



LAUDA - the big one

Thermostats, Circulation chillers, Water baths

Overall Brochure 2016/2017

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

The LAUDA ECO stands out due to its range of functionality and ease of use. 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 flowrate 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 available with natural refrigerants as standard. 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)
- Programer 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
- 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 (GWP)
- 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, Profibus, Ethernet, EtherCAT 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

ECO Control head Silver

The control heads Silver with 2.0 kW heater power (230 V) are now perfectly suited for thermostating tasks up to 200 °C. They are fitted with a monochrome LCD display.



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 programer with five programs and 150 temperature-time segments is a further distinctive feature compared to Silver.





- 2.0 kW heater power (230 V), working temperature range up to 200 °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
- Safety class III, FL for flammable liquids
- 1-point calibration by the user
- Programer with one program and 20
- Vario pump with six levels, flow rate switch for internal or external circulation
- Mini-USB interface as standard



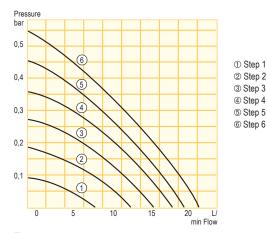
- 2.6 kW heater power (230 V), working temperature range up to 200 °C
- Colored TFT display, resolution of indication 0.01 °C
- Operation via cursor and softkeys
- Simultaneous display of set and actual temperature, navigation in plain text
- Selectable operating temperature range and additional button for overtemperature protection setting
- Safety class III, FL for flammable liquids
- 1-point calibration by the user
- Graphical display of temperature profiles
- Programer 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.



Pump characteristics Heat transfer liquid: Water



Temperature range 20...200 °C

Included accessories
Screw clamp

Additional accessories

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



All technical data on page 96 and following Other power supply variants on page 110





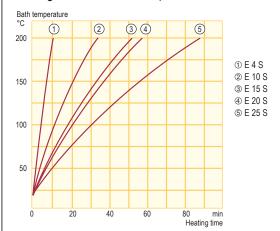
Technical features		Silver	Gold
Working temperature range	°C	20200	20200
Temperature stability	±K	0.01	0.01
Heater power	kW	2.0	2.6
Pump pressure max.	bar	0.55	0.55
Pump flow max.	L/min	22	22
Bath depth	mm	Min. 150	Min. 150
Cat. No. 230 V; 50/60 Hz		LCE 0227	LCE 0228

ECO 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 200 °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 curves Heat transfer liquid: Therm 240, bath closed



Pump characteristics on page 23

Temperature range 20...200 °C

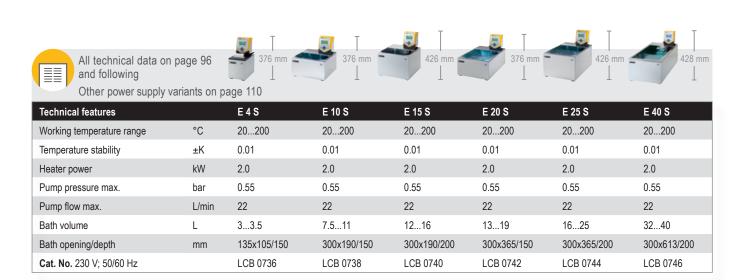
Included accessories

Cooling coil · bath cover and pump 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, Ethernet, EtherCAT, Pt100/LiBus module · Command remote control

Heating thermostat E 4 S

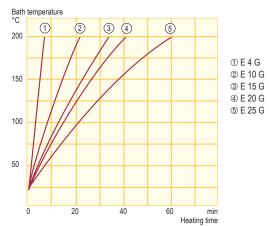


ECO Heating thermostats with stainless steel bath and control head Gold

The heating thermostats with control head Gold can be used in a temperature range of up to 200 $^{\circ}$ 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 curves Heat transfer liquid: Therm 240, bath closed



Pump characteristics on page 23

Temperature range

20...200 °C

Included accessories

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

Additional accessories

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



Technical features		E 4 G	E 10 G	E 15 G	E 20 G	E 25 G	E 40 G
Working temperature range	°C	20200	20200	20200	20200	20200	20200
Temperature stability	±Κ	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	33.5	7.511	1216	1319	1625	3240
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

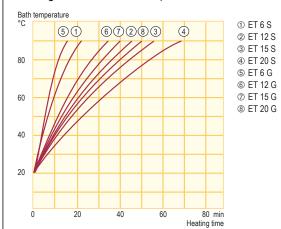
ECO

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



Pump characteristics on page 23

Temperature range

20...100 °C

Included accessories

Cooling coil (not for ET 15 S/G) · closing plugs · pump connection set with 13 mm plastic nipples (ET 15 S) or M16 x 1 thread (ET 15 G)

Additional accessories

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



Heating thermostat ET 12 S



All technical data on page 96 and following Other power supply variants on page 110













Technical features		ET 6 S	ET 12 S	ET 15 S	ET 20 S
Working temperature range	°C	20100	20100	20*100	20100
Temperature stability	±Κ	0.01	0.01	0.01	0.01
Heater power	kW	2.0	2.0	2.0	2.0
Pump pressure max.	bar	0.55	0.55	0.55	0.55
Pump flow max.	L/min	22	22	22	22
Bath volume	L	56	9.512	15	1520
Bath opening/depth	mm	130x285/160	300x175/160	275x130/310	300x350/160
Cat. No. 230 V; 50/60 Hz		LCM 0096	LCD 0286	LCD 0288	LCD 0290

Technical features		ET 6 G	ET 12 G	ET 15 G	ET 20 G
Working temperature range	°C	20100	20100	20*100	20100
Temperature stability	±K	0.01	0.01	0.01	0.01
Heater power	kW	2.6	2.6	2.6	2.6
Pump pressure max.	bar	0.55	0.55	0.55	0.55
Pump flow max.	L/min	22	22	22	22
Bath volume	L	56	9.512	15	1520
Bath opening/depth	mm	130x285/160	300x175/160	275x130/310	300x350/160
Cat. No. 230 V; 50/60 Hz		LCM 0097	LCD 0287	LCD 0289	LCD 0291

^{*} Possible with external cooling

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 200 °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 minimized foot print. The RE 1050 SN 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 SN and RE 2025 SN are excellently suited to applications inside the bath.



