

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

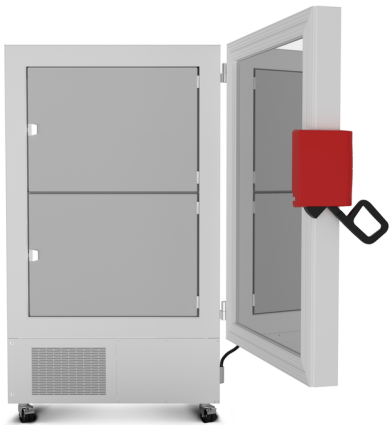
The BINDER ultra low temperature freezer ensures the safe storage of samples at -90 °C. It combines outstanding environmental friendliness with low energy consumption, convenient operation and an individual safety concept.

## BENEFITS

- Lowest energy consumption in its class
- Environmentally-friendly refrigerants R-290 and R-170
- Thermal insulation with unique long-life VIPs (vacuum insulation panels)
- Rust-proof interior made completely of stainless steel



Model



Model

## IMPORTANT FEATURES

- Temperature range: -90 °C to -40 °C
- Lowest energy consumption in its class
- Energy Star certified
- Powerful cascade compressor cooling unit
- Environmentally friendly refrigerants R-290 and R-170
- Thermal insulation with unique long-life VIPs (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
- 3 access ports, Ø 28 mm, rear

## ORDERING INFORMATION

Interior volume		Power supply - unit fuse	Plug*	Version	Model version	Art.-No.
[L]	[L]					
Model UF V 700						
736	736	230 V 1~ 50 Hz -10,0 A	CEE 7/7	Standard	UFV700-230V	9020-0348
				Water cooling	UFV700-230V-W	9020-0350
		115 V 1~ 60 Hz -15,0 A	NEMA 5-15	Standard	UFV700UL-120V	9020-0352
		208...230 V 2~ 60 Hz -10,0 A	NEMA 6-15	Standard	UFV700UL-240V	9020-0354

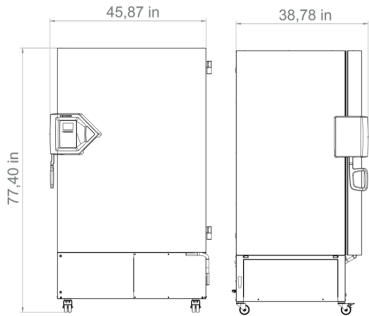
## TECHNICAL DATA

Data				
Designation	UFV700-230V	UFV700-230V-W	UFV700UL-240V	UFV700UL-120V
Article Number	9020-0348	9020-0350	9020-0354	9020-0352
Option model	Standard	Water cooling	Standard	Standard
Performance Data Temperature				
Temperature range	-90...-40 °C	-90...-40 °C	-90...-40 °C	-90...-40 °C
Temperature uniformity at -80°C	2,5 ± K	2,5 ± K	2,5 ± K	2,5 ± K
Temperature fluctuation at -80°C	1,5 ± K	1,5 ± K	1,5 ± K	1,5 ± K
Cooling down time from 22°C to -80°C	450 min	450 min	450 min	450 min
Electrical data				
Rated Voltage	230 V	230 V	208...230 V	115 V
Power frequency	50 Hz	50 Hz	60 Hz	60 Hz
Nominal power	1,6 kW	1,6 kW	1,8 kW	1,4 kW
Unit fuse	10,0 A	10,0 A	10,0 A	15,0 A
Phase (Nominal voltage)	1~	1~	2~	1~
Measures				
Interior volume	736 L	736 L	736 L	736 L
Net weight of the unit (empty)	288 kg	288 kg	288 kg	288 kg
Permitted load	200 kg	200 kg	200 kg	200 kg
Permitted load of individual compartment	50 kg	50 kg	50 kg	50 kg
Wall clearance back	100 mm	100 mm	100 mm	100 mm
Wall clearance sidewise	250 mm	250 mm	250 mm	250 mm
Housing dimensions not incl. fittings and connections				
Width net	1,110 mm	1,110 mm	1,110 mm	1,110 mm
Height net	1,966 mm	1,966 mm	1,966 mm	1,966 mm
Depth net	938 mm	938 mm	938 mm	938 mm
Internal Dimensions				
Interior width	890 mm	890 mm	890 mm	890 mm
Interior height	1,300 mm	1,300 mm	1,300 mm	1,300 mm

