

-86°C Ultra Low Temperature Freezer



Ultra Low Deep Freezer is specially designed to meet the demands for long-term and safe storage of the high-valued medical and laboratory materials. The new structure of the Ultra Low Deep Freezer has a new look Microcomputer controller comes with 7 inches LED touch screen display, giving you more user-friendly and convenient interface can set the temperature uniformity inside the cabinet with a adjustable range from -10°C to -86°C with an uniform accuracy of 1°C. It comes with 2 individual inner doors can be opened independently. The optimized foaming insulation inside the doors provides better temperature performance. Dual independent cascade refrigeration system with two compressors. The targeted refrigeration of the deep freezer enables fast refrigeration. It is designed in human-oriented with energy saving and environmentally friendly.

Scope of Application :

The ultra low temperature freezer is suitable for use in Blood Banks, Hospitals, Health and Disease Prevention Systems, Research Institutions, Colleges & Universities, Electronic Industry, Biological Engineering, Laboratories in Colleges & Universities, Military Enterprises, Deep Sea Fishing Companies, etc.,.

High Precision Temperature Control System

- The High Precision Microprocessor temperature control system and platinum resistor temperature sensors can realize more precise temperature control and enable users to set temperature inside the cabinet with a controllable range from -10°C to -86°C ensure the controlling precision 1°C.
- The Large 7" Inch LED Touch Screen display simultaneously display the chamber temperature, Power Supply, Voltage, Ambient Temperature, Alarm and other parameters, etc.. The running status is clearly displayed and can be seen from distance.

Security & Alarm System

- It has a Multiple Audible & Visible Alarm functions, such as High / Low Temperature Alarm, Sensor Failure Alarm, Door Ajar Alarm, High Ambient Temperature Alarm, System Failure Alarm, Power Failure Alarm, Abnormal Voltage Alarm, Low Battery Alarm, Condenser Cooling Failure Alarm, etc.,.
- The turn-on delay and stopping interval protection can ensure reliable operation.
- The Lockable door, Keyboard Lock and Password protection prevents any unauthorized access and operation without permission.

Factory-Integrated OEM Remote Monitoring Specifications

The freezers are equipped from the factory with an integrated, non-intrusive monitoring architecture designed for seamless, continuous data collection and alert transmission:

- Microprocessor & Communication: Factory-integrated controller with RS-485 / RS-232 serial communication supporting MODBUS/ open-protocol data transmission.
- Remote Alarm Terminal: Dry-contact NO/NC relay output for connection to facility alarm panels, BMS, or automated phone/SMS dialer systems.
- Telemetry Monitoring: Continuous monitoring of chamber temperature, ambient temperature, supply voltage, door-ajar status, and system diagnostic/error codes.
- On-Board Data Logging: Integrated USB interface for automated temperature recording, backup, validation, and historical compliance reporting.
- OEM Integration: Remote monitoring interfaces, including RS-485 and remote alarm contacts, are factory-integrated, verified, and approved for connection with centralized monitoring platforms, cloud/IoT networks, and LIMS.

Effective Thermal Insulation System

- The Ultra Low temperature freezer is equipped with VIP+ vacuum insulation foaming door with seal. The two layer insulated foam door with double seal and the outdoor insulation design with multiple patents can prevent loss of cooling effectively and to improve temperature stability.
- The six sides of the cabinet are made from high-performance vacuum insulation materials, which can perfectly improve the thermal insulation performance.
- Two individual inner doors can be opened independently to minimize frost buildup and prevent loss of cooling inside the chamber.

Powerful Refrigeration System

- Ultra Low deep freezer is adopted high-efficiency hermetically sealed compressor and famous EMB fan, which are energy saving and environmentally friendly.
- CFC / HCFC / HFC Free refrigerants.
- The large finned condenser with a space between fins less and equal to 2mm provides effective heat dissipation.
- Specialized refrigeration system design using whisper quiet fan and compressor less than 50dB.