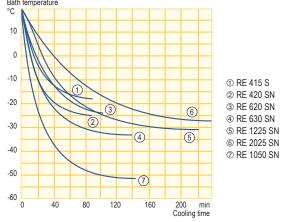
130x105/160

LCK 1910

mm

Cooling thermostat RE 1050 SN





Pump characteristics on page 23

Temperature range

-50...200 °C

Included accessories

Bath cover $\,\cdot\,$ pump connections with 13 mm plastic nipples $\,\cdot\,$ closing plugs

Additional accessories

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

200x200/200

LCK 1948

300x350/160

LCK 1950

200x200/160

LCK 1946

All technical data on and following Other power supply of	. •	546 mn	555 mi	581 mm	581 mm	624 mm	624 mm	624 mm
Technical features		RE 415 S	RE 420 SN	RE 620 SN	RE 630 SN	RE 1050 SN	RE 1225 SN	RE 2025 SN
Working temperature range*	°C	-15200	-20200	-20200	-30200	-50200	-25200	-25200
Temperature stability	±K	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Heater power	kW	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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	3.34	3.34	4.65.7	4.65.7	810	9.312	1420

150x130/160

LCK 1942

150x130/160

LCK 1944

130x105/160

LCK 1940

Bath opening/depth

Cat. No. 230 V; 50 Hz

^{*} Working temperature range is equal to ACC range

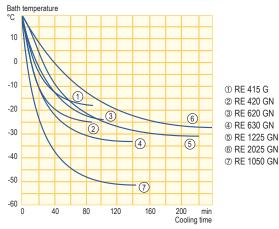
ECO Air-cooled cooling thermostats with control head Gold

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 GN has an especially high cooling capacity and reaches temperatures down to -50 °C. The integrated Smart-Cool system ensures remarkable energy and cost savings. The RE 415 G with small foot print saves valuable laboratory space.



Cooling thermostat RE 1050 GN

Cooling curves Heat transfer liquid: Ethanol, bath closed Bath temperature



Pump characteristics on page 23

Temperature range -50...200 °C

Included accessories

Bath cover $\,\cdot\,$ pump connections with M16 x 1 thread $\,\cdot\,$ closing plugs

Additional accessories

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

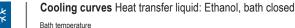
All technical data on and following Other power supply was a supply wa	1 0	546 mm age 112	555 mm	581 mm	581 mm	624 mm	624 mm	624 mm
Technical features		RE 415 G	RE 420 GN	RE 620 GN	RE 630 GN	RE 1050 GN	RE 1225 GN	RE 2025 GN
Working temperature range*	°C	-15200	-20200	-20200	-30200	-50200	-25200	-25200
Temperature stability	±Κ	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	3.34	3.34	4.65.7	4.65.7	810	9.312	1420
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 1941	LCK 1943	LCK 1945	LCK 1947	LCK 1949	LCK 1951

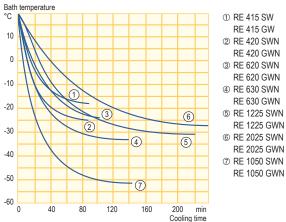
ECO Water-cooled cooling thermostats with control head Silver and Gold

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.



Cooling thermostat RE 1050 GWN





Pump characteristics on page 23

Temperature range -50...200 °C

Included accessories

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

Additional accessories

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



All technical data on page 100, 102 and following Other power supply variants on page 112

Technical features		RE 415 SW	RE 420 SWN	RE 620 SWN	RE 630 SWN	RE 1050 SWN	RE 1225 SWN	RE 2025 SWN
Working temperature range*	°C	-15200	-20200	-20200	-30200	-50200	-25200	-25200
Temperature stability	±Κ	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Heater power	kW	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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	3.34	3.34	4.65.7	4.65.7	810	9.312	1420
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 1954	LCK 1956	LCK 1958	LCK 1960	LCK 1962	LCK 1964

Technical features		RE 415 GW	RE 420 GWN	RE 620 GWN	RE 630 GWN	RE 1050 GWN	RE 1225 GWN	RE 2025 GWN
Working temperature range*	°C	-15200	-20200	-20200	-30200	-50200	-25200	-25200
Temperature stability	±Κ	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	3.34	3.34	4.65.7	4.65.7	810	9.312	1420
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 1955	LCK 1957	LCK 1959	LCK 1961	LCK 1963	LCK 1965

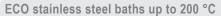
* Working temperature range is equal to ACC range

ECO accessories (excerpt)

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



The insulated baths made from stainless steel can be used up to 200 $^{\circ}$ 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









HDQ 133



ECO accessories (excerpt)

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
LRZ 921	Ethernet module	Upper module slot
LRZ 922	EtherCAT module with M8 connection	Upper module slot
LRZ 923	EtherCAT module with RJ45 connection	Upper module slot
LCZ 9727	Module box with LiBus for 2 modules	LiBus module





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	-10155 °C



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



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