

The right temperature worldwide

# LAUDA



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

**LAUDA Ultracool**  
Industrial chillers  
2012/2013

# 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, etc.
- 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.

By using R 134a as refrigerant, the pressure inside the refrigeration system is rather low and therefore the units can work in 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  $\pm 0.7$  K (instead of  $\pm 2$  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		E6813102	E6813104	E6813106
Cat. No. 220 V; 60 Hz		E6813302	E6813304	E6813306

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	3.5	3.3	3.1
Pump flow nominal**	L/min	5.6	10.3	13.8
Volume water tank	L	35	35	35
Cat. No. 230 V; 50 Hz		E6813002	E6813004	E6813006
Cat. No. 220 V; 60 Hz		E6813202	E6813204	E6813206

\* 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  $\pm 0.7$  K (instead of  $\pm 2$  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  $\pm 0.7$  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
Ambient temperature range	°C	-15...50	-15...50	-15...50	-15...50	-15...50
Cooling output*	kW	7.1	9.4	11.7	14.5	22.0
Cat. No. 400-440 V; 3/PE; 50 Hz	E6813108	E6813110	E6813112	E6813114	E6813116	E6813118
Cat. No. 440-480 V; 3/PE; 60 Hz	E6813308	E6813310	E6813312	E6813314	E6813316	E6813318

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
Ambient temperature range	°C	-15...50	-15...50	-15...50	-15...50	-15...50
Cooling output*	kW	7.1	9.4	11.7	14.5	22.0
Pump pressure nominal**	bar	4.0	4.0	3.9	3.7	3.2
Pump flow nominal**	L/min	20.1	26.6	33.6	43.8	62.6
Volume water tank	L	100	100	100	100	100
Cat. No. 400-440 V; 3/PE; 50 Hz	-	E6813008	E6813010	E6813012	E6813014	E6813016
Cat. No. 440-480 V; 3/PE; 60 Hz	-	E6813208	E6813210	E6813212	E6813214	E6813216

\* 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  $\pm 0.7$  K (instead of  $\pm 2$  K)
- Water pre-heater
- Water-cooled version
- External threaded BSP or NPT stainless steel connections
- Motor fan speed regulator (for ambient temperatures below  $0^{\circ}\text{C}$ )
- Modbus remote control



### UC laser with:

- 5-bar pump
- Pump totally in stainless steel
- Increased temperature stability  $\pm 0.7$  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	-5...25	-5...25	-5...25	-5...25	-5...25	-5...25	-5...25	-5...25
Ambient temperature range*	$^{\circ}\text{C}$ -15...45	-15...45	-15...45	-15...45	-15...45	-15...45	-15...45	-15...45	-15...45
Cooling output**	kW 34.1	43.3	48.7	64.4	87.9	106.4	139.2	175.7	265.0
Cat. No. 400-440 V; 3/PE; 50 Hz	E6813120	E6813122	E6813124	E6813126	E6812128	E6812130	E6812132	E6812134	E6812136
Cat. No. 440-480 V; 3/PE; 60 Hz	E6813320	E6813322	E6813324	E6813326	E6812328	E6812330	E6812332	E6812334	E6812336

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	-5...25	-5...25	-5...25	-5...25	-5...25	-5...25	-5...25	-5...25
Ambient temperature range*	$^{\circ}\text{C}$ -15...45	-15...45	-15...45	-15...45	-15...45	-15...45	-15...45	-15...45	-15...45
Cooling output**	kW 34.1	43.3	48.7	64.4	87.9	106.4	139.2	175.7	265.0
Pump pressure nominal***	bar 3.9	3.6	3.3	3.7	3.4	3.3	4.3	3.6	3.8
Pump flow nominal***	L/min 98.0	123.0	150.0	196.0	247.0	299.0	392.0	494.0	733.0
Volume water tank	L 200	200	200	300	300	500	500	500	500
Cat. No. 400-440 V; 3/PE; 50 Hz	E6813020	E6813022	E6813024	E6813026	E6812028	E6812030	E6812032	E6812034	E6812036
Cat. No. 440-480 V; 3/PE; 60 Hz	E6813220	E6813222	E6813224	E6813226	E6812228	E6812230	E6812232	E6812234	E6812236

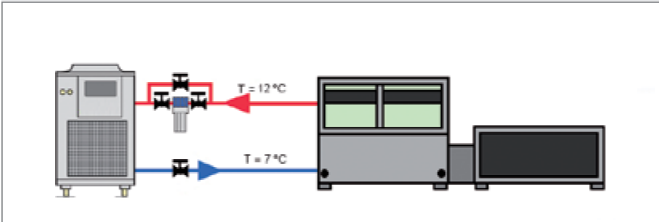
\* -15  $^{\circ}\text{C}$  only with option motor fan speed regulator (see page 11)

