BINDER
Best conditions for your success

BINDER
Product overview

Made in Germany
Premium Quality

Incubators
Drying and heating chambers
Climate chambers
Ultra low temperature freezers

EN

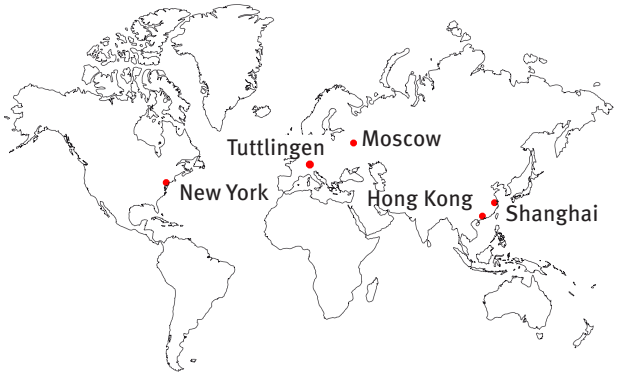
On your doorstep – worldwide

THE ULTIMATE in premium quality – produced in Germany

BINDER simulation chambers perform complex laboratory tasks with absolute reliability. They are developed and manufactured exclusively at the company site in Tuttlingen, southern Germany. We carry out all production stages in our factory – parts are punched, bent, and welded with precision; units are insulated and then finally assembled with care. By doing this, we can guarantee quality across the board. We supply around 22,000 premium units globally each year, with our intensive quality checks ensuring the excellent BINDER standard each time.

With our four subsidiaries and our international sales partners, we are never far away from global companies, institutes, and research facilities all over the world. In recent years, we have really increased our international presence and are now highly committed to our customers in Asia and America, as well as to our core markets in Europe. Our BINDER experts support and advise you on-site in everything from choosing your perfect unit and installation, right through to maintenance and reliable technical support.

Right on your doorstep – in 135 countries around the world



Perfection in every detail

BINDER product portfolio and know-how – for all industries

Nearly all respected companies and research facilities rely on BINDER simulation chambers with the characteristic red triangle, whether they need them for cell or tissue cultivation, long-term storage, product testing, or material testing. We know what is important in laboratory practice and therefore work to ensure that we can fulfill our customers' requirements perfectly with excellent products and sophisticated equipment features. Our highly diversified BINDER product portfolio includes incubators, growth chambers, ultra low temperature freezers, drying and heating chambers, and climate chambers. It therefore covers the diverse requirements of the industries and markets in a first-class manner.

Series production units and individual solutions – for all circumstances

Right from their manufacture at the factory, BINDER temperature, climate and simulation chambers address the widest range of demands from scientific and industrial labs. Thanks to a wide range of accessories and equipment options, our series production products can be set up in a more specific way on request for all standard application areas. If they are to be used for truly specialist laboratory tasks, the series production simulation chambers can be adapted further using individual extras from BINDER INDIVIDUAL.

BINDER has the experience for every requirement

- Automotive
- Biotechnology
- Chemical industry
- Electronics/semiconductor industry
- Human diagnostics
- Pharmaceutical industry
- In-vitro fertilization (IVF)
- Cosmetics industry
- Aerospace industry
- Food/beverage industry
- Medical research
- Basic biological research

Looking for the right climate chamber?
BINDER products fit the bill perfectly.

Every BINDER climate chamber is equipped with top-of-the-range technology made in Germany and makes it possible to precisely simulate biological, chemical, and physical environmental conditions. The wide range of products from the leading specialist addresses the various requirements in science and industry. It comprises temperature and climate chamber models, material testing and drying chambers, as well as environmental simulation chambers. You'll find the ideal unit for every application here!

		23/28 liters	53/56/60 liters	115 liters	170 liters	220/240/260 liters	400/500 liters	700/720 liters	1020 liters	Page
GROWTH from page 4	CB series	-	•	-	•	•	-	-	-	5
	C series	-	-	-	•	-	-	-	-	5
	BD series	•	•	•	-	•	•	•	-	7
	BD-S series	-	•	•	-	-	-	-	-	7
	B series	•	-	-	-	-	-	-	-	8
	BF series	-	•	•	-	•	•	•	-	8
	KB series	•	•	•	-	•	•	•	-	9
	KT series	-	•	•	•	-	-	-	-	9
	KBW series	-	-	-	-	•	•	•	-	10
	KBWF series	-	-	-	-	•	-	•	-	10
STORAGE from page 12	UFV series	-	-	-	-	-	•	•	-	13
DRYING AND TEMPERING from page 14	ED series	•	•	•	-	•	•	•	-	15
	ED-S series	-	•	•	-	-	-	-	-	15
	E series	•	-	-	-	-	-	-	-	16
	FD/FED series	•	•	•	-	•	•	•	-	17
	FD-S series	-	•	•	-	-	-	-	-	17
	FP/M series	-	•	•	-	•	•	•	-	18
	FDL series	-	-	•	-	-	-	-	-	18
	VD series	•	•	•	-	-	-	-	-	19
	VDL series	•	•	•	-	-	-	-	-	19
ENVIRONMENTAL SIMULATION from page 22	KBF series	-	-	•	-	•	-	•	•	23
	KBF-S series	-	-	•	-	•	-	•	•	23
	KBF P series	-	-	-	-	•	-	•	-	24
	KBF LQC series	-	-	-	-	•	-	•	-	24
	KMF series	-	-	•	-	•	-	•	-	25
	MK/MKT series	-	•	•	-	•	-	•	-	26
	MKF/MKFT series	-	•	•	-	•	-	•	-	26
	LIT series									27
MULTI MANAGEMENT SOFTWARE from page 28	APT-COM™ 4									29
ACCESSORIES AND SERVICES from page 30	Options & accessories									31
	Services									33
	BINDER INDIVIDUAL									35

Growth

The ability to precisely control physical parameters such as temperature, humidity, CO_2 and O_2 concentrations, as well as the reproducibility of test conditions on a reliable basis, are the most important requirements for incubators and climate chambers in scientific laboratories that work with living organisms. BINDER understands these requirements and is constantly working to provide the ideal CO_2 incubators, microbiological incubators, and plant growth chambers. Innovative technical solutions and a range of equipment options come standard with our solutions.

