

## Heating oven with natural convection

The strength of the BINDER ED series heating oven: routine drying and sterilization applications up to 300 °C. 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 InstitutesHuman / Veterinary  
Medicine

Features	Customer benefits	Characteristics
APT.line™	<ul style="list-style-type: none"> <li>• Quick drying</li> <li>• Identical test conditions throughout the chamber interior</li> <li>• Independent of specimen size and quantity</li> </ul>	<b>APT.line™ for maximum precision</b> <ul style="list-style-type: none"> <li>• Uniform circulation even under full load</li> <li>• Homogeneous temperature conditions throughout specimen material</li> </ul>
Temperature range	<ul style="list-style-type: none"> <li>• Broad range of applications</li> <li>• Short warm up times</li> </ul>	<b>Standard up to 300 °C</b> <ul style="list-style-type: none"> <li>• Large power reserves</li> </ul>
Inner chamber concept	<ul style="list-style-type: none"> <li>• Maximum occupational safety</li> <li>• Easy loading and unloading of specimen material</li> <li>• Easy cleaning</li> </ul>	<b>Inner chamber made of stainless steel</b> <ul style="list-style-type: none"> <li>• Very tight door closure with 2-point door latch</li> <li>• Low heat dissipation due to 60 mm insulation</li> <li>• Rack with tilt protection</li> <li>• No permanent fixtures</li> </ul>
Standard equipment	<ul style="list-style-type: none"> <li>• Reliable, easy handling</li> </ul>	<b>Comprehensive standards</b> <ul style="list-style-type: none"> <li>• Microprocessor control</li> <li>• Ergonomically positioned controller.</li> <li>• RS 422 interface</li> <li>• PT 100 temperature sensor</li> </ul>
Quality	<ul style="list-style-type: none"> <li>• Reliable devices with long service lives</li> <li>• Short delivery times</li> <li>• Minimal maintenance and operating costs</li> </ul>	<b>Premium quality</b> <ul style="list-style-type: none"> <li>• Highly automated</li> <li>• Series production</li> <li>• High-quality materials, state-of-the-art production technology</li> <li>• High standard according to DIN 12880 (27-point measurement)</li> </ul>
Accessories and Services	<ul style="list-style-type: none"> <li>• Flexible solution in terms of size, type and equipment</li> <li>• Optimal solution for numerous applications</li> <li>• BINDER INDIVIDUAL for customer-specific solutions</li> <li>• Worldwide BINDER Service</li> </ul>	<b>Comprehensive product portfolio</b> <ul style="list-style-type: none"> <li>• Size 23 to 720 liters</li> <li>• Additional product lines with humidity, light, CO2 or vacuum</li> <li>• Voltage variants (UL) and certificates</li> <li>• Various options: Door with viewing window, access ports, reinforced shelves, Data Logger Kits</li> <li>• Worldwide service network</li> </ul>

- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Temperature range from 5 °C (9 °F) above ambient temperature to 300 °C (527 °F)
- Digital temperature setting with an accuracy of one degree
- DS control with integrated timer 0 to 99,59 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
- Optional RS 422 Interface for APT-COM™ Data Control System communication software
- Units up to 115 liters are stackable
- 2 chrome-plated racks included
- BINDER test confirmation

**ED 400**

▶ Exterior dimensions	
Housing	
Width (mm)	1235
Height (incl. feet/castors) (mm)	1025
Depth (plus connections and fittings) (mm)	765
Depth (incl. connections and fittings) (mm)	860
Wall clearance, rear (mm)	100
Wall clearance, side (mm)	160
Exhaust duct (outer Ø mm)	52
Steam space volume (l)	457
Number of doors (ea.)	2

▶ Interior dimensions	
Width (mm)	1000
Height (mm)	800
Depth (mm)	520
Interior volume (l)	400
Racks (number standard/max.)	2 / 10
Load per rack (kg)	35
Permitted total load (kg)	90
Weight (empty) (kg)	125

▶ Temperature data	
Temperature range approx. 5 °C above ambient temperature to (°C)	300
Temperature variation 1)	
at 70 °C (± K)	1,7
at 150 °C (± K)	3
at 300 °C (± K)	5,0
Temperature fluctuation at 70 °C (± K)	0,3
Warm-up time 2)	
to 70 °C (min.)	49
to 150 °C (min.)	62
to 250 °C (min.)	74
Recovery time after doors were open for 30 sec. 2)	
at 70 °C (min.)	4
at 150 °C (min.)	20
at 300 °C (min.)	24

**ED 400**

▶ Ventilation data	
Ventilation	
at 70 °C (x/h)	11
at 150 °C (x/h)	10
at 300 °C (x/h)	9

▶ Electrical data	
IP protection class acc. to EN 60529	IP 20
Voltage (± 10%) 50 / 60 Hz (V), 3~	400
Nominal power (kW)	3,4
Energy consumption	
at 70 °C (W)	201
at 150 °C (W)	672
at 300 °C (W)	1000

1) without a viewing window

2) 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.



### 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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Access ports with silicone plug, 10, 30, 50, 100 mm	<input type="radio"/>
Anti-slip rubber pads for safe stacking (1 set of 4 pieces)	<input type="radio"/>
Switchable audible alarm for over temperature. Adjustable limit on the independent temperature safety device	<input type="radio"/>
Independent temperature safety device class 3.1 (DIN 12880) with optical alarm	<input type="radio"/>
Analog output for temperature 4 - 20 mA with 6-pin DIN socket (output not adjustable)	<input type="radio"/>
Temperature measurement acc. to DIN 12880 (27 measuring points, for 23 liter devices 15 measuring points) at 150 °C or at specified temperature with measuring protocol and certificate	<input type="radio"/>
Calibration certificate, measurement in center of chamber at 150 °C or at specified testing temperature	<input type="radio"/>
Extension to calibration certificate. Each additional measurement at additional measuring point or testing temperature	<input type="radio"/>
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	<input type="radio"/>
Data Logger Software: Configuration and evaluation software for all BINDER Data Logger Kits, incl. data cable	<input type="radio"/>
Rack, chrome-plated	<input type="radio"/>
Rack, stainless steel	<input type="radio"/>
Perforated shelf, stainless steel	<input type="radio"/>
Door lock	<input type="radio"/>
Door gasket, FKM (Viton)	<input type="radio"/>
2 doors each with window 470 x 290 mm and interior lighting (30 W)	<input type="radio"/>