

The right temperature worldwide

LAUDA



LAUDA – the big one

Thermostats, Circulation chillers, Water baths

Overall Brochure 2014/2015

NEW

LAUDA Microcool
LAUDA Variocool
LAUDA Viscothermostats
LAUDA Integral XT 4 H (W)
and XT 8 H (W)

LAUDA – the big one – Overview

Aqualine
25...95 °C

The universal **water baths** for the laboratory
from 25 up to 95 °C

Alpha
-25...100 °C

Heating and cooling thermostats
for cost effective thermostating in the laboratory
at temperatures from -25 up to 100 °C

ECO
-50...200 °C

NEW

Viscocoool, Viscotemp

Heating and cooling thermostats
for economical thermostating in the laboratory
from -50 up to 200 °C

Proline
Proline Kryomats
-90...300 °C

Heating and cooling thermostats
with temperatures from -90 up to 300 °C for
professional use in materials testing, research
and quality control

Integral T
Integral XT
-90...320 °C

NEW

Integral XT 4 H, XT 4 HW, XT 8 H, XT 8 HW

Process thermostats for professional external
thermostating across a wide temperature range from
-90 up to 320 °C

Microcool
-10...40 °C

NEW

Variocool
-20...40 °C

NEW

Circulation chillers for cost effective cooling in the
lab and in research from -10 up to 40 °C

Circulation chillers for variable use in laboratory,
mini-plant and production for temperatures from
-20 up to 40 °C (optional up to 80 °C)

Calibration thermostats
Digital thermometers
-40...300 °C

Calibration and adjustment with
LAUDA calibration thermostats at
temperatures from -40 up to 300 °C

Additional devices

Additional devices
Immersion coolers, through-flow coolers,

Accessories
Heat transfer liquids
Software

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Software p. 89

Technical data
Power supply variants
Glossary

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Glossary p. 107





-90 °C -85 °C -40 °C 0 °C 100 °C 200 °C 300 °C 400 °C



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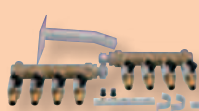
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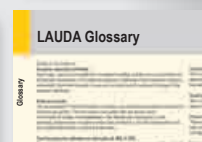
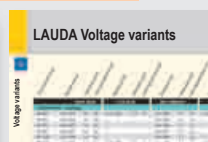
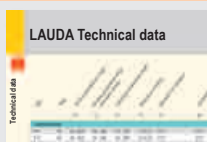
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Advantages



Large selection

LAUDA has the right solution for almost any requirement. The water baths and the high-value LAUDA Alpha heating and cooling thermostats are the first choice for routine tasks. The ECO and Proline thermostats allow temperature control that is both professional and economical. High cooling capacities and rapid cooling rates are provided by the Proline Kryomats and the high-performance Integral T und Integral XT process thermostats ensure lightning-speed temperature changes with external temperature regulation.



Convenient use

LAUDA equipment stands out for its excellent handling, optimum ergonomics and intuitive operation. As such, the removable Command remote control allows rapid changes of operation settings. A self-adaptation of the controller is already integrated into all LAUDA Proline cooling thermostats with a Command remote control as well as all LAUDA Integral XT process thermostats. It automatically calculates the optimum control parameters for different applications.



Proverbial quality

For almost 60 years now, LAUDA has been developing, engineering and producing high-class constant temperature equipment and measuring instruments of outstanding quality. From the start, the owners and directors promised to deliver the highest quality standards to their clients, business partners and to the global scientific community. The guarantee of user-friendliness, optimum functionality and high safety standards has always been the full attention and concentration of all LAUDA employees - which, now more than ever, produces what has become the proverbial LAUDA longevity and durability.



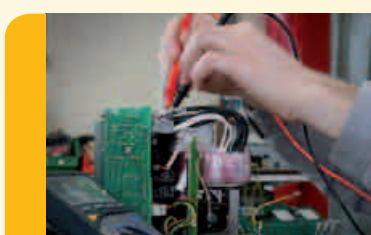
Industry leading safety concepts

All products are compliant with the strictest safety requirements and constraints. Consideration is given to all the relevant DIN and international standards such as IEC, UL and CSA. Furthermore, intelligent technologies and sophisticated safety concepts provide a good feeling to any application. As such, the LAUDA Proline and ECO, for example, have "double safety circuit" technology with reciprocal checking μ -controllers, which switch off the equipment in the event of a fault. The electronic low-level protection detection of the ECO allows operation only when the function is fault-free.



First class support – internationally

The LAUDA team at our headquarters and in the international subsidiaries and agencies, the professionally and comprehensively trained sales representatives, and the staff of the specialist laboratory facilities provide friendly, fair and competent advice. Together with our clients, LAUDA helps application experts to configure application-specific systems.



Reliable service

LAUDA equipment is known for its robustness and durability. However, should you ever need support – usually after many years of installation – we are there for you: as a LAUDA customer, you have access to comprehensive services, ensuring greater flexibility and profitability. One thing is certain: LAUDA service will not let you down.

World market leader with Tradition

- 1956 The first year**
In the small town of Lauda located in the German region of Baden, Dr. Rudolf Wobser founds the Messgerätewerk Lauda Dr. R. Wobser KG, and three years later the first serial production of thermostats starts.
- 1964 The first systems for industry**
Now LAUDA is building industrial heating and cooling systems for technical laboratories and production as well.
- 1967 The first measuring instruments**
Again LAUDA is putting groundbreaking new developments on the market: the first tensiometer and the first film balance.
- 1977 Dr. Gerhard and Karlheinz Wobser take over the management**
After the death of their father Dr. Rudolf Wobser, the brothers take over the management and divide the areas of responsibility.
- 1989 The first year under today's new name**
LAUDA sees an expansion of the range of products, and thus the company is renamed from Messgerätewerk Lauda Dr. R. Wobser KG into LAUDA DR. R. WOBSEER GMBH & CO. KG.
- 2003 Dr. Gunther Wobser is appointed Managing Director**
Karlheinz Wobser retires. Dr. Gunther Wobser, part of the company since 1997, is appointed managing partner.
- 2005 Establishment of the first subsidiary LAUDA France**
The French subsidiary shall support the representations and customers in the market by consultation and service.
- 2006 The constant size – 50 years of LAUDA**
The 50th anniversary is celebrated on March 1, 2006, the day when the founder of the company Dr. Rudolf Wobser set up LAUDA company in the town of Lauda.
- 2008 Expansion course with new subsidiaries**
By setting up the subsidiaries LAUDA America Latina C.A., LAUDA China Co., Ltd. and LAUDA Brinkmann, LP, USA, LAUDA consistently continues the world-wide expansion course.
- 2010 Dr. Gerhard Wobser resigns from office**
After 39 years as a Managing Director, Dr. Gerhard Wobser resigns from office in March 2010. His son, Dr. Gunther Wobser, takes over his duties.
- 2011 Expansion in Spain**
With the founding of the Spanish subsidiary LAUDA Ultracool S.L., LAUDA broadens the product range with industrial process circulation chillers from the "Ultracool" brand.
- 2012 Great Britain becomes a LAUDA place of location**
Foundation of subsidiary LAUDA Technology Ltd. in Birmingham, Great Britain.
- 2013 Headquarters expansion and investment in China**
LAUDA invests over 6 million Euro into a new logistics center, production hall and opens a production site in Shanghai.



Managing Director Dr. Gunther Wobser



LAUDA headquarters in Lauda-Königshofen



Company founder
Dr. Rudolf Wobser



Karlheinz Wobser

Dr. Gerhard Wobser

LAUDA, Ultra-Kryomat, Kryomat, LAUDA Vario pump and iVisc are registered trademarks of the LAUDA DR. R. WOBSEER GMBH & CO. KG

With more than 400 employees, more than EUR 60 million in annual turnover and eight foreign subsidiaries, LAUDA is the global leader in the manufacture of innovative constant temperature equipment and systems for science, application technology and production, as well as for high- quality measuring devices. With almost 60 years of experience and a unique product portfolio ranging from compact laboratory thermostats to industrial circulation chillers to customized heating and cooling systems with more than 400 kilowatts of cooling power, LAUDA is the only company that can guarantee optimized temperature throughout the entire value-added chain for its 10,000 plus customers worldwide.

Quality products from LAUDA keep temperatures constant to an impressive 5 thousandth °C or make targeted changes in an area spanning -150 to 400 °C. Through active cooling or warming, production processes are accelerated or, indeed, made possible in the first place. In such cases, LAUDA, for example, replaces the uneconomical mains-water cooling with environmentally friendly and cost-efficient devices or, alternatively, uses existing forms of primary energy such as thermal discharge. LAUDA measuring instruments determine the surface tension, tension limit and viscosity of liquids precisely

As a highly specialized niche provider, LAUDA ranks either first or second in almost all future-oriented sectors. In the semi-conductor industry, all the renowned manufacturers and suppliers place their trust in LAUDA thermostats and heating and cooling systems. LAUDA quality products also enable both the research and mass production of vital medicines. In the growing medical technology market, circulation chillers made by LAUDA cool patients and guarantee safe openheart surgery. LAUDA industrial circulation chillers provide reliable and cost effective cooling for printing machines, injection moulding plants and laser processing machines equipment. Further principle applications include material inspection, biotechnology and the cooling of laboratory instruments and machines. LAUDA thermostats are, naturally, also used in the measuring instruments manufactured by us. For example, in order to determine the viscosity of aviation fuel under real conditions at 10,000-meter altitude, the sample is cooled in the laboratory down to -60 °C.

Through numerous innovations and ongoing investment, LAUDA is sustainably improving its excellent market position and is growing both in the main European market as well as overseas.

LAUDA – The right temperature worldwide



Robust and economical: LAUDA viscothermostats

LAUDA is expanding its range of viscothermostats for manual and automatic viscometry. The new Viscotemp series supplements the robust, tried-and-tested stainless steel viscothermostats with its excellent price-performance ratio. A first with the Viscocool 6 with low bath volume is the integrated Peltier cooling and lighting in space-saving and compact design. This way, external cooling is not necessary in order to maintain the often required 20 or 25 °C. The integrated Peltier cooling guarantees an operating temperature range of up to 15 °C below room temperature.



LAUDA Microcool: circulation chillers in a compact design with an excellent price performance ratio

LAUDA is offering a new line of equipment for simple cooling applications with the Microcool circulation chillers. LAUDA Microcool is designed as a low-cost circulation chiller line with four compact models with cooling performances of 0.25 to 1.2 kW. The most powerful model is available as an air-cooled or water-cooled version. The circulation chillers are suitable for temperature control tasks up to -10 °C. The operating element with a large LED display and membrane keyboard enables clear and simple menu guidance. An RS-232 interface and an alarm contact are integrated as standard.



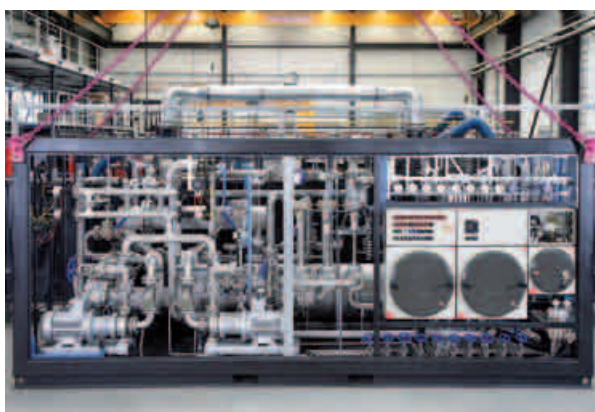
LAUDA Variocool: circulation chillers with flexible equipment possibilities and simple operation

With the new Variocool circulation chillers LAUDA presents a great selection of models with a very wide performance range. The product line offers 13 models with many different options for demanding temperature control tasks. A color TFT display provides visibility to operating parameters and allows for ease of use. A USB interface and an alarm contact are integrated as standard. Other interfaces are available as accessories. The circulation chillers operate in the range between -20 and 40 °C. The maximum temperature range can be extended to 80 °C with use of an optional heater. Optional pumps are available in the versions from VC 1200 for higher pressure requirements.



The high temperature thermostats: LAUDA Integral XT

Within the Integral XT product family, a total of four process thermostats, which were designed as pure heating thermostats extend the range of the product line. The XT high temperature thermostats provide a maximum operating temperature of 320 °C. The thermostats are operated using the Command remote control, which is already known from the other XT models. With the XT 4 HW and the XT 8 HW models, water counter-cooling guarantees a quick cool down across the entire temperature range.



Our energy saving stars

Constant temperature equipment requires power, especially cooling thermostats in constant operation and working to full capacity. Our cooling thermostats with electronic expansion valves regulate refrigeration with the utmost precision and only use the minimum amount of energy required. This reduces costs and helps with environmental conservation efforts. In this brochure, special energy-efficient thermostats are now listed for the first time with the "Energy Saving Star" label.

LAUDA – much more than constant temperature equipment

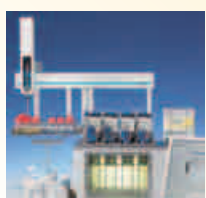
The right temperature worldwide and the greatest precision – at LAUDA, these claims also extend to include extremely high performance heating and cooling systems, intelligent measuring instruments and process circulation chillers for industrial applications.

LAUDA Ultracool



The LAUDA Ultracool industrial circulation chillers with a cooling output of up to 265 kilowatts and a working temperature range from -5 up to 25 °C are used by the manufacturers of, for example, printing machines, injection moulding plants and laser processing machines. They have versatile options, provide reliable temperature control and ensure secure processing.

LAUDA measuring instruments



Viscometers and tensiometers from LAUDA are essential for the analysis of polymers, oils, greases and tensides. With the modular concept of the PVS process viscometer, measuring routines may be conducted

effectively, quickly and safely and repeated as desired. The LAUDA iVisc capillary viscometer is new, space-saving, fully automatic and easy to operate. With LAUDA tensiometers, it is possible, for example, to determine the exact interfacial surface tension of transformer oils.

LAUDA heating and cooling systems



In accordance with the principle of "modular engineering", LAUDA process cooling systems, heat transfer systems and secondary circuit systems are planned and built precisely according to customer's wishes: process-oriented, customized and with precision control, meeting strict safety standards. With a temperature range of -150 up to 400 °C, LAUDA systems heat and cool to an accuracy of one tenth of a degree Celsius. As the requirements for temperature regulation systems are constantly increasing, the modern LAUDA heating and cooling modules are flexibly extendable and modifiable.

Subsidiaries

- LAUDA headquarters in Germany
- Worldwide subsidiaries



LAUDA. The right temperature worldwide.

Our subsidiaries:

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Measuring instruments
Heating and cooling systems
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LAUDA cooperates with more than 90 representatives around the world. Thoroughly trained and highly qualified employees in sales and service of our representatives give friendly and competent advice to our customers worldwide. Please refer to **www.lauda.de** for detailed contact data of your local LAUDA representative (sector: Company → Worldwide).

LAUDA Aqualine

The universal water baths for the laboratory
from 25 up to 95 °C



Application examples

- Preparation of medical samples for analysis
- Temperature control of cytological samples
- Pre-thermostating of samples for spectroscopic tests
- Use in colleges, hospitals and education

Reliable, compact and ergonomic

The **LAUDA Aqualine** water baths offer an affordable entry into laboratory thermostating. The equipment range for basic applications in the laboratory stands out for its simple operation with digital LED display and high reliability. The devices have no circulating pumps and no

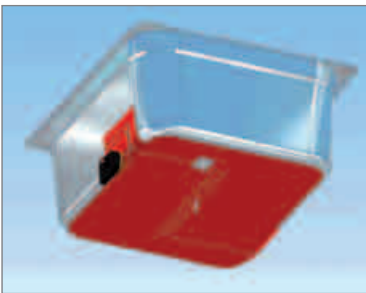
fittings within the bath. Consequently, they are corrosion-resistant, easy to clean or disinfect, and provide maximum use of internal bath space. The heating elements housed under the bath vessel ensure homogenous temperature distribution without localised overheating.

Your advantages at a glance



The Aqualine advantages

Your benefits



- Heating of the bath bottom across the entire base
- Patented low-level protection, minimum fill level of only 2 cm

- Excellent temperature homogeneity in the bath and optimum use of the internal space
- Bath operation almost independent of the fill level



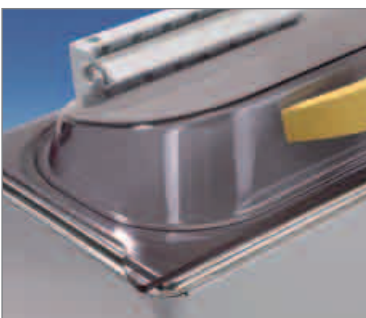
- Recessed operating elements
- Luminous digital LED display
- Controller electronics integrated into the housing

- Dirt and drip-proof electronics
- Easy operation
- Smallest possible unit footprint



- No heaters, sensors or other fittings in the bath vessel

- Easy-clean interior
- No niches for hidden growth of germs
- Full use of the bath



- Transparent polycarbonate gable covers removable without tools are a standard feature.

- Easy and quick visual inspection of the samples in the bath
- Easy cleaning, no height restrictions

- Optimized roof shape

- Prevents sample contamination from condensation

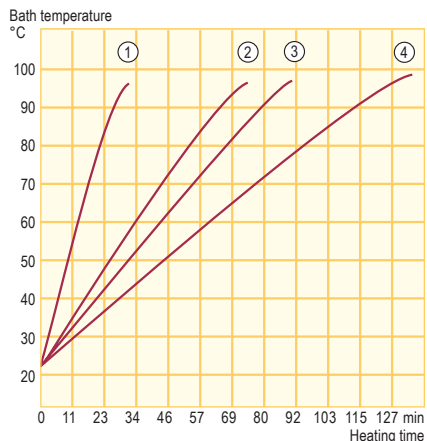
LAUDA Aqualine

Aqualine Water baths

The LAUDA Aqualine water baths are available in five different sizes. Depending on the size and the quantity of the samples, the user has the right bath depth or opening for his application at his disposal. All the baths are made from moulded stainless steel, and do not have any fittings. As a result, the interior is used to its full advantage, and the number of samples per bath is maximised. Above all, the LAUDA Aqualine is designed for the requirements of biological, medical and biochemical laboratories. Thanks to the patented heating concept, the baths also achieve a high level of temperature homogeneity.



Heating curves Heat transfer liquid: Water, bath closed



- ① AL 2
- ② AL 5 · AL 12
- ③ AL 18
- ④ AL 25

Temperature range

25...95 °C

Included accessories

Transparent polycarbonate gable cover



AL 5 water bath



All technical data on page 90 and following
Other power supply variants on page 102



Technical features		AL 2	AL 5	AL 12	AL 18	AL 25
Working temperature range	°C	25...95	25...95	25...95	25...95	25...95
Temperature stability at 37 °C	±K	0.2	0.2	0.2	0.2	0.2
Heater power	kW	0.5	0.5	1.0	1.2	1.2
Bath volume	L	0.9...1.7	1...5	2...12	3...18	3...25
Bath opening/Bath depth	mm	300x151/65	300x151/150	329x300/150	505x300/150	505x300/200
Cat. No. 230 V; 50/60 Hz		LCB 0723	LCB 0724	LCB 0725	LCB 0726	LCB 0727

Aqualine accessories

Test tube racks

Polypropylene up to 95 °C

Cat. No.	Description	Qty. Tubes	Ø mm
UE 041	Rack white	21	30
UE 040	Rack white	24	25
UE 039	Rack white	40	20
UE 042	Rack white	60	16
UE 037	Rack white	90	13
UE 047	Rack yellow	21	30
UE 046	Rack yellow	24	25
UE 045	Rack yellow	40	20
UE 048	Rack yellow	60	16
UE 043	Rack yellow	90	13
Suitable for	1 x in AL 5 2 x in AL 12 4 x in AL 18, AL 25		



UE 043

Test tube rack

Stainless steel up to 150 °C

Cat. No.	Description	Qty. Tubes	Ø mm
UE 038	Test tube rack stainless steel	12	20
Suitable for	1 x in AL 5 3 x in AL 12 6 x in AL 18, AL 25		

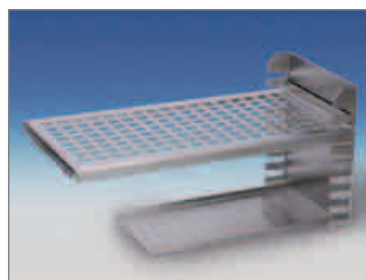


UE 038

Platform

Stainless steel up to 100 °C, with eight height adjustable steps

Cat. No.	Suitable for	Usable area mm
LCZ 0689	1 x in AL 12 2 x in AL 18, AL 25	140x270



LCZ 0689



Order the detailed LAUDA accessories brochure and the heat transfer liquids brochure free of charge. These and additional product information can also be found at www.lauda.de

LAUDA Alpha

Heating and cooling thermostats for cost-effective thermostating in the laboratory at temperatures from -25 up to 100 °C



Application examples

- Sample preparation for chemico-pharmaceutical analysis
- Quality control
- Precise temperature control in sensitive areas such as medical serology
- Versatile thermostating tasks in the field of biotechnology

Reliable technology, modern design, favorable price

LAUDA Alpha is the cost-effective choice in the area of high-quality LAUDA thermostats. The temperature range from -25 to 100 °C covers the larger part of all basic thermostatic applications within the laboratory. This is exactly the working temperature range of the LAUDA Alpha. This well-priced equipment range is made possible

by minimizing any unnecessary features, with the focus on reliability and user-friendliness. The thermostats are suitable for operation with non-flammable liquids (water, water/glycol) and for both internal and external thermostating tasks. A 1-point-calibration of the thermostats can be carried out by the user.

Your advantages at a glance

+

The Alpha advantages

Your benefits



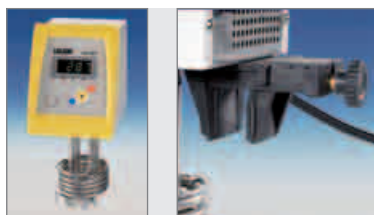
- 3-button operation with large, clearly legible LED display
- Low level protection with acoustic and visual alarm
- Timer function integrated

- Easy and intuitive menu navigation
- Easily legible display values
- Automatic shut-off of heater and pump when level of heat transfer liquid is too low
- Automatic shut-down (stand-by) after preset time



- Automatic compressor control supplies strong cooling output only when needed – up to 425 W

- Cost-effective operation
- No unnecessary energy consumption
- Equipment-saving principle extends the life of the compressor



- Alpha immersion and heating thermostats with screw clamp

- Easy to change to different bath vessels with a wall thickness of up to 30 mm



- Variable flow rates via inserts and fittings

- The rate of circulation can be adapted to the size of the bath



- Removal of the front cover without tools

- Easy cleaning of the cool air inlet
- Extended maintenance intervals

LAUDA Alpha

Alpha Immersion thermostat

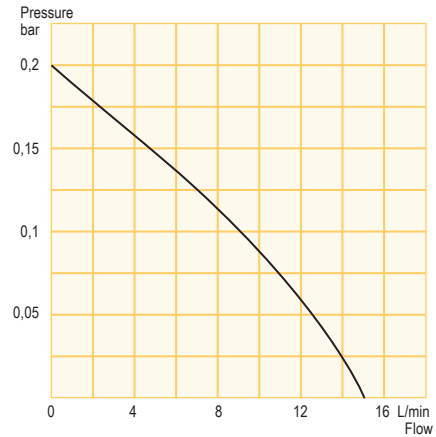
The immersion thermostat A can be used for any bath with a wall thickness of up to 30 mm by means of the screw clamp included in the scope of delivery. Using the additional pump circulation set and a cooling coil, the immersion thermostat can be expanded to form a full-fledged thermostating system.



Immersion thermostat A



Pump characteristic Heat transfer liquid: Water



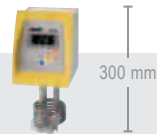
Temperature range
25...100 °C

Included accessories
Screw clamp · fitting in 2 sizes

Additional accessories see p. 19
Pump circulation set · cooling coil



All technical data on page 90 and following
Other power supply variants on page 102



Technical features		A
Working temperature range	°C	25...100
Temperature stability	±K	0.05
Heater power	kW	1.5
Pump pressure max.	bar	0.2
Pump flow max.*	L/min	15
Cat. No. 230 V; 50/60 Hz		LCE 0226

* Reducible to 5 L/min

Alpha Heating thermostats

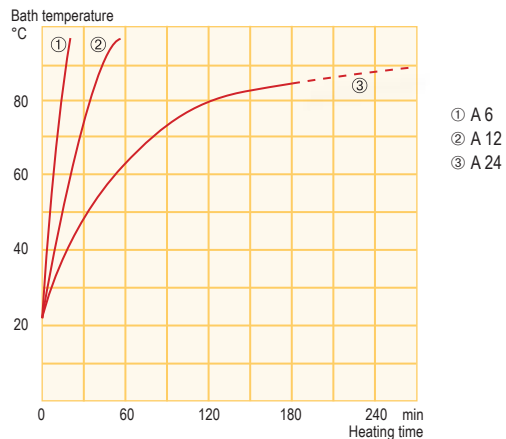
The heating thermostats A 6, A 12 and A 24 operate in the temperature range between 25 and 100 °C. As in the case of the immersion thermostats, a cooling coil and pump circulation set as well as a bath cover set are available as optional accessories.



Heating thermostat A 12 with cooling coil (accessory)



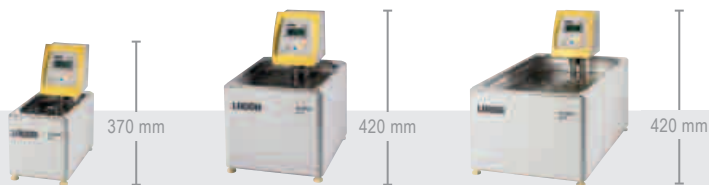
Heating curves Heat transfer liquid: Water, bath closed



Temperature range
25...100 °C

Included accessories
Screw clamp · fitting in 2 sizes

Additional accessories see p. 19
Pump circulation set · cooling coil · bath cover set



All technical data on page 90 and following
Other power supply variants on page 102

Technical features		A 6	A 12	A 24
Working temperature range	°C	25*...100	25*...100	25*...100
Temperature stability	±K	0.05	0.05	0.05
Heater power	kW	1.5	1.5	1.5
Pump pressure max.	bar	0.2	0.2	0.2
Pump flow max.	L/min	15	15	15
Bath volume	L	2.5...5.5	8...12	18...25
Bath opening	mm	145x161	235x161	295x374
Bath depth	mm	150	200	200
Cat. No. 230 V; 50/60 Hz		LCB 0733	LCB 0734	LCB 0735

* With open bath

LAUDA Alpha

Alpha Cooling thermostats

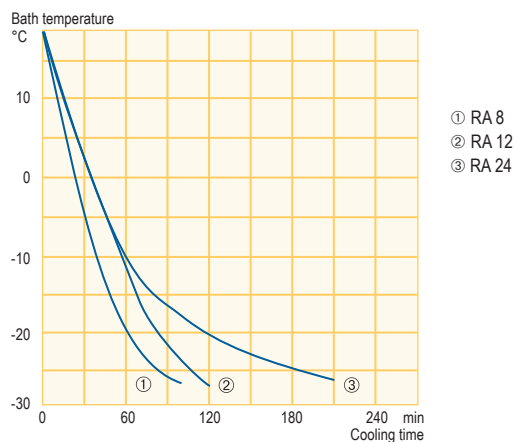
The cooling technology of the cooling thermostats RA 8, RA 12 and RA 24 enables cooling performance through the entire temperature range of -25 up to 100 °C. Emptying the heat transfer liquid is done by a drain connection on the rear side of the devices. Bath covers and pump kits are included in the standard equipment.



Cooling thermostat RA 24



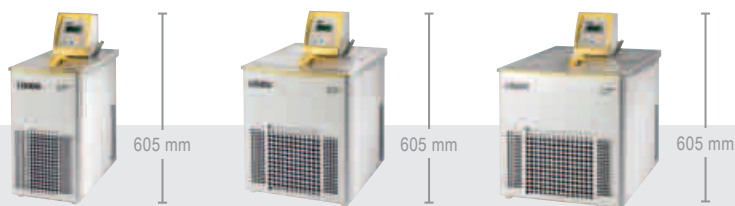
Cooling curves Heat transfer liquid: Ethanol, bath closed



Temperature range
-25...100 °C

Included accessories
Pump circulation set · bath cover · pump link for pump connections

Additional accessories
Racks · tubings



All technical data on page 94 and following
Other power supply variants on page 104

Technical features		RA 8	RA 12	RA 24
Working temperature range*	°C	-25...100	-25...100	-25...100
Temperature stability	±K	0.05	0.05	0.05
Heater power	kW	1.5	1.5	1.5
Cooling output at 20 °C	kW	0.225	0.325	0.425
Pump pressure max.	bar	0.2	0.2	0.2
Pump flow max.	L/min	15	15	15
Bath volume	L	5...7.5	9.5...14.5	14...22
Bath opening	mm	165x177	300x203	350x277
Bath depth	mm	160	160	160
Cat. No.		LCK 1907	LCK 1908	LCK 1909

* Working temperature range is equal to ACC range

Alpha accessories

Pump circulation set

For thermostating of external applications

Cat. No.	Description
LCZE 005	With 13 mm nipples
For all Alpha immersion and heating thermostats	

Cooling coil

For additional cooling of heating baths by means of cold water

Cat. No.	Description
LCZE 004	With 12 mm nipples
For all Alpha immersion and heating thermostats	

Test tube racks

Polypropylene up to 95 °C*

Cat. No.	Description	Qty. Tubes	Ø mm
UE 047/UE 041	Rack yellow/white	21	30
UE 046/UE 040	Rack yellow/white	24	25
UE 045/UE 039	Rack yellow/white	40	20
UE 048/UE 042	Rack yellow/white	60	16
UE 043/UE 037	Rack yellow/white	90	13
Suitable for	3 x A 24 2 x RA 12 3 x RA 24		

* Test tube rack stainless steel up to 150 °C available on request

Bath cover sets

For assembly on LAUDA Alpha heating baths.
Consisting of bath bridge, bath cover, 2 blanking plates and 4 screws.

Cat. No.	Description
LCZE 006	Bath cover set A 6
LCZE 007	Bath cover set A 12
LCZE 008	Bath cover set A 24



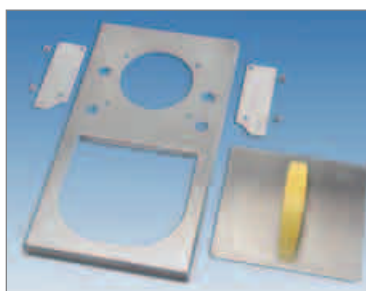
LCZE 005



LCZE 004



UE 043



LCZE 006



Order the detailed LAUDA accessories brochure and the heat transfer liquids brochure free of charge. These and additional product information can also be found at www.lauda.de

LAUDA ECO

Heating and cooling thermostats
Economical thermostating in the laboratory
from -50 up to 200 °C



Application examples

- Precise temperature regulation in quality assurance and analytics
- Sample preparation in chemistry and pharmacy
- Temperature control in electronics and life sciences
- Cooling in material tests

Precise, economical, flexible

With the ECO LAUDA is continuing the amazing success story of the equipment series, LAUDA Ecoline. There are innovations and developments particularly with regard to the range of features and the ease of operation. Both control heads, designated ECO Silver and ECO Gold, have a powerful circulating pump with a more than 30 percent higher pump capacity compared to the predecessor models. A menu navigation in plain text allows easy operation of the devices. Both control heads are equipped with a mini-USB

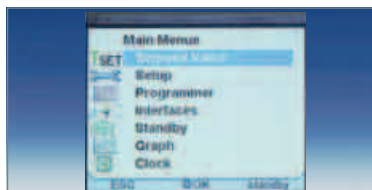
interface as standard. Further interfaces are available as modules. Another innovation is the practical allocation of a flow-rate switch at the front on the control head. This means that individual adjustment of the flow between internal and external circulation is possible even during operation. Variants in 230 V; 50 Hz are also available with natural refrigerants. The most powerful units are equipped with the energy-saving LAUDA SmartCool system. All cooling thermostats are available as air-cooled or water-cooled variants.

Your advantages at a glance



The ECO advantages

Your benefits



- Menu navigation via monochrome LCD (Silver) or colored TFT display (Gold)
- Programmer with both models

- Easy and clear operation
- Parameters are clearly readable
- Automation of temperature variations and test series



- Cooling outputs of 180, 200, 300 and 700 W and minimal temperature ranges from -15 up to -50 °C
- All cooling thermostats available as air and water cooled versions
- Also with natural refrigerants
- Energy-saving SmartCool System with 700 W cooling output

- Application related temperature control
- Choice of models regarding ambient conditions
- Very low global warming potential
- Energy and cost savings with digital cooling management



- Strong circulation pump with six levels; flow rate switch placed at the front of the control head for internal or external circulation
- Pump connections as standard with cooling thermostats
- Cooling coil as standard with heating thermostats

- Adaptation of pump power to applications and different bath sizes
- Convenient working even at ambient temperature, without cooling
- Temperature control of external applications
- Connection of cooling water or external cooling for work below ambient temperature



- Mini-USB interface as standard
- Upper module slot: Analog, RS 232/485, contact or Profibus module, to insert as an accessory
- Lower module slot: Pt100/LiBus module as accessory

- Computer connection and easy software updates
- Provides user with flexible control options
- Precise control of external applications
- Command remote control via LiBus



- Drain valves standard on all heating and cooling thermostats with stainless steel baths at the back of the devices

- Easy and safe changing of heat transfer liquids

LAUDA ECO

ECO Control head Silver

The control heads Silver with 1.3 kW heater power (230 V) are perfectly suited for thermostating tasks up to 150 °C. They are fitted with a monochrome LCD display.



Silver

- 1.3 kW heater power (230 V), working temperature range up to 150 °C
- LCD display, resolution of indication 0.01 °C
- Operation via cursor and softkeys
- Simultaneous display of set and actual temperature, navigation in plain text
- Selectable operating temperature range and additional button for overtemperature protection setting
- Safety class III, FL for flammable liquids
- 1-point calibration by the user
- Programmer with one program and 20 segments
- Vario pump with six levels, flow rate switch for internal or external circulation
- Mini-USB interface as standard

ECO Control head Gold

The control heads Gold with a heating power of 2,6 kW (230 V) have a working temperature range of up to 200 °C. They are provided with a larger colored TFT display. Temperature profiles can be displayed graphically. A comprehensive programmer with five programs and 150 temperature-time segments is a further distinctive feature compared to Silver.



Gold

- 2.6 kW heater power (230 V), working temperature range up to 200 °C
- Colored TFT display, resolution of indication 0.01 °C
- Operation via cursor and softkeys
- Simultaneous display of set and actual temperature, navigation in plain text
- Selectable operating temperature range and additional button for overtemperature protection setting
- Safety class III, FL for flammable liquids
- 1-point calibration by the user
- Graphical display of temperature profiles
- Programmer with five programs and 150 segments
- Vario pump with six levels, flow rate switch for internal or external circulation
- Mini-USB interface as standard

ECO Immersion thermostats

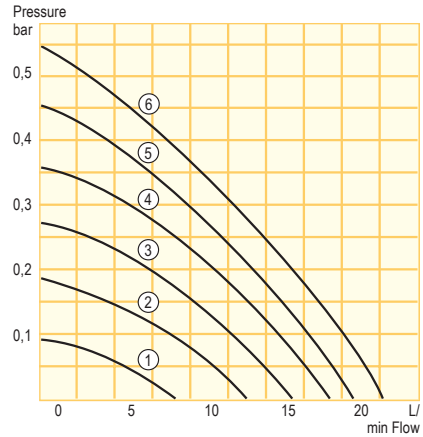
The ECO immersion thermostats can be used for any bath with a wall thickness of up to 30 mm and a bath depth of at least 150 mm by means of the screw clamp included in the scope of delivery.



Immersion thermostat Gold



Pump characteristics Heat transfer liquid: Water



- ① Step 1
- ② Step 2
- ③ Step 3
- ④ Step 4
- ⑤ Step 5
- ⑥ Step 6

Temperature range

Silver: 20...150 °C

Gold: 20...200 °C

Included accessories

Screw clamp

Additional accessories

Baths · cooling coil · pump connection set · Interface modules: analog, RS 232/485, contact, Profibus, Pt100/LiBus module



All technical data on page 90 and following
Other power supply variants on page 102



325 mm



325 mm

Technical features		Silver	Gold
Working temperature range	°C	20...150	20...200
Temperature stability	±K	0.01	0.01
Heater power	kW	1.3	2.6
Pump pressure max.	bar	0.55	0.55
Pump flow max.	L/min	22	22
Bath depth	mm	Min. 150	Min. 150
Cat. No.	230 V; 50/60 Hz	LCE 0227	LCE 0228

ECO Air-cooled cooling thermostats with control head Silver

The cooling thermostats with control head Silver are available in the temperature range from -50 up to 150 °C. They are equipped with a bath cover and pump connections for external applications as standard. The pump connections are nipples made of high-quality plastic with an outer diameter of 13 mm. The RE 415 S is the basic model with minimised foot print. The RE 1050 S with SmartCool digital cooling management can be used down to -50 °C and provides a cooling capacity of 700 W at 20 °C. Thanks to the larger baths, both models RE 1225 S and RE 2025 S are excellently suited to applications inside the bath.

