

# Product catalog **2025**

## **Laboratory requirements**

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## About us



As a mechanical engineering company with more than 70 years of experience in the manufacture of environmental simulation systems, we at Köhler-VLM are experts in the field of corrosion testing.

Our origins date back to 1951, when we developed the first Kesternich condensation water system in collaboration with Wilhelm Kesternich. With our many years of experience and outstanding expertise, we always offer you the best possible advice and are constantly striving to improve.

Today, our diverse systems can be found in a wide range of quality assurance and development areas. We offer series devices for front and top loading as well as walk-in test chambers that can be individually adapted to customer requirements.

We also offer a wide range of laboratory equipment, such as metal block thermostats, evaporators and salt for corrosion testing. Our laboratory products range from standard devices to devices for special applications.



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**Important note:** the illustrations shown in the catalog may differ from the purchased item in the following respects: Appearance of the controller

## Our range of services



We have the right devices for your applications:

Choose from our wide range of services



### **Metal block thermostats with heating trays for exchangeable heating blocks or with permanently installed heating blocks**

- ✓ Types QS, EC, LS
- ✓ Working temperatures up to 130°C / 210°C
- ✓ Microprocessor controller (PID) with timer, ramp and calibration function



### **Metal block thermostats with liquid-tight, solid heating trays for the highest demands on temperature control precision**

- ✓ Optimal decontamination in clinical and life science laboratories
- ✓ Types HP, BIO,
- ✓ Working temperatures 130°/ 210°C
- ✓ Microprocessor controller (PID) with timer, ramp and calibration function



### **Metal block thermostats with permanently installed heating blocks for high temperatures**

- ✓ Type HT
- ✓ Working temperatures up to 300°C, 400°C
- ✓ Microprocessor controller (PID) JUMO or program controller for temperature
- ✓ Time programs



### **Metal block thermostats for special applications (SPA)**

- ✓ Hydroxyproline digestions (food analysis)
- ✓ COD digestions, Kjeldah digestions, aqua regia digestions
- ✓ High-temperature thermostats up to 450°C
- ✓ Custom-made products according to your specifications



### **Evaporator systems for evaporating solvents with nitrogen**

- ✓ Inexpensive systems with tripod
- ✓ Particularly user-friendly systems with lift
- ✓ Systems for visual inspection for evaporation to a residual volume.

*The prices in this catalog are non-binding. Despite all efforts to keep our prices constant during the validity of the catalog, we reserve the right to make price adjustments due to unforeseeable price increases for device components.*

## JUMO controller (PID)

*Optimum temperature stability through precise control*



### The function of the microprocessor controller (PID)

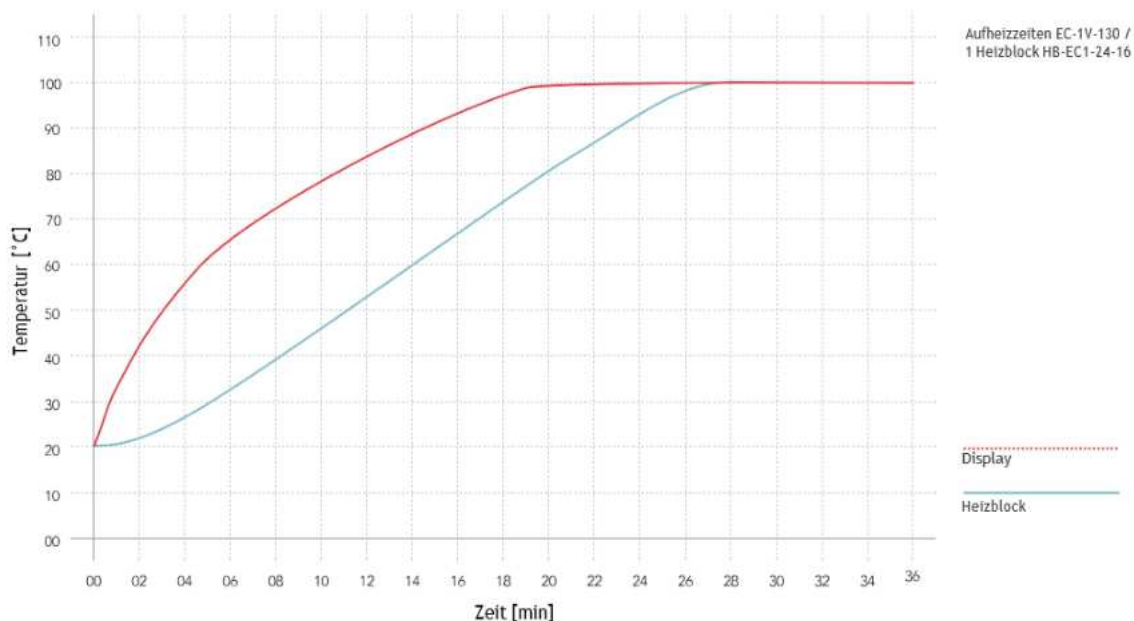
The devices in the EC, LS, QS, HP, BIO, HT and VIS product lines are equipped with the JUMO PID controller. The PID control parameters allow fast heating rates without overshooting and guarantee precise temperature control of the samples (see diagram).

### Calibration:

If the temperature shown on the display deviates from the value measured in the heating block over time, it can be adjusted by the user using the calibration function. All heating blocks have a 4 mm sensor hole for this purpose. A precise temperature measuring device with Pt 100 sensor is available as an accessory.

The controller operates in the functions:

- ✓ Continuous operation (unlimited heating operation)
- ✓ Timer mode (time-limited heating)
- ✓ Ramp operation
- ✓ Standby mode (heating switched off)
- ✓ Calibration function



#### Temperature control using the example of an EC-1V metal block thermostat

The diagram shows the exceptional performance of the JUMO controller using the EC-1V thermostat as an example. The PID control parameters are set at the factory to achieve a practical compromise between a fast heating rate and low temperature overshoot.

