

# °LAUDA



NEW



## THE NEW BATH THERMOSTATS LAUDA Universa



°FAHRENHEIT. °CELSIUS. °LAUDA.



# THE ALL-NEW DIMENSION

MODULAR, AI-READY, SUSTAIN





6,82



OF TEMPERATURE CONTROL  
ABLE, HIGH-PERFORMANCE

# One product line. Maximum performance

## Three innovative product variants for perfect temperature control

With LAUDA Universa, we offer you a new generation of bath thermostats for reliable, precise and powerful temperature control. Three performance classes – ECO, PRO and MAX – allow you to select the perfect solution for a wide range of requirements in laboratories, research and industry. Whether entry-level solution, versatile all-rounder or high-end system for demanding processes: All variants impress with their high temperature stability, powerful heating and cooling capacities and modern digital functions – for high efficiency and process reliability.

### LAUDA UNIVERSA ECO

**The smart choice for convenient basic temperature control.**  
**Reliable. Compact. Economical.**

Display:	2.9" VA LC display
Temperature range:	-30 ... 100 °C
Heating output:	2 kW
Cooling output:	300 W
Pump type:	Pressure pump
Bath volume:	8 ... 16 L
Bath depths:	160 mm, 200 mm
Safety class:	I/NFL

### LAUDA UNIVERSA PRO

**The all-rounder for versatile laboratory applications.**  
**Flexible. Powerful. Dynamic.**

Display:	3.5" TFT color display
Temperature range:	-45 ... 200 °C
Heating output:	2.5 kW
Cooling output:	200 ... 800 W
Pump type:	Pressure pump
Bath volume:	4 ... 40 L
Bath depths:	160 mm, 200 mm
Safety class:	III/FL



# LAUDA UNIVERSA MAX

The powerful solution for the highest demands.  
Maximum performance. Precise control. For extreme  
temperature ranges.

Display:	5" TFT color display
Temperature range:	-90 ... 300 °C
Heating output:	3.6 kW
Cooling output:	800 W ... 1.6 kW
Pump type:	Pressure/suction pump
Bath volume:	8 ... 42 L
Bath depths:	200 mm, 320 mm
Safety class:	III/FL





# Technology that makes the difference

## High precision, dynamics and temperature stability

Whether heating or cooling, LAUDA Universa stands for powerful, precise and efficient temperature control in all processes. Sophisticated technology, intelligent control and innovations (patent-pending) ensure top performance in everyday laboratory work – flexible, sustainable and future-proof.

1

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### **Rapid heating & cooling**

High heating and cooling capacity, high-quality insulation and minimal heat loss enable short heating and cooling times. For maximum dynamics and efficiency in every process.

2

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### **Constant precision – even with temperature jumps**

LAUDA Universa guarantees exact temperature constancy down to  $\pm 0.01$  K – for internal and external temperature control. Ideally suited for processes with tight tolerances and the highest quality requirements in static and dynamic applications.

3

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### **Reliability thanks to intelligent safety functions**

LAUDA Universa offers comprehensive protection in daily operation: with adjustable overtemperature protection, automatic system diagnostics, acoustic alarm functions and intelligent warning messages. For a high level of safety even in sensitive applications.

4

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### **Powerful pump with control stages**

The speed-controlled pressure or pressure-suction pump ensures even temperature distribution – adapted to your application, whether internal or external temperature control. For demanding media such as oils at high temperatures, the pressure-suction pump is also available in a ball bearing version. For even greater operational reliability in continuous operation.

5

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### **Extra quiet, clean and durable**

The standard speed-control enables trouble-free, low-noise operation and extends the service life of the compressors – for more quietness and planning reliability in the laboratory.

6

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### **Modular, intelligent, future-proof**

Control heads and base parts can be replaced or upgraded as required. This means that LAUDA Universa grows with your requirements – without you having to buy a complete new one. The built-in electronics are also designed to be future-proof: Its intelligent structure forms the basis for functional updates, digital services, remote maintenance and AI-supported functions.

## BATH EDGE VENTILATION



### Bath edge ventilation for clean operation

An innovative, software-controlled ventilation system prevents condensation and vapors from entering the control head. The air is extracted in a targeted manner – for a dry, clean and safe working area. Icing is also reduced, which significantly increases reliability (patent pending).

## SPEED-CONTROLLED COMPRESSORS

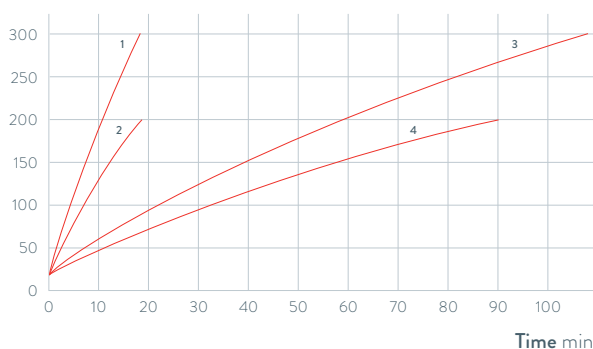


### Efficient refrigeration technology – minimal energy consumption, quiet operation

The refrigeration system automatically adjusts the cooling capacity to the requirements of the respective process. Speed-controlled compressors minimize energy consumption – for dynamic temperature control with high precision, quiet operation and a reduced CO<sub>2</sub> footprint (patent pending).

## HEATING PERFORMANCE Heat transfer liquid: Silicone oil

Bath temperature °C



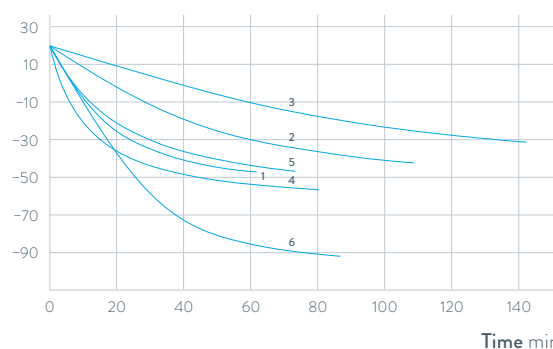
1 U 8 M | 2 U 8 P | 3 U 40 M | 4 U 40 P

### Fast heating with heating thermostats

With up to 3.6 kW heating power, LAUDA Universa sets standards, while the high-quality insulation minimizes heat loss, shortens process times and increases efficiency in everyday laboratory work.

## COOLING PERFORMANCE Heat transfer liquid: Ethanol

Bath temperature °C



1 U 845 M | 2 U 2040 M | 3 U 4230 M  
4 U 855 M | 5 U 1645 M | 6 U 890 M

### Precision without delay with cooling thermostats

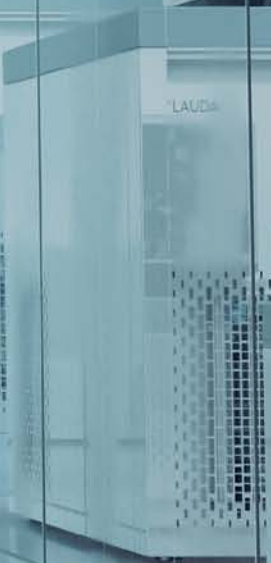
Refrigerated thermostats with high cooling capacities, fast response and precise control – for dynamic cooling and demanding heating cycles with maximum stability.



