



KJELDATHERM
DIGESTION UNITS

TURBOTHERM



Turbotherm TT 125

THE CONSTRUCTION

The Turbotherm is a versatile infrared rapid digestion system capable of handling a wide range of samples in today's modern laboratory. The digestion time is dramatically reduced due to the extremely short heating up and cooling down periods. The instrument accepts tubes from 100 up to 800 ml, making the Turbotherm a very versatile system. The insert rack, suction and drip tray can be inserted on the two-tier console which reduces the bench space needed and makes the handling easier.

THE BASIC MODELS TT

- ▶ With electronic timer and power control
By using the modern electronic-control up to 9 different programs can be entered. Each program has up to 9 variable heating levels and time settings. The current status is permanently displayed with manual override possible at any time.
- ▶ With manual control
This model is the alternative for a low budget. The power selection is done manually using an energy controller.

RAPID DIGESTION UNIT

VERSATILITY

The Turbotherm can be used for many applications. The option of using 5 different insert racks allows the instrument to accept tubes of 100, 250, 400, and 800 ml. There is even the possibility of using the Turbotherm as a multifunctional, programmable heater for inorganic acid digestions.

EXHAUST MANIFOLD

The acid vapours generated during the digestion are effectively removed via the exhaust manifold by either using a water jet pump or the Turbosog-suction washer. This provides the maximum possible safety in the laboratory as no acid vapours escape from the unit.

CONFIGURATION

All rapid digestion systems consist of a Turbotherm basic unit, the two-tier console, the insert rack with a set of tubes, exhaust manifold with drip tray incl. water jet pump and 1.5 m of isoversinic-tubing.

THE MODELS

Order No.	Type	Description
705000	TT 625	Rapid digestion unit with electronic time temperature controller, complete 6-place, for tubes 250 ml
715000	TT 625 M	As model TT 625 but with manual controller
705030	TT 125	Rapid digestion unit with electronic time temperature controller, complete 12-place, for tubes 250 ml
715030	TT 125 M	As model TT 125 but with manual controller
705010	TT 440	Rapid digestion unit with electronic time temperature controller, complete 4-place, for tubes 400 ml
715010	TT 440 M	As model TT 440 but with manual controller
705020	TT 480	Rapid digestion unit with electronic time temperature controller, complete 4-place, for tubes 800 ml
715020	TT 480 M	As model TT 480 but with manual controller
705040	TT 100	Rapid digestion unit with electronic time temperature controller, complete 12-place, for tubes 100 ml
715040	TT 100 M	As model TT 100 but with manual controller

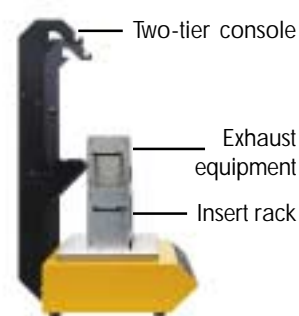
The Turbotherm will accept all tube combinations. Additional insert racks, tubes and the corresponding exhaust manifold can be ordered separately.

Technical data see page 15

TWO-TIER CONSOLE

The two-tier console has the advantage of taking the insert rack as well as the exhaust manifold. This feature makes the operation safe and simple as well as saving valuable bench-space.

1. Digestion mode



2. Cooling down mode



3. Standby mode



KJELDATHERM



KBL 20 S + TZ + TLS

The compact Kjeldatherm block digestion systems allow for simultaneous multiple digestions. A precise temperature control permits the conditions for the digestions to be optimized thus providing reproducible results.

The comprehensive product range of Kjeldahl models made by Gerhardt includes digestion systems for Kjeldahl digestions in 100 ml, 250 ml, and 400 ml tubes. An excess temperature protection as well as an excess current switch are now part of the standard equipment. The temperature control is provided by an external controller which is not included in the standard configuration.

THE CONSTRUCTION

All digestion blocks consist of the following components:

- ▶ Kjeldatherm digestion block made of aluminum with holes for digestion tubes. Energy efficient heating and insulation to retain heat within the block and to protect the user.
- ▶ Insert rack made of aluminum with two side positioned insulated handles. Integrated heat shield and window provide easy and safe observation of the samples.
- ▶ Exhaust system with heat insulated handles, integrated glass exhaust manifold and water jet pump. Exhaust system and digestion tubes can be easily and safely handled separately.
- ▶ Two-tier console mounted directly on the block. The insert rack as well as the exhaust manifold can be stored safely above the block during the cooling down periods. This has a positive impact on the safe operation of the Kjeldatherm and at the same time, saves horizontal bench space (for further details also see the principle on page 3).
- ▶ Kjeldatherm digestion tubes depending on the system used KMT (100ml), KTG (250 ml) or BS (400 ml).