The heating tray reaches the set temperature of +100°C after just 17 minutes. The heating block is initially heated up at full power during the heating-up phase. In the equalization phase, the heating is reduced to such an extent that the heating block reaches the set target temperature without overshooting after just 9 minutes.

This particularly good control performance is very advantageous if, for example, some of the samples are replaced and the thermostat heats up again quickly after the cold snap. If required, the thermostats can be set to achieve even shorter heating times. However, temperature overshoots are then unavoidable.



## Quality guarantee

*for reliable results in the laboratory*

Köhler-VLM metal block thermostats meet the highest demands in terms of:

- ✓ Precision of the temperature control
- ✓ Safety in operation
- ✓ Electrotechnical and mechanical processing

We develop, produce and test the devices in accordance with the standards applicable to laboratory devices:

- ✓ 73/23/EEC amended by 93/68/EEC,
- ✓ 2014/30/EU and
- ✓ 93/68/EWG, EN 61010-1, EN 61010-2, EU 61326-1

### *High-quality components*

We adhere to our quality guidelines at all times and only use VDE-tested components from well-known manufacturers.

### *"Made in Germany"*

The appliances are manufactured by our experienced specialists at our Geseke site and then individually adjusted and tested.

### *High reliability*

The careful workmanship and comprehensive inspection of each individual appliance have proven their worth. You can rely on many years of flawless operation.

### *Serial numbers for traceability*

Each appliance can be traced back to the exact date of manufacture based on the serial number. Reproductions of previously purchased special appliances are therefore possible at any time without any problems.

## Metal block thermostats 130°C/210°C

*for exchangeable heating blocks*



### QS thermostats +130°C/+210°C

are designed for a smaller number of samples and tight budgets. The compact devices are equipped with the high-quality JUMO microprocessor PID controller. Its high precision as well as the timer, ramp and calibration function are the reason for its superior performance in this price range. In addition to thermostats with heating trays for exchangeable heating blocks with drilling depths of up to 65 mm, we also supply devices with permanently installed blocks according to your specifications. Heating blocks can be manufactured to sample for all common vessels.



### EC thermostats +130°C/+210°C

are intended for routine tasks in the laboratory. Compared to the HP thermostats, the EC heating trays are mechanically less elaborate design, although the base plates are also precision-milled. However, the walls are made of anodized aluminium profiles, which is why EC stands for "ECONOMY".

The EC thermostats are also equipped with the JUMO microprocessor temperature controller (PID) with integrated timer, ramp and calibration function. As a result, they achieve an exceptional overall performance in this price class.

### LS thermostats +130°C



LS thermostats are not "cheap heaters", but represent the low-cost alternative to BIO thermostats. In order to accommodate tight budgets, the mechanically very complex, solid aluminum heating tray has been dispensed with in favour of a mounted tray. Its base is also precision-milled to ensure good heat transfer to the heating blocks. Equipped with the JUMO controller (PID) and a wide range of heating blocks, the LS circulators are perfectly matched to the requirements of life science laboratories.



#### **HP thermostats +130°C/+210°C**

"High Performance" thermostats are equipped with a liquid-tight solid aluminum heating tray for the use of exchangeable heating blocks (drilling depth 65 mm). However, in order to meet the highest standards of accuracy, they can also be manufactured with permanently installed heating blocks - not only with holes for standard test tubes, but also for many other vessels commonly used in the laboratory.



#### **BIO thermostats +130°C**

were developed for precise sample temperature control in biochemical, clinical or molecular biology laboratories. The particularly compact devices are equipped with a solid, liquid-tight heating tray made of an aluminum alloy with high thermal conductivity. They are designed for the use of interchangeable heating blocks (46 mm high). After covering with a polycarbonate plate, the devices can be used as mini incubators. Like the HP thermostats, the BIO thermostats can also be supplied with permanently installed heating blocks for all common vessels.

# Metal block thermostats 130°C/210°C

for exchangeable heating blocks and permanently installed heating blocks



Köhler VLM metal block thermostats meet high demands for precise temperature control and are characterized by a solid construction

- Thermostats with interchangeable heating blocks up to 210°C
- Microprocessor PID controller with timer, ramp and calibration function
- Heating blocks for all tubes and microtiter plates commonly used in the laboratory
- Customized special designs

## QS - Thermostats

Device type	max. T. [°C]	Samples	Heating tray L / W / D [mm]	Housing L / W / D [mm]	Power [W]	Order no.
QS - 130 - V	130	16	91 x 91 x 65	180 x 275 x 155	160	V.640.061.920
QS - 210 - V	210	16	91 x 91 x 65	180 x 275 x 155	160	V.640.062.920

## EC thermostats

Device type	max. T. [°C]	Samples	Heating tray L / W / D [mm]	Housing L / W / D [mm]	Power [W]	Order no.
EC - 1V - 130	130	24	148 x 107 x 75	382 x 212 x 140	300	V.649.061.920
EC - 1V - 210	210	24	148 x 107 x 75	382 x 212 x 140	300	V.649.062.920
EC - 2V - 130	130	48	214 x 107 x 75	422 x 253 x 140	600	V.659.061.920
EC - 2V - 210	210	48	214 x 107 x 75	422 x 253 x 140	600	V.659.062.920

## LS - Thermostats

Device type	max. T. [°C]	Samples	Heating tray L / W / D [mm]	Housing L / W / D [mm]	Power [W]	Order no.
LS - 1V - 130	130	48	149 x 108 x 59	315 x 193 x 140	300	V.668.161.920
LS - 2V - 130	130	96	215 x 149 x 59	315 x 190 x 150	300	V.678.161.920