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

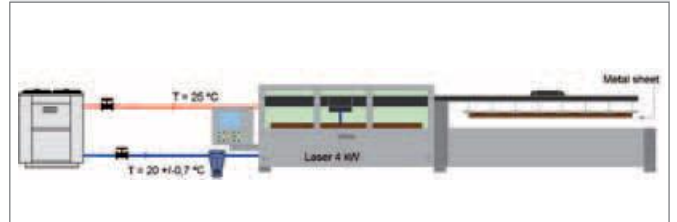
\*\*\* Nominal values: at a temperature difference of 5 K between inlet and outlet at the given cooling capacity

## Application examples

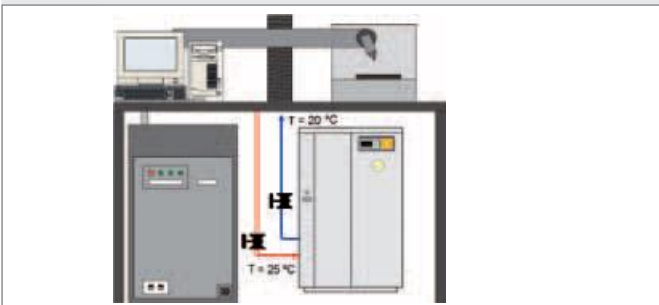
### Digital printing



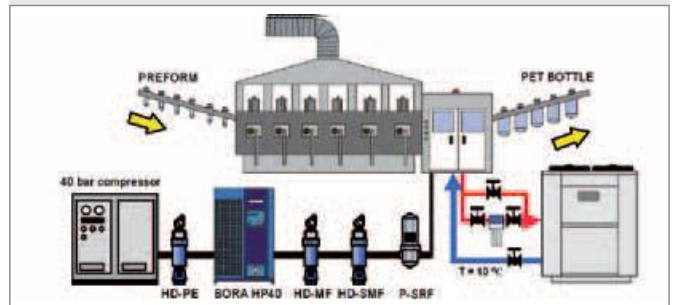
### Laser cutting



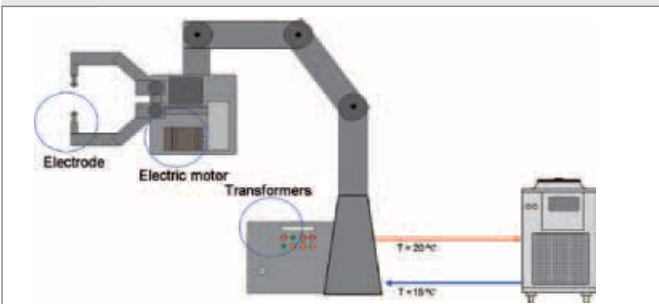
### Laser marking



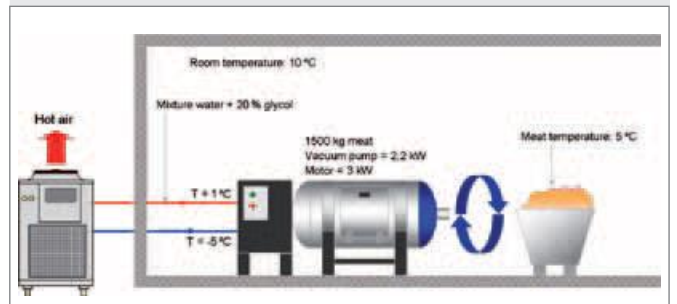
### PET blowing



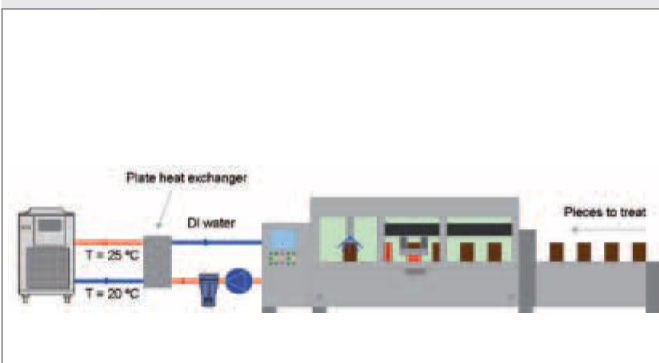
### Point welding



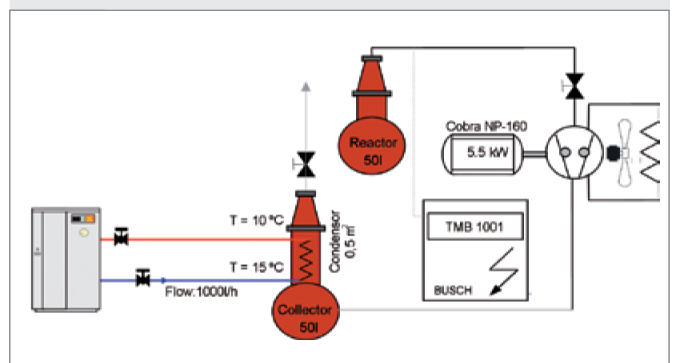
### Meat mixing drums



### Induction heating



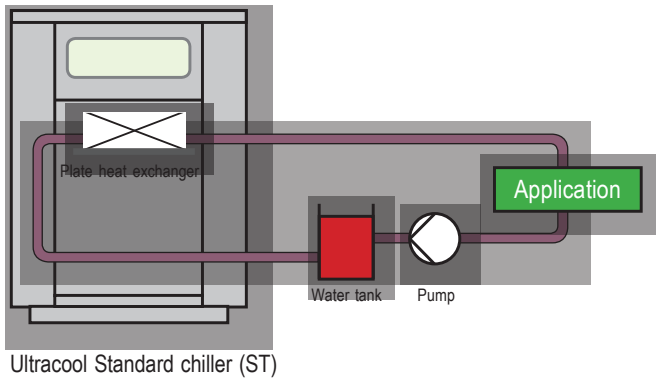
### Vacuum pumps



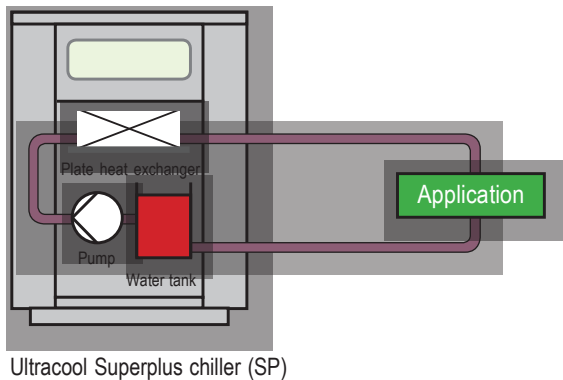
# LAUDA Ultracool

## Recommended installation parameters

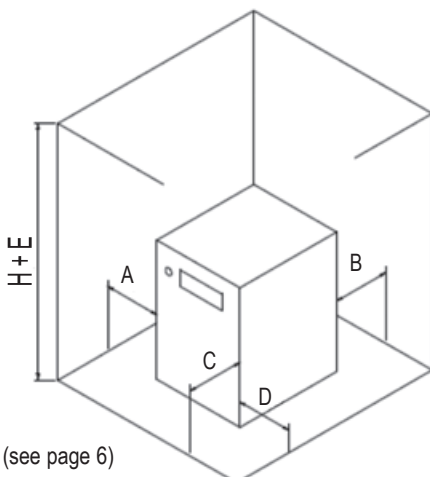
