

The right temperature worldwide

LAUDA



- Low maintenance requirements
- Flexible designs for customization
- Suitable for outdoor installation

**LAUDA Ultracool
Industrial chillers**

LAUDA Ultracool

Process circulation chillers for industrial applications with cooling outputs up to 265 kW at working temperatures from -5 up to 25 °C in ambient conditions from -15 up to 50 °C



Application examples

- Digital printing
- Laser cutting
- Laser sorting
- Point welding
- Induction heating
- Injection molding

High cooling outputs, compact design, versatile options

LAUDA Ultracool chillers provide reliable temperature control and ensure secure processing. The chillers of the UC series are available as Ultracool Standard (ST) and Ultracool Superplus (SP). The Ultracool Standard units provide the necessary cooling output for customers who already have a pump and a water reservoir installed. The Superplus models are plug & operate systems equipped with a cold water tank, a centrifugal pump and an

internal bypass. All chillers are already equipped with an antifreeze protection thermostat to prevent freezing of the heat exchanger. Integrated pressure switches protect the circuit against pressure levels that drift too high or too low. Housings made from galvanized steel and externally coated with epoxy resin protects against corrosion even under aggressive ambient conditions. Most of the models are suitable for outdoor installation.

Your advantages at a glance



The Ultracool advantages

Your benefits



- Centrifugal high-quality water pump with internal bypass
- Use of plate heat exchangers outside of the water tank
- Evaporator and pump in stainless steel construction
- Level switch

- Allows flow rates from 0 to 100 percent
- Efficient heat exchange and low energy loss
- Corrosion resistant
- Pump protection in case of low level



- Integrated water filter and antibacterial additive
- Insulated water tank made of polyethylene
- Use of thermostatic expansion valve

- Protection of application and chiller system
- Corrosion resistant and durable
- Automatic adjustment to changing work load conditions and optimal cooling output



- Protection class IP 54 (for Midi and Maxi)
- Suitable for ambient temperatures up to 50 °C
- Housing made from galvanized steel and externally coated with epoxy resin
- Antifreeze protection thermostat
- Use of R 134a or R 407C as refrigerants

- Suitable for outdoor installation
- Operation under extreme ambient temperature conditions
- Protection against corrosion even under aggressive ambient conditions
- Prevents freezing of heat exchanger
- No ozone depletion potential (ODP)



- Versatile options, including pump, special color, stainless steel housing, wheels, external bypass, water-cooled versions, deionized water. Additional options see page 16.

- Customization possibilities for OEM



- Compact and smart design
- Integrated pressure switches
- Large cold water tank

- User friendly installation and maintenance and reduction of footprint to save installation space
- Protection of the refrigeration circuit against pressures that drift too high or too low
- Keeps water temperature constant even under varying load conditions

LAUDA Ultracool

Ultracool UC Mini chillers up to 4.7 kW



The three UC Mini chillers are available with cooling outputs from 1.9 up to 4.7 kW. The models work with a reciprocating compressor and a centrifugal pump. The pump is noise reduced and works with a very flat flow rate/pressure characteristic. This allows the user to easily adjust the water flow without jeopardizing the pressure.

The technical construction of the cooling system allows the chillers to be operated at ambient temperatures up to 50 °C.



Circulation chiller UC-0040 SP



Options UC Mini

- 5 bar pump
- Refrfluid 1 (heat transfer liquid with antifreeze + bactericide + anticorrosive)
- External bypass
- Modbus remote control
- Increased temperature stability ± 0.7 K (instead of ± 2 K)
- Water-cooled version
- Stainless steel housing for food and medical industry
- Wheels
- Customized color
- Condenser air filter
- 3-phase power supply



Ultracool Standard (ST): without pump and water tank
Additional technical data from page 12

Ultracool Superplus (SP): pump and water tank included

Technical features UC Mini Standard		UC-0020 ST	UC-0030 ST	UC-0040 ST
Working temperature range	°C	-5...25	-5...25	-5...25
Ambient temperature range	°C	5...50	5...50	5...50
Cooling output*	kW	1.9	3.4	4.7
Cat. No. 230 V; 50 Hz		E6002310	E6003310	E6004310
Cat. No. 230 V; 60 Hz		E6002330	E6003330	E6004330

Technical features UC Mini Superplus		UC-0020 SP	UC-0030 SP	UC-0040 SP
Working temperature range	°C	-5...25	-5...25	-5...25
Ambient temperature range	°C	5...50	5...50	5...50
Cooling output*	kW	1.9	3.4	4.7
Pump pressure nominal**	bar	3.3	3.0	2.8
Pump flow nominal**	L/min	5.6	10.3	13.8
Volume water tank	L	35	35	35
Cat. No. 230 V; 50 Hz		E6002311	E6003311	E6004311
Cat. No. 230 V; 60 Hz		E6002331	E6003331	E6004331

* At 10 °C water outlet temperature and 25 °C ambient temperature, for 50 Hz versions

** Nominal values: at a temperature difference of 5 K between inlet and outlet at the given cooling capacity

Ultracool UC Midi chillers up to 26.3 kW



Six UC Midi types have cooling outputs ranging from 7.1 up to 26.3 kW. The models work with a reciprocating or scroll compressor and a centrifugal pump. The noise-reduced pump allows customers to easily adjust the water flow. The use of R 134a as refrigerant ensures very low working pressures inside the refrigeration system and operation in ambient temperatures up to 50 °C. The integrated motor fan speed regulator allows operation in ambient conditions up to -15 °C and reduces the noise level additionally.

The models UC-0060 to UC-0240 are also available as UC laser models with pre-configured options included.



Circulation chiller UC-0240 SP



Options UC Midi

- 5 bar pump
- Refrfluid 1 (heat transfer liquid with antifreeze + bactericide + anticorrosive)
- External bypass
- Modbus remote control
- Auto filling kit
- Increased temperature stability ± 0.7 K (instead of ± 2 K)
- Water pre-heater
- Water-cooled version
- Feet (wheels as standard)
- External threaded BSP (British Standard Pipe) or NPT stainless steel connections
- Customized color
- Condenser air filter



UC laser with:

- 5 bar pump
- Pump totally in stainless steel
- Increased temperature stability ± 0.7 K



Ultracool Standard (ST): without pump and water tank
Additional technical data from page 12

Ultracool Superplus (SP): pump and water tank included

Technical features UC Midi Standard		UC-0060 ST	UC-0080 ST	UC-0100 ST	UC-0140 ST	UC-0180 ST	UC-0240 ST
Working temperature range	°C	-5...25	-5...25	-5...25	-5...25	-5...25	-5...25
Ambient temperature range	°C	-15...50	-15...50	-15...50	-15...50	-15...50	-15...50
Cooling output*	kW	7.1	9.4	11.4	14.0	22.0	26.3
Cat. No. 400 V; 3/PE; 50 Hz		E6006320	E6008320	E6010320	E6014320	E6018320	E6024320
Cat. No. 460 V; 3/PE; 60 Hz		E6006340	E6008340	E6010340	E6014340	E6018340	E6024340

