Operating Manual

BD (E3.1) | Incubators Avantgarde.Line with natural convection

BF (E3.1) | Incubators Avantgarde.Line with forced convection

ED (E3.1) | Drying and heating ovens Avantgarde.Line with natural convection

FD (E3.1) | Drying and heating ovens Avantgarde.Line with forced convection

FED (E3.1) | Drying and heating ovens Avantgarde.Line with forced convection and enhanced timer functions

with microprocessor temperature controller

Model	Model version	Art. No.	Model	Model version	Art. No.
BD 56	BD056-230V	9010/ 9110-0323	ED 260	ED260-230V	9010/ 9110-0339
	BD056UL-120V	9010/ 9110-0324		ED260UL-240V	9010/ 9110-0340
BD 115	BD115-230V	9010/ 9110-0325	ED 720	ED720-400V	9010/ 9110-0341
	BD115UL-120V	9010/ 9110-0326	FD 56	FD056-230V	9010/ 9110-0303
BD 260	BD260-230V	9010/ 9110-0329		FD056UL-120V	9010/ 9110-0304
	BD260UL-120V	9010/ 9110-0330	FD 115	FD115-230V	9010/ 9110-0305
BD 720	BD720-230V	9010/ 9110-0331		FD115UL-120V	9010/ 9110-0306
	BD720UL-240V	9010/ 9110-0332	FD 260	FD260-230V	9010/ 9110-0309
BF 56	BF056-230V	9010/ 9110-0313		FD260UL-240V	9010/ 9110-0310
	BF056UL-120V	9010/ 9110-0314	FD 720	FD720-400V	9010/ 9110-0311
BF 115	BF115-230V	9010/ 9110-0315	FED 56	FED056-230V	9010/ 9110-0295
	BF115UL-120V	9010/ 9110-0316		FED056UL-120V	9010/ 9110-0296
BF 260	BF260-230V	9010/ 9110-0319	FED 115	FED115-230V	9010/ 9110-0293
	BF260UL-120V	9010/ 9110-0320		FED115UL-120V	9010/ 9110-0294
BF 720	BF720-230V	9010/ 9110-0321	FED 260	FED260-230V	9010/ 9110-0299
	BF720UL-240V	9010/ 9110-0322		FED260UL-240V	9010/ 9110-0300
ED 56	ED056-230V	9010/ 9110-0333	FED 720	FED720-400V	9010/ 9110-0301
	ED056UL-120V	9010/ 9110-0334		FED720UL-208V	9010/ 9110-0302
ED 115	ED115-230V	9010/ 9110-0335			
	ED115UL-120V	9010/ 9110-0336			

BINDER GmbH

▶ Address: Post office box 102, 78502 Tuttlingen, Germany ▶ Phone: +49 7462 2005 0
▶ Fax: +49 7462 2005 100 ▶ Internet: http://www.binder-world.com
▶ Service Hotline: +49 7462 2005 555
▶ Service Fax: +49 7462 2005 93 555
▶ Service Hotline USA: +1 866 885 9794 or +1 631 224 4340 x3
▶ Service Hotline Asia Pacific: +852 390 705 04 or +852 390 705 03

Issue 01/2025 Art. No. 7001-0292

Content

Dear customer,

For the correct operation of the chambers, it is important that you read this operating manual completely and carefully and observe all instructions as indicated. Failure to read, understand and follow the instructions may result in personal injury. It can also lead to damage to the chamber and/or poor equipment performance

1. Safety

1.1 Personnel Qualification

The chamber must only be installed, tested, and started up by personnel qualified for assembly, startup, and operation of the chamber. Qualified personnel are persons whose professional education, knowledge, experience and knowledge of relevant standards allow them to assess, carry out, and identify any potential hazards in the work assigned to them. They must have been trained and instructed, and be authorized, to work on the chamber.

The chamber should only be operated by laboratory personnel especially trained for this purpose and familiar with all precautionary measures required for working in a laboratory. Observe the national regulations on minimum age of laboratory personnel.

1.2 Operating manual

This operating manual is part of the components of delivery. Always keep it handy for reference in the vicinity of the chamber. If selling the unit, hand over the operating manual to the purchaser.

To avoid injuries and damage observe the safety instructions of the operating manual. Failure to follow instructions and safety precautions can lead to significant risks.

DANGER

Dangers due to failure to observe the instructions and safety precautions.

Serious injuries and chamber damage. Risk of death.

- Observe the safety instructions in this Operating Manual.
- Follow the operating procedures in this Operating Manual.
- Carefully read the complete operating instructions of the chamber prior to installing and using the chamber.
- Keep the operating manual for future reference

Make sure that all persons who use the chamber and its associated work equipment have read and understood the Operating Manual.

This Operating Manual is supplemented and updated as needed. Always use the most recent version of the Operating Manual. When in doubt, call the BINDER Service Hotline for information on the up-to-dateness and validity of this Operating Manual.

1.3 Legal considerations

This operating manual is for informational purposes only. It contains information for correct and safe installing, start-up, operation, decommissioning, cleaning and maintenance of the product. Note: the contents and the product described are subject to change without notice.

Understanding and observing the instructions in this operating manual are prerequisites for hazard-free use and safety during operation and maintenance. Images are to provide basic understanding. They may deviate from the actual version of the chamber. The actual scope of delivery can, due to optional or special design, or due to recent technical changes, deviate from the information and illustrations in these instructions this operating manual. In no event shall BINDER be held liable for any damages, direct or incidental arising out of or related to the use of this manual.

This operating manual cannot cover all conceivable applications. If you would like additional information, or if special problems arise that are not sufficiently addressed in this manual, please ask your dealer or contact us directly, e.g. by phone at the number located on page one of this manual

Furthermore, we emphasize that the contents of this operating manual are not part of an earlier or existing agreement, description, or legal relationship, nor do they modify such a relationship. All obligations on the part of BINDER derive from the respective purchase contract, which also contains the entire and exclusively valid statement of warranty administration and the general terms and conditions, as well as the legal regulations valid at the time the contract is concluded. The statements in this manual neither augment nor restrict the contractual warranty provisions.

1.3.1 Intellectual property

This operating manual is protected by copyright. Any unauthorized copying or disclosure to third parties is strictly prohibited. We reserve the right to take legal action and, if necessary, to assert claims for damages in the event of infringement.

Trademark Information: All BINDER trademarks relating to products or service, as well as trade names, logos and product names used on the website, products and documents of BINDER company are trademarks or registered trademarks of BINDER company (including BINDER GmbH, BINDER Inc.) in the U.S. and other countries and communities of states. This includes word marks, position marks, word/figurative marks, design configurations, figurative marks, and design patents.

Patent Information: BINDER products, categories of products, and accessories may be covered by one or more patents and/or utility models in the U.S. and other countries and communities of states. This information is provided to satisfy the virtual patent marking provisions of various jurisdictions, in particular it is intended to serve as notice under 35 U.S.C. § 287(a). Products and services listed on the BINDER website may be sold individually or as part of a combination product. Additional patent applications may also be pending in the U.S. and other countries and communities of states.

Please visit www.binder-world.com for more information.

1.4 Structure of the safety instructions

In this operating manual, the following safety definitions and symbols indicate dangerous situations following the harmonization of ISO 3864-2 and ANSI Z535.6.

1.4.1 Signal word panel

Depending on the probability of serious consequences, potential dangers are identified with a signal word, the corresponding safety color, and if appropriate, the safety alert symbol.

DANGER
Indicates an imminently hazardous situation that, if not avoided, will result in death or serious (irreversible) injury.

WARNING
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious (irreversible) injury

CAUTION
Indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor (reversible) injury

NOTICE
Indicates a potentially hazardous situation which, if not avoided, may result in damage to the product and/or its functions or of a property in its proximity.

1.4.2 Safety alert symbol

Use of the safety alert symbol indicates a **risk of injury**.
Observe all measures that are marked with the safety alert symbol in order to avoid death or injury.

1.4.3 Pictograms

Warning signs			
 Electrical hazard	 Hot surface	 Explosive atmosphere	 Stability hazard
 Lifting hazard	 Risk of corrosion and / or chemical burns	 Suffocation hazard	 Harmful substances
 Biohazard	 Pollution Hazard		
Mandatory action signs			
 Mandatory regulation	 Read operating instructions	 Disconnect the power plug	 Lift with several persons
 Lift with mechanical assistance	 Environment protection	 Wear protective gloves	 Wear safety goggles
Prohibition signs			
 Do NOT touch	 Do NOT spray with water		

	**Information** to be observed in order to ensure optimum function of the product.

1.4.4 Word message panel structure

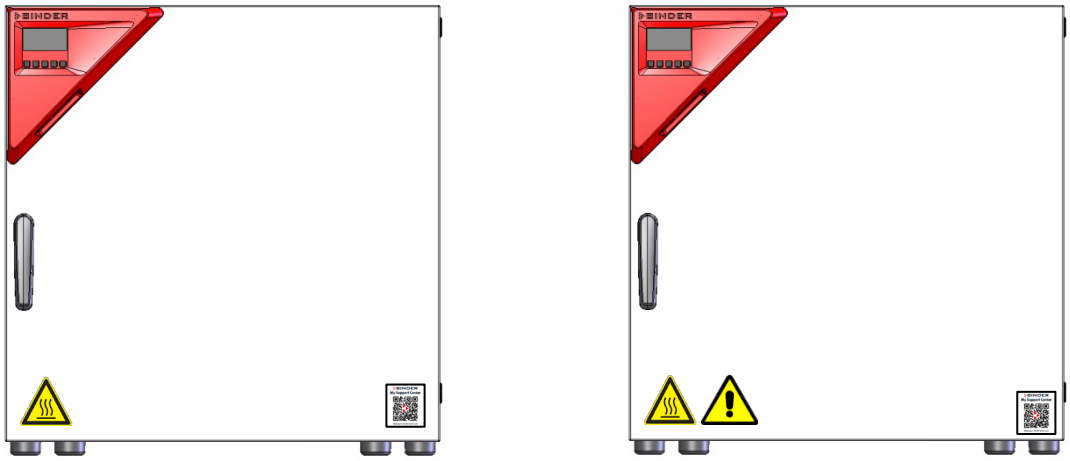
Type / cause of hazard. **Possible consequences.** ∅ Instruction how to avoid the hazard: prohibition. ➢ Instruction how to avoid the hazard: mandatory action.

Observe all other notes and information not necessarily emphasized in the same way, in order to avoid disruptions that could result in direct or indirect injury or property damage.

1.5 Localization / position of safety labels on the chamber

The following labels are located on the chamber:

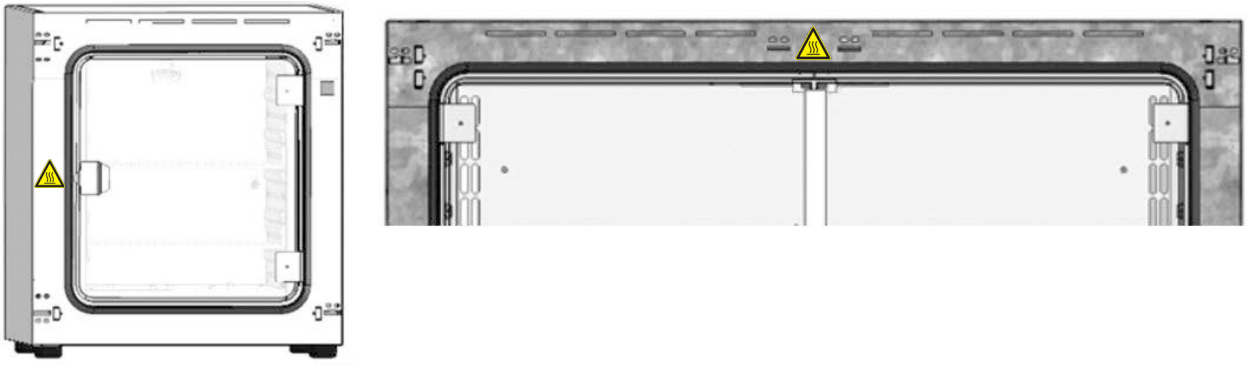
Pictograms (Warning signs)	
	Hot surface • ED, FD, FED: outer chamber door • BD, BF 56/115/260: next to the glass door handle • BD, BF 720: centered at the top of the inner chamber front • On chamber rear next to the exhaust duct
	Risk of injury. Observe the safety instructions in the operating manual. • On type plate • UL chamber: outer chamber door
Information	
	QR-Code and URL to contact the BINDER Support Center



ED, FD, FED

ED-UL, FD-UL, FED-UL

Figure 1: Position of labels on the chamber front (example: ED, FD, FED size 56)



Size 56/115/260 Size 720

Figure 2: Position of labels next to the glass door with BD/BD-UL and BF/BF-UL (shown without outer chamber door)

	Keep safety labels complete and legible.

Replace safety labels that are no longer legible. Contact BINDER Service for these replacements.

1.6 Type plate

The type plate is located on the left-hand side of the chamber, bottom right-hand.

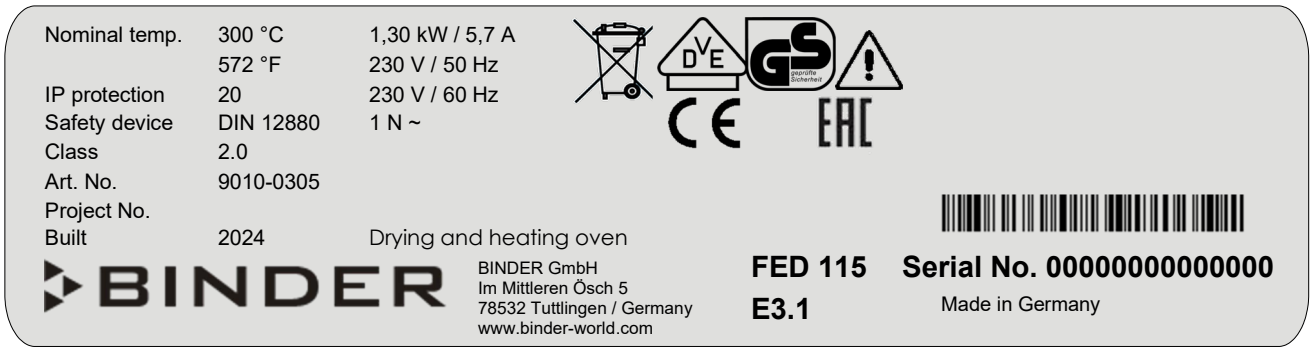


Figure 3: Type plate (example FED 115-230V regular chamber)

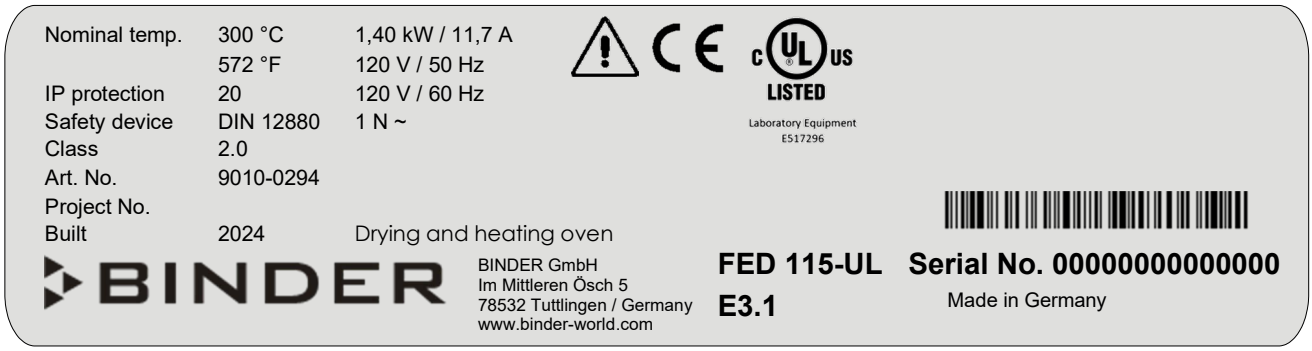


Figure 4: Type plate (example FED 115-UL-120V regular chamber)

Indications of the type plate (example)

Indication		Information
BINDER		Manufacturer: BINDER GmbH
BD 115		Model designation
Incubator		Chamber name: Incubator
Drying and heating oven		Chamber name: Drying and heating oven
Serial No.	000000000000	Serial No of the chamber
Built	2024	Year of construction
Nominal temperature	100 °C 212 °F	Nominal temperature
IP protection	20	IP type of protection acc. to EN 60529
Temp. safety device	DIN 12880	Temperature safety device acc. to standard DIN 12880
Class	3.1	Class of temperature safety device
Art. No.	9110-0305	Art. no. of the chamber
Project No.	---	Optional: Special application acc. to project no.
1,30 kW		Nominal power
5,7 A		Nominal current
230 V / 50 Hz		Nominal voltage ± 10% at the indicated power frequency
230 V / 60 Hz		
1 N ~		Current type

Symbols on the type plate

Symbol	Valid for	Information
CE	All chambers	CE conformity marking
	Not for UL chambers	Electrical and electronic equipment manufactured / placed on the market in the EU after 13 August 2005 and be disposed of in separate collection according to Directive 2012/19/EU on waste electrical and electronic equipment (WEEE).
DVE GS	Not for UL chambers	GS mark of conformity of the “VDE Prüf- und Zertifizierungsinstitut” (Testing and Certification Institute of the Association for Electrical, Electronic and Information Technologies
EAC	Not for UL chambers	The chamber is certified according to Customs Union Technical Regulation (CU TR) for the Eurasian Economic Union (Russia, Belarus, Armenia, Kazakhstan Kyrgyzstan).
c UL us LISTED LABORATORY EQUIPMENT 43KM	UL chambers only	The chamber is certified by Underwriters Laboratories Inc.® according to the following standards: • UL 61010-1, 3rd Edition, 2012-05, rev. 2015-07 • CAN/CSA-C22.2 No. 61010-1, 3rd Edition, 2012-05, rev. 2015-07
	All chambers	Observe the safety instructions in the operating manual

1.7 UKCA Label

The sticker with UKCA Authorised Representative details sticks next to the type plate to the left side of the chamber, bottom right-hand.

Figure 5: UKCA Label

Symbol on the sticker

Symbol	Applies to	Information
UK CA	All models except UL models	UKCA conformity marking

1.8 General safety instructions on installing and operating the chambers

With regard to operating the chambers and to the installation location, please observe the local and national regulations relevant for your country (for Germany: DGUV guidelines 213-850 on safe working in laboratories, issued by the employers' liability insurance association).

BINDER GmbH is only responsible for the safety features of the chamber provided skilled electricians or qualified personnel authorized by BINDER perform all maintenance and repair, and if components relating to chamber safety are replaced in the event of failure with original spare parts.

To operate the chamber, use only original BINDER accessories or accessories from third-party suppliers authorized by BINDER. The user is responsible for any risk caused by using unauthorized accessories.

NOTICE

Danger of overheating due to lack of ventilation.

Damage to the chamber.

∅ Do NOT install the chamber in unventilated recesses.

➢ Ensure sufficient ventilation for dispersal of the heat.

➢ Observe the prescribed minimum distances when installing the chamber (chap. 3.4)

Do not install or operate the chambers in hazardous locations.

DANGER

Danger of explosion due to combustible dusts or explosive mixtures in the vicinity of the chamber.

Serious injury or death from burns and / or explosion pressure.

∅ Do NOT operate the chamber in potentially explosive areas.

➢ KEEP combustible dust or air-solvent mixtures AWAY from the chamber.

The chambers do not dispose of any measures of explosion protection.

DANGER

Danger of explosion due to introduction of flammable or explosive substances in the chamber.

Serious injury or death from burns and / or explosion pressure.

∅ Do NOT introduce any substance into the chamber which is combustible or explosive at working temperature.

∅ Do NOT introduce any combustible dust or air-solvent mixture in the inner chamber.

Any solvent contained in the charging material must not be explosive or inflammable. I.e., irrespective of the solvent concentration in the steam room, NO explosive mixture with air must form. The temperature inside the chamber must lie below the flash point or below the sublimation point of the charging material. Familiarize yourself with the physical and chemical properties of the charging material, as well as the contained moisture constituent and its behavior with the addition of heat energy.

Familiarize yourself with any potential health risks caused by the charging material, the contained moisture constituent or by reaction products that may arise during the temperature process. Take adequate measures to exclude such risks prior to putting the chamber into operation.

DANGER

Electrical hazard by water entering the chamber.

Deadly electric shock.

∅ The chamber must NOT become wet during operation, cleaning, or maintenance.

∅ Do NOT install the chamber in damp areas or in puddles.

➢ Set up the chamber in a splash-proof manner.

The chambers were produced in accordance with VDE regulations and were routinely tested in accordance to VDE 0411-1 (IEC 61010-1).

During and shortly after operation, the temperature of the inner surfaces almost equals the set-point. The glass doors and glass door handles (BD, BF), inner chamber, exhaust duct, door window (option), and the door gaskets will become hot during operation.

CAUTION

Danger of burning by touching hot chamber parts during or after operation.

Burns.

∅ Do NOT touch the glass doors, inner surfaces, exhaust duct, door window, access ports, door gaskets, or the charging material during operation.

∅ BF, FD, FED: Do NOT place the power cable over the door gap when the chamber is hot after operation.

1.9 Intended use

	Observing the instructions in this operating manual and conducting regular maintenance work (chap. 14.2) is part of the intended use.

Any use of the chambers that does not comply with the requirements specified in this Operating Manual shall be considered improper use.

Other applications than those described in this chapter are not approved.

Use

The chambers are suitable for exact tempering of harmless materials and for drying and heat treatment of solid or pulverized charging material, as well as bulk material, using the supply of heat. They can be used to dry e.g. glassware, and for warm storage of liquids in containers.

DO NOT use the device for drying processes that release so large amounts of water vapor that condensation occurs.

Because of their precise temperature accuracy the incubators BD and BF are especially useful for incubation of cultures at a standard temperature of 37 °C / *98.6 °F*.

Requirements for the chamber load

Any solvent must not be explosive or flammable. A mixture of any component of the charging material with air must NOT be explosive. The operating temperature must lie below the flash point or below the sublimation point of the charging material. Any component of the charging material must NOT be able to release toxic gases.

The loading material shall not contain any corrosive ingredients that may damage the machine components made of stainless steel, aluminum, and copper. Such ingredients include in particular acids and halides. Any corrosive damage caused by such ingredients is excluded from liability by BINDER GmbH.

The chamber does not dispose of any measures of explosion protection.

DANGER

Explosion or implosion hazard and danger of poisoning through the introduction of unsuitable loading material.

Poisoning. Serious injury or death from burns and / or explosion pressure.

- ∅ Do NOT introduce any substance combustible or explosive at working temperature into the chamber, in particular no energy sources such as batteries or lithium-ion batteries.
- ∅ NO explosive dust or air-solvent mixture in the inner chamber.
- ∅ Do NOT introduce any substance which could lead to release of toxic gases.

Contamination of the chamber by toxic, infectious or radioactive substances must be prevented

WARNING

Danger of intoxication and infection through contamination of the chamber with toxic, infectious or radioactive substances.

Damages to health.

- ➢ Protect the interior of the chamber from contamination by toxic, infectious or radioactive substances.
- ➢ Take suitable protective measures when introducing and removing toxic, infectious or radioactive material

In case of foreseeable use of the chamber there is no risk for the user through the integration of the chamber into systems or by special environmental or operating conditions in the sense of EN 61010-1:2010. For this, the intended use of the chamber and all its connections must be observed.

Connect only external devices to the chamber interfaces Ethernet (regular with FED, optional with BD, BF, ED, FD) and USB which are compliant with the standards EN 61010-1:2010 or EN 60950-1:2006 mod.

Medical devices

The chambers are not classified as medical devices as defined by Regulation (EU) No 2017/745.

	Due to the special demands of the Medical Products legislation, these chambers are not qualified to perform sterilization of medical devices as defined by Regulation (EU) No 2017/745.

Personnel Requirements

Only trained personnel with knowledge of the Operating Manual can set up and install the chamber, start it up, operate, clean, and take it out of operation. Service and repairs call for further technical requirements (e.g. electrical know-how), as well as knowledge of the service manual.

Installation site requirements

The chambers are designed for setting up inside a building (indoor use).

The requirements described in the Operating Manual for installation site and ambient conditions (chap. 3.4) must be met.

	WARNING: If customer should use a BINDER chamber running in non-supervised continuous operation, we strongly recommend in case of inclusion of irrecoverable specimen or samples to split such specimen or samples and store them in at least two chambers, if this is feasible.

1.10 Foreseeable Misuse

Other applications than those described in chap. 1.9 are not approved.

This expressly includes the following misuses (the list is not exhaustive), which pose risks despite the inherently safe construction and existing technical safety equipment:

- Non-observance of Operating Manual
- Non-observance of information and warnings on the chamber (e.g. control unit messages, safety identifiers, warning signals)
- Installation, startup, operation, maintenance and repair by untrained, insufficiently qualified, or unauthorized personnel
- Missed or delayed maintenance and testing
- Non-observance of traces of wear and tear
- Insertion of materials excluded or not permitted by this Operating Manual.
- Non-compliance with the admissible parameters for processing the respective material.
- Installation, testing, service or repair in the presence of solvents
- Installation of replacement parts and use of accessories and operating resources not specified and authorized by the manufacturer
- Bypassing or changing protective systems, operation of the chamber without the designated protective systems
- Non-observance of messages regarding cleaning and disinfection of the chamber.
- Spilling water or cleaning agent on the chamber, water penetrating into the chamber during operation, cleaning or maintenance
- Cleaning activity while the chamber is turned on
- Operation of the chamber with a damaged housing or damaged power cord
- Continued operation of the chamber during an obvious malfunction

- Insertion of objects, particularly metallic objects, in louvers or other openings or slots on the chamber
- Human error (e.g. insufficient experience, qualification, stress, exhaustion, laziness)

To prevent these and other risks from incorrect operation, it is recommended the operator issue operating instructions and standard operating procedures (SOPs).

1.11 Residual Risks

The unavoidable design features of a chamber, as well as its proper field of application, can also pose risks, even during correct operation. These residual risks include hazards which, despite the inherently safe design, existing technical protective equipment, safety precautions and supplementary protective measures, cannot be ruled out.

Messages on the chamber and in the Operating Manual warn of residual risks. The consequences of these residual risks and the measures required to prevent them are listed in the Operating Manual. Moreover, the operator must take measures to minimize hazards from unavoidable residual risks. This includes, in particular, issuing operating instructions.

The following list summarizes the hazards against which this Operating Manual and the Service Manual warn, and specifies protective measures at the appropriate spots:

Unpacking, Transport, Installation

- Sliding or tilting the chamber
- Setup of the chamber in unauthorized areas
- Installation of a damaged chamber
- Installation of a chamber with damaged power cord
- Inappropriate site of installation
- Missing protective conductor connection

Normal operation

- Assembly errors
- Contact with hot surfaces on the housing
- Contact with hot surfaces in the interior and inside of doors
- Emission of non-ionizing radiation from electrical operating resources
- Contact with live parts in normal state

Cleaning and Decontamination

- Penetration of water into the chamber
- Inappropriate cleaning and decontamination agents
- Enclosure of persons in the interior

Malfunction and Damage

- Continued operation of the chamber during an obvious malfunction or outage of the heating system
- Contact with live parts during error status
- Operation of a unit with damaged power cord

Maintenance

- Maintenance work on live parts.
- Execution of maintenance work by untrained/insufficiently qualified personnel
- Electrical safety analysis during annual maintenance not performed

Trouble-shooting and Repairs

- Non-observance of warning messages in the Service Manual
- Trouble-shooting of live parts without specified safety measures
- Absence of a plausibility check to rule out erroneous inscription of electrical components
- Performance of repair work by untrained/insufficiently qualified personnel
- Inappropriate repairs which do not meet the quality standard specified by BINDER
- Use of replacement parts other than BINDER original replacement parts
- Electrical safety analysis not performed after repairs

2. Chamber description

BINDER incubators BD and BF and drying and heating ovens ED, FD and FED are equipped with an electronic PID-controller with digital display.

	The incubators BD and BF indicate the temperature with an accuracy of a tenth of a degree. The drying and heating ovens ED, FD and FED indicate the temperature with an accuracy of one degree.

All chambers are heated electrically. Incubators BD and drying and heating ovens ED are ventilated naturally. Incubators BF and drying and heating ovens FD and FED are ventilated by fan-assisted, forced-air circulation.

The concept of air conduction guarantees high level of spatial and time-based temperature precision, thanks to the direct and distributed air circulation into the interior. With BF, FD and FED, the fan supports exact attainment and maintenance of the desired temperature accuracy.

The chambers are regularly equipped with an overtemperature safety device class 1 acc. to DIN12880:2007 and with an overtemperature safety controller (overtemperature temperature safety device class 2 or class 3.1 acc. to DIN12880:2007), see chap. 7).

Material: The inner chamber and the inside of the doors are made of stainless steel V2A (German material no. 1.4301, US equivalent AISI 304 and material no. 1.4016, US equivalent AISI 430). Drying and heating ovens ED, FD and FED: When operating the chambers at temperatures above 150 °C / *302 °F*, the impact of the oxygen in the air may cause discoloration of the metallic surfaces (yellowish-brown or blue) by natural oxidation processes. These colorations are harmless and will in no way impair the function or quality of the chamber. The housing is RAL 7035 or RAL 9003 powder-coated. All corners and edges are also completely coated.

All chamber functions are easy and comfortable to use thanks to their clear arrangement. Major features are easy cleaning of all chamber parts and avoidance of undesired contamination.

The chambers are regularly (FED) or optionally equipped with an Ethernet interface for computer communication, e.g. via the APT-COM™ 4 Multi Management Software (accessory, chap. 12.1) and with a USB interface to read out the measured values in real time.

The models size 720 are equipped with four castors. Both front castors can be locked by brakes.

Temperature ranges see technical data (chap. 16.4 - 16.8).

2.1 Chamber overview

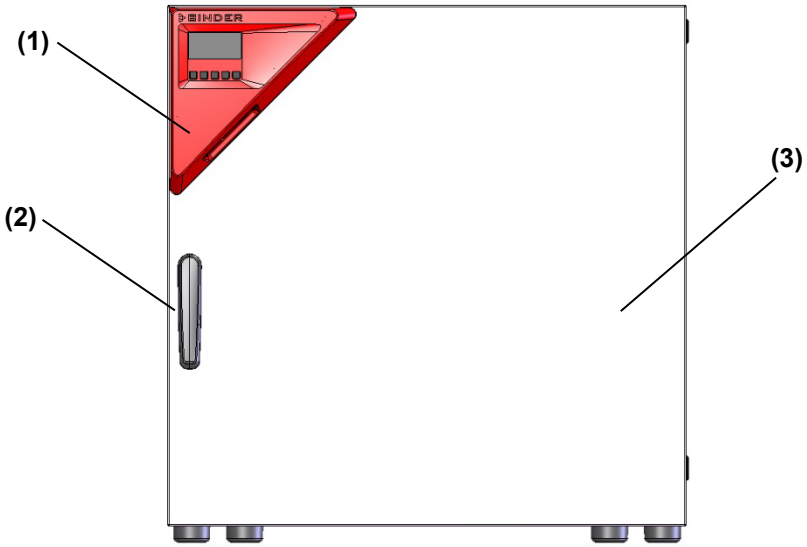


Figure 6: Overview, closed chamber (chamber with single door)

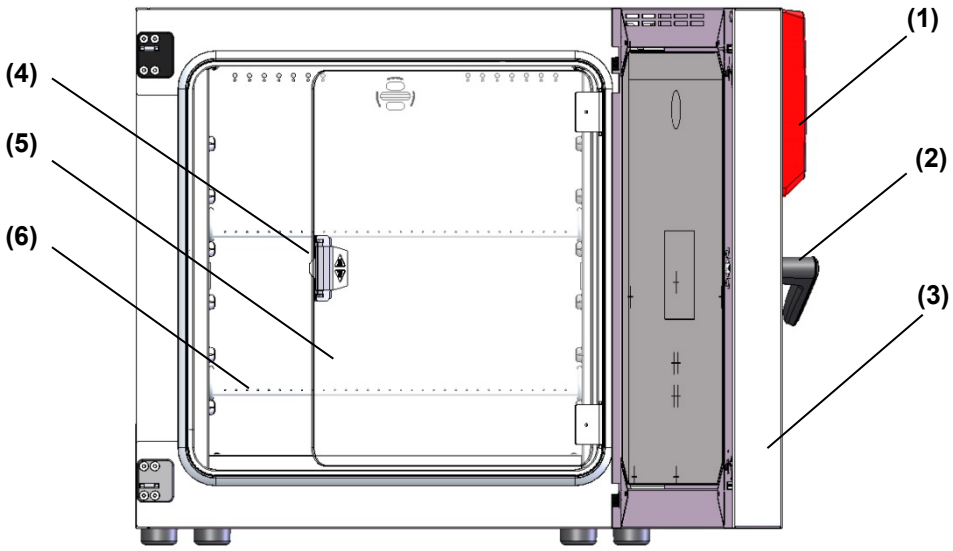


Figure 7: Overview, open chamber with glass door (chamber with single door) (BD, BF)

(1) Triangular instrument panel with controller R4 and USB interface
(2) Door handle
(3) Outer door
(4) Glass door handle (BD and BF)
(5) Glass door (BD and BF)
(6) Rack

2.2 Triangular instrument panel

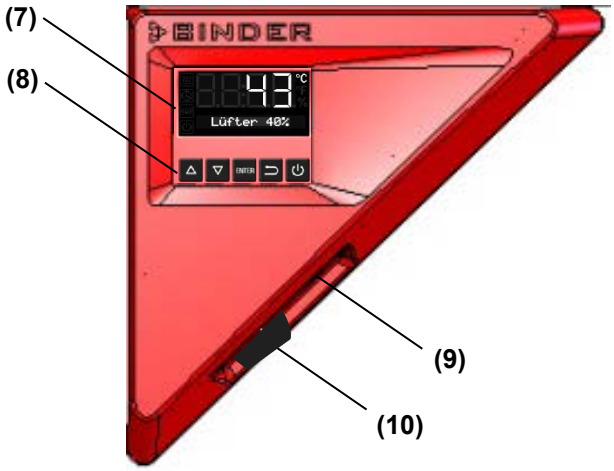


Figure 8: Triangular instrument panel

(7) Controller display

(8) Functional controller buttons

(9) USB interface

(10) Switch for Interior lighting (option)

2.3 Main power switch on the chamber rear (ED, FD, FED 720)

The chambers ED, FD, FED size 720 are equipped with a main power switch located on the chamber rear.

