



# °LAUDA

°LAUDA

## LAUDA ULTRACOOL

The next stage of energy-efficient  
temperature control

°FAHRENHEIT. °CELSIUS. °LAUDA.

# LAUDA Ultracool

## Process circulation chiller with an outstanding range of functions

-10 °C 35 °C

### Energy-efficient with cost-savings of up to 50 percent

Developed with a focus on energy efficiency, the new LAUDA Ultracool circulation chillers make a pivotal contribution to reducing your operating costs. The newly developed devices allow energy costs to be reduced by up to 50 percent, depending on the operating conditions.

### Optimized for Industry 4.0

Thanks to the innovative operating concept, the LAUDA Ultracool circulation chillers can be conveniently monitored and controlled from a distance – via a connected remote control or the integrated web server on a PC or laptop. A connection to the LAUDA Cloud allows device data to be saved, analyzed and used for remote maintenance.

### Advanced technology for a broad range of applications

Extensive technical innovation and a significantly expanded range of functions characterize the various LAUDA Ultracool devices and additional equipment options. Custom options and a wide cooling output range make the new generation of LAUDA Ultracool circulation chillers the ideal solution for a broad range of industrial applications.



# Energy efficiency

## High energy saving and a short payback time

Depending on the operating conditions, the new circulation chillers are up to 50 percent more energy-efficient than conventional circulation chillers which are not Ecodesign-compliant.

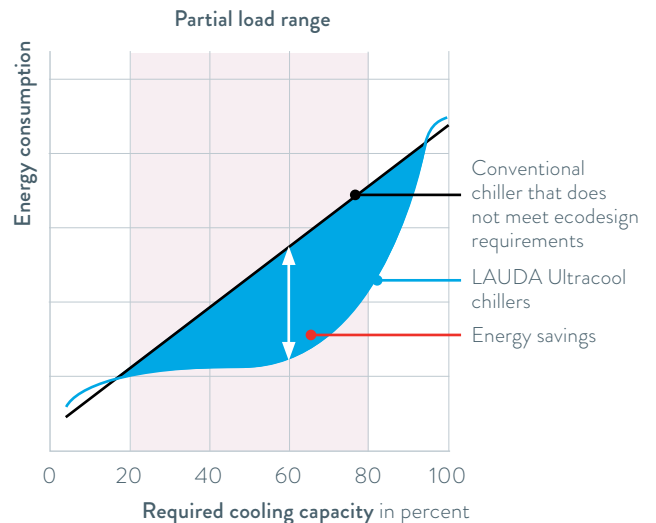
A modern chiller that conforms with the EU Directive has clear advantages over older devices or products still in use and available outside the EU, which are not subject to the Directive. Some chillers exceed the required SEPR values\* for energy efficiency by some distance, such as the new generation of LAUDA Ultracool circulation chillers, which meet ecodesign requirements and incorporate a speed-controlled compressor, ventilator fan and electronic expansion valve.

## Compliant with the Ecodesign Directive

The new LAUDA Ultracool circulation chillers comply with the Ecodesign Directive 2009/125/EC. This defines the limit values for energy efficiency that process circulation chillers must fulfill.

## Amortization times

Savings are made due to the reduced power consumption of the respective cooler. The cost savings are a product of the energy savings and electricity costs.



The degree of chiller utilization is decisive in determining the amount of energy saved. The energy savings clearly demonstrate the efficiency of the new Ultracool model types from LAUDA.

## LAUDA Ultracool UC 24

Temperature profile (annual average temperatures)	Oslo/Helsinki/Stockholm (10 °C)	Amsterdam/London/Paris (15 °C)	Barcelona/Milan/Athens (20 °C)
Required cooling capacity	22 kW	22 kW	22 kW
Outflow temperature	10 °C	10 °C	10 °C
Energy costs	0.13 €/kWh	0.13 €/kWh	0.13 €/kWh
Working hours per year / day	12 hrs / 260 days	12 hrs / 260 days	12 hrs / 260 days
Energy savings	7913 kWh/year	5384 kWh/year	2716 kWh/year
Cost saving/year	1029 €	700 €	353 €

The higher purchase price of an energy-efficient chiller, compared to a conventional device, typically amortizes between 1.5 and 2.5 years, thanks to savings made from reduced energy requirements.