Technical features UC Midi Superplus		UC-0060 SP	UC-0080 SP	UC-0100 SP	UC-0140 SP	UC-0180 SP	UC-0240 SP
Working temperature range	°C	-5...25	-5...25	-5...25	-5...25	-5...25	-5...25
Ambient temperature range	°C	-15...50	-15...50	-15...50	-15...50	-15...50	-15...50
Cooling output*	kW	7.1	9.4	11.4	14.0	22.0	26.3
Pump pressure nominal**	bar	4.0	4.0	3.9	3.7	3.2	2.7
Pump flow nominal**	L/min	20.1	26.6	33.6	43.8	62.6	84.1
Volume water tank	L	100	100	100	100	100	100
Cat. No. 400 V; 3/PE; 50 Hz		E6006323	E6008323	E6010323	E6014323	E6018323	E6024323
Cat. No. 460 V; 3/PE; 60 Hz		E6006341	E6008341	E6010341	E6014341	E6018341	E6024341

* At 10 °C water outlet temperature and 25 °C ambient temperature, for 50 Hz versions

** Nominal values: at a temperature difference of 5 K between inlet and outlet at the given cooling capacity

LAUDA Ultracool

Ultracool UC Maxi chillers up to 265 kW



Within the Ultracool Maxi range, there are four chillers with cooling outputs from 34.1 up to 64.4 kW which work with one single refrigeration circuit. The five models from 87.9 up to 265 kW of cooling capacities work with two independent refrigeration circuits to provide a backup security. All Maxi models are equipped with scroll compressors, work with R 407C as refrigerant and are suitable for outdoor installation. The internal pipes for the water circuit are made of PP-R (polypropylene random copolymer) and are thermowelded. Besides the main advantage that these connections are absolutely leak free, PP-R is corrosion and frost proof, allow for smaller pressure drops and are long lasting.

The models UC-0300 to UC-0650 are also available as UC laser models with pre-configured options included.



Circulation chiller UC-0400 SP



Options UC Maxi

- 5 bar pump
- Refrfluid 1 (heat transfer liquid with antifreeze + bactericide + anticorrosive)
- External bypass
- Auto filling kit
- Increased temperature stability ± 0.7 K (instead of ± 2 K)
- Water pre-heater
- Water-cooled version
- External threaded BSP or NPT stainless steel connections
- Motor fan speed regulator (for ambient temperatures below 0°C)
- Modbus remote control



UC laser with:

- 5 bar pump
- Pump totally in stainless steel
- Increased temperature stability ± 0.7 K



Ultracool Standard (ST): without pump and water tank
Additional technical data from page 12

Ultracool Superplus (SP): pump and water tank included

Technical features UC Maxi Standard	UC-0300 ST	UC-0400 ST	UC-0500 ST	UC-0650 ST	UC-0800 ST	UC-1000 ST	UC-1350 ST	UC-1700 ST	UC-2400 ST
Working temperature range	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25
Ambient temperature range*	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45
Cooling output**	kW 34.1	kW 43.3	kW 48.7	kW 64.4	kW 87.9	kW 106.4	kW 139.2	kW 175.7	kW 265.0
Cat. No. 400 V; 3/PE; 50 Hz	E6030320	E6040320	E6050320	E6065320	E6080220	E6100220	E6135220	E6170220	E6240220
Cat. No. 460 V; 3/PE; 60 Hz	E6030340	E6040340	E6050340	E6065340	E6080240	E6100240	E6135240	E6170240	E6240240

Technical features UC Maxi Superplus	UC-0300 SP	UC-0400 SP	UC-0500 SP	UC-0650 SP	UC-0800 SP	UC-1000 SP	UC-1350 SP	UC-1700 SP	UC-2400 SP
Working temperature range	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25	$^{\circ}\text{C}$ -5...25
Ambient temperature range*	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45	$^{\circ}\text{C}$ -15...45
Cooling output**	kW 34.1	kW 43.3	kW 48.7	kW 64.4	kW 87.9	kW 106.4	kW 139.2	kW 175.7	kW 265.0
Pump pressure nominal***	bar 3.9	bar 3.6	bar 3.3	bar 3.7	bar 3.4	bar 3.3	bar 4.3	bar 3.6	bar 3.8
Pump flow nominal***	L/min 98.0	L/min 123.0	L/min 150.0	L/min 196.0	L/min 247.0	L/min 299.0	L/min 392.0	L/min 494.0	L/min 733.0
Volume water tank	L 200	L 200	L 200	L 300	L 300	L 500	L 500	L 500	L 500
Cat. No. 400 V; 3/PE; 50 Hz	E6030323	E6040323	E6050323	E6065323	E6080223	E6100221	E6135221	E6170221	E6240221
Cat. No. 460 V; 3/PE; 60 Hz	E6030341	E6040341	E6050341	E6065341	E6080241	E6100241	E6135241	E6170241	E6240241

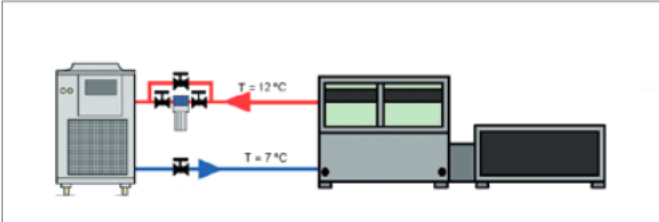
* -15 $^{\circ}\text{C}$ only with option motor fan speed regulator (see page 11)

** At 10 $^{\circ}\text{C}$ water outlet temperature and 25 $^{\circ}\text{C}$ ambient temperature, for 50 Hz versions

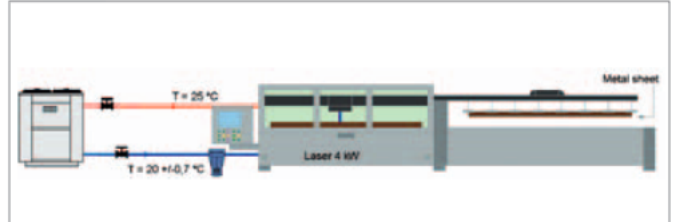
*** Nominal values: at a temperature difference of 5 K between inlet and outlet at the given cooling capacity