This rear power switch allows turning off the chamber. The switch is intended for service and is intended to be used as a power disconnection device in the event of danger.

Off On

Figure 9: Main power switch on the chamber rear

3. Completeness of delivery, transportation, storage, and installation

3.1 Unpacking, and checking equipment and completeness of delivery

After unpacking, please check the chamber and its optional accessories, if any, based on the delivery receipt for completeness and for transportation damage. Inform the carrier immediately if transportation damage has occurred.

The final tests of the manufacturer may have caused traces of the racks on the inner surfaces. This has no impact on the function and performance of the chamber.

Please remove any transportation protection devices and adhesives in/on the chamber and on the doors and take out the operating manuals and accessory equipment.

CAUTION

Risk of injury and damages by lifting heavy loads and by sliding or tilting of the chamber due to improper lifting.

Injuries, damage to the chamber.

- ∅ Do NOT lift or transport the chamber using the door handle or the door.
- ∅ Do NOT lift chambers size 720 by hand
- ➢ Lift the chamber size 56 and 115 from the pallet at its four lower corners with the aid of 2 people, chamber size 260 with the aid of 4 people.
- ➢ Lift chambers size 720 from the pallet using technical devices (fork lifter). Set the fork lifter only from the rear in the middle of the chamber. Make sure to place all the lateral supports of the chamber on the forks.

If you need to return the chamber, please use the original packing and observe the guidelines for safe lifting and transportation (chap. 3.2).

For disposal of the transport packing, see chap. 15.1.

Note on second-hand chambers (Ex-Demo-Units):

Second-hand chambers are chambers that have been used for a short time for tests or exhibitions. They are thoroughly tested before resale. BINDER ensures that the chamber is technically sound and will work flawlessly.

Second-hand chambers are marked with a sticker on the chamber door. Please remove the sticker before commissioning the chamber.

3.2 Guidelines for safe lifting and transportation

The front castors of chambers size 720 can be blocked by brakes. Please move the chambers with castors only when empty and on an even surface, otherwise the castors may be damaged. After operation, please observe the guidelines for temporarily decommissioning the chamber (chap. 15.2).

CAUTION

Risk of injury and damages by lifting heavy loads and by sliding or tilting of the chamber due to improper transportation.

Injuries, damage to the chamber.

- ➢ Transport the chamber only in its original packaging.
- ➢ Secure the chamber with transport straps for transport.
- ∅ Do NOT lift or transport the chamber using the door handle or the door.
- ∅ Do NOT lift chambers size 720 by hand
- ➢ Lift chamber size 56 and 115 at its four lower corners with the aid of 2 people, chamber size 260 with the aid of 4 people, and place it on a transport pallet with wheels. Push the pallet to the desired site and then lift the chamber from the pallet at its four lower corners.
- ➢ Place chamber size 720 using technical devices (fork lifter) on the transport pallet. Set the fork lifter only from the rear in the middle of the chamber. Make sure to place all the lateral supports of the chamber on the forks.
- ➢ Transport chamber size 720 ONLY with the original transport pallet. Set the fork lifter only to the pallet. Without the pallet the chamber is in imminent danger of overturning!

- Permissible ambient temperature range during transport: -10 °C to +60 °C / *14 °F to 140 °F.*

You can order transport packing and pallets for transportation purposes from BINDER Service.

3.3 Storage

Intermediate storage of the chamber is possible in a closed and dry room. Observe the guidelines for temporary decommissioning (chap. 15.2).

- Permissible ambient temperature range during storage: -10 °C to +60 °C / *14 °F to 140 °F.*
- Permissible ambient humidity: max. 70 % r.H., non-condensing

When after storage in a cold location you transfer the chamber to its warmer installation site, condensation may form. Before start-up, wait at least one hour until the chamber has attained ambient temperature and is completely dry.

3.4 Location of installation and ambient conditions

Set up the chamber on an even and non-flammable surface, free from vibration and in a well-ventilated, dry location and align it using a spirit level. The site of installation must be capable of supporting the chamber's weight (see technical data, chap. 16.4 to 16.7). The chambers are designed for setting up inside a building (indoor use).

NOTICE

Danger of overheating due to lack of ventilation.

Damage to the chamber.

- ∅ Do NOT install the chamber in unventilated recesses.
- ➢ Ensure sufficient ventilation for dispersal of the heat.
- ➢ Observe the prescribed minimum distances when installing the chamber.

Do not install or operate the chamber in potentially explosive areas.

DANGER

Danger of explosion due to combustible dusts or explosive mixtures in the vicinity of the chamber.

Serious injury or death from burns and / or explosion pressure.

∅ Do NOT operate the chamber in potentially explosive areas.

➢ KEEP explosive dust or air-solvent mixtures AWAY from the vicinity of the chamber.

Ambient conditions

- Permissible ambient temperature range during operation: +18 °C up to +40 °C / *64.4 °F to 104 °F.* At elevated ambient temperature values, fluctuations in temperature can occur.

The ambient temperature should not be substantially higher than the indicated ambient temperature of +25 °C / *77 °F* to which the specified technical data relate. For other ambient conditions, deviations from the indicated data are possible.

- Permissible ambient humidity: 70 % r.H. max., non-condensing.
- Installation height: max. 2000 m / *6562 ft.* above sea level.

Minimum distances

When placing several chambers of the same size side by side, maintain a minimum distance of 250 mm / *9.84 in* between each chamber. Wall distances: rear 160 mm / *6.30 in*, sides 100 mm / *3.94 in*. Spacing above the chamber of at least 100 mm / *3.94 in* must also be accounted for.

- When placing several chambers of the same size side by side, maintain a minimum distance of 250 mm / *9.84 in* between each chamber.
- Wall distances: rear 160 mm / *6.30 in*, sides 100 mm / *3.94 in*.
- Spacing above the chamber of at least 100 mm / *3.9 in* must also be accounted for.

Stacking

Two devices up to size 115 can be stacked on top of each other. For this purpose place rubber pads under all feet of the upper chamber to prevent the device from slipping.

NOTICE

Risk of damages by sliding or tilting of the upper chamber.

Damage to the chambers.

➢ When stacking, place rubber pads under all feet of the upper chamber.

➢ Stack only chambers of the same size.

Chambers sizes 260 and 720 must NOT be stacked.

NOTICE

Danger by stacking.

Damage to the chambers.

∅ Do NOT place chambers sizes 260 or 720 on top of each other.

Other requirements

To completely separate the chamber from the power supply, you must disconnect the power plug. Install the chamber in a way that the power plug is easily accessible and can be easily pulled in case of danger. Do not conduct the power cable above the exhaust duct.

4. Installation

4.1 Mounting the tilt protection holders (chambers with window)

For chambers equipped with the option „door with window“ it is recommended to install the supplied tilt protection.

Scope of delivery of tilt protection kit (Art.no. 8009-0870):

- 2 screws
- 2 tilt protection holders

Preparing the tilt protection holders

- Depending on the desired wall distance, you can bend the tilt protection holders accordingly.

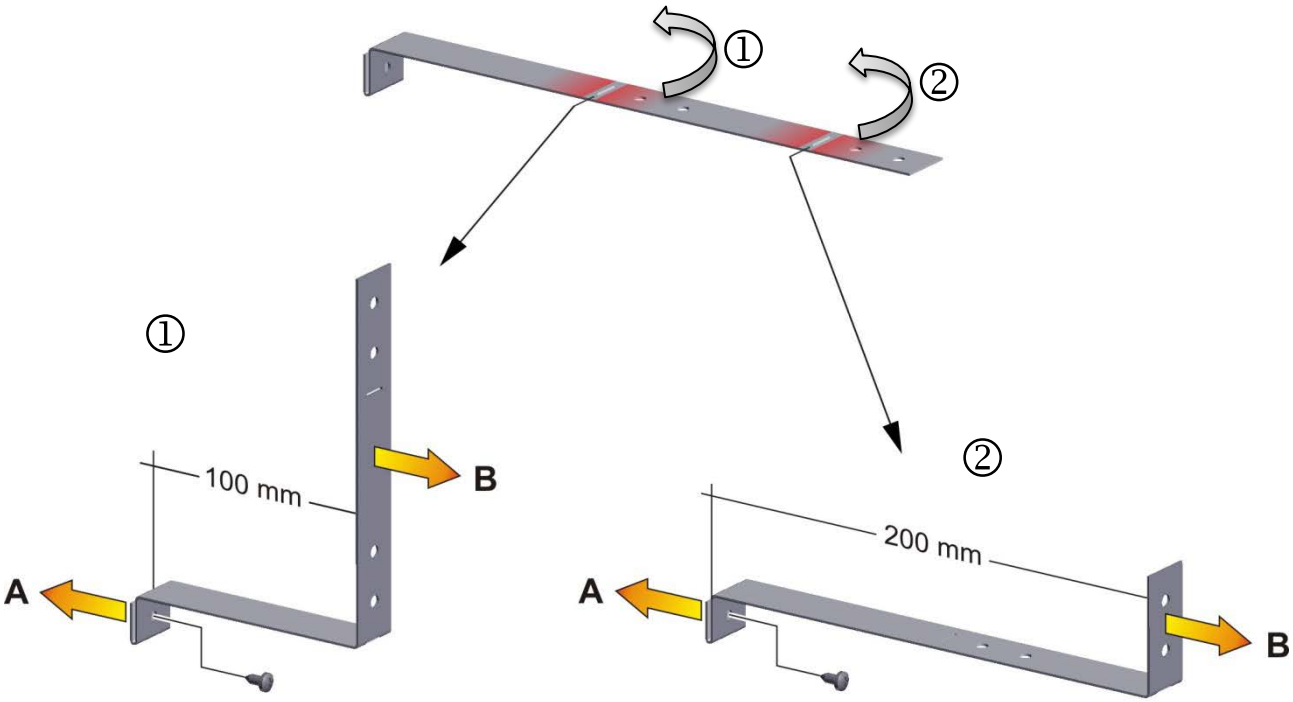


Figure 10: Variable length of the tilt protection holder depending on the bend

Installation on the chamber

- Plug the two tilt protection holders each with the tab on the provided spot on the edge of the rear panel. The screw holes in the rear wall and in the tilt protection holders must align.
- Fix the tilt protection holders each with one of the supplied screws on the chamber rear wall.

Wall mounting

- Then fix both tilt protection holders on the wall, each with 2 screws Ø 6mm suitable for the wall (B)

4.2 Electrical connection

The chambers are supplied ready for connection and.

The chambers ED720 / FD720 / FED720 / FED720UL come with a fixed power connection cable of at least 1800 mm / *70.87 in* in length. The other chambers come with an IEC connector plug.

Model	Power plug / power cable	Nominal voltage +/- 10% at the indicated power frequency	Current type	Chamber fuse
BD056-230V BF056-230V	Grounded plug	230 V at 50 Hz 230 V at 60 Hz	1N~	6,3 A
ED056-230V FD056-230V FED056-230V	Grounded plug	230 V at 50 Hz 230 V at 60 Hz	1N~	6,3 A
BD115-230V BF115-230V	Grounded plug	230 V at 50 Hz 230 V at 60 Hz	1N~	6,3 A
ED115-230V FD115-230V FED115-230V	Grounded plug	230 V at 50 Hz 230 V at 60 Hz	1N~	6,3 A
BD260-230V BF260-230V	Grounded plug	230 V at 50 Hz 230 V at 60 Hz	1N~	8,0 A
ED260-230V FD260-230V FED260-230V	Grounded plug	230 V at 50 Hz 230 V at 60 Hz	1N~	12,5 A
BD720-230V BF720-230V	Grounded plug	230 V at 50 Hz 230 V at 60 Hz	1N~	12,5 A
ED720-400V FD720-400V FED720-400V	Grounded plug	400 V at 50 Hz 400 V at 60 Hz	3N~	---
BD056UL-120V BF056UL-120V	NEMA 5-15P SJT 14AWG*3C	120 V at 50 Hz 120 V at 60 Hz	1N~	12,5 A
ED056UL-120V FD056UL-120V FED056UL-120V	NEMA 5-15P SJT 14AWG*3C	120 V at 50 Hz 120 V at 60 Hz	1N~	12,5 A
BD115UL-120V BF115UL-120V	NEMA 5-15P SJT 14AWG*3C	120 V at 50 Hz 120 V at 60 Hz	1N~	12,5 A
ED115UL-120V FD115UL-120V FD115UL-120V	NEMA 5-15P SJT 14AWG*3C	120 V at 50 Hz 120 V at 60 Hz	1N~	12,5 A
BD260UL-120V BF260UL-120V	NEMA 5-15P SJT 12AWG*3C	120 V at 50 Hz 120 V at 60 Hz	1N~	12,5 A
ED260UL-240V FD260UL-240V FED260UL-240V	NEMA 6-20P SJT 12AWG*3C	240 V at 50 Hz 240 V at 60 Hz	2~	---
BD720UL-240V BF720UL-240V	NEMA 6-20P SJT 12AWG*3C	240 V at 50 Hz 240 V at 60 Hz	2~	---
FED720UL-208V	NEMA L21-20P	208 V at 50 Hz 208 V at 60 Hz	3N~	---

- The domestic socket must also provide a protective conductor. Make sure that the connection of the protective conductor of the domestic installations to the chamber's protective conductor meets the latest technology. The protective conductors of the socket and plug must be compatible!

DANGER

Electrical hazard due to missing protective conductor connection.

Deadly electric shock.

➢ Make sure that the chamber's power plug and the power socket match and securely connect the electrical protective conductors of the chamber and the house installation.

- Only use original connection cables from BINDER according to the above specification.

  UL chambers: Use only a UL Listed Power supply cord (UL category ELBZ) according to the above specification. For outside USA use a certified power supply cord according to national requirements.

- Prior to connection and start-up, check the power supply voltage. Compare the values to the specified data located on the chamber's type plate (left-hand side of the chamber, chap. 1.6).

NOTICE

Danger of incorrect power supply voltage due to improper connection.

Damage to the chamber.

➢ Check the power supply voltage before connection and start-up.

➢ Compare the power supply voltage with the data indicated on the type plate.

- When connecting, please observe the regulations specified by the local electricity supply company as well as the local or national electrical regulations (VDE directives for Germany).
- Observe a sufficient current protection according to the number of devices that you want to operate. We recommend the use of a residual current circuit breaker.
- BF, FD, FED: Do not place the power cable over the door gap when the chamber is hot after operation.
- Pollution degree (acc. to IEC 61010-1): 2
- Over-voltage category (acc. to IEC 61010-1): II

See also electrical data (chap. 16.4 to 16.7).

To completely separate the chamber from the power supply, you must disconnect the power plug. Install the chamber in a way that the power plug is easily accessible and can be easily pulled in case of danger.

4.3 Connection to an exhaust/ventilation system (optional)

Active suction from the chamber must only be effected together with external air. Therefore, the chamber's exhaust air duct shall not be immediately connected to an active exhaust system.

When connecting to an active exhaust system, proceed as follows:

- Perforate the connecting piece between the exhaust air duct and the exhaust system.

Or

- Use an exhaust air funnel placed in a distance of 3-5 cm / *1 to 2 in* from the exhaust air duct. The funnel's opening must be at least twice as large as the diameter of the exhaust air duct.

	If improperly connected to an active exhaust/ventilation system, the spatial temperature exactitude (uniformity), the heating-up and recovering times as well as the maximum temperature of the chamber may be negatively affected.

The exhaust duct on the chamber rear will become hot during operation

	CAUTION
	Danger of burning by touching hot chamber parts during operation. **Burns.** ∅ Do NOT touch the exhaust duct during operation.

4.4 Inserting the racks

	Observe the correct orientation of the racks!

Standard rack:

When inserting the rack the lateral brackets must point upwards. They will be located above the rack surface.

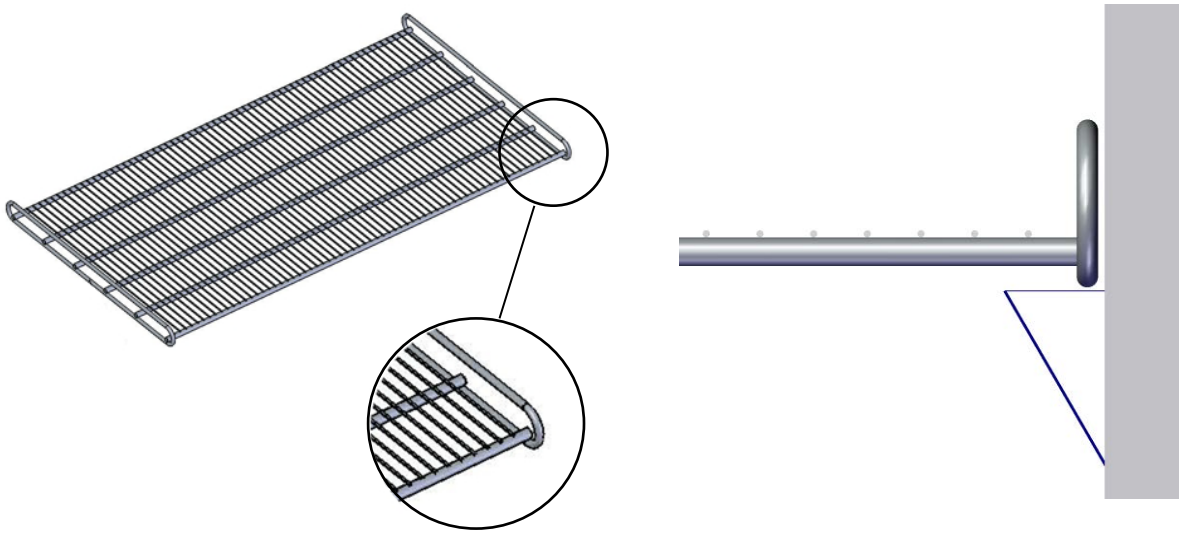


Figure 11: Correct orientation when inserting the racks: brackets pointing **upwards**

Heavy load rack (accessory):

	Depending on the chamber model, the heavy load racks may be different. When inserting, pay attention to the respective orientation

BD / ED

Heavy load rack Art. no. 8012-2187 (for size 260) and 8012-2186 (for size 720)

When inserting the rack the lateral brackets must point upwards. They will be located above the rack surface.

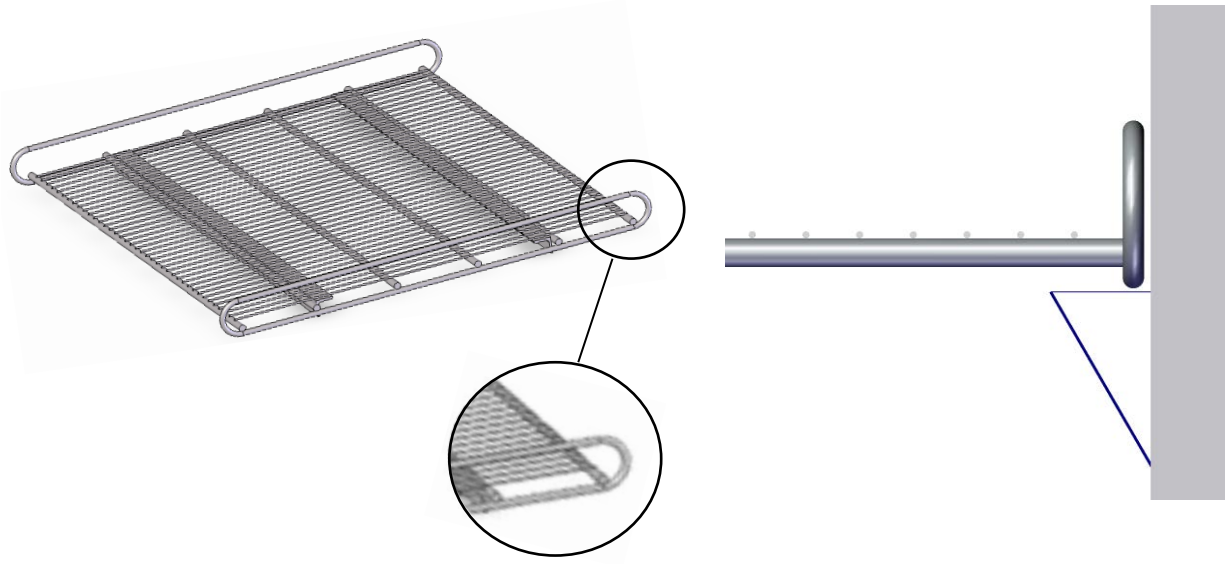


Figure 12: Correct orientation when inserting the heavy load racks for BD / ED:
brackets pointing **downwards**

BF / FD / FED

Heavy load rack Art. no. 8012-2184 (for size 260) and 8012-2185 (for size 720)

When inserting the rack the lateral brackets must point downwards. They will be located below the rack surface.

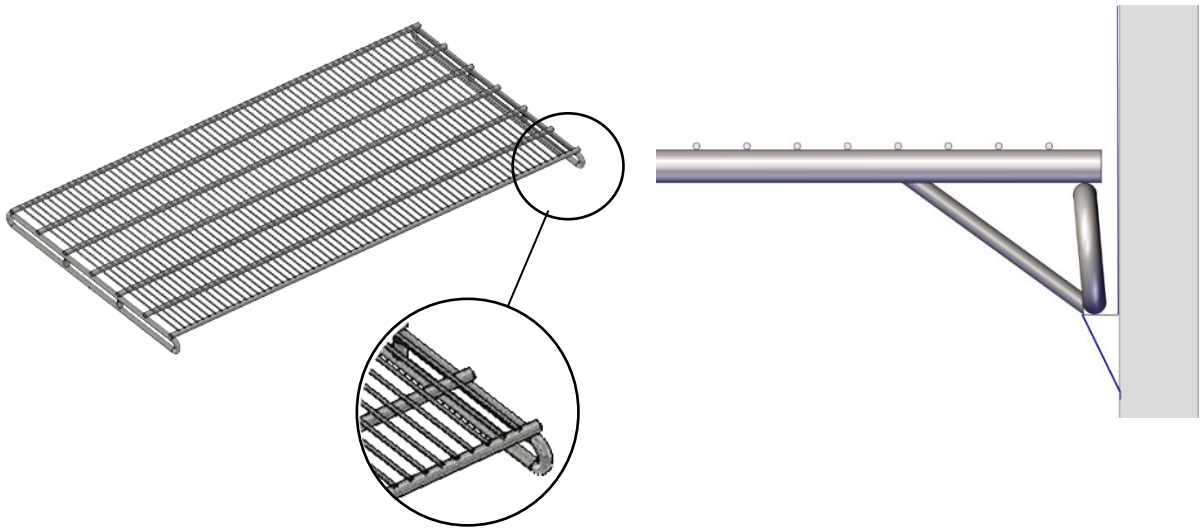


Figure 13: Correct orientation when inserting the racks for BF / FD / FED:
brackets pointing **downwards**

WARNING

Risk of injury by racks falling down due to incorrectly inserting the racks.
Injuries.

- ➢ Use only racks intended for this chamber model.
- ➢ Observe the correct orientation of the racks when inserting them.

5. Start up

Insert the plug into a suitable socket (chap. 4.2).

BF, FD, FED size 720: Turn the chamber at the main power switch (chap. 2.3).

If there is no other indication on the controller than the standby symbol, press the standby button until the display lights up.

The controller now shows normal display (chap. 6.2). If a timer function was active prior to turning off the chamber, it is shown in the controller display.

Warming chambers may release odors in the first few days after commissioning. This is not a quality defect. To reduce odors quickly we recommend heating up the chamber to its nominal temperature for one day and in a well-ventilated location.

5.1 Behavior when opening the door

BD, ED: Depending on the temperature, heating performance may be adapted when opening the door.

BF, FD, FED: When opening the door, heating and fan turn off as long as the door remains open.

5.2 Performance during and after power failures

During a power failure, all controller functions are shut down.

After the power returns, all functions return to the same status the chamber had before power failure. . The controller continues to function in the original operating mode it was in previously before the power failure occurred.

- Performance after power failure in Standby mode

  Control is deactivated
- Performance after power failure that occurred while equilibrating to the set-point:

  The set-points are immediately resumed.
- Performance after power failure during timer operation

  The program is resumed at the point where the interruption occurred with the latest set-points reached during the program run.

5.3 Loading

When loading the chamber, observe the maximum permissible load per rack and the maximum permissible total load (see tecnical data, chap. 16.4 to 16.8).

Observe the correct orientation of the racks (chap. 4.4).

WARNING

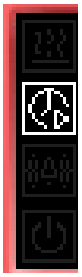
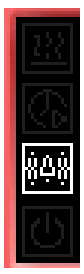
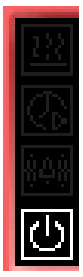
Risk of injury by racks falling down due to overload.
Injuries.

∅ Do not exceed the maximum permissible load per rack.
∅ Do not exceed the maximum permissible total load.
➢ Gently place the load on the racks.
➢ Distribute the load as evenly as possible.

6. Overview and general settings on the R4 controller

6.1 Controller overview

Buttons on the controller	
	The **arrow buttons** serve to navigate and to enter the values
	The **OK button** serves to select the parameters and to confirm the entered values
	The **Back button** serves to reach the preceding level
	If the **Standby button** is pressed down for approx. 3 seconds, the display changes to standby mode. To activate the display, press down the standby button again for approx. 3 seconds  Display in standby mode with standby symbol

Status symbols on the controller display			
 Heating active	 Timer operation	 Overtemperature alarm of the safety controller	 Standby mode

6.2 Normal display

	Normal display with chambers without fan (BD, ED) or with fixed fan speed (FD)
	Normal display with chambers with adjustable fan speed (BF, FED)

6.3 Setting the menu language

without fan **5x** with fan **6x** 	From Normal display with the arrow-up button to the user menu
	Confirm with OK.
	Enter the password (factory setting: 00 00) and confirm each entry with OK.
4 x 	with the arrow-up button to the **language setting** menu.
	The current menu language is shown.
	Press OK to select the menu language.
	The setting flashes.
	Select the setting with the arrow buttons
	and confirm with OK.
2x 	Back to Normal display.

There are the following options:

German:	English:	French:
		

6.4 Setting date and time

without fan **5x** with fan **6x** 	From Normal display with the arrow-up button to the user menu
	Confirm with OK.
	Enter the password (factory setting: 00 00) and confirm each entry with OK.
	The current date is shown.

	Press OK to **set the year**.
	The setting flashes.
	Enter the year with the arrow buttons (any setting)
	and confirm with OK.

	Press OK to **set the month**.
	The setting flashes.
	Enter the month with arrow buttons (1 to 12)
	and confirm with OK.

	Without the optional real time clock, these settings must be repeated when the power supply is interrupted..

OK	Press OK to **set the day**.
	The setting flashes.
△ ▽	Enter the day with arrow buttons (1 to 31)
OK	and confirm with OK.

OK	Press OK to **set the hour**.
	The setting flashes.
△ ▽	Enter the hour with arrow buttons (0 to 23)
OK	and confirm with OK.

OK	Press OK to **set the minute**.
	The setting flashes.
△ ▽	Enter the minute with arrow buttons (0 to 59)
OK	and confirm with OK.

2x ⮌	Back to Normal display.

6.5 Selecting the temperature unit

You can chose between degrees Celsius °C and degrees Fahrenheit °F.

If the unit is changed, the temperature set-point and limits are converted accordingly.

Also when specifying the ramp function (see chap. 9) this setting is accordingly taken as the basis.

	C = degrees Celsius 0 °C = 31°F F= degrees Fahrenheit 100 °C = 212°F	Conversion: [Value in °F] = [Value in °C] ∗ 1.8 + 32

without fan **5x** with fan **6x** 	From Normal display with the arrow-up button to the user menu
	Confirm with OK.
	Enter the password (factory setting: 00 00) and confirm each entry with OK.
	With the arrow-up button to the **temperature unit selection** menu.
	The current temperature unit is shown.
	Press OK to select the temperature unit.
	The setting flashes.
	Select the setting with arrow buttons
	and confirm with OK.
2x 	Back to Normal display.

6.6 Set-point entry for temperature and fan speed

	From Normal display with the arrow-up button to the **Set-point entry** menu.
	The current temperature set-point is displayed.
	Press OK to enter the temperature set-point.
	The temperature set-point flashes.
	Enter the temperature set-point with arrow buttons with an accuracy of a tenth of a degree (BD, BF) or of one degree (ED, FD, FED)
	and confirm with OK.
 **or** 	Back to Normal display. with chambers with adjustable fan speed (BF, FED): go on to enter the fan speed.
	The fan speed set-point is displayed.
	Press OK to enter the fan speed
	The fan speed set-point flashes
	Adjust the fan speed in steps of 10 % with arrow buttons 40 % to 100 %
	and confirm with OK.
	Back to Normal display.

	Check and/or adjust the safety controller following any changes of the set-point (chap. 7).

6.6.1 Set-point entry for temperature in two-door chambers (ED, FD, FED 720)

With two-door chambers (ED, FD, FED 720) the maximum adjustable temperature set-point depends on the ambient temperature:

- Range from 18 °C up to 26 °C: maximum temperature set-point: 300 °C
- Range from above 26 °C up to 40 °C: maximum temperature set-point decreasing with increasing ambient temperature

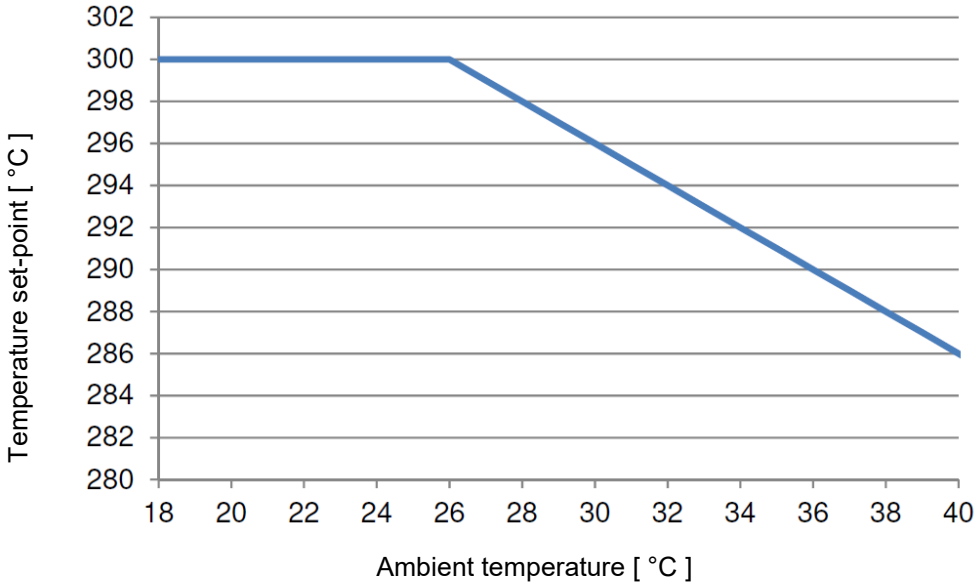


Figure 14: Maximum temperature set-point depending on the ambient temperature

Ambient temperature	Maximum temperature set-point
18 °C up to 26 °C	300 °C
28 °C	298 °C
30 °C	296 °C
32 °C	294 °C
34 °C	292 °C
36 °C	290 °C
38 °C	288 °C
40 °C	286 °C

This ensures the maximum lifetime of the controller.

6.7 Adjusting the air flap position

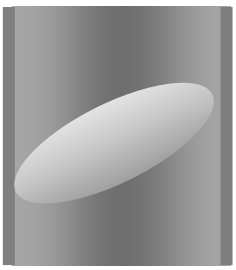
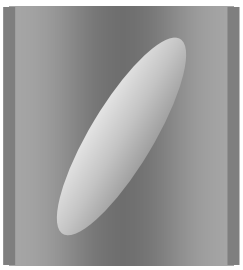
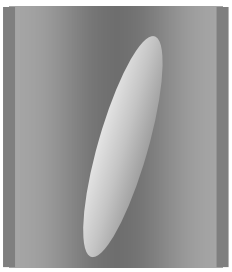
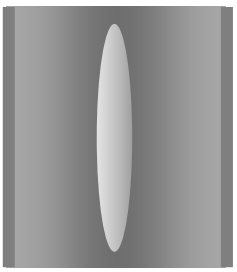
Opening the air flap in the exhaust duct serves to adjust the air change.

The position of the air flap in the exhaust duct serves to adjust the fresh air entry. With the open the air flap, fresh air can enter through the fresh air tube. For chambers with fan, fan operation will increase fresh air entry.