Cell biology
C | CB CO_2 incubators

Microbiology
B | BD | BD-S | BF standard incubators
KB | KT cooling incubators

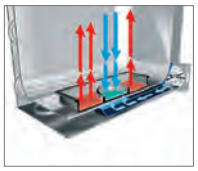
Plant biology
KBW | KBWF growth chambers

CO_2 incubators with hot air sterilization and heat sterilizable CO_2 sensor | CB series

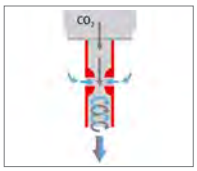
Features:

- Temperature range: ambient temperature +4 °C to +60 °C
- Humidity range: 90 to 95 % RH
- CO_2 control range: 0 to 20 vol% CO_2
- Minimum risk of contamination thanks to 180 °C hot air sterilization
- Fanless, easy-to-clean interior
- Low evaporation of the medium due to high levels of humidity and quick recovery time
- Numerous optional extras for high-end applications, e.g., active humidification, O_2 control

Seamless, deep-drawn chamber with corrugated sides and no interfering fixtures

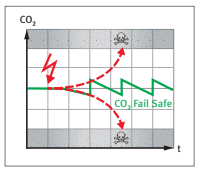


Permadry™ humidification system with double pan



Sterilizable IR CO_2 sensor and Venturi gas-mixing nozzle

DuoDoor™ – outer and inner door open at the same time



CO_2 fail-safe for control in the event of sensor failure

All details on the series
go2binder.com/en-CB

Available sizes: CB 60 | CB 170 | CB 220 model

CO_2 incubators with hot air sterilization | C series

Features:

- Temperature range: ambient temperature +7 °C to +50 °C
- High humidity up to 95 % RH
- Standard gassed incubator with exceptional ease of use and a minimal risk of contamination
- Simple and fast cleaning thanks to a deep-drawn inner chamber incl. stainless steel fixtures
- Auto-sterilization with hot air at +180 °C
- Stable pH values thanks to drift-free CO_2 IR sensor technology
- Humidification system with condensation protection

Stainless steel inner chamber with rack frame

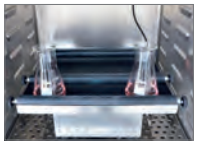
Humidification system with large water pan

Plug-in CO_2 sensor

All details on the series
go2binder.com/en-C

Available sizes: C 170 model

ACCESSORIES AND CONFIGURATIONS

CO_2 shaker	High-quality solution for the incubation of suspension cell cultures in CO_2 incubators. As only corrosion-resistant components are used in the stainless steel housing, the CO_2 shaker is ideal for gassed incubators with increased CO_2 concentrations and nearly saturated air humidity. Available as a Universal variant with ribbon cable for all BINDER CO_2 incubators with an interior of 150 liters or more and a Professional variant for CB models from 150 liters upwards with a LEMO socket as an electric access port. C and CB series	
Active humidification	Humidity regulation from 50 to 95 % RH with external water supply. Hot steam is used for the humidification process, while sterile, dry ambient air is supplied for dehumidification. The CO_2 incubator does not need a water pan. CB series	
Quick sample access	The additional glass window (13 cm x 25 cm) in the inner glass door allows quick access to samples with a short incubation time. This ensures that any disruption to the atmosphere is kept to a minimum and that recovery times are quick. CB series	
Multiple-split inner door	Split glass doors and special matching shelf racks make it possible to divide the space for different experiments. The interior chamber atmosphere remains stable. CB series	
Copper interior fittings	The kit consists of three copper shelves and a copper-plated water pan. The copper equipment reduces the time and effort required for cleaning the incubator while continuing to ensure a high level of resistance to contamination. C series, CB 170	

Stacking options:

Base	The base equipped with casters is used to position and level BINDER CO_2 incubators securely. C and CB series	
Stacking adapter	For stacking two BINDER CO_2 incubators in a thermally isolated manner. C and CB series	
Stacking frame with casters	Stable, vibration-free stacking frame on casters with locking brake for stacking two CO_2 incubators safely. C and CB series	

Standard incubators with natural convection | BD Avantgarde.Line series

Features:

- Temperature range: ambient temperature +5 °C to +100 °C
- Excellent temporal and spatial temperature accuracy thanks to APT.line™ preheating chamber technology
- Transfer of heat through natural convection
- Up to 30 % lower energy consumption compared to conventional units on the market
- Disinfection possible at +100 °C
- Easy and intuitive to use thanks to modern control technology

Controller with LCD and numerous functions

Data recording via the USB port, which comes as standard

Inner door made of tempered safety glass (ESG)

Available sizes: BD 23 | BD 56 | BD 115 | BD 260 | BD 400 | BD 720 Model

Controller and timer functions

	BD series
Ramp function	•
Time delayed OFF	•
Time delayed ON	•
Temperature-dependent delayed OFF	•
Class 3.1 independent temperature safety device	•
Visual temperature alarm	•
Adjustable fan speed	–
Electromechanical control of the exhaust air flap	•

All details on the series
go2binder.com/en-BD

Standard incubators with natural convection | BD-S Solid.Line series

Features:

- Temperature range: ambient temperature +5 °C to +70 °C
- High temperature accuracy
- Transfer of heat through natural convection
- Controller with timer function

Controller with 7-segment display

Manually adjustable air flap

Available sizes: BD-S 56 | BD-S 115 model

Controller and timer functions

	BD-S series
Ramp function	•
Time delayed OFF	•
Time delayed ON	–
Temperature-dependent delayed OFF	–
Class 3.1 independent temperature safety device	•
Visual temperature alarm	•
Adjustable fan speed	–
Electromechanical control of the exhaust air flap	–

All details on the series
go2binder.com/en-BD-S

Standard incubators with mechanical adjustment | B Classic.Line series

Features:

- Temperature range: +30 °C to +70 °C
- Hydro-mechanical thermostat
- Inner door made of tempered safety glass (ESG)
- 2 chrome-plated racks
- Stackable

Stainless steel inner chamber

Glass pane with door gasket

All details on the series
go2binder.com/en-B

Available sizes: B 28 model

Standard incubators with forced convection | BF Avantgarde.Line series

Features:

- Temperature range: +7 °C to +8 °C above ambient temperature up to +100 °C
- Excellent temporal and spatial temperature accuracy thanks to new APT.line™ technology
- Transfer of heat through forced convection
- Short temperature recovery times
- Controller with LCD
- Electromechanical control of the exhaust air flap