Application examples

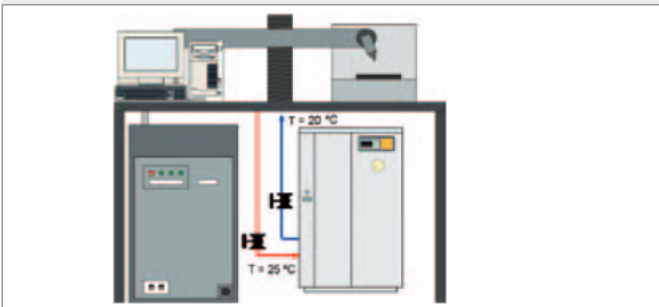
Digital printing



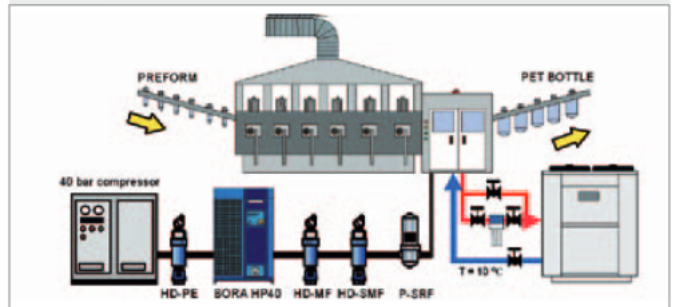
Laser cutting



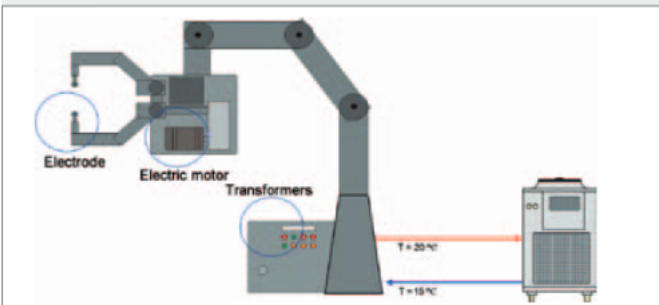
Laser marking



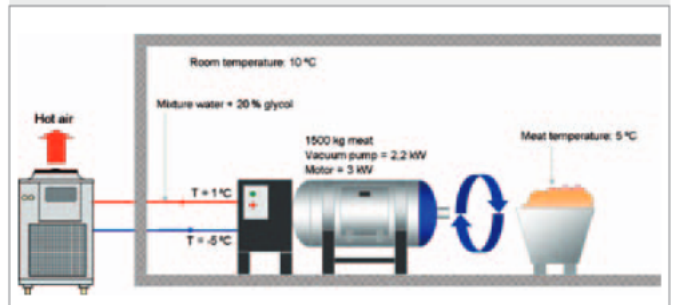
PET blowing



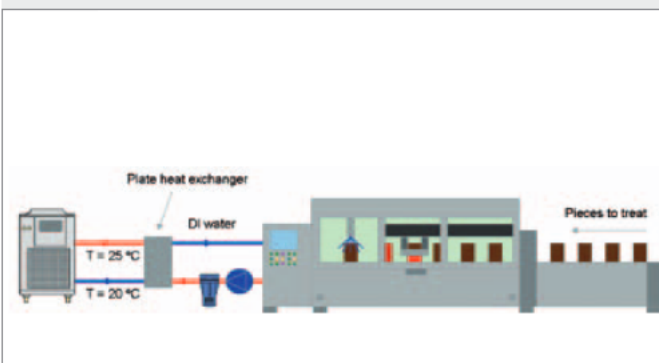
Point welding



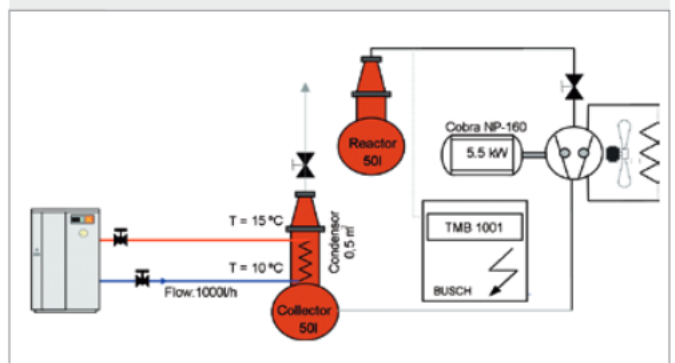
Meat mixing drums



Induction heating



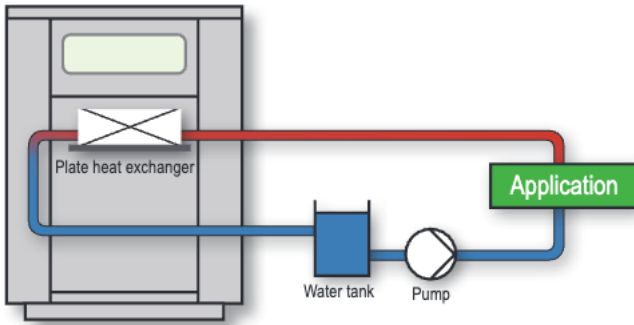
Vacuum pumps



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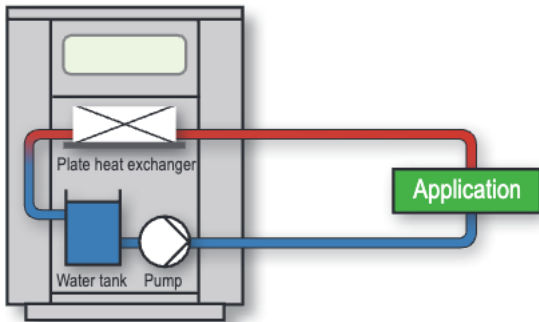
Recommended installation parameters

Standard ST (no pump and water tank included; pump and water tank to be provided by the customer)



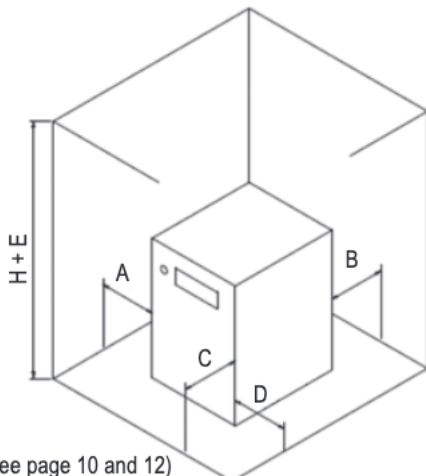
Ultracool Standard chiller (ST)

Superplus SP (pump and water tank included)



Ultracool Superplus chiller (SP)

Minimum space requirements around the Ultracool chillers:



H = height of chiller (see page 10 and 12)

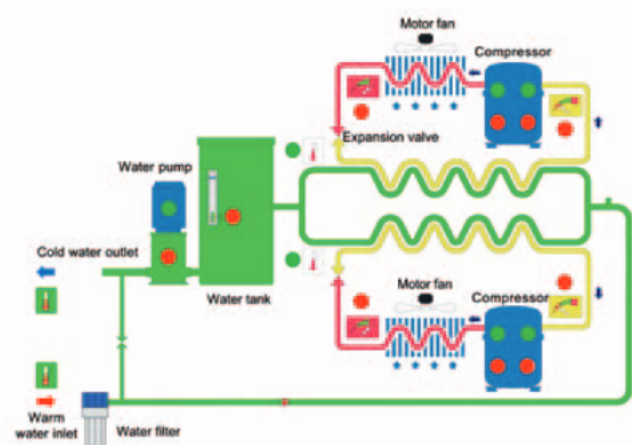
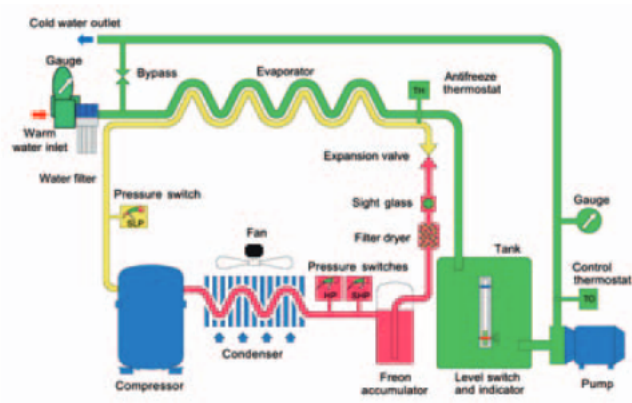


- Recommended installation in a well-ventilated site in a non-corrosive, dust-free atmosphere.
- The air renewal of the room should be at least $\frac{3}{4}$ of the chiller's motor fan flow (see page 12 and 14).
- In the case of outdoor installation the chiller should be protected from rain with a roof and it must be installed in such a way that the control panel receives as little direct sunlight as possible.
- The intake of fresh air onto the condenser must not be obstructed, avoiding any chance of air recycling.
- The chiller must be installed on a solid base avoiding uneven surfaces.
- Power cables are only included in UC-0020 to UC-0040

The Ultracool chillers generate a certain amount of heat during operation. This heat must be removed efficiently. Find the minimum distances around the different chiller types in the table below.

