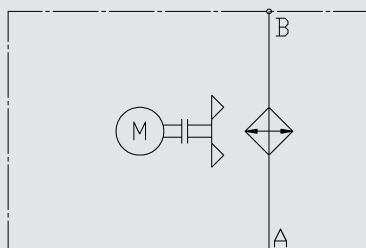




## Symbol



## General

The AC-LN 1-7 air cooler series can be used in all areas where either oil or water-glycol is to be cooled with air. The coolers with an axial fan can be used in the return line as well as in the bypass flow.

The wide range of accessories and optional versions mean that the coolers can be adapted flexibly to various applications.

## Product Features

The cooler can also be used in the bypass flow by attaching a pump. An additional filter enables continuous filtration of the medium.

- Large product range
- Large cooling performance range
- Modular design

## Air Cooler Industry

### AC-LN 1-7 / ACA-LN 2-7 / ACAF-LN 2-7

## Operation Data

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fluids                                     | Oils (mineral oils, synthetic oils, high viscosity oils, biological oils, phosphate ester)<br>Water-glycol (cooling fluid)<br>HFC pressure fluids                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Viscosity                                  | AC-LN: 2,000 mm <sup>2</sup> /s (standard)<br>ACA-LN / ACAF-LN: see technical data                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Temperature range                          | Minimum / maximum ambient temperature:<br>-20 °C to +40 °C (standard)<br>Minimum / maximum temperature of the medium: +130 °C<br>Please contact the technical sales department in the event of deviating temperatures for applications with water-glycol.<br><b>Notice!</b><br>Fan switching frequency at max. fan speed (max. volume of air) must be avoided when operating a cooler at which the temperature difference between the medium inlet at the cooler and the ambient temperature can be greater than +50 °C. Quick changes in the temperature of the cooling element material can lead to a significant reduction in service life or to direct damage of the cooling element due to thermal shock.<br>Please contact the technical sales department to receive information about controlled fan drives. |
| Pressure resistance of the cooling element | Dynamic operating pressure: 16 bar<br>Static operating pressure: 21 bar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Fan                                        | Axial fan in suction version (standard)<br>Axial fan in pushing version on request<br>(note: approx. 10 % less cooling capacity)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Motor                                      | Three-phase motor<br>Efficiency class IE2 (only ≥0.75 kW)<br>Protection class IP55<br>Insulation class F<br>Other versions on request.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| ErP                                        | The fan unit of the AC-LN corresponds to the minimum efficiency levels specified in the Ecodesign directive or ErP directive (Energy-related Products) 2009/125/EC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Pump<br>(only ACA-LN/ACAF-LN)              | ACA-LN / ACAF-LN 2-3: screw pump<br>ACA-LN / ACAF-LN 4-5-6: vane pump<br>ACA-LN / ACAF-LN 7: screw pump with separate motor<br>Operating pressure: max. 10 bar (screw pump) max. 6 bar (vane pump)<br><br>Negative suction pressure of the pump: max. -0.4 bar<br>Pump motor speed: 3,000 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Noise levels                               | See technical data AC-LN and ACA-LN / ACAF-LN<br>The noise levels are only reference values as the acoustic properties of a room, connections and reflection have an effect on the noise level.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Accessories                                | Integrated pressure bypass valve (IBP) or integrated thermal pressure bypass valve (IBT) (cannot be retrofitted, also see options)<br>Thermostats<br>Air filter grid or air filter mat<br>Vibration damper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## Application Field

Systems with small and medium cooling requirements, such as:

- Hydraulic systems
- Lubrication systems
- Gears
- Motors
- Generators
- Converters
- Machine tools

## Options

### Integrated pressure bypass valve (IBP) / Integrated thermal pressure bypass valve (IBT)

The bypass channel is integrated in the cooling element. If a particular pressure is exceeded, the IBP opens the bypass channel, thereby protecting the cooling element from too high a pressure. Furthermore, the IBT only opens the cooling element path once a particular temperature has been reached.

### ATEX

The AC-LN (without pump and filter) is also available for operation in gas and dust explosive areas. The ATEX certification applies for a frequency of 50 Hz and 60 Hz.

### Marine

The MAR version is for aggressive ambient conditions, such as industrial atmospheres, high humidity or high salt content, which place great demands on the corrosion resistance and robustness of the materials used.

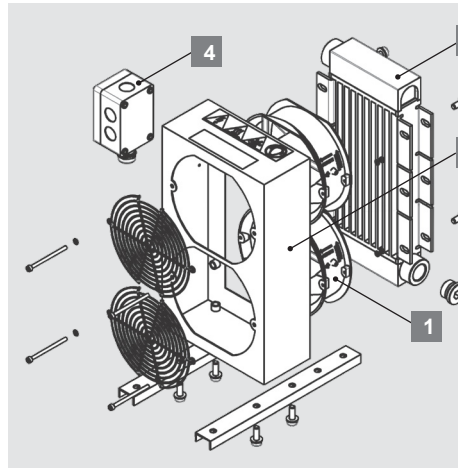
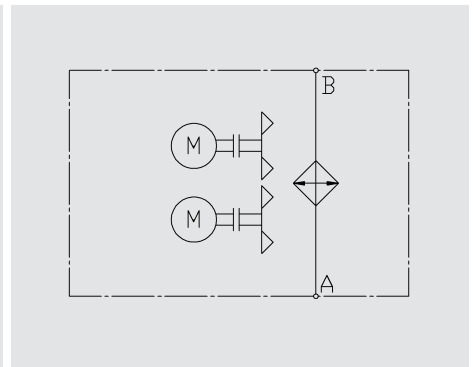
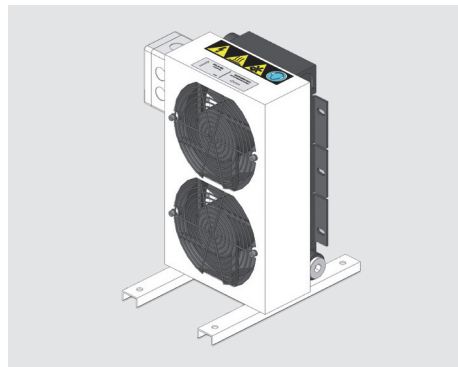
### Cold Climate/Hot Climate

Use in extreme ambient conditions:  
Cold Climate to  $-40\text{ }^{\circ}\text{C}$ ,  
Hot Climate to  $+60\text{ }^{\circ}\text{C}$

The various versions can also be combined. Our technical sales department will be happy to assist you further.

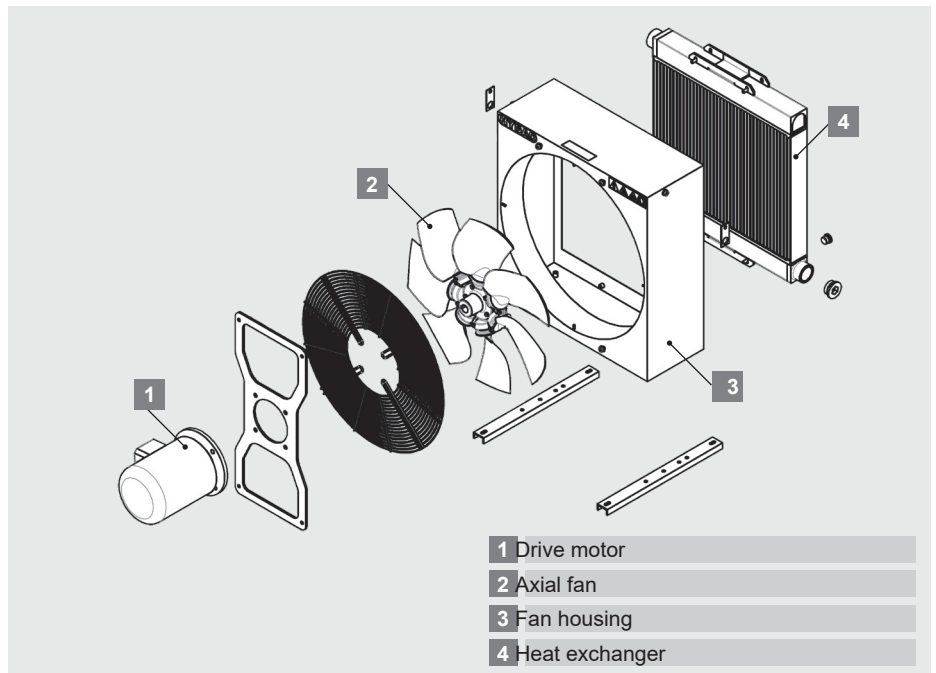
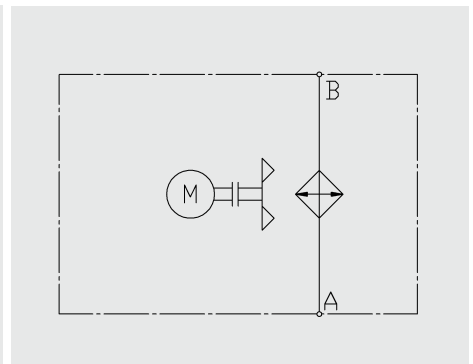
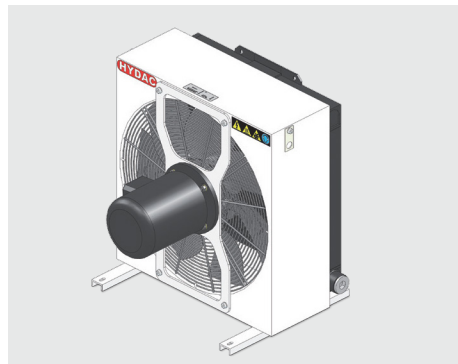
## Design

