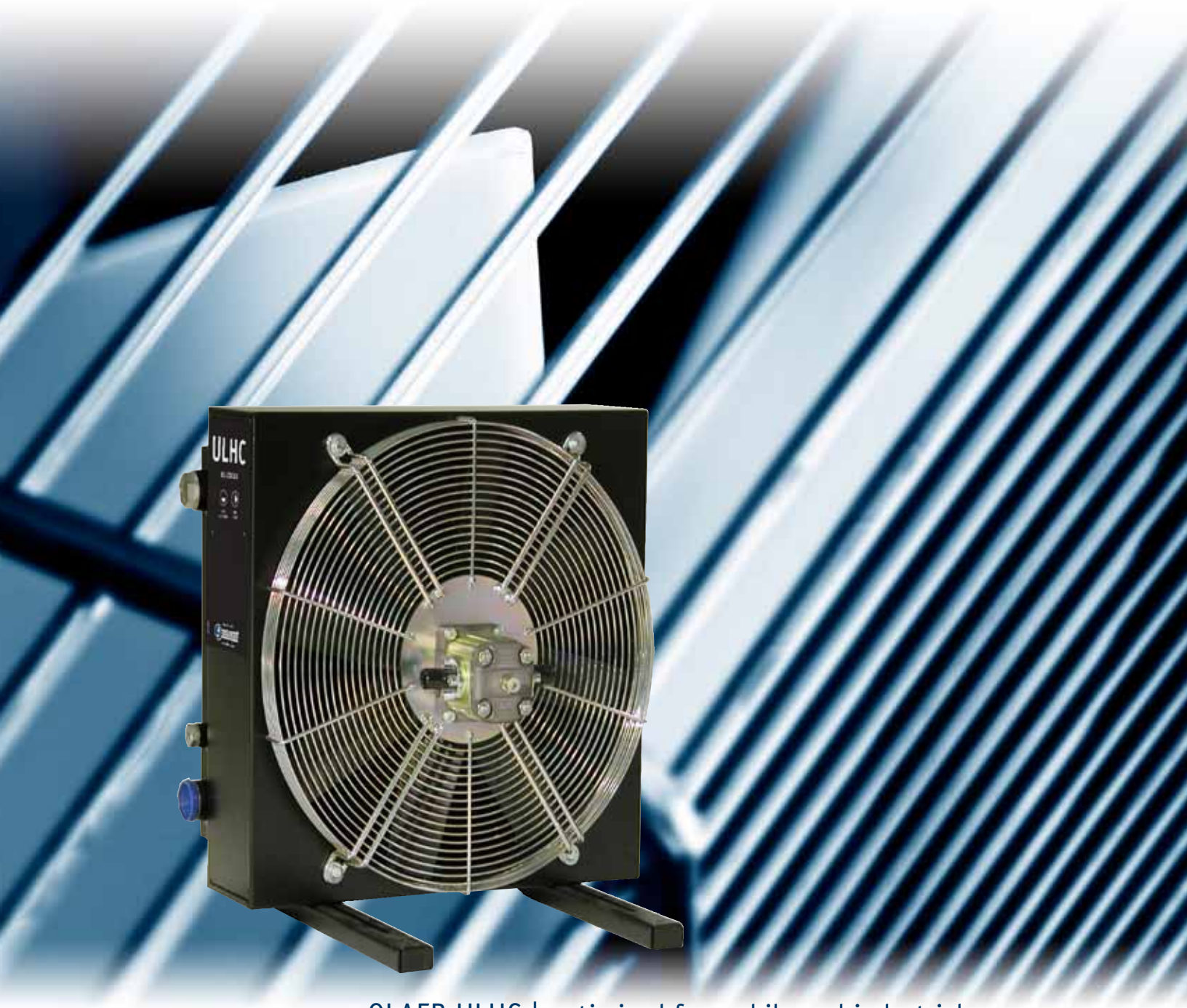
OLAER®

The Professional Choice

ULHC

With hydraulic motor



OLAER ULHC | optimized for mobile and industrial use

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.