Minimum distance in m	A	B	C	D	E
Mini	0.5	0.5	0.5	0.5	0.5
Midi	1	1	1	1	1
Maxi	2	2	2	2	2

Refrigeration circuits



To secure high quality and reliability for the refrigeration circuits, only components of renowned suppliers are used.

The Ultracool models UC-0020 to UC-0650 work with one refrigeration circuit.

The Ultracool models UC-0800 to UC-2400 work with two refrigeration circuits.

The two independent refrigeration circuits provide a backup security. If one circuit should fail, the unit still runs with 50 percent of the cooling capacity. If less cooling capacity is needed one refrigeration circuit is switched off. Thus, energy consumption and consequently operation costs are reduced.

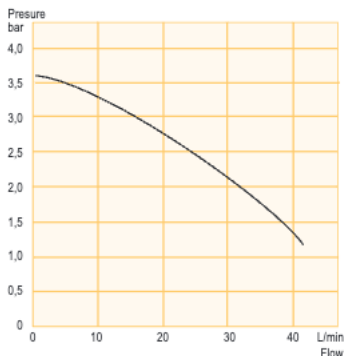
Pumps

In the following tables pump performances are indicated in nominal values. By definition, these are values at a temperature difference of 5 K between inlet and outlet at the given cooling capacity.

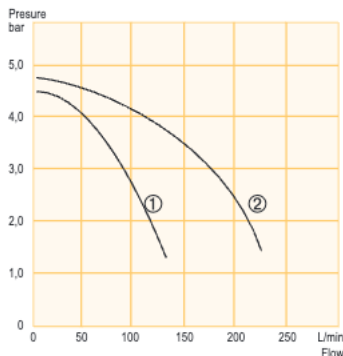
Note:

In addition to the pumps mentioned in this document, there is the possibility to provide the Ultracool chillers with customized pumps.

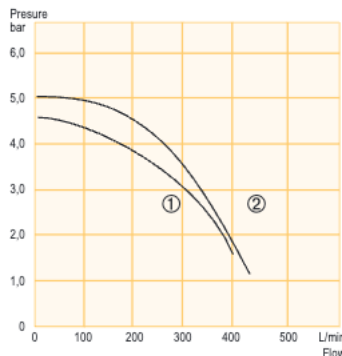
Pump characteristics, Standard pumps (3 bar), 50 Hz



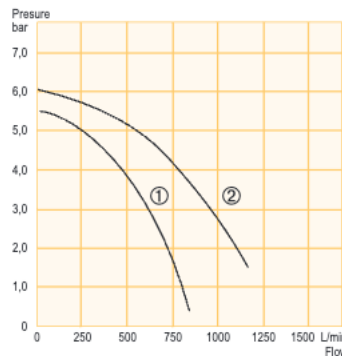
UC-0020, UC-0030, UC-0040



① UC-0060, UC-0080, UC-0100, UC-0140, UC-0180, UC-0240
② UC-0300, UC-0400; UC-0500



① UC-0650, UC-0800
② UC-1000

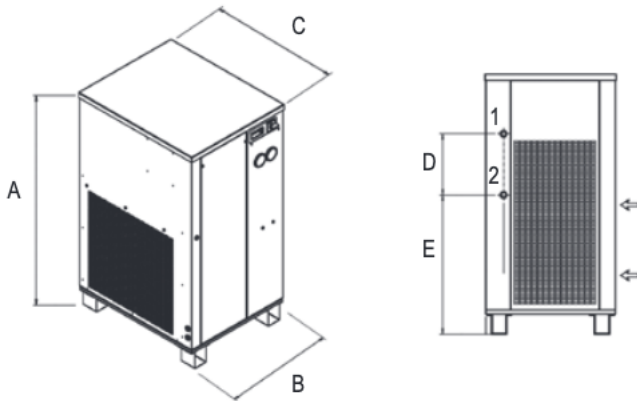


① UC-1350, UC-1700
② UC-2400

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Unit dimensions

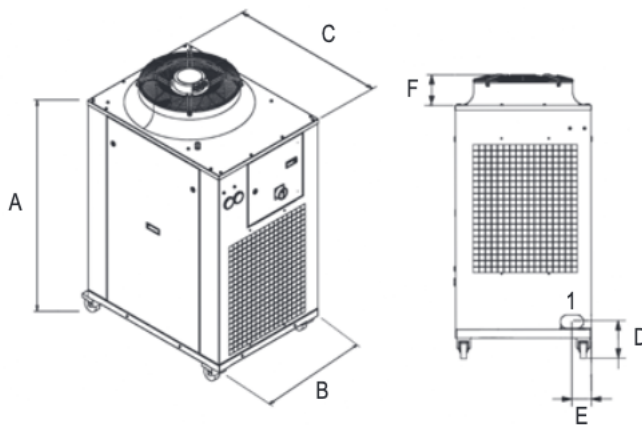
UC Mini UC-0020 to UC-0040



Type	A	B	C mm	D	E
UC-0020	940	534	630	282	390
UC-0030	1167	581	712	275	625
UC-0040	1167	581	712	275	625

1: water outlet
2: water inlet

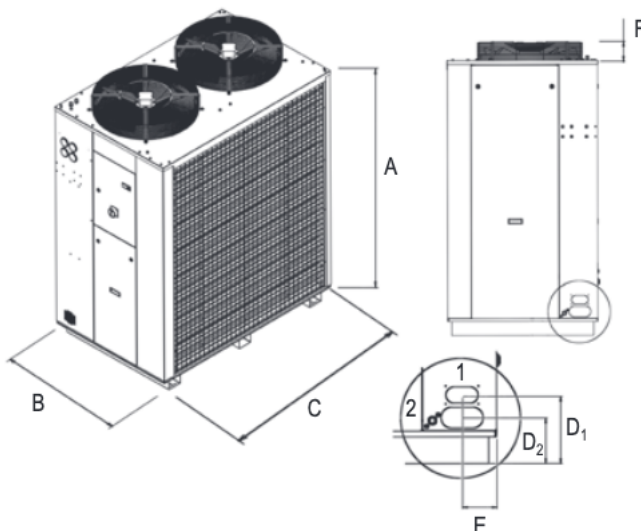
UC Midi UC-0060 to UC-0240



Type	A	B	C mm	D	E	F
UC-0060	1330	715	945	188	101	162
UC-0080	1330	715	945	188	101	162
UC-0100	1330	715	945	188	101	162
UC-0140	1330	715	945	188	101	162
UC-0180	1330	715	945	188	101	162
UC-0240	1330	715	945	188	101	162

1: connection port - water inlet
- water outlet
- drain and overflow

UC Maxi UC-0300 to UC-0650

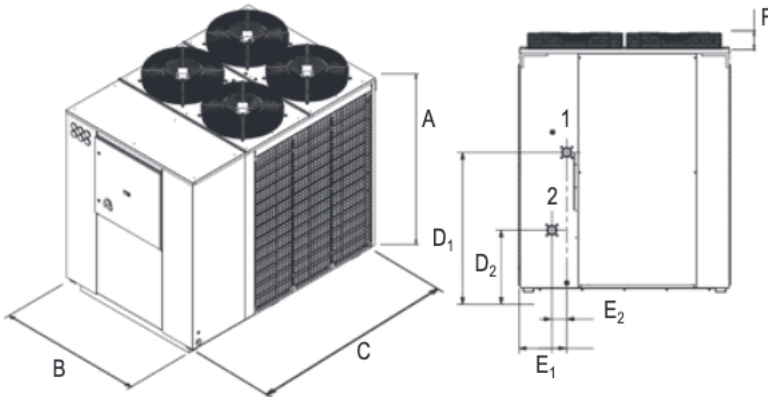


Type	A	B	C mm	D ₁	D ₂	E	F
UC-0300	1843	1006	1566	239	160	120	125
UC-0400	1843	1006	1566	239	160	120	125
UC-0500	1843	1006	1566	239	160	120	125
UC-0650	1843	1006	1566	239	160	120	125