If the air flap is completely open, the spatial temperature accuracy can be negatively influenced.

without fan **2x** with fan **3x** 	From Normal display with the arrow-up button to the **Adjusting the air flap position** menu.
	The current air flap position is shown.
	Press OK to select the air flap position.
	The setting flashes.
	Select the position with arrow buttons
	and confirm with OK.
	Back to Normal display.

There are the following options:

Air flap closed	Air flap slightly opened	Air flap half opened	Air flap almost open	Air flap open
				
				

The setting can be done in steps of 15°.

	As part of an automatic function test, the exhaust air flap opens briefly every 24 hours.

6.8 Changing the passwords for user level and general controller functions

In this menu you can change the passwords for access to the user menu and to all controller functions.

You can set two passworts for different access levels:

L1 (level 1): The password enables access control to the user level

L2 (level 2): The password enables access control to all controller functions

Factory setting for both passwords is 00 00 (no password assigned).

As soon as a password has been assigned, access to the respective functions is blocked and only available after enering the correct password.

without fan **5x** with fan **6x** 	From Normal display with the arrow-up button to the user menu		
	Confirm with OK.		
	Enter the password (factory setting: 00 00) and confirm each entry with OK.		
2 x 	With the arrow-up button to the **password setting menu**.		
	Password **L1** for access to the user level. Confirm with OK.		
	The current password level **L1** is shown. The setting flashes. You can change beween **L1** and **L2** with arrow buttons.	  	  
	Select the setting with arrow buttons (if desired)		
	and confirm with OK.		
	The current password for the selected password level is shown. The left two digits are flashing.		
	Enter the desired numbers with arrow buttons,		
	confirm with OK and go on.		

<table>
<tr><td>  </td><td colspan="2">The right two digits of the password are flashing.</td></tr>
<tr><td>  </td><td colspan="2">Enter the desired numbers with arrow buttons</td></tr>
<tr><td>  </td><td colspan="2">and confirm with OK.</td></tr>
<tr><td rowspan="2">  </td><td colspan="2">The modified password (L1 or L2 depending on the selection) is shown (example: L1).</td></tr>
<tr><td>  </td><td>If you want to change beween L1 and L2, confirm with OK. Thereafter you can change to the other password level and also modify the password.</td></tr>
<tr><td>2x  </td><td colspan="2">Back to Normal display.</td></tr>
</table>

	Keep in mind any modification of the password. There is no access to the user menu without the correct password L1. Without the correct password L2 access control to all controller functions is blocked.

7. Overtemperature protection

7.1 Overtemperature protective device (class 1)

The chambers are regularly equipped with an overtemperature protective device (safety device class 1 acc. to DIN 12880:2007). It serves to protect the chamber, its environment and the contents against exceeding the maximum permissible temperature. When a defined temperature is reached, which is approx. by 20 °C to 30 °C above the chamber's nominal temperature, the overtemperature protective device turns off the heating.

Cut-off temperature values:

BD, BF: 120 °C

ED 260, ED 720: 320 °C

ED 56, ED 115, FD 56, FED 56: 330 °C

FD 115, FD 260, FD 720, FED 115, FED 260, FED 720: 350 °C

The message "Overtemperature" is displayed on the controller.

If the overtemperature protective device class 1 has turned off the heating, proceed as follows:

- Disconnect the chamber from the power supply for at least 10 seconds (pull the power plug).
- If appropriate, have an expert examine and rectify the cause of the fault.
- Let the chamber cool down
- Restart the chamber.

As soon as the inner chamber temperature after restart is below the defined cut-off temperature of the overtemperature protective device class 1, the alarm message is deleted automatically.

Reset temperature values:

BD, BF: 90 °C

ED 260, ED 720: 220 °C

ED 56, ED 115, FD 56, FED 56: 230 °C

FD 115, FD 260, FD 720, FED 115, FED 260, FED 720: 250 °C

7.2 Safety controller

The chambers are regularly equipped with an adjustable electronic safety controller. It serves to protect the chamber, its environment and the contents against exceeding the maximum permissible temperature. Please observe the regulations applicable to your country (for Germany: DGUV guidelines 213-850 on safe working in laboratories, issued by the employers' liability insurance association).

Depending on the chamber type the safety controller acts as an over temperature safety device class 2 ("temperature limiter") or class 3.1 ("temperature protection") acc. to DIN 12880:2007.

	Check the setting regularly and adjust it following any changes of the set-point.

- **Safety controller class 2 ("temperature limiter") with ED, FD and FED**

  The safety controller class 2 limits the temperature inside the chamber to the entered safety controller set-point. In the event of a fault (if this maximum temperature is exceeded) the safety controller completely turns off the heating until manual reset. This status is reported visually by an alarm message and, in case of the option audible alarm with activated buzzer (chap. 7.6) additionally by the buzzer sounding.

  If the safety controller class 2 has turned off the heating, we recommend proceeding as follows:

  - Disconnect the chamber from the power supply.
  - Have an expert examine and rectify the cause of the fault.
  - Restart the chamber
  - Reset the alarm message

- **Safety controller class 3.1 ("temperature protection") with BD and BF**

  The safety controller class 3.1 limits the temperature inside the chamber to the entered safety controller set-point. In the event of a fault (if this maximum temperature is exceeded), it takes over the control to this value. This status is reported visually by an alarm message and, in case of the option audible alarm with activated buzzer (chap. 7.6) additionally by the buzzer sounding.

  The safety controller keeps control of the chamber until the chamber temperature cools down below the safety controller set-point value.

  If the safety controller class 3.1 has taken over control, we recommend proceeding as follows:

  - Disconnect the chamber from the power supply.
  - Have an expert examine and rectify the cause of the fault.
  - Restart the chamber
  - Reset the alarm message

Function check:

Check the safety controller at appropriate intervals for its functionality. It is recommended that the authorized operating personnel should perform such a check, e.g., before starting a longer work procedure.

7.3 Setting the safety controller set-point

A limit temperature is entered as the safety controller set-point , i.e. the absolute maximum permitted temperature value.

Example: Temperature set-point 45 °C, safety controller set-point 50 °C.

	Regularly check the safety controller setting relating to the entered temperature set-point Set the safety controller set-point by approx. 2 °C to 5 °C above the desired temperature set-point.

without fan **4x** with fan **5x** 	From Normal display with the arrow-up button to the **Safety controller set-point setting** menu.
	The current safety controller set-point is shown (class 2 “temperature limiter” or class 3.1 “temperature protection” depending on the chamber type).
	Press OK to enter the safety controller set-point.
	The safety controller set-point flashes.
	Enter the safety controller set-point with arrow buttons: 10 °C up to 100 °C (with an accuracy of a tenth of a degree) with BD, BF 10 °C up to 300 °C (with an accuracy of one degree) with ED, FD, FED
	and confirm with OK.
	Back to Normal display.

7.4 Alarm message and proceeding in case of an alarm

The alarm icon flashes in the display. In case of the option audible alarm with activated buzzer (chap. 7.6) the buzzer sounds.

- Safety controller class 2 (“temperature limiter”)

The alarm icon flashes in the display. In case of the option audible alarm with activated buzzer (chap. 7.6) the buzzer sounds.

The heating turns off.

Resetting the alarm:

With option audible alarm with activated buzzer: Mute the buzzer pressing the OK button.

As soon as the inner chamber temperature has cooled down below the safety controller set-point, the alarm icon is lit permanently. You can reset the alarm message on the controller. To do this, reset the alarm message in the safety controller menu with the OK button. The heating is released and temperature control is resumed by the controller.

- **Safety controller class 3.1 (“temperature protection”)**

The alarm icon flashes in the display. In case of the option audible alarm with activated buzzer (chap. 7.6) the buzzer sounds.

The heating turns off.

Resetting the alarm:

With option audible alarm with activated buzzer: Mute the buzzer pressing the OK button.

As soon as the inner chamber temperature has cooled down below the safety controller set-point, You can reset the alarm message in the safety controller menu with the OK button, The heating is released and temperature control is resumed by the controller.

Note:

When the safety controller class 2 or class 3.1 had been activated, you should disconnect the chamber from the power supply and have an expert examine and rectify the cause of the fault.

7.5 Function check

Check the temperature safety device class 2 or class 3.1 at appropriate intervals for its functionality. It is recommended that the authorized operating personnel should perform such a check, e.g., before starting a longer work procedure

7.6 Disconnectable audible over-temperature alarm (option)

This option permits activating an audible signal:

If the buzzer is activated, an audible signal sounds when the limit temperature set at the safety controller is exceeded. This happens in addition to the alarm message on the controller display.

	Turning off the audible alarm does not influence the safety controller's function.

without fan **5x** with fan **6x** 	From Normal display with the arrow-up button to the user menu
	Confirm with OK.
	Enter the password (factory setting: 00 00) and confirm each entry with OK.
5 x 	With the arrow-up button to the **alarm buzzer setting** menu
	The current setting is shown.
	Press OK to select the alarm buzzer setting
	The setting flashes.
	Select the setting with arrow buttons
	and confirm with OK.
	Back to Normal display.

There are the following options

Alarm buzzer On	Alarm buzzer Off
	

8. Timer functions

8.1 Selecting the timer function

There are up to three 3 timer functions:

	**Timer function “Delayed Off”** The selected timer run-time immediately starts running down. When the timer expires the heating turns off. Chambers with fan: The fan may continue working according to the selections made.
	**Timer function “Temperature dependent Delayed Off”** The selected timer run-time only starts running down, when the actual value reached or exceeds the selected set-point. When the timer expires the heating turns off. Chambers with fan: The fan may continue working according to the selections made.
	**Timer function “Delayed On”** The selected timer run-time immediately starts running down, the heating turns off. Chambers with fan: The fan may be working according to the selections made. When the timer expires the heating turns on and remains in continuous operation.

The chambers BD, ED and FD offer the timer function “Delayed Off”

The chambers BF and FED offer all the three timer functions.

Stage	Heating	Fan (Chamber with fixed fan speed: FD)	Fan (Chambers with adjustable fan speed: BF, FED)
Timer function “Delayed Off”			
Timer running	Control to the temperature set-point	On (100 %)	Rotation speed according to fan speed set-point
After the timer expired	Off	On (100 %) or Off (0 %) acc. to selection	Rotation speed according to setting of timer function
Timer function “Temperature dependent Delayed Off”			
Possibly heating-up phase until the temperature set-point is reached	Control to the temperature set-point	---	Rotation speed according to fan speed set-point
Timer running	Control to the temperature set-point	---	Rotation speed according to fan speed set-point
After the timer expired	Off	---	Rotation speed according to setting of timer function
Timer function “Delayed On”			
Timer running	Off	---	Rotation speed according to setting of timer function
After the timer expired	Control to the temperature set-point	---	Rotation speed according to fan speed set-point

General information on the setting:

In the setting menus of the timer functions, it is always required to confirm ***all*** parameters with OK, otherwise all entries made will be lost.

Timer run-time is set in days, hours, and minutes. If days have been entered, they are shown in the controller display preceded by an underscore:

	Setting: 0 days (not shown), 10 hours, 30 minutes
	Setting: 2 days, 10 hours (minutes not shown)

8.2 Timer function “Delayed Off”

8.2.1 Entry and activation of the timer run-time and fan setting

	From Normal display with the arrow-down button to the **Timer function “Delayed Off”** menu (with connected USB device: press the arrow-down button twice)
	Current Timer function “Delayed Off”
	Confirm with OK and go on to enter the **days of the timer run-time**.
	The current timer run-time (days) is shown. The day value flashes.
	Enter the days of the timer run-time (0 up to 9)
	confirm with OK and go on to enter the **hours of the timer run-time**
	The hour value flashes.
	Enter the hours of the timer run-time (0 up to 23)
	confirm with OK and go on to enter the **minutes of the timer run-time**

	The minute value flashes.
	Enter the minutes of the timer run-time (0 up to 59)
	and confirm with OK.

Chambers without fan (BD, ED):	
	The timer function “Delayed Off” is activated
	Back to Normal display.

Chamber with fixed fan speed (FD): Select whether the fan shall operate or not after the timer has expired	
	The current setting of the fan operation is shown
	Select fan operation: On (100 %) or Off (0 %)
	and confirm with OK.
	The timer function “Delayed Off” is activated
	Back to Normal display.

Chambers with adjustable fan speed (BF, FED): Enter the fan speed set-point valid for the time after the timer has expired.	
	The current fan speed set-point is shown
	Enter the fan speed in steps of 10 % 0 % and 40 % up to 100 %
	and confirm with OK.
	The timer function “Delayed Off” is activated
	Back to Normal display.

Normal display during timer operation with timer function „Delayed Off“

	The timer run-time until turning off the heating is running down.

Normal display after the timer has expired:

	**Chambers without fan (BD, ED):** Timer function “Delayed Off”. The timer has expired. The heating is off.
	**Chamber with fixed fan speed (FD):** Timer function “Delayed Off”. The timer has expired. The heating is off. The fan is operating (On) or not (Off), as selected
	**Chambers with adjustable fan speed (BF, FED):** Timer function “Delayed Off”. The timer has expired. The heating is off. The fan operates with the selected fan speed.

When the timer has expired, the heating is off. The chamber cools down to ambient temperature.

To restart the chamber you need to turn off the timer function (chap. 8.2.2)

8.2.2 Turning off the timer function or changing the settings

To turn off the timer function “Delayed Off” during the time when it is still running, set all time values (days, hours, minutes) to zero in the according menu (terminating the timer function). As long as the timer is running, the timer function settings can be subsequently modified in this menu.

After the timer expired you can turn off the timer function by pressing the OK button. Alternatively you can also set the time to zero in the according menu.

Turning off the timer function when the timer has expired

In Normal display press the OK button.

Alternatively you can set the time to zero:

	From Normal display with the arrow-down button to the **Timer function "Delayed Off"** menu (with connected USB device: press the arrow-down button twice)
 or  or 	**Chambers without fan (BD, ED):** Timer function "Delayed Off", the timer has expired. The heating is off. **Chamber with fixed fan speed (FD):** Timer function "Delayed Off", the timer has expired. The heating is off. The fan is operating (On) or not (Off), as selected **Chambers with adjustable fan speed (BF, FED):** Timer function "Delayed Off", the timer has expired. The heating is off. The fan operates with the selected fan speed.
	Confirm the timer function "Delayed Off" with OK
see chap. 8.2.1	Set all time values to zero
2x 	Back to Normal display.

Changing or terminating the timer function when the timer is running:

	From Normal display with the arrow-down button to the **Timer function "Delayed Off"** menu (with connected USB device: press the arrow-down button twice)
 or  or 	**Chambers without fan (BD, ED):** Timer function „Delayed Off", the timer is running. **Chamber with fixed fan speed (FD):** Timer function "Delayed Off", the timer is running. **Chambers with adjustable fan speed (BF, FED):** Timer function "Delayed Off", the timer is running.
	Confirm the timer function "Delayed Off" with OK
see chap. 8.2.1	Modify the time values or set them to zero to terminate the timer function
2x 	Back to Normal display.

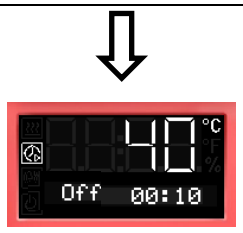
8.3 Timer function “Temperature dependent Delayed Off” (BF, FED)

8.3.1 Entry and activation of the timer run-time, fan setting and set-point entry

3 x 	From Normal display with the arrow-down button to the **Timer function “Temperature dependent Delayed Off”** menu (with connected USB device: press the arrow-down button 4 times)
	Current Timer function “Temperature dependent Delayed Off”
	Confirm with OK and go on to enter the **days of the timer run-time**.
	The current timer run-time (days) is shown. The day value flashes.
	Enter the days of the timer run-time (0 up to 9)
	confirm with OK and go on to enter the **hours of the timer run-time**
	The hour value flashes.
	Enter the hours of the timer run-time (0 up to 23)
	confirm with OK and go on to enter the **minutes of the timer run-time**
	The minute value flashes.
	Enter the minutes of the timer run-time (0 up to 59)
	confirm with OK and go on to enter the **temperature set-point**

	The temperature set-point flashes. When the set-point is reached, the timer starts running down.
	Enter the temperature set-point,
	confirm with OK and go on to enter the fan speed set-point valid for the time after the timer has expired
	The current fan speed is shown
	Enter the fan speed in steps of 10 % 0 % and 40 % up to 100 %
	and confirm with OK.
	The timer function “Temperature dependent Delayed Off” is activated
	Back to Normal display.

Normal display during timer operation with timer function „Temperature dependent Delayed Off“

	Normal display while the timer is running If the entered set-point exceeds the current actual value, the chamber heats up.
	The defined time only begins to run when the current value is by 1 °C below the set point. After the defined time has expired, the heating is turned off. Normal display during the timer run-time. The timer run-time until turning off the heating (and possibly the fan) is running.

Normal display after the timer has expired:

	Timer function “Temperature dependent Delayed Off”. The timer has expired. The heating is off. The fan operates with the selected fan speed.

When the timer has expired, the heating is off. The chamber cools down to ambient temperature.

To restart the chamber you need to turn off the timer function (chap. 8.3.2).

8.3.2 Turning off the timer function or changing the settings

To turn off the timer function “Temperature dependent Delayed Off” during the time when it is still running, set all time values (days, hours, minutes) to zero in the according menu (terminating the timer function). As long as the timer is running, the timer function settings can be subsequently modified in this menu.

After the timer expired you can turn off the timer function by pressing the OK button. Alternatively you can also set the time to zero in the according menu.

Turning off the timer function when the timer has expired

In Normal display press the OK button.

Alternatively you can set the time to zero:

3 x 	From Normal display with the arrow-down button to the **Timer function “Temperature dependent Delayed Off”** menu (with connected USB device: press the arrow-down button 4 times)
	Timer function “Temperature dependent Delayed Off”, the timer has expired
	Confirm the timer function “Temperature dependent Delayed Off” with OK
see chap. 8.3.1	Set all time values to zero
	Back to Normal display

Changing or terminating the timer function when the timer is running:

3 x 	From Normal display with the arrow-down button to the **Timer function “Temperature dependent Delayed Off”** menu (with connected USB device: press the arrow-down button 4 times)
	Timer function “Temperature dependent Delayed Off”, the timer is running
	Confirm the timer function “Temperature dependent Delayed Off” with OK
see chap. 8.3.1	Modify the time values or set all time values to zero to terminate the timer function
	Back to Normal display

8.4 Timer function “Delayed On” (BF, FED)

8.4.1 Entry and activation of the timer run-time and fan setting

2 x ▽	From Normal display with the arrow-down button to the **Timer function “Delayed On”** menu (with connected USB device: press the arrow-down button 3 times)
	Current timer function “Delayed On”
OK	Confirm with OK and go on to enter the **fan speed set-point** valid during the time the timer is running
	The current fan speed set-point is shown
△ ▽	Enter the fan speed in steps of 10 % 0 % and 40 % up to 100 %
OK	Confirm with OK and go on to enter the **days of the timer run-time**.
	The current timer run-time (days) is shown. The day value flashes.
△ ▽	Enter the days of the timer run-time (0 up to 9)
OK	confirm with OK and go on to enter the **hours of the timer run-time**
	The hour value flashes.
△ ▽	Enter the hours of the timer run-time (0 up to 23),
OK	confirm with OK and go on to enter the **minutes of the timer run-time**

	The minute value flashes.
	Enter the minutes of the timer run-time (0 up to 59)
	confirm with OK and go on to **enter the temperature set-point**
	The temperature set-point flashes.
	Enter the temperature set-point,
	confirm with OK and go on to enter the fan speed set-point valid for the time after the timer has expired
	The current fan speed set-point is shown
	Enter the fan speed in steps of 10 % - 0 % and 40 % up to 100 %
	and confirm with OK.
	The timer function “Delayed On” is activated
2x 	Back to Normal display.

Normal display during timer operation with timer function “Delayed On”

	The Timer run-time until turning on the heating is running. Timer function “Delayed On”. The heating is off, temperature approximates ambient temperature.

Normal display after the timer has expired:

	The timer has expired. The time function is off. The heating is active to equilibrate the temperature set-point. The fan operates with the selected fan speed.

8.4.2 Changing the settings

After the timer expired, the timer function „Delayed On“ deactivates, therefore turning the function off is not required.

As long as the timer is still running, the timer function settings can be subsequently modified in this menu.

To terminate the timer function, all time values (days, hours, minutes) must be set to zero in the according menu.

Changing or terminating the timer function when the timer is running:

 **2 x** 	From Normal display during timer operation with the arrow-down button to the **Timer function “Delayed On”** menu. (with connected USB device: press the arrow-down button 3 times)
	Timer function “Delayed On”, the timer is running. The fan operates with the selected fan speed.
	Confirm the timer function “Delayed On” with OK
see chap. 8.4.1	Modify the time values or set all time values to zero to terminate the timer function
2x 	Back to Normal display.

8.5 Temperature programming example (BF, FED)

The chamber shall heat up to a temperature of 50 °C, maintain this temperature for three hours and then turn off.

Proceeding: Select timer function “Temperature dependent Delayed Off“ (chap. 8.3) and perform the following settings:

- Enter a timer run-time of 3 hours
- Enter the set point 50 °C
- Specify the fan speed after the timer expires

9. Ramp function

9.1 General information

You can program temperature ramps in order to extend heating up times. This may be necessary in some cases to prevent temperature stress in the material during the heating up phase. Temperature ramps should only be used if required. Using them may result in considerably slowing down the heating up times. When the ramp function is turned off, the chamber will heat up with its maximum heating capacity.

The entry means the nominal value gradient and limits the maximum temperature increase to this value. Due to the heat and evaporation energy assumed by the drying material, smaller temperature gradients may also result.

A ramp proceeds from a previously entered set-point to a new, higher one. The temperature must be equilibrated to the start set-point. Perform the setting in the following 3 steps:

1. Enter the temperature set-point as **start ramp set-point** and let the temperature equilibrate to this value
2. Define the temperature increase (**ramp gradient**) in °C/min or in °F/min in the setting menu “Ramp function”

   You can select a gradient from „0.0“ up to „1.0“ or from „1“ up to „10“ according to the chamber type.

   When setting the gradient to „0.0“ or „0“, ramp function is turned off. The chamber will then heat up with its maximum heating capacity.

   The chamber will try to heat up according to the entered gradient, i.e. with a speed of xx degree per minute. A heating-up rate of 0.4 °C/min for the incubators BD and BF resp. 4 °C/min for the heating and drying ovens ED, FD and FED can be regarded as a realistic maximum.
3. Enter the **target ramp set-point** in the “ramp function” setting menu.

As soon as the entries have been adopted, the ramp function is activated. The chamber heats up with the entered gradient, if the set ramp target value lies above the actual temperature value.

During ramp operation the **effective ramp set-point** continually rises in accordance to the entered gradient from the previously entered set-point to the new one. The actual value follows this continually changing effective ramp set-point. As soon as the ramp target value is reached, this temperature is maintained constant.

The actual temperature value, the selected gradient, and the target value are shown in Normal display. The effective ramp set-point can be seen through the temperature set-point function.

9.2 Setting and displaying the ramp function

without fan **3x** with fan **4x** 	From Normal display with the arrow-up button to the **Ramp function** menu.
	Ramp function (not programmed)
	Press OK to enter the **gradient** in degree per minute.
	The gradient flashes.
	Enter the gradient (0 up to 9)
	confirm with OK and go on toenter the **target ramp set-point**
	The target ramp set-point value flashes.
	Enter the target ramp set-point
	and confirm with OK.
	Selected ramp with gradient 1 and target ramp set-point 40 °C (example)
	Back to Normal display.
	Normal display showing the actual temperature, the gradient and the target ramp set-point (example: 40 °C)

Temperature course with ramp function

9.3 Displaying the effective ramp set-point and changing the target ramp set-point

 	From Normal display showing the actual temperature (example: 27 °C), the gradient (example: 1) and the target ramp set-point (example: 40 °C) to the display of the effective ramp set-point
	The effective ramp set-point is displayed
	Press OK to set the target ramp set-point
	The target ramp set-point value flashes.
	Enter the target ramp set-point
	and confirm with OK.
	The effective ramp set-point is displayed
2x 	Back to Normal display.
	Normal display showing the actual temperature, the gradient and the modified target ramp set-point (example: 50 °C)

9.4 Turning off the ramp function

To turn off the ramp function, the gradient must be set to zero in the according menu. The set-point can be entered as desired.

without fan **3x** with fan **4x** 	From Normal display with the arrow-up button to the **Ramp function** menu
	Ramp function with programmed gradient and target ramp set-point
	Press OK to enter the gradient in degree per minute.
	The gradient flashes.
	Enter the gradient zero (turning off the ramp function)
	confirm with OK and go on to the ramp target value
	The target ramp set-point value flashes.
	Enter the target ramp set-point
	and confirm with OK.
	Ramp function (not programmed)
	Back to Normal display.
	Normal display showing the actual temperature, the gradient and the target ramp set-point (example: 40 °C)
2x 	Back to Normal display.

Instead of turning off the ramp function (gradient = 0), you can also modify the settings of the gradient and target ramp set-point in this menu.

10. Data recording via USB interface

The USB interface located in the triangular instrument panel serves to read out the measured values, which are put out in real time. Following data is recorded: Timer, actual temperature value, temperature set-point, Object temperature sensor (chambers with option Object temperature display), Fan (chambers with fan), air flap position, safety controller, analog output (option), heating regulation ratio.

	Connect only USB sticks to the USB interface.

Data are stored directly on the USB stick. They are issued in the selected language as a spreadsheet with the file extension ".csv" and can be further processed in the desired program.

10.1 Starting data recording

Connect the USB stick to the interface located in the triangular instrument panel.

	From Normal display with the arrow-down button to the **USB** menu
	Current state of data recording: stopped
	Confirm with OK.

Chambers without the real time clock option do not save date and time after shut-down. To make sure that recorded data is provided with the correct date and time, with these chambers it is required to enter date and time first :

	The current date is displayed. For setting, proceed as described in chap. 6.4.

After entry of the minute and confirmation with OK, further setting in the USB menu continues.

	The data recording interval flashes.
	Enter the interval in minutes
	and confirm with OK.
	The current state of data recording (stopped) flashes.
	Change to start data recording.

	The current state of data recording (started) flashes
	Confirm with OK.
	Data recording is running.
	Back to Normal display.

Data recording continues also during stand-by mode of the chamber. Disconnecting the power supply interrupts data recording, which continues after the power returns. To terminate data recording, stop it via the menu (chap. 10.2).

10.2 Terminating data recording

	From Normal display with the arrow-down button to the **USB** menu
	Current state of data recording: running
	Confirm with OK.
	The current state of data recording (running) flashes
	Change to stop data recording
	The current state of data recording (stopped) flashes
	Confirm with OK.
	Data recording is stopped.
	Back to Normal display.

11. Network configuration for chambers with Ethernet interface

The settings of this submenu are used for networking chambers with an Ethernet interface, e.g. to connect them with BINDER's APT-COM™ 4 Multi Management Software (accessory, chap. 12.1).

This menu subsequently offers the following settings:

- Display of the chamber's **MAC address** (no setting)
- Switching on and off the **DHCP state**
- Entering the **IP address**
- Entering the **subnet** mask number
- Entering the **gateway** number

without fan **5x** with fan **6x** 	From Normal display with the arrow-up button to the user menu
	Confirm with OK.
	Enter the password (factory setting: 00 00) and confirm each entry with OK.
5 x 	with the arrow-up button to the **Ethernet** menu.
	Confirm with OK.
	The first digits of the **MAC address** are shown.
	Continue with OK. The middle digits of the **MAC address** are shown.
	Continue with OK. The last digits of the **MAC address** are shown.

Displaying the chamber's MAC address serves to identify the chamber in the Ethernet network.

Example: **00-0F-67-0F-42-40**

00-0F	67-0F	42-40
		

	Continue with OK to **switching on and off the DHCP state**
	The current DHCP state is displayed (on). The setting flashes.
	Select the setting with the arrow buttons.

There are the following options:

DHCP switched on:	DHCP switched off:
	

To configure the network settings, the DHCP state must be switched off. Otherwise, the DHCP-server would assign the network configuration..

	Confirm with OK and go on to enter the **IP address**.
	The first digits of the current IP address are shown. The setting flashes.
	Enter the desired values with the arrow buttons
	and confirm with OK. The next digits of the IP address are shown. Enter the desired values accordingly.

Example value: 0.0.0.0

0	0	0	0
			

OK	Confirm with OK and go on to enter the **subnet mask**.
	The first digits of the current subnet mask are shown. The setting flashes.
△ ▽	Enter the desired values with the arrow buttons
OK	and confirm with OK. The next digits of the subnet mask are shown. Enter the desired values accordingly.

Example value: 255.255.255.0

255	255	255	0
			
Subnet_HH	Subnet_H	Subnet_L	Subnet_LL

OK	Confirm with OK and go on to enter the **gateway**.
	The first digits of the current gateway are shown. The setting flashes.
△ ▽	Enter the desired values with the arrow buttons
OK	and confirm with OK. The next digits of the gateway are shown. Enter the desired values accordingly.

Example value: 0.0.0.0

0	0	0	0
			
GatWay_HH	GatWay_H	GatWay_L	GatWay_LL

OK	Confirm with OK.
2x ⮌	Back to Normal display.

	If the IP settings have been changed, disconnect the power plug for at least 10 seconds so that the settings are adopted.

12. Options and accessories

12.1 APT-COM™ 4 Multi Management Software (accessory)

The chamber is regularly (FED) or optionally equipped with an Ethernet interface on the chamber rear that can connect the BINDER APT-COM™ 4 Multi Management Software. The actual temperature value is given at adjustable intervals. Programming can be performed graphically via PC. Up to 100 chambers can be cross-linked. The MAC Address is indicated in the **Ethernet** menu (chap. 11). For further information, please refer to the APT-COM™ 4 operating manual.

To establish a connection via the chamber's Ethernet interface, the chamber must be turned off.

12.2 Object temperature display with additional Pt100 temperature sensor (option)

With this option an additional flexible temperature sensor Pt100 measures the chamber temperature or the temperature of the charging material which is shown on the controller. The sensor-top protective tube of the flexible Pt100 can be immersed into liquid substances.

The object temperature display enables the determination of the actual temperature of the charging material during the whole process. The object temperature is displayed in the controller in Normal Display.

	Chamber with option object temperature display: Actual temperature value and actual object temperature value

Technical data of thePt100 sensor:

- Three-wire technique
- Class B (DIN EN 60751)
- Temperature range up to 320 °C / *608 °F*
- Stainless steel protective tube 45 mm length, material no. 1.4501

12.3 Analog output for temperature (option)

With this option the chamber is equipped with an analog output 4-20 mA for temperature. This output permits transmitting data to external data registration systems or devices.

The connection is carried out as a DIN socket at the rear of the chamber as follows:

ANALOG OUTPUT 4-20 mA DC

PIN 1: Temperature –
PIN 2: Temperature +

Temperature range:

BD, BF: 0 °C / *32 °F* to +100 °C / *212 °F*
ED, FD, FED: 0 °C / *32 °F* to +300 °C / *572 °F*
A suitable DIN plug is enclosed.

Figure 15: Pin allocation of DIN socket for option analog outputs

12.4 HEPA fresh air filter (option for FD, FED)

With this option, the introduced fresh air is cleaned by means of a high efficiency submicron particulate air filter type HEPA class H 14 (acc. to DIN EN 1822:2009). Replace the filter insert, if necessary, by removing the metal cover of the filter at the left side of the chamber (Art. No. 6014-0003).

12.5 Mostly gas-tight version (option for BF, FD, FED)

With this option the chamber is additionally sealed, so the loss when introducing gases is decreased. The chamber is not completely gas-tight, so it is impossible to establish overpressure. The sealing diminishes the release of vapors via the housing that may be set free from the charging material when heated. Carrying-off via the regular evacuation duct, e.g. into a waste air installation, is likely to further reduce emissions.

	The chamber is not completely gas-tight. Gases from inside the chamber can escape into the surrounding atmosphere. Observe the occupational exposure limit OEL for the released substance set by the national authorities (formerly maximum permitted workplace concentration). Respect the relevant regulations. Any harmful gas that might escape has to be led out via good room ventilation or a suitable exhaust system. Place the chamber, if necessary, below a gas vent.

The air flap does not close the exhaust duct completely. The delivered plug serves to avoid emerging of vapors or loss of introduced inert gas, if any, via the exhaust duct. Due to special demands of heat resistance, use the delivered plug only.

	***NOTICE*** **Danger of inflammation when using an inappropriate plug.** **Damage to the chamber and ist surroundings.** ➢ Use ONLY the supplied plug to close the exhaust duct.

For drying purpose, please remove the plug in order to permit dissipation of the generated vapor, which would lead to condensation in the inner chamber.

12.6 Inert gas connection with mostly gas-tight version (option for BF, FD, FED)

With this option the chamber is additionally sealed, so the loss when introducing inert gases is decreased. For details on the mostly gas-tight version please refer to chap. 12.5.

The chamber is equipped with two ports for inert gas (nitrogen or noble gases).

The ports are located **on the top panel in the middle** and **on the chamber rear at the bottom right**. Each of these ports can be used as inlet or outlet, depending on the nature of the inert gas:

- lighter gas (nitrogen, helium): lower port as inlet
- heavy gas (e.g. argon): upper port as inlet

This distinction is important when operating with a reduced fan speed.

Connection

Observe the legal requirements and relevant standards and regulations for the safe handling of gas cylinders and inert gases.