## HP - Thermostats, liquid-tight heating tray

Device type	max. T. [°C]	Samples	Heating tray L / W / D [mm]	Housing L / W / D [mm]	Power [W]	Order no.
HP - 1V - 130	130	24	140 x 98 x 75	382 x 212 x 140	300	V.640.061.920
HP - 1V - 210	210	24	140 x 98 x 75	382 x 212 x 140	300	V.640.062.920
HP - 2V - 130	130	48	198 x 140 x 75	440 x 253 x 140	600	V.650.061.920
HP - 2V - 210	210	48	198 x 140 x 75	440 x 253 x 140	600	V.650.062.920

## HP - Thermostats with permanently installed heating blocks

Device type	max. T. [°C]	Samples	Heating tray L / W / D [mm]	Housing L / W / D [mm]	Power [W]	Order no.
HP-1V-130-24-16	130	24	-	382 x 212 x 140	300	V.640.061.920
HP-1V-210-24-16	210	24	-	382 x 212 x 140	300	V.640.062.920
HP-1V-130-48-16	130	48	-	440 x 253 x 140	600	V.650.061.920
HP-1V-210-48-16	210	48	-	440 x 253 x 140	600	V.650.062.920

### BIO - Thermostats, liquid-tight heating tray

Device type	max. T. [°C]	Samples	Heating tray L / W / D [mm]	Housing L / W / D [mm]	Power [W]	Order no.
BIO-1V-130	130	38	140 x 98 x 46	310 x 190 x 150	300	V.668.061.920
BIO-2V-130	130	76	198 x 140 x 46	370 x 230 x 150	600	V.678.061.920



## QS thermostats 130°C/210°C

for small numbers of samples

Max. Working temp.	Type	Order no.
130°C	QS-1V-130	V.640.061.920
210°C	QS-1V-210	V.640.062.920



QA blocks for Eppendorf tubes H = 46mm		ml	Pr.	Type	Order no.
		0,2	36	HB-QS-36-0.2-EP	V.814.060.000
		0,2	64	HB-QS-64-0.2-EPS	V.814.560.000
		0,5	24	HB-QS-24-0.5-EP	V.814.570.000
		1,5	24	HB-QS-24-1.5-EP	V.814.580.000
		2,0	24	HB-QS-24-2.0-EP	V.814.590.000

QA blocks for Falcon tubes H = 75, D = 65mm		ml	Pr.	Type	Order no.
		15	8	HB-QS-8-15-FA	V. 814.470.000
		50	4	HB-QS-4-50-FA	V. 814.480.000

QA blocks for Chrom. Vials H = 46mm		Ø	Pr.	Type	Order no.
		11,8	24	HB-QS-24-11F	V. 814.700.000
		15,0	16	HB-QS-16-15F	V.814.280.000
		23,2	5	HB-QS-5-23F	V.814.870.000
		24,2	5	HB-QS-5-24F	V.814.880.000
		1,5	16	HB-QS-16-1.5 EP	V.814.080.000
		2,0	16	HB-QS-16-2.0 EP	V.814.090.000

QA blocks for test tubes H = 75, D = 65 mm		Ø	Drill.	Type	Order no.
		10,2	24	HB-QS-24-10	V.814.710.000
		12,2	24	HB-QS-24-12	V.814.680.000
		13,3	24	HB-QS-24-13	V.814.690.000
		16,2	16	HB-QS-16-16	V.814.220.000
		16,2	16	HB-QS-16-16-Z	V.814.250.000
		17,2	16	HB-QS-16-17	V.814.230.000
		18,2	8	HB-QS-8-18	V.814.740.000
		50 20,2	8	HB-QS-8-18	V.814.750.000
		22,2	8	HB-QS-8-22	V.814.760.000
		24,2	5	HB-QS-5-24	V.814.770.000

## EC thermostats 130°C/210°C

*The economy class: reliability and precision for tight budgets*

Max. Working temp.	Type	Order no.
<b>130°C</b>	EC-1V-130	V.649.061.920
<b>210°C</b>	EC-1V-210	V.649.062.920



### Heating blocks HB-EC1 for **test tubes** W/D/H 149x107x75 mm

Ø	Pr.	Type	Order no.
10,2	48	HB-EC1-48-10	V.804.660.000
12,2	48	HB-EC1-48-12	V.804.680.000
13,2	34	HB-EC1-34-13	V.804.690.000
16,2	24	HB-EC1-24-16	V.804.220.000
16,2 con	24	HB-EC1-24-16 Con	V.804.250.000
17,2	24	HB-EC1-24-17	V.804.230.000
18,2	18	HB-EC1-18-18	V.804.740.000
20,2	18	HB-EC1-18-20	V.804.750.000
22,2	17	HB-EC1-17-22	V.804.760.000
26,5	12	HB-EC1-12-26	V.804.790.000

### Heating blocks HB-EC1 for **chrome. Vial** base flat "F" W/D/H 149x107x75 mm

Ø	Pr.	Type	Order no.
11,8	24	HB-EC1-24-11,8F	V.804.270.000
11,8	48	HB-EC1-48-11,8F	V.804.700.000
15,2	24	HB-EC1-24-15F	V.804.280.000
23,2	12	HB-EC1-12-23F	V.804.770.000
24,2	12	HB-EC1-12-24F	V.804.780.000
26,5	12	HB-EC1-12-26F	V.804.820.000

Max. Working temp.	Type	Order no.
130°C	EC-2V-130	V.659.061.920
210°C	EC-2V-210	V.659.062.920



**Heating blocks HB-EC2 for test tubes**  
W/D/H 215x107x75 mm

Ø	Pr.	Type	Order no.
10,2	96	HB-EC2-96-10	V.803.660.000
12,2	96	HB-EC2-96-12	V.803.680.000
13,2	76	HB-EC2-76-13	V.803.690.000
16,2	48	HB-EC2-48-16	V.803.220.000
17,2	48	HB-EC2-48-17	V.803.230.000
18,2	38	HB-EC2-38-18	V.803.740.000
20,2	38	HB-EC2-38-20	V.803.750.000
22,2	24	HB-EC2-24-22	V.803.760.000
26,5	24	HB-EC2-24-26	V.803.790.000
10,2	96	HB-EC2-96-10	V.803.660.000

**Heating blocks HB-EC2 for chrome.**  
**Vial** bottom flat "F" W/D/H  
215x107x75 mm

Ø	Pr.	Type	Order no.
11,8	96	HB-EC2-96-11,8F	V.803.700.000
15,2	48	HB-EC2-48-15F	V.803.280.000
23,2	24	HB-EC2-24-23F	V.803.770.000
24,2	24	HB-EC2-24-24F	V.803.780.000

Further heating blocks suitable for the EVA-EC-S evaporator can be found under "Evaporators".