1: water inlet and outlet
2: overflow and drain pipe

Unit dimensions

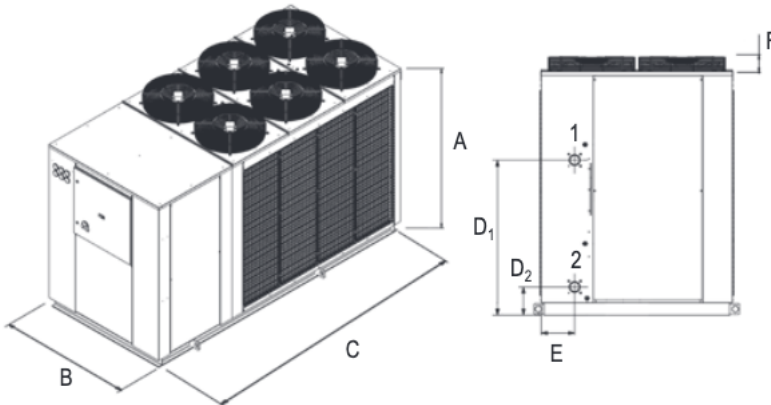
UC Maxi UC-0800 to UC-1000



Type	A	B	C mm	D ₁	D ₂	E ₁	E ₂	F
UC-0800	1885	1545	2230	1123	548	345	110	124
UC-1000	1965	1660	3400	1253	228	270	270	124

1: water inlet
2: water outlet

UC Maxi UC-1350 to UC-2400



Type	A	B	C mm	D ₁	D ₂	E	F
UC-1350	1965	1660	3400	1253	228	270	124
UC-1700	1965	1660	3400	1253	228	270	124
UC-2400	1965	1660	3585	1413	273	297	124

1: water inlet
2: water outlet

LAUDA Technical data 50 Hz

Type	Working temperature range °C	Temperature stability ±K	Ambient temperature range °C	Cooling output at water outlet temperature*							Refrigerant circuit	Motor fan		
				25 °C kW	20 °C kW	15 °C kW	10 °C kW	5 °C kW	0 °C kW	-5 °C kW		No.	kW	m ³ /h
LAUDA Ultracool Mini – 230 V; 50 Hz														
UC-0020 ST	-5...25	2	5...50	2.5	2.5	2.2	1.9	1.6	1.4	1.1	1	1	0.12	1500
UC-0030 ST	-5...25	2	5...50	4.7	4.7	4.1	3.4	2.7	2.2	1.7	1	1	0.15	2200
UC-0040 ST	-5...25	2	5...50	6.8	6.8	5.7	4.7	3.7	3.0	2.3	1	1	0.15	2200
UC-0020 SP	-5...25	2	5...50	2.5	2.5	2.2	1.9	1.6	1.4	1.1	1	1	0.12	1500
UC-0030 SP	-5...25	2	5...50	4.7	4.7	4.1	3.4	2.7	2.2	1.7	1	1	0.15	2200
UC-0040 SP	-5...25	2	5...50	6.8	6.8	5.7	4.7	3.7	3.0	2.3	1	1	0.15	2200
LAUDA Ultracool Midi – 400 V; 3/PE; 50 Hz														
UC-0060 ST	-5...25	2	-15...50	10.8	10.2	8.6	7.1	5.8	4.7	3.8	1	1	1.04	7000
UC-0080 ST	-5...25	2	-15...50	15.8	14.7	11.9	9.4	7.3	5.6	4.1	1	1	1.04	7000
UC-0100 ST	-5...25	2	-15...50	18.6	17.1	14.3	11.4	8.8	6.6	4.8	1	1	1.04	7000
UC-0140 ST	-5...25	2	-15...50	22.3	20.2	17.1	14.0	11.0	8.4	6.3	1	1	1.04	7000
UC-0180 ST	-5...25	2	-15...50	32.9	30.2	26	22.0	18.0	14.5	11.5	1	1	1.04	9000
UC-0240 ST	-5...25	2	-15...50	37.3	34.6	30.3	26.3	22.3	18.2	14.5	1	1	1.04	9000
UC-0060 SP	-5...25	2	-15...50	10.8	10.2	8.6	7.1	5.8	4.7	3.8	1	1	1.04	7000
UC-0080 SP	-5...25	2	-15...50	15.8	14.7	11.9	9.4	7.3	5.6	4.1	1	1	1.04	7000
UC-0100 SP	-5...25	2	-15...50	18.6	17.1	14.3	11.4	8.8	6.6	4.8	1	1	1.04	7000
UC-0140 SP	-5...25	2	-15...50	22.3	20.2	17.1	14.0	11.0	8.4	6.3	1	1	1.04	7000
UC-0180 SP	-5...25	2	-15...50	32.9	30.2	26	22.0	18.0	14.5	11.5	1	1	1.04	9000
UC-0240 SP	-5...25	2	-15...50	37.3	34.6	30.3	26.3	22.3	18.2	14.5	1	1	1.04	9000
LAUDA Ultracool Maxi – 400 V; 3/PE; 50 Hz														
UC-0300 ST	-5...25	2	-15...45**	50.3	48.2	40.9	34.1	28.2	23.1	18.6	1	2	1.2	18000
UC-0400 ST	-5...25	2	-15...45**	62.5	59.7	51.2	43.3	35.1	28.1	22.0	1	2	1.2	18000
UC-0500 ST	-5...25	2	-15...45**	68.4	65.6	56.8	48.7	41.2	33.5	26.8	1	2	1.2	18000
UC-0650 ST	-5...25	2	-15...45**	84.6	84.6	75.2	64.4	53.6	43.9	35.5	1	2	2.5	23000
UC-0800 ST	-5...25	2	-15...45**	114.3	114.3	103.0	87.9	72.3	57.8	45.4	2	4	2.4	36000
UC-1000 ST	-5...25	2	-15...45**	140.8	140.8	126.1	106.4	85.9	67.0	51.2	2	4	2.4	40800
UC-1350 ST	-5...25	2	-15...45**	182.1	182.1	163.7	139.2	113.7	90.0	69.8	2	6	3.6	57000
UC-1700 ST	-5...25	2	-15...45**	228.4	228.4	205.9	175.7	144.6	115.6	90.8	2	6	3.6	55200
UC-2400 ST	-5...25	2	-15...45**	336.9	336.9	308.8	265.0	223.1	182.8	148.2	2	6	7.5	66000
UC-0300 SP	-5...25	2	-15...45**	50.3	48.2	40.9	34.1	28.2	23.1	18.6	1	2	1.2	18000
UC-0400 SP	-5...25	2	-15...45**	62.5	59.7	51.2	43.3	35.1	28.1	22.0	1	2	1.2	18000
UC-0500 SP	-5...25	2	-15...45**	68.4	65.6	56.8	48.7	41.2	33.5	26.8	1	2	1.2	18000
UC-0650 SP	-5...25	2	-15...45**	84.6	84.6	75.2	64.4	53.6	43.9	35.5	1	2	2.5	23000
UC-0800 SP	-5...25	2	-15...45**	114.3	114.3	103.0	87.9	72.3	57.8	45.4	2	4	2.4	36000
UC-1000 SP	-5...25	2	-15...45**	140.8	140.8	126.1	106.4	85.9	67.0	51.2	2	4	2.4	40800
UC-1350 SP	-5...25	2	-15...45**	182.1	182.1	163.7	139.2	113.7	90.0	69.8	2	6	3.6	57000
UC-1700 SP	-5...25	2	-15...45**	228.4	228.4	205.9	175.7	144.6	115.6	90.8	2	6	3.6	55200
UC-2400 SP	-5...25	2	-15...45**	336.9	336.9	308.8	265.0	223.1	182.8	148.2	2	6	7.5	66000

