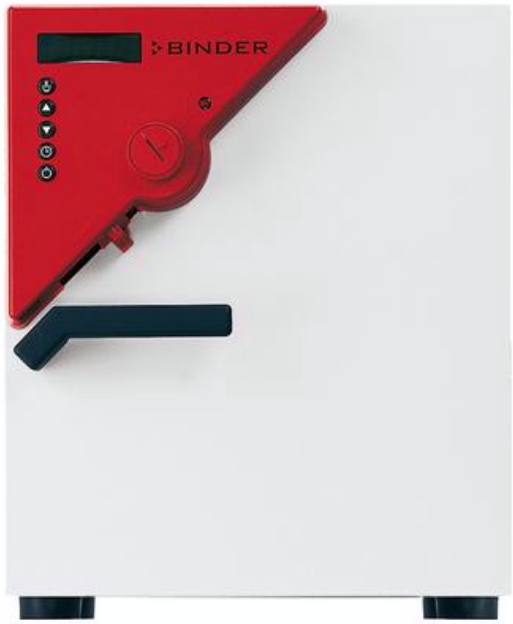
Heating oven with mechanical control

The strength of the BINDER ED series heating oven: routine drying and sterilization applications up to 300 °C (572 °F). Thanks to the gravity convection, thermal processes are highly efficient for this heating oven. A BINDER ED heating oven ensures fast, uniform drying.



Advantages:

- Fast, even tempering
- Wide temperature range
- Quality "Made in Germany"

Areas of application:


Biotechnology


Basic Research / Research Institutes


Human / Veterinary Medicine

Customer benefits

BINDER
Best conditions for your success

Features	Customer benefits	Characteristics
APT.line™	• Quick tempering • Identical test conditions throughout the chamber interior • Independent of specimen size and quantity	**APT.line™ for maximum precision** • Uniform circulation even under full load • Homogeneous temperature conditions throughout specimen material
Temperature range	• Broad range of applications • Short warm up times	**Standard up to 300 °C (572 °F)** • Large power reserves
Inner chamber concept	• Maximum occupational safety • Easy loading and unloading of specimen material • Easy cleaning	**Inner chamber made of stainless steel** • Very tight door closure with 2-point door latch • Low heat dissipation due to 60 mm (2.36 inch) insulation • Rack with tilt protection • No permanent fixtures
Standard equipment	• Reliable, easy handling	**Comprehensive standards** • Microprocessor control • Ergonomically positioned controller. • RS 422 interface • PT 100 temperature sensor
Quality	• Reliable devices with long service lives • Short delivery times • Minimal maintenance and operating costs	**Premium quality** • Highly automated • Series production • High-quality materials, state-of-the-art production technology • High standard according to DIN 12880 (27-point measurement)
Accessories and Services	• Flexible solution in terms of size, type and equipment • Optimal solution for numerous applications • BINDER INDIVIDUAL for customer-specific solutions • Worldwide BINDER Service	**Comprehensive product portfolio** • Size 23 to 720 liters (0.7 - 25.7 cu.ft.) • Additional product lines with humidity, light, CO2 or vacuum • Voltage variants (UL) and certificates • Various options: Door with viewing window, access ports, reinforced shelves, Data Logger Kits • Worldwide service network

BINDER Inc. 545-3 Johnson Ave, Bohemia, NY 11716, USA
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Performance characteristics

- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Temperature range from 5 °C (9 ºF) above ambient temperature to 300 °C (572 °F)
- Digital temperature setting with an accuracy of one degree
- DS control with integrated timer 0 to 99 hrs
- Independent adjustable temperature safety device class 2 (DIN 12880), with visual temperature alarm
- Adjustable ventilation by means of front ventilation flap slide and rear exhaust Ø 50 mm (2.0 inch)
- Optional RS 422 Interface for APT-COM™ Data Control System communication software
- Units up to 115 l (4.1 cu.ft.) are stackable
- 2 chrome-plated racks included
- ED 23 with space-saving door mechanism
- BINDER technical specification conformance certificate

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Specifications

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Best conditions for your success

ED 23

Exterior dimensions	
Width (mm/inch)	435 / 17.1
Height (incl. feet) (mm/inch)	495 / 19.4
Depth (mm/inch)	520 / 20.3
Plus door handle, I-panel, connection (mm/inch)	105 / 4.1
Wall clearance, rear (mm/inch)	100 / 3.9
Wall clearance, side (mm/inch)	100 / 3.9
Exhaust duct (outer Ø mm/inch)	52 / 2.1
Steam space volume (l/cu.ft.)	36 / 1.3
Number of doors (ea.)	1

