

Model UF V 700 | Ultra low temperature freezers with climate-neutral refrigerants

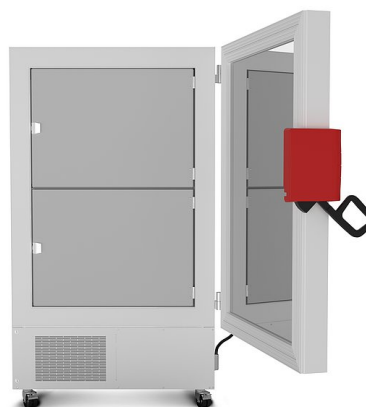
The BINDER ultra low temperature freezer ensures the safe storage of samples at -90 °C. It combines outstanding environmental friendliness with low energy consumption, convenient operation and an individual safety concept.

BENEFITS

- Lowest energy consumption in its class
- Environmentally friendly refrigerant
- Multi-level safety concept
- 5-year warranty



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MAIN FEATURES

- Range of temperature controller: -90 °C to -40 °C
- Lowest energy consumption in its class
- Powerful cascade compressor cooling unit
- Environmentally friendly refrigerants R-290 and R-170
- Efficient thermal insulation with vacuum insulation panels
- Innovative door gasket concept reduces buildup of ice
- Ergonomic door handle
- Rust-proof interior made completely of stainless steel
- Detachable inner doors made of stainless steel
- 3 stainless-steel shelves providing flexible placement
- Water cooling (depending on version)
- Zero-voltage alarm contact for in-house alarm system
- Internal data logger, measured values can be read out in open format via USB
- Ethernet interface
- Operating hours counter
- 2 access ports, Ø 28 mm, rear

ORDERING INFORMATION

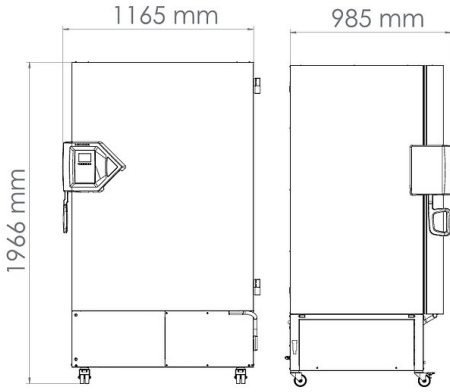
Interior volume [L]	Voltage	Option model	Version	Art.-No.
700	230 V 1~ ph 50 Hz	Standard	UFV700-230V	9020-0348
		Water cooling	UFV700-230V-W	9020-0350
	120 V 1~ ph 60 Hz	Standard	UFV700UL-120V	9020-0352
		Standard	UFV700UL-240V	9020-0354