* 25 °C ambient temperature ** -15 °C only with option motor fan speed regulator (see page 16)

Correction factor ambient temperature: $C_{NOM} = C_{WORK} \times F$					
Ambient temperature	25	30	35	40	45
Correction factor F	1	0.9	0.85	0.78	0.66

Note: The values calculated with the correction factors are only approximated values.

Pump pressure nominal	Pump flow nominal	Water circuit connection*	Volume water tank	Dimensions (WxDxH)	Protection level	Noise level	Weight	Loading	Max. fuse	Cat. No.	Type
bar	L/min		L	mm		dB(A)	kg	kW	A		
LAUDA Ultracool Mini – 230 V; 50 Hz											
–	–	Rp 1/2	–	534x630x940	IP 44	55.0	100	0.9	16	E6002310	UC-0020 ST
–	–	Rp 1/2	–	581x712x1167	IP 44	52.1	105	0.9	16	E6003310	UC-0030 ST
–	–	Rp 1/2	–	581x712x1167	IP 44	51.5	110	1.4	16	E6004310	UC-0040 ST
3.3	5.6	Rp 1/2	35	534x630x940	IP 44	55.0	115	1.4	16	E6002311	UC-0020 SP
3.0	10.3	Rp 1/2	35	581x712x1167	IP 44	52.1	120	1.4	16	E6003311	UC-0030 SP
2.8	13.8	Rp 1/2	35	581x712x1167	IP 44	51.5	125	1.9	16	E6004311	UC-0040 SP

LAUDA Ultracool Midi – 400 V; 3/PE; 50 Hz											
–	–	HT DN25	–	715x945x1490	IP 54	56.3	145	3.1	20	E6006320	UC-0060 ST
–	–	HT DN25	–	715x945x1490	IP 54	60.1	155	3.3	25	E6008320	UC-0080 ST
–	–	HT DN25	–	715x945x1490	IP 54	58.5	155	3.9	25	E6010320	UC-0100 ST
–	–	HT DN25	–	715x945x1490	IP 54	58.1	155	4.8	25	E6014320	UC-0140 ST
–	–	HT DN25	–	715x945x1490	IP 54	56.0	180	5.8	32	E6018320	UC-0180 ST
–	–	HT DN25	–	715x945x1490	IP 54	57.5	195	7.3	40	E6024320	UC-0240 ST
4.0	20.1	HT DN25	100	715x945x1490	IP 54	56.3	165	3.8	20	E6006323	UC-0060 SP
4.0	26.6	HT DN25	100	715x945x1490	IP 54	60.1	175	4.1	25	E6008323	UC-0080 SP
3.9	33.6	HT DN25	100	715x945x1490	IP 54	58.5	175	4.6	25	E6010323	UC-0100 SP
3.7	43.8	HT DN25	100	715x945x1490	IP 54	58.1	180	5.6	25	E6014323	UC-0140 SP
3.2	62.6	HT DN25	100	715x945x1490	IP 54	56.0	210	6.6	32	E6018323	UC-0180 SP
2.7	84.1	HT DN25	100	715x945x1490	IP 54	57.5	230	8.0	40	E6024323	UC-0240 SP

LAUDA Ultracool Maxi – 400 V; 3/PE; 50 Hz											
–	–	HT DN40	–	1005x1565x1965	IP 54	50.2	420	7.9	40	E6030320	UC-0300 ST
–	–	HT DN40	–	1005x1565x1965	IP 54	53.5	420	9.9	40	E6040320	UC-0400 ST
–	–	HT DN40	–	1005x1565x1965	IP 54	55.3	420	12.1	50	E6050320	UC-0500 ST
–	–	HT DN40	–	1005x1565x1965	IP 54	59.2	590	16.3	63	E6065320	UC-0650 ST
–	–	Rp 2	–	1545x2230x2010	IP 54	58.3	960	25.3	80	E6080220	UC-0800 ST
–	–	Rp 2 1/2	–	1660x3400x2090	IP 54	63.1	1380	29.4	100	E6100220	UC-1000 ST
–	–	Rp 2 1/2	–	1660x3400x2090	IP 54	62.2	1480	38.3	150	E6135220	UC-1350 ST
–	–	Rp 2 1/2	–	1660x3400x2090	IP 54	61.3	1540	49.4	150	E6170220	UC-1700 ST
–	–	DIN-2566 DN80	–	1660x3585x2090	IP 54	62.7	1590	63.9	200	E6240220	UC-2400 ST
3.9	98.0	HT DN40	200	1005x1565x1965	IP 54	50.2	450	9.4	40	E6030323	UC-0300 SP
3.6	124.0	HT DN40	200	1005x1565x1965	IP 54	53.5	450	11.4	40	E6040323	UC-0400 SP
3.3	150.0	HT DN40	200	1005x1565x1965	IP 54	55.3	450	13.6	50	E6050323	UC-0500 SP
3.7	196.0	HT DN40	300	1005x1565x1965	IP 54	59.2	630	18.5	63	E6065323	UC-0650 SP
3.4	247.0	Rp 2	300	1545x2230x2010	IP 54	58.3	1020	27.5	80	E6080223	UC-0800 SP
3.3	299.0	Rp 2 1/2	500	1660x3400x2090	IP 54	63.1	1460	32.4	100	E6100221	UC-1000 SP
4.3	392.0	Rp 2 1/2	500	1660x3400x2090	IP 54	62.2	1570	43.8	150	E6135221	UC-1350 SP
3.6	494.0	Rp 2 1/2	500	1660x3400x2090	IP 54	61.3	1630	54.9	150	E6170221	UC-1700 SP
3.8	733.0	DIN-2566 DN80	500	1660x3585x2090	IP 54	62.7	1690	71.4	200	E6240221	UC-2400 SP

*Rp = G = BSP internal parallel thread

HT DN = hose tail for internal nominal pipe diameter (mm)

DIN-2566 DN = DIN-2566 flange for internal nominal pipe diameter (mm)