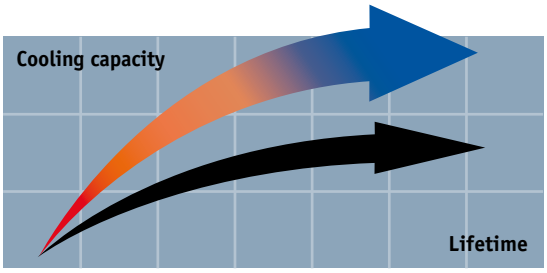
ULHC Oil Coolers

For mobile and industrial use - maximum cooling capacity 215 HP

The ULHC oil cooler with hydraulic motor is optimized for use in the mobile and industrial sector. Together with a wide range of accessories, the ULHC cooler is suitable for installation in most applications and environments. Choosing the right cooler requires precise 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 (Ploss = Pcool = Pin – Pused).

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.

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

Easy to maintain and easy to retrofit into many applications.

Hydraulic motor with displacement from 8.4 cc/rev to 25.2 cc/rev

Collar bearing for fan motor on larger models provides longer operating life.

Quiet Fan Design Due to optimization of material and blade design

Cooler matrix with low pressure drop and high cooling capacity.

Calculate the cooling capacity requirement

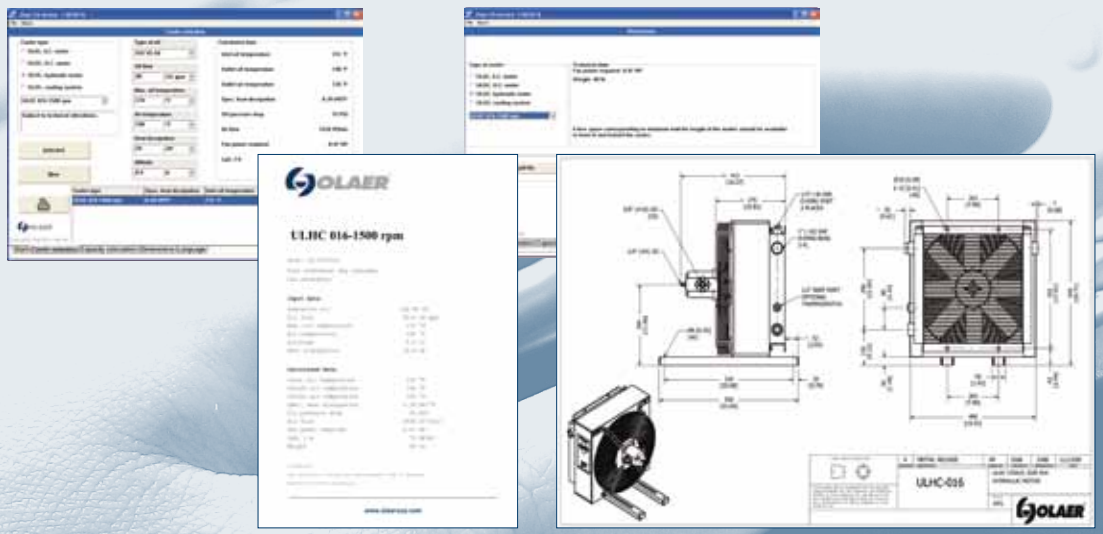
Cooling capacity requirement? → Installed Horse Power → Flow? Pressure? Pump efficiency? → Measure in your existing unit → Contact Olaer USA representative.

Installed Horse Power → Theoretical Horse power losses → Flow? Pressure? Pump efficiency?

Choose the right kind of cooler

Download the sizing software:
www.olaerusa.com

Enter your values ....



