

## Laboratory Freezers

A variety of freezer models for subzero degree storage of your sensitive lab material with innovative defrost system.



### FDG/FCG/FMG/FHG models

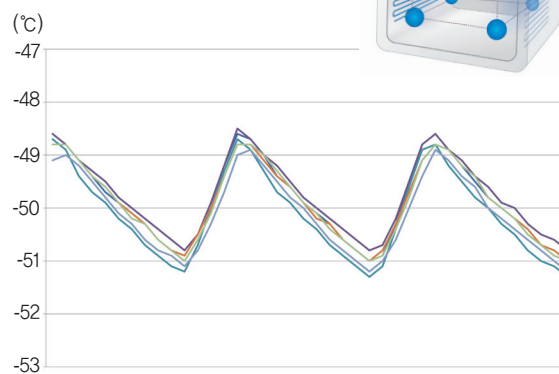
with optional recorder

#### Standard accessories

- Wire shelves, Door key
- Cable port (except for 150L chamber)

#### Optional accessories see page 140

- Three type recorders (dot / chart / thermal line)
- Auto dialing remote system



Reliable temperature control



## Performance

- Excellent freezing control down to minimum  $-50^{\circ}\text{C}$  (model dependent)
  - FDG model down to  $-50^{\circ}\text{C}$
  - FCG model down to  $-35^{\circ}\text{C}$
  - FMG model down to  $-25^{\circ}\text{C}$
  - FHG model down to  $-15^{\circ}\text{C}$
- Fully insulated chamber ensuring minimal chamber's temperature fluctuation.
- High thermal efficiency evaporation system, made of low corrosive materials.
- Dual defrost systems
  - Innovation auto-defrost system automatically activated on detecting amount of frost accumulated in the evaporator.
  - Additional manual defrost system for immediate frost removal.

## Convenience

- Four-temperature different freezing models cover various storage application.
- Intuitive and easy-to-operate control panel with VFD and touch-sensitive buttons.
  - Easy temperature unit conversion between  $^{\circ}\text{C}$  and  $^{\circ}\text{F}$

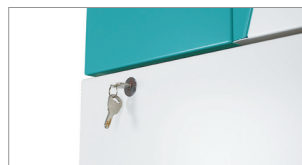
- Air-tight door seal and lockable door latch enhances tightness to door closure.
- High-quality 304 grade stainless steel interior.
- Efficient internal space use with height adjustable wire shelves.
- Dedicated stand with casters and stacking kit for FHG/FMG/FCG- 150 for use in labs with limited space. (optional)
- Three types of recorders to choose from (optional)
  - Dot recorder (6 point)
  - Chart recorder (6", 24hr/7 days)
  - Thermal line recorder

## Safety

- High/low temperature protection, Over current protection.
- Open door alarm and automatic fan stop interlocked with door opening for minimization of heat loss.
- Keypad lock function, Built in door lock with a key.



Door open button



Door key lock



Display



Enough storage space

# Laboratory Freezers

## FDG models (for temperature range from -50°C to -35°C)

Model		FDG-300	FDG-650
Chamber volume (L / cu ft)		303 / 10.7	647 / 22.8
Temperature range (°C / °F)		-50 to -35 / -58 to -31	
Refrigerator (Hp)		1/3 x 2	1/2 x 2
No. of wire shelf (standard / max.)		3 / 11	3 / 17
No. of drawer shelf, slide (max., optional)		5	8
Max. load per shelf (kg / lbs)		26 / 57.3	30 / 66.1
Material	Interior / Exterior	Stainless steel #304 / Steel, 1 mm, powder coating	
	Insulation	120mm, Polyurethane foam	
Dimension (WxDxH)	Interior (mm / inch)	550x550x1000 / 21.7x21.7x39.4	700x675x1370 / 27.6x26.6x53.9
	Exterior (mm / inch)	805x800x1690 / 31.7x31.5x66.5	955x925x2060 / 37.6x36.4x81.1
	Net weight (kg / lbs)	180 / 396.8	280 / 617.3
Electrical requirements (230V, 60Hz)		5.0A	6.5A
Cat. No.		AAHE2411K	AAHE2421K
Electrical requirements (230V, 50Hz)		5.0A	6.5A
Cat. No.		AAHE2412K	AAHE2422K

1) Technical data according to DIN 12880.