Standard ST (no pump and water tank included; pump and water tank to be provided by the customer)



Superplus SP (pump and water tank included)



Minimum space requirements around the Ultracool chillers:



H = height of chiller (see page 6)



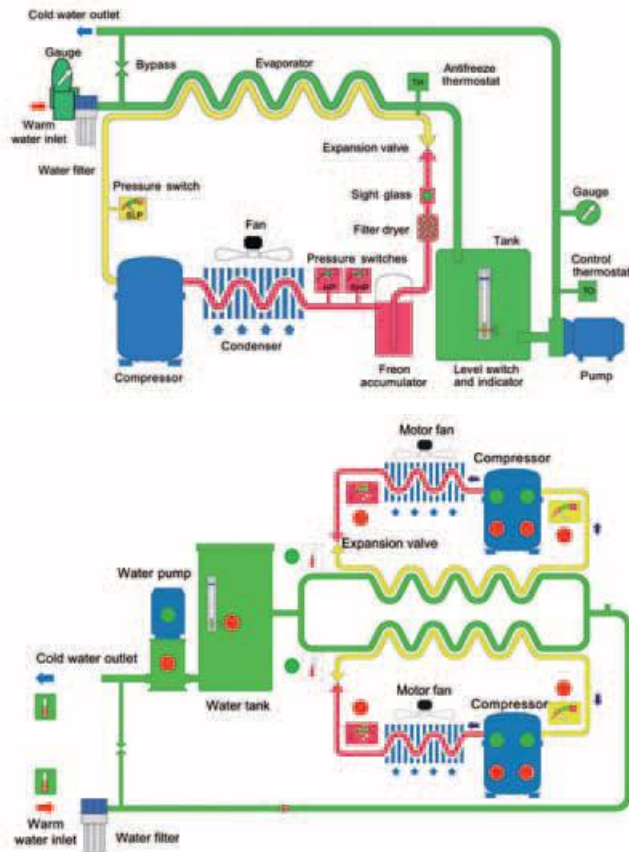
- Recommended installation in a well-ventilated site in a non-corrosive, dust-free atmosphere.
- The air renewal of the room should be at least 3/4 of the chiller's motor fan flow (see page 12 and 14).
- In the case of outdoor installation the chiller must be protected from rain with a roof and it must 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 should 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.

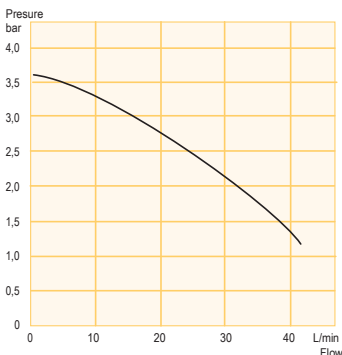
## Pumps

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.

