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## Maximum precision, minimum space

Technological leadership pays off in practice. This is demonstrated by the universal heating/drying ovens from BINDER. First-class workmanship, extensive features, maximum operational reliability and safety in conjunction with the latest communication and documentation facilities, particularly for GLP/GMP-compliant working – now also available in compact 23 litre Benchtop format. The new drying ovens and heating chambers in the ED and FD series fulfil the highest quality requirements for a multitude of different applications and can meet any individual needs. They are temperature-accurate and efficient, favourably priced and economical – not least thanks to energy saving.

### Universal drying ovens ED 23 Benchtop series



Ideal for anyone who wishes to utilise the benefits of modern unit technology, without having to forfeit a high standard of outfitting and highest quality. Natural convection is suitable for all drying and sterilisation tasks that can take place without increased drying rates or special time requirements.

► **Operative ranges:**

Pharmaceutical and chemical industry, biotechnology, medicine, universities, research institutes, food industry, material testing

► **Performance features:**

- 5 °C above room temperature to 300 °C
- Tempering with natural convection
- Outstanding drying results due to optimal air conduction

► **Equipment:**

- Microprocessor controller with LED-display and integrated timer
- One ramp function
- Timer 0 – 99,59 h and continuous operation
- RS 422 communication interface for standard software APT-COM® DataControlSystem (optional)
- 2 shelves, chrome-plated
- Safety device class 2 (DIN 12880)
- Ventilation slide and exhaust duct Ø 50 mm



## Universal drying ovens FD, FED 23 Benchtop series



Fig. series FD with option window

Tempering with forced convection produces higher drying rates and faster heating rates. Due to the high rate of air transfer, particularly efficient drying is achieved. Particularly in case of fully loaded cabinets, temperature accuracies are increased still further, and maximum temperature constancy is achieved.

### ► Operative ranges:

Pharmaceutical and chemical industry, biotechnology, medicine, universities, research institutes, food industry, material testing

### ► Performance features:

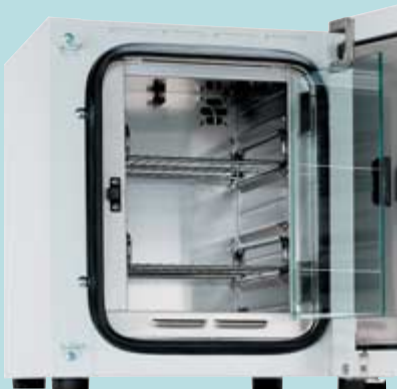
- 5 °C above room temperature to 300 °C
- Fast and uniform drying of large quantities of samples with forced convection due to powerful air turbine
- Outstanding drying results due to optimal air conduction

### ► Equipment:

- Microprocessor controller with LED-display and integrated timer (series FD) resp. several timer functions (series FED)
- One ramp function
- Timer 0 – 99,99 h and continuous operation
- Communication interface RS 422 (series FED)
- Adjustable fan rate (0 – 100%) series FED
- 2 shelves, chrome-plated
- Safety device class 2 (DIN 12880)
- Ventilation slide and exhaust duct Ø 50 mm

The incubators and refrigerated incubators in the APT.Line® are precision instruments for reliable long-term cultivation of micro-organisms with a preference for heat or cold. They are universally applicable for a wide range of tempering tasks in extensive areas of application – now also available in compact 23 litre Benchtop format.

## Incubators BD 23 Benchtop series



The microbiological incubators in the BD series stand out from all others in their superior temperature accuracy. With this reliable precision, the APT.Line® incubators meet all quality requirements for constant, reproducible incubation conditions. Perfect ease of cleaning, disinfection routine at 100° C and simple operation complete the equipment reliability.

Thanks to the broad temperature range and high quality outfitting, the units in the BD series are suitable for a wide variety of tasks in research, production and quality assurance. The space-saving and compact 23 litre Benchtop format can be mounted directly on the laboratory bench.

### ► Operative ranges:

Microbiology, biotechnology, biomedicine, universities, research institutions, pharmaceutical industry, foodstuffs industry, cosmetic industry

### ► Performance features:

- 5 °C above room temperature to 100 °C
- Precise incubating conditions throughout the entire inner chamber due to best spatial temperature accuracies
- Optimal heat distribution due to symmetrical airflow system

### ► Equipment:

- Microprocessor PID controller with LED-display
- Timer 0 – 99,99 h and continuous operation
- Interface RS 422 for communication-software APT-COM® DataControl-System (optional)
- Inner glass door
- 2 shelves, chrome-plated
- Safety device class 3.1 (DIN 12880)
- Adjustable ventilation by means of rear exhaust duct Ø 50 mm



## Peltier-refrigerated incubators, KB 23 Benchtop series



The Peltier-refrigerated 23 litre incubator from Binder is excellently suited for high-precision tempering of small sample quantities and demanding cell cultivation. The cooling principle used in the KB 23 is a highly efficient Peltier cooling system. This combination links the advantages of the electrical cooling principle with those of the most technically advanced tempering concept. A fundamental feature of the Peltier cooling is the absence of vibration. This provides ideal system prerequisites for even the most sensitive cooling processes, for example, during protein crystallisation. All core elements of modern tempering technology are realised in the KB 23, namely: technical perfection of the temperature control parameter, economic and space-saving unit concept as well as minimal operating noise, providing a pleasant working environment.

### ► Operative ranges:

Biochemistry – here particularly the protein crystallisation, cell- and biotechnology, microbiology, pharmaceutical industry, foodstuffs and cosmetic industry

### ► Performance features:

- 4 °C to 60 °C
- Precise culture conditions throughout the entire inner chamber due to best spatial temperature accuracies
- Optimal heat distribution due to symmetrical airflow system

### ► Equipment:

- Microprocessor PID controller with LED-display
- Peltier cooling principle without vibration
- Interface RS 422 for communication-software APT-COM® DataControl-System (optional)
- Safety device class 3.1 (DIN 12880)
- 2 shelves, stainless steel
- Inner glass door
- One ramp function

## Technical Data: BINDER Series FD

FD series	FD 23	FD 53	FD 115	FD 240
<b>Exterior dimensions</b>				
Width (mm)	433	634	834	1034
Height (inclusive feet/castors) (mm)	492	617	702	822
Depth (mm)	516	575	645	745
plus door handle, I-panel and exhaust duct (mm)	85	105	105	105
<b>Interior dimensions</b>				
Width (mm)	222	400	600	800
Height (mm)	330	400	480	600
Depth (mm)	280	330	400	500
Interior volume (l)	20	53	115	240
Shelves, chrome-plated (number standard/max)	2/3	2/5	2/6	2/7
Load per shelf (kg)	12	15	20	30
Permitted total load (kg)	25	40	50	70
Temperature range, 5 °C above ambient up to (°C)	300	300	300	300
Temperature variation <sup>1)</sup>				
at 70 °C (± °C)	0.8	0.8	0.7	0.8
at 150 °C (± °C)	2	2	1.8	2
at 300 °C (± °C)	3.7	3.7	3.9	4.3
Temperature fluctuation (≤ ± °C)	0.3	0.3	0.3	0.3
Nominal voltage (± 10 %) 50/60 Hz (V)	230	230	230	230
Nominal power (W)	800	1200	1600	2700
Doors (number)	1	1	1	2
<b>Options</b>				
Shelves, chrome-plated resp. stainless steel	●	●	●	●
Safety device cl. 3.1 acc. to DIN 12880, Part 1	●	●	●	●
Lockable door	●	●	●	●
Viton gasket (temperature resistant up to 220° C max.)	●	●	●	●
Rubber pads for safe stacking	●	●	●	●
Access ports with silicone plug	–	●	●	●
Door with window and interior lighting	●	●	●	●
Calibration certificate	●	●	●	●
with CUL-registration 115 V 1 N ~ 60 Hz	–	●	●	–
with CUL-registration 208 V 3 N ~ 60 Hz	–	–	–	●
acc. CUL-standard 115 V 1 N ~ 60 Hz	●	–	–	–

