LAUDA scientific

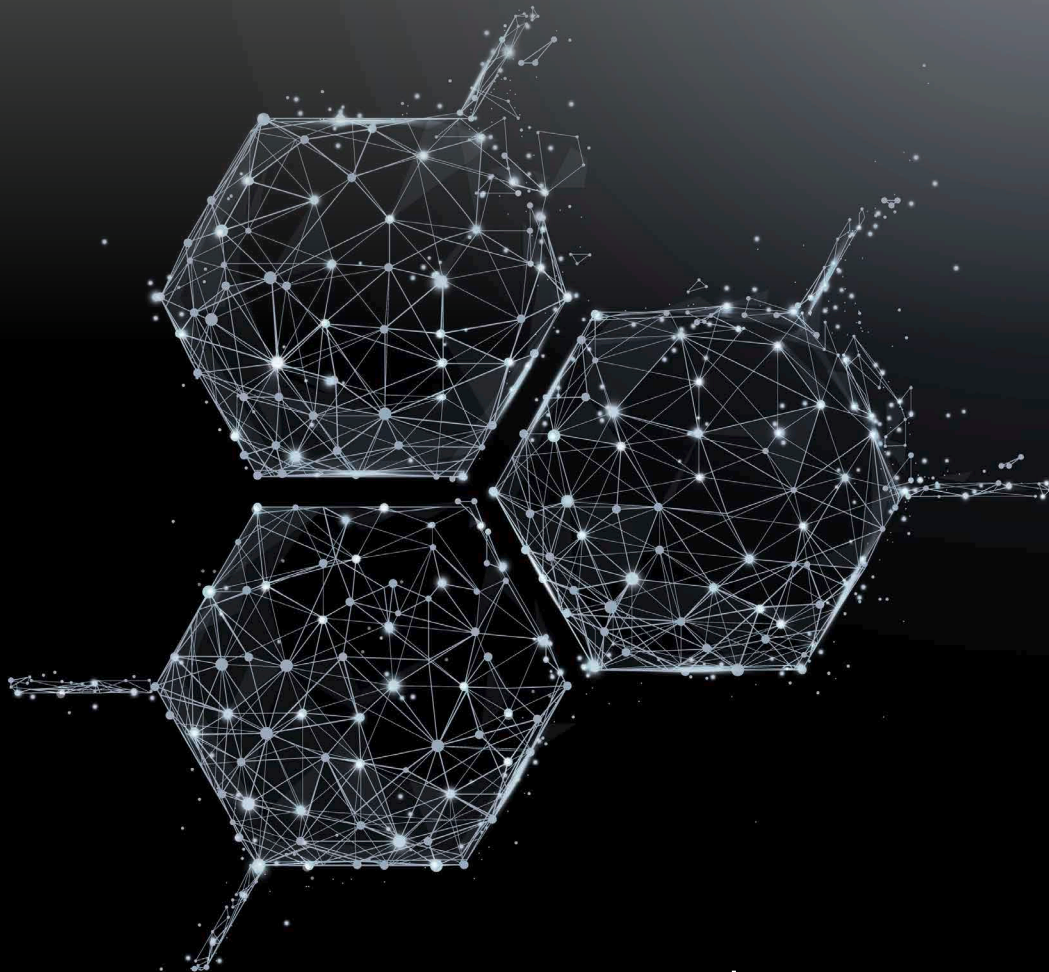## Precise measuring instruments for viscosity and surface science

Product range 2023 / 2024

Version 2023-09-01

Viscothermostats

Precise data. Constant values.

Viscothermostats

LAUDA Scientific viscothermostats provide accurate tempering for all glass capillary viscometers. Various products are available to support different system configurations where international norm standards require a precise temperature stability (**ASTM 0445**, **ISO 3105** and DIN 51562 from now on **DIN 53000**).

