Model UF V 350 | 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 350



Model 350

IMPORTANT FEATURES

- Temperature range: -90 °C to -40 °C
- Lowest energy consumption in its class
- Energy Star certified (depending on version)
- 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.
[cu.ft.]	[L]					
Model UF V 350						
14	402	230 V 1~ 50 Hz -10,0 A	CEE 7/7	Standard	UFV350-230V	9020-0453
		115 V 1~ 60 Hz -15,0 A	NEMA 5-15	Standard	UFV350UL-120V	9020-0454
		208...230 V 2~ 60 Hz -10,0 A	NEMA 6-15	Standard	UFV350UL-240V	9020-0455

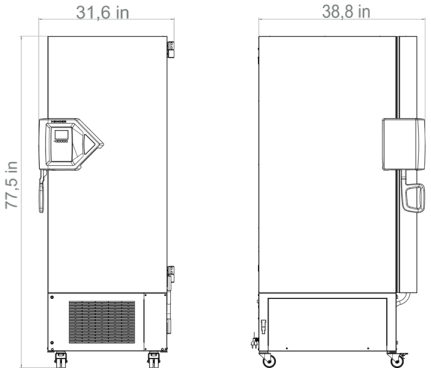
TECHNICAL DATA

Data			
Article Number	9020-0453	9020-0454	9020-0455
Designation	UFV350-230V	UFV350UL-120V	UFV350UL-240V
Option model	Standard	Standard	Standard
Performance Data Temperature			
Temperature range	-90...-40 °C	-90...-40 °C	-90...-40 °C
Temperature uniformity at -80°C	3.5 ± K	3.5 ± K	3.5 ± K
Temperature fluctuation at -80°C	4.0 ± K	4.0 ± K	4.0 ± K
Cooling down time from 22°C to -80°C	210 min	210 min	210 min
Electrical data			
Rated Voltage	230 V	115 V	208...230 V
Power frequency	50 Hz	60 Hz	60 Hz
Nominal power	1,6 kW	1,4 kW	1,8 kW
Unit fuse	10,0 A	15,0 A	10,0 A
Phase (Nominal voltage)	1~	1~	2~
Dimensions and weights			
Interior volume	14 cu.ft.	14 cu.ft.	14 cu.ft.
Net weight of the unit (empty)	498 lbs	498 lbs	498 lbs
Permitted load of individual compartment	88 lbs	88 lbs	88 lbs
Permitted load	353 lbs	353 lbs	353 lbs
Wall clearance back	3,94 in	3,94 in	3,94 in
Wall clearance sidewise	9,84 in	9,84 in	9,84 in
Housing dimensions not incl. fittings and connections			
Width net	27.8 in	27.8 in	27.8 in
Height net	77.4 in	77.4 in	77.4 in
Depth net	36.93 in	36.93 in	36.93 in
Internal Dimensions			
Interior width	19.13 in	19.13 in	19.13 in
Interior height	51.18 in	51.18 in	51.18 in
Interior depth	25.04 in	25.04 in	25.04 in

Inner doors	2	2	2
Unit doors	1	1	1
Environment-specific data			
Sound-pressure level	47 dB(A)	47 dB(A)	47 dB(A)
Average heat compensation at set value -80°C and Ta = 21°C	310 W	310 W	310 W
Energieverbrauch bei Sollwert -80 °C und T_u = 20 °C	7.5 kWh/d	7.5 kWh/d	7.5 kWh/d
Fixtures			
Number of shelves (std./max.)	3/11	3/11	3/11
Load-variants			
Freezer racks per compartment	3	3	3
Cryoboxes, 50 mm	264	264	264

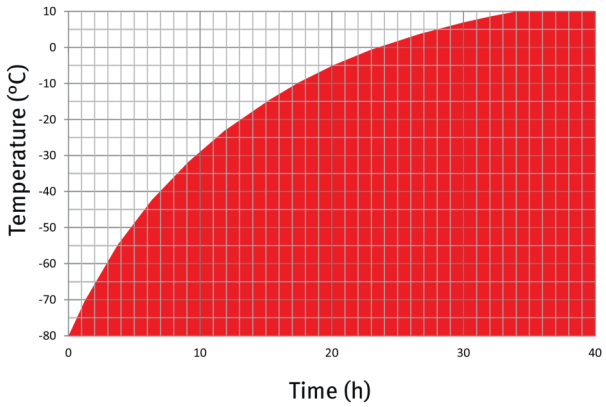
All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10%. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances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