All technical data are specified for units with standard equipment at an ambient temperature of +22 °C and a voltage fluctuation of ±10 %. The temperature data are determined in accordance to DIN 12880, part 2 respecting the recommended wall clearances of 10 % of the height, width and depth of the inner chamber. All indications are average values, typical for units produced in series. We reserve the right to alter technical specifications at all times.

<sup>1)</sup> value without viewing window

<sup>2)</sup> up to 98 % of the set value

● Optional

– not available



Universal heating and drying ovens with forced convection

## BINDER Series FD: The efficient basis for forced convection

**Whoever is looking for heating or drying ovens with forced convection, will by all means experience the FD series as high-performance devices with a very good value for money. You only pay for what you really need and you get maximum performance for your money.**

Forced convection produces higher drying rates and quicker heating rates. The powerful air turbine increases the efficiency. Due to the high rate of air transfer, particularly efficient drying is achieved, unpleasant fumes are specifically removed. Particularly in the case of fully loaded cabinets, temperature accuracies are increased still further, and maximum temperature constancy is achieved.

The FD series is ideal for all those who wish to utilise their time efficiently and attach importance to a high standard of outfitting and highest quality.

### ► Operative ranges:

Pharmaceutical and chemical industry, biotechnology, medicine, universities, research institutes, food industry, material testing

### ► Performance features:

- Temperature range: 5 °C above ambient temperature to 300 °C
- Maximum tempering precision and very fast temperature recovery time through patented APT.Line® preheating chamber technology
- Fast and uniform drying of large quantities of samples with forced convection due to powerful air turbine
- Electronic timer 0 – 99,59 h and continuous operation
- Calibrations and validations possible

### ► Equipment:

- Microprocessor PID controller with LED-display
- One ramp function
- Safety device class 2 (DIN 12880)
- Ventilation slide and exhaust duct Ø 50 mm
- 2 shelves, chrome-plated
- Inner chamber volume in litres: 20; 53; 115; 240

## Technical Data: BINDER Series FED

FED series	FED 23	FED 53	FED 115	FED 240	FED 400	FED 720
<b>Exterior dimensions</b>						
Width (mm)	433	634	834	1034	1234	1234
Height (inclusive feet/castors) (mm)	492	617	702	822	1030	1530
Depth (mm)	516	575	645	745	765	865
plus door handle, I-panel and exhaust duct (mm)	85	105	105	105	105	105
<b>Interior dimensions</b>						
Width (mm)	222	400	600	800	1000	1000
Height (mm)	330	400	480	600	800	1200
Depth (mm)	277	330	400	500	500	600
Interior volume (l)	20	53	115	240	400	700
Shelves, chrome-plated (number standard/max)	2/3	2/5	2/6	2/7	2/10	2/16
Load per shelf (kg)	12	15	20	30	35	45
Permitted total load (kg)	25	40	50	70	90	120
Temperature range, 5 °C above ambient up to (°C)	300	300	300	300	300	300
Temperature variation <sup>1)</sup>						
at 70 °C (± °C)	0.8	0.8	0.7	0.8	1	1
at 150 °C (± °C)	2.0	2.0	1.8	2.0	2.5	2.0
at 300 °C (± °C)	3.7	3.7	3.9	4.3	4.8	5.5
Temperature fluctuation (± °C)	0.3	0.3	0.3	0.3	0.3	0.3
Nominal voltage (± 10 %) 50/60 Hz (V)	230	230	230	230	400 3/N	400 3/N
Nominal power (W)	800	1200	1600	2700	3400	5000
Doors (number)	1	1	1	2	2	2
<b>Options</b>						
Shelves, chrome-plated resp. stainless steel	●	●	●	●	●	●
Lockable door	●	●	●	●	●	●
Safety device cl. 3.1 acc. to DIN 12880, Part 1	●	●	●	●	●	●
Reinforced shelf, stainless steel						
with 1 set of shelf securings	–	–	–	●	●	●
Perforated shelf, stainless steel	●	●	●	●	●	●
Door with window and interior lighting	●	●	●	●	●	●
Fresh air filter	●	●	●	●	●	●
Viton gasket						
(temperature resistant up to 220° C max.)	●	●	●	●	●	●
Reinforced inner chamber inclusive 2 reinforced shelves, stainless steel	–	–	–	●	●	●
Access ports with silicone plug		●	●	●	●	●
Printer hybrid for numerical and graphical temperature registration for connection to a printer interface with cable set and interface converter RS 422/232	●	●	●	●	●	●
Measuring protocol acc. to DIN 12880, Part 2	●	●	●	●	●	●
Rubber pads	●	●	●	●	–	–
Analogue outputs for temperature 4 to 20mA with DIN bushing 6 poles, incl. DIN plug	●	●	●	●	●	●
Switched off acoustic alarm in case of over temperature	●	●	●	●	●	●
Measurement of air change rate acc. to ASTM D5374	●	●	●	●	●	●
Calibration certificate	●	●	●	●	●	●

All technical data are specified for units with standard equipment at an ambient temperature of +22 °C and a voltage fluctuation of ±10 %. The temperature data are determined in accordance to DIN 12880, part 2 respecting the recommended wall clearances of 10 % of the height, width and depth of the inner chamber. All indications are average values, typical for units produced in series. We reserve the right to alter technical specifications at all times.

<sup>1)</sup> value without glass door

<sup>2)</sup> up to 98 % of the set value

● Optional

– not available



Multifunctional heating/drying ovens with forced convection

## BINDER Series FED: Flexible power packages

**New features:** The FED series has an interface RS 422 for connection to the comfortable data and communication software BINDER APT-COM. Something has changed on the FED, also optically: you can now recognise it on seeing the red "triangle" controller.

The FED series of multifunctional heating chambers are almost unlimited in their efficiency and particularly adaptable to frequently changing thermal requirements. Whether for attaining maximum temperature accuracies and heating-up gradients, or for simulating natural environmental conditions without convection: Using the digitally controllable air turbine, temperature parameters and the ambient conditions in the inner chamber can be perfectly controlled. For special thermal tasks, the heating characteristic can be individually adapted by means of the ramp function and the adjustable heat load. The FED series is ideal for all those who require individual options at maximum capacity. It is also optimally suited to test laboratories.