# THE ALL-NEW DIMENSION

MODULAR, AI-READY, SUSTAIN





OF CUSTOMIZATION  
ABLE, HIGH-PERFORMANCE

# Maximum choice. Perfect temperature control

## The modular system – as individual as your application

With LAUDA Universa, you can specify your temperature control system as required: Choose from three powerful control heads and a variety of heating or cooling baths – for maximum flexibility in every application.



### LAUDA UNIVERSA ECO

#### The entry into the modular world

The ECO control head impresses with easy handling, solid performance and an economical solution for standard applications in the temperature range from  $-30$  to  $100^{\circ}\text{C}$ . Optimally combinable with numerous heating or cooling baths – for reliable results in everyday temperature control tasks.



### LAUDA UNIVERSA PRO

#### The modular solution for versatile processes

More pumping power, higher heating and cooling capacity, programmable and additional functions make the PRO control head the powerful choice for more demanding applications. Application temperatures from  $-45$  to  $200^{\circ}\text{C}$  can be flexibly realized with a wide variety of baths.



### LAUDA UNIVERSA MAX

#### The powerful solution for the highest demands

LAUDA Universa MAX offers advanced control functions, pressure-suction pump and high temperature stability for extreme temperature ranges from  $-90$  to  $300^{\circ}\text{C}$ . Can be combined with the most powerful chillers – for maximum control and dynamics.



3x

MECHANICAL

9x

## HEAT BATHS TO CHOOSE FROM

### Versatile bath options for every application

From compact 4 L stainless steel baths to spacious 40 L versions – including deep versions up to 320 mm and transparent polycarbonate baths for an optimum view of your temperature-controlled products.



14x

## COLD BATHS TO CHOOSE FROM

### Maximum variety

Six powerful chillers with cooling capacities from 200 W to 1.6 kW, combinable with various bath vessels – tailor-made solutions for all your temperature control requirements.



Step-by-step to the right product:

[www.lauda.de/en/products/constant-temperature-equipment/product-finder](http://www.lauda.de/en/products/constant-temperature-equipment/product-finder)

LAUDA product finder



# LAUDA Universa – fully customizable

## The right temperature control system for every requirement

LAUDA Universa offers a large selection of heating and cooling baths that can be flexibly combined with all three control head variants in countless combinations. Stainless steel and transparent baths, many cooling and heating power levels and a comprehensive range of accessories guarantee an individual solution for every application – just one combination away.

### IMMERSION THERMOSTATS

#### Universa ECO



307 mm

#### Universa PRO



327 mm

Device type	ECO	PRO
Temperature range °C	25 ... 100	20 ... 200
Temperature stability K	±0.05	±0.01
Heater power kW	2	2.5
Bath volume L	–	–

### HEATING THERMOSTATS

#### Universa ECO



450 mm

#### Universa PRO



436 -  
478 mm

Device type	U 8 E	U 12 E	U 16 E	U 4 P	U 8 P	U 16 P	U 40 P
Temperature range °C	20 ... 100	20 ... 100	20 ... 100	20 ... 200	20 ... 200	20 ... 200	20 ... 200
Temperature stability K	±0.05	±0.05	±0.05	±0.01	±0.01	±0.01	±0.01
Heater power kW	2	2	2	2.5	2.5	2.5	2.5
Bath volume L	5.8 ... 8.5	8.5 ... 13	11.5 ... 17	3 ... 5	5.8 ... 8.5	11.5 ... 17	27.5 ... 41

#### Universa MAX



497 -  
617 mm

Device type	U 8 M	U 12 M	U 20 M	U 40 M
Temperature range °C	20 ... 300	20 ... 300	20 ... 300	20 ... 300
Temperature stability K	±0.01	±0.01	±0.01	±0.01
Heater power kW	3.6	3.6	3.6	3.6
Bath volume L	5.8 ... 8.5	8.5 ... 13	9.5 ... 22	29 ... 42



## COOLING THERMOSTATS

### Universa ECO



630 -  
632 mm

Device type	U 830 E	U 1225 E	U 1625 E
Temperature range °C	-30 ... 100	-25 ... 100	-25 ... 100
Temperature stability K	±0.05	±0.05	±0.05
Heater power kW	2	2	2
Cooling power W	300	300	300
Bath volume L	5 ... 8	8.5 ... 13	10.5 ... 16.5



616 -  
736 mm

### Universa PRO

Device type	U 420 P	U 630 P	U 635 P	U 1245 P	U 1635 P
Temperature range °C	-20 ... 200	-30 ... 200	-35 ... 200	-45 ... 200	-35 ... 200
Temperature stability K	±0.02	±0.02	±0.02	±0.02	±0.02
Heater power kW	2.5	2.5	2.5	2.5	2.5
Cooling power W	200	300	500	800	500
Bath volume L	1.8 ... 4	3.2 ... 5.7	3.2 ... 5.7	8.5 ... 13	11 ... 16.5



757 -  
927 mm

### Universa MAX

Device type	U 845 M	U 855 M	U 890 M	U 2040 M	U 1645 M	U 4230 M
Temperature range °C	-45 ... 200	-55 ... 200	-90 ... 200	-40 ... 200	-45 ... 200	-30 ... 200
Temperature stability K	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
Heater power kW	3.6	3.6	3.6	3.6	3.6	3.6
Cooling power W	800	1600	800	800	1600	800
Bath volume L	5 ... 8	5 ... 8	5 ... 8	9 ... 21	10.5 ... 16.5	19 ... 47





# THE ALL-NEW DIMENSION

MODULAR, AI-READY, SUSTAIN





# OF CONNECTIVITY

ABLE, HIGH-PERFORMANCE

# Fully connected, intuitive control, efficient maintenance

Digital control and smart process reliability



## Intuitive control – anytime, from anywhere

With the LAUDA Command app, you can control your devices flexibly and precisely – wirelessly and device-independently via smartphone, tablet or PC.

## Wi-Fi on board – without additional infrastructure

LAUDA Universa devices have integrated Wi-Fi as standard. Ideal for mobile or decentralized use.

## Ready for AI-supported monitoring & maintenance

With LAUDA.LIVE, your devices can be monitored in real time and checked via remote maintenance. The integrated connectivity and our research work on artificial intelligence shall detect faults at an early stage in the future and, in the best case, prevent them from occurring in the first place – for maximum availability.

## Secure and encrypted

Data is encrypted and transmitted securely in the network. A comprehensive rights and access system protects sensitive processes and prevents unauthorized access.





