The right temperature worldwide

LAUDA

Chapter Variocool

LAUDA – the big one

Thermostats, Circulation chillers, Water baths

Overall Brochure 2016/2017

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)

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, allowing for easy 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.

Application examples

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

Your advantages at a glance

The Variocool advantages	Your benefits
	• All models are equipped with electronic expansion valves. • 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
	• 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
 	• Options: • High power pumps • Heaters • Outdoor installation • Sound absorption
 	• 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 • Ethernet module • EtherCAT module
	• 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

Your benefits
• Cost savings thanks to reduced energy consumption • The appropriate solution to every requirement • Saves valuable lab space
• Easy and clear setup options • Early detection of insufficient fluid
• Flexible customization to applications • Good temperature control up to ±0,05 K
• Easy accessibility • Flexible control options
• Easy to clean condenser • Space-saving setup • Reduced footprint and lower refrigerant quantity • Connection of pressure sensitive applications

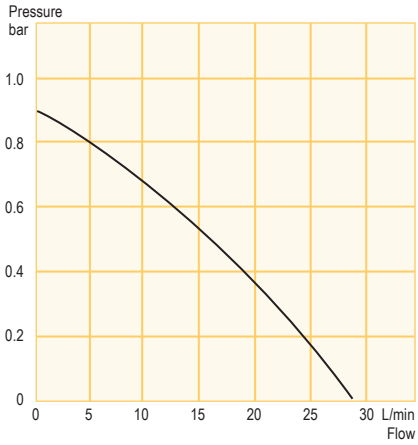
LAUDA Variocool

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 (W). 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

Additional accessories
Interface modules: analog, RS 232/485, contact, Profibus, Ethernet, EtherCAT, Pt100/LiBus module

Options
High-power pumps** · heater

All technical data on page 106 and following

Other power supply variants on page 114

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	0.05	0.05	0.05	0.05	0.05
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

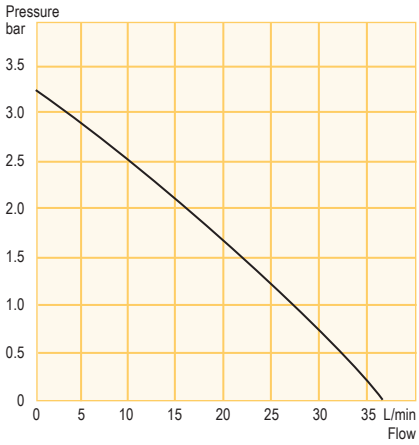
* Working temperature range is equal to ACC range **Using such a pump changes the available cooling capacity, and causes a change of the height of the housing from 650 mm to 790 mm for VC 1200 (W) and VC 2000 (W)

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 for VC 5000 and a sound absorption for 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

Additional accessories
Interface modules: analog, RS 232/485, contact, Profibus, Ethernet, EtherCAT, Pt100/LiBus module

Options
High-power pumps** · heater · outdoor installation (VC 5000) · sound absorption (VC 5000, VC 5000 W)

All technical data on page 106 and following

Other power supply variants on page 114, 115


970 mm


970 mm


970 mm


970 mm

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	0.05	0.05	0.05	0.05
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

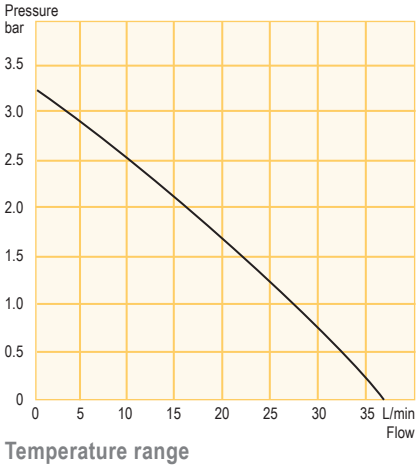
LAUDA Variocool

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

Additional accessories
Interface modules: analog, RS 232/485, contact, Profibus, Ethernet, EtherCAT, Pt100/LiBus module