	General information for safe handling of gas cylinders: • Store and use gas cylinders only in well ventilated areas. • Open the gas cylinder valve slowly to avoid pressure surges • Secure gas cylinders during storage and use against falling (chaining). • Transport gas cylinders with a cylinder cart, do not carry, roll, or throw them • Always close the valve even with apparently empty cylinders; screw on the cap when not in use. Return gas cylinders with the valve closed • Do not open gas cylinders by force. Mark them when damaged • Observe relevant regulations for dealing with gas cylinders.

Connect a flexible gas tube to the gas hose connection adapter (diameter 10mm), which is used for gas inlet, and secure it with hose clamps (hose and hose clamps are not enclosed). There is a constant gas flow after establishing the connection.

	After connecting the gas cylinder, check all gas connections for leaks (e.g. with leak spray or diluted soap solution).

Use a pressure reducer and make sure to avoid any excessive outlet pressure when connecting the gas hose to the chamber.

	The chamber is not entirely gas-tight. Inert gases from inside the chamber can escape into the surrounding atmosphere.

Inert gases in high concentrations is hazardous to health. They are colorless and almost odorless and therefore practically imperceptible. Inhalation of inert gases can cause drowsiness up to respiratory arrest. When the O_2 content of the air decreases below 18%, there is risk of death from lack of oxygen. Any gas that might escape has to be led out via good room ventilation or a suitable exhaust system.

	**DANGER** **Risk of suffocation through high concentration of inert gas.** **Death by suffocation.** ∅ Do NOT set up chambers in non-ventilated recesses. ➢ Ensure technical ventilation measures. ➢ Observe the relevant regulations for handling inert gases. ➢ Close the gas supply when decommissioning the chamber.

	Inert gases, which are heavier than air, may accumulate in low-lying areas of the installation site.

The “Mostly gas-tight version” reduces the loss of gas.

Setting (sample values):

If you want to flush the chamber with an air exchange rate of 1 per hour, set the flow rate on the pressure reducer according to the interior volume.

Chamber with 56 l internal volume: The flow rate corresponding to 56 l / h is 0.9 l / min.

Chamber with 115 l internal volume: The flow rate corresponding to 115 l / h is 1.9 l / min.

Chamber with 260 l internal volume: The flow rate corresponding to 260 l / h is 4.3 l / min.

The air flap does not close the exhaust duct completely. The delivered plug serves to avoid loss of introduced inert gas via the exhaust duct. Due to special demands of heat resistance, use the delivered plug only.

	***NOTICE*** **Danger of inflammation when using an inappropriate plug.** **Damage to the chamber and ist surroundings.** ➢ Use ONLY the supplied plug to close the exhaust duct.

For drying purpose, please remove the plug in order to permit dissipation of the generated vapor, which would lead to condensation in the inner chamber.

13. Cleaning and decontamination

Clean the chamber after each use in order to prevent potential corrosion damage by ingredients of the loading material.

Prior to renewed startup, allow the chamber to completely dry after all cleaning and decontamination measures.

DANGER

Electrical hazard by water entering the chamber.

Deadly electric shock.

∅ Do NOT spill water or cleaning agents over the inner and outer chamber surfaces.

∅ Do NOT put ANY cleaning aids (cloth or brush) into slots or openings on the chamber.

➢ Before cleaning, turn off the chamber at the main power switch (ED, FD, FED size 720) and disconnect the power plug. Let the chamber cool down to ambient temperature.

➢ Completely dry the chamber before turning it on again.

13.1 Cleaning

Disconnect the chamber from the power supply before cleaning. Disconnect the power plug.

	The interior of the chamber must be kept clean. Thoroughly remove any residues of the charging material

Wipe the surfaces with a moistened towel. In addition, you can use the following cleaning agents:

Exterior surfaces inner chamber racks door gaskets	Standard commercial cleaning detergents free from acid or halides. Alcohol-based solutions. We recommend using the neutral cleaning agent Art. No. 1002-0016.
Instrument panel	Standard commercial cleaning detergents free from acid or halides. We recommend using the neutral cleaning agent Art. No. 1002-0016.
Zinc coated hinge parts rear chamber wall	Standard commercial cleaning detergents free from acid or halides. Do NOT use a neutral cleaning agent on zinc coated surfaces.

Do not use cleaning agents that may cause a hazard due to reaction with components of the device or the charging material. If there is doubt regarding the suitability of cleaning products, please contact BINDER service.

	We recommend using the neutral cleaning agent Art. No. 1002-0016 for a thorough cleaning. Any corrosive damage that may arise following use of other cleaning agents is excluded from liability by BINDER GmbH. Any corrosive damage caused by a lack of cleaning, is excluded from liability by BINDER GmbH.

NOTICE

Danger of corrosion by using unsuitable cleaners.

Damage to the chamber.

∅ Do NOT use acidic or chlorine cleaning detergents.

∅ Do NOT use a neutral cleaning agent on other kind of surfaces e.g., the zinc coated hinge parts or the rear chamber wall.

For surface protection, perform cleaning as quickly as possible.

After cleaning completely remove cleaning agents from the surfaces with a moistened towel. Let the chamber dry.

Soapsuds may contain chlorides and must therefore NOT be used for cleaning.

With every decontamination method, always use adequate personal safety controls.

Following cleaning, leave the chamber door open or remove the plugs of the optional access port.

The neutral cleaning agent may cause health problems in contact with skin and if ingested. Follow the operating instructions and safety hints labeled on the bottle of the neutral cleaning agent.

Recommended precautions: To protect the eyes use sealed protective goggles. Wear gloves. Suitable protective gloves in full contact with media: butyl or nitrile rubber, penetration time >480 minutes.

CAUTION

Danger of chemical burns through contact with skin or ingestion of the neutral cleaning agent.

Skin and eye damage. Environmental damage.

∅ Do not ingest the neutral cleaning agent. Keep it away from food and beverages.

∅ Do NOT empty the neutral cleaning agent into drains.

➢ Wear protective gloves and goggles.

➢ Avoid skin contact with the neutral cleaning agent.

13.2 Decontamination / chemical disinfection

The operator must ensure that proper decontamination is performed in case a contamination of the chamber by hazardous substances has occurred.

Disconnect the chamber from the power supply prior to decontamination. Pull the power plug.

Do not use decontamination agents that may cause a hazard due to reaction with components of the device or the charging material. If there is doubt regarding the suitability of cleaning products, please contact BINDER service.

You can use the following disinfectants:

Inner chamber	Standard commercial surface disinfectants free from acid or halides. Alcohol-based solutions. We recommend using the disinfectant spray Art. No. 1002-0022.

☞	For chemical disinfection, we recommend using the disinfectant spray Art. No. 1002-0022. Any corrosive damage that may arise following use of other disinfectants is excluded from liability by BINDER GmbH.

☞	With every decontamination / disinfection method, always use adequate personal safety controls.

In case of impurity of the interior with biological or chemical hazardous material, there are three possible procedures depending on the type of contamination and of the charging material.

1. The drying and heating ovens ED, FD and FED can be hot air sterilized at 190 °C / *374 °F* for at least 30 minutes. All inflammable goods must be removed from the interior before. With the incubators BD and BF it is possible to perform a hot-air disinfection at 100 °C / *212 °F*.
2. Spray the inner chamber with an appropriate disinfectant.

   Before start-up, the chamber must be absolute dry and ventilated, because explosive gases may form during the decontamination process.
3. BD, ED: If necessary, have strongly contaminated inner chamber parts removed by an engineer for cleaning, or have them exchanged. Sterilize the inner chamber parts in a sterilizer or autoclave. You can also remove and sterilize the racks.

	In case of eye contact, the disinfectant spray may cause eye damage due to chemical burns. Follow the operating instructions and safety hints labeled on the bottle of the disinfectant spray.

Recommended precautions: To protect the eyes use sealed protective goggles.

	**CAUTION** **Danger of chemical burns through eye contact with the disinfectant spray.** **Eye damage. Environmental damage** ∅ Do NOT empty the disinfectant into drains. ➢ Wear protective goggles.

☞	After using the disinfectant spray, allow the chamber to dry thoroughly, and aerate it sufficiently.

14. Maintenance and service, troubleshooting, repair, testing

14.1 General information, personnel qualification

- **Maintenance**

  See chap. 14.2.

- **Simple troubleshooting**

  Chap. 14.3 describes troubleshooting by operating personnel. It does not require technical intervention into the chamber, nor disassembly of chamber parts.

  For personnel requirements please refer to chap. 1.1.

- **Detailed troubleshooting**

  If errors cannot be identified with simple troubleshooting, further troubleshooting must be performed by BINDER Service or by BINDER qualified service partners or technicians, in accordance with the description in the Service Manual.

  For personnel requirements please refer to the Service Manual.

- **Repair**

  Repair of the chamber can be performed by BINDER Service or by BINDER qualified service partners or technicians, in accordance with the description in the Service Manual.

  After maintenance, the chamber must be tested prior to resuming operation.

- **Electrical testing**

  To prevent the risk of electrical shock from the electrical equipment of the chamber, an annual repeat inspection as well as a test prior to initial startup and prior to resuming operation after maintenance or repair, are required. This test must meet the requirements of the competent public authorities. We recommend testing under EN 50678/VDE 0701 and EN 50699/VDE 0702 in accordance with the details in the Service Manual.

  For personnel requirements please refer to the Service Manual.

14.2 Maintenance intervals, service

DANGER

Electrical hazard during live maintenance work.

Deadly electric shock.

∅ The chamber must NOT become wet during operation or maintenance works.

∅ Do NOT remove the rear panel of the chamber.

➢ Disconnect the chamber before conducting maintenance work. Turn off the main power switch (ED, FD, FED size 720) and pull the power plug.

➢ Make sure that all maintenance work will be conducted by licensed electricians or experts authorized by BINDER.

Ensure regular maintenance work is performed at least once a year.

The warranty becomes void if maintenance work is conducted by non-authorized personnel.

Replace the door gasket only when cold. Otherwise, the door gasket may become damaged.

We recommend taking out a maintenance agreement. Please consult BINDER Service.

BINDER telephone hotline:	+49 (0) 7462 2005 555
BINDER fax hotline:	+49 (0) 7462 2005 93555
BINDER service hotline USA:	+1 866 885 9794 or +1 631 224 4340 x3 (toll-free in the USA)
BINDER service hotline Asia Pacific:	+852 390 705 04 or +852 390 705 03
BINDER Internet website	http://www.binder-world.com
BINDER address	BINDER GmbH, post office box 102, D-78502 Tuttlingen

International customers, please contact your local BINDER distributor.

14.3 Simple troubleshooting

Defects and shortcomings can compromise the operational safety of the chamber and can lead to risks and damage to equipment and persons. If there are is a technical fault or shortcoming, take the chamber out of operation and inform BINDER Service. If you are not sure whether there is a technical fault, proceed according to the following list. If you cannot clearly identify an error or there is a technical fault, please contact BINDER Service.

Only qualified service personnel authorized by BINDER must perform repair.
Repaired chambers must comply with the BINDER quality standards.

Fault description	Possible cause	Required measures
General		
Chamber without function.	No power supply.	Check connection to power supply.
		ED, FD, FED size 720: Check whether the chamber is turned on at the main power switch.
	Wrong voltage.	Check power supply for correct voltage (chap. 4.2).
	Chamber fuse has responded.	Check chamber fuse and replace it if appropriate (chap. 16.3). If it responds again, contact BINDER service.
	Defective controller.	Contact BINDER service.
	Overtemperature protective device class 1 has turned off the chamber.	Disconnect the chamber from the power supply for at least 10 seconds and let it cool down. If the device responds again, contact BINDER service
Chamber without function, the standby icon is displayed.	Chamber in standby mode.	Press down the standby button until the display lights up.
Temperature		
Set-point temperature is not reached after specified time.	Chamber door not properly closed.	Completely close chamber door.
	Defective door gasket.	Replace door gasket,
	Controller not adjusted.	Calibrate and adjust controller.
	Wrong voltage.	Check the power supply for correct voltage (chap. 4.2).
Chamber heating permanently, set-point not held.	Defective controller.	Contact BINDER service.
	Defective Pt 100 sensor.	
	Defective semiconductor relay.	
	Controller not adjusted.	Calibrate and adjust controller.

Fault description	Possible cause	Required measures
Temperature (continued)		
Chamber doesn't heat up. Heating icon is displayed.	Defective heating element.	Contact BINDER service.
	Defective semiconductor relay.	
Chamber doesn't heat up. No heating icon in the display. Controller display working.	Timer run off.	Re-program the timer or turn it off.
	Defective semiconductor relay.	Contact BINDER service.
	Defective controller.	
BD, BF: Alarm message "!TProt" is displayed	Safety device class 3.1 has responded.	Check the settings of the temperature set-point and of the safety device class 3.1 (chap. 7.3).
ED, FD, FED: Chamber without function. Alarm message "!TLim" is displayed	Safety device class 2 has turned off the chamber.	Let cool down the chamber. Check the settings of the temperature set-point and of the safety device class 2 (chap. 7.3). If appropriate, select suitable limit value.
	Defective safety device class 2.	Contact BINDER service.
Deviations from the indicated heating-up times.	Chamber fully loaded.	Load the chamber less or consider longer heating-up times.
Controller		
Message „1999" in the controller display	Sensor rupture between sensor and controller.	Contact BINDER service.
Fault description	**Possible cause**	**Required measures**
Miscellaneous		
BF, FD, FED: The fan doesn't turn or turns too slowly.	*BF, FED:* Fan speed set too low	*BF, FED:* Set fan speed to 100%
	Defective fan.	Contact BINDER service.

14.4 Sending the chamber back to BINDER GmbH

If you return a BINDER product to us for repair or any other reason, we will only accept the product upon presentation of an **authorization number** (RMA number) that has previously been issued to you. An authorization number will be issued after receiving your complaint either in writing or by telephone **prior** to your sending the BINDER product back to us. The authorization number will be issued following receipt of the information below:

- BINDER product type and serial number
- Date of purchase
- Name and address of the dealer from which you bought the BINDER product
- Exact description of the defect or fault
- Complete address, contact person and availability of that person
- Exact location of the BINDER product in your facility
- A contamination clearance certificate (chap. 18) must be faxed in advance

The authorization number must be applied to the packaging in such a way that it can be easily recognized or be recorded clearly in the delivery documents.

For safety reasons we cannot accept a chamber delivery if it does not carry an authorization number.

Return address: BINDER GmbH, Abteilung Service
Gänsäcker 16, 78502 Tuttlingen, Germany

15. Disposal

15.1 Disposal of the transport packing

Packing element	Material	Disposal
Straps to fix packing on pallet	Plastic	Plastic recycling
Wooden transport box (option)	Non-wood (compressed match-wood, IPPC standard)	Wood recycling
with metal screws	Metal	Metal recycling
Pallet (from size 115 on)	Solid wood (IPPC standard)	Wood recycling
Transport box	Cardboard	Paper recycling
with metal clamps	Metal	Metal recycling
Top cover (size 720)	Cardboard	Paper recycling
Edge protection	Styropor® or PE foam	Plastic recycling
Protection of doors and racks	PE foam	Plastic recycling
Bag for operating manual	PE foil	Plastic recycling
Insulating air cushion foil (packing of optional accessories)	PE foil	Plastic recycling

If recycling is not possible, all packing parts can also be disposed of with normal waste.

15.2 Decommissioning

- ED, FD, FED size 720: Turn off the chambers at the main power switch (chap. 2.3).
- Disconnect the chamber from the power supply (pull the power plug).
- With option inert gas connection (chap. 12.6): Close the inert gas supply and remove the gas connection.

DANGER

Risk of suffocation through high concentration of inert gas.

Death by suffocation.

➢ Observe the relevant regulations for handling inert gases.

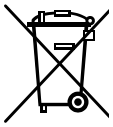
➢ Close the gas supply when decommissioning the chamber.

- Temporal decommissioning: See indications for appropriate storage, chap. 3.3.
- Final decommissioning: Dispose of the chamber as described in chap. 15.3 to 15.5.

15.3 Disposal of the chamber in the Federal Republic of Germany

According to Annex I of Directive 2012/19/EU of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE), BINDER devices are classified as “monitoring and control instruments” (category 9) only intended for professional use“. They must not be disposed of at public collecting points.

The chambers bear the symbol for the marking of electrical and electronic equipment manufactured / placed on the market in the EC after 13 August 2005 and be disposed of in separate collection according to Directive 2012/19/EU on waste electrical and electronic equipment (WEEE) and German national law for electrical and electronic equipment (Elektro- und Elektronikgerätegesetz, ElektroG). WEEE marking: crossed-out wheeled bin. A significant part of the materials must be recycled in order to protect the environment.



At the end of the device's service life, have the device disposed of according to the German national law for electrical and electronic equipment (Elektro- und Elektronikgerätegesetz, ElektroG from 20 October 2015, BGBl. I p. 1739) or contact BINDER service who will organize taking back and disposal of the chamber according to the German national law for electrical and electronic equipment (Elektro- und Elektronikgerätegesetz, ElektroG from 20 October 2015, BGBl. I p. 1739).

NOTICE

Danger of violation against existing law if not disposed of properly.

Failure to comply with applicable law.

∅ Do NOT dispose of BINDER devices at public collecting points.

➢ Have the device disposed of professionally at a recycling company which is certified according to the German national law for electrical and electronic equipment (Elektro- und Elektronikgerätegesetz, ElektroG from 20 October 2015, BGBl. I p. 1739).

or

➢ Instruct BINDER Service to dispose of the device. The general terms of payment and delivery of BINDER GmbH apply, which were valid at the time of purchasing the chamber.

Certified companies disassemble waste (used) BINDER equipment in primary substances for recycling according to Directive 2012/19/EU. The devices must be free from toxic, infectious or radioactive substances in order to eliminate any health hazards to the employees of the recycling companies.

Prior to handing the chamber over to a recycling company, it is the user's responsibility that it is free from toxic, infectious or radioactive substances.

- Prior to disposal, clean all introduced or residual toxic substances from the chamber.
- Prior to disposal, disinfect the chamber from all sources of infection. Be aware that sources of infection may also be located outside the inner chamber.
- If you cannot safely remove all toxic substances and sources of infection from the chamber, dispose of it as special waste according to national law.
- Fill out the contamination clearance certificate (chap. 18) and enclose it with the chamber.

WARNING

Danger of intoxication and infection through contamination of the chamber with toxic, infectious or radioactive substances.

Damages to health.

∅ NEVER take a chamber contaminated with toxic substances or sources of infection for recycling according to Directive 2012/19/EU.

➢ Prior to disposal, remove all toxic substances and sources of infection from the chamber.

➢ A chamber from which all toxic substances or sources of infection cannot be safely removed must be considered as "special" waste according to national law. Dispose of it accordingly.

15.4 Disposal of the chamber in the member states of the EU except for the Federal Republic of Germany

According to Annex I of Directive 2012/19/EU of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE), BINDER devices are classified as "monitoring and control instruments" (category 9) only intended for professional use". They must not be disposed of at public collecting points.

The chambers bear the symbol for the marking of electrical and electronic equipment manufactured / placed on the market in the EC after 13 August 2005 and be disposed of in separate collection according to the Directive 2012/19/EU on waste electrical and electronic equipment (WEEE). WEEE marking: crossed-out wheeled bin.

At the end of the device's service life, notify the distributor who sold you the device, who will take back and dispose of the chamber according to the Directive 2012/19/EU on waste electrical and electronic equipment (WEEE).

NOTICE

Danger of violation against existing law if not disposed of properly.

Failure to comply with applicable law.

∅ Do NOT dispose of BINDER devices at public collecting points.

➢ Have the device disposed of professionally at a recycling company that is certified according to conversion of the Directive 2012/19/EU into national law.

or

➢ Instruct the distributor who sold you the device to dispose of it. The agreements apply that were agreed with the distributor when purchasing the chamber (e.g. his general terms of payment and delivery).

➢ If your distributor is not able to take back and dispose of the chamber, please contact BINDER service.

Certified companies disassemble waste (used) BINDER equipment in primary substances for recycling according to Directive 2012/19/EU. The devices must be free from toxic, infectious or radioactive substances in order to eliminate any health hazards to the employees of the recycling companies.

Prior to handing the chamber over to a recycling company, it is the user's responsibility that it is free from toxic, infectious or radioactive substances.

- Prior to disposal, clean all introduced or residual toxic substances from the chamber.
- Prior to disposal, disinfect the chamber from all sources of infection. Be aware that sources of infection may also be located outside the inner chamber.
- If you cannot safely remove all sources of infection and toxic substances from the chamber, dispose of it as special waste according to national law.
- Fill out the contamination clearance certificate (chap. 18) and enclose it with the chamber.

WARNING

Danger of intoxication and infection through contamination of the chamber with toxic, infectious or radioactive substances.

Damages to health.

∅ NEVER take a chamber contaminated with toxic substances or sources of infection for recycling according to Directive 2012/19/EU.

➢ Prior to disposal, remove all toxic substances and sources of infection from the chamber.

➢ A chamber from which all toxic substances or sources of infection cannot be safely removed must be considered as "special" waste according to national law. Dispose of it accordingly.

15.5 Disposal of the chamber in non-member states of the EU

NOTICE

Danger of violation against existing law if not disposed of properly.

Failure to comply with applicable law. Alteration of the environment.

➢ For final decommissioning and disposal of the chamber, please contact BINDER service.

➢ Follow the statutory regulations for appropriate, environmentally friendly disposal.

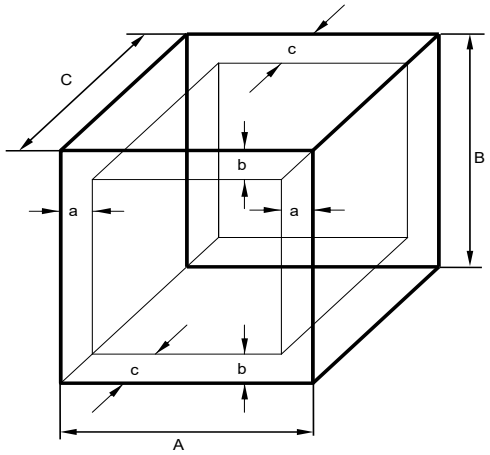
16. Technical description

16.1 Factory calibration and adjustment

This chamber was calibrated and adjusted in the factory. Calibration and adjustment were performed using standardized test instructions, according to the QM DIN EN ISO 9001 system applied by BINDER (certified since December 1996 by TÜV CERT). All test equipment used is subject to the administration of measurement and test equipment that is also constituent part of the BINDER QM DIN EN ISO 9001 systems. They are controlled and calibrated to a DKD-Standard at regular intervals.

16.2 Definition of usable volume

The usable volume illustrated below is calculated as follows:



A, B, C = Internal dimensions (W, H, D)
a, b, c = Wall clearances

a = 0.1 x A
b = 0.1x B
c = 0.1 x C

V_{USE} = (A - 2a) x (B - 2b) x (C - 2c)

Figure 16: Determination of the useable volume

The technical data refers to the defined usable volume.

	Do NOT place samples outside this usable volume. Do NOT load this volume by more than half to enable sufficient airflow inside the chamber. Do NOT divide the usable volume into separate parts with large area samples. Do NOT place samples too close to each other in order to permit circulation between them and thus obtain a homogenous distribution of temperature.

16.3 Over current protection

Single-phase devices are protected by one (UL chambers) or two miniature fuses against over current, accessible from the outside. The miniature fuses are located at the rear of the chamber above the power cable connection. Each fuse holder is equipped with a fuse clip 5mm x 20 mm (cUL-Version 6,3x32 mm). A fuse may be replaced only with a substitute of the same ratings. Refer to the technical data of the respective device type.

Two-phase devices are equipped with a resettable miniature circuit breaker (combination element).

Three-phase devices are equipped with an internal miniature circuit breaker.

16.4 BD technical data

Chamber size			BD 56	BD 115	BD 260	BD 720
Exterior dimensions						
Width, net		mm / *inch*	560 / *22.01*	710 / *27.95*	815 / *32.09*	1165 / *45.87*
Height, gross (incl. feet)		mm / *inch*	625 / *24.60*	735 / *28.94*	965 / *37.99*	1590 / *62.60*
Depth, net		mm / *inch*	565 / *22.24*	605 / *23.82*	760 / *29.92*	816 / *32.13*
Depth, gross (incl. door handle, exhaust duct)		mm / *inch*	640 / *25.20*	680 / *26.77*	815 / *32.09*	870 / *34.25*
Wall clearance rear (minimum)		mm / *inch*	160 / *6.30*	160 / *6.30*	160 / *6.30*	160 / *6.30*
Wall clearance side (minimum)		mm / *inch*	100 / *3.94*	100 / *3.94*	100 / *3.94*	100 / *3.94*
Exhaust duct, outer diameter		mm / *inch*	52 / *2.05*	52 / *2.05*	52 / *2.05*	52 / *2.05*
Doors						
Number of doors			1	1	1	2
Number of inner glass doors			1	1	1	2
Interior dimensions						
Width		mm / *inch*	360 / *14.17*	510 / *20.08*	610 / *24.02*	960 / *37.80*
Height		mm / *inch*	420 / *16.54*	530 / *20.87*	760 / *29.92*	1280 / *50.39*
Depth		mm / *inch*	380 / *14.96*	420 / *16.53*	550 / *21.65*	605 / *23.81*
Interior volume		l / *cu.ft.*	57 / *2.01*	112 / *3.96*	255 / *9.01*	737 / *26.03*
Steam space volume		l / *cu.ft.*	63 / *2.22*	127 / *4.49*	279 / *9.85*	791 / *27.93*
Racks						
Quantity of racks (regular)			2	2	2	2
Quantity of racks (max.)			4	5	8	16
Max. load per rack (standard rack)		Kg / *lbs*	30 / *66*	30 / *66*	40 / *88*	45 / *99*
Max. load per rack (accessory perforated shelf)		Kg / *lbs*	35 / *77*	35 / *77*	35 / *77*	35 / *77*
Max. load per rack (accessory heavy load rack)		Kg / *lbs*	---	---	70 / *154*	70 / *154*
Permitted total load		Kg / *lbs*	70 / 154	150 / *330*	270 / 595	315 / *694*
Weight						
Weight (empty)		Kg / *lbs*	38 / *84*	54 / *119*	85 / *187*	170 / *375*
Temperature data						
Temperature range	from … degrees above ambient	°C / *°F*	5 / *9*	5 / *9*	5 / *9*	5 / *9*
	up to	°C / *°F*	100 / *212*	100 / *212*	100 / *212*	100 / *212*
Temperature fluctuation at 37 °C / *98.6 °F*		± K	0.2	0.1	0.2	0.1
Temperature uniformity (variation) at 37 °C / *98.6 °F*		± K	0.4	0.4	0.4	0.7
Heating up time to 37 °C / *98.6 °F*		minutes	52	55	65	70
Recovery time after door was opened for 30 sec at 37 °C / *98.6 °F*		minutes	16	16	19	23
Electrical data (model versions BD056-230V, BD115-230V, BD260-230V, BD720-230V)						
System of protection acc. to EN 60529		IP	20	20	20	20
Nominal voltage (+/-10%)	at 50 Hz power frequency	V	230	230	230	230
	at 60 Hz power frequency	V	230	230	230	230
Current type			1N~	1N~	1N~	1N~
Nominal power		kW	0.30	0.35	0.85	1.65

Chamber size			BD 56	BD 115	BD 260	BD 720
Electrical data (continued)						
Power plug of the power cable			Grounded plug			
Chamber fuse (external) 5x20 mm / 250V / time-lag (T)		A	6.3	6.3	8.0	12.5
Overtemperature protective device class 1		°C	120	120	120	120
Installation category acc. to IEC 61010-1			II	II	II	II
Pollution degree acc. to IEC 61010-1			2	2	2	2
Different electrical data for BD-UL constructed for the USA and Canada (model versions BD056UL-120V, BD115UL-120V, BD260UL-120V, BD720UL-240V)						
Nominal voltage (+/-10%)	at 50 Hz power frequency	V	120	120	120	240
	at 60 Hz power frequency	V	120	120	120	240
Current type			1N~	1N~	1N~	2~
Nominal power		kW	0,30	0,35	0,95	1,75
Power plug of the power cable		NEMA	5-15P	5-15P	5-15P	6-20P
Chamber fuse (external) 5x20 mm / 250V / time-lag (T)		A	12.5	12.5	12.5	---
Miniature circuit breaker (internal)		A	---	---	---	16
Environment-specific data						
Energy consumption at 37 °C / *98.6 °F*		Wh/h	25	25	40	78

All technical data is specified for unloaded chambers with standard equipment at an ambient temperature of +22 °C +/- 3 °C / *71.6 °F +/- 5.4 °F* and a power supply voltage fluctuation of +/-10%. Technical data is determined in accordance to BINDER Factory Standard Part 2:2015 and DIN 12880:2007.

All indications are average values, typical for chambers produced in series. We reserve the right to change technical specifications at any time.

If the chamber is fully loaded, the specified heating up times may vary according to the load.

16.5 BF technical data

Chamber size		BF 56	BF 115	BF 260	BF 720
Exterior dimensions					
Width, net	mm / *inch*	560 / *22.01*	710 / *27.95*	815 / *32.09*	1165 / *45.87*
Height, gross (incl. feet)	mm / *inch*	625 / *24.60*	735 / *28.94*	965 / *37.99*	1590 / *62.60*
Depth, net	mm / *inch*	565 / *22.24*	605 / *23.82*	760 / *29.92*	816 / *32.13*
Depth, gross (incl. door handle and exhaust duct)	mm / *inch*	640 / *25.20*	680 / *26.77*	815 / *32.09*	870 / *34.25*
Wall clearance rear (minimum)	mm / *inch*	160 / *6.30*	160 / *6.30*	160 / *6.30*	160 / *6.30*
Wall clearance side (minimum)	mm / *inch*	100 / *3.94*	100 / *3.94*	100 / *3.94*	100 / *3.94*
Exhaust duct, outer diameter	mm / *inch*	52 / *2.05*	52 / *2.05*	52 / *2.05*	52 / *2.05*
Doors					
Number of doors		1	1	1	2
Number of inner glass doors		1	1	1	2
Interior dimensions					
Width	mm / *inch*	400 / *15.75*	550 / *21.65*	650 / *25.59*	1000 / *39.37*
Height	mm / *inch*	440 / *17.32*	550 / *21.65*	780 / *30.71*	1300 / *51.18*
Depth	mm / *inch*	340 / *13.39*	380 / *14.96*	510 / *20.08*	560 / *22.05*

Chamber size			BF 56	BF 115	BF 260	BF 720
Interior dimensions (continued)						
Interior volume		l / *cu.ft.*	59 / *2.08*	114 / *4.03*	257 / *9.08*	728 / *25.71*
Steam space volume		l / *cu.ft.*	66 / *2.33*	127 / *4.49*	279 / *9.85*	791 / *27.93*
Racks						
Quantity of racks (regular)			2	2	2	2
Quantity of racks (max.)			4	5	8	16
Max. load per rack (standard rack)		Kg / *lbs*	30 / *66*	30 / *66*	40 / *88*	45 / *99*
Max. load per rack (accessory perforated shelf)		Kg / *lbs*	35 / *77*	35 / *77*	35 / *77*	35 / *77*
Max. load per rack (accessory heavy load rack)		Kg / *lbs*	---	---	70 / *154*	70 / *154*
Permitted total load		Kg / *lbs*	70 / 154	150 / *330*	270 / 595	315 / *694*
Weight						
Weight (empty)		Kg / *lbs*	39 / *86*	54 / *119*	85 / *187*	166 / *366*
Temperature data						
Temperature range	from … degrees above ambient	°C / *°F*	7 / *12.6*	8 / *14.4*	7 / *12.6*	10 / *18*
	up to	°C / *°F*	100 / *212*	100 / *212*	100 / *212*	100 / *212*
Temperature fluctuation at 37 °C / *98.6 °F*		± K	0.1	0.1	0.1	0.1
Temperature uniformity (variation) at 37 °C / *98.6 °F*		± K	0.3	0.3	0.3	0.3
Heating up time to 37 °C / *98.6 °F*		minutes	8	8	8	15
Recovery time after door was opened for 30 sec at 37 °C / *98.6 °F*		minutes	3	4	4	4
Electrical data (model versions BF056-230V, BF115-230V, BF260-230V, BF720-230V)						
System of protection acc. to EN 60529		IP	20	20	20	20
Nominal voltage (+/-10%)	at 50 Hz power frequency	V	230	230	230	230
	at 60 Hz power frequency	V	230	230	230	230
Current type			1N~	1N~	1N~	1N~
Nominal power		kW	0.40	0.40	0.90	1.75
Power plug of the power cable			Grounded plug			
Chamber fuse (external) 5x20 mm / 250V / time-lag (T)		A	6.3	6.3	8.0	12.5
Overtemperature protective device class 1		°C	120	120	120	120
Installation category acc. to IEC 61010-1			II	II	II	II
Pollution degree acc. to IEC 61010-1			2	2	2	2
Different electrical data for BF-UL constructed for the USA and Canada (model versions BF056UL-120V, BF115UL-120V, BF260UL-120V, BF720UL-240V)						
Nominal voltage (+/-10%)	at 50 Hz power frequency	V	120	120	120	240
	at 60 Hz power frequency	V	120	120	120	240
Current type			1N~	1N~	1N~	2~
Power plug of the power cable		NEMA	5-15P	5-15P	5-15P	6-20P
Nominal power		kW	0.40	0.40	1.00	1.85
Chamber fuse (external) 5x20 mm / 250V / time-lag (T)		A	12.5	12.5	12.5	---
Miniature circuit breaker (internal)		A	---	---	---	16

Chamber size		BF 56	BF 115	BF 260	BF 720
Environment-specific data					
Noise level (mean value)	dB (A)	43	43	43	43
Energy consumption at 37 °C / *98.6 °F*	Wh/h	60	60	70	130

All technical data is specified for unloaded chambers with standard equipment at an ambient temperature of +22 °C +/- 3 °C / *71.6 °F +/- 5.4 °F* and a power supply voltage fluctuation of +/-10%. Specification of the sound pressure level +/- 1 dB(A). Technical data is determined in accordance to BINDER Factory Standard Part 2:2015 and DIN 12880:2007.