# LS thermostats 130°C

*The practical helpers in the life science laboratory*

Max. Working temp.	Type	Order no.
130°C	LS-1V-130	V.668.161.920



LS-1H heating blocks for Eppendorf tubes	B. ml	Drill.	Type	Order no.
	0,2	48	HB-LS1H-48-0.2EP	V.800.560.000
	0,2	40	HB-LS1H-40-0.2EP	V.800.060.000
	0,5	40	HB-LS1H-40-0.5EP	V.800.570.000
	1,5	24	HB-LS1H-24-1.5EP	V.800.580.000
	2,0	24	HB-LS1H-24-2.0EP	V.800.590.000

LS-1H heating blocks for test tubes	Ø	Drill.	Type	Order no.
	10,2	24	HB-LS1H-24-10,2	V.800.660.000
	12,2	24	HB-LS1H-24-12,2	V.800.680.000
	16,2	12	HB-LS1H-12-16,2	V.800.220.000

LS-1H heating blocks for Falcon tubes 15 and 50 ml	B. ml	Drill.	Type	Order no.
	15	12	HB-LS1H-12-15FAL	V.800.470.000
	50	4	HB-LS1H-4-50FAL	V.800.480.000

Max. Working temp.	Type	Order no.
130°C	LS-2V-130	V.678.161.920



LS-1 heating blocks for Eppendorf tubes	B. ml	Drill.	Type	Order no.
	0,2	96	HB-LS1-96-0.2EPS	V.802.560.000
	0,2	80	HB-LS1-80-0.2EPS	V.802.060.000
	0,5	80	HB-LS1-80-0.5EPS	V.802.570.000
	1,5	48	HB-LS1-48-1.5EPS	V.802.580.000
	2,0	48	HB-LS1-48-2.0EPS	V.802.590.000

LS-1 heating blocks for test tubes	Ø	Drill.	Type	Order no.
	10,2	48	HB-LS1-48-10	V.802.660.000
	12,2	48	HB-LS1-48-12	V.802.680.000
	16,2	24	HB-LS1-24-12	V.802.220.000

LS-1 heating blocks for Falcon tubes 15 and 50 ml	B. ml	Drill.	Type	Order no.
	15	12	HB-LS1-12-15FAL	V.802.470.000
	50	4	HB-LS1-4-50FAL	V.802.480.000

LS-2 heating blocks for Eppendorf tubes	B. ml	Drill.	Type	Order no.
	1,5	96	HB-LS2-96-1.5EP	V.801.580.000
	2,0	96	HB-LS2-96-2.0EP	V.801.590.000

For microtiter and PCR plates	Wells	Drill.	Type	Order no.
	round	96	HB-LS1-MT-R	V.802.020.000
	flat	96	HB-LS1-MT-F	V.802.030.000
	pointed	96	HB-LS1-MT-S	V.802.040.000
	pointed	96	HB-LS1-PCR	V.802.050.000



Polycarbonate cover plates are available to use the LS thermostats as incubators and to prevent condensation under the lids of Eppendorf tubes:

Order no.	Type
V.822.200.100	Cover plate made of polycarbonate, cross-sectioned for heating tray LS1/EC1 2(78x115) mm
V.822.200.000	Cover plate made of polycarbonate, undivided, for heating tray LS1/EC1 115x156 mm



# HP and BIO thermostats with liquid-tight solid heating trays

*Maximum precision thanks to optimum heat transfer*



HP and BIO thermostats with liquid-tight, solid heating trays have been developed for precise sample temperature control in biochemical, clinical or molecular biology laboratories. The compact devices are equipped with a solid, liquid-tight heating tray made of a particularly thermally conductive aluminum alloy for the use of exchangeable heating blocks. They can be used as mini incubators after being covered with a polycarbonate plate.

- ✓ Modern technology for the highest demands on temperature control accuracy ( $< \pm 0.1^\circ\text{K}$ ) and fast heat-up rates
- ✓ Convenient sample handling, no dripping of water, no oil vapors, uniform temperature control of microtiter plates after covering the heating wells with polycarbonate plates
- ✓ Compact stainless steel housing, high sample capacity in the smallest of spaces
- ✓ Seamless heating trays for optimum heat transfer to the heating blocks
- ✓ Convenient, safe decontamination
- ✓ JUMO microprocessor controller (PID) with timer, ramp and calibration function,
- ✓ best workmanship, 100% final inspection,
- ✓ 2-year guarantee

## HP thermostats 130°C/120°C

with exchangeable heating blocks

Max. Working temp.	Type	Order no.
130°C	HP-1V-130	V.640.061.920
210°C	HP-1V-210	V.640.062.920



Heating blocks for test tubes	Ø	Drill.	Type	Order no.
	10,2	52	HB-HP1-52-10	V.812.660.000
	12,2	34	HB-HP1-34-12	V.812.680.000
	13,2	34	HB-HP1-34-13	V.812.690.000
	16,2	24	HB-HP1-24-16	V.812.220.000
	17,2	24	HB-HP1-24-17	V.812.230.000
	18,2	14	HB-HP1-14-18	V.812.240.000
	20,2	14	HB-HP1-14-20	V.812.750.000
	22,2	12	HB-HP1-12-22	V.812.760.000
	26,5	12	HB-HP1-12-26	V.812.790.000