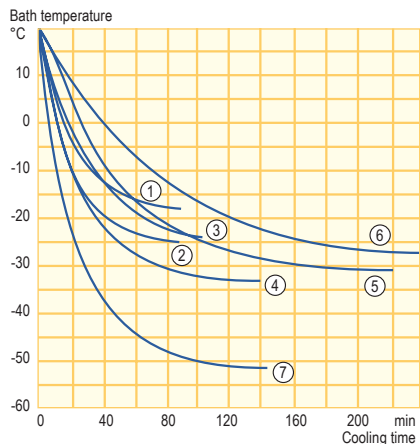
Variants in 230 V; 50 Hz are also available with natural refrigerants throughout the EU and Switzerland (except RE 415).
Cat. No. for models with natural refrigerants see page 95.



Cooling thermostat RE 1050 S



Cooling curves Heat transfer liquid: Ethanol, bath closed



- ① RE 415 S
- ② RE 420 S
- ③ RE 620 S
- ④ RE 630 S
- ⑤ RE 1225 S
- ⑥ RE 2025 S
- ⑦ RE 1050 S

Pump characteristics on page 23

Temperature range

-50...150 °C

Included accessories

Bath cover · pump connections with 13 mm plastic nipples · closing plugs

Additional accessories

Hoses · Interface modules: analog, RS 232/485, contact, Profibus, Pt100/LiBus module · Command remote control



All technical data on page 94 and following

Other power supply variants on page 104



Technical features		RE 415 S	RE 420 S	RE 620 S	RE 630 S	RE 1050 S	RE 1225 S	RE 2025 S
Working temperature range*	°C	-15...150	-20...150	-20...150	-30...150	-50...150	-25...150	-25...150
Temperature stability	±K	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Heater power	kW	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Cooling output at 20 °C	kW	0.18	0.2	0.2	0.3	0.7	0.3	0.3
Pump pressure max.	bar	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Pump flow max.	L/min	22	22	22	22	22	22	22
Bath volume	L	3.3...4	3.3...4	4.6...5.7	4.6...5.7	8...10	9.3...12	14...20
Bath opening/depth	mm	130x105/160	130x105/160	150x130/160	150x130/160	200x200/160	200x200/200	300x350/160
Cat. No. 230 V; 50 Hz**		LCK 1910	LCK 1912	LCK 1914	LCK 1916	LCK 1918	LCK 1920	LCK 1922

* Working temperature range is equal to ACC range

** Cat. No. for models with natural refrigerants see page 95

*** Only RE 1050 S

ECO

Air-cooled cooling thermostats with control head Gold

The cooling thermostats with control head Gold work up to 200 °C. Included as standard is a bath cover and pump connections made of stainless steel with M16 x 1 threads. The RE 1050 G has an especially high cooling capacity and reaches temperatures down to -50 °C. The integrated SmartCool system ensures remarkable energy and cost savings. The RE 415 G with small foot print saves valuable laboratory space.

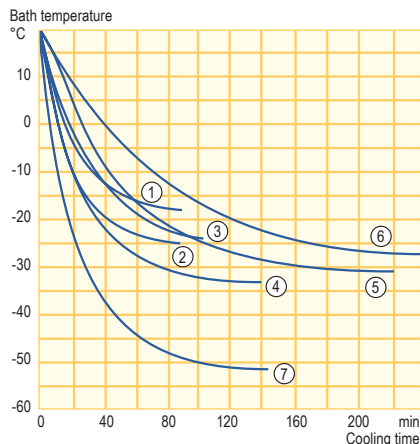
Variants in 230 V; 50 Hz are also available with natural refrigerants throughout the EU and Switzerland (except RE 415).
Cat. No. for models with natural refrigerants see page 95.



Cooling thermostat RE 1050 G



Cooling curves Heat transfer liquid: Ethanol, bath closed



- ① RE 415 G
- ② RE 420 G
- ③ RE 620 G
- ④ RE 630 G
- ⑤ RE 1225 G
- ⑥ RE 2025 G
- ⑦ RE 1050 G

Pump characteristics on page 23

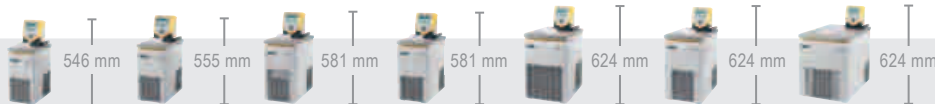
Temperature range
-50...200 °C

Included accessories
Bath cover · pump connections with M16 x 1 thread · closing plugs

Additional accessories
Hoses · Interface modules: analog, RS 232/485, contact, Profibus, Pt100/LiBus module · Command remote control

All technical data on page 94 and following

Other power supply variants on page 104



Technical features		RE 415 G	RE 420 G	RE 620 G	RE 630 G	RE 1050 G	RE 1225 G	RE 2025 G
Working temperature range*	°C	-15...200	-20...200	-20...200	-30...200	-50...200	-25...200	-25...200
Temperature stability	±K	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Heater power	kW	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Cooling output at 20 °C	kW	0.18	0.2	0.2	0.3	0.7	0.3	0.3
Pump pressure max.	bar	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Pump flow max.	L/min	22	22	22	22	22	22	22
Bath volume	L	3.3...4	3.3...4	4.6...5.7	4.6...5.7	8...10	9.3...12	14...20
Bath opening/depth	mm	130x105/160	130x105/160	150x130/160	150x130/160	200x200/160	200x200/200	300x350/160
Cat. No. 230 V; 50 Hz**		LCK 1911	LCK 1913	LCK 1915	LCK 1917	LCK 1919	LCK 1921	LCK 1923

* Working temperature range is equal to ACC range

** Cat. No. for models with natural refrigerants see page 95

*** Only RE 1050 G

ECO Water-cooled cooling thermostats with control head Silver and Gold

The cooling thermostats with control heads Silver and Gold are also available as water cooled models. By discharging process heat to the cooling water, heating-up of the environment will be reduced. This is an advantage when using several devices or at high ambient temperatures.

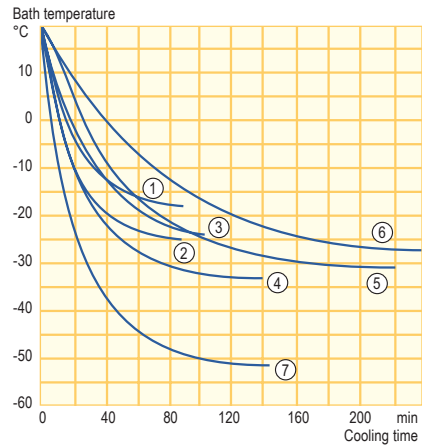
Variants in 230 V; 50 Hz are also available with natural refrigerants throughout the EU and Switzerland (except RE 415). Cat. No. for models with natural refrigerants see page 97.



Cooling thermostat RE 1050 GW



Cooling curves Heat transfer liquid: Ethanol, bath closed



- ① RE 415 SW
RE 415 GW
- ② RE 420 SW
RE 420 GW
- ③ RE 620 SW
RE 620 GW
- ④ RE 630 SW
RE 630 GW
- ⑤ RE 1225 SW
RE 1225 GW
- ⑥ RE 2025 SW
RE 2025 GW
- ⑦ RE 1050 SW
RE 1050 GW

Pump characteristics on page 23

Temperature range

Silver: -50...150 °C

Gold: -50...200 °C

Included accessories

Bath cover · pump connections with 13 mm plastic nipples (Silver) or M16 x 1 thread (Gold) and 13 mm nipples · closing plugs

Additional accessories

Hoses · Interface modules: analog, RS 232/485, contact, Profibus, Pt100/LiBus module · Command remote control



All technical data on page 94 and following
Other power supply variants on page 104

Technical features		RE 415 SW	RE 420 SW	RE 620 SW	RE 630 SW	RE 1050 SW	RE 1225 SW	RE 2025 SW
Working temperature range*	°C	-15...150	-20...150	-20...150	-30...150	-50...150	-25...150	-25...150
Temperature stability	±K	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Heater power	kW	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Cooling output at 20 °C	kW	0.18	0.2	0.2	0.3	0.7	0.3	0.3
Pump pressure max.	bar	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Pump flow max.	L/min	22	22	22	22	22	22	22
Bath volume	L	3.3...4	3.3...4	4.6...5.7	4.6...5.7	8...10	9.3...12	14...20
Bath opening/depth	mm	130x105/160	130x105/160	150x130/160	150x130/160	200x200/160	200x200/200	300x350/160
Cat. No. 230 V; 50 Hz**		LCK 1924	LCK 1926	LCK 1928	LCK 1930	LCK 1932	LCK 1934	LCK 1936

Technical features		RE 415 GW	RE 420 GW	RE 620 GW	RE 630 GW	RE 1050 GW	RE 1225 GW	RE 2025 GW
Working temperature range*	°C	-15...200	-20...200	-20...200	-30...200	-50...200	-25...200	-25...200
Temperature stability	±K	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Heater power	kW	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Cooling output at 20 °C	kW	0.18	0.2	0.2	0.3	0.7	0.3	0.3
Pump pressure max.	bar	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Pump flow max.	L/min	22	22	22	22	22	22	22
Bath volume	L	3.3...4	3.3...4	4.6...5.7	4.6...5.7	8...10	9.3...12	14...20
Bath opening/depth	mm	130x105/160	130x105/160	150x130/160	150x130/160	200x200/160	200x200/200	300x350/160
Cat. No. 230 V; 50 Hz**		LCK 1925	LCK 1927	LCK 1929	LCK 1931	LCK 1933	LCK 1935	LCK 1937

* Working temperature range is equal to ACC range

** Cat. No. for models with natural refrigerants see page 97

*** Only RE 1050 SW and RE 1050 GW

Viscocool and Viscotemp Viscothermostats with transparent bath and Silver and Gold control heads



The tried-and-tested ET 15 baths made from polycarbonate provide space for immersion of a maximum of three glass capillary viscometers for manual measurement using the stop watch or for up to two automatic measuring stations for iVisc or S 5 (PVS). If required, when using dilution viscometers for example, up to two magnetic stirrers can be added to the thermostat.

Specifically for applications near room temperature (15 to 30 °C), the ET range was expanded upon with the inclusion of the extremely compact, electronic Viscocool 6 version which is cooled using Peltier technology. It can provide cooling without a cooling water connection or any additional devices. The similarly new round solid glass bath Viscotemp 18 is used particularly for temperatures around 100 °C for operation with silicone oils and with aggressive samples. Outstanding insights in the smallest space can be achieved thanks to up to five stop watch measuring stands. Alternatively, it can be equipped with an iVisc or PVS measuring stand and thermostating position.



Viscothermostat Viscocool 6



Special features

- Baths made from polycarbonate or glass with 6 to 18 liters bath volume
- Ideal for operation between 20 and 40 °C
- For up to two automatic or five stop watch measuring stations
- Optionally with the control head ECO Silver or ECO Gold (except for Viscocool 6)
- Simple design makes quick cleaning possible
- Variopump with six pumping levels and pump flow distribution for perfect homogeneity
- Display with standards-compliant resolution of 0.01 K
- Can be combined with LAUDA through-flow coolers
- Intuitive operation via cursor and softkeys
- Polycarbonate bath Viscocool 6 with integrated Peltier cooling and double chamber system

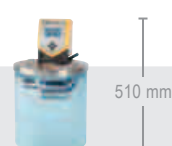
Temperature range
15...105 °C

Included accessories
Pump connection set with 13 mm plastic nipples (ET 15 S, Viscotemp 18 S) or M16 x 1 thread (ET 15 G, Viscotemp 18 G) · plugs

Additional accessories
Cooling coil · tubing · cover plates · Pt100/LiBus module



All technical data on page 90 and following
Other power supply variants on page 102



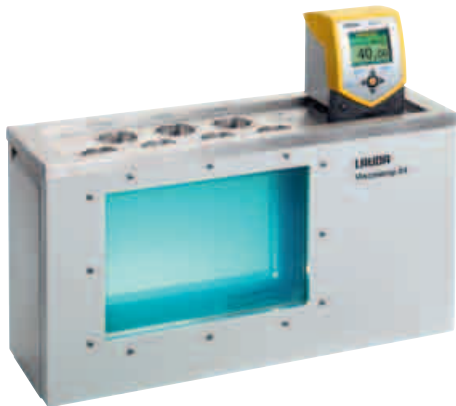
Technical features		ET 15 S/G	Viscocool 6	Viscotemp 18 S/G
Working temperature range	°C	20*...100	15...90	0*...105
Temperature stability	±K	0.01	0.01	0.01
Heater power 230 V (115 V)	kW	1.3/2.6 (1.3/1.3)	1.3 (1.3)	1.3/2.6 (1.3/1.3)
Pump pressure max.	bar	0.55	0.55	0.55
Pump flow max.	L/min	22	22	22
Bath volume	L	15	6.5	18.5
Bath opening/depth	mm	275x130/310	188x128/330	ø290/320
Dimensions	mm	428x130x532	206x415x530	ø310x510
Cat. No. Silver 230 V; 50/60 Hz		LCD 0288	LCD 0292	LCD 0294
Cat. No. Gold 230 V; 50/60 Hz		LCD 0289	–	LCD 0295

* Possible with external cooling

Viscotemp Viscothermostats with stainless steel bath and control head Silver and Gold



The new Viscotemp 15, 24, and 40 viscothermostats with high-quality stainless steel baths and glass windows can be used in the most common temperature range from 0 up to 105 °C. The clearly designed single-chamber systems with optional background lighting provide a glass-clear view and can be easily cleaned. They are ideal for determining, for example, the viscosity index of motor oils or the solution viscosity of plastics. The Viscotemp 15 type offers space for up to four manual measuring stations or two automatic measuring stands, iVisc or S 5 (PVS). Viscotemp 24 has space for seven viscometers or up to four automatic measuring stands. Both versions can be fitted with cleaning modules. Viscotemp 40 was designed exclusively for manual measurements with twelve measuring stations. With the Therm 180 heat transfer liquid, the thermostats can be operated as a corrosion-resistant thermostating bath for aggressive samples, e.g. for polyamides dissolved in sulfuric acid.



Viscothermostat Viscotemp 24 G with cover plate 24 K
– Cover plates not included in delivery –



Special features

- Corrosion-resistant stainless steel bath with 19 to 44 liter bath volumes
- For up to four automatic or 12 stop watch (manual) measuring stations
- Optionally with control head ECO Silver or ECO Gold
- Clear design makes quick cleaning possible
- Variopump with six pumping levels and pump flow distribution for perfect homogeneity
- Display with standards-compliant resolution of 0.01 K
- Can be combined with LAUDA through-flow coolers
- Intuitive operation via cursor and softkeys

Temperature range

0...105 °C

Included accessories

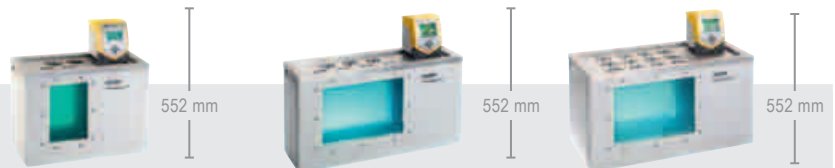
Pump connection set with 13 mm plastic nipples (Silver) or M16 x 1 thread (Gold) · plugs

Additional accessories

Cooling coil · tubing · cover plates · Pt100/LiBus module



All technical data on page 90 and following
Other power supply variants on page 102



Technical features		Viscotemp 15 S/G	Viscotemp 24 S/G	Viscotemp 40 S/G
Working temperature range	°C	0*...105	0*...105	0*...105
Temperature stability	±K	0.01	0.01	0.01
Heater power 230 V (115 V)	kW	1.3 /2.6 (1.3/1.3)	1.3 /2.6 (1.3/1.3)	1.3 /2.6 (1.3/1.3)
Pump pressure max.	bar	0.55	0.55	0.55
Pump flow max.	L/min	22	22	22
Bath volume	L	19	27	44
Bath opening/depth	mm	430x145x320	607x145x320	607x250x320
Glass pane size	mm	152x233	329x233	329x233
Dimensions	mm	532x233x552	708x233x552	708x328x552
Cat. No. Silver 230 V; 50/60 Hz		LCD 0296	LCD 0298	LCD 0300
Cat. No. Gold 230 V; 50/60 Hz		LCD 0297	LCD 0299	LCD 0301

* Possible with external cooling The cover plates/bath bridge necessary for operation need to be ordered separately.

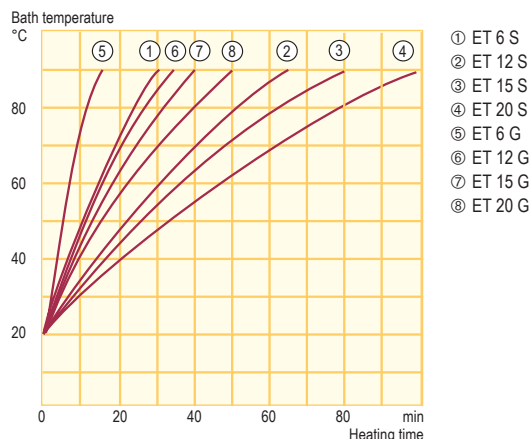
ECO

Heating thermostats with transparent bath and control head Silver and Gold

LAUDA ECO units with transparent plastic baths provide the necessary visibility in all cases where test samples need to be observed during thermostating. The thermostats with baths made from polycarbonate can be used in the temperature range of up to 100 °C. They have a filling volume of 5 up to 20 liters.



Heating curves Heat transfer liquid: Water, bath closed



- ① ET 6 S
- ② ET 12 S
- ③ ET 15 S
- ④ ET 20 S
- ⑤ ET 6 G
- ⑥ ET 12 G
- ⑦ ET 15 G
- ⑧ ET 20 G

Pump characteristics on page 23

Temperature range
20...100 °C

Included accessories
Cooling coil · closing plugs

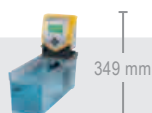
Additional accessories
Hoses · Interface modules: analog, RS 232/485, contact, Profibus, Pt100/LiBus module · Command remote control



Heating thermostat ET 12 S



All technical data on page 90 and following
Other power supply variants on page 102



Technical features		ET 6 S	ET 12 S	ET 20 S
Working temperature range	°C	20...100	20...100	20...100
Temperature stability	±K	0.01	0.01	0.01
Heater power	kW	1.3	1.3	1.3
Pump pressure max.	bar	0.55	0.55	0.55
Pump flow max.	L/min	22	22	22
Bath volume	L	5...6	9.5...12	15...20
Bath opening/depth	mm	130x285/160	300x175/160	300x350/160
Cat. No.	230 V; 50/60 Hz	LCM 0096	LCD 0286	LCD 0290

Technical features		ET 6 G	ET 12 G	ET 20 G
Working temperature range	°C	20...100	20...100	20...100
Temperature stability	±K	0.01	0.01	0.01
Heater power	kW	2.6	2.6	2.6
Pump pressure max.	bar	0.55	0.55	0.55
Pump flow max.	L/min	22	22	22
Bath volume	L	5...6	9.5...12	15...20
Bath opening/depth	mm	130x285/160	300x175/160	300x350/160
Cat. No.	230 V; 50/60 Hz	LCM 0097	LCD 0287	LCD 0291

ECO Heating thermostats with stainless steel bath and control head Silver

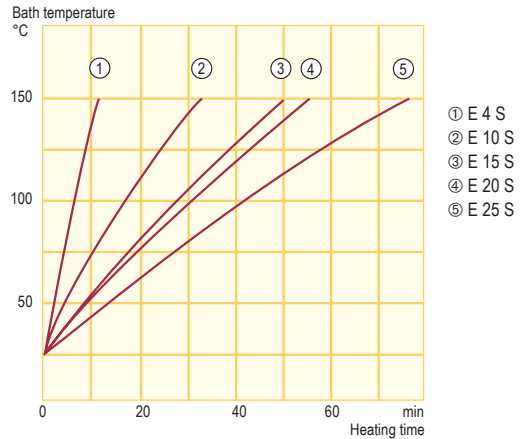
The heating thermostats with control head Silver are suitable for a temperature range of up to 150 °C. All heating thermostats are equipped with a cooling coil as standard. The E 4 S is fitted with a bath cover and pump connections for external applications with nipples made from plastic.



Heating thermostat E 4 S



Heating curves Heat transfer liquid: Therm 240, bath closed



Pump characteristics on page 23

Temperature range
20...150 °C

Included accessories

Cooling coil · bath cover and pump connections with 13 mm plastic nipples and closing plugs (E 4 S only)

Additional accessories

Hoses · bath covers · pump circulation set · Interface modules: analog, RS 232/485, contact, Profibus, Pt100/LiBus module · Command remote control

All technical data on page 90 and following
Other power supply variants on page 102

Technical features		E 4 S	E 10 S	E 15 S	E 20 S	E 25 S	E 40 S
Working temperature range	°C	20...150	20...150	20...150	20...150	20...150	20...150
Temperature stability	±K	0.01	0.01	0.01	0.01	0.01	0.01
Heater power	kW	1.3	1.3	1.3	1.3	1.3	1.3
Pump pressure max.	bar	0.55	0.55	0.55	0.55	0.55	0.55
Pump flow max.	L/min	22	22	22	22	22	22
Bath volume	L	3...3.5	7.5...11	12...16	10...17	16...23	30...43
Bath opening/depth	mm	135x105/150	300x190/150	300x190/200	300x365/150	300x365/200	300x613/200
Cat. No. 230 V; 50/60 Hz		LCB 0736	LCB 0738	LCB 0740	LCB 0742	LCB 0744	LCB 0746

ECO Heating thermostats with stainless steel bath and control head Gold

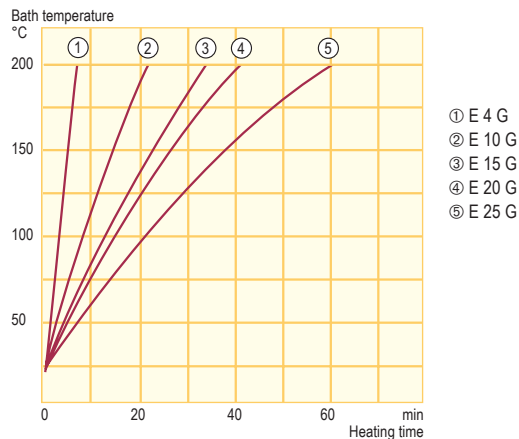
The heating thermostats with control head Gold can be used in a temperature range of up to 200 °C. All heating thermostats are equipped with a cooling coil as standard. The E 4 G is fitted with a bath cover and pump connections for external applications with M16 x 1 threads.



Heating thermostat E 20 G



Heating curves Heat transfer liquid: Therm 240, bath closed



Pump characteristics on page 23

Temperature range
20...200 °C

Included accessories

Cooling coil · bath cover and pump connection set with M16 x 1 thread (E 4 G only)

Additional accessories

Hoses · bath covers · pump circulation set · Interface modules: analog, RS 232/485, contact, Profibus, Pt100/LiBus module · Command remote control



All technical data on page 90 and following

Other power supply variants on page 102



Technical features		E 4 G	E 10 G	E 15 G	E 20 G	E 25 G	E 40 G
Working temperature range	°C	20...200	20...200	20...200	20...200	20...200	20...200
Temperature stability	±K	0.01	0.01	0.01	0.01	0.01	0.01
Heater power	kW	2.6	2.6	2.6	2.6	2.6	2.6
Pump pressure max.	bar	0.55	0.55	0.55	0.55	0.55	0.55
Pump flow max.	L/min	22	22	22	22	22	22
Bath volume	L	3...3.5	7.5...11	12...16	10...17	16...23	30...43
Bath opening/depth	mm	135x105/150	300x190/150	300x190/200	300x365/150	300x365/200	300x613/200
Cat. No. 230 V; 50/60 Hz		LCB 0737	LCB 0739	LCB 0741	LCB 0743	LCB 0745	LCB 0747

ECO accessories

ECO transparent baths up to 100 °C

Transparent baths made of polycarbonate in order to view the objects being subjected to thermostating

Cat. No.	Description	Volume max. L	Int. dimensions (WxDxH)
LCZ 0703	6 T	6	130x420x160
LCZ 0704	12 T	12	300x315x160
LCZ 0705	15 T	15	416x130x310
LCZ 0706	20 T	20	300x490x160

ECO stainless steel baths up to 200 °C

The insulated baths made from stainless steel can be used up to 200 °C. All stainless steel baths are equipped with a built in drain tap. The outer jacket is made of powder-coated sheet steel.

Cat. No.	Description	Volume max. L	Int. dimensions (WxDxH)
LCZ 0707	B 4	3,5	135x240x150
LCZ 0708	B 10	11	300x329x150
LCZ 0709	B 15	16	300x329x200
LCZ 0710	B 20	19	300x505x150
LCZ 0711	B 25	25	300x505x200
LCZ 0712	B 40	40	300x750x200

Cooling coil set

For cooling of any heating baths

Cat. No.	Description	Suitable for
LCZ 0719	Cooling coil set ET 15, connectors to the right side	ET 15 S, ET 15 G

Bath covers

Cat. No.	Description	Suitable for
HDQ 133	Bath cover, stainless steel	E 10 S, E 10 G, E 15 S, E 15 G
HDQ 134	Bath cover, stainless steel	E 20 S, E 20 G, E 25 S, E 25 G
LCZ 0718	Bath cover, stainless steel	E 40 S, E 40 G (three pieces)

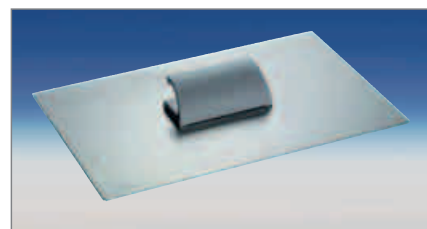
Pump connection sets

For thermostating of external applications. Both pump connection sets are usable with ECO Silver and ECO Gold.

Cat. No.	Description
LCZ 0716	With 13 mm plastic nipples
LCZ 0717	With M16 x 1 stainless steel connections, screw caps and 13 mm nipples



LCZ 0719



HDQ 133



LCZ 0716

LCZ 0717

ECO accessories

Interface modules

Cat. No.	Description	Suitable for
LRZ 912	Analog module	Upper module slot
LRZ 913	RS 232/485 interface	Upper module slot
LRZ 914	Contact module with 1 input and 1 output	Upper module slot
LRZ 915	Contact module with 3 inputs and 3 outputs	Upper module slot
LRZ 917	Profibus module	Upper module slot
LRZ 918	Pt100/LiBus module	Lower module slot

Command remote control

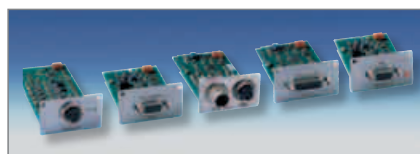
With RS 232/485 interface as standard

Cat. No.	Description
LRT 914	Command remote control with graphic LCD for remote control via LiBus. Only possible in combination with Pt100/LiBus module (LRZ 918)

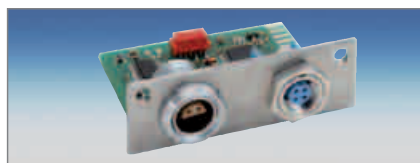
Solenoid valve for cooling water control

Water-conscious cooling of heating thermostats

Cat. No.	Description	Temperature range
LCZ 9664	Solenoid valve with LiBus-connector	-10...155 °C



LRZ 912 LRZ 913 LRZ 914 LRZ 915 LRZ 917



LRZ 918



LRT 914



Order the detailed LAUDA accessories brochure and the heat transfer liquids brochure free of charge. These and additional product information can also be found at www.lauda.de

LAUDA Proline

Heating and cooling thermostats with temperatures from -90 up to 300 °C for professional use in research, application engineering and production



Proline

Application examples

- Temperature control for chemical synthesis
- Tests on electronic components at different temperatures
- Temperature control of measuring structures in process technology
- Heating and cooling of glass reactors

Proline Kryomats

Application examples

- Constant temperatures in the notch bending test and drop test
- Changing temperatures when determining the pour point, Brookfield test of lubricants and test of slide bearings

Intuitive operation, ultra high and low temperatures

LAUDA Proline thermostats are our solution for high performance and reliable temperature regulation. With their broad temperature range they fulfill high requirements. LAUDA Proline thermostats are available in two versions: in the basic version with the Master control head, and as a Command version with a removable

control unit for enhanced ease of operation. Master version devices can be retrofitted with the Command remote control, which are simply connected to the control head. The thermostat automatically recognises and controls all newly installed moduls.

Your advantages at a glance



The Proline advantages

Your benefits



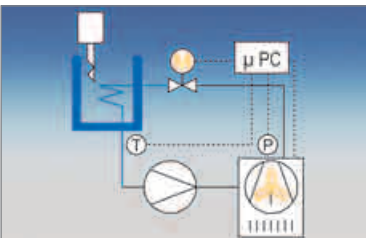
- Master or Command version
- 52 different devices
- Simple retrofitting from Master to Command version

- The right solution for every application
- Subsequent extension or adaptation to changing application requirements



- Graphical user guidance
- Adaptive control on cooling thermostats

- Easy and intuitive operation
- Saves time-consuming calculation of control parameters



- Patented SmartCool system
- PowerAdapt system for adjustment of the power consumption

- Up to 75 percent energy saving with digital cooling management
- Use of the maximum available output from the power supply system



- Two insert ports can be combined with five different interface modules
- Easy distribution of the pump flow by means of bypass valve
- Pump connections on the side and rear

- High level of flexibility for the user allowing for broad range of system integration
- Simultaneous connection of two external applications
- Flexible connection of external applications from different sides



- High-performance pressure-suction pump (Varioflex pump) with eight pump levels
- Up to 3.5 kW (230 V) heating power – even on all cooling thermostats via SmartCool system

- Suitable for internal and external applications
- Adaptation of the pump power to the respective application
- Rapid heating achieved

LAUDA Proline

Proline Master control head

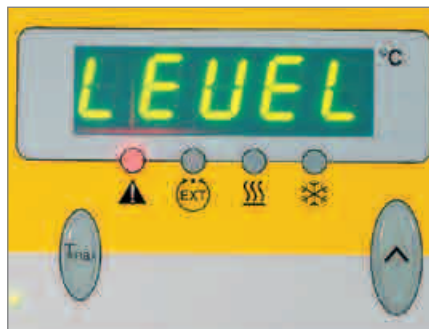
The Proline Master devices are designed with high thermostating accuracy and reliability for all applications from -90 up to 300 °C where operating parameters are not changed or modified frequently. They have all the basic features and safety functions required for professional thermostating during continuous use. A modular structure and bus technology have created an instrument capable of extending its function and performance as the application requires.



- Easy-to-read green LED display
- Convenient setting of set-temperature and Varioflex pump via three operation buttons
- Indicator lights for heating, cooling, external control and alarm
- Resolution of indication 0.01 °C, setting resolution selectable 0.1 or 0.01 °C
- Selectable operating temperature range and additional button for overtemperature protection setting
- External temperature control via Pt100
- Optical and audible alarm function
- Simple temperature probe calibration
- Integrated mains network safety device
- Start mode control (automatic or manual)
- Two slots for interface modules
- LAUDA Wintherm Plus control software via RS 232/485 interface (optional)



Easy replacement of interface modules



Alarm message for malfunction



Upgradable to Command version

Proline Command control head

The Command control heads are the top models of the LAUDA Proline. The highly-efficient programmer fulfills all the requirements of complex thermostating processes – with real-time function. It offers the utmost in user-friendliness and optimum functionality, e.g. for an industrial testing lab. The simple menu-driven operation and the easy editing of test programs allow for quickly changing thermostating tasks. The Command remote control is removable and can easily be used with cable up to 50 m. Comprehensive basic equipment as with the Proline Master range.

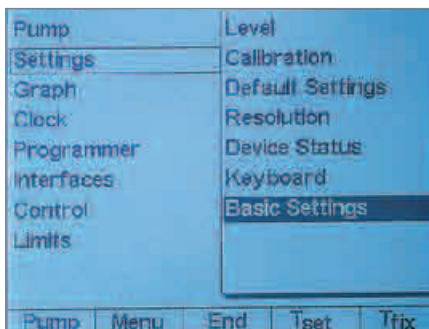


Basic equipment as Proline Master, plus:

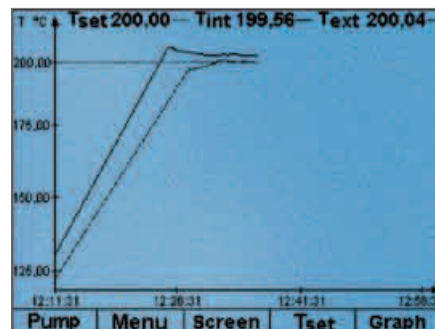
- 10-key console for setpoint adjustment of temperature
- Programmer with real-time clock, 150 temperature/time segments, for use in up to 5 programs, editable segments with loop and tolerance band function
- High resolution, back-lit, graphic LCD display with various display possibilities
- Detachable Command remote control for use with cable up to 50 m
- Eight freely selectable fixed temperatures with memory function
- Resolution of actual value display up to 0.001 °C
- RS 232/485 interface for LAUDA Wintherm Plus software
- Menu guidance in German, English, French and Spanish



An opto-decoupled RS 232/485 interface is integrated as standard



Drop-down menus make settings easy. Available in four languages.



Graphic display of temperature values

LAUDA Proline

Proline Heating thermostats with Master control head up to 19 liters

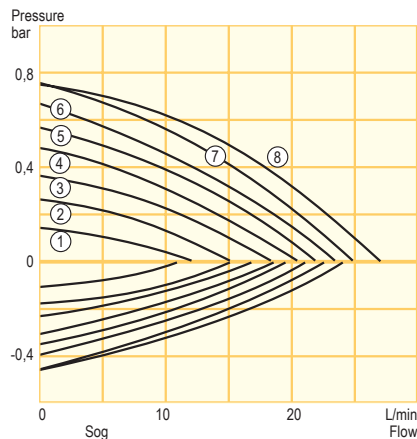
The heating thermostats of the LAUDA Proline with Master control head do not only convince because of their compact construction. The high heater power of 3.5 kW (230 V), two interfaces for various modules, a cooling coil fitted as a standard feature, and an integrated external control – these features make them particularly useful for users who require flexible thermostating operations while only rarely needing to adjust the settings.



Heating thermostat P 18



Pump characteristics Heat transfer liquid: Water



- ① Step 1
- ② Step 2
- ③ Step 3
- ④ Step 4
- ⑤ Step 5
- ⑥ Step 6
- ⑦ Step 7
- ⑧ Step 8

Temperature range

30...300 °C

Included accessories

Bath cover · 2 nipples and 4 closing plugs for pump connections · 2 nipples for cooling coil

Additional accessories

Constant level device (for P 8) · automatic filling device · through-flow cooler · reverse flow protection · tubes · solenoid valve for cooling water control · high-temperature cooler (water) · Interface modules: analog, RS 232/485, contact, Profibus module



All technical data on page 92 and following
Other power supply variants on page 103



Technical features		P 5	P 8	P 12	P 18
Working temperature range*	°C	35...300	35...300	30...300	30...300
Temperature stability	±K	0.01	0.01	0.01	0.01
Heater power	kW	3.5	3.5	3.5	3.5
Pump pressure max.	bar	0.7	0.7	1.1**	0.7
Pump suction max.	bar	0.4	0.4	-	0.4
Pump flow (pressure) max.	L/min	25	25	32**	25
Pump flow (suction) max.	L/min	23	23	-	23
Bath volume	L	3.5...5.5	5.5...8	6.5...13.5	12.5...19
Bath opening/Bath depth	mm	150x50/200	150x150/200	150x150/320	300x200/200
Cat. No. 230 V; 50/60 Hz		LCB 0708	LCB 0710	LCB 0716***	LCB 0712

* Working temperature range with water cooling 20...300 °C

** Pressure pump only, pump characteristics see page 42

*** Instead of pressure and suction pump equipped with increased output

Proline Heating thermostats with Master control head up to 53 liters

The LAUDA Proline P 26, P 40 and P 50 heating thermostats are distinguished by particularly large-volume baths. All the below models are equipped with a Varioflex pump and cover the temperature range from 30 up to 300 °C. These stainless steel baths are ideally suited to direct thermostating inside the bath. The P 40 is particularly suitable for thermostating applications needing a large submersion depth. The P 26 and P 50 models with their wide baths, allow long or bulky test pieces to be placed in the bath or even enable a number of test pieces to be positioned alongside each other, for simultaneous testing.

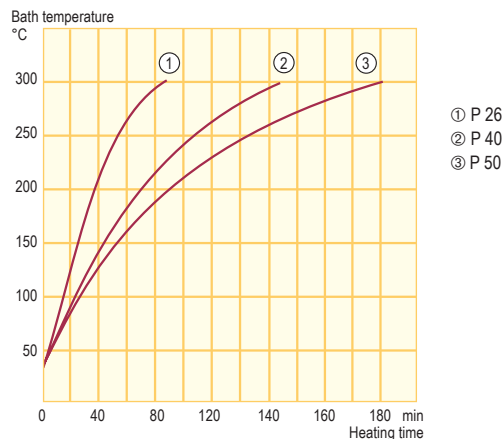
A circulation chamber on the P 40 and P 50 ensures good mixing in the bath and thus guarantees good temperature homogeneity, despite the large bath vessel.