### Everything at a glance – with just a few fingertips

The LAUDA Command app offers an intuitive user interface with full functionality:

- Set target values
- Start & stop processes
- Manage device settings
- Manage programs
- Display temperature curves
- Analyze & export data

### Available for all platforms

Whether smartphone, tablet or PC: the LAUDA Command app is available for iOS, Android and Windows.

#### APP DOWNLOAD





# Maximum connectivity for modern system integration

Standard interfaces – flexibly expandable via module



## Plug and Play interface extension

Whether control system, LIMS or digital laboratory platform – LAUDA Universa offers a wide range of communication interfaces as standard for smooth data exchange. The modular interface card system expands connectivity as required: from the classic RS-232 connection to Profinet and EtherCAT through to the integration of external sensors. This means that LAUDA Universa is ready for any system integration – today and tomorrow.

## Standard interfaces

Model variant	Ethernet	Wi-Fi	USB*	Pt100/LiBus	Number of module slots
Universa ECO	●	●	●	-	-
Universa PRO	●	●	●	-	1x large, 1x small
Universa MAX	●	●	●	●	2x large

\* For data import/export and updates only

## Interface modules as a flexible expansion solution



LRZ 912  
Analog module



LRZ 918  
Pt100/LiBus module,  
small cover



LRZ 925  
External Pt100/LiBus  
module, large cover



LRZ 926  
RS-232/485



LRZ 927  
Contact module with single  
input and single output  
(NAMUR)



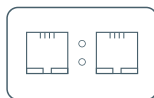
LRZ 928  
Contact module D-Sub



LRZ 929  
Profibus



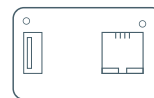
LRZ 931  
EtherCAT



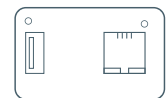
LRZ 932  
Profinet



LRZ 933  
CAN



LRZ 934  
OPC UA



LRZ 935  
ModBus TCP/IP

# With LAUDA.LIVE Services Cloud-enabled and AI-ready

## Remote maintenance-capable and ready for AI-supported process optimization



### Smartly connected into the future

LAUDA Universa is designed to be digital from the ground up. The system comes with integrated connectivity to the LAUDA.LIVE Cloud out of the box and can be activated with just a few clicks – without any additional hardware. This enables modern remote maintenance, live monitoring and data-based process analysis in real time.

### LAUDA.LIVE – digital services with added value

Statuses, processes and temperature curves are monitored live via a secure cloud connection. Errors can be identified and rectified quickly, often without on-site intervention. This can significantly reduce downtimes, associated costs and maintenance work.



### AI-ready – ready for intelligent optimization

LAUDA Universa is ready for future developments in the field of artificial intelligence. Thanks to its modular architecture and digital interfaces, AI-supported functions can be integrated in the future – for predictive maintenance, automatic process optimization or intelligent energy control, for example.

### Future-proof thanks to adaptive systems

In the future, AI-based analyses will be able to detect deviations at an early stage, prevent faults and adjust temperature control processes independently. This not only increases efficiency, but also operational safety – a decisive factor in sensitive laboratory environments.

### Your advantages:

- Minimization of downtime and malfunctions
- Fast troubleshooting via remote maintenance
- Reduction of service calls and travel costs
- Full transparency through live data analysis
- Future-proof through AI integration





# THE ALL-NEW DIMENSION

MODULAR, AI-READY, SUSTAIN





6,82



OF SUSTAINABILITY  
ABLE, HIGH-PERFORMANCE



# Sustainably thought. Efficiently implemented

For future-oriented, resource-saving temperature control technology



## Efficiency that pays off twice

LAUDA Universa relies on speed-controlled compressors, intelligent refrigeration control and natural refrigerants – for maximum performance with maximum energy savings. The system is particularly efficient and application-optimized, especially at partial load. The innovative technology not only ensures low power consumption, but also measurably reduces the carbon footprint.

## Natural refrigerants – safe & environmentally friendly

All LAUDA Universa refrigerated thermostats use natural refrigerants with an extremely low **Global Warming Potential (GWP)**. The filling quantity remains below **100 grams**, even with the most powerful devices. This eliminates the need for complex safety measures or special transportation regulations.

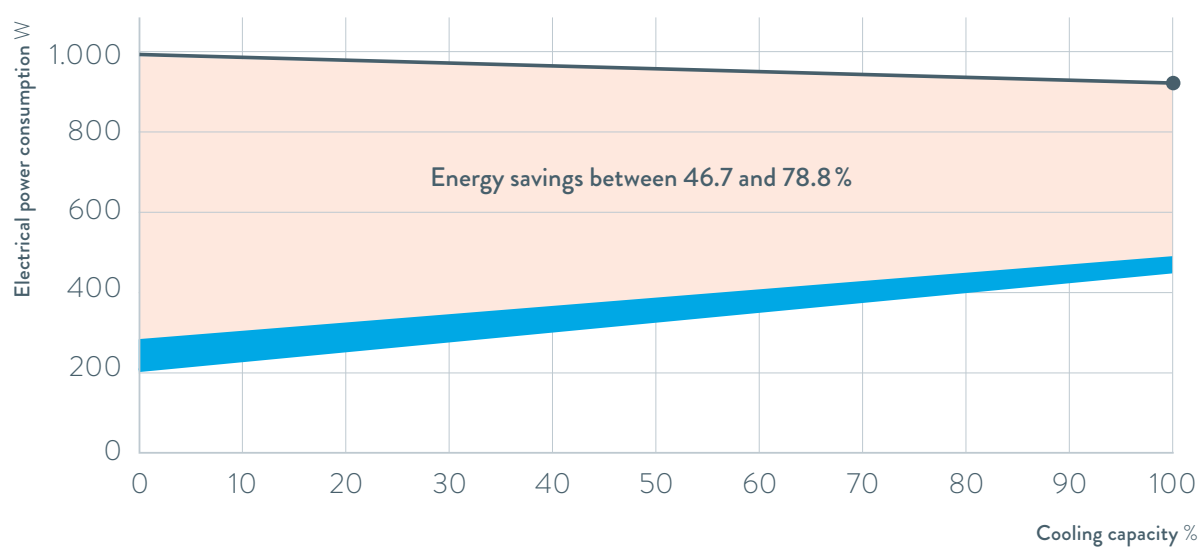
## Quiet in operation, strong in occupational safety

The lower housing of the bath features high-quality insulation and a three-part bath edge – for optimum energy efficiency and safe working conditions. Speed-controlled fans in the chillers also ensure quiet, resource-saving operation. This promotes focused work in the laboratory and supports occupational safety in noise-sensitive environments.

## Durable. Modular. Future-proof.

The modular system enables simple repairs, targeted upgrades and the long-term replacement of individual components – all in the interests of a sustainable product life cycle. Regular updates ensure that LAUDA Universa is always at the cutting edge of technology.





