



The Professional Choice

ULDC

With DC motor



OLAER ULDC | optimized for mobile use

www.comoso.com



Olaer is a global player specializing in innovative, efficient system solutions for temperature optimization and energy storage.

All over the world, our products are working in the most diverse environments and applications.

ULDC Oil Coolers

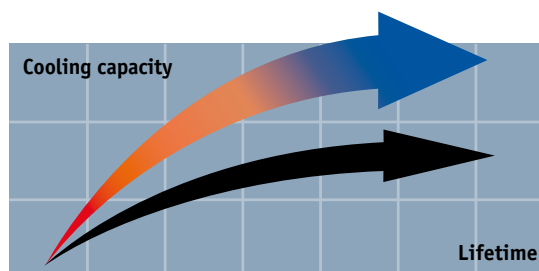
For mobile use - maximum cooling capacity 40 HP

The ULDC oil cooler with 12 or 24 V DC motor is optimized for use in the mobile industry. Together with a wide range of accessories, the ULDC cooler is suitable for installation in most applications and environments. Choosing the right cooler requires precise system sizing. The most reliable way to size a cooler 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 optimization - 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 optimization occurs at the temperature at which the oil viscosity is maintained at recommended values. The correct working temperature produces a number of economic and environmental benefits:

- The hydraulic system's useful life is extended.
- The oil's useful life is extended.
- The hydraulic system's availability increases - more operating time and fewer shutdowns.
- Service and repair costs are reduced.
- High efficiency level maintained in continuous operation - the system's efficiency falls if the temperature exceeds the ideal working temperature.

Optimized design with right choice of materials and components ensures reliable and long lasting cooler with low service and maintenance costs.

Compact design resulting in lighter weight unit yet with higher cooling capacity and lower pressure drop.

Easy to maintain and easy to retrofit into many applications.



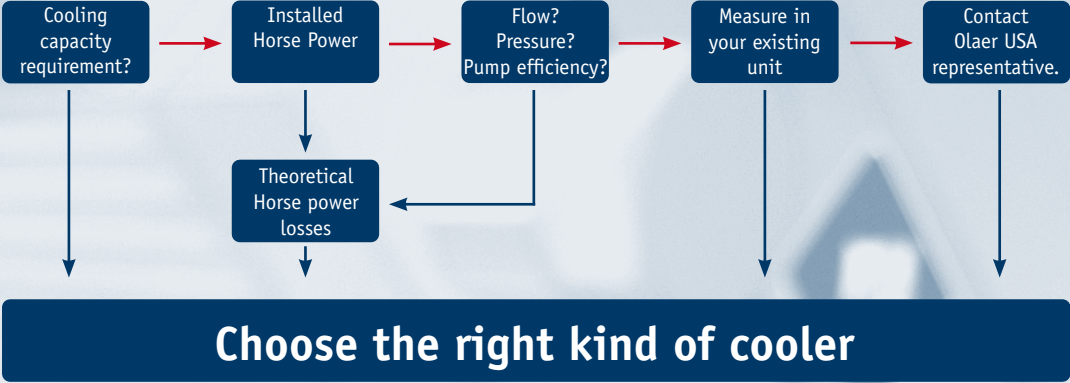
DC motor
12V/24V

Quiet
fan and fan motor.

Smart DC Drive

The Smart DC Drive is for soft starting fan, as well as lower power consumption and sound level by means of temperature-controlled speed regulation. Smart DC Drive also eliminates voltage peaks, thus contributing towards a longer useful life for the fan motor.