The customer can determine the amortization time of a modern, energy-saving circulation chiller compared to conventional devices already in operation based on calculated energy savings, lower water/glycol costs, a tank content reduced by up to 80 percent and the lower maintenance costs of the new device.



\*SEPR = Seasonal Energy Performance Ratio

# LAUDA Ultracool

## Connectivity

### Optimized for Industry 4.0

The new process circulation chillers are equipped with an LCD remote control as standard. An Ethernet interface for connection to a computer or local network (LAN) is also integrated as standard. In addition, the Ultracool devices can be controlled by means of a web server via a PC or even mobile devices – an internet connection is not necessary. All you need to do is to configure an IP address for the circulation chiller, which must be in the same network as the terminal device. The LAUDA Cloud enables monitoring and analysis of the device from any computer with an Internet connection – irrespective of location.

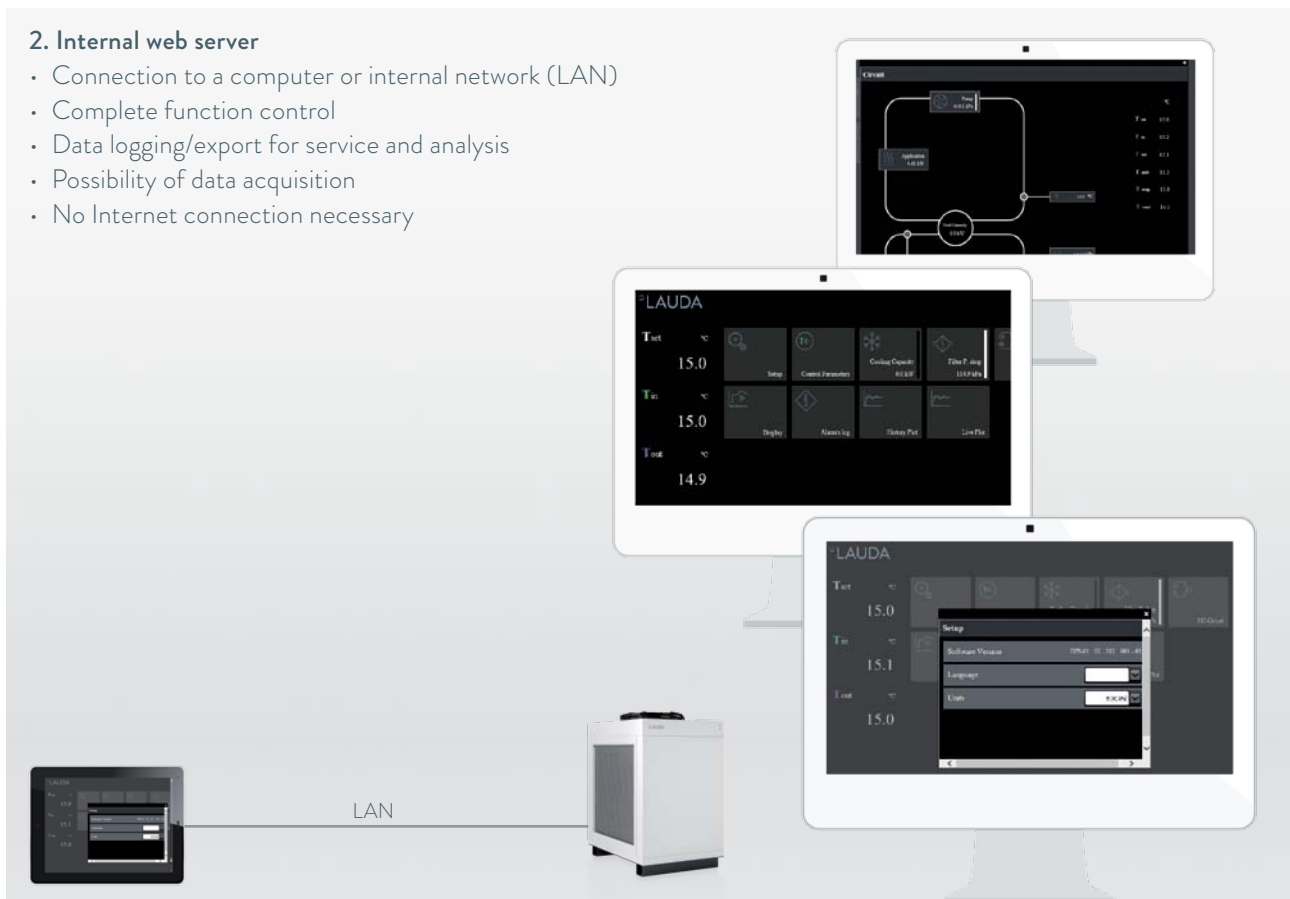
#### 1. LCD remote control

- Complete function control
- Ergonomic and user-friendly
- Cable connection with a length of 5 m



#### 2. Internal web server

- Connection to a computer or internal network (LAN)
- Complete function control
- Data logging/export for service and analysis
- Possibility of data acquisition
- No Internet connection necessary







The LAUDA Cloud: Clearly structured dashboards and KPIs facilitate monitoring and analysis

### 3. LAUDA Cloud

- New options for monitoring and control
- Storage and evaluation of numerous device parameters
- Remote maintenance minimizes costs and maximizes service efficiency
- Complete functionality on all devices (desktop and notebook computers, smartphones, tablets) and all popular web browsers
- Flexible connection to the cloud – 4G mobile communication via gateway
- Continuous expansion of the LAUDA Cloud and its digital services, particularly of preventative and predictive maintenance through the use of artificial intelligence/machine learning
- Multi-level access control and state-of-the-art cloud security (e.g. two-factor authentication)



# LAUDA Ultracool

## Production features and benefits at a glance

NEW

### Highlights of the new generation



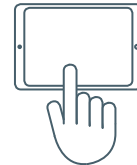
#### Improved performance

- Increased temperature stability of  $\pm 0.5$  K increases the process security of the cooled system
