



# Product Highlights

BINDER Scientific

**ITRONIK**

**BINDER**

Best conditions for your success

Cell and tissue cultures



Microbiology



In vivo and In vitro cultures



Sample storage



CO<sub>2</sub> incubators | C and CB series

- ▶ VENTAIR™ air jacket system
- ▶ High relative humidity up to 95%
- ▶ Stable pH values thanks to drift-free CO<sub>2</sub> IR sensor technology
- ▶ Condensation-free interior due to Permady™ technology
- ▶ Validated and recognized 180 °C hot air sterilization routine
- ▶ ANTI.PLENUM Design

Incubators | BD, BF, KB and KT series

- ▶ APT.line™ Advanced Preheating Technology
- ▶ Adjustable fan speed
- ▶ Disinfection routine at 100 °C
- ▶ Inner glass door: „First look, then open“
- ▶ Refrigerated incubator (KB series) with compressor technology
- ▶ Refrigerated incubator (KT series) with Peltier technology

Growth chambers with illumination | KBW and KBWF series

- ▶ APT.line™ Advanced Preheating Technology
- ▶ Patented lighting system ensures homogeneous light distribution with height-adjustable cassettes and three lamp types to choose from, e.g. daylight lamps or Arabidopsis lamps
- ▶ Fast and precise steam humidification
- ▶ Integrated weekly program in real-time

ULTRA.GUARD™

-86 °C Ultra low temperature freezers | UF V series

- ▶ Automatic door mechanism for easy opening and closing
- ▶ Personalized access control through RFID technology (standard)
- ▶ Low energy consumption
- ▶ Lowest noise level available in its class
- ▶ Data logger with USB connection (option)

Product	Series	~ 23 liters	~ 53 liters	~ 115 liters	~ 150 liters	~ 210 liters	~ 240 liters	~ 400 liters
CO <sub>2</sub> incubator	C	-	-	-	9040-0078	-	-	-
CO <sub>2</sub> incubator	CB	-	9040-0069	-	9040-0038	9040-0039	-	-
CO <sub>2</sub> incubator with O <sub>2</sub> control	CB	-	9040-0071	-	9040-0044	9040-0045	-	-
Incubator with natural convection	BD	9010-0187	9010-0081	9010-0088	-	-	9010-0095	9010-0073
Incubator with forced convection	BF	-	9010-0235	9010-0237	-	-	9010-0239	9010-0241
Refrigerated incubator	KB	9020-0112	9020-0114	9020-0116	-	-	9020-0162	9020-0178
Refrigerated incubator	KT	-	-	9020-0209 <sup>1</sup>	-	-	-	-
Growth chamber	KBW	-	-	-	-	-	9020-0164	9020-0180
Growth chamber	KBWF	-	-	-	-	-	9020-0166	-
Ultra low temperature freezer	UF V	-	-	-	-	-	-	-

Series	~ 500 liters	~ 700 liters	~ 720 liters	Temperature Range	Temperature Fluctuation ±K	Interface	Temperature Alarm	Temperature Safety Device	Fan	Fan with Speed Control	Inner Glass Door	Controller
C	-	-	-	T <sub>A</sub> + 7 °C to 50 °C	0.1	-	V/A	3.1	-	-	✓	LED/Timer
CB	-	-	-	T <sub>A</sub> + 5 °C to 60 °C	0.1	RS422	V/A	3.1	-	-	✓	Color Graphic Program
CB	-	-	-	T <sub>A</sub> + 5 °C to 60 °C	0.1	RS422	V/A	3.1	-	-	✓	Color Graphic Program
BD	-	-	9010-0074	T <sub>A</sub> + 5 °C to 100 °C	0.1	RS422	V	3.1	-	-	✓	LED/Timer Function/Ramp
BF	-	-	9010-0243	T <sub>A</sub> + 5 °C to 100 °C	0.2	RS422	V	3.1	✓	✓	✓	LED/Timer Function/Ramp
KB	-	-	9020-0111	-5 °C to 100 °C	0.1	RS422	V/A	3.1	✓	✓	✓	LED/Timer Function/program
KT	-	-	-	4 °C to 100 °C	0.1	Ethernet	V/A	3.1	✓	✓	✓	Graphic Program
KBW	-	-	9020-0172	0 °C to 70 °C	0.1	RS422	V/A	3.1	✓	✓	✓	LED/Timer Function/program
KBWF	-	-	9020-0173	0 °C to 70 °C	0.5	RS422	V/A	3.1	✓	-	✓	Color Graphic Program
UF V	9020-0236	9020-0233	-	-40 °C to -86 °C	2.5	RS422	V/A	-	-	-	-	LED/Constant temperature

