LAC

Air Oil Coolers with AC Motor
for industrial use

„Power and usability in one.“

Sandro Stoll, OLAER (Schweiz) AG
AIR OIL COOLERS LAC

For industrial use – maximum cooling capacity 170 kW

The LAC air oil cooler with single-phase or three-phase AC motor is optimized for use in the industrial sector. Together with a wide range of accessories, the LAC cooler is suitable for installation in most applications and environments. The maximum cooling capacity is 170 kW at ETD 40 °C. Choosing the right cooler requires precise system sizing. The most reliable way to size is with the aid of our calculation program. This program, together with precise evaluations from our experienced, skilled engineers, gives you the opportunity for more cooling per € invested.

Overheating - an expensive problem

An under-sized cooling capacity produces a temperature balance that is too high. The consequences are poor lubricating properties, internal leakage, a higher risk of cavitation, damaged components, etc. Overheating leads to a significant drop in cost-efficiency and environmental consideration.

Temperature optimisation - a basic prerequisite for cost-efficient operation

Temperature balance in a hydraulic system occurs when the cooler can cool down the energy input that the system does not consume - the system’s lost energy: \( P_{\text{loss}} = P_{\text{cool}} = P_{\text{in}} - P_{\text{used}} \). Temperature optimisation means that temperature balance occurs at the system’s ideal working temperature – the temperature at which the oil’s viscosity and the air content comply with recommended values.

The correct working temperature produces a number of economic and environmental benefits:

- Extended hydraulic system life.
- Extended oil life.
- Increased hydraulic system availability - more operating time and fewer shutdowns.
- Reduced service and repair costs.
- Maintained high efficiency in continuous operation – the system efficiency falls if the temperature exceeds the ideal working temperature.

THE RIGHT ACCESSORIES

With our specialist expertise, industry knowledge and advanced technology, we can offer a range of different solutions for coolers and accessories to meet your requirements.

Supplementing a hydraulic system with a cooler, cooler accessories and an accumulator gives you increased availability and a longer useful life, as well as lower service and repair costs.

All applications and operating environments are unique. A well-planned choice of the following accessories can thus further improve your hydraulic system.

Please contact OLAER for guidance and information.

Pressure-controlled bypass valve Integrated
Thermo contact
Temperature-controlled bypass valve Integrated
Lifting eyes
Temperature-controlled 3-way valve External
Stone guard/Dust guard
Clever design and the right choice of materials and components produce a long useful life, high availability and low service and maintenance costs.

Compact design and low weight.

Easy to maintain and easy to retrofit in many applications.

**LAC-X and LAC-M**

LAC cooling systems are also available in two special versions:

**LAC-X** (Atex version) is approved for the use in explosive areas.

**LAC-M** is ideal for marine applications requiring very good corrosion resistance.

Cooler matrix with low pressure drop and high cooling capacity.

Quiet fan and fan motor.

AC motor single-phase for smaller and three-phase for larger cooler sizes.
TECHNICAL SPECIFICATION LAC

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<th>Weight (approx) kg</th>
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* Noise level tolerance ± 3 dB(A).

For more informations, contact OLAER please.
DIMENSIONS LAC

Manufacturer’s tolerances not taken into account.

The right to make modifications reserved.

PRESSURE DROP LAC

Pressure drop

At 30 cSt single-pass

Pressure drop

Oil flow
L/min

50 100 150 200 250 300 35

016, 023 033 056 064

076, 110

007, 011

003, 004

002

056, 078, 112, 113
## Example

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All positions must be filled in when ordering.

### 1. Air Oil Cooler with AC motor

| = LAC/LAC2 |

### 2. Cooler size

- 002, 003, 004, 007, 011, 016, 023, 033, 044, 056, 076, 078, 110, 112, 113 and 200

### 3. Number of poles, motor

- 2-pole = 2
- 4-pole = 4
- 6-pole = 6
- 8-pole = 8

### 4. Voltage and frequency

- 230/400V 50 Hz = A
- 460V 60 Hz = B
- Single-phase 230 V 50 Hz (not IE2) = C
- 230/400 V 50 Hz, 460 alt = D
- 500 V 50 Hz (no standard) = E
- 400/690V 50 Hz, 460 alt = F
- 480 V 60 Hz = G
- Motor for special voltage or frequency (stated in plain language) = X

1) For LAC 033 to LAC 113
2) For LAC2 007 to LAC2 023
3) For other options contact OLAER for assistance.

### 5. Thermo contact

- No thermo contact = 00
- 40 °C = 40
- 50 °C = 50
- 60 °C = 60
- 70 °C = 70
- 80 °C = 80
- 90 °C = 90

### 6. Cooler matrix

- Standard = 000
- Two-pass = T00

### 7. Matrix guard

- No guard = 0
- Stone guard = S
- Dust guard = D
- Dust and stone guard = P

### 8. Standard / Special

- Standard = 0
- Special = Z

### Built-in, pressure-controlled bypass, two-pass

- 2 bar = T20
- 5 bar = T50
- 8 bar = T80

### Built-in, pressure-controlled bypass, single-pass

- 50 °C, 2.2 bar = S25
- 60 °C, 2.2 bar = S26
- 70 °C, 2.2 bar = S27
- 90 °C, 2.2 bar = S29

### Built-in, pressure-controlled bypass, two-pass

- 50 °C, 2.2 bar = T25
- 60 °C, 2.2 bar = T26
- 70 °C, 2.2 bar = T27
- 90 °C, 2.2 bar = T29

### Technical data for cooler matrix

- Maximum static operating pressure = 21 bar
- Dynamic operating pressure = 14 bar
- Heat transfer limit = ± 6 %
- Maximum oil inlet temperature = 120 °C

### Technical data for 3-phase motor

- 3-phase asynchronous motors in accordance with IEC 34-1 and IEC 60072 in accordance with DIN 57530/VDE 0530
- Insulation class F
- Rise of temperature = B
- Protection class = IP 55

### Technical data for 1-phase motor

- Insulation class = B
- Rise of temperature = B
- Protection class = IP 44

### Technical data for 3-phase motor LAC2 004

- Rated voltage: 230/400 V 50/60 Hz
- Insulation class = B
- Rise of temperature = B
- Protection class = IP 44

### Cooling capacity curve

The cooling capacity curves in this technical data sheet are based on tests in accordance with EN 1048 and have been produced using oil type ISO VG 46 at 60 °C.

### Contact OLAER for advice on:

- Oil temperatures: > 120 °C
- Oil viscosity: > 100 cSt
- Other liquids
- Aggressive environments
- Ambient air rich in particles
- High-altitude locations

### Fluid combinations

- Mineral oil: HLP in accordance with DIN 51524
- Oil / Water emulsion: HFA, HFB in accordance with CETOP RP 7H
- Water glycol: HFC in accordance with CETOP RP 7H
- Phosphate ester: HFD-R in accordance with CETOP RP 7H