● Comparable cooling thermostats 800 W (market standard)

■ LAUDA Universa cooling thermostats 800 W (U 845 M, U 2040 M and U 4230 M)

### Up to 78.8% energy savings

Thanks to state-of-the-art components, such as a speed-controlled compressor and fan as well as electronic expansion valves, LAUDA Universa significantly reduces

energy consumption compared to the market standard. This results in energy savings of between **46.7 and 78.8 %**, depending on the operating mode.

# VERSATILE IN USE. EQUIPPED FOR ALL APPLICATIONS

High-precision temperature control for  
industry, research and development







# Internal temperature control

## Constant temperature, maximum homogeneity

LAUDA Universa bath thermostats enable precise sample temperature control through uniform circulation and stable temperature conditions throughout the bath. They are used in a wide range of industries – from pharmaceuticals and chemicals to electronics, biotech and food technology. High temperature stability and homogeneity, which must be maintained over several days or even weeks, are common requirements for temperature control units.

### QUALITY CONTROL AND CALIBRATION

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Inline tests require temperature-stable conditions. LAUDA Universa offers:

- Large bath volume for several samples
- Uniform liquid circulation around your samples
- Precise temperature stability

Accessories such as lid inserts, baskets or racks support standard-compliant quality testing in the bath.



LAUDA Universa offers for the calibration of sensors, thermometers and components:

- Uniform spatial temperature distribution
- Stable temperatures over the entire calibration period
- Optional cylindrical inserts and controlled overflow weirs enable even higher temperature homogeneities

**The result:** reproducible calibration values in research, production and quality assurance.

# External temperature control

Dynamic, precise, versatile

For reactors, systems and appliances: LAUDA Universa bath thermostats offer maximum flexibility and performance for external applications. Fast-response temperature control, high flow rates and smart control ensure precise processes.

## TEMPERATURE CONTROL OF REACTORS AND SYSTEMS



LAUDA Universa bath thermostats create ideal conditions for the precise temperature control of reactors:

- Pressure-suction pump for high flow rate
- High heating and cooling capacity for reaching the target temperature quickly

A particular advantage of the LAUDA Universa MAX devices is the standard Pt100/LiBus interface.

It enables:

1. Direct temperature monitoring in the reactor
2. Precise control of the external temperature

This means that even the most sophisticated reactor temperature control systems can be implemented safely and efficiently.



LAUDA Universa bath thermostats are suitable for controlling the temperature of a wide range of systems - from analysis devices to complex systems and machines. They can be flexibly integrated or operated independently.

Digital tools such as

- **LAUDA Command app** for remote control & monitoring
- **LAUDA.LIVE** for data analysis & process optimization enable wireless control, monitoring and data analysis – for reliable, safe and efficient continuous operation.

# LAUDA Universa

## Limitless versatile temperature control

High-performing, sustainable, digital and modular – this is how LAUDA is repositioning temperature control technology for the laboratory. The innovative LAUDA Universa range offers a comprehensive modular system of bath thermostats in three performance classes: ECO, PRO and MAX. From the economically optimized standard device to the powerful high-end thermostat, each device can be flexibly configured – perfectly matched to your application.

### MODULAR DESIGN

The ideal choice from the modular system: desired range of functions of the control head, heating and cooling capacity and bath size. This creates the right device for every application – individual, flexible and future-proof.

### MECHANICAL INTERFACE

The standardized mechanical interface guarantees simple installation, secure sealing and reliable operation – even after many years of use.

### HIGH-QUALITY CONSTRUCTION

Welded bath vessels, robust materials and precise workmanship ensure durability, stability and uncompromising quality.

### STABLE AND MOBILE

LAUDA Universa devices stand securely on rubber feet – and can still be moved comfortably thanks to the integrated castors on the refrigerated base.

LAUDA Universa U 855 M





## ACCESSORIES

Suitable accessories such as quick-release couplings, solenoid valves, stands and racks allow the system to be expanded flexibly and optimally for both internal and external applications.

## INTUITIVE OPERATION

Control via a well-arranged display with a clearly structured menu. All functions can be accessed quickly and directly – ideal for laboratory use.

## PUMP NOZZLE

The pump connections are made of stainless steel with a standardized M16×1 connection – for high compatibility and safe operation.

## CONNECTIVITY AS STANDARD

Wi-Fi, USB, Ethernet and Pt100/LiBus are standard features. Other interfaces and protocols can be flexibly retrofitted.

## SUSTAINABLY DESIGNED

With speed-controlled compressors, intelligent refrigeration control and natural refrigerants, all LAUDA Universa devices are energy-efficient and environmentally friendly.

# ACCESSORIES AND HEAT TRANSFER LIQUIDS

Optimally matched to LAUDA Universa





# Heat transfer liquids for safe processes

## Optimally matched and suitable for continuous operation

### Reliable temperature control up to wide temperature ranges – continuous operation for a long service life of the thermostat

Choosing the right heat transfer liquids is crucial. Thanks to decades of experience, LAUDA offers a wide range of heat transfer liquids for wide temperature ranges and reliable heat transfer. The menu-controlled fluid management of LAUDA Universa bath thermostats ensures safe and optimum use at all times.

Heat transfer fluid / Chemical substance class	Temperature range for open/half-open systems						Recommendation for the following device			Part Number 5 L / 10 L / 20 L
	-50 °C	0 °C	100 °C				Universa ECO	Universa PRO	Universa MAX	
Aqua 90 Water		5 °C	90 °C				●	●	●	LZB 120 / 220 / 320
Therm 160 Polyethylene glycol		60 °C	160 °C				-	●	●	LZB 106 / 206 / 306
Therm 180 Silicone oil		0 °C	180 °C				-	●	●	LZB 114 / 214 / 314
Therm 250 Silicone oil		50 °C	250 °C				-	●	●	LZB 122 / 222 / 322
Ultra 301 Mineral oil		40 °C	230 °C				-	●	●	LZB 153 / 253 / 353
Kryo 10 Water/antifreeze*		-10 °C	90 °C				●	●	●	LZB 132 / 232 / 332
Kryo 20 Silicone oil		-20 °C	170 °C				-	●	●	LZB 116 / 216 / 316
Kryo 30 Water/antifreeze		-30 °C	90 °C				●	●	●	LZB 109 / 209 / 309 / LZB 809 (200 L barrel)
Kryo 51 Silicone oil		-50 °C	120 °C				-	●	●	LZB 121 / 221 / 321
Kryo 60 Silicone oil		-60 °C	60 °C				-	-	●	LZB 102 / 202 / 302 LZB 802 (200 L barrel)
Kryo 95 Silicone oil	-95 °C		60 °C				-	-	●	LZB 130 / 230 / 330

Note: When working above  $T = 250\text{ °C}$ , special safety precautions must be observed: Work under fume hood or extraction, wear gloves and goggles. The ambient temperature must not exceed  $T_a = 35\text{ °C}$

● = approved for the device line

● = Restricted release for the device line. Please check specification.