Ergonomic Design

- The interior are made of SS304 and Exterior is painted steel board low temperature resistance, anti-corrosion for long Service life and easy cleaning.
- The door with new type assisting rotating door handle to be opened easily.
- The two door design including the inner door and outer door can lock the cool air inside the chamber and ensures thermal insulation double silicon gasket seal for a long period.
- Equipped with temperature printer, records 7 days data. 72 hours battery backup for printer and controller display.
- 4 Universal Caster wheels with Leveling foot design, easy for movement and fixation.
- Optional : Chart recorder, Co2 Backup System, LN2 backup system, storage racks & Boxes, Remote Alarm system.

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Technical Specifications :

	Model No.	861-050	861-100
Technical Data	Cabinet Type	Upright	
	Capacity (L)	50	100
	Climate Class	N	
	Cooling Type	Direct cooling	
	Defrost Mode	Manual	
	Compressor	High Efficiency Danfoss Compressor 1no	
	Refrigerant	CFC / HCFC / HFC - Free Refrigerants	
	Evaporator	D-form copper tube	Coil Evaporator
	Fan Motor	EBM	
	Noise(dB(A))	≤ 50	
Performance	Cooling Performance (°C)	-86°C	
	Temperature Range (°C)	-10°C ~ -86°C	
	Ambient Temperature (°C)	16°C ~ 32°C	
Control	Controller	Microprocessor	
	Display	LED Digital Display	
Function	USB Interface	YES	
	Access Test Port	1 as Standard	
	Alarm	Audible & Visible : High / Low Temperature, Sensor Failure, Door Ajar, System Failure, High Ambient Temperature, Condenser Cooling Failure, Low Battery, Power Failure, Abnormal Voltage	
Construction	External	High Quality Steel Plates with Powder Coating	
	Internal	304 grade Stainless Steel	
	External Door	1 no	
	Inner Door	1 Individual Inner Doors	2 Individual Inner Doors
	Shelves	1 shelf made of SS304	
	Door Lock with Keys	YES	
	Door with Heater	YES, Hot gas Surrounding	
	Insulation Thickness	VIP Plus vacuum insulation 130 mm	
	Data Logging/Time/Quantity	USB/Record every 1 minute / 365 days	
	Battery	48hours back-up battery	
	Inventory Boxes	Inventory 2" boxes: 42pcs boxes	
	Vials	Vials (2ml): 4200pcs	
	Caster	4 units of Universal Caster wheels	
	Foot	—	2 Leveling Foot
Electrical Data	Power Supply (V/Hz)	220 V ~ 240 V / 50Hz, 220V / 60Hz	
	Rated Power (W)	650	1000
	Input Power (W)	970	850
	Power Consumption (KWh/24h)	7.97	9.8
	Rated Current (A)	4.49	9.5
Dimensions	Internal Dimension (WxDxH)	305x425x430 mm	450x439x514 mm
	External Dimension (WxDxH)	953x668x757 mm	1066x742x820 mm
	Packing Dimension (WxDxH)	1035x760x1184 mm	1180x825x995 mm
	Net Wt. / Gross Wt.	104 Kgs / 122 kgs	145 Kgs / 176.5 kgs
Accessories	Optional	Chart Recorder, CO2 Backup System, LN2 Backup System, Remote Alarm System	
Others	Certificate	CE, ISO9001 :2015	

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► Technical Specifications :

