

## PRODUCT DATA SHEET

Standing: 2025-06-25

LAUDA Universa U 420 P

Cooling thermostat 100 V; 50/60 Hz

Part Number: L004435

### Features

- Bath circulation thermostat with advanced electronics ensures precise control accuracy
- Future-proof thanks to modularity: LAUDA Universa with interchangeable control head and heating/cooling base allows flexible adaptation to current and future requirements.
- Clear overview, intuitive operation: The 3,5-inch colour TFT display provides a progression graph, offers a clear menu navigation in six languages and easy to read operating status icons - easily controlled via cursor and soft keys.
- Focus on safety: The dedicated Tmax button provides convenient access to the essential overtemperature protection setting during commissioning.
- Efficient vario pump with six adjustable performance levels. The flexible flow distribution for internal and external circulation ensures optimum volume flow and pressure.
- Easily accessible front switch on the control head allows the pump output to be adjusted during operation.
- Energy-efficient refrigeration system: capillary tube technology with speed-controlled inverter compressor and speed-controlled fan - for reduced energy costs and a long service life.
- Environmentally friendly refrigerants: Use of natural refrigerants for sustainable and environmentally conscious cooling.
- Adaptive bath edge ventilation (patent application): - Prevents icing and condensation - Stops water entering the bath - Blocks vapors to protect electronics. To increase operational safety and extend service life.
- Features include programmer, calibration options and weekly scheduler for versatile and precise process control.
- Intelligent remote control and monitoring: Integrated web server allows flexible remote control in the company network via the LAUDA Command app or browser-based, secured by PKI and 2-factor authentication. The connection to LAUDA.LIVE enables global, cloud-based data analysis and remote maintenance.
- Flexible networking: Modern connectivity through integrated Ethernet and USB interfaces as standard, plus ten optional interface modules for versatile communication solutions.
- Comprehensive safety concept: - Reliable low-level protection with float technology, - Adjustable overtemperature protection with acoustic alarm, - Smart temperature control media management with automatic limit value adjustment. For reliable operation and improved safety of your valuable samples.



Reserve technical changes

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WEEE-Reg.-Nr.: DE 66 42 40 57

Kommanditgesellschaft: Sitz Lauda-Königshofen  
Registergericht Mannheim • HRA 560069

Persönlich haftende Gesellschafterin:  
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Registergericht Mannheim • HRB 560226

Geschäftsführer:  
Dr. Gunther Wobsey (Vors.), Dr. Mario Englert,  
Dr. Marc Stricker  
Beirat: Dr. Gerhard Wobsey

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Working temperature min.  
-20 °C



Working temperature max.  
200 °C

## Technical Features

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Working temperature range               | -20 ... 200 °C                         |
| Operating temperature range             | -20 ... 200 °C                         |
| Ambient temperature range               | 5 ... 40 °C                            |
| Temperature stability                   | 0.02 ± K                               |
| Heating capacity range                  | 1.1 ... 1.1 kW                         |
| Current max.                            | 12 A                                   |
| Size of bath (W x D x H)                | 130 x 100 x 160 mm                     |
| Bath opening (WxT)                      | 130 x 100 mm                           |
| Bath volume min. / max.                 | 1.8 / 4.0 L                            |
| Pump Pressure max.                      | 0,6 bar                                |
| Pump flow rate max. (pressure)          | 22 L/min                               |
| In / Outlet connection thread (outside) | M16 x 1                                |
| Overall dimensions (WxDxH)              | 210 x 410 x 616 mm                     |
| Weight                                  | 26 kg                                  |
| Refrigerant stage 1                     | R-600a (GWP 3); 0.030 kg; 0.0 t CO2-eq |
| Power supply                            | 100 V; 50/60 Hz                        |
| Power plug                              | Power cord with plug (NEMA 5-15P)      |

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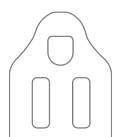
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Power cord with plug (NEMA 5-15P)

| Temperature | Pump stage | Heat transfer liquid | Cooling Capacity 50 Hz | Cooling Capacity 60 Hz |
|-------------|------------|----------------------|------------------------|------------------------|
| 200 °C      | 6          | Thermal oil          | 0.2 kW                 | 0.2 kW                 |
| 100 °C      | 6          | Thermal oil          | 0.2 kW                 | 0.2 kW                 |
| 20 °C       | 6          | Ethanol              | 0.2 kW                 | 0.2 kW                 |
| 10 °C       | 6          | Ethanol              | 0.19 kW                | 0.19 kW                |
| 0 °C        | 6          | Ethanol              | 0.18 kW                | 0.18 kW                |
| -10 °C      | 6          | Ethanol              | 0.14 kW                | 0.14 kW                |
| -20 °C      | 3          | Ethanol              | 0.07 kW                | 0.07 kW                |

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### Standard accessories

- 1 Bath cover
- Pump connection set with M16x1 stainless steel connections
- 2 screw caps, 2 closing plugs

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### COOLING PERFORMANCE Heat transfer liquid: Ethanol, bath closed

Bath temperature °C



- 1 U 420 P
- 2 U 630 P
- 3 U 635 P
- 4 U 1635 P
- 5 U 1245 P

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### PUMP CHARACTERISTIC Heat transfer liquid: Water

Pressure bar



- 1 Stage 1
- 2 Stage 2
- 3 Stage 3
- 4 Stage 4
- 5 Stage 5
- 6 Stage 6

Flow rate L/min

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