LAUDA Technical data 60 Hz

Type	Working temperature range °C	Temperature stability ±K	Ambient temperature range °C	Cooling output at water outlet temperature*							Refrigerant circuit No.	Motor fan		
				25 °C kW	20 °C kW	15 °C kW	10 °C kW	5 °C kW	0 °C kW	5 °C kW		kW	m ³ /h	
LAUDA Ultracool Mini – 230 V; 60 Hz														
UC-0020 ST	-5...25	2	5...50	2.6	2.6	2.2	1.9	1.6	1.3	1.1	1	1	0.16	1700
UC-0030 ST	-5...25	2	5...50	5.6	5.6	4.7	3.8	3.1	2.5	1.9	1	1	0.21	2500
UC-0040 ST	-5...25	2	5...50	6.9	6.6	5.5	4.6	3.7	2.9	2.3	1	1	0.21	2500
UC-0020 SP	-5...25	2	5...50	2.6	2.6	2.2	1.9	1.6	1.3	1.1	1	1	0.16	1700
UC-0030 SP	-5...25	2	5...50	5.6	5.6	4.7	3.8	3.1	2.5	1.9	1	1	0.21	2500
UC-0040 SP	-5...25	2	5...50	6.9	6.6	5.5	4.6	3.7	2.9	2.3	1	1	0.21	2500
LAUDA Ultracool Midi – 460 V; 3/PE; 60 Hz														
UC-0060 ST	-5...25	2	-15...50	14.4	13.6	11.3	9.3	7.5	6.0	4.7	1	1	1.04	7000
UC-0080 ST	-5...25	2	-15...50	18.1	16.9	13.9	11.0	8.6	6.6	4.9	1	1	1.04	7000
UC-0100 ST	-5...25	2	-15...50	21.8	20.2	17.0	13.9	10.9	8.3	6.1	1	1	1.04	7000
UC-0140 ST	-5...25	2	-15...50	25.7	23.4	19.9	16.7	13.6	10.5	7.8	1	1	1.04	7000
UC-0180 ST	-5...25	2	-15...50	37.7	34.8	30.3	25.9	21.4	17.3	13.8	1	1	1.04	9000
UC-0240 ST	-5...25	2	-15...50	42.7	39.7	34.9	30.4	26.1	21.9	17.6	1	1	1.04	9000
UC-0060 SP	-5...25	2	-15...50	14.4	13.6	11.3	9.3	7.5	6.0	4.7	1	1	1.04	7000
UC-0080 SP	-5...25	2	-15...50	18.1	16.9	13.9	11.0	8.6	6.6	4.9	1	1	1.04	7000
UC-0100 SP	-5...25	2	-15...50	21.8	20.2	17.0	13.9	10.9	8.3	6.1	1	1	1.04	7000
UC-0140 SP	-5...25	2	-15...50	25.7	23.4	19.9	16.7	13.6	10.5	7.8	1	1	1.04	7000
UC-0180 SP	-5...25	2	-15...50	37.7	34.8	30.3	25.9	21.4	17.3	13.8	1	1	1.04	9000
UC-0240 SP	-5...25	2	-15...50	42.7	39.7	34.9	30.4	26.1	21.9	17.6	1	1	1.04	9000
LAUDA Ultracool Maxi – 460 V; 3/PE; 60 Hz														
UC-0300 ST	-5...25	2	-15...45**	60.1	57.5	49.5	41.3	34.1	27.8	22.5	1	2	1.6	20200
UC-0400 ST	-5...25	2	-15...45**	72.2	69.2	59.6	50.8	42.1	34.0	27.1	1	2	1.6	20200
UC-0500 ST	-5...25	2	-15...45**	80.6	77.4	67	57.5	48.8	40.3	32.3	1	2	1.6	20200
UC-0650 ST	-5...25	2	-15...45**	99.7	99.7	88.8	76.1	64.4	52.7	42.6	1	2	5.8	31400
UC-0800 ST	-5...25	2	-15...45**	132.5	132.5	120.1	103.4	87.8	70.9	56.3	2	4	3.2	40000
UC-1000 ST	-5...25	2	-15...45**	162.6	162.6	147.7	127.3	108.0	86.4	67.0	2	4	3.2	48000
UC-1350 ST	-5...25	2	-15...45**	212.1	212.1	191.9	164.6	139.3	111.6	87.7	2	6	4.9	66000
UC-1700 ST	-5...25	2	-15...45**	264.9	264.9	240.2	206.7	175.5	141.8	112.6	2	6	4.9	63000
UC-2400 ST	-5...25	2	-15...45**	396.9	396.9	364.1	313.0	266.4	219.5	177.9	2	6	17.5	91800
UC-0300 SP	-5...25	2	-15...45**	60.1	57.5	49.5	41.3	34.1	27.8	22.5	1	2	1.6	20200
UC-0400 SP	-5...25	2	-15...45**	72.2	69.2	59.6	50.8	42.1	34.0	27.1	1	2	1.6	20200
UC-0500 SP	-5...25	2	-15...45**	80.6	77.4	67	57.5	48.8	40.3	32.3	1	2	1.6	20200
UC-0650 SP	-5...25	2	-15...45**	99.7	99.7	88.8	76.1	64.4	52.7	42.6	1	2	5.8	31400
UC-0800 SP	-5...25	2	-15...45**	132.5	132.5	120.1	103.4	87.8	70.9	56.3	2	4	3.2	40000
UC-1000 SP	-5...25	2	-15...45**	162.6	162.6	147.7	127.3	108.0	86.4	67.0	2	4	3.2	48000
UC-1350 SP	-5...25	2	-15...45**	212.1	212.1	191.9	164.6	139.3	111.6	87.7	2	6	4.9	66000
UC-1700 SP	-5...25	2	-15...45**	264.9	264.9	240.2	206.7	175.5	141.8	112.6	2	6	4.9	63000
UC-2400 SP	-5...25	2	-15...45**	396.9	396.9	364.1	313.0	266.4	219.5	177.9	2	6	17.5	91800

* 25 °C ambient temperature

** -15 °C only with option motor fan speed regulator (see page 16)

Correction factor ambient temperature: $C_{NOM} = C_{WORK} \times F$

Ambient temperature	25	30	35	40	45
Correction factor F	1	0.9	0.85	0.78	0.66

Note: The values calculated with the correction factors are only approximated values.

Pump pressure nominal	Pump flow nominal	Water circuit connection*	Volume water tank	Dimensions (WxDxH)	Protection level	Noise level	Weight	Loading	Max. fuse	Cat. No.	Type
bar	L/min		L	mm		dB(A)	kg	kW	A		
LAUDA Ultracool Mini – 230 V; 60 Hz											
–	–	½" NPT(F)	–	534x630x940	IP 44	57.0	100	0.8	16	E6002330	UC-0020 ST
–	–	½" NPT(F)	–	581x712x1167	IP 44	54.2	105	1.2	16	E6003330	UC-0030 ST
–	–	½" NPT(F)	–	581x712x1167	IP 44	55.5	110	1.5	16	E6004330	UC-0040 ST
3.4	5.6	½" NPT(F)	35	534x630x940	IP 44	57.0	115	1.4	16	E6002331	UC-0020 SP
3.3	10.3	½" NPT(F)	35	581x712x1167	IP 44	54.2	120	1.8	16	E6003331	UC-0030 SP
3.2	13.8	½" NPT(F)	35	581x712x1167	IP 44	55.5	125	2.1	16	E6004331	UC-0040 SP

