

LK LAB KOREA EQUIPMENT

STRONG POINT

ISO9001

QUALITY MANAGEMENT CERTIFIED

This standard is based on a number of quality management principles including a strong customer focus, the motivation and implication of top management, the process approach and continual improvement.

LK Lab Korea's mission is to give our customer maximum satisfaction with our quality level and in order to set all this as system, we acquired certification ISO 9001.

ISO14001

ENVIRONMENTAL MANAGEMENT CERTIFIED

ISO 14001 specifies the requirements for an environmental management system that an organization can use to enhance its environmental performance.

ISO 14001 is intended for use by an organization seeking to manage its environmental responsibilities in a systematic manner that contributes to the environmental pillar of sustainability.

LK Lab Korea' mission is not only for supply quality of products to market but pursuit more about our environment in our designing, producing and delivery and in order to set all this systems, we acquired certification ISO 14001.

VALIDATION SUPPORTING

For safer and more convenience operating of our products to user, LK Lab Korea is supporting IQ / OQ validation.

R&D CENTER

LK Lab Korea's R&D center stands for improvement of our products and better satisfaction of our customer by customizing service as well.

We invest and research continuously from better stability in quality and safety to development and patent. Our system also allow every possibilities of customizing upon request by customers.

CE MARK

CE marking is a mandatory conformity marking for certain products sold within the European Economic Area (EEA) since 1985.

The CE marking is also found on products sold outside the EEA that are manufactured in, or designed to be sold in, the EEA. This makes the CE marking recognizable worldwide even to people who are not familiar with the European Economic Area. LK Lab Korea provides safer products to customer in overseas countries, obey the regulation of production by CE in all manufacturing processing.

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INDUSTRY AND
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AUTOCLAVE, STEAM STERILIZER

Autoclave (Standard-Type)

Autoclave (Recorder-Type)



Product	Autoclave (Standard-Type)	Autoclave (Recorder-Type)
Model	LVExxx	LVExxx
Control	PID Control, Graphic LCD Display	PID Control, Graphic LCD Display
Capacity	45L, 65L, 85L, 105L	45L, 65L, 85L, 105L
Temp. range	110 ~ 123 °C	110 ~ 123 °C
Pressure	2.1 bar (Absolute Pressure)	2.1 bar (Absolute Pressure)
Paper Recorder	-	O

Autoclave, Steam Sterilizer



Recorder



Door Open



Controller



Door Lock



Wire Basket



Exhaust Tank



Drain Bucket

Cat. No	Model	Capacity	Type	Type
A05-01-005	LVE040	45L	2 kW	Standard
A05-01-010				Recorder
A05-01-015	LVE060	65L	3 kW	Standard
A05-01-020				Recorder
A05-01-025	LVE080	85L	3 kW	Standard
A05-01-030				Recorder
A05-01-225			4 kW	Standard
A05-01-230				Recorder
A05-01-035	LVE100	105L	3 kW	Standard
A05-01-040				Recorder
A05-01-235			4 kW	Standard
A05-01-240				Recorder

- Sterilizing instruments, glass wares, and embryoid bodies as a moist heat sterilization machine using high-pressure steam
- One-touch opens the door for ease of use (Patent Registration)
- All processes such as heating, pressurization, sterilization, exhaust etc. are executed automatically by the initial temperature setting
- A total of 9 sterilization processes can be stored and used
- Current process and progress can be checked through the controller screen
- Verified the temperature and pressure as KS P 6102 standard (Medical High-Pressure Steam Sterilizer)
- Precision control implementation by $121^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$
- Equipped with low water level alarm, steam emission alarm, over-temperature protection, and pressure safety device
- Temperature can be recorded via Recorder (Recorder Type)
- Including 2 Wire Baskets and an exhaust tank

Optional Accessory

Cat. No	Model	Description
A05-01-110	LVEB040	Wire Basket for LVE040, $\Phi 330 \times 195\text{mm}$
A05-01-120	LVEB060	Wire Basket for LVE060, $\Phi 330 \times 285\text{mm}$
A05-01-130	LVEB080	Wire Basket for LVE080, $\Phi 430 \times 215\text{mm}$
A05-01-140	LVEB100	Wire Basket for LVE100, $\Phi 430 \times 285\text{mm}$
A05-01-150	LVEExTank	Exhaust Tank
T09-53-270	1052-94	Drain Bucket for LVE040, LVE060
T09-53-276	1053-94	Drain Bucket for LVE080, LVE100