Controller with LCD and numerous functions

Data recording via the USB port, which comes as standard

Inner door made of tempered safety glass (ESG)

Controller and timer functions

	BF series
Ramp function	•
Time delayed OFF	•
Time delayed ON	•
Temperature-dependent delayed OFF	•
Class 3.1 independent temperature safety device	•
Visual temperature alarm	•
Adjustable fan speed	•

All details on the series
go2binder.com/en-BF

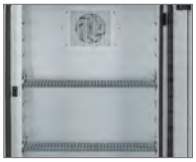
Available sizes: BF 56 | BF 115 | BF 260 | BF 400 | BF 720 model

Cooling incubators with compressor technology | KB series

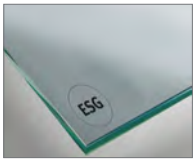
Features:

- Temperature range: -5 °C to +100 °C
- Powerful cooling with compressor cooling unit
- Precise temperature control
- Disinfection possible at +100 °C
- Up to 30 % lower energy consumption compared to the previous model
- Adjustable fan speed

Controller with time-segment and real-time programming



Inner chamber made of corrosion-resistant stainless steel



Inner door made of tempered safety glass (ESG)

White light LED modules providing flexible and simple placement (option)

All details on the series
go2binder.com/en-KB

Available sizes: KB 23 | KB 53 | KB 115 | KB 240 | KB 400 | KB 720 model

Cooling incubators with thermoelectric cooling | KT series

Features:

- Temperature range: +4 °C to +100 °C
- Cooling with precision control thanks to thermoelectric Peltier module
- Environmentally friendly and safe as there are no refrigerants
- Energy-efficient temperature control at ambient temperature
- Disinfection possible at +100 °C
- Adjustable fan speed

Controller with time-segment and real-time programming

HIT insulation, direct foaming of the chamber with the housing

Inner door made of safety glass with gasket

White light LED modules providing flexible and simple placement (option)

All details on the series
go2binder.com/en-KT

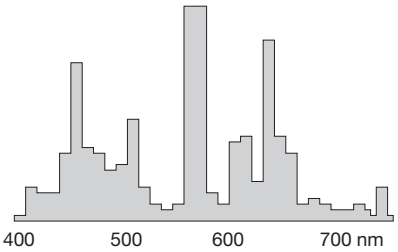
Available sizes: KT 53 | KT 115 | KT 170 model

Growth chambers with light | KBW series

Features:

- Temperature range: 0 °C to +70 °C
- Homogeneous temperature distribution thanks to APT. line™ preheating chamber technology
- Cooling system for operation that is stable in the long term
- Illumination cassettes providing flexible placement, which ensure homogeneous illumination over the entire usable area
- Intuitive touchscreen controller with time-segment and real-time programming

Type of illumination for the illumination cassettes Daylight fluorescent lamps Light color 865 (standard)



Illumination cassettes with three light qualities: daylight, Arabidopsis, FLUORA

Inner door made of safety glass

Intuitive touchscreen controller

All details on the series
go2binder.com/en-KBW

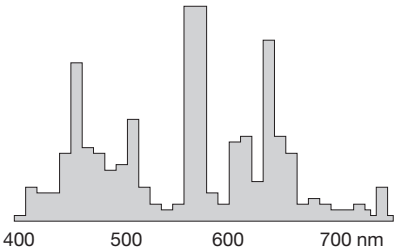
Available sizes: KBW 240 | KBW 400 | KBW 720 model

Growth chambers with light and humidity | KBWF series

Features:

- Temperature range: 0 °C to +70 °C
- Humidity range: 10 % to 80 % RH
- Homogeneous temperature distribution thanks to APT. line™ preheating chamber technology
- Illumination cassettes providing flexible placement, which ensure homogeneous illumination over the entire usable area
- Responsive long-life steam humidifying system
- Flexible water management at any location
- Intuitive touchscreen controller with time-segment and real-time programming

Type of illumination for the illumination cassettes Daylight fluorescent lamps Light color 865 (standard)



Illumination cassettes with three light qualities: daylight, Arabidopsis, FLUORA

Direct connection to ultrapure water pressure line

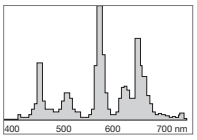
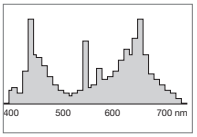
TIMELESS coating on inner door prevents glass corrosion

Intuitive touchscreen controller

All details on the series
go2binder.com/en-KBWF

Available sizes: KBWF 240 | KBWF 720 model

ACCESSORIES AND CONFIGURATIONS

BINDER PURE AQUA SERVICE	System for preparation or complete desalination of tap water, complete set containing safety pressure container, single-use cartridge, measuring device, and all necessary connecting parts. KBWF series	
Water supply set	External, consisting of fresh and waste-water containers (20 liters each), cabling and external pump, for hanging from the back of the unit. KBWF series	
Arabidopsis illumination	Illumination cassettes equipped with Arabidopsis fluorescent tubes instead of daylight fluorescent tubes. Light color 842. KBW and KBWF series	
FLUORA® illumination	Illumination cassettes equipped with FLUORA® fluorescent tubes instead of daylight fluorescent tubes. Light color 77. KBW and KBWF series	

Storage

An ultra deep freezer has to cool reliably in order to maintain the integrity of heat-sensitive samples. Another lab requirement is that it has to be practical and be designed with a user-oriented safety and operating concept. This includes, for example, the ability to record and ensure the traceability of the temperature chart for the entire storage period, or the ease with which chamber doors can be opened. BINDER has developed a state-of-the-art, ultra deep freezer that effortlessly joins the family of proven BINDER scientific laboratory products, setting new standards for environmentally-friendly solutions.