All indications are average values, typical for chambers produced in series. We reserve the right to change technical specifications at any time.

If the chamber is fully loaded, the specified heating up times may vary according to the load.

16.6 ED technical data

Chamber size		ED 56	ED 115	ED 260	ED 720
Exterior dimensions					
Width, net	mm / *inch*	560 / *22.01*	710 / *27.95*	815 / *32.09*	1165 / *45.87*
Height, gross (incl. feet)	mm / *inch*	625 / *24.60*	735 / *28.94*	965 / *37.99*	1590 / *62.60*
Depth, net	mm / *inch*	565 / *22.24*	605 / *23.82*	760 / *29.92*	816 / *32.13*
Depth, gross (incl. door handle and exhaust duct)	mm / *inch*	640 / *25.20*	680 / *26.77*	815 / *32.09*	870 / *34.25*
Wall clearance rear (minimum)	mm / *inch*	160 / *6.30*	160 / *6.30*	160 / *6.30*	160 / *6.30*
Wall clearance side (minimum)	mm / *inch*	100 / *3.94*	100 / *3.94*	100 / *3.94*	100 / *3.94*
Exhaust duct, outer diameter	mm / *inch*	52 / *2.05*	52 / *2.05*	52 / *2.05*	52 / *2.05*
Doors					
Number of door(s)		1	1	1	2
Interior dimensions					
Width	mm / *inch*	360 / *14.17*	510 / *20.08*	610 / *24.02*	960 / *37.80*
Height	mm / *inch*	420 / *16.54*	530 / *20.87*	760 / *29.92*	1280 / *50.39*
Depth	mm / *inch*	380 / *14.96*	425 / *16.73*	550 / *21.65*	610 / *24.02*
Interior volume	l / *cu.ft.*	57 / *2.01*	114 / *4.03*	255 / *9.01*	749 / *26.45*
Steam space volume	l / *cu.ft.*	63	127 / *4.49*	273 / *9.64*	791 / *27.93*
Racks					
Quantity of racks (regular)		2	2	2	2
Quantity of racks (max.)		4	5	8	16
Max. load per rack (standard rack)	Kg / *lbs*	30 / *66*	30 / *66*	44 / *88*	45 / *99*
Max. load per rack (accessory perforated shelf)	Kg / *lbs*	35 / *77*	35 / *77*	35 / *77*	35 / *77*
Max. load per rack (accessory heavy load rack)	Kg / *lbs*	---	---	70 / *154*	70 / *154*
Permitted total load	Kg / *lbs*	70 / 154	150 / *330*	270 / 595	315 / *694*
Weight					
Weight (empty)	Kg / *lbs*	39 / *86*	54 / *119*	85 / *187*	169 / *373*

Chamber size			ED 56	ED 115	ED 260	ED 720
Temperature data						
Temperature range	from … degrees above ambient	°C / *°F*	5 / *9*	5 / *9*	5 / *9*	5 / *9*
	up to	°C / *°F*	300 / *572*	300 / *572*	300 / *572*	300 / *572*
Temperature fluctuation at 150 °C / *302 °F*		± K	0.4	0.4	0.8	0.8
Temperature uniformity (variation) at 150 °C / *302 °F*		± K	2.3	1.5	1.8	3,2
Heating up time to 150 °C / *302 °F*		minutes	50	45	50	85
Recovery time after door was opened for 30 sec at 150 °C / *302 °F*		minutes	19	16	20	25
Electrical data (model versions ED056-230V, ED115-230V, ED260-230V, ED720-400V)						
IP system of protection acc. to EN 60529		IP	20	20	20	20
Nominal voltage (+/-10%)	at 50 Hz power frequency	V	230	230	230	400
	at 60 Hz power frequency	V	230	230	230	400
Current type			1N~	1N~	1N~	3N~
Nominal power		kW	1.05	1.25	2.25	4.10
Power plug of the power cable			Grounded plug			
Chamber fuse (external) 5x20 mm / 250V / time-lag (T)		A	6.3	6.3	12.5	---
Miniature circuit breaker (internal)		A	---	---	---	16
Overtemperature protective device class 1		°C	330	330	330	330
Installation category acc. to IEC 61010-1			II	II	II	II
Pollution degree acc. to IEC 61010-1			2	2	2	2
Different electrical data for ED-UL constructed for the USA and Canada (model versions ED056UL-120V, ED115UL-120V, ED260UL-240V)						
Nominal voltage (+/-10%)	at 50 Hz power frequency	V	120	120	240	---
	at 60 Hz power frequency	V	120	120	240	---
Current type			1N~	1N~	2~	---
Power plug of the power cable		NEMA	5-15P	5-15P	6-20P	---
Nominal power		kW	1.15	1.35	2.45	---
Chamber fuse (external) 5x20 mm / 250V / time-lag (T)		A	12.5	12.5	---	---
Miniature circuit breaker (combination element, external)		A	---	---	16	---
Environment-specific data						
Energy consumption at 150 °C / *302 °F*		Wh/h	180	245	355	700

All technical data is specified for unloaded chambers with standard equipment at an ambient temperature of +22 °C +/- 3 °C / *71.6 °F +/- 5.4 °F* and a power supply voltage fluctuation of +/-10%. Technical data is determined in accordance to BINDER Factory Standard Part 2:2015 and DIN 12880:2007.

All indications are average values, typical for chambers produced in series. We reserve the right to change technical specifications at any time.

If the chamber is fully loaded, the specified heating up times may vary according to the load.

16.7 FD technical data

Chamber size			FD 56	FD 115	FD 260	FD 720
Exterior dimensions						
Width, net		mm / *inch*	560 / *22.01*	710 / *27.95*	815 / *32.09*	1165 / *45.87*
Height, gross (incl. feet)		mm / *inch*	625 / *24.60*	735 / *28.94*	965 / *37.99*	1590 / *62.60*
Depth, net		mm / *inch*	565 / *22.24*	605 / *23.82*	760 / *29.92*	816 / *32.13*
Depth, gross (incl. door handle and exhaust duct)		mm / *inch*	640 / *25.20*	680 / *26.77*	815 / *32.09*	870 / *34.25*
Wall clearance rear (minimum)		mm / *inch*	160 / *6.30*	160 / *6.30*	160 / *6.30*	160 / *6.30*
Wall clearance side (minimum)		mm / *inch*	100 / *3.94*	100 / *3.94*	100 / *3.94*	100 / *3.94*
Exhaust duct, outer diameter		mm / *inch*	52 / *2.05*	52 / *2.05*	52 / *2.05*	52 / *2.05*
Doors						
Number of door(s)			1	1	1	2
Interior dimensions						
Width		mm / *inch*	400 / *15.75*	550 / *21.65*	650 / *25.59*	1000 / *39.37*
Height		mm / *inch*	440 / *17.32*	550 / *21.65*	780 / *30.71*	1300 / *51.18*
Depth		mm / *inch*	345 / *13.58*	385 / *15.16*	510 / *20.08*	570 / *22.44*
Interior volume		l / *cu.ft.*	60 / *2.12*	116 / *4.10*	257 / *9.08*	741 / *26.17*
Steam space volume		l / *cu.ft.*	67 / *2.37*	127 / *4.49*	279 / *9.85*	791 / *27.93*
Racks						
Quantity of racks (regular)			2	2	2	2
Quantity of racks (max.)			4	5	8	16
Max. load per rack (standard rack)		Kg / *lbs*	30 / *66*	30 / *66*	44 / *88*	45 / *99*
Max. load per rack (accessory perforated shelf)		Kg / *lbs*	35 / *77*	35 / *77*	35 / *77*	35 / *77*
Max. load per rack (accessory heavy load rack)		Kg / *lbs*	---	---	70 / *154*	70 / *154*
Permitted total load		Kg / *lbs*	70 / 154	150 / *330*	270 / 595	315 / *694*
Weight						
Weight (empty)		Kg / *lbs*	39 / *86*	54 / *119*	85 / *187*	166 / *366*
Temperature data						
Temperature range	from … degrees above ambient	°C / *°F*	10 / *18*	10 / *18*	10 / *18*	12 / *21.6*
	up to	°C / *°F*	300 / *572*	300 / *572*	300 / *572*	300 / *572*
Temperature fluctuation at 150 °C / *302 °F*		± K	0.3	0.3	0.5	0.6
Temperature uniformity (variation) at 150 °C / *302 °F*		± K	1.7	1.7	1.9	2.5
Heating up time to 150 °C / *302 °F*		minutes	15	19	20	25
Recovery time after door was opened for 30 sec at 150 °C / *302 °F*		minutes	4	5	6	6
Ventilation data						
Air change	at 100 °C / *212 °F*	x/h	80	32	9	5
Electrical data (model versions FD056-230V, FD115-230V, FD260-230V, FD720-400V)						
System of protection acc. to EN 60529		IP	20	20	20	20
Nominal voltage (+/-10%)	at 50 Hz power frequency	V	230	230	230	400
	at 60 Hz power frequency	V	230	230	230	400

Chamber size		FD 56	FD 115	FD 260	FD 720
Electrical data (continued) (model versions FD056-230V, FD115-230V, FD260-230V, FD720-400V)					
Current type		1N~	1N~	1N~	3N~
Nominal power	kW	1.10	1.30	2.30	4.50
Power plug of the power cable		Grounded plug			
Chamber fuse (external) 5x20 mm / 250V / time-lag (T)	A	6.3	6.3	12.5	---
Miniature circuit breaker (internal)	A	---	---	---	16
Overtemperature protective device class 1	°C	330	350	350	350
Installation category acc. to IEC 61010-1		II	II	II	II
Pollution degree acc. to IEC 61010-1		2	2	2	2
Different electrical data for FD-UL constructed for the USA and Canada (model versions FD056UL-120V, FD115UL-120V, FD260UL-240V)					
Nominal voltage (+/-10%) at 50 Hz power frequency	V	120	120	240	---
Nominal voltage (+/-10%) at 60 Hz power frequency	V	120	120	240	---
Current type		1N~	1N~	2~	---
Nominal power	kW	1.20	1.40	2.50	---
Power plug of the power cable	NEMA	5-15P	5-15P	6-20P	---
Chamber fuse (external) 5x20 mm / 250V / time-lag (T)	A	12.5	12.5	---	---
Miniature circuit breaker (combination element)	A	---	---	16	---
Environment-specific data					
Noise level (mean value)	dB (A)	43	43	43	43
Energy consumption at 150 °C / *302 °F*	Wh/h	300	340	420	800

All technical data is specified for unloaded chambers with standard equipment at an ambient temperature of +22 °C +/- 3 °C / *71.6 °F +/- 5.4 °F* and a power supply voltage fluctuation of +/-10%. Specification of the sound pressure level +/- 1 dB(A). Technical data is determined in accordance to BINDER Factory Standard Part 2:2015 and DIN 12880:2007.

All indications are average values, typical for chambers produced in series. We reserve the right to change technical specifications at any time.

If the chamber is fully loaded, the specified heating up times may vary according to the load.

16.8 FED technical data

Chamber size		FED 56	FED 115	FED 260	FED 720
Exterior dimensions					
Width, net	mm / *inch*	560 / *22.01*	710 / *27.95*	815 / *32.09*	1165 / *45.87*
Height, gross (incl. feet)	mm / *inch*	625 / *24.60*	735 / *28.94*	965 / *37.99*	1590 / *62.60*
Depth, net	mm / *inch*	565 / *22.24*	605 / *23.82*	760 / *29.92*	816 / *32.13*
Depth, gross (incl. door handle and exhaust duct)	mm / *inch*	640 / *25.20*	680 / *26.77*	815 / *32.09*	870 / *34.25*
Wall clearance rear (minimum)	mm / *inch*	160 / *6.30*	160 / *6.30*	160 / *6.30*	160 / *6.30*
Wall clearance side (minimum)	mm / *inch*	100 / *3.94*	100 / *3.94*	100 / *3.94*	100 / *3.94*
Exhaust duct, outer diameter	mm / *inch*	*52 / 2.05*	*52 / 2.05*	*52 / 2.05*	*52 / 2.05*
Doors					
Number of door(s)		1	1	1	2

Chamber size			FED 56	FED 115	FED 260	FED 720
Interior dimensions						
Width		mm / *inch*	400 / *15.75*	550 / *21.65*	650 / *25.59*	1000 / *39.37*
Height		mm / *inch*	440 / *17.32*	550 / *21.65*	780 / *30.71*	1300 / *51.18*
Depth		mm / *inch*	345 / *13.58*	385 / *15.16*	510 / *20.08*	570 / *22.44*
Interior volume		l / *cu.ft.*	60 / *2.12*	116 / *4.10*	257 / *9.08*	741 / *26.17*
Steam space volume		l / *cu.ft.*	67 / *2.37*	127 / *4.49*	279 / *9.85*	791 / *27.93*
Racks						
Quantity of racks (regular)			2	2	2	2
Quantity of racks (max.)			4	5	8	16
Max. load per rack (standard rack)		Kg / *lbs*	30 / *66*	30 / *66*	44 / *88*	45 / *99*
Max. load per rack (accessory perforated shelf)		Kg / *lbs*	35 / *77*	35 / *77*	35 / *77*	35 / *77*
Max. load per rack (accessory heavy load rack)		Kg / *lbs*	---	---	70 / *154*	70 / *154*
Permitted total load		Kg / *lbs*	70 / 154	150 / *330*	270 / 595	315 / *694*
Weight						
Weight (empty)		Kg / *lbs*	39 / *86*	54 / *119*	85 / *187*	162 / *357*
Temperature data						
Temperature range	from … degrees above ambient	°C / *°F*	10 / *18*	10 / *18*	10 / *18*	12 / *21.6*
	up to	°C / *°F*	300 / *572*	300 / *572*	300 / *572*	300 / *572*
Temperature fluctuation at 150 °C / *302 °F*		± K	0.3	0.3	0.5	0.6
Temperature uniformity (variation) at 150 °C / *302 °F*		± K	1.4	1.2	1.6	2.0
Heating up time to 150 °C / *302 °F*		minutes	15	19	20	25
Recovery time after door was opened for 30 sec at 150 °C / *302 °F*		minutes	4	5	6	6
Ventilation data						
Air change	at 100 °C / *212 °F*	x/h	80	32	9	5
Electrical data (model versions FED056-230V, FED115-230V, FED260-230V, FED720-400V)						
System of protection acc. to EN 60529		IP	20	20	20	20
Nominal voltage (+/-10%)	at 50 Hz power frequency	V	230	230	230	400
	at 60 Hz power frequency	V	230	230	230	400
Current type			1N~	1N~	1N~	3N~
Nominal power		kW	1.10	1.30	2.30	4.50
Power plug of the power cable			Grounded plug			
Chamber fuse (external) 5x20 mm / 250V / time-lag (T)		A	6.3	6.3	12.5	---
Miniature circuit breaker (internal)		A	---	---	---	16
Overtemperature protective device class 1		°C	330	350	350	350
Installation category acc. to IEC 61010-1			II	II	II	II
Pollution degree acc. to IEC 61010-1			2	2	2	2

Chamber size			FED 56	FED 115	FED 260	FED 720
Different electrical data for FED-UL constructed for the USA and Canada (model versions FED056UL-120V, FED115UL-120V, FED260UL-240V, FED720UL-208V)						
Nominal voltage (+/-10%)	at 50 Hz power frequency	V	120	120	240	208
	at 60 Hz power frequency	V	120	120	240	208
Current type			1N~	1N~	2~	3N~
Nominal power		kW	1.20	1.40	2.50	4.50
Power plug of the power cable		NEMA	5-15P	5-15P	6-20P	L21-20P
Chamber fuse (external) 5x20 mm / 250V / time-lag (T)		A	12.5	12.5	---	---
Miniature circuit breaker (combination element, external)		A	---	---	16	---
Miniature circuit breaker (internal)		A	---	---	---	16
Environment-specific data						
Noise level (mean value)		dB (A)	43	43	43	43
Energy consumption at 150 °C / *302 °F*		Wh/h	300	340	420	800

All technical data is specified for unloaded chambers with standard equipment at an ambient temperature of +22 °C +/- 3 °C / *71.6 °F +/- 5.4 °F* and a power supply voltage fluctuation of +/-10%. Specification of the sound pressure level +/- 1 dB(A). Technical data is determined in accordance to BINDER Factory Standard Part 2:2015 and DIN 12880:2007.

All indications are average values, typical for chambers produced in series. We reserve the right to change technical specifications at any time.

If the chamber is fully loaded, the specified heating up times may vary according to the load.

16.9 Equipment, options, and accessories (extract)

To operate the chamber, use only original BINDER accessories or accessories / components from third-party suppliers authorized by BINDER. The user is responsible for any risk arising from using unauthorized accessories.

	BD	BF	ED	FD	FED
Standard equipment					
Microprocessor temperature controller	√	√	√	√	√
One timer function: Delayed Off	√		√	√	
Three timer functions: Delayed On, Delayed Off and Temperature dependent Delayed Off		√			√
Adjustable ramp function	√	√	√	√	√
Temperature safety controller class 3.1 acc. to DIN 12880:2007	√	√			
Temperature safety controller class 2 acc. to DIN 12880:2007			√	√	√
Inner glass door	√	√			
USB interface to read out the measured values	√	√	√	√	√
Communication interface Ethernet					√
Exhaust duct, internal diameter 50 mm / *1.97 inches*, with adjustable ventilation slide	√	√	√	√	√
Adjustable air change by means of rear exhaust duct (50 mm)	√	√	√	√	√
2 racks, chrome-plated	√	√	√	√	√

Options / accessories					
Rack, chrome-plated or stainless steel	√	√	√	√	√
Perforated rack, stainless steel	√	√	√	√	√
Heavy load rack, stainless steel	√	√	√	√	√
Access ports with various diameters, with silicone plug	√	√	√	√	√
Door with window			√	√	√
Interior lightning	√	√	√	√	√
Communication interface Ethernet	√	√	√	√	
Battery backed real-time clock	√	√	√	√	√
Rubber pads for safe stacking (5 pieces)	√	√	√	√	√
Object temperature display with additional Pt100 temperature sensor	√	√	√	√	√
Analog output 4-20 mA for temperature with 6 pole DIN socket, DIN plug included	√	√	√	√	√
HEPA Fresh air filter, class H 14 (DIN EN 1822:2009)				√	√
Mostly gas-tight version		√		√	√
Inert gas connection (gas inlet and outlet), with mostly gas-tight version		√		√	√
Disconnectable audible over-temperature alarm	√	√	√	√	√
FKM door gasket (temperature resistant up to 200 °C / *392 °F* max.)			√	√	√
Measurement of air change rate acc. to ASTM D5374		√		√	√
Factory calibration certificate	√	√	√	√	√
Extension to factory calibration certificate (additional values)	√	√	√	√	√
Measuring protocol acc. to DIN 12880:2007	√	√	√	√	√
Qualification folder	√	√	√	√	√
Neutral cleaning agent (liquid concentrate)	√	√	√	√	√
Stable table on wheels with castors and locking brakes	√	√	√	√	√

16.10 Accessories and spare parts (extract)

BINDER GmbH is responsible for the safety features of the chamber only, provided skilled electricians or qualified personnel authorized by BINDER perform all maintenance and repair, and if components relating to chamber safety are replaced in the event of failure with original spare parts. The user is responsible for any risks arising from using unauthorized accessories/components.

Chamber size	56	115	260	720
Description	**Art. No.**			
Rack, chrome-plated BD, ED	8012-2039	8012-2041	8012-2043	8012-2045
Rack, chrome-plated BF, FD, FED	8012-2038	8012-2040	8012-2042	8012-2044
Rack, stainless steel BD, ED	8012-2171	8012-2172	8012-2173	8012-2174
Rack, stainless steel BF, FD, FED	8012-2085	8012-2168	8012-2169	8012-2170
Perforated rack, stainless steel BD, ED	8012-2179	8012-2180	8012-2181	8012-2182
Perforated rack, stainless steel BF, FD, FED	8012-2175	8012-2176	8012-2177	8012-2178
Rack, heavy load, stainless steel BD, ED	---	---	8012-2187	8012-2186
Rack, heavy load, stainless steel BF, FD, FED	---	---	8012-2184	8012-2185

Chamber size	56	115	260	720
Description	**Art. No.**			
Door gasket, silicone	6005-0254	6005-0255	6005-0258	6005-0260
Door gasket made of FKM (temperature resistant up to 200 °C / *392 °F* max.)	6005-0265	6005-0266	6005-0268	6005-270
Stable table on wheels with castors and locking brakes	9051-0005	9051-0005	9051-0006	---
Chamber fuse 5x20mm 250V 6,3 A time lag (T)	5006-0092	5006-0092	---	---
Chamber fuse 5x20mm 250V 8,0 A time lag (T)	---	---	5006-0093	---
Chamber fuse 5x20mm 250V 12,5 A time lag (T)	5006-0096	5006-0096	5006-0096	---

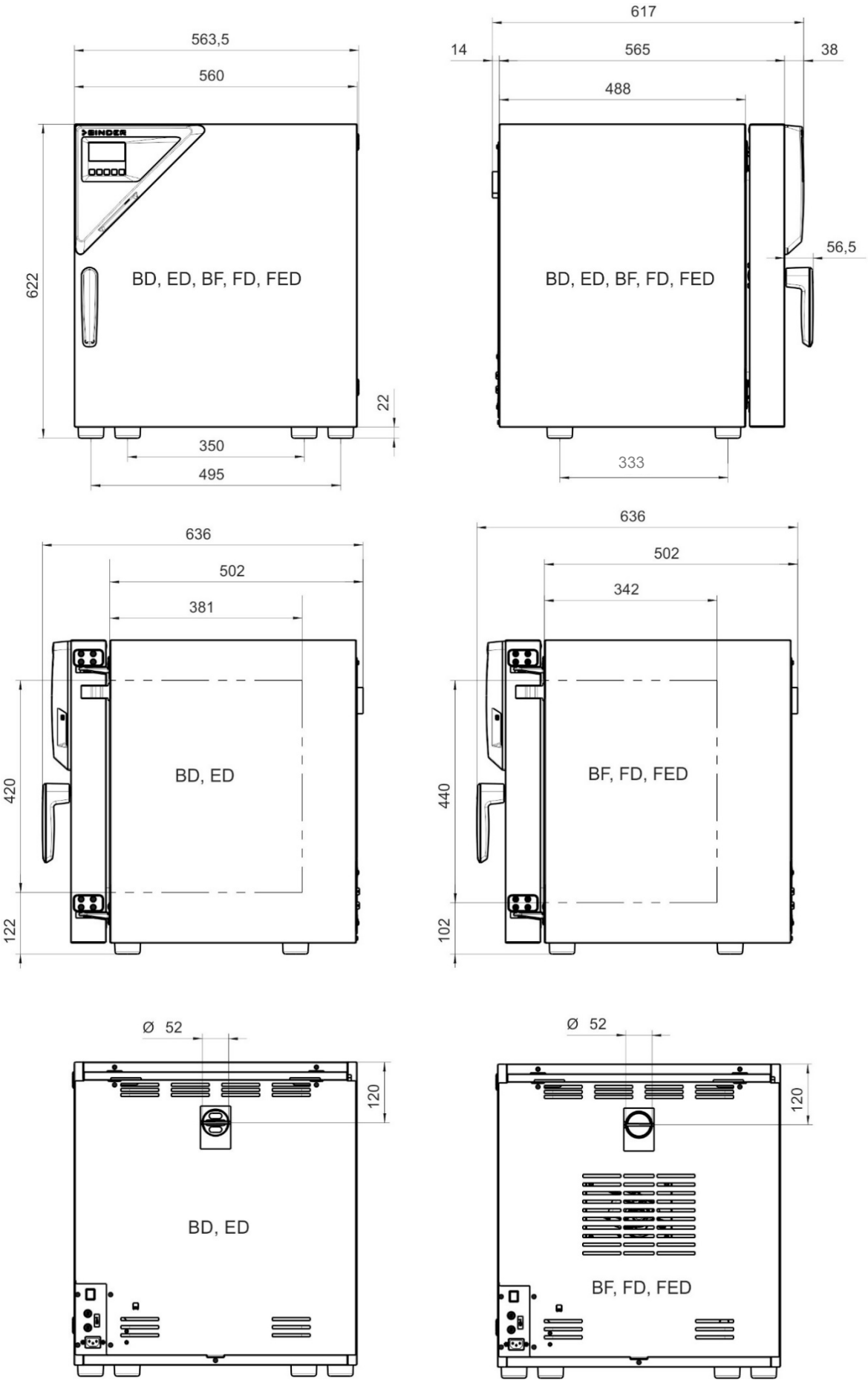
Description	Art. No.
HEPA fresh air filter (replacement) class H 14 (DIN EN 1822:2009)	6014-0003
Rubber pads for safe stacking (5 pieces)	8012-1887
Neutral cleaning agent, 1 kg	1002-0016

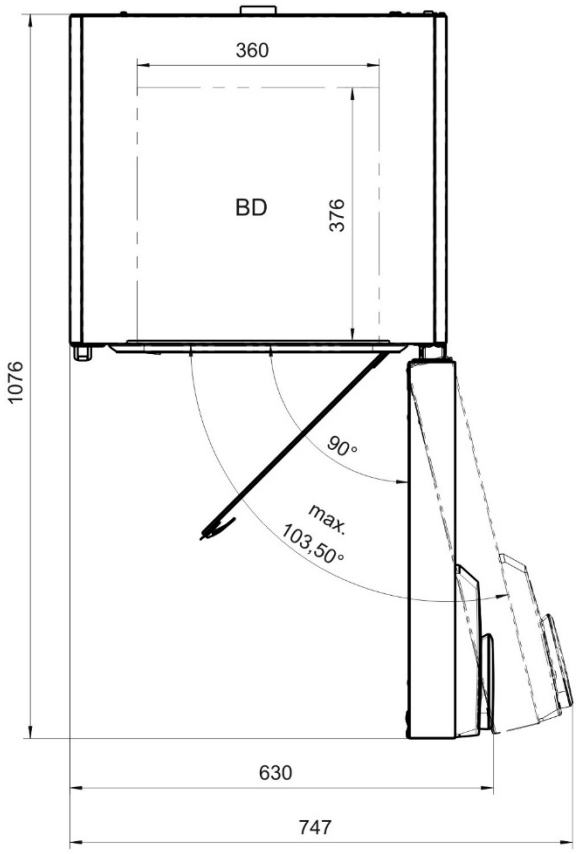
For information on components not listed here, please contact BINDER Service.

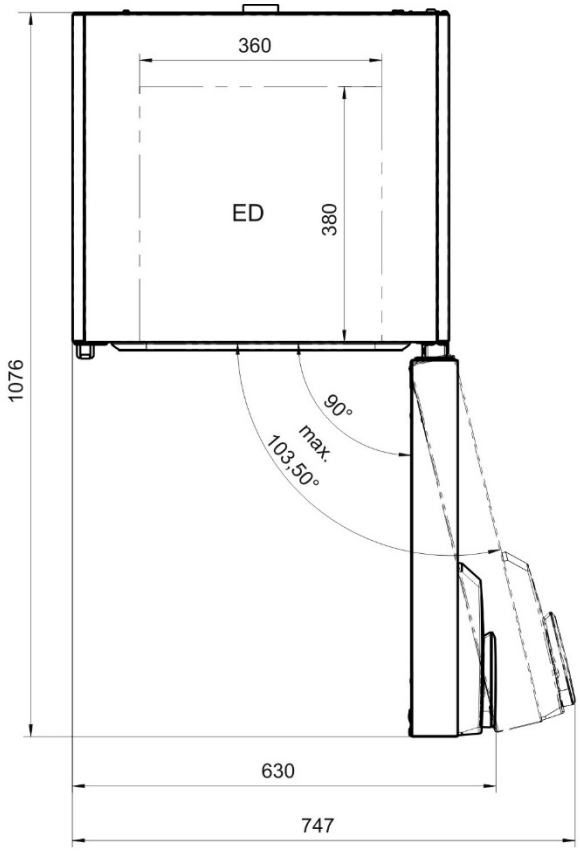
Validation service	Art. no.
Qualification folder IQ-OQ (printed version)	7007-0001
Qualification folder IQ-OQ (digital version)	7057-0001
Qualification folder IQ-OQ-PQ (printed version)	7007-0005
Qualification folder IQ-OQ-PQ (digital version)	7057-0005
Execution of IQ-OQ	DL420300
Execution of IQ-OQ-PQ	DL440500

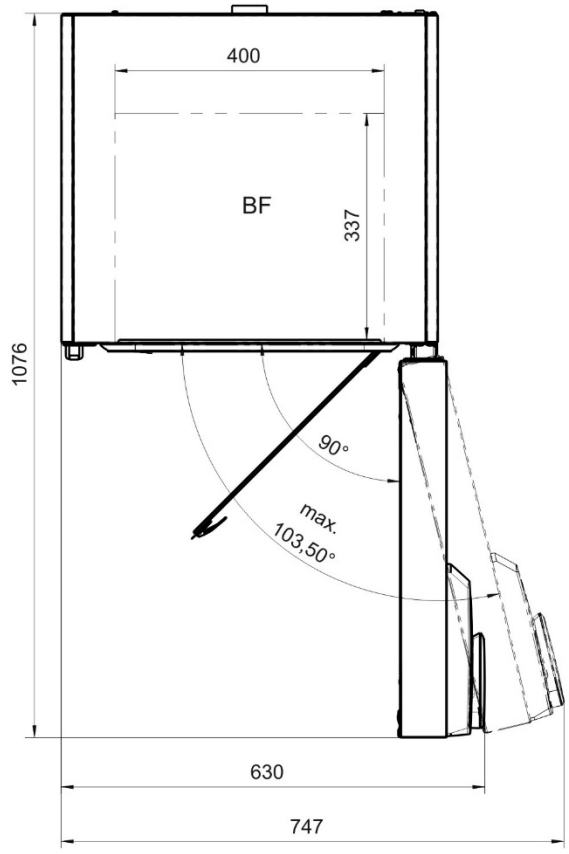
Chamber type	BD	BF	ED	FD	FED
Calibration service	**Art.-No.**				
Calibration of temperature including certificate (1 measuring point)	DL300101	DL300101	DL300101	DL300101	DL300101
Spatial temperature measurement including certificate (9 measuring points)	DL300109	DL300109	DL300109	DL300109	DL300109
Spatial temperature measurement including certificate (18 measuring points)	DL300118	DL300118	DL300118	DL300118	DL300118
Spatial temperature measurement including certificate (27 measuring points)	DL300127	DL300127	DL300127	DL300127	DL300127
Measurement of air ventilation acc. to ASTM D 5374, including certificate	--	--	DL330000	DL330000	DL330000