Cat. No		A05-01-005 / A05-01-010	A05-01-015 / A05-01-020	A05-01-025 / A05-01-030	A05-01-225 / A05-01-230	A05-01-035 / A05-01-040	A05-01-235 / A05-01-240
Model		LVE040	LVE060	LVE080		LVE100	
Volume		45L	65L	85L		105L	
Controller		PID Control, Graphic LCD Display					
Temperature	Range	110 ~ 123 °C (Uniformity ± 1.0 °C)					
Pressure	Sterilization at 121°C	2.1 bar (Absolute Pressure)					
	Guage Range	0 ~ 3 bar (Gauge Pressure)					
Timer				99hr 59min			
Size	Interior(Φxh)	350 x h420 mm	350 x h600 mm	450 x h460 mm		450 x h600 mm	
	Exterior(wxdxh)	500x600x940 mm	500x600x1040 mm	600x700x940 mm		600x700x1040 mm	
	Door Open	500x600x1395mm	500x600x1495mm	600x700x1490mm		600x700x1590mm	
Material	Interior	Stainless Steel 304					
	Exterior	Powder Coated Steel					
	Door Cover	ABS					
Electrical	Voltage/Frequency	220V 50/60Hz					
	Current	9.0A	13.6 A	13.6 A	18.2 A	13.6 A	18.2 A
	Power Line	Standard Plug		Standard Plug	Industrial Plug	Standard Plug	Industrial Plug
Safety		Over Temp. & Over Pressure Protector, Low Water Alarm					
Basket		2ea of Wire Basket Included					

APPLICATOR

Automatic Film Applicator / Wire Bar Coater

Micrometer Applicator / Baker Applicator

Vacuum Bed - Vacuum Plate

Product	Automatic Film Applicator- Standard	Automatic Film Applicator- Low Speed
Model	AFAxxx, AFAxxxx, AFAxxxxx	AFAxxx-LS, AFAxxxx-LS, AFAxxxxx-LS
Control	Digital Multi-Function Controller	Digital Multi-Function Controller
Bed Type	Glass, Vacuum, Vacuum & Heating	Glass, Vacuum, Vacuum & Heating
Coating	w270×d380 mm	w270×d380 mm
Speed	20 ~ 100 mm/sec (Digital Display)	5 ~ 30 mm/sec (Digital Display)



Automatic Film Applicator

- Accurate and reproducible sample coatings of paint, ink and resin
- Provide all reproducible elements (speed, direction, pressure)
- Constant results can always be achieved without human error during manual coating
- Main functions: Test speed and Traverse distance adjustable
- Heating Type : Max.150 °C
- Sturdy design
- Can be used with Wire Bar Coater or Micro Applicator depending on application
- Include Pump for Vacuum Bed
- Can be replaced with the necessary Bed depending on the purpose

Standard

Cat. No	Model	Bed Type	Speed	Bed Size (mm)
A03-178-010	AFA350	Glass	20 ~ 100 mm/sec	w300×d490
A03-178-020	AFA350V	Vacuum		
A03-178-030	AFA350VH	Vacuum & Heating		

Low Speed

Cat. No	Model	Bed Type	Speed	Bed Size (mm)
A03-178-110	AFA350-LS	Glass	5 ~ 30 mm/sec	w300×d490
A03-178-120	AFA350V-LS	Vacuum		
A03-178-130	AFA350VH-LS	Vacuum & Heating		

Cat. No	A03-178-010	A03-178-020	A03-178-030	A03-178-110	A03-178-120	A03-178-130
Model	AFA350	AFA350V	AFA350VH	AFA350-LS	FA350V-LS	AFA350VH-LS
Bed Type	Glass	Vacuum	Vacuum & Heating	Glass	Vacuum	Vacuum & Heating
Plate Material	Glass	Aluminum Anodizing		Glass	Aluminum Anodizing	
Size	Bed	w300×d490 mm				
	Coating	w270×d380 mm				
	Overall	w680×d500×h360 mm				
Speed	20 ~ 100 mm/sec (Digital Display)			5 ~ 30 mm/sec (Digital Display)		
Controller	Digital Multi-Function Controller					
Safety	Limit Switch & Positioning Sensor					
Power	220V, 50/60Hz					



- Rod Diameter : $\varnothing 1/4"$, $\varnothing 1/2"$ 3
- Coating Width : 300 mm
- Overall Length : 400 mm
- Material : Stainless Steel 304