Calculate the cooling capacity requirement



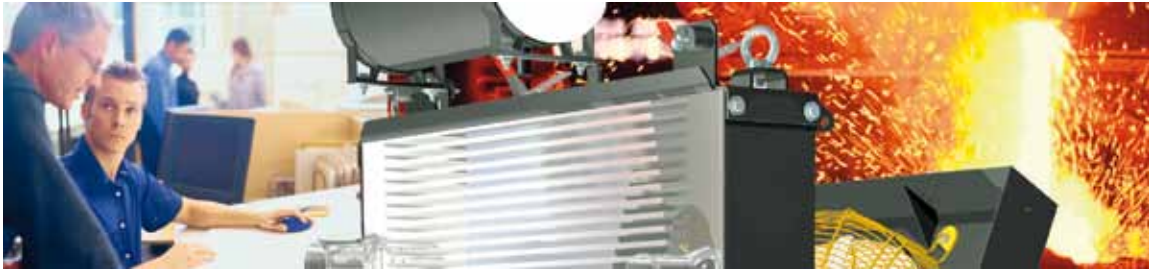
Download the sizing software:
www.olaerusa.com



Enter your values

This section displays three screenshots from the software. On the left is the 'Cooler selection' dialog box with various input fields for flow, pressure, and efficiency. In the center is the 'Capacity calculation' results window showing a table of data for a selected cooler model. On the right is a technical drawing of the 'ULDC-011' cooler, showing front and side views with dimensions and a 3D perspective view.

... suggested solution



Better energy consumption means not only less environmental impact, but also reduces operating costs, i.e. more cooling per \$ invested.

More cooling per \$

with precise calculations and our engineers' support

Optimal sizing produces efficient cooling.

Correct sizing requires knowledge and experience. Our calculation program, combined with our engineers' support, gives you access to this very knowledge and experience. The result is more cooling per \$ invested.

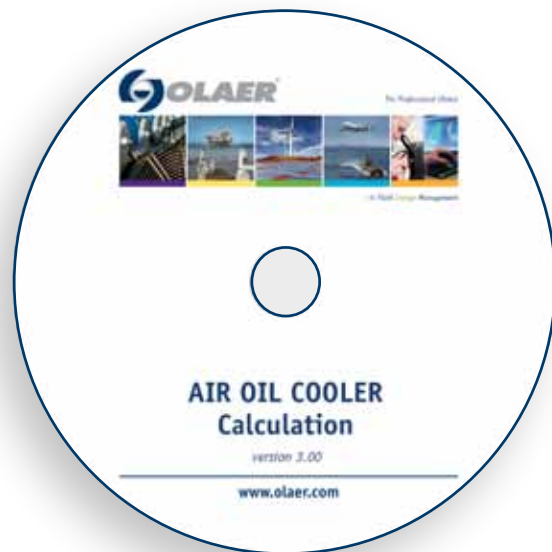
The user-friendly calculation program can be downloaded from www.olaerusa.com

In depth system review as an added value

A more wide-ranging review of the hydraulic system is often a natural element of cooling calculations. Other potential system improvements can then be discussed – e.g. filtering, offline or online cooling, etc. Contact us for further guidance and information.