Heating thermostat P 50



Heating curves Heat transfer liquid: Ultra 300, bath closed



Temperature range

30...300 °C

Included accessories

Bath cover (only P 26) · 2 nipples and 4 closing plugs for pump connections · 2 nipples for cooling coil

Additional accessories

Bath cover · automatic filling device · through-flow cooler · reverse flow protection · tubes · solenoid valve for cooling water control · high-temperature cooler (water) · rising platform · Interface modules: analog, RS 232/485, contact, Profibus module



All technical data on page 92 and following
Other power supply variants on page 103



Technical features		P 26	P 40	P 50
Working temperature range*	°C	30...300	30...300**	30...300**
Temperature stability	±K	0.01	0.01	0.01
Heater power	kW	3.5	3.5	3.5
Pump pressure max.	bar	0.7	0.7	0.7
Pump suction max.	bar	0.4	0.4	0.4
Pump flow (pressure) max.	L/min	25	25	25
Pump flow (suction) max.	L/min	23	23	23
Bath volume	L	18...27	30...37	35...53
Bath opening/Bath depth	mm	300x350/200	250x270/450	300x750/200
Cat. No. 230 V; 50/60 Hz		LCB 0714	LCB 0728	LCB 0730

* Working temperature range with water cooling 20...300 °C ** Max. temperature only achieved with closed bath cover

LAUDA Proline

Proline Heating thermostats with Command control head up to 19 liters

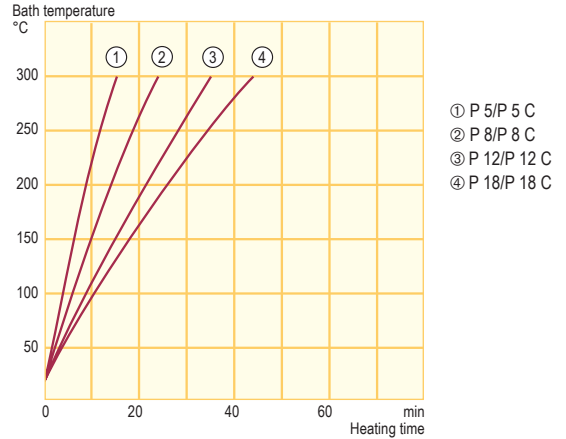
The Proline heating thermostats with Command control head (C) impress through an expanded scope of functions. Alongside a graphic LCD display, which enables current values to be displayed up to 0.001 °C resolution, an easily editable and convenient programmer with storage possibilities is available. The standard RS 232/485 interface enables communication with a computer. Work flexibly with Command: The Command remote control can be quickly and easily detached from the thermostat.



Heating thermostat P 18 C



Heating curves Heat transfer liquid: Ultra 300, bath closed



Temperature range
30...300 °C

Included accessories

Bath cover · 2 nipples and 4 closing plugs for pump connections · 2 nipples for cooling coil

Additional accessories

Constant level device (for P 8 C) · automatic filling device · through-flow cooler · reverse flow protection · tubes · solenoid valve for cooling water control · high-temperature cooler (water) · Interface modules: analog, RS 232/485, contact, Profibus module



All technical data on page 92 and following
Other power supply variants on page 103

Technical features		P 5 C	P 8 C	P 12 C	P 18 C
Working temperature range*	°C	35...300	35...300	30...300	30...300
Temperature stability	±K	0.01	0.01	0.01	0.01
Heater power	kW	3.5	3.5	3.5	3.5
Pump pressure max.	bar	0.7	0.7	1.1**	0.7
Pump suction max.	bar	0.4	0.4	-	0.4
Pump flow (pressure) max.	L/min	25	25	32**	25
Pump flow (suction) max.	L/min	23	23	-	23
Bath volume	L	3.5...5.5	5.5...8	6.5...13.5	12.5...19
Bath opening/Bath depth	mm	150x50/200	150x150/200	150x150/320	300x200/200
Cat. No. 230 V; 50/60 Hz		LCB 0709	LCB 0711	LCB 0717***	LCB 0713

* Working temperature range with water cooling 20...300 °C

** Pressure pump only, pump characteristics see page 42

*** Instead of pressure and suction pump equipped with increased output

Proline Heating thermostats with Command control head up to 53 liters

In order to enhance ease of use even further, P 26 C, P 40 C and P 50 C heating thermostats with large baths are also available with the Command control head which allows complex thermostating functions, particularly those with internal thermostating processes, to be easily mastered with the aid of an intuitive operation guidance system and the ability to edit programs rapidly.

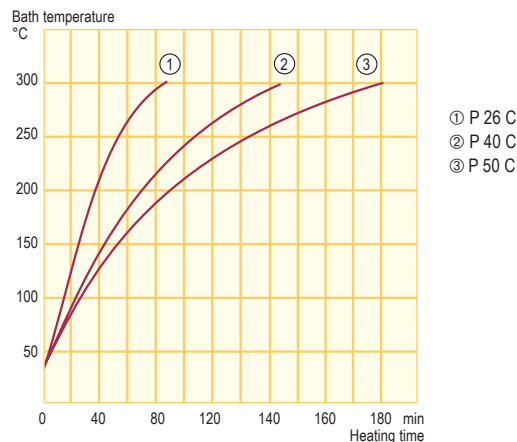
A circulation chamber on the P 40 and P 50 ensures good mixing in the bath and thus guarantees good temperature homogeneity, despite the large bath vessel.



Heating thermostat P 40 C



Heating curves Heat transfer liquid: Ultra 300, bath closed



Temperature range

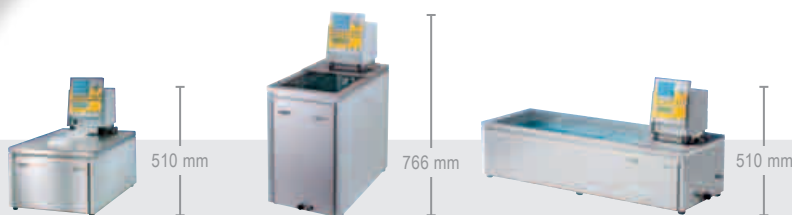
30...300 °C

Included accessories

Bath cover (only P 26 C) · 2 nipples and 4 closing plugs for pump connections · 2 nipples for cooling coil

Additional accessories

Automatic filling device · bath cover · through-flow cooler · reverse flow protection · tubes · solenoid valve for cooling water control · high-temperature cooler (water) · rising platform · Interface modules: analog, RS 232/485, contact, Profibus module



All technical data on page 92 and following
Other power supply variants on page 103

Technical features		P 26 C	P 40 C	P 50 C
Working temperature range*	°C	30...300	30...300**	30...300**
Temperature stability	±K	0.01	0.01	0.01
Heater power	kW	3.5	3.5	3.5
Pump pressure max.	bar	0.7	0.7	0.7
Pump suction max.	bar	0.4	0.4	0.4
Pump flow (pressure) max.	L/min	25	25	25
Pump flow (suction) max.	L/min	23	23	23
Bath volume	L	18...27	30...37	35...53
Bath opening/Bath depth	mm	300x350/200	250x270/450	300x750/200
Cat. No. 230 V; 50/60 Hz		LCB 0715	LCB 0729	LCB 0731

* Working temperature range with water cooling 20...300 °C ** Max. temperature achieved only with closed bath cover

Proline Viscothermostats

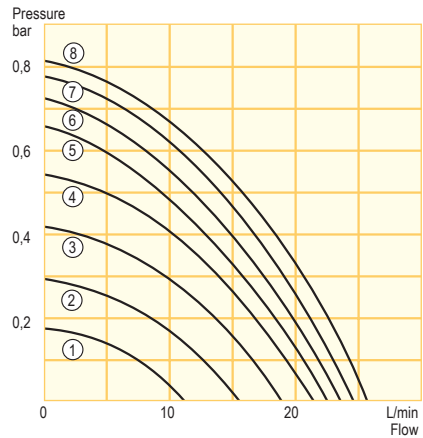
LAUDA viscothermostats are optimized for directly observing inserted objects. The temporal and spatial temperature stability required for precisely determining the viscosity is guaranteed for the full temperature range. As such, they are ideal for use with the fully automated LAUDA PVS or iVisc viscometers. Thanks to the double-chamber principle, a constant liquid level in the measuring room is guaranteed regardless of the rate and temperature. The PVL models are equipped with five layers of insulating glass and by connecting a DLK 45 through-flow cooler or Proline RP 890 cooling thermostat are suited to low-temperature measurements down to -40 or -60 °C.



Viscothermostat PV 24 C

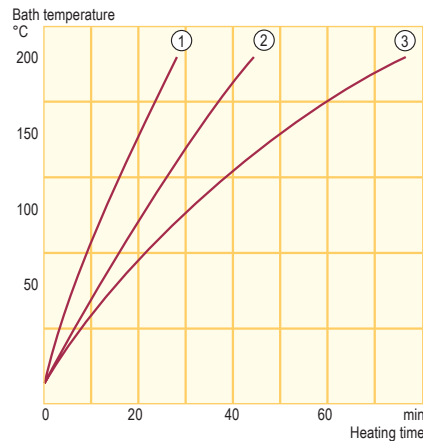


Pump characteristics Heat transfer liquid: Water



- ① Step 1
- ② Step 2
- ③ Step 3
- ④ Step 4
- ⑤ Step 5
- ⑥ Step 6
- ⑦ Step 7
- ⑧ Step 8

Heating curves Heat transfer liquid: Therm 240, bath closed



- ① PV 15 (up to 230 °C)
PVL 15 (up to 100 °C)
- ② PV 24 (up to 230 °C)
PVL 24 (up to 100 °C)
- ③ PV 36

Temperature range

30...230 °C

Included accessories

- 2 nipples and 4 closing plugs for pump connections ·
- 2 nipples for cooling coil

Additional accessories

- Window heating system – PVL 15 (C), PVL 24 (C) only ·
- solenoid valve for cooling water · additional cooler · Command remote control



All technical data on page 92 and following
Other power supply variants on page 103

Technical features		PV 15/PV 15 C	PV 24/PV 24 C	PV 36/PV 36 C	PVL 15/PVL 15 C	PVL 24/PVL 24 C
Working temperature range	°C	30...230	30...230	30...230	30...100	30...100
Temperature stability	±K	0.01	0.01	0.01	0.01	0.01
Heater power	kW	3.5	3.5	3.5	3.5	3.5
Pump pressure max.	bar	0.8	0.8	0.8	0.8	0.8
Pump suction max.	bar	–	–	–	–	–
Pump flow (pressure) max.	L/min	25	25	25	25	25
Pump flow (suction) max.	L/min	–	–	–	–	–
Bath volume	L	11...15	19...24	28...36	11...15	19...24
Bath opening/Bath depth	mm	230x135/320	405x135/320	585x135/320	230x135/320	405x135/320
Glass pane size	mm	149x230	326x230	506x230	149x230	326x230
Cat. No. Master 230 V; 50/60 Hz		LCD 0276	LCD 0278	LCD 0280	LCD 0282	LCD 0284
Cat. No. Command 230 V; 50/60 Hz		LCD 0277	LCD 0279	LCD 0281	LCD 0283	LCD 0285

Proline Bridge thermostats

LAUDA Proline bridge thermostats are available in two versions with different pump models and immersion depths. The PB models have a pressure/suction pump and require a bath depth of 200 mm, while the PBD models have a more powerful pressure pump (D) and require a bath with a depth of 320 mm. In addition, both series of models differ in the selected control head: Master or Command (C). Through variably extendable telescopic rods, all models can be attached without problem to baths with a width from 310 mm up to 550 mm.



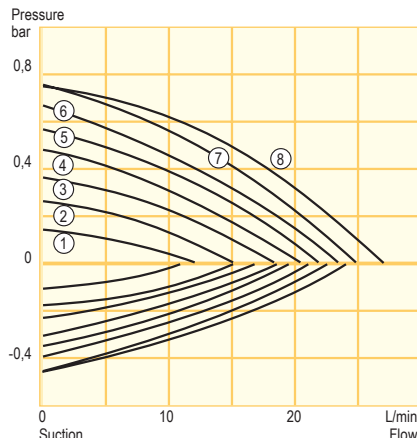
Bridge thermostat PBD C
– Bath not included in scope of delivery –



All technical data on page 92 and following
Other power supply variants on page 103

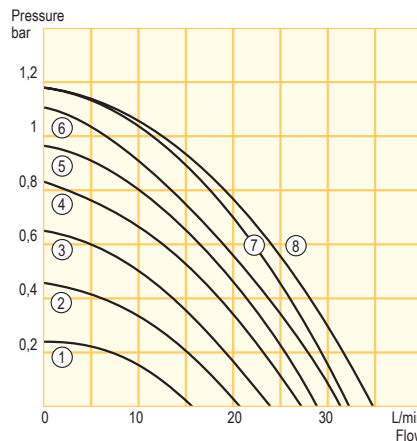


Pump characteristics for PB and PBC,
Heat transfer liquid: Water



- ① Step 1
- ② Step 2
- ③ Step 3
- ④ Step 4
- ⑤ Step 5
- ⑥ Step 6
- ⑦ Step 7
- ⑧ Step 8

Pump characteristics for PBD and PBD C
P 12 and P 12 C, Heat transfer liquid: Water



- ① Step 1
- ② Step 2
- ③ Step 3
- ④ Step 4
- ⑤ Step 5
- ⑥ Step 6
- ⑦ Step 7
- ⑧ Step 8

Temperature range
30...300 °C

Included accessories

2 nipples and 4 closing plugs for pump connections ·
telescopic rods

Additional accessories

Automatic filling device · water bath
Interface modules: analog, RS 232/485, contact, Profibus
module

Technical features		PB/PB C	PBD/PBD C
Working temperature range	°C	30...300	30...300
Operating temperature range	°C	-30*...300	-30*...300
Temperature stability	±K	0.01	0.01
Heater power	kW	3.5	3.5
Pump pressure max.	bar	0.7	1.1
Pump suction max.	bar	0.4	–
Pump flow (pressure) max.	L/min	25	32
Pump flow (suction) max.	L/min	23	–
Bath volume up to approx.	L	80	80
Bath opening	mm	Telescopic rods can be extended for bath widths 310...550	
Bath depth min.	mm	200	320
Cat. No. Master 230 V; 50/60 Hz		LCG 0090	LCG 0092
Cat. No. Command 230 V; 50/60 Hz		LCG 0091	LCG 0093

* Only achievable with LAUDA through-flow cooler

LAUDA Proline

Proline Cooling thermostats with Master control head up to 8 liters

The Proline RP 845, RP 855, RP 870 and RP 890 cooling thermostats stand out above all for their compact dimensions and small footprint. With a cooling capacity of 1.6 kW at 20 °C, the RP 855 has a particularly high-performance design. The RP 890 low-temperature device enables you to reach temperatures down to -90 °C. The standard integrated electrical-heated bath cover set prevents icing as a result of condensation and humidity on all Proline cooling thermostats with a temperature range down to -90 °C.



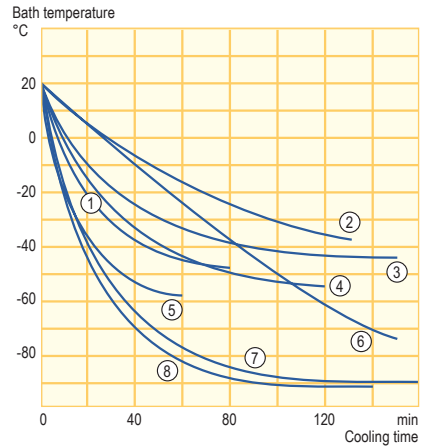
Cooling thermostat RP 845



All types
(except RP 870)



Cooling curves Heat transfer liquid: Ethanol, bath closed



- ① RP 845
- ② RP 3530
- ③ RP 1840
- ④ RP 1845
- ⑤ RP 855
- ⑥ RP 870
- ⑦ RP 1290
- ⑧ RP 890

Temperature range

-90...200 °C

Included accessories

Bath cover · 2 nipples and 4 closing plugs for pump connections · electrical-heated bath cover set for RP 890

Additional accessories

Constant level device for RP 845 and RP 855 · reverse flow protection · automatic filling device · tubes · electrical-heated bath cover set for RP 855 and RP 870 (only ex works) · Interface modules: analog, RS 232/485, contact, Profibus module · set of castors (RP 855 to RP 890)



688 mm



770 mm



735 mm



735 mm



All technical data on page 96 and following
Other power supply variants on page 104

Technical features		RP 845	RP 855	RP 870	RP 890
Working temperature range*	°C	-45...200	-55...200	-70...200	-90...200
Temperature stability	±K	0.01	0.01	0.02	0.02
Heater power	kW	3.5	3.5	3.5	3.5
Cooling output at 20 °C	kW	0.8	1.6	0.38	1.1
Pump pressure max.	bar	0.7	0.7	0.7	0.7
Pump suction max.	bar	0.4	0.4	0.4	0.4
Pump flow (pressure) max.	L/min	25	25	25	25
Pump flow (suction) max	L/min	23	23	23	23
Bath volume	L	5.5...8	5.5...8	5.5...8	5.5...8
Bath opening/depth	mm	150x150/200	150x150/200	150x150/200	150x150/200
Cat. No. 230 V; 50 Hz		LCK 1885	LCK 1893	LCK 1895	LCK 1897

* Working temperature range is equal to ACC range

Proline Cooling thermostats with Master control head up to 35 liters

The Proline RP 1290, RP 1840, RP 1845 and RP 3530 cooling thermostats differ in terms of bath volume, achievable cooling capacity, and working temperature range. With bath capacities up to 35 liters, the RP 3530 provides a particularly large bath volume and the RP 1845 provides a particularly high cooling capacity of 1.6 kW. To prevent icing the RP 1290 is equipped with an electrical-heated bath cover set.



Cooling thermostat RP 1845

All types



All technical data on page 96 and following
Other power supply variants on page 104



735 mm



688 mm



770 mm



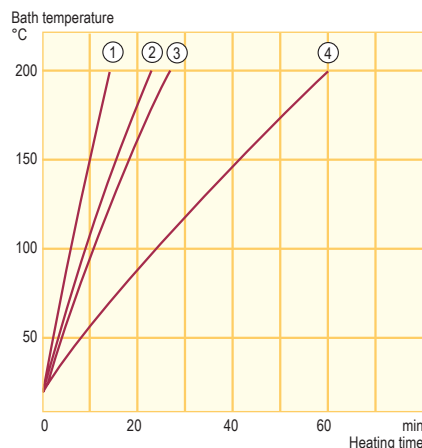
740 mm

Technical features		RP 1290	RP 1840	RP 1845	RP 3530
Working temperature range*	°C	-88...200	-40...200	-50...200	-35...200
Temperature stability	±K	0.02	0.01	0.01	0.02
Heater power	kW	3.5	3.5	3.5	3.5
Cooling output at 20 °C	kW	1.1	0.9	1.6	0.9
Pump pressure max.	bar	0.7	0.7	0.7	0.7
Pump suction max.	bar	0.4	0.4	0.4	0.4
Pump flow (pressure) max.	L/min	25	25	25	25
Pump flow (suction) max	L/min	23	23	23	23
Bath volume	L	8...13.5	12.5...19	12.5...19	23...35
Bath opening/depth	mm	300x150/200	300x200/200	300x200/200	300x350/250
Cat. No. 230 V; 50 Hz		LCK 1899	LCK 1887	LCK 1891	LCK 1889

* Working temperature range is equal to ACC range



Heating curves Heat transfer liquid: Ultra 300, bath closed



- ① RP 855
RP 845
RP 870
RP 890
- ② RP 1290
- ③ RP 1840
RP 1845
- ④ RP 3530

Temperature range

-88...200 °C

Included accessories

Bath cover · 2 nipples and 4 closing plugs for pump connections · electrical-heated bath cover set for RP 1290

Additional accessories

Reverse flow protection · automatic filling device · tubes · Interface modules: analog, RS 232/485, contact, Profibus module · set of castors (RP 1290 to RP 1845)

LAUDA Proline

Proline Cooling thermostats with Command control head up to 8 liters

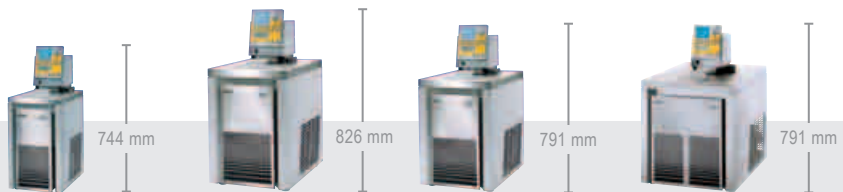
The SmartCool system – an energy-saving, digital cooling management system – ensures that every temperature is run with the correct cooling capacity. It increases or reduces the cooling according to application requirements. The advantages are particularly effective for programmer operation and temperature ramping.

The Proline cooling thermostats with the Command control head (C) have a convincing extended range of functions. At 20 °C, RP 855 C has a particularly high cooling capacity of 1.6 kW. RP 890 C and RP 1290 C are designed for especially low temperatures. They differ in terms of bath volume and have an electrical-heated bath cover set as a standard feature.



All types (except RP 870 C)

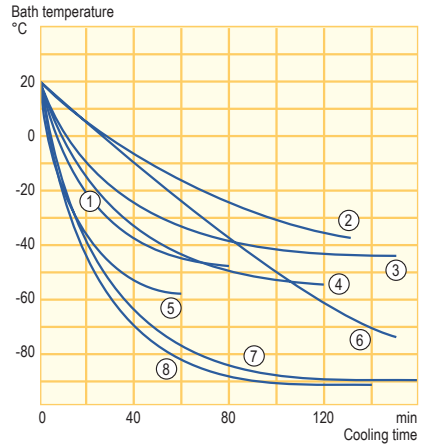
Cooling thermostat RP 845 C



All technical data on page 96 and following
Other power supply variants on page 104



Cooling curves Heat transfer liquid: Ethanol, bath closed



- ① RP 845 C
- ② RP 3530 C
- ③ RP 1840 C
- ④ RP 1845 C
- ⑤ RP 855 C
- ⑥ RP 870 C
- ⑦ RP 1290 C
- ⑧ RP 890 C

Temperature range

-90...200 °C

Included accessories

Bath cover · 2 nipples and 4 closing plugs for pump connections · electrical-heated bath cover set for RP 890 C

Additional accessories

Constant level device for RP 845 C und RP 855 C · reverse flow protection · automatic filling device · tubes · electrical-heated bath cover set for RP 855 C and RP 870 C (only ex works) · Interface modules: analog, RS 232/485, contact, Profibus module · set of castors (RP 855 C to RP 890 C)

Technical features		RP 845 C	RP 855 C	RP 870 C	RP 890 C
Working temperature range*	°C	-45...200	-55...200	-70...200	-90...200
Temperature stability	±K	0.01	0.01	0.02	0.02
Heater power	kW	3.5	3.5	3.5	3.5
Cooling output at 20 °C	kW	0.8	1.6	0.38	1.1
Pump pressure max.	bar	0.7	0.7	0.7	0.7
Pump suction max.	bar	0.4	0.4	0.4	0.4
Pump flow (pressure) max.	L/min	25	25	25	25
Pump flow (suction) max.	L/min	23	23	23	23
Bath volume	L	5.5...8	5.5...8	5.5...8	5.5...8
Bath opening/depth	mm	150x150/200	150x150/200	150x150/200	150x150/200
Cat. No. 230 V; 50 Hz		LCK 1886	LCK 1894	LCK 1896	LCK 1898

* Working temperature range is equal to ACC range

Proline Cooling thermostats with Command control head up to 35 liters

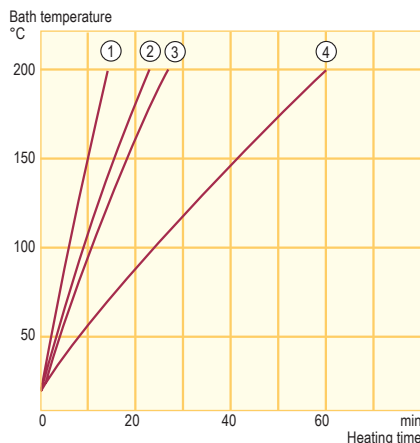
Thanks to their various capacity ranges and filling volumes, the Proline cooling thermostats which make up the Command range skilfully adapt to your requirements. The RP 1845 C works at a temperature range between -50 and 200 °C and, at 20 °C, has a cooling capacity of 1.6 kW. The RP 3530 C has a particularly large bath for internal sample thermostating. The RP 1290 C comes with an integrated electrical-heated bath cover set as standard.



Cooling thermostat RP 1840 C



Heating curves Heat transfer liquid: Ultra 300, bath closed



- ① RP 855 C
RP 845 C
RP 870 C
RP 890 C
- ② RP 1290 C
- ③ RP 1840 C
RP 1845 C
- ④ RP 3530 C

Temperature range

-88...200 °C

Included accessories

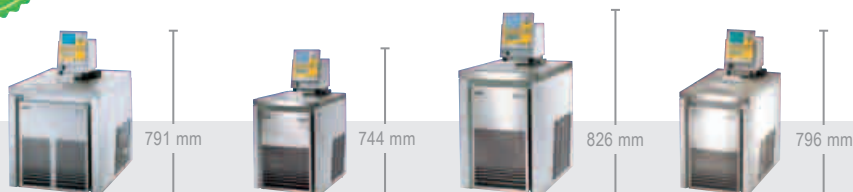
Bath cover · 2 nipples and 4 closing plugs for pump connections · electrical-heated bath cover set for RP 1290 C

Additional accessories

Reverse flow protection · automatic filling device · tubes · Interface modules: analog, RS 232/485, contact, Profibus module · set of castors (RP 1290 C to RP 1845 C)



All types



All technical data on page 96 and following
Other power supply variants on page 104

Technical features		RP 1290 C	RP 1840 C	RP 1845 C	RP 3530 C
Working temperature range*	°C	-88...200	-40...200	-50...200	-35...200
Temperature stability	±K	0.02	0.01	0.01	0.02
Heater power	kW	3.5	3.5	3.5	3.5
Cooling output at 20 °C	kW	1.1	0.9	1.6	0.9
Pump pressure max.	bar	0.7	0.7	0.7	0.7
Pump suction max.	bar	0.4	0.4	0.4	0.4
Pump flow (pressure) max.	L/min	25	25	25	25
Pump flow (suction) max.	L/min	23	23	23	23
Bath volume	L	8...13.5	12.5...19	12.5...19	23...35
Bath opening/depth	mm	300x150/200	300x200/200	300x200/200	300x350/250
Cat. No. 230 V; 50 Hz		LCK 1900	LCK 1888	LCK 1892	LCK 1890

* Working temperature range is equal to ACC range

LAUDA Proline Kryomats

Extra powerful cooling thermostats for bath applications from -90 up to 200 °C
LAUDA Proline Kryomats



Application examples

Constant temperatures

- Notch bending test
- Drop test

Changing temperatures

- Determination of pour point
- Brookfield test of lubricants
- Test of slide bearings

The **Proline Kryomats** are floor-standing, low temperature thermostats suitable for a wide variety of applications. They never fail to impress through their compact design and high cooling capacities, especially at low temperatures. All Proline Kryomats are fitted with the Command remote control for easy and user-friendly operation. The units are equipped with a pressure pump optimized for internal

circulation adjustable from performance level five to eight. To prevent moisture in the atmosphere from condensing at low temperatures, bath bridge and bath edge heating are integrated into the design. Proline Kryomats stand out for having the latest technologies and an excellent price-performance ratio.

Your advantages at a glance

+	The Proline Kryomats advantages	Your benefits
	<ul style="list-style-type: none"> • Removable Command remote control with graphic LCD • Automatic adjustment of the control parameters via integrated software for adaptive control 	<ul style="list-style-type: none"> • Easy and intuitive operation. Quick setting changes • Saves time-consuming calculation of control parameters
	<ul style="list-style-type: none"> • Offset control head • Integrated bath edge and bath bridge heating • Use of innovative cooling technology 	<ul style="list-style-type: none"> • Allows installation of optional supplementary pumps for external applications • Avoids condensation and ice build-up • High cooling capacity and low operating temperatures with very small footprint
	<ul style="list-style-type: none"> • Updated, adjustable pump nozzle 	<ul style="list-style-type: none"> • Optimum circulation and temperature distribution throughout the entire bath
	<ul style="list-style-type: none"> • Spacious baths with large bath openings • Thread sleeves as standard on the edge of the bath 	<ul style="list-style-type: none"> • Accommodates various sample shapes and sizes with efficient flow • Allow for the fixing of testing equipment without further conversion measures
	<ul style="list-style-type: none"> • Intelligent cooling fan control • Optimised cooling airflow • Internal release valve 	<ul style="list-style-type: none"> • Optimum heat discharge while reducing noise emission • Bath drain at front of unit • No protruding release valve

LAUDA Proline Kryomats

Proline Kryomats Air-cooled cooling thermostats

The air-cooled Proline Kryomats have a working temperature range from -50 and -90 up to 200 °C. The models are available with bath volumes of 30 and 40 liters. The Proline SmartCool system, with its energy-saving digital cooling management, ensures that the cooling output is run in accordance with the application needs. That saves up to 75 percent of energy compared to standard cooling methods. Two different booster pumps are available as options (ex works) especially for external applications that require a considerable increase in volume flow/ discharge pressure.

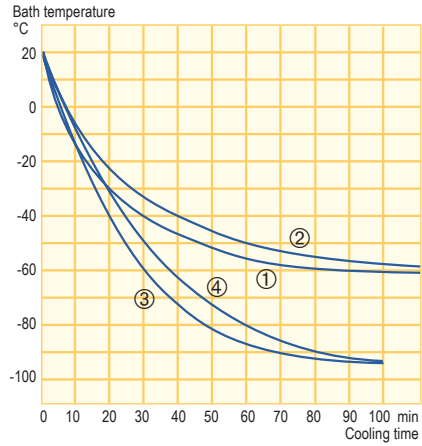


Cooling thermostat RP 4050 C

All types



Cooling curves Heat transfer liquid: Ethanol, bath closed



- ① RP 3050 C
- ② RP 4050 C
- ③ RP 3090 C
- ④ RP 4090 C

Temperature range

-90...200 °C

Included accessories

Bath cover · 4 closing plugs for pump connections ·
2 connectors 13 mm

Additional accessories

Interface modules: analog, RS 232/485, contact, Profibus module

Options

Booster pumps



All technical data on page 96 and following
Other power supply variants on page 105



Technical features		RP 3050 C	RP 4050 C	RP 3090 C	RP 4090 C
Working temperature range*	°C	-50...200	-50...200	-90...200	-90...200
Temperature stability	±K	0.05	0.05	0.05	0.05
Heater power	kW	3.5	3.5	3.5	3.5
Cooling output at 20 °C	kW	5.0	5.0	3.0	3.0
Pump pressure max.	bar	0.5	0.5	0.5	0.5
Pump flow (pressure) max.	L/min	19	19	19	19
Bath volume	L	23...31	32...44	23...31	32...44
Bath opening/depth	mm	350x200/250	350x350/250	350x200/250	350x350/250
Cat. No. 400 V; 3/N/PE; 50 Hz		LUK 239	LUK 241	LUK 245	LUK 247

* Working temperature range is equal to ACC range

Proline Kryomats

Water-cooled cooling thermostats

In the case of the water-cooled Proline Kryomats, the process heat is dissipated with the use of facility cooling water. This largely prevents unnecessary heating of the surrounding environment. As a result of this type of cooling, even higher cooling capacities are achieved than with the air-cooled units. The electronic cooling water management minimizes water consumption. The booster pumps, available as options (ex works), are particularly recommended for external applications where increased volume flow or greater pressures are required.

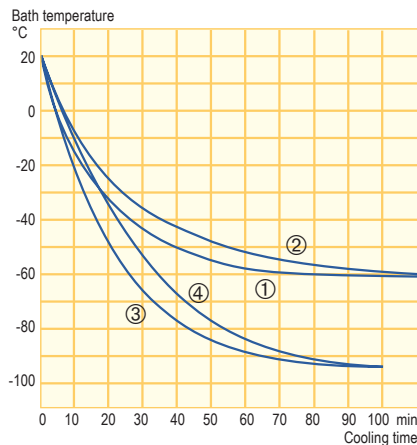


Cooling thermostat RP 4090 CW

All types



Cooling curves Heat transfer liquid: Ethanol, bath closed



- ① RP 3050 CW
- ② RP 4050 CW
- ③ RP 3090 CW
- ④ RP 4090 CW

Temperature range

-90...200 °C

Included accessories

Bath cover · 4 closing plugs for pump connections · G 3/4" lock-nut with 1/2" hose clip · 2 connectors 13 mm

Additional accessories

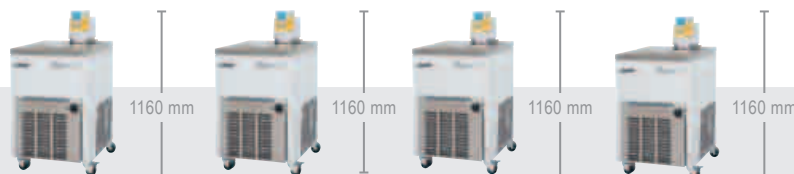
Tubing for cooling water · Interface modules: analog, RS 232/485, contact, Profibus module

Options

Booster pumps



All technical data on page 96 and following
Other power supply variants on page 105



Technical features		RP 3050 CW	RP 4050 CW	RP 3090 CW	RP 4090 CW
Working temperature range*	°C	-50...200	-50...200	-90...200	-90...200
Temperature stability	±K	0.05	0.05	0.05	0.05
Heater power	kW	3.5	3.5	3.5	3.5
Cooling output at 20 °C	kW	6.0	6.0	4.0	4.0
Pump pressure max.	bar	0.5	0.5	0.5	0.5
Pump flow (pressure) max.	L/min	19	19	19	19
Bath volume	L	23...31	32...44	23...31	32...44
Bath opening/depth	mm	350x200/250	350x350/250	350x200/250	350x350/250
Cat. No.		LUK 240	LUK 242	LUK 246	LUK 248

* Working temperature range is equal to ACC range

Proline accessories

Shut down valve/Reverse flow protection

Reverse flow protection when thermostating external systems, to avoid over-flow when pump stops, for retrofitting with LiBus. Temperature range -40...140 °C

Cat. No.	Description
LCZ 9673	Shut down valve reverse flow protection with LiBus
Suitable for	All Proline devices



LCZ 9673

Solenoid valve

Water-conscious cooling on heating thermostats for cooling water control. Controlled cooling operation for exothermal reactions or controlled cooling with programmer. Up to 155 °C bath temperature.

Cat. No.	Description	Temperature range
LCZ 9662	Solenoid valve with LiBus-connector	-10...155 °C
Suitable for	All heating and clear-view thermostats	



LCZ 9662

Baskets

For notch bending test

Cat. No.	Suitable for
LCZ 0658	RP 870, RP 870 C, RP 890, RP 890 C
LCZ 0694	RP 1290, RP 1290 C



LCZ 0694

Constant level device

Necessary for the constant liquid level when thermostating open external baths. Connection set: for wall thickness of bath vessel between 0 to 30 mm, with opening for thermometers 4 mm or 1.9 mm Ø and clamping gland HX 077 and HX 078.

Cat. No.	Description	Suitable for
LCZ 0660	Level controller, mechanical	P 8 (C), RP 845 (C) RP 855 (C)*, RP 870 (C)*
LCZ 0679	Connection set for external inlet and outlet	LCZ 0660

* Not with option bath cover including bath edge heating (LCZ 9670)



LCZ 0660



LCZ 0679

Automatic filling device

For automatic replacement of liquid losses in thermostat bath, for example by evaporation. Also from vessels with max. 1 m suction height

Cat. No.	Description
LCZ 9661	Automatic filling device with LiBus



LCZ 9661

Controlled high-temperature chiller HTC with LiBus

For controlled cooling of thermostats in the operating temperature range up to 300 °C without formation of vapors, to be connected to external water cooling source.

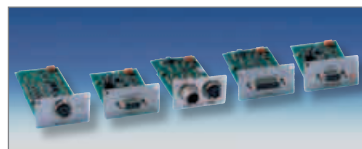
Cat. No.	Description
LCZ 9663	Controlled high-temperature chiller HTC

Proline Kryomats accessories

Interface modules

An RS 232/485 interface is integrated as a standard feature. The control head is equipped for two interface modules to be plugged into the rear of the unit.

Cat. No.	Description
LRZ 912	Analog module, 2 x In, 2 x Out, 0(4)...20 mA or 0...10 V
LRZ 913	RS 232/485 interface, electrically isolated, 9-pin SUB-D socket
LRZ 914	Contact module NAMUR, 1 x In, 1 x Out, NE 28, 2 DIN socket
LRZ 915	Contact module SUB-D, 3 x In, 3 x Out, 15-pin SUB-D
LRZ 917	Profibus module, electrically isolated, 9-pin SUB-D socket



LRZ 912 LRZ 913 LRZ 914 LRZ 915 LRZ 917

Suitable hoses/tubing for heat transfer liquids and cooling water

Available upon request.



LZM 081



RKJ 031

Booster pumps (only ex works)

For higher flow rates and pressure for external systems, connections M30 x 1.5 O

Cat. No.	Temperature range	Pressure max.	Pump flow max.
LWZ 080	-100...150 °C	0.9 bar	90 L/min
LWZ 086	-40...150 °C	3.2 bar	40 L/min

(O = outer thread)

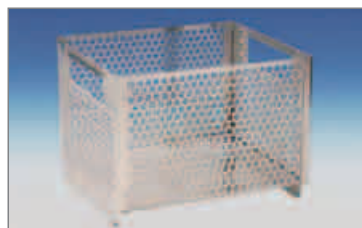


LWZ 080

Baskets

For notch bending test

Cat. No.	Suitable for
LUZ 008	RP 3050 C, RP 3050 CW, RP 3090 C, RP 3090 CW
LUZ 009	RP 4050 C, RP 4050 CW, RP 4090 C, RP 4090 CW



LUZ 008

Pour point determination

Bath cover accommodates up to 16 metal beakers

Cat. No.	Suitable for
UP 065	RP 4050 C, RP 4050 CW, RP 4090 C, RP 4090 CW



UP 065



Order the detailed LAUDA accessories brochure and the heat transfer liquids brochure free of charge. These and additional product information can also be found at www.lauda.de

LAUDA Integral

Process thermostats for professional external thermostating across a wide temperature range from -90 up to 320 °C



Application examples

- Process technology
- Process engineering
- Production
- Research
- Thermostating of stirrer tanks
- Temperature control of reactors in chemistry, pharmacy or biotechnology
- Thermal tests on test stands
- Use in material tests

Extremely flexible and rapid temperature change

Integral T and XT process thermostats are particularly suited for external temperature control of reactors, mini plants and calorimeters. They provide broad temperature ranges and rapid temperature changes. The temperature of external applications can be controlled precisely with defined heating and cooling speeds. With

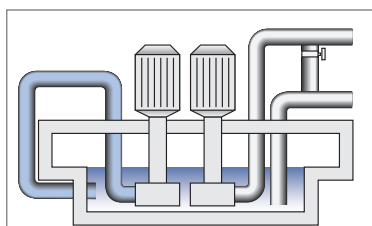
the Integral T, internal circulation allows temperature control independently of external current resistances. The Integral XT units work on the basis of the flow principle with a cold-oil blanket. As a result, significantly greater temperature ranges and quicker temperature changes are possible.