NEW

Control head for viscothermostats Viscocool 6, Viscotemp 18, Viscotemp ET and Viscotemp 15 / 24

Special Features:

‖ Inbuilt cooling coil to connect an external circulation chiller (e.g. MC 250)

‖ Colored TFT display for simultaneous indication of actual and set temperature

‖ Powerful heater (up to 2,6 kW)

LCD S0293
Viscocool 6
(Image similar)

Viscocool 6, Viscotemp 18, Viscotemp ET

For R&D applications close to ambient temperature, the **Viscocool 6** is the perfect selection. With a footprint of only 206 x 415 mm and an integrated thermoelectric unit it provides cooling without any additional devices.

The **Viscotemp ET** is a very economic bath made from polycarbonate where a maximum of three glass capillary viscometers for manual measurement using the stop watch or up to two automatic measuring stations for iVisc or S5 (PVS) can be used. If required, when using dilution viscometers for example, up to two magnetic stirrers can be added to the thermostat.

LCD S0289
Viscotemp ET
(Image similar)

The **Viscotemp 18** had been designed for temperatures around 100 °C, e.g. for operation with silicone oils and aggressive samples. Cover plates for either five manual measuring units or for one iVisc or S5 measuring stand plus one additional glass capillary viscometer can be provided.

Technical features	Viscocool 6 (LCD S0293)	Viscotemp 18 (LCD S0295)	Viscotemp ET (LCD S0289)
Material bath vessel	Polycarbonate	Glass	Polycarbonate
Working temperature range	15...90 °C	0[1]...105 °C	20[1]...100 °C
Temperature stability	± 0.01 K	± 0.01 K	± 0.01 K
Max. amount measuring stands	1	1	2
Max. amount manual thermost. positions	2	5	3
VRM mounting set available	✘	✘	✓
Heater power	2.6 kW	2.6 kW	2.6 kW
Bath volume	6.5 l	18.5 l	15 l
Voltage	230 V, 50/60 Hz [2]	230 V, 50/60 Hz [2]	230 V, 50/60 Hz [2]
Dimensions (W x D x H)	206 x 415 x 530 mm	Ø 310 x 510 mm	428 x 130 x 532 mm
Supplied cover plate	Cover plate Viscocool A1M1	Cover plate Viscotemp 18 M5	Cover plate Viscotemp ET A2

[1] Can be realized with external cooling

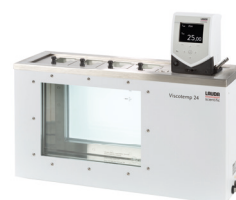[2] Other power supply variants on request

Viscotemp 15 / 24

The Viscotemp 15 / 24 provides a high-quality stainless steel bath and glass window and can be used in the most common temperature range from 0 up to 105 °C. The well-arranged single-chamber system with optional background lighting allows a crystal-clear view and can be easily cleaned. Typical applications for that products are the determination of the viscosity index of motor oils or the solution viscosity of plastics.

The **Viscotemp 15** can be used with up to four manual measuring stations or two automatic measuring stands, iVisc or S5 (PVS). **Viscotemp 24** offers the capacity to work with maximum seven viscometers or up to four automatic measuring stands. On both versions the VRM 4 cleaning module can be installed. The corrosion-resistant thermostating bath allows the handling with aggressive samples, e.g. polyamides dissolved in sulfuric acid and is approved for the usage of suitable silicon oils (e.g. Therm 180) as heat transfer liquid.

Special Features:

ǁ Corrosion-resistant stainless steel bath
  with 19 to 27 liter bath volumes

ǁ For up to 4 automatic or 7 manual measuring stations

ǁ Clear design makes quick cleaning possible

ǁ Variopump with six pumping levels and pump flow
  distribution for perfect homogeneity

ǁ Display with standards-compliant resolution of 0.01 K,
  intuitive operation via cursor and soft-keys

LCD S0299
Viscotemp 24
(Image similar)