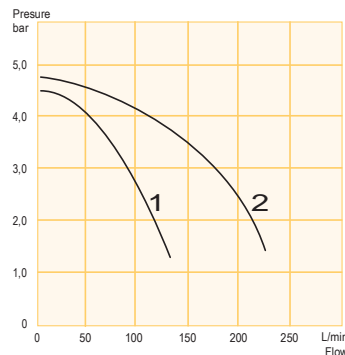
### Note:

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

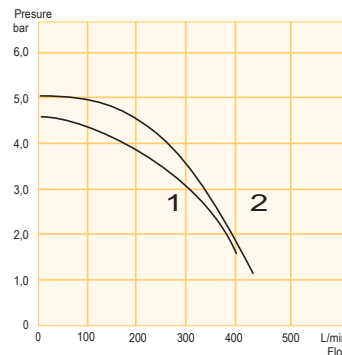
### Pump characteristics, Standard pumps (3 bar), 50 Hz



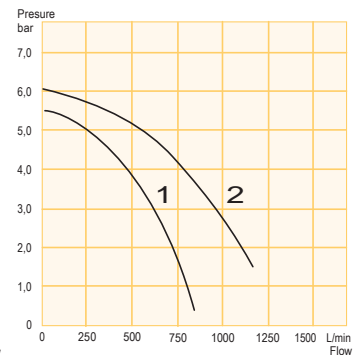
UC-0020, UC-0030, UC-0040



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

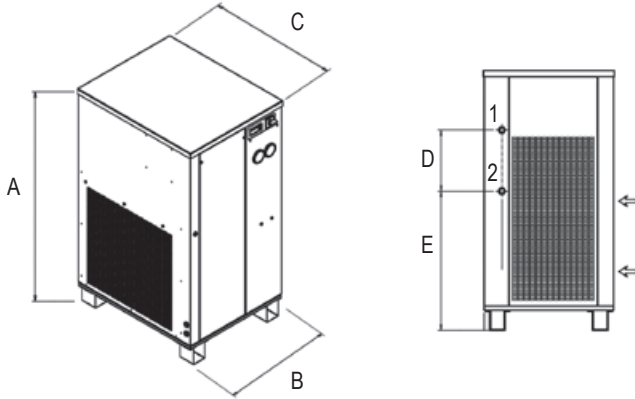


1 UC-1350, UC-1700  
2 UC-2400

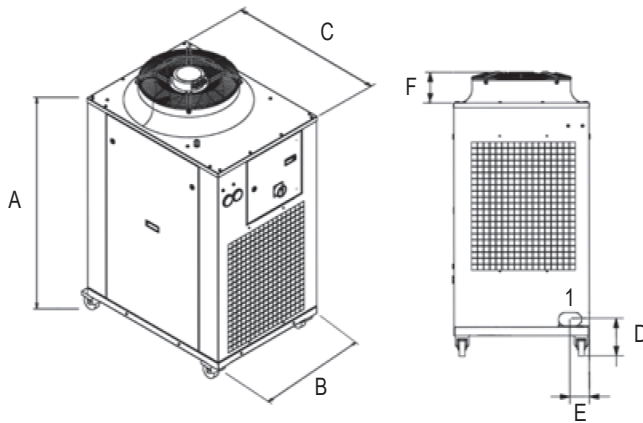
# LAUDA Ultracool

## Unit dimensions

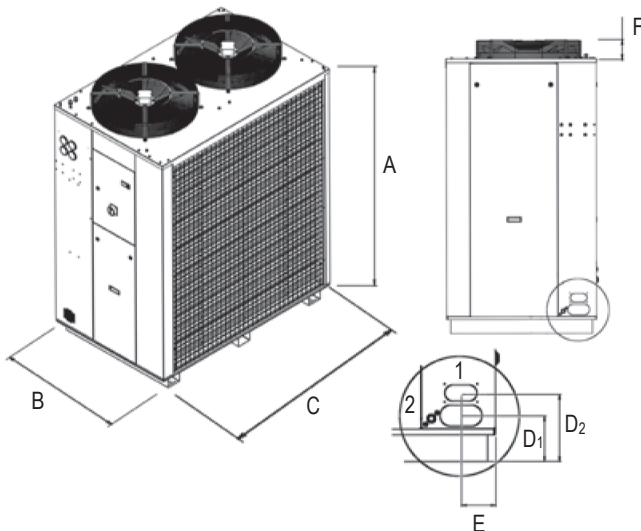
UC Mini UC-0020 to UC-0040



UC Midi UC-0060 to UC-0240



UC Maxi UC-0300 to UC-0650



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

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

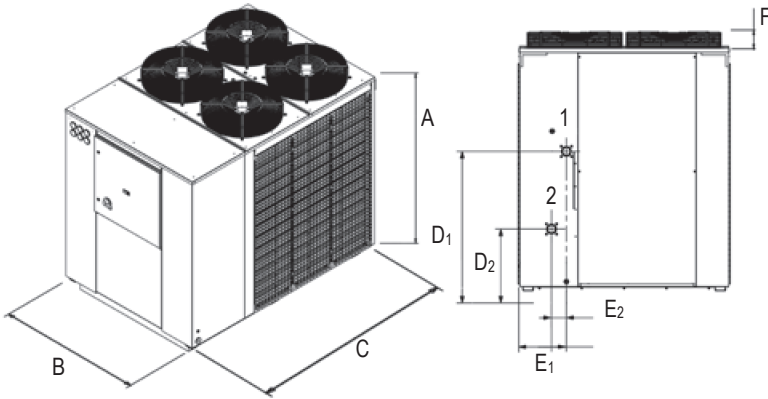
1: connection port - water inlet  
- water outlet  
- drain and overflow

Type	A	B	C mm	D <sub>1</sub>	D <sub>2</sub>	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

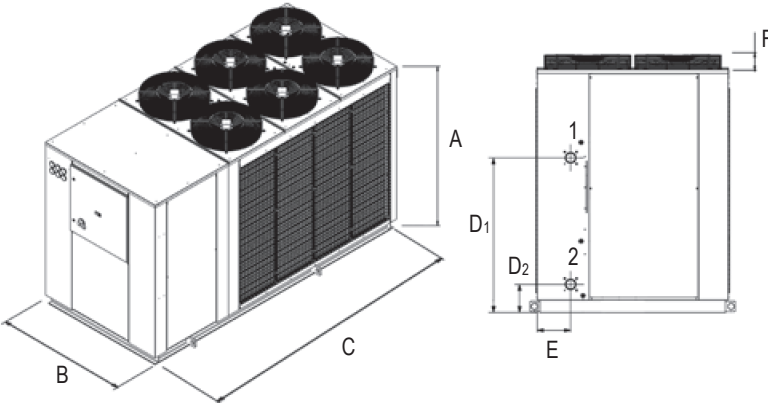
UC Maxi UC-0800 to UC-1000



Type	A	B	C mm	D <sub>1</sub>	D <sub>2</sub>	E <sub>1</sub>	E <sub>2</sub>	F
UC-0800	1885	1545	2230	1123	548	345	235	124
UC-1000	1965	1660	3400	1253	228	270	270	124

1: water outlet  
2: water inlet

UC Maxi UC-1350 to UC-2400



Type	A	B	C mm	D <sub>1</sub>	D <sub>2</sub>	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 outlet  
2: water inlet

# LAUDA Technical data 50 Hz

Technical data

Type	Working temperature range		Temperature stability	Ambient temperature range		Cooling output at water outlet temperature*						Refrigerant circuit		Motor fan	
	°C	±K		°C	25 °C	20 °C	15 °C	10 °C	5 °C	0 °C	-5 °C	No.	kW	m³/h	
<b>LAUDA Ultracool Mini – 230 V; 50 Hz</b>															