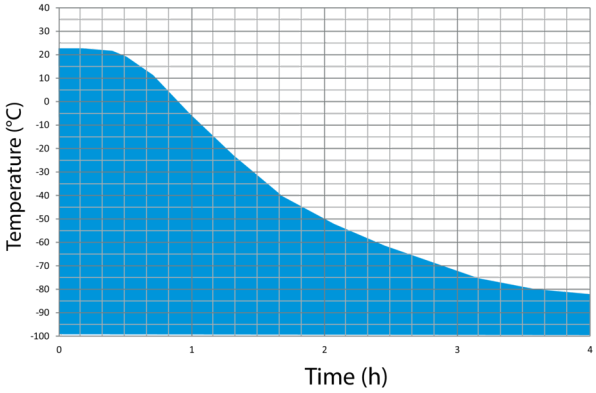
Pull-up time during power failure



Ambient temperature 22 °C, no load

Heating up rate

Pull-down time



Ambient temperature 22 °C, no load

Cooling down rate

OPTIONS

Designation	Description	UF V 350	*	Art.-No.
Alarm system, battery-backed	for maintaining temperature display, alarm messages, and communication	•	-	8012-2279
Analog output 4-20 mA	for temperature values (output not adjustable)	•	-	8012-1898
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	•	-	8012-2274
CO_2 backup cooling	factory installed (allow for increased depth of UF V: 1085 mm), includes the option of a battery-backed alarm system	•	-	8012-2278
Door lock	lockable door handle	•	-	8012-1911
Shipping pallet	with unloading ramp for installing unit without forklift	•	-	8012-2277
Switch cover	Lockable main switch cover	•	-	8012-1980

ACCESSORIES

Designation	Description	UF V 350	*	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

Designation	Description	UF V 350	*	Art.-No.
APT-COM™ 4 BASIC-Edition	for simple logging and documentation requirements with up to 5 networked units.			
	version 4, BASIC edition	•	-	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	•	-	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	•	-	9053-0040
Chamber rack, aluminum	for 5x4 standard boxes (50 mm), dimensions: H 278 x W 139 x D 564 mm			
	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			

Designation	Description	UF V 350	*	Art.-No.
	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
	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	•	-	8012-2275
Grid shelf	For temperature range -40 °C to -60 °C, 3 provided in set, including shelf supports			
	stainless steel	•	-	8012-2246
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250
Qualification documents IQ/OQ	IQ/OQ documents digital in PDF format – supporting documents for validation consisting of: IQ/OQ checklists, comprehensive unit documentation covering: temperature. Excluded: Document execution is separate			
	temperature. Excluded: Document execution is separate	•	-	7057-0010
Qualification documents IQ/OQ/PQ	IQ/OQ/PQ documents digital in PDF format – supporting documents for validation customizied to customer requirements, PQ section added to the qualification folder IQ/OQ; supporting documents for validation consisting of: IQ/OQ checklists, comprehensive unit documentation covering: temperature values. Excluded: Document execution is separate			
	temperature values. Excluded: Document execution is separate	•	-	7057-0016
Shelf	Incl. shelf supports			
	stainless steel	•	-	8012-2276

SERVICES

Designation	Description	*	Art.-No.
Calibration services			
Temperature calibration	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate Travel to be quoted separate.	05	DL30-0190
Temperature measurement, 20 measuring points	Temperature measurement with 20 measuring points with a set value specified by the user, including certificate	05	DL30-0620
Installation services			
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.	05	DL10-0170
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	DL10-0540
Maintenance services			
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.	05	DL20-0720
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.	05	DL20-0955
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.	05	DL20-0603
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.	05	DL20-0855
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder. Travel to be quoted separate.	05	DL41-0210
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder. Travel to be quoted separate.	05	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).

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