... suggested solution

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

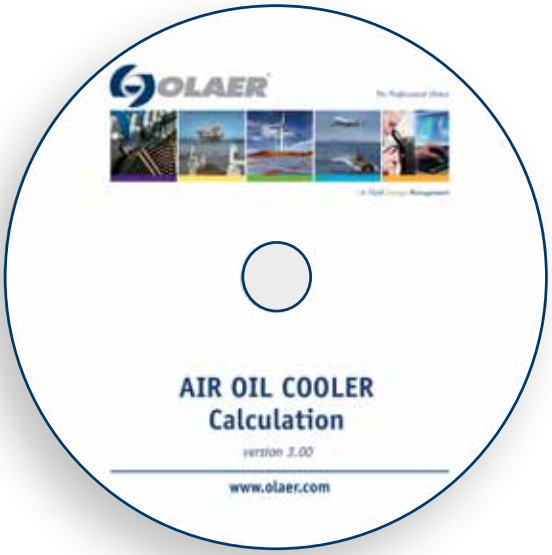
More cooling per $

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

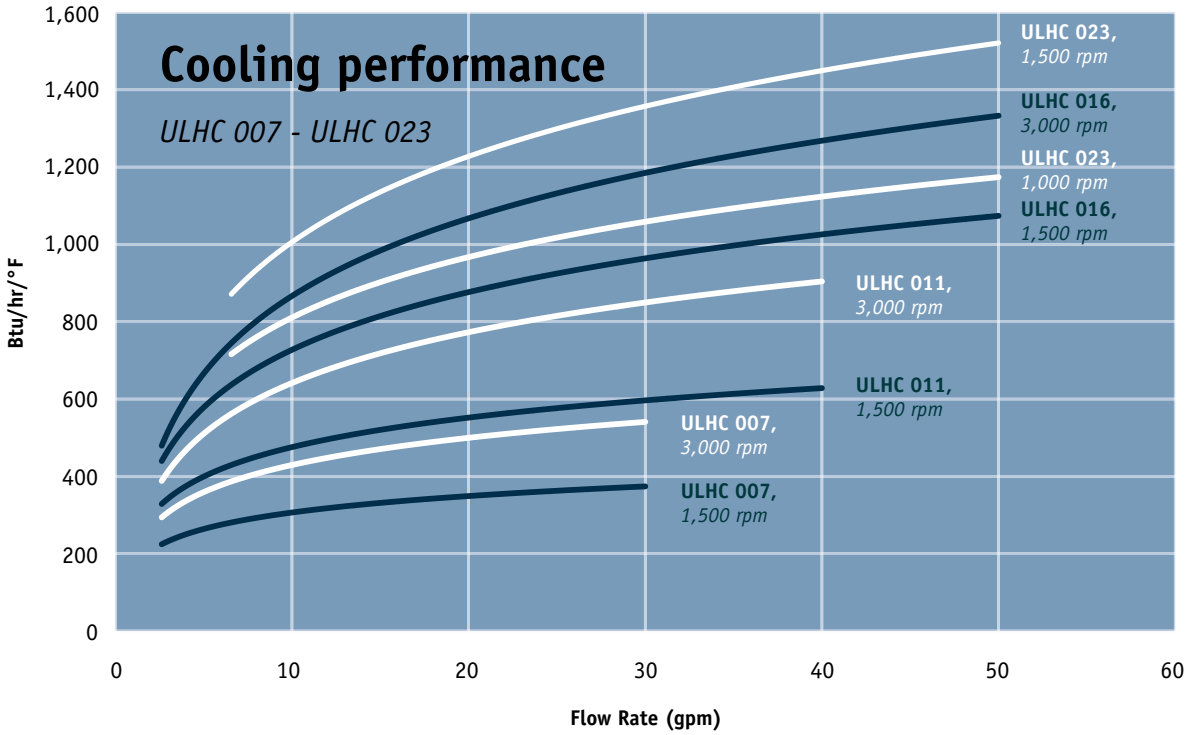
A more wide-ranging review of the hydraulic system is often a natural element of cooling calculations. Other potential system improvements can then be discussed – e.g. filtering, offline or online cooling, etc. Contact us for further guidance and information.