TECHNICAL DATA

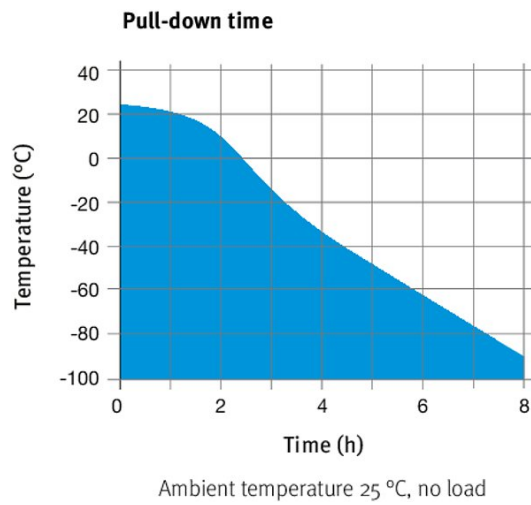
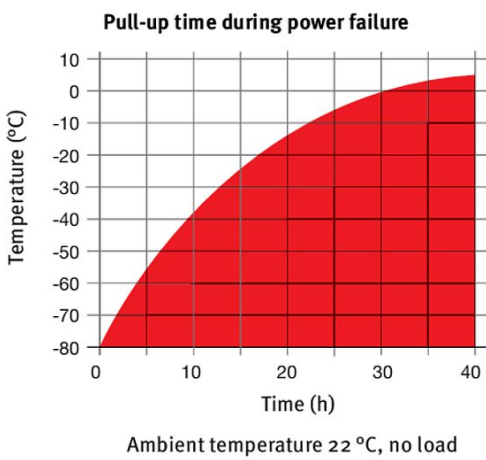
Description	UFV700-230V ¹	UFV700-230V-W ¹	UFV700UL-120V ¹	UFV700UL-240V ¹
Article Number	9020-0348	9020-0350	9020-0352	9020-0354
Performance Data Temperature				
Temperature range	-90...-40	-90...-40	-90...-40	-90...-40
Temperature variation at -80 °C [± K]	2.5	2.5	2.5	2.5
Temperature fluctuation at -80 °C [± K]	1.5	1.5	1.5	1.5
Cooling down time from 22 °C to -80 °C [min]	450	450	450	450
Warm-up time during power failure from -80 °C / -122 °F to -60 °C / -76 °F [min]	250	250	250	250
Electrical data				
Rated Voltage [V]	230	230	120	240
Power frequency [Hz]	50	50	60	60
Nominal power [kW]	1.6	1.6	1.4	1.6
Unit fuse [A]	10	10	13	10
Phase (Nominal voltage)	1~	1~	1~	1~
Measures				
Interior volume [L]	700	700	700	700
Net weight of the unit (empty) [kg]	289	289	289	289
Permitted load [kg]	200	200	200	200
Permitted load of individual compartment [kg]	50	50	50	50
Wall clearance back [mm]	100	100	100	100
Wall clearance sidewise [mm]	250	250	250	250
Internal Dimensions				
Width [mm]	890	890	890	890
Height [mm]	1300	1300	1300	1300
Depth [mm]	605	605	605	605
Doors				
Unit doors	1	1	1	1
Housing dimensions not incl. fittings and connections				
Width net [mm]	1110	1110	1110	1110
Height net [mm]	1966	1966	1966	1966
Depth net [mm]	938	938	938	938
Environment-specific data				
Energy consumption at set-point -80 °C and ambient temperature = 21 °C [kWh/d]	8.1	8.1	8.1	8.1
Average heat dissipation at set-point -80 °C and ambient temperature = 21 °C [W]	340	340	340	340
Sound-pressure level [dB(A)]	47	47	47	47
Fixtures				
Number of shelves (std./max.)	3/13	3/13	3/13	3/13
Load-variants				
Freezer racks per compartment	6	6	6	6
Cryoboxes, 50 mm	528	528	528	528

1 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.

DIMENSIONS incl. fittings and connections [mm]



CHARTS



Heating up rate

Cooling down rate

OPTIONS

Designation	Description	*	Art.-No.
Alarm system, battery-backed	for maintaining temperature display, alarm messages, and communication	-	8012-1910
Analog output 4-20 mA	for temperature values (output not adjustable)	-	8012-1898
Buck-boost converter	automatic voltage compensation	-	8012-1897
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	-	8012-1126
Calibration certificate, temperature	for temperature, measurement in center of chamber at specified temperature	-	8012-0031
	temperature measurement incl. certificate, 20 measuring points at specified temperature	-	8012-0925
Compartment doors	Foam-filled compartment doors with gasket	-	8012-1894
CO ₂ backup cooling	factory installed (allow for increased depth of UF V: 1085 mm), includes the option of a battery-backed alarm system	-	8012-1936
Door access system	consisting of electromechanical door locking mechanism and electronic access control via NumPad	-	8012-1899
Door lock	lockable door handle	-	8012-1911
Shipping pallet	with unloading ramp for installing unit without forklift	-	8012-1907
Switch cover	Lockable main switch cover	-	8012-1980