### AC-LN 1



- 1 Axial fan with integrated motor
- 2 Fan housing
- 3 Heat exchanger
- 4 Electrical box

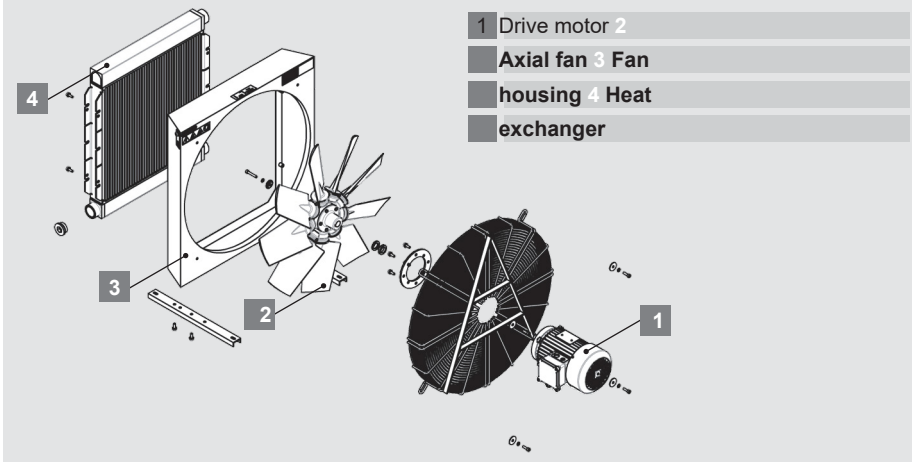
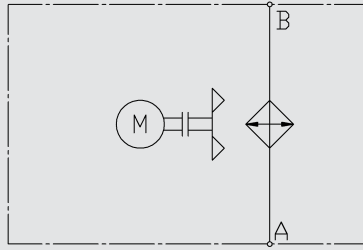
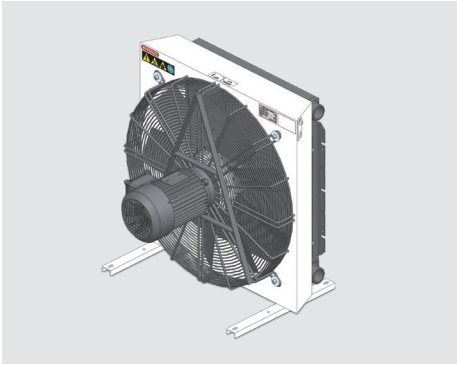
### AC-LN 2-3-4-5-6



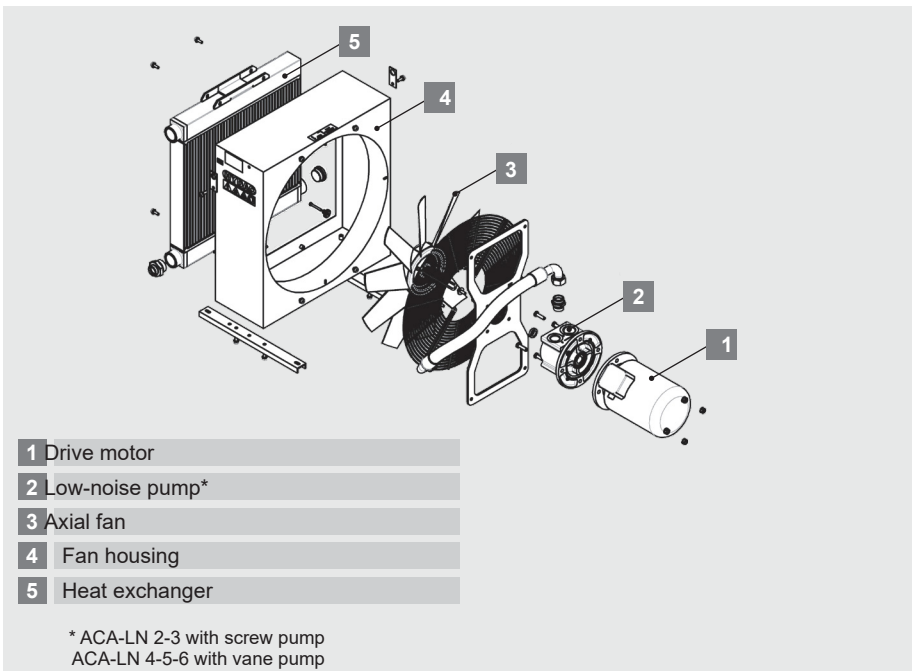
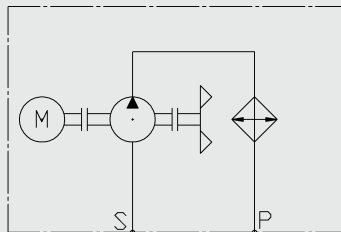
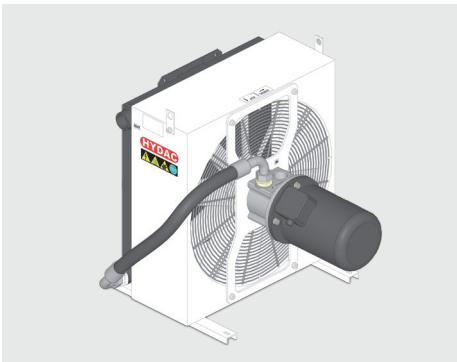
- 1 Drive motor
- 2 Axial fan
- 3 Fan housing
- 4 Heat exchanger

## Design

### AC-LN 7

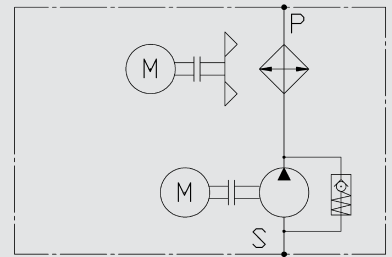
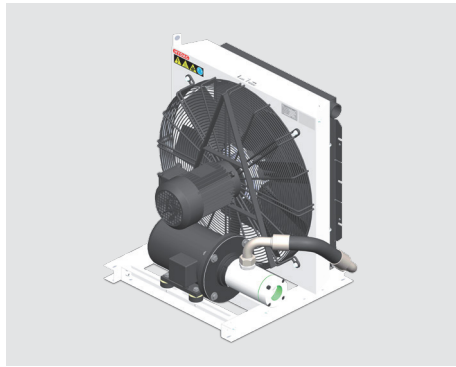


### ACA-LN 2-6



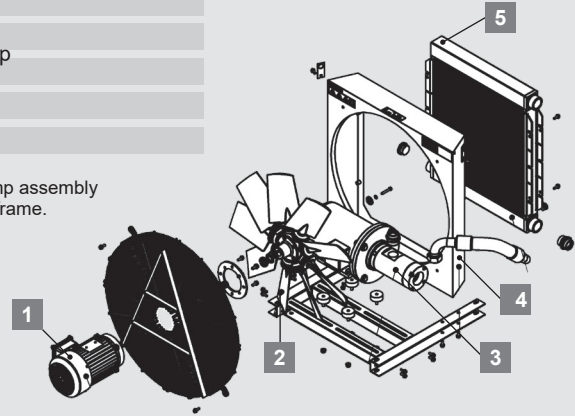
## Design

### ACA-LN 7

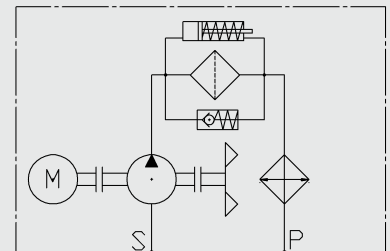
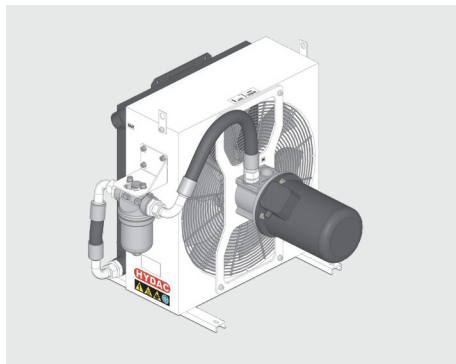