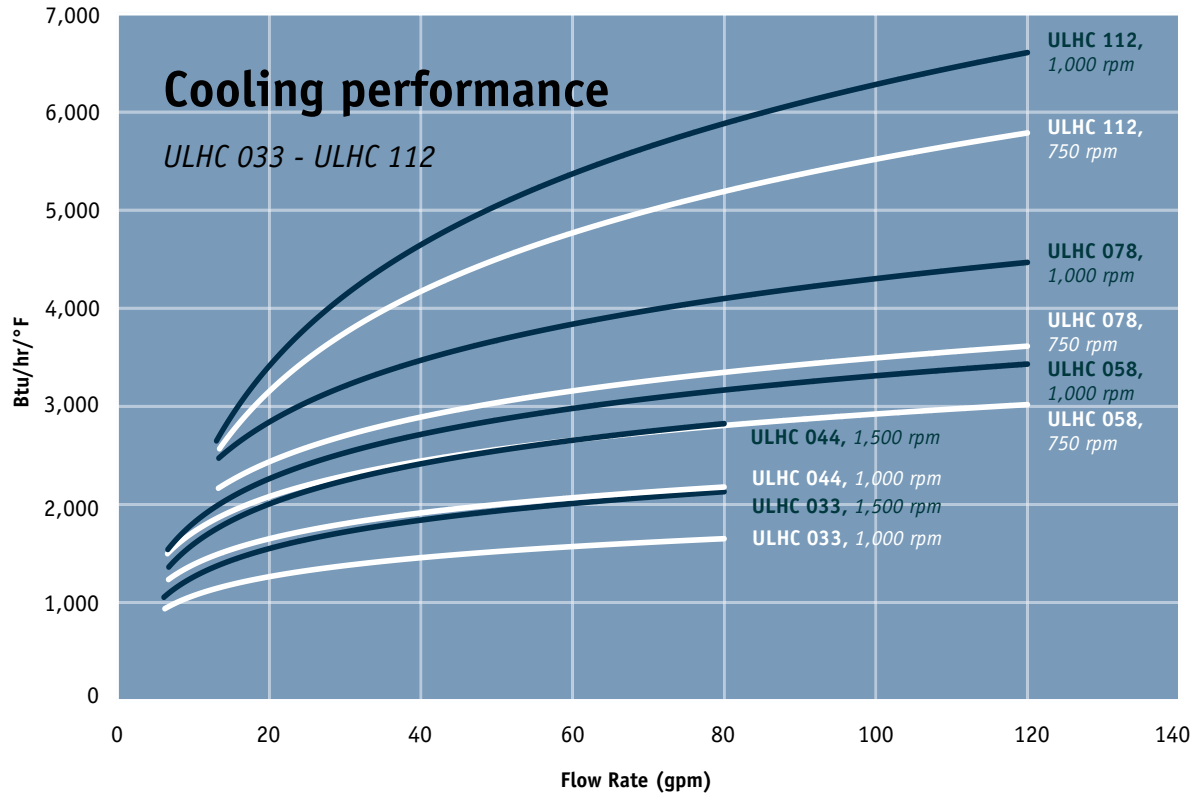
OLAER'S quality and performance guarantee assures you of maximum system performance and reliability.

