

Drying and Heating Chambers

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Series ED: Drying and heating chambers Classic.Line with natural convection

The strengths of a ED series drying chamber include routine drying and sterilization tasks up to 300 °C. Thanks to the natural convection, all thermal processes which use this drying chamber are highly efficient. The ED series ensures fast, uniform drying.

Features:

- Temperature range: room temperature +5 °C to 300 °C
- Natural convection
- Adjustable exhaust air flap
- Controller with timer functions
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- RS 422 interface (only with ED400)



ED 023



ED 400

Technical data:

	ED023	ED400
	230V *	400V-I *
Article Number	9010-0190	9010-0075
Performance Data Temperature		
Temperature range 5 °C above ambient temperature to [°C]	300	300
Temperature variation at 150 °C [± K]	2,8	3
Temperature fluctuation at 150 °C [± K]	0,5	0,5
Heating-up time to 150 °C [min]	28	71
Recovery time after 30 seconds door open at 150 °C [min]	5	31
Electrical data		
Rated Voltage [V]	230	400
Power frequency [Hz]	50 / 60	50 / 60
Nominal power [kW]	0,8	3,4
Unit fuse [A]	10	3 x 16
Phase (Nominal voltage) [ph]	1 ~	3 ~
Outer dimensions		
Width net [mm]	435	1235
Height net [mm]	495	1025
Depth net [mm]	520	765
Wall clearance back [mm]	100	160
Wall clearance sidewise [mm]	100	100
Doors		
Unit doors	1	2
Internal Dimensions		
Width [mm]	222	1000
Height [mm]	330	800
Depth [mm]	300	520
Further Dimension		
Interior volume [L]	20	400
Net weight of the unit (empty) [kg]	27	125
Permitted load [kg]	25	90
Load per rack [kg]	12	35
Environment-specific data		
Energy consumption at 150 °C [Wh/h]	148	672
Fixtures		
Number of shelves (std./max.)	2 / 4	2 / 10

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10%. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing 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 change technical specifications at any time.

Series ED: Drying and heating chambers Avantgarde.Line with natural convection

The strengths of a ED series drying chamber include routine drying and sterilization tasks up to 300 °C. Thanks to the natural convection, all thermal processes which use this drying chamber are highly efficient. The ED series ensures fast, uniform drying.

Features:

- Temperature range: ambient temperature +5 °C to 300 °C
- High temperature accuracy thanks to APT.line™ technology
- Natural convection
- Controller with LCD display
- Electromechanical control of the exhaust air flap
- 2 chrome-plated racks
- Units up to 115 L are stackable
- Class 2 independent temperature safety device (DIN 12880) with visual temperature alarm
- Ergonomic handle design
- USB port for recording data



ED 056



ED 56

Technical data:

	ED056	ED115	ED260	ED720
	230V *	230V *	230V *	400V *
Article Number	9010-0333	9010-0335	9010-0339	9010-0341
Performance Data Temperature				
Temperature range 5 °C above ambient temperature to [°C]	300	300	300	300
Temperature variation at 150 °C [± K]	2,3	1,5	1,8	3,2
Temperature fluctuation at 150 °C [± K]	0,4	0,4	0,8	0,8
Heating-up time to 150 °C [min]	50	45	50	85
Recovery time after 30 seconds door open at 150 °C [min]	19	16	20	25
Electrical data				
Rated Voltage [V]	230	230	230	400
Power frequency [Hz]	50 / 60	50 / 60	50 / 60	50 / 60
Nominal power [kW]	1,05	1,25	2,25	4,1
Unit fuse [A]	6,3	6,3	12,5	16
Phase (Nominal voltage) [ph]	1~	1~	1~	1~
Outer dimensions				
Width net [mm]	560	710	810	1165
Height net [mm]	625	705	940	1590
Depth net [mm]	565	605	760	870
Wall clearance back [mm]	160	160	160	160
Wall clearance sidewise [mm]	100	100	100	100
Doors				
Unit doors	1	1	1	2
Internal Dimensions				
Width [mm]	360	510	610	960
Height [mm]	420	530	760	1280
Depth [mm]	380	425	550	605
Further Dimension				
Interior volume [L]	57	114	255	743
Net weight of the unit (empty) [kg]	42	57	84	161
Permitted load [kg]	70	150	270	315
Load per rack [kg]	30	30	40	45
Environment-specific data				
Energy consumption at 150 °C [Wh/h]	180	245	355	700
Fixtures				
Number of shelves (std./max.)	2 / 4	2 / 5	2 / 8	2 / 16

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10%. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing 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 change technical specifications at any time.

Series ED-S: Drying and heating chambers Solid.Line with natural convection

The new products in the Solid.Line impress with their tried-and-tested BINDER quality and reliability. They are suited to drying and heating. The attributes of the Solid.Line are geared towards the application in question and therefore used in research and quality assurance.

Features:

- Temperature range: ambient temperature plus 7 °C to 250 °C
- APT.line™ preheating chamber technology
- Natural convection
- Adjustable exhaust air flap
- Controller with timer function
- 1 chrome-plated rack, incl. shelf supports
- Class 2 independent temperature safety device (DIN 12880) with visual temperature alarm



ED-S 056



ED-S 115

Technical data:

	ED-S056	ED-S115
	230V *	230V *
Article Number	9090-0014	9090-0020
Performance Data Temperature		
Temperature range 7 °C above ambient temperature to [°C]	250	250
Temperature variation at 150 °C [± K]	2,8	2,8
Temperature fluctuation at 150 °C [± K]	0,8	0,8
Heating-up time to 150 °C [min]	60	55
Electrical data		
Rated Voltage [V]	230	230
Power frequency [Hz]	50 / 60	50 / 60
Nominal power [kW]	1,05	1,25
Unit fuse [A]	6,3	6,3
Phase (Nominal voltage) [ph]	1~	1~
Outer dimensions		
Width net [mm]	614	764
Height net [mm]	625	735
Depth net [mm]	577	616
Wall clearance back [mm]	160	160
Wall clearance sidewise [mm]	100	100
Doors		
Unit doors	1	1
Internal Dimensions		
Width [mm]	400	550
Height [mm]	440	550
Depth [mm]	350	390
Further Dimension		
Interior volume [L]	62	118
Net weight of the unit (empty) [kg]	36	53
Permitted load [kg]	30	75
Load per rack [kg]	15	20
Environment-specific data		
Energy consumption at 150 °C [Wh/h]	180	310
Fixtures		
Number of shelves (std./max.)	1 / 3	1 / 5

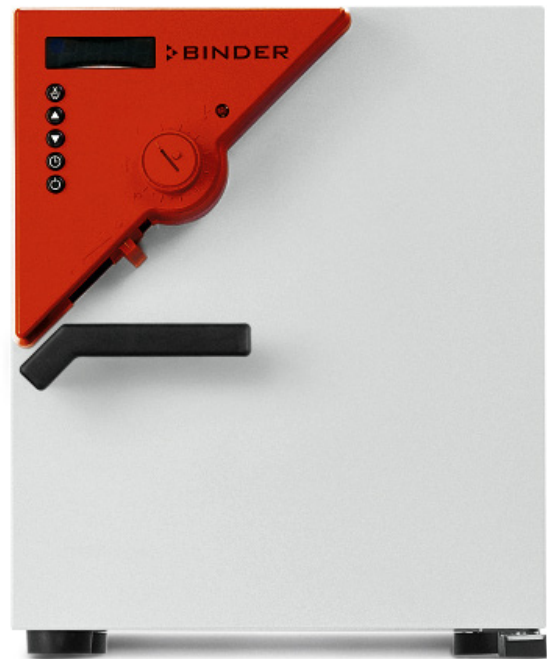
* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10%. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances 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 change technical specifications at any time.

Series FD: Drying and heating chambers Classic.Line with forced convection

A 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.

Features:

- Temperature range: room temperature plus 5 °C to 300 °C
- APT.line™ preheating chamber technology
- Forced convection
- Adjustable exhaust air flap
- Controller with timer functions
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm



FD 023

Technical data:

	FD023
	230V *
Article Number	9010-0194
Performance Data Temperature	
Temperature range 5 °C above ambient temperature to [°C]	300
Temperature variation at 150 °C [± K]	2,5
Temperature fluctuation at 150 °C [± K]	0,3
Heating-up time to 150 °C [min]	25
Recovery time after 30 seconds door open at 150 °C [min]	6
Air change data	
Air change (approx.) at 150 °C [x/h]	64
Electrical data	
Rated Voltage [V]	230
Power frequency [Hz]	50 / 60
Nominal power [kW]	0,8
Unit fuse [A]	10
Phase (Nominal voltage) [ph]	1~
Outer dimensions	
Width net [mm]	435
Height net [mm]	495
Depth net [mm]	520
Wall clearance back [mm]	160
Wall clearance sidewise [mm]	100
Doors	
Unit doors	1
Internal Dimensions	
Width [mm]	222
Height [mm]	330
Depth [mm]	300
Further Dimension	
Interior volume [L]	20
Net weight of the unit (empty) [kg]	27
Permitted load [kg]	25
Load per rack [kg]	12
Environment-specific data	
Energy consumption at 150 °C [Wh/h]	300
Fixtures	
Number of shelves (std./max.)	2 / 4

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

Series FD: Drying and heating chambers Avantgarde.Line with forced convection

A FD series Avantgarde.Line 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.