1: NEW, available 9/2012 T<sub>A</sub>: ambient above temperature A: Acoustic V: Visual

Wide range of options



Gas Supply Service (C | CB)



Divided inner glass door (CB)



Stacking adapter for thermal decoupled stacking of two CO<sub>2</sub> incubators (C | CB)



Data Logger Kits (BD | BF | KB | KBW | KBWF)



FLUORA® or Arabidopsis illumination options (KBW | KBWF)



BINDER PURE AQUA SERVICE (KBWF)



Wide selection of racks and boxes (UF V)



Various access ports (C | CB | BD | BF | KB | KT | KBW | KBWF)

## Drying and heat treatment



## Material testing



## Safety drying



## Vacuum drying



### Drying and heating ovens | ED, FD and FED series

- ▶ Uniform drying conditions due to APT.line™ Advanced Preheating Technology
- ▶ High standard according to DIN 12880 (27-point measurement)
- ▶ Large capacity reserves
- ▶ Short heating up and recovery times
- ▶ Available with natural or forced convection

### Material test chambers | FP and M series

- ▶ Uniform drying conditions due to APT.line™ Advanced Preheating Technology
- ▶ High standard according to DIN 12880 (27-point measurement)
- ▶ High air exchange rate and large power reserves
- ▶ Short heating up times
- ▶ Individual programming with digital controller (only M series)

### Safety drying ovens | FDL and MDL series

- ▶ APT.line™ Advanced Preheating Technology
- ▶ Defined solvent quantity meets drying safety standards
- ▶ Meets EN 1539: Fresh air monitoring with automatic switchoff
- ▶ Safety class IP 33
- ▶ Easy to replace fresh air filter
- ▶ Individual programming with digital controller (only MDL series)

### Vacuum drying ovens | VD and VDL series

- ▶ Maximum specimen protection with adjusted overshooting
- ▶ Direct heat transfer through thermal conducting plates
- ▶ Patented, flexible positioning of the expansion racks
- ▶ Accelerated drying process due to Cross-Flow Principle
- ▶ Ensures optimal work safety through its one-of-a-kind safety concept

Product	Series	~ 23 liters	~ 53 liters	~ 115 liters	~ 150 liters	~ 210 liters	~ 240 liters	~ 400 liters
Drying oven with natural convection	ED	9010-0191	9010-0079	9010-0097	-	-	9010-0101	9010-0075
Drying oven with forced convection	FD	9010-0194	9010-0082	9010-0102	-	-	9010-0104	-
Heating chamber with forced convection	FED	-	9010-0210	9010-0212	-	-	9010-0214	9010-0216
Material test chamber with forced convection	FP	-	9010-0153	9010-0255	-	-	9010-0263	9010-0265
Temperature test chamber	M	-	9010-0201	9010-0202	-	-	9010-0203	9010-0204
Safety drying oven	FDL	-	-	9010-0269	-	-	-	-
Safety drying oven	MDL	-	-	9010-0200	-	-	-	-
Vacuum drying oven	VD	9030-0029	9030-0030	9030-0031	-	-	-	-
Safety vacuum drying oven	VDL	9030-0038	9030-0039	9030-0040	-	-	-	-