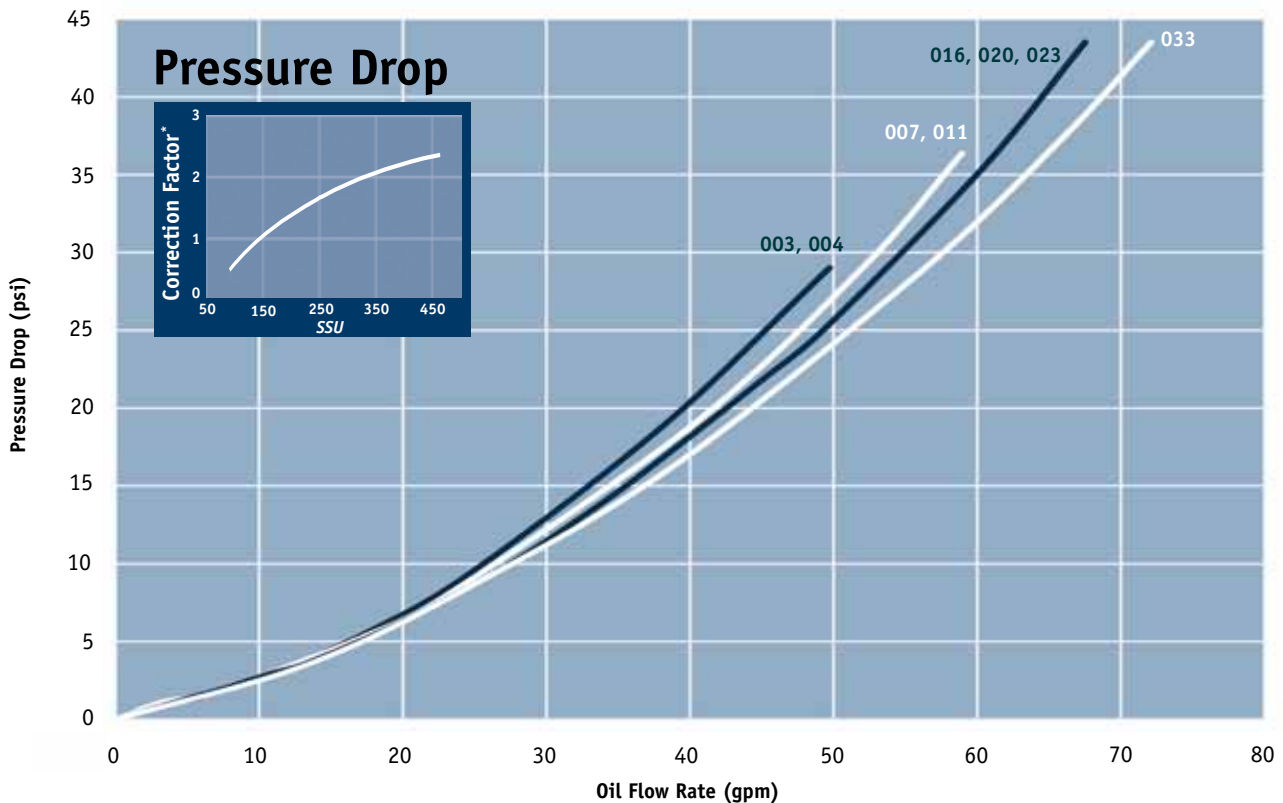
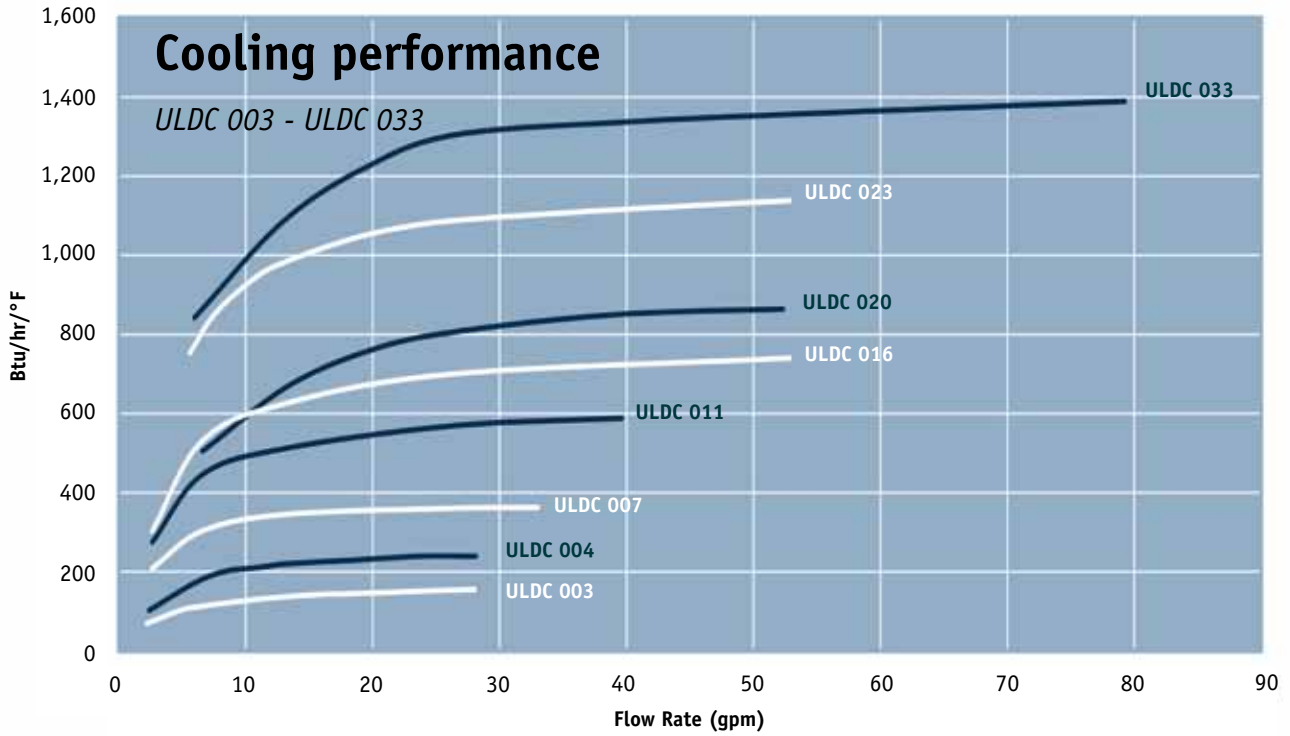
OLAER'S quality and performance guarantee assures you of maximum system performance and reliability.

