



ORELL

LAC 200

Air Oil Coolers with AC Motor
for industrial use, maximum cooling capacity 300 kW

„The biggest of its kind – just exceptional and fantastic.“

ORELL Tec



AIR OIL COOLERS LAC 200

For industrial use – maximum cooling capacity 300 kW

OLAER have added to their wide range of standard products the huge LAC 200 air oil cooler with cooling capacity 300 kW.

The asynchronous motor driving the LAC 200 oil cooler has been developed taking into account the specific requirements regarding strength and performance of hydraulic drive systems.

Mining, oil, gas, paper industry, offshore and shipbuilding but also special applications such as construction machines, conveyor and shredding systems show the possibilities of this type of cooling system.

Our coolers make sure that your installation will also be available under the most extreme conditions: high dust and dirt loads, extreme temperatures, corrosive and humid environments, continuous operation or other types of additional stress will not prevent optimal cooling.

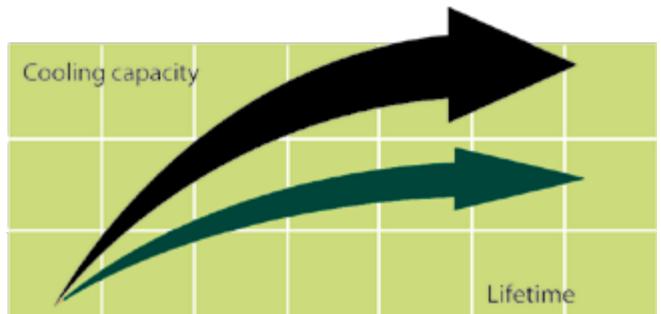


Temperature optimisation - a basic prerequisite for cost-efficient operation

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: ($P_{loss} = P_{cool} = P_{in} - P_{used}$). 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.



Clever design and the right choice of materials and components provide a long useful life, high availability and low service and maintenance costs.

Easy to maintain and easy to retrofit in many applications.



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.

LAC-X and LAC-M

LAC cooling systems are also available in two special versions:

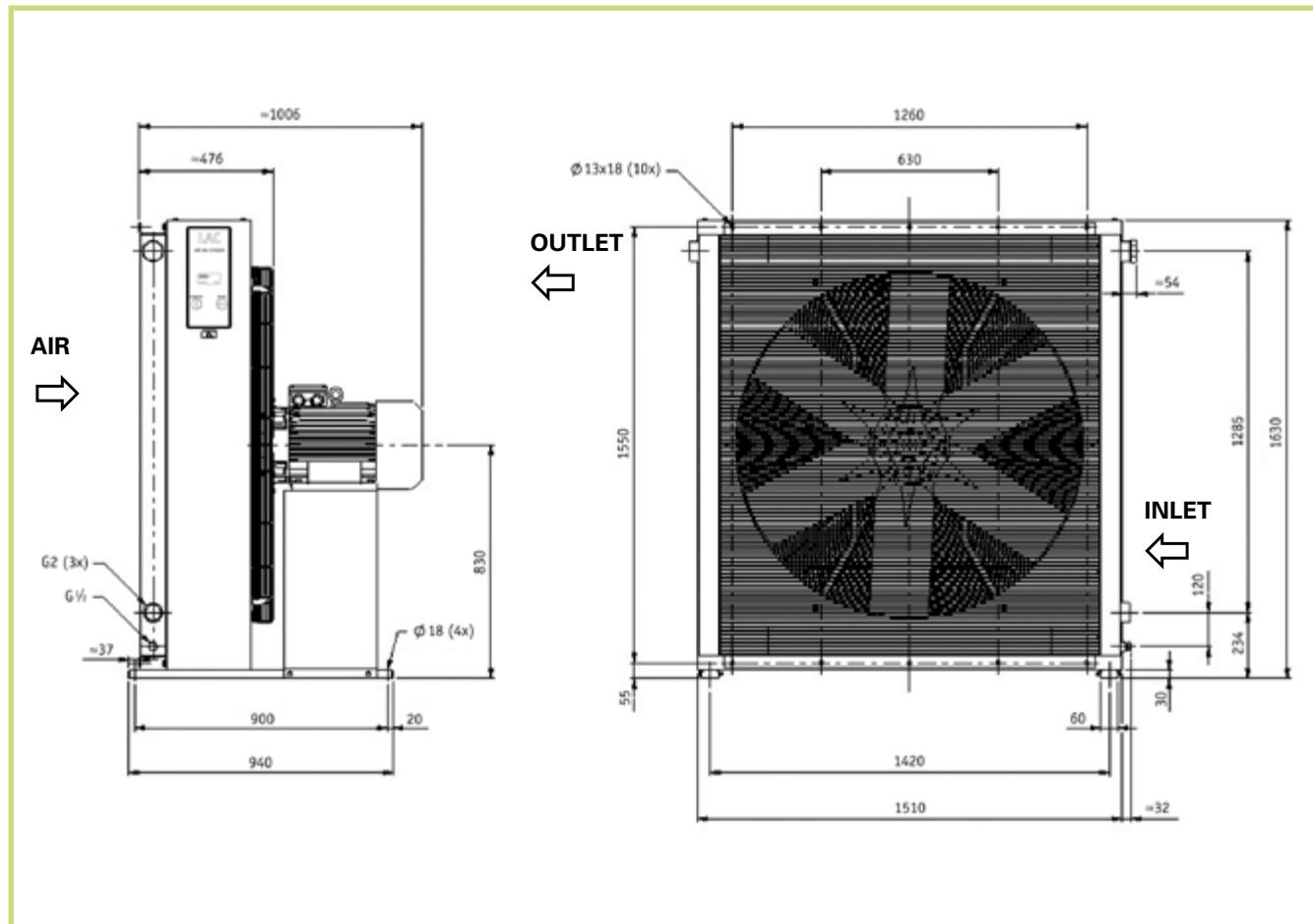
LAC-X (Atex version) is approved for the use in explosive areas.