### ► Operative ranges:

Pharmaceutical and chemical industry, medicine/veterinary medicine, fundamental research in universities and research institutes, automotive industry suppliers, electronics industry, test laboratories, transport/transport subcontractors supplier, mechanical engineering, building materials industry, aircraft industry

### ► Performance features:

- Temperature range: 5 °C above ambient temperature up to 300 °C
- Maximum tempering accuracy and very fast temperature recovery time through patented APT.Line® preheating chamber technology
- Efficient and reproducible drying of large sample amounts and high humidity contents
- Adjustable intervals for printer
- Adjustable ventilation
- Visual temperature alarm
- Calibrations and validations possible

### ► Equipment:

- Microprocessor controller with LED-display and integrated timer-functions
- One ramp function
- Adjustable fan speed (0 – 100%)
- Front ventilation slide and rear exhaust duct Ø 50 mm
- 2 chrome-plated shelves
- Interface RS 422 for communication software APT-COM® DataControl-System
- Safety device class 2 (DIN 12880)
- Inner chamber volume: 20; 53; 115; 240; 400; 720

## Technical Data: BINDER Series FP

FP series	FP 53	FP 115	FP 240	FP 400	FP 720
<b>Exterior dimensions</b>					
Width (mm)	634	834	1034	1234	1234
Height (inclusive feet/castors) (mm)	617	702	822	1030	1530
Depth (mm)	575	645	745	765	865
plus door handle (mm)	105	105	105	105	105
<b>Interior dimensions</b>					
Width (mm)	400	600	800	1000	1000
Height (mm)	400	480	600	800	1200
Depth (mm)	330	400	500	500	600
Interior volume (l)	53	115	240	400	720
Shelves, chrome-plated (number standard/max)	2/5	2/6	2/8	2/10	2/16
Load per shelf (kg)	15	20	30	35	45
Permitted total load (kg)	40	50	70	90	120
Temperature range, 5 °C above ambient up to (°C)	300	300	300	300	300
Temperature variation <sup>1)</sup>					
at 70 °C (± °C)	0.8	0.7	0.8	1	1
at 150 °C (± °C)	2.0	1.8	2.0	2.5	2.0
at 300 °C (± °C)	3.7	3.9	4.3	4.8	5.5
Temperature fluctuation (≤ ± °C)	0.3	0.3	0.3	0.3	0.3
Housing protection acc to EN 60529	IP 20	IP 20	IP 20	IP 20	IP 20
Nominal voltage (± 10 %) 50/60 Hz (V)	230	230	230	400 3/N	400 3/N
Nominal power (W)	1200	1600	2700	3400	5000
Number of doors	1	1	2	2	2
<b>Options</b>					
Shelves, chrome-plated resp. stainless steel	●	●	●	●	●
Safety device cl. 3.1 acc. to DIN 12880, Part 1	●	●	●	●	●
Lockable door	●	●	●	●	●
Viton gasket (temperature resistant up to 220 °C max)	●	●	●	●	●
Increased air change through stronger fan	●	●	●	●	●
Access ports with silicone plug	●	●	●	●	●
Printer hybrid for numerical and graphical temperature registration for connection to a printer interface with cable set and interface converter RS 422/232	●	●	●	●	●
Additional PT100 temperature sensor, fix or flexible with external connection	●	●	●	●	●
Rubber pads for safe stacking	●	●	●	●	●
Measuring protocol acc. to DIN 12880, Part 2	●	●	●	●	●
Calibration certificate	●	●	●	●	●
Door with window and interior lighting	●	●	●	●	●
Fresh air filter	●	●	●	●	●

All technical data are specified for units with standard equipment at an ambient temperature of +22 °C and a voltage fluctuation of ±10 %. The temperature data are determined in accordance to DIN 12880, part 2 respecting the recommended wall clearances of 10 % of the height, width and depth of the inner chamber. All indications are average values, typical for units produced in series. We reserve the right to alter technical specifications at all times.

<sup>1)</sup> without glass door

<sup>2)</sup> up to 98 % of the set value

● Optional

– not available



Multifunctional heating/drying ovens with forced convection and program controller

## **New BINDER Series FP: Highly precise, highly flexible and offering a high degree of control**

The new drying/heating ovens of the FP series are equipped with a programmable microprocessor controller as standard. They are based on the proven technology of the FED series with forced convection air and are now equipped with a program controller. Thanks to the freely programmable controller, even complex tasks with temperature ramps or strong temperature variations can be easily programmed. With its individually programmable temperature cycles, the FP series can meet all your needs and therefore provides the greatest user flexibility. It is thus perfectly suited for demanding testing tasks and high-precision temperature processes.

### ► **Operative ranges:**

Pharmaceutical and chemical industry, fundamental research in universities and research institutes, automotive industry suppliers, electronics industry, test laboratories, medicine, veterinary medicine, transport /transport subcontractors supplier, mechanical engineering, building materials industry, aircraft industry

### ► **Performance features:**

- Temperature range: 5 °C above ambient temperature up to 300 °C
- Easy programming through microprocessor-program controller with LED-display
- Maximum tempering precision and very fast temperature recovery time through patented APT.Line® preheating chamber technology
- Effective and reproducible drying of large sample amounts and higher humidity contents
- Powerful air turbine
- Adjustable intervals for printer
- Adjustable ventilation
- Calibrations and validations possible

### ► **Equipment:**

- Microprocessor program controller with LED-display with 2 programmes with 10 sections each or alternatively, switchable to 1 programme with 20 sections
- Numerous temperature and time functions
- Adjustable ramp function via program editor
- Adjustable fan speed (0 – 100%)
- Front ventilation slide and rear exhaust duct Ø 50 mm
- Counter of operating hours
- Visual and acoustic temperature alarm
- 2 shelves, chrome-plated
- Communication interface RS 422
- Safety device class 2 (DIN 12880)
- Inner chamber volume: 53; 115; 240; 400; 720

