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Find the *Lauda WKL1200* at our website: ***Click HERE***

# LAUDA WK class

Circulation chillers with closed cooler circuit for continuous operation in research, technology and production at temperatures from -30 up to 40 °C










### Application examples

- Analytical devices such as electron microscopes, X-ray units, refractometers, distilling systems or AAS units
- Rotary evaporators and Soxhlet systems
- X-ray control systems e.g. at airports and semiconductor systems
- Control of cooling traps e.g. in the drying of gases
- Central cooling water supplies for complete laboratories to replace cooling with tap water

## Reliable, large selection of models, compact construction

**LAUDA WK class** circulation chillers are used where operating heat has to be discharged reliably and quickly in chemical production processes or from technical systems – in harsh constant use environments. Unlike cooling with tap water, they provide a constant temperature irrespective of the time of year and pressure fluctuations. The water saving also protects the environment and significantly reduces operating costs.



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# Your advantages at a glance

| | The WK class advantages | Your benefits |
|---|---|---|
|  | • 37 different models<br>• Cooling output from 230 W to 13 kW | • The right solution for all requirements<br>• Cooling-water temperature and pressure always constant |
|  | • LED display and 3-button operation | • Easy operation |
|  | • Easily visible level display and discharge pressure display from WK 1200<br>• All devices with submersible pump | • Important operating parameters visible at a glance<br>• No seal problems at the pump shaft |
|  | • Below the bench height of 79 cm on units up to WK 2400<br>• Small footprint | • Fits under the standard laboratory bench top<br>• Saves valuable laboratory space |



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# WK class
# WK circulation chillers up to 600 W

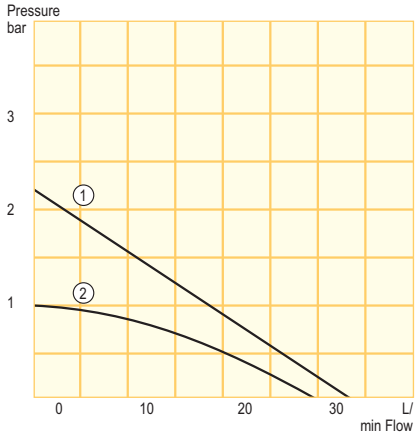
The circulation chillers of the WK class are available with different cooling and pump configurations. The temperature range for all the units is from 0 up to 40 °C.

The LAUDA WK 300 was especially designed for simple cooling tasks down to 0 °C and is ideally suited for the use on the laboratory bench due to its compact size. The circulation chillers WK 500 and WK 502 differ in their cooling and pump output. The WK 502 was especially designed for the connection to atomic absorption spectrometers (ASS). Unlike the WK 500, it has an appropriately upgraded cooling unit and pump.



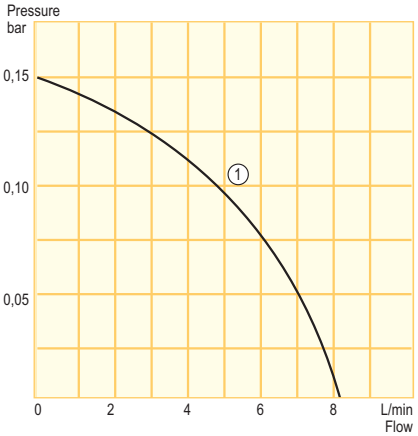
Circulation chiller WK 500

**Pump characteristics** Heat transfer liquid: Kryo 30




① WK 502
② WK 500, WK 1400
WK 1400 W, WK 2400
WK 2400 W
T 1200...T 2200 W
UWT 3000, UWT 6000
(1-bar pump)