- = NOT approved for device line

\* food compatible



# Accessories for maximum compatibility

## Expandable and a perfect fit

### Optimized for your requirements

The reliable operation of temperature control units requires suitable accessories. With adapters, hose connections, distributors and interface modules, LAUDA Universa can be specifically expanded – for maximum flexibility in use. The comprehensive range of LAUDA accessories ideally complements your laboratory equipment and comes from a single source: well thought-out, proven, compatible.



### Accessories:

- Extensive range of racks for centrifuge tubes and test tubes
- Standard rails for lid holders and standard rail clamps for attaching support stands – creates space on the laboratory bench and enables individual set-ups
- Bath cover with lockable opening for temperature sensor
- Cylinder-shaped insert for calibrating temperature sensors
- Quick coupling for connecting external consumers
- Compatible slotted rails and cover holders for modular customer applications from Better Basics

# Accessories for maximum compatibility

## Expandable and a perfect fit

Part Number	Designation	Description	Suitable for
<b>Bath covers</b>			
A001748	Bath cover Universa	for bath opening 130 × 100 mm	U 4, U 420
A001751	Bath cover Universa	for bath opening 130 × 150 mm	U 630, U 635
A001661	Bath cover Universa	for bath opening 150 × 150 mm	U 8, U 830, U 845, U 855, U 890
A001662	Bath cover Universa	for bath opening 200 × 200 mm	U 12, U 1225, U 1245, U 20, U 2040
A001663	Bath cover Universa	for bath opening 200 × 300 mm	U 16, U 1625, U 1635, U 1645
A001749	Bath cover Universa, two parts	for bath opening 300 × 600 mm	U 40
A001750	Bath cover Universa	for bath opening 300 × 350 mm	U 4230
A001658	Bath cover with feed-throughs	for bath opening 150 × 150 mm	U 8, U 830, U 845, U 855, U 890
A001659	Bath cover with feed-throughs	for bath opening 200 × 200 mm	U 12, U 1225, U 1245, U 20, U 2040
A001744	Bath cover with ring inserts: 4 openings	for bath opening 150 × 150 mm	U 8, U 830, U 845, U 855, U 890
A001745	Bath cover with ring inserts: 5 openings	for bath opening 200 × 200 mm	U 12, U 1225, U 1245, U 20, U 2040
A001769	Bath cover for transparent baths	for bath opening 130 × 270 mm	U 6 T
A001770	Bath cover for transparent baths	for bath opening 270 × 130 mm	U 15 T
A001771	Bath cover for transparent baths	for bath opening 300 × 350 mm	U 20 T
A001761	Screw-on cover	for bath opening 130 × 100 mm	U 4, U 420
<b>Mounting parts, brackets</b>			
A001666	Standard rail	Length: 394 mm	U 8, U 420
A001667	Standard rail	Length: 444 mm	U 12, U 20, U 630
A001668	Standard rail	Length: 474 mm	U 635, U 830
A001669	Standard rail	Length: 484 mm	U 845, U 855, U 1225, U 1245
A001670	Standard rail	Length: 534 mm	U 16, U 2040
A001671	Standard rail	Length: 604 mm	U 1625, U 1635, U 1645, U 890, U 4230
A001672	Standard rail	Length: 844 mm	U 40
A001720	Standard rail claw for pipes	Mounting hole: M10	A001666 ... A001672
A001721	Cover holder	Suitable for standard rails	A001666 ... A001672, A001780
A001773	Aluminum slotted rail*	Length: 394 mm	U 8, U 420
A001774	Aluminum slotted rail*	Length: 444 mm	U 12, U 20, U 630
A001775	Aluminum slotted rail*	Length: 474 mm	U 635, U 830
A001776	Aluminum slotted rail*	Length: 484 mm	U 845, U 855, U 1225, U 1245
A001777	Aluminum slotted rail*	Length: 534 mm	U 16, U 2040
A001778	Aluminum slotted rail*	Length: 604 mm	U 1625, U 1635, U 1645, U 890, U 4230
A001779	Aluminum slotted rail*	Length: 844 mm	U 40
A001780	Adapter for cover holder*	Suitable for aluminum slotted rail	A001773 ... A001779
A001742	Conversion kit to swivel castors with 4 brakes	Suitable for Universa U 890	U 890
A001746	Trolley with castors, adjustable		all
<b>Bath vessels</b>			
A001734	LAUDA Universa U 6 T	6 L, transparent bath in polycarbonate	
A001722	Cylindrical insert	Suitable for U 20 M & U 2040 M	U 20, U 2040
<b>Boxes, Baskets</b>			
LCZ 0694	Basket	W × D × H: 180 × 190 × 195 mm	U 12, U 1225, U 1245, U 20, U 2040
LCZ 0658	Basket	W × D × H: 140 × 140 × 195 mm	U 8, U 830, U 845, U 855, U 890
<b>Racks</b>			
A001652	Test tube rack in z-shape	with 36 openings, diameter 17 mm	U 8, U 830, U 845, U 855, U 890
A001653	Test tube rack in z-shape	with 49 openings, diameter 13 mm	U 8, U 830, U 845, U 855, U 890
A001654	Test tube rack in z-shape	with 64 openings, diameter 17 mm	U 12, U 1225, U 1245, U 20, U 2040
A001655	Test tube rack in z-shape	with 100 openings, diameter 13 mm	U 12, U 1225, U 1245, U 20, U 2040
A001787	Stainless steel test tube rack	for 14 test tubes, diameter 29 mm	U 8, U 830, U 845, U 855, U 890, U 630, U 635
A001788	Stainless steel test tube rack	for 30 test tubes, diameter 17 mm	U 8, U 830, U 845, U 855, U 890, U 630, U 635
UE 028	Stainless steel test tube rack	for 42 Eppendorf tubes	U 4, U 420

\* Compatible with Better Basics



Part Number	Designation	Description	Suitable for
UE 035	Stainless steel test tube rack RN 18/4	for 11 glasses, D=14-18 mm, 110 mm ID	U 4, U 420
A001764	Rotorack	Diameter 198 mm	U 20, U 2040

### Heat exchanger

A001740	Cooling coil set Universa PRO	with M16 × 1 stainless steel connections	Universa PRO
A001741	Cooling coil set Universa ECO	with M16 × 1 stainless steel connections	Universa ECO
LCZ 0787	Insulated plate heat exchanger M16 × 1 O	Temperature range: -100 to 150 °C, up to 12 bar	Universa PRO, Universa MAX