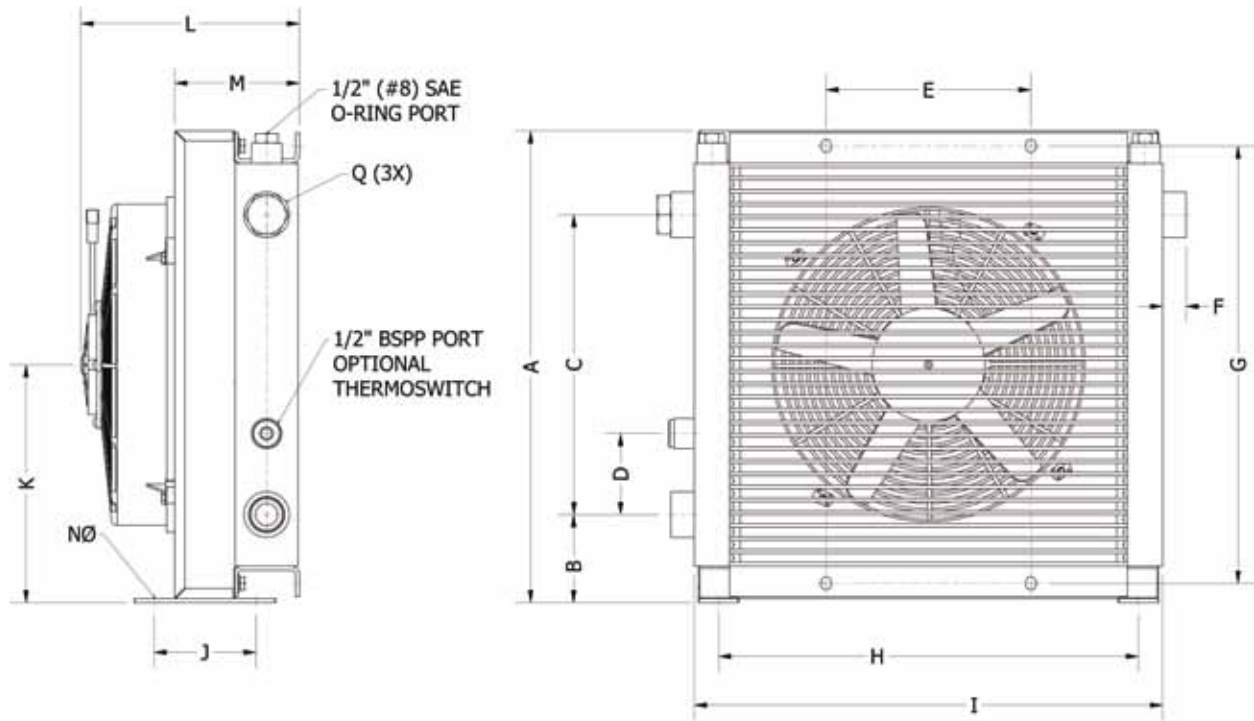
A continual desire for more cost efficient and environmentally friendly hydraulic systems requires continuous development. Areas where we are continuously seeking to improve performance include cooling capacity, noise level, pressure drop and fatigue.