## Technical Data: BINDER Series KBF

KBF series	KBF 115	KBF 240	KBF 720
<b>Exterior dimensions</b>			
Width (mm)	834	1034	1234
Height (inclusive feet/castors) (mm)	1022	1142	1816
Depth (mm)	646	745	865
plus door handle, I-panel, connection (mm)	100	100	100
<b>Interior dimensions</b>			
Width (mm)	600	800	1000
Height (mm)	480	600	1168
Depth (mm)	400	500	600
Interior volume (l)	115	240	700
Shelves (number standard/max)	2/5	2/7	2/14
Load per shelf (kg)	20	30	45
Permitted total load (kg)	50	70	120
<b>Temperature range</b>			
without humidity/lighting (°C)	- 10 – 100.0	- 10 – 100.0	- 10 – 100.0
with humidity approx. (°C)	10 – 90	10 – 90	10 – 90
with humidity (lighting in door) approx. (°C)	20 – 90	20 – 90	20 – 90
<b>Temperature variation</b>			
without humidity at 10 °C (± °C)	0.4	0.4	0.4
without humidity at 37 °C (± °C)	0.3	0.4	0.4
Temperature variation with humidity (± °C) <sup>2)</sup>	1.0	1.0	1.0
<b>Temperature fluctuation from 5 °C</b>			
above ambient temp. (≤ ± °C)	0.1	0.1	0.1
Temp. fluctuation when cooling system is in operation	0.5	0.5	0.5
Humidity fluctuation <sup>2), 4)</sup> (± r.H. %)	1.5	1.5	1.5
Nominal voltage (± 10 %) 50/60 Hz (V)	230	230	230
Nominal power (W)	1700	2250	2760
Number of doors	1	2	2
<b>Options</b>			
Temperature safety device cl. 3.3 acc. to DIN 12880	●	●	●
Stainless steel shelves	●	●	●
Reinforced shelves, stainless steel	●	●	●
Perforated shelf, stainless steel	●	●	●
Potential free alarm outputs for temp. and humidity with acoustic signal	●	●	●
Interior lighting	●	●	●
Lockable door	●	●	●
Access ports with silicone plug	●	●	●
Validating package for temperature (DIN 12880) and humidity (works standard)	●	●	●
Calibration certificate for temperature and humidity	●	●	●
Analogue outputs 4-20 mA for temperature and humidity with 6 pole DIN bushing	●	●	●
ICH-conform illumination acc. ICH guideline CPNP/ICH279/95	●	●	●
2-channel recorder with digital display for temperature and humidity with digital display	●	●	●
Safety kit for water connection	●	●	●
Waterproof interior socket	●	●	●
Light qualification	●	●	●

All technical data are specified for units with standard equipment at an ambient temperature of +22 °C and a voltage fluctuation of ±10 %. The temperature data are determined in accordance to DIN 12880, part 2 respecting the recommended wall clearances of 10 % of the height, width and depth of the inner chamber. All indications are average values, typical for units produced in series. We reserve the right to alter technical specifications at all times.

<sup>1)</sup> Up to 98 % of the set value <sup>2)</sup> value without lighting ● Optional – not available

<sup>3)</sup> A water tap (1 – 6 bar) with normal tap water (approx. 200–500 µS/tolerance range: +300 to –150 µS) is necessary for the installation of the "humidifying and dehumidifying system". Furthermore, a 40 mm water drain with descending gradient is required.

<sup>4)</sup> Upon door opening or water exchange in humidity cylinder: > ± 1.5 r.H.%, recovery time approx. 20 min

<sup>5)</sup> These energy consumption values can be used upon calculation of air conditioning systems. <sup>6)</sup> Measured in center of usable volume



For tests in accordance with valid EN standards and ICH directives.

## BINDER Series KBF: Program-controlled stability and precision

**New features:** with a colour screen controller and 25 programmes à 100 sections, the KBF series now offers more flexibility for many applications in which time, temperature, humidity and also light control plays an important role. With outstanding accuracy and enormous reliability, the KBF climatic chamber is quite simply the specialist for precise, standard-compliant simulation of all climatic conditions under a constant atmosphere. This also includes carrying out all long-duration storage for durability and (photo) stability tests according to the internationally valid EN standards and the pharmaceutical ICH guidelines (CPMP/ICH/380/95/Q1A and Q1B). The high performance reserves cater for precise simulation of extreme conditions. The microprocessor-controlled humidification and dehumidification system ensures a maximum humidity range of 10% – 90% rH with temporal humidity accuracies of  $\pm 1,5\%$  rH. The humidity system is operated exclusively with tap water. With the communication software APT-COM® DataControlSystem, all requirements of modern documentation and data archiving are perfectly fulfilled.

### ► Operative ranges:

Pharmaceutical industry, testing laboratories, quality assurance, material aging, environmental simulation, building materials industry, foodstuffs and luxury articles industry, biotechnology

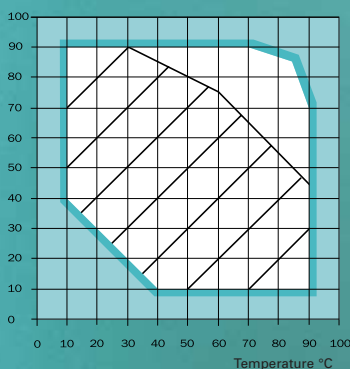
### ► Performance features:

- Temperature range  $-10\text{ }^{\circ}\text{C}$  to  $100\text{ }^{\circ}\text{C}$  (without humidity)
- Microprocessor-controlled humidification and dehumidification system with humidity range of 10% – 90% rH
- Operation with normal tap water ( $200 - 500\text{ }\mu\text{S}$ /tolerance)
- Maintenance-free capacitive precision-humidity sensor
- Direct DCT®-cooling system with environmentally friendly refrigerant R134a
- Automatic defrosting device for longterm operation
- ICH-compliant lighting device for photostability test (optional)
- Inner glass door with smooth inner side
- Calibrations and validations possible

### ► Equipment:

- Colour screen program controller for temperature and humidity control
- Memory capacity of controller: max. 500 program segments
- Safety device class 3.1 (DIN 12880) with visual and acoustic alarm
- Interface RS 422 for communication software APT-COM® DataControlSystem
- Collecting tray for condensation on the door
- Refrigerant 134a
- 2 stainless steel shelves
- Cable access port diameter 29 mm with silicone plug, right side top
- Connection kit for water supply incl. waterhose as well for water drain
- ICH-compliant lighting device in the doors (KBF-ICH)
- Inner chamber volume in litres: 115; 240; 700

Humidity rH %



The light area shows the control range of temperature and relative humidity. The hatched area shows the control range of temperature and relative humidity without condensation.

## Technical data: BINDER Series BF

BF series	BF 53	BF 115	BF 240	BF 400	BF 720
<b>Exterior dimensions</b>					
Width (mm)	634	834	1034	1234	1234
Height (inclusive feet/castors) (mm)	617	702	822	1030	1530
Depth (mm)	575	645	745	765	865
plus door handle (mm)	85	85	85	85	85
<b>Interior dimensions</b>					
Width (mm)	400	600	800	1000	1000
Height (mm)	400	480	600	800	1200
Depth (mm)	330	400	500	500	600
Interior volume (l)	53	115	240	400	720
Shelves, chrome-plated (number standard/max)	2/5	2/5	2/7	2/10	2/16
Load per shelf (kg)	15	20	30	35	45
Permitted total load (kg)	40	50	70	90	120
Temperature range, 5 °C above ambient up to (°C)	100	100	100	100	100
Temperature variation <sup>1)</sup> at 37 °C (± °C)	0.4	0.4	0.5	0.3	0.4
Temperature fluctuation 37 °C (± °C)	0.1	0.1	0.1	0.1	0.1
Recovery time after door was opened 30 sec at 37°C	1	2	1	2	1
Nominal voltage (± 10 %) 50/60 Hz (V)	230	230	230	230	230
Nominal power (W)	400	400	680	850	1250
Number of doors	1	1	2	2	2
<b>Optional</b>					
Shelves, chrome-plated resp. stainless steel	●	●	●	●	●
Lockable door	●	●	●	●	●
Access ports with silicone plug	●	●	●	●	●
Waterproof interior socket	●	●	●	●	●
Printer Hybrid for numerical and graphical temperature registration	●	●	●	●	●
Additional PT100 temperature sensor, fix or flexible with external connection	●	●	●	●	●
Measuring protocol acc. to DIN 12880, Part 2	●	●	●	●	●
Calibration certificate	●	●	●	●	●
Acoustic alarm can be switched off in case of over temp.	●	●	●	●	●
Analogue outputs for temperature 4 to 20mA with DIN bushing 6 poles	●	●	●	●	●
Rupper pads for save stacking	●	●	●	–	–

All technical data are specified for units with standard equipment at an ambient temperature of +22 °C and a voltage fluctuation of ±10 %. The temperature data are determined in accordance to DIN 12880, part 2 respecting the recommended wall clearances of 10 % of the height, width and depth of the inner chamber. All indications are average values, typical for units produced in series. We reserve the right to alter technical specifications at all times.