Max. Working temp.	Type	Order no.
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<b>130°C</b>	HP-1V-130	V.640.061.920
<b>210°C</b>	HP-2V-210	V.650.062.920



#### Heating blocks for test tubes

Ø	Drill.	Type	Order no.
10,2	92	HB-HP2-92-10	V.811.660.000
12,2	68	HB-HP2-68-12	V.811.680.000
13,2	68	HB-HP2-68-13	V.811.690.000
16,2	48	HB-HP2-48-16	V.811.220.000
17,2	48	HB-HP2-48-17	V.811.230.000
18,2	48	HB-HP2-48-18	V.811.240.000
20,2	34	HB-HP2-34-20	V.811.750.000
22,2	24	HB-HP2-24-22	V.811.760.000
26,5	24	HB-HP2-24-26	V.811.790.000

#### Heating blocks for test tubes in evaporators

Ø	Drill.	Type	Order no.
11,8	48	HB-HP2-48-11F-EVA	V.811.270.000
11,8	68	HB-HP2-68-11F	V.811.700.000
15,2	48	HB-HP2-48-15F-EVA	V.811.280.000
23,2	24	HB-HP2-24-23F	V.811.770.000

# BIO thermostats 130°C

*with exchangeable heating blocks*

Max. Working temp.	Type	Order no.
130°C	BIO-1V-130	V.668.061.920



Heating blocks for <b>Eppendorf tubes</b>		Drill ml	Drill.	Type	Order no.
Suitable for BIO-1V and BIO-2V thermostats W/TH 139x 98 x 46 mm		0,2 (Stripes)	96	HB-BIO1-96-0.2-EP	V.812.560.000
		0,2	62	HB-BIO1-62-0,2-EP	V.812.060.000
		0,5	52	HB-BIO1-52-0.5-EP	V.812.570.000
		1,5	38	HB-BIO1-38-1.5-EP	V.812.580.000
		2,0	38	HB-BIO1-38-2.0-EP	V.812.590.000

Heating blocks for <b>FALCON tubes</b>		Vol.	Drill.	Type	Order no.
Suitable for BIO-1V and BIO-2V thermostats W/TH 139x 98 x 46 mm		15	20	HB-BIO1-20-15-FAL	V.812.470.000
		50	6	HB-BIO1-6-50-FAL	V.812.480.000



Max. Working temp.	Type	Order no.
130°C	BIO-2V-130	V.678.061.920



Heating blocks for Eppendorf tubes		Drill ml	Drill.	Type	Order no.
Suitable for BIO-2V thermostats W/D/H 197x 139 x 46 mm		0,2 (Stripes)	192	HB-BIO2-192-0,2-EPS	V.811.560.000
		0,5	96	HB-BIO2-96-0.5-EP	V.811.570.000
		0,5	76	HB-BIO2-76-1.5-EP	V.811.580.000
		1,5	96	HB-BIO2-96-1.5-EP	V.811.540.000
		2,0	76	HB-BIO2-76-2.0-EP	V.811.590.000

Heating blocks for microtiter and PCR plates		Wells	Drill.	Type	Order no.
HB-BIO1 W/D/H 139x 98 x 30 mm		round	96	HB-BIO1-MT-R-FL	V.810.520.000
		flat	96	HB-BIO1-MT-F-FL	V.810.530.000
		pointed	96	HB-BIO1-MT-S-FL	V.810.540.000
		pointed	96	HB-BIO1-PCR-FL	V.810.550.000

## HT thermostats "High Temperature"

*300°C, 400°C with permanently installed heating blocks*



The devices in the HT series are designed for temperature control tasks in the high temperature range up to +300°C or +400°C and have a special housing due to the higher thermal insulation. HT thermostats are an ideal replacement for oil or sand baths. In comparison, the HT temperature control system reacts much more sensitively and accurately.

The high precision and temperature consistency in sample temperature control is achieved on the one hand by the high performance of the JUMO microprocessor PID controllers. On the other hand, the permanently installed heating blocks made of a special aluminum alloy with high thermal conductivity are characterized by fast, uniform heat distribution.

On request, the HT thermostats can be equipped with special controllers, e.g. for the implementation of temperature time programs and, of course, with RS 232 interfaces.

We supply separately installable control boxes for controlling the HT thermostat outside a fume cupboard.

Due to the material properties of aluminum and aluminum alloys, metal block thermostats with heating trays for replaceable heating blocks can only be manufactured up to +210°C. HT thermostats are therefore only available with permanently installed heating blocks, which is indicated by the type designation "F".

The HT housings are sealed against the heating blocks with an acid- and alkali-resistant fiber-glass seal to prevent liquids from penetrating the appliance. At the same time, the seal prevents as little heat as possible from being transferred from the heating block to the housing. As a result, the HT thermostats offer a high level of protection against burns.

For an extra charge, the HT appliances can be fitted with a heat or contact protection plate. We also supply polycarbonate protective covers as accessories.

The stainless steel housings can also be painted or given a fluoropolymer coating.