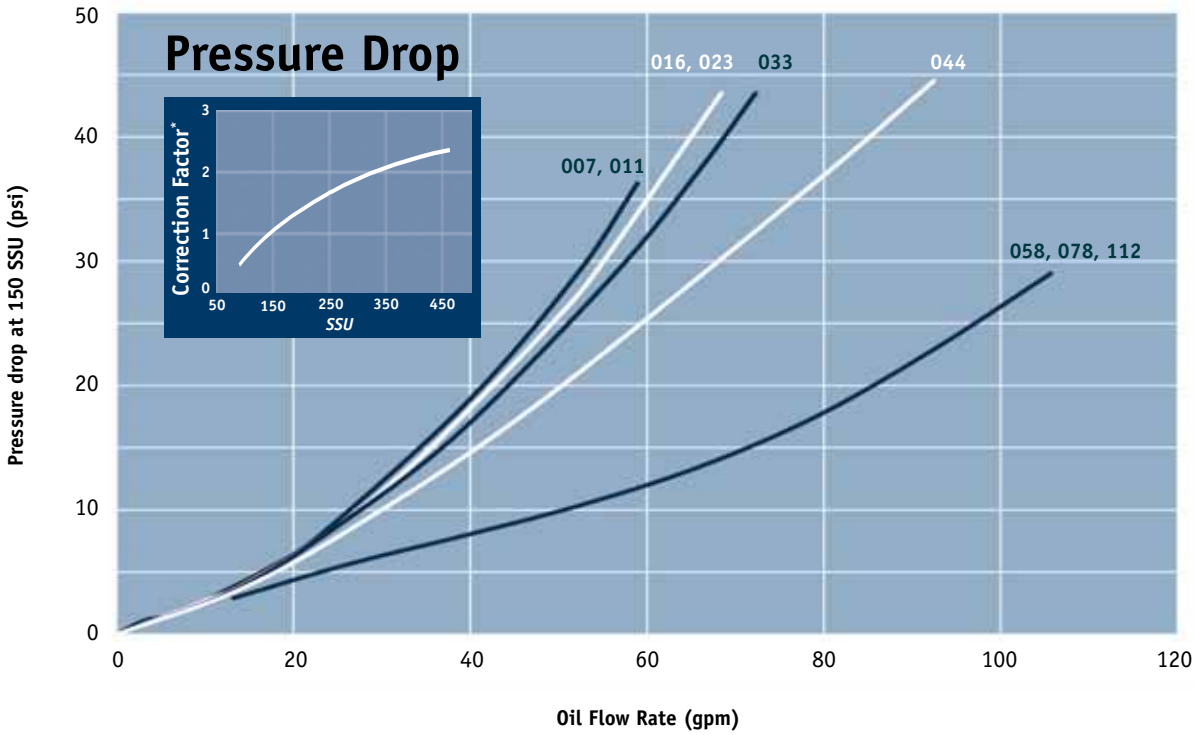
A continual desire for more cost efficient and environmentally friendly hydraulic systems requires continuous development. Areas where we are continuously seeking to improve performance include cooling capacity, noise level, pressure drop and fatigue.

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".

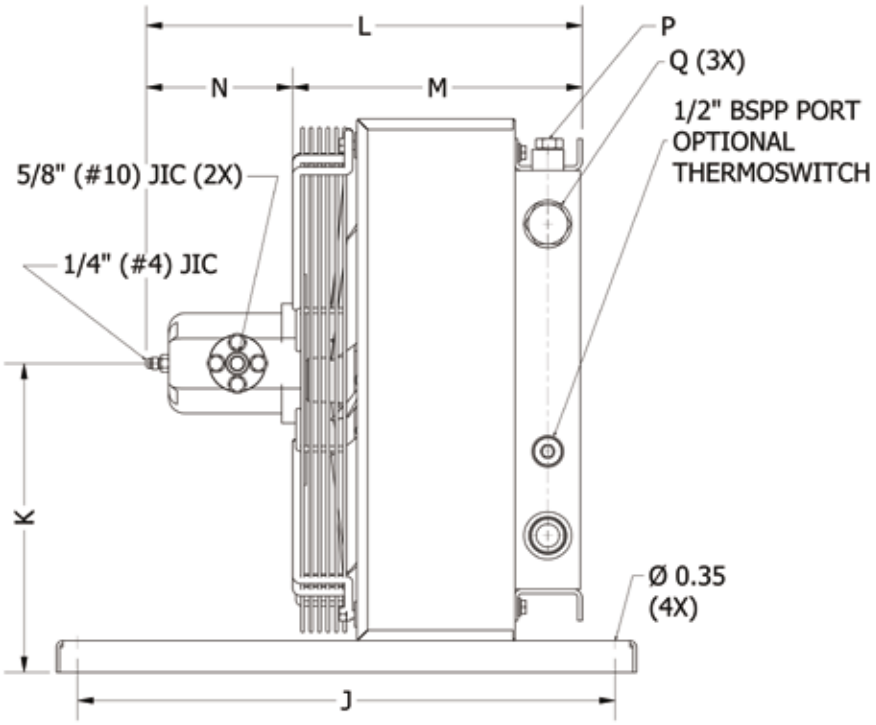
The cooling capacity curves are based on the inlet oil temperature and the ambient air temperature. An oil temperature of 140 °F and air temperature of 70 °F produce a temperature difference of 70 °F. Multiply by Btu/hr/°F for total cooling capacity.