<sup>1)</sup> without glass door

<sup>2)</sup> up to 98 % of the set value

● Optional

– not available



The reliable precision incubators with forced convection

## **NEW BINDER Series BF: When maximum dynamics are required**

The BF incubators with forced convection are perfectly suitable for incubation tasks with large sample quantities and short temperature recovery times. They differ from all other incubators through their superior temperature accuracy. With reliable precision, the incubators with APT.Line® temperature technology meet all quality requirements of constant, reproducible incubating conditions. Perfect ease of cleaning, disinfection at 100 °C and easy handling add to the reliability of the devices. Due to their broad temperature range and high-grade fittings, they can be used for all incubation tasks in research, production and quality assurance.

### ► **Operative ranges:**

Biotechnology, universities, research institutions pharmaceutical and chemical industry foodstuffs industry (food and beverage), animal food industry, cosmetic industry, paper and textile industry, environmental technology

### ► **Performance features:**

- Temperature range: from 5 °C above ambient temperature up to 100 °C
- Maximum temperature precision  $\pm 0,4$  °C temperature variation
- Patented APT.Line® preheating chamber technology
- Fastest temperature recovery time, 1 min at 37 °C
- Minimal set value fluctuation at the whole temperature spectrum
- Stable incubator conditions, independent from external climatically fluctuations, outstanding isolation
- Very low energy consumption
- Can be used for certified laboratories

### ► **Equipment:**

- Microprocessor controller with LED-display and integrated timer
- Numerous temperature and time functions
- Digital temperature setting with tenth of a degree accuracy
- One ramp function
- Adjustable fan speed (0 – 100%)
- Interface RS 422 for communication software APT-COM® 3 DataControl-System
- Inner glass door
- Temperature safety device class 3.1 (DIN 12880)
- Optical temperature alarm
- Adjustable ventilation by means of rear exhaust duct  $\varnothing$  50 mm with ventilation flap and front ventilation slide
- 2 shelves, chrome-plated
- Inner chamber volume in litres: 53; 115; 240; 400; 720

## Technical data: BINDER Series KB

KB series	KB 23	KB 53	KB 115	KB 240	KB 400	KB 720
<b>Exterior dimensions</b>						
Width (mm)	433	634	834	1034	884	1234
Height (inclusive feet/castors) (mm)	575	837	1022	1142	1850	1816
Depth (mm)	516	576	646	746	716	867
plus door handle, I-panel, connection (mm)	85	100	100	100	100	100
<b>Interior dimensions</b>						
Width (mm)	222	400	600	800	650	1000
Height (mm)	330	400	480	600	1308	1168
Depth (mm)	280	330	400	500	470	600
Interior volume (l)	20	53	115	240	400	700
Shelves (number standard/max)	2/3	2/4	2/5	2/7	2/15	2/15
Load per shelf (kg)	12	15	20	30	20	45
Permitted total load (kg)	25	40	50	70	50	120
Temperature range <sup>1)</sup> (°C)	4 – 60	– 10 – 99.9	– 10 – 99.9	– 10 – 99.9	– 10 – 99.9	– 10 – 99.9
Temperature variation						
at 10 °C (± °C)	0.5	0.5	0.5	0.6	0.6	0.6
at 37 °C (± °C)	0.4	0.4	0.4	0.5	0.3	0.4
Temperature fluctuation during heating operation (≤ ± °C)	0.1	0.1	0.1	0.1	0.1	0.1
Temperature fluctuation during cooling operation (≤ ± °C)	0.3	0.3	0.3	0.3	0.3	0.3
Nominal voltage (10 %) 50/60 Hz (V)	230	230	230	230	230	230
Nominal power (W)	300	460	460	930	1100	1350
Number of doors	1	1	1	2	1	2
<b>Options</b>						
Communication interface RS 422	●	–	–	–	–	–
Temperature safety device cl. 3.3 acc. to DIN 12880	–	●	●	●	●	●
Stainless steel shelves	●	●	●	●	●	●
Reinforced shelves, stainless steel	–	–	–	●	●	●
Perforated shelf with additional fixation for shaker operation	–	●	●	●	●	●
Lockable door	●	●	●	●	●	●
Interior lighting	–	●	●	●	●	●
Full viewing window	–	–	–	–	●	●
Access ports with silicone plug	–	●	●	●	●	●
Rubber pads for safe stacking	●	●	●	●	–	–
Reinforced cooling	–	–	–	●	●	●
Additional PT 100 temperature sensor. fix or flexible with external connection, incl. 3 pin LEMO plug	–	●	●	●	●	●
Temperature measurement acc. to DIN 12880-2 at 37°C or at specified temperature with measuring protocol and certificate	●	●	●	●	●	●
Temperature measurement with 9 measuring points at one temperature with measuring protocol and certificate	●	●	●	●	●	●
Calibration certificate and extension for calibration certificate	●	●	●	●	●	●
Water-proof interior socket 230 V	–	●	●	●	●	●
Analogue outputs for temperature 4 to 20mA with DIN bushing 6 poles	–	●	●	●	●	●
Protocol printer for a numerical and graphical temperature recording	–	●	●	●	●	●
Program controlled potential free switching outputs, can be tapped via 6-pin DIN socket	–	●	●	●	●	●

Based on the ice increase on the evaporators the refrigerating capacity decreases at a set value of < 0° C. For this reason the chambers have to be defrosted regularly (approx. once a week).

<sup>1)</sup> at ambient temperature < 20 °C

<sup>2)</sup> Not possible in connection with the use of the timer functions

<sup>3)</sup> Not possible in connection with the use of the temperature safety device 3.3

● Optional

– not available



Refrigerated incubators with program controller

## BINDER Series KB: Dynamic, safe – and now programmable

**New features:** For the first time, the KB series is now equipped with a powerful program controller, which allows the user individual setting of time, temperature and ramp functions of all kinds. The independent temperature monitoring provides additional safety with optical and acoustic alarm function.