- ✓ High accuracy of temperature control
- ✓ Microprocessor controller (PID), or method-specific program controller
- ✓ Alternative: control box for remote control
- ✓ Convenient sample handling, no oil vapors
- ✓ No contamination of the test tubes,
- ✓ No carry-over of silicone from heating baths
- ✓ Compact housing, high sample capacity in the smallest of spaces
- ✓ No risk of accidents due to splashing hot oil



### HT1 and HT2 with permanently installed heating blocks

Ø	Drill.	Type	Order no.
16,2	48	HT-1F-300-48-16	V.683.263.220
16,2	48	HT-1F-400-48-16	V.683.264.220
16,2	24	HT-2F-300-24-16	V.684.263.220
16,2	24	HT-2F-400-24-16	V.684.264.220

### Technical data

### HT1

### HT2

Working temperature	5° C > Room temp. up to max. 300°C/400° C	
Temperature control	JUMO microprocessor controller (PID) with ramp and timer function 0-999 min on request with controllers for time and temperature ramps	
Temperature Stability over time	± 0,1 °C	
Temperature display	LED display, resolution 0.1 °C	
Overheating protection	20°C > max. working temperature	
Output at 300 °C / 400 °C	1200 W / 1800W	600 W / 800 W
Heating blocks	Precision milled, permanently installed	
Dimensions L/W/D	198 x 140 x 75 mm	140 x 99 x 75 mm
Standard drilling depth	65 mm, up to 100 mm on request (surcharge)	
Capacity	48 test tubes	24 test tubes
Housing	Stainless steel with all-round acid- and alkali-resistant glass fiber seal in the lid cut-out, edge protection	
Dimensions L/W/H	283 x 454 x 220 mm	283 x 402 x 220 mm
Weight	approx. 15.5 kg	approx. 10.8 kg

## SPA thermostats up to +450 °C

*for digestion processes and material testing*



SPA thermostats are designed for special applications in analysis and material testing. We supply standard devices for carrying out certain procedures in accordance with known national or international standards, e.g. for COD determination in environmental analysis. The following examples give you an idea of different designs. All devices are equipped with high-quality JUMO microprocessor PID controllers, which guarantee high temperature stability over the entire temperature range. Depending on the task, the digital controllers are selected for the specific requirements, e.g. with 2nd setpoint or for time/temperature programs. On request, the controllers can be equipped with RS 232 interfaces. SPA thermostats are available with separate control boxes if they are to be operated outside the fume cupboard, for example. This protects the control electronics from particularly aggressive media or high temperatures. SPA thermostats and heating blocks can be manufactured for all glass or metal vessels commonly used in laboratories. The robust stainless steel housings can be painted, powder-coated or coated with Halar® (ECTFE) for particularly aggressive media on request.



- ✓ COD digestions
- ✓ Kjeldahl digestions (nitrogen)
- ✓ Hydroxyproline digestions
- ✓ Incubators for microbiology
- ✓ Thermostats for material testing
- ✓ Rubber aging test
- ✓ Built-in thermostats for automatic analyzers

Thermostats with accessories for COD and other digestions for 12 or 24 samples (see pictures) and accessories. The heating blocks have a particularly high heat capacity in order to transfer sufficient heat to the samples for rapid heating. To ensure optimum heat transfer, the holes are milled with high precision to match the reaction vessels.

*Prices on request*

## SPA thermostats

*for hydroxyproline digestions in food analysis*

Thermostats with accessories for hydroxyproline digestions in food analysis for 28 or 40 samples (see pictures) and accessories. Housing and heating block ECTFE-coated on request.

Hydroxyproline digestion thermostat for 40 samples



Hydroxyproline digestion thermostat for 28 samples



Test tube rack for 40 samples



Hydroxyproline digestion thermostat, powder-coated



# Evaporators

*for evaporating solvents with nitrogen*

**EVA-LS1 MT** with  
tripod



**EVA-EC2L** with  
motorized lift





The EVA-EC complete systems for 48, 24 or 16 samples consist of:

- ✓ Evaporator with gas dosing unit and motor-driven lift or the stand unit
- ✓ EC thermostat with heating tray for exchangeable heating blocks, working temp. up to 130°C or 210°C
- ✓ 1 heating block for 48, 24 or 16 standard test tubes Ø16 mm, drilling depth 65 mm
- ✓ 48, 24 or 16 stainless steel cannulas optionally coated with PVDF (surcharge) Microtiter plates: 96 cannulas
- ✓ PU connection hose with adapter for connection to gas fittings
- ✓ Optional: Adapter plate for the use of Pasteur pipettes or pipette tips (surcharge)
- ✓ Optional: Gas pressure reducer with pressure gauge

Köhler VLM evaporators are a cost-effective alternative to rotary evaporators and other concentrators if a large number of samples need to be processed. Evaporation of the solvent is accelerated by gassing with nitrogen, a particularly gentle method for oxidation-sensitive samples. The metal block thermostats are used to compensate for the evaporative cooling, thereby maintaining the temperature of the system.

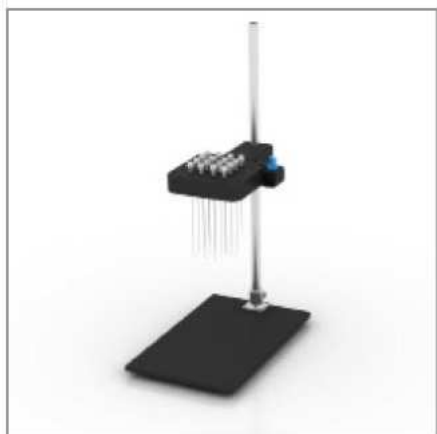
A complete evaporator system consists of the evaporator unit with motor-driven lift or a manually height-adjustable stand, the gas dosing unit and the metal block thermostat QS, EC, LS or VIS. In the lift version, this stands on a base plate that can be pulled out to the front, making it very easy to replace the heating blocks or samples.

After rotating the gas dosing unit of the EVA-Lift by 180°, the stainless steel cannulas or Pasteur pipettes (adapter plate required) can be conveniently inserted into the silicone holders from above. In the stand version, the gas dosing unit can be removed and also loaded from above after turning it over.

We supply cabinets as accessories that can be connected to a laboratory ventilation system if there is no space in the fume cupboard. It is also possible to pulse the nitrogen flow and switch it off after a preselected time has elapsed.