	Model No.	861-400	861-530
Technical Data	Cabinet Type	Upright	
	Capacity (L)	398	528
	Climate Class	N	
	Cooling Type	Direct cooling	
	Defrost Mode	Manual	
	Compressor	1no	2no
	Refrigerant	CFC- Free, Mixture Gas	
	Evaporator	D-Form Copper tube	
	Fan Motor	EBM	
	Noise(dB(A))	50	
Performance	Cooling Performance (°C)	-86°C	
	Temperature Range (°C)	-10°C ~ -86°C	
	Ambient Temperature (°C)	16°C ~ 32°C	
Control	Controller	Microprocessor	
	Display	7" LED Touch Screen Display	
Function	USB Interface	YES	
	Access Test Port	2	
	Alarm	Audible & Visible : High / Low Temperature, Sensor Failure, Door Ajar, System Failure, USB Failure, High Ambient Temperature, Condenser Cooling Failure, Low Battery, Power Failure, Abnormal Voltage	
Construction	External	High Quality Steel Plates with Powder Coating	
	Internal	304 grade Stainless Steel	
	External Door	1 no	
	Inner Door	2 Individual Inner Doors	
	Shelves	3 shelf made of SS304	
	Door Lock with Keys	YES	
	Inventory 2ml vial	30000	40000
	Insulation	VIP + Vacuum Insulation panel with 130 mm	
	Inventory Rack 2"	5 x 5 x 12 = 300	5 x 5 x 16 = 400
	Caster	4 units of Universal Caster wheels	
	Foot	2 Leveling Foot	
Electrical Data	Power Supply (V/Hz)	220 V ~ 240 V / 50Hz, 220V / 60Hz	
	Rated Power (W)	950	1265
	Input Power (W)	980	1445
	Power Consumption (KWh/24h)	11	12.82
	Rated Current (A)	5	6.57
Dimensions	Internal Dimension (WxDxH)	440x696x1266 mm	585x696x1266 mm
	External Dimension (WxDxH)	785x1041x1947 mm	930x1041x1947 mm
	Packing Dimension (WxDxH)	880x1150x2085 mm	1025x1150x2085 mm
	Net Wt. / Gross Wt.	237 Kgs / 272 kgs	286 Kgs / 319 kgs
Accessories	Optional	Chart Recorder, CO2 Backup System, LN2 Backup System, Remote Alarm System, Printer	
Others	Certificate	CE, ISO9001 :2015	

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► Technical Specifications :

	Model No.	861-678	861-778	861-860	861-1000
Technical Data	Cabinet Type	Upright			
	Capacity (L)	678	778	858	1000
	Climate Class	N			
	Cooling Type	Direct cooling			
	Defrost Mode	Manual			
	Compressor	2 no			
	Refrigerant	CFC / HCFC / HFC - Free Refrigerants			
	Evaporator	D-Form Copper tube			
	Fan Motor	EBM			
	Noise(dB(A))	56			
Performance	Cooling Performance (°C)	-86°C			
	Temperature Range (°C)	-10°C ~ -86°C			
	Ambient Temperature (°C)	16°C ~ 32°C			
Control	Controller	Microprocessor			
	Display	7" LED Touch Screen Display			
Function	USB Interface	YES			
	Access Test Port	3			
	Alarm	Audible & Visible : High / Low Temperature, Sensor Failure, Door Ajar, System Failure, High Ambient Temperature, Condenser Cooling Failure, Low Battery, Power Failure, Abnormal Voltage			
Construction	External	Cooled rolled steel with annealed painting with a nice finish			
	Internal	304 grade Stainless Steel			
	External Door	1 no			
	Inner Door	4 Individual		2 Individual	
	Shelves (SS304)	3 shelves		4 shelves	3 shelves
	Door Lock with Keys	YES			
	Inventory 2ml vial	50000	60000	66000	77000
	Insulation	VIP + Vacuum Insulation panel with 155 mm			
	Inventory Rack 2"	5 x 5 x 20 = 500	5 x 5 x 24 = 600	5x5x12+6x5x12 = 660	5x5x14+6x5x14 = 770
	Caster	4 units of Universal Caster wheels			
	Foot	2 Leveling Foot			
Electrical Data	Power Supply (V/Hz)	220 V ~ 240 V / 50Hz, 220V / 60Hz			
	Input Power (W)	1450	1450	1825	1900
	Rated Current (A)	7.5	7.5	8.5	9.3
	Power Consumption (KWh/24h)	14.4	14.5	16.5	19.15
Dimensions	Internal Dimension (WxDxH)	750x696x1286 mm	865x696x1286 mm	877x696x1378 mm	1022x696x1378 mm
	External Dimension (WxDxH)	1090x1025x1955 mm	1205x1025x1955 mm	1217x1025x2005 mm	1362x1025x2002 mm
	Net Wt.	330 Kgs	380 Kgs	390 Kgs	430 Kgs
Accessories	Optional	Chart Recorder, CO2 Backup System, LN2 Backup System, Remote Alarm System			
Others	Certificate	CE, ISO9001 :2015			