- 1 Drive motor
- 2 Axial fan
- 3 Low-noise screw pump
- 4 Fan housing
- 5 Heat exchanger

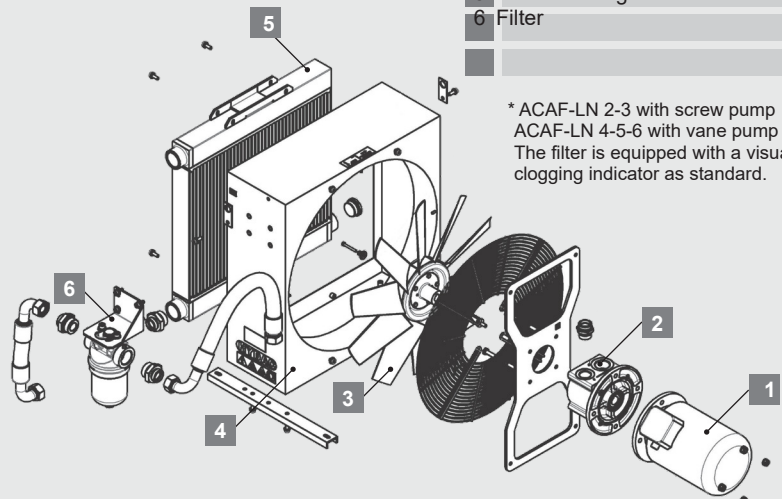
With external motor-pump assembly attached onto the base frame.



### ACAF-LN 2-6



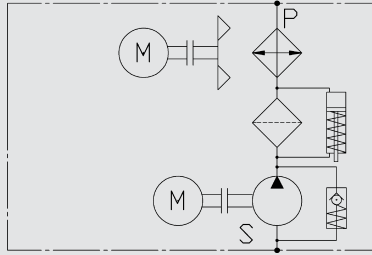
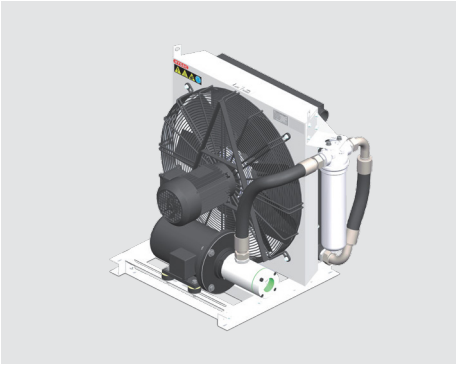
- 1 Drive motor
- 2 Low-noise pump\*
- 3 Axial fan
- 4 Fan housing
- 5 Heat exchanger
- 6 Filter



\* ACAF-LN 2-3 with screw pump  
ACAF-LN 4-5-6 with vane pump  
The filter is equipped with a visual clogging indicator as standard.

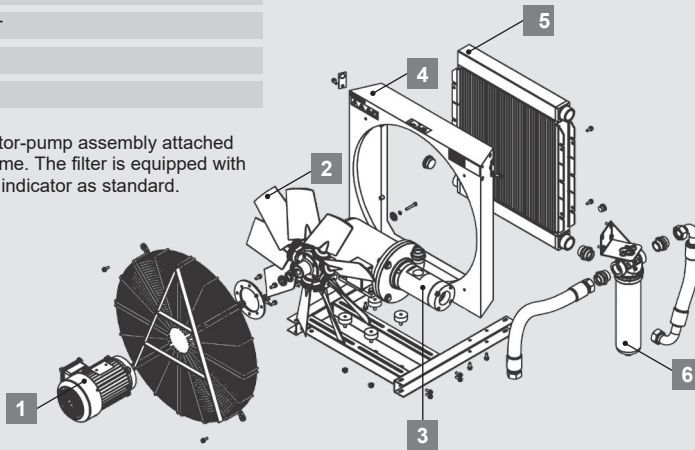
## Design

### ACAF-LN 7



- 1 Drive motor
- 2 Axial fan
- 3 Low-noise screw pump
- 4 Fan housing
- 5 Heat exchanger
- 6 Filter

With external motor-pump assembly attached onto the base frame. The filter is equipped with a visual clogging indicator as standard.



Technical Data

AC-LN

| Type of cooler | P/N     | Fluid [-] <sup>1)</sup> | Fluid flow [l/min] <sup>2)</sup> | Air flow [m³/h] <sup>3)</sup> | Port size / flange | Fan motor 50 Hz:[kW<br>Power / current absorption<br>/ A] <sup>4)</sup> |      | Fan motor 60 Hz:[kW<br>Power / current<br>absorption/ A] <sup>4)</sup> |      | Noise level (at 1m distance, 50<br>Hz) [dB(A)] | Volume [l] <sup>5)</sup> | Weight [kg] <sup>6)</sup> |
|----------------|---------|-------------------------|----------------------------------|-------------------------------|--------------------|-------------------------------------------------------------------------|------|------------------------------------------------------------------------|------|------------------------------------------------|--------------------------|---------------------------|
| AC-LN1H        | 3849085 | F 120                   | 650                              |                               | -                  | 0.03                                                                    | 0.23 | 0.03                                                                   | 0.21 | 60                                             | 0.3                      | 7                         |
| AC-LN2S        | 3860765 | F                       | 180                              | 900                           | 4/63/B5            | 0.18                                                                    | 0.66 | 0.20                                                                   | 0.75 | 64                                             | 0.7                      | 14                        |
| AC-LN2H        | 3860702 | F                       | 180                              | 1,850                         | 2/63/B5            | 0.25                                                                    | 0.76 | 0.30                                                                   | 0.76 | 80                                             | 0.7                      | 14                        |
| AC-LN3S        | 3860382 | F                       | 180                              | 1,400                         | 4/63/B5            | 0.18                                                                    | 0.66 | 0.20                                                                   | 0.66 | 1.0                                            | 1.0                      | 20                        |
| AC-LN3H        | 3860308 | F                       |                                  |                               |                    |                                                                         |      |                                                                        |      | 85                                             |                          |                           |
| AC-LN4L        | 3859982 | F                       | 200                              | 1,600                         | 6/71/B5            | 0.25                                                                    | 0.90 | 0.28                                                                   | 0.80 | 63                                             | 2.3                      | 32                        |
| AC-LN4S        | 3860090 | F                       | 200                              | 2,250                         | 4/71/B5            | 0.37                                                                    | 1.20 | 0.40                                                                   | 1.10 | 72                                             | 1.15                     | 32                        |
| AC-LN5L        | 3860913 | F                       | 250                              | 2,050                         | 6/80/B5            | 0.37                                                                    | 1.25 | 0.41                                                                   | 65   |                                                | 2.8                      | 42                        |
| AC-LN5S        | 3860907 | F                       | 250                              | 3,200                         | 4/90/B5            | 1.10                                                                    | 2.60 | 1.30                                                                   | 2.20 | 75                                             | 2.8                      | 45                        |
| AC-LN6L        | 3856579 | F                       | 250                              | 2,800                         | 6/80/B5            | 0.37                                                                    | 1.25 | 0.41                                                                   | 1.15 | 67                                             | 4.6                      | 52                        |
| AC-LN6S        | 3859080 | F                       | 250                              | 4,250                         | 4/90/B5            | 1.10                                                                    | 2.60 | 1.30                                                                   | 2.20 | 77                                             | 4.6                      | 52                        |
| AC-LN7L        | 3909026 | F                       | 300                              | 4,800                         | 6/90/B14           | 1.10                                                                    | 2.70 | 1.30                                                                   | 2.70 | 76                                             |                          | 58                        |
| AC-LN7S        | 3909027 | F                       | 300                              | 8,200                         | 4/100/B14          | 3.00                                                                    | 6.00 | 3.60                                                                   | 7.20 | 84                                             | 5.2                      | 63                        |

1) Medium: F = mineral oil or water-glycol, M = mineral oil  
2) Max. flow rate  
3) Air flow data at 50 Hz  
4) AC-LN1: each motor  
5) Fluid in cooling element  
6) Unfilled