KJELDALIFT

- ▶ In the digestion systems with the Kjeldalift the two tier console is equipped with a lift for moving the insert rack plus manifold in and out of the block. All functions are controlled by the TZ-controller.

BLOCK DIGESTION UNITS

KJELDATHERM-AUTOMATIC

When using the automatic digestion systems the handling of the insert rack and manifold is done with the help of the lift-motor.

For the fully automatic programming we recommend the temperature-time-programmer TZ (see page 9).

The controller is not included in the standard configuration!

Order No.	Type	Description
700801	KBL 8 S	Kjeldalift-Digestion unit, with 8 digestion tubes 6100, 250 ml and lift-motor
700821	KBL 8 S-BS	Kjeldalift-Digestion unit, with 8 digestion tubes 6108, 400 ml and lift-motor, suited especially for samples prone to excessive foaming
702001	KBL 20 S	Kjeldalift-Digestion unit, with 20 digestion tubes 6100, 250 ml and lift-motor
704001	KBL 40 S	Kjeldalift-Digestion unit, with 40 digestion tubes 6103, 100 ml and lift-motor

Technical data see page 15



KBL 20 S + TZ

KJELDATHERM-BASIC

When using the manual digestion systems the handling of the insert rack and manifold are done manually.

For all manual digestion systems we recommend controller TR (see page 9). For the fully automatic programming we recommend the temperature-time-programmer TZ. The controller is not included in the standard configuration!

Order No.	Type	Description
700800	KB 8 S	Kjeldatherm-Digestion unit, with 8 digestion tubes 6100, 250 ml
700820	KB 8 S-BS	Kjeldatherm-Digestion unit, with 8 digestion tubes 6108, 400 ml, suited especially for samples prone to excessive foaming
702000	KB 20 S	Kjeldatherm-Digestion unit, with 20 digestion tubes 6100, 250 ml
704000	KB 40 S	Kjeldatherm-Digestion unit, with 40 digestion tubes 6103, 100 ml

Technical data see page 15



KB 8 S + TR

COD AND TRACE METAL



SMA 20 A + TZ + TLS

COD

Digestion block systems for the determination of the Chemical Oxygen Demand of water. The COD system is controlled by a digital electronic temperature controller via PID to 1 K precision. The required heating up phase of the samples to around 148 °C is reached in less than 10 minutes.

TRACE METAL SMA

Block system for the digestion with aqua regia to determine the acid-soluble parts of metals in sludge, sediments and soils.

Technical data see page 15.

THE MODELS

Gerhardt offers two options: Cost efficient, manual units and sophisticated, automatic units.

Version Automatic

When using the automatic version systems the handling of the heavy insert rack and manifold is done with the help of the lift-motor. Equipped with water condensers and motor-driven lifting device with insert racks for sample tubes and condensers. For a fully automated process controlling the cooling water supply and suction as well as temperature-time programming, we recommend the temperature-time-controller TZ (also see page 9). Controllers are not included in the delivery!

Version Basic

The insert rack is handled manually in this version. The system CSB is delivered with air condensers. For all manual digestion systems we recommend the controller TR (see page 9). The controller is not included in the standard configuration.

DIGESTION UNITS

COD-AUTOMATIC

- ▶ Kjeldatherm digestion block KB made of aluminum with holes for COD /SMA tubes SMG.
- ▶ Insert rack EB-A made of aluminum with two insulated handles.
- ▶ Two tier console EBL-C with built-in motor for the vertical movement of the samples and water condensers.
- ▶ Insert rack EB-K for condenser fitting the two tier console EBL-C and the water condensers SMK with KS 40.
- ▶ CSB/SMA-Sample tubes SMG, 250 ml with KS 40.
CSB/SMA-Water condenser SMK with KS 40.

Order No.	Type	Description
700810	CSB 8 A	COD-Digestion unit, 8-place, complete system
702010	CSB 20 A	COD-Digestion unit, 20-place, complete system

TRACE METAL SMA-AUTOMATIC

Identical set up as CSB-Automatic, but with additional absorption traps, PVC-exhaust manifold and water jet pump.

