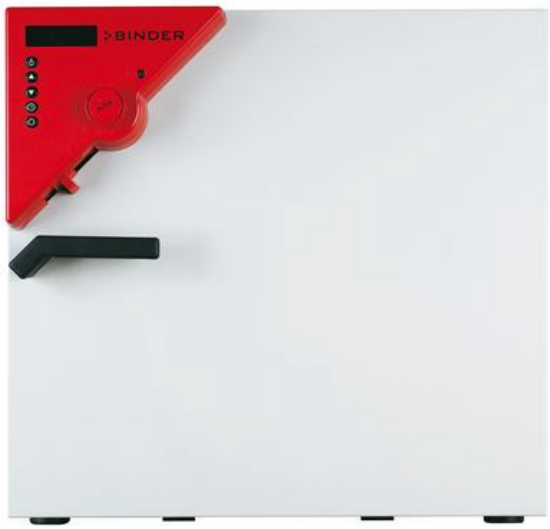
Heating oven with mechanical convection

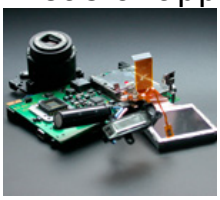
A BINDER FD series heating oven is always used when fast drying and sterilization is required. Thanks to its fully homogeneous temperature distribution, quick dynamics and powerful fan, this heating oven saves valuable time.



Advantages:

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

Areas of application:


Electronics / Semiconductor Industry


Basic Research / Research Institutes


Plastics Industry

Features	Customer benefits	Characteristics
APT.line™	• Quick drying • 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** • 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 insulation • Rack with tilt protection • No permanent fixtures
Standard equipment	• Reliable, easy handling	**Comprehensive standards** • Microprocessor control • Ergonomically positioned controller. • 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 240 liters • 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 GmbH PO Box 102 D-78502 Tuttlingen Address: Im Mittleren Ösch 5 D-78532 Tuttlingen, Germany
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- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Temperature range from 5 °C above ambient temperature to 300 °C
- DS control with integrated timer 0 to 99,59 hrs
- Digital temperature setting with an accuracy of one degree
- Independent adjustable temperature safety device class 2 (DIN 12880), with visual temperature alarm
- Adjustable front ventilation flap slide and rear exhaust Ø 50 mm (1.97 inch)
- Units up to 115 liters are stackable
- 2 chrome-plated racks included
- BINDER test confirmation

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FD 53

Exterior dimensions	
Housing	
Width (mm)	635
Height (incl. feet/castors) (mm)	620
Depth (plus connections and fittings) (mm)	575
Depth (incl. connections and fittings) (mm)	690
Wall clearance, rear (mm)	100
Wall clearance, side (mm)	160
Exhaust duct (outer Ø mm)	52
Steam space volume (l)	77
Number of doors (ea.)	1

Interior dimensions	
Width (mm)	400
Height (mm)	400
Depth (mm)	340
Interior volume (l)	53
Racks (number standard/max.)	2 / 5
Load per rack (kg)	15
Permitted total load (kg)	40
Weight (empty) (kg)	44

Temperature data	
Temperature range approx. 5 °C above ambient temperature to (°C)	300
Temperature variation	
at 70 °C (± K)	0,8
at 150 °C (± K)	2
at 300 °C (± K)	3,7
Temperature fluctuation at 70 °C (± K)	0,3
Heating up time 1)	
to 70 °C (min.)	7
to 150 °C (min.)	24
to 300 °C (min.)	60
Recovery time after doors were open for 30 sec. 1)	
at 70 °C (min.)	2
at 150 °C (min.)	5
at 300 °C (min.)	9

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FD 53

Ventilation data	
Ventilation	
at 70 °C (x/h)	59
at 150 °C (x/h)	64
at 300 °C (x/h)	53

Electrical data	
IP protection class acc. to EN 60529	IP 20
Voltage (± 10%) 50/60 Hz (V)	230
Nominal power (kW)	1,2
Energy consumption	
at 70 °C (W)	172
at 150 °C (W)	429
at 300 °C (W)	951

1) To 98% of the set value

All technical data are specified for units with standard equipment at an ambient temperature of 25 °C and a line voltage fluctuation of ±10%. The temperature data is determined in accordance to factory standard following DIN 12880, respecting the recommended wall clearances of 10% of the height, width and depth of the inner chamber. All figures are typical average values for series devices. We reserve the right to alter technical specifications at any time.

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Numerous access ports

With silicone plugs for introducing external measuring instruments into the chamber, access ports with 10, 30, 50, 100 mm 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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FD 53

Access ports with silicone plug, 10, 30, 50, 100 mm	O
Anti-slip rubber pads for safe stacking (1 set of 4 pieces)	O
Independent adjustable temperature safety device class 3.1 (DIN 12880) with optical alarm	O
Analog temperature output, 4 - 20 mA with 6-pin DIN socket (output not adjustable)	O
Over temperature alarm, audible, can be switched off. Temperature limit can be set at the independent, adjustable temperature safety device	O
Securing elements for additional fastening of racks (1 set of 4 pieces)	O
Temperature measurement acc. to DIN 12880 at 150 °C or at specified testing temperature with measuring protocol and certificate	O
Factory calibration certificate. Measurement in center of chamber at 150 °C (302 °F) or at specified testing temperature	O
Extension to factory calibration certificate. Each additional measurement at additional measuring point or temperature	O
Data Logger Kit T 350: For continuous temperature recording of 0 °C to 350 °C. 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
Shelf, perforated, stainless steel	O
Locking door handle with key	O
Door gasket, FKM (Viton)	O
Door with window 230 x 230 mm and interior lighting (15 W)	O

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