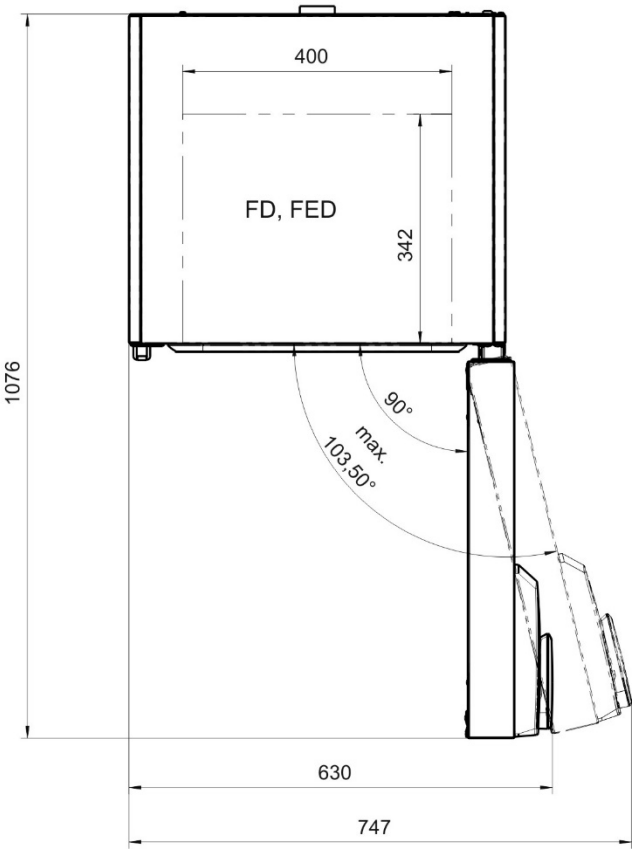
16.11 Dimensions size 56



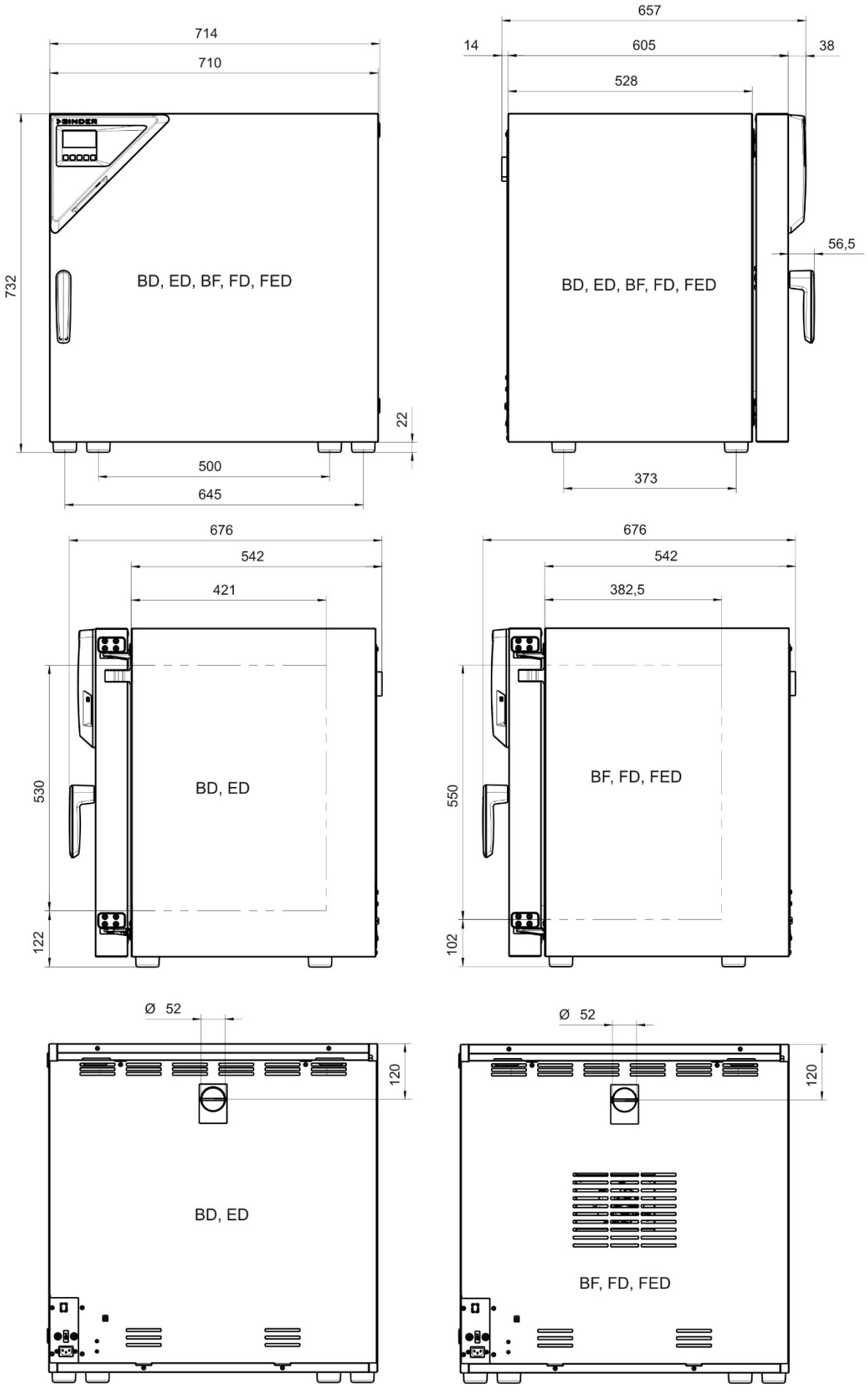

360
BD
376
1076
90°
max.
103,50°
630
747

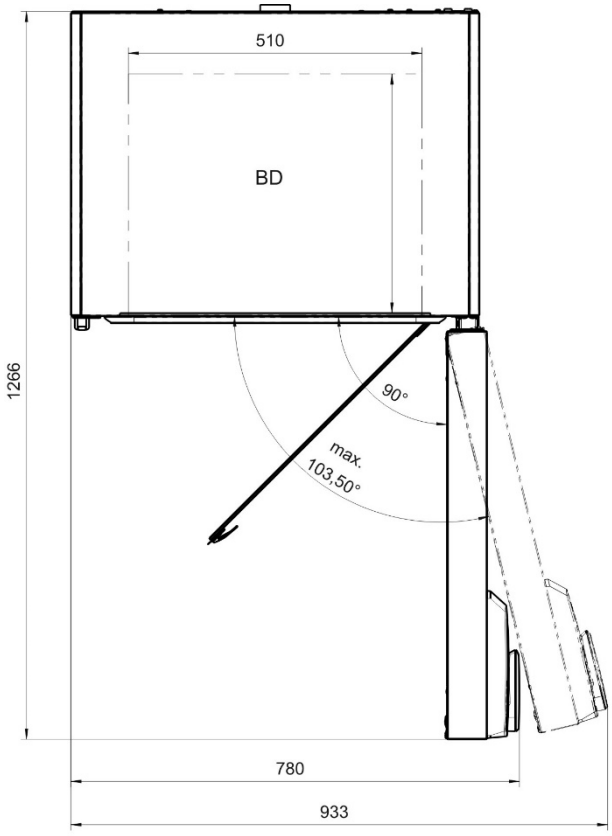

360
ED
380
1076
90°
max.
103,50°
630
747

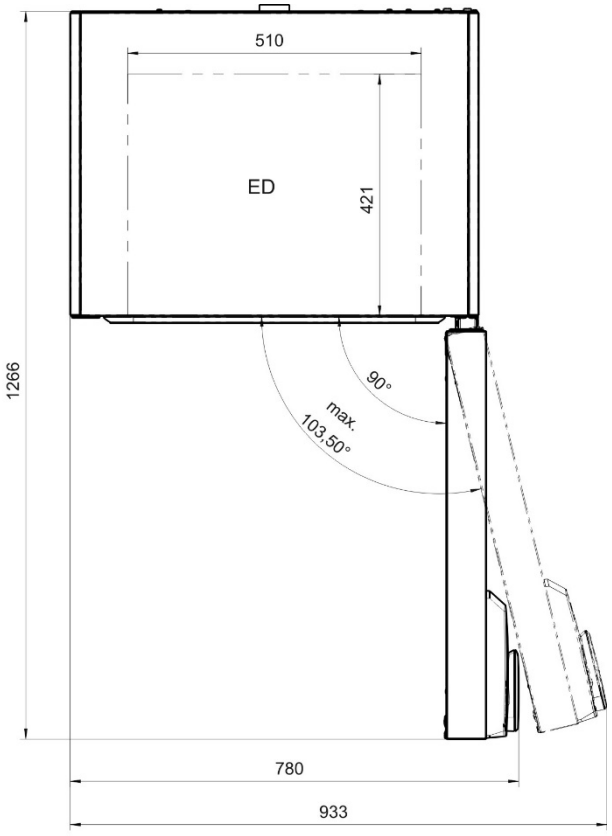

400
BF
337
1076
90°
max.
103,50°
630
747

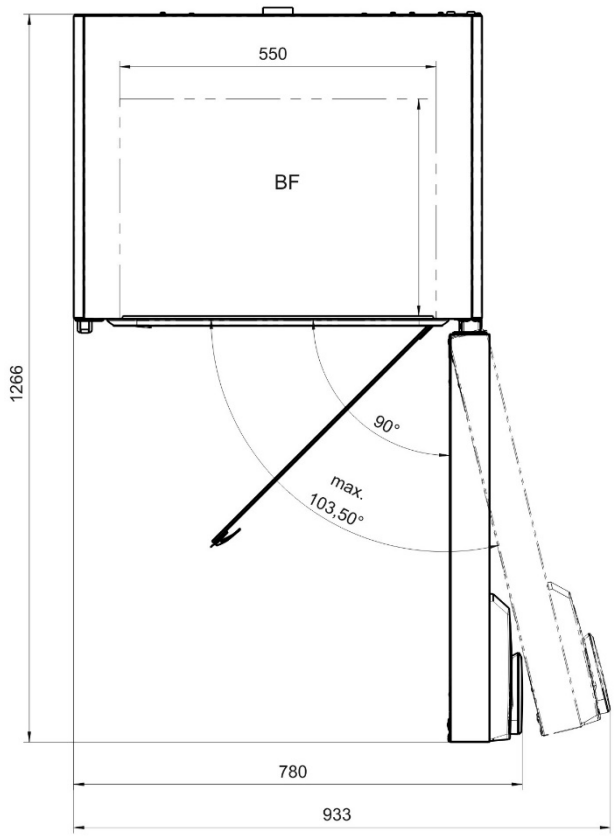

400
FD, FED
342
1076
90°
max.
103,50°
630
747

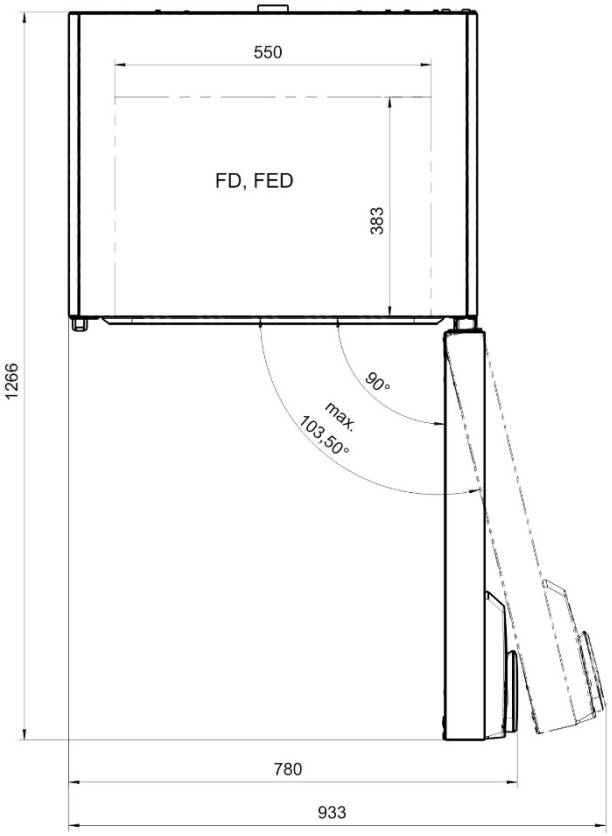
16.12 Dimensions size 115



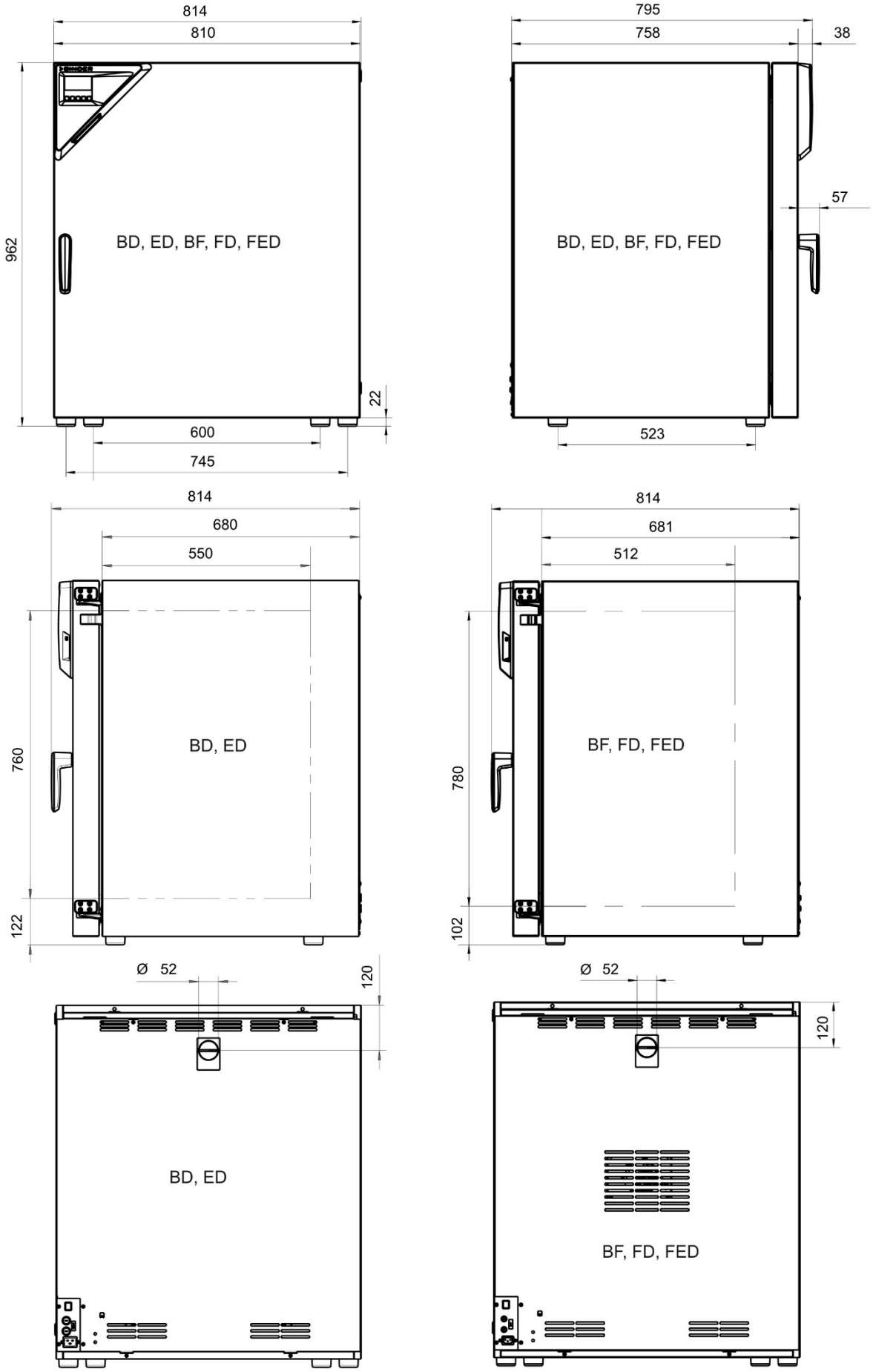

510
BD
1266
90°
max.
103,50°
780
933

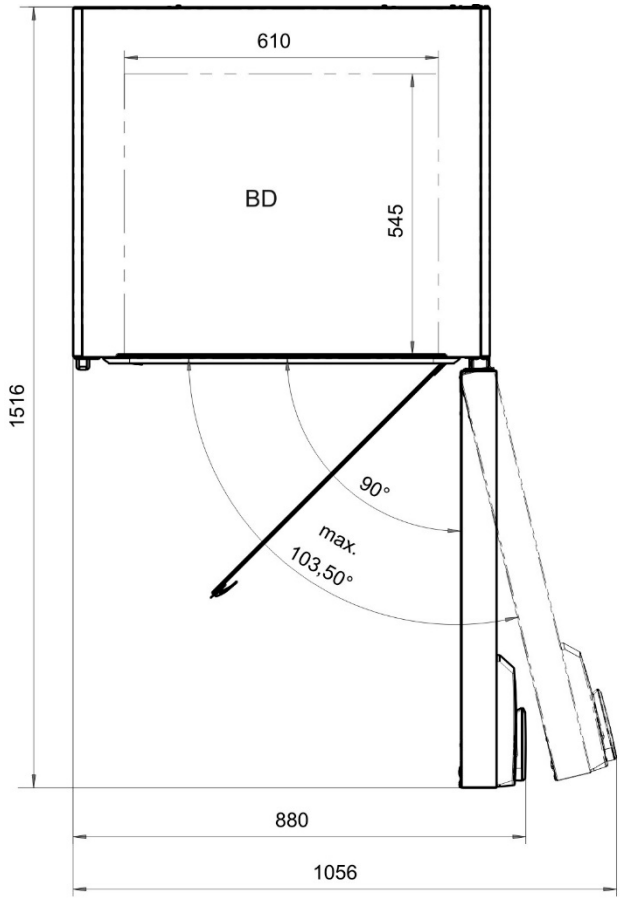

510
ED
421
1266
90°
max.
103,50°
780
933

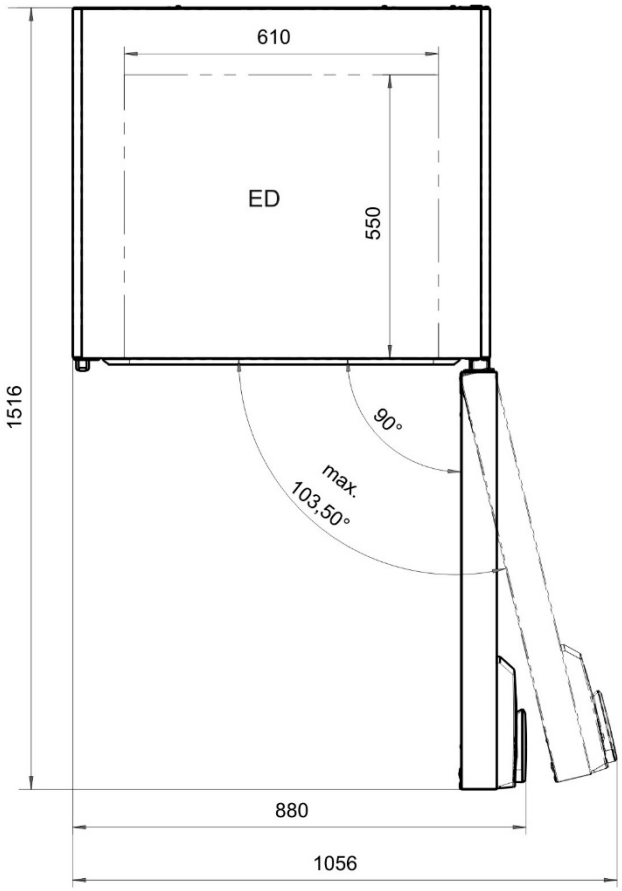

550
BF
1266
90°
max.
103,50°
780
933

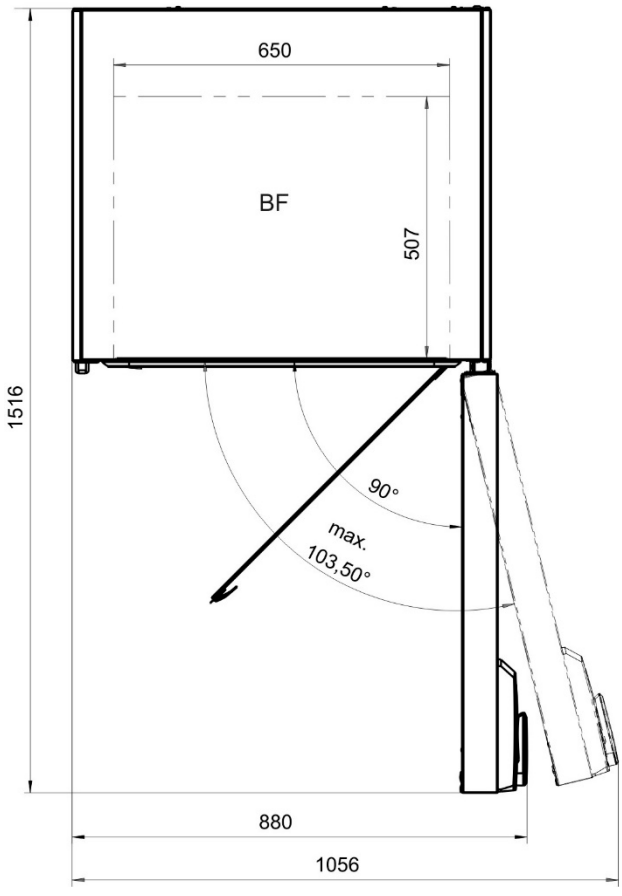

550
FD, FED
383
1266
90°
max.
103,50°
780
933

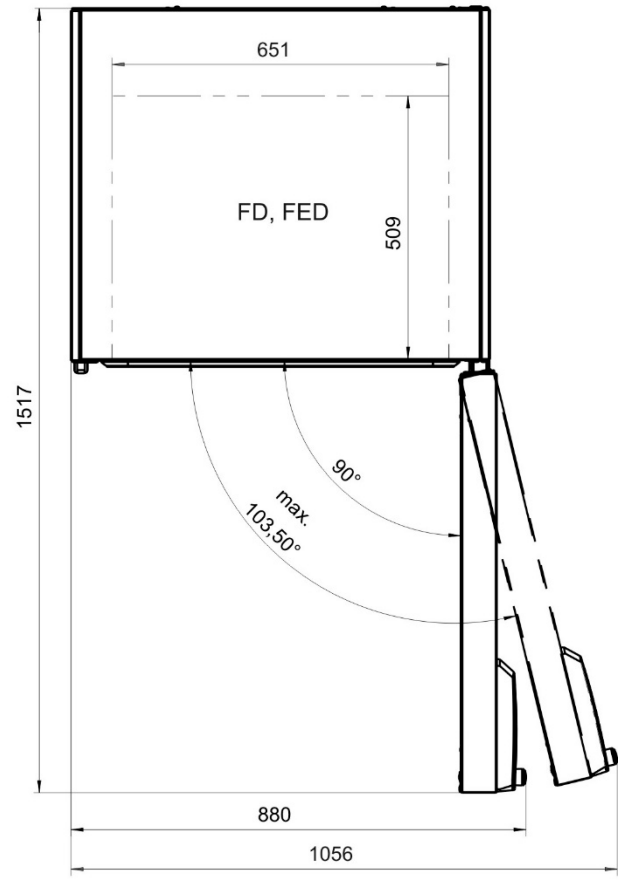
16.13 Dimensions size 260



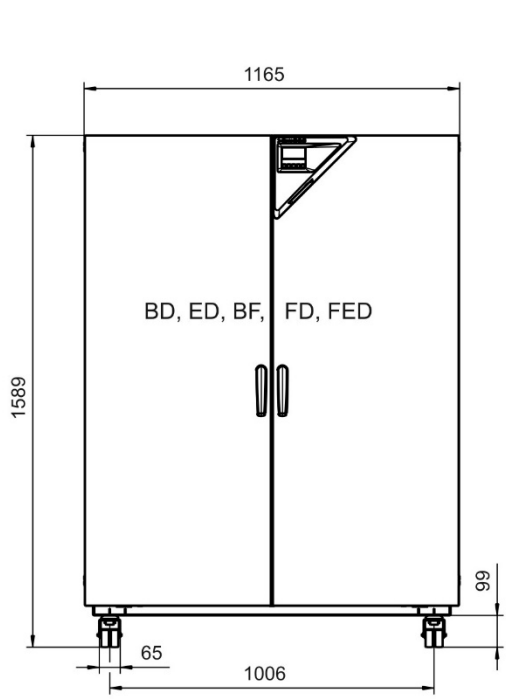

610
BD
545
1516
90°
max.
103,50°
880
1056

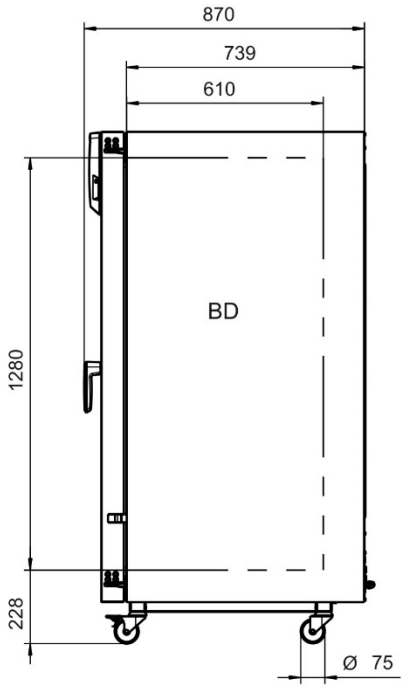

610
ED
550
1516
90°
max.
103,50°
880
1056

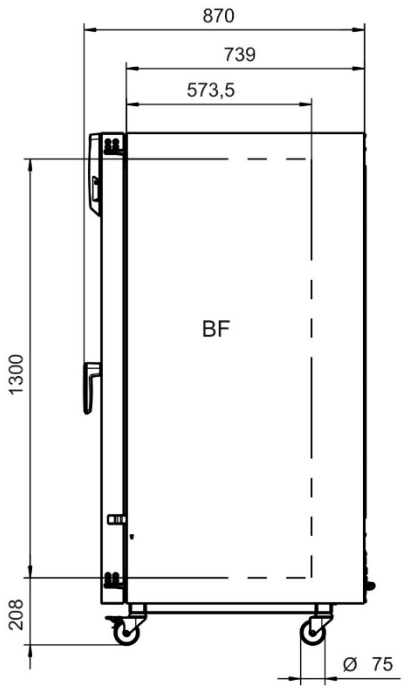

650
BF
507
1516
90°
max.
103,50°
880
1056

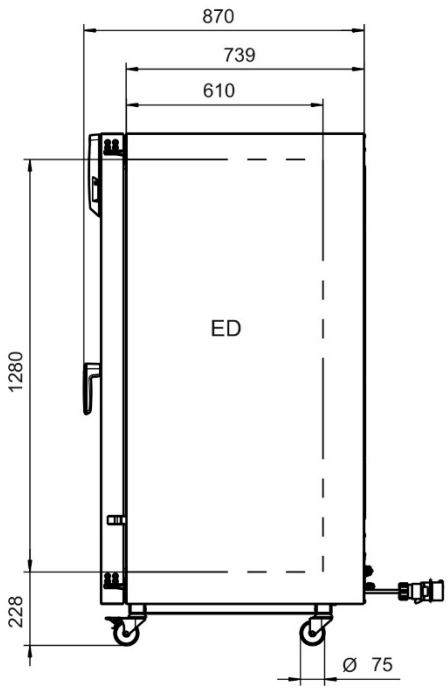

651
FD, FED
509
1517
90°
max.
103,50°
880
1056

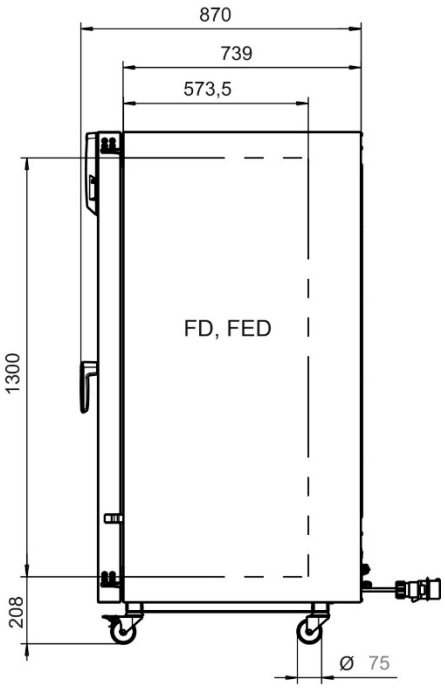
16.14 Dimensions size 720

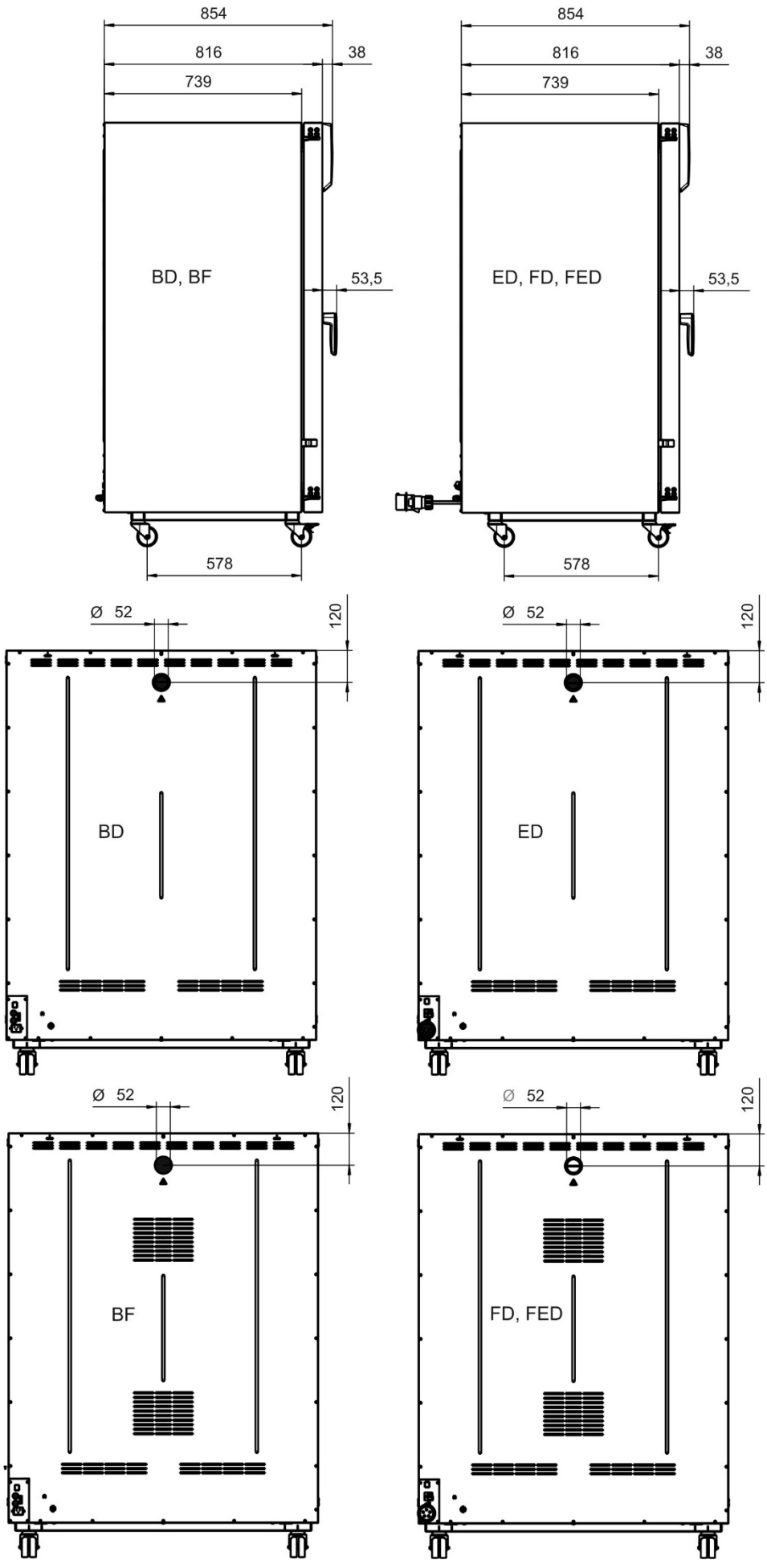


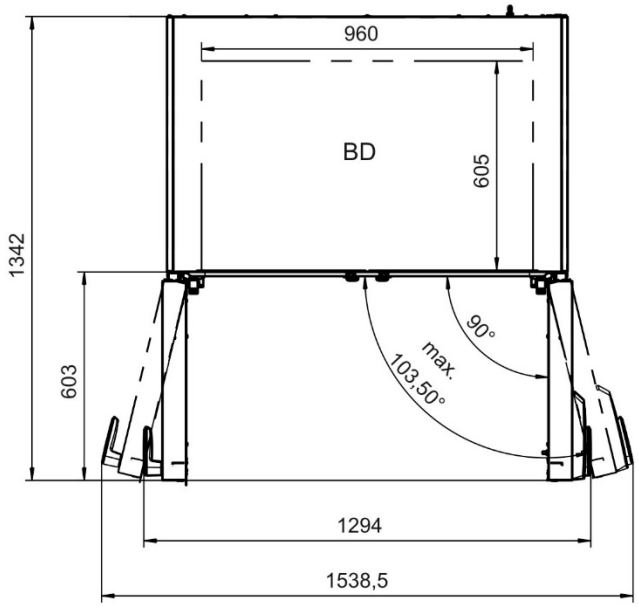


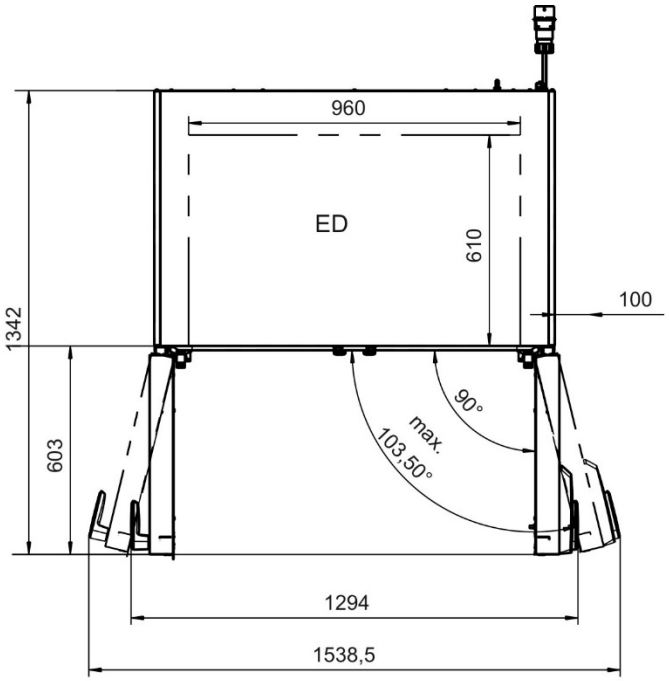


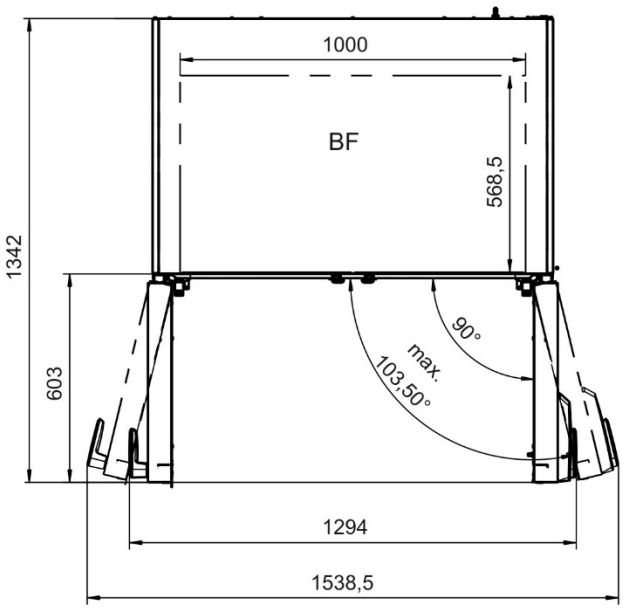


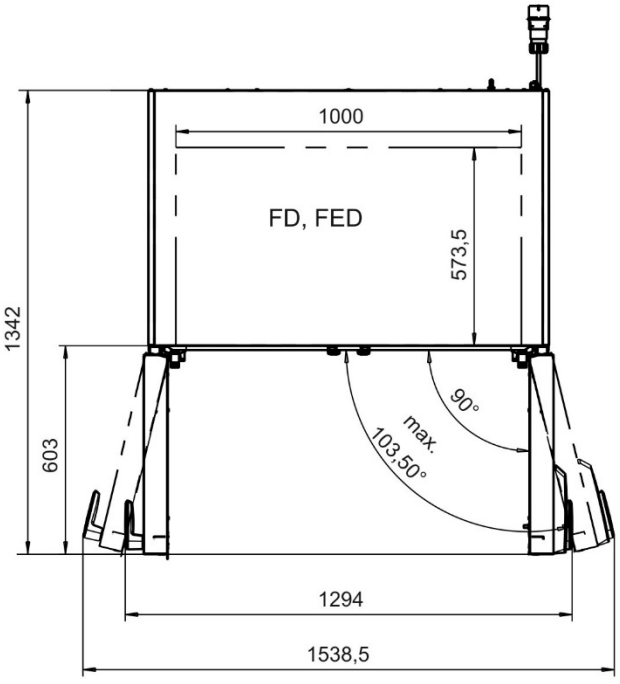



854
816
38
739
BD, BF
53,5
578
854
816
38
739
ED, FD, FED
53,5
578
Ø 52
120
BD
Ø 52
120
ED
Ø 52
120
BF
Ø 52
120
FD, FED


960
BD
605
1342
603
90°
max.
103,50°
1294
1538,5


960
ED
610
100
1342
603
90°
max.
103,50°
1294
1538,5


1000
BF
568,5
1342
603
90°
max.
103,50°
1294
1538,5


1000
FD, FED
573,5
1342
603
90°
max.
103,50°
1294
1538,5

17. Certificates and declarations of conformity

17.1 EU Declaration of Conformity for BD

BINDER
Best conditions for your success

EU-Konformitätserklärung / EU Declaration of Conformity / Déclaration de conformité UE / Declaración de conformidad UE / Dichiarazione di conformità UE / Декларация соответствия EU