UC-0020 ST	-5...25	2	5...50	2.5	2.5	2.2	1.9	1.6	1.4	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	0.13	2200	
UC-0040 ST	-5...25	2	5...50	6.8	6.8	5.7	4.7	3.7	3.0	2.3	–	1	0.13	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	0.13	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	0.13	2200	
<b>LAUDA Ultracool Midi – 400-440 V; 3/PE; 50 Hz</b>															
UC-0060 ST	-5...25	2	-15...50	10.8	10.2	8.6	7.1	5.8	4.7	3.8	–	1	1.04	7000	
UC-0080 ST	-5...25	2	-15...50	15.7	14.7	11.9	9.4	7.4	5.6	4.2	–	1	1.04	7000	
UC-0100 ST	-5...25	2	-15...50	18.8	17.3	14.5	11.7	9.1	7.0	5.2	–	1	1.04	7000	
UC-0140 ST	-5...25	2	-15...50	22.3	20.3	17.3	14.5	11.5	8.9	6.8	–	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	1.04	9000	
UC-0240 ST	-5...25	2	-15...50	37.3	34.6	30.3	26.3	22.3	18.2	14.5	–	1	1.04	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	15.7	14.7	11.9	9.4	7.4	5.6	4.2	1	1	1.04	7000	
UC-0100 SP	-5...25	2	-15...50	18.8	17.3	14.5	11.7	9.1	7.0	5.2	1	1	1.04	7000	
UC-0140 SP	-5...25	2	-15...50	22.3	20.3	17.3	14.5	11.5	8.9	6.8	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	
<b>LAUDA Ultracool Maxi – 400-440 V; 3/PE; 50 Hz</b>															
UC-0300 ST	-5...25	2	-15...45**	50.3	48.2	40.9	34.1	28.2	23.1	18.6	–	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	–	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	–	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	–	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	–	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	–	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	–	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	–	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	–	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	

