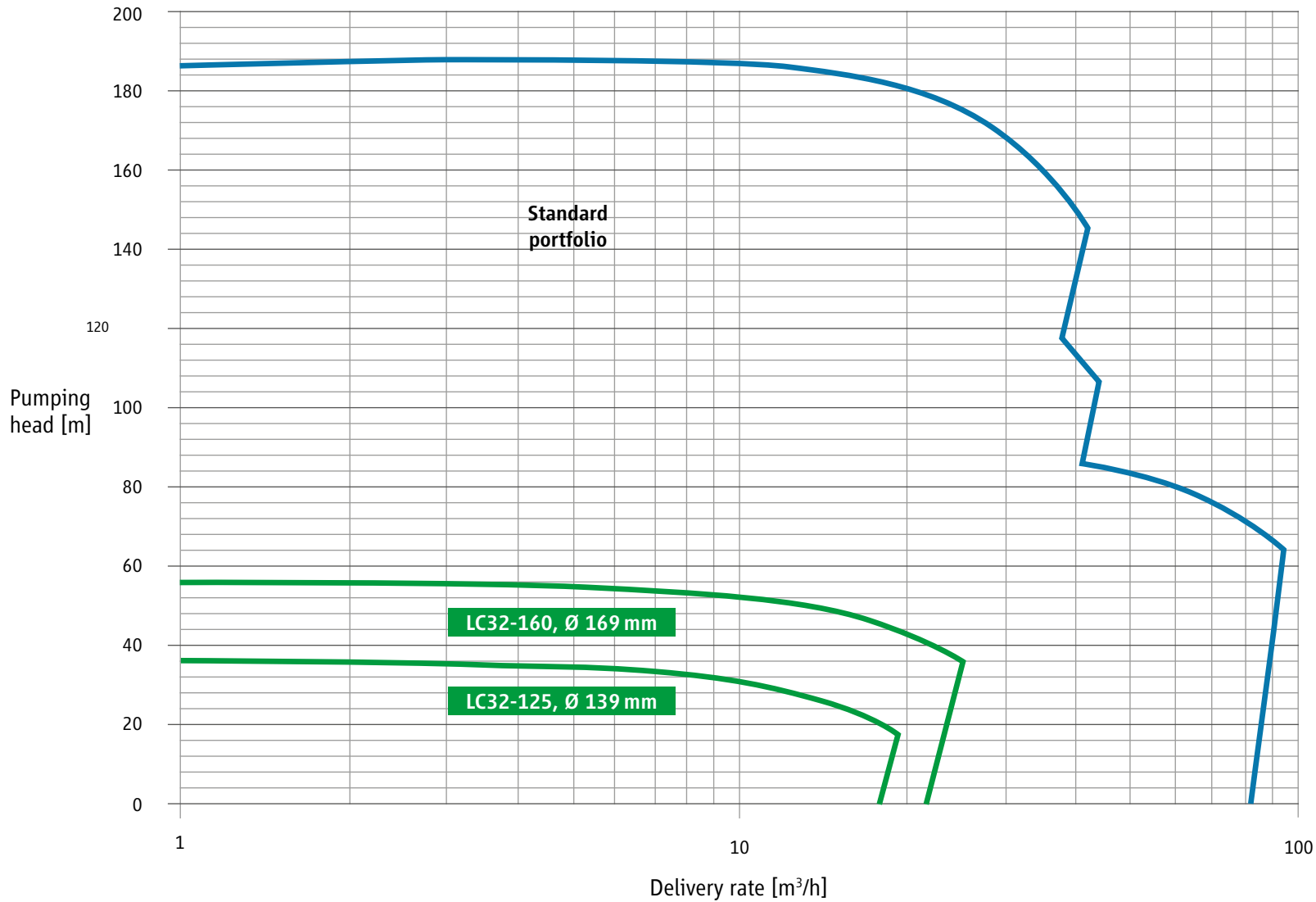


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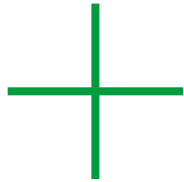
Individual adaptations

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## Benefits of the canned motor type LC

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Approximately 20 % weight saving compared to conventional construction

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Attractive prices and low life-cycle costs due to long service life

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Mean Time Between Failures (MTBF) is more than 130,000 hours

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Fast development to meet individual customer requirements

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Hermetically sealed system without media loss

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ZART® system for longevity of hydrodynamic bearings

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Extremely compact

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Horizontal and vertical mounting as well as 90° versions