## FCG models (for temperature range from -35°C to -25°C)

Model		FCG-150	FCG-300	FCG-650
Chamber volume (L / cu ft)		154 / 5.4	303 / 10.7	647 / 22.8
Temperature range (°C / °F)		-35 to -25 / -31 to -13		
Refrigerator (Hp)		3/4	1	1-1/2
No. of wire shelf (standard / max.)		2 / 6	3 / 11	3 / 17
No. of drawer shelf, slide (max., optional)		3	5	8
Max. load per shelf (kg / lbs)		26 / 57.3		30 / 66.1
Material	Interior / Exterior	Stainless steel #304 / Steel, 1 mm, powder coating		
	Insulation	100mm, Polyurethane foam		
Dimension (WxDxH)	Interior (mm / inch)	550x570x490 / 21.7x22.4x19.3	550x550x1000 / 21.7x21.7x39.4	700x675x1370 / 27.6x26.6x53.9
	Exterior (mm / inch)	763x815x1055 / 30x32.1x41.5	765x760x1650 / 30.1x29.9x64.9	915x885x2020 / 36x34.8x79.5
	Net weight (kg / lbs)	123 / 271.2	155 / 341.7	238 / 524.7
Electrical requirements (230V, 60Hz)		6A	7.5A	10.5A
Cat. No.		AAHE2301K	AAHE2311K	AAHE2321K
Electrical requirements (230V, 50Hz)		6A	7.5A	10.5A
Cat. No.		AAHE2302K	AAHE2312K	AAHE2322K

## FMG models (for temperature range from -25°C to -15°C)

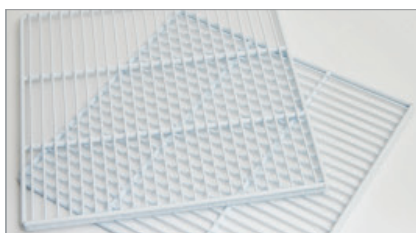
Model		FMG-150	FMG-300	FMG-650
Chamber volume (L / cu ft)		154 / 5.4	303 / 10.7	647 / 22.8
Temperature range (°C / °F)		-25 to -15 / -13 to 5		
Refrigerator (Hp)		1/2	1/2	1/2
No. of wire shelf (standard / max.)		2 / 6	3 / 11	3 / 17
No. of drawer shelf, slide (max., optional)		3	5	8
Max. load per shelf (kg / lbs)		26 / 57.3		30 / 66.1
Material	Interior / Exterior	Stainless steel #304 / Steel, 1 mm, powder coating		
	Insulation	100mm, Polyurethane foam		
Dimension (WxDxH)	Interior (mm / inch)	550x570x490 / 21.7x22.4x19.3	550x550x1000 / 21.7x21.7x39.4	700x675x1370 / 27.6x26.6x53.9
	Exterior (mm / inch)	763x815x1055 / 30x32.1x41.5	765x760x1650 / 30.1x29.9x64.9	915x885x2020 / 36x34.8x79.5
	Net weight (kg / lbs)	120 / 264.6	150 / 330.7	233 / 513.7
Electrical requirements (230V, 60Hz)		4.5A	4.8A	5.5A
Cat. No.		AAHE2201K	AAHE2211K	AAHE2221K
Electrical requirements (230V, 50Hz)		4.5A	4.8A	5.5A
Cat. No.		AAHE2202K	AAHE2212K	AAHE2222K

## FHG models (for temperature range from -15°C to 0°C)

Model		FHG-150	FHG-300	FHG-650
Chamber volume (L / cu ft)		154 / 5.4	303 / 10.7	647 / 22.8
Temperature range (°C / °F)		-15 to 0 / 5 to 32		
Refrigerator (Hp)		1/3	1/3	1/3
No. of wire shelf (standard / max.)		2 / 6	3 / 11	3 / 17
No. of drawer shelf, slide (max., optional)		3	5	8
Max. load per shelf (kg / lbs)		26 / 57.3		30 / 66.1
Material	Interior / Exterior	Stainless steel #304 / Steel, 1 mm, powder coating		
	Insulation	100mm, Polyurethane foam		
Dimension (WxDxH)	Interior (mm / inch)	550x570x490 / 21.7x22.4x19.3	550x550x1000 / 21.7x21.7x39.4	700x675x1370 / 27.6x26.6x53.9
	Exterior (mm / inch)	763x815x1055 / 30x32.1x41.5	765x760x1650 / 30.1x29.9x64.9	915x885x2020 / 36x34.8x79.5
	Net weight (kg / lbs)	120 / 264.6	150 / 330.7	230 / 507.1
Electrical requirements (230V, 60Hz)		3.5A	3.8A	3.8A
Cat. No.		AAHE2101K	AAHE2111K	AAHE2121K
Electrical requirements (230V, 50Hz)		3.5A	3.8A	3.8A
Cat. No.		AAHE2102K	AAHE2112K	AAHE2122K

\* Technical data according to DIN 58375. \* FDA establishment registered company. FDA listed products.