Order No.	Type	Description
700815	SMA 8 A	Trace metal digestion unit, 8-place, complete system
702015	SMA 20 A	Trace metal digestion unit, 20-place, complete system

COD-BASIC

- ▶ Kjeldatherm digestion block KB made of aluminum with holes for COD /SMA tubes SMG.
- ▶ Insert rack EB-A made of aluminum with two insulated handles.
- ▶ COD-sample tubes SMG-8, 250 ml with NS 29.
- ▶ COD-air condenser SML, 750 mm length, with NS 29.

Order No.	Type	Description
700805	CSB 8 M	COD-Digestion unit, 8-place, complete system
702005	CSB 20 M	COD-Digestion unit, 20-place, complete system

Recommended accessories (not included in the standard configuration):

7035	ST-SML	PP-Rack for 10 air condensers with drip tray
7035/1	ST-SML	PP-Rack for 12 air condensers with drip tray

TRACE METAL SMA-BASIC

The alternative for labs with low sample throughput. The manual systems have the same configuration as the trace metal automatic model except for the motor-driven two tier console. It has to be moved manually.

Order No.	Type	Description
700816	SMA 8 M	Manual trace metal digestion unit, 8-place complete system

THE ADVANTAGES

- ▶ The automatic lift system can separate or connect all the digestion tubes and reflux water condensers in just one step
- ▶ All digestion tubes can be lifted together with the insert rack
- ▶ The installation is very simple as the supply of cooling water is organized with just one central supply and discharge
- ▶ The instrument is designed to allow for the cooling down of the samples in the insert rack outside the hot block thus offering safer handling and a significant reduction of the cooling down-phase



CSB 8 M

SCRUBBER UNITS



TURBOSOG

For removal of aggressive acid fumes outside a cabinet we recommend the use of the Turbosog-scrubber unit.

Turbosog can be connected to all Gerhardt digestion units with suction.

PRINCIPLE

The Turbosog centrifugal scrubber condenses and neutralizes aggressive acid fumes. The preseparator works in two steps, separating and washing out these acid fumes. The removal of the fumes is very efficient with extremely low running costs. Little service is required as no activated carbon filters are used in the system.

Order No.	Type	Description
630010	TUR/K	Turbosog - Scrubber

Technical data see page 15

ADDITIONAL COOLING UNIT FOR TURBOSOG

Additional condensate bottle for a more efficient separation of condensate when doing water digestions with Kjeldatherm or Turbotherm digestion units. The system can be easily cleaned, has screw caps with snap lids and cooling water control. The unit is attached at the side of the Turbosog and connected to the water supply. Thus upgrades of existing units are done without problems.

Order No.	Type	Description
6330	ZKE	Additional cooling unit complete, incl. water control



CONTROL UNITS

TZ-CONTROL UNIT

TZ is a time- temperature controller - easily programmed for the automated operation of the KJELDATHERM-, KJELDALIFT- and COD and SMA-digestion units, mounted on the side of the system. Up to 9 different programs can be defined and stored. Each program offers the possibility of up to 9 different temperature- and time steps. This feature ensures optimal control of the heating up phase, the digestion phase, as well as cooling. The fume scrubber TURBO-SOG can also be turned on and off automatically. With cooling water control, an external pressure valve (optional, order number 7211) can monitor and control the flow of cooling water for the COD and Trace Metal Systems.

THE ADVANTAGES

- ▶ 9 programs with 9 program steps ensure a controlled heating up.
- ▶ Programmable temperature range (room temperature up to 430 °C).
- ▶ Accuracy < 0,5 % in the upper temperature range
- ▶ Suction is turned on automatically when the previously defined block temperature is passed - thus greater safety when working with acid fumes.
- ▶ Automatic controls of fume suction and cooling water flow.
- ▶ Optical and acoustic messages

Technical data see page 15



TZ + TLS

Order No.	Type	Description
7210	TZ	TZ-Controller 230 Volt
Accessories		
7045	TLS	Rack for TZ- and TR-Controller
7211	WTZ	Cooling water valve

TR-CONTROLLER

Electronic temperature controller, mounted on the side of the system, with PID behaviour.

The required temperature is set by using the arrow keys, the display is digital. Temperature range 0 – 430 °C, accuracy < 1,0 % in the upper temperature range.