\* At 10 °C water outlet temperature and 25 °C ambient temperature

\*\* -15 °C only with option motor fan speed regulator (see page 10)

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 max.	Pump flow max.	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	bar	L/min		L	mm		dB(A)	kg	kW	A		
<b>LAUDA Ultracool Mini – 220 V; 50 Hz</b>													
–	–	–	–	Rp 1/2	–	534x630x940	IP 44	55.0	100	0.9	16	E6813102	UC-0020 ST
–	–	–	–	Rp 1/2	–	581x712x1167	IP 44	52.1	105	0.9	16	E6813104	UC-0030 ST
–	–	–	–	Rp 1/2	–	581x712x1167	IP 44	51.5	110	1.4	16	E6813106	UC-0040 ST
3.5	42	3.5	5.6	Rp 1/2	35	534x630x940	IP 44	55.0	115	1.4	16	E6813002	UC-0020 SP
3.5	42	3.3	10.3	Rp 1/2	35	581x712x1167	IP 44	52.1	120	1.4	16	E6813004	UC-0030 SP
3.5	42	3.1	13.8	Rp 1/2	35	581x712x1167	IP 44	51.5	125	1.9	16	E6813006	UC-0040 SP
<b>LAUDA Ultracool Midi – 440-480 V; 3/PE; 50 Hz</b>													
–	–	–	–	HT DN25	–	715x945x1490	IP 54	56.3	145	3.1	20	E6813108	UC-0060 ST
–	–	–	–	HT DN25	–	715x945x1490	IP 54	60.1	155	3.6	25	E6813110	UC-0080 ST
–	–	–	–	HT DN25	–	715x945x1490	IP 54	58.5	155	4.2	25	E6813112	UC-0100 ST
–	–	–	–	HT DN25	–	715x945x1490	IP 54	58.1	155	5.1	25	E6813114	UC-0140 ST
–	–	–	–	HT DN25	–	715x945x1490	IP 54	56.0	180	5.8	32	E6813116	UC-0180 ST
–	–	–	–	HT DN25	–	715x945x1490	IP 54	57.5	195	7.3	40	E6813118	UC-0240 ST
4.2	130	4.0	20.1	HT DN25	100	715x945x1490	IP 54	56.3	165	3.8	20	E6813008	UC-0060 SP
4.2	130	4.0	26.6	HT DN25	100	715x945x1490	IP 54	60.1	175	4.3	25	E6813010	UC-0080 SP
4.2	130	3.9	33.6	HT DN25	100	715x945x1490	IP 54	58.5	175	4.9	25	E6813012	UC-0100 SP
4.2	130	3.7	43.8	HT DN25	100	715x945x1490	IP 54	58.1	180	5.9	25	E6813014	UC-0140 SP
4.2	130	3.2	62.6	HT DN25	100	715x945x1490	IP 54	56.0	210	6.6	32	E6813016	UC-0180 SP
4.2	130	2.7	84.0	HT DN25	100	715x945x1490	IP 54	57.5	230	8.0	40	E6813018	UC-0240 SP
<b>LAUDA Ultracool Maxi – 440-480 V; 3/PE; 50 Hz</b>													
–	–	–	–	HT DN25	–	1005x1565x1965	IP 54	50.2	420	7.9	40	E6813120	UC-0300 ST
–	–	–	–	HT DN25	–	1005x1565x1965	IP 54	53.5	420	9.9	40	E6813122	UC-0400 ST
–	–	–	–	HT DN25	–	1005x1565x1965	IP 54	55.3	420	12.1	50	E6813124	UC-0500 ST
–	–	–	–	HT DN25	–	1005x1565x1965	IP 54	59.2	590	16.3	63	E6813126	UC-0650 ST
–	–	–	–	Rp 2	–	1545x2230x2010	IP 54	58.3	960	25.3	80	E6812128	UC-0800 ST
–	–	–	–	Rp 2 1/2	–	1660x3400x2090	IP 54	63.1	1380	29.4	100	E6812130	UC-1000 ST
–	–	–	–	Rp 2 1/2	–	1660x3400x2090	IP 54	62.2	1480	38.3	150	E6812132	UC-1350 ST
–	–	–	–	Rp 2 1/2	–	1660x3400x2090	IP 54	61.3	1540	49.4	150	E6812134	UC-1700 ST
–	–	–	–	DIN-2566 DN80	–	1660x3585x2090	IP 54	62.7	1585	63.9	200	E6812136	UC-2400 ST
4.7	230	3.9	98.0	HT DN25	200	1005x1565x1965	IP 54	50.2	450	9.4	40	E6813020	UC-0300 SP
4.7	230	3.6	124.0	HT DN25	200	1005x1565x1965	IP 54	53.5	450	11.4	40	E6813022	UC-0400 SP
4.7	230	3.3	150.0	HT DN25	200	1005x1565x1965	IP 54	55.3	450	13.6	50	E6813024	UC-0500 SP
4.7	420	3.7	196.0	HT DN25	300	1005x1565x1965	IP 54	59.2	630	18.5	63	E6813026	UC-0650 SP
4.7	420	3.4	247.0	Rp 2	300	1545x2230x2010	IP 54	58.3	1020	27.5	80	E6812028	UC-0800 SP
5.0	330	3.3	299.0	Rp 2 1/2	500	1660x3400x2090	IP 54	63.1	1460	32.4	100	E6812030	UC-1000 SP
5.0	750	4.3	392.0	Rp 2 1/2	500	1660x3400x2090	IP 54	62.2	1570	43.8	150	E6812032	UC-1350 SP
5.0	750	3.6	494.0	Rp 2 1/2	500	1660x3400x2090	IP 54	61.3	1630	54.9	150	E6812034	UC-1700 SP
5.9	1160	3.8	733.0	DIN-2566 DN80	500	1660x3585x2090	IP 54	62.7	1690	71.4	200	E6812036	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