The KB series are mainly used for incubation tasks below ambient temperature or in cases where high ambient temperatures cannot be excluded. The patented DCT® cooling system, in conjunction with the APT.Line temperature technology, creates the ideal prerequisites for highly accurate and constant temperature conditions. The enormous cooling capacity allows a final temperature of approx.  $-10\text{ }^{\circ}\text{C}$ . The DCT® cooling system and the controllable air turbine guarantee high levels of humidity even during cooling operation or long-duration tests, reliably preventing samples from drying out.

### ► Operative ranges:

Pharmaceutical/chemical industry, cosmetic industry, industrial biotechnology, biosensor technology, food-stuffs industry, animal food industry, paper and textile industry, fundamental medical research, universities/research institutes, health service/ blood banks, hygiene, quality assurance, water analysis, environmental technology

### ► Performance features:

- Temperature range:  $-10\text{ }^{\circ}\text{C}$  to  $100\text{ }^{\circ}\text{C}$  at ambient temperature  $< 20\text{ }^{\circ}\text{C}$
- Maximum temperature precision ( $\pm 0,5\text{ }^{\circ}\text{C}$  during cooling operation)
- Fastest temperature recovery time with patented APT-Line® preheating chamber technology
- Minimum moisture loss at cooling operation through extensive DCT®-cooling system
- During cooling operation no condensation in the inner chamber
- Optimum reliability, even during long term cooling operation
- Powerful cooling system, for operation of big shaking devices
- Calibrations and validations possible

### ► Equipment:

- Microprocessor program controller with LED-display with two programs with 10 sections each, or switch over to one program with 20 sections
- Numerous temperature and time functions
- Adjustable ramp function via program editor
- Adjustable fan speed (0 – 100%)
- Counter of operating hours
- Visual and acoustic temperature alarm
- Interface RS 422 for communication software APT-COM® DataControl-System
- Temperature safety device class 3.1 (DIN 12880)
- Inner glass door
- 2 shelves, stainless steel
- Inner chamber volume in litres: 20 (Peltier cooling); 53; 115; 240; 400; 700

## Technical Data: BINDER Series KBW

KBW series	KBW 240	KBW 400	KBW 720
<b>Exterior dimensions</b>			
Width (mm)	1034	884	1234
Height (inclusive feet/castors) (mm)	1142	1850	1816
Depth (mm)	746	716	867
plus door handle, I-panel, connection (mm)	100	100	100
<b>Interior dimensions</b>			
Width (mm)	800	650	1000
Height (mm)	600	1308	1168
Depth (mm)	500	470	600
Interior volume (l)	240	400	700
Shelves (number standard/max)	2/7	3/15	3/15
Load per shelf (kg)	30	20	45
Permitted total load (kg)	70	100	120
Temperature range 0% illumination (°C) <sup>1)</sup>	- 10 – 60.0	- 10 – 60.0	- 10 – 60.0
Temperature range 100% illumination (°C) <sup>1)</sup>	14 – 60	14 – 60	30 – 60
<b>Temperature variation</b>			
at 0 °C/0 % illumination (± °C)	0.7	0.7	0.7
at 25 °C/0 % illumination (± °C)	0.4	0.5	0.5
at 25 °C/100 % illumination (± °C)	3.6	4	–
Temperature fluctuation during heating operation (≤ ± °C)	0.1	0.1	0.1
Temperature fluctuation during cooling operation (≤ ± °C)	0.3	0.3	0.3
max. illumination intensity/daylight illumin. tubes <sup>4)</sup> (Lux)	9000	12000	13000
max. illumination intensity/daylight illumin. tubes <sup>4)</sup> (μE)	95	125	225
max. illumin. intensity/daylight illumin. tubes <sup>4)</sup> (W/m <sup>2</sup> ) UVA	0.70	0.65	1.17
max. illumination intensity / cool white illumination tubes/increased illumination <sup>4)</sup> (Lux)	25000	28600	30000
max. illumination intensity / cool white illumination tubes/increased illumination <sup>4)</sup> (μE)	370	430	774
max. illumination intensity / cool white illumination tubes/increased illumination <sup>4)</sup> (W/m <sup>2</sup> ) UVA	2.2	2.3	4.1
max. illumination intensity / growth lamps <sup>4)</sup> (Lux)	4000	6300	7200
max. illumination intensity / growth lamps <sup>4)</sup> (μE)	75	77	138
Nominal voltage (10 %) 50/60 Hz (V)	230	230	230
Nominal power (W)	1100	1350	2000
Number of door(s)	2	1	2
<b>Optional</b>			
Safety device class 3.3. acc. to DIN 12880 <sup>2)</sup>	●	●	●
Shelf, stainless steel	●	●	●
Reinforced shelves, stainless steel	●	●	●
Perforated shelf, stainless steel	●	●	●
Lockable door	●	●	●
Access ports with silicone plug	●	●	●
Increased illumination	●	●	●
Water-proof interior socket 230 VAC	●	●	●
Programming of gradual light ramps (OFF/25%/50%/100%)	●	●	●
Printer Hybrid for numerical and graphical temperature registration for connection to a printer interface	●	●	●
Calibration certificate	●	●	●
Measuring protocol acc. to DIN 12880, Part 2	●	●	●
Light scattering disc	●	●	●

Based on the ice increase on the evaporators the refrigerating capacity decreases at a set value of < 0 °C. For this reason the chambers have to be defrosted regularly (approx. once a week)

<sup>1)</sup> at ambient temperature +22°C

● Optional – not available

<sup>2)</sup> Not possible in connection with the use of the timer functions

<sup>3)</sup> These energy consumption values can be used upon calculation of air conditioning systems

<sup>4)</sup> Mean values based on 25 measuring points. The distance between the measuring plain and each illuminated shelf is 12 cm.



Plant growth chambers with optimal conditions

## BINDER Series KBW: The most advanced method of plant cultivation

**New features: The KBW offers a maximum flexibility for all growth parameters. A modern program controller ensures variable and definable alternative temperature and light control.**

The new plant growth chambers in the KBW series already show today where the demands of tomorrow will lie: in safe cell and tissue production, observing all the international guidelines and regulations. With their impressive performance, the new KBW plant growth chambers fulfil all the demands for optimum light and temperature conditions, for being able to define culture processes exactly and reproduce them. Precision combined with maximum dynamics are the outstanding properties for keeping the balance of the growth parameters constant under any circumstances due to minimum reaction times.

The KBW series is ideal if you also wish to have results that are safe in the future.