LAUDA Ultracool Midi – 460 V, 3/PE; 60 Hz											
–	–	HT DN25	–	715x945x1490	IP 54	56.5	145	3.9	20	E6006340	UC-0060 ST
–	–	HT DN25	–	715x945x1490	IP 54	60.8	155	3.9	25	E6008340	UC-0080 ST
–	–	HT DN25	–	715x945x1490	IP 54	60.8	155	4.7	25	E6010340	UC-0100 ST
–	–	HT DN25	–	715x945x1490	IP 54	60.8	150	6.0	25	E6014340	UC-0140 ST
–	–	HT DN25	–	715x945x1490	IP 54	58.0	180	7.2	32	E6018340	UC-0180 ST
–	–	HT DN25	–	715x945x1490	IP 54	59.1	195	9.5	40	E6024340	UC-0240 ST
3.9	20.1	HT DN25	100	715x945x1490	IP 54	56.5	165	5.0	20	E6006341	UC-0060 SP
3.8	26.6	HT DN25	100	715x945x1490	IP 54	60.8	175	4.9	25	E6008341	UC-0080 SP
3.8	33.6	HT DN25	100	715x945x1490	IP 54	60.8	175	5.8	25	E6010341	UC-0100 SP
3.7	43.8	HT DN25	100	715x945x1490	IP 54	60.8	180	7.0	25	E6014341	UC-0140 SP
3.5	62.6	HT DN25	100	715x945x1490	IP 54	58.0	210	8.3	32	E6018341	UC-0180 SP
3.1	84.1	HT DN25	100	715x945x1490	IP 54	59.1	230	10.5	40	E6024341	UC-0240 SP

LAUDA Ultracool Maxi – 460 V, 3/PE; 60 Hz											
–	–	HT DN40	–	1005x1565x1965	IP 54	55.6	420	10.0	40	E6030340	UC-0300 ST
–	–	HT DN40	–	1005x1565x1965	IP 54	57.4	420	12.5	40	E6040340	UC-0400 ST
–	–	HT DN40	–	1005x1565x1965	IP 54	58.3	420	15.8	50	E6050340	UC-0500 ST
–	–	HT DN40	–	1005x1565x1965	IP 54	64.8	590	23.2	63	E6065340	UC-0650 ST
–	–	2" NPT(F)	–	1545x2230x2010	IP 54	61.3	980	32.9	80	E6080240	UC-0800 ST
–	–	2 ½" NPT(F)	–	1660x3400x2090	IP 54	65.2	1380	38.1	100	E6100240	UC-1000 ST
–	–	2 ½" NPT(F)	–	1660x3400x2090	IP 54	64.3	1480	49.3	150	E6135240	UC-1350 ST
–	–	2 ½" NPT(F)	–	1660x3400x2090	IP 54	64.3	1540	64.2	150	E6170240	UC-1700 ST
–	–	DIN-2566 DN80	–	1660x3585x2090	IP 54	68.5	1590	88.6	200	E6240240	UC-2400 ST
4.7	98.0	HT DN40	200	1005x1565x1965	IP 54	55.6	450	12.5	40	E6030341	UC-0300 SP
4.5	124.0	HT DN40	200	1005x1565x1965	IP 54	57.4	450	15.0	40	E6040341	UC-0400 SP
4.3	150.0	HT DN40	200	1005x1565x1965	IP 54	58.3	450	18.3	50	E6050341	UC-0500 SP
3.8	196.0	HT DN40	300	1005x1565x1965	IP 54	64.8	630	25.7	63	E6065341	UC-0650 SP
3.0	247.0	2" NPT(F)	300	1545x2230x2010	IP 54	61.3	1020	35.4	80	E6080241	UC-0800 SP
4.5	299.0	2 ½" NPT(F)	500	1660x3400x2090	IP 54	65.2	1460	42.1	100	E6100241	UC-1000 SP
4.9	392.0	2 ½" NPT(F)	500	1660x3400x2090	IP 54	64.3	1570	55.3	150	E6135241	UC-1350 SP
4.2	494.0	2 ½" NPT(F)	500	1660x3400x2090	IP 54	64.3	1630	70.2	150	E6170241	UC-1700 SP
2.9	733.0	DIN-2566 DN80	500	1660x3585x2090	IP 54	68.5	1690	96.1	200	E6240241	UC-2400 SP

*NPT(F) = NPT internal taper thread

HT DN = hose tail for internal nominal pipe diameter (mm)

DIN-2566 DN = DIN-2566 flange for internal nominal pipe diameter (mm)

LAUDA Ultracool

Ultracool options

The LAUDA Ultracool product range offers very flexible designs and production lines for customization. For the UC Mini and Midi range there is one, for the Maxi range there are two flexible platforms available. The two platforms allocate space for different housing types. Besides the

Ultracool Standard and the Ultracool Superplus versatile options can be included to provide a tailor-made solution for user applications. Ask our specialists for detailed information regarding the following options or additional options you would like to integrate into your chiller.

This table shows a short description of the available standard options for LAUDA Ultracool Chiller units. Please be aware that not all chiller models can be combined with these options. A detailed overview is included in the Ultracool price list.

Option number	Designation	Description
1	5 bar pump	Housing and impeller in stainless steel AISI 304/316L
2	Pump totally made from stainless steel	Housing, impeller and water connections from stainless steel AISI 304/316L (by default on UC-0060 to UC-0650)
3	Auto filling kit	When the water level is too low the solenoid valve at the filling connection opens automatically and refills the water tank
4	Motor fan speed regulator	Adjustment of the motor fan speed in order to keep the condensation pressure constant. Also reduction of noise and power consumption. Required for ambient temperatures below 0 °C (only available from UC-0300 to UC-2400)
5	Increased temperature stability	Water temperature stability of ± 1 °C (± 0.7 K) (realized by a hot gas bypass valve)
7	Castors	Four nylon castors with brakes for easy movement (only available for UC-0020 to UC-0040, by default from UC-0060 to UC-0240)
8	Special color	Special color (RAL) for the housing of the unit
9	Water heater	Pre-heater to heat the water inside the water tank while the unit is idle
10	External bypass	External water bypass, required when the temperature difference between inlet and outlet is higher than 10 °C
11	Water cooling	Chiller cooled by water instead of air
12	Stainless steel threaded connections	Corrosion proof connections attached to the housing (only available from UC-0060 to UC-0650)
13	Flow switch	For extra safety. Stops the unit when there is no flow
14	Water flow meter	External digital device. Allows to read the exact flow of water
15	Feet	Feet for floor fixation (standard on UC-0020 to UC-0040 and UC-0300 to UC-2400)
16	Modbus remote control	Enables system to communicate with a Modbus network through a RS 485 interface
17	Air filter	Air filter in front of the condenser for protection in dusty environments

Heat transfer liquid	Description	Container size in liter	Cat. No.
Refrifluid 1	Water/glycol mixture (80/20), including Refrifluid B	25 Liters	E7012402
Refrifluid 1	Water/glycol mixture (80/20), including Refrifluid B	50 Liters	E7012404
Refrifluid 1	Water/glycol mixture (80/20), including Refrifluid B	100 Liters	E7012406

Additive for heat transfer liquid	Description	Container size in liter	Cat. No.
Refrifluid B	Concentrated antibacterial and anticorrosive additive	2 Liters	E7011852
Refrifluid B	Concentrated antibacterial and anticorrosive additive	4 Liters	E7011854

Thermostats · Circulation chillers · Water baths
 Process cooling systems · Heat transfer systems · Secondary circuit systems
 Viscometers · Tensiometers

Sales and service:
 LAUDA DR. R. WOBSEER GMBH & CO. KG
 Pfarrstraße 41/43 · 97922 Lauda-Königshofen · Germany
 Phone: +49 (0)9343 503-0 · Fax: +49 (0)9343 503-222
 E-mail: info@lauda.de · Internet: www.lauda.de

Manufacturer and supplier:
 LAUDA Ultracool S.L.
 C/ Colom, 606 · 08228 Terrassa (Barcelona) · Spain
 Phone: +34 93 785 4866 · Fax: +34 93 785 3988
 E-mail: info@lauda-ultracool.com · Internet: www.lauda.de