### Adapters, fittings

A001737	Pump connection set Universa PRO	with M16 × 1 stainless steel connections	Universa PRO
A001738	Pump connection set Universa ECO	with 11 mm stainless steel connectors	Universa ECO
LCZ 0660	Level controller, mechanical	for bath opening 150 × 150 mm	Universa MAX available Q4/25
LCZ 0679	Connection set for ext. in- and outlet	M16 × 1 outside thread	Universa MAX available Q4/25
A001656	Quick coupling	Suitable for M16 × 1 connection thread	all
HKA 221	Adapter	Adapter M16 × 1 I - NPT 1/2" O	all
HKA 107	Adapter	Adapter M16 × 1 I - NPT 1/4" O	all
HKA 063	Angle adapter	M16 × 1 outside thread/screw cap	all
HKA 058	Adapter M16 × 1 I - 3/8" O		all
HKA 060	Adapter M16 × 1 I - G1/2" O	Cooling coil connection	all
HKA 068	Adapter M16 × 1 - M14 × 1,5		all
HKA 144	Adapter M16 × 1 I - G1/4" I		all
HKA 149	Adapter M16 × 1 O - spherical liner RD=22		all
HKA 150	Adapter M16 × 1 I - G1/2" O	ID=4,5 mm	all
HKA 190	Extension 70 mm M16 × 1 O - M16 × 1 I		all
HKM 032	Screw cap M16 × 1		

### Connectors

HKA 073	Angular connector 13,5 mm to M16 × 1 I		all
HKO 025	Connector 11 mm for M16 × 1		all
HKO 026	Connector 13,5 mm for M16 × 1		all
HKO 061	Connector 8 mm for M16 × 1		all
A001781	Connector set for M16 × 1	External diameter connector 13.5 mm	all

### Magnetic valves

A001657	Coolant valve with LiBus	with M16 × 1 stainless steel connector	Universa PRO, Universa MAX
A001753	Shut-off unit/return valve	with LiBus	Universa PRO, Universa MAX

### Interface modules

LRZ 912	Analog module PMA with LiBus		Universa PRO, Universa MAX
LRZ 918	External Pt100-/LiBus module	small cover	Universa PRO
LRZ 925	External Pt100-/LiBus module	large cover	Universa PRO, Universa MAX
LRZ 926	RS-232/485 module Advanced, LiBus	D-SUB 9-pol.	Universa PRO, Universa MAX
LRZ 927	Contact module NAMUR Advanced, LiBus	1 x input, 1 x output	Universa PRO, Universa MAX available Q3/25
LRZ 928	Contact module D-SUB Advanced, LiBus	D-SUB 15-pol., 3 x input, 3 x output	Universa PRO, Universa MAX
LRZ 929	Profibus module Advanced, LiBus	D-SUB 9-pol.	Universa PRO, Universa MAX
LRZ 931	EtherCAT module Advanced, LiBus	2 x M8	Universa PRO, Universa MAX available Q4/25
LRZ 932	Profinet module Advanced, LiBus	RJ45	Universa PRO, Universa MAX available Q3/25
LRZ 933	CAN module Advanced, LiBus	D-SUB 9-pol.	Universa PRO, Universa MAX available Q4/25
LRZ 934	OPC UA module Advanced, LiBus	RJ45	Universa PRO, Universa MAX
LRZ 935	Modbus TCP module Advanced, LiBus	RJ45	Universa PRO, Universa MAX
LCZ 9727	Module box with LiBus MB		Universa PRO, Universa MAX

### Digital products

D000089	LAUDA Command Professional app		all
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# LAUDA Universa

## Functional overview of control units

Whether LAUDA Universa ECO, PRO or MAX – each LAUDA Universa device variant has its own strengths. The tabular overview shows key features in direct comparison and makes it easier to select the right device variant for your application.

Operating element	Universa ECO	Universa PRO	Universa MAX
Display	VA LC	TFT	TFT
Display size	2,9"; 77 × 38 mm	3,5"; 77 × 64 mm	5"; 121 × 76 mm
Mode of operation	3-button	Cursor softkey	Cursor softkey
User languages	1 (english)	6	6
Data logging, export to USB stick	✓	✓	✓
Safe mode	-	-	✓ (available Q1/26)
1-point calibration	✓	✓	✓
2-point calibration	-	-	✓
Self-adaptation controller	-	-	✓ (available Q3/25)
Programmer, programs/segments	-	5 / 150	5 / 150
Programmer, tolerance range function	-	✓	✓
Ramp function	-	✓	✓
Date / Time	✓	✓	✓
Weekly timer	-	✓	✓
Countdown function	✓	-	-
Graphic temperature profile display	-	✓	✓
Splitting switch for pump flow pressure	-	✓	✓
Level indicator (digital)	-	-	✓
Standby timer	-	✓	✓
Low-level alarm	✓	✓	✓
Low-level warning	-	-	✓
Drain tap	✓	✓	✓
Liquid menu	-	✓	✓



# LAUDA Universa

## Pump curves

LAUDA Universa PRO and MAX work with a multi-stage, speed-controlled circulation pump that ensures optimum heat transfer for both internal and external temperature control. The pump stage can be conveniently selected via the menu in order to precisely adjust the outlet pressure and flow rate to each application.

### Pump curves LAUDA Universa MAX

LAUDA Universa MAX is equipped with an eight-stage, speed-controlled pressure-suction pump. This enables the reliable supply to external consumers as well as stable internal circulation. Devices with a bath depth of 320 mm have particularly powerful pressure pumps for uniform temperature distribution in the bath ( $\Delta T = \pm 0.01 \text{ K}$ ).

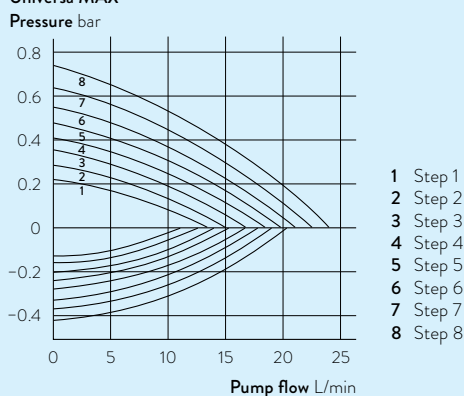
### Ball bearing version for special requirements

All LAUDA Universa MAX devices with a pressure-suction pump are also available with an optional ball bearing pump – ideal for:

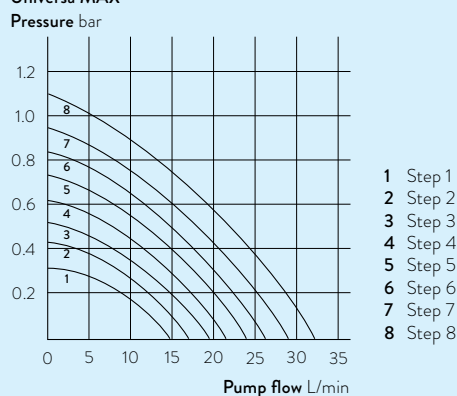
- Foreign bodies in the bath (e.g. due to material residues)
- Residues from high-temperature applications with silicone or mineral oils

This design increases operational safety and prevents blockages during continuous operation.