Features:

- Temperature range: ambient temperature +10 °C to 300 °C (FD 720: +12 °C to 300 °C)
- High temperature accuracy thanks to APT.line™ technology
- Forced convection
- Controller with LCD display
- Electromechanical control of the exhaust air flap
- 2 chrome-plated racks
- Units up to 115 L are stackable
- Class 2 independent temperature safety device (DIN 12880) with visual temperature alarm
- Ergonomic handle design
- USB port for recording data



FD 056



FD 056

Technical data:

	FD056	FD115	FD260	FD720
	230V *	230V *	230V *	400V *
Article Number	9010-0303	9010-0305	9010-0309	9010-0311
Performance Data Temperature				
Temperature range 10 °C (12 °C) above ambient temperature to [°C]	300	300	300	300
Temperature variation at 150 °C [± K]	1,7	1,7	1,9	2,5
Temperature fluctuation at 150 °C [± K]	0,3	0,3	0,4	0,6
Heating-up time to 150 °C [min]	15	18	19	25
Recovery time after 30 seconds door open at 150 °C [min]	4	4	5	6
Electrical data				
Rated Voltage [V]	230	230	230	400
Power frequency [Hz]	50 / 60	50 / 60	50 / 60	50 / 60
Nominal power [kW]	1,1	1,3	2,3	4,5
Unit fuse [A]	6,3	6,3	12,5	3×16
Phase (Nominal voltage) [ph]	1~	1~	1~	3~
Outer dimensions				
Width net [mm]	560	710	810	1165
Height net [mm]	625	735	940	1590
Depth net [mm]	565	605	825	870
Wall clearance back [mm]	160	160	160	160
Wall clearance sidewise [mm]	100	100	100	100
Doors				
Unit doors	1	1	1	2
Internal Dimensions				
Width [mm]	400	550	650	1000
Height [mm]	440	550	780	1300
Depth [mm]	345	385	515	570
Further Dimension				
Interior volume [L]	60	116	259	741
Net weight of the unit (empty) [kg]	39	54	85	166
Permitted load [kg]	70	150	270	315
Load per rack [kg]	30	30	40	45
Environment-specific data				
Energy consumption at 150 °C [Wh/h]	290	340	410	800
Sound-pressure level [dB(A)]	43	43	43	43
Fixtures				
Number of shelves (std./max.)	2 / 4	2 / 5	2 / 8	2 / 16

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

Series FED: Drying and heating chambers Avantgarde.Line with forced convection and enhanced timer functions

Heating chambers of the FED Avantgarde.Line series provide almost unlimited capacity and are particularly adaptable. With advanced timing functions and a controllable fan, temperature and convection conditions are easily controlled.

Features:

- Temperature range +10 °C upto 300 °C (FED 720: +12 °C to 300 °C)
- High temperature accuracy thanks to APT.line™ technology
- Adjustable fan speed
- Controller with LCD display
- Electromechanical control of the exhaust air flap
- 2 chrome-plated racks
- Units up to 115 L are stackable
- Class 2 independent temperature safety device (DIN 12880) with visual temperature alarm
- Ergonomic handle design
- Ethernet interface
- USB port for recording data



FED 260



Technical data:

	FED056	FED115	FED260	FED720
	230V *	230V *	230V *	400V *
Article Number	9010-0295	9010-0293	9010-0299	9010-0301
Performance Data Temperature				
Temperature range 10°C above ambient temperature to [°C]	300	300	300	-
Temperature range 12°C above ambient temperature to [°C]	-	-	-	300
Temperature variation at 150 °C [± K]	1,4	1,2	1,6	2,0
Temperature fluctuation at 150 °C [± K]	0,3	0,3	0,4	0,6
Heating-up time to 150 °C [min]	15	18	19	25
Recovery time after 30 seconds door open at 150 °C [min]	4	4	5	6
Electrical data				
Rated Voltage [V]	230	230	230	400
Power frequency [Hz]	50 / 60	50 / 60	50 / 60	50 / 60
Nominal power [kW]	1,1	1,3	2,3	4,5
Unit fuse [A]	6,3	6,3	12,5	3x16
Phase (Nominal voltage) [ph]	1~	1~	1~	3~
Outer dimensions				
Width net [mm]	560	710	810	1165
Height net [mm]	625	735	965	1590
Depth net [mm]	565	605	760	870
Wall clearance back [mm]	160	160	160	160
Wall clearance sidewise [mm]	100	100	100	100
Doors				
Unit doors	1	1	1	2
Internal Dimensions				
Width [mm]	400	550	650	1000
Height [mm]	440	550	780	1300
Depth [mm]	345	385	515	570
Further Dimension				
Interior volume [L]	60	116	259	741
Net weight of the unit (empty) [kg]	41	57	84	162
Permitted load [kg]	70	150	270	315
Load per rack [kg]	30	30	40	45
Environment-specific data				
Energy consumption at 150 °C [Wh/h]	290	340	410	800
Sound-pressure level [dB(A)]	43	43	43	43
Fixtures				
Number of shelves (std./max.)	2 / 4	2 / 5	2 / 8	2 / 16

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

Series FED: Drying and heating chambers Classic.Line with forced convection and enhanced timer functions

Heating chambers of the FED series provide almost unlimited capacity and are particularly adaptable. With advanced timing functions and 2 adjustable fans, temperature and convection conditions are easily controlled.

Features:

- Temperature range: room temperature +5 °C to 300 °C
- APT.line™ preheating chamber technology
- Adjustable fan speed
- Adjustable exhaust air flap
- Controller with expanded timer functions
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- Computer interface: RS 422



FED 400

Technical data:

	FED400
	400V *
Article Number	9010-0216
Performance Data Temperature	
Temperature range 5 °C above ambient temperature to [°C]	300
Temperature variation at 150 °C [± K]	3,8
Temperature fluctuation at 150 °C [± K]	0,7
Heating-up time to 150 °C [min]	29
Recovery time after 30 seconds door open at 150 °C [min]	6
Air change data	
Air change (approx.) at 150 °C [x/h]	18
Electrical data	
Rated Voltage [V]	400
Power frequency [Hz]	50 / 60
Nominal power [kW]	3,4
Unit fuse [A]	3x16
Phase (Nominal voltage) [ph]	3~
Outer dimensions	
Width net [mm]	1235
Height net [mm]	1025
Depth net [mm]	765
Wall clearance back [mm]	160
Wall clearance sidewise [mm]	100
Doors	
Unit doors	2
Internal Dimensions	
Width [mm]	1000
Height [mm]	800
Depth [mm]	510
Further Dimension	
Interior volume [L]	400
Net weight of the unit (empty) [kg]	145
Permitted load [kg]	90
Load per rack [kg]	35
Environment-specific data	
Energy consumption at 150 °C [Wh/h]	1200
Fixtures	
Number of shelves (std./max.)	2 / 10

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

Series FP: Drying and heating chambers Avantgarde.Line with forced convection and program functions

A material test chamber with mechanical convection of the FP series provides reliably short drying times and particularly fast heating – even for chambers under full loads.

Features:

- Temperature range: room temperature +10 °C to 300 °C
- Adjustable fan speed
- Electromechanical control of the exhaust air flap
- Controller with intervall and real-time programming
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) and class 3.1 independent temperature safety device (DIN 12880) with visual/acoustic alarm available for selection on the controller
- Failsafe function
- Computer interface: Ethernet



FP 056



FP 720

Technical data:

	FP056	FP115	FP260	FP720
	230V *	230V *	230V *	400V *
Article Number	9010-0363	9010-0364	9010-0365	9010-0366
Performance Data Temperature				
Temperature range 5 °C above ambient temperature to [°C]	300	300	300	300
Temperature variation at 150 °C [± K]	1,4	1,4	1,7	2,4
Temperature fluctuation at 150 °C [± K]	0,4	0,3	0,4	0,6
Heating-up time to 150 °C [min]	15	19	19	25
Recovery time after 30 seconds door open at 150 °C [min]	4	5	6	6
Air change data				
Air change (approx.) at 150 °C [x/h]	80	32	9	5
Electrical data				
Rated Voltage [V]	230	230	230	400
Power frequency [Hz]	50 / 60	50 / 60	50 / 60	50 / 60
Nominal power [kW]	1,2	1,4	2,5	4,5
Unit fuse [A]	10	10	16	3 x 16
Phase (Nominal voltage) [ph]	1~	1~	1~	3~
Outer dimensions not incl. fittings and connections				
Width net [mm]	560	710	810	1160
Height net [mm]	622	732	962	1590
Depth net [mm]	596	636	786	816
Wall clearance back [mm]	160	160	160	160
Wall clearance sidewise [mm]	100	100	100	100
Internal Dimensions				
Width [mm]	400	550	650	1000
Height [mm]	400	550	780	1300
Depth [mm]	342	383	512	574
Further Dimension				
Interior volume [L]	60	116	259	741
Net weight of the unit (empty) [kg]	44	62	96	194
Permitted load [kg]	70	150	270	315
Load per rack [kg]	30	30	40	45
Environment-specific data				
Energy consumption at 150 °C [Wh/h]	290	370	465	880
Fixtures				
Number of shelves (std./max.)	2 / 5	2 / 5	2 / 8	2 / 16

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

Series M: Drying and heating chambers Classic.Line with forced convection and advanced program functions

With a maximum of 300 °C and various programming options the M series material test chambers are ideal for material and aging tests. With a high air flow, the powerful fans ensure rapid heating.