## Technical Data

### ACA-LN / ACAF-LN

| Type of cooler | Fluid [-] <sup>1)</sup> | Fluid flow [l/min] <sup>2)</sup> | Air flow [m³/h] <sup>2)</sup> | Pump displacement [cm³/U] | Max. Viscosity [mm²/s]<br>continuous working <sup>3)</sup> | Fan motor:<br>Poles / size / flange | Fan motor 50 Hz:<br>power / current<br>absorption [kW / A] <sup>4)</sup> |      | Fan motor 60 Hz:<br>power / current<br>absorption [kW / A] <sup>4)</sup> |      | Filter size [-] | Noise level (at 1m distance,<br>50 Hz) [dB(A)] | Volume [l] <sup>5)</sup> | Weight [kg] <sup>6)</sup> |
|----------------|-------------------------|----------------------------------|-------------------------------|---------------------------|------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------|------|--------------------------------------------------------------------------|------|-----------------|------------------------------------------------|--------------------------|---------------------------|
| ACA-LN2S       | M                       | 13                               | 900                           | 10                        | 500                                                        | 4/71/B5                             | 0.37                                                                     | 1.20 | 0.40                                                                     | 1.10 | -               | 64                                             | 0.7                      | 21                        |
| ACA-LN2H       | M                       | 27                               | 1,850                         | 10                        | 500                                                        | 2/80/B5                             | 1.50                                                                     | 3.10 | 1.80                                                                     | 3.10 | -               | 80                                             | 0.7                      | 21                        |
| ACAF-LN2S      | M                       | 13                               | 900                           | 10                        | 500                                                        | 4/71/B5                             | 0.37                                                                     | 1.20 | 0.40                                                                     | 1.10 | LPF160          | 64                                             | 0.7                      | 22                        |
| ACAF-LN2H      | M                       | 27                               | 1,850                         | 10                        | 500                                                        | 2/80/B5                             | 1.50                                                                     | 3.10 | 1.80                                                                     | 3.10 | LPF160          | 80                                             | 0.7                      | 22                        |
| ACA-LN3S       | M                       | 36                               | 1,400                         | 28                        | 500                                                        | 4/90/B5                             | 1.10                                                                     | 2.60 | 1.30                                                                     | 2.60 | -               | 66                                             | 1.0                      | 35                        |
| ACA-LN3H       | M                       | 72                               | 2,700                         | 28                        | 500                                                        | 2/90/B5                             | 2.20                                                                     | 4.50 | 2.6                                                                      | 4.5  | -               | 85                                             | 1.0                      | 35                        |
| ACAF-LN3S      | M                       | 36                               | 1,400                         | 28                        | 500                                                        | 4/90/B5                             | 1.10                                                                     | 2.60 | 1.30                                                                     | 2.60 | LPF160          | 66                                             | 1.0                      | 36                        |
| ACAF-LN3H      | M                       | 72                               | 2,700                         | 28                        | 500                                                        | 2/90/B5                             | 2.20                                                                     | 4.50 | 2.6                                                                      | 4.5  | LPF160          | 85                                             | 1.0                      | 36                        |
| ACA-LN4L       | M                       | 24/34                            | 1,600                         | 28/40                     | 350                                                        | 6/90/B5                             | 1.10                                                                     | 2.65 | 1.30                                                                     | 2.25 | -               | 63                                             | 2.3                      | 35                        |
| ACA-LN4S       | M                       | 36/52                            | 2,250                         | 28/40                     | 350                                                        | 4/90/B5                             | 1.80                                                                     | 3.70 | 2.10                                                                     | 3.60 | -               | 72                                             | 2.3                      | 35                        |
| ACAF-LN4L      | M                       | 24/34                            | 1,600                         | 28/40                     | 350                                                        | 6/90/B5                             | 1.10                                                                     | 2.65 | 1.30                                                                     | 2.25 | LPF160          | 67                                             | 2.3                      | 41                        |
| ACAF-LN4S      | M                       | 36/52                            | 2,250                         | 28/40                     | 350                                                        | 4/90/B5                             | 1.80                                                                     | 3.70 | 2.10                                                                     | 3.60 | LPF160          | 72                                             | 2.3                      | 41                        |
| ACA-LN5L       | M                       | 24/34                            | 2,050                         | 28/40                     | 350                                                        | 6/90/B5                             | 1.10                                                                     | 2.65 | 1.30                                                                     | 2.25 | -               | 65                                             | 2.8                      | 45                        |
| ACA-LN5S       | M                       | 36/52                            | 3,200                         | 28/40                     | 350                                                        | 4/90/B5                             | 1.80                                                                     | 3.70 | 2.10                                                                     | 3.60 | -               | 75                                             | 2.8                      | 45                        |
| ACAF-LN5L      | M                       | 24/34                            | 2,050                         | 28/40                     | 350                                                        | 6/90/B5                             | 1.10                                                                     | 2.65 | 1.30                                                                     | 2.25 | LPF160          | 65                                             | 2.8                      | 52                        |
| ACAF-LN5S      | M                       | 36/52                            | 3,200                         | 28/40                     | 350                                                        | 4/90/B5                             | 1.80                                                                     | 3.70 | 2.10                                                                     | 3.60 | LPF160          | 77                                             | 2.8                      | 52                        |
| ACA-LN6L       | M                       | 24/34                            | 2,800                         | 28/40                     | 350                                                        | 6/90/B5                             | 1.10                                                                     | 2.65 | 1.30                                                                     | 2.25 | -               | 67                                             | 4.6                      | 55                        |
| ACA-LN6S       | M                       | 36/52                            | 4,250                         | 28/40                     | 350                                                        | 4/90/B5                             | 1.80                                                                     | 3.70 | 2.10                                                                     | 3.60 | -               | 77                                             | 4.6                      | 55                        |
| ACAF-LN6L      | M                       | 24/34                            | 2,800                         | 28/40                     | 350                                                        | 6/80/B5                             | 1.10                                                                     | 2.65 | 1.30                                                                     | 2.25 | LPF160          | 67                                             | 4.6                      | 62                        |
| ACAF-LN6S      | M                       | 36/52                            | 4,250                         | 28/40                     | 350                                                        | 4/90/B5                             | 1.80                                                                     | 3.70 | 2.10                                                                     | 3.60 | LPF160          | 77                                             | 4.6                      | 62                        |
| ACA-LN7L       | M                       | 100/150/180                      | 4,800                         | 40/58/69                  | 320/130/240                                                | 6/90/B14                            | 1.10                                                                     | 2.70 | 1.30                                                                     | 2.70 | -               | 76                                             | 5.2                      | 74                        |
| ACA-LN7S       | M                       | 100/150/180                      | 8,200                         | 40/58/69                  | 320/130/240                                                | 4/100/B14                           | 3.00                                                                     | 6.00 | 3.60                                                                     | 7.20 | -               | 84                                             | 5.2                      | 74                        |
| ACAF-LN7L      | M                       | 100/150/180                      | 4,800                         | 40/58/69                  | 320/130/240                                                | 6/90/B14                            | 1.10                                                                     | 2.70 | 1.30                                                                     | 2.70 | LPF280          | 76                                             | 5.2                      | 82                        |
| ACAF-LN7S      | M                       | 100/150/180                      | 8,200                         | 40/58/69                  | 320/130/240                                                | 4/100/B14                           | 3.00                                                                     | 6.00 | 3.60                                                                     | 7.20 | LPF280          | 84                                             | 5.2                      | 82                        |

<sup>1)</sup> Medium: F = mineral oil or water-glycol, M = mineral oil

<sup>2)</sup> Fluid and air flow data at 50 Hz

<sup>3)</sup> Depends on pump displacement

<sup>4)</sup> For the size 7 the power / current absorption data are those of the fan motor.

For the pump motor on feet refer to the following data:

40/58 cm³/U → 3 [kW] / 6.7 [A] 69

cm³/U → 5.5 [kW] / 10.4 [A]

<sup>5)</sup> Fluid in cooling element

<sup>6)</sup> Unfilled

### Cooling in bypass flow: ACA-LN / ACAF-LN

The ACA-LN with integrated boost pump is a complete bypass flow cooling system; the ACAF-LN is equipped with a high-quality HYDAC filter for additional filtration.