- Expanded working temperature range from  $-10$  to  $35^{\circ}\text{C}$  covers a wide range of applications
- Reliable and safe operation, even in extreme conditions and ambient temperatures as low as  $-15^{\circ}\text{C}$



#### Optimal cost balance

- Reduced tank volume reduces installation and operating costs
- Small footprint compared to comparable previous models
- High energy efficiency results in lower operating costs



#### Simpler operation

- Full connectivity offers complete control via control systems and mobile devices
- Connection to the LAUDA Cloud enables remote maintenance and increases device availability
- Suitable for global use, thanks to various display options:  $^{\circ}\text{C}$  or  $^{\circ}\text{F}$ , menu in German, English, Spanish and French

### Comprehensive standard equipment with many additional benefits

- High-quality block pumps for high conveying capacity
- Numerous options and accessories for customer-specific adaptations
- Suitable for outdoor installation, thanks to protection level IP 54



High-quality, service-friendly product design



Fan control as standard allows operation at ambient temperatures as low as  $-15^{\circ}\text{C}$  and reduces noise emissions






# Options and accessories

A wide variety of options and accessories are available for flexible adaptation to specific applications.

## Options

	Reinforced pump (5 bar)	Pump with 5 bar nominal pressure for higher pressure requirements
	Flow meter (FM)	Integrated flow meter to monitor the process flow
	Air filter for condenser (CFM)	Metal air filter for condenser: For protection in dusty environments
	Feet (FT)	Feet for placement on the floor
	Water-cooled version (W)	Cooling of the condenser with water
	Low sound level (LSL)	Sound insulation to reduce the noise level
	Low set point (LSP)	Thermal insulation at set points below 0°C to reduce thermal losses
	Phase detector (PHD)	Indicates whether the rotating field direction is correct

## Accessories

	External bypass	Required to prevent possible damage to components if the temperature difference between the inlet and outlet is more than 10°C.
	Pressure reducing valve	Sets the maximum pressure in pressure sensitive applications
	Installation kits (2 x 10/20/50 m)	Contains two hoses and two connection sets
	Water solenoid valve kit	Prevents liquid from backing up when pump is stopped. Includes a non-return valve and a solenoid valve
	Hose connection set	2 x hose nozzle 1" or 1½"