Features:

- Temperature range: room temperature +5 °C to 300 °C
- APT.line™ preheating chamber technology
- Adjustable fan speed
- Program-controlled ventilation flap
- Color LCD controller with time-segment programming
- 2 chrome-plated racks
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- Computer interface: RS 422



M 053



M 720

Technical data:

	M053	M115	M240	M400	M720
	230V *	230V *	230V *	400V *	400V *
Article Number	9010-0201	9010-0202	9010-0203	9010-0204	9010-0205
Performance Data Temperature					
Temperature range 5 °C above ambient temperature to [°C]	300	300	300	300	300
Temperature variation at 150 °C [± K]	1,3	1,5	1,5	1,5	1,9
Temperature fluctuation at 150 °C [± K]	0,3	0,3	0,3	0,3	0,3
Heating-up time to 150 °C [min]	15	16	19	18	21
Recovery time after 30 seconds door open at 150 °C [min]	3	3	3	3	3
Air change data					
Air change (approx.) at 150 °C [x/h]	192	96	60	54	36
Electrical data					
Rated Voltage [V]	230	230	230	400	400
Power frequency [Hz]	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60
Nominal power [kW]	1,2	1,6	2,7	3,4	5
Phase (Nominal voltage) [ph]	1~	1~	1~	3~	3~
Outer dimensions					
Width net [mm]	635	835	1035	1235	1235
Height net [mm]	780	865	985	1190	1690
Depth net [mm]	575	645	745	795	865
Wall clearance back [mm]	160	160	160	160	160
Wall clearance sidewise [mm]	100	100	100	100	100
Internal Dimensions					
Width [mm]	400	600	800	1000	1000
Height [mm]	400	480	600	800	1200
Depth [mm]	340	410	510	510	610
Further Dimension					
Interior volume [L]	53	115	240	400	720
Net weight of the unit (empty) [kg]	61	89	131	173	203
permitted load [kg]	40	50	70	90	120
Load per rack [kg]	15	20	30	35	45
Environment-specific data					
Energy consumption at 150 °C [Wh/h]	300	544	850	1200	1320
Fixtures					
Number of shelves (std./max.)	2 / 5	2 / 6	2 / 7	2 / 10	2 / 16

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

SAFETY DRYING OVENS

Series FDL: Safety drying chambers for limited quantities of solvent

The FDL 115 with silicone and dust-free inner chamber, as well as symmetric airflow dries specimens containing solvents and thus this safety drying oven meets all EN 1539 requirements.

Features:

- Temperature range: room temperature +10 °C to 300 °C
- APT.line™ preheating chamber technology
- Controller with time-segment and real-time programming
- 2 chrome-plated racks
- Fresh-air monitoring with audible and visual alarm and automatic deactivation of heating
- Replaceable filter cartridge, Class M6
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- Computer interface: RS 422

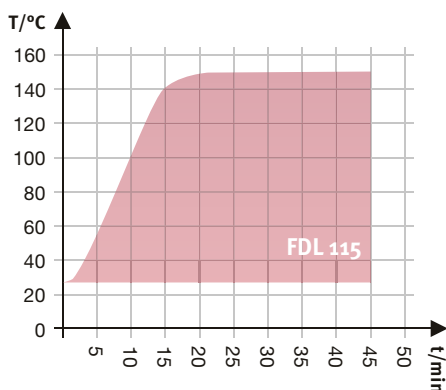


FDL 115



FDL 115

Heating up time:



Technical data:

	FDL115
	230V *
Article Number	9010-0292
Performance Data Temperature	
Temperature range 10 °C above ambient temperature to [°C]	300
Temperature variation at 150 °C [± K]	2,5
Temperature fluctuation [± K]	0,8
Heating-up time to 150 °C [min]	20
Recovery time after 30 seconds door open at 150 °C [min]	12
Air change data	
Air circulation (approx.) [x/min]	20
Volumetric flow rate of exhaust air acc. to EN 1539 at 50 °C [ca. L/min]	400
solvent quantity	
Highest permitted solvent quantity (at T-180 °C, M-100g/mol, U-40g/m ³ , K=0,5) [g]	66,5
Electrical data	
Rated Voltage [V]	230
Power frequency [Hz]	50 / 60
Nominal power [kW]	2,9
Phase (Nominal voltage) [ph]	1~
Outer dimensions	
Width net [mm]	830
Height net [mm]	805
Depth net [mm]	685
Wall clearance back [mm]	160
Wall clearance sidewise [mm]	100
Internal Dimensions	
Width [mm]	600
Height [mm]	435
Depth [mm]	435
Further Dimension	
Interior volume [L]	115
Net weight of the unit (empty) [kg]	90
permitted load [kg]	60
Load per rack [kg]	30
Environment-specific data	
Energy consumption at 150 °C [Wh/h]	1200
Sound-pressure level [dB(A)]	57
Fixtures	
Number of shelves (std./max.)	2 / 5

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

COOLING CHAMBERS

Series KT: Cooling chambers with peltier technology

The KT series combines outstanding performance with impressive energy efficiency and environmental friendliness. The cooled incubators of the KT series are state-of-the-art in application and protect the samples.

Features:

- Temperature range +4 °C to 100 °C
- APT.line™ preheating chamber technology
- Adjustable fan speed
- Electrical cooling with peltier module
- Controller with time-segment and real-time programming
- Display via LCD monitor
- Input via pushbutton / rotary knob
- Inner door made of tempered safety glass
- 2 stainless steel racks
- Units up to 115 liters are stackable
- Access port with silicone plug from 240 liters
- Class 3.1 independent temperature safety device (DIN 12880) with visual and audible temperature alarm
- Computer interface: Ethernet
- Data recording and USB interface



KT 053



KT 170

Technical data:

	KT053	KT115	KT170
	230V *	230V *	230V *
Article Number	9020-0311	9020-0313	9020-0289
Performance Data Temperature			
Temperature range [°C]	+4...100	+4...100	+4...100
Temperature variation at 37 °C [± K]	0,3	0,3	0,4
Temperature fluctuation at 37 °C [± K]	0,1	0,1	0,1
Recovery time after 30 seconds door open at 37 °C [min]	2	3	3
Electrical data			
Rated Voltage [V]	200...240	200...240	200...240
Power frequency [Hz]	50/60	50/60	50/60
Nominal power [kW]	0,4	0,7	0,8
Unit fuse [A]	10	10	10
Phase (Nominal voltage) [ph]	1~	1~	1~
Outer dimensions			
Width net [mm]	660	860	860
Height net [mm]	635	715	1025
Depth net [mm]	630	655	655
Wall clearance back [mm]	100	100	100
Wall clearance sidewise [mm]	240	240	240
Doors			
Inner doors	1	1	1
Unit doors	1	1	1
Internal Dimensions			
Width [mm]	400	600	600
Height [mm]	400	455	765
Depth [mm]	334	355	355
Further Dimension			
Interior volume [L]	53	102	163
Net weight of the unit (empty) [kg]	63	83	102
permitted load [kg]	40	100	120
Load per rack [kg]	15	30	30
Environment-specific data			
Energy consumption at 25 °C [Wh/h]	75	75	80
Energy consumption at 37 °C [Wh/h]	75	75	80
Sound-pressure level [dB(A)]	48	48	48
Fixtures			
Number of shelves (std./max.)	2 / 5	2 / 6	2 / 10

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

Series KB: Cooling chambers with compressor technology

The most versatile among the cooled incubators: The KB series cooled incubator controls temperature ranges of 0/-10 °C to 100 °C.

With its comprehensive program functions, this cooled incubator offers a wide range of capabilities and delivers reproducible test results.

Features:

- Temperature range -10 °C to 100 °C
- APT.line™ preheating chamber technology
- Cooling with compressor cooling unit
- Adjustable fan speed
- Controller with time-segment and real-time programming
- Operating hours counter
- Inner door made of tempered safety glass
- 2 stainless steel racks
- Units up to 115 liters are stackable
- Class 3.1 independent temperature safety device (DIN 12880) with visual and audible temperature alarm



KB 240



KB 240

Technical data:

	KB053	KB115	KB240	KB400	KB720
	230V *	230V *	230V *	230V *	230V *
Article Number	9020-0199	9020-0397	9020-0202	9020-0203	9020-204
Performance Data Temperature					
Temperature range [°C]	-10...100	-10...100	-10...100	-10...100	-10...100
Temperature variation at 37 °C [± K]	0,2	0,2	0,2	0,2	0,2
Temperature fluctuation at 37 °C [± K]	0,1	0,1	0,1	0,1	0,1
Recovery time after 30 seconds door open at 37 °C [min]	2	2	2	4	3
Electrical data					
Rated Voltage [V]	230	230	200...240	200...240	200...240
Power frequency [Hz]	50	50	50 / 60	50 / 60	50 / 60
Nominal power [kW]	0,6	0,7	1,2	1,4	2,3
Unit fuse [A]	10	10	16	16	16
Phase (Nominal voltage) [ph]	1~	1~	1~	1~	1~
Outer dimensions					
Width net [mm]	635	835	925	925	1250
Height net [mm]	835	1025	1465	1950	1925
Depth net [mm]	580	650	800	805	885
Wall clearance back [mm]	100	100	100	100	100
Wall clearance sidewise [mm]	100	100	100	100	100
Doors					
Inner doors	1	1	1	1	2
Unit doors	1	1	1	1	2
Internal Dimensions					
Width [mm]	400	600	650	650	970
Height [mm]	400	480	785	1270	1250
Depth [mm]	330	400	485	485	576
Further Dimension					
Interior volume [L]	53	115	247	400	698
Net weight of the unit (empty) [kg]	78	106	171	221	304
permitted load [kg]	40	50	100	120	150
Load per rack [kg]	15	20	30	30	45
Environment-specific data					
Energy consumption at 37 °C [Wh/h]	70	75	270	330	360
Energy consumption at 40 °C [Wh/h]					
Sound-pressure level [dB(A)]	49	49	53	53	53
Fixtures					
Number of shelves (std./max.)	2 / 4	2 / 5	2 / 9	2 / 15	2 / 15

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

Series KB ECO: Constant cooling chambers with peltier temperature control system

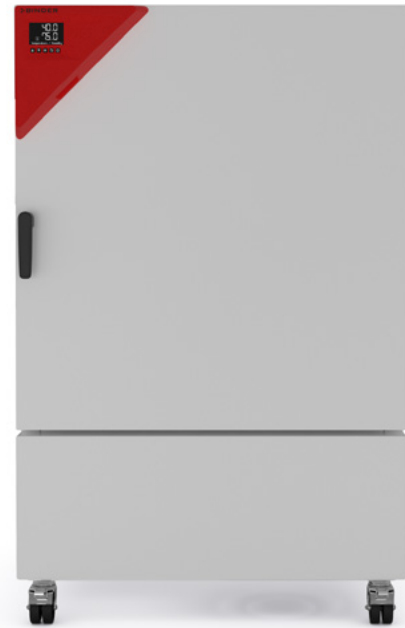
The new series of cooling chambers guarantees homogeneous constant temperature conditions, low noise and excellent energy efficiency through the combination of advanced technologies: Peltier cooling & heating system with patented heat dissipation, digitally controlled „APT.line“ preheating chamber technology and forced air circulation through controllable fan.