Sample storage
UF V ultra low temperature freezers

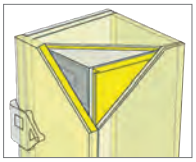
Ultra low temperature freezers with climate-neutral refrigerants | UF V series

Features:

- Range of temperature controller: -90 °C to -40 °C
- Lowest energy consumption in its class
- Efficient thermal insulation with vacuum insulation panels
- Environmentally friendly refrigerants R-290 and R-170
- Minimum buildup of ice thanks to the innovative door concept; inner doors can be removed for deicing
- Rust-proof interior made completely of stainless steel
- Can be equipped with air or water cooling

Environmentally friendly refrigerant

R-290
R-170



Patented VIP insulation for ultimate energy efficiency

Inner chamber, shelves, and inner doors made entirely from stainless steel

Door latch handle for easy opening and closing

Water cooling for connecting to a building cooling water system

All details on the series
go2binder.com/en-UFV

Available sizes: UF V 500 | UF V 700 model

ACCESSORIES AND CONFIGURATIONS

Racks and boxes	Large selection of racks made of aluminum or stainless steel in different variants. Cryobox set consisting of 36 cardboard boxes with sample dividers. UF V series	
Door access system	Door access system consisting of electromechanical door locking mechanism and electronic access control via NumPad. UF V series	
Alarm system	Battery-backed alarm system for maintaining temperature display, alarm messages, and communication. UF V series	

Drying & Tempering

The requirements for a drying chamber in terms of temperature stress tests go well beyond temperature accuracy, heat distribution and residue-free drying. For example, a chamber used to dry flammable materials must comply with safety standards.
BINDER fulfills these requirements like no other company, and provides customers with a wide range of drying and heating chambers, material test chambers, as well as chambers for safety drying or gentle vacuum drying of heat-sensitive samples.

Drying & tempering
Drying and heating chambers
ED | ED-S | E | FD | FED | FD-S | FP | M

Safety drying
FDL safety drying chambers

Vacuum drying
VD | VDL vacuum drying chambers

Drying and heating chambers with natural convection | ED Avantgarde.Line series

Features:

- Temperature range: ambient temperature +5 °C to +300 °C
- Excellent temporal and spatial temperature accuracy thanks to new APT.line™ technology
- Transfer of heat through natural convection
- Up to 30 % lower energy consumption compared to conventional units on the market
- Easy and intuitive to use thanks to modern control technology, USB interface
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm

Controller with LCD and numerous functions

Data recording via the USB port, which comes as standard

Available sizes: ED 23 | ED 56 | ED 115 | ED 260 | ED 400 | ED 720 model

Controller and timer functions

	ED series
Ramp function	•
Time delayed OFF	•
Time delayed ON	•
Temperature-dependent delayed OFF	•
Class 2 independent adjustable temperature safety device	•
Visual temperature alarm	•
Adjustable fan speed	–
Electromechanical control of the exhaust air flap	•

All details on the series
go2binder.com/en-ED

Drying and heating chambers with natural convection | ED-S Solid.Line series

Features:

- Temperature range: ambient temperature +7 °C to +250 °C
- High temperature accuracy thanks to APT.line™ preheating chamber technology
- Transfer of heat through natural convection
- Controller with timer function
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm

Controller with 7-segment display

Manually adjustable air flap

Available sizes: ED-S 56 | ED-S 115 model

Controller and timer functions

	ED-S series
Ramp function	•
Time delayed OFF	•
Time delayed ON	–
Temperature-dependent delayed OFF	–
Class 2 independent adjustable temperature safety device	•
Visual temperature alarm	•
Adjustable fan speed	–
Electromechanical control of the exhaust air flap	–

All details on the series
go2binder.com/en-ED-S

Drying and heating chambers with mechanical adjustment | E Classic.Line series

Features:

- Temperature range: +60 °C to +230 °C
- Adjustable exhaust air flap
- Hydro-mechanical thermostat
- Class 1 temperature safety device
- Timer 0 – 120 min

Stainless steel inner chamber

Available sizes: E 28 model

All details on the series
go2binder.com/en-E

Drying and heating chambers with forced convection | FD/FED Avantgarde.Line series

Features:

- Temperature range: ambient temperature +10 °C to +300 °C
- Excellent temporal and spatial temperature accuracy thanks to new APT.line™ technology
- Transfer of heat through forced convection
- Up to 30 % lower energy consumption compared to conventional units on the market
- Easy and intuitive to use thanks to modern control technology
- Ethernet interface
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm

Controller with LCD and numerous functions

Data recording via the USB port, which comes as standard

Available sizes: FD 23 | FD/FED 56 | FD/FED 115 | FD/FED 260 | FED 400 | FD/FED 720 model

Controller and timer functions

	FD series	FED series
Ramp function	•	•
Time delayed OFF	•	•
Time delayed ON	•	•
Temperature-dependent delayed OFF	•	•
Class 2 independent adjustable temperature safety device	•	•
Temperature alarm, visual	•	•
Adjustable fan speed	–	•
Advanced timing functions	–	•

All details on the series
go2binder.com/en-FD
go2binder.com/en-FED

Drying and heating chambers with forced convection | FD-S Solid.Line series

Features:

- Temperature range: ambient temperature +10 °C to +250 °C
- Homogeneous temperature distribution thanks to APT.line™ preheating chamber technology
- Transfer of heat through forced convection
- Controller with timer function
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm

Controller with 7-segment display

Manually adjustable air flap

Available sizes: FD-S 56 | FD-S 115 model

Controller and timer functions

	FD-S series
Ramp function	•
Time delayed OFF	•
Time delayed ON	–
Temperature-dependent delayed OFF	–
Class 2 independent adjustable temperature safety device	•
Temperature alarm, visual	•
Adjustable fan speed	–

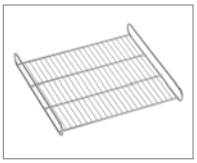
All details on the series
go2binder.com/en-FD-S

Drying and heating chambers with forced convection and program functions | FP/M Classic.Line series

Features

- Temperature range: ambient temperature +5 °C to +300 °C
- Adjustable fan speed
- Adjustable exhaust air flap
- Controller with time-segment and real-time programming
- Computer interface: RS 422

Controller with LED display (FP)



2 chrome-plated racks included with the standard unit

LCD color monitor (M)

Available sizes: FP/M 53 | FP/M 115 | FP/M 240 | FP/M 400 | FP/M 720 model

Controller and timer functions

	FP series	M series
Programming option	•	•
Weekly programming option	•	–
Real-time clock	–	•
Class 2 independent temperature safety device	•	•
Temperature alarm, visual	•	•
Adjustable fan speed	•	–
High-performance fan for fast heating up time	–	•

All details on the series
go2binder.com/en-FP
go2binder.com/en-M

Safety drying chambers for limited quantities of solvent | FDL series

Features

- Temperature range: ambient temperature +10 °C to +300 °C
- Meets all EN 1539:2015 requirements
- Controller with time-segment and real-time programming
- Fresh-air monitoring with audible and visual alarm and automatic deactivation of heating
- Replaceable fresh-air filter cartridge, Class M6 according to DIN EN 779:2012
- Computer interface: RS 422