Order No.	Type	Description
7043	TR	Temperature controller

Accessories:

7045	TLS	Rack for TZ- and TR-controller
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Technical data see page 15



TR + TLS

FIBREBAG®



THE FIBREBAG-

METHOD

The new FibreBag system uses a fine porous mesh bag, into which the sample is weighed. A spacer is put into each bag, to allow the reagents to flow freely into the bag. The second part of the system is a carousel, which holds up to 6 sample bags. The carousel is now placed into a one-litre glass beaker using the handle, which also helps to take the carousel out again later on. Simultaneously, the six samples can be de-fatted, boiled in sulphuric acid, rinsed, boiled in potassium hydroxide solution, rinsed again, lifted out and dried.

The rinsing step being so tedious on the traditional method is so simple when working with the FibreBags: hot water is poured on the open bags from above. At the end of the last rinsing step, the spacers are taken out carefully and the sample residue is rinsed again. The bags are then put into porcelain crucibles, dried in the muffle oven, weighed and then ashed. The FibreBag material will dissolve without leaving any trace. The ash remaining is weighed and deducted from the sample weight taken after initial drying. From these weights the crude fibre content of the sample can be accurately determined.

FIBREBAG

The introduction of the revolutionary FibreBag System by Gerhardt means that the tedious and time-consuming stages usually associated with this determination process like e.g. Weender, van Soest and others, can be reduced to a minimum. Space as well as the consumption of energy and chemicals is reduced to a sixth of the traditional methods. At the same time the conformity to the methods is maintained.

COMPARISON TO THE STANDARD METHOD

When working with the standard method, the samples are de-fatted individually, boiled in undiluted sulphuric acid, filtered and boiled in dilute potassium or sodium hydroxide solution, rinsed again, dried and ashed in an oven. The amount of time required for this method is enormous, not to mention the amount of space needed.



ADF, NDF AND CRUDEFIBRE

Gerhardt offers 3 systems for a special package price. For low sample throughput we recommend the basic pack for up to 6 samples simultaneously. For high sample throughput we recommend the 24-place or the 36-place system, with serial heating plates. All system components can also be ordered individually.

FIBREBAG SINGLE COMPONENTS

Order-No.	Type	Description
1775	ADF	Bag with 100 FibreBags for ADF/NDF-determination
1776	RF	Bag with 100 FibreBags for crude fibre determination
1777	RS 1	Reference substance 1 (15 %)
1778	RS 2	Reference substance 2 (25 %)
1770	CAT	Carousel for 6 FibreBags with bayonet coupling, stainless steel
1771	CHT	Handle for carousel, stainless steel
1772	SPF	Spacer made of glass
1773	SZK	Support stand with ring for beaker and holder for condenser
1774	KGR	Condenser made of glass with raffle
1766	B1000S	Beaker 1000ml, without spout

FIBREBAG SYSTEMS

The FibreBags are not included in a system. Depending on the determination the bags must be ordered separately for crude fibre or ADF/NDF (order no. see above)!

FibreBag System 6-place

Order-No.	Type	Description
175006	FBS 6	FibreBag system 6 -place complete: 1 x Single heater 450 W - 230 V AC, 1 x Beaker 1000 ml, 1 x Carousel 6-place, 1 x Handle for carousel, 6 x Spacer made of glass, 1 x Support stand with ring, 1 x Condenser made of glass with tubes, Dimensions (W x H x D) = 250 x 600 x 230 mm

FibreBag System 24-place

Order-No.	Type	Description
175024	FBS 24	FibreBag System 24-place complete: 1 x Serial heater 4-place 1800 W-230 V AC, 4 x Beaker 1000 ml, 4 x Carousel 6-place, 1 x Handle for carousel, 24 x Spacer made of glass, 4 x Support stand with ring, 4 x Condenser made of glass with tubes, Dimensions (W x H x D) = 600 x 600 x 230 mm

FibreBag System 36-place

Order-No.	Type	Description
175036	FBS 36	FibreBag System 36-place complete: 1 x Serial heater 6-place 2700 W, 6 x Beaker 1000 ml, 6 x Carousel 6-place, 1 x Handle for carousel, 36 x Spacer made of glass, 6 x Support stand with ring, 6 x Condenser made of glass with tubes, denser made of glass with tubes, Dimensions (W x H x D) 900 x 600 x 230 mm