Rod, $\varnothing 1/4"$ (6.35 mm)		Wet Film (um)	Rod, $\varnothing 1/2"$ (12.7 mm)	
Cat. No	Model		Cat. No	Model
A03-43-184	LWBO040	91.4	A03-43-448	LWBO140
A03-43-192	LWBO042	96.0	A03-43-456	LWBO142
A03-43-200	LWBO044	100.6	A03-43-464	LWBO144
A03-43-208	LWBO046	105.2	A03-43-472	LWBO146
A03-43-216	LWBO048	109.8	A03-43-480	LWBO148
A03-43-224	LWBO050	114.3	A03-43-488	LWBO150
A03-43-232	LWBO055	125.7	A03-43-496	LWBO155
A03-43-240	LWBO060	137.2	A03-43-504	LWBO160
A03-43-248	LWBO065	148.6	A03-43-512	LWBO165
A03-43-256	LWBO070	160.0	A03-43-520	LWBO170
A03-43-264	LWBO075	171.5	A03-43-528	LWBO175

Wire Bar Coater

Rod, $\varnothing 1/4"$ (6.35 mm)		Wet Film (um)	Rod, $\varnothing 1/2"$ (12.7 mm)	
Cat. No	Model		Cat. No	Model
A03-43-008	LWBO003	6.86	A03-43-272	LWBO103
A03-43-016	LWBO004	9.14	A03-43-280	LWBO104
A03-43-024	LWBO005	11.43	A03-43-288	LWBO105
A03-43-032	LWBO006	13.7	A03-43-296	LWBO106
A03-43-040	LWBO007	16.0	A03-43-304	LWBO107
A03-43-048	LWBO008	18.3	A03-43-312	LWBO108
A03-43-056	LWBO009	20.6	A03-43-320	LWBO109
A03-43-064	LWBO010	22.9	A03-43-328	LWBO110
A03-43-072	LWBO012	27.4	A03-43-336	LWBO112
A03-43-080	LWBO014	32.0	A03-43-344	LWBO114
A03-43-088	LWBO016	36.6	A03-43-352	LWBO116
A03-43-096	LWBO018	41.1	A03-43-360	LWBO118
A03-43-104	LWBO020	45.7	A03-43-368	LWBO120
A03-43-112	LWBO022	50.3	A03-43-376	LWBO122
A03-43-120	LWBO024	54.8	A03-43-384	LWBO124
A03-43-128	LWBO026	59.4	A03-43-392	LWBO126
A03-43-136	LWBO028	64.8	A03-43-400	LWBO128
A03-43-144	LWBO030	68.6	A03-43-408	LWBO130
A03-43-152	LWBO032	73.2	A03-43-416	LWBO132
A03-43-160	LWBO034	77.7	A03-43-424	LWBO134
A03-43-168	LWBO036	83.3	A03-43-432	LWBO136
A03-43-176	LWBO038	86.9	A03-43-440	LWBO138



Micrometer Applicator

Cat. No	Model	Film Width
A03-41-160	1117/100	100 mm
A03-41-168	1117/150	150 mm
A03-41-176	1117/200	200 mm
A03-41-184	1117/250	250 mm
A03-41-192	1117/300	300 mm

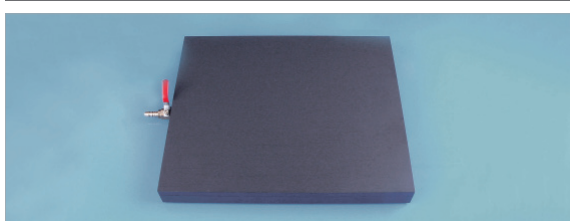
- 2 Micrometric Screws (From 0 ~ 13 mm, in 10 um Increment)
- Used to uniformly coat the surface of the film
- Non-specification products can be supplied upon request



Baker Applicator

Cat. No	Model	Film Width
A03-178-501	YBA-1	50 mm
A03-178-508	YBA-2	75 mm
A03-178-515	YBA-3	100 mm
A03-178-522	YBA-4	150 mm
A03-178-529	YBA-5	200mm
A03-178-536	YBA-6	250 mm
A03-178-543	YBA-7	300 mm

- A variable type applicator that can adjust the thickness of the application
- Thickness of coating : 12.5 um, 25 um, 50 um, 75 um, 100 um, 125 um, 150 um, 175 um, 200 um, 225 um, 237.5 um, 250 um