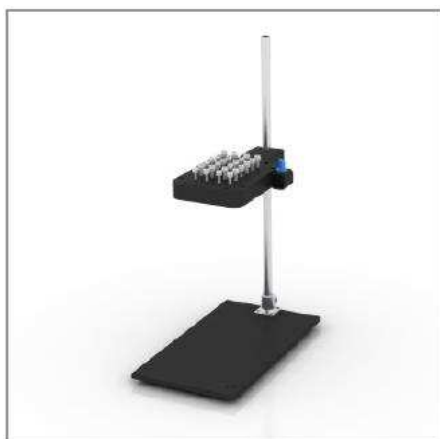
# Evaporators

*All evaporators at a glance*



## Type EVA QS

	Samp- les	Order no.
EVA QS-S, complete system	16	V.830.033.122
EVA QS tripod + N2 Dos.	16	V.833.000.002
Thermostat QS-130-V	16	V.660.061.920
Heating block HB-QS-16-16	16	V.814.220.000
Adapter plate for Pasteur pipettes	16	V.826.812.000



## Type EVA EC1

	Samp- les	Order no.
EVA EC1-S tripod, complete system	24	
EVA EC1-L lift, complete system	24	V.830.511.122
EVA EC-1 S, tripod+N2-Dos.	24	V.832.000.002
EVA EC-1 L, Lift + N2 Dos.	24	V.832.416.003
Thermostat EC1V-130	24	V.649.061.920
Heating block HB-EC1-24-16	24	V.804.220.000
Adapter plate for Pasteur pipettes	24	V.826.612.000

**Type EVA EC2****Samp-  
les****Order no.**

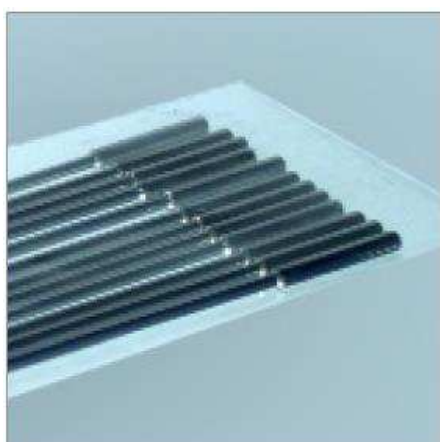
EVA EC2 tripod, system	48	V.830.012.122
EVA EC2-Lift, System	48	V.830.512.122
EVA EC2-S tripod +N2-Dos.	48	V.831.000.002
EVA EC2-L Lift +N2-Dos.	48	V.832.416.005
Thermostat EC-2V-130	48	V.659.061.920
Heating block HB-EC2-48-16	48	V.803.220.000
Adapter plate for Pasteur pipettes	48	V.826.712.000

**Type EVA LS1 MT****Samp-  
les****Order no.**

EVA-LS1-S-MT, complete system	96	V.830.211.105
EVA LS-1 L MT, complete system	96	V.830.721.105
EVA LS1 MT Tripod +N2-Dos.	96	V.832.000.012
EVA LS1 MT Lift +N2-Dos.	96	V.832.416.013
Thermostat LS-1V-130	96	V.668.161.920
Heating block HB.LS1-MT-R	96	V.802.020.000

**Type EVA VIS****Samp-  
les****Order no.**

EVA VIS-72 Complete system	72	V.830.541.122
EVA VIS Lift +N2-Dos.	72	V.834.416.001
Thermostat EVA VIS-100	72	V.685.260.220
HB-EVAVIS-24-16 heating block (3 required)	24	V.816.220.000

**Type EVA LS MT****Order no.**

Adapter plate for Pasteur pip. 72	V.826.412.000
Pressure reducer with pressure gauge	V.825.211.130
Set of stainless steel cannulas (12 pieces) <b>A-Ø 2.0 mm I-Ø 1.0 mm</b> <b>Length 150mm</b>	V.825.211.003
Set of stainless steel cannulas (12 pieces) A-Ø2.0 mm I-Ø 1.0 mm Length 150mm PVDF coated	V.825.221.003
Replacement dosing screws for gas dosing units 12 pcs.	V.825.211.100
Replacement PU hose clear 2 m	V.825.211.110

## Heating blocks for evaporators

*For all sample vessels commonly used in the laboratory*

Max. Working temp.	Type	Order no.
130°C	QS-1V-130	V.660.061.920
210°C	QS-1V-210	V.660.062.920



QA blocks for test tubes, round base	Ø	Drill.	Type	Order no.
	12,2	16	HB-QS-16-12	V.814.180.000
	16,2	16	HB-QS-16-16	V.814.220.000
	17,2	16	HB-QS-16-17	V.814.230.000

QA blocks for chromatography vials, flat bottom "F"	Ø	Drill.	Type	Order no.
	11,8	16	HB-QS-16-11F	V.814.270.000
	15,2	16	HB-QS-16-15F	V.814.280.000

QA blocks for Eppendorf tubes 1.5ml and 2.0ml	ml	Pr.	Type	Order no.
	1,5	16	HB-QS-16-1.5EP	V. 814.080.000
	2,0	16	HB-QS-16-2.0EP	V. 814.090.000

*Prices for heating blocks with other holes on request*

Max. Working temp.	Type	Order no.
130°C	EC-1V-130	V.649.061.920
210°C	EC-1V-210	V.649.062.920



EC blocks for <b>test tubes, round base</b>	Ø	Drill.	Type	Order no.
	12,2	24	HB-EC1-24-12	V.804.180.000
	16,2	24	HB-EC1-24-16	V.804.220.000
	17,2	24	HB-EC1-24-17	V.804.230.000
	18,2	12	HB-EC1-12-18	V.804.840.000
	20,2	12	HB-EC1-12-20	V.804.850.000
	22,2	12	HB-EC1-12-22	V.804.860.000
	26,5	12	HB-EC1-12-26	V.804.890.000