* Notes > See last page

ACCESSORIES

Designation	Description	*	Art.-No.
5 m power cable	C 13 refrigerator connection cable with BS 1363 British plug	–	5023-0285
	C 13 refrigerator connection cable with CEE 7/7 European plug	–	5023-0283
	C 13 refrigerator connection cable with type 13 Swiss plug	–	5023-0284
APT-COM™ 4 BASIC-Edition	for simple logging and documentation requirements with up to 5 networked units. version 4, BASIC edition	19	9053-0039
APT-COM™ 4 GLP-Edition	for working under GLP-compliant conditions. Measured values are documented in a tamper-proof way in line with the requirements of FDA Regulation 21 CFR 11. version 4, GLP edition	19	9053-0042
APT-COM™ 4 PROFESSIONAL-Edition	convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units. version 4, PROFESSIONAL edition	19	9053-0040
Chamber rack with drawer, stainless steel	for 5x4 standard boxes (50 mm) incl. boxes, dimensions: H 285 x W 140 x D 560 mm	–	6017-0046
	for 5x4 standard boxes (50 mm), dimensions: H 285 x W 140 x D 560 mm	–	6017-0045
	for 6x4 standard boxes (50 mm) incl. boxes, dimensions: H 340 x W 140 x D 560 mm	–	6017-0052
Chamber rack, aluminum	for 6x4 standard boxes (50 mm), dimensions: H 340 x W 140 x D 560 mm	–	6017-0051
	for 5x4 standard boxes (50 mm) incl. boxes, dimensions: H 276 x W 139 x D 558 mm	–	6017-0042
	for 5x4 standard boxes (50 mm), dimensions: H 276 x W 139 x D 558 mm	–	6017-0041
	for 6x4 standard boxes (50 mm) incl. boxes, dimensions: H 331 x W 139 x D 558 mm	–	6017-0048
Chamber rack, stainless steel	for 6x4 standard boxes (50 mm), dimensions: H 331 x W 139 x D 558 mm	–	6017-0047
	for 5x4 standard boxes (50 mm) incl. boxes, dimensions: H 276 x W 139 x D 558 mm	–	6017-0044
	for 5x4 standard boxes (50 mm), dimensions: H 276 x W 139 x D 558 mm	–	6017-0043
Chamber rack, stainless steel	for 6x4 standard boxes (50 mm) incl. boxes, dimensions: H 331 x W 139 x D 558 mm	–	6017-0050
	for 6x4 standard boxes (50 mm), dimensions: H 331 x W 139 x D 558 mm	–	6017-0049
	CO ₂ backup cooling	upgrade kit, for on-site installation by our service technician, requires the option of a battery-backed alarm system	–
Cryoboxes	set consisting of 36 cardboard boxes with sample dividers	–	6017-0053
Data Logger Kit	T 220: For continuous temperature logging from -90 °C to 220 °C. The kit includes 1 data logger, Pt 100 sensor with 2 m extension cable and 1 magnetic fixture for mounting to the BINDER unit	19	8012-0715
Deicing kit	consisting of de-icing tray, wiper and scraper	–	8012-1909
Gloves	for low temperatures, covers forearms	–	1007-0141
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	–	1002-0016
Qualification documents	IQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ checklists incl. calibration guide and comprehensive unit documentation; parameters: temperature, CO ₂ , O ₂ , pressure, depending on unit		
	Digital in PDF format	–	7057-0001
	Hard copy inside folder	–	7007-0001
Shelf	IQ/OQ/PQ documents – supporting documents for validation performed by customers, according to customer requirements, PQ section added to qualification folder IQ/OQ; parameters: temperature, CO ₂ , O ₂ – or pressure, depending on unit		
	Digital in PDF format	–	7057-0005
	Hard copy inside folder	–	7007-0005
Shelf	Incl. shelf supports		
	stainless steel	–	8012-1902

* Notes › See last page

SERVICES

Designation	Description	*	Art.-No.
Installation services			
Installation of CO ₂ backup cooling	Installation of CO ₂ backup cooling on unit	18	DL02-8002
Unit installation	Unpacking and setting up of unit, connecting to existing connections, and checking function	13, 18	DL10-0300
Unit instructions	Unit function instructions for operation and programming of the controller	18	DL10-0700
Preventive maintenance			
Maintenance	Functional testing of all electrical and mechanical components, short calibration, documentation in the maintenance schedule	14, 18	DL20-0200
Calibration services			
Temperature calibration	Expansion – including certificate, each additional measuring point in center of chamber at specified test temperature	14, 16, 17, 18	DL30-0102
	Temperature calibration with 1 measuring point in center of chamber at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0101
Temperature measurement, 20 measuring points	Temperature measurement with 20 measuring points at a specified test temperature, including certificate	14, 16, 17, 18	DL30-0620
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	15, 18	DL41-0200
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	15, 18	DL44-0500

* Notes › See last page

NOTES

- 01 Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge.
- 02 UL mark is not granted when this option is used.
- 03 Heat resistant only to max. 200 °C.
- 04 Only available on units rated for 230 V.
- 07 The additional heat input may affect the temperature behavior.
- 09 Not in conjunction with the optional access port, door with window and interior lighting.
- 10 Not available on 23-liter units.
- 11 Not available on 23- or 53-liter units.
- 12 Only available on units rated for 230 V or 400 V.
- 13 Installation and connections take place at unit location; transport within the company only upon consultation.
- 14 We recommend a BINDER service contract to cover unit inspections, calibrations and validations.
- 15 OQ according to Yellow Paper = completed factory validation documentation of all OQ checklists.
- 16 Sensor calibration is performed in an accredited calibration laboratory.
- 17 Calibration is performed according to the BINDER factory standard.
- 18 Quoted prices do not include travel costs. Please refer to the chapter on BINDER Service for travel costs for your region. Quoted prices for services performed in Switzerland do not include a country-specific added fee (available on request).
- 19 For additional accessories, refer to the Process documentation chapter.

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