Your advantages at a glance

+

The Integral T advantages

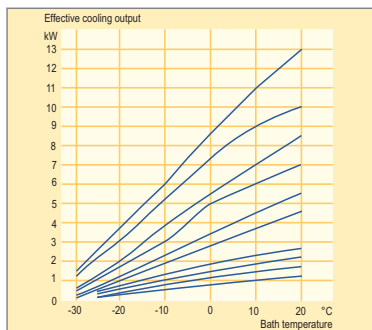
Your benefits



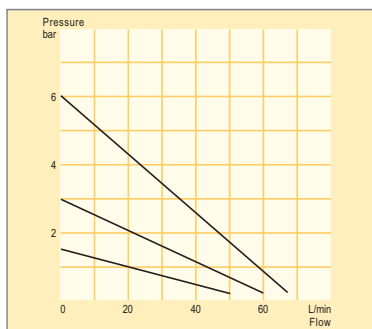
- | | |
|---|---|
| <ul style="list-style-type: none"> ● Small active internal volume ● Bypass valve between inlet and outlet as a standard feature | <ul style="list-style-type: none"> ● Rapid temperature change and effective control of exothermic reactions ● Pressure reducer to protect pressure-sensitive applications and glass |
|---|---|



- | | |
|---|--|
| <ul style="list-style-type: none"> ● Pivoting control unit with clear keypad and large display | <ul style="list-style-type: none"> ● Easily accessible yet splash-water protected interfaces ● Easy and intuitive to operate |
|---|--|



- | | |
|---|--|
| <ul style="list-style-type: none"> ● Specific equipment range with heating outputs up to 9 kW and cooling outputs up to 13 kW ● Limited target temperature range from -30 to 150 °C | <ul style="list-style-type: none"> ● Application-specific temperature control with high heating and cooling speeds ● Economical temperature control by limitation to essential functions |
|---|--|



- | | |
|--|--|
| <ul style="list-style-type: none"> ● Strong submersible pump, large expansion volume with overflow connection ● Additional pump as a standard feature with T 4600 units and larger ● Enhanced pump and low-pressure pump available as options | <ul style="list-style-type: none"> ● Suitable for large external circuits ● Full cooling capacity independent from external flow ● May be adapted to various applications |
|--|--|



- | | |
|---|---|
| <ul style="list-style-type: none"> ● Compact design, all devices fitted with castors ● Remote control options available with use of accessory | <ul style="list-style-type: none"> ● Saves valuable laboratory space ● Flexible positioning ● Mounting and sub-assembly option |
|---|---|

LAUDA Integral T

Integral T Process thermostats up to 2.7 kW



Integral T process thermostats make rapid thermostating with powerful heating and cooling outputs combined with a small active internal volume possible. This minimises thermal drift and exothermic reactions are effectively controlled. Its compact construction is space-saving and the castor set makes the Integral T mobile.

The T control unit can simply be flipped open. The following interfaces are then accessible from below: connector for standby contact input, malfunction (alarm) contact output, analogue inputs and outputs, external Pt 100 and serial RS 232/RS 485 interface.

From the T 4600 units and larger, the Integral T is equipped with an additional pump allowing for more powerful circulation in the internal circuit. An adjustable bypass valve between the supply pipe and the bath of the external circuit allows for pressure reduction (e.g. in order to protect pressure-sensitive applications).

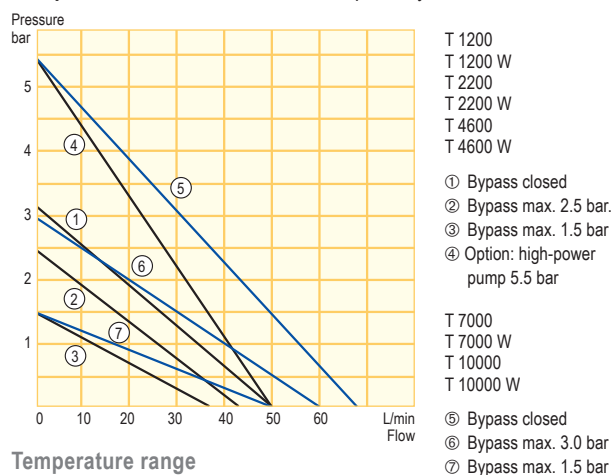


Process thermostat T 2200



- Programmer with max. 150 temperature/time segments, for up to 5 programs
- Parallel display of 2 temperature values and discharge pressure
- External control via Pt100 temperature probe or standard signal
- Analogue inputs (3) and outputs (2), can be configured to 0...10 V or 0/4...20 mA
- Error message for low level, overtemperature, pumps and cooling compressor
- Remote "malfunction" display and stand-by switch via neutral contact
- RS 232/485 interface for PC and LAUDA Wintherm Plus control software

Pump characteristics Heat transfer liquid: Kryo 30



Temperature range

-25...120 °C (optional up to 150 °C)

Options T 1200...T 2200 W

Extended temperature range up to 150 °C · flow control instrument · low-pressure pump 1 bar, 30 L/min*** · high-power pump 5.5 bar***

Additional accessories T 1200...T 2200 W

Fiber-reinforced rubber tubing · insulation for rubber tubing · metal hose · 4-port manifold · remote control



All technical data on page 98 and following
Other power supply variants on page 105

Technical features		T 1200	T 1200 W	T 2200	T 2200 W
Working temperature range*	°C	-25...120 **	-25...120 **	-25...120 **	-25...120 **
Temperature stability	±K	0.2	0.2	0.2	0.2
Heater power	kW	2.25	2.25	2.25	2.25
Cooling output at 20 °C	kW	1.2	1.6	2.2	2.7
Pump pressure max.	bar	3.2	3.2	3.2	3.2
Pump flow max.	L/min	40	40	40	40
Internal volume	L	3...7	3...7	3...7	3...7
Cat. No. 230 V; 50 Hz		LWP 101	LWP 102	LWP 103	LWP 104

* Working temperature range is equal to ACC range

** Available from -25 up to 150 °C upon request

*** Using such a pump changes the available cooling capacity

Integral T Process thermostats up to 13 kW

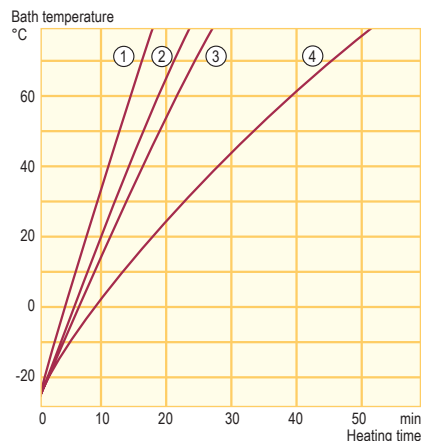
The more powerful T 4600 to T 10000 W Integral process thermostats have a second pump for circulation in addition to the powerful circulating pump via an internal plate-type heat exchanger and therefore provide efficient and space-saving cooling. This enables a cooling output of 4.6 to 13 kW at 20 °C with the smallest internal bath volume.



Process thermostat T 7000

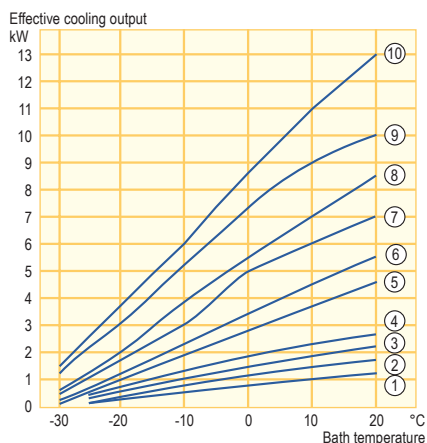


Heating curves Heat transfer liquid: Kryo 30 External volume: 10 L



- ① T 10000 · T 10000 W
- ② T 4600 · T 4600 W
- ③ T 7000 · T 7000 W
- ④ T 1200 · T 1200 W
T 2200 · T 2200 W

Cooling output Heat transfer liquid: Ethanol



- ① T 1200
- ② T 1200 W
- ③ T 2200
- ④ T 2200 W
- ⑤ T 4600
- ⑥ T 4600 W
- ⑦ T 7000
- ⑧ T 7000 W
- ⑨ T 10000
- ⑩ T 10000 W

Temperature range

-30...120 °C (optional up to 150 °C)

Options T 4600...T 10000 W:

Extended temperature range up to 150 °C · flow control instrument · high-power pump 5.5 bar*** (only T 4600, T 4600 W)

Additional accessories T 4600...T 10000 W:

Fiber-reinforced rubber tubing · insulation for rubber tubing · metal hose · 4-port manifold · remote control



All technical data on page 98 and following
Other power supply variants on page 105

Technical features		T 4600	T 4600 W	T 7000	T 7000 W	T 10000	T 10000 W
Working temperature range*	°C	-30...120 **	-30...120 **	-30...120 **	-30...120 **	-30...120 **	-30...120 **
Temperature stability	±K	0.2	0.2	0.3	0.3	0.3	0.3
Heater power	kW	6.0	6.0	6.0	6.0	9.0	9.0
Cooling output at 20 °C	kW	4.6	5.5	7.0	8.5	10.0	13.0
Pump pressure max.	bar	3.2	3.2	6.0	6.0	6.0	6.0
Pump flow max.	L/min	40	40	60	60	60	60
Internal volume	L	6...18	6...18	8...20	8...20	8...20	8...20
Cat. No. 400 V; 3/N/PE; 50 Hz		LWP 205	LWP 206	LWP 207	LWP 208	LWP 209	LWP 210

* Working temperature range is equal to ACC range

** Available from -30 up to 150 °C upon request

*** Using such a pump changes the available cooling capacity

LAUDA Integral XT

Extremely broad temperature range and rapid temperature changes:
LAUDA Integral XT



Application examples

- Temperature control of stirrer tanks
- Temperature control of reactors in chemistry, pharmacy or biotechnology
- Thermal tests on test stands
- Use in material tests

LAUDA Integral XT process thermostats allow extremely rapid temperature changes, resulting from the small, internal, thermally active heat transfer medium. The instruments work according to the highly

efficient flow principle with a broad working temperature range. The process thermostats are used where rapid temperature changes or high refrigeration and heating performance are required.

Your advantages at a glance

+

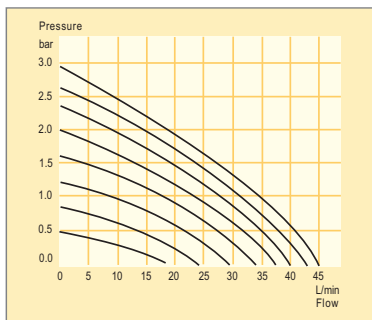
The Integral XT advantages

Your benefits



- Removable Command remote control with graphic LCD
- Automatic adjustment of the control parameters via integrated software for adaptive control
- Also available as explosion-proof version

- Easy and intuitive operation, quick setting changes
- Saves time-consuming calculation of control parameters
- Operation in ex-zones



- Eight-level Vario pump adjustment
- Infinitely variable control of pump pressure
- Magnetically coupled pump

- Application-specific adaptation of flow and pressure to the application
- Pressure reduction to protect pressure-sensitive applications
- No sealing problems at the pump shaft across the entire temperature range



- Two slots for interface modules available
- RS 232/485 interface included

- High flexibility for the user for the broadest range of system integrations



- Recessed filling inlet on the top of the equipment
- Practical drain taps on the sides of the equipment

- Simple filling with heat transfer liquid from the top of the unit
- Quick and complete drainage of the heat transfer liquid from the system



- Software-based/controlled filling and draining
- Automatic degassing after filling process

- Professional and safe start-up
- Temperature control of external application without gas introduction



- SelfCheck assistant shows equipment status clearly on the display

- High level of operating safety and constant monitoring of all equipment functions

LAUDA Integral XT

Integral XT Air-cooled process thermostats down to -80 °C

The LAUDA Integral XT process thermostats are ideally designed for the requirements of rapid and precise temperature control of an external application in process plant and pilot plant environments. The air-cooled process thermostats offer high performance in a small footprint while still providing functionality across a wide temperature range. The special high-temperature version enables process temperatures up to 300 °C. The models XT 750 S and XT 750 HS are available with increased heater power. The large expansion vessel in the LAUDA Integral XT absorbs temperature-induced changes in volume, thereby ensuring smooth operation even in large connected external systems.

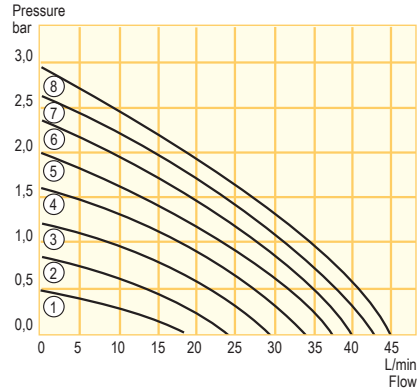


Integral XT 750

All types

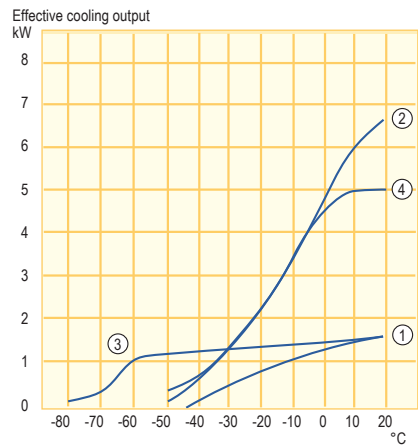


Pump characteristics for all XT except for XT 1850 W, XT 1850 WS Heat transfer liquid: Water



- ① Step 1
- ② Step 2
- ③ Step 3
- ④ Step 4
- ⑤ Step 5
- ⑥ Step 6
- ⑦ Step 7
- ⑧ Step 8

Cooling output Heat transfer liquid: Ethanol



- ① XT 150
- ② XT 750 · XT 750 H
- ③ XT 280
- ④ XT 550

Temperature range

-80...300 °C

Included accessories

Command remote control with RS 232/485 interface



All technical data on page 98 and following
Other power supply variants on page 105



660 mm



1285 mm



1285 mm



1285 mm



1285 mm

Technical features		XT 150	XT 280	XT 550	XT 750 (XT 750 S)	XT 750 H (XT 750 HS)
Working temperature range*	°C	-45...220	-80...220	-50...220	-50...220	-50...300
Temperature stability at -10 °C	±K	0.05	0.1	0.05	0.05	0.05
Heater power	kW	3.5	4.0	5.3	5.3 (8.0)	5.3 (8.0)
Cooling output at 20 °C	kW	1.5	1.5	5.0	6.7	6.7
Pump pressure max.	bar	2.9	2.9	2.9	2.9	2.9
Pump flow max.	L/min	45	45	45	45	45
Filling volume min.	L	2.6	5.0	5.0	5.0	5.3
Filling volume of expansion vessel	L	5.5	6.7	6.7	6.7	6.7
Cat. No. 400 V; 3/PE; 50 Hz		LWP 112**	LWP 534	LWP 524	LWP 520 (LWP 552)	LWP 522 (LWP 553)

* Working temperature range is equal to ACC range ** 230 V; 50 Hz

Integral XT

Water-cooled process thermostats down to -50 °C

Independent of variations in ambient temperature, Integral XT water-cooled process thermostats achieve constantly high cooling performance. The temperature of the ambient air remains virtually unchanged due to the dissipation of the process heat through the cooling water. This is a particular advantage in setups similar to production as in process plants or in the mini-plant, where work is conducted under the most strained conditions. Water-cooled Integral XT systems are also the perfect choice for air-conditioned spaces, since they do not tax or place an unnecessary burden on air-conditioning systems. The XT 950 WS provides an increased heater power.



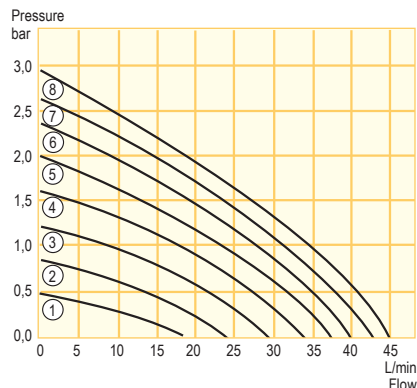
Integral XT 350 HW

All types



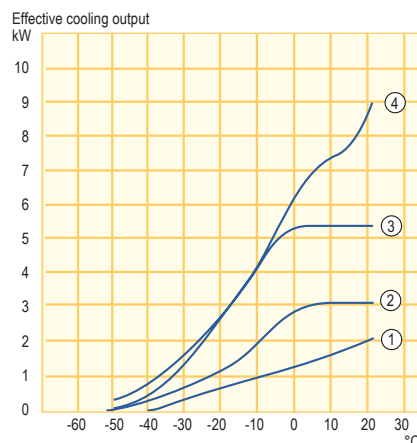
Pump characteristics for all XT except for XT 1850 W, XT 1850 WS

Heat transfer liquid: Water



- ① Step 1
- ② Step 2
- ③ Step 3
- ④ Step 4
- ⑤ Step 5
- ⑥ Step 6
- ⑦ Step 7
- ⑧ Step 8

Cooling output Heat transfer liquid: Ethanol



- ① XT 250 W
- ② XT 350 W
- ③ XT 350 HW
- ④ XT 550 W
- ⑤ XT 950 W
- ⑥ XT 950 WS

Temperature range

-50...300 °C

Included accessories

Command remote control with RS 232/485 interface



All technical data on page 98 and following
Other power supply variants on page 105



Technical features		XT 250 W	XT 350 W	XT 350 HW	XT 550 W	XT 950 W (XT 950 WS)
Working temperature range*	°C	-45...220	-50...220	-50...300	-50...220	-50...220
Temperature stability at -10 °C	±K	0.05	0.1	0.1	0.1	0.1
Heater power	kW	3.5	3.5	3.5	5.3	5.3 (8.0)
Cooling output at 20 °C	kW	2.1	3.1	3.1	5.4	9.0
Pump pressure max.	bar	2.9	2.9	2.9	2.9	2.9
Pump flow max.	L/min	45	45	45	45	45
Filling volume min.	L	2.6	5.0	5.3	5.0	5.0
Filling volume of expansion vessel	L	5.5	6.7	6.7	6.7	6.7
Cat. No. 230 V; 50 Hz		LWP 113	LWP 117	LWP 119	-	-
Cat. No. 400 V; 3/PE; 50 Hz		-	-	-	LWP 525	LWP 521 (LWP 554)

* Working temperature range is equal to ACC range

LAUDA Integral XT

Integral XT Water-cooled process thermostats down to -90 °C

The LAUDA Integral XT 1590 WS and XT 490 W process thermostats stand out for their high cooling outputs at very low temperatures. Thanks to the two-stage cascade system, the thermostats are particularly suited for applications in the ultra-low range down to -90 °C. The water-cooled devices achieve cooling outputs of up to 18.5 kW and maximum heating capacities of 10.6 kW. The XT 1850 WS provides an increased heater power.

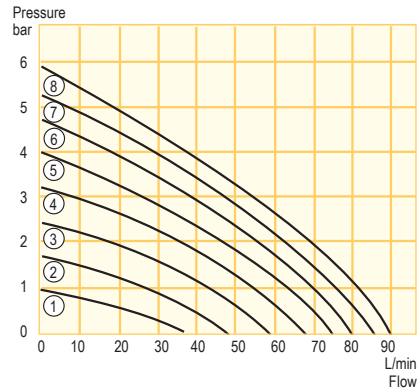


Integral XT 1590 W

All types

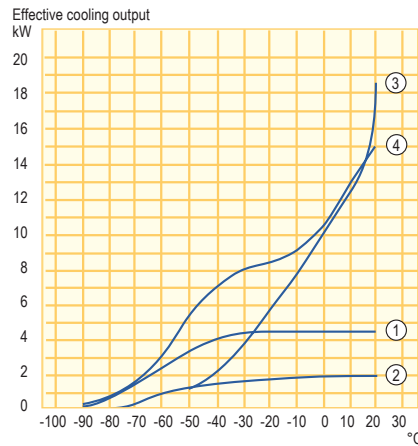


Pump characteristics for XT 1850 W, XT 1850 WS Heat transfer liquid: Water



- ① Step 1
- ② Step 2
- ③ Step 3
- ④ Step 4
- ⑤ Step 5
- ⑥ Step 6
- ⑦ Step 7
- ⑧ Step 8

Cooling output Heat transfer liquid: Ethanol



- ① XT 490 W
- ② XT 280 W
- ③ XT 1850 W (XT 1850 WS)
- ④ XT 1590 WS

Temperature range

-90...220 °C

All Integral XT include

Command remote control with RS 232/485 interface



All technical data on page 98 and following
Other power supply variants on page 105



1285 mm



1600 mm



1600 mm



1600 mm

Technical features		XT 280 W	XT 1850 W (XT 1850 WS)	XT 490 W	XT 1590 WS
Working temperature range*	°C	-80...220	-50...220	-90...220	-90...220
Temperature stability at -10 °C	±K	0.1	0.3	0.1	0.3
Heater power	kW	4.0	10.6 (16.0)	5.3	8.0
Cooling output at 20 °C	kW	2.0	18.5	4.4	15.0
Pump pressure max.	bar	2.9**	5.8	2.9**	2.9**
Pump flow max.	L/min	45	90	45	45
Filling volume min.	L	5.0	9.0	9.5	10.5
Filling volume of expansion vessel	L	6.7	17.4	17.4	17.4
Cat. No. 400 V; 3/PE; 50 Hz		LWP 535	LWP 532 (LWP 533)	LWP 539	LWP 551

* Working temperature range is equal to ACC range

** Pump characteristics p. 61

Integral XT High-temperature thermostats up to 320 °C

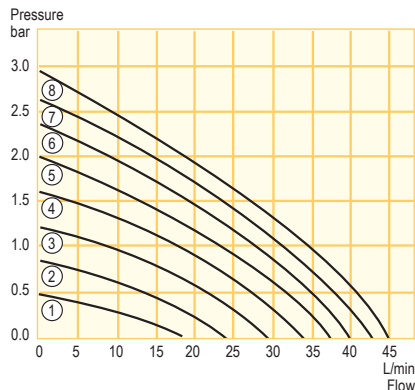
The LAUDA Integral XT high-temperature thermostats allow for a maximum working temperature of 320 °C. The process thermostats are operated using the Command remote control, which is already utilized in the other XT models. The powerful pump can be regulated at eight different levels, supplying a maximum pressure of 2.9 bar and a flow rate of up to 45 L/min. The model XT 4 H provides a heating power of 3.2 kW. The XT 8 H is equipped with an 8.0 kW heating system.



Integral XT 8 H



Pump characteristics for all XT except for XT 1850 W
Heat transfer liquid: Water



- ① Step 1
- ② Step 2
- ③ Step 3
- ④ Step 4
- ⑤ Step 5
- ⑥ Step 6
- ⑦ Step 7
- ⑧ Step 8

Temperature range

80...320 °C

Included accessories

Command remote control with RS 232/485 interface



All technical data on page 98 and following
Other power supply variants on page 103

NEW



660 mm

NEW



660 mm

Technical features		XT 4 H	XT 8 H
Working temperature range	°C	80...320	80...320
Temperature stability at 150 °C with oil	±K	0.05	0.05
Heater power max.	kW	3.2	8.0
Pump pressure max.	bar	2.9	2.9
Pump flow max.	L/min	45	45
Filling volume min.	L	2.6	2.6
Filling volume of expansion vessel	L	5.5	5.5
Pump connection thread	mm	M30 x 1.5 (DN 20)	M30 x 1.5 (DN 20)
Dimensions (WxDxH)	mm	335x550x660	335x550x660
Cat. No. 230 V; 50 Hz		LWP 147	LWP 549 (400 V; 3/PE; 50 Hz)

LAUDA Integral XT

Integral XT High-temperature thermostats with water counter-cooling up to 320 °C

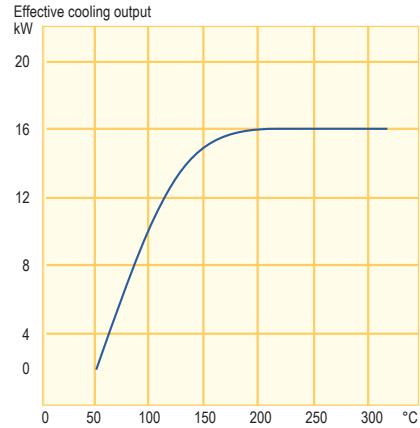
With the XT 4 HW and the XT 8 HW models, water-generated counter-cooling allows for quick cool-down across the entire temperature range from 30 up to 320 °C. Especially at higher temperatures, the water counter-cooling is very efficient and cost effective.



Integral XT 4 HW



Cooling output of the water counter-cooling Cooling liquid: water



XT 4 HW
XT 8 HW

Temperature range
30...320 °C

Included accessories
Command remote control with RS 232/485 interface

NEW



660 mm

NEW



660 mm



All technical data on page 98 and following
Other power supply variants on page 103

Technical features		XT 4 HW	XT 8 HW	
Working temperature range	°C	30...320	30...320	
Temperature stability at 150 °C with oil	±K	0.1	0.1	
Heater power max.	kW	3.2	8.0	
Cooling output (water counter-cooling) at 15 °C cooling water temperature				
	300 °C	kW	16	16
	200 °C	kW	16	16
	150 °C	kW	15	15
	100 °C	kW	9	9
	50 °C	kW	2	2
Pump pressure max.	bar	2.9	2.9	
Pump flow max.	L/min	45	45	
Filling volume min.	L	2.6	2.6	
Filling volume of expansion vessel	L	5.5	5.5	
Pump connection thread	mm	M30 x 1.5 (DN 20)	M30 x 1.5 (DN 20)	
Dimensions (WxDxH)	mm	335x550x660	335x550x660	
Connection water cooling		R3/4 A	R3/4 A	
Cat. No. 230 V; 50 Hz		LWP 148	LWP 550 (400 V; 3/PE; 50 Hz)	

Integral T accessories

Reinforced polymer tubing

Special polymer tubing for high pressures

Cat. No.	Description	Temperature range °C	Max. pressure in bar
RKJ 031	Polymer tubing 1/2", fiber-reinforced	-40...100	20
RKJ 032	Polymer tubing 3/4", fiber-reinforced	-40...100	20
RKJ 033	Polymer tubing 1", fiber-reinforced	-40...100	20
RKJ 103	Polymer tubing 1/2", with textile insert	-40...120	9
RKJ 104	Polymer tubing 3/4", with textile insert	-40...120	9
RKJ 105	Polymer tubing 1", with textile insert	-40...120	3

Insulated metal hoses

For T 1200...T 4600						
Cat. No.	Description	Length (cm)	Thread	d _i (mm)	d _e (mm)	Temperature range °C
LZM 075	MTK 100	100	G 3/4	20	47	-60...150
LZM 076	MTK 200	200	G 3/4	20	47	-60...150

For T 7000...T 10000						
Cat. No.	Description	Length (cm)	Thread	d _i (mm)	d _e (mm)	Temperature range °C
LZM 078	MTK 101	100	G 1 1/4-G 1	25	50	-60...150
LZM 079	MTK 201	200	G 1 1/4-G 1	25	50	-60...150

d_i = internal diameter, d_e = external diameter

Manifold connectors

For joining multiple external systems (suitable for water/glycol and silicone oil)

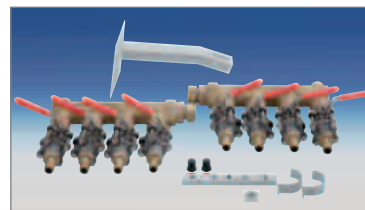
Cat. No.	Description	Connection	Male thread	Temperature range °C
LWZ 084	Four-port manifold	G 3/4"	4 x 3/4"	-30...150
LWZ 075	Four-port manifold	G 3/4"	4 x 1/2"	-30...150
LWZ 085	Four-port manifold	G 3/4"	4 x 10 mm	-30...150
LWZ 082	Four-port manifold	G 1 1/4"	4 x 3/4"	-30...150



RKJ 031



LZM 075



LWZ 075

Options	Cat. No.	T 1200	T 1200 W*	T 2200	T 2200 W*	T 4600	T 4600 W*	T 7000	T 7000 W*	T 10000 W**	T 10000 W**
Enlarged temperature range up to 150 °C	LWZ 029	●	●	●	●	●	●	●	●	●	●
Flow control instrument	LWZ 035 LWZ 036	●	●	●	●	●	●	-	-	-	-
Low-pressure pump 1 bar**, 30 L/min, 50-Hz version	LWZ 041-1	●	●	●	●	-	-	-	-	-	-
High-power pump 5.5 bar**, 40 L/min 50-Hz version (see pump characteristics at the top of page 56)	LWZ 031-4 LWZ 032-4	●	●	●	●	-	-	-	-	-	-
Pump connections M38 x 1,5 O	LWZ 093	-	-	-	-	-	-	●	●	●	●

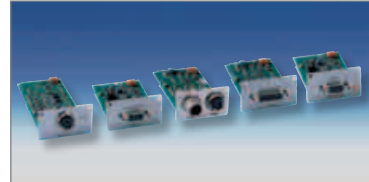
* W = water-cooled version ** Using such a pump changes the available cooling capacity

LAUDA Integral XT

Integral XT accessories (excerpt)

Slot-in and interface modules

Cat. No.	Description
LRZ 912	Analog module, 2 x In, 2 x Out, 0(4)...20 mA or 0...10 V
LRZ 913	RS 232/485 interface, electrically isolated, 9-pin SUB-D
LRZ 914	Contact module NAMUR, 1 x In, 1 x Out, NE 28, 2 DIN sockets
LRZ 915	Contact module SUB-D, 3 x In, 3 x Out, 15-pin SUB-D
LRZ 917	Profibus interface, electrically isolated, 9-pin SUB-D



LRZ 912 LRZ 913 LRZ 914 LRZ 915 LRZ 917

Command Ex i remote control

(explosion protection II 2G Ex ia IIC T4 Gb)

Cat. No.	Description
LRT 915	Command Ex i remote control including 10 m cable and barrier box
LRT 916	Command Ex i remote control including 25 m cable and barrier box



LRT 915

High-pressure pump

Cat. No.	Description
LWZ 077-1	High-pressure pump*, suitable for all XT with exception of XT 1850 W (S) (230 V; 50 Hz), resulting max. pump pressure 5.8 bar

* Using such a pump changes the available cooling capacity



LWZ 077-1

Metal hoses M30 x 1.5 l

Cat. No.	Description	Length (cm)	Temperature range °C
LZM 091	M30X 100S	100	-100...350
LZM 092	M30X 200S	200	-100...350
LZM 093	M30X 300S	300	-100...350
Field of application	With special insulation for cooling and heating thermostats, for all heat transfer liquids		

(l = inner thread)



LZM 091

Metal hoses M38 x 1.5 l

Cat. No.	Description	Length (cm)	Temperature range °C
LZM 094	M38X 100S	100	-100...350
LZM 095	M38X 200S	200	-100...350
LZM 096	M38X 300S	300	-100...350

(l = inner thread)



LZM 094

Integral XT accessories (excerpt)

Additional adapters and connectors

Cat. No.	Description
HKA 152	Reducer, M30 x 1.5 O on M16 x 1 I
UD 660	Reducer, M30 x 1.5 I on M16 x 1 O
HKA 164	Reducer, M38 x 1.5 O on M30 x 1.5 I
EOV 194	Screw-in stud, M30 x 1.5 O on G 3/4" A
EOV 207	Screw-in stud, M30 x 1.5 O on NPT 3/4" A
EOV 206	Screw-in stud, M30 x 1.5 O on G 1" O
EOV 208	Double connector, M30 x 1.5 O
HKA 160	Adapter, M30 x 1.5 O on spherical line RD = 28
HKA 163	Flange adapter, M38 x 1.5 O on DIN 2633/DN40
HKA 165	Angle connector, M38 x 1.5 I on M38 x 1.5 A
HKA 153	Angle connector, M30 x 1.5 I on M30 x 1.5 A

(O = outer thread, I = inner thread)

Nipples

Cat. No.	Description
HKA 161	Nipple, 1/2" nipples on spherical line for M30 x 1.5
HKA 162	Nipple, 3/4" nipples on spherical line for M30 x 1.5
EOV 196	Screw cap, M30 x 1.5

Miscellaneous

Cat. No.	Description	Temperature range °C
LWZ 046	Bypass, M30 x 1.5 I/O	-40...350
LWZ 071	Bypass, M38 x 1.5 I/O	-40...350
LWZ 089	Bypass, M30 x 1.5 I/O	-90...220
LWZ 073	Ball valve, M30 x 1.5 I on M30 x 1.5 O	-30...180
LWZ 074	Ball valve, M38 x 1.5 I on M38 x 1.5 O	-30...180

(O = outer thread, I = inner thread)



HKA 152 UD 660 HKA 164



EOV 194 EOV 207 EOV 206



EOV 208 HKA 160 HKA 163



HKA 165 HKA 153



HKA 161 HKA 162 EOV 196



LWZ 046

LWZ 073



Order the detailed LAUDA accessories brochure and the heat transfer liquids brochure free of charge. These and additional product information can also be found at www.lauda.de

LAUDA Microcool

Circulation chillers for reliable continuous operation in the lab and in research from -10 up to 40 °C



Excellent price-performance ratio, compact design and simple to use



Application examples

- Cooling of rotary evaporators
- Cooling of distillation systems
- Supply of cooling traps
- Cooling of analytical devices

LAUDA Microcool has been designed as a circulation chiller line with four compact models and cooling capacities from 0.25 to 1.2 kW. The user interface with large LED display and the membrane keyboard make the devices easy to use. An RS-232 interface and alarm contact are integrated as standard. What is unusual in this price category

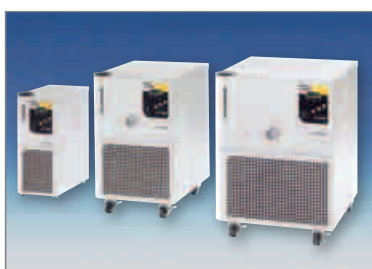
of circulation chillers is the high-quality block pump with magnetic coupling. The magnetic coupling of pump and electric motor exclude sealing problems on the pump shaft. LAUDA Microcool circulation chillers are used wherever heat needs to be dissipated reliable and fast, e. g. in laboratories for rotary evaporators, distillation systems or analytical devices.

Your advantages at a glance



The Microcool advantages

Your benefits



- Four device types in three housing sizes
- Cooling capacities from 250 W up to 1200 W

- Clear device portfolio for simple selection
- Covers the majority of basic lab uses



- User interface with large LED display and membrane keyboard
- Autostart timer and auto-shutdown function
- Illuminated window for checking heat transfer liquid level

- Simple and intuitive use
- Timer-based activation and deactivation of the circulation chillers
- Quick optical detection of the filling level



- Block pump with magnetic coupling of pump and electric motor
- Integrated adjustable bypass and pressure gauge at MC 600, MC 1200 and MC 1200 W
- Integrated overflow connection

- Prevents sealing problems at the pump shaft
- Integrated pump pressure adjustment for connected delicate glassware
- Controlled filling of the devices



- RS-232 interface and alarm contact standard

- System integration into processes without additional costs



- Compact design and low space requirements
- Integrated filling funnel on top of the device
- Easily removable front grid

- Saves valuable laboratory space
- Simple and safe filling
- Easy-to-clean condenser

LAUDA Microcool

Microcool Circulation chiller with cooling capacity up to 1200 Watt

The compact MC 250 makes it ideal for being positioned on the bench-top. The circulation chiller is equipped with a magnetic coupling pump. This supplies a pump pressure of 0.35 bar and a maximum pump flow of 16 L/min.

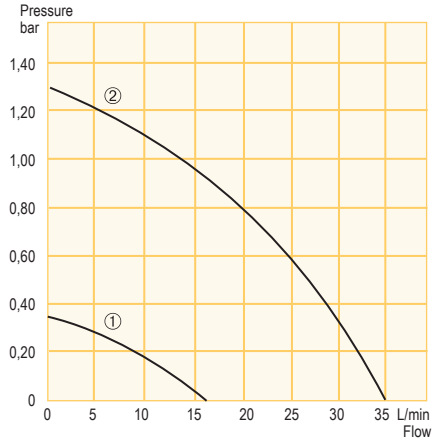
The 600 and 1200 Watt cooling capacity models are floor standing instruments designed to fit underneath the lab bench. They are equipped with a pressure gauge to display the pressure and casters which can be controlled and locked. Pump pressure can be controlled via the integrated bypass. At 1200 Watt, the most powerful device is also available in a water-cooled version as the MC 1200 W.