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Among other things vibration tests according to EN 61373

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Highest corrosion and fire protection

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**Benefits of the canned motor type LC**

Flanges

- SAE 2"
- According to customer request

30 Hz – 70 Hz

Standards:

- CLC TS 50537-3
- EN 45545-2

HERMETIC ZART®

Hydrodynamic bearings FH82A

Base optionally in stainless steel

Connection:

- Cable (RADOX)
- Harting
- Weidmueller

Paintwork:

- Standard 40 µm (inside)
- Paintwork type "A" 120 µm (outside)
- Paintwork type C5 200 µm (extreme conditions)

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**Technical data**

**Canned motor data**

|                           | <b>LC32-125</b>   | <b>LC32-160</b>   |
|---------------------------|-------------------|-------------------|
| Nominal pressure          | 10 bar            | 10 bar            |
| Operating temperature     | -40 °C to +80 °C  | -40 °C to +80 °C  |
| Weight                    | 37 kg             | 42 kg             |
| Impeller diameter         | 100 mm to 139 mm  | 100 mm to 169 mm  |
| Noise level (50Hz / 60Hz) | < 61 dB / < 64 dB | < 65 dB / < 68 dB |

**General characteristics**

|                             | <b>LC32-125</b>               | <b>LC32-160</b>            |
|-----------------------------|-------------------------------|----------------------------|
| Output power P2             | max. 1.8 kW (optional 1.0 kW) | max. 3.0 kW                |
| Speed                       | 1,450 rpm to 3,500 rpm        | 1,450 rpm to 3,500 rpm     |
| Operating mode              | S1 according to EN 60034-1    | S1 according to EN 60034-1 |
| Type of protection (motor)  | IP 66                         | IP 66                      |
| Motor protection in winding | PTC thermistor KL180          | PTC thermistor KL180       |

**Paintwork**

|                                  | <b>LC32-125</b>                   | <b>LC32-160</b>                   |
|----------------------------------|-----------------------------------|-----------------------------------|
| Corrosion protection (paintwork) | up to C5                          | up to C5                          |
| Fire protection (paintwork)      | R1 and R7 for HL1, HL2 and HL3    | R1 and R7 for HL1, HL2 and HL3    |
| Colour                           | RAL 7021 (black grey)             | RAL 7021 (black grey)             |
| Paint thickness                  | 40 µm to 200 µm (various options) | 40 µm to 200 µm (various options) |

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## Documentation and tests

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### Documentation according to HERMETIC Standard, consisting of:

Operating manual for the HERMETIC pump

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Technical specifications

---

Characteristic curve of the pump

---

Sectional drawing

---

Parts list

---

Dimensional drawing

---

Cable connection diagram

---

Plain bearing play

---

EU Declaration of Conformity

### Warranty

---

30 months from delivery

### Standard tests

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Hydrostatic pressure test with 1.5x nominal pressure

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Balancing of shaft and impeller according to DIN ISO 1940, 6.3

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Leak test of the complete pump

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Functional test

### Additional test

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Shock and vibration tests according to EN 61373

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Fire protection test according to EN 45545-2