**Pump characteristic** Heat transfer liquid: Kryo 30




① WK 300, WKL 230

**Temperature range**
0...40 °C

**Standard accessories**
Nipples · screw caps

**Options (only WK 500, WK 502)**
Digital interface RS 232/485, (LWZ 033) · flow control instrument (LWZ 034)

**Recommended accessories**
Fiber-reinforced rubber tubing 1/2" · insulation for rubber tubing 1/2" · 4-port manifold

All technical data from page 98
Other power supply variants on page 103

| Technical features | | WK 300 | WK 500 | WK 502 |
|---|---|---|---|---|
| Working temperature range* | °C | 0...40 | 0...40 | 0...40 |
| Temperature stability | ±K | 0.5 | 0.5 | 0.5 |
| Cooling output at 20 °C | kW | 0.31 | 0.50 | 0.60 |
| Pump pressure max. | bar | 0.15 | 1.0 | 2.2 |
| Pump flow max. | L/min | 8 | 30 | 33 |
| **Cat. No.** 230 V; 50 Hz | | LWM 117 | LWG 132 | LWG 140 |

* Working temperature range is equal to ACC range



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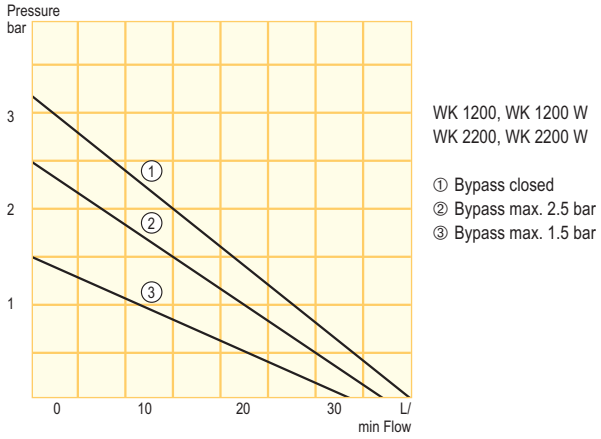
# WK class
# WK circulation chillers up to 2.8 kW

The differences between the individual units are the effective cooling and pump outputs and the dimensions. All units can be supplied with water cooling (W). This enables greater cooling performance without heating of the surrounding laboratory environment.



Circulation chiller WK 1200

**Pump characteristics** Heat transfer liquid: Kryo 30




WK 1200, WK 1200 W
WK 2200, WK 2200 W

① Bypass closed
② Bypass max. 2.5 bar
③ Bypass max. 1.5 bar

### Temperature range
0...40 °C

### Standard accessories
Nipples · screw caps · Water tubing – only WK 1200 W, WK 1400 W, WK 2200 W, WK 2400 W

### Options
Digital interface RS 232/485 (LWZ 033) · flow control instrument (LWZ 035) · high-power pump 5.5 bar (LWZ 031) – only WK 1200, WK 1200 W, WK 2200, WK 2200 W

### Recommended accessories
Fiber-reinforced rubber tubing 3/4" · insulation for rubber tubing 3/4" · 4-port manifold · fiber-reinforced rubber tubing 1/2" · insulation for rubber tubing 1/2"

All technical data from page 98
Other power supply variants on page 103

| Technical features | | WK 1200 | WK 1200 W | WK 1400 | WK 1400 W |
|---|---|---|---|---|---|
| Working temperature range* | °C | 0...40 | 0...40 | 0...40 | 0...40 |
| Temperature stability | ±K | 0.5 | 0.5 | 0.5 | 0.5 |
| Cooling output at 20 °C | kW | 1.2 | 1.5 | 1.4 | 1.7 |
| Pump pressure max. | bar | 3.2 | 3.2 | 1** | 1** |
| Pump flow max. | L/min | 40 | 40 | 30 | 30 |
| **Cat. No.** 230 V; 50 Hz | | LWG 133 | LWG 161 | LWG 137 | LWG 162 |

| Technical features | | WK 2200 | WK 2200 W | WK 2400 | WK 2400 W |
|---|---|---|---|---|---|
| Working temperature range* | °C | 0...40 | 0...40 | 0...40 | 0...40 |
| Temperature stability | ±K | 1 | 1 | 1 | 1 |
| Cooling output at 20 °C | kW | 2.2 | 2.6 | 2.4 | 2.8 |
| Pump pressure max. | bar | 3.2 | 3.2 | 1** | 1** |
| Pump flow max. | L/min | 40 | 40 | 30 | 30 |
| **Cat. No.** 230 V; 50 Hz | | LWG 134 | LWG 163 | LWG 138 | LWG 164 |