Interior dimensions	
Width (mm/inch)	222 / 8.7
Height (mm/inch)	330 / 13.0
Depth (mm/inch)	277 / 10.9
Interior volume (l/cu.ft.)	20 / 0.7
Racks (number standard/max.)	2 / 3
Load per rack (kg/lbs.)	12 / 26
Permitted total load (kg/lbs.)	25 / 55
Weight (empty) (kg/lbs.)	22 / 49

Temperature data	
Temperature range approx. 5 °C (9 ºF) above ambient temperature to (°C / °F)	300 / 572
Temperature variation	
at 70 °C (158 °F) (± K)	1.5
at 150 °C (302 °F) (± K)	2.5
at 300 °C (572 °F) (± K)	3.8
Temperature fluctuation at 70 °C (158 °F) (± K)	0.3
Warm-up time 1)	
to 70 °C (158 °F) (min.)	13
to 150 °C (302 °F) (min.)	24
to 250 °C (482 °F) (min.)	35
Recovery time after doors were open for 30 sec. 1)	
at 70 °C (158 °F) (min.)	2.5

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at 150 °C (302 °F) (min.)	5
at 300 °C (572 °F) (min.)	8

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ED 23

Ventilation data	
Ventilation	
at 70 °C (158 °F) (x/h)	10
at 150 °C (302 °F) (x/h)	13
at 300 °C (572 °F) (x/h)	17

Electrical data	
IP protection class acc. to EN 60529	IP 20
Voltage (± 10%) 50 / 60 Hz (V)	230
Voltage (± 10%) 60 Hz (V)	115
Nominal power (kW)	0.8
Energy consumption	
at 70 °C (158 °F) (W)	43
at 150 °C (302 °F) (W)	148
at 300 °C (572 °F) (W)	450

1) To 98% of the set value

All technical data are specified for units with standard equipment at an ambient temperature of 25 °C (77 °F) and a line voltage fluctuation of ±10%. These average values have been determined according to the BINDER factory standard, respecting the recommended wall clearances of 10% of the height, width and depth of the inner chamber. Differing ambient temperatures and production-related device-specific variances can lead to varying technical data.

Therefore, we recommend individual customer-specific calibration or validation for applications on the limit of the permitted ambient temperature range.

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Numerous access ports

With silicone plugs for introducing external measuring instruments into the chamber, access ports with 10 mm (0.39 inch), 30 mm (1.18 inch), 50 mm (1.97 inch), 100 mm (3.94 inch) diameters.

Door with window and interior lighting

For optimal process control in the inner chamber, available for all device sizes.

Door lock

Prevents unauthorized access to the process sequences in the chamber.

Calibration certificate & validation

BINDER can significantly reduce the workload in qualifying and validating devices. Nobody knows our devices as well and has as much experience in certifications as we do.

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ED 23

Access ports with silicone plug 10 mm (0.39 inch), 30 mm (1.18 inch), 50 mm (1.97 inch), 100 mm (3.94 inch)	O
Anti-slip rubber pads for safe stacking (1 set of 4 pieces)	O
Switchable audible alarm for over temperature. Adjustable limit on the independent temperature safety device	O
Independent temperature safety device class 3.1 (DIN 12880) with optical alarm	O
Analog output for temperature 4 - 20 mA with 6-pin DIN socket (output not adjustable)	O
Temperature measurement acc. to DIN 12880 (27 measuring points, for 23 l (0.81 cu.ft.) devices 15 measuring points) at 150 °C (302 °F) or at specified temperature with measuring protocol and certificate	O
Calibration certificate, measurement in center of chamber at 150 °C (302 °F) or at specified testing temperature	O
Extension to calibration certificate. Each additional measurement at additional measuring point or testing temperature	O
Data Logger Kit T 350: For continuous temperature recording of 0 °C (32 °F) to 350 °C (662 °F). Kit includes 1 data logger, PT 100 sensor with 2 m Teflon extension cable and 1 fixture for mounting to the BINDER unit	O
Data Logger Software: Configuration and evaluation software for all BINDER Data Logger Kits, incl. data cable	O
Rack, chrome-plated	O
Rack, stainless steel	O
Perforated shelf, stainless steel	O
Door lock	O
Door gasket, FKM (Viton)	O
Door with window 180 x 180 mm (7.09 x 7.09 inch) and interior lighting (15 W)	O

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