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

DIMENSIONS LAC 200

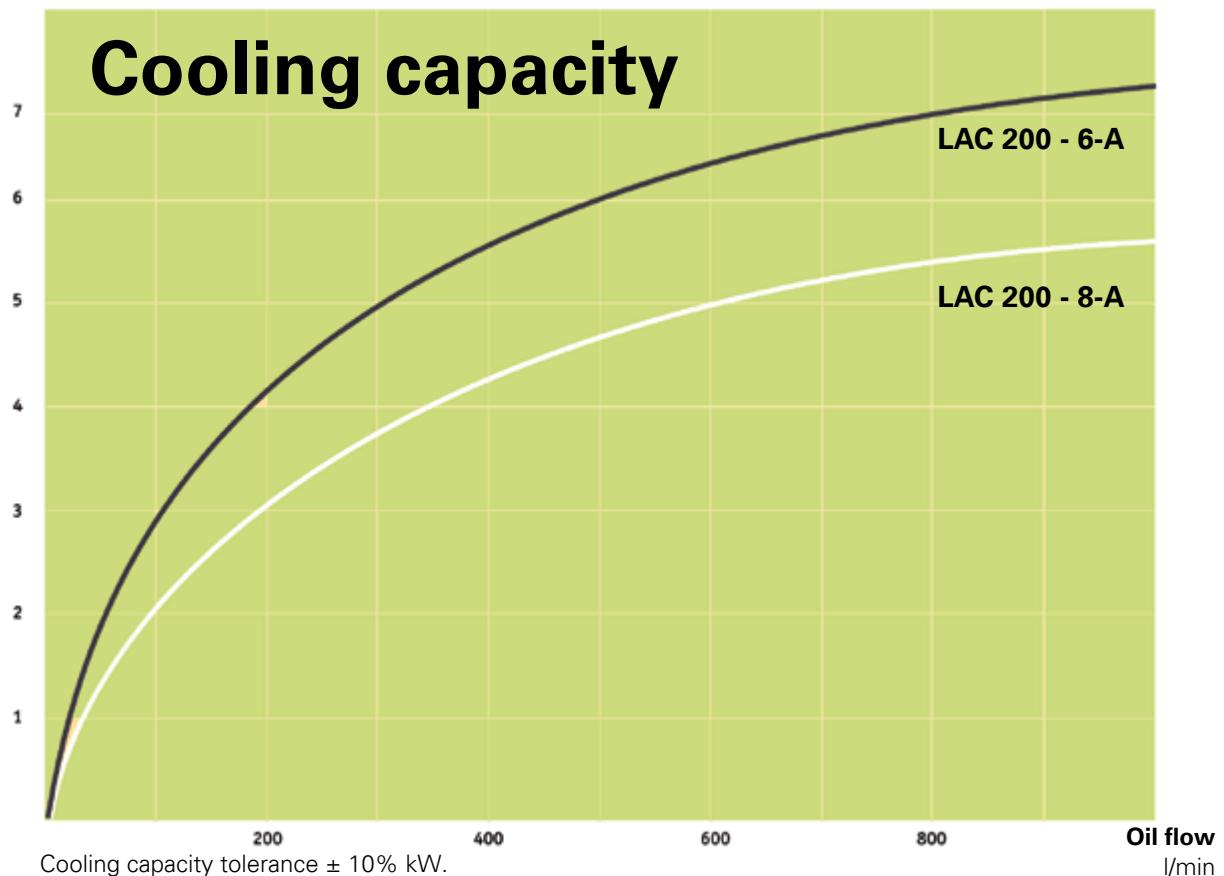
Type	Acoustics pressure level LpA dB(A) 1m*	No. of poles / Capacity kW	Weight (approx) kg
LAC 200-6	92	6 - 11,0	405
LAC 200-8	86	8 - 4,0	365