ADVANTAGES

The advantages when comparing FibreBags to similar methods:

SAVING TIME

- Up to 6 times faster than the standard method
- Fast filtration process
- Shorter drying periods
- Lower blank values (bags are almost completely incinerated)
- Rinsing process easier and faster

REDUCING THE COSTS

- More cost effective and significantly faster
- Less chemicals needed
- Less bench space needed during burning process
- Energy consumption reduced to a sixth

SAVING ON RESOURCES

- Since only a small amount of plastic is burnt during the ashing, there is less odour and the entire procedure is easier on the environment
- Less chemicals thus less waste

SAVING BENCH SPACE

- 6 samples on one hot-plate versus 6 samples on 6 hotplates

CYANIDE - DETERMINATION



TT 4 CA

Cyanid automatic TT 4 CA

- ▶ TT 4 CA is equipped with a modern control. Thus, up to 9 different programs can be defined (Technical data see page 15).

Cyanid manual TT 4 CM

- ▶ TT 4 CM with manual power setting using the energy controller (Technical data see page 15)

The basic system is the Turbotherm infra-red digestion unit.

By adding special accessories, the Cyanide digestion unit can be used for further digestions as well (also see page 2-3).

Turbotherm basic unit, insert rack, energy console with controller for the gas inlet and the cooling water distribution, tubing, drip tray, set of glass consisting of: digestion tube, reflux condenser, absorption trap, and dropping funnel.

Decomposition and Digestion Instrument Digestion instrument, which has been especially developed, for the decomposition of water- and soil samples for the determination of cyanide resp. for the total cyanide determination as well as for other determinations.

THE ADVANTAGES

- ▶ Thanks to the IR heating system, a fast and even heating up of the instrument is made possible
- ▶ Gas flow counter located at the side
- ▶ Up to four samples can be digested
- ▶ Steckmatic connection makes handling of compressed air resp. inlet tubings easy
- ▶ Four sample tubes can be handled easily and simultaneously by using an insert rack
- ▶ Connection to in-house compressed air resp. nitrogen tubing is possible, thus economic and safe flow of gas
- ▶ Using of inert materials

CONSUMABLES

When replacing consumables or spares, please make sure, that you buy only original parts from C. Gerhardt. This is the only way we can guarantee a trouble-free, analytical process with precise and reliable results.

CATALYST-TABLETS

Tin with 1000 tablets

Order No.	Type	Description
6121	ST	3,5 g K_2SO_4 + 0,0035 g Se
6122	S	5,0 g K_2SO_4 + 0,005 g Se
6123	CX	5,0 g K_2SO_4 + 0,5 g $CuSO_4 \times 5H_2O$
6124	CT	5,0 g K_2SO_4 , 0,15 g $CuSO_4 \times 5H_2O$ + 0,15 g TiO_2
6126	SQ	1,5 g K_2SO_4 + 0,0015 g Se
6128	IB/61	5,0 g K_2SO_4 , $CuSO_4 \times 5H_2O$ + Se (100:6:1 parts) acc. to Wieninger
6129	CK	1,5 g K_2SO_4 + 0,4 g $CuSO_4 \times 5H_2O$
6130	TCT	3,5 g K_2SO_4 + 0,105 g $CuSO_4 \times 5H_2O$ + 0,105 g $TiO_2 \times 5H_2O$
6131	C	5,0 g K_2SO_4 + 0,1 g $CuSO_4 \times 5H_2O$
6132	CQ	1,5 g K_2SO_4 + 0,15 g $CuSO_4 \times 5H_2O$
6133		K_2SO_4 + $CuSO_4 + 5H_2O$
6134	KS	100 x K_2SO_4 , 1xSe
6135	NACT	1,0 g Na_2SO_4 , 0,03 g $CuSO_4 \times 5H_2O$, 0,03 g TiO_2