Technical features	Viscotemp 15 (LCD S0297)	Viscotemp 24 (LCD S0299)
Working temperature range	0[1]…105 °C	0[1]…105 °C
Temperature stability	± 0.01 K	± 0.01 K
Max. amount measuring stands	2	4
Max. amount of manual thermostating positions	4	7
VRM mounting set available	✓	✓
Heater power	2.6 kW	2.6 kW
Bath volume	19 l	27 l
Glass pane size (W x H)	152 x 233 mm	329 x 233 mm
Voltage	230 V, 50/60 Hz [2]	230 V, 50/60 Hz [2]
Dimensions (W x D x H)	532 x 233 x 552 mm	708 x 233 x 552 mm
Supplied cover plate	Cover plate Viscotemp 15 A2	Cover plate Viscotemp 24 A4

[1] Can be realized with external cooling   [2] Other power supply variants on request

Viscotemp Pro 15 / 24 / 36

LAUDA Scientific Viscotemp Pro viscothermostats provide an outstanding temperature stability and homogeneity over the complete temperature range for all typical viscosity applications. As such, they are ideal for use with the fully automated PVS-S5 or iVisc viscometer and they are mandatory for the use with the VAS autosampler systems. Thanks to the double-chamber principle, a constant liquid level in the measuring room is guaranteed – even when changing the temperatures.

The special **Viscotemp Pro L models** are equipped with five layers of insulating glass. By connecting a LAUDA PRO circulation thermostat RP 250 or RP 290, they are suited for low-temperature measurements down to -40 or -60°C.

LCD S0276
Viscotemp Pro 15
(Image similar)

LCD S0278
Viscotemp Pro 24
(Image similar)

LCD S0302
Viscotemp Pro 15
With ball bearing when using silicon oil heat transfer liquids

Special Features:

‖ Corrosion-resistant stainless steel bath with 15, 24 or 36 liter bath volume

‖ Double-chamber system for constant liquid level in the measuring chamber of bath

‖ Multi-glazing with optional heating avoids fogged up glass panes

‖ For up to 6 automatic or 9 manual measuring stations

‖ Integrated heat exchanger for counter-cooling, can be combined with LAUDA circulation thermostats

‖ High control precision thanks to adaptive PID regulation

‖ Optional external sensor controls the temperature at the measuring location

‖ Integration of magnetic stirrers and combination with VAS systems possible

Technical features	Viscotemp Pro 15 (LCD S0276)	Viscotemp Pro 24 (LCD S0278)	Viscotemp Pro 36 (LCD S0280)	Viscotemp Pro 15 L (LCD S0282)	Viscotemp Pro 24 L (LCD S0284)
Working temperature range	0[1]...150°C	0[1]...150°C	0[1]...150°C	-60[3]...100°C	-60[3]...100°C
Temperature stability	± 0.01 K	± 0.01 K	± 0.01 K	± 0.01 K	± 0.01 K
Max. amount measuring stands	2	4	6	2	4
Max. amount manual positions	3	7	9	3	7
Heater power	3.5 kW	3.5 kW	3.5 kW	3.5 kW	3.5 kW
Bath volume	11...15 l	19...24 l	28...36 l	11...15 l	19...24 l
Glass pane size (W x H)	149 x 230 mm	326 x 230 mm	506 x 230 mm	149 x 230 mm	326 x 230 mm
Voltage	230 V, 50/60 Hz [2]	230 V, 50/60 Hz [2]	230 V, 50/60 Hz [2]	230 V, 50/60 Hz [2]	230 V, 50/60 Hz [2]
Dimensions (W x D x H)	506x282x590mm	740x282x590mm	1,040x282x590mm	506x282x590mm	740x282x590mm

[1] Can be realized with additional LAUDA cooler   [3] Can be realized with LAUDA RP 290   [2] Further power supply variants on request

Cover plates for viscothermostats

Viscotemp 18

LCZ 0737   Cover plate Viscotemp 18 A1M1
For 1 measuring stand and 1 manual / thermostating position

LCZ 0736   Cover plate Viscotemp 18 M5
For 5 manual / thermostating positions
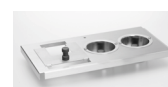
Viscotemp ET

LCZ 041   Cover plate Viscotemp ET A2
For 2 measuring stands

LCZ 040   Cover plate Viscotemp ET A1M2
For 1 measuring stand and 2 manual / thermostating positions