Calculate your personal solvent curve

› go2binder.com/en-Solvent-curve

Replaceable fresh-air filter cartridge

Interior and shelves made of stainless steel

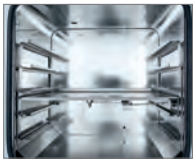
Available sizes: FDL 115 model

All details on the series
go2binder.com/en-FDL

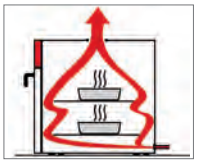
Vacuum drying chambers for non-flammable solvents | VD series

Features:

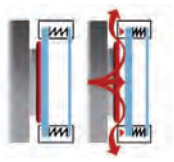
- Temperature range: ambient temperature +15 °C to +200 °C
- Controller with time-segment and real-time programming
- 2 aluminum expansion racks, can be positioned individually
- Inert gas connection
- Shatterproof, spring-mounted safety glass panel



Direct thermal transfer through expansion racks



Cross Flow – even flow throughout the entire interior



Shatterproof, spring-mounted safety glass plane

All details on the series
go2binder.com/en-VD

Available sizes: VD 23 | VD 53 | VD 115 model

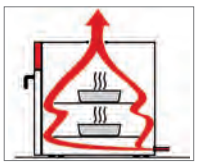
Vacuum drying chambers for flammable solvents | VDL series

Features:

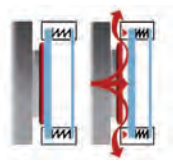
- Temperature range: ambient temperature +15 °C to +200 °C
- ATEX conformity for unit interior: Ex II 3/-G Ex h IIB T1-T3 Gc X
- Controller with time-segment and real-time programming
- 2 aluminum expansion racks, can be positioned individually
- Shatterproof, spring-mounted safety glass panel
- Pressurized instrument panel with compressed air connection

Explosion-protected interior thanks to flame protection gasket

Direct thermal transfer through expansion racks



Cross Flow – even flow throughout the entire interior



Shatterproof, spring-mounted safety glass plane

All details on the series
go2binder.com/en-VDL

Available sizes: VDL 23 | VDL 53 | VDL 115 model

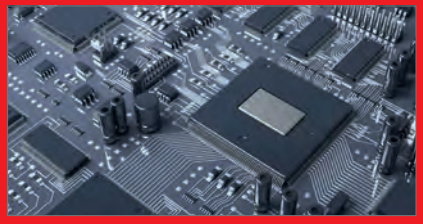
ACCESSORIES AND CONFIGURATIONS

Vacuum pumps	BINDER vacuum drying chambers are available with a perfectly matched vacuum pump in a separate pump chamber. The pumps are available in different option models. They boast an excellent pumping speed and a long service life.	
Chemical membrane pump VP 1.1	Chemical membrane pump with a nominal air flow of 2.0 m³/hour, final pressure 7 mbar. VD series	
Chemical membrane pump VP 2.1	Chemical membrane pump with a nominal air flow 3.4 m³/hour, final pressure 1.5 mbar. VD series	
EX-proof chemical membrane pump VP 4	ATEX-compliant chemical membrane pump with a nominal air flow of 1.9 m³/hour, final pressure 12 mbar. VDL series	
Temperature measurement of the specimen	Pt 100 sensor with flexible cable for performing measurements directly on the sample. VD and VDL series	
Electric access port	Vacuum-tight access port for transmitting electrical currents, voltages, or signals. VD and VDL series	

Environmental simulation

Product development and quality assurance focus primarily on achieving and monitoring performance objectives. Durability tests and functional tests of materials, products and systems are prerequisites in this process. A climate chamber has to be able to reproducibly simulate the effects of temperature, humidity and light on the test material. Particularly for these requirements, BINDER offers a line of constant climate chambers, which are ideal for providing precise and long-term stable tests. If dynamic climate changes are required, our dynamic climate chambers offer innovative technical solutions and extensive equipment options. They are perfectly aligned with standards and customer requirements, and ensure that active or passive test samples can be tested reliably.

Stability tests
KBF | KBF P | KBF LQC | KBF-S | KMF
constant climate chambers



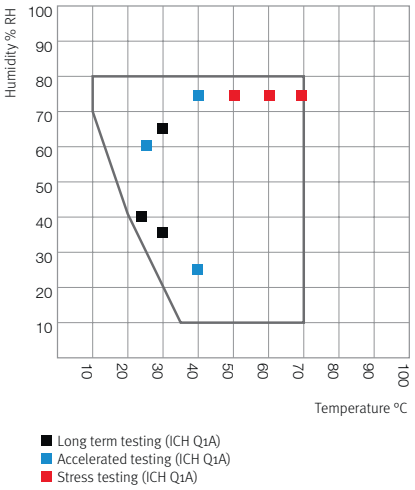
Material tests
MK | MKT | MKF | MKFT dynamic climate chambers

Constant climate chambers with large temperature / humidity range | KBF series

Features:

- Temperature range: 0 °C to +70 °C
- Humidity range: 10 % to 80 % RH
- Test conditions that are stable in the long term for tests in line with the ICH Q1A guideline
- Responsive long-life steam humidifying system
- Flexible water management at any location
- Intuitive touchscreen controller
- High-quality stainless steel inner chamber

Temperature-humidity chart with ICH testing points



Homogeneous climate conditions thanks to APT.line™ preheating chamber technology

TFT color display with resistive touchscreen

Direct connection to ultrapure water pressure line

Inner chamber and all fixtures made of stainless steel

All details on the series
go2binder.com/en-KBF

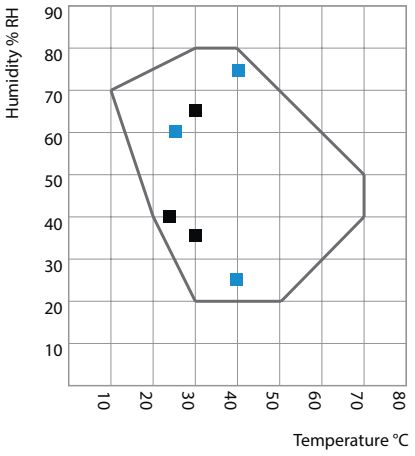
Available sizes: KBF 115 | KBF 240 | KBF 720 | KBF 1020 model