Meticulous quality and performance tests are conducted in our laboratory. All tests and measurements take place in accordance with standardized methods - cooling capacity in accordance with EN1048, noise level ISO 3743, pressure drop EN 1048 and fatigue ISO 10771-1. For more information about our standardized tests, ask for "OLAER's blue book – a manual for more reliable cooler purchasing".

The cooling capacity curves are based on the inlet oil temperature and the ambient air temperature.
 An oil temperature of 140°F and air temperature of 70 °F produce a temperature difference of 70 °F.
 Multiply by Btu/hr/°F for total cooling capacity.





TYPE	Weight <i>lbs (Approx.)</i>	Acoustic Pressure <i>LpA dB(A) 3ft*</i>	Q <i>SAE O-ring Boss</i>
ULDC 003	11	68	1" (#16)
ULDC 004	13	68	1" (#16)
ULDC 007	20	68	1" (#16)
ULDC 011	26	68	1" (#16)
ULDC 016	33	68	1" (#16)
ULDC 020	40	68	1" (#16)
ULDC 023	55	68	1" (#16)
ULDC 033	66	68	1 1/4" (#20)

* = Noise level tolerance ± 3 dB(A)

TYPE	A	B	C	D	E	F	G	H	I	J	K	L	M	NØ <i>dia./oblong</i>
ULDC 003	8.9	2.5	3.5	-	5.2	0.9	7.8	5.3	9.6	5.8	4.6	5.9	4.1	0.35 x 0.55
ULDC 004	10.0	3.5	3.5	-	6.0	0.9	9.0	5.3	10.5	5.8	5.2	6.0	4.3	0.35 x 0.55
ULDC 007	13.3	3.7	6.3	3.2	8.0	0.9	11.7	8.0	13.0	10.5	6.8	6.8	4.3	0.35
ULDC 011	15.6	3.4	9.0	3.2	8.0	0.9	14.3	14.2	15.7	4.0	7.9	8.5	4.9	0.35 x 1.1
ULDC 016	18.3	3.4	11.7	3.2	8.0	0.9	17.0	16.4	18.3	4.0	9.3	8.3	4.8	0.35 x 1.1
ULDC 020	20.1	3.0	13.8	2.8	8.0	0.9	18.7	18.5	20.1	4.0	10.1	8.3	4.9	0.35 x 0.55
ULDC 023	25.0	5.4	14.9	3.2	14.0	-	20.2	-	24.2	11.4	7.9/18.0	8.6	4.9	0.51
ULDC 033	26.7	3.4	19.1	3.2	14.0	1.0	24.5	-	25.0	11.4	7.9/18.0	10.1	6.5	0.51

All dimensions listed above are in inches.

Order Key for ULDC Oil Coolers

All positions must be filled in when ordering.

EXAMPLE:

ULDC	- 007	- A	- 000	- SA
<i>Series</i>	<i>Model</i>	<i>Motor type</i>	<i>Thermoswitch</i>	<i>Core Bypass</i>
1	2	3	4	5

1. OIL COOLER SERIES

WITH DC MOTOR; ULDC

2. COOLER SIZE/MODEL

003, 007, 011, 016, 020, 023, 033

3. MOTOR VOLTAGE

12 V = A
24 V = B

4. THERMOSWITCH

No thermoswitch = 000
100 °F = 100
120 °F = 120
140 °F = 140
160 °F = 160
175 °F = 175
195 °F = 195
Not listed, consult Olaer USA = ZZZ

5. CORE BYPASS*

No Bypass = SW
20 psi External Hose Bypass (*standard option*) = SA
65 psi External Hose Bypass (*standard option*) = SB
30 psi External Tube Bypass = SG
75 psi External Tube Bypass = SH
120 psi External Tube Bypass = SJ
120 °F External Thermo-Bypass = SM
140 °F External Thermo-Bypass = SN
160 °F External Thermo-Bypass = SP
195 °F External Thermo-Bypass = SQ
Full Flow External Bypass = SF

* The standard cores are single pass. Two pass cores and other options available upon request, please consult Olaer USA.