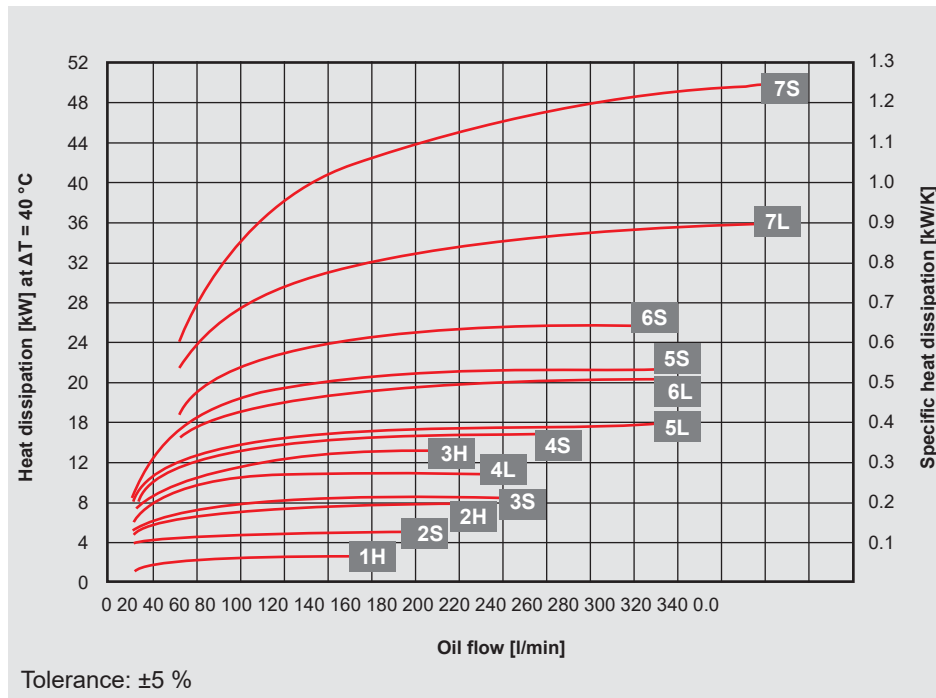
#### Advantages:

- Stable cooling and filtration (independent of the cycle times of the system)
- Continuous filtration is possible, cooling as required
- Avoidance of pressure surges in the cooling element
- Design of the cooler is in accordance with the cooling capacity required (not according to the maximum possible return flow volume)

## Cooling Capacity and Pressure Difference $\Delta p$

Mineral oil

AC-LN / ACA-LN / ACAF-LN

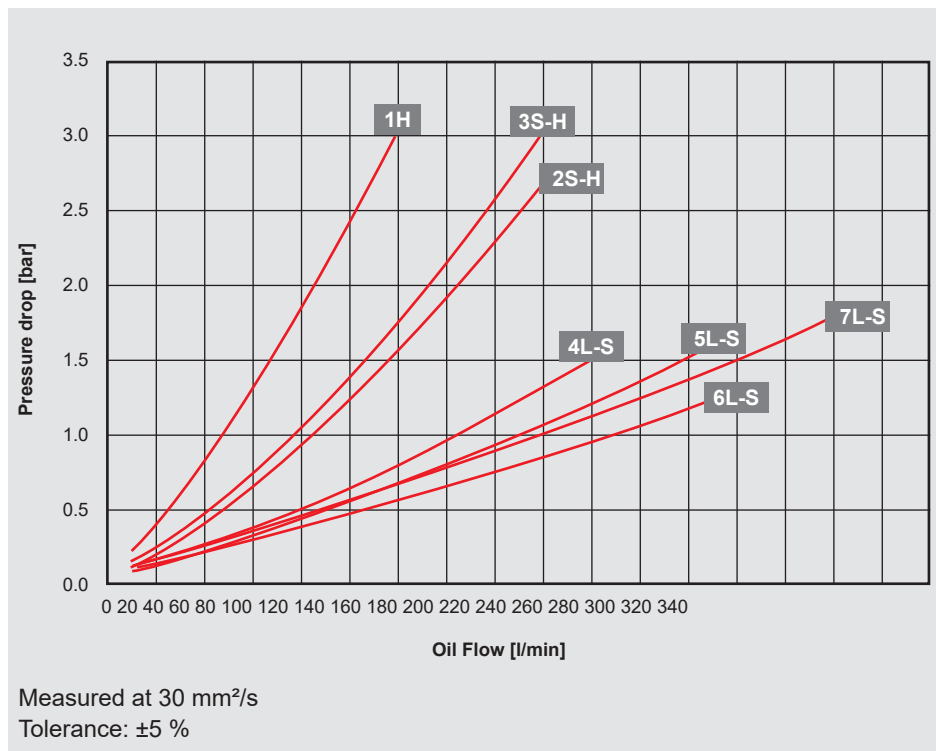


### Cooling capacity:

Dependent on the oil flow rate and the temperature difference  $\Delta T$  between oil inlet and air inlet.

### Note:

The values are measured at  $\Delta T = 40\text{ °C}$ . For smaller  $\Delta T$  values, the values can change. You can also use our cooler calculation software for designing. Please contact our technical sales department.



### Pressure difference $\Delta p$

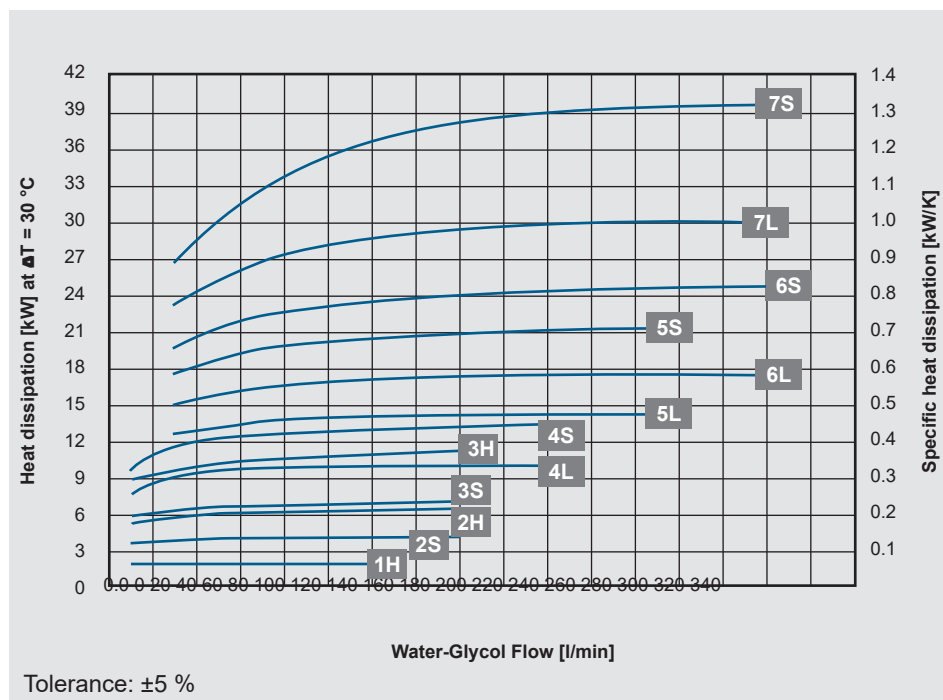
For other viscosities, the pressure loss must be multiplied by the conversion factor K:

| Viscosity ( $\text{mm}^2/\text{s}$ ) | 10   | 15  | 22   | 30 | 46  | 68  | 100 | 150 |
|--------------------------------------|------|-----|------|----|-----|-----|-----|-----|
| Factor K                             | 0.35 | 0.5 | 0.75 | 1  | 1.4 | 1.9 | 2.5 | 3.5 |

## Cooling Capacity and Pressure Difference $\Delta p$

Water-glycol (60/40)

AC-LN

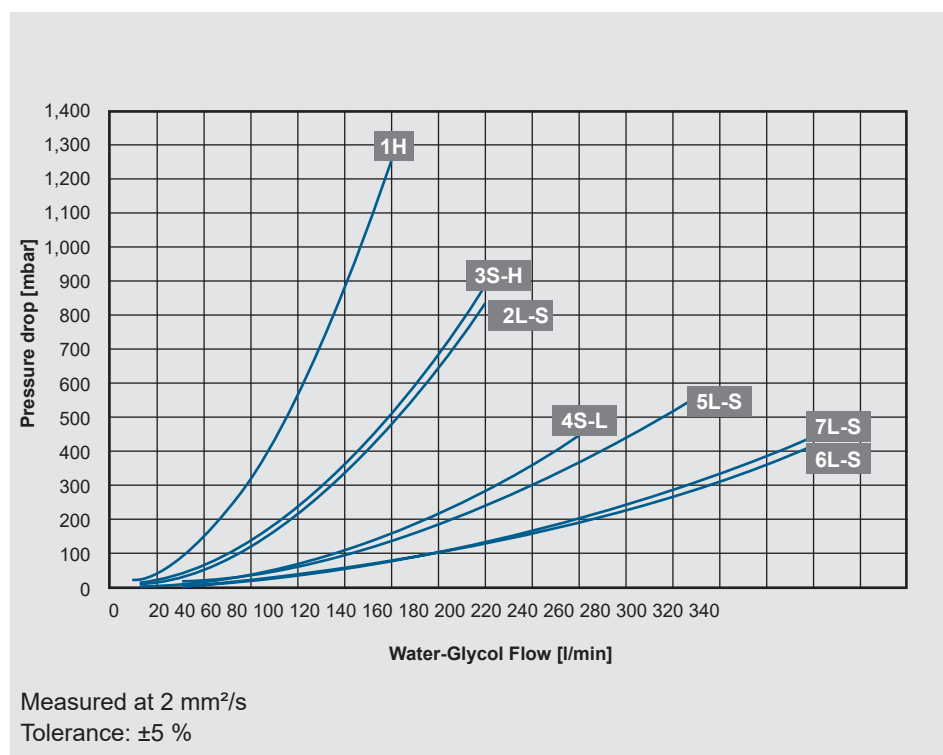


### Cooling capacity:

Dependant on the water-glycol flow rate and the temperature difference  $\Delta T$  between w/g inlet and air inlet.