Constant climate chambers with large temperature / humidity range | KBF-Solid.Line series

Features:

- Temperature range: 0 °C to +70 °C
- Humidity range: 20 % to 80 % RH
- Suitable for long-term tests and accelerated stability tests in line with ICH Q1A
- Humidity regulation with capacitive humidity sensor and steam humidification
- Inner chamber made completely of stainless steel
- Independent water supply

Temperature-humidity chart with ICH testing points



Homogeneous climate conditions thanks to APT.line™ preheating chamber technology

Precise humidification

Inner chamber and all fixtures made of stainless steel

Water supply via tank

All details on the series
go2binder.com/en-KBF-S

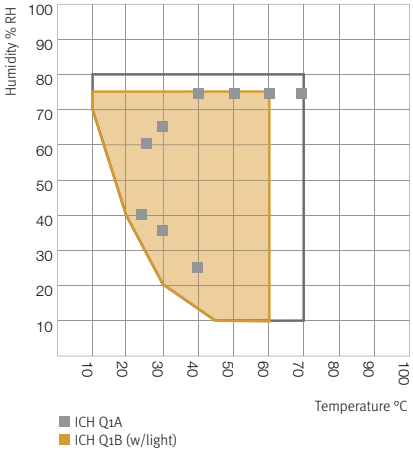
Available sizes: KBF S 115 | KBF S 240 | KBF S 720 | KBF S 1020 model

Constant climate chambers with ICH-compliant light source | KBF P series

Features:

- Temperature range: 0 °C to +70 °C
- Humidity range: 10 % to 80% RH
- Conditions that are stable in the long term for stability tests in line with the ICH Q1A and ICH Q1B guidelines
- Humidity regulation with capacitive humidity sensor and steam humidification
- Illumination cassettes with ICH-compliant UV/Vis light source
- Intuitive touchscreen controller

KBF P / LQC 240 model temperature-humidity chart



Homogeneous climate conditions thanks to APT.line™ preheating chamber technology

Direct connection to ultrapure water pressure line

Variable positionable and removable illumination cassettes

Available sizes: KBF P 240 | KBF P 720 model

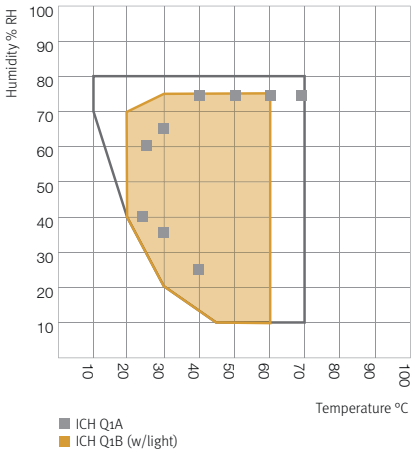
All details on the series
go2binder.com/en-KBFP

Constant climate chambers with ICH-compliant light source and light-dose control | KBF LQC series

Features:

- Temperature range: 0 °C to +70 °C
- Humidity range: 10 % to 80 % RH
- Conditions that are stable in the long term for stability tests in line with the ICH Q1A and ICH Q1B guidelines
- Humidity regulation with capacitive humidity sensor and steam humidification
- Illumination cassettes with ICH-compliant UV/Vis light source
- Independent light-dose control using spherical sensors
- Intuitive touchscreen controller

KBF P / LQC 720 model temperature-humidity chart



Homogeneous climate conditions thanks to APT.line™ preheating chamber technology

Direct connection to ultrapure water pressure line

Variable positionable and removable illumination cassettes

LQC light-dose control with spherical sensors

Available sizes: KBF LQC 240 | KBF LQC 720 model

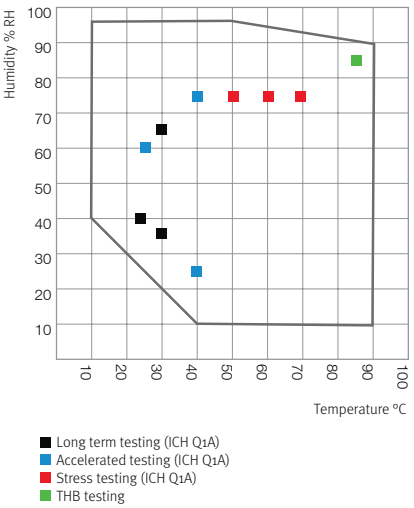
All details on the series
go2binder.com/en-KBFLQC

Constant climate chambers with extended temperature / humidity range | KMF series

Features:

- Temperature range: -10 °C to +100 °C
- Humidity range: 10 % to 98 % RH
- Stable test conditions, including for THB testing (85/85)
- Responsive long-life steam humidifying system
- Flexible water management at any location
- Intuitive touchscreen controller
- High-quality stainless steel inner chamber

Temperature-humidity chart with ICH testing points



Homogeneous climate conditions thanks to APT.line™ preheating chamber technology

TFT color display with resistive touchscreen

Direct connection to ultrapure water pressure line

Inner chamber and all fixtures made of stainless steel

All details on the series
go2binder.com/en-KMF

Available sizes: KMF 115 | KMF 240 | KMF 720 model

ACCESSORIES AND CONFIGURATIONS

BINDER PURE AQUA SYSTEM	System for preparation or complete desalination of tap water, complete set containing safety pressure container, single-use cartridge, measuring device, and all necessary connecting parts KBF | KBF P | KBF LQC | KMF series	
Water supply set	External, consisting of fresh and waste-water containers (20 liters each), cabling and external pump, for hanging from the back of the unit KBF | KBF P | KBF LQC | KMF series	
White light LED strip lights	Suitable for illuminating the interior with low light intensities, easy to install, and provide flexible placement KMF series	

Dynamic climate chambers for rapid temperature changes | MK/MKT series

Features:

- Temperature range: -40 °C to +180 °C (MK)
- Temperature range: -70 °C to +180 °C (MKT)
- Programmable condensation protection for test material
- Viewing window with interior lighting
- Intuitive touchscreen controller with time-segment and real-time programming
- Portable and freely movable thanks to unit casters
- CFC-free refrigerants R452-A/R23
- Alternating speeds of 5 K/min

Homogeneous temperature conditions thanks to APT.line™ preheating chamber technology

Large heated viewing window with LED interior lighting

TFT color display with resistive touchscreen, internal data logger that can be read via USB