**PUMP CHARACTERISTIC** Pressure-suction pump, Heat transfer liquid: Water  
**Universa MAX**

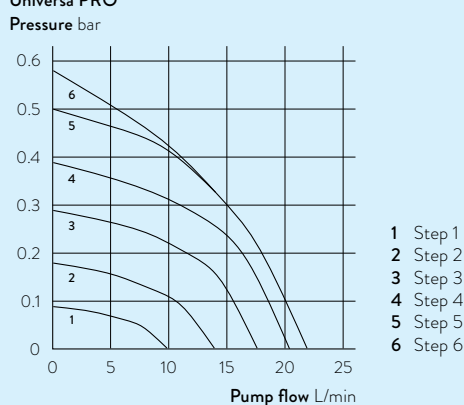


**PUMP CHARACTERISTIC** Pressure pump, Heat transfer liquid: Water  
**Universa MAX**



	Pressure-suction pump	Pressure-suction pump with ball bearing	Pressure pump
Heating thermostats	U 8, U 12 M, U 40 M	U 8, U 12 M, U 40 M	U 20 M
Cooling thermostats	U 845 M, U 855 M, U 890 M	U 845 M, U 855 M, U 890 M	U 2040 M, U 4230 M

**PUMP CHARACTERISTIC** Pressure pump, Heat transfer liquid: Water  
**Universa PRO**



### Pump characteristics LAUDA Universa PRO

LAUDA Universa PRO works with a multi-stage, speed-controlled circulation pump that ensures optimum heat transfer for internal and external temperature control.

# LAUDA Universa Heating thermostats

Technical data according to DIN 12876 standard

Device type	Working temperature range °C	Working temperature range with water cooling °C	Temperature stability ±K	Safety fittings	Heater power max. kW	Pump pressure max. (pressure) bar	Pump pressure max. (suction) bar	Pump flow max. (pressure) L/min	Pump flow max. (suction) L/min
<b>LAUDA Immersion thermostats</b>					ECO available Q4/25				
ECO	25 ... 100	-	0.05	I/NFL	2	0.2	-	15	-
PRO	30 ... 200	20 ... 200	0.01	III/FL	2.5	0.55	-	22	-
<b>LAUDA Universa ECO Heating thermostats</b>					available Q4/25				
U 8 E	25 ... 100	-	0.05	I/NFL	2	0.2	-	15	-
U 12 E	25 ... 100	-	0.05	I/NFL	2	0.2	-	15	-
U 16 E	25 ... 100	-	0.05	I/NFL	2	0.2	-	15	-
<b>LAUDA Universa PRO Heating thermostats</b>									
U 4 P	30 ... 200	20 ... 200	0.01	III/FL	2.5	0.55	-	22	-
U 8 P	40 ... 200	20 ... 200	0.01	III/FL	2.5	0.55	-	22	-
U 16 P	40 ... 200	20 ... 200	0.01	III/FL	2.5	0.55	-	22	-
U 40 P	40 ... 200	20 ... 200	0.01	III/FL	2.5	0.55	-	22	-
<b>LAUDA Universa MAX Heating thermostats</b>									
U 8 M	70 ... 300	20 ... 300	0.01	III/FL	3.6	0.7	0.4	25	23
U 12 M	70 ... 300	20 ... 300	0.01	III/FL	3.6	0.7	0.4	25	23
U 20 M	65 ... 300	20 ... 300	0.01	III/FL	3.6	1.1	-	32	-
U 40 M	65 ... 300	20 ... 300	0.01	III/FL	3.6	0.7	0.4	25	23
<b>LAUDA Universa MAX Heating thermostats, pump with ball bearing</b>									
U 8 M	70 ... 300	20 ... 300	0.01	III/FL	3.6	0.7	0.4	25	23
U 12 M	70 ... 300	20 ... 300	0.01	III/FL	3.6	0.7	0.4	25	23
U 40 M	65 ... 300	20 ... 300	0.01	III/FL	3.6	0.7	0.4	25	23

The Universa PRO Immersion thermostat is equipped with a protective plate with integrated screw terminal as standard.

Pump nozzles are available as accessories for the Universa PRO Immersion thermostats and the Universa PRO Heating thermostats.

All Universa MAX devices are fitted with a cooling coil, pump nozzle and a cover as standard.

Universa ECO and PRO Heating thermostats: A cover is available as an accessory, the PRO Heating thermostats are equipped with a cooling coil as standard.



Pump connection thread mm	Bath volume max. L	Bath opening (W × D) mm	Bath depth mm	Usable depth mm	Height top of bath mm	Dimensions (W × D × H) mm	Weight kg	Power supply V; Hz	Radio capability	Part Number	Device type
-	-	-	-	-	-	125 × 176 × 307	-	-	-	L003967	ECO
M16 × 1	-	-	-	-	-	164 × 186 × 327	-	200-240 V; 50/60 Hz	Wi-Fi	L003890	PRO
-	8.5	150 × 150	200	-	-	230 × 400 × 450	-	-	-	L003968	U 8 E
-	13	200 × 200	200	-	-	280 × 450 × 450	-	-	-	L003969	U 12 E
-	17	200 × 300	200	-	-	280 × 550 × 450	-	-	-	L003970	U 16 E
M16 × 1	5	130 × 100	160	140	240	190 × 330 × 436	10.5	200-240 V; 50/60 Hz	Wi-Fi	L003891	U 4 P
M16 × 1	8.5	150 × 150	200	180	280	230 × 400 × 476	14.5	200-240 V; 50/60 Hz	Wi-Fi	L003892	U 8 P
M16 × 1	17	200 × 300	200	180	280	280 × 550 × 476	19.0	200-240 V; 50/60 Hz	Wi-Fi	L003893	U 16 P
M16 × 1	41	300 × 600	200	180	282	380 × 850 × 478	28.0	200-240 V; 50/60 Hz	Wi-Fi	L003894	U 40 P
M16 × 1	8.5	150 × 150	200	180	280	230 × 400 × 497	15.0	200-240 V; 50/60 Hz	Wi-Fi	L003749	U 8 M
M16 × 1	13	200 × 200	200	180	280	280 × 450 × 497	18.0	200-240 V; 50/60 Hz	Wi-Fi	L003750	U 12 M
M16 × 1	22	200 × 200	320	300	400	280 × 450 × 617	22.5	200-240 V; 50/60 Hz	Wi-Fi	L003751	U 20 M
M16 × 1	42	300 × 600	200	180	282	380 × 850 × 499	29.0	200-240 V; 50/60 Hz	Wi-Fi	L003752	U 40 M
M16 × 1	8.5	150 × 150	200	180	280	230 × 400 × 497	14.5	200-240 V; 50/60 Hz	Wi-Fi	L003759	U 8 M
M16 × 1	13	200 × 200	200	180	280	280 × 450 × 497	18.0	200-240 V; 50/60 Hz	Wi-Fi	L003760	U 12 M
M16 × 1	42	300 × 600	200	180	282	380 × 850 × 499	29.0	200-240 V; 50/60 Hz	Wi-Fi	L003761	U 40 M