Hersteller / Manufacturer / Fabricant / Fabricante / Fabbricante / Производитель	BINDER GmbH
Anschrift / Address / Adresse / Dirección / Indirizzo / Адрес	Im Mittleren Ösch 5, 78532 Tuttlingen, Germany
Produkt / Product / Produit / Producto / Prodotto / Продукт	Inkubatoren mit freier Konvektion Incubators with natural convection Incubateurs à convection naturelle Incubadoras de convección natural Incubatori a convezione naturale Инкубаторы с естественной конвекцией
Typenbezeichnung / Type / Type / Tipo / Tipo / Тип	BD 56, BD 115, BD 260, BD 720 (E3.1)
Art. No. / Art. no. / Réf. / Art. N° / Art. n. / № арт.	9010-0323, 9110-0323, 9010-0324, 9110-0324 9010-0325, 9110-0325, 9010-0326, 9110-0326 9010-0329, 9110-0329, 9010-0330, 9110-0330 9010-0331, 9110-0331, 9010-0332, 9110-0332

Die oben beschriebenen Produkte sind konform mit folgenden EU-Richtlinien:
The products described above are in conformity with the following EU Directives:
Les produits décrits ci-dessus sont conformes aux directives UE suivantes:
Los productos descritos arriba cumplen con las siguientes directivas de la UE:
I prodotti sopra descritti sono conformi alle seguenti direttive UE:
Продукты, указанные выше, полностью соответствуют следующим EU руководствам:

- **2014/35/EU**
  Niederspannungsrichtlinie 2014/35/EU / Low voltage directive 2014/35/EU / Directive basse tension 2014/35/UE / Directiva sobre baja tensión 2014/35/UE / Direttiva Bassa tensione 2014/35/UE / Директива по низкому напряжению 2014/35/EU
- **2014/30/EU**
  EMV-Richtlinie 2014/30/EU / EMC Directive 2014/30/EU / Directive CEM 2014/30/UE / Directiva CEM 2014/30/UE / Direttiva EMC 2014/30/UE / Директива ЭМС 2014/30/EU
- **2011/65/EU, (EU) 2015/863**
  RoHS-Richtlinien 2011/65/EU und (EU) 2015/863 / RoHS Directives 2011/65/EU and (EU) 2015/863 / Directives RoHS 2011/65/UE et (UE) 2015/863 / Directivas RoHS 2011/65/UE y (UE) 2015/863 / Direttive RoHS 2011/65/UE et (UE) 2015/863 / Директивы RoHS 2011/65/EU и (EU) 2015/863

1 / 2

BINDER GmbH Postfach 102 D-78502 Tuttlingen **Anschrift: BINDER** GmbH Im Mittleren Ösch 5 D-78532 Tuttlingen
Kontakt: Telefon: +49 (0) 74 62 / 20 05 – 0 | Telefax: +49 (0) 74 62 / 20 05 – 100 | info@binder-world.com | www.binder-world.com
Geschäftsführung: Dipl.-Ing. Peter M. Binder | Amtsgericht Stuttgart, HRB 727150 | Sitz der Gesellschaft: Tuttlingen
Bankverbindung: *Kreissparkasse Tuttlingen* IBAN-Code: DE05643 500700 000002266 | SWIFT-Code: SOLA DE S1TUT
Deutsche Bank Tuttlingen IBAN-Code: DE56653 70075 0213870900 | SWIFT-Code: DEUT DE SS653
Altgeräte-Entsorgung gemäß WEEE-Reg.-Nr. DE 37004983

BINDER
Best conditions for your success

Die oben beschriebenen Produkte tragen entsprechend die Kennzeichnung CE.
The products described above, corresponding to this, bear the CE-mark.
Les produits décrits ci-dessus, en correspondance, portent l'indication CE.
Los productos descritos arriba, en conformidad, llevan la indicación CE.
I prodotti sopra descritti, conformi a quanto sopra, portano il marchio CE.
Данные продукты в соответствии с изложенным выше маркированы знаком CE.

Die oben beschriebenen Produkte sind konform mit folgenden harmonisierten Normen:
The products described above are in conformity with the following harmonized standards:
Les produits décrits ci-dessus sont conformes aux normes harmonisées suivantes:
Los productos descritos arriba cumplen con las siguientes normas:
I prodotti sopra descritti sono conformi alle seguenti normative armonizzate:
Продукты, указанные выше, полностью соответствуют следующим стандартам:

Sicherheit / Safety / Sécurité / Seguridad / Sicurezza / Нормативы по безопасности
• **EN 61010-1:2010** • **EN 61010-2-010:2014**
EMV / EMC / CEM / CEM / EMC / ЭМС
• **EN 61326-1:2013**
RoHS
• **EN IEC 63000:2018**

78532 Tuttlingen, 28.01.2022
BINDER GmbH

P. Wimmer
Vice President
Vice President
Vice président
Vicepresidente
vicepresidente
Вице-президент

J. Bollaender
Leiter F & E
Director R & D
Chef de service R&D
Responsable I & D
Direttore R & D
Глава департамента R&D

2 / 2

BINDER GmbH Postfach 102 D-78502 Tuttlingen **Anschrift: BINDER** GmbH Im Mittleren Ösch 5 D-78532 Tuttlingen
Kontakt: Telefon: +49 (0) 74 62 / 20 05 – 0 | Telefax: +49 (0) 74 62 / 20 05 – 100 | info@binder-world.com | www.binder-world.com
Geschäftsführung: Dipl.-Ing. Peter M. Binder | Amtsgericht Stuttgart, HRB 727150 | Sitz der Gesellschaft: Tuttlingen
Bankverbindung: *Kreissparkasse Tuttlingen* IBAN-Code: DE05643 500700 000002266 | SWIFT-Code: SOLA DE S1TUT
Deutsche Bank Tuttlingen IBAN-Code: DE56653 70075 0213870900 | SWIFT-Code: DEUT DE SS653
Altgeräte-Entsorgung gemäß WEEE-Reg.-Nr. DE 37004983

17.2 EU Declaration of Conformity for BF

BINDER
Best conditions for your success

EU-Konformitätserklärung / EU Declaration of Conformity / Déclaration de conformité UE / Declaración de conformidad UE / Dichiarazione di conformità UE / Декларация соответствия EU

Hersteller / Manufacturer / Fabricant / Fabricante / Fabbricante / Производитель	BINDER GmbH
Anschrift / Address / Adresse / Dirección / Indirizzo / Адрес	Im Mittleren Ösch 5, 78532 Tuttlingen, Germany
Produkt / Product / Produit / Producto / Prodotto / Продукт	Inkubatoren mit Umluft Incubators with forced convection Incubateurs à convection forcée Incubadoras de convección forzada Incubatori a convezione forzata Инкубаторы с принудительной циркуляцией воздуха
Typenbezeichnung / Type / Type / Tipo / Tipo / Тип	BF 56, BF 115, BF 260, BF 720 (E3.1)
Art. No. / Art. no. / Réf. / Art. Nº / Art. n. / № арт.	9010-0313, 9110-0313, 9010-0314, 9110-0314 9010-0315, 9110-0315, 9010-0316, 9110-0316 9010-0319, 9110-0319, 9010-0320, 9110-0320 9010-0321, 9110-0321, 9010-0322, 9110-0322

Die oben beschriebenen Produkte sind konform mit folgenden EU-Richtlinien:
The products described above are in conformity with the following EU Directives:
Les produits décrits ci-dessus sont conformes aux directives UE suivantes:
Los productos descritos arriba cumplen con las siguientes directivas de la UE:
I prodotti sopra descritti sono conformi alle seguenti direttive UE:
Продукты, указанные выше, полностью соответствуют следующим EU руководствам:

- **2014/35/EU**
  Niederspannungsrichtlinie 2014/35/EU / Low voltage directive 2014/35/EU / Directive basse tension 2014/35/UE / Directiva sobre baja tensión 2014/35/UE / Direttiva Bassa tensione 2014/35/UE / Директива по низкому напряжению 2014/35/EU
- **2014/30/EU**
  EMV-Richtlinie 2014/30/EU / EMC Directive 2014/30/EU / Directive CEM 2014/30/UE / Directiva CEM 2014/30/UE / Direttiva EMC 2014/30/UE / Директива ЭМС 2014/30/EU
- **2011/65/EU, (EU) 2015/863**
  RoHS-Richtlinien 2011/65/EU und (EU) 2015/863 / RoHS Directives 2011/65/EU and (EU) 2015/863 / Directives RoHS 2011/65/UE et (UE) 2015/863 / Directivas RoHS 2011/65/UE y (UE) 2015/863 / Direttive RoHS 2011/65/UE et (UE) 2015/863 / Директивы RoHS 2011/65/EU и (EU) 2015/863

1 / 2

BINDER GmbH Postfach 102 D-78502 Tuttlingen **Anschrift: BINDER** GmbH Im Mittleren Ösch 5 D-78532 Tuttlingen
Kontakt: Telefon: +49 (0) 74 62 / 20 05 – 0 | Telefax: +49 (0) 74 62 / 20 05 – 100 | info@binder-world.com | www.binder-world.com
Geschäftsführung: Dipl.-Ing. Peter M. Binder | Amtsgericht Stuttgart, HRB 727150 | Sitz der Gesellschaft: Tuttlingen
Bankverbindung: *Kreissparkasse Tuttlingen* IBAN-Code: DE05643 500700 000002266 | SWIFT-Code: SOLA DE S1TUT
Deutsche Bank Tuttlingen IBAN-Code: DE56653 70075 0213870900 | SWIFT-Code: DEUT DE **SS653**
Altgeräte-Entsorgung gemäß WEEE-Reg.-Nr. DE 37004983

BINDER
Best conditions for your success

Die oben beschriebenen Produkte tragen entsprechend die Kennzeichnung CE.
The products described above, corresponding to this, bear the CE-mark.
Les produits décrits ci-dessus, en correspondance, portent l'indication CE.
Los productos descritos arriba, en conformidad, llevan la indicación CE.
I prodotti sopra descritti, conformi a quanto sopra, portano il marchio CE.
Данные продукты в соответствии с изложенным выше маркированы знаком CE.

Die oben beschriebenen Produkte sind konform mit folgenden harmonisierten Normen:
The products described above are in conformity with the following harmonized standards:
Les produits décrits ci-dessus sont conformes aux normes harmonisées suivantes:
Los productos descritos arriba cumplen con las siguientes normas:
I prodotti sopra descritti sono conformi alle seguenti normative armonizzate:
Продукты, указанные выше, полностью соответствуют следующим стандартам:

Sicherheit / Safety / Sécurité / Seguridad / Sicurezza / Нормативы по безопасности
• **EN 61010-1:2010** • **EN 61010-2-010:2014**
EMV / EMC / CEM / CEM / EMC / ЭМС
• **EN 61326-1:2013**
RoHS
• **EN IEC 63000:2018**

78532 Tuttlingen, 28.01.2022
BINDER GmbH

P. Wimmer
Vice President
Vice President
Vice président
Vicepresidente
vicepresidente
Вице-президент

J. Bollaender
Leiter F & E
Director R & D
Chef de service R&D
Responsable I & D
Direttore R & D
Глава департамента R&D

2 / 2

BINDER GmbH Postfach 102 D-78502 Tuttlingen **Anschrift: BINDER** GmbH Im Mittleren Ösch 5 D-78532 Tuttlingen
Kontakt: Telefon: +49 (0) 74 62 / 20 05 – 0 | Telefax: +49 (0) 74 62 / 20 05 – 100 | info@binder-world.com | www.binder-world.com
Geschäftsführung: Dipl.-Ing. Peter M. Binder | Amtsgericht Stuttgart, HRB 727150 | Sitz der Gesellschaft: Tuttlingen
Bankverbindung: *Kreissparkasse Tuttlingen* IBAN-Code: DE05643 500700 000002266 | SWIFT-Code: SOLA DE S1TUT
Deutsche Bank Tuttlingen IBAN-Code: DE56653 70075 0213870900 | SWIFT-Code: DEUT DE SS653
Altgeräte-Entsorgung gemäß WEEE-Reg.-Nr. DE 37004983

17.3 EU Declaration of Conformity for ED

BINDER
Best conditions for your success

EU-Konformitätserklärung / EU Declaration of Conformity / Déclaration de conformité UE / Declaración de conformidad UE / Dichiarazione di conformità UE / Декларация соответствия EU

Hersteller / Manufacturer / Fabricant / Fabricante / Fabbricante / Производитель	BINDER GmbH
Anschrift / Address / Adresse / Dirección / Indirizzo / Адрес	Im Mittleren Ösch 5, 78532 Tuttlingen, Germany
Produkt / Product / Produit / Producto / Prodotto / Продукт	Trocken- und Wärmeschränke mit freier Konvektion Drying and heating ovens with natural convection Etuves de chauffage et de séchage à convection naturelle Estufas de secado y calentamiento de convección natural Stufe per essiccazione e riscaldamento a convezione naturale Сушильные и сухожаровые шкафы с естественной конвекцией
Typenbezeichnung / Type / Type / Tipo / Tipo / Тип	ED 56, ED 115, ED 260, ED 720 (E3.1)
Art. No. / Art. no. / Réf. / Art. N° / Art. n. / № арт.	9010-0333, 9110-0333, 9010-0334, 9110-0334 9010-0335, 9110-0335, 9010-0336, 9110-0336 9010-0339, 9110-0339, 9010-0340, 9110-0340 9010-0341, 9110-0341

Die oben beschriebenen Produkte sind konform mit folgenden EU-Richtlinien:
The products described above are in conformity with the following EU Directives:
Les produits décrits ci-dessus sont conformes aux directives UE suivantes:
Los productos descritos arriba cumplen con las siguientes directivas de la UE:
I prodotti sopra descritti sono conformi alle seguenti direttive UE:
Продукты, указанные выше, полностью соответствуют следующим EU руководствам:

- **2014/35/EU**
  Niederspannungsrichtlinie 2014/35/EU / Low voltage directive 2014/35/EU / Directive basse tension 2014/35/UE / Directiva sobre baja tensión 2014/35/UE / Direttiva Bassa tensione 2014/35/UE / Директива по низкому напряжению 2014/35/EU
- **2014/30/EU**
  EMV-Richtlinie 2014/30/EU / EMC Directive 2014/30/EU / Directive CEM 2014/30/UE / Directiva CEM 2014/30/UE / Direttiva EMC 2014/30/UE / Директива ЭМС 2014/30/EU
- **2011/65/EU, (EU) 2015/863**
  RoHS-Richtlinien 2011/65/EU und (EU) 2015/863 / RoHS Directives 2011/65/EU and (EU) 2015/863 / Directives RoHS 2011/65/UE et (UE) 2015/863 / Directivas RoHS 2011/65/UE y (UE) 2015/863 / Direttive RoHS 2011/65/UE et (UE) 2015/863 / Директивы RoHS 2011/65/EU и (EU) 2015/863

1 / 2

BINDER GmbH Postfach 102 D-78502 Tuttlingen **Anschrift: BINDER** GmbH Im Mittleren Ösch 5 D-78532 Tuttlingen
Kontakt: Telefon: +49 (0) 74 62 / 20 05 – 0 | Telefax: +49 (0) 74 62 / 20 05 – 100 | info@binder-world.com | www.binder-world.com
Geschäftsführung: Dipl.-Ing. Peter M. Binder | Amtsgericht Stuttgart, HRB 727150 | Sitz der Gesellschaft: Tuttlingen
Bankverbindung: *Kreissparkasse Tuttlingen* IBAN-Code: DE05643 500700 000002266 | SWIFT-Code: SOLA DE S1TUT
Deutsche Bank Tuttlingen IBAN-Code: DE56653 70075 0213870900 | SWIFT-Code: DEUT DE SS653
Altgeräte-Entsorgung gemäß WEEE-Reg.-Nr. DE 37004983

BINDER
Best conditions for your success

Die oben beschriebenen Produkte tragen entsprechend die Kennzeichnung CE.
The products described above, corresponding to this, bear the CE-mark.
Les produits décrits ci-dessus, en correspondance, portent l'indication CE.
Los productos descritos arriba, en conformidad, llevan la indicación CE.
I prodotti sopra descritti, conformi a quanto sopra, portano il marchio CE.
Данные продукты в соответствии с изложенным выше маркированы знаком CE.

Die oben beschriebenen Produkte sind konform mit folgenden harmonisierten Normen:
The products described above are in conformity with the following harmonized standards:
Les produits décrits ci-dessus sont conformes aux normes harmonisées suivantes:
Los productos descritos arriba cumplen con las siguientes normas:
I prodotti sopra descritti sono conformi alle seguenti normative armonizzate:
Продукты, указанные выше, полностью соответствуют следующим стандартам:

Sicherheit / Safety / Sécurité / Seguridad / Sicurezza / Нормативы по безопасности
• **EN 61010-1:2010** • **EN 61010-2-010:2014**
EMV / EMC / CEM / CEM / EMC / ЭМС
• **EN 61326-1:2013**
RoHS
• **EN IEC 63000:2018**

78532 Tuttlingen, 28.01.2022
BINDER GmbH

P. Wimmer
Vice President
Vice President
Vice président
Vicepresidente
vicepresidente
Вице-президент

J. Bollaender
Leiter F & E
Director R & D
Chef de service R&D
Responsable I & D
Direttore R & D
Глава департамента R&D

2 / 2

BINDER GmbH Postfach 102 D-78502 Tuttlingen **Anschrift: BINDER** GmbH Im Mittleren Ösch 5 D-78532 Tuttlingen
Kontakt: Telefon: +49 (0) 74 62 / 20 05 – 0 | Telefax: +49 (0) 74 62 / 20 05 – 100 | info@binder-world.com | www.binder-world.com
Geschäftsführung: Dipl.-Ing. Peter M. Binder | Amtsgericht Stuttgart, HRB 727150 | Sitz der Gesellschaft: Tuttlingen
Bankverbindung: *Kreissparkasse Tuttlingen* IBAN-Code: DE05643 500700 000002266 | SWIFT-Code: SOLA DE S1TUT
Deutsche Bank Tuttlingen IBAN-Code: DE56653 70075 0213870900 | SWIFT-Code: DEUT DE SS653
Altgeräte-Entsorgung gemäß WEEE-Reg.-Nr. DE 37004983

17.4 EU Declaration of Conformity for FD

BINDER
Best conditions for your success

EU-Konformitätserklärung / EU Declaration of Conformity / Déclaration de conformité UE / Declaración de conformidad UE / Dichiarazione di conformità UE / Декларация соответствия EU

Hersteller / Manufacturer / Fabricant / Fabricante / Fabbricante / Производитель	BINDER GmbH
Anschrift / Address / Adresse / Dirección / Indirizzo / Адрес	Im Mittleren Ösch 5, 78532 Tuttlingen, Germany
Produkt / Product / Produit / Producto / Prodotto / Продукт	Trocken- und Wärmeschränke mit Umluft Drying and heating ovens with forced convection Etuves de chauffage et de séchage à convection forcée Estufas de secado y calentamiento de convección forzada Stufe per essiccazione e riscaldamento a convezione forzata Сушильные и сухожаровые шкафы с принудительной конвекцией
Typenbezeichnung / Type / Type / Tipo / Tipo / Тип	FD 56, FD 115, FD 260, FD 720 (E3.1)
Art. No. / Art. no. / Réf. / Art. N° / Art. n. / № арт.	9010-0303, 9110-0303, 9010-0304, 9110-0304 9010-0305, 9110-0305, 9010-0306, 9110-0306 9010-0309, 9110-0309, 9010-0310, 9110-0310 9010-0311, 9110-0311

Die oben beschriebenen Produkte sind konform mit folgenden EU-Richtlinien:
The products described above are in conformity with the following EU Directives:
Les produits décrits ci-dessus sont conformes aux directives UE suivantes:
Los productos descritos arriba cumplen con las siguientes directivas de la UE:
I prodotti sopra descritti sono conformi alle seguenti direttive UE:
Продукты, указанные выше, полностью соответствуют следующим EU руководствам:

- **2014/35/EU**
  Niederspannungsrichtlinie 2014/35/EU / Low voltage directive 2014/35/EU / Directive basse tension 2014/35/UE / Directiva sobre baja tensión 2014/35/UE / Direttiva Bassa tensione 2014/35/UE / Директива по низкому напряжению 2014/35/EU
- **2014/30/EU**
  EMV-Richtlinie 2014/30/EU / EMC Directive 2014/30/EU / Directive CEM 2014/30/UE / Directiva CEM 2014/30/UE / Direttiva EMC 2014/30/UE / Директива ЭМС 2014/30/EU
- **2011/65/EU, (EU) 2015/863**
  RoHS-Richtlinien 2011/65/EU und (EU) 2015/863 / RoHS Directives 2011/65/EU and (EU) 2015/863 / Directives RoHS 2011/65/UE et (UE) 2015/863 / Directivas RoHS 2011/65/UE y (UE) 2015/863 / Direttive RoHS 2011/65/UE et (UE) 2015/863 / Директивы RoHS 2011/65/EU и (EU) 2015/863

1 / 2

BINDER GmbH Postfach 102 D-78502 Tuttlingen **Anschrift: BINDER** GmbH Im Mittleren Ösch 5 D-78532 Tuttlingen
Kontakt: Telefon: +49 (0) 74 62 / 20 05 – 0 | Telefax: +49 (0) 74 62 / 20 05 – 100 | info@binder-world.com | www.binder-world.com
Geschäftsführung: Dipl.-Ing. Peter M. Binder | Amtsgericht Stuttgart, HRB 727150 | Sitz der Gesellschaft: Tuttlingen
Bankverbindung: *Kreissparkasse Tuttlingen* IBAN-Code: DE05643 500700 000002266 | SWIFT-Code: SOLA DE S1TUT
Deutsche Bank Tuttlingen IBAN-Code: DE56653 70075 0213870900 | SWIFT-Code: DEUT DE SS653
Altgeräte-Entsorgung gemäß WEEE-Reg.-Nr. DE 37004983

BINDER
Best conditions for your success

Die oben beschriebenen Produkte tragen entsprechend die Kennzeichnung CE.
The products described above, corresponding to this, bear the CE-mark.
Les produits décrits ci-dessus, en correspondance, portent l'indication CE.
Los productos descritos arriba, en conformidad, llevan la indicación CE.
I prodotti sopra descritti, conformi a quanto sopra, portano il marchio CE.
Данные продукты в соответствии с изложенным выше маркированы знаком CE.

Die oben beschriebenen Produkte sind konform mit folgenden harmonisierten Normen:
The products described above are in conformity with the following harmonized standards:
Les produits décrits ci-dessus sont conformes aux normes harmonisées suivantes:
Los productos descritos arriba cumplen con las siguientes normas:
I prodotti sopra descritti sono conformi alle seguenti normative armonizzate:
Продукты, указанные выше, полностью соответствуют следующим стандартам:

Sicherheit / Safety / Sécurité / Seguridad / Sicurezza / Нормативы по безопасности
• **EN 61010-1:2010** • **EN 61010-2-010:2014**
EMV / EMC / CEM / CEM / EMC / ЭМС
• **EN 61326-1:2013**
RoHS
• **EN IEC 63000:2018**

78532 Tuttlingen, 28.01.2022
BINDER GmbH

P. Wimmer
Vice President
Vice President
Vice président
Vicepresidente
vicepresidente
Вице-президент

J. Bollaender
Leiter F & E
Director R & D
Chef de service R&D
Responsable I & D
Direttore R & D
Глава департамента R&D

2 / 2

BINDER GmbH Postfach 102 D-78502 Tuttlingen **Anschrift: BINDER** GmbH Im Mittleren Ösch 5 D-78532 Tuttlingen
Kontakt: Telefon: +49 (0) 74 62 / 20 05 – 0 | Telefax: +49 (0) 74 62 / 20 05 – 100 | info@binder-world.com | www.binder-world.com
Geschäftsführung: Dipl.-Ing. Peter M. Binder | Amtsgericht Stuttgart, HRB 727150 | Sitz der Gesellschaft: Tuttlingen
Bankverbindung: *Kreissparkasse Tuttlingen* IBAN-Code: DE05643 500700 000002266 | SWIFT-Code: SOLA DE S1TUT
Deutsche Bank Tuttlingen IBAN-Code: DE56653 70075 0213870900 | SWIFT-Code: DEUT DE SS653
Altgeräte-Entsorgung gemäß WEEE-Reg.-Nr. DE 37004983

17.5 EU Declaration of Conformity for FED

BINDER
Best conditions for your success

EU-Konformitätserklärung / EU Declaration of Conformity / Déclaration de conformité UE / Declaración de conformidad UE / Dichiarazione di conformità UE / Декларация соответствия EU

Hersteller / Manufacturer / Fabricant / Fabricante / Fabbricante / Производитель	BINDER GmbH
Anschrift / Address / Adresse / Dirección / Indirizzo / Адрес	Im Mittleren Ösch 5, 78532 Tuttlingen, Germany
Produkt / Product / Produit / Producto / Prodotto / Продукт	Trocken- und Wärmeschränke mit Umluft Drying and heating ovens with forced convection Etuves de chauffage et de séchage à convection forcée Estufas de secado y calentamiento de convección forzada Stufe per essiccazione e riscaldamento a convezione forzata Сушильные и сухожаровые шкафы с принудительной конвекцией
Typenbezeichnung / Type / Type / Tipo / Tipo / Тип	FED 56, FED 115, FED 260, FED 720 (E3.1)
Art. No. / Art. no. / Réf. / Art. Nº / Art. n. / № арт.	9010-0293, 9110-0293, 9010-0294, 9110-0294 9010-0295, 9110-0295, 9010-0296, 9110-0296 9010-0299, 9110-0299, 9010-0300, 9110-0300 9010-0301, 9110-0301, 9010-0302, 9110-0302

Die oben beschriebenen Produkte sind konform mit folgenden EU-Richtlinien:
The products described above are in conformity with the following EU Directives:
Les produits décrits ci-dessus sont conformes aux directives UE suivantes:
Los productos descritos arriba cumplen con las siguientes directivas de la UE:
I prodotti sopra descritti sono conformi alle seguenti direttive UE:
Продукты, указанные выше, полностью соответствуют следующим EU руководствам:

- **2014/35/EU**
  Niederspannungsrichtlinie 2014/35/EU / Low voltage directive 2014/35/EU / Directive basse tension 2014/35/UE / Directiva sobre baja tensión 2014/35/UE / Direttiva Bassa tensione 2014/35/UE / Директива по низкому напряжению 2014/35/EU
- **2014/30/EU**
  EMV-Richtlinie 2014/30/EU / EMC Directive 2014/30/EU / Directive CEM 2014/30/UE / Directiva CEM 2014/30/UE / Direttiva EMC 2014/30/UE / Директива ЭМС 2014/30/EU
- **2011/65/EU, (EU) 2015/863**
  RoHS-Richtlinien 2011/65/EU und (EU) 2015/863 / RoHS Directives 2011/65/EU and (EU) 2015/863 / Directives RoHS 2011/65/UE et (UE) 2015/863 / Directivas RoHS 2011/65/UE y (UE) 2015/863 / Direttive RoHS 2011/65/UE et (UE) 2015/863 / Директивы RoHS 2011/65/EU и (EU) 2015/863

1 / 2

BINDER GmbH Postfach 102 D-78502 Tuttlingen **Anschrift: BINDER** GmbH Im Mittleren Ösch 5 D-78532 Tuttlingen
Kontakt: Telefon: +49 (0) 74 62 / 20 05 – 0 | Telefax: +49 (0) 74 62 / 20 05 – 100 | info@binder-world.com | www.binder-world.com
Geschäftsführung: Dipl.-Ing. Peter M. Binder | Amtsgericht Stuttgart, HRB 727150 | Sitz der Gesellschaft: Tuttlingen
Bankverbindung: *Kreissparkasse Tuttlingen* IBAN-Code: DE05643 500700 000002266 | SWIFT-Code: SOLA DE S1TUT
Deutsche Bank Tuttlingen IBAN-Code: DE56653 70075 0213870900 | SWIFT-Code: DEUT DE **SS653**
Altgeräte-Entsorgung gemäß WEEE-Reg.-Nr. DE 37004983

BINDER
Best conditions for your success

Die oben beschriebenen Produkte tragen entsprechend die Kennzeichnung CE.
The products described above, corresponding to this, bear the CE-mark.
Les produits décrits ci-dessus, en correspondance, portent l'indication CE.
Los productos descritos arriba, en conformidad, llevan la indicación CE.
I prodotti sopra descritti, conformi a quanto sopra, portano il marchio CE.
Данные продукты в соответствии с изложенным выше маркированы знаком CE.

Die oben beschriebenen Produkte sind konform mit folgenden harmonisierten Normen:
The products described above are in conformity with the following harmonized standards:
Les produits décrits ci-dessus sont conformes aux normes harmonisées suivantes:
Los productos descritos arriba cumplen con las siguientes normas:
I prodotti sopra descritti sono conformi alle seguenti normative armonizzate:
Продукты, указанные выше, полностью соответствуют следующим стандартам:

Sicherheit / Safety / Sécurité / Seguridad / Sicurezza / Нормативы по безопасности
• **EN 61010-1:2010** • **EN 61010-2-010:2014**
EMV / EMC / CEM / CEM / EMC / ЭМС
• **EN 61326-1:2013**
RoHS
• **EN IEC 63000:2018**

78532 Tuttlingen, 28.01.2022
BINDER GmbH

P. Wimmer
Vice President
Vice President
Vice président
Vicepresidente
vicepresidente
Вице-президент

J. Bollaender
Leiter F & E
Director R & D
Chef de service R&D
Responsable I & D
Direttore R & D
Глава департамента R&D

BINDER GmbH Postfach 102 D-78502 Tuttlingen **Anschrift: BINDER** GmbH Im Mittleren Ösch 5 D-78532 Tuttlingen
Kontakt: Telefon: +49 (0) 74 62 / 20 05 – 0 | Telefax: +49 (0) 74 62 / 20 05 – 100 | info@binder-world.com | www.binder-world.com
Geschäftsführung: Dipl.-Ing. Peter M. Binder | Amtsgericht Stuttgart, HRB 727150 | Sitz der Gesellschaft: Tuttlingen
Bankverbindung: *Kreissparkasse Tuttlingen* IBAN-Code: DE05643 500700 000002266 | SWIFT-Code: SOLA DE S1TUT
Deutsche Bank Tuttlingen IBAN-Code: DE56653 70075 0213870900 | SWIFT-Code: DEUT DE SS653
Altgeräte-Entsorgung gemäß WEEE-Reg.-Nr. DE 37004983

17.6 UKCA Declaration of Conformity for BD

BINDER
Best conditions for your success

UKCA Declaration of Conformity

Name and address of manufacturer	BINDER GmbH Im Mittleren Ösch 5, 78532 Tuttlingen, Germany
Name and address of UK Authorised Representative	Comply Express Ltd Unit C2, Coalport House, Stafford Park 1, Telford TF3 3BD
Object of the Declaration	Incubators with natural convection
Type Designation	BD 56, BD 115, BD 260, BD 720 (E3.1)
BINDER Art. No.	9010-0323, 9110-0323, 9010-0325, 9110-0325, 9010-0329, 9110-0329, 9010-0331, 9110-0331,

The Objects of the Declaration described above are in conformity with the relevant UK Regulations and UK Guidelines:

- **Electrical Equipment (Safety) Regulations 2016**
  Statutory Instruments 2016 No. 1101 – Consumer Protection Health and safety
- **Electromagnetic Compatibility Regulations 2016**
  Statutory Instruments 2016 No. 1091 – Electromagnetic Compatibility
- **The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012**
  Statutory Instruments 2012 No. 3032 – Environmental Protection

References of standards and/or technical specifications applied for this Declaration of Conformity, or parts thereof:

S.I. 2016 No. 1101:	EN 61010-1:2010 EN 61010-2-10 EN 60204-1:2018
S.I. 2016 No. 1091:	EN 61326-1:2013
S.I. 2012 No. 3032:	EN IEC 63000:2018

This Declaration is issued under the sole responsibility of the manufacturer.