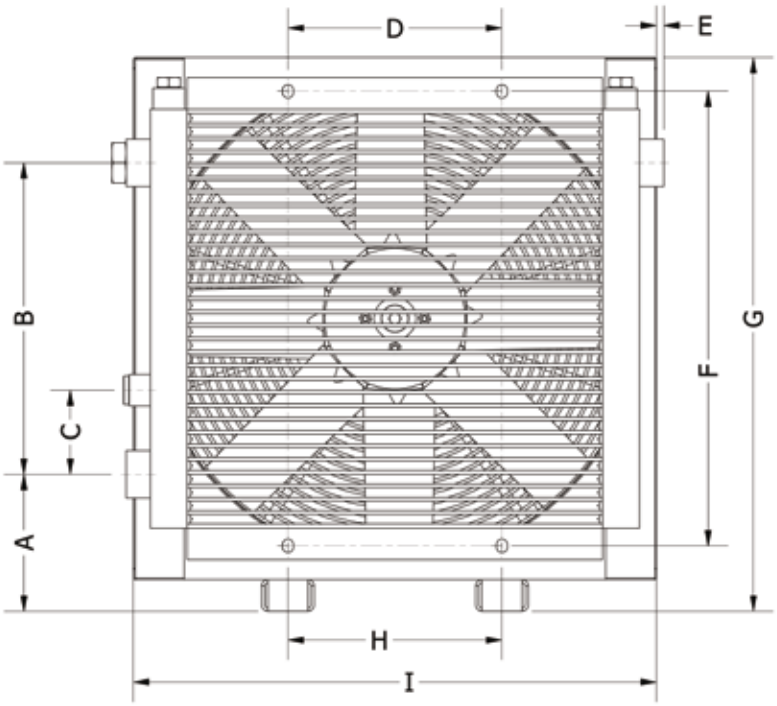
** Pressure Drop Correction Factor for other viscosities.*



TYPE	Fan Speed *rpm*	Fan Power *HP*	Weight *lbs. (Approx.)*	Max speed *rpm*	Acoustic pressure level *LpA dB(A) 3 ft**
ULHC 007	1,500	0.13	22	3,500	62
	3,000	0.87	22	3,500	79
ULHC 011	1,500	0.27	33	3,500	67
	3,000	2.01	33	3,500	82
ULHC 016	1,500	0.13	40	3,500	60
	3,000	0.47	40	3,500	70
ULHC 023	1,000	0.20	66	2,840	64
	1,500	0.67	66	2,840	76
ULHC 033	1,000	0.87	88	2,350	75
	1,500	2.68	88	2,350	85
ULHC 044	1,000	0.94	123	2,350	77
	1,500	2.68	123	2,350	86
ULHC 058	750	1.01	170	1,850	75
	1,000	2.41	170	1,850	83
ULHC 078	750	0.94	245	1,690	81
	1,000	2.15	245	1,690	88
ULHC 112	750	2.28	276	1,440	86
	1,000	5.36	276	1,440	92