Features:

- Temperature range 0°C to 70 °C
- APT.line™ preheating chamber technology
- Microprocessor controller with LCD display and integrated real-time clock
- Peltier cooling & heating system: precise and fast-acting, vibration-free, low-noise
- Use of cycle-resistant high-performance Peltier elements with long service life
- Environmentally friendly operation without refrigerant
- Forced air circulation in the interior through adjustable turbine
- Self-test: automated check of proper unit function
- Ethernet communication interface for APT-COM® DataControlSystem
- Inner glass door with seal
- Cable entry Ø 30 mm, left-hand side
- Set of castors (4 castors, with parking brake)

Advantages:

- Reliable due to uncompromisingly fail-safe operation.
- Smart, as highly customisable to individual customer requirements thanks to a wide range of accessories.
- Economical due to lowest energy consumption thanks to optimised Peltier technology.



KB ECO 240



KB ECO 1020

Technical data:

	KB ECO 240	KB ECO 400	KB ECO 720	KB ECO 1020
	230V *	230V *	230V *	230V *
Article Number	9020-0423	9020-0465	9020-0424	9020-0425
Performance Data Temperature				
Temperature range (max. 26°C below ambient temperature) [°C]	-	-	0...+70	0...+70
Temperature range (max. 28°C below ambient temperature) [°C]	0...+70	0...+70	-	-
Temperature variation at 37 °C [± K]	0,1	0,1	0,1	0,1
Temperature fluctuation at 37 °C [± K]	0,1	0,1	0,1	0,1
Recovery time after 30 seconds door open at 37 °C [min]	4	6	4	3
Electrical data				
Rated Voltage [V]	200...230	200...230	200...230	200...230
Power frequency [Hz]	50 / 60	50 / 60	50 / 60	50 / 60
Nominal power [kW]	0,9	1,2	1,3	1,3
Unit fuse [A]	16	16	16	16
Phase (Nominal voltage) [ph]	1~	1~	1~	1~
Outer dimensions				
Width net [mm]	925	925	1250	1250
Height net [mm]	1461	1946	1925	1925
Depth net [mm]	796	796	885	1149
Wall clearance back [mm]	100	100	100	100
Wall clearance sidewise [mm]	100	100	100	100
Doors				
Inner doors	1	1	2	2
Unit doors	1	1	2	2
Internal Dimensions				
Width [mm]	650	650	973	973
Height [mm]	785	1946	1250	1250
Depth [mm]	485	485	576	836
Further Dimension				
Interior volume [L]	247	400	700	1020
Net weight of the unit (empty) [kg]	152	196	272	327
permitted load [kg]	100	120	150	150
Load per rack [kg]	30	30	45	45
Environment-specific data				
Energy consumption at 4 °C [Wh/h]	100	-	185	190
Energy consumption at 37 °C [Wh/h]	65	70	105	105
Sound-pressure level [dB(A)]	43	43	47	47
Fixtures				
Number of shelves (std./max.)	2 / 9	2 / 15	2 / 15	2 / 15

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard part 2:2015 and DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

HEATING- AND COOLING CHAMBERS

Series MK: Heating- /Cooling chambers for rapid temperature changes

The MK series chamber is suitable for all heat and cold tests between -40 °C and 180 °C. The MK is a clever alternative to complex individual solutions for cyclical temperature tests.

Features:

- Temperature range: -40 °C to 180 °C
- APT.line™ preheating chamber technology
- Programmable condensation protection for test material
- Heated viewing window with LED interior lighting
- APT-COM™ Basic Edition communication software
- Troubleshooting system with visual and audible alarms
- Intuitive touchscreen controller with time-segment and real-time programming
- Access port with silicone plug (Models 56, 115, 240, 400), 50 mm, left
- 2 access ports with silicone plugs (Model 720, 1020), 80 mm, left and right
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- 4 castors, two with brakes, from 115 liters
- Computer interface: Ethernet
- Adjustable ramp function
- Integrated chart recorder
- Real-time clock
- Door heating
- Inner chamber made of stainless steel incl. 1 ss rack
- CFC-free refrigerant R-452A
- Cooling with compressor cooling unit

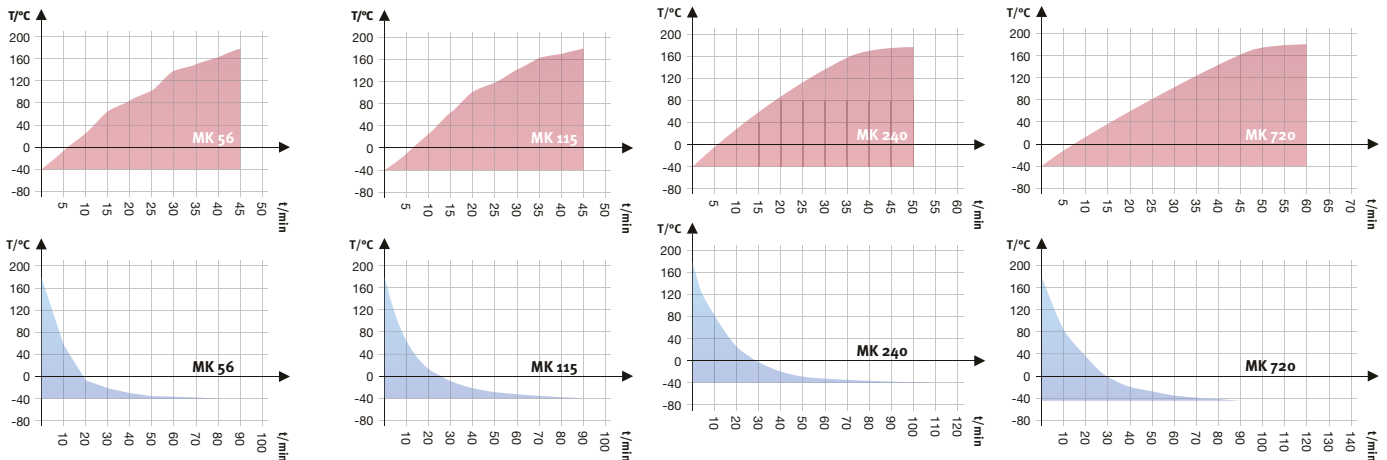


MK 056

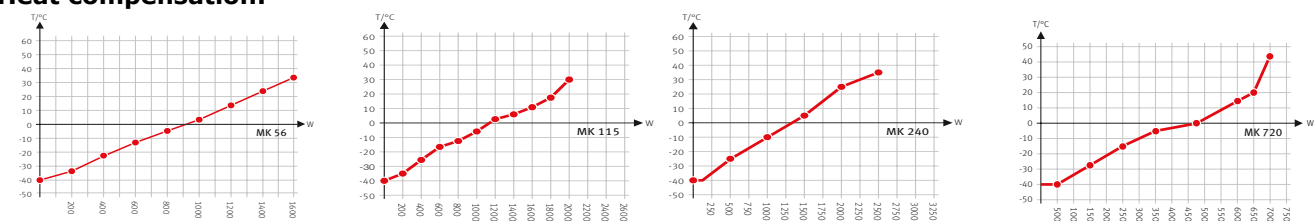


MK 720

Heating up / Cooling down times:



Heat compensation:



Technical data:

	MK056	MK115	MK240	MK400	MK720	MK1020
	230V *	400V *	400V *	400V *	400V *	400V *
Article Number	9020-0374	9020-0375	9020-0376	9020-0406	9020-0377	9020-0407
Performance Data Temperature						
Temperature range [°C]	-40...180	-40...180	-40...180	-40...180	-40...180	-40...180
Temperature variation depending on setpoint [± K]	0,5...1,5	0,1...2	0,1...1,2	0,1...1,2	0,3...2	0,1...1,8
Temperature fluctuation depending on setpoint [± K]	0,1...0,5	0,1...0,5	0,1...0,5	0,1...0,5	0,1...0,5	0,1...0,5
Average heating-up rate according to IEC 60068-3-5 [K/min]	5	5,3	5	5	4	5,5
Heating up time from -40 °C to 180 °C [min]	75	55	50	55	96	60
Cooling down time from 180 °C to -40 °C [min]	90	90	110	115	100	120
Average cooling down time according to IEC 60068-3-5 [K/min]	5	5	4,5	5	4,5	5
Max. heat compensation at 20 °C [W]	-	-	-	4500	-	6000
Max. heat compensation at 25 °C [W]	800	1500	2000	-	3500	-
Electrical data						
Rated Voltage [V]	230	400	400	400	400	400
Power frequency [Hz]	50	50	50	50	50	50
Nominal power [kW]	2,8	3,5	5,6	7	8,7	11,5
Unit fuse [A]	16	16	16	16	16	32
Phase (Nominal voltage) [ph]	1~	3~	3~	3~	3~	3~
Outer dimensions						
Width net [mm]	720	980	1115	1115	1580	1580
Height net [mm]	1445	1725	1710	1710	2005	2005
Depth net [mm]	778	865	925	1400	1140	1480
Wall clearance back [mm]	300	300	300	500	300	300
Wall clearance sidewise [mm]	200	200	200	300	200	200
Viewing window width [mm]	288	288	508	508	508	508
Viewing window height [mm]	255	222	300	300	300	300
Doors						
Unit doors	1	1	1	1	1	1
Internal Dimensions						
Width [mm]	400	600	735	735	1200	1200
Height [mm]	420	480	700	700	1020	1020
Depth [mm]	350	400	443	810	600	810
Further Dimension						
Interior volume [L]	60	115	228	417	734	991
Net weight of the unit (empty) [kg]	165	260	340	413	570	621
permitted load [kg]	60	60	70	150	160	200
Load per rack [kg]	15	30	30	30	40	40
Environment-specific data						
Sound-pressure level [dB(A)]	59	62	62	65	65	65
Fixtures						
Number of shelves (std./max.)	1 / 4	1 / 4	1 / 6	1 / 6	1 / 11	1 / 11

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

Series MKT: Heating- /Cooling chambers for rapid temperature changes with extended low temperature range

Temperature ranges between -70 °C and 180 °C, with the added benefit of natural simulation, are what make the MKT series so unique. At the same time, this environmental simulation chamber fulfills the very highest precision and performance requirements for cyclical temperature tests.