### ► Operative ranges:

Plant biotechnology, gardening agricultural industry, forestry and timber industry, pharmaceutical and chemical industry, basic research, quality assurance

### ► Performance features:

- $-10\text{ }^{\circ}\text{C}$  to  $60\text{ }^{\circ}\text{C}$  (without lighting)
- Digitally adjustable air turbine
- Patented APT-Line® preheating chamber technology with DCT® cooling system
- Environmentally friendly refrigerant R134a
- Calibrations and validations possible

### ► Equipment:

- Microprocessor program controller with LED-display with two programs with 10 sections each, or switch over to one program with 20 sections
- Adjustable ramp function via program editor
- Adjustable fan rate (0 – 100 %)
- Temperature cycle and illumination control by digital program timer with weekly program
- Communication interface RS 422

- Flexible adjustable illumination cassettes each with 4 Daylight-illumination tubes (KBW 720 8 with tubes)
- Inner glass door with smooth inner side
- Temperature safety device Cl. 3.1
- Leadthroughs  $\varnothing$  29 mm right side top and bottom
- Counter of operating hours
- Shelves, stainless steel: KBW 240 – 2 pcs; KBW 400 720 – 3 pcs
- KBW with dimming of lighting (optional)
- Equipment as above, but with digital electronic dimming of the lighting device from 0 – 100 %
- Inner chamber volume in litres: 240; 400; 700

## Technical Data: BINDER Series KBWF

KBWF series	KBWF 240	KBWF 720
<b>Exterior dimensions</b>		
Width (mm)	1034	1234
Height (inclusive feet/castors) (mm)	1142	1816
Depth (mm)	746	867
plus door handle, I-panel, connection (mm)	100	100
<b>Interior dimensions</b>		
Width (mm)	800	1000
Height (mm)	600	1200
Depth (mm)	500	600
Interior volume (l)	240	700
Shelves (number standard/max)	2/7	2/15
Load per shelf (kg)	30	45
Permitted total load (kg)	70	120
Temperature range		
with humidity and with illumination(°C)	10 – 90	10 – 90
with humidity and illumination (approx. °C)	20 – 70	20 – 70
Temperature variation <sup>2)</sup>		
without humidity at 10 °C (± °C)	0.4	0.4
without humidity at 37 °C (± °C)	0.4	0.4
Temperature variation with humidity (± °C) <sup>2)</sup>	1.0	1.0
Max. illumination growth lamps (Lux)	5000	5000
Max. illumination growth lamps $\mu\text{E}/\text{sxm}^2$	120	120
Nominal voltage (10%) 50/60 Hz (V)	230	230
Nominal power (W)	2420	2950
Number of door(s)	2	2
<b>Options</b>		
Temperature safety device class 3.3 acc. to DIN 12880	●	●
Lockable door	●	●
Access ports with silicone plug	●	●
Water-proof interior socket 230 VAC	●	●
Measuring protocol acc. to DIN 12880, Part 2	●	●
Built-in 2-channel line recorder with digital display of temperature and humidity values	●	●
Analogue outputs 4 – 20 mA for temperature and humidity with DIN bushing 6-poles	●	●
Shelves, stainless steel	●	●
Perforated shelf, stainless steel	●	●
FLUORA growth lamps	●	●
Daylight illumination intensity light colour 11 in the centre of the cabinet and illumination from the top (LUX) <sup>3)</sup>	7000	7000
Potential free alarm output for temp. and humidity with DIN plug 6 poles, with disconnectable acoustical signal	●	●
Calibration certificate and extension for calibration certificate	●	●
Lockable keyboard	●	●

All technical data are specified for units with standard equipment at an ambient temperature of +22 °C and a voltage fluctuation of  $\pm 10\%$ . The temperature data are determined in accordance to DIN 12880, part 2 respecting the recommended wall clearances of 10 % of the height, width and depth of the inner chamber. All indications are average values, typical for units produced in series. We reserve the right to alter technical specifications at all times. By bringing in a humidity source to the inner chamber the minimal humidity range is affected.

A water tap (1 – 6 bar) with normal tap water (approx. 200 – 500  $\mu\text{S}$ /tolerance range: + 300 to – 150  $\mu\text{S}$ , total hardness appr. 4 – 8° dH) is necessary for the installation of the “humidifying and dehumidifying system”. Furthermore, a 40 mm water drain with descending gradient is required.

<sup>1)</sup> to 98 % of the set value    <sup>2)</sup> value without lighting ... <sup>3)</sup> Maximal value, measured in center of usable volume

● Optional

– not available

For complete technical data please see general catalogue.



For perfect in vivo conditions and natural environmental simulation

## BINDER Series KBWF: Constant precision for every climate

**New features: the KBWF has now become even easier to operate: with colour screen controller, easily and clearly programmable day/night cycles and gradable ramp functions for lighting, which increases the possibilities of use. Additionally, programme-controlled additional devices (e.g. shakers) can be switched on and off.**

Thanks to the exceptional capability and considerable diversity of the programming facilities, all parameters for natural conditions, such as temperature, humidity and light, can be perfectly simulated in the KBWF plant climatic chambers. The effective lighting is located in the doors and is thermally disconnected from the inner chamber. A lighting device can be placed beneath the unit ceiling as an option, in order to simulate multi-directional lighting conditions. The lamps can be switched in three groups. The day/night simulation is controlled via the program control. The KBWF series is ideal for simulating any given climate naturally over longer periods of time.

### ► Operative ranges:

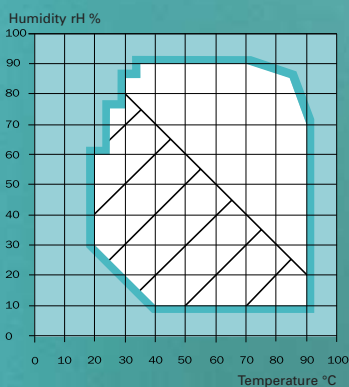
Plant biotechnology, agricultural industry, gardening forestry and timber industry, pharmaceutical and chemical industry, basic research, quality assurance

### ► Performance features:

- - 5 °C to 100 °C (without humidity and lighting)
- Microprocessor-controlled humidification and dehumidification system with humidity range of 10 % – 90 %rH; +/- 1.5 % temporal accuracy
- Operation with normal tap water
- Maintenance-free capacitive precision-humidity sensor
- DCT® cooling system with environmentally friendly refrigerant R134a
- Calibrations and validations possible

### ► Equipment:

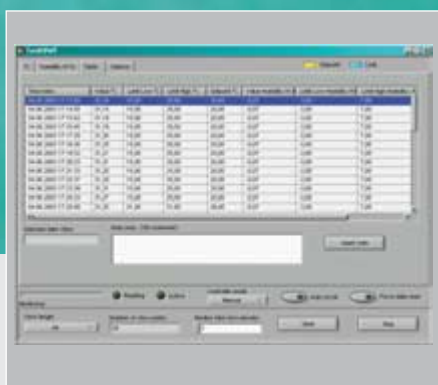
- Colour screen controller with 25 programs, each with 100 sections for temperature, humidity and light
- Memory capacity of controller: max. 500 program segments
- Continuous defrosting device for long-term operation
- Collecting tray for condensate on the door
- Daylight lamps in the door (10 pieces)
- Lighting device possible beneath unit ceiling (as an option)
- Communication interface RS 422
- Inner glass door with smooth inner side
- 2 or 3 stainless steel shelves
- Temperature safety device Cl. 3.1
- Leadthroughs Ø 29 mm right side top and bottom
- Inner chamber volume in litres: 240; 700



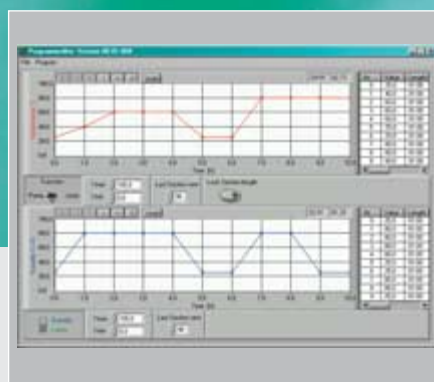
The light area shows the control range of temperature and relative humidity. The hatched area shows the control range of temperature and relative humidity without condensation.