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LC32-125 cable

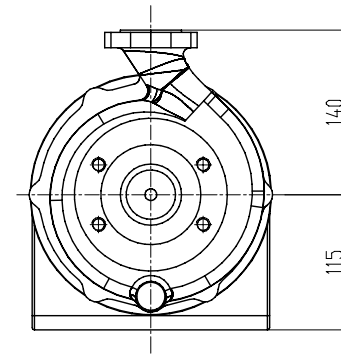
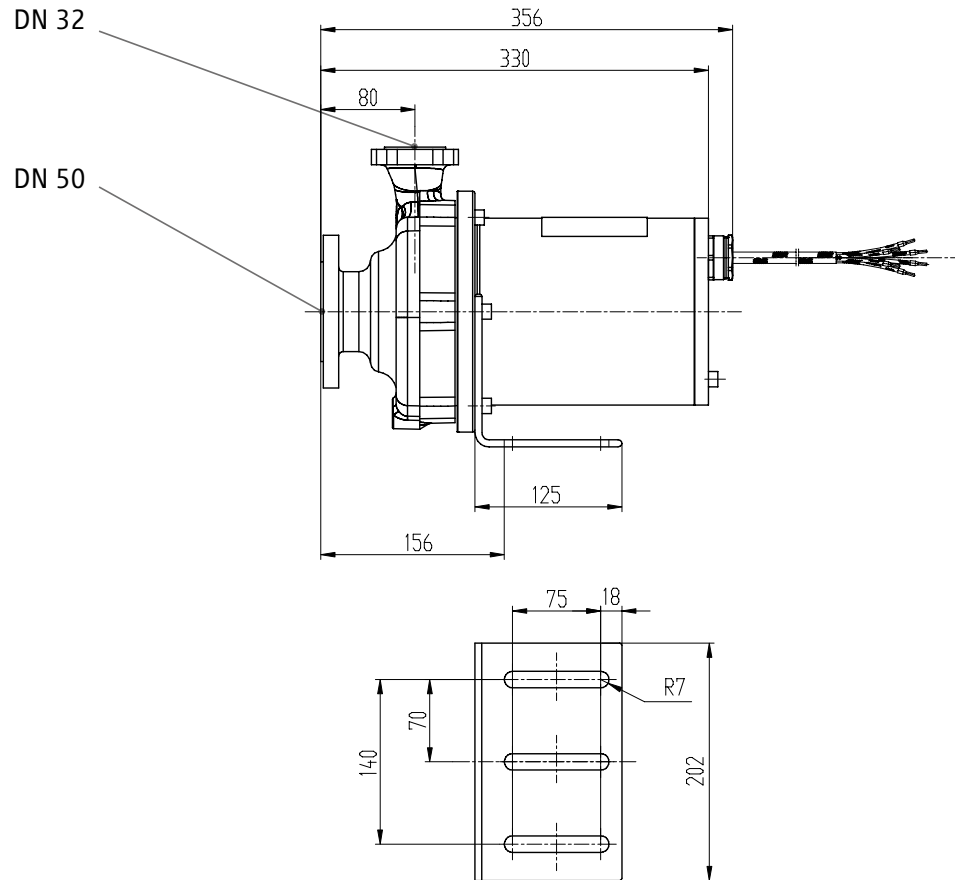


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LC32-160 cable

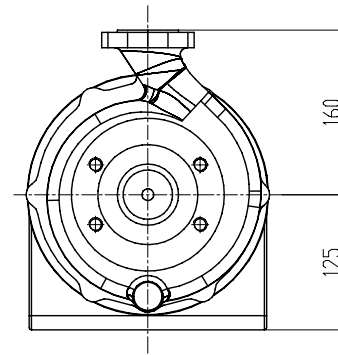
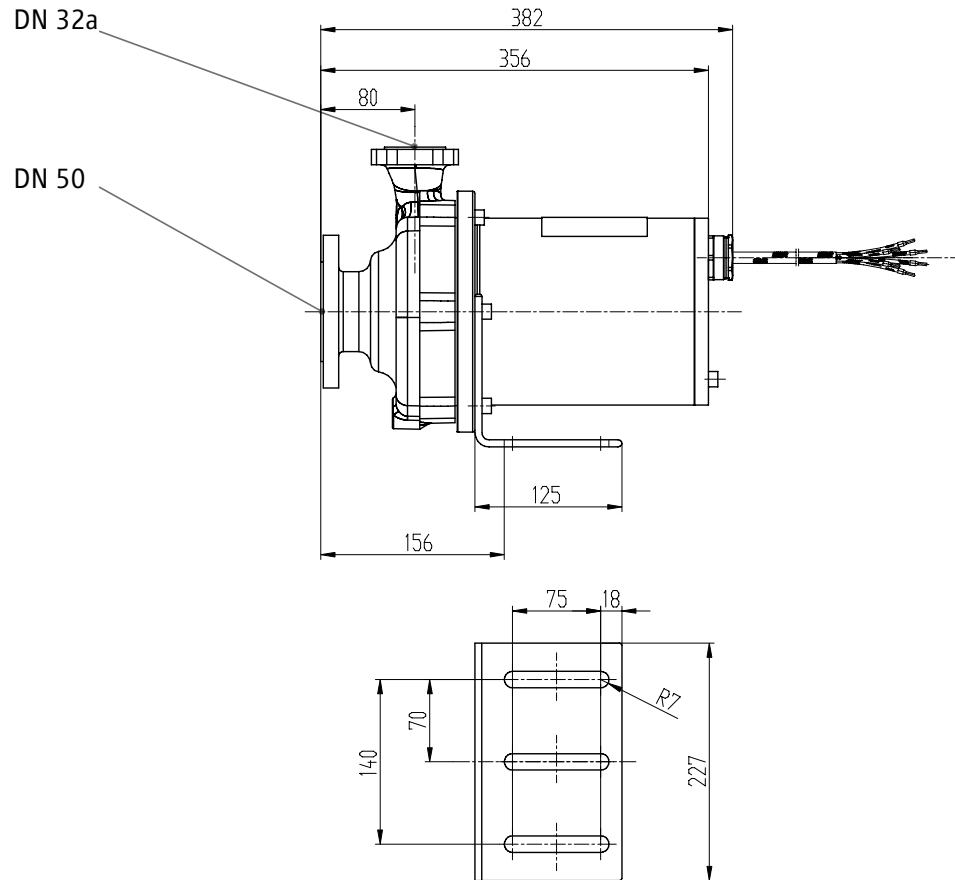