ANTIFOAM-TABLETS

Tin with 1000 tablets

6127	AS	Antifoam-Tablets
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DIGESTION TUBES

Order No.	Type	Description	for Type
6100	KTG	Digestion tube macro, 250 ml	TT 625, TT 125, KB(L) 8 S, KB(L) 20 S
6103	KMT	Digestion tube micro, 100 ml	TT 100, KB 40
6104	KMT/E	Digestion tube micro, 100 ml with constriction	TT 100, KB 40
6105	KTG/E	Digestion tube macro, 250 ml with constriction	TT 625, TT 125, KB(L) 8 S, KB(L) 20 S
6106	KTG/K	ditto 6100 but hand-selected for Vapodest 50 carousel	TT 625, TT 125, KB(L) 8 S, KB(L) 20 S
6108	BS 400	Special tube 400 ml, diminished	KB(L) 8 S-BS
6816	SMG	Digestion tube, 250 ml with KS 40	CSB 8 A, CSB 20 A, SMA 8 A, SMA 20 A, SMA 8 M
6715	SMG 8	Digestion tube, 250 ml with NS 29	CSB 8 M, CSB 20 M
6460	KDD 400	Digestion tube, 400 ml	TT 440
6461	KDD 800	Jumbo digestion tube, 800 ml	TT 480

More accessories and informations available on request!

KJELDATHERM AND VAPODEST



Vapodest 30 + KBL 20S + TZ

Digestion and distillation from one source
 Digestion and distillation from one source. The perfect combination for our Kjeldatherm program is the distillation range Vapodest. All laboratories which need fast and highly precise results, appreciate these systems.

The Vapodest product range is available in various levels of automation, from the Vapodest 20 semi-automatic distillation system to the Vapodest 50 distillation and titration system with carousel autosampler. All systems are suitable for the distillation of Kjeldahl digestion solutions and for other steam distillation procedures.

THE VAPODEST RANGE

- › Vapodest 20, 30 and 40
- › Vapodest 45 with external titrator
- › Vapodest 50 with integrated titration
- › Vapodest 50 carousel with autosampler

Steam distillation for sample preparation for:

- › Alcohol
- › Sorbic acid
- › Total formaldehyde
- › Total cyanide
- › Volatile acids
- › Volatile acids

Further product information is available from our product brochure Vapodest or directly from the Gerhardt product specialist at Gerhardt or at the Gerhardt representative in your country.



Distillation system Vapodest 50 carousel with autosampler

TECHNICAL DATA

Type	TT 625 / TT 625M	TT 125 / TT 125 M	TT 440 / TT 440 M	TT 480 / TT 480 M
Order No.:	705000 / 715000	705030 / 715030	705010 / 715010	705020 / 715020
Nominal Voltage*:	230 V AC	230 V AC	230 V AC	230 V AC
Frequency:	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Nominal Wattage:	1500 W	1500 W	1500 W	1500 W
Weight:	21 kg	22,5 kg	22,5 kg	21,5 kg
Dimens. (WxDxH):	525 x 450 x 740 mm	525 x 450 x 740 mm	525 x 450 x 740 mm	525 x 450 x 740 mm
Temperature:	750 °C	750 °C	750 °C	750 °C
Heating places:	6	12	4	4
Size of tube:	250 ml	250 ml	400 ml	800 ml

Type	TT 100 / TT 100 M	KB 8 S	KB 8 S-BS	KB 20 S
Order No.:	705040 / 715040	700800	700820	702000
Nominal Voltage*:	230 V AC	230 V AC	230 V AC	230 V AC
Frequency:	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Nominal Wattage:	1500 W	1000 W	1000 W	2200 W
Weight:	22,5 kg	16 kg	16 kg	26 kg
Dimens. (WxDxH):	525 x 450 x 740 mm	380 x 380 x 650 mm	380 x 380 x 650 mm	380 x 500 x 650 mm
Temperature:	750 °C	430 °C	430 °C	430 °C
Heating places:	12	8	8	20
Size of tube:	100 ml	250 ml	400 ml	250 ml

Gerät	KB 40 S	KBL 8 S	KBL 8 S-BS	KBL 20 S
Order No.:	704000	700801	700821	702001
Nominal Voltage*:	230 V AC	230 V AC	230 V AC	230 V AC
Frequency:	50/60 Hz	50 Hz	50 Hz	50 Hz
Nominal Wattage:	2200 W	1160 W	1160 W	2360 W
Weight:	26 kg	29 kg	29 kg	39 kg
Dimens. (WxDxH):	380 x 500 x 650 mm	460 x 500 x 740 mm	460 x 500 x 740 mm	460 x 500 x 740 mm
Temperature:	430 °C	430 °C	430 °C	430 °C
Heating places:	40	8	8	20
Size of tube:	100 ml	250 ml	400 ml	250 ml