* Noise level tolerance ± 3 dB(A).

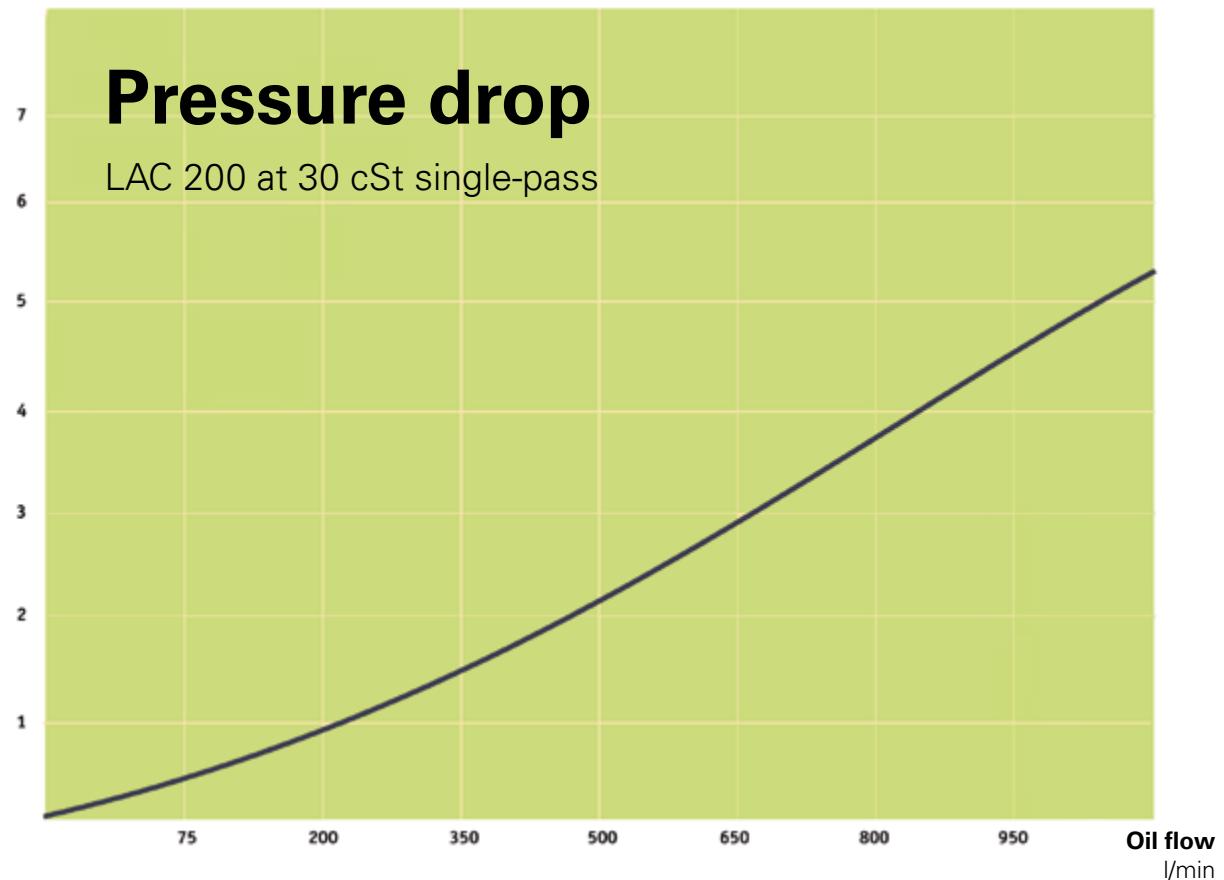


COOLING CAPACITY LAC 200 / PRESSURE DROP

Cooling capacity
kW/ °C



Pressure drop
bar



KEY FOR LAC 200 / TECHNICAL SPECIFICATION

Example

LAC - 200 - 6 - A - 50 - T20 - D - 0

1 2 3 4 5 6 7 8

All positions must be filled in when ordering.

1. Air Oil Cooler with AC motor = LAC

2. Cooler size

200

3. Number of poles, motor

6-pole = 6

8-pole = 8

4. Voltage and frequency (IE2 guaranteed at 50 Hz)

No motor = 0

230/400V 50 Hz = A

460 alt 480V 60 Hz = B

230/400 V 50 Hz, 460 alt 480 V 60 Hz = D

500 V 50 Hz (not standard) = E

400/690 V 50 Hz, 460 alt 480 V 60 Hz = F

525 V 50 Hz, 575 V 60 Hz = G

Motor for special voltage or frequency (stated in plain language) = X

6. Cooler matrix

Standard = 000

Two-pass = T00

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

2 bar = S20

5 bar = S50

8 bar = S80

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

2 bar = T20

5 bar = T50

8 bar = T80

Built-in temperature and 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 temperature and 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 specification

Fluid combinations

Mineral oil	HL/HLP in accordance with DIN 51524
Oil / Water emulsion	HFA, HFB in accordance with CETOP RP 77H
Water glycol	HFC in accordance with CETOP RP 77H
Phosphate ester	HFD-R in accordance with CETOP RP 77H

Material

Cooler matrix	Aluminium
Fan blades / hub	Glass fibre reinforced polypropylene / Aluminium
Fan housing	Steel
Fan guard	Steel
Other parts	Steel
Surface treatment	Electrostatically powder-coated

Technical data for cooler matrix

Maximum static operating pressure	21 bar