Available sizes: MK 56 | MK/MKT 115 | MK/MKT 240 | MK/MKT 720 model

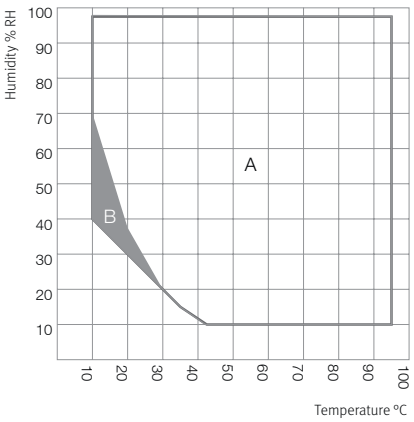
All details on the series
go2binder.com/en-MK
go2binder.com/en-MKT

Dynamic climate chambers with humidity regulation | MKF/MKFT series

Features:

- Temperature range: -40 °C to +180 °C (MKF)
- Temperature range: -70 °C to +180 °C (MKFT)
- Humidity range: 10 % to 98 % RH
- Humidity regulation with capacitive humidity sensor and steam humidification
- Viewing window with interior lighting
- Intuitive touchscreen controller with time-segment and real-time programming
- CFC-free refrigerants R452-A/R23
- Alternating speeds of 5 K/min

MKFT temperature-humidity chart



A: Standard Climate range
B: Time-limited operation (max. 24 hours)

Homogeneous climate conditions thanks to APT.line™ preheating chamber technology

Large heated viewing window with LED interior lighting

TFT color display with resistive touchscreen, internal data logger that can be read via USB

Integrated 20 L water-storage tank ensures a flexible water supply

Available sizes: MKF 56 | MKF/T 115 | MKF/T 240 | MKF/T 720 model

All details on the series
go2binder.com/en-MKF
go2binder.com/en-MKFT

ACCESSORIES AND CONFIGURATIONS

Dry-air purge	Suitable for simulating a dry, cold climate. In the MKF and MKFT series, the temperature-humidity chart is significantly expanded, while the option of simulating current automotive industry standards, such as PV 1200 and PR 308.2, is also available. MK, MKF, MKT, and MKFT series	
BINDER PURE AQUA SERVICE	System for preparation or complete desalination of tap water, complete set containing safety pressure container, single-use cartridge, measuring device, and all necessary connecting parts. MK, MKF, MKT, and MKFT series	
Water cooling	For connecting to a building cooling water system, for reduced heat loss to ambient air. MK, MKF, MKT, and MKFT series	

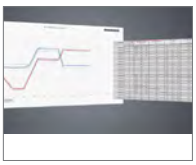
BINDER INDIVIDUAL

Test chamber for energy storage devices | LIT series

Features:

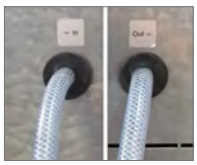
- For executing aging and performance tests
- Additional safety equipment on the dynamic climate chamber
- Corresponds to Eucar/Hazard Level 4
- Package A for aging tests only
- Package P for performance and aging tests

Temperature range limited to +120 °C on the controller



Stainless steel pressure relief flap installed in the middle on top of the unit

Door-locking mechanism with strong closing brackets on the side



Inert gas connections for rinsing (e.g., for nitrogen)

All details on the series
go2binder.com/
en-BINDER-INDIVIDUAL

Multi Management Software

BINDER's new Multi Management Software provides management, recording, programming, control, and documentation options, and much more. With features ranging from GLP-compliant recording to convenient program creation and management of up to 100 units, the APT-COM™ 4 can be used in all industries and makes complex work processes much easier.

APT-COM™ 4
Multi Management Software Basic | Professional | GLP

Multi Management Software for recording, controlling, and monitoring | APT-COM™ 4

Features:

- Easy, intuitive operation
- Overview of units at a glance with the room plan function
- Choice of 5 menu languages: DE, EN, FR, IT, ES
- Easy and quick programming options with graphical interface

BASIC EDITION

For simple recording and documentation requirements with up to 5 networked units.

PROFESSIONAL EDITION

Convenient unit and user management which builds on the BASIC edition. Suitable for networking up to 100 units.

GLP EDITION

For working under GLP-compliant conditions. Measured values are documented in a tamper-proof way in line with the requirements of FDA Regulation 21 CFR 11.

Unit overview and control at a glance

Room plan can be created easily using drag & drop

Simple programming and presentation of measured data

Tamper-proof and GLP-compliant data retention

All details on the software
go2binder.com/
en-APT-COM4

Available editions: Basic | Professional | GLP

ACCESSORIES

Alarm kit

The Alarm Center software enables ongoing recordings to be monitored independently of APT-COM™ 4 (e.g., on a second PC). The Alarm Center software monitors when unit parameter tolerances are exceeded in the recording, as well as the communication between APT-COM™ 4 and the connected units.
The Alarm Kit hardware is designed to forward alarm messages triggered by the Alarm Center software on to the customer's alarm systems.

APT-COM™ 4

TIPS AND TRICKS

Highlights of APT-COM™ 4 can be found here:

Video: › go2binder.com/en-APT-COM4

Options & accessories

We offer our customers a comprehensive selection of options and accessories for BINDER temperature, climate and, environmental simulation chambers.
You will find all options and accessories suitable for each of our products on our website www.binder-world.com

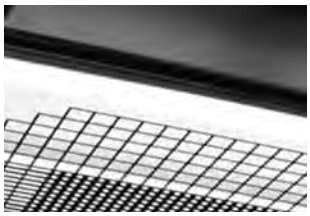
i

TIPS AND TRICKS

You can find our complete range of options and accessories at: › go2binder.com/en-options

The ideal complement for the BINDER chamber

Access ports
Various positions and sizes



Fluorescent tubes for illumination cassettes

Qualification folder for validation

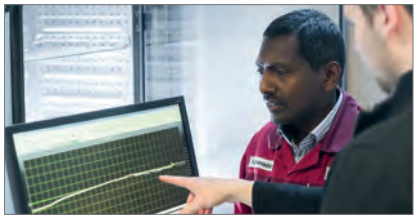
Various shelves

PURE AQUA Service water treatment system

Interfaces

Services

The outstanding performance of BINDER simulation chambers is not just a result of our groundbreaking, German-engineered technologies but also of our first-class range of services. Vital services including unit maintenance, calibration, and qualification, as well as fulfillment of spare parts requests, are available to our customers all over the world. Customers can access these services either individually or through a highly cost-effective and convenient maintenance contract.