### Note:

The values are measured at  $\Delta T = 30\text{ °C}$ . For smaller  $\Delta T$  values, the values can change. You can also use our cooler calculation software for designing. Please contact our technical sales department.



### Pressure difference $\Delta p$

## Model Type

ACAF-LN 4S - 40 - 1.0 - B - M - A - LPF160 - 10 - 1 - IBT

### Cooler type

AC-LN = Air cooler (oil / water-glycol mix)

ACA-LN = Air cooler (oil) with integrated pump

ACAF-LN = Air cooler (oil) with integrated pump and filter

### Size / motor speed

1-7 = Size

L = 6 poles (1,000 rpm)

S = 4 poles (1,500 rpm)

H = 2 poles (3,000 rpm)

### Displacement cm<sup>3</sup>/rev

10 = Screw pump (ACA-LN / ACAF-LN2)

28 = Screw pump (ACA-LN / ACAF-LN3)

28 = Vane pump (ACA-LN / ACAF-LN4-6)

40 = Vane pump (ACA-LN / ACAF-LN4-6)

40/58/69 = Screw pump (ACA-LN / ACAF-LN 7)

### Revision

### Clogging indicators (only ACAF-LN)

A = Without clogging indicator

B = With visual indicator (Standard)

D = With electrical and optical indicator

### Fluids

F = Mineral oil or water glycol mix (AC-LN)

M = Mineral oil (ACA-LN and ACAF-LN)

### Motor voltage

Standard voltages and frequencies for 3 phase motor

A = 230/400 V – 50 Hz / 265/460 V – 60 Hz

B = 230/ 400 V – 50 Hz

C = 265/460 V – 60 Hz

AC-LN1 = 220 - 240 V – 50/60 Hz, single phase (Standard)

(tolerance voltage  $\pm 10$  %)

Other voltages on request.

### Size of filter (only ACAF-LN)

LPF160 = ACAF-LN2-6

LPF280 = ACAF-LN7

### Filtration rating in micron (only ACAF)

5 = 5  $\mu$ m Betamicon®-4-N (5 BN4HC)

10 = 10  $\mu$ m Betamicon®-4-N (10 BN4HC) (Standard)

20 = 20  $\mu$ m Betamicon®-4-N (20 BN4HC)

### Color

1 = RAL 9002 (Standard) Other colors on request.

### Accessories

IBP = Heat exchanger with integrated bypass valve

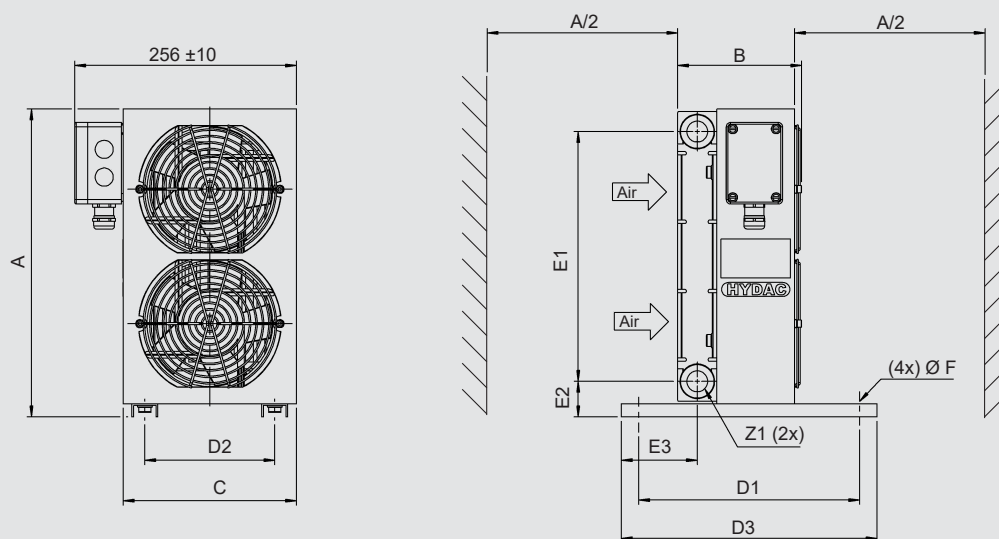
IBT = Heat exchanger with integrated thermo-bypass valve

AITF = Thermostat (fixed)

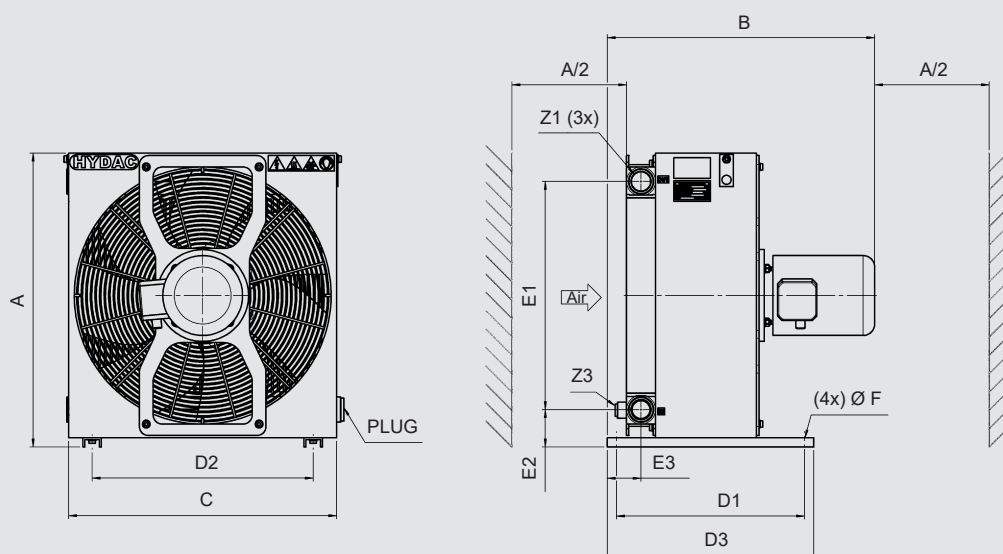
For all possible accessories, like vibration absorber, air filter grid or air filter mat please refer to brochure "Accessories for air coolers".