* Working temperature range is equal to ACC range ** Pump characteristics p. 70



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## WK class
## WK circulation chillers up to 13 kW

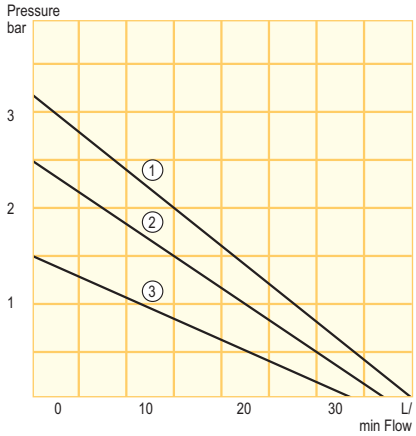
The different cooling capacities are critical when selecting a unit. The WK class circulation chillers from 1 kW cooling output upwards are also available with water-cooling (W). In the more powerful WK 7000 to WK 10000 W circulation chillers, a second pump provides the internal circulation in addition to the pump for the external circuit. Thus the cooling capacity and temperature stability do not depend on the flow characteristics in the external circuit. These units can be supplied on request with water cooling (W). For these units, the use of water/glycol mixtures as heat transfer liquid is compulsory.

The LAUDA WK circulation chillers are available with different options, e.g. RS 232/485 interface and enhanced pumping systems.



Circulation chiller WK 7000

**Pump characteristics** Heat transfer liquid: Kryo 30




WK 3200 to
WK 10000 W

① Bypass closed
② Bypass max. 2.5 bar
③ Bypass max. 1.5 bar

### Temperature range
0...40 °C

### Standard accessories
Nipples · screw caps ·
Water tubing – only WK 3200 W, WK 4600 W

### Options
High-power pump 5.5 bar (LWZ 032) ·
digital interface RS 232/485 (LWZ 033) ·
flow control instrument (LWZ 035)

### Recommended accessories
Fiber-reinforced rubber tubing 3/4“ · insulation for rubber tubing 3/4“ · 4-port manifold · fiber-reinforced rubber tubing 1/2“ · insulation for rubber tubing 1/2“

All technical data from page 98
Other power supply variants on page 103

| Technical features | | WK 3200 | WK 3200 W | WK 4600 | WK 4600 W |
|---|---|---|---|---|---|
| Working temperature range* | °C | 0...40 | 0...40 | 0...40 | 0...40 |
| Temperature stability | ±K | 1 | 1 | 0.5 | 0.5 |
| Cooling output at 20 °C | kW | 3.5 | 4.0 | 4.6 | 5.3 |
| Pump pressure max. | bar | 3.2 | 3.2 | 3.2 | 3.2 |
| Pump flow max. | L/min | 40 | 40 | 40 | 40 |
| **Cat. No.** 400 V; 3/N/PE; 50 Hz | | LWG 235 | LWG 265 | LWG 236 | LWG 258 |

| Technical features | | WK 7000 | WK 7000 W | WK 10000 | WK 10000 W |
|---|---|---|---|---|---|
| Working temperature range* | °C | 0...40 | 0...40 | 0...40 | 0...40 |
| Temperature stability | ±K | 0.5 | 0.5 | 0.5 | 0.5 |
| Cooling output at 20 °C | kW | 7.0 | 8.5 | 10.0 | 13.0 |
| Pump pressure max. | bar | 3.2 | 3.2 | 3.2 | 3.2 |
| Pump flow max. | L/min | 40 | 40 | 40 | 40 |
| **Cat. No.** 400 V; 3/N/PE; 50 Hz | | LWG 245** | LWG 247** | LWG 249** | LWG 251** |

* Working temperature range is equal to ACC range  ** Use of water/glycol mixtures as heat transfer liquid is compulsory.