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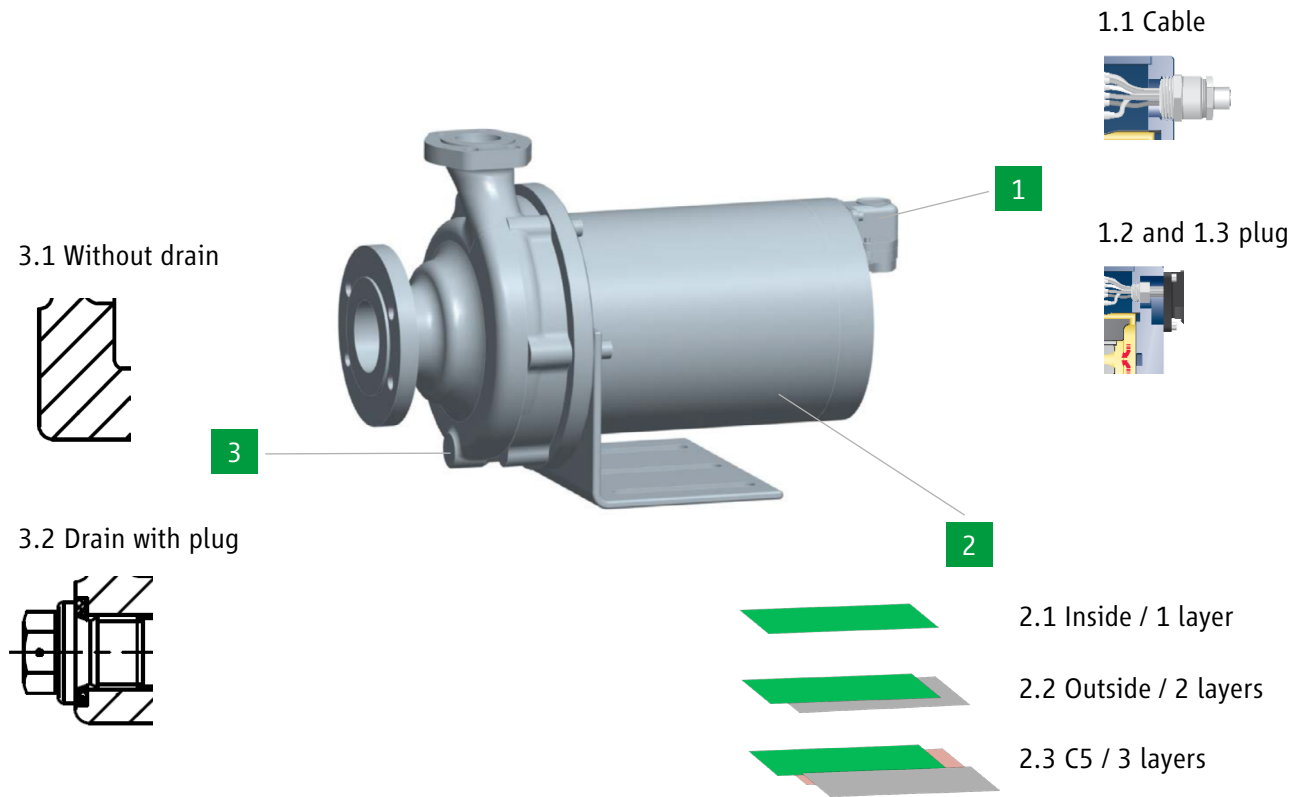
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Options



**1 Mains connection**

- 1.1 Redox cable (standard)
- 1.2 HARTING plug / 4-pole (option)
- 1.3 Weidmüller plug / 6-pole (option)

**2 Paintwork**

- 2.1 Inside (~40 µm) (standard)
- 2.2 Outside (~120 µm) (option)
- 2.3 C5 (~200 µm) (option)