## APT-COM®: For contemporary communication and documentation

APT-COM® 3 DataControlSystem, such is the name of the new version of Binder's innovative and convenient data and communication software. Thanks to new and more comfortable functions, this package now makes control, programming and data recording of temperature ovens easier for you. It goes without saying that it fully meets all specifications of the FDA guideline 21 CFR Part 11 on the subject of data safety and validity of the overall system as well as a documentation in accordance to GLP/GMP, that is safe against any manipulation of the data.



Graphical display  
of measurements



Program  
editor

The user interface of APT-COM® 3 convinces through its user-friendly design. It especially ensures clear and convenient measurement data recording and data administration. The function of the ovens can be monitored any time on the Intranet and on the Internet through an integrated HTTP web server. The current process parameters can be called up on line any time as HTML files, even from home. Alarm notifications can be transferred via mobile network to fixed network dial numbers. The numerous registration and monitoring functions with variable graphic layouts enable safe working and complete protocolling of measurement data.



Watch Tool

### 3 performance levels are available:

- ▶ **GLP-Edition:** for applications according to FDA Directive 21 CFR Part 11 in the GLP/GMP area as well as comprehensive functions in the field of data safety, alarming and monitoring, includes all functions of the standard and basic edition
- ▶ **STANDARD-Edition:** includes numerous standard functions, like e.g. HTTP-web server and e-mail notification
- ▶ **BASIC-Edition:** for simple documentation and data recording.

### Functionality of full version (GLP-Edition)

- Connection of up to 30 units simultaneously (RS 232 or RS 422)
- Documentation of measurement data, safe against manipulation and in according to GLP/GMP
- Fully compliant according FDA 21 CFR Part 11
- Graphic recording of the controlled process parameter temperature, pressure, humidity or CO<sub>2</sub> concentration
- Graphical program editor for comfortable remote programming of the temperature chambers
- Documentation of measurements as HTML files, HTTP webserver function for comfortable process control
- E-mail notification for limit over-/under run using Simple Mail Transfer Protocol (SMTP)
- Transfer of remote alarm via E-Mail (or/and telephone, optional)
- Password and access protection
- Export of the data for printing or saving in spreadsheets
- System overview (control room function) over all units via TCP/IP protocol
- Unlimited number of users, automatic data backup system

## BINDER INDIVIDUAL: 1,000 good reasons for an enquiry: Special solutions by BINDER Individual

Special applications sometimes require a special solution. The casing in stainless steel design or the individual leadthrough are only the tip of the iceberg here. More often, there is a need for more technical know-how. Some customers have particularly heavy samples that cannot be stored in a conventional cabinet. Others need a low-particle version. However, no matter what it is: BINDER will find a solution – or has already realised it.



Customized access port in the door



Additional electrical access port

### The know-how

BINDER INDIVIDUAL is a new name for a proven service. Countless tasks for the most varied applications were already successfully solved by BINDER. The company offers its customers the broad know-how of a manufacturer operating in many markets, sectors and application areas. The following examples are only an extract of this broad spectrum:

- "Tuning" of heat, cold, humidity, light, air, CO<sub>2</sub> or O<sub>2</sub> supply
- Measurement, control, regulation, switching according to special specifications
- Connections, outputs and leadthroughs in all facets
- New interpretation of defined parameters (e. g. reinforced inner chamber)
- Integration of additional parts (e. g. rollers, pneumatic door openers...)

### The reasons

There are more reasons than you think to talk to BINDER about an individual solution:

- Because we can use our know-how transfer acquired through many years' experience in the most different markets
- Because innovative solutions originate through individual technical advice
- Because your individual requirements can be realised easily and a low cost

- Because individual functionality is optimised
- Because individual comfort is increased
- Because an integrated solution is better than a later stage

### The service

We have a competence team of application specialists, technical advisers and engineers. The decisive advantage is a comprehensive service with:

- Individual advice
- Competent planning
- Ultra-modern production
- Certified calibration and validation (works calibration certificate)
- Comprehensive application support

### The guarantee

All components come from the same manufacturer and ideally complement each other. In this respect, it goes without saying that compliance with standards according to DIN ISO EN 9001 is ensured – as are the guarantee on all individualisations as well as a complete instruction manual for the expanded range. The same applies for the guarantee of spare parts supply over 10 years and the immediate identification of components for repeat purchases.

## Accessories: the ideal supplement to your BINDER

With our high-quality accessories, you can equip your BINDER device even more individually according to your needs. With articles that are perfectly tailored to your ovens – and which were selected by BINDER product specialists. You thus get functional, practical or qualitative added value from each accessory. Regardless whether you are tempering, drying, sample-conditioning, incubating, cultivating or climatizing. It is not by chance that each component bears the same trademark as your oven: BINDER.



Stable table on wheels

### Stable table

For use in variable working sites or for device positioning at a comfortable working height. High-quality melamine resin coated working plate, GLP/GMP-compliant and clean-room suitable up to class 10000. The wheels are designed for heavy loads and equipped with two locks.

### Stacking adapter

For the safe stacking of 2 CO<sub>2</sub> incubators and their thermal decoupling. At 180 °C hot-air sterilisation, the culture activity in the other device remains unaffected by waste heat. (without illustration)



Petry dish incubation racks

### Petry dish incubation racks

For fast and organised sample-loading of incubators. Special room partition and stackability for maximum tempering precision. In stainless steel or with colour coding for quick identification of batches.

### Evaporator dish with rim

Multiple-use dish for all drying/vacuum-drying tasks. From 18/8 rust free stainless steel, insensitive to aggressive media. Various sizes. (without illustration)

### Detergent

Hard on dirt, soft on the unit, environmentally-friendly and pH neutral. Fully rinsable after cleaning. Contents 1000 ml. (without illustration)



Cleaner kit



Instrument tray

#### **Cleaner kit**

Optimal for cleaning and disinfection of CO<sub>2</sub> incubators, consisting of: disinfectants, detergents and lintfree disposable wipes.

#### **Validations + certificates**

BINDER can significantly reduce its clients work pertaining to device qualification and validation. Because in the end, no one knows our devices as well as we do. Furthermore, hardly anyone has gathered as much experience in certifications as we have. (without illustration)

#### **Instrument tray with lid**

From 18/8 rust free stainless steel. Conveniently stackable, optimal for hot-air sterilisation. The lid prevents subsequent contamination. Various sizes.

#### **Measuring instruments**

There are transportable and compact BINDER measuring instruments for the independent monitoring of data: for temperature, humidity, CO<sub>2</sub> and vacuum. Ideally suited to fast and safe determination of measuring values in accordance with relevant standards. (without illustration)