Technical data

Type	Working temperature range		Temperature stability	Ambient temperature range		Cooling output at water outlet temperature*						Refrigerant circuit		Motor fan	
	°C	±K		°C	25 °C	20 °C	15 °C	10 °C	5 °C	0 °C	-5 °C	No.	kW	m³/h	
<b>LAUDA Ultracool Mini – 230 V; 60 Hz</b>															
UC-0020 ST	-5...25	2	5...50	2.6	2.6	2.2	1.9	1.6	1.3	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	0.19	2500	
UC-0040 ST	-5...25	2	5...50	6.9	6.6	5.5	4.6	3.7	2.9	2.3	–	1	0.19	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	0.19	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	0.19	2500	
<b>LAUDA Ultracool Midi – 400-440 V; 3/PE; 60 Hz</b>															
UC-0060 ST	-5...25	2	-15...50	14.4	13.6	11.3	9.3	7.5	6.0	4.7	–	1	1.04	7000	
UC-0080 ST	-5...25	2	-15...50	18.2	17.1	14.1	11.3	8.8	6.8	5.1	–	1	1.04	7000	
UC-0100 ST	-5...25	2	-15...50	21.5	17.1	14.1	11.3	8.8	6.8	5.1	–	1	1.04	7000	
UC-0140 ST	-5...25	2	-15...50	24.7	22.7	19.7	16.8	14.1	11.1	8.5	–	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	1.04	9000	
UC-0240 ST	-5...25	2	-15...50	42.7	39.7	34.9	30.4	26.1	21.9	17.6	–	1	1.04	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	18.2	17.1	14.1	11.3	8.8	6.8	5.1	1	1	1.04	7000	
UC-0100 SP	-5...25	2	-15...50	21.5	17.1	14.1	11.3	8.8	6.8	5.1	1	1	1.04	7000	
UC-0140 SP	-5...25	2	-15...50	24.7	22.7	19.7	16.8	14.1	11.1	8.5	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	
<b>LAUDA Ultracool Maxi – 400-440 V; 3/PE; 60 Hz</b>															
UC-0300 ST	-5...25	2	-15...45**	60.1	57.5	49.5	41.3	34.1	27.8	22.5	–	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	–	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	–	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	–	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	–	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	–	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	–	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	–	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	–	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	

\* At 10 °C water outlet temperature and 25 °C ambient temperature

\*\* -15 °C only with option motor fan speed regulator (see page 10)