## Dimensions

### AC-LN 1

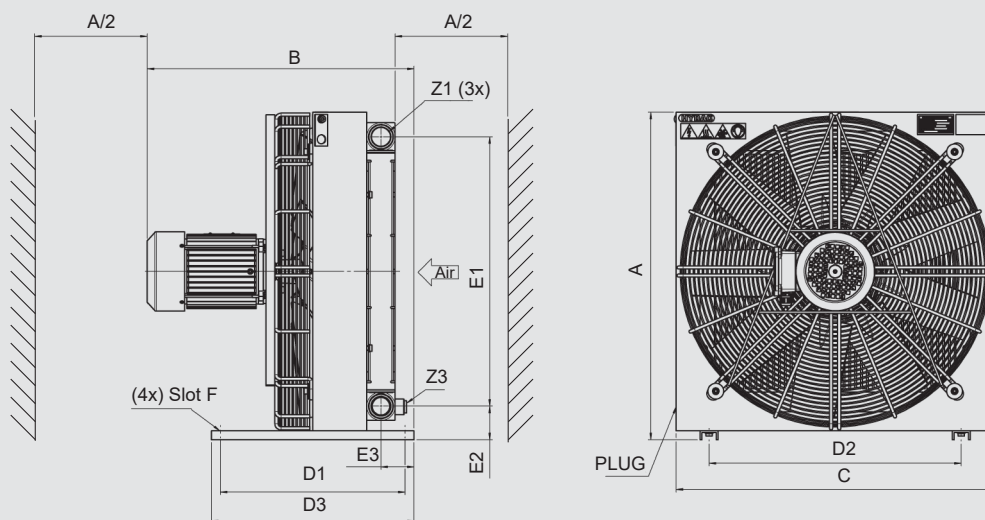


### AC-LN 2-6



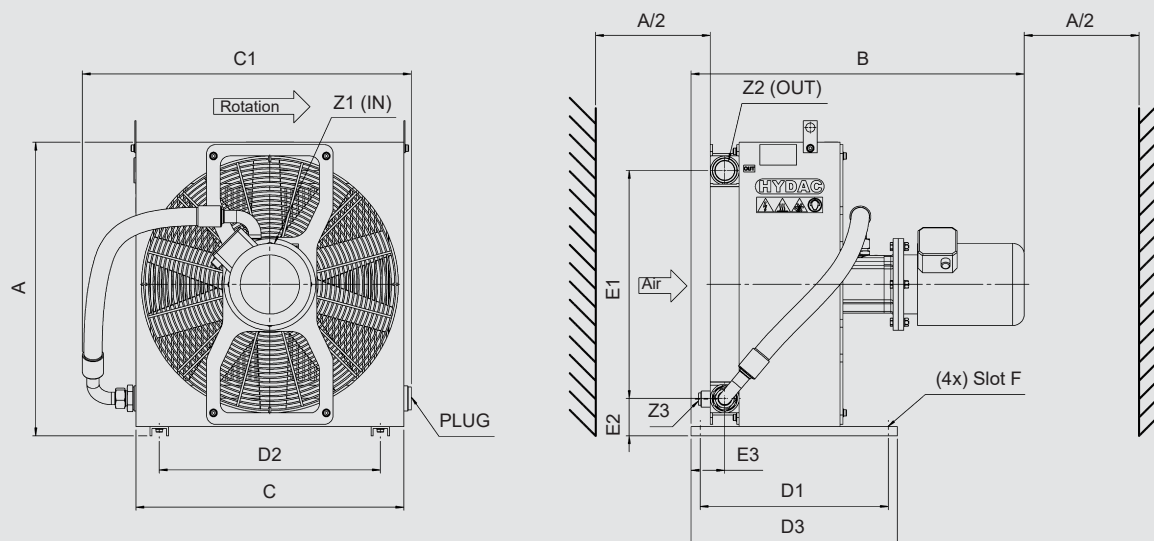
|         | A<br>±10 | B<br>±25 | C<br>±10 | D1<br>±2 | D2<br>±2 | D3<br>±2 | E1<br>±5 | E2<br>±5 | E3<br>±5    | F Ø<br>Slot  | Z1      | Z3      |
|---------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|--------------|---------|---------|
| AC-LN1H | 355      | 143      | 200      | 255      | 150      | 295      | 288      | 41       | 88          | 9            | G3/4"   | -       |
| AC-LN2H | 355      | 401      | 330      | 255      | 160      | 295      | 289      | 41       | 58          | 9            | G3/4"   | -       |
| AC-LN2S | 355      | 396      | 330      | 255      | 160      | 295      | 289      | 41       | 58          | 9            | G3/4"   | -       |
| AC-LN3H | 455      | 438      | 380      | 255      | 290      | 295      | 388      | 41       | 58          | 9            | G3/4"   | -       |
| AC-LN3S | 455      | 404      | 380      | 255      | 290      | 295 388  | 41 58    | 9 450    | 439 51      | 104 9x20 450 | G3/4"   | -       |
| AC-LN4L | 520      | 517      | 485 410  | 425 485  | 410      |          |          |          |             |              | G1"     | -       |
| AC-LN4S | 520      | 517      | 425      |          |          |          | 439 51   | 104 9x20 | G1" -439 72 | 94 9x20      | G1" -   |         |
| AC-LN5L | 562      | 547      | 542      | 410      | 482      | 450      |          |          |             |              |         |         |
| AC-LN5S | 562      | 563      | 542      | 410      | 482      | 450      | 439      | 72       | 94          | 9x20         | G1"     | -       |
| AC-LN6L | 640      | 567      | 584      | 410      | 482      | 450      | 497      | 82       | 74          | 9x20         | G1 1/4" | M22x1.5 |
| AC-LN6S | 640      | 583      | 584      | 410      | 482      | 450      | 497      | 82       | 74          | 9x20         | G1 1/4" | M22x1.5 |

## AC-LN 7



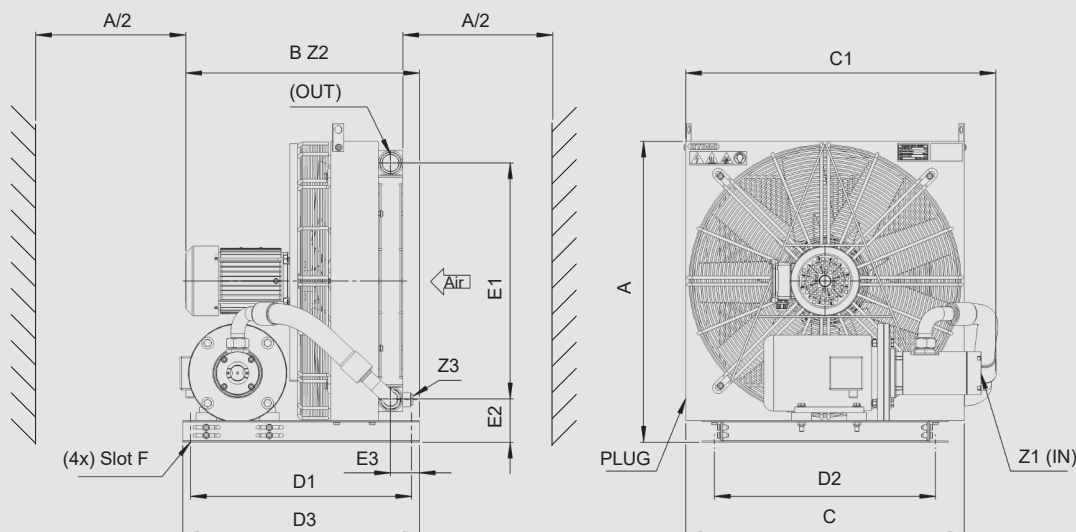
|         | A<br>±10 | B<br>±25 | C<br>±10 | D1<br>±2 | D2<br>±2 | D3<br>±2 | E1<br>±5 | E2<br>±5 | E3<br>±5 | F Ø<br>Slot | Z1      | Z3      |
|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|---------|---------|
| AC-LN7L | 726      | 593      | 706      | 410      | 560      | 450      | 597      | 75       | 74       | 9x20 G1     | 1/4"    | M22x1.5 |
| AC-LN7S | 726      | 613      | 706      | 410      | 560      | 450      | 597      | 75       | 74       | 9x20        | G1 1/4" | M22x1.5 |

## ACA-LN 2-6



|          | A<br>±10 | B<br>±30 | C<br>±10 | C1<br>±25 | D1<br>±2 | D2<br>±2 | D3<br>±2 | E1<br>±5 | E2<br>±5 | E3<br>±5 | F<br>ØSlot | Z1<br>(IN) | Z2<br>(3x) | Z3      |
|----------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------|------------|------------|------------|---------|
| ACA-LN2S | 355      | 567      | 330      | 414       | 370      | 160      | 410      | 289      | 41       | 58       | 9          | G 1"       | G 3/4"     | -       |
| ACA-LN2H | 355      | 596      | 330      | 414       | 370      | 160      | 410      | 289      | 41       | 58       | 9          | G 1"       | G 3/4"     | -       |
| ACA-LN3S | 455      | 620      | 380      | 462       | 370      | 290      | 410      | 388      | 41       | 58       | 9          | G 1"       | G 3/4"     | -       |
| ACA-LN3H | 455      | 620      | 380      | 462       | 370      | 290      | 410      | 388      | 41       | 58       | 9          | G 1"       | G 3/4"     | -       |
| ACA-LN4L | 520      | 697      | 520      | 485       | 574      | 410      | 425      | 450      | 439      | 51       | 104        | 9x20       | G1 1/4"    | -       |
| ACA-LN4S | 699      | 562      | 707      | 485       | 574      | 410      | 425      | 450      | G1 1/4"  |          |            |            | G1"        | -       |
| ACA-LN5L |          |          | 542      | 641       | 410      | 482      | 450      | 439      | 71.5     | 94       | 9x20       | G1 1/4"    | G1"        | -       |
| ACA-LN5S | 562      | 709      | 542      | 641       | 410      | 482      | 450      | 439      | 71.5     | 94       | 9x20       | G1 1/4"    | G1"        | -       |
| ACA-LN6L | 640      | 727      | 584      | 717       | 410      | 482      | 450      | 497      | 81.5     | 74       | 9x20       | G1 1/4"    | G1 1/4"    | M22x1.5 |
| ACA-LN6S | 640      | 729      | 584      | 717       | 410      | 482      | 450      | 497      | 81.5     | 74       | 9x20       | G1 1/4"    | G1 1/4"    | M22x1.5 |