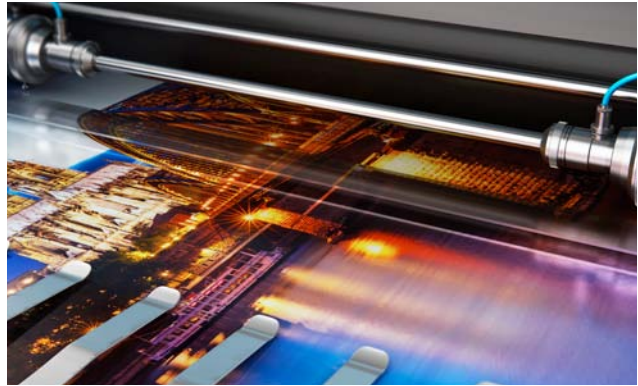
# LAUDA Ultracool

## Fields of application

### Digital printing machines

Cooling points:

- Inking units
- Waste heat inside the machine



### Laser cutting machines

Cooling points:

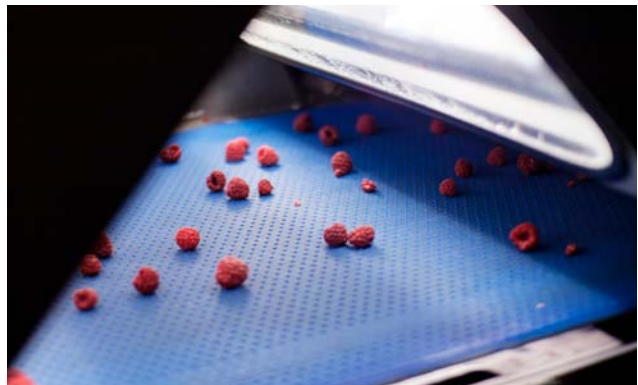
- Laser
- Optics
- Control cabinet



### Laser sorting machines (food and recycling industry)

Cooling points:

- Laser
- Housing
- Motors



### Spot welding machines, CNC machines

Cooling points:

- Electrodes
- Electric motors
- Transformers





### Induction heating systems

Cooling points:

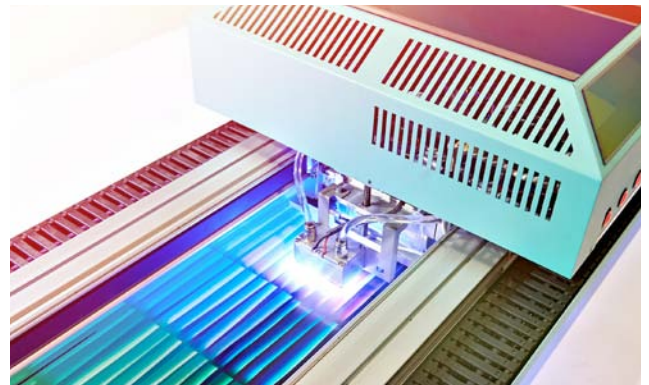
- Working coil
- Working head
- Power supply



### UV coating (printing industry)

Cooling points:

- Lamp cover



### Packing machines (food industry)

Cooling points:

- Control cabinet



### Hydrogen generators

Cooling points:

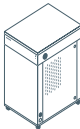

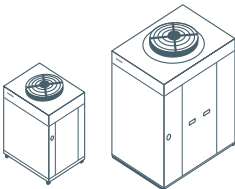

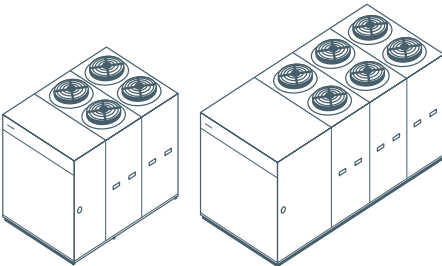

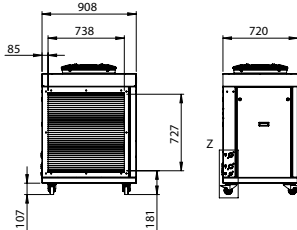
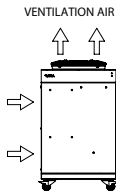
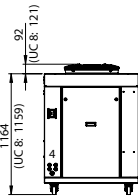