Features:

- Temperature range: -70 °C to 180 °C
- 4 zero-voltage relay contacts
- APT.line™ preheating chamber technology
- Programmable condensation protection for test material
- Heated viewing window with LED interior lighting
- APT-COM™ Basic Edition communication software
- Troubleshooting system with visual and audible alarms
- Intuitive touchscreen controller with time-segment and real time programming
- Internal data logger, measured values can be read out in open format via USB
- Access port with silicone plug (Models 115, 240: 50 mm, left)
- 2 access ports with silicone plugs (Model 720: 80 mm, left and right)
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- 4 castors, two with brakes
- Computer interface: Ethernet
- Adjustable ramp function
- Integrated chart recorder
- Real-time clock
- Door heating
- Inner chamber made of stainless steel with 1 ss rack
- CFC-free refrigerants R-452A and R-23
- Cooling with cascade compressor cooling unit

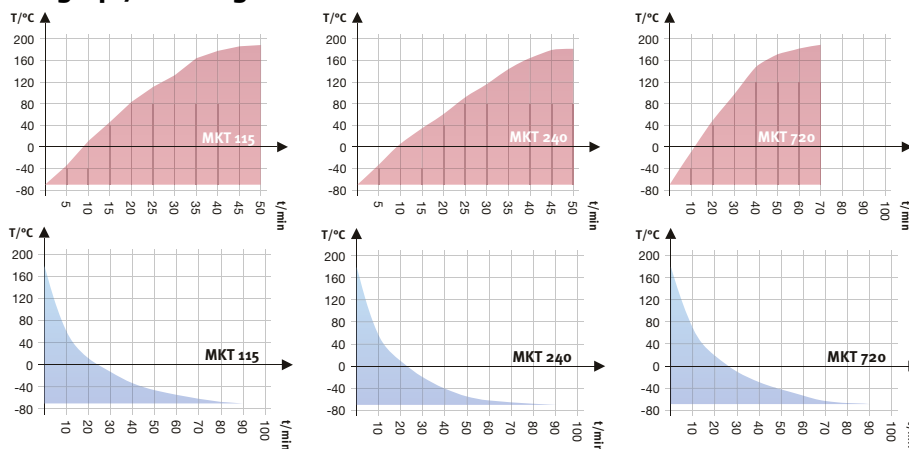


MKT 115

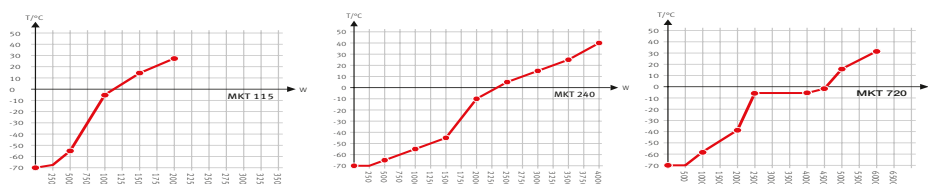


MKT 115

Heating up / Cooling down times:



Heat compensation:



Technical data:

	MKT115	MKT240	MKT720
	400V *	400V *	400V *
Article Number	9020-0385	9020-0386	9020-0387
Performance Data Temperature			
Temperature range [°C]	-70...180	-70...180	-70...180
Temperature variation depending on setpoint [± K]	0,2...1,8	0,1...1,0	0,3...2
Temperature fluctuation depending on setpoint [± K]	0,1...0,6	0,1...0,4	0,1...0,5
Average heating-up rate according to IEC 60068-3-5 [K/min]	5,3	5	4,5
Cooling down time from 180 °C to -70 °C [min]	110	95	
Cooling down time from 180 °C to -40 °C [min]			120
Average cooling down time according to IEC 60068-3-5 [K/min]	4,2	4,2	4,0
Max. heat compensation at 25 °C [W]	1500	3200	5000
Electrical data			
Rated Voltage [V]	400	400	400
Power frequency [Hz]	50	50	50
Nominal power [kW]	5,5	6,5	13
Unit fuse [A]	16	16	32
Phase (Nominal voltage) [ph]	3~	3~	3~
Outer dimensions			
Width net [mm]	980	1115	1580
Height net [mm]	1725	1935	2005
Depth net [mm]	865	925	1140
Wall clearance back [mm]	300	300	300
Wall clearance sidewise [mm]	200	200	200
Viewing window width [mm]	228	508	508
Viewing window height [mm]	222	300	300
Doors			
Unit doors	1	1	1
Internal Dimensions			
Width [mm]	600	735	1200
Height [mm]	480	700	1020
Depth [mm]	400	443	600
Further Dimension			
Interior volume [L]	115	228	734
Net weight of the unit (empty) [kg]	305	380	610
permitted load [kg]	60	70	160
Load per rack [kg]	30	30	40
Environment-specific data			
Sound-pressure level [dB(A)]	64	64	65
Fixtures			
Number of shelves (std./max.)	1/4	1/6	1/11

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

CONSTANT CLIMATE CHAMBERS

Series KBF: Constant climate chambers with large temperature / humidity range

The KBF is the specialist for unconditionally reliable stability testing and precise maintenance of constant climate conditions. From programming to documentation, this constant climate chamber meets all critical requirements.

Features:

- Temperature range: 0 °C to 70 °C
- Humidity range: 10 % to 80 % RH
- APT.line™ preheating chamber technology
- Humidity regulation with capacitive humidity sensor and vapor humidification
- Intuitive touchscreen controller with time-segment and real-time programming
- Multi-Management Software APT-COMTM Basic Edition
- Inner chamber made of stainless steel
- Internal data logger, measured values can be read out in open format via USB
- Unit self-test for comprehensive status analysis
- Tightly-sealed inner door made of tempered safety glass
- Avoidance of glass corrosion by special TIMELESS coating
- Inner chamber made of stainless steel
- 2 stainless steel racks
- Access port with silicone plug, 30 mm, left
- 4 stable castors, two with brakes, from 240 liters
- Class 3.1 independent temperature safety device (DIN 12880) with visual and audible temperature alarm
- Computer interface: Ethernet
- Door heating

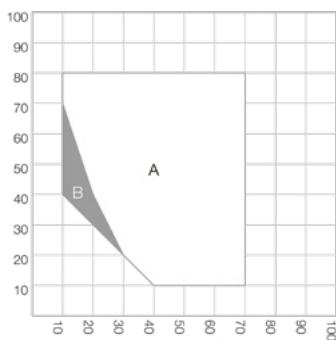


KBF 115



KBF 240

Temperature-humidity chart



A: Standard Climate range
B: Discontinuous range

Technical data:

	KBF115	KBF240	KBF720
	230V *	230V *	230V *
Article Number	9020-0320	9020-0322	9020-0324
Performance Data Temperature			
Temperature range [°C]	0...70	0...70	0...70
Temperature variation at 40 °C [± K]	0,2	0,3	0,2
Temperature fluctuation [± K]	0,1	0,1	0,1
Max. heat compensation at 40 °C [W]	200	300	600
Performance Data Climate			
Temperature range [°C]	10...70	10...70	10...70
Temperature variation at 25 °C and 60 % RH [± K]	0,2	0,3	0,2
Temperature variation at 40 °C and 75 % RH [± K]	0,2	0,3	0,2
Temperature fluctuation at 25 °C and 60 % RH [± K]	0,1	0,1	0,1
Temperature fluctuation at 40 °C and 75 % RH [± K]	0,1	0,1	0,1
Humidity range [% RH]	10...80	10...80	10...80
Humidity fluctuation at 25 °C and 60 % RH	≤2 ± % r.F.	1,5 ± % r.F.	1,5 ± % r.F.
Humidity fluctuation at 40 °C and 75 % RH	≤2 ± % r.F.	1,5 ± % r.F.	1,5 ± % r.F.
Electrical data			
Rated Voltage [V]	200...230	200...230	200...230
Power frequency [Hz]	50/60	50/60	50/60
Nominal power [kW]	2	2,1	3,1
Unit fuse [A]	16	16	16
Phase (Nominal voltage) [ph]	1~	1~	1~
Outer dimensions			
Width net [mm]	880	925	1250
Height net [mm]	1050	1460	1925
Depth net [mm]	650	800	890
Wall clearance back [mm]	100	100	100
Wall clearance sidewise [mm]	100	100	300
Doors			
Inner doors	1	1	2
Unit doors	1	1	2
Internal Dimensions			
Width [mm]	600	650	973
Height [mm]	483	785	1250
Depth [mm]	351	485	576
Further Dimension			
Interior volume [L]	102	247	700
Net weight of the unit (empty) [kg]	128	189	312
permitted load [kg]	100	100	150
Load per rack [kg]	30	30	45
Environment-specific data			
Energy consumption at 40 °C and 75 % RH [Wh/h]	470	650	620
Sound-pressure level [dB(A)]	52	52	53
Fixtures			
Number of shelves (std./max.)	2/5	2/9	2/15

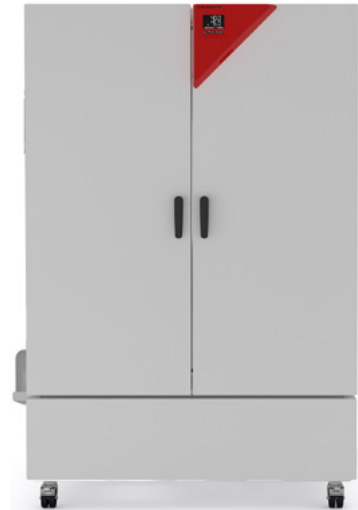
* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

Series KBF-S ECO Solid Line: Constant climatic chambers with Peltier technology

Thanks to thermoelectric cooling technology with patented heat dissipation, the new KBF-S ECO climatic chamber is one of the most energy-efficient constant climate chambers on the market. The thermoelectric cooling technology means the KBF-S ECO series is also very quiet during operation.