EC blocks for <b>chromatography vials, flat bottom "F"</b>	Ø	Drill.	Type	Order no.
	11,8	24	HB-EC1-24-11F	V.804.270.000
	15,2	24	HB-EC1-24-15F	V.804.280.000
	23,2	12	HB-EC1-12-23F	V.804.870.000
	24,5	12	HB-EC1-12-24F	V.804.880.000
	26,5	12	HB-EC1-12-26F	V.804.820.000

EC blocks for <b>Eppendorf tubes 1.5ml and 2.0ml</b>	ml	Pr.	Type	Order no.
	1,5	24	HB-EC1-24-1.5EP	V. 804.080.000
	2,0	24	HB-EC1-24-2.0EP	V. 804.090.000

*Prices for heating blocks with other holes on request*

Max. Working temp.	Type	Order no.
130°C	EC-2V-130	V.659.061.920
210°C	EC-2V-210	V.659.062.920



EC blocks for <b>test tubes, round base</b>	Ø	Drill.	Type	Order no.
	12,2	48	HB-EC2-48-12	V.803.180.000
	16,2	48	HB-EC2-48-16	V.803.220.000
	17,2	48	HB-EC2-48-17	V.803.230.000
	18,2	24	HB-EC2-24-18	V.803.840.000
	20,2	24	HB-EC2-24-20	V.803.850.000
	22,2	24	HB-EC2-24-22	V.803.860.000
	26,5	24	HB-EC2-24-26	V.803.890.000

EC blocks for <b>chromatography vials, flat bottom "F"</b>	Ø	Drill.	Type	Order no.
	11,8	48	HB-EC2-48-11F	V.803.270.000
	15,2	48	HB-EC2-48-15F	V.803.280.000
	23,2	24	HB-EC2-24-23F	V.803.870.000
	24,5	24	HB-EC2-24-24F	V.803.880.000
	26,5	24	HB-EC2-24-26-F	V.803.820.000

EC blocks for <b>Eppendorf tubes 1.5ml and 2.0ml</b>	ml	Pr.	Type	Order no.
	1,5	48	HB-EC2-48-1.5EP	V. 803.080.000
	2,0	48	HB-EC2-48-2.0EP	V. 803.090.000

*Prices for heating blocks with other holes on request*

Max. Working temp.	Type	Order no.
130°C	LS-1V-130	V.668.161.920



#### HB-LS1-MT heating blocks for **LS1** thermostats

Wells	Drill.	Order no.
round	96	V.802.020.000
flat	96	V.802.030.000
pointe d	96	<b>V.802.040.000</b>
pointe d	96	V.802.050.000





# EVA-VIS

*for visual control of the residual volume*



## Technical data

## VIS

<b>Capacity</b>	Up to max. 72 samples
<b>Working temperature</b>	5°C > room temperature up to max. 100 °C
<b>Temperature control</b>	Microprocessor controller (PID) with ramp and timer function
<b>Display</b>	LED display, resolution 0.1 °C
<b>Temperature sensor</b>	1 x Pt 100
<b>Housing</b>	Stainless steel
<b>Temp. stability over time</b>	± 0,1 °C
<b>Dimensions L / W</b>	540 x 475 mm
<b>Power W</b>	600W

## The Köhler-VLM Evaporator-VIS

The illustration on the left shows the standard version of the device for the use of 3 heating blocks for 72 standard test tubes Ø 16 mm.

The heating blocks are provided with longitudinal slots so that the sinking liquid level in the front block can be observed. A fluorescent lamp provides better lighting conditions. Under these conditions, it is possible to concentrate the samples to a residual volume.

The nitrogen supply for the rear heating blocks can be opened with a time delay. Most of the solvent has already evaporated, as it is not necessary to monitor the liquid level during this phase.

After removing the front block, the blocks behind it are pulled forward to stop evaporation in the final phase. Thanks to this time-saving procedure, the Köhler-VLM Evaporator- VIS enables a high sample throughput.

We supply heating blocks for test tubes, Eppendorf reaction vessels, chromatography vials, round bottom and conical flasks.

The gas dosing unit is divided into three chambers, into each of which nitrogen is introduced separately. The flow rate for each of the up to 72 samples is set individually using the valve screws. Outlets that are not required remain closed. Glass Pasteur pipettes can be used instead of the stainless steel capillaries after attaching the adapter plate.

The Köhler VLM thermostat is equipped with a JUMO microprocessor PID controller and ensures precise temperature control of the samples and compensation of evaporative cooling.

*Subject to technical changes.*

HB-EVA-VIS heating blocks 3 blocks per heating tray	Order no.	Type		Ø mm	No.
	V.816.220.000	HB-EVA-VIS-24-16	Test tubes	16,2	24
	V.816.520.000	HB-EVA-VIS-24-11,8F	Chrome. Vials 1.5 ml	11,8F	24
	V.816.540.000	HB-EVA-VIS-24-15,0F	Chrome. Vials 4 ml	15,0F	24
	V.816.570.000	HB-EVA-VIS-12-23,2F	Headspace Vials	23,2	12
	V.816.310.000	HB-EVA-VIS-6-10-SPK	Pointed flask	10 ml	6

HB-EVA-VIS heating blocks, 2 blocks per heating tray	Order no.	Type		Ø mm	No.
	V.815.220.000	HB-EVA-VIS-34-16	Test tubes	16,2	34
	V.815.310.000	HB-EVA-VIS-12-10-SPK	Pointed flask	10 ml	12
	V.815.340.000	HB-EVA-VIS-4-100-SPK	Pointed flask		
	V.815.930.000	HB-EVA-VIS-12-10-RK	Round bottom flask	10ml	12
	V.815.960.000	HB-EVA-VIS-4-100-RK	Round bottom flask	100ml	4

Prices for heating blocks with other holes on request