Circulation chiller MC 250



Pump characteristics Heat transfer liquid: Water



- ① MC 250
- ② MC 600
MC 1200
MC 1200 W

Temperature range

-10...40 °C

Included as standard

RS 232 interface · alarm contact

Included accessories (except of MC 250)

Nipples (3/4") · screw caps



All technical data on page 100 and following

Other power supply variants on page 106



465 mm



595 mm



650 mm



650 mm

Technical features		MC 250	MC 600	MC 1200	MC 1200 W
Working temperature range*	°C	-10...40	-10...40	-10...40	-10...40
Temperature stability	±K	0.5	0.5	0.5	0.5
Cooling output at 20 °C	kW	0.25	0.6	1.2	1.2
Pump pressure max.	bar	0.35	1.3	1.3	1.3
Pump flow max.	L/min	16	35	35	35
Cat. No. 230 V; 50 Hz		LWM 118	LWM 120	LWM 121	LWM 122

* Working temperature range is equal to ACC range

Accessories (excerpt)

EPDM tubing

Cat. No.	Description	d _i (mm)	d _e (mm)	Temperature range °C	Pressure range max. bar
RKJ 111	Polymer tubing	9	11	10...120	1
RKJ 112	Polymer tubing	12	14	10...120	1
LZS 021	Insulated	12	21	-35...90	-
RKJ 031	Reinforced fibres	13 (1/2")	19	-40...100	20
RKJ 032	Reinforced fibres	19 (3/4")	27	-40...100	20
RKJ 009	Tube insulation	23	33	-50...105	-
RKJ 013	Tube insulation	29	39.5	-50...105	-

d_i = internal diameter ; d_e = external diameter

Adapter G 3/4"

Cat. No.	Designation	Description
LWZ 016	Nipple	3/4" Screw cap, 1/2" nipple
LWZ 040	Nipple	3/4" Screw cap, 10 mm nipple

Stainless steel hose clamps

To secure hoses

Cat. No.	Description
EZS 012	Hose clamp for external diameter 10-16 mm, 1/2"
EZS 013	Hose clamp for external diameter 12-22 mm, 1/2"
EZS 015	Hose clamp for external diameter 20-32 mm, 3/4"

Heat transfer liquids

Cat. No.	Description	Temperature range °C
LZB 120	Aqua 90, 5 L	5...90
LZB 220	Aqua 90, 10 L	5...90
LZB 320	Aqua 90, 20 L	5...90
LZB 109	Kryo 30, 5 L	-30...90
LZB 209	Kryo 30, 10 L	-30...90
LZB 309	Kryo 30, 20 L	-30...90



RKJ 031



LWZ 016



LWZ 040



EZS 012



LZB 209



Order the detailed LAUDA accessories brochure and the heat transfer liquids brochure free of charge. These and additional product information can also be found at www.lauda.de

LAUDA Variocool

Circulation chillers for variable use in laboratory, mini-plant and production for temperatures from -20 up to 40 °C (optional up to 80 °C)



Application examples

- Central cooling water supply in laboratories
- Cooling of analytical devices
- Temperature control of bio-reactors
- Supply to cooling traps

Numerous options, compact design, easy operation

The **LAUDA Variocool** circulation chillers offer a broad performance spectrum for demanding temperature control tasks. The color TFT screen makes operation easy. A USB interface and an alarm contact are integrated as standard features. Additional interfaces are available as accessories. They are located in the front of the device, which means they are easy to access.

The circulation chillers with their multitude of options are very well suited to a number of different areas of application. Optional pumps, for example, enable higher pressures and flows. Optional heating units, which are adapted to the cooling capacity, enable the quick heating of the connected application when needed.

Your advantages at a glance



The Variocool advantages

Your benefits



- All models are equipped with electronic expansion valve and are marked with the „Energy Saving Star“ label.
- 13 models in air or water-cooled design with cooling capacities from 600 W up to 10 kW
- Due to their compact design, units up to 2 kW of cooling capacity can be placed under the laboratory table

- Very energy efficient models with good temperature control and cost savings thanks to reduced energy consumption
- The appropriate solution to every requirement
- Saves valuable lab space



- Display and operation via color TFT screen and membrane keyboard
- Electronic fill gauge on the display and low level alarm when fluid level too low

- Easy and clear setup options
- Early detection of insufficient fluid



- Options:
 - High power pumps
 - Heaters
 - Outdoor installation
 - Noise reduction

- Flexible customization to applications



- USB interface and alarm contact standard features in the front of the device
- Retrofittable interfaces as accessory:
 - analog module
 - RS-232/485 interface
 - contact modules
 - profibus module
 - Pt100/LiBus module

- Easy accessibility
- Flexible control options



- Front grill can be easily removed without tool
- Tower design for larger models (from VC 7000)
- Microchannel condensers in all air-cooled models
- All models (except VC 600) with adjustable bypass and pressure gauge

- Easy to clean condenser
- Space-saving setup
- Reduced footprint and lower refrigerant quantity
- Connection of pressure sensitive applications

LAUDA Variocool

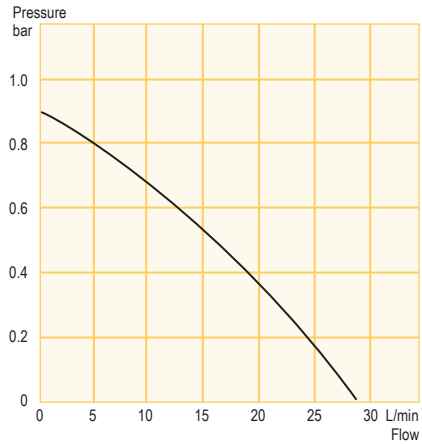
Variocool Circulation chillers with cooling capacities up to 2 kW

Variocool circulation chillers function in an operating temperature range of -20 to 40 °C. Optional heaters can be added to increase the maximum temperature to 80 °C. For greater pressure requirements, optional pumps are available with the VC 1200 version or higher. With the exception of the VC 600, all models are also available as water-cooled versions. All devices are equipped with lockable casters. The compact dimensions of the models from VC 600 to VC 2000 (W) allows to place them under the laboratory table.



Circulation chiller VC 600

Pump characteristic Heat transfer liquid: Water



Temperature range

-20...40 °C (-20...80 °C with optional heater)

Included as standard

USB interface · alarm contact

Included accessories

Nipples · screw caps

Options

High-power pumps** · heater



All technical data on page 100 and following

Other power supply variants on page 106



Technical features		VC 600	VC 1200	VC 1200 W	VC 2000	VC 2000 W
Working temperature range*	°C	-20...40	-20...40	-20...40	-20...40	-20...40
Working temperature range with optional heater	°C	-20...80	-20...80	-20...80	-20...80	-20...80
Temperature stability	±K	0.2	0.2	0.2	0.2	0.2
Cooling output at 20 °C	kW	0.6	1.2	1.2	2.0	2.0
Pump pressure max.	bar	0.9	0.9	0.9	0.9	0.9
Pump flow	L/min	28	28	28	28	28
Cat. No. 230 V; 50 Hz		LWG 175	LWG 176	LWG 182	LWG 177	LWG 183

* Working temperature range is equal to ACC range

**Using such a pump changes the available cooling capacity, and causes a change of the height of the housing from 650 mm to 790 mm for VC 1200 (W) and VC 2000 (W)

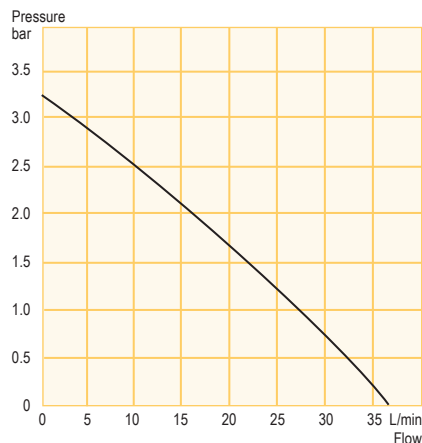
Variocool Circulation chillers with cooling capacities up to 5 kW

The models VC 3000 and VC 5000 offer cooling capacities of 3 and 5 kW. They are also available in water-cooled design (W). For flexible adaption to different applications the chillers can also be delivered with optional high-power pumps or heaters. Further options are an outdoor-installation and a noise reduction for the types VC 5000 and VC 5000 W.



Circulation chiller VC 3000 W

Pump characteristic Heat transfer liquid: Water



Temperature range

-20...40 °C (-20...80 °C with optional heater)

Included as standard

USB interface · alarm contact

Included accessories

Nipples · screw caps

Options

High-power pumps** · heater · outdoor installation (VC 5000, VC 5000 W) · noise reduction (VC 5000, VC 5000 W)



All technical data on page 100 and following

Other power supply variants on page 106

Technical features		VC 3000	VC 3000 W	VC 5000	VC 5000 W
Working temperature range*	°C	-20...40	-20...40	-20...40	-20...40
Working temperature range with optional heater	°C	-20...80	-20...80	-20...80	-20...80
Temperature stability	±K	0.2	0.2	0.2	0.2
Cooling output at 20 °C	kW	3.0	3.0	5.0	5.0
Pump pressure max.	bar	3.2	3.2	3.2	3.2
Pump flow	L/min	37	37	37	37
Cat. No. 230 V; 50 Hz		LWG 178	LWG 184	–	–
Cat. No. 400 V; 3/N/PE; 50 Hz		–	–	LWG 279	LWG 285

* Working temperature range is equal to ACC range

** Using such a pump changes the available cooling capacity

LAUDA Variocool

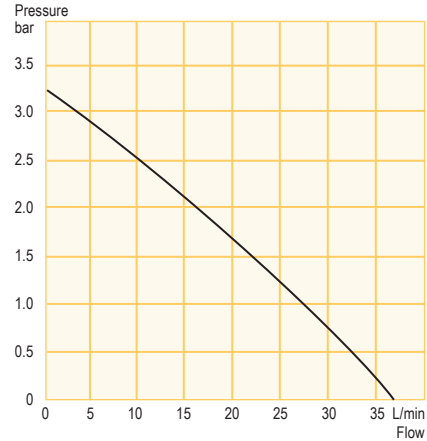
Variocool Circulation chillers with cooling capacities up to 10 kW

The highly efficient tower design circulation chillers provide cooling capacities between 7 and 10 kW. Options like heating or high-power pumps add to the devices' areas of application. The models are available in air or water-cooled design. All models are equipped with controllable casters which can be locked.



Circulation chiller VC 7000

Pump characteristic Heat transfer liquid: Water



Temperature range
-20...40 °C (-20...80 °C with optional heater)

Included as standard
USB interface · alarm contact

Included accessories
Nipples · screw caps

Options
High-power pumps** · heater · outdoor installation · noise reduction



All technical data on page 100 and following

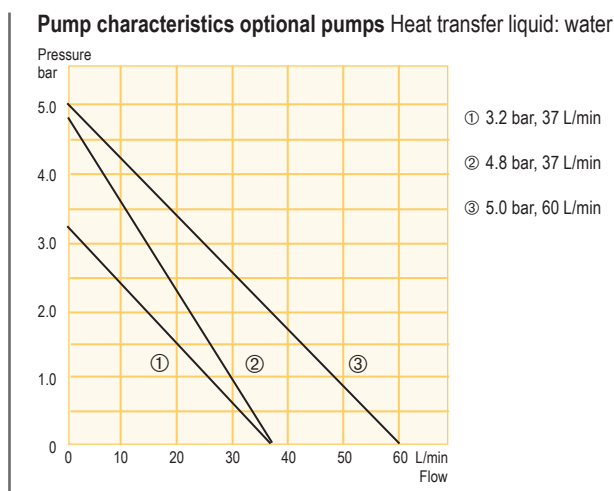
Other power supply variants on page 106

Technical features		VC 7000	VC 7000 W	VC 10000	VC 10000 W
Working temperature range*	°C	-20...40	-20...40	-20...40	-20...40
Working temperature range with optional heater	°C	-20...80	-20...80	-20...80	-20...80
Temperature stability	±K	0.5	0.5	0.5	0.5
Cooling output at 20 °C	kW	7.0	7.0	10.0	10.0
Pump pressure max.	bar	3.2	3.2	3.2	3.2
Pump flow	L/min	37	37	37	37
Cat. No. 400 V; 3/N/PE; 50 Hz		LWG 280	LWG 286	LWG 281	LWG 287

* Working temperature range is equal to ACC range ** Using such a pump changes the available cooling capacity

Options Variocool

For all Variocool models, different options can be ordered. The options can only be affixed at point of production. Please check the tables below for compatibility of options with the corresponding circulation chiller type.



Applications Advantages Devices Accessories

Options	
Heaters	For all types. Extension of the temperature up to 80 °C.
High-power pumps	For all types, except VC 600.
Outdoor installation	For models VC 5000 up to 10000 W. An additional protection with a roof is necessary.
Noise reduction	For models VC 5000 up to 10000 W.

Options – not power supply dependent		VC 600	VC 1200	VC 1200 W	VC 2000	VC 2000 W	VC 3000	VC 3000 W	VC 5000	VC 5000 W	VC 7000	VC 7000 W	VC 10000	VC 10000 W
Outdoor installation	LWZ 123	-	-	-	-	-	-	-	●	●	●	●	●	●
Noise reduction	LWZ 126	-	-	-	-	-	-	-	●	●	-	-	-	-
Noise reduction	LWZ 127	-	-	-	-	-	-	-	-	-	●	●	●	●

LAUDA Variocool

Options – power supply dependent

		230 V; 50 Hz						400 V; 3/N/PE; 50 Hz						
Option	Cat. No.	VC 600	VC 1200*	VC 1200 W*	VC 2000*	VC 2000 W*	VC 3000	VC 3000 W	VC 5000	VC 5000 W	VC 7000	VC 7000 W	VC 10000	VC 10000 W
Heater 1.5 kW	LWZ 1095	●	●	●	●	●	●	●	-	-	-	-	-	-
Heater 4.5 kW	LWZ 2096	-	-	-	-	-	-	-	●	●	●	●	-	-
Heater 7.5 kW	LWZ 2097	-	-	-	-	-	-	-	-	-	-	-	●	●
Pump, 3.2 bar 37 L/min**	LWZ 1100	-	●	●	-	-	-	-	-	-	-	-	-	-
Pump, 3.2 bar 37 L/min**	LWZ 1101	-	-	-	●	●	-	-	-	-	-	-	-	-
Pump, 4.8 bar 37 L/min**	LWZ 1103	-	●	●	-	-	-	-	-	-	-	-	-	-
Pump, 4.8 bar 37 L/min**	LWZ 1104	-	-	-	●	●	-	-	-	-	-	-	-	-
Pump, 4.8 bar 37 L/min**	LWZ 1102	-	-	-	-	-	●	●	-	-	-	-	-	-
Pump, 4.8 bar 37 L/min**	LWZ 2105	-	-	-	-	-	-	-	●	●	●	●	●	●
Pump, 5.0 bar 60 L/min**	LWZ 2106	-	-	-	-	-	-	-	●	●	●	●	●	●

		115 V; 60 Hz	220 V; 60 Hz	208-220 V; 60 Hz						208-220 V; 3/PE; 60 Hz					
Option	Cat. No.	VC 600	VC 600	VC 1200*	VC 1200 W*	VC 2000*	VC 2000 W*	VC 3000	VC 3000 W	VC 5000	VC 5000 W	VC 7000	VC 7000 W	VC 10000	VC 10000 W
Heater 1.15 kW	LWZ 4095	●	-	-	-	-	-	-	-	-	-	-	-	-	-
Heater 1.35 kW	LWZ 2095	-	●	-	-	-	-	-	-	-	-	-	-	-	-
Heater 1.20-1.35 kW	LWZ 8095	-	-	●	●	●	●	●	●	-	-	-	-	-	-
Heater 3.65-4.1 kW	LWZ 3096	-	-	-	-	-	-	-	-	●	●	●	●	-	-
Heater 6.1-6.9 kW	LWZ 3097	-	-	-	-	-	-	-	-	-	-	-	-	●	●
Pump, 3.2 bar 37 L/min**	LWZ 8100	-	-	●	●	-	-	-	-	-	-	-	-	-	-
Pump, 3.2 bar 37 L/min**	LWZ 8101	-	-	-	-	●	●	-	-	-	-	-	-	-	-
Pump, 4.8 bar 37 L/min**	LWZ 2103	-	-	●	●	-	-	-	-	-	-	-	-	-	-
Pump, 4.8 bar 37 L/min**	LWZ 2104	-	-	-	-	●	●	-	-	-	-	-	-	-	-
Pump, 4.8 bar 37 L/min**	LWZ 2102	-	-	-	-	-	-	●	●	-	-	-	-	-	-
Pump, 4.8 bar 37 L/min**	LWZ 3105	-	-	-	-	-	-	-	-	●	●	●	●	●	●
Pump, 5.0 bar 60 L/min**	LWZ 3106	-	-	-	-	-	-	-	-	●	●	●	●	●	●

		100 V; 50/60 Hz		200 V; 50/60 Hz						200 V; 3/PE; 50/60 Hz					
Option	Cat. No.	VC 600	VC 600	VC 1200*	VC 1200 W*	VC 2000*	VC 2000 W*	VC 3000	VC 3000 W	VC 5000	VC 5000 W	VC 7000	VC 7000 W	VC 10000	VC 10000 W
Heater 1.0 kW	LWZ 6095	●	-	-	-	-	-	-	-	-	-	-	-	-	-
Heater 1.1 kW	LWZ 5095	-	-	●	●	●	●	●	●	-	-	-	-	-	-
Heater 3.4 kW	LWZ 4096	-	-	-	-	-	-	-	-	●	●	●	●	-	-
Heater 5.7 kW	LWZ 4097	-	-	-	-	-	-	-	-	-	-	-	-	●	●
Pump, 3.2 bar 37 L/min**	LWZ 5100	-	-	●	●	-	-	-	-	-	-	-	-	-	-
Pump, 3.2 bar 37 L/min**	LWZ 5101	-	-	-	-	●	●	-	-	-	-	-	-	-	-
Pump, 4.8 bar 37 L/min**	LWZ 5103	-	-	●	●	-	-	-	-	-	-	-	-	-	-
Pump, 4.8 bar 37 L/min**	LWZ 5104	-	-	-	-	●	●	-	-	-	-	-	-	-	-
Pump, 4.8 bar 37 L/min**	LWZ 5102	-	-	-	-	-	-	●	●	-	-	-	-	-	-
Pump, 4.8 bar 37 L/min**	LWZ 4105	-	-	-	-	-	-	-	-	●	●	●	●	●	●
Pump, 5.0 bar 60 L/min** [Ⓢ]	LWZ 4106	-	-	-	-	-	-	-	-	●	●	●	●	●	●

* Use with high-power pumps causes a change of the height of the housing from 650 mm to 790 mm.

** Using such a pump changes the available cooling capacity

[Ⓢ] At 200 V; 3/PE-50 Hz; 4,3 bar; 60 L/min

Variocool accessories (excerpt)

Tubings EPDM

(also to use for cooling water)

Cat. No.	d _i (mm)	d _e (mm)	Temp. range °C	Pressure range max. bar
RKJ 031	13 (1/2")	19	-40...100	20
RKJ 032	19 (3/4")	27	-40...100	20
RKJ 033	25 (1")	34	-40...100	20
RKJ 111	9	11	10...120	1
RKJ 112	12	14	10...120	1

d_i = internal diameter ; d_e = external diameter



RKJ 031

Manifold connectors for VC 1200 (W) to VC 5000 (W)

For joining multiple external systems

Cat. No.	Description	Connection	Tube connection
LWZ 132	Two-port manifold	G 3/4"	2 x 1/2" and 2 x 3/4"
LWZ 133	Four-port manifold	G 3/4"	4 x 1/2" and 4 x 3/4"



LWZ 133

Ball valve

Cat. No.	Description
LWZ 134	Ball valve G 3/4" G 3/4"



LWZ 134

Heat transfer liquids

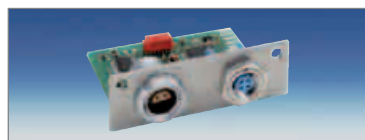
Designation	Temperature range	5 L	Cat. No. 10 L	20 L
Aqua 90	5...90 °C	LZB 120	LZB 220	LZB 320
Kryo 30	-30...90 °C	LZB 109	LZB 209	LZB 309

Interface modules

Cat. No.	Description
LRZ 912	Analog module, 2 x In, 2 x Out, 0(4)...20 mA or 0...10 V
LRZ 913	RS 232/485 interface, electrically isolated, 9-pin SUB-D
LRZ 914	Contact module NAMUR, 1 x In, 1 x Out, NE 28, 2 DIN sockets
LRZ 915	Contact module SUB-D, 3 x In, 3 x Out, 15-pin SUB-D
LRZ 917	Profibus interface, electrically isolated, 9-pin SUB-D
LRZ 918	Pt100/LiBus module



LRZ 912 LRZ 913 LRZ 914 LRZ 915 LRZ 917



LRZ 918



Order the detailed LAUDA accessories brochure and the heat transfer liquids brochure free of charge. These and additional product information can also be found at www.lauda.de

LAUDA Calibration thermostats

Calibration and adjustment with LAUDA calibration thermostats at temperatures from -40 up to 300 °C



Application examples

- Industrial production
- Testing institutes
- Calibration of thermometers
- Quality assurance in the production of temperature probes

High temperature stability, variable sample vessels, extensive range of devices and accessories

LAUDA calibration thermostats are the first choice when it comes to temperature stability, greatest reliability, and homogeneity during calibration and adjustment. The high performance complete solutions for individual requirements are available in the Ecoline Staredition and Proline models. They differ in terms of size, bath-opening, and usable depth. Thermostats, in particular, are superior to heating cabinets and metal block thermostats as the heat transfer into the heat transfer liquid is 40 to 60 times better than through the air.

Your advantages at a glance

+

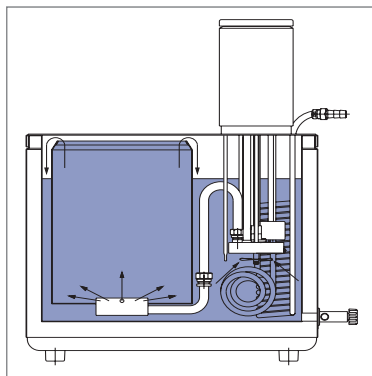
The Calibration thermostats advantages

Your benefits



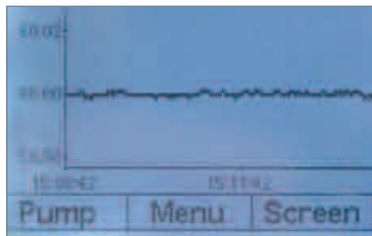
- Calibration thermostats available from two different product lines
- Temperatures down to -40 °C achievable in conjunction with LAUDA cooling units

- The ideal solution for any calibration task
- Optimised adaptation to the application can be achieved by selection of the appropriate cooling unit



- Specifically constructed internal calibration chamber based on the overflow principle
- Specially insulated low-temperature thermostats available

- Outstanding spatial temperature distribution and high temperature stability
- Consistent immersion depths
- Operation at low temperatures without formation of condensation on the outside of the devices
- Operate reliably even at high ambient temperatures



- Temperature stability of ± 0.005 K

- Allows reliable and accurate calibration of temperature measuring instruments



- Extensive range of accessories available

- Reproducible submersion and calibration of the broadest range of test samples

LAUDA Calibration thermostats

Calibration thermostats Ecoline Staredition and Proline

The calibration thermostats of the LAUDA Ecoline Staredition range offer you temperature stabilities to ± 0.01 K at temperatures down to -30 °C. The RE 212 J model with its two-line display, digital interface and basic programmer is convincing. The even more user-friendly RE 312 J offers the possibility of external control for even better accuracy and the PC software LAUDA Wintherm Plus. In the heating range, the compact Proline PJ 12/PJ 12 C models reach maximum temperatures up to 300 °C. The PJL 12/PJL 12 C were designed especially for operation with the LAUDA DLK 45 through-flow cooler and reach temperatures down to -40 °C.

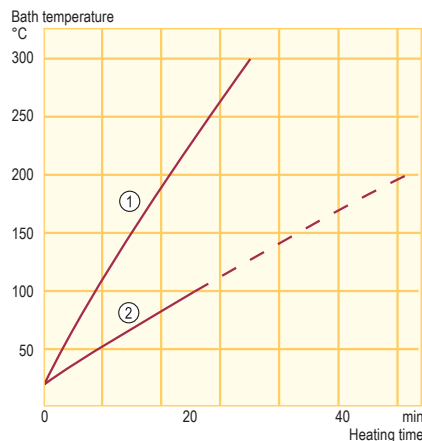


Ecoline Staredition RE 312 J



Proline PJ 12 C

Heating curves Heat transfer liquid: Ultra 300, bath closed



- ① PJ 12/PJ 12 C (to 300 °C)
PJL 12/PJL 12 C (to 200 °C)
- ② RE 212 J
RE 312 J

Temperature range

$-40 \dots 300$ °C

Included accessories

Nipples · screw caps · pump link
(only RE 212 J and RE 312 J)

Additional accessories

Bath cover · calibration racks



All technical data on page 92 and following
Other power supply variants on page 103

Technical features		RE 212 J	RE 312 J
Working temperature range*	°C	$-30 \dots 200$	$-30 \dots 200$
Temperature stability	\pm K	0.01	0.01
Resolution of indication	°C	0.05	0.05/0.01
Heater power	kW	2.25	2.25
Cooling output at 20 °C	kW	0.30	0.30
Pump pressure max.	bar	0.40	0.40
Pump flow (pressure) max.	L/min	17	17
Bath volume	L	9...12	9...12
Bath opening/usable depth	mm	\varnothing 150/180	\varnothing 150/180
Cat. No. 230 V; 50 Hz		LCK 1879	LCK 1880

Technical features		PJ 12	PJ 12 C	PJL 12	PJL 12 C
Working temperature range	°C	30...300	30...300	30...200	30...200
Operating temperature range	°C	0...300	0...300	$-40^{**} \dots 200$	$-40^{**} \dots 200$
Temperature stability	\pm K	0.01	0.01	0.01	0.01
Resolution of indication	°C	0.1	0.1/0.01/0.001	0.1	0.1/0.01/0.001
Heater power	kW	3.5	3.5	3.5	3.5
Pump pressure max.	bar	0.8	0.8	0.8	0.8
Pump flow (pressure) max.	L/min	25	25	25	25
Bath volume	L	8.5...13.5	8.5...13.5	8.5...13.5	8.5...13.5
Bath opening/depth	mm	\varnothing 120/320	\varnothing 120/320	\varnothing 120/320	\varnothing 120/320
Usable depth	mm	300	300	300	300
Cat. No. 230 V; 50/60 Hz		LCB 0720	LCB 0721	LCB 0718	LCB 0719

* Working temperature range is equal to the ACC range.

**At -40 °C in conjunction with LAUDA through-flow cooler DLK 45 (see page 85)

Calibration thermostats accessories

Calibration rack

Cat. No.	Qty. samples	Ø mm	Suitable for
UG 092	180	6,5	UB 20 F, UB 20 J

Roto racks

For thermometers or temperature probes for calibration purposes, all racks made from stainless steel, rotating and height adjustable

Cat. No.	Qty. samples	Ø mm	Height adjustable	Suitable for
UG 093	20	10	✓	UB 20 F, UB 20 J
UG 099	20	10	✓	UB 30 J
UG 100	20	10	✓	UB 40 J
UG 110	18	11	✓	RE 212 J, RE 312 J
UG 111	20	10	✓	RE 212 J, RE 312 J
UG 112	15	12	✓	PJ 12 (C), PJJ 12 (C)

Bath cover stainless steel

Cat. No.	Description	Suitable for
LTZ 032	Bath cover, circular with handle	UB 20 F, J, UB 30 J, UB 40 J UB 65 J

Platinum resistance thermometers

For use on Pt100 inputs, stainless steel version to DIN EN 60751 (for connecting cables except for Pt100-94), with Lemo connection socket, accuracy class A



UG 092



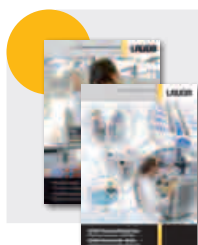
UG 099



LTZ 032



ETP 009



Order the detailed LAUDA accessories brochure and the heat transfer liquids brochure free of charge. These and additional product information can also be found at www.lauda.de

LAUDA Additional devices

Immersion coolers, through-flow coolers

Devices

Additional devices Immersion coolers

LAUDA through-flow coolers and immersion coolers are used as add-on devices to cool heating thermostats or any type of bath below ambient temperature. The preferred use of through-flow coolers is the use in conjunction with heating thermostats and integration into the cooling circuit.

LAUDA immersion coolers provide a quick way to extend the temperature range downwards when used in conjunction with heating thermostats, water baths and cooling traps. The thermostats work on the classical principle of direct evaporation, and the flexible hose connection means that they can be used without any problems. The ETK 50 even has adjustable temperature control.



Cooling using the LAUDA immersion cooler ETK 30



- Compact space-saving construction
- Carrying handles for easy transport
- Cooling coil made from high-grade stainless steel
- Flexible tube connection with special insulation (length 1.5 m)

Temperature range

-50...20 °C



Technical features		ETK 30	ETK 50
Working temperature range (without external heating)	°C	-30...20	-50...20
Operating temperature range (with external heating)	°C	-30...100	-50...100
Temperature probe		–	Pt 100
Control action		–	2-point action
Temperature stability (at -10 °C)	±K	–	0.5
Cooling output at	20 °C	kW	0.15
	-10 °C	kW	0.13
	-30 °C	kW	0.04
	-40 °C	kW	0.01
	-50 °C	kW	–
Cooling unit		Air-cooled fully hermetic	Air-cooled fully hermetic
Cooling coil (Ø x L)	mm	42x124	52x166
Dimensions (WxDxH)	mm	250x360x285	460x410x270
Weight	kg	17	33
Power consumption	kW	0.2	0.3
Cat. No. 230 V; 50/60 Hz		LFE 002	LFE 103 (230 V; 50 Hz)

Additional devices

Through-flow coolers

LAUDA through-flow coolers upgrade any type of heating thermostat with pump connections to a high-quality cooling thermostat and thus allow working below ambient temperature. Through-flow coolers replace cooling with tap water that is expensive and ecologically not recommendable. They provide a constant flow and temperature of cooling supply regardless of the variations. Therefore, it is possible to ensure optimum temperature stability over the entire period and allow reproducible temperature conditions at any time.

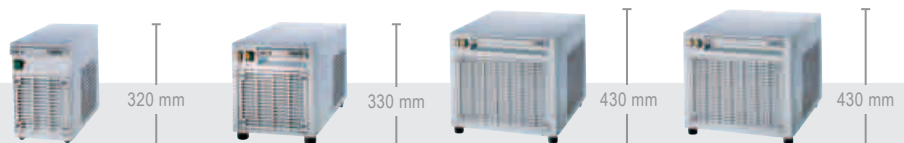


- Air-cooled, fully hermetic and thus absolutely maintenance-free cooling aggregates with heat exchangers in reasonable dimensions
- Heat exchangers are made from stainless steel.
- All refrigerated parts inside the through-flow cooler are perfectly insulated. Therefore no condensation of water or risk of corrosion.
- Low noise emissions

Temperature range
-40...150 °C



Through-flow cooler DLK 10



Technical features		DLK 10	DLK 25	DLK 45	DLK 45 LiBus
Working temperature range	°C	-15...150	-30...150	-40...150	-40...150
Cooling output at	20 °C	kW 0.25	0.33	1.1	1.1
	0 °C	kW 0.20	0.28	0.95	0.95
	-10 °C	kW 0.10	0.25	0.85	0.85
	-20 °C	kW –	0.22	0.75	0.75
	-30 °C	kW –	0.20	0.55	0.55
	-40 °C	kW –	–	0.30	0.30
Heat exchanger connections for heat carrier		M16 x 1, nipples Ø 13 mm	M16 x 1, nipples Ø 13 mm	M16 x 1, nipples Ø 13 mm	M16 x 1, nipples Ø 13 mm
Special features		Control connection for mains supply		Proportional cooling: Ultra	Proportional cooling: Proline
Dimensions (WxDxH)	mm	200x400x320	290x540x330	470x560x430	470x560x430
Weight	kg	17	33	63	63
Power consumption	kW	0.2	0.5	0.9	0.9
Cat. No. 230 V; 50 Hz		LFD 010 (230 V; 50/60 Hz)	LFD 108	LFD 109	LFD 111

LAUDA Overview of accessories

Overview of accessories for constant temperature equipment

The operation of constant temperature equipment often requires the use of accessories. Only with the appropriate testing stands, connecting parts, reducers, various tubing/hose connections, distributors or interface modules, etc. the applications can be achieved successfully.

Additional equipment

Solenoid valve for cooling water control



Proline shut down valve/reverse flow protection



Level controller



Proline automatic filling device



Alpha accessories



Temperature probes

Platinum resistance thermometers in stainless steel tube



Connecting cables

Connecting cables



- Match your LAUDA equipment exactly; developed, constructed or programmed specifically for it
- Tested for practicality – your LAUDA contact person knows what works and what is appropriate
- Robust – LAUDA accessories are designed for durability



Order the detailed LAUDA accessories brochure. This and additional product information can also be found at www.lauda.de

Connecting plugs

Connecting plugs



Bath covers

Stainless steel bath covers



Stainless steel gable covers



Cover plates for clear-view thermostats



Overview of accessories for constant temperature equipment

Racks, platforms

Polycarbonate racks up to 100 °C



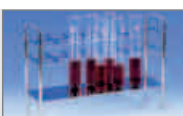
Polypropylene test tube racks, up to 95 °C



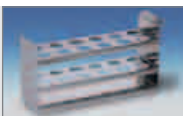
Stainless steel racks up to 100 °C



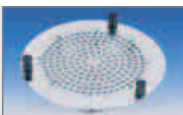
Stainless steel racks up to 300 °C



Stainless steel test tube racks up to 150 °C



Racks for calibration thermostats



Platforms and adjustable platforms



Accessories for notch bending tests



Accessories for pour point determination



Tubing

Polymer tubing



Insulation tubing



Hoses

Metal hoses (stainless steel flexible hose)



Equipment trolley

Equipment trolley and castor base



Connectors

Connectors



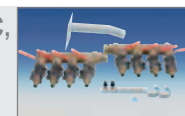
Screw caps



Manifold for temperature range -10...100 °C, for use with water/glycol



Manifold for temperature range -30...150 °C, for use with silicone oil and water/glycol



Integral XT bypass



Adapters



Double connectors



LAUDA Heat transfer liquids

Heat transfer liquids

Correct selection of the heat transfer liquid is of crucial importance for the safe and reliable operation of your thermostats. It must be suitable for the temperature range. In addition you should always use suitable tubing/hoses. More details can be found in our special brochure "Heat transfer liquids". Additional accessories are listed in the accessories brochure. Safety data sheets with the physical properties can be found on our website at: www.lauda.de.

Thanks to our decades of experience and continual tests we can offer you optimum heat transfer liquids for all LAUDA thermostats. Heat transfer liquids are available in three packing units: 5, 10 and 20 liters. When calculating the amount to be ordered, please consider the volume of the thermostat and the external circulation in addition to the bath volume.

In the table below, you can see precisely which heat transfer liquids are suitable for which temperature ranges. Please note that these details always relate to the temperature range of the heat transfer liquid, which is the limiting factor.