Technical specification

FLUID COMBINATIONS

Mineral oil

Oil/water emulsion

Water glycol

Phosphate ester

MATERIAL

Cooler core = Aluminum
Fan blades/guard = Glass fiber reinforced polypropylene
Fan housing = Steel
Other parts = Steel
Surface treatment = Electrostatically powder-coated

COOLER MATRIX

Maximum static working pressure = 300 psi
Dynamic working pressure = 200 psi*
Heat transfer tolerance = ± 6 %
Maximum oil inlet temperature = 250 °F

* Tested in accordance with ISO/DIS 10771-1

COOLING CAPACITY CURVES

The cooling capacity curves in this catalogue are created using oil type ISO VG 46 at 250 °F.

CONTACT OLAER FOR ADVICE ON

Oil temperatures > 250 °F
Oil viscosity > 100 cSt / 500 SSU
Aggressive environments
Environments with heavy airborne particulates
High-altitude locations



The information in this brochure is subject to change without prior notice.



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

Take the next step

- choose the right accessories

Supplementing a hydraulic system with a cooler and proper accessories or an accumulator gives you increased system up time and a longer expected 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 USA 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.



Smart DC Drive speed regulation

For cost-efficient operation and better environmental consideration through speed-regulated fan control – the higher the temperature, the higher the fan speed.



Temperature-controlled bypass valve *Integrated*

Same function as the pressure-controlled by-pass valve, but with a temperature-controlled opening pressure - the hotter the oil, the higher the opening pressure. Available for single-pass or two-pass matrix design.



Stone guard/Dust guard

Protects components and systems from tough conditions.



Thermo contact

Sensor with fixed set point for temperature warnings and cost efficient operation with automatic switching on and off of the fan motor thereby reducing the energy usage.



Temperature-controlled 3-way valve *External*

Same function as the temperature-controlled bypass valve, but positioned externally.
Note: must be ordered separately.



Professional competence as well as advanced technology and extensive knowledge from the industry, allow us to provide many cooler combinations, which meet your unique needs.

Combinations

providing optimal solutions

A close collaboration between our application engineers, designers and you as the customer during the whole project will result in a high-quality product. The final product will be a tailor-made cooler, which always meets your unique needs.

Extensive choices

Long-term experience from the mobile field has provided us with a unique ability to deliver the ideal combination cooler solution. Depending on the conditions, the cooler fan can be operated by the diesel engine on the machine or by a hydraulic motor or a DC motor. We can also supply many different cooler combination options. A frequent combination is the "side-by-side"-cooler, where the coolers are placed side-by-side, no matter the media, such as a water cooler, an oil cooler and an intercooler. Another solution is the "sandwich"-cooler, where the coolers are placed in front of each other. The solution could also be a combination of these two. No matter which combination will be used, the pressure drop and the heat dissipation across the matrix will always be optimal.







- in Fluid Energy Management

Global perspective

and local entrepreneurial flair



Olaer is a global player specializing in innovative, efficient system solutions for temperature optimization and energy storage. Olaer develops, manufactures and markets products and systems for a number of different sectors, e.g. the aircraft, engineering, steel and mining industries, as well as for sectors such as oil and gas, contracting and transport, farming and forestry, renewable energy, etc.

All over the world, our products operate in the most diverse environments and applications. One constantly

repeated demand in the market is for optimal energy storage and temperature optimization. We work at a local level with the whole world as our workplace – local entrepreneurial flair and a global perspective go hand in hand.

Our local presence, long experience and a wealth of knowledge combined with our cutting-edge expertise to give you the best possible conditions for making a professional choice.