

## ED 53 - Drying oven with natural convection

Routine drying and sterilization applications up to 300 °C (572 °F) and storage at precisely controlled elevated temperatures are the strengths of ED drying ovens. Because of the natural convection with a high rate of air exchange, thermal processes run with significantly increased efficiency.



### ► Performance features and equipment:

- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Temperature range 5 °C (9 °F) above ambient temperature up to 300 °C (572 °F)
- Digital temperature setting with an accuracy of one degree
- DS controller with integrated timer 0 to 99 h
- 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)
- With or without RS 422 Interface for use with optional GMP/GLP and FDA guideline 21 CFR Part 11 compliant APT-COM™ DataControlSystem software
- Units up to 115 liters are stackable
- 2 chrome-plated racks included
- BINDER test certificate



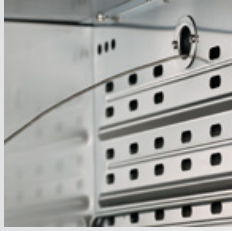
ED 53

<b>Exterior dimensions</b>	
Width (mm/inch)	634 / 25.0
Height (inclusive feet/castors) (mm/inch)	617 / 24.3
Depth (mm/inch)	575 / 22.6
plus door handle and exhaust duct (mm/inch)	90 / 3.5
Wall clearance rear (mm/inch)	100 / 3.9
Wall clearance side (mm/inch)	160 / 6.3
Exhaust duct outer-Ø (mm/inch)	52 / 2.1
Steam space volume (l/cu.ft.)	70 / 2.5
Number of doors	1
<b>Interior dimensions</b>	
Width (mm/inch)	400 / 15.8
Height (mm/inch)	400 / 15.8
Depth (mm/inch)	330 / 13.0
Interior volume (l/cu.ft.)	53 / 1.9
Racks, chrome-plated (number standard/max.)	2 / 5
Load per rack (kg/lbs.)	15 / 33
Permitted total load (kg/lbs.)	40 / 88
Weight of the unit (empty) (kg/lbs.)	42 / 93
<b>Temperature data</b>	
Temperature range, 5 °C (41°F) above ambient up to (°C / °F)	300 / 572
Temperature variation 1)	
at 70 °C (± °C)	2
at 150 °C (± °C)	3.2
at 300 °C (± °C)	4.5
Temperature fluctuation (± °C) at 70 °C	0.3
Heating up time 2)	
to 70 °C (Min.)	14
to 150 °C (Min.)	27
to 250 °C (Min.)	61
Recov. time after door was opened for 30 sec. 2)	
at 70 °C (Min.)	2
at 150 °C (Min.)	6
at 300 °C (Min.)	11
<b>Air change data</b>	
Air change	
at 70 °C (x/h)	8
at 150 °C (x/h)	19
at 300 °C (x/h)	20
<b>Electrical data</b>	
Housing protection acc. to EN 60529	IP 20
Nominal voltage (±10 %) 50 / 60 Hz (V)	230
Nominal power (kW)	1.2
Energy consumption	
at 70 °C (W)	60
at 150 °C (W)	210
at 300 °C (W)	600

1) value without window

2) up 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 voltage fluctuation of ±10 %. The temperature data are 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 indications are average values, typical for units produced in series. We reserve the right to alter technical specifications at all times.



▶ Access ports

With silicon plugs for inserting external measuring devices into the chamber. Access ports with 10, 30, 50, 100 mm (0.4, 1.2, 2, 3.94 inch) diameter.



▶ Door with window and interior lighting

For optimum process control in the interior, available for all equipment sizes.



▶ Lockable door

Prevents unauthorized access and interference with processes in the chamber.



▶ Calibration certificates and validation

BINDER can significantly reduce the time and effort needed for equipment qualification. We draw on unparalleled knowledge of our equipment applications and years of experience in certification.

**ED 53**

Access port with silicone plugs, 10 mm (0.39 inch), 30 mm (1.18 inch), 50 mm (1.97 inch), 100 mm (3.94 inch)	<input type="radio"/>
Anti-slip rubber pads for safe stacking (1 set of 4 pieces)	<input type="radio"/>
Over temperature alarm, audible, can be switched off. Temperature limit can be set at the independent, adjustable temperature safety device, for 230 V	<input type="radio"/>
Independent adjustable temperature safety device, Class 3.1 (DIN 12880) with visual alarm	<input type="radio"/>
Analog temperature output, 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 units 15 measuring points) at 150 °C (302 °F) or at specified temperature with measuring protocol and certificate	<input type="radio"/>
Factory calibration certificate. Measurement in center of chamber at 150 °C (302 °F) or at specified testing temperature	<input type="radio"/>
Extension to factory calibration certificate. Each additional measurement at an additional measuring point or temperature	<input type="radio"/>
Data Logger Kit T 350: For the 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 the connection at the BINDER unit	<input type="radio"/>
Data Logger Software: Configuration und 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"/>
Shelf, perforated, stainless steel	<input type="radio"/>
Door Lock	<input type="radio"/>
Door gasket, FKM (Viton)	<input type="radio"/>
Door with window 230 x 230 mm (9.06 x 9.06 inch) and interior lighting (15 W)	<input type="radio"/>