- Highly accurate thermostating, even at extreme temperatures
- Durability
- Simple and safe handling
- Reliability, suitable for long-term operation
- Optimal for long thermostat life
- Best possible compatibility with the environment
- Safety data sheets available upon request



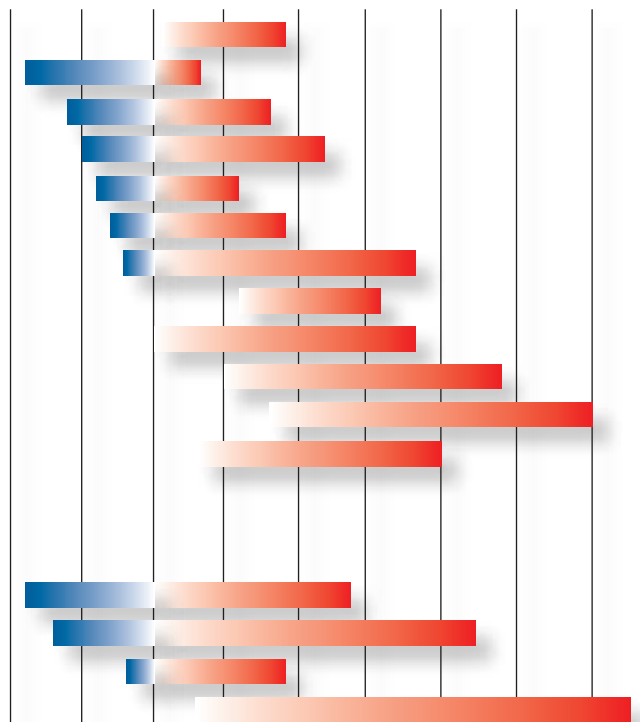
Order the detailed LAUDA brochure heat transfer liquids free of charge. This and additional product information can also be found at www.lauda.de

Open/half-open systems				
Designation	Temp. range	5 L	Cat. No.: 10 L	20 L
Aqua 90	5...90 °C	LZB 120	LZB 220	LZB 320
Kryo 90	Ⓢ -90...30 °C	LZB 128	LZB 228	LZB 328
Kryo 60	Ⓢ -60...80 °C	LZB 102	LZB 202	LZB 302
Kryo 51	Ⓢ -50...120 °C	LZB 121	LZB 221	LZB 321
Kryo 40	-40...60 °C	LZB 119	LZB 219	LZB 319
Kryo 30	-30...90 °C	LZB 109	LZB 209	LZB 309
Kryo 20	Ⓢ -20...180 °C	LZB 116	LZB 216	LZB 316
Therm 160	60...160 °C	LZB 106	LZB 206	LZB 306
Therm 180	Ⓢ 0...180 °C	LZB 114	LZB 214	LZB 314
Therm 240	Ⓢ 50...240 °C	LZB 122	LZB 222	LZB 322
Ultra 300	Ⓢ 80...300 °C	LZB 108	LZB 208	LZB 308
Ultra 350	30...200 °C	LZB 107	LZB 207	LZB 307

Closed systems flooded with cold oil (USH 400, Integral XT)				
Designation	Temp. range	5 L	Cat. No.: 10 L	20 L
Kryo 90	Ⓢ -90...140 °C	LZB 128	LZB 228	LZB 328
Kryo 70	Ⓢ -70...220 °C	LZB 127	LZB 227	LZB 327
Kryo 30	-30...90 °C	LZB 109	LZB 209	LZB 309
Ultra 350	30...350 °C	LZB 107	LZB 207	LZB 307

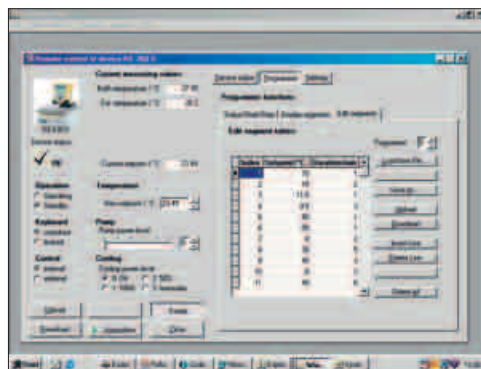
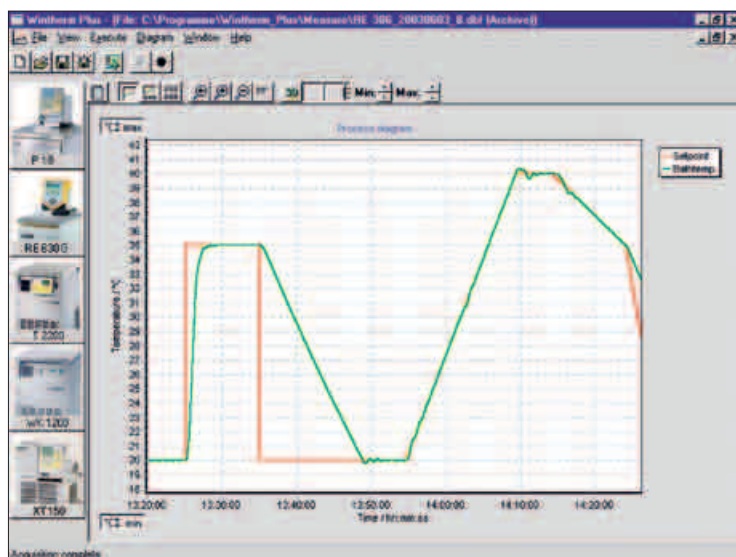
Ⓢ = Silicone oil

-100 °C -50 °C 0 °C 50 °C 100 °C 150 °C 200 °C 250 °C 300 °C



Wintherm Plus software

All LAUDA ECO Silver and ECO Gold thermostats, all Ecoline Staredition thermostats with control heads E 200 and E 300, all Proline thermostats and Proline Kryomats, all Ultra-thermostats, all circulation chillers Variocool, Microcool and WK/WKL with interface, and all LAUDA Integral process thermostats can be controlled from any PC with the LAUDA Wintherm Plus software. Requirements of the PC: at least 64 MB RAM, serial interface or USB interface or Ethernet interface.



Wintherm Plus features

- Remote setting of temperature set-point and live observance of actual bath temperature
- Monitoring of external temperature values
- Online graphic display of all values with a readily selectable time window to reduce the amount of data or to increase resolution
- Temperature program editor to create and archive temperature profiles and ramps
- Complete control of all thermostat functions such as control parameters, temperature range and pump capacity*
- Each measuring graph can be imported as an ASCII file or D-Base database into spreadsheet programs such as Microsoft Excel.
- A separate read and display software makes it possible to view and print out existing graphs in parallel and independently of the controller sections.
- Read-out of the data logger for devices with remote control Command or ECO Gold thermostats or Variocool
- Every measuring curve can be imported directly as bitmap or metafile into all graphic programs and Microsoft Word.
- Simultaneous control of up to 16 thermostats
- Serial interfaces of the PC can be addressed as RS 232 or RS 485.
- Driving of the thermostats via USB for ECO and Variocool as well as per Ethernet
- Automatic recognition of connected thermostats
- Operating languages: German and English
- Supported operation systems: Windows XP, Windows VISTA, Windows 7 (32 and 64 Bit), Windows 8 (32 und 64 Bit)

* Pump capacity not controllable with Wintherm Plus on LAUDA USH, WK/WKL, Microcool, Variocool and Integral T

LAUDA Technical data according to DIN 12876 standard



Type	Page	Working temperature range ^① °C	Working temperature range with water cooling ^② °C	Operating temperature range ^③ °C	Resolution of setting °C	Resolution of indication °C	Temperature stability ±K	Safety fittings ^④	Heater power kW	Pump type ^⑤ bar	Pump pressure max. L/min	Pump flow max. (pressure) mm	Pump connection thread Ø Nipples mm
LAUDA Aqualine													
AL 2	12	25...95	–	–	0.1/1	0.1	0.2 ^⑥	I, NFL	0.5	–	–	–	–
AL 5	12	25...95	–	–	0.1/1	0.1	0.2 ^⑥	I, NFL	0.5	–	–	–	–
AL 12	12	25...95	–	–	0.1/1	0.1	0.2 ^⑥	I, NFL	1.0	–	–	–	–
AL 18	12	25...95	–	–	0.1/1	0.1	0.2 ^⑥	I, NFL	1.2	–	–	–	–
AL 25	12	25...95	–	–	0.1/1	0.1	0.2 ^⑥	I, NFL	1.2	–	–	–	–

LAUDA Alpha														
A	16	25...100	20...100	-25...100	0.1/1	0.1	0.05	I, NFL	1.5	D	0.2	15	– ^⑦	– ^⑧
A 6	17	25*...100	20...100	-25...100	0.1/1	0.1	0.05	I, NFL	1.5	D	0.2	15	– ^⑦	– ^⑧
A 12	17	25*...100	20...100	-25...100	0.1/1	0.1	0.05	I, NFL	1.5	D	0.2	15	– ^⑦	– ^⑧
A 24	17	25*...100	20...100	-25...100	0.1/1	0.1	0.05	I, NFL	1.5	D	0.2	15	– ^⑦	– ^⑧

* With open bath

LAUDA ECO														
Silver	23	20...150	20...150	-20...150	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	– ^⑦	– ^⑦
Gold	23	20...200	20...200	-20...200	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	– ^⑦	– ^⑦
ET 6 S	29	20...100	20...100	-20...100	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	– ^⑦	– ^⑦
ET 12 S	29	20...100	20...100	-20...100	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	– ^⑦	– ^⑦
ET 15 S	27	20...100	20...100	-20...100	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	– ^⑦	13
ET 20 S	29	20...100	20...100	-20...100	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	– ^⑦	– ^⑦
ET 6 G	29	20...100	20...100	-20...100	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	– ^⑦	– ^⑦
ET 12 G	29	20...100	20...100	-20...100	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	– ^⑦	– ^⑦
ET 15 G	27	20...100	20...100	-20...100	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	M16 x 1	13
ET 20 G	29	20...100	20...100	-20...100	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	– ^⑦	– ^⑦
E 4 S	30	20...150	20...150	-20...150	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	– ^⑦	13
E 10 S	30	20...150	20...150	-20...150	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	– ^⑦	– ^⑦
E 15 S	30	20...150	20...150	-20...150	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	– ^⑦	– ^⑦
E 20 S	30	20...150	20...150	-20...150	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	– ^⑦	– ^⑦
E 25 S	30	20...150	20...150	-20...150	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	– ^⑦	– ^⑦
E 40 S	30	20...150	20...150	-20...150	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	– ^⑦	– ^⑦
E 4 G	31	20...200	20...200	-20...200	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	M16 x 1	13
E 10 G	31	20...200	20...200	-20...200	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	– ^⑦	– ^⑦
E 15 G	31	20...200	20...200	-20...200	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	– ^⑦	– ^⑦
E 20 G	31	20...200	20...200	-20...200	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	– ^⑦	– ^⑦
E 25 G	31	20...200	20...200	-20...200	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	– ^⑦	– ^⑦
E 40 G	31	20...200	20...200	-20...200	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	– ^⑦	– ^⑦
Viscocol 6	27	15...90	–	-20...50	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	–	–
Viscotemp 15 S	28	30...105	0*...105	-20...110	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	–	13
Viscotemp 18 S	27	30...105	0*...105	-20...110	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	–	13
Viscotemp 24 S	28	30...105	0*...105	-20...110	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	–	13
Viscotemp 40 S	28	30...105	0*...105	-20...110	0.01	0.01	0.01	III, FL	1.3	V	0.55	22	–	13
Viscotemp 15 G	28	30...105	0*...105	-20...110	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	M16 x 1	–
Viscotemp 18 G	27	30...105	0*...105	-20...110	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	M16 x 1	–
Viscotemp 24 G	28	30...105	0*...105	-20...110	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	M16 x 1	–
Viscotemp 40 G	28	30...105	0*...105	-20...110	0.01	0.01	0.01	III, FL	2.6	V	0.55	22	M16 x 1	–

NEW
NEW
NEW
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NEW

^① At pump level 1 ^② With external cooling/through-flow cooler ^③ III, FL: for use with flammable and non-flammable liquids; I, NFL: for use with non-flammable liquids
^④ Pump connection sets for ECO Silver and ECO Gold available as accessories. See page 32. ^⑤ Pump connection sets for Alpha available as accessories. See page 19.



Bath volume min. L	Bath volume max. L	Bath opening (WxD) mm	Bath depth mm	Usable depth mm	Height top of bath mm	Height gable cover mm	Glass pane size (WxH) mm	Dimensions (WxDxH) mm	Weight kg	Power supply [®] V; Hz	Loading kW	Cat. No.	Type
LAUDA Aqualine													
0.9	1.7	300x151	65	–	–	55	–	343x186x290	4.5	230; 50/60	0.6	LCB 0723	AL 2
1.0	5.0	300x151	150	–	–	55	–	343x186x290	5.0	230; 50/60	0.6	LCB 0724	AL 5
2.0	11.7	329x300	150	–	–	90	–	372x335x325	8.5	230; 50/60	1.1	LCB 0725	AL 12
3.0	18.2	505x300	150	–	–	90	–	548x335x325	11.5	230; 50/60	1.3	LCB 0726	AL 18
3.0	25.2	505x300	200	–	–	90	–	548x335x375	13.5	230; 50/60	1.3	LCB 0727	AL 25

LAUDA Alpha													
–	50.0	–	Min. 150	Min. 100	–	–	–	125x150x300	3.5	230; 50/60	1.5	LCE 0226	A
2.5	5.5	145x161	150	130	212	–	–	181x332x370	6.2	230; 50/60	1.5	LCB 0733	A 6
8	12	235x161	200	180	262	–	–	270x332x420	7.5	230; 50/60	1.5	LCB 0734	A 12
18	25	295x374	200	180	262	–	–	332x535x420	10.5	230; 50/60	1.5	LCB 0735	A 24

LAUDA ECO													
–	–	–	Min. 150	–	–	–	–	130x135x325	3.0	230; 50/60	1.4	LCE 0227	Silver
–	–	–	Min. 150	–	–	–	–	130x135x325	3.4	230; 50/60	2.7	LCE 0228	Gold
5.0	6.0	130x285	160	140	169	–	–	143x433x349	4.1	230; 50/60	1.4	LCM 0096	ET 6 S
9.5	12.0	300x175	160	140	208	–	–	322x331x389	6.4	230; 50/60	1.4	LCD 0286	E T 12 S
13.5	15.0	275x130	310	290	356	–	–	428x148x532	6.4	230; 50/60	1.4	LCD 0288	E T 15 S
15.0	20.0	300x350	160	140	208	–	–	322x506x389	7.6	230; 50/60	1.4	LCD 0290	E T 20 S
5.0	6.0	130x285	160	140	169	–	–	143x433x349	4.5	230; 50/60	2.7	LCM 0097	E T 6 G
9.5	12.0	300x175	160	140	208	–	–	322x331x389	6.8	230; 50/60	2.7	LCD 0287	E T 12 G
13.5	15.0	275x130	310	290	356	–	–	428x148x532	6.8	230; 50/60	2.7	LCD 0289	E T 15 G
15.0	20.0	300x350	160	140	208	–	–	322x506x389	8.0	230; 50/60	2.7	LCD 0291	E T 20 G
3.0	3.5	135x105	150	130	196	–	–	168x272x376	6.6	230; 50/60	1.4	LCB 0736	E 4 S
7.5	11.0	300x190	150	130	196	–	–	331x361x376	8.6	230; 50/60	1.4	LCB 0738	E 10 S
12.0	16.0	300x190	200	180	246	–	–	331x361x426	10.3	230; 50/60	1.4	LCB 0740	E 15 S
10.0	17.0	300x365	150	130	196	–	–	331x537x376	11.8	230; 50/60	1.4	LCB 0742	E 20 S
16.0	23.0	300x365	200	180	246	–	–	331x537x426	13.1	230; 50/60	1.4	LCB 0744	E 25 S
30.0	43.0	300x613	200	180	248	–	–	350x803x428	17.2	230; 50/60	1.4	LCB 0746	E 40 S
3.0	3.5	135x105	150	130	196	–	–	168x272x376	7.0	230; 50/60	2.7	LCB 0737	E 4 G
7.5	11.0	300x190	150	130	196	–	–	331x361x376	9.0	230; 50/60	2.7	LCB 0739	E 10 G
12.0	16.0	300x190	200	180	246	–	–	331x361x426	10.7	230; 50/60	2.7	LCB 0741	E 15 G
10.0	17.0	300x365	150	130	196	–	–	331x537x376	12.2	230; 50/60	2.7	LCB 0743	E 20 G
16.0	23.0	300x365	200	180	246	–	–	331x537x426	13.5	230; 50/60	2.7	LCB 0745	E 25 G
30.0	43.0	300x613	200	180	248	–	–	350x803x428	17.6	230; 50/60	2.7	LCB 0747	E 40 G
6.4	6.5	188x128	330	285	350	–	–	206x415x530	–	230; 50	1.4	LCD 0292	Viscotemp 6
16.0	19	252x145	320	285	370	–	152x223	532x233x552	22.0	230; 50	1.4	LCD 0296	Viscotemp 15 S
16.5	18.5	Ø290	320	285	330	–	–	Ø310x510	9.0	230; 50	1.4	LCD 0294	Viscotemp 18 S
22.5	27	430x145	320	285	330	–	329x233	708x233x552	28.0	230; 50	1.4	LCD 0298	Viscotemp 24 S
37.5	44	430x230	320	285	330	–	329x233	708x328x552	33.0	230; 50	1.4	LCD 0300	Viscotemp 40 S
16.0	19	252x145	320	285	370	–	152x233	532x233x552	22.4	230; 50	2.7	LCD 0297	Viscotemp 15 G
16.5	18.5	Ø290	320	285	330	–	–	Ø310x510	9.4	230; 50	2.7	LCD 0295	Viscotemp 18 G
22.5	27	430x145	320	285	330	–	329x233	708x233x552	28.4	230; 50	2.7	LCD 0299	Viscotemp 24 G
37.5	44	430x230	320	285	330	–	329x233	708x328x552	33.4	230; 50	2.7	LCD 0301	Viscotemp 40 G

[®] D: pressure pump; V: Vario pump, pressure pump with 6 selectable pump levels

[®] Other power supply variants on page 102

[®] At 37 °C

LAUDA Technical data according to DIN 12876 standard



Technical data

Type	Page	Working temperature range ^① °C	Working temperature range with water cooling °C	Operating temperature range ^② °C	Resolution of setting °C	Resolution of indication °C	Temperature stability ±K	Safety fittings ^③	Heater power kW	Pump type ^④	Pump pressure max. bar	Pump suction max. bar	Pump flow max. (pressure) L/min	Pump flow max. (suction) L/min	Pump connection thread mm	Ø Nipples mm
LAUDA Proline																
P 5	38	35...300	20...300	-30...300	0.1/0.01	0.01	0.01	III, FL	3.5	VF	0.7	0.4	25	23	M16 x 1	13
P 8	38	35...300	20...300	-30...300	0.1/0.01	0.01	0.01	III, FL	3.5	VF	0.7	0.4	25	23	M16 x 1	13
P 12	38	30...300	20...300	-30...300	0.1/0.01	0.01	0.01	III, FL	3.5	VFP	1.1	-	32	-	M16 x 1	13
P 18	38	30...300	20...300	-30...300	0.1/0.01	0.01	0.01	III, FL	3.5	VF	0.7	0.4	25	23	M16 x 1	13
P 26	39	30...300	20...300	-30...300	0.1/0.01	0.01	0.01	III, FL	3.5	VF	0.7	0.4	25	23	M16 x 1	13
P 40	39	30...300*	20...300	-30...300*	0.01	0.1/0.01	0.01	III, FL	3.5	VF	0.7	0.4	25	23	M16 x 1	13
P 50	39	30...300*	20...300	-30...300*	0.01	0.1/0.01	0.01	III, FL	3.5	VF	0.7	0.4	25	23	M16 x 1	13
P 5 C	40	35...300	20...300	-30...300	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	VF	0.7	0.4	25	23	M16 x 1	13
P 8 C	40	35...300	20...300	-30...300	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	VF	0.7	0.4	25	23	M16 x 1	13
P 12 C	40	30...300	20...300	-30...300	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	VFP	1.1	-	32	-	M16 x 1	13
P 18 C	40	30...300	20...300	-30...300	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	VF	0.7	0.4	25	23	M16 x 1	13
P 26 C	41	30...300	20...300	-30...300	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	VF	0.7	0.4	25	23	M16 x 1	13
P 40 C	41	30...300*	20...300	-30...300*	0.01	0.1/0.01	0.01	III, FL	3.5	VF	0.7	0.4	25	23	M16 x 1	13
P 50 C	41	30...300*	20...300	-30...300*	0.01	0.1/0.01	0.01	III, FL	3.5	VF	0.7	0.4	25	23	M16 x 1	13
PV 15	42	30...230	20...230	0...230	0.1/0.01	0.01	0.01	III, FL	3.5	VFP	0.8	-	25	-	M16 x 1	13
PV 24	42	30...230	20...230	0...230	0.1/0.01	0.01	0.01	III, FL	3.5	VFP	0.8	-	25	-	M16 x 1	13
PV 36	42	30...230	20...230	0...230	0.1/0.01	0.01	0.01	III, FL	3.5	VFP	0.8	-	25	-	M16 x 1	13
PV 15 C	42	30...230	20...230	0...230	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	VFP	0.8	-	25	-	M16 x 1	13
PV 24 C	42	30...230	20...230	0...230	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	VFP	0.8	-	25	-	M16 x 1	13
PV 36 C	42	30...230	20...230	0...230	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	VFP	0.8	-	25	-	M16 x 1	13
PVL 15	42	30...100	20...100	-60...100	0.1/0.01	0.01	0.01	III, FL	3.5	VFP	0.8	-	25	-	M16 x 1	13
PVL 24	42	30...100	20...100	-60...100	0.1/0.01	0.01	0.01	III, FL	3.5	VFP	0.8	-	25	-	M16 x 1	13
PVL 15 C	42	30...100	20...100	-60...100	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	VFP	0.8	-	25	-	M16 x 1	13
PVL 24 C	42	30...100	20...100	-60...100	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	VFP	0.8	-	25	-	M16 x 1	13
PB	43	30...300	20...300	-30...300	0.1/0.01	0.01	0.01	III, FL	3.5	VF	0.7	0.4	25	23	M16 x 1	13
PB C	43	30...300	20...300	-30...300	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	VF	0.7	0.4	25	23	M16 x 1	13
PBD	43	30...300	20...300	-30...300	0.1/0.01	0.01	0.01	III, FL	3.5	VFP	1.1	-	32	-	M16 x 1	13
PBD C	43	30...300	20...300	-30...300	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	VFP	1.1	-	32	-	M16 x 1	13

* Max. temperature only with bath cover

LAUDA calibration thermostats																
RE 212 J	82	-30...200	-	-	0.1/0.01	0.05	0.01	III, FL	2.25	V	0.40	-	17	-	M16 x 1	13
RE 312 J	82	-30...200	-	-	0.1/0.01	0.05/0.01	0.01	III, FL	2.25	V	0.40	-	17	-	M16 x 1	13
PJ 12	82	30...300	20...300	0...300	0.1/0.01	0.01	0.01	III, FL	3.5	VFP	0.8	-	25	-	M16 x 1	13
PJ 12 C	82	30...300	20...300	0...300	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	VFP	0.8	-	25	-	M16 x 1	13
PJL 12	82	30...200	20...200	-40...200	0.1/0.01	0.01	0.01	III, FL	3.5	VFP	0.8	-	25	-	M16 x 1	13
PJL 12 C	82	30...200	20...200	-40...200	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	VFP	0.8	-	25	-	M16 x 1	13

① At pump level 1

② With external cooling/add-on cooler

③ III, FL: for use with flammable and non-flammable liquids; I, NFL: for use with non-flammable liquids



Bath volume min.	Bath volume max.	Bath opening (WxD)	Bath depth	Usable depth	Height top of bath	Glass pane size (WxH)	Dimensions (WxDxH)	Weight	Power supply [®]	Loading	Cat. No.	Type
L	L	mm	mm	mm	mm	mm	mm	kg	V; Hz	kW		
LAUDA Proline												
3.5	5.5	150x50	200	180	254	–	200x260x454	12.0	230; 50/60	3.6	LCB 0708	P 5
5.5	8.0	150x150	200	180	254	–	200x360x454	14.0	230; 50/60	3.6	LCB 0710	P 8
6.5	13.5	150x150	320	300	374	–	220x360x574	16.0	230; 50/60	3.6	LCB 0716	P 12
12.5	19.0	300x200	200	180	254	–	370x410x454	19.0	230; 50/60	3.6	LCB 0712	P 18
18.0	27.0	300x350	200	180	254	–	370x560x454	24.0	230; 50/60	3.6	LCB 0714	P 26
30.0	37.0	250x270	450	430	510	–	320x545x710	24.0	230; 50/60	3.6	LCB 0728	P 40
35.0	53.0	300x750	200	180	260	–	1025x350x454	24.0	230; 50/60	3.6	LCB 0730	P 50
3.5	5.5	150x50	200	180	254	–	200x260x454 [®]	12.0	230; 50/60	3.6	LCB 0709	P 5 C
5.5	8.0	150x150	200	180	254	–	200x360x454 [®]	14.0	230; 50/60	3.6	LCB 0711	P 8 C
6.5	13.5	150x150	320	300	374	–	220x360x574 [®]	16.0	230; 50/60	3.6	LCB 0717	P 12 C
12.5	19.0	300x200	200	180	254	–	370x410x454 [®]	19.0	230; 50/60	3.6	LCB 0713	P 18 C
18.0	27.0	300x350	200	180	254	–	370x560x454 [®]	24.0	230; 50/60	3.6	LCB 0715	P 26 C
30.0	37.0	250x270	450	430	510	–	320x545x710 [®]	24.0	230; 50/60	3.6	LCB 0729	P 40 C
35.0	53.0	300x750	200	180	260	–	1025x350x454 [®]	24.0	230; 50/60	3.6	LCB 0731	P 50 C
11.0	15.0	230x135	320	285	390	149x230	506x282x590	26.0	230; 50/60	3.6	LCD 0276	PV 15
19.0	24.0	405x135	320	285	390	326x230	740x282x590	36.0	230; 50/60	3.6	LCD 0278	PV 24
28.0	36.0	585x135	320	285	390	506x230	1040x282x590	44.0	230; 50/60	3.6	LCD 0280	PV 36
11.0	15.0	230x135	320	285	390	149x230	506x282x590 [®]	26.0	230; 50/60	3.6	LCD 0277	PV 15 C
19.0	24.0	405x135	320	285	390	326x230	740x282x590 [®]	36.0	230; 50/60	3.6	LCD 0279	PV 24 C
28.0	36.0	585x135	320	285	390	506x230	1040x282x590 [®]	44.0	230; 50/60	3.6	LCD 0281	PV 36 C
11.0	15.0	230x135	320	285	390	149x230	506x282x590	28.0	230; 50/60	3.6	LCD 0282	PVL 15
19.0	24.0	405x135	320	285	390	326x230	740x282x590	39.0	230; 50/60	3.6	LCD 0284	PVL 24
11.0	15.0	230x135	320	285	390	149x230	506x282x590 [®]	28.0	230; 50/60	3.6	LCD 0283	PVL 15 C
19.0	24.0	405x135	320	285	390	326x230	740x282x590 [®]	39.0	230; 50/60	3.6	LCD 0285	PVL 24 C
–	80.0	**	Min. 200	–	–	–	– x185x400	8.0	230; 50/60	3.6	LCG 0090	PB
–	80.0	**	Min. 200	–	–	–	– x185x520 [®]	8.0	230; 50/60	3.6	LCG 0091	PB C
–	80.0	**	Min. 320	–	–	–	– x185x400	8.0	230; 50/60	3.6	LCG 0092	PBD
–	80.0	**	Min. 320	–	–	–	– x185x520 [®]	8.0	230; 50/60	3.6	LCG 0093	PBD C

** The telescopic rod can be extended for bath widths 310...550 mm

LAUDA calibration thermostats												
9.0	12.0	Ø 150	200	180	441	–	250x400x602	30.0	230; 50	2.3	LCK 1879	RE 212 J
9.0	12.0	Ø 150	200	180	441	–	250x400x602	30.0	230; 50	2.3	LCK 1880	RE 312 J
8.5	13.5	Ø 120	320	300	374	–	220x360x574	17.0	230; 50/60	3.6	LCB 0720	PJ 12
8.5	13.5	Ø 120	320	300	374	–	220x360x574 [®]	17.0	230; 50/60	3.6	LCB 0721	PJ 12 C
8.5	13.5	Ø 120	320	300	374	–	220x360x574	17.0	230; 50/60	3.6	LCB 0718	PJL 12
8.5	13.5	Ø 120	320	300	374	–	220x360x574 [®]	17.0	230; 50/60	3.6	LCB 0719	PJL 12 C

[®] D: pressure pump; Du: Duplex pump, pressure/suction pump; V: Vario pump, pressure pump with 5 selectable output steps; VF: Varioflex pump, pressure/suction pump with 8 selectable output steps; VFP: Varioflex pump, pressure pump with 8 selectable output steps [®] Other power supply variants on page 103 [®] With Command remote control: 56 mm higher

LAUDA Technical data according to DIN 12876 standard



Type	Page	Working temperature range (equal to ACC range) ^①	Resolution of setting	Resolution of indication	Temperature stability	Safety fittings ^②	Heater power	Effective cooling output ^③														
								(measured with ethanol, 20 °C ambient temperature)														
		°C	°C	°C	±K		kW	kW	150 °C (thermal oil)	20 °C	0 °C	-20 °C	-30 °C	-40 °C	-45 °C	-50 °C	-55 °C	-60 °C	-70 °C	-80 °C	-90 °C	
LAUDA Alpha																						
RA 8	18	-25...100	0.1	0.1	0.05	I, NFL	1.5	0.225	0.16	0.08	-	-	-	-	-	-	-	-	-	-	-	-
RA 12	18	-25...100	0.1	0.1	0.05	I, NFL	1.5	0.325	0.26	0.08	-	-	-	-	-	-	-	-	-	-	-	-
RA 24	18	-25...100	0.1	0.1	0.05	I, NFL	1.5	0.425	0.33	0.08	-	-	-	-	-	-	-	-	-	-	-	-
LAUDA ECO																						
RE 415 S	24	-15...150	0.01	0.01	0.02	III, FL	1.3	0.18	0.12	0.03 ^④	-	-	-	-	-	-	-	-	-	-	-	-
RE 420 S	24	-20...150	0.01	0.01	0.02	III, FL	1.3	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-	-
RE 620 S	24	-20...150	0.01	0.01	0.02	III, FL	1.3	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-	-
RE 630 S	24	-30...150	0.01	0.01	0.02	III, FL	1.3	0.30	0.24	0.10	0.02	-	-	-	-	-	-	-	-	-	-	-
RE 1050 S	24	-50...150	0.01	0.01	0.02	III, FL	1.3	0.70	0.60	0.35	0.19	0.10	-	0.02	-	-	-	-	-	-	-	-
RE 1225 S	24	-25...150	0.01	0.01	0.02	III, FL	1.3	0.30	0.24	0.09	0.04 ^④	-	-	-	-	-	-	-	-	-	-	-
RE 2025 S	24	-25...150	0.01	0.01	0.02	III, FL	1.3	0.30	0.23	0.06	0.03 ^④	-	-	-	-	-	-	-	-	-	-	-
RE 415 G	25	-15...200	0.01	0.01	0.02	III, FL	2.6	0.18	0.12	0.03 ^④	-	-	-	-	-	-	-	-	-	-	-	-
RE 420 G	25	-20...200	0.01	0.01	0.02	III, FL	2.6	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-	-
RE 620 G	25	-20...200	0.01	0.01	0.02	III, FL	2.6	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-	-
RE 630 G	25	-30...200	0.01	0.01	0.02	III, FL	2.6	0.30	0.24	0.10	0.02	-	-	-	-	-	-	-	-	-	-	-
RE 1050 G	25	-50...200	0.01	0.01	0.02	III, FL	2.6	0.70	0.60	0.35	0.19	0.10	-	0.02	-	-	-	-	-	-	-	-
RE 1225 G	25	-25...200	0.01	0.01	0.02	III, FL	2.6	0.30	0.24	0.09	0.04 ^④	-	-	-	-	-	-	-	-	-	-	-
RE 2025 G	25	-25...200	0.01	0.01	0.02	III, FL	2.6	0.30	0.23	0.06	0.03 ^④	-	-	-	-	-	-	-	-	-	-	-
RE 415 SW	26	-15...150	0.01	0.01	0.02	III, FL	1.3	0.18	0.12	0.03 ^④	-	-	-	-	-	-	-	-	-	-	-	-
RE 420 SW	26	-20...150	0.01	0.01	0.02	III, FL	1.3	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-	-
RE 620 SW	26	-20...150	0.01	0.01	0.02	III, FL	1.3	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-	-
RE 630 SW	26	-30...150	0.01	0.01	0.02	III, FL	1.3	0.30	0.24	0.10	0.02	-	-	-	-	-	-	-	-	-	-	-
RE 1050 SW	26	-50...150	0.01	0.01	0.02	III, FL	1.3	0.70	0.60	0.35	0.19	0.10	-	0.02	-	-	-	-	-	-	-	-
RE 1225 SW	26	-25...150	0.01	0.01	0.02	III, FL	1.3	0.30	0.24	0.09	0.04 ^④	-	-	-	-	-	-	-	-	-	-	-
RE 2025 SW	26	-25...150	0.01	0.01	0.02	III, FL	1.3	0.30	0.23	0.06	0.03 ^④	-	-	-	-	-	-	-	-	-	-	-
RE 415 GW	26	-15...200	0.01	0.01	0.02	III, FL	2.6	0.18	0.12	0.03 ^④	-	-	-	-	-	-	-	-	-	-	-	-
RE 420 GW	26	-20...200	0.01	0.01	0.02	III, FL	2.6	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-	-
RE 620 GW	26	-20...200	0.01	0.01	0.02	III, FL	2.6	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-	-
RE 630 GW	26	-30...200	0.01	0.01	0.02	III, FL	2.6	0.30	0.24	0.10	0.02	-	-	-	-	-	-	-	-	-	-	-
RE 1050 GW	26	-50...200	0.01	0.01	0.02	III, FL	2.6	0.70	0.60	0.35	0.19	0.10	-	0.02	-	-	-	-	-	-	-	-
RE 1225 GW	26	-25...200	0.01	0.01	0.02	III, FL	2.6	0.30	0.24	0.09	0.04 ^④	-	-	-	-	-	-	-	-	-	-	-
RE 2025 GW	26	-25...200	0.01	0.01	0.02	III, FL	2.6	0.30	0.23	0.06	0.03 ^④	-	-	-	-	-	-	-	-	-	-	-
LAUDA ECO with natural refrigerants																						
RE 420 SN	24	-20...150	0.01	0.01	0.02	III, FL	1.3	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-	-
RE 620 SN	24	-20...150	0.01	0.01	0.02	III, FL	1.3	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-	-
RE 630 SN	24	-30...150	0.01	0.01	0.02	III, FL	1.3	0.30	0.24	0.10	0.02	-	-	-	-	-	-	-	-	-	-	-
RE 1050 SN	24	-50...150	0.01	0.01	0.02	III, FL	1.3	0.70	0.60	0.35	0.19	0.10	-	0.02	-	-	-	-	-	-	-	-
RE 1225 SN	24	-25...150	0.01	0.01	0.02	III, FL	1.3	0.30	0.24	0.09	0.04 ^④	-	-	-	-	-	-	-	-	-	-	-
RE 2025 SN	24	-25...150	0.01	0.01	0.02	III, FL	1.3	0.30	0.23	0.06	0.03 ^④	-	-	-	-	-	-	-	-	-	-	-
RE 420 GN	25	-20...200	0.01	0.01	0.02	III, FL	2.6	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-	-
RE 620 GN	25	-20...200	0.01	0.01	0.02	III, FL	2.6	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-	-
RE 630 GN	25	-30...200	0.01	0.01	0.02	III, FL	2.6	0.30	0.24	0.10	0.02	-	-	-	-	-	-	-	-	-	-	-
RE 1050 GN	25	-50...200	0.01	0.01	0.02	III, FL	2.6	0.70	0.60	0.35	0.19	0.10	-	0.02	-	-	-	-	-	-	-	-
RE 1225 GN	25	-25...200	0.01	0.01	0.02	III, FL	2.6	0.30	0.24	0.09	0.04 ^④	-	-	-	-	-	-	-	-	-	-	-
RE 2025 GN	25	-25...200	0.01	0.01	0.02	III, FL	2.6	0.30	0.23	0.06	0.03 ^④	-	-	-	-	-	-	-	-	-	-	-



Due to national and international (security) regulations, the application and the transport of ECO devices with natural refrigerants is limited on the area of the EU and Switzerland in 230 V; 50 Hz only.