Vacuum Bed - Vacuum Plate

Cat. No	Model	Bed Size (mm)	Coating Size (mm)
A03-41-081	VP-4230	w490xd300	w400xd250

- Material : Aluminum Anodizing
- There is a fine hole on the plate, so use a pump to press it

BATH & CIRCULATOR

Digital Water Bath

Multi Water Bath

Shaking Water Bath

Extraction COD Water Bath, Soxhlet Bath

Digital Oil Bath

Digital Glass Oil Bath

Circulating Water Bath

Circulating Oil Bath

Low Temp. Circulating Water Bath

Wide Range Circulating Water Bath

Horizontal Low Temp. Circulating Water Bath

Recirculating Chiller

Precise Viscosity Water Bath

Cold Trap Bath

Vacuum Cold Trap Bath



Product	Digital Water Bath	Multi Water Bath	Shaking Water Bath	Digital Oil Bath	Digital Glass Oil Bath
Model	LB-WDxxx	LB-WMxxx	LB-SWxxx	LO-BHxxx	LO-BGxxx
Capacity (L)	6, 11, 22	6 x 3ea / 11 x 3ea	25, 35, 60	6, 11, 22	2, 4.5
Temp. range (°C)	Ambient +10 ~ 100 °C	Ambient +10 ~ 100 °C	Ambient +10 ~ 100 °C	Ambient +10 ~ 250 °C	Ambient +10 ~ 250 °C
Temp. uniformity (°C)	±1.2 ~ ±1.9	±1.2 ~ ±1.5	±0.9 ~ ±1.3	±2.7 ~ ±3.9	±0.9 ~ ±1.6
External sensor	O	-	-	O	O
PC interface	O	-	-	O	O
Circulation	-	-	-	-	-
Over temp. limit	O	O	O	O	O
Low water alarm	-	-	-	-	-

Product	Extraction COD Water Bath, Soxhlet Bath	Precise Viscosity Bath	Cold Trap Bath	Vacuum Cold Trap Bath
Model	LB-SDxxx	HVB40x	CTBxx	VCTxx
Capacity (L)	4 Places / 6 Places	21	4.2	4.2
Temp. range (°C)	Ambient +10 ~ 100 °C	Ambient +10 ~ 100 °C Ambient +10 ~ 150 °C	Down to -40 °C Down to -70 °C	Down to -40 °C Down to -70 °C
Temp. uniformity (°C)	±2.0	±0.1	-	-
External sensor	-	O	-	-
PC interface	-	O	-	-
Over temp. limit	O	O	-	-
Low water alarm	-	O	-	-

Circulating Water Bath	Circulating Oil Bath	Low Temp. Circulating Bath	Wide Range Circulating Bath	Horizontal Low Temp. Circulating Bath	Recirculating Chiller
DCWBxx	COBxx	LC-LTxxx	LC-HTxxx	LC-LT308	LCHxxx
5, 10, 20, 30	10, 20, 30	8, 12, 22, 30	12, 22	8	5, 10, 20
Ambient +10 ~ 100 °C	Ambient +10 ~ 250 °C	-20 ~ 150 °C -40 ~ 150 °C	-40 ~ 250 °C	-20 ~ 150 °C	-20 ~ 80 °C
±0.3 ~ ±0.7	±0.5 ~ ±1.3	±0.2 ~ ±0.4	±0.2 ~ ±0.3	±0.3	-
O	O	O	O	O	O
O	O	O	O	O	O
O	O	O	O	O	O
O	O	O	O	O	O
O	O	O	O	O	O



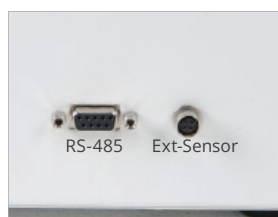
Drain



Controller



Support Kit Socket

PC communication port
& Ext. sensor

RS485 to USB Cable



External Sensor



Support Kit

Digital Water Bath

Cat. No.	Model	Type	Capacity
B04-02-050	LB-WD316	PID Control	6 L
B04-02-100	LB-WD321		11 L
B04-02-150	LB-WD522		22 L

- Accurate temperature control by PID control method
- Temperature display by 0.01°C
- Installed ports for external sensor and RS485 for PC communication (communication program can download on www.lklab.com)
- Using Seamless Stainless Steel Bath
- Installing a drain tap for an easier drain from the bath (LB-WD522)
- Easy observation inside through PC cover (Optional, except LB-WD316)
- Simple and intuitive user interface with Graphic LCD display
- Auto-tuning and Temperature Calibration function installed
- 2 type timer function installed (start at the same time as driving or start after reaching target temperature)
- Automatic fault sensing system: water bath itself can detect an unusual situation (patent registration)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit

Optional Accessory

Cat. No	Model	Description
B04-01-085	LI-USB	RS485 to USB Communication Cable
B04-91-471	ET101	External Sensor, Pt100, Φ4×L300 mm
H03-03-205	SL-HSKIT	Support Kit
B04-91-153	LB-WDPL11	Optional PC cover for 11L
B04-91-155	LB-WDPL22	Optional PC cover for 22L

Cat. No.		B04-02-050	B04-02-100	B04-02-150
Model		LB-WD316	LB-WD321	LB-WD522
Capacity		6 L	11 L	22 L
Controller	Control	PID control, Auto-tuning		
	Display	GLCD (Graphic LCD)		
	Resolution	0.01°C		
	Timer	Run start / Wait start (99 hr 59 min)		
Temperature	Range	Ambient +10 to +100°C		
	Accuracy at 50°C	±0.3°C		
	Uniformity at 50°C	±1.12°C	±1.42°C	±1.84°C
Size	Interior	w300×d155×h150 mm	w300×d240×h150 mm	w500×d295×h150 mm
	Exterior	w325×d180×h260 mm	w325×d265×h260 mm	w535×d330×h260 mm
Material	Interior	Stainless Steel 304		
	Exterior	Powder Coated Steel		
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz		
	Max Consumption	800 W (3.6 A)	1 kW (4.6 A)	2 kW (9.1 A)
	Power Line	Standard Plug		
Other	Drain	N/A		1/4" Hose Nipple Male
Safety		Over Temp. & Current Protection, Automatic Fault Sensing System		



Inside of a tank



Drain



Controller



PC Cover

Multi Water Bath

Cat. No.	Model	Type	Capacity
B04-02-200	LB-WM631	PID Control	6 L × 3 ea
B04-02-250	LB-WM651		11 L × 3 ea

- High space efficiency with 3 baths in one instrument
- Each bath can be controlled separately
- Accurate temperature control by PID control method
- Temperature display by 0.01°C
- Using seamless stainless steel bath
- Easy observation inside through PC cover (optional, except LB-WD631)
- Installing a drain tap for an easier drain from the bath
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- 2 type timer functions installed (start at the same time as driving or start after reaching target temperature)
- Automatic fault sensing system: water bath itself can detect an unusual situation (patent registration)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit
- Installed earth leakage circuit breaker
- Available to install ports for external sensor and PC communication on request (optional)

Optional Accessory

Cat. No	Model	Description
B04-91-153	LB-WDPL11	Optional PC cover for 11L

Cat. No.		B04-02-200	B04-02-250
Model		LB-WM631	LB-WM651
Capacity		6 L×3 Bath	11 L×3 Bath
Controller	Control	PID control, Auto-tuning	
	Display	GLCD(Graphic LCD)	
	Resolution	0.01°C	
	Timer	Run start / Wait start (99 hr 59 min)	
Temperature	Range	Ambient +10 to +100°C	
	Accuracy at 50°C	±0.3°C	
	Uniformity at 50°C	±1.12°C	±1.42°C
Size	Interior	w155xd300xh150 mm / 3 ea	w240xd300xh150 mm / 3 ea
	Exterior	w695xd470xh385 mm	w960xd470xh385 mm
Material	Interior	Stainless Steel 304	
	Exterior	Powder Coated Steel	
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz	
	Max Consumption	800 W × 3 ea (10.9 A)	1 kW × 3 ea (13.4 A)
	Power Line	Standard Plug	
Other	Drain	1/4" Hose Nipple Male	
Safety		Over Temp. & Current Protection, Automatic Fault Sensing System	



Bath Cover



Spring Rack



Controller



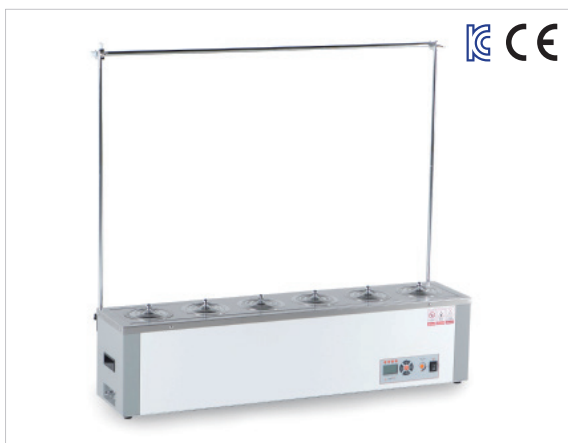
Drain

Shaking Water Bath

Cat. No.	Model	Capacity	R.P.M
B04-44-050	LB-SW025	25 L	20 ~ 180
B04-44-060	LB-SW035	35 L	
B04-44-070	LB-SW060	60 L	