i

TIPS AND TRICKS

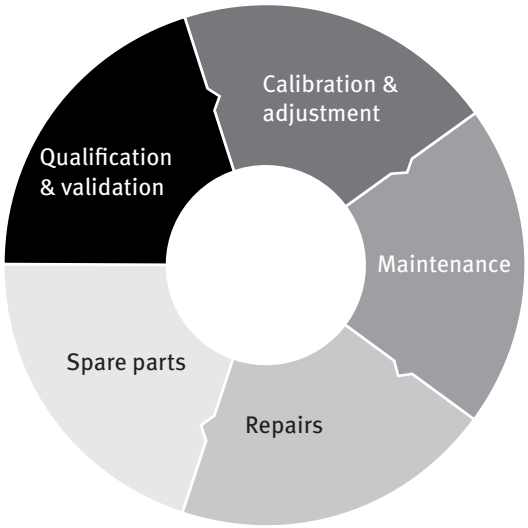
You can find more information at:
› go2binder.com/en-service

Services
Another plus for BINDER simulation chambers

BINDER units offer clear benefits for laboratory practice. Their outstanding performance is the result of both our groundbreaking, “made in Germany” technologies and our bespoke service.

The comprehensive service package is available to our customers all over the world. You have the option of choosing a highly cost-effective, convenient service contract or you can opt for our services on an individual basis.

Our service wheel



Service contracts
Regular service – maximum performance

With the durable BINDER simulation chambers, consistently high levels of productivity and availability are part of the package right as soon as they leave the factory. What’s more, our preventive inspection and maintenance guarantee maximum performance over the entire service life of the unit.

A service contract gives you more security and has a number of particularly impressive benefits:

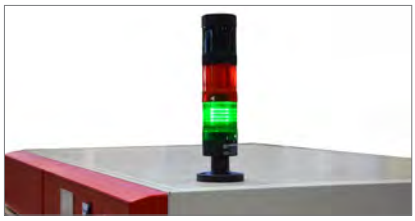
- Maximum productivity
- Planning security: all-round check on fixed dates
- Calibration and adjustment of BINDER units
- Discount on BINDER original spare parts
- Software updates (APT-COM™)
- Implementation by qualified and authorized specialists
- Extended warranty
- Discounted charge rate for service technicians
- Fixed-price annual maintenance for 3 years

Training courses & seminars
Know-how and training – knowledge creates a competitive edge

Along with our leading product portfolio, here at BINDER, we also offer a training program aimed at both users and our service employees and partners. Our BINDER experts, with their many years of experience, carry out the training and give the participants exclusive access to the latest technical topics from our product range.

BINDER INDIVIDUAL

BINDER INDIVIDUAL units are based on BINDER simulation chambers, which consistently offer outstanding quality made in Germany.
In our BINDER INDIVIDUAL department at the Tuttlingen plant, we turn your unique requirements into reality. Be it stainless steel housing, special access ports, O_2 regulation, or much more, we use a proven series production product to create your customized solution. This solution is developed by our experts and manufactured as a single unit or in small series production.



BINDER INDIVIDUAL

Individual extras for your simulation chamber

Even though the BINDER product range contains an incredibly wide variety of products and equipment options, some highly specific customer requirements still cannot be met by a unit manufactured in series production. We can, however, adapt these units to fit individual requirements profiles. Our BINDER INDIVIDUAL units are based on BINDER simulation chambers, which consistently offer outstanding quality made in Germany.

In our BINDER INDIVIDUAL department at the Tuttlingen plant, we turn every unique requirement into reality. Be it stainless steel housing, special access ports, O_2 regulation, or much more, we use a proven series production product to create a perfectly customized solution. This solution is developed by our experts and manufactured as a single unit or in small series production before being tested, certified, and provided with a full functional guarantee and warranty.

BINDER series production unit

Series production products offer guaranteed premium quality.

Series production heating chamber

BINDER series production unit & optional series production equipment

With accessories and equipment options, series production products can be optimized for popular requirements profiles.

Heating chamber with viewing window option and Pt 100 sensor

BINDER INDIVIDUAL

Highly specialized individual solutions are the result of the custom modifications and enhancements made to series production units.

Heating chamber with stainless steel housing

Made in Germany

Benefits across the board

- **TIME-SAVING** – individual solutions are based on BINDER series production units that are kept in stock
- **ECONOMICAL** – consulting, costing, and proposals for solutions are free of charge
- **INNOVATIVE** – integrated solutions thanks to individual technical consultations
- **IMPRESSIVE** – execution of individual requirements is simple and affordable
- **RELIABLE** – thanks to BINDER's premium German-made quality
- **COMPLETELY STRESS-FREE** – full warranty for the unit including all enhancements
- **FAST** – unit delivered about 4–8 weeks after order is placed

i

TIPS AND TRICKS

More information about BINDER INDIVIDUAL is available at:
› go2binder.com/en-BINDER-INDIVIDUAL

Product range

- CO_2 incubators
- Standard incubators
- Cooling incubators
- Growth chambers
- Ultra low temperature freezers
- Drying and heating chambers
- Safety drying chambers
- Vacuum drying chambers
- Constant climate chambers
- Dynamic climate chambers
- Multi Management Software

Don't miss out on our latest products –
Stay up to date with our BINDER newsletter

Subscribe now

› go2binder.com/en-newsletter-subscription

BINDER
Best conditions for your success

BINDER GmbH
Tuttlingen, Germany

Phone +49 7462 2005 0
Fax +49 7462 2005 100
info@binder-world.com

www.binder-world.com

BINDER Asia Pacific (Hong Kong) Ltd.
Kowloon, Hong Kong, P.R. China

Phone +852 39070500
Fax +852 39070507
asia@binder-world.com

Representative Office for CIS
Moscow, Russia

Phone +7 495 988 15 16
Fax +7 495 988 15 17

BINDER Environmental Testing Equipment
(Shanghai) Co., Ltd.
Shanghai, P.R. China

Phone +86 21 685 808 25
Fax +86 21 685 808 29
china@binder-world.com

BINDER Inc.
Bohemia, NY, USA

Phone +1 631 224 4340
Fax +1 631 224 4354
usa@binder-world.com