Features:

- Temperature range: 0 °C to +70 °C
- Humidity range: 10% to 80% RH
- APT.line™ preheating chamber technology
- Independent water supply via tank
- LCD to display temperature and humidity along with additional information and alarms
- Internal data logger, measured values can be read out in open format via USB
- Unit self-test for comprehensive status analysis
- Inner chamber made completely of stainless steel
- 2 stainless steel racks, including shelf carrier
- Access port with silicone plug Ø 30 mm, left



KBF S-ECO 720

Benefits:

- Safe thanks to standard-compliant testing according to the ICH Q1A guideline, even with full load.
- Reliable thanks to failsafe operation without compromise.
- Smart, as a wide range of accessories makes it highly compatible for adaptation to specific customer requirements.
- Economical, as energy consumption is minimal thanks to optimized thermoelectric cooling.



KBF S-ECO 1020

Technical data:

	KBF-S ECO 240	KBF-S ECO 400	KBF-S ECO 720	KBF-S ECO 1020
	230V *	230V *	230V *	230V *
Article Number	9020-0416	9020-0463	9020-0418	9020-0419
Performance Data Temperature				
Temperature range (max. 24 °C below ambient temperature) [°C]			0...70	0...70
Temperature range (max. 26 °C below ambient temperature) [°C]		0...70		
Temperature range (max. 28 °C below ambient temperature) [°C]	0...70			
Temperature variation at 40 °C [± K]	0,2	0,5	0,3	0,5
Temperature fluctuation [± K]	0,1	0,1	0,1	0,1
Performance Data Climate				
Temperature range (max. 24 °C below ambient temperature) [°C]			5...70	5...70
Temperature range (max. 26 °C below ambient temperature) [°C]		5...70		
Temperature range (max. 28 °C below ambient temperature) [°C]	5...70			
Temperature variation at 40 °C and 75 % RH [± K]	0,2	0,5	0,3	0,5
Temperature fluctuation at 40 °C and 75 % RH [± K]	0,1	0,1	0,1	0,1
Humidity range [% RH]	10...80	10...80	10...80	10...80
Humidity fluctuation at 40 °C and 75 % RH [± % r.H.]	0,3	0,3	0,3	0,4
Electrical data				
Rated Voltage [V]	200...230	200...230	200...230	200...230
Power frequency [Hz]	50/60	50/60	50/60	50/60
Nominal power [kW]	0,8	1,1	1,2	1,2
Unit fuse [A]	16	16	16	16
Phase (Nominal voltage) [ph]	1~	1~	1~	1~
Outer dimensions without attachments and connections				
Width net [mm]	932	925	1254	1254
Height net [mm]	1461	1946	1925	1925
Depth net [mm]	796	796	885	1146
Wall clearance back [mm]	100	100	100	100
Wall clearance sidewise [mm]	180	180	180	180
Doors				
Unit doors	1	1	2	2
Internal Dimensions				
Width [mm]	650	650	973	973
Height [mm]	785	1200	1250	1250
Depth [mm]	485	390	576	836
Further Dimension				
Interior volume [L]	247	400	700	1020
Net weight of the unit (empty) [kg]	146	192	267	322
permitted load [kg]	100	120	150	150
Load per rack [kg]	30	30	45	45
Environment-specific data				
Energy consumption at 40 °C and 75 % RH [Wh/h]	85	70	130	135
Sound-pressure level [dB(A)]	46	45	48	49
Fixtures				
Number of shelves (std./max.)	2/9	2/15	2/15	2/15

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time. For model KBF-S ECO 240, temperature differences are possible up to 28 °C below ambient temperature; for models KBF-S ECO 720 and KBF-S ECO 1020, temperature differences are possible up to 24 °C below ambient temperature. The lowest operating temperature for all units is 0 °C irrespective of the ambient temperature.

Series KMF: Constant climate chambers with expanded temperature / humidity range

The KMF ensures absolutely constant test conditions throughout the testing area. A big advantage of this constant climate chamber is its low space requirement and flexibility in terms of water supply. The wide temperature and humidity range make this constant climate chamber ideally suited for stress testing series.

Features:

- Temperature range: -10 °C to 100 °C
- Humidity range: 10 % RH to 98 % RH
- APT.line™ preheating chamber technology
- Humidity regulation with capacitive humidity sensor and vapor humidification
- Inner chamber made of stainless steel
- APT-COM™ Basic Edition communication software
- Intuitive touchscreen controller with time-segment and real-time programming
- Internal data logger, measured values can be read out in open format via USB
- Unit self-test for comprehensive status analysis
- Tightly-sealed inner door made of tempered safety glass (ESG)
- Avoidance of glass corrosion by special TIMELESS coating
- 1 stainless steel rack
- Access port with silicone plug, 30 mm, left
- Class 3.1 independent temperature safety device (DIN 12880) with visual and audible temperature alarm
- Computer interface: Ethernet
- Door heating

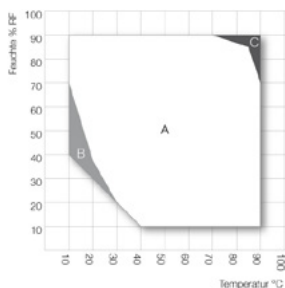


KMF 115



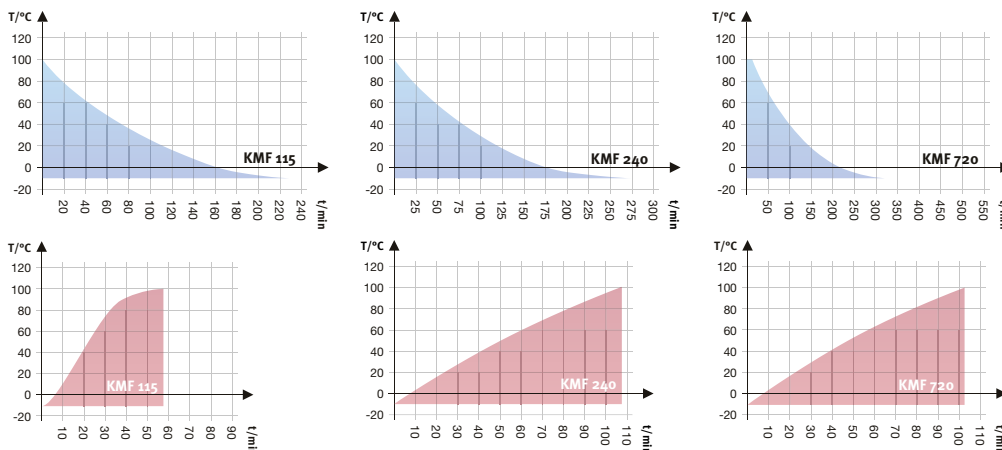
KMF 240

Temperature-humidity chart



A: Standard Climate range
 B: Discontinuous range
 C: In this range, condensation in the inner chamber is possible

Heating up / Cooling down times:



Technical data:

	KMF115	KMF240	KMF720
	230V *	230V *	230V *
Article Number	9020-0341	9020-0343	9020-0345
Performance Data Temperature			
Temperature range [°C]	-10...100	-10...100	-10...100
Average heating-up rate according to IEC 60068-3-5 [K/min]	1,3	0,8	0,7
Average cooling down time according to IEC 60068-3-5 [K/min]	0,5	0,4	0,4
Max. heat compensation at 25 °C [W]	150	200	450
Performance Data Climate			
Temperature range [°C]	10...90	10...90	10...90
Temperature variation depending on setpoint [± K]	0,2...1	0,1...1	0,1...1
Temperature fluctuation depending on setpoint [± K]	0,1...0,3	0,1...0,3	0,1...0,5
Humidity range [% RH]	10...98	10...98	10...98
Humidity fluctuation depending on setpoint	≤2,5 ± % r.F.	≤2 ± % r.F.	≤2 ± % r.F.
Dew point temperature range [°C]	5...90	5...90	5...90
Electrical data			
Rated Voltage [V]	200...230	200...230	200...230
Power frequency [Hz]	50/60	50/60	50/60
Nominal power [kW]	2	2,1	3,1
Unit fuse [A]	16	16	16
Phase (Nominal voltage) [ph]	1~	1~	1~
Outer dimensions			
Width net [mm]	880	930	1250
Height net [mm]	1050	1465	1925
Depth net [mm]	650	800	890
Wall clearance back [mm]	100	100	100
Wall clearance sidewise [mm]	100	100	100
Doors			
Inner doors	1	1	2
Unit doors	1	1	2
Internal Dimensions			
Width [mm]	600	650	973
Height [mm]	483	785	1250
Depth [mm]	351	485	576
Further Dimension			
Interior volume [L]	102	247	700
Net weight of the unit (empty) [kg]	128	189	306
permitted load [kg]	100	100	150
Load per rack [kg]	30	30	45
Environment-specific data			
Energy consumption at 85 °C and 85 % RH [Wh/h]	570	570	900
Sound-pressure level [dB(A)]	52	52	56
Fixtures			
Number of shelves (std./max.)	1/5	1/9	1/15

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

DYNAMIC CLIMATE CHAMBERS

Series MKF: Dynamic climate chambers for rapid temperature changes with humidity control

A MKF series environmental simulation chamber is ideally suited for any cold and heat testing based on current temperature and climate testing methods according to DIN and IEC standards. The comprehensive standard equipment for this environmental simulation chamber ensures ease of operation.