^① At pump level 2 (ECO) and pump level 3 (Proline) ^② III, FL: for use with flammable and non-flammable liquids; I, NFL: only for non-flammable liquids
^③ Cooling output at -15 °C ^④ Cooling output at -25 °C



Pump type [®]	Pump pressure max.	Pump suction max.	Pump flow max. (pressure)	Pump flow max. (suction)	Pump connection thread	Ø Nipples	Bath volume min.	Bath volume max.	Bath opening (WxD)	Bath depth	Usable depth	Height top of bath	Dimensions (WxDxH)	Weight	Power supply [®]	Loading	Cat. No.	Type
bar	bar	L/min	L/min	mm	mm	L	L	mm	mm	mm	mm	mm	mm	kg	V; Hz	kW		
LAUDA Alpha																		
–	0.2	–	15	–	–	13	5.0	7.5	165x177	160	140	450	235x500x605	31.0	230; 50	1.8	LCK 1907	RA 8
–	0.2	–	15	–	–	13	9.5	14.5	300x203	160	140	450	365x500x605	37.0	230; 50	1.8	LCK 1908	RA 12
–	0.2	–	15	–	–	13	14.0	22.0	350x277	160	140	450	415x605x605	43.0	230; 50	1.8	LCK 1909	RA 24

LAUDA ECO																		
V	0.55	–	22	–	L [®]	13	3.3	4.0	130x105	160	140	365	180x350x546	19.6	230; 50	1.6	LCK 1910	RE 415 S
V	0.55	–	22	–	L [®]	13	3.3	4.0	130x105	160	140	374	180x396x555	21.6	230; 50	1.6	LCK 1912	RE 420 S
V	0.55	–	22	–	L [®]	13	4.6	5.7	150x130	160	140	400	200x430x581	23.3	230; 50	1.6	LCK 1914	RE 620 S
V	0.55	–	22	–	L [®]	13	4.6	5.7	150x130	160	140	400	200x430x581	27.2	230; 50	1.7	LCK 1916	RE 630 S
V	0.55	–	22	–	L [®]	13	8.0	10.0	200x200	160	140	443	280x440x624	34.6	230; 50	2.0	LCK 1918	RE 1050 S
V	0.55	–	22	–	L [®]	13	9.3	12.0	200x200	200	180	443	250x435x624	30.0	230; 50	1.7	LCK 1920	RE 1225 S
V	0.55	–	22	–	L [®]	13	14.0	20.0	300x350	160	140	443	350x570x624	37.0	230; 50	1.7	LCK 1922	RE 2025 S
V	0.55	–	22	–	M16 x 1	13	3.3	4.0	130x105	160	140	365	180x350x546	20.0	230; 50	2.8	LCK 1911	RE 415 G
V	0.55	–	22	–	M16 x 1	13	3.3	4.0	130x105	160	140	374	180x396x555	22.0	230; 50	2.8	LCK 1913	RE 420 G
V	0.55	–	22	–	M16 x 1	13	4.6	5.7	150x130	160	140	400	200x430x581	23.7	230; 50	2.8	LCK 1915	RE 620 G
V	0.55	–	22	–	M16 x 1	13	4.6	5.7	150x130	160	140	400	200x430x581	27.6	230; 50	2.8	LCK 1917	RE 630 G
V	0.55	–	22	–	M16 x 1	13	8.0	10.0	200x200	160	140	443	280x440x624	35.0	230; 50	3.3	LCK 1919	RE 1050 G
V	0.55	–	22	–	M16 x 1	13	9.3	12.0	200x200	200	180	443	250x435x624	30.4	230; 50	2.9	LCK 1921	RE 1225 G
V	0.55	–	22	–	M16 x 1	13	14.0	20.0	300x350	160	140	443	350x570x624	37.4	230; 50	2.9	LCK 1923	RE 2025 G
V	0.55	–	22	–	L [®]	13	3.3	4.0	130x105	160	140	365	180x350x546	20.5	230; 50	1.6	LCK 1924	RE 415 SW
V	0.55	–	22	–	L [®]	13	3.3	4.0	130x105	160	140	374	180x396x555	22.5	230; 50	1.6	LCK 1926	RE 420 SW
V	0.55	–	22	–	L [®]	13	4.6	5.7	150x130	160	140	400	200x430x581	24.3	230; 50	1.6	LCK 1928	RE 620 SW
V	0.55	–	22	–	L [®]	13	4.6	5.7	150x130	160	140	400	200x430x581	28.2	230; 50	1.7	LCK 1930	RE 630 SW
V	0.55	–	22	–	L [®]	13	8.0	10.0	200x200	160	140	443	280x440x624	35.6	230; 50	2.0	LCK 1932	RE 1050 SW
V	0.55	–	22	–	L [®]	13	9.3	12.0	200x200	200	180	443	250x435x624	31.2	230; 50	1.7	LCK 1934	RE 1225 SW
V	0.55	–	22	–	L [®]	13	14.0	20.0	300x350	160	140	443	350x570x624	38.4	230; 50	1.7	LCK 1936	RE 2025 SW
V	0.55	–	22	–	M16 x 1	13	3.3	4.0	130x105	160	140	365	180x350x546	20.9	230; 50	2.8	LCK 1925	RE 415 GW
V	0.55	–	22	–	M16 x 1	13	3.3	4.0	130x105	160	140	374	180x396x555	22.9	230; 50	2.8	LCK 1927	RE 420 GW
V	0.55	–	22	–	M16 x 1	13	4.6	5.7	150x130	160	140	400	200x430x581	24.7	230; 50	2.8	LCK 1929	RE 620 GW
V	0.55	–	22	–	M16 x 1	13	4.6	5.7	150x130	160	140	400	200x430x581	28.6	230; 50	2.9	LCK 1931	RE 630 GW
V	0.55	–	22	–	M16 x 1	13	8.0	10.0	200x200	160	140	443	280x440x624	36.0	230; 50	3.3	LCK 1933	RE 1050 GW
V	0.55	–	22	–	M16 x 1	13	9.3	12.0	200x200	200	180	443	250x435x624	31.6	230; 50	2.9	LCK 1935	RE 1225 GW
V	0.55	–	22	–	M16 x 1	13	14.0	20.0	300x350	160	140	443	350x570x624	38.5	230; 50	2.9	LCK 1937	RE 2025 GW

LAUDA ECO with natural refrigerants																		
V	0.55	–	22	–	L [®]	13	3.3	4.0	130x105	160	140	374	180x396x555	22.5	230; 50	1.6	LCK 1940	RE 420 SN
V	0.55	–	22	–	L [®]	13	4.6	5.7	150x130	160	140	400	200x430x581	24.3	230; 50	1.6	LCK 1942	RE 620 SN
V	0.55	–	22	–	L [®]	13	4.6	5.7	150x130	160	140	400	200x430x581	28.2	230; 50	1.7	LCK 1944	RE 630 SN
V	0.55	–	22	–	L [®]	13	8.0	10.0	200x200	160	140	443	280x440x624	35.6	230; 50	2.0	LCK 1946	RE 1050 SN
V	0.55	–	22	–	L [®]	13	9.3	12.0	200x200	200	180	443	250x435x624	31.2	230; 50	1.7	LCK 1948	RE 1225 SN
V	0.55	–	22	–	L [®]	13	14.0	20.0	300x350	160	140	443	350x570x624	38.4	230; 50	1.7	LCK 1950	RE 2025 SN
V	0.55	–	22	–	M16 x 1	13	3.3	4.0	130x105	160	140	374	180x396x555	22.9	230; 50	2.8	LCK 1941	RE 420 GN
V	0.55	–	22	–	M16 x 1	13	4.6	5.7	150x130	160	140	400	200x430x581	24.7	230; 50	2.8	LCK 1943	RE 620 GN
V	0.55	–	22	–	M16 x 1	13	4.6	5.7	150x130	160	140	400	200x430x581	28.6	230; 50	2.8	LCK 1945	RE 630 GN
V	0.55	–	22	–	M16 x 1	13	8.0	10.0	200x200	160	140	443	280x440x624	36.0	230; 50	3.3	LCK 1947	RE 1050 GN
V	0.55	–	22	–	M16 x 1	13	9.3	12.0	200x200	200	180	443	250x435x624	31.6	230; 50	2.9	LCK 1949	RE 1225 GN
V	0.55	–	22	–	M16 x 1	13	14.0	20.0	300x350	160	140	443	350x570x624	38.5	230; 50	2.9	LCK 1951	RE 2025 GN

[®] D: pressure pump; V: Vario pump, pressure pump with 6 selectable output steps for ECO and 4 selectable output steps for Proline Kryomats; VF: Varioflex pump, pressure/suction pump with 8 selectable output steps [®] Other power supply variants on page 104 [®] Pump connection sets for ECO Silver and ECO Gold available as accessories. See page 32.

LAUDA Technical data according to DIN 12876 standard



Technical data

Type	Page	Working temperature range (equal to ACC range) ^①		Resolution of setting °C	Resolution of indication °C	Temperature stability ±K	Safety fittings ^②	Heater power kW	Effective cooling output ^③ (measured with ethanol, 20 °C ambient temperature)												
		°C	°C						150 °C (thermal oil)	20 °C	0 °C	-20 °C	-30 °C	-40 °C	-45 °C	-50 °C	-55 °C	-60 °C	-70 °C	-80 °C	-90 °C
LAUDA ECO with natural refrigerants																					
RE 420 SWN	26	-20...150	0.01	0.01	0.02	III, FL	1.3	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-
RE 620 SWN	26	-20...150	0.01	0.01	0.02	III, FL	1.3	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-
RE 630 SWN	26	-30...150	0.01	0.01	0.02	III, FL	1.3	0.30	0.24	0.10	0.02	-	-	-	-	-	-	-	-	-	-
RE 1050 SWN	26	-50...150	0.01	0.01	0.02	III, FL	1.3	0.70	0.60	0.35	0.19	0.10	-	0.02	-	-	-	-	-	-	-
RE 1225 SWN	26	-25...150	0.01	0.01	0.02	III, FL	1.3	0.30	0.24	0.09	0.04 ^③	-	-	-	-	-	-	-	-	-	-
RE 2025 SWN	26	-25...150	0.01	0.01	0.02	III, FL	1.3	0.30	0.23	0.06	0.03 ^③	-	-	-	-	-	-	-	-	-	-
RE 420 GWN	26	-20...200	0.01	0.01	0.02	III, FL	2.6	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-
RE 620 GWN	26	-20...200	0.01	0.01	0.02	III, FL	2.6	0.20	0.15	0.03	-	-	-	-	-	-	-	-	-	-	-
RE 630 GWN	26	-30...200	0.01	0.01	0.02	III, FL	2.6	0.30	0.24	0.10	0.02	-	-	-	-	-	-	-	-	-	-
RE 1050 GWN	26	-50...200	0.01	0.01	0.02	III, FL	2.6	0.70	0.60	0.35	0.19	0.10	-	0.02	-	-	-	-	-	-	-
RE 1225 GWN	26	-25...200	0.01	0.01	0.02	III, FL	2.6	0.30	0.24	0.09	0.04 ^③	-	-	-	-	-	-	-	-	-	-
RE 2025 GWN	26	-25...200	0.01	0.01	0.02	III, FL	2.6	0.30	0.23	0.06	0.03 ^③	-	-	-	-	-	-	-	-	-	-

Due to national and international (security) regulations, the application and the transport of ECO devices with natural refrigerants is limited on the area of the EU and Switzerland in 230 V; 50 Hz only.

LAUDA Proline																					
RP 845	44	-45...200	0.1/0.01	0.01	0.01	III, FL	3.5	1.0	0.80	0.70	0.36	0.22	0.11	0.05	-	-	-	-	-	-	-
RP 855	44	-55...200	0.1/0.01	0.01	0.01	III, FL	3.5	1.7	1.60	1.10	0.60	0.38	0.21	0.15	0.10	0.04	-	-	-	-	-
RP 870	44	-70...200	0.1/0.01	0.01	0.02	III, FL	3.5	0.5	0.38	0.36	0.33	0.30	0.25	-	0.25	-	0.20	0.10	-	-	-
RP 890	44	-90...200	0.1/0.01	0.01	0.02	III, FL	3.5	0.5	1.10	1.00	0.90	0.83	0.75	-	0.58	-	0.42	0.24	0.13	0.04	-
RP 1290	45	-88...200	0.1/0.01	0.01	0.02	III, FL	3.5	0.5	1.10	1.00	0.90	0.83	0.75	-	0.58	-	0.42	0.24	0.13	-	-
RP 1840	45	-40...200	0.1/0.01	0.01	0.01	III, FL	3.5	1.0	0.90	0.70	0.35	0.20	0.09	-	-	-	-	-	-	-	-
RP 1845	45	-50...200	0.1/0.01	0.01	0.01	III, FL	3.5	1.7	1.60	1.10	0.55	0.32	0.18	0.10	0.045	-	-	-	-	-	-
RP 3530	45	-35...200	0.1/0.01	0.01	0.02	III, FL	3.5	1.0	0.90	0.70	0.30	0.15	-	-	-	-	-	-	-	-	-
RP 845 C	46	-45...200	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	1.0	0.80	0.70	0.36	0.22	0.11	0.05	-	-	-	-	-	-	-
RP 855 C	46	-55...200	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	1.7	1.60	1.10	0.60	0.38	0.21	0.15	0.10	0.04	-	-	-	-	-
RP 870 C	46	-70...200	0.01	0.1/0.01/0.001	0.02	III, FL	3.5	0.5	0.38	0.36	0.33	0.30	0.25	-	0.25	-	0.20	0.10	-	-	-
RP 890 C	46	-90...200	0.01	0.1/0.01/0.001	0.02	III, FL	3.5	0.5	1.10	1.00	0.90	0.83	0.75	-	0.58	-	0.42	0.24	0.13	0.04	-
RP 1290 C	47	-88...200	0.01	0.1/0.01/0.001	0.02	III, FL	3.5	0.5	1.10	1.00	0.90	0.83	0.75	-	0.58	-	0.42	0.24	0.13	-	-
RP 1840 C	47	-40...200	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	1.0	0.90	0.70	0.35	0.20	0.09	-	-	-	-	-	-	-	-
RP 1845 C	47	-50...200	0.01	0.1/0.01/0.001	0.01	III, FL	3.5	1.7	1.60	1.10	0.55	0.32	0.18	0.10	0.045	-	-	-	-	-	-
RP 3530 C	47	-35...200	0.01	0.1/0.01/0.001	0.02	III, FL	3.5	1.0	0.90	0.70	0.30	0.15	-	-	-	-	-	-	-	-	-

LAUDA Proline Kryomats																					
RP 3050 C	50	-50...200	0.01	0.1/0.01/0.001	0.05	III, FL	3.5	5.00	5.00	3.00	1.60	1.00	0.50	-	0.25	-	-	-	-	-	-
RP 4050 C	50	-50...200	0.01	0.1/0.01/0.001	0.05	III, FL	3.5	5.00	5.00	3.00	1.60	1.00	0.50	-	0.25	-	-	-	-	-	-
RP 3090 C	50	-90...200	0.01	0.1/0.01/0.001	0.05	III, FL	3.5	3.00	3.00	2.90	2.50	2.30	2.00	-	1.60	-	1.30	0.80	0.50	0.15	-
RP 4090 C	50	-90...200	0.01	0.1/0.01/0.001	0.05	III, FL	3.5	3.00	3.00	2.90	2.50	2.30	2.00	-	1.60	-	1.30	0.80	0.50	0.15	-
RP 3050 CW	51	-50...200	0.01	0.1/0.01/0.001	0.05	III, FL	3.5	6.00	6.00	3.50	1.80	1.10	0.60	-	0.25	-	-	-	-	-	-
RP 4050 CW	51	-50...200	0.01	0.1/0.01/0.001	0.05	III, FL	3.5	6.00	6.00	3.50	1.80	1.10	0.60	-	0.25	-	-	-	-	-	-
RP 3090 CW	51	-90...200	0.01	0.1/0.01/0.001	0.05	III, FL	3.5	4.00	4.00	3.70	3.10	2.70	2.30	-	1.80	-	1.40	0.90	0.50	0.15	-
RP 4090 CW	51	-90...200	0.01	0.1/0.01/0.001	0.05	III, FL	3.5	4.00	4.00	3.70	3.10	2.70	2.30	-	1.80	-	1.40	0.90	0.50	0.15	-

① At pump level 2 (ECO and Proline Kryomats) and pump level 3 (Proline) ② III, FL: for use with flammable and non-flammable liquids ③ Cooling output at -25 °C



	Pump type®	Pump pressure max.	Pump suction max.	Pump flow max. (pressure)	Pump flow max. (suction)	Pump connection thread	Ø Nipples	Bath volume min.	Bath volume max.	Bath opening (WxD)	Bath depth	Usable depth	Height top of bath	Dimensions (WxDxH)	Weight	Power supply®	Loading	Cat. No.	Type
	bar	bar	L/min	L/min	mm	mm	L	L	mm	mm	mm	mm	mm	mm	kg	V; Hz	kW		
LAUDA ECO with natural refrigerants																			
V	0.55	–	22	–	L [®]	13	3.3	4.0	130x105	160	140	374	180x396x555	22.5	230; 50	1.6	LCK 1954	RE 420 SWN	
V	0.55	–	22	–	L [®]	13	4.6	5.7	150x130	160	140	400	200x430x581	24.3	230; 50	1.6	LCK 1956	RE 620 SWN	
V	0.55	–	22	–	L [®]	13	4.6	5.7	150x130	160	140	400	200x430x581	28.2	230; 50	1.7	LCK 1958	RE 630 SWN	
V	0.55	–	22	–	L [®]	13	8.0	10.0	200x200	160	140	443	280x440x624	35.6	230; 50	2.0	LCK 1960	RE 1050 SWN	
V	0.55	–	22	–	L [®]	13	9.3	12.0	200x200	200	180	443	250x435x624	31.2	230; 50	1.7	LCK 1962	RE 1225 SWN	
V	0.55	–	22	–	L [®]	13	14.0	20.0	300x350	160	140	443	350x570x624	38.4	230; 50	1.7	LCK 1964	RE 2025 SWN	
V	0.55	–	22	–	M16 x 1	13	3.3	4.0	130x105	160	140	374	180x396x555	22.9	230; 50	2.8	LCK 1955	RE 420 GWN	
V	0.55	–	22	–	M16 x 1	13	4.6	5.7	150x130	160	140	400	200x430x581	24.7	230; 50	2.8	LCK 1957	RE 620 GWN	
V	0.55	–	22	–	M16 x 1	13	4.6	5.7	150x130	160	140	400	200x430x581	28.6	230; 50	2.9	LCK 1959	RE 630 GWN	
V	0.55	–	22	–	M16 x 1	13	8.0	10.0	200x200	160	140	443	280x440x624	36.0	230; 50	3.3	LCK 1961	RE 1050 GWN	
V	0.55	–	22	–	M16 x 1	13	9.3	12.0	200x200	200	180	443	250x435x624	31.6	230; 50	2.9	LCK 1963	RE 1225 GWN	
V	0.55	–	22	–	M16 x 1	13	14.0	20.0	300x350	160	140	443	350x570x624	38.5	230; 50	2.9	LCK 1965	RE 2025 GWN	

LAUDA Proline																			
VF	0.7	0.4	25	23	M16 x 1	13	5.5	8.5	150x150	200	180	488	285x430x688	41.0	230; 50	3.6	LCK 1885	RP 845	
VF	0.7	0.4	25	23	M16 x 1	13	5.5	8.5	150x150	200	180	570	400x540x770	60.0	230; 50	3.6	LCK 1893	RP 855	
VF	0.7	0.4	25	23	M16 x 1	13	5.5	8.5	150x150	200	180	535	375x540x735	68.0	230; 50	3.6	LCK 1895	RP 870	
VF	0.7	0.4	25	23	M16 x 1	13	5.5	8.0	150x150	200	180	535	495x615x735	100.0	230; 50	3.6	LCK 1897	RP 890	
VF	0.7	0.4	25	23	M16 x 1	13	8.0	13.5	300x150	200	180	535	495x615x735	100.0	230; 50	3.6	LCK 1899	RP 1290	
VF	0.7	0.4	25	23	M16 x 1	13	12.5	19.0	300x200	200	180	488	375x465x688	46.0	230; 50	3.6	LCK 1887	RP 1840	
VF	0.7	0.4	25	23	M16 x 1	13	12.5	19.0	300x200	200	180	570	400x540x770	61.0	230; 50	3.6	LCK 1891	RP 1845	
VF	0.7	0.4	25	23	M16 x 1	13	23.0	35.0	300x350	250	230	540	375x615x740	51.0	230; 50	3.6	LCK 1889	RP 3530	
VF	0.7	0.4	25	23	M16 x 1	13	5.5	8.5	150x150	200	180	488	285x430x688 [®]	41.0	230; 50	3.6	LCK 1886	RP 845 C	
VF	0.7	0.4	25	23	M16 x 1	13	5.5	8.5	150x150	200	180	570	400x540x770 [®]	60.0	230; 50	3.6	LCK 1894	RP 855 C	
VF	0.7	0.4	25	23	M16 x 1	13	5.5	8.5	150x150	200	180	535	375x540x735 [®]	68.0	230; 50	3.6	LCK 1896	RP 870 C	
VF	0.7	0.4	25	23	M16 x 1	13	5.5	8.0	150x150	200	180	535	495x615x735 [®]	100.0	230; 50	3.6	LCK 1898	RP 890 C	
VF	0.7	0.4	25	23	M16 x 1	13	8.0	13.5	300x150	200	180	535	495x615x735 [®]	100.0	230; 50	3.6	LCK 1900	RP 1290 C	
VF	0.7	0.4	25	23	M16 x 1	13	12.5	19.0	300x200	200	180	488	375x465x688 [®]	46.0	230; 50	3.6	LCK 1888	RP 1840 C	
VF	0.7	0.4	25	23	M16 x 1	13	12.5	19.0	300x200	200	180	570	400x540x770 [®]	61.0	230; 50	3.6	LCK 1892	RP 1845 C	
VF	0.7	0.4	25	23	M16 x 1	13	23.0	35.0	300x350	250	230	540	375x615x740 [®]	51.0	230; 50	3.6	LCK 1890	RP 3530 C	

LAUDA Proline Kryomats																			
V	0.5	–	19	–	M16 x 1	13	23.0	31.0	350x200	250	230	905	600x700x1160 [®]	130.0	400; 3/N/PE; 50	5.0	LUK 239	RP 3050 C	
V	0.5	–	19	–	M16 x 1	13	32.0	44.0	350x350	250	230	905	600x700x1160 [®]	130.0	400; 3/N/PE; 50	5.0	LUK 241	RP 4050 C	
V	0.5	–	19	–	M16 x 1	13	23.0	31.0	350x200	250	230	905	600x700x1160 [®]	155.0	400; 3/N/PE; 50	5.0	LUK 245	RP 3090 C	
V	0.5	–	19	–	M16 x 1	13	32.0	44.0	350x350	250	230	905	600x700x1160 [®]	155.0	400; 3/N/PE; 50	5.0	LUK 247	RP 4090 C	
V	0.5	–	19	–	M16 x 1	13	23.0	31.0	350x200	250	230	905	600x700x1160 [®]	130.0	400; 3/N/PE; 50	5.0	LUK 240	RP 3050 CW	
V	0.5	–	19	–	M16 x 1	13	32.0	44.0	350x350	250	230	905	600x700x1160 [®]	130.0	400; 3/N/PE; 50	5.0	LUK 242	RP 4050 CW	
V	0.5	–	19	–	M16 x 1	13	23.0	31.0	350x200	250	230	905	600x700x1160 [®]	155.0	400; 3/N/PE; 50	5.0	LUK 246	RP 3090 CW	
V	0.5	–	19	–	M16 x 1	13	32.0	44.0	350x350	250	230	905	600x700x1160 [®]	155.0	400; 3/N/PE; 50	5.0	LUK 248	RP 4090 CW	

® D: pressure pump; V: Vario pump, pressure pump with 6 selectable output steps for ECO and 4 selectable output steps for Proline Kryomats; VF: Varioflex pump, pressure/suction pump with 8 selectable output steps
[®] Other power supply variants on page 104/105
[®] With Command remote control: 56 mm higher
[®] Pump connection sets for ECO Silver and ECO Gold available as accessories. See page 32.

LAUDA Technical data according to DIN 12876 standard



Technical data

Type	Page	Working temperature range (equal to ACC range)		Ambient temperature range	Resolution of setting	Resolution of indication	Control	Effective cooling output (measured with ethanol and with standard pump, 20 °C ambient temperature 15 °C water temperature and 3 bar water pressure)											
		°C	°C					±K	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
LAUDA Integral T																			
T 1200	56	-25...120 [ⓐ]	5...40	0.1	0.05	↑ Proportional cooling with automatic refrigeration ↓	0.2	2.25	1.20	1.00	0.90	0.80	0.70	0.60	0.40	0.18	0.10	-	
T 1200 W	56	-25...120 [ⓐ]	5...40	0.1	0.05		0.2	2.25	1.60	1.30	1.20	1.10	0.85	0.70	0.45	0.25	0.10	-	
T 2200	56	-25...120 [ⓐ]	5...40	0.1	0.05		0.2	2.25	2.20	1.80	1.60	1.40	1.20	1.00	0.80	0.60	0.35	-	
T 2200 W	56	-25...120 [ⓐ]	5...40	0.1	0.05		0.2	2.25	2.70	2.30	2.10	1.90	1.70	1.40	1.00	0.68	0.42	-	
T 4600	57	-30...120 [ⓐ]	5...40	0.1	0.05		0.2	6	4.60	3.70	3.20	2.80	2.30	1.90	1.30	1.00	0.50	0.20	
T 4600 W	57	-30...120 [ⓐ]	5...40	0.1	0.05		0.2	6	5.50	4.50	4.00	3.40	2.90	2.30	1.70	1.10	0.65	0.30	
T 7000	57	-30...120 [ⓐ]	5...40	0.1	0.05		0.3	6	7.00	6.00	5.50	5.00	4.00	3.00	2.40	1.70	1.00	0.50	
T 7000 W	57	-30...120 [ⓐ]	5...40	0.1	0.05		0.3	6	8.50	7.00	6.30	5.50	4.70	3.90	3.00	2.00	1.30	0.60	
T 10000	57	-30...120 [ⓐ]	5...40	0.1	0.05		0.3	9	10.00	9.00	8.20	7.30	6.20	5.10	4.10	3.00	2.20	1.20	
T 10000 W	57	-30...120 [ⓐ]	5...40	0.1	0.05		0.3	9	13.00	11.00	9.90	8.70	7.40	6.00	4.90	3.70	2.60	1.50	

NEW

Type	Page	Working temperature range		Ambient temperature range	Resolution of setting	Temperature stability	Effective cooling output (water counter-cooling at 15 °C cooling water temperature)				
		°C	°C				±K	kW	300 °C	200 °C	100 °C
LAUDA Integral XT											
XT 4 H	63	80...320	5...40	0.01	0.05	3.5	-	-	-	-	-
XT 8 H	63	80...320	5...40	0.01	0.05	8.0	-	-	-	-	-
XT 4 HW	64	30...320	5...40	0.01	0.1	3.5	16	16	9	2	-
XT 8 HW	64	30...320	5...40	0.01	0.1	8.0	16	16	9	2	-

Type	Page	Working temperature range (equal to ACC range)		Ambient temperature range	Resolution of setting	Compressor cooling	Temperature stability	Effective cooling output (measured with pump step 4 at 20 °C ambient temperature/ 15 °C water temperature and 3 bar water pressure)															
		°C	°C					±K	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
LAUDA Integral XT																							
XT 150	60	-45...220	5...40	0.01	Air	0.05	3.5	-	1.50 [ⓐ]	1.50 [ⓐ]	1.50 [ⓐ]	1.30 [ⓐ]	1.10 [ⓐ]	1.00 [ⓐ]	0.62 [ⓐ]	0.28 [ⓐ]	0.06 [ⓐ]	-	-	-	-	-	
XT 280	60	-80...220	5...40	0.01	Air	0.10	4.0	-	1.50 [ⓐ]	1.50 [ⓐ]	1.50 [ⓐ]	1.50 [ⓐ]	1.40 [ⓐ]	1.40 [ⓐ]	1.30 [ⓐ]	1.30 [ⓐ]	1.30 [ⓐ]	1.20 [ⓐ]	1.00 [ⓐ]	0.40 [ⓐ]	0.10 [ⓐ]	-	-
XT 550	60	-50...220	5...40	0.01	Air	0.05	5.3	-	5.00	5.00	5.00	5.00	4.60	3.40	2.20	1.25	0.60 [ⓐ]	0.15 [ⓐ]	-	-	-	-	-
XT 750	60	-50...220	5...40	0.01	Air	0.05	5.3	-	7.00	7.00	6.70	6.10	4.80	3.40	2.20	1.25	0.60 [ⓐ]	0.30 [ⓐ]	-	-	-	-	-
XT 750 S	60	-50...220	5...40	0.01	Air	0.05	8.0	-	7.00	7.00	6.70	6.10	4.80	3.40	2.20	1.25	0.60 [ⓐ]	0.30 [ⓐ]	-	-	-	-	-
XT 750 H	60	-50...300	5...40	0.01	Air	0.05	5.3	5.5	7.00	7.00	6.70	6.10	4.80	3.40	2.20	1.25	0.60 [ⓐ]	0.30 [ⓐ]	-	-	-	-	-
XT 750 HS	60	-50...300	5...40	0.01	Air	0.05	8.0	5.5	7.00	7.00	6.70	6.10	4.80	3.40	2.20	1.25	0.60 [ⓐ]	0.30 [ⓐ]	-	-	-	-	-
XT 250 W	61	-45...220	5...40	0.01	Water	0.05	3.5	-	2.10 [ⓐ]	2.10 [ⓐ]	2.10 [ⓐ]	1.80 [ⓐ]	1.30 [ⓐ]	1.00 [ⓐ]	0.62 [ⓐ]	0.28 [ⓐ]	0.06 [ⓐ]	-	-	-	-	-	-
XT 280 W	62	-80...220	5...40	0.01	Water	0.10	4.0	-	2.00 [ⓐ]	2.00 [ⓐ]	2.00 [ⓐ]	2.00 [ⓐ]	2.00 [ⓐ]	1.90 [ⓐ]	1.80 [ⓐ]	1.70 [ⓐ]	1.60 [ⓐ]	1.40 [ⓐ]	1.00 [ⓐ]	0.40 [ⓐ]	0.10 [ⓐ]	-	-
XT 350 W	61	-50...220	5...40	0.01	Water	0.10	3.5	-	3.10	3.10	3.10	3.10	3.10	2.00	1.20	0.70	0.25 [ⓐ]	0.02 [ⓐ]	-	-	-	-	-
XT 350 HW	61	-50...300	5...40	0.01	Water	0.10	3.5	12	12.00	6.00	3.10	3.10	3.10	2.00	1.20	0.70	0.25 [ⓐ]	0.02 [ⓐ]	-	-	-	-	-
XT 550 W	61	-50...220	5...40	0.01	Water	0.10	5.3	-	5.40	5.40	5.40	5.40	5.40	4.30	2.90	1.60	0.80 [ⓐ]	0.15 [ⓐ]	-	-	-	-	-
XT 950 W	61	-50...220	5...40	0.01	Water	0.10	5.3	-	9.00	9.00	9.00	7.50	6.60	4.60	3.00	1.70	0.90 [ⓐ]	0.35 [ⓐ]	-	-	-	-	-
XT 950 WS	61	-50...220	5...40	0.01	Water	0.10	8.0	-	9.00	9.00	9.00	7.50	6.60	4.60	3.00	1.70	0.90 [ⓐ]	0.35 [ⓐ]	-	-	-	-	-
XT 1850 W	62	-50...220	5...40	0.01	Water	0.30	10.6	-	18.50	18.50	18.50	12.50	10.30	7.70	5.90	3.80	2.20 [ⓐ]	1.20 [ⓐ]	-	-	-	-	-
XT 1850 WS	62	-50...220	5...40	0.01	Water	0.30	16.0	-	18.50	18.50	18.50	12.50	10.30	7.70	5.90	3.80	2.20 [ⓐ]	1.20 [ⓐ]	-	-	-	-	-
XT 490 W	62	-90...220	5...40	0.01	Water	0.10	5.3	-	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.00	3.30	2.30	1.35	0.70 [ⓐ]	0.20 [ⓐ]
XT 1590 W	62	-90...220	5...40	0.01	Water	0.30	-	-	15.00	15.00	15.00	13.00	10.50	9.20	8.50	8.50	7.00	5.30	3.70	1.80	0.90 [ⓐ]	0.35 [ⓐ]	-
XT 1590 WS	62	-90...220	5...40	0.01	Water	0.30	8.0	-	15.00	15.00	15.00	13.00	10.50	9.20	8.50	8.50	7.00	5.30	3.70	1.80	0.90 [ⓐ]	0.35 [ⓐ]	-

[ⓐ] Optional up to 150 °C [ⓑ] On pump output step 2



Pump pressure max.	Pump flow max.	Pump connection thread	For tubing	Filling volume	Dimensions (WxDxH)	Pressure measurement/ parameter	Protection level	Noise level	Additional features	Weight	Loading	Power supply®	Cat. No.	Type
bar	L/min	i. d. (mm)		L	mm			dB(A)		kg	kW	V; Hz		
LAUDA Integral T														
3.2	40	G 3/4/(15)	3/4"	3...7	450x550x790	↑	IP 32	60	↑	77	2.7	230; 50	LWP 101	T 1200
3.2	40	G 3/4/(15)	3/4"	3...7	450x550x790		IP 32	58	Level indication	82	2.7	230; 50	LWP 102	T 1200 W
3.2	40	G 3/4/(15)	3/4"	3...7	450x550x790		IP 32	60	↓	89	3.1	230; 50	LWP 103	T 2200
3.2	40	G 3/4/(15)	3/4"	3...7	450x550x790		IP 32	58	↓	94	3.1	230; 50	LWP 104	T 2200 W
3.2	40	G 3/4/(15)	3/4"	6...18	550x650x970	Digital/ Bypass	IP 32	63	↑	123	8.5	400; 3/N/PE; 50	LWP 205	T 4600
3.2	40	G 3/4/(15)	3/4"	6...18	550x650x970		IP 32	61	Level indication	128	8.3	400; 3/N/PE; 50	LWP 206	T 4600 W
6.0	60	G 1 1/4/(20)	1"	8...20	850x670x970	↓	IP 32	65	Level indication, additional pump for internal circulation	175	11.5	400; 3/N/PE; 50	LWP 207	T 7000
6.0	60	G 1 1/4/(20)	1"	8...20	850x670x970		IP 32	63	↓	180	11.2	400; 3/N/PE; 50	LWP 208	T 7000 W
6.0	60	G 1 1/4/(20)	1"	8...20	1050x770x1120		IP 32	69	↓	235	16.0	400; 3/N/PE; 50	LWP 209	T 10000
6.0	60	G 1 1/4/(20)	1"	8...20	850x670x970		IP 32	67	↓	242	15.5	400; 3/N/PE; 50	LWP 210	T 10000 W

Pump pressure max.	Pump flow max.	Pump connection thread	Filling volume	Filling volume expansion vessel	Dimensions (WxDxH)	Pressure measurement	Protection level	Additional features	Weight	Loading	Power supply®	Cat. No.	Type
bar	L/min	i. d. (mm)	L	L	mm				kg	kW	V; Hz		
LAUDA Integral XT													
2.9	45	M30 x 1.5 (DN 20)	2.6	5.5	335x550x660	Digital	IP21C	Level indication	60	3.7	230; 50	LWP 147	XT 4 H
2.9	45	M30 x 1.5 (DN 20)	2.6	5.5	335x550x660	Digital	IP21C	Level indication	62	8.8	400; 3/PE; 50	LWP 549	XT 8 H
2.9	45	M30 x 1.5 (DN 20)	2.6	5.5	335x550x660	Digital	IP21C	Level indication	64	3.7	230; 50	LWP 148	XT 4 HW
2.9	45	M30 x 1.5 (DN 20)	2.6	5.5	335x550x660	Digital	IP21C	Level indication	66	8.8	400; 3/PE; 50	LWP 550	XT 8 HW

Pump pressure max.	Pump flow max.	Pump connection thread	Filling volume min.	Filling volume expansion vessel	Dimensions (WxDxH)	Pressure measurement/ parameter	Protection level	Additional features	Weight	Loading	Power supply®	Cat. No.	Type
bar	L/min	i. d. (mm)	L	L	mm				kg	kW	V; Hz		
LAUDA Integral XT													
2.9	45	M30 x 1.5 (DN 20)	2.6	5.5	335x550x660	Digital	IP21C	Level indication	87	3.68	230; 50	LWP 112	XT 150
2.9	45	M30 x 1.5 (DN 20)	5.0	6.7	460x550x1285	Digital	IP21C	Level indication	180	9.00	400; 3/PE; 50	LWP 534	XT 280
2.9	45	M30 x 1.5 (DN 20)	5.0	6.7	460x550x1285	Digital	IP21C	Level indication	150	7.80	400; 3/PE; 50	LWP 524	XT 550
2.9	45	M30 x 1.5 (DN 20)	5.0	6.7	460x550x1285	Digital	IP21C	Level indication	155	7.80	400; 3/PE; 50	LWP 520	XT 750
2.9	45	M30 x 1.5 (DN 20)	5.0	6.7	460x550x1285	Digital	IP21C	Level indication	155	9.70	400; 3/PE; 50	LWP 552	XT 750 S
2.9	45	M30 x 1.5 (DN 20)	5.3	6.7	460x550x1285	Digital	IP21C	Level indication	160	7.80	400; 3/PE; 50	LWP 522	XT 750 H
2.9	45	M30 x 1.5 (DN 20)	5.3	6.7	460x550x1285	Digital	IP21C	Level indication	160	9.70	400; 3/PE; 50	LWP 553	XT 750 HS
2.9	45	M30 x 1.5 (DN 20)	2.6	5.5	335x550x660	Digital	IP21C	Level indication	90	3.68	230; 50	LWP 113	XT 250 W
2.9	45	M30 x 1.5 (DN 20)	5.0	6.7	460x550x1285	Digital	IP21C	Level indication	180	9.00	400; 3/PE; 50	LWP 535	XT 280 W
2.9	45	M30 x 1.5 (DN 20)	5.0	6.7	460x550x1285	Digital	IP21C	Level indication	150	3.68	230; 50	LWP 117	XT 350 W
2.9	45	M30 x 1.5 (DN 20)	5.0	6.7	460x550x1285	Digital	IP21C	Level indication	150	3.68	230; 50	LWP 119	XT 350 HW
2.9	45	M30 x 1.5 (DN 20)	5.0	6.7	460x550x1285	Digital	IP21C	Level indication	155	7.80	400; 3/PE; 50	LWP 525	XT 550 W
2.9	45	M30 x 1.5 (DN 20)	5.0	6.7	460x550x1285	Digital	IP21C	Level indication	160	7.80	400; 3/PE; 50	LWP 521	XT 950 W
2.9	45	M30 x 1.5 (DN 20)	5.0	6.7	460x550x1285	Digital	IP21C	Level indication	160	9.70	400; 3/PE; 50	LWP 554	XT 950 WS
5.8	90	M38 x 1.5 (DN 25)	9.0	17.4	700x550x1600	Digital	IP21C	Level indication	250	13.80	400; 3/PE; 50	LWP 532	XT 1850 W
5.8	90	M38 x 1.5 (DN 25)	9.0	17.4	700x550x1600	Digital	IP21C	Level indication	250	17.30	400; 3/PE; 50	LWP 533	XT 1850 WS
2.9	45	M30 x 1.5 (DN 20)	9.5	17.4	700x550x1600	Digital	IP21C	Level indication	245	9.00	400; 3/PE; 50	LWP 539	XT 490 W
2.9	45	M30 x 1.5 (DN 20)	10.5	17.4	700x550x1600	Digital	IP21C	Level indication	280	-*	-*	-*	XT 1590 W
2.9	45	M30 x 1.5 (DN 20)	10.5	17.4	700x550x1600	Digital	IP21C	Level indication	280	13.80	400; 3/PE; 50	LWP 551	XT 1590 WS

® Other power supply variants on page 105

* Available as power supply variants (see page 105)

LAUDA Technical data according to DIN 12876 standard



Technical data

NEW

Type	Page	Working temperature range (equal to ACC range) °C	Ambient temperature range °C	Resolution of setting °C	Resolution of indication °C	Temperature stability ±K	Cooling output (measured with ethanol, 20 °C ambient temperature)			
							20 °C kW	10 °C kW	0 °C kW	-10 °C kW
LAUDA Microcool										
MC 250	70	-10...40	5...40	0.1	0.1	0.5	0.25	0.20	0.15	0.09
MC 600	70	-10...40	5...40	0.1	0.1	0.5	0.60	0.50	0.36	0.15
MC 1200	70	-10...40	5...40	0.1	0.1	0.5	1.20	1.05	0.75	0.40
MC 1200 W	70	-10...40	5...40	0.1	0.1	0.5	1.20	1.05	0.75	0.40