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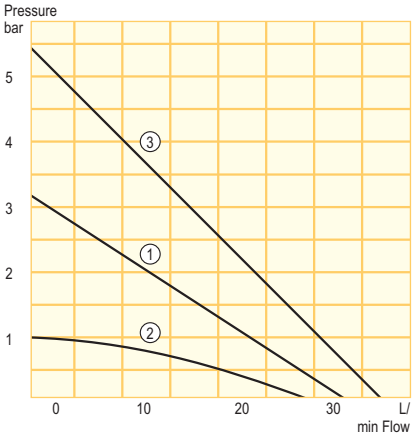
# WK class
# WKL circulation chillers up to 1 kW

The WKL 230 circulation chiller was especially designed for simple thermostating tasks below 0 °C. Thanks to its extremely compact construction and small footprint it fits anywhere. The temperature range of the WKL 230 is from -10 up to 40 °C with a temperature stability of ±0.5 K. The compact circulation chillers WKL 600 to WKL 1000 have different pumps and cooling performance.



Circulation chiller WKL 230

**Pump characteristics** Heat transfer liquid: Kryo 30




① WKL 603, WKL 903
② WKL 600, WKL 900
WKL 1000
③ Option
pump 5.5 bar

Pump characteristics
WKL 230 and WK 300
p. 70

### Temperature range
-25...40 °C

### Standard accessories
Nipples · screw caps · bath cover (WKL 230)

### Options (WKL 600...1000)
Digital interface RS 232/485 (LWZ 033) ·
flow control instrument (LWZ 034)

### Additional accessories WKL 230...1000
EPDM-tube (only WKL 230) · fiber-reinforced rubber tubing 1/2" · insulation for rubber tubing 1/2" · 4-port manifold · adjustable bypass and pressure indication (WKL 603 and WKL 903)

All technical data from page 98
Other power supply variants on page 103

| Technical features | | WKL 230 | WKL 600 | WKL 603 |
|---|---|---|---|---|
| Working temperature range* | °C | -10...40 | -25...40 | -20...40 |
| Temperature stability | ±K | 0.5 | 1.0 | 1.0 |
| Cooling output at 20 °C | kW | 0.23 | 0.65 | 0.52 |
| Pump pressure max. | bar | 0.15 | 1.0 | 3.2 |
| Pump flow max. | L/min | 8 | 30 | 33 |
| **Cat. No.** 230 V; 50 Hz | | LWM 016 (230 V; 50/60 Hz) | LWG 141 | LWG 142 |

| Technical features | | WKL 900 | WKL 903 | WKL 1000 |
|---|---|---|---|---|
| Working temperature range* | °C | -20...40 | -15...40 | -10...40 |
| Temperature stability | ±K | 1.0 | 1.0 | 0.5 |
| Cooling output at 20 °C | kW | 0.95 | 0.8 | 1.0 |
| Pump pressure max. | bar | 1.0 | 3.2 | 1.0 |
| Pump flow max. | L/min | 30 | 33 | 30 |
| **Cat. No.** 230 V; 50 Hz | | LWG 159 | LWG 160 | LWG 173 |

* Working temperature range is equal to ACC range



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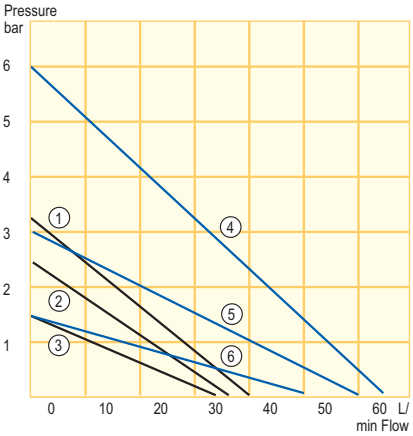
# WK class
# WKL circulation chillers up to 13 kW

The WKL circulation chillers differ in terms of their cooling outputs and achieve temperatures of -10 °C (WKL 1200 to WKL 4600 W) or -30 °C (WKL 7000 to WKL 10000 W). All units are also available in the water-cooled design (W). With these units, the use of water/glycol mixtures as the heat transfer liquid is compulsory.