Options
High-power pumps** · heater · outdoor installation (VC 7000, VC 10000) · sound absorption


1250 mm


1250 mm


1250 mm


1250 mm

All technical data on page 106 and following

Other power supply variants on page 115

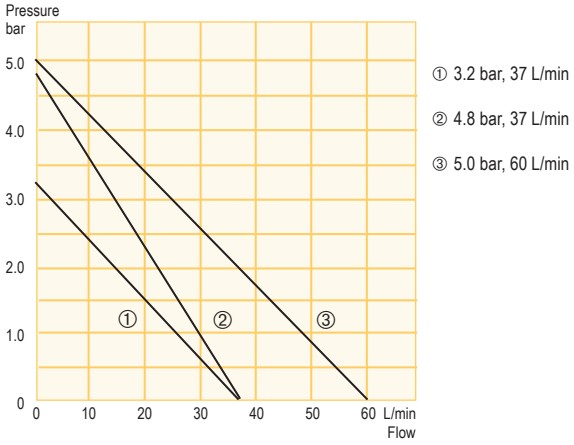
Technical features		VC 7000	VC 7000 W	VC 10000	VC 10000 W
Working temperature range*	°C	-20…40	-20…40	-20…40	-20…40
Working temperature range with optional heater	°C	-20…80	-20…80	-20…80	-20…80
Temperature stability	±K	0.1	0.1	0.1	0.1
Cooling output at 20 °C	kW	7.0	7.0	10.0	10.0
Pump pressure max.	bar	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 installed during production. Please check the following tables for compatibility of options with the corresponding circulation chiller type.

Pump characteristics optional pumps



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, VC 7000, VC 10000. An additional protection with a roof is necessary.
Sound absorption	For models VC 5000 up to 10000 W.

Options – not power supply dependent

Option	Cat. No.	VC 5000	VC 5000 W	VC 7000	VC 7000 W	VC 10000	VC 10000 W
Outdoor installation	LWZ 922	●	–	–	–	–	–
Outdoor installation	LWZ 923	–	–	●	–	●	–
Sound absorption	LWZ 126	●	–	–	–	–	–
Sound absorption	LWZ 127	–	●	–	–	–	–
Sound absorption	LWZ 128	–	–	●	–	●	–
Sound absorption	LWZ 135	–	–	–	●	–	●

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 2.25 kW	LWZ 1107	–	●	●	●	●	–	–	–	–	–	–	–	–
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 1.8-2.1 kW	LWZ 8107	–	–	●	●	●	●	–	–	–	–	–	–	–	–
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 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 1.7 kW	LWZ 5107	–	●	●	●	●	–	–	–	–	–	–	–	–
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**①	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

① 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

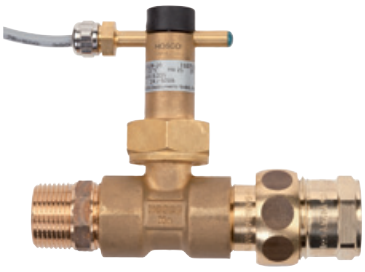
Cat. No.	Description
LWZ 134	Ball valve G 3/4“

LWZ 134

Flow control instrument

For control of the flow of the heat transfer liquid. If the flow is too low a contact is switched. For mounting on the fitting of the return flow.

Cat. No.	Designation	Suitable for
LWZ 119	Flow control instrument 1 1/4“	VC 7000 (W)…VC 10000 (W)
LWZ 129	Flow control instrument M16 x 1	VC 600
LWZ 118	Flow control instrument 3/4“	VC 1200 (W)…VC 5000 (W)



LWZ 118

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

LRZ 912 LRZ 913 LRZ 914 LRZ 915 LRZ 917

LRZ 918 LRZ 921 LRZ 922 LRZ 923

LCZ 9727

Temperature solutions:

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

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