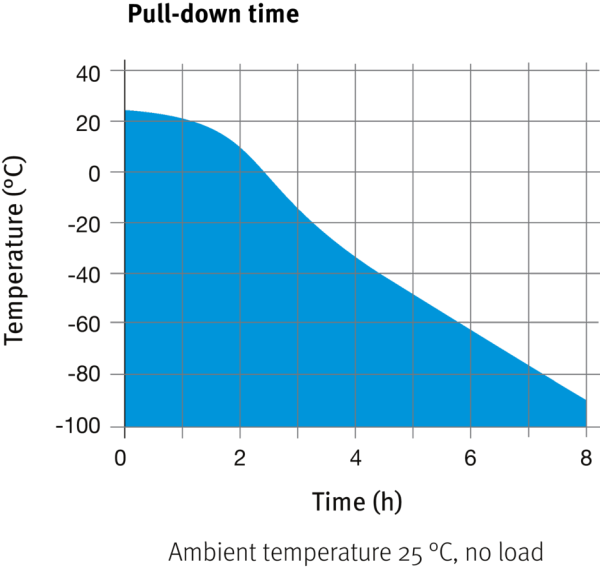
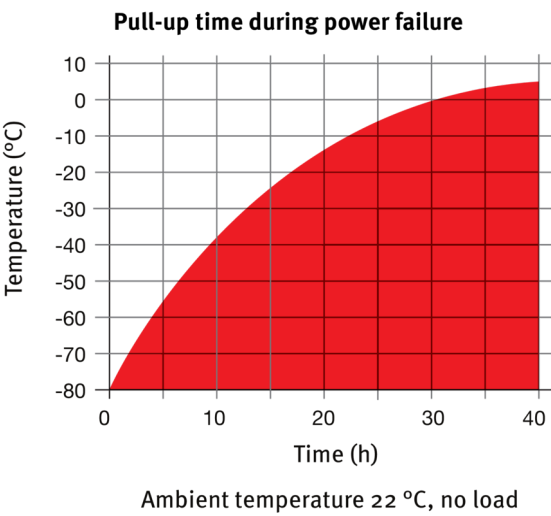
Interior depth	636 mm	636 mm	636 mm	636 mm
Inner doors	2	2	2	2
Unit doors	1	1	1	1
Environment-specific data				
Sound-pressure level	47 dB(A)	47 dB(A)	47 dB(A)	47 dB(A)
Energieverbrauch bei Sollwert -80 °C und T <sub>u</sub> = 20 °C	8.1 kWh/d	8.1 kWh/d	8.1 kWh/d	8.1 kWh/d
Fixtures				
Number of shelves (std./max.)	3/11	3/11	3/11	3/11
Load-variants				
Freezer racks per compartment	6	6	6	6
Cryoboxes, 50 mm	528	528	528	528

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]



DIAGRAMS



Heating up rate

Cooling  
down rate

## OPTIONS

Designation	Description	UFV 700	*	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
CO <sub>2</sub> backup cooling	factory installed (allow for increased depth of UF V: 1085 mm), includes the option of a battery-backed alarm system	•	-	8012-1936
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
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

## ACCESSORIES

Designation	Description	UFV 700	*	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	Multi Management Software APT-COM™			
	version 4, BASIC edition	•	-	9053-0039
	version 4, GLP edition	•	-	9053-0042
	version 4, PROFESSIONAL edition	•	-	9053-0040
Chamber rack, aluminum	for 5x4 standard boxes (50 mm), dimensions: H 278 x W 139 x D 564 mm			

Designation	Description	UF V 700	*	Art.-No.
	Set of 3	•	-	8012-2345
	Set of 4	•	-	8012-2346
	for 5x4 standard boxes (50 mm) incl. boxes, dimensions: H 278 x W 139 x D 564 mm			
	Set of 3	•	-	8012-2347
	Set of 4	•	-	8012-2348
	for 6x4 standard boxes (50 mm), dimensions: H 334 x W 139 x D 564 mm			
	Set of 3	•	-	8012-2357
	Set of 4	•	-	8012-2358
	for 6x4 standard boxes (50 mm) incl. boxes, dimensions: H 334 x W 139 x D 564 mm			
	Set of 3	•	-	8012-2359
	Set of 4	•	-	8012-2360
Chamber rack, stainless steel	for 5x4 standard boxes (50 mm), dimensions: H 278 x W 139 x D 561 mm			
	Set of 3	•	-	8012-2349
	Set of 4	•	-	8012-2350
	for 5x4 standard boxes (50 mm) incl. boxes, dimensions: H 278 x W 139 x D 561 mm			
	Set of 3	•	-	8012-2351
	Set of 4	•	-	8012-2352
	for 6x4 standard boxes (50 mm), dimensions: H 334 x W 139 x D 561 mm			
	Set of 3	•	-	8012-2361
	Set of 4	•	-	8012-2362
	for 6x4 standard boxes (50 mm) incl. boxes, dimensions: H 334 x W 139 x D 561 mm			
	Set of 3	•	-	8012-2363
	Set of 4	•	-	8012-2364
Chamber rack with drawer, stainless steel	for 5x4 standard boxes (50 mm), dimensions: H 278 x W 140 x D 562 mm			
	Set of 3	•	-	8012-2353
	Set of 4	•	-	8012-2354
	for 5x4 standard boxes (50 mm) incl. boxes, dimensions: H 278 x W 140 x D 562 mm			
	Set of 3	•	-	8012-2355