Circulation chiller WKL 7000

**Pump characteristics** Heat transfer liquid: Kryo 30




WKL 1200, WKL 1200 W
WKL 2200, WKL 2200 W
WKL 3200, WKL 3200 W
WKL 4600, WKL 4600 W

① Bypass closed
② Bypass max. 2.5 bar
③ Bypass max. 1.5 bar

WKL 7000, WKL 7000 W
WKL 10000, WKL 10000 W

④ Bypas closed
⑤ Bypass max. 3 bar
⑥ Bypass max. 1.5 bar

### Temperature range
-30...40 °C

### Standard accessories
Nipples · screw caps · Water tubing – only WKL 1200 W, WKL 2200 W, WKL 3200 W, WKL 4600 W, WKL 7000 W and WKL 10000 W

### Options
Enlarged temperature range down to -25 °C to WKL 4600 (W) · RS 232/485 digital interface · flow control instrument · low-pressure pump 1 bar (30 L/min)**** · high-power pump 5.5 bar

All technical data from page 98
Other power supply variants on page 103

| Technical features | | WKL 1200 | WKL 1200 W | WKL 2200 | WKL 2200 W | WKL 3200 | WKL 3200 W |
|---|---|---|---|---|---|---|---|
| Working temperature range* | °C | -10...40 | -10...40 | -10...40 | -10...40 | -10...40 | -10...40 |
| Temperature stability | ±K | 0.5 | 0.5 | 1.0 | 1.0 | 1.0 | 1.0 |
| Cooling output at 20 °C | kW | 1.2 | 1.6 | 2.2 | 2.7 | 3.5 | 4.2 |
| Pump pressure max. | bar | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| Pump flow max. | L/min | 40 | 40 | 40 | 40 | 40 | 40 |
| **Cat. No.** 230 V; 50 Hz | | LWG 153 | LWG 166 | LWG 154 | LWG 167 | LWG 255** | LWG 268** |

| Technical features | | WKL 4600 | WKL 4600 W | WKL 7000 | WKL 7000 W | WKL 10000 | WKL 10000 W |
|---|---|---|---|---|---|---|---|
| Working temperature range* | °C | -10...40 | -10...40 | -30...40 | -30...40 | -30...40 | -30...40 |
| Temperature stability | ±K | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Cooling output at 20 °C | kW | 4.6 | 5.3 | 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 |
| **Cat. No.** 400 V; 3/N/PE; 50 Hz | | LWG 256 | LWG 257 | LWG 246*** | LWG 248*** | LWG 250*** | LWG 252*** |

* Working temperature range is equal to ACC range ** 400 V; 3/N/PE; 50 Hz *** Use of water/glycol mixtures as heat transfer liquid is compulsory. **** Pump characteristics p. 70



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# WK class accessories

## Reinforced polymer tubing

Special polymer tubing (EPDM) for high pressures

| Cat.-No. | Description | Temperature range °C | Max. pressure in bar |
|---|---|---|---|
| **RKJ 031** | Polymer tube 1/2“ fiber-reinforced | -40...100 | 20 |
| **RKJ 032** | Polymer tube 3/4“ fiber-reinforced | -40...100 | 20 |
| **RKJ 033** | Polymer tube 1“ fiber-reinforced | -40...100 | 20 |