Series	~ 500 liters	~ 700 liters	~ 720 liters	Temperature Range	Temperature Fluctuation ±K	Interface	Temperature Alarm	Temperature Safety Device	Fan	Fan with Speed Control	Inner Glass Door	Controller
ED	-	-	9010-0076	T <sub>A</sub> + 5 °C to 300 °C	0.3	RS422	V	2	-	-	-	LED/Timer Function/Ramp
FD	-	-	-	T <sub>A</sub> + 5 °C to 300 °C	0.3	-	V	2	✓	-	-	LED/Timer Function/Ramp
FED	-	-	9010-0218	T <sub>A</sub> + 5 °C to 300 °C	0.3	RS422	V	2	✓	✓	-	LED/Timer Function/Ramp
FP	-	-	9010-0267	T <sub>A</sub> + 5 °C to 300 °C	0.3	RS422	V	2	✓	✓	-	LED/Timer Function/program
M	-	-	9010-0205	T <sub>A</sub> + 5 °C to 300 °C	0.3	RS422	V	2	✓	✓	-	Color Graphic Program
FDL	-	-	-	T <sub>A</sub> + 5 °C to 300 °C	0.3	RS422	V/A	2	✓	-	-	LED/Timer Function/Ramp
MDL	-	-	-	T <sub>A</sub> + 5 °C to 350 °C	0.5	RS422	V/A	2	✓	-	-	Color Graphic Program
VD	-	-	-	T <sub>A</sub> + 15 °C to 200 °C	0.1	RS422	V	2	-	-	-	LED/Timer Function/program
VDL	-	-	-	T <sub>A</sub> + 15 °C to 200 °C	0.1	RS422	V	2	-	-	-	LED/Timer Function/program

T<sub>A</sub>: ambient above temperature A: Acoustic V: Visual

### Wide range of options



Door with heated viewing window with interior lighting (ED | FD | FED | FP | M)



Access ports with silicone plugs (ED | FD | FED | FP | M | FDL)



Reinforced Shelves (FD | FED | FP | M)



Data Logger Kits (ED | FD | FED | FP | M)



Temperature measurement of the specimen (ED | FD | FED | FP | M | FDL | MDL | VD | VDL)



Extension for coil coating applications (MDL)

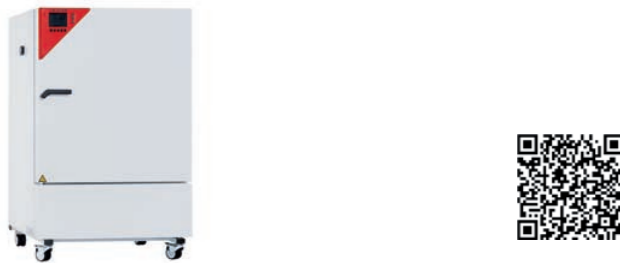


Vacuum module with chemical membrane pump (VD | VDL)



Specimen temperature display with PT 100 sensor (ED | FD | FED | FP | M | VD | VDL)

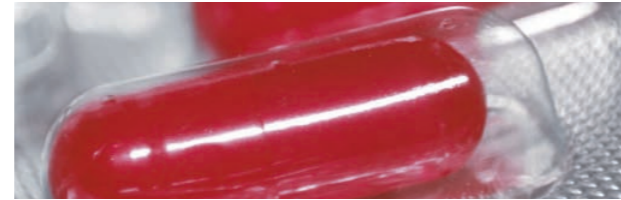
### Constant climate testing



#### Constant climate chambers | KBF

- ▶ Homogeneous climate conditions due to APT.line™ Advanced Preheating Technology
- ▶ Tap or tank automatic water and discharge management
- ▶ Vapor pressure humidification with fast response times
- ▶ Stability tests according to ICH guideline Q1A(R2)
- ▶ Documentation and software FDA compliant

### Constant climate testing with illumination



#### Constant climate chambers with illumination | KBF P & KBF LQC

- ▶ ICH-Q1 B Option 2 compliant BINDER Synergy Light™
- ▶ Homogeneous light over the entire usable space
- ▶ Light Quantum Control with accurate light valuation directly at the sample location (only LQC)
- ▶ Documentation and software FDA and GMP/GLP compliant
- ▶ Tap or tank automatic water and discharge management

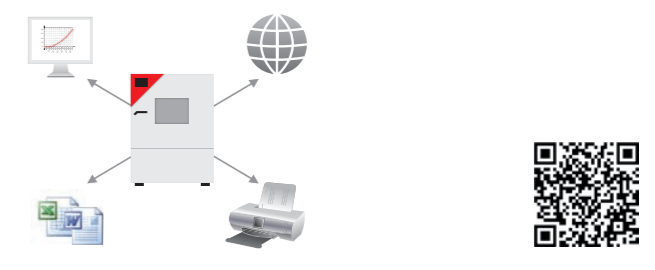
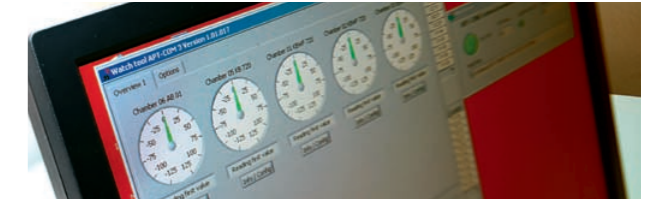
### Dynamic constant climate testing