Designation	Description	UF V 700	*	Art.-No.
	Set of 4	•	-	8012-2356
	for 6x4 standard boxes (50 mm), dimensions: H 334 x W 140 x D 562 mm			
	Set of 3	•	-	8012-2365
	Set of 4	•	-	8012-2366
	for 6x4 standard boxes (50 mm) incl. boxes, dimensions: H 334 x W 140 x D 562 mm			
	Set of 3	•	-	8012-2367
	Set of 4	•	-	8012-2368
Cryoboxes	set consisting of 36 cardboard boxes with sample dividers	•	-	8012-2369
Deicing kit	consisting of de-icing tray, wiper and scraper	•	-	8012-1909
Grid shelf	For temperature range -40 °C to -60 °C, 3 provided in set, including shelf supports			
	stainless steel	•	-	8012-1904
Qualification documents	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 <sub>2</sub> , O <sub>2</sub> – or pressure, depending on unit			
	Digital in PDF format	•	-	7057-0005
	Hard copy inside folder	•	-	7007-0005
	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 <sub>2</sub> , O <sub>2</sub> , pressure, depending on unit			
	Digital in PDF format	•	-	7057-0001
	Hard copy inside folder	•	-	7007-0001
Shelf	Incl. shelf supports			
	stainless steel	•	-	8012-1902
WLAN kit	The kit contains a client bridge that establishes a wireless connection between BINDER units and APT-COM4, LIMS, or customer-specific software via an Ethernet interface. It provides an alternative solution in situations where units need to be positioned in locations without an on-site Ethernet connection. In secured networks, installation and configuration must be performed by the customer's IT service.	•	-	8012-2262
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250

## SERVICES

Designation	Description	*	Art.-No.
<b>Calibration services</b>			
Temperature calibration	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate Travel to be quoted separate.	-	DL30-0101

Designation	Description	*	Art.-No.
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate Travel to be quoted separate.	-	DL30-0102
Temperature measurement, 20 measuring points	Temperature measurement with 20 measuring points with a set value specified by the user, including certificate	-	DL30-0620
<b>Installation services</b>			
Unit installation	Connect the unit to the customer-side connections (electricity, water, wastewater, gas), basic functions check, brief operating instructions. (excl.: unpacking, setup, controller instructions, programming, installation work) Travel to be quoted as separate.	-	DL10-0300
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming. Travel to be quoted as separate Limited to 3 hours.	05	DL10-0700
<b>Maintenance services</b>			
BRONZE 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate. 10% Discount on Spare Parts and Labor for any additional Services needed Wear + tear parts to be purchased or billed to customer. Travel to be quoted as separate.	-	DL20-0710
GOLD 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate of Temperature. 25% Discount on Spare Parts and Labor for any additional Services needed. One additional courtesy visit per year can be used for service visit or operator. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.	-	DL20-0910
Preventive maintenance	One-off maintenance service in accordance with maintenance schedule. Visual inspection of mechanical and electrical components, testing of all key functions. Checking a test temperature specified by the user in center of usable space without certificate. Wear + tear parts need to be purchased or billed to customer. Travel to be quoted as separate.	-	DL20-0200
SILVER 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate 15% Discount on Spare Parts and Labor for any additional Services needed One additional courtesy visit per year can be used for service visit or operator training. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.	-	DL20-0810
<b>Validation services</b>			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder. Travel to be quoted separate.	-	DL41-0210
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder. Travel to be quoted separate.	-	DL44-0500

## NOTES

- 05 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).

### **BINDER GmbH**

Tuttlingen, Germany  
TEL +49 7462 2005 0  
FAX +49 7462 2005 100  
info@binder-world.com  
www.binder-world.com

### **BINDER Inc.**

Bohemia, NY, USA  
TEL +1 631 224 4340  
FAX +1 631 224 4354  
usa@binder-world.com  
www.binder-world.us

### **BINDER Environmental Testing Equipment (Shanghai) Co., Ltd.**

Shanghai, P.R. China  
TEL +86 21 685 808 25  
FAX +86 21 685 808 29  
china@binder-world.com  
www.binder-world.com

### **BINDER Asia Pacific (Hong Kong) Ltd.**

Kowloon, Hong Kong, P.R. China  
TEL +852 39070500  
FAX +852 39070507  
asia@binder-world.com  
www.binder-world.com