

Safety drying oven with expanded temperature range

The BINDER MDL 115 with enhanced control function works at temperatures up to 350 °C. This safety drying oven meets all EN 1539 requirements 1539 and is perfectly suited for high-temperature testing such as in the coil coating area.



Advantages:

- Defined solvent quantity according to EN 1539
- Wide temperature range up to 350 °C

Areas of application:



Chemicals



Surface Technology

Features	Customer benefits	Characteristics
APT.line™	<ul style="list-style-type: none"> • Same test conditions throughout the chamber interior • Independent of specimen size and quantity 	APT.line™ preheating chamber for maximum precision <ul style="list-style-type: none"> • Uniform circulation throughout the inner chamber • Homogeneous temperature conditions throughout test specimens
Safety concept	<ul style="list-style-type: none"> • Defined solvent quantity • Safe standard-compliant drying 	<ul style="list-style-type: none"> • Complies with EN 1539: <ul style="list-style-type: none"> • Fresh air monitoring with automatic switchoff • Audible and visual alarm • Class 2 temperature limiter • Safety class IP 33 • Easy to replace fresh air filter
Performance feature	<ul style="list-style-type: none"> • Short warm up times • Broad range of applications, e.g. coil coating tests 	<ul style="list-style-type: none"> • High air exchange rate • Monitored air exchange volume • Large power reserves up to 9 kW • Temperature range up to 350 °C
Inner chamber concept	<ul style="list-style-type: none"> • Maximum occupational safety • Easy loading and unloading of specimen material • Easy to clean 	<ul style="list-style-type: none"> • Very tight door closure with 2-point door latch • Low heat dissipation due to 60 mm insulation • Rack with tilt protection • Complete inner chamber made of stainless steel • No permanent fixtures • Silicone free • Viton (FKM) door seal
Controller	<ul style="list-style-type: none"> • Convenient HMI (Human Machine Interface) • Convenient documentation • All measured values read at a glance 	<ul style="list-style-type: none"> • Controller with color display and 25 storable programs • Integrated digital continuous-line recorder for monitoring limits and alarm function
Quality	<ul style="list-style-type: none"> • Reliable devices with long service lives • Short delivery times • Minimal maintenance and operating costs 	<ul style="list-style-type: none"> • Premium quality made in Germany • Highly automated series production (20,000 units per year) • High-quality materials, state-of-the-art production technology
Unit options and service	<ul style="list-style-type: none"> • Optimal solution for numerous applications • BINDER INDIVIDUAL for customer-specific solutions • Worldwide BINDER Service 	Comprehensive product portfolio: <ul style="list-style-type: none"> • Various options: coil coating extension, temperature measurement of the specimen, calibration certificate • Control and documentation software APT-COM™ • Drying ovens, vacuum drying ovens, climate chambers • Worldwide service network

- Electronically controlled APT.line™ preheating chamber assuring temperature accuracy and reproducible results
- Temperature range from 5 °C above ambient temperature to 350 °C
- All safety features met according to EN 1539
- Heating load 9.0 kW
- Door gasket made of of high temperature resistant silicone
- Rear exhaust connector Ø 100 mm
- MCS controller with 25 storable programs of 100 sections each for a maximum of 500 program segments
- User-friendly LCD screen
 - Easy-to-read menu guide
 - Integrated electronic chart recorder
 - Variety of options for the graphic display of process parameters
 - Real-time clock
- Replacable fresh-air filter cartridge, class F6 (EU6-fine particle filter for particle sizes between 1 ... 10 µm)
- Independent adjustable temperature safety device class 2 (DIN 12880), with acoustic and visual temperature alarm
- Fresh-air monitoring with audible and visual alarm and automatic deactivation of heating
- RS 422 interface for communication software APT-COM™ DataControlSystem
- 2 chrome-plated racks included
- BINDER test confirmation

MDL 115

▶ Exterior dimensions	
Width (mm)	835
Height (incl. feet) (mm)	800
Depth (plus door handle 50 mm) (mm)	685
Wall clearance, rear (mm)	100
Wall clearance, side (mm)	100
Exhaust duct (outer Ø mm)	100
Steam space volume (l)	156

▶ Interior dimensions	
Width (mm)	600
Height (mm)	435
Depth (mm)	435
Interior volume (l)	115
Racks (number standard/max.)	2 / 5
Load per rack (kg)	20
Permitted total load (kg)	50
Weight (empty) (kg)	90

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▶ Temperature range	
Temperature range approx. 5 °C above ambient temperature to (°C)	350
Temperature variation	
at 70 °C (± K)	2
at 150 °C (± K)	3,4
at 300 °C (± K)	7
Temperature variation, extension in the door	
at 70 °C (± K)	2
at 150 °C (± K)	3
at 300 °C (± K)	8
Temperature fluctuation (± K)	0,5
Warm-up time from 2)	
to 70 °C (min.)	3,5
to 150 °C (min.)	6
to 300 °C (min.)	10
Recovery time after doors were open for 30 sec. 2)	
at 70 °C (min.)	0,5
at 150 °C (min.)	2
at 300 °C (min.)	4
Recovery time after door was open for 30 sec. 2), extension in the door	
at 70 °C (min.)	0,5
at 150 °C (min.)	1
at 300 °C (min.)	2
Ventilation (approx. x/min.)	3
Air circulation (approx. x/min.)	40
Exhaust air volume flow (approx. l/min. m ³ /h)	400 (24,0)
Air flow velocity (m/sec)	0,8 - 1,2
Maximum amount of solvent (g) (at T-180 °C, M-100 g/mol, U-40 g/m ³ , K = 0,5)	6,65
▶ Electrical data	
IP protection class acc. to EN 60529	IP 33
Voltage (± 10%) 50 / 60 Hz (V)	400 V / 3N~
Nominal power (kW)	9,0

Energy consumption at 150 °C (W)

1130

1)

T = drying temperature

M = molecular mass

U = lower explosion limit

K = solvent vapor concentration as percentage at lower explosion limit

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 $\pm 10\%$. 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.

Door lock

Prevents unauthorized access to the process sequences in the chamber.

**Extension for coil coating applications**

Extension in the door for quick loading for coil coating / hot air short cycle applications.

**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.



MDL 115

Rack,chrome-plated or stainless steel	<input type="radio"/>
Shelf, perforated, stainless steel	<input type="radio"/>
Locking door handle with key	<input type="radio"/>
Keyboard lock	<input type="radio"/>
Base on castors	<input type="radio"/>
Door flap for coil-coating tests	<input type="radio"/>
Replacement air filter (class F6/EU6 – fine particle filter for particle sizes between 1 µm and 10 µm), 100 × 520 × 22 mm, with aluminum frame	<input type="radio"/>
Additional measuring channel for digital display of specimen temperature, with clip temperature sensor. Measured data recorded via RS 422 interface	<input type="radio"/>
Temperature measurement acc. to DIN 12880 (27 measuring points) at 150 °C 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"/>