Features:

- Temperature range: -40 °C to 180 °C
- Humidity range: 10*%) to 98 % RH
- Integrated water-storage tank, 20 liters (not MKF056)
- 4 zero-voltage relay contacts
- APT.line™ preheating chamber technology
- Intuitive touchscreen controller with time-segment and real-time programming with integrated chart recorder
- Internal data logger, read out in open format via USB
- Programmable condensation protection for test material
- Heated door/viewing window with LED interior lighting
- Humidity regulation with capacitive humidity sensor and vapor humidification
- APT-COM™ Basic Edition communication software
- Troubleshooting system with visual and audible alarms
- Access port with silicone plug (056, 115, 240, 400: 50 mm, left)
- 2 access ports with silicone plugs (720, 1020: 80 mm, left and right)
- Class 2 adjustable temp. safety device with visual alarm
- 4 castors, two with brakes
- Computer interface: Ethernet
- Adjustable ramp function
- Real-time clock
- Alarm notification in the event of insufficient water in fresh water tank (Models 115, 240, 400, 720, 1020)
- Complete safety connection kit for water supply and drainage, up to 1 m height
- Inner chamber made of stainless steel with 1 SS Rack
- CFC-free refrigerant R-452A

*) 5 ...98% r. H. with optional orderable compressed air dryer (Automotive Tests)

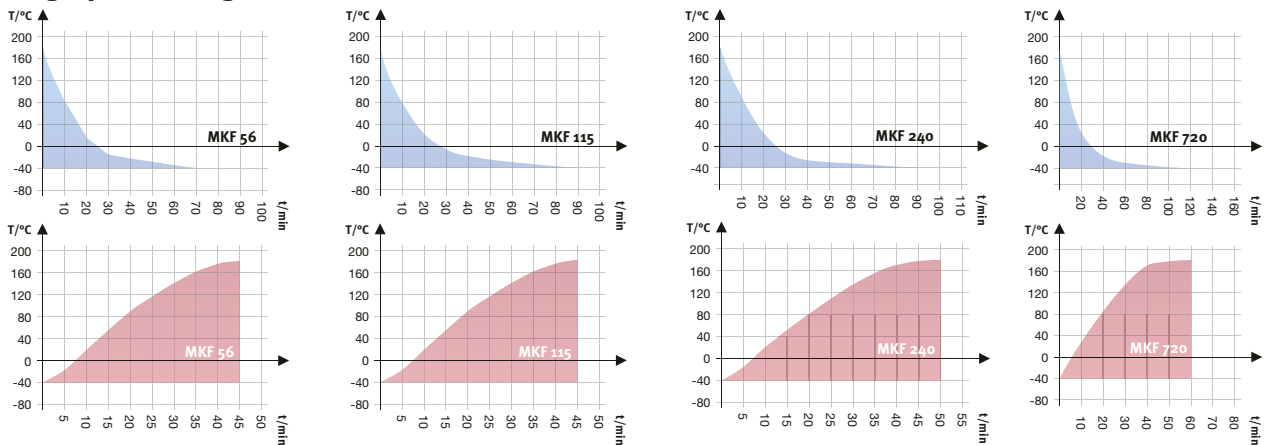


MKF 240

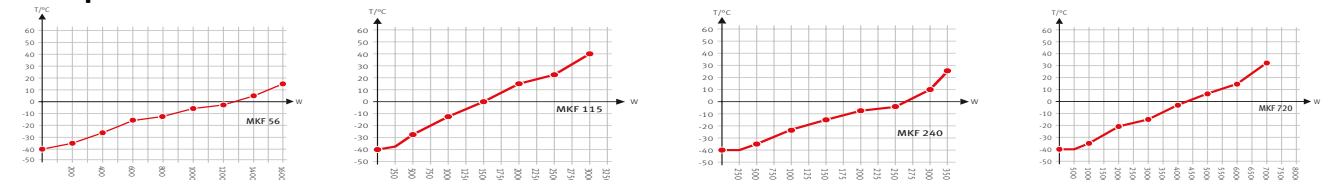


MKF 240

Heating up / Cooling down times:



Heat compensation:



Technical data:

	MKF056	MKF115	MKF240	MKF400	MKF720	MKF1020
	230V *	400V *	400V *	400V *	400V *	400V *
Article Number	9020-0378	9020-0379	9020-0380	9020-0408	9020-0381	9020-0409
Performance Data Temperature						
Temperature range [°C]	-40...180	-40...180	-40...180	-40...180	-40...180	-40...180
Temperature variation depending on setpoint [± K]	0,5...1,5	0,1...1,3	0,1...1,5	0,1...1,2	0,1...1,8	0,1...1,8
Temperature fluctuation depending on setpoint [± K]	0,1...0,5	0,1...0,6	0,1...0,5	0,1...0,5	0,1...0,5	0,1...0,5
Average heating-up rate according to IEC 60068-3-5 [K/min]	5	5,5	5	5	4,8	5,5
Heating up time from -40 °C to -40 °C [min]	60	60	60	55	85	60
Cooling down time from 180 °C to -40 °C [min]	90	100	120	115	120	120
Average cooling down time acc. to IEC 60068-3-5 [K/min]	5	4,5	5	5	4,8	5
Max. heat compensation at 20 °C [W]	-	-	-	4500	-	6000
Max. heat compensation at 25 °C [W]	1200	2100	2800	-	5800	-
Performance Data Climate						
Temperature range [°C]	10...95	10...95	10...95	10...95	10...95	10...95
Temperature variation depending on setpoint [± K]	0,5...1,5	-	-	0,1...1,5	-	0,1...2
Temperature fluctuation depending on setpoint [± K]	0,1...0,5	0,1...1,3	0,1...1,3	0,1...1,3	0,2...1,5	0,1...1,5
Humidity range [% RH]	10...98	10...98	10...98	10...98	10...98	10...98
Humidity fluctuation depending on setpoint [± %] r.F.	≤2,5	≤2,5	≤2,5	2,5	≤2,5	2,5
Dew point temperature range [°C]	5...94	5...94	5...94	5...94	5...94	5...94
Electrical data						
Rated Voltage [V]	200...230	400	400	400	400	400
Power frequency [Hz]	50	50	50	50	50	50
Nominal power [kW]	2,8	4,8	6,8	8	11	12,5
Unit fuse [A]	16	16	16	16	32	32
Phase (Nominal voltage) [ph]	1~	3~	3~	3~	3~	3~
Outer dimensions						
Width net [mm]	720	980	1115	1115	1580	1580
Height net [mm]	1445	1725	1715	1710	2005	2005
Depth net [mm]	780	865	925	1400	1140	1140
Wall clearance back [mm]	300	300	300	500	300	300
Wall clearance sidewise [mm]	200	200	200	300	200	200
Viewing window width [mm]	288	288	508	508	508	508
Viewing window height [mm]	255	222	300	300	300	300
Doors						
Unit doors	1	1	1	1	1	1
Internal Dimensions						
Width [mm]	400	600	735	735	1200	1200
Height [mm]	420	480	700	700	1020	1020
Depth [mm]	348	400	443	810	600	810
Further Dimension						
Interior volume [L]	60	115	228	417	734	991
Net weight of the unit (empty) [kg]	175	280	360	432	590	636
permitted load [kg]	60	60	70	150	160	160
Load per rack [kg]	15	30	30	30	40	40
Environment-specific data						
Sound-pressure level [dB(A)]	59	62	65	65	65	69
Fixtures						
Number of shelves (std./max.)	1/4	1/4	1/6	1/6	1/11	1/11

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

Series MKFT: Dynamic climate chambers for rapid temperature changes with humidity control and extended low temperature range

The environmental simulation cabinet of the MKFT series is the specialist for dynamic climate changes between -70 °C and 180 °C. Large power reserves and fast cooling make it a high-class product for complex standard-compliant climate tests.

Features:

- Temperature range: -70 °C to 180 °C
- Humidity range: 10*) % to 98 % RH
- Integrated water-storage tank, 20 liters
- 4 zero-voltage relay contacts
- APT.line™ preheating chamber technology
- Programmable condensation protection for test material
- Intuitive touchscreen controller with time-segment and real-time programming and integrated chart recorder
- Internal data logger, values can be read out via USB
- Heated door/viewing window with LED interior lighting
- Humidity regulation with capacitive humidity sensor and vapor humidification
- APT-COM™ Basic Edition communication software
- Troubleshooting system with visual and audible alarms
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- Access port with silicone plug (115, 240: 50 mm, left)
- 2 access ports with silicone plugs (720: 80 mm, left and right)
- 4 castors, two with brakes
- Computer interface: Ethernet
- Adjustable ramp function
- Real-time clock
- Alarm notification in the event of insufficient water in fresh water tank
- Complete safety connection kit for water supply and drainage, up to 1 m in height
- Inner chamber made of stainless steel with 1 SS-rack
- CFC-free refrigerants R-452A and R-23

*) 5 ...98% r. H. with optional orderable compressed air dryer (Automotive Tests)

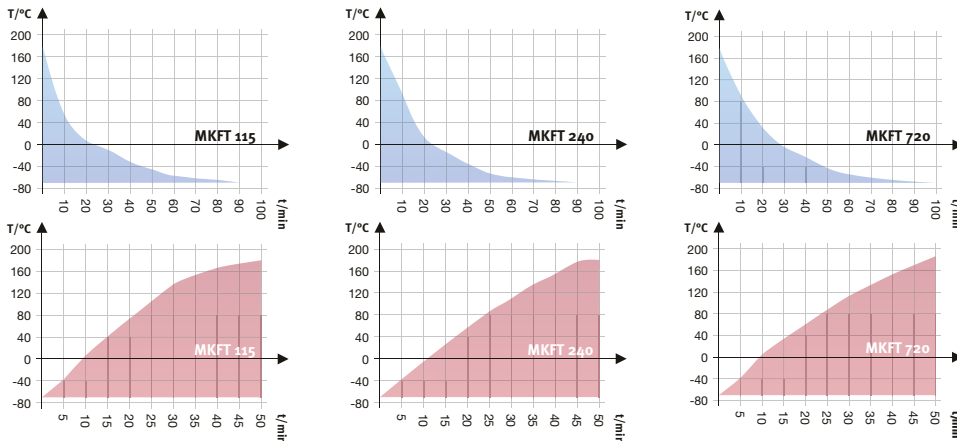


MKFT 115

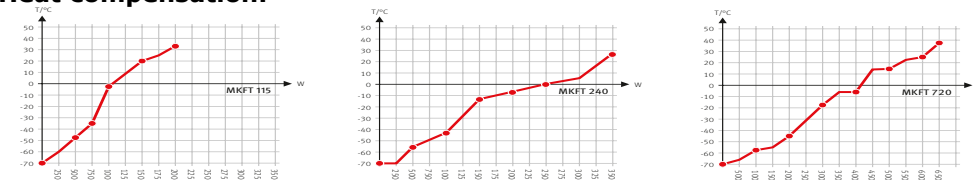


MKFT 115

Heating up / Cooling down times:



Heat compensation:



Technical data:

	MKFT115	MKFT240	MKFT720
	400V *	400V *	400V *
Article Number	9020-0382	9020-0383	9020-0384
Performance Data Temperature			
Temperature range [°C]	-70...180	-70...180	-70...180
Temperature variation depending on setpoint [± K]	0,1...1,3	0,2...1,8	0,3...2,0
Temperature fluctuation depending on setpoint [± K]	0,1...0,1	0,1...0,5	0,1...0,1
Average heating-up rate according to IEC 60068-3-5 [K/min]	5,5	5	4,8
Average cooling down time according to IEC 60068-3-5 [K/min]	4,2	4,2	4
Max. heat compensation at 25 °C [W]	1500	3000	4500
Performance Data Climate			
Temperature range [°C]	10...95	10...95	10...95
Temperature fluctuation depending on setpoint [± K]	0,1...1	0,1...1,5	0,1...1
Humidity range [% RH]	10...98	10...98	10...98
Humidity fluctuation depending on setpoint	≤2,5 ± % r.F.	≤2,5 ± % r.F.	≤2,5 ± % r.F.
Dew point temperature range [°C]	5...94	5...94	5...94
Electrical data			
Rated Voltage [V]	400	400	400
Power frequency [Hz]	50	50	50
Nominal power [kW]	5,0	6,0	11
Unit fuse [A]	16	16	32
Phase (Nominal voltage) [ph]	3~	3~	3~
Outer dimensions			
Width net [mm]	980	1115	1580
Height net [mm]	1725	1940	2005
Depth net [mm]	865	925	1140
Wall clearance back [mm]	300	300	300
Wall clearance sidewise [mm]	200	200	200
Viewing window width [mm]	288	508	508
Viewing window height [mm]	222	300	300
Doors			
Unit doors	1	1	1
Internal Dimensions			
Width [mm]	600	735	1200
Height [mm]	480	700	1020
Depth [mm]	400	443	600
Further Dimension			
Interior volume [L]	115	228	734
Net weight of the unit (empty) [kg]	330	415	635
permitted load [kg]	60	70	160
Load per rack [kg]	30	30	40
Environment-specific data			
Sound-pressure level [dB(A)]	64	67	69
Fixtures			
Number of shelves (std./max.)	1/4	1/6	1/11

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

VACUUM DRYING OVENS

Series VD: Vacuum drying chambers for non-flammable solvents

A vacuum drying oven VD series gently dries materials with homogeneous temperature distribution. The patented expansion shelf technology ensures optimal heat transfer. The shelves are easy to position where required and the inner chamber of the vacuum drying oven is easy to clean.

• Features:

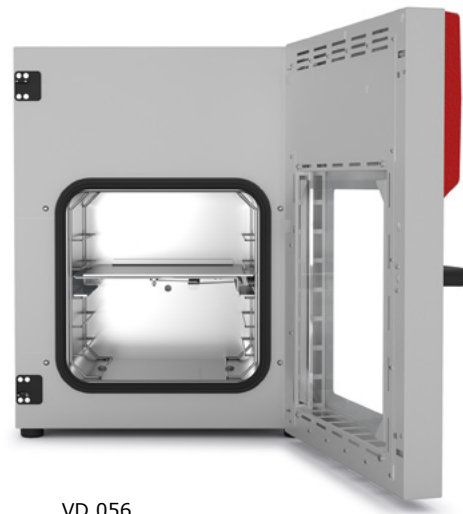
- Temperature range: room temperature +9 °C to 220 °C
- Controller with digital display of pressure and temperature
- Program-controlled drying monitoring with automatic ventilation at end of process
- Internal data logger, measured values can be read out in open format via USB
- 1 aluminum expansion rack, can be custom-positioned
- Inert gas connection
- Universal access port DN 16
- Shatterproof, spring-mounted safety glass panel
- Large viewing window with option of interior lighting
- Computer interface: Ethernet
- 2 relay outputs, 24 V DC (max. 0.4 A)

Optional equipment:

- Touchscreen Controller - Graphical display of main process parameter
- Expansion racks - Choice of aluminum or stainless steel racks depending on the application requirements
- Analogue output for temperature and pressure signals - for external monitoring and evaluation of the process parameters, integration into in-house systems is possible
- Universal ventilation - Selection of different ventilation by air or inert gas
- Universal access port DN 40
- Multi Management Software APT-COM - Manage, record and document device parameters



VD 056



VD 056

Technical data:

	VD023	VD056	VD115
	230V *	230V *	230V *
Article Number	9630-001	9630-0002	9630-0003
Performance Data Temperature			
Temperature range 9 °C above ambient temperature to [°C]	220	220	220
Temperature variation at 100 °C [± K]	1,0	1,2	2,9
Temperature fluctuation [± K]	0,1	0,1	0,1
Heating-up time to 100 °C [min]	80	80	130
Vacuum Data			
Leak rate [bar/h]	0,01	0,01	0,01
Electrical data			
Rated Voltage [V]	200...230	200...230	200...230
Power frequency [Hz]	50/60	50/60	50/60
Nominal power [kW]	0,9	1,4	1,6
Unit fuse [A]	6,3	8	10
Phase (Nominal voltage) [ph]	1~	1~	1~
Connections			
Compressed air connection for pressure-encapsulation [NW]	5	5	5
Vacuum connection with small flange [DN mm]	16	16	16
Measuring access port with small flange [DN mm]	16	16	16
Inert gas connection with flow limiter (RP")	3/8	3/8	3/8
Outer dimensions			
Width net [mm]	523	638	743
Height net [mm]	698	815	942
Depth net [mm]	413	461	581
Wall clearance back [mm]	100	100	100
Wall clearance sidewise [mm]	70	70	70
Viewing window width [mm]	305	420	525
Viewing window height [mm]	305	420	468
Doors			
Unit doors	1	1	1
Internal Dimensions			
Width [mm]	285	400	506
Height [mm]	285	400	506
Depth [mm]	295	343	460
Further Dimension			
Interior volume [L]	24	55	119
Net weight of the unit (empty) [kg]	64	95	146
permitted load [kg]	50	60	70
Load per rack [kg]	20	20	20
Fixtures			
Number of shelves (std./max.)	1/4	1/5	1/6

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10%. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing 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 change technical specifications at any time.

Series VDL: Vacuum drying chambers for flammable solvents

A safety vacuum drying oven of the VDL series ensures maximum safety when drying organic solvents standard with TÜV/GS. The inner chamber of the VDL safety vacuum drying oven is designed according to ATEX guidelines 2014/34/EU: EX II 2/3/- G IIB T3 Gb/Gc/- X.

Features:

- Temperature range: room temperature plus 9 °C to 110 °C
- ATEX compliance chamber's interior: EX II 2/3/- G IIB T3 Gb/Gc/- X
- Intuitive touchscreen controller with graphical pressure and temperature display
- Program-controlled drying monitoring with automatic ventilation at end of process
- Internal data logger, measured values can be readout in open format via USB
- Pressure control device for heating activated from < 100 mbar
- 2 aluminum expansion racks, can be custom-positioned
- Universal connection for ventilation with ambient air or inert gas
- Universal access port DN 16
- Shatterproof, spring-mounted safety glass panel
- Large viewing window
- Computer interface: Ethernet

Optional equipment:

- Expansion racks - Choice of aluminum or stainless steel racks depending on the application requirements
- Analogue output for temperature and pressure signals - for external monitoring and evaluation of the process parameters, integration into in-house systems is possible
- Universal ventilation - Selection of different ventilation by air or inert gas
- Universal access port DN 40
- Multi Management Software APT-COM - Manage, record and document device parameters



VDL 056



VDL 056 w/m Module

Technical data:

	VDL023	VDL056	VDL115
	230V *	230V *	230V *
Article Number	9630-0009	9630-0010	9630-0011
Performance Data Temperature			
Temperature range 9 °C above ambient temperature to [°C]	110	110	110
Temperature variation at 100 °C [± K]	1,0	1,2	2,9
Temperature fluctuation [± K]	0,1	0,1	0,1
Heating-up time to 100 °C [min]	110	140	170
Vacuum Data			
Leak rate [bar/h]	0,01	0,01	0,01
Electrical data			
Rated Voltage [V]	200...230	200...230	200...230
Power frequency [Hz]	50/60	50/60	50/60
Nominal power [kW]	0,9	1,4	1,6
Unit fuse [A]	6,3	8	10
Phase (Nominal voltage) [ph]	1~	1~	1~
Connections			
Vacuum connection with small flange [DN mm]	16	16	16
Measuring access port with small flange [DN mm]	16	16	16
Inert gas connection with flow limiter (RP")	3/8	3/8	3/8
Outer dimensions			
Width net [mm]	523	638	743
Height net [mm]	698	815	942
Depth net [mm]	413	461	581
Wall clearance back [mm]	100	100	100
Wall clearance sidewise [mm]	70	70	70
Viewing window width [mm]	305	420	525
Viewing window height [mm]	305	420	468
Doors			
Unit doors	1	1	1
Internal Dimensions			
Width [mm]	285	400	506
Height [mm]	285	400	506
Depth [mm]	295	343	460
Further Dimension			
Interior volume [L]	24	55	119
Net weight of the unit (empty) [kg]	72	104	158
Permitted load [kg]	50	60	70
Load per rack [kg]	20	20	20
Fixtures			
Number of shelves (std./max.)	2/4	2/5	2/6

* All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10%. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing 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 change technical specifications at any time.

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