Tuttlingen	01.06.2022			
Place	Date	P. Wimmer Vice President	J. Bollaender Director R & D	BINDER GmbH

BINDER GmbH
Im Mittleren Ösch 5
78502 Tuttlingen
Deutschland

Tel: +49 (0) 74 62 / 20 05 - 0
Fax: +49 (0) 74 62 / 20 05 - 100
info@binder-world.com
www.binder-world.com

Geschäftsführung:
Dipl.-Ing. Peter M. Binder
Amtsgericht Stuttgart, HRB 727150
Sitz der Gesellschaft: Tuttlingen
Ust.-ID.-Nr.: DE815021304

Kreissparkasse Tuttlingen
IBAN: DE05 6435 0070 0000 0022 66
SWIFT: SOLA DE S1TUT
Deutsche Bank Tuttlingen
IBAN: DE56 6537 0075 0213 8709 00
SWIFT: DEUT DE SS653

17.7 UKCA Declaration of Conformity for BF

BINDER
Best conditions for your success

UKCA Declaration of Conformity

Name and address of manufacturer	BINDER GmbH Im Mittleren Ösch 5, 78532 Tuttlingen, Germany
Name and address of UK Authorised Representative	Comply Express Ltd Unit C2, Coalport House, Stafford Park 1, Telford TF3 3BD
Object of the Declaration	Incubators with forced convection
Type Designation	BF 56, BF 115, BF 260, BF 720 (E3.1)
BINDER Art. No.	9010-0313, 9110-0313, 9010-0315, 9110-0315, 9010-0319, 9110-0319, 9010-0321, 9110-0321,

The Objects of the Declaration described above are in conformity with the relevant UK Regulations and UK Guidelines:

- **Electrical Equipment (Safety) Regulations 2016**
  Statutory Instruments 2016 No. 1101 – Consumer Protection Health and safety
- **Electromagnetic Compatibility Regulations 2016**
  Statutory Instruments 2016 No. 1091 – Electromagnetic Compatibility
- **The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012**
  Statutory Instruments 2012 No. 3032 – Environmental Protection

References of standards and/or technical specifications applied for this Declaration of Conformity, or parts thereof:

S.I. 2016 No. 1101:	EN 61010-1:2010 EN 61010-2-10 EN 60204-1:2018
S.I. 2016 No. 1091:	EN 61326-1:2013
S.I. 2012 No. 3032:	EN IEC 63000:2018

This Declaration is issued under the sole responsibility of the manufacturer.

Tuttlingen 01.06.2022

Place	Date	P. Wimmer Vice President	J. Bollaender Director R & D	BINDER GmbH

BINDER GmbH
Im Mittleren Ösch 5
78502 Tuttlingen
Deutschland

Tel: +49 (0) 74 62 / 20 05 - 0
Fax: +49 (0) 74 62 / 20 05 - 100
info@binder-world.com
www.binder-world.com

Geschäftsführung:
Dipl.-Ing. Peter M. Binder
Amtsgericht Stuttgart, HRB 727150
Sitz der Gesellschaft: Tuttlingen
Ust.-ID.-Nr.: DE815021304

Kreissparkasse Tuttlingen
IBAN: DE05 6435 0070 0000 0022 66
SWIFT: SOLA DE S1TUT
Deutsche Bank Tuttlingen
IBAN: DE56 6537 0075 0213 8709 00
SWIFT: DEUT DE SS653

17.8 UKCA Declaration of Conformity for ED

BINDER
Best conditions for your success

UKCA Declaration of Conformity

Name and address of manufacturer	BINDER GmbH Im Mittleren Ösch 5, 78532 Tuttlingen, Germany
Name and address of UK Authorised Representative	Comply Express Ltd Unit C2, Coalport House, Stafford Park 1, Telford TF3 3BD
Object of the Declaration	Drying and heating ovens with natural convection
Type Designation	ED 56, ED 115, ED 260, ED 720 (E3.1)
BINDER Art. No.	9010-0333, 9110-0333, 9010-0335, 9110-0335, 9010-0339, 9110-0339, 9010-0341, 9110-0341

The Objects of the Declaration described above are in conformity with the relevant UK Regulations and UK Guidelines:

- **Electrical Equipment (Safety) Regulations 2016**
  Statutory Instruments 2016 No. 1101 – Consumer Protection Health and safety
- **Electromagnetic Compatibility Regulations 2016**
  Statutory Instruments 2016 No. 1091 – Electromagnetic Compatibility
- **The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012**
  Statutory Instruments 2012 No. 3032 – Environmental Protection

References of standards and/or technical specifications applied for this Declaration of Conformity, or parts thereof:

S.I. 2016 No. 1101:	EN 61010-1:2010 EN 61010-2-10 EN 60204-1:2018
S.I. 2016 No. 1091:	EN 61326-1:2013
S.I. 2012 No. 3032:	EN IEC 63000:2018

This Declaration is issued under the sole responsibility of the manufacturer.

Place	Date			
Tuttlingen	01.06.2022	P. Wimmer Vice President	J. Bollaender Director R & D	BINDER GmbH

BINDER GmbH
Im Mittleren Ösch 5
78502 Tuttlingen
Deutschland

Tel: +49 (0) 74 62 / 20 05 - 0
Fax: +49 (0) 74 62 / 20 05 - 100
info@binder-world.com
www.binder-world.com

Geschäftsführung:
Dipl.-Ing. Peter M. Binder
Amtsgericht Stuttgart, HRB 727150
Sitz der Gesellschaft: Tuttlingen
Ust.-ID.-Nr.: DE815021304

Kreissparkasse Tuttlingen
IBAN: DE05 6435 0070 0000 0022 66
SWIFT: SOLA DE S1TUT
Deutsche Bank Tuttlingen
IBAN: DE56 6537 0075 0213 8709 00
SWIFT: DEUT DE SS653

17.9 UKCA Declaration of Conformity for FD

BINDER
Best conditions for your success

UKCA Declaration of Conformity

Name and address of manufacturer	BINDER GmbH Im Mittleren Ösch 5, 78532 Tuttlingen, Germany
Name and address of UK Authorised Representative	Comply Express Ltd Unit C2, Coalport House, Stafford Park 1, Telford TF3 3BD
Object of the Declaration	Drying and heating ovens with forced convection
Type Designation	FD 56, FD 115, FD 260, FD 720 (E3.1)
BINDER Art. No.	9010-0303, 9110-0303, 9010-0305, 9110-0305, 9010-0309, 9110-0309, 9010-0311, 9110-0311

The Objects of the Declaration described above are in conformity with the relevant UK Regulations and UK Guidelines:

- **Electrical Equipment (Safety) Regulations 2016**
  Statutory Instruments 2016 No. 1101 – Consumer Protection Health and safety
- **Electromagnetic Compatibility Regulations 2016**
  Statutory Instruments 2016 No. 1091 – Electromagnetic Compatibility
- **The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012**
  Statutory Instruments 2012 No. 3032 – Environmental Protection

References of standards and/or technical specifications applied for this Declaration of Conformity, or parts thereof:

S.I. 2016 No. 1101:	EN 61010-1:2010 EN 61010-2-10 EN 60204-1:2018
S.I. 2016 No. 1091:	EN 61326-1:2013
S.I. 2012 No. 3032:	EN IEC 63000:2018

This Declaration is issued under the sole responsibility of the manufacturer.

Tuttlingen	01.06.2022	i.V.	i.V.	
Place	Date	P. Wimmer Vice President	J. Bollaender Director R & D	BINDER GmbH

BINDER GmbH
Im Mittleren Ösch 5
78502 Tuttlingen
Deutschland

Tel: +49 (0) 74 62 / 20 05 - 0
Fax: +49 (0) 74 62 / 20 05 - 100
info@binder-world.com
www.binder-world.com

Geschäftsführung:
Dipl.-Ing. Peter M. Binder
Amtsgericht Stuttgart, HRB 727150
Sitz der Gesellschaft: Tuttlingen
Ust.-ID.-Nr.: DE815021304

Kreissparkasse Tuttlingen
IBAN: DE05 6435 0070 0000 0022 66
SWIFT: SOLA DE S1TUT
Deutsche Bank Tuttlingen
IBAN: DE56 6537 0075 0213 8709 00
SWIFT: DEUT DE SS653

17.10 UKCA Declaration of Conformity for FED

BINDER
Best conditions for your success

UKCA Declaration of Conformity

Name and address of manufacturer	BINDER GmbH Im Mittleren Ösch 5, 78532 Tuttlingen, Germany
Name and address of UK Authorised Representative	Comply Express Ltd Unit C2, Coalport House, Stafford Park 1, Telford TF3 3BD
Object of the Declaration	Drying and heating ovens with forced convection
Type Designation	FED 56, FED 115, FED 260, FED 720 (E3.1)
BINDER Art. No.	9010-0293, 9110-0293, 9010-0295, 9110-0295, 9010-0299, 9110-0299, 9010-0301, 9110-0301,

The Objects of the Declaration described above are in conformity with the relevant UK Regulations and UK Guidelines:

- **Electrical Equipment (Safety) Regulations 2016**
  Statutory Instruments 2016 No. 1101 – Consumer Protection Health and safety
- **Electromagnetic Compatibility Regulations 2016**
  Statutory Instruments 2016 No. 1091 – Electromagnetic Compatibility
- **The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012**
  Statutory Instruments 2012 No. 3032 – Environmental Protection

References of standards and/or technical specifications applied for this Declaration of Conformity, or parts thereof:

S.I. 2016 No. 1101:	EN 61010-1:2010 EN 61010-2-10 EN 60204-1:2018
S.I. 2016 No. 1091:	EN 61326-1:2013
S.I. 2012 No. 3032:	EN IEC 63000:2018

This Declaration is issued under the sole responsibility of the manufacturer.

Tuttlingen	01.06.2022			
Place	Date	P. Wimmer Vice President	J. Bollaender Director R & D	BINDER GmbH

BINDER GmbH
Im Mittleren Ösch 5
78502 Tuttlingen
Deutschland

Tel: +49 (0) 74 62 / 20 05 - 0
Fax: +49 (0) 74 62 / 20 05 - 100
info@binder-world.com
www.binder-world.com

Geschäftsführung:
Dipl.-Ing. Peter M. Binder
Amtsgericht Stuttgart, HRB 727150
Sitz der Gesellschaft: Tuttlingen
Ust.-ID.-Nr.: DE815021304

Kreissparkasse Tuttlingen
IBAN: DE05 6435 0070 0000 0022 66
SWIFT: SOLA DE S1TUT
Deutsche Bank Tuttlingen
IBAN: DE56 6537 0075 0213 8709 00
SWIFT: DEUT DE SS653

17.11 Certificate for the GS mark of conformity of the “VDE Prüf- und Zertifizierungsinstitut” (Testing and Certification Institute of the Association for Electrical, Electronic and Information Technologies)

VDE Prüf- und Zertifizierungsinstitut

ZEICHENGENEHMIGUNG
MARKS APPROVAL

Binder GmbH
Im Mittleren Ösch 5
78532 Tuttlingen
Germany

ist berechtigt, für ihr Produkt /
is authorized to use for their product

Wärmeschrank, Labor
Heating cabinet, laboratory

die hier abgebildeten markenrechtlich geschützten Zeichen
für die ab Blatt 2 aufgeführten Typen zu benutzen /
the legally protected Marks as shown below for the types referred to on page 2 ff.

und/oder - *and/or* oder/*or*

Geprüft und zertifiziert nach /
Tested and certified according to

DIN EN 61010-1 (VDE 0411-1):2020-03; EN 61010-1:2010+A1:2019+A1:2019/AC:2019
DIN EN IEC 61010-2-010 (VDE 0411-2-010):2022-12; EN IEC 61010-2-010:2020

Das Produkt erfüllt auch die Anforderungen nach /
The product also fulfills the requirements of

IEC 61010-1:2010
IEC 61010-1:2010/AMD1:2016
IEC 61010-2-010:2019

Das Produkt entspricht den Anforderungen des deutschen Produktsicherheitsgesetzes (ProdSG) hinsichtlich der Gewährleistung von Sicherheit und Gesundheit.
The product covers the requirements of the German Act "Produktsicherheitsgesetz (ProdSG)" regarding the ensurance of safety and health.

Befristet zum / *valid until*: 2028-06-30

Aktenzeichen: 1792300-2945-0010 / 304075
File ref.:

VDE Prüf- und Zertifizierungsinstitut GmbH
VDE Testing and Certification Institute
Zertifizierungsstelle / *Certification*

Ausweis-Nr. 40045043 Blatt 1
Certificate No. *Page*

Weitere Bedingungen siehe Rückseite und Folgeblätter /
further conditions see overleaf and following pages

Offenbach, 2016-09-28
(letzte Änderung / updated 2023-07-10)

M. Taschl

VDE Zertifikate sind nur gültig bei Veröffentlichung unter:
VDE certificates are valid only when published on:
http://www.vde.com/zertifikat
http://www.vde.com/certificate

VDE

VDE Prüf- und Zertifizierungsinstitut
Zeichengenehmigung

Ausweis-Nr. / *Certificate No.* 40045043

Blatt / *Page* 2

Name und Sitz des Genehmigungs-Inhabers / *Name and registered seat of the Certificate holder*
Binder GmbH, Im Mittleren Ösch 5, 78532 Tuttlingen

Aktenzeichen / *File ref.*
1792300-2945-0010 / 304075 / TL7 / ZIE

letzte Änderung / *updated* 2023-07-10

Datum / *Date* 2016-09-28

Dieses Blatt gilt nur in Verbindung mit Blatt 1 des Zeichengenehmigungsausweises Nr. 40045043.
This supplement is only valid in conjunction with page 1 of the Certificate No. 40045043.

Wärmeschrank, Labor
Heating cabinet, laboratory

Typ(en) / *Type(s)*

A)	**BF 56**
B)	**BF 115**
C)	**BF 260**
D)	**BD 56**
E)	**BD 115**
F)	**BD 260**
G)	**ED 56**
H)	**ED 115**
I)	**ED 260**
J)	**FD 56**
K)	**FD 115**
L)	**FD 260**
M)	**FED 56**
N)	**FED 115**
O)	**FED 260**
P)	**BF 720**
Q)	**BD 720**
R)	**ED 720**
S)	**FD 720**
T)	**FED 720**

Bemerkung
Remark

BF - Brutschrank mit Lüfter zur Luftumwälzung /
Incubator with fan for air circulation
BD - Brutschrank / Incubator
ED - Universalwärmeschrank, natürliche Luftumwälzung /
Universal heating cabinet, natural air circulation
FD - mit Lüfter zur Luftumwälzung /
with fan for air circulation
FED - mit Lüfter zur Luftumwälzung und Drehzahlregelung /
with fan for air circulation and speed regulation
BF - Brutschrank mit Lüfter zur Luftumwälzung /
Incubator with fan for air circulation

Die zwei / drei folgenden Ziffern
bezeichnen das Innenraumvolumen /
The two / three following digits
are significant for the interior volume

Fortsetzung siehe Blatt 3 /
continued on page 3

VDE Prüf- und Zertifizierungsinstitut GmbH * Testing and Certification Institute
Merianstrasse 28, D-63069 Offenbach
Telefon +49 (0) 69 83 06-0
Telefax +49 (0) 69 83 06-555

VDE Prüf- und Zertifizierungsinstitut
Zeichengenehmigung

Ausweis-Nr. / *Certificate No.* 40045043

Blatt / *Page* 3

Name und Sitz des Genehmigungs-Inhabers / *Name and registered seat of the Certificate holder*
Binder GmbH, Im Mittleren Ösch 5, 78532 Tuttlingen

Aktenzeichen / *File ref.*
1792300-2945-0010 / 304075 / TL7 / ZIE

letzte Änderung / *updated*
2023-07-10

Datum / *Date*
2016-09-28

Dieses Blatt gilt nur in Verbindung mit Blatt 1 des Zeichengenehmigungsausweises Nr. 40045043.
This supplement is only valid in conjunction with page 1 of the Certificate No. 40045043.

PAK AfPS GS 2019:01PAK	Das Produkt entspricht den Anforderungen gemäß PAK-Dokument AfPS GS 2019:01PAK
PAH AfPS GS 2019:01PAH	*The product is in accordance with the requirements of PAH-document AfPS GS 2019:01PAH*
Weitere Angaben *Further information*	siehe Anlage Nr. 1 von 2023-07-10 *see Appendix No. 1 dated 2023-07-10*

VDE Prüf- und Zertifizierungsinstitut GmbH * Testing and Certification Institute

Merianstrasse 28, D-63069 Offenbach

Telefon +49 (0) 69 83 06-0
Telefax +49 (0) 69 83 06-555

VDE Prüf- und Zertifizierungsinstitut
Zeichengenehmigung

Ausweis-Nr. / *Certificate No.*
40045043

Beiblatt / *Supplement*

Name und Sitz des Genehmigungs-Inhabers / *Name and registered seat of the Certificate holder*
Binder GmbH, Im Mittleren Ösch 5, 78532 Tuttlingen

Aktenzeichen / *File ref.*
1792300-2945-0010 / 304075 / TL7 / ZIE

letzte Änderung / *updated*
2023-07-10

Datum / *Date*
2016-09-28

Dieses Beiblatt ist Bestandteil des Zeichengenehmigungsausweises Nr. 40045043.
This supplement is part of the Certificate No. 40045043.

Wärmeschrank, Labor
Heating cabinet, laboratory

Fertigungsstätte(n)
Place(s) of manufacture

Referenz/*Reference*	Binder GmbH
30007949	Gänsäcker 16
	78532 Tuttlingen

VDE Prüf- und Zertifizierungsinstitut GmbH * Testing and Certification Institute

Merianstrasse 28, D-63069 Offenbach

Telefon +49 (0) 69 83 06-0
Telefax +49 (0) 69 83 06-555

VDE Prüf- und Zertifizierungsinstitut Zeichengenehmigung

Ausweis-Nr. / *Certificate No.*
40045043

Infoblatt / *Info sheet*

Name und Sitz des Genehmigungs-Inhabers / *Name and registered seat of the Certificate holder*
Binder GmbH, Im Mittleren Ösch 5, 78532 Tuttlingen

Aktenzeichen / *File ref.*
1792300-2945-0010 / 304075 / TL7 / ZIE

letzte Änderung / *updated*
2023-07-10

Datum / *Date*
2016-09-28

Dieses Blatt gilt nur in Verbindung mit Blatt 1 des Zeichengenehmigungsausweises Nr. 40045043.
This supplement is only valid in conjunction with page 1 of the Certificate No. 40045043.

Genehmigung zum Benutzen des auf Seite 1 abgebildeten markenrechtlich geschützten Zeichens des VDE:

Grundlage für die Benutzung sind die Allgemeinen Geschäftsbedingungen (AGB) der VDE Prüf- und Zertifizierungsinstitut GmbH (www.vde.com\AGB-Institut). Das Recht zur Benutzung erstreckt sich nur auf die bezeichnete Firma mit den genannten Fertigungsstätten und die oben aufgeführten Produkte mit den zugeordneten Bezeichnungen. Die Fertigungsstätte muss so eingerichtet sein, dass eine gleichmäßige Herstellung der geprüften und zertifizierten Ausführung gewährleistet ist.
Die Genehmigung ist so lange gültig wie die VDE-Bestimmungen gelten, die der Zertifizierung zugrunde gelegen haben, sofern sie nicht auf Grund anderer Bedingungen aus der VDE Prüf- und Zertifizierungsordnung (PM102) zurückgezogen werden muss.
Der Gültigkeitszeitraum einer VDE-GS-Zeichengenehmigung kann auf Antrag verlängert werden. Bei gesetzlichen und / oder normativen Änderungen kann die VDE-GS-Zeichengenehmigung ihre Gültigkeit zu einem früheren als dem angegebenen Datum verlieren.
Produkte, die das Biozid Dimethylfumarat (DMF) enthalten, dürfen gemäß der Kommissionsentscheidung 2009/251/EG nicht mehr in den Verkehr gebracht oder auf dem Markt bereitgestellt werden.
Der VDE-Zeichengenehmigungsausweis wird ausschließlich auf der ersten Seite unterzeichnet.

Approval to use the legally protected Mark of the VDE as shown on the first page:
Basis for the use are the general terms and conditions of the VDE Testing and Certification Institute (www.vde.com\terms-institute). The right to use the mark is granted only to the mentioned company with the named places of manufacture and the listed products with the related type references. The place of manufacture shall be equipped in a way that a constant manufacturing of the certified construction is assured.
The approval is valid as long as the VDE specifications are in force, on which the certification is based on, unless it is withdrawn according to the VDE Testing and Certification Procedure (PM102E).
The validity period of a VDE-GS-Mark Approval may be prolonged on request. In case of changes in legal and / or normative requirements, the validity period of a VDE-GS-Mark Approval may be shortened.
Products containing the biocide dimethylfumarate (DMF) may not be marketed or made available on the EC market according to the Commission Decision 2009/251/EC.
The approval is solely signed on the first page.

17.12 Certificate of Compliance for the UL Certification Mark from Underwriters Laboratories

CERTIFICATE OF COMPLIANCE

Certificate Number	2019-2-26-E200795
Report Reference	E200795-D1002-1/A0/C3-UL
Issue Date	2019-2-26
Issued to:	Binder GmbH
Applicant Company:	Im Mittleren Oesch 5 Tuttlingen, 78532 DE
Listed Company:	Same as Applicant
This is to certify that representative samples of	Heating cabinet, laboratory BF056-UL, BF115-UL, BF260-UL, BF720-UL, BD056-UL, BD115-UL, BD260-UL, BD720-UL, ED056-UL, ED115-UL, ED260-UL, FD056-UL, FD115-UL,FD260-UL, FED056-UL, FED115-UL, FED260-UL, FED720-UL Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL 61010-1, 3rd Edition, May 11, 2012, Revised July 15 2015, CAN/CSA-C22.2 No. 61010-1-12, 3rd Edition, Revision dated July 2015
Additional Standards:	IEC 61010 2-010: 2014 (Third Edition)
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information.

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Bruce Mahrenholz, Assistant Chief Engineer, Global Inspection and Field Services, UL LLC
Joseph Hosey, General Manager, Director of Sales – Canada, UNDERWRITERS LABORATORIES OF CANADA INC.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative www.ul.com/contactus

Page 1

18. Contamination clearance certificate

18.1 For chambers located outside the USA and Canada

Declaration with regard to safety and health

Erklärung zur Sicherheit und gesundheitlichen Unbedenklichkeit

The German Ordinance on Hazardous Substances (GefStofV), and the regulations regarding safety at the workplace, require that this form be filled out for all products that are returned to us, so that the safety and health of our employees can be warranted.

Die Sicherheit und Gesundheit unserer Mitarbeiter, die Gefahrstoffverordnung GefStofV und die Vorschriften zur Sicherheit am Arbeitsplatz machen es erforderlich, dass dieses Formblatt für alle Produkte, die an uns zurückgeschickt wird.

	In the absence of a completely filled out form, a repair is not possible. Ohne Vorliegen des vollständig ausgefüllten Formblattes ist eine Reparatur nicht möglich.

- A completely filled out form should be transmitted by Fax (+49 (0) 7462 2005 93555) or by letter in advance to us, so that this information is available before the equipment/component part arrives. A second copy of this form should accompany the equipment/component part. Eventually the carrier should be informed.

  Eine vollständig ausgefüllte Kopie dieses Formblattes soll per Telefax (Nr. +49 (0) 7462 2005 93555) oder Brief vorab an uns gesandt werden, so dass die Information vorliegt, bevor das Gerät/Bauteil eintrifft. Eine weitere Kopie soll dem Gerät/Bauteil beigefügt sein. Ggf. ist auch die Spedition zu informieren.

- Incomplete information or non-conformity with this procedure will inevitably lead to substantial delays in processing. We hope you will have understanding for this measure, which lies outside of our area of influence, and that you will help us to speed up this procedure.

  Unvollständige Angaben oder Nichteinhalten dieses Ablaufs führen zwangsläufig zu beträchtlichen Verzögerungen in der Abwicklung. Bitte haben Sie Verständnis für Maßnahmen, die außerhalb unserer Einflussmöglichkeiten liegen und helfen Sie mit, den Ablauf beschleunigen.

- **Please fill out this form completely.**

  Bitte unbedingt vollständig ausfüllen!

1.	**Chamber/ component part / type:** / **Gerät / Bauteil / Typ:**
2.	**Serial No./ Serien-Nr.:**
3.	**Details about utilized substances / biological substances** / **Einzelheiten über die eingesetzten Substanzen/biologische Materialien:**
3.1	**Designations** / **Bezeichnungen:** a) _____ b) _____ c) _____
3.2	**Safety measures required for handling these substances** / **Vorsichtsmaßnahmen beim Umgang mit diesen Stoffen:** a) _____ b) _____ c) _____

3.3 Measures to be taken in case of skin contact or release into the atmosphere / Maßnahmen bei Personenkontakt oder Freisetzung:

a) _____

b) _____

c) _____

d) _____

3.4 Other important information that must be taken into account / Weitere zu beachtende und wichtige Informationen:

a) _____

b) _____

c) _____

4. Declaration on the risk of these substances (please checkmark the applicable items) / Erklärung zur Gefährlichkeit der Stoffe (bitte Zutreffendes ankreuzen) :

❑ **4.1 For non toxic, non radioactive, biologically harmless materials / für nicht giftige, nicht radioaktive, biologisch ungefährliche Stoffe:**

We herewith guarantee that the above-mentioned chamber / component part… / Wir versichern, dass o.g. Gerät/Bauteil...

❑ Has not been exposed to or contains any toxic or otherwise hazardous substances / weder giftige noch sonstige gefährliche Stoffe enthält oder solche anhaften.

❑ That eventually generated reaction products are non-toxic and also do not represent a hazard / auch evtl. entstandene Reaktionsprodukte weder giftig sind noch sonst eine Gefährdung darstellen.

❑ Eventual residues of hazardous substances have been removed / evtl. Rückstände von Gefahrstoffen entfernt wurden.

❑ **4.2 For toxic, radioactive, biologically harmful or hazardous substances, or any other hazardous materials / für giftige, radioaktive, biologisch bedenkliche bzw. gefährliche Stoffe oder anderweitig gefährliche Stoffe.**

We herewith guarantee that … / Wir versichern, dass …

❑ The hazardous substances, which have come into contact with the above-mentioned equipment/component part, have been completely listed under item 3.1 and that all information in this regard is complete / die gefährlichen Stoffe, die mit dem o.g. Gerät/Bauteil in Kontakt kamen, in 3.1 aufgelistet sind und alle Angaben vollständig sind.

❑ That the chamber /component part has not been in contact with radioactivity / das Gerät/Bauteil nicht mit Radioaktivität in Berührung kam

5. Kind of transport / transporter / Transportweg/Spediteur:

Transport by (means and name of transport company, etc.) Versendung durch (Name Spediteur o.ä.)

_____

Date of dispatch to BINDER GmbH / Tag der Absendung an BINDER GmbH:

_____

We herewith declare that the following measures have been taken / Wir erklären, dass folgende Maßnahmen getroffen wurden:

❑ Hazardous substances were removed from the chamber / component part, so that no hazard exists for corresponding persons in the handling or repair of these items / das Gerät/Bauteil wurde von Gefahrstoffen befreit, so dass bei Handhabung/Reparaturen für die betreffenden Person keinerlei Gefährdung besteht

❑ The chamber was securely packaged and properly identified / das Gerät wurde sicher verpackt und vollständig gekennzeichnet.

❑ Information about the hazardousness of the shipment (if required) has been provided to the transporter / der Spediteur wurde (falls vorgeschrieben) über die Gefährlichkeit der Sendung informiert.

We herewith commit ourselves and guarantee that we will indemnify BINDER GmbH for all damages that are a consequence of incomplete or incorrect information provided by us, and that we will exempt BINDER GmbH from eventual damage claims by third parties./ Wir versichern, dass wir gegenüber BINDER für jeden Schaden, der durch unvollständige und unrichtige Angaben entsteht, haften und BINDER gegen eventuell entstehende Schadenansprüche Dritter freistellen.

We are aware that, in accordance with Article 823 of the German Civil Code (BGB), we are directly liable with regard to third parties, in this instance especially the employees of BINDER GmbH, who have been entrusted with the handling / repair of the chamber / component. / Es ist uns bekannt, dass wir gegenüber Dritten – hier insbesondere mit der Handhabung/Reparatur des Geräts/des Bauteils betraute Mitarbeiter der Firma BINDER - gemäß §823 BGB direkt haften

Name: _____

Position: _____

Date / Datum: _____

Signature / Unterschrift: _____

Company stamp / Firmenstempel:

Equipment that is returned to the factory for repair must be accompanied by a completely filled out contamination clearance certificate. For service and maintenance works on site, such a contamination clearance certificate must be submitted to the service technician before the start of the works. No repair or maintenance of the equipment is possible, without a properly filled out contamination clearance certificate.

18.2 For chambers located in the USA and Canada

Product Return Authorization Request

Please complete this form and the Customer Decontamination Declaration (next 2 pages) and attach the required pictures. E-mail to: IDL_SalesOrderProcessing_USA@binder-world.com

After we have received and reviewed the complete information we will decide on the issue of a RMA number. Please be aware that size specifications, voltage specifications as well as performance specifications are available on the internet at www.binder-world.us at any time.

Take notice of shipping laws and regulations.

	Please fill:	
Reason for return request	○ Duplicate order	
	○ Duplicate shipment	
	○ Demo	*Page one completed by sales*
	○ Power Plug / Voltage	115V / 230 V / 208 V / 240V
	○ Size does not fit space	
	○ Transport Damage	Shock watch tripped? *(pictures)*
	○ Other (specify below)	
	_____	
Is there a replacement PO?	○ Yes ○ No	
If yes -> PO #		
If yes -> Date PO placed		
Purchase order number		
BINDER model number		
BINDER serial number		
Date chamber was received		
Was the chamber unboxed?	○ Yes ○ No	
Was the chamber plugged in?	○ Yes ○ No	
Was the chamber in operation?	○ Yes ○ No	
Pictures of chamber attached? *Pictures of Packaging attached?*	○ Yes ○ No ○ Yes ○ No	Pictures have to be attached!

	Customer Contact Information	Distributor Contact Information
Name		
Company		
Address		
Phone		
E-mail		

Customer (End User) Decontamination Declaration

Health and Hazard Safety declaration

To protect the health of our employees and the safety at the workplace, we require that this form is completed by the user for all products and parts that are returned to us. (Distributors or Service Organizations cannot sign this form)

	NO RMA number will be issued without a completed form. Products or parts returned to our NY warehouse without a RMA number will be refused at the dock.

A second copy of the completed form must be attached to the outside of the shipping box.

1.	**Chamber/ component part / type**:
2.	**Serial No.**
3.	**List any exposure to hazardous liquids, gasses or substances and radioactive material**
3.1	**List with MSDS sheets attached where available or needed (if there is not enough space available below, please attach a page):** a) _____ b) _____ c) _____
3.2	**Safety measures required for handling the list under 3.1** a) _____ b) _____ c) _____
3.3	**Measures to be taken in case of skin contact or release into the atmosphere**: a) _____ b) _____ c) _____ d) _____
3.4	**Other important information that must be considered**: a) _____ b) _____ c) _____

4. Declaration of Decontamination

For toxic, radioactive, biologically and chemically harmful or hazardous substances, or any other hazardous materials.

We hereby guarantee that

4.1 Any hazardous substances, which have come into contact with the above-mentioned equipment / component part, have been completely listed under item 3.1 and that all information in this regard is complete.

4.2 That the chamber /component part has not been in contact with radioactivity

4.3 Any Hazardous substances were removed from the chamber / component part, so that no hazard exists for a persons in the shipping, handling or repair of these returned chamber

4.4 The chamber was securely packaged in the original undamaged packaging and properly identified on the outside of the packaging material with the chamber designation, the RMA number and a copy of this declaration.

4.5 Shipping laws and regulations have not been violated.

I hereby commit and guarantee that we will indemnify BINDER Inc. for all damages that are a consequence of incomplete or incorrect information provided by us, and that we will indemnify and hold harmless BINDER Inc. from eventual damage claims by third parties.

Name: _____

Position: _____

Company: _____

Address: _____

Phone #: _____

Email: _____

Date: _____

Signature: _____

Equipment returned to the NY warehouse for repair must be accompanied by a completed customer decontamination declaration. For service and maintenance works on site, such a customer decontamination declaration must be submitted to the service technician before the start of work. No repair or maintenance of the equipment is possible without a completed form.