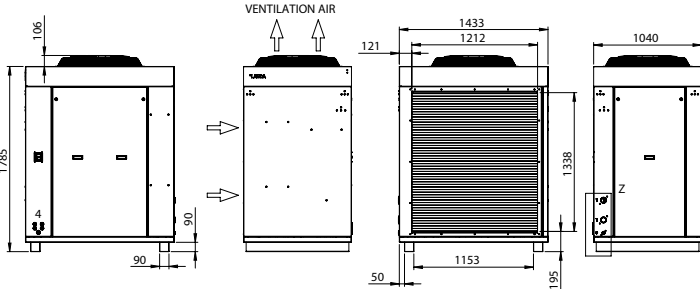
- Electrolyte
- Gas cooling



# LAUDA Ultracool

## Overview of functions

The new, energy-efficient Ultracool process circulation chillers cover the complete range of functions for applications ranging from laboratory applications, all the way through to industrial applications with high cooling capacity demands.

Device type		Cooling capacity range
	UC 2	
	UC 4	
	UC 8	
	UC 14	
	UC 24	
	UC 50	
	UC 65	
	UC 80	
	UC 100	
	UC 130	
	UC 160	
	UC 240	
<div></div> <div><div>LAUDA Ultracool device types UC 2, UC 4</div><div>LAUDA Ultracool device types UC 8, UC 14, UC 24</div></div>		
<div></div> <div>LAUDA Ultracool device types UC 50, UC 65</div>		

# Device overview

## Technical data

Device type	Working temperature range °C	Temperature stability ±K	Ambient temperature °C	Cooling capacity at 20 °C water outlet temperature <sup>1</sup> kW	Cooling capacity at 10 °C water outlet temperature <sup>1</sup> kW	Max. pump pressure bar	Nominal flow rate L/min	Pump connection thread	Water tank volume L	Weight kg	Protection level	SEPR*	Cat. No.
LAUDA Ultracool – specifications at 50 Hz													
UC 2	-10 ... 35	0.5	-15 ... 50	3.1	2.4	3.4	5.6	Rp ½	12	115	IP 32	6.24	L003509
UC 4	-10 ... 35	0.5	-15 ... 50	6.1	4.8	3.4	13.8	Rp ½	12	115	IP 32	5.23	L003511
UC 8	-10 ... 35	0.5	-15 ... 50	13.3	10.2	4.0	26.6	Rp 1	35	150	IP 54	6.44	L002853
UC 14	-10 ... 35	0.5	-15 ... 50	20.3	15.8	3.7	43.8	Rp 1	35	175	IP 54	6.41	L002854
UC 24	-10 ... 35	0.5	-15 ... 50	30.9	24.3	2.7	84.1	Rp 1	35	180	IP 54	5.63	L002855
UC 50	-10 ... 35	0.5	-15 ... 50	65.5	51.2	3.3	150.0	Rp 1 ½	210	410	IP 54	5.37	L002856
UC 65	-10 ... 35	0.5	-15 ... 50	85.2	66.9	3.3	196.0	Rp 1 ½	210	440	IP 54	5.16	L002857
UC 80	-10 ... 35	1	-15 ... 50		80.0	3.0	230.0	Rp 2 ½			IP 54	6.5	
UC 100	-10 ... 35	1	-15 ... 50		100.0	3.0	287.0	Rp 2 ½			IP 54	6.1	
UC 130	-10 ... 35	1	-15 ... 50		130.0	3.0	373.0	Rp 2 ½			IP 54	6.1	
UC 160	-10 ... 35	1	-15 ... 50		160.0	3.0	459.0	Rp 2 ½			IP 54	5.9	
UC 240	-10 ... 35	1	-15 ... 50		240.0	3.0	689.0	DIN-2566 DN 80			IP 54	5.9	

<sup>1</sup> at 25 °C ambient temperature

\*SEPR = Seasonal Energy Performance Ratio