## Accessories & Options



Wire shelves



Wire shelves (slide type)



Drawer shelves (slide type)



Dot recorder



Chart recorder



Thermal line recorder

### for Laboratory Cooling

Cat. No.	Description	CLG-150	CLG-300	CLG-650	CLG-850	CLG-1400	
AAAE1511		•	•	-	-	-	
AAAE1512	Wire shelves - flat type (included shelf bracket)	-	-	•	-	•	
AAAE1513		-	-	-	•	-	
AAAE1514		•	•	-	-	-	
AAAE1515	Wire shelves - slide type (included guide rail)	-	-	•	-	•	
AAAE1516		-	-	-	•	-	
AAAE1517		•	•	-	-	-	
AAAE1518	Drawer shelves - slide type (included guide rail)	-	-	•	-	•	
AAAE1519		-	-	-	•	-	
AAAE1562	Recorder set; Recorder (dot type, 6 point) with Temp. sensor	•	•	•	•	•	
AAAE1501	Recorder set; Recorder (chart type, 6", 24hr / 7day) with Temp. sensor	•	•	•	•	•	
AAAE1502	Chart recorder paper (6", 60ea/1 package)	•	•	•	•	•	
AAAE1563	Recorder set; Recorder (thermal line type) with Temp. sensor	•	•	•	•	•	
AAAE1551	Auto dialing remote system	•	•	•	•	•	
AAAE1521	Cable port	-	•	•	•	•	
AAAE1531	Electric outlet (120V-US style)	-	•	•	•	•	
AAAE1532	Electric outlet (230V-Korea style)	-	•	•	•	•	
Cat. No.	Description	FHG-150 / FMG-150	FHG-300 / FMG-300	FHG-650 / FMG-650	FCG-150	FCG-300 / FDG-300	FCG-650 / FDG-650
AAAE1511	Wire shelves - flat type (included shelf bracket)	•	•	-	•	•	-
AAAE1512		-	-	•	-	-	•
AAAE1517	Drawer shelves - slide type (included guide rail)	•	•	-	•	•	-
AAAE1518		-	-	•	-	-	•
AAAE1562	Recorder set; Recorder (dot type, 6 point) with Temp. sensor	•	•	•	•	•	•
AAAE1501	Recorder set; Recorder (chart type, 6", 24hr / 7day) with Temp. sensor	•	•	•	•	•	•
AAAE1502	Chart recorder paper (6", 60ea/1 package)	•	•	•	•	•	•
AAAE1563	Recorder set; Recorder (thermal line type) with Temp. sensor	•	•	•	•	•	•
AAAE1551	Auto dialing remote system	•	•	•	•	•	•

for Medical Cooling

Cat. No.	Description	BSR-300	BSR-650
AAAE1517	Drawer shelves - slide type (included guide rail)	•	-
AAAE1518		-	•
AAAE1501	Recorder set; Recorder (chart type, 6", 24hr / 7day) with Temp. sensor	•	•
AAAE1502	Chart recorder paper (6", 60ea/1 package)	•	•
AAAE1551	Auto dialing remote system	•	•

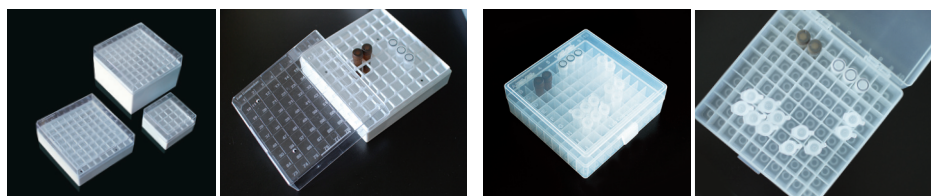
Cat. No.	Description	BSF-300	BSF-650
AAAE1517	Drawer shelves - slide type (included guide rail)	•	-
AAAE1518		-	•
AAAE1501	Recorder set; Recorder (chart type, 6", 24hr / 7day) with Temp. sensor	•	•
AAAE1502	Chart recorder paper (6", 60ea/1 package)	•	•
AAAE1551	Auto dialing remote system	•	•

Cat. No.	Description	PSR-300	PSR-650
AAAE1511	Wire shelves - flat type (included shelf bracket)	•	-
AAAE1512		-	•
AAAE1514	Wire shelves - slide type (included guide rail)	•	-
AAAE1515		-	•
AAAE1517	Drawer shelves - slide type (included guide rail)	•	-
AAAE1518		-	•
AAAE1501	Recorder set; Recorder (chart type, 6", 24hr / 7day) with Temp. sensor	•	•
AAAE1502	Chart recorder paper (6", 60ea/1 package)	•	•
AAAE1551	Auto dialing remote system	•	•

Cryo box / Storage box

Cryo box is designed for ultra-low temperature storage of biological materials. (heat resistance : -196°C to 121°C)

Storage box is suitable for storage of samples in general conditions. (heat resistance: 20°C to 121°C)



Cryo box

Storage box

Cat. No.	Description	Dimension (WxDxH) (mm / inch)
AAAJ7001	Cryo box (PC, 1.2 to 2.0ml tubes x 25)	77×77×53 / 3.0×3.0×2.1
AAAJ7002	Cryo box (PC, 1.2 to 2.0ml tubes x 81)	132×132×54 / 5.2×5.2×2.1
AAAJ7003	Cryo box (PC, 5ml tubes x 81)	132×132×96 / 5.2×5.2×3.8
AAAJ7011	Storage box (PP, 1.2 to 2.0ml tubes x 100)	140×140×53 / 5.5×5.5×2.1

※ 5ea for 1 set.