Gerät	KBL 40 S	CSB 8 M	CSB 20 M	CSB 8 A
Order No.:	704001	700805	702005	700810
Nominal Voltage*:	230 V AC	230 V AC	230 V AC	230 V AC
Frequency:	50 Hz	50/60 Hz	50/60 Hz	50 Hz
Nominal Wattage:	2360 W	1000 W	2200 W	1160 W
Weight:	39 kg	15 kg	24 kg	31 kg
Dimens. (WxDxH):	460 x 500 x 740 mm	390 x 390 x 1150 mm	390 x 520 x 1150 mm	470 x 390 x 800 mm
Temperature:	430 °C	430 °C	430 °C	430 °C
Heating places:	40	8	20	8
Size of tube:	100 ml	250 ml	250 ml	250 ml

Gerät	CSB 20 A	SMA 8 A	SMA 20 A	SMA 8 M
Order No.:	702010	700815	702015	700816
Nominal Voltage*:	230 V AC	230 V AC	230 V AC	230 V AC
Frequency:	50 Hz	50 Hz	50 Hz	50/60 Hz
Nominal Wattage:	2360 W	1160 W	2360 W	1000 W
Weight:	45 kg	32 kg	46 kg	29 kg
Dimens. (WxDxH):	470 x 520 x 800 mm	470 x 390 x 1000 mm	470 x 520 x 1000 mm	470 x 390 x 1000 mm
Temperature:	430 °C	430 °C	430 °C	430 °C
Heating places:	20	8	20	8
Size of tube:	250 ml	250 ml	250 ml	250 ml

Gerät	TR	TZ	TUR / K	TT 4 CA / TT 4 CN
Order No.:	7043	7210	630010	705050 / 715050
Nominal Voltage*:	230 V AC	230 V AC	230 V AC	230 V AC
Frequency:	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Nominal Wattage:	-	-	205 W	1500 W
Weight:	1,4 kg	2,3 kg	19 kg	35 kg
Dimens. (WxDxH):	80 x 150 x 155 mm	80 x 150 x 255 mm	330 x 450 x 420 mm	525 x 450 x 740 mm
Temperature:	0 - 430 °C	0 - 430 °C (450 °C)	-	max. 750 °C
Heating places:	-	-	-	4
Size of tube:	-	-	-	800 ml
Accuracy:	< 0,5 %	< 0,5 %	-	-
Programs:	-	9	-	-

* Other voltages on request

OTHER PRODUCTS

On request we will be happy to supply you with further brochures regarding our other products.

DISTILLATION SYSTEMS

VAPODEST

Gerhardt has set new standards worldwide with the Vapodest steam distillation system. Whenever, highly precise analysis results are needed - Gerhardt has the answer. The Vapodest product range is available in various levels of automation, from the Vapodest 20 semi-automatic distillation system to the Vapodest 50 distillation and titration system with carousel autosampler.



RAPID EXTRACTION

SOXTERM

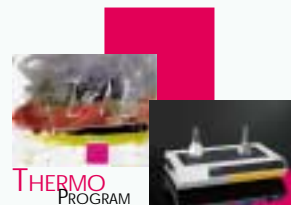
Based on the experiences of customers and partners worldwide Gerhardt has improved the successful Soxtherm range. Depending on the demands and sample throughput of the laboratory, the customer can now choose between a 2, 4, and 6 place programmable unit.



HOTPLATES

HOTPLATES HT
SERIAL HEATING UNITS
SERIAL FLASK HEATERS

Hotplates, single and serial hotplates as well as sand baths, are standard requirements in any laboratory. They have always been an important part of the product range at Gerhardt. The thermo program also includes classic distillation systems, digestion instruments, and extraction units.



SHAKER

LABOSHAKE
THERMOSHAKE

Gerhardt offers shakers of all sizes as well as incubator shakers for all kind of shaking tasks in modern labs. Thanks to the wide range of attachments, carrier plates, two tiers consoles, and the extensive accessories, the basic model can be considered a true multi use unit.



All stages from research & development to shipment have undergone a constant quality control under EN ISO 9001:2000, which C. Gerhardt has recently achieved.

EN ISO
9001:2000



FRONTCOVER DESIGN

Gouache „Kjeldatherm“
Douglas Swan 1997

Douglas Swan, born in the USA, raised in Scotland, had his studio at C. Gerhardt in Bonn from 1980 until his death in the year 2000. Winner of the August Macke Award, Bonn 1997.



Gerhardt

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Later modifications possible.