# LAUDA Universa Cooling thermostats

Technical data according to DIN 12876 standard

Device type	Working temperature range °C	Temperature stability ±K	Safety fittings	Heater power max. kW	Cooling output kW										Pump pressure max. (pressure) bar	Pump pressure max. (suction) bar	Pump flow max. (pressure) L/min	Pump flow max. (suction) L/min
					20 °C	0 °C	-20 °C	-30 °C	-40 °C	-45 °C	-50 °C	-60 °C	-80 °C	-90 °C				
LAUDA Universa ECO Cooling thermostats															available Q4/25			
U 830 E	-30 ... 100	0.05	I/NFL	2	0.3										0.2	-	15	-
U 1225 E	-25 ... 100	0.05	I/NFL	2	0.3										0.2	-	15	-
U 1625 E	-25 ... 100	0.05	I/NFL	2	0.3										0.2	-	15	-
LAUDA Universa PRO Cooling thermostats																		
U 420 P	-20 ... 200	0.02	III/FL	2.5	0.2	0.18	0.07	-	-	-	-	-	-	-	0.55	-	22	-
U 630 P	-30 ... 200	0.02	III/FL	2.5	0.3	0.25	0.12	0.02	-	-	-	-	-	-	0.55	-	22	-
U 635 P	-35 ... 200	0.02	III/FL	2.5	0.5	0.47	0.17	0.06	-	-	-	-	-	-	0.55	-	22	-
U 1245 P	-45 ... 200	0.02	III/FL	2.5	0.8	0.73	0.45	0.26	0.12	0.05	-	-	-	-	0.55	-	22	-
U 1635 P	-35 ... 200	0.02	III/FL	2.5	0.5	0.43	0.15	0.05	-	-	-	-	-	-	0.55	-	22	-
LAUDA Universa MAX Cooling thermostats																		
U 845 M	-45 ... 200	0.01	III/FL	3.6	0.8	0.7	0.44	0.26	0.12	0.05	-	-	-	-	0.7	0.4	25	23
U 855 M	-55 ... 200	0.01	III/FL	3.6	1.6	1.25	0.62	0.38	0.18	-	0.05	-	-	-	0.7	0.4	25	23
U 890 M	-90 ... 200	0.01	III/FL	3.6	0.8	0.74	0.72	0.68	0.64	-	0.6	0.46	0.12	0.02	0.7	0.4	25	23
U 2040 M	-40 ... 200	0.01	III/FL	3.6	0.8	0.71	0.45	0.26	0.1	-	-	-	-	-	1.1	-	32	-
U 1645 M	-45 ... 200	0.01	III/FL	3.6	1.6	1.2	0.58	0.35	0.15	0.07	-	-	-	-	0.7	0.4	25	23
U 4230 M	-30 ... 200	0.01	III/FL	3.6	0.8	0.7	0.43	0.18	-	-	0.12'	-	-	-	1.1	-	32	-
LAUDA Universa MAX Cooling thermostats, pump with ball bearing																		
U 845 M	-45 ... 200	0.01	III/FL	3.6	0.8	0.7	0.44	0.26	0.12	0.05	-	-	-	-	0.7	0.4	25	23
U 855 M	-55 ... 200	0.01	III/FL	3.6	1.6	1.25	0.62	0.38	0.18	-	0.05	-	-	-	0.7	0.4	25	23
U 890 M	-90 ... 200	0.01	III/FL	3.6	0.8	0.74	0.72	0.68	0.64	-	0.6	0.46	0.12	0.02	0.7	0.4	25	23
U 1645 M	-45 ... 200	0.01	III/FL	3.6	1.6	1.2	0.58	0.35	0.15	0.07	-	-	-	-	0.7	0.4	25	23

All Universa Cooling thermostats are fitted with a cover as standard.

Pump connection thread mm	Bath volume max. L	Bath opening (W × D) mm	Bath depth mm	Usable depth mm	Height top of bath mm	Dimensions (W × D × H) mm	Noise level full load dB (A)	Noise level partial load dB (A)	Weight kg	Power supply V; Hz	Radio capability	Part Number	Device type
-	8	150 × 150	200	-	-	260 × 480 × 632	-	-	-	-	-	L003971	U 830 E
-	13	200 × 200	200	-	-	310 × 510 × 630	-	-	-	-	-	L003972	U 1225 E
-	16.5	200 × 300	200	-	-	310 × 610 × 630	-	-	-	-	-	L003973	U 1625 E
M16 × 1	4	130 × 100	160	140	420	210 × 410 × 616	50	48	25	200-240 V; 50/60 Hz	Wi-Fi	L003898	U 420 P
M16 × 1	5.7	130 × 150	160	140	420	215 × 460 × 616	50	48	26	200-240 V; 50/60 Hz	Wi-Fi	L003899	U 630 P
M16 × 1	5.7	130 × 150	160	140	450	290 × 480 × 646	52	49	33	200-240 V; 50/60 Hz	Wi-Fi	L003900	U 635 P
M16 × 1	13	200 × 200	200	180	540	310 × 510 × 736	56	40	43	200-240 V; 50/60 Hz	Wi-Fi	L003901	U 1245 P
M16 × 1	16.5	200 × 300	200	180	540	310 × 610 × 736	52	49	38	200-240 V; 50/60 Hz	Wi-Fi	L003902	U 1635 P
M16 × 1	8	150 × 150	200	180	540	310 × 490 × 757	58	44	44	200-240 V; 50/60 Hz	Wi-Fi	L003753	U 845 M
M16 × 1	8	150 × 150	200	180	540	310 × 490 × 757	60	44	44	200-240 V; 50/60 Hz	Wi-Fi	L003754	U 855 M
M16 × 1	8	150 × 150	200	180	570	525 × 615 × 787	56	47	76	200-240 V; 50/60 Hz	Wi-Fi	L003755	U 890 M
M16 × 1	21	200 × 200	320	300	710	350 × 540 × 927	55	51	55	200-240 V; 50/60 Hz	Wi-Fi	L003756	U 2040 M
M16 × 1	16.5	200 × 300	200	180	540	310 × 610 × 757	60	44	48	200-240 V; 50/60 Hz	Wi-Fi	L003757	U 1645 M
M16 × 1	47	300 × 350	320	300	710	450 × 690 × 927	55	51	66	200-240 V; 50/60 Hz	Wi-Fi	L003758	U 4230 M
M16 × 1	8	150 × 150	200	180	540	310 × 490 × 757	58	44	44	200-240 V; 50/60 Hz	Wi-Fi	L003762	U 845 M
M16 × 1	8	150 × 150	200	180	540	310 × 490 × 757	60	44	44	200-240 V; 50/60 Hz	Wi-Fi	L003763	U 855 M
M16 × 1	8	150 × 150	200	180	570	525 × 615 × 787	56	47	76	200-240 V; 50/60 Hz	Wi-Fi	L003764	U 890 M
M16 × 1	16.5	200 × 300	200	180	540	310 × 610 × 757	60	44	48	200-240 V; 50/60 Hz	Wi-Fi	L003765	U 1645 M



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of defects



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#### 3. UPLOAD PROOF

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