Dynamic operating pressure	14 bar Tested in accordance with ISO/DIS 10771-1.
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

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 ORELL Tec for advice on:

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

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 ORELL Tec for guidance and information.



Pressure-controlled bypass valve

Integrated

Allows the oil to bypass the cooler matrix if the pressure drop is too high. Reduces the risk of the cooler bursting, e.g. in connection with cold starts and temporary peaks in pressure or flow. Available for single-pass or two-pass matrix design.



Thermo contact

Sensor with fixed set point, for temperature warnings. Can be used for more cost-efficient operation and better environmental consideration through the automatic control of the fan motor, either on or off.



Temperature-controlled bypass valve

Integrated

Allows the oil to bypass the cooler matrix if the pressure drop is higher than 2,2 bar or less than the chosen temperature. The bypass closes when the oil temperature increases. Different closing temperatures available. Available for singlepass or two-pass matrix design.



Lifting eyes

For simple installation and relocation.

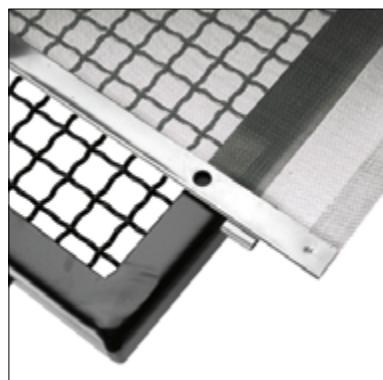


Temperature-controlled 3-way valve

External

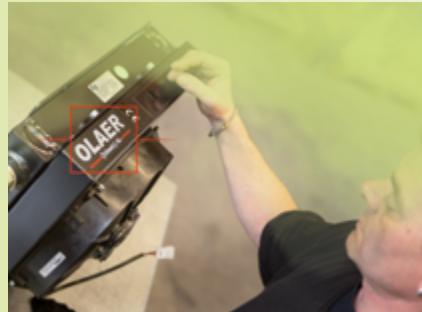
Same function as the temperature-controlled bypass valve, but positioned externally.

Note: must be ordered separately.



Stone guard/Dust guard

Protects components and systems from tough conditions.



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