**3 Drain**

- 3.1 Without drain (standard)
- 3.2 Drain with plug (option)

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Individual adaptations according to customer requirements

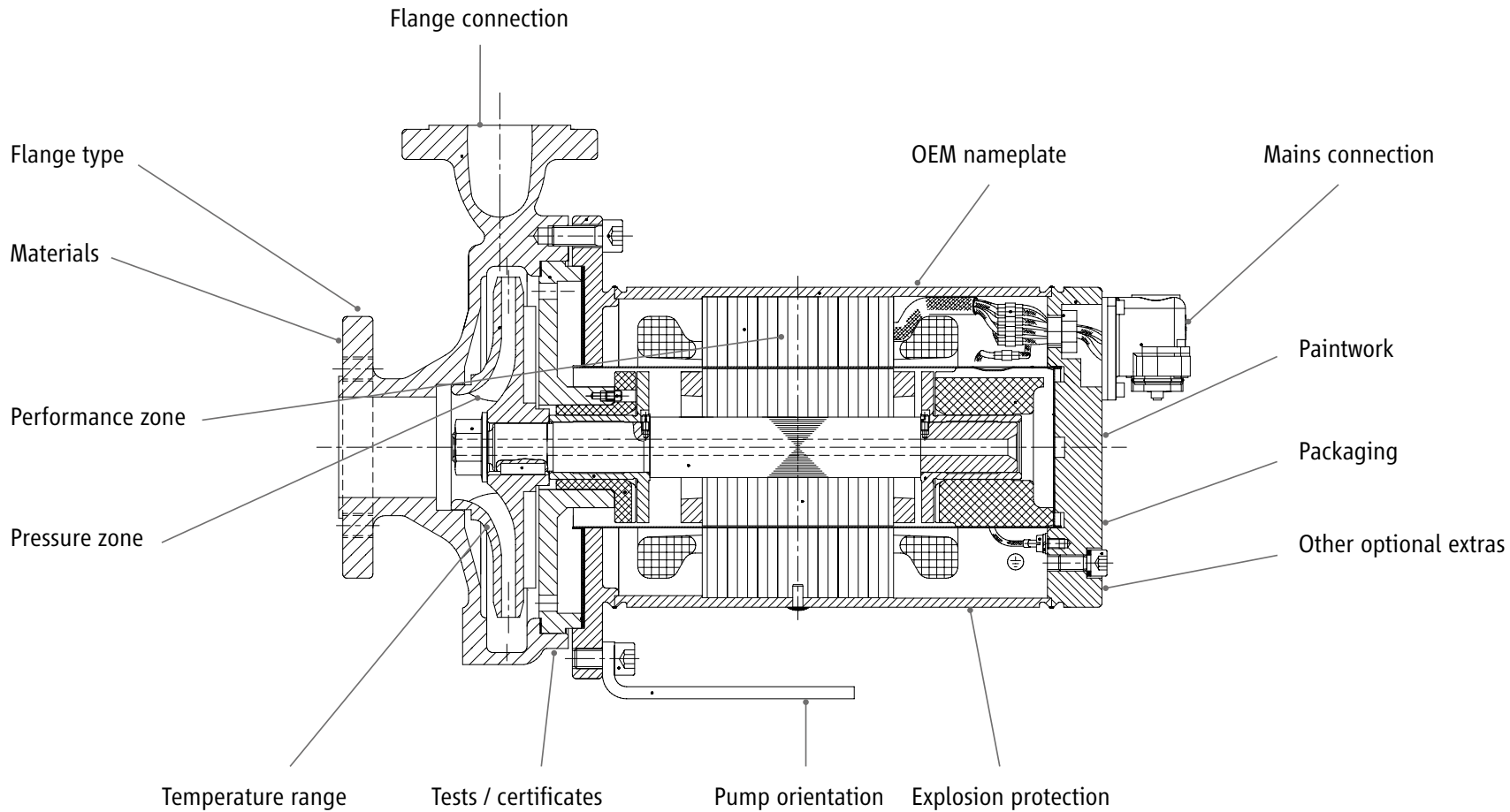


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Do you need a modified LC pump? We can adapt our pumps for you quickly and cost-effectively.

In this case, please contact our technical support:  
[lc-support@hermetic-pumpen.com](mailto:lc-support@hermetic-pumpen.com)



PRODUCT INFORMATION

# Contact

[lc-support@hermetic-pumpen.com](mailto:lc-support@hermetic-pumpen.com)

[www.hermetic-pumpen.com](http://www.hermetic-pumpen.com)

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