LCZ 0685   Cover plate Viscotemp ET M3
For 3 manual / thermostating positions

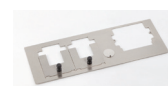## Viscotemp 15

LCZ 0730   Cover plate Viscotemp 15 A2
For 2 measuring stands

LCZ 0731   Cover plate Viscotemp 15 A1M2
For 1 measuring stand and 2 manual / thermostating positions

LCZ 0729   Cover plate Viscotemp 15 M4
For 4 manual / thermostating positions

Viscotemp 24

LCZ 0733   Cover plate Viscotemp 24 A4
For 4 measuring stands

LCZ 0734   Cover plate Viscotemp 24 A2M4
For 2 measuring stands and 4 manual / thermostating positions

LCZ 0732   Cover plate Viscotemp 24 M7
For 7 manual / thermostating positions

Viscotemp Pro 15

LTZ 045   Cover plate Viscotemp Pro 15 A2
For 2 measuring stands

LTZ 048   Cover plate Viscotemp Pro 15 A1M2
For 1 measuring stand and 2 manual / thermostating positions

LTZ 017   Cover plate Viscotemp Pro 15 M3
For 3 manual / thermostating positions

Cover plates for viscothermostats

Viscotemp Pro 24

LTZ 046   Cover plate Viscotemp Pro 24 A4
For 4 measuring stands

LTZ 049   Cover plate Viscotemp Pro 24 A3M3
For 3 measuring stands and 3 manual / thermostating positions

LTZ 019   Cover plate Viscotemp Pro 24 M5
For 5 manual / thermostating positions

LTZ 023   Cover plate Viscotemp Pro 24 M7
For 7 manual / thermostating positions

Viscotemp Pro 36

LTZ 047   Cover plate Viscotemp Pro 36 A6
For 6 measuring stands

LTZ 021   Cover plate Viscotemp Pro 36 M9
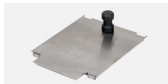For 9 manual / thermostating positions

General

LTZ 052   Adapter M for cover plates A
Conversion kit for manual measurements

HDR 016   Cover M complete
Use for cover plates M

HDQ 090   Cover A complete
Use for cover plates A

HDQ 093   Cover A for measuring stands
Use for stand position A

Accessories for viscothermostats

LCZ 9681   Heatable window frame for Viscotemp Pro 15 L
Avoids fogged up glass panes, LiBus (optional, installing by factory)

LCZ 9682   Heatable window frame for Viscotemp Pro 24 L
Avoids fogged up glass panes, LiBus (optional, installing by factory)

Bath illumination

LCZ 9738   Background lighting BL 15
LED back-light panel for Viscotemp 15 and Viscotemp Pro 15 (L)

LCZ 9739   Background lighting BL 24
LED back-light panel for Viscotemp 24 and Viscotemp Pro 24 (L)

LCZ 9740   Background lighting BL 36
LED back-light panel for Viscotemp Pro 36

EKS 068   Extension cable LiBus
5 m, for Background lighting BL 36 (LCZ 9740)

LCZ 9738 | LCZ 9739 | LCZ 9740

Accessories for viscothermostats

LRZ 913   **RS 232/485 Interface for viscothermostats**
Plug-in module upgrading viscothermostat with a RS 232/485 interface, necessary for temperature control via PC with PVS software module TEMP-DLL (LDVM2023)

ETP 059   **External temperature probe PT100-94**
For viscothermostats

LRZ 918   **Pt 100 LiBus module**
Plug-in unit for use with external temperature probe PT100-94 (ETP 059)

Magnetic stirrer equipment for dilution viscometry

LMZ 841   **Single-place magnetic stirrer set**
For Viscotemp ET (retrofitting possible)

LMVZ967-1 **Two-place magnetic stirrer set**
For Viscotemp Pro 15 with control unit, installing by factory

LMVZ968-1 **Four-place magnetic stirrer set**
For Viscotemp Pro 24 With control unit, installing by factory