NEW

Type	Page	Working temperature range (equal to ACC range) °C	Working temperature range with optional heater °C	Ambient temperature range °C	Resolution of setting °C	Resolution of indication °C	Temperature stability ±K	Cooling output (measured with ethanol and with standard pump, 20 °C ambient temperature)					Heater power optional heater kW
								20 °C kW	10 °C kW	0 °C kW	-10 °C kW	-20 °C kW	
LAUDA Variocool													
VC 600	74	-20 ... 40	-20...80	5...40	0.01	0.01	0.2	0.60	0.50	0.36	0.21	0.08	1.5
VC 1200	74	-20 ... 40	-20...80	5...40	0.01	0.01	0.2	1.20	1.00	0.70	0.40	0.18	1.5
VC 1200 W	74	-20 ... 40	-20...80	5...40	0.01	0.01	0.2	1.20	1.00	0.70	0.40	0.18	1.5
VC 2000	74	-20 ... 40	-20...80	5...40	0.01	0.01	0.2	2.00	1.50	1.06	0.68	0.38	1.5
VC 2000 W	74	-20 ... 40	-20...80	5...40	0.01	0.01	0.2	2.00	1.50	1.06	0.68	0.38	1.5
VC 3000	75	-20 ... 40	-20...80	5...40	0.01	0.01	0.2	3.00	2.40	1.68	1.03	0.60	1.5
VC 3000 W	75	-20 ... 40	-20...80	5...40	0.01	0.01	0.2	3.00	2.40	1.68	1.03	0.60	1.5
VC 5000	75	-20 ... 40	-20...80	5...40	0.01	0.01	0.2	5.00	3.90	2.75	1.70	1.00	4.5
VC 5000 W	75	-20 ... 40	-20...80	5...40	0.01	0.01	0.2	5.00	3.90	2.75	1.70	1.00	4.5
VC 7000	76	-20 ... 40	-20...80	5...40	0.01	0.01	0.5	7.00	5.30	3.70	2.40	1.50	4.5
VC 7000 W	76	-20 ... 40	-20...80	5...40	0.01	0.01	0.5	7.00	5.30	3.70	2.40	1.50	4.5
VC 10000	76	-20 ... 40	-20...80	5...40	0.01	0.01	0.5	10.00	7.60	5.30	3.50	2.00	7.5
VC 10000 W	76	-20 ... 40	-20...80	5...40	0.01	0.01	0.5	10.00	7.60	5.30	3.50	2.00	7.5



Pump pressure max.	Pump flow max.	Pump connection thread (inner diameter in mm)	For tubings	Filling volume	Dimensions (WxDxH)	Protection level	Noise level	Weight	Loading	Power supply ^①	Cat. No.	Type
bar	L/min			L	mm		dB(A)	kg	kW	V; Hz		
LAUDA Microcool												
0.35	16	Ø 10 mm	1/2"	2...4	200x350x465	IP32	60	26	0.23	230 V; 50 Hz	LWM 118	MC 250
1.30	35	G 3/4 (15)	3/4"	4...8	350x480x595	IP32	57	51	0.70	230 V; 50 Hz	LWM 120	MC 600
1.30	35	G 3/4 (15)	3/4"	7...14	450x550x650	IP32	59	64	1.15	230 V; 50 Hz	LWM 121	MC 1200
1.30	35	G 3/4 (15)	3/4"	7...14	450x550x650	IP32	59	64	1.15	230 V; 50 Hz	LWM 122	MC 1200 W

Pump pressure max.	Pump flow max. (pressure)	Pump connection thread (inner diameter in mm)	For tubings	Filling volume	Dimensions (WxDxH)	Protection level	Noise level	Weight	Loading	Power supply ^①	Cat. No.	Type
bar	L/min	i. d. (mm)		L	mm		dB(A)	kg	kW	V; Hz		
LAUDA Variocool												
0.9	28	M16 x 1 (10)	1/2"	8	350x480x595	IP32	47	39	0.7	230 V; 50 Hz	LWG 175	VC 600
0.9	28	G 3/4 (15)	3/4"	15	450x550x650 ^②	IP32	51	54	1.1	230 V; 50 Hz	LWG 176	VC 1200
0.9	28	G 3/4 (15)	3/4"	15	450x550x650 ^②	IP32	50	51	1.1	230 V; 50 Hz	LWG 182	VC 1200 W
0.9	28	G 3/4 (15)	3/4"	15	450x550x650 ^②	IP32	52	57	1.6	230 V; 50 Hz	LWG 177	VC 2000
0.9	28	G 3/4 (15)	3/4"	15	450x550x650 ^②	IP32	50	54	1.6	230 V; 50 Hz	LWG 183	VC 2000 W
3.0	37	G 3/4 (15)	3/4"	33	550x650x970	IP32	57	93	1.8	230 V; 50 Hz	LWG 178	VC 3000
3.0	37	G 3/4 (15)	3/4"	33	550x650x970	IP32	55	89	1.8	230 V; 50 Hz	LWG 184	VC 3000 W
3.0	37	G 3/4 (15)	3/4"	33	550x650x970	IP32	64	98	3.3	400 V; 3/N/PE; 50 Hz	LWG 279	VC 5000
3.0	37	G 3/4 (15)	3/4"	33	550x650x970	IP32	60	94	3.3	400 V; 3/N/PE; 50 Hz	LWG 285	VC 5000 W
3.0	37	G 1 1/4 (20)	1"	64	650x670x1250	IP32	65	138	4.3	400 V; 3/N/PE; 50 Hz	LWG 280	VC 7000
3.0	37	G 1 1/4 (20)	1"	64	650x670x1250	IP32	60	131	4.3	400 V; 3/N/PE; 50 Hz	LWG 286	VC 7000 W
3.0	37	G 1 1/4 (20)	1"	64	650x670x1250	IP32	69	147	5.8	400 V; 3/N/PE; 50 Hz	LWG 281	VC 10000
3.0	37	G 1 1/4 (20)	1"	64	650x670x1250	IP32	62	140	5.8	400 V; 3/N/PE; 50 Hz	LWG 287	VC 10000 W

① Other power supply variants on page 106

② Use with high-power pumps causes a change of the height of the housing from 650 mm to 790 mm.

LAUDA Power supply variants



Power supply variants

Type	Cat. No.	Heater power kW	Loading kW	Cat. No.	Heater power kW	Loading kW	Cat. No.	Heater power kW	Loading kW
230 V; 50/60 Hz									
LAUDA Aqualine – single phase									
AL 2	LCB 0723	0.5	0.6	LCB 4723	0.45	0.6	LCB 6723	0.34	0.5
AL 5	LCB 0724	0.5	0.6	LCB 4724	0.45	0.6	LCB 6724	0.34	0.5
AL 12	LCB 0725	1.0	1.1	LCB 4725	1.0	1.1	LCB 6725	0.76	0.9
AL 18	LCB 0726	1.2	1.3	LCB 4726	1.2	1.3	LCB 6726	0.9	1.0
AL 25	LCB 0727	1.2	1.3	LCB 4727	1.2	1.3	LCB 6727	0.9	1.0
115 V; 60 Hz									
LAUDA Alpha – single phase									
A	LCE 0226	1.5	1.5	LCE 4226	1.15	1.2	LCE 6226	1.0	1.0
A 6	LCB 0733	1.5	1.5	LCB 4733	1.15	1.2	LCB 6733	1.0	1.0
A 12	LCB 0734	1.5	1.5	LCB 4734	1.15	1.2	LCB 6734	1.0	1.0
A 24	LCB 0735	1.5	1.5	LCB 4735	1.15	1.2	LCB 6735	1.0	1.0
100 V; 50/60 Hz									
LAUDA ECO – single phase									
Silver	LCE 0227	1.3	1.4	LCE 2227	1.2	1.3	LCE 4227	1.3	1.4
Gold	LCE 0228	2.6	2.7	LCE 2228	2.4	2.5	LCE 4228	1.3	1.4
E 4 S	LCB 0736	1.3	1.4	LCB 2736	1.2	1.3	LCB 4736	1.3	1.4
E 10 S	LCB 0738	1.3	1.4	LCB 2738	1.2	1.3	LCB 4738	1.3	1.4
E 15 S	LCB 0740	1.3	1.4	LCB 2740	1.2	1.3	LCB 4740	1.3	1.4
E 20 S	LCB 0742	1.3	1.4	LCB 2742	1.2	1.3	LCB 4742	1.3	1.4
E 25 S	LCB 0744	1.3	1.4	LCB 2744	1.2	1.3	LCB 4744	1.3	1.4
E 40 S	LCB 0746	1.3	1.4	LCB 2746	1.2	1.3	LCB 4746	1.3	1.4
E 4 G	LCB 0737	2.6	2.7	LCB 2737	2.4	2.5	LCB 4737	1.3	1.4
E 10 G	LCB 0739	2.6	2.7	LCB 2739	2.4	2.5	LCB 4739	1.3	1.4
E 15 G	LCB 0741	2.6	2.7	LCB 2741	2.4	2.5	LCB 4741	1.3	1.4
E 20 G	LCB 0743	2.6	2.7	LCB 2743	2.4	2.5	LCB 4743	1.3	1.4
E 25 G	LCB 0745	2.6	2.7	LCB 2745	2.4	2.5	LCB 4745	1.3	1.4
E 40 G	LCB 0747	2.6	2.7	LCB 2747	2.4	2.5	LCB 4747	1.3	1.4
ET 6 S	LCM 0096	1.3	1.4	LCM 2096	1.2	1.3	LCM 4096	1.3	1.4
ET 12 S	LCD 0286	1.3	1.4	LCD 2286	1.2	1.3	LCD 4286	1.3	1.4
ET 15 S	LCD 0288	1.3	1.4	LCD 2288	1.2	1.3	LCD 4288	1.3	1.4
ET 20 S	LCD 0290	1.3	1.4	LCD 2290	1.2	1.3	LCD 4290	1.3	1.4
ET 6 G	LCM 0097	2.6	2.7	LCM 2097	2.4	2.5	LCM 4097	1.3	1.4
ET 12 G	LCD 0287	2.6	2.7	LCD 2287	2.4	2.5	LCD 4287	1.3	1.4
ET 15 G	LCD 0289	2.6	2.7	LCD 2289	2.4	2.5	LCD 4289	1.3	1.4
ET 20 G	LCD 0291	2.6	2.7	LCD 2291	2.4	2.5	LCD 4291	1.3	1.4
Viscocoool 6	LCD 0292	1.3	1.4	–	–	–	LCD 4292	1.3	1.4
Viscotemp 15 S	LCD 0296	1.3	1.4	–	–	–	LCD 4296	1.3	1.4
Viscotemp 18 S	LCD 0294	1.3	1.4	–	–	–	LCD 4294	1.3	1.4
Viscotemp 24 S	LCD 0298	1.3	1.4	–	–	–	LCD 4298	1.3	1.4
Viscotemp 40 S	LCD 0300	1.3	1.4	–	–	–	LCD 4300	1.3	1.4
Viscotemp 15 G	LCD 0297	2.6	2.7	–	–	–	LCD 4297	1.3	1.4
Viscotemp 18 G	LCD 0295	2.6	2.7	–	–	–	LCD 4295	1.3	1.4
Viscotemp 24 G	LCD 0299	2.6	2.7	–	–	–	LCD 4299	1.3	1.4
Viscotemp 40 G	LCD 0301	2.6	2.7	–	–	–	LCD 4301	1.3	1.4



Type	Cat. No.	Heater power kW	Loading kW	Cat. No.	Heater power kW	Loading kW	Cat. No.	Heater power kW	Loading kW	Cat. No.	Heater power kW	Loading kW	Cat. No.	Heater power kW	Loading kW						
230 V; 50/60 Hz			115 V; 60 Hz			100 V; 50/60 Hz			200 V; 50/60 Hz			208-220 V; 60 Hz									
LAUDA Proline – single phase																					
P 5	LCB 0708	3.5	3.6	LCB 4708	1.8	1.8	LCB 6708	1.4	1.4	LCB 5708	2.8	2.9	LCB 8708	3.5	3.6						
P 8	LCB 0710	3.5	3.6	LCB 4710	1.8	1.8	LCB 6710	1.4	1.4	LCB 5710	2.8	2.9	LCB 8710	3.5	3.6						
P 12	LCB 0716	3.5	3.6	LCB 4716	1.8	1.8	LCB 6716	1.4	1.4	LCB 5716	2.8	2.9	LCB 8716	3.5	3.6						
P 18	LCB 0712	3.5	3.6	LCB 4712	1.8	1.8	LCB 6712	1.4	1.4	LCB 5712	2.8	2.9	LCB 8712	3.5	3.6						
P 26	LCB 0714	3.5	3.6	LCB 4714	1.8	1.8	LCB 6714	1.4	1.4	LCB 5714	2.8	2.9	LCB 8714	3.5	3.6						
P 40	LCB 0728	3.5	3.6	LCB 4728	1.8	1.8	-	-	-	-	-	-	-	-	-						
P 50	LCB 0730	3.5	3.6	LCB 4730	1.8	1.8	-	-	-	-	-	-	-	-	-						
P 5 C	LCB 0709	3.5	3.6	LCB 4709	1.8	1.8	LCB 6709	1.4	1.4	LCB 5709	2.8	2.9	LCB 8709	3.5	3.6						
P 8 C	LCB 0711	3.5	3.6	LCB 4711	1.8	1.8	LCB 6711	1.4	1.4	LCB 5711	2.8	2.9	LCB 8711	3.5	3.6						
P 12 C	LCB 0717	3.5	3.6	LCB 4717	1.8	1.8	LCB 6717	1.4	1.4	LCB 5717	2.8	2.9	LCB 8717	3.5	3.6						
P 18 C	LCB 0713	3.5	3.6	LCB 4713	1.8	1.8	LCB 6713	1.4	1.4	LCB 5713	2.8	2.9	LCB 8713	3.5	3.6						
P 26 C	LCB 0715	3.5	3.6	LCB 4715	1.8	1.8	LCB 6715	1.4	1.4	LCB 5715	2.8	2.9	LCB 8715	3.5	3.6						
P 40 C	LCB 0729	3.5	3.6	LCB 4729	1.8	1.8	-	-	-	-	-	-	-	-	-						
P 50 C	LCB 0731	3.5	3.6	LCB 4731	1.8	1.8	-	-	-	-	-	-	-	-	-						
PV 15	LCD 0276	3.5	3.6	LCD 4276	1.8	1.8	LCD 6276	1.4	1.4	-	-	-	-	-	-						
PV 24	LCD 0278	3.5	3.6	-	-	-	-	-	LCD 5278	2.8	2.9	LCD 8278	3.5	3.6							
PV 36	LCD 0280	3.5	3.6	-	-	-	-	-	LCD 5280	2.8	2.9	LCD 8280	3.5	3.6							
PV 15 C	LCD 0277	3.5	3.6	LCD 4277	1.8	1.8	LCD 6277	1.4	1.4	-	-	-	-	-	-						
PV 24 C	LCD 0279	3.5	3.6	-	1.8	1.8	-	1.4	1.4	LCD 5279	2.8	2.9	LCD 8279	3.5	3.6						
PV 36 C	LCD 0281	3.5	3.6	-	1.8	1.8	-	1.4	1.4	LCD 5281	2.8	2.9	LCD 8281	3.5	3.6						
PVL 15	LCD 0282	3.5	3.6	LCD 4282	1.8	1.8	LCD 6282	1.4	1.4	-	-	-	-	-	-						
PVL 24	LCD 0284	3.5	3.6	LCD 4284	1.8	1.8	LCD 6284	1.4	1.4	-	-	-	-	-	-						
230 V; 50/60 Hz			115 V; 60 Hz			100 V; 50/60 Hz															
LAUDA Proline – single phase																					
PVL 15 C	LCD 0283	3.5	3.6	LCD 4283	1.8	1.8	LCD 6283	1.4	1.4												
PVL 24 C	LCD 0285	3.5	3.6	LCD 4285	1.8	1.8	LCD 6285	1.4	1.4												
PB	LCG 0090	3.5	3.6	LCG 4090	1.8	1.8	LCG 6090	1.4	1.4												
PB C	LCG 0091	3.5	3.6	LCG 4091	1.8	1.8	LCG 6091	1.4	1.4												
PBD	LCG 0092	3.5	3.6	LCG 4092	1.8	1.8	LCG 6092	1.4	1.4												
PBD C	LCG 0093	3.5	3.6	LCG 4093	1.8	1.8	LCG 6093	1.4	1.4												
230 V; 50 Hz			200 V; 50/60 Hz			208-220 V; 60 Hz															
LAUDA Integral XT – single phase																					
XT 4 H	LWP 147	3.5	3.7	LWP 547	2.65	3.2	LWP 847	3.2	3.5												
XT 4 HW	LWP 148	3.5	3.7	LWP 548	2.65	3.2	LWP 848	3.2	3.5												
208-220 V; 3/PE; 60 Hz			200 V; 3/PE; 50/60 Hz			400 V; 3/PE; 50 Hz															
LAUDA Integral XT – three phase																					
XT 8 H	LWP 349	8.0	8.8	LWP 449	8.0	8.7	LWP 549	8.0	8.8												
XT 8 HW	LWP 350	8.0	8.8	LWP 450	8.0	8.7	LWP 550	8.0	8.8												
230 V; 50/60 Hz			230 V; 50 Hz			230 V; 60 Hz			115 V; 60 Hz			200 V; 50/60 Hz			100 V; 50/60 Hz			208-220 V; 60 Hz			
LAUDA Calibration thermostats – single phase																					
RE 212 J	-	-	-	LCK 1879	2.25	2.3	LCK 2879	2.25	2.3	LCK 4879	1.3	1.4	-	-	-	-	-	-	-		
RE 312 J	-	-	-	LCK 1880	2.25	2.3	LCK 2880	2.25	2.3	LCK 4880	1.3	1.4	-	-	-	-	-	-	-		
PJ 12	LCB 0720	3.5	3.6	-	-	-	-	-	-	LCB 4720	1.8	1.8	LCB 5720	2.8	2.9	LCB 6720	1.4	1.4	LCB 8720	3.5	3.6
PJ 12 C	LCB 0721	3.5	3.6	-	-	-	-	-	-	LCB 4721	1.8	1.8	LCB 5721	2.8	2.9	LCB 6721	1.4	1.4	LCB 8721	3.5	3.6
PJL 12	LCB 0718	3.5	3.6	-	-	-	-	-	-	LCB 4718	1.8	1.8	LCB 5718	2.8	2.9	LCB 6718	1.4	1.4	LCB 8718	3.5	3.6
PJL 12 C	LCB 0719	3.5	3.6	-	-	-	-	-	-	LCB 4719	1.8	1.8	LCB 5719	2.8	2.9	LCB 6719	1.4	1.4	LCB 8719	3.5	3.6



Type	Cat. No.	Heater power kW	Loading kW	Cat. No.	Heater power kW	Loading kW	Cat. No.	Heater power kW	Loading kW					
400 V; 3/N/PE; 50 Hz			208 V; 3/PE; 60 Hz			200 V; 3/PE; 50/60 Hz								
LAUDA Proline Kryomats – three phase														
RP 3050 C	LUK 239	3.5	5.0	LUK 339	3.0	5.0	LUK 439	2.8	5.0					
RP 4050 C	LUK 241	3.5	5.0	LUK 341	3.0	5.0	LUK 441	2.8	5.0					
RP 3090 C	LUK 245	3.5	5.0	LUK 345	3.0	5.0	LUK 445	2.8	5.0					
RP 4090 C	LUK 247	3.5	5.0	LUK 347	3.0	5.0	LUK 447	2.8	5.0					
RP 3050 CW	LUK 240	3.5	5.0	LUK 340	3.0	5.0	LUK 440	2.8	5.0					
RP 4050 CW	LUK 242	3.5	5.0	LUK 342	3.0	5.0	LUK 442	2.8	5.0					
RP 3090 CW	LUK 246	3.5	5.0	LUK 346	3.0	5.0	LUK 446	2.8	5.0					
RP 4090 CW	LUK 248	3.5	5.0	LUK 348	3.0	5.0	LUK 448	2.8	5.0					
230 V; 50 Hz			230 V; 60 Hz			208-230 V; 60 Hz			200 V; 50 Hz		200 V; 60 Hz			
LAUDA Integral T – single phase														
T 1200	LWP 101	2.25	2.7	-	-	-	LWP 801	1.85	2.7	LWP 811	1.7	2.7		
T 1200 W	LWP 102	2.25	2.7	-	-	-	LWP 802	1.85	2.7	-	-	-		
T 2200	LWP 103	2.25	3.1	LWP 203	2.25	3.1	LWP 803	1.85	3.1	-	-	LWP 846	1.7	3.1
T 2200 W	LWP 104	2.25	3.1	LWP 204	2.25	3.1	LWP 804	1.85	3.1	-	-	-	-	-
400 V; 3/N/PE; 50 Hz			208 V; 3/PE; 60 Hz			400 V; 3/PE; 50 Hz			440-480 V; 3/PE; 60 Hz					
LAUDA Integral T – three phase														
T 4600	LWP 205	6.0	8.5	LWP 305	4.9	8.5	LWP 505	6.0	8.5	-	-	-		
T 4600 W	LWP 206	6.0	8.3	LWP 306	4.9	8.3	-	-	-	-	-			
T 7000	LWP 207	6.0	11.5	-	-	-	LWP 507	6.0	8.3	LWP 607	5.3	11.5		
T 7000 W	LWP 208	6.0	11.2	-	-	-	-	-	-	LWP 608	5.3	11.2		
T 10000	LWP 209	9.0	16.0	-	-	-	-	-	-	LWP 609	7.95	15.0		
T 10000 W	LWP 210	9.0	15.5	-	-	-	-	-	-	LWP 610	7.95	14.5		
230 V; 50 Hz			200 V; 50/60 Hz			208-220 V; 60 Hz								
LAUDA Integral XT – single phase														
XT 150	LWP 112	3.5	3.68	LWP 512	2.65	3.2	LWP 812	2.9	3.5					
XT 250 W	LWP 113	3.5	3.68	LWP 513	2.65	3.2	LWP 813	2.9	3.5					
XT 350 W	LWP 117	3.5	3.68	LWP 517	2.65	3.2	LWP 817	2.9	3.5					
XT 350 HW	LWP 119	3.5	3.68	LWP 519	2.65	3.2	LWP 819	2.9	3.5					
208-220 V; 3/PE; 60 Hz			200 V; 3/PE; 50/60 Hz			400 V; 3/PE; 50 Hz			440-480 V; 3/PE; 60 Hz		400 V; 3/PE; 50 Hz & 440-480 V; 3/PE; 60 Hz			
LAUDA Integral XT – three phase														
XT 280	LWP 334	2.9	7.0	LWP 434	2.65	6.5	LWP 534	4.0	9.0	-	-	-		
XT 550	LWP 324	5.7	7.6	LWP 424	5.3	6.9	LWP 524	5.3	7.8	-	-	-		
XT 750	LWP 320	5.7	7.6	LWP 420	5.3	6.9	LWP 520	5.3	7.8	-	-	-		
XT 750 S	-	-	-	-	-	-	LWP 552	8.0	9.7	-	-	-		
XT 750 H	LWP 322	5.7	7.6	LWP 422	5.3	6.9	LWP 522	5.3	7.8	-	-	-		
XT 750 HS	-	-	-	-	-	-	LWP 553	8.0	9.7	-	-	-		
XT 280 W	LWP 335	2.9	7.0	LWP 435	2.65	6.5	LWP 535	4.0	9.0	-	-	-		
XT 490 W	LWP 339	5.7	9.5	LWP 439	5.3	8.6	LWP 539	5.3	9.0	-	-	-		
XT 550 W	LWP 325	5.7	7.6	LWP 425	5.3	6.9	LWP 525	5.3	7.8	-	-	-		
XT 950 W	LWP 321	5.7	7.6	LWP 421	5.3	6.9	LWP 521	5.3	7.8	-	-	-		
XT 950 WS	-	-	-	-	-	-	LWP 554	8.0	9.7	-	-	-		
XT 1850 W	-	-	-	-	-	-	LWP 532	10.6	13.8	LWP 632	14.0	20.8		
XT 1850 WS	-	-	-	-	-	-	LWP 533	16.0	17.3	-	-	-		
XT 1590 W	-	-	-	-	-	-	-	-	-	LWP 642	7.0	16.6		
XT 1590 WS	-	-	-	-	-	-	LWP 551	8.0	13.8	-	-	-		
										LWP 732	10.6 & 14.0	20.8		
										LWP 742	5.3 & 7.0	16.6		

LAUDA Power supply variants



Power supply variants

Type	Cat. No.	Loading kW	Cat. No.	Loading kW	Cat. No.	Loading kW	Cat. No.	Loading kW
230 V; 50 Hz		220 V; 60 Hz		115 V; 60 Hz		100 V; 50/60 Hz		
LAUDA Microcool – single phase								
MC 250	LWM 118	0.23	LWM 218	–	LWM 418	–	LWM 618	–
MC 600	LWM 120	0.70	LWM 220	–	LWM 420	–	LWM 620	–
MC 1200	LWM 121	1.15	LWM 221	–	LWM 421	–	LWM 621	–
MC 1200 W	LWM 122	1.15	LWM 222	–	LWM 422	–	LWM 622	–

Type	Cat. No.	Loading kW	Cat. No.	Loading kW	Cat. No.	Loading kW	Cat. No.	Loading kW	Cat. No.	Loading kW	Cat. No.	Loading kW
230 V; 50 Hz		220 V; 60 Hz		115 V; 60 Hz		220 V; 50/60 Hz		100 V; 50/60 Hz		208-220 V; 60 Hz		
LAUDA Variocool – single phase												
VC 600	LWG 175	0.7	LWG 275	0.7	LWG 475	0.8	–	–	LWG 675	0.7	–	–
VC 1200	LWG 176	1.1	–	–	–	–	LWG 576	1.3	–	–	LWG 876	1.4
VC 1200 W	LWG 182	1.1	–	–	–	–	LWG 582	1.3	–	–	LWG 882	1.4
VC 2000	LWG 177	1.6	–	–	–	–	LWG 577	2.0	–	–	LWG 877	2.2
VC 2000 W	LWG 183	1.6	–	–	–	–	LWG 583	2.0	–	–	LWG 883	2.2
VC 3000	LWG 178	1.8	–	–	–	–	LWG 578	–	–	–	LWG 878	–
VC 3000 W	LWG 184	1.8	–	–	–	–	LWG 584	–	–	–	LWG 884	–

400 V; 3/N/PE; 50 Hz			208-220 V; 3/PE; 60 Hz			200 V; 3/PE; 50/60 Hz		
LAUDA Variocool – three phase								
VC 5000	LWG 279	3.3	LWG 379	3.6	LWG 479	3.5		
VC 5000 W	LWG 285	3.3	LWG 385	3.6	LWG 485	3.5		
VC 7000	LWG 280	4.3	LWG 380	4.6	LWG 480	4.5		
VC 7000 W	LWG 286	4.3	LWG 386	4.6	LWG 486	4.5		
VC 10000	LWG 281	5.8	LWG 381	7.0	LWG 481	6.8		
VC 10000 W	LWG 287	5.8	LWG 387	7.0	LWG 487	6.8		

Device functions

EasyUse operation (Proline)

Drain taps, castors and handles for increased mobility, double pump connections for the parallel connection of two external systems, switching of the circulation (bypass), removable Command remote control, and quick change of the required interfaces.

External control

The temperature of the thermostat is controlled via a temperature probe connected to the external system. The set value is compared with the actual value in the external system and readjusted within the thermostat. Depending on the operating temperature, insulation losses and exothermia, the bath temperature can be considerably above or below the set value. External control ensures that the bath temperature and application temperature are constant.

PowerAdapt System (Proline)

The maximum possible heating capacity is used as far as is permitted by the net. Advantage: up to 3.5 kW heating capacity even with cooling thermostats, shorter heating times and no overloading of the net. The patented LAUDA heater control minimises the loading effects on the laboratory's voltage network. Moreover, the maximum power consumption can be reduced to 10 A as required.

Proportional cooling (Kryomats, Process thermostats)

The cooling output is quasi-proportionally set according to the controller signal. This produces savings of around 75 percent compared to standard cooling that uses cooling and counter-cooling. The automatic cooling output adjustment also switches the cooling unit off completely should no cooling be required for a longer period of time.

SelfCheck Assistant (Proline, Integral XT)

The SelfCheck Assistant checks all parameters before the actual start of operations and the switch-off methods of the heater control in particular. The system registers not only alarm or error messages on the display: it also points out scheduled maintenance tasks such as cleaning of the cooling grid.

SmartCool System (Proline)

A special form of proportional cooling combined with a regulated ventilator.

Types of device

Bath/circulation thermostat

Is a bath thermostat with a circulating pump for closed or open external circuits.

Bath thermostat

Is a thermostat which is equipped with a bath capable of holding the object to be thermostated. The built-in circulation pump is used to mix the bath liquid, but can also be used to convey the liquid through a closed external circuit, e.g. the connection of through-flow coolers, if required.

Calibration thermostat

Is a bath thermostat with especially high temperature stability and especially consistent spatial temperature distribution. It is used mainly for the calibration and adjustment of test pieces in the bath.

Circulation chiller (also circulating chiller)

Are special cooling thermostats designed as circulation thermostats without a freely-accessible bath. Thanks to their construction, they are independent devices which are frequently used as a replacement for the cooling with mains water.

Circulation heat exchanger

Is a through-flow cooler which, via a heat exchanger, uses an existing primary cooling circuit to cool various external systems.

Circulation thermostat

Is a thermostat through which the bath liquid is conveyed through an open or closed external circuit.

Clear-view thermostat

Is a bath thermostat with transparent front and back to enable viewing of an object to be thermostated, usually a viscometer. Bath thermostats with transparent polycarbonate baths are known as thermostats with transparent bath.

Cooling thermostat

Is a thermostat whose working temperature range is below the ambient temperature.

Heating and cooling thermostat

Is a thermostat whose working temperature range is above and below the ambient temperature and which can both heat and cool.

Heating thermostat

Is a thermostat whose working temperature range is above the ambient temperature and which can only heat.

Immersion thermostat

Is a thermostat which can be combined with any bath. It is attached to the side of the bath or on a stand by means of a screw clamp.

Immersion cooler

Is an add-on cooler which is connected by means of a flexible tube to a cooling coil for immersion in any bath or vessel.

Kryomat

Is a floor-mounted heating and cooling thermostat in three different levels with various cooling and pump capacities.

Process thermostats (Integral T, Integral XT)

Are circulation thermostats used as heating and cooling thermostats with high cooling, heating and pump capacities. Small volumes of liquid enable quick cooling-down and heating speeds: they are ideal for process technology applications.

Through-flow cooler

Is an add-on cooler which can be interconnected in an external circuit and which extends the function of a heating thermostat to that of a heating and cooling thermostat. It replaces water cooling or can be used to achieve lower temperatures (down to -40 °C with the DLK 45/DLK 45 LiBus).

Ultra thermostats

Are heating thermostats used as bath/circulation thermostats or as pure circulation thermostats with spatially-separated bath and control unit. This enables remote control and monitoring.

Water bath

Is a heating bath which does not have a pump for active mixing purposes and which is only equipped for use with water.

Refrigeration technology

Cooling output

Is the effective output available in a cooling thermostat or circulation chiller. Losses caused by the circulating pump and invasive heat have already been deducted.

Cooling cascades

If temperatures below -50 °C are to be produced with compressor cooling units, two-stage cooling units connected in cascades are required to bridge the difference between the cold side (evaporation pressure) and warm side (condensation pressure, e.g. ambient temperature). The high-pressure stage bridges the temperature difference from approx. ambient temperature to -40 °C, for example. The low-temperature stage provides the final temperature of -90 °C, for example.

Refrigerant

Is used in the circuit of the cooling unit and extracts the heat of the thermostating liquid when the compressed gas expands and evaporates in the evaporator. LAUDA only uses refrigerants with ODP = 0 which do not destroy the ozone layer (ODP = ozone depleting potential). In several LAUDA thermostats natural refrigerants are used. Natural refrigerants are naturally occurring, non-synthetic substances. In addition to a ODP of zero they also have a very low GWP (global warming potential).

Pumps

Pressure pump

Is used for the circulation of the bath liquid in a closed external circuit and for mixing the liquid within the bath.

Vario pump (ECO, Integral XT)

Is a pressure pump which can be set to various output stages with regard to flow rate and flow pressure. This enables the optimum adaptation to the corresponding application.

Varioflex pump (Proline)

Is a pressure/suction pump with 8 different pump capacity settings to be connected to open and closed circuits. Its low energy input makes working at the lowest temperatures possible. The Varioflex pump is available in a high-power model as a pure pressure pump for devices with deeper baths. The patented low-level protection (DGM) is an additional safety advantage.

Technical data of LAUDA devices

ACC range (Active Cooling Control): according to DIN 12876

This is the working temperature range during operation with an active cooling unit. The working temperature range is equal to the ACC range in all LAUDA devices.

Ambient temperature range

This is the permissible temperature range of the environment in which the device works properly. It is 5...35 °C for all LAUDA devices contained within this brochure with the exception of the ECO, Integral and the WK devices, where the latter is extended to 40 °C. This is particularly important with respect to industrial applications.

Bath depth

Is the overall dimension from the upper edge to the bottom of the bath.

Bath opening

Is the usable surface available for direct thermostating, as a rule over the entire usable depth.

Bath volume (also filling volume)

Is the volume of the bath liquid that is required for the appropriate operation of the thermostat in the bath. The required minimum volume and the permitted maximum volume are usually given. The difference is the expansion volume, which must absorb the heat expansion of the bath liquid. The expansion volume is especially large with process thermostats.

Discharge pressure

Is the pressure of the circulation pump of a thermostat directly at the pressure nozzle, measured with water. In the tables, the maximum discharge pressure is given at flow rate zero. The diagrams illustrate the discharge pressure is dependent upon the flow rate.

Discharge suction

This is the suction of the circulation pump (Varioflex or Duplex pump) directly at the suction nozzle, measured with water. In the tables, the maximum suction is given at flow rate zero. The diagrams illustrate the discharge suction is dependent upon the flow rate.

Display resolution

Is given with regard to the digital temperature display of the actual value, and displays the temperature difference between two subsequent numbers.

Flow rate

Is the volume of liquid conveyed per time unit by the circulation pump, measured with water. In the tables, the maximum flow rate is given at counter pressure zero. The diagrams illustrate the discharge pressure is dependent upon the flow rate.

Heating capacity

This is the maximum electrical capacity of the installed heater at the given nominal voltage. The heating capacity of LAUDA thermostats may be controlled if required.

Interface, analogue

Is used to input the set value of the temperature/to output temperature values or other values in analogue form, usually as a reference signal with voltage (0...10 V) or current (0/4...20 mA). Relevant LAUDA interfaces are adjustable and scalable.

Interface, digital

Is used to exchange digital data, mainly set and actual temperature values. The RS 232 interface is of a serial type and allows a point-to-point connection. This means that only two participants can communicate at a time with each other via the interface. The RS 485 interface is an addressable interface to which up to 32 participants with their own address may be connected.

International protection, IP

As per EN 60529. The first digit indicates the protection against contact and foreign objects, whereas the second digit indicates protection against water. For example, IP 32: 3 stands for protection against contact with dangerous parts located inside with a tool of greater than/equal to 2.5 mm diameter and up to 100 mm in length. 2 stands for protection against dripping water at angles of 15 °. The assessment is carried out as per EN 61010-1. The LAUDA range only provides IP information for process thermostats and circulation chillers.

Intrinsic temperature

Is the operating temperature of a heating thermostat attained when the thermostat is switched off. It depends on the pump capacity, the heat transfer liquid used and the insulation of the thermostats. The working temperature range only starts approx. 3 °C above the intrinsic temperature.

Operating temperature range

This is the temperature range defined by the lowest and highest permissible operating temperature. As a rule, this is only given for heating thermostats whose working temperature range can be extended to lower temperatures by means of auxiliary equipment.

Profibus

Is a bus system with a high signal transfer rate for connecting up to 256 devices and is used mainly in the chemical industry.

Resolution setting

Is the difference between two consecutive set values of a digital set value setting.

Safety class

It is possible to use non-flammable or flammable bath liquids in thermostats. The relevant safety-related requirements are stipulated in DIN EN 61010-2-010. According to DIN 12876-1, we make a distinction between class I with the distinction NFL (non-flammable) with built-in overtemperature protection exclusively for non-flammable liquids, and class III with the distinction FL (flammable) with adjustable overtemperature protection and low level protection for flammable liquids.

Sound pressure level

Is measured according to the guidelines given in DIN EN ISO 11200 and the basic standards contained therein.

Standard

The safety regulations for electric laboratory equipment are stipulated in the European standards EN 61010-1 and EN 61010-2-010. The terms and the stipulation of the characteristic data are described in DIN 12876. EMC requirements are stipulated in EN 61356. Depending on the device, further standards may be applied.

Temperature stability

This is half of the temperature difference between the highest and the lowest temperatures which are measured at a specific set value after attaining a stable value for 30 minutes in a thermostat. The details are provided at 70 °C (using water) for a heating thermostat and at -10 °C (using ethanol) for a cooling thermostat.

Usable depth

Is the maximum liquid depth available in the bath thermostat for direct thermostating.

Working temperature range

This is the temperature range which can be attained at an ambient temperature of 20 °C by the thermostat alone and with the exclusive use of electrical energy and without any other aid. The working temperature range of a heating thermostat begins above the ambient temperature and ends at the upper limit of the operating temperature.

Our product lines:

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



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