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 max.	Pump flow max.	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	bar	L/min		L	mm		dB(A)	kg	kW	A		
<b>LAUDA Ultracool Mini – 220 V; 60 Hz</b>													
–	–	–	–	½" NPT(F)	–	534x630x940	IP 44	57.0	100	0.8	16	E6813302	UC-0020 ST
–	–	–	–	½" NPT(F)	–	581x712x1167	IP 44	54.2	105	1.2	16	E6813304	UC-0030 ST
–	–	–	–	½" NPT(F)	–	581x712x1167	IP 44	55.5	110	1.5	16	E6813306	UC-0040 ST
3.5	50	3.4	5.6	½" NPT(F)	35	534x630x940	IP 44	57.0	115	1.4	16	E6813202	UC-0020 SP
3.5	50	3.3	10.3	½" NPT(F)	35	581x712x1167	IP 44	54.2	120	1.8	16	E6813204	UC-0030 SP
3.5	50	3.2	13.8	½" NPT(F)	35	581x712x1167	IP 44	55.5	125	2.1	16	E6813206	UC-0040 SP
<b>LAUDA Ultracool Midi – 440-480 V; 3/PE; 60 Hz</b>													
–	–	–	–	HT DN25	–	715x945x1490	IP 54	56.5	145	3.8	20	E6813308	UC-0060 ST
–	–	–	–	HT DN25	–	715x945x1490	IP 54	60.8	155	4.2	25	E6813310	UC-0080 ST
–	–	–	–	HT DN25	–	715x945x1490	IP 54	60.8	155	5.1	25	E6813312	UC-0100 ST
–	–	–	–	HT DN25	–	715x945x1490	IP 54	60.8	150	6.3	25	E6813314	UC-0140 ST
–	–	–	–	HT DN25	–	715x945x1490	IP 54	58.0	180	6.8	32	E6813316	UC-0180 ST
–	–	–	–	HT DN25	–	715x945x1490	IP 54	59.1	195	8.5	40	E6813318	UC-0240 ST
4.1	125	3.9	20.1	HT DN25	100	715x945x1490	IP 54	56.5	165	4.6	20	E6813208	UC-0060 SP
4.1	125	3.8	26.6	HT DN25	100	715x945x1490	IP 54	60.8	175	5.0	25	E6813210	UC-0080 SP
4.1	125	3.8	33.6	HT DN25	100	715x945x1490	IP 54	60.8	175	5.9	25	E6813212	UC-0100 SP
4.1	125	3.7	43.8	HT DN25	100	715x945x1490	IP 54	60.8	180	7.1	25	E6813214	UC-0140 SP
4.1	125	3.5	62.6	HT DN25	100	715x945x1490	IP 54	58.0	210	8.0	32	E6813216	UC-0180 SP
4.1	125	3.1	84.0	HT DN25	100	715x945x1490	IP 54	59.1	230	9.8	40	E6813218	UC-0240 SP
<b>LAUDA Ultracool Maxi – 440-480 V; 3/PE; 60 Hz</b>													
–	–	–	–	HT DN25	–	1005x1565x1965	IP 54	55.6	420	10.0	40	E6813320	UC-0300 ST
–	–	–	–	HT DN25	–	1005x1565x1965	IP 54	57.4	420	12.2	40	E6813322	UC-0400 ST
–	–	–	–	HT DN25	–	1005x1565x1965	IP 54	58.3	420	14.6	50	E6813324	UC-0500 ST
–	–	–	–	HT DN25	–	1005x1565x1965	IP 54	64.8	590	22.4	63	E6813326	UC-0650 ST
–	–	–	–	2" NPT(F)	–	1545x2230x2010	IP 54	61.3	980	31.5	80	E6812328	UC-0800 ST
–	–	–	–	2 ½" NPT(F)	–	1660x3400x2090	IP 54	65.2	1380	36.4	100	E6812330	UC-1000 ST
–	–	–	–	2 ½" NPT(F)	–	1660x3400x2090	IP 54	64.3	1480	47.2	150	E6812332	UC-1350 ST
–	–	–	–	2 ½" NPT(F)	–	1660x3400x2090	IP 54	64.3	1540	61.4	150	E6812334	UC-1700 ST
–	–	–	–	DIN-2566 DN80	–	1660x3585x2090	IP 54	68.5	1585	83.9	200	E6812336	UC-2400 ST
4.8	300	4.7	98.0	HT DN25	200	1005x1565x1965	IP 54	55.6	450	11.7	40	E6813220	UC-0300 SP
4.8	300	4.5	124.0	HT DN25	200	1005x1565x1965	IP 54	57.4	450	14.0	40	E6813222	UC-0400 SP
4.8	300	4.3	150.0	HT DN25	200	1005x1565x1965	IP 54	58.3	450	16.4	50	E6813224	UC-0500 SP
4.8	300	3.8	196.0	HT DN25	300	1005x1565x1965	IP 54	64.8	630	25.1	63	E6813226	UC-0650 SP
4.8	300	3.0	247.0	2" NPT(F)	300	1545x2230x2010	IP 54	61.3	1020	35.2	80	E6812228	UC-0800 SP
5.2	430	4.5	299.0	2 ½" NPT(F)	500	1660x3400x2090	IP 54	65.2	1460	41.1	100	E6812230	UC-1000 SP
5.4	600	4.9	392.0	2 ½" NPT(F)	500	1660x3400x2090	IP 54	64.3	1570	51.2	150	E6812232	UC-1350 SP
5.4	600	4.2	494.0	2 ½" NPT(F)	500	1660x3400x2090	IP 54	64.3	1630	66.9	150	E6812234	UC-1700 SP
3.7	1170	2.9	733.0	DIN-2566 DN80	500	1660x3585x2090	IP 54	68.5	1690	89.4	200	E6812236	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.

Option number	Designation	Description
1	5-bar pump	Housing and impeller in stainless steel AISI 304/316L
2	Pump totally made of stainless steel	Housing, impeller and water connections in stainless steel AISI 304/316L (standard on UC-0060 to UC-0650)
3	Auto filling kit	When the level is too low the water tank is opened by a solenoid valve and filled automatically
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 (for units from UC-0300 to UC-2400)
5	Increased temperature stability	Water temperature stability of $\pm 0.7$ K (realized by a hot gas bypass valve)
7	Wheels	Four nylon wheels with brakes for easy movement (only available for UC-0020 to UC-0040)
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 for UC-0020 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 antifreeze and anticorrosive protection	25 Liters	E7012402
Refrifluid 1		50 Liters	E7012404
Refrifluid 1		100 Liters	E7012406

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

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