UD 1190   **Spirit level**
For viscometer alignment

LRZ 913

UD 1190

Add. external cooling equipment

L001046   **LAUDA Microcool MC 250 (230 V / 50 Hz)**
Circulation chiller, working temp. range -10...+40°C, temperature stability 0.5 ± K, other power supply variants on request, requires silicone tubing (LZS 007)

LMVZ884   **Cool.Fix**
Heat exchanger for temperatures up to -50°C,
incl. 2x metal tubing MK 100 (LZM 053)
Requires external cooling-heating circulator (e.g. LAUDA PRO RP 290 E)

L000022   **LAUDA PRO RP 245 E (230 V / 50 Hz)**
Compact circulation thermostat for use
with Viscothermostats Viscotemp Pro L 15/24,
working temp. range -45...+200°C, temperature stability 0.05 ± K,
heater power max. 2.5 kW, cooling output (at 20°C) 0.8 kW,
(at -30°C) 0.15 kW, other power supply variants on request

L002502   **LAUDA PRO RP 290 E (230 V / 50 Hz)**
Compact circulation thermostat for use
with Viscothermostats Viscotemp Pro L 15/24,
working temp. range -90...+200°C, temperature stability 0.05 ± K,
heater power max. 2,5 kW, cooling output (at 20°C) 0,8 kW,
(at -60°C) 0,39 kW, other power supply variants on request

LAUDA Microcool MC 250

LMVZ884
Cool.Fix

Accessories for additional external cooling equipment

LCZ 0719
Cooling coil set

LZS 007

LCZ 0719   Cooling coil set
For use with circulating chillers and viscothermostats ET 15 S and
Viscotemp series, also suitable for direct use with of tap water

Tubings
For connecting circulation chillers with the cooling coil of viscothermostats

LZS 001   Silicone tubing
8 mm inner diameter (9 mm insulated), price per meter

LZS 007   Silicone tubing
11 mm inner diameter (9 mm insulated), price per meter

LZM 053   Metal tubing MK 100
M16X1, 100 cm, for temperatures -90...150 °C,
2 pcs. needed per each thermostat

LZM 055   Metal tubing MK 200
M16X1, 200 cm, for temperatures -90...150 °C,
2 pcs. needed per each thermostat

LZS 018   Viton tubing
12 mm inner diameter (10 mm insulated), price per meter
for temperatures -20...150 °C

HKA 068   Adapter
M16X1 – M14X1,5

EZS 012   Tubing clamp
For silicon and viton tubings (LZS 001, LZS 007, LZS 018)

Heat transfer liquids

LZB 114 | LZB 214 | LZB 314

[1] Temperature range
   technically approved

[2] **Temperature range recommended
   for viscosity measurement**

Silicon oil
Temperature ranges: 0...180 °C [1] | **10...110 °C [2]**

LZB 114   Therm 180, 5 l
LZB 214   Therm 180, 10 l
LZB 314   Therm 180, 20 l

Temperature ranges: 90...200 °C [1] | **90...150 °C [2]**

LZB 122   Therm 250, 5 l
LZB 222   Therm 250, 10 l
LZB 322   Therm 250, 20 l

Temperature ranges: -20...180 °C [1] | **-20...100 °C [2]**

LZB 116   KRYO 20, 5 l
LZB 216   KRYO 20, 10 l
LZB 316   KRYO 20, 20 l

Temperature ranges: -50...120 °C [1] | **-40...50 °C [2]**

LZB 121   KRYO 51, 5 l
LZB 221   KRYO 51, 10 l
LZB 321   KRYO 51, 20 l

Heat transfer liquids

Silicon oil

Temperature ranges: -70...30 °C [1] | **-60...30 °C [2]**

LZB 130   KRYO 95, 5 l
LZB 230   KRYO 95, 10 l
LZB 330   KRYO 95, 20 l

LZB 929   Aqua Stab water stabilizer, 100 ml

Algicide for viscothermostats, not suitable for Viscocool 6 and Viscotemp ET

LZB 929
Aqua Stab