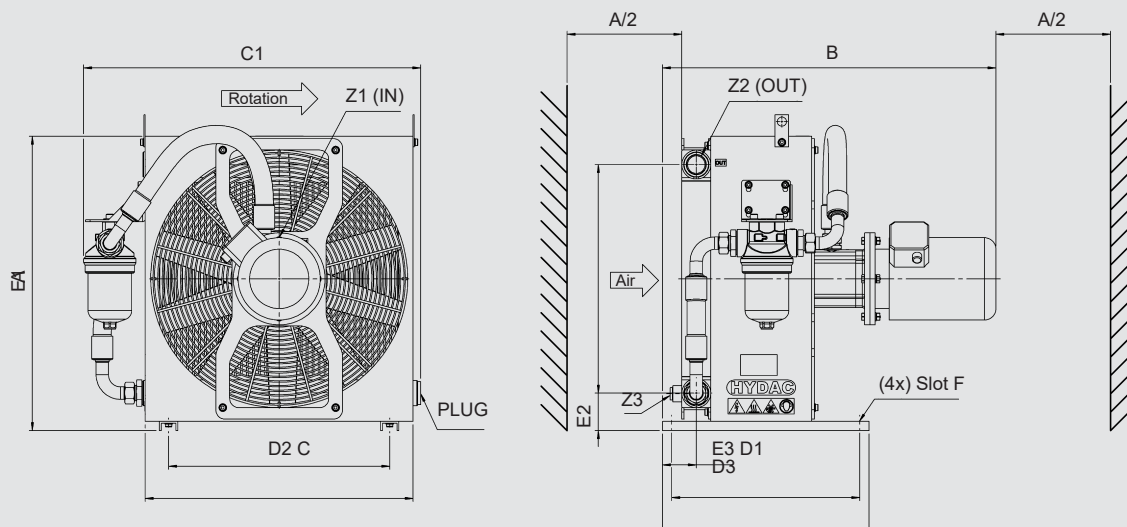
## ACA-LN 7



|          | A<br>±10 | B<br>±30 | C<br>±10 | C1<br>±25 | D1<br>±2          | D2<br>±2 | D3<br>±2          | E1<br>±5 | E2<br>±5 | E3<br>±5 | F<br>ØSlot | Z1<br>(IN) | Z2<br>(3x) | Z3      |
|----------|----------|----------|----------|-----------|-------------------|----------|-------------------|----------|----------|----------|------------|------------|------------|---------|
| ACA-LN7L | 736      | 593      | 706      | 775       | 560 <sub>1)</sub> | 560      | 600 <sub>1)</sub> | 600      | 83       | 74       | 9x20       | G 2"       | G1 1/4"    | M22x1.5 |
| ACA-LN7S | 736      | 607      | 706      | 775       | 560 <sub>1)</sub> | 560      | 600 <sub>1)</sub> | 600      | 83       | 74       | 9x20       | G 2"       | G1 1/4"    | M22x1.5 |

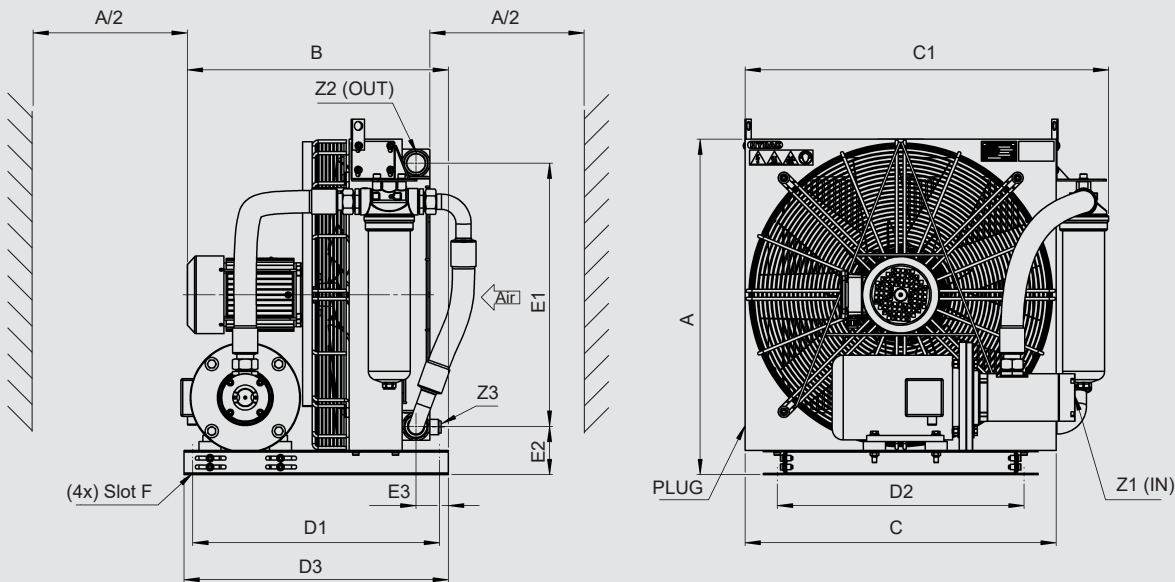
<sub>1)</sub> Version with pump displacement 69 [cm³/U]: D1 = 830, D3 = 870

## ACAF-LN 2-6



|           | A<br>±10 | B<br>±30 | C<br>±10 | C1<br>±25 | D1<br>±2 | D2<br>±2 | D3<br>±2 | E1<br>±5          | E2<br>±5 | E3<br>±5 | F<br>ØSlot | Z1<br>(IN)  | Z2<br>(3x) | Z3      |
|-----------|----------|----------|----------|-----------|----------|----------|----------|-------------------|----------|----------|------------|-------------|------------|---------|
| ACAF-LN2S | 355      | 567      | 330      | 467       | 370      | 160      | 410      | 289               | 41       | 58       | 9          | G 1"        | G 3/4"     | -       |
| ACAF-LN2H | 355      | 596      | 330      | 467       | 370      | 160      | 410      | 289               | 41       | 58       | 9          | G 1"        | G 3/4"     | -       |
| ACAF-LN3S | 455      | 620      | 380      | 517       | 370      | 290      | 410      | 388               | 41       | 58       | 9          | G 1"        | G 3/4"     | -       |
| ACAF-LN3H | 455      | 596      | 380      | 517       | 370      | 290      | 410      | 388               | 41       | 58       | 9          | G 1"        | G 3/4"     | -       |
| ACAF-LN4L | 520      | 697      | 485      | 619       | 410      | 425      | 450      | 439 51            | 104 9x20 | G1 1/4"  | G1" 439    | 51 104 9x20 | G1         | -       |
| ACAF-LN4S | 520      | 699      | 485      | 619       | 410      | 425      | 450      | 1/4" G1" 439 71.5 | 94 9x20  | G1 1/4"  | G1"        |             |            | -       |
| ACAF-LN5L | 562      | 707      | 542      | 676       | 410      | 482      | 450      |                   |          |          |            |             |            | -       |
| ACAF-LN5S | 562      | 709      | 542      | 676       | 410      | 482      | 450      | 439               | 71.5     | 94       | 9x20       | G1 1/4"     | G1"        | -       |
| ACAF-LN6L | 640      | 727      | 584      | 734       | 410      | 482      | 450      | 497               | 81.5     | 74       | 9x20       | G1 1/4"     | G1 1/4"    | M22x1.5 |
| ACAF-LN6S | 640      | 729      | 584      | 734       | 410      | 482      | 450      | 497               | 81.5     | 74       | 9x20       | G1 1/4"     | G1 1/4"    | M22x1.5 |

ACAF-LN 7



|           | A<br>±10 | B<br>±30 | C<br>±10 | C1<br>±25 | D1<br>±2          | D2<br>±2 | D3<br>±2          | E1<br>±5 | E2<br>±5 | E3<br>±5 | F<br>ØSlot | Z1<br>(IN) | Z2<br>(3x) | Z3      |
|-----------|----------|----------|----------|-----------|-------------------|----------|-------------------|----------|----------|----------|------------|------------|------------|---------|
| ACAF-LN7L | 736      | 593      | 706      | 775       | 560 <sup>1)</sup> | 560      | 600 <sup>1)</sup> | 600      | 83       | 74       | 9x20       | G 2"       | G1 1/4"    | M22x1.5 |
| ACAF-LN7S | 736      | 607      | 706      | 775       | 560 <sup>1)</sup> | 560      | 600 <sup>1)</sup> | 600      | 83       | 74       | 9x20       | G 2"       | G1 1/4"    | M22x1.5 |

<sup>1)</sup> Version with pump displacement 69 [cm³/U]: D1 = 830, D3 = 870

Note:

We recommend maintaining a minimum distance to ensure an unimpeded air inlet and air outlet. This is half the height of the cooling element (A/2). Anything below the minimum distance can influence the cooling capacity and the noise emissions.

Note

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department. Subject to technical modifications.



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