#### Constant climate chambers for stress testing | KMF

- ▶ Homogeneous climate conditions due to APT.line™ Advanced Preheating Technology
- ▶ Broad climate range up to 90 % r.H.
- ▶ Vapor pressure humidification with fast response times
- ▶ Tap or tank automatic water and discharge management
- ▶ Powerful cooling system for safe operation up to T<sub>A</sub> 32 °C

### Process documentation APT-COM



#### Software: APT-COM™ DataControlSystem

- ▶ Performance potential in 3 classes: Basic, Standard, GLP Edition (FDA conform)
- ▶ Clear presentation of process data
- ▶ Unsurpassed process safety and security
- ▶ Guideline-compliant data security
- ▶ Time-saving documentation and presentation of results

Product	Series	~ 23 liters	~ 53 liters	~ 115 liters	~ 150 liters	~ 210 liters	~ 240 liters	~ 400 liters
Constant climate chambers	KBF	-	-	9020-0139	-	-	9020-0150	-
Constant climate chambers with ICH-compliant illumination	KBF P	-	-	-	-	-	9020-0244	-
Constant climate chambers with Light Quantum Control	KBF LQC	-	-	-	-	-	9020-0248	-
Constant climate chambers for stress testing	KMF	-	-	9020-0187	-	-	9020-0145	-

Series	~ 500 liters	~ 700 liters	~ 720 liters	Temperature Range	Temperature Fluctuation ±K	Interface	Temperature Alarm	Temperature Safety Device	Fan	Fan with Speed Control	Inner Glass Door	Controller
KBF	-	-	9020-0108	0 °C to 70 °C	0.1	Ethernet	V/A	3.1	✓	-	✓	Color Graphic Program
KBF P	-	-	9020-0246	0 °C to 70 °C	0.2	Ethernet	V/A	3.1	✓	-	✓	Color Graphic Program
KBF LQC	-	-	9020-0249	0 °C to 70 °C	0.2	Ethernet	V/A	3.1	✓	-	✓	Color Graphic Program
KMF	-	-	9020-0245	-10 °C to 100 °C	0.5	Ethernet	V/A	3.1	✓	✓	✓	Color Graphic Program

T<sub>A</sub>: ambient above temperature A: Acoustic V: Visual

#### ▶ Wide range of options



BINDER PURE AQUA SERVICE water treatment system (KBF | KBF P | KBF LQC | KMF)



Data Logger Kits (KBF | KBF P | KBF LQC | KMF)



Validations and calibrations (KBF | KBF P | KBF LQC | KMF)



External water supply (KBF | KBF P | KBF LQC | KMF)



Reinforced Shelves (KBF | KBF P | KBF LQC | KMF)



Access ports with silicone plugs (KBF | KBF P | KBF LQC | KMF)

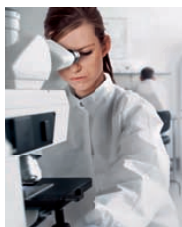


Replacement set illumination tubes for one illumination cassette (KBF P | KBF LQC)



Specimen temperature display with PT 100 sensor (KBF | KBF P | KBF LQC | KMF)

# BINDER Scientific Products



## Growth

Cell and tissue cultures – C | CB

Microbiology – BD | BF | KB | KT

In vivo and In vitro cultures – KBW | KBWF



## Storage

Sample storage – UF V



## Drying and tempering

Drying and heat treatment – ED | FD | FED

Material testing – FP | M

Safety drying – FDL | MDL

Vacuum drying – VD | VDL



## Environmental simulation

Constant climate testing – KBF

Constant climate testing with illumination – KBF P | KBF LQC

Dynamic constant climate testing – KMF

Process documentation APT-COM™

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