** = Noise level tolerance ± 3 dB(A).*

MOTOR	Displacement *cm^3/r*	N *ULHC 007 -ULHC 023*	N *ULHC 033 - ULHC 112*	Max. working pressure *psi*
A	8.4	4.5	6.1	3,000
B	10.8	4.8	6.3	3,000
C	14.4	4.9	6.6	3,000
D	16.8	5.0	6.7	3,000
E	19.2	5.2	6.9	3,000
F	25.2	5.6	7.4	2,330



TYPE	A	B	C	D	E	F	G	H	I	J	K
ULHC 007	5.2	6.3	3.2	8.0	0.2	11.7	15.6	8.0	14.4	20.1	7.8
ULHC 011	5.4	9.0	3.2	8.0	0.1	14.3	18.5	8.0	17.3	20.1	9.2
ULHC 016	5.1	11.7	3.2	8.0	0.3	17.0	10.7	8.0	19.5	20.1	11.6
ULHC 023	5.2	14.9	3.2	14.0	0.2	20.2	24.0	14.0	22.8	20.1	12.0
ULHC 033	5.2	19.1	3.2	14.0	-	24.5	28.4	14.0	27.2	20.1	14.2
ULHC 044	4.6	26.1	3.2	14.0	-	31.5	34.1	14.0	27.2	20.1	17.0
ULHC 058	5.2	26.1	3.2	20.0	-	31.5	35.4	20.0	34.2	20.1	17.6
ULHC 078	5.2	32.3	3.9	26.8	-	38.9	41.4	20.4	40.2	24.0	20.7
ULHC 112	5.1	38.8	3.9	31.1	0.2	45.4	47.8	23.6	46.7	24.0	23.9

All dimensions listed above are in inches.

TYPE	L *(max)*	M	P *SAE O-ring*	Q *SAE O-ring Boss*	Motor Selection
ULHC 007	14.4	8.9	½" (#8)	1" (#16)	A - F
ULHC 011	15.3	9.8	½" (#8)	1" (#16)	A - F
ULHC 016	16.3	10.8	½" (#8)	1" (#16)	A - F
ULHC 023	16.6	11.1	½" (#8)	1" (#16)	A - F
ULHC 033	19.7	12.5	½" (#8)	1¼" (#20)	A - F
ULHC 044	20.7	13.5	½" (#8)	1¼" (#20)	A - F
ULHC 058	22.4	15.3	¾" (#12)	1½" (#24)	A - F
ULHC 078	21.4	16.3	¾" (#12)	1½" (#24)	B - F
ULHC 112	24.4	17.2	¾" (#12)	1½" (#24)	D - F

Order Key for ULHC Oil Coolers

All positions must be filled in when ordering.

EXAMPLE:

ULHC	**-**	**007**	**-**	**A**	**-**	**120**	**-**	**SA**
Series		*Model*		*Hydraulic motor displacement*		*Thermoswitch*		*Core Bypass*
1		*2*		*3*		*4*		*5*

1. OIL COOLER SERIES WITH HYDRAULIC MOTOR; ULHC

2. COOLER SIZE/MODEL

007, 011, 016, 023, 033, 044, 058, 078 and 112.

3. HYDRAULIC MOTOR, DISPLACEMENT

No hydraulic motor	= W
Displacement 8.4 cm^3/rev.	= A
Displacement 10.8 cm^3/rev.	= B
Displacement 14.4 cm^3/rev.	= C
Displacement 16.8 cm^3/rev.	= D
Displacement 19.2 cm^3/rev.	= E
Displacement 25.2 cm^3/rev.	= F
Not listed, consult Olaer USA	= Z

4. THERMO CONTACT

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 matrix	Aluminum
Fan blades/Housing	Glass fiber reinforced polypropylene/ Aluminum
Fan housing	Steel
Fan guard	Steel
Other parts	Steel
Surface treatment	Electrostatically powder-coated

COOLER CORE

Maximum static operating pressure	300 psi
Dynamic operating 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 catalog are created using oil type ISO VG 46 at 140 °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.

Stone guard/Dust guard

Protects components and systems from tough conditions.

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.

Lifting eyes

For simple installation and relocation.

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.

The Professional Choice

- 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.