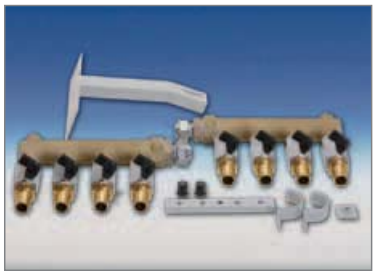


**RKJ 031**

## Manifold connectors

For joining multiple external systems (for water/glycol, not suitable for silicone oil)

| Cat.-No. | Description | Connection | Male thread | Temperature range °C |
|---|---|---|---|---|
| **LWZ 010** | Four-port manifold | G 3/4“ | 4 x 3/4“ | -10...100 |
| **LWZ 022** | Four-port manifold | G 3/4“ | 4 x 1/2“ | -10...100 |
| **LWZ 039** | Four-port manifold | G 3/4“ | 4 x 10 mm | -10...100 |
| **LWZ 024** | Four-port manifold | G 1 1/4“ | 4 x 3/4“ | -10...100 |
| **LWZ 038** | Four-port manifold | M16 x 1 | 4 x 10 mm | -10...100 |
| **LWZ 009** | Four-port manifold | M16 x 1 | 4 x 1/2“ | -10...100 |

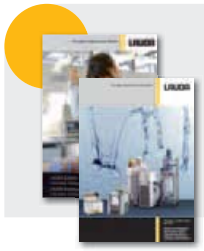


**LWZ 009**

| Options ex works: WK circulation chillers up to 0 °C | Cat.-No. | WK 300 | WK 500 | WK 502 | WK 1200 | WK 1200 W* | WK 1400 | WK 1400 W* | WK 2200 | WK 2200 W* | WK 2400 | WK 2400 W* | WK 3200 | WK 3200 W* | WK 4600 | WK 4600 W* | WK 7000 | WK 7000 W* | WK 10000 | WK 10000 W* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS 232/485 digital interface | LWZ 033 | – | | | | | | | | | | | | | | | | | | |
| Flow control instrument | LWZ 034 | – | | | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | LWZ 035 | – | – | – | | | | | | | | | | | | | | | | |
| High-power pump 5.5 bar, 40 L/min. 50-Hz version (see pump characteristics on p. 73) | LWZ 031-1 | — | — | – | | | – | – | | | – | – | – | – | – | – | – | – | – | – |
| | LWZ 032-1 | | | – | – | – | – | – | – | – | – | – | | | | | | | | |

| Options ex works: WK circulation chillers down to -30 °C | Cat.-No. | WKL 230 | WKL 600 | WKL 603 | WKL 900 | WKL 903 | WKL 1000 | WKL 1200 | WKL 1200 W* | WKL 2200 | WKL 2200 W* | WKL 3200 | WKL 3200 W* | WKL 4600 | WKL 4600 W* | WKL 7000 | WKL 7000 W* | WKL 10000 | WKL 10000 W* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Enlarged temperature range down to -25 °C | LWZ 030 | – | – | – | – | – | – | ● | ● | ● | ● | ● | ● | ● | ● | – | – | – | – |
| RS 232/485 digital interface | LWZ 033 | – | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Flow control instrument | LWZ 034 | – | ● | ● | ● | ● | ● | – | – | – | – | – | – | – | – | – | – | – | – |
| | LWZ 035 | – | – | – | – | – | – | ● | ● | ● | ● | ● | ● | ● | ● | – | – | – | – |
| | LWZ 036 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | ● | ● | ● | ● |
| Low-pressure pump 1 bar, 30 L/min. 50-Hz version (see pump characteristics on p. 70 above) | LWZ 041-1 | – | – | – | – | – | – | ● | ● | ● | ● | – | – | – | – | – | – | – | – |
| High-power pump 5.5 bar, 40 L/min. 50-Hz version (see pump characteristics on p. 73) | LWZ 031-1 | – | – | – | – | – | – | ● | ● | ● | ● | – | – | – | – | – | – | – | – |
| | LWZ 032-1 | – | – | – | – | – | – | – | – | – | – | ● | ● | ● | ● | ● | ● | ● | ● |

* W = water-cooled version



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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