- Suitable for aerobe culture by shaking function
- Prevent condensate water drop and minimize moisture evaporation by triangle shape lid
- Temperature control and shaking can be controlled separately
- Available for no-noise and stable motion by a multi-joint reciprocating engine
- Slow start function for minimizing the impact of reciprocating action
- Embedded structure for preventing the contamination of controller from water or samples
- Installing a drain tap for an easier drain from the bath
- Auto tuning, temperature, and RPM calibration function
- Automatically save for frequently used temperature and timer
- A spring wire rack Included
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit

Cat. No.		B04-44-050	B04-44-060	B04-44-070
Model		LB-SW025	LB-SW035	LB-SW060
Capacity		25 L	35 L	60 L
Controller	Control	PID control, Auto-tuning		
	Display	LED Segment		
	Resolution	0.1°C		
Temperature	Range	Ambient +10 to +100°C		
	Accuracy at 50°C	±0.3°C		
	Uniformity at 50°C	±0.85°C	±1.00°C	±1.20°C
Shaking	Speed	20 ~ 180 rpm		
	Motion	Horizontal		
	Stroke	30 mm		
Size	Interior	w320×d350×h240 mm	w400×d350×h240 mm	w600×d400×h240 mm
	Exterior	w560×d420×h420 mm	w660×d420×h420 mm	w860×d470×h420 mm
	Spring Rack	w215×d265×h120 mm	w315×d265×h120 mm	w515×d315×h120 mm
Material	Interior	304 Stainless Steel		
	Exterior	Powder Coated Steel		
Electric Supply	Power	1 Phase, 220 Vac, 60 Hz		
	Max Consumption	1.6 Kw (7.2A)	2.1 Kw (9.6 A)	2.6 Kw (11.9A)
	Power Line	Standard Plug		
Other	Drain	1/4" Hose Nipple Male		
Safety		Over Temp. & Current Protection		



Product composition



Drain



Controller



Ring Cover



Holding Frame



Hook Connector

Extraction COD Water Bath, Soxhlet Bath

Cat. No.	Model	Type	Hole
B04-02-530	LB-SD410	PID Control	4 Places
B04-02-550	LB-SD610		6 Places

- Suitable for COD measuring, fat extraction, and evaporating experiment
- Accurate temperature control by PID control method
- Convenient extraction work available by separation cover
- Installing a drain tap for an easier drain from the bath
- Simple and intuitive user interface with graphic LCD display
- Automatically save for frequently used temperature and timer
- Auto tuning and temperature calibration function installed
- 2 type timer function installed (start at the same time as driving or start after reaching target temperature)
- Included support frame with 1pc holding frame
- Available for extra holding frame (optional)
- Automatic fault sensing system - bath itself can detect an unusual situation (patent registration)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit

Optional Accessory

Cat. No	Model	Description
B04-02-560	SD410F	Holding Frame $\Phi 12.7 \times L770$ mm
B04-02-570	SD610F	Holding Frame $\Phi 12.7 \times L1100$ mm
C09-143-206	LCP-FR04	Hook Connector, Chrome Plated

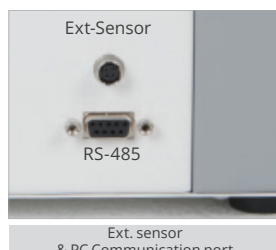
Spare Accessory

Cat. No	Model	Description
B04-91-160	LB-SDLCL	Separable Ring Cover

Cat. No.		B04-02-530	B04-02-550
Model		LB-SD410	LB-SD610
Extraction Holes		4 Places	6 Places
Controller	Control	PID control, Auto-tuning	
	Display	GLCD (Graphic LCD)	
	Resolution	0.01°C	
	Timer	Run start / Wait start (99 hr 59 min)	
Temperature	Range	Ambient +10 ~ +100°C	
	Accuracy at 50°C	±0.3°C	
	Uniformity at 50°C	±2.0°C	
Size	Interior	w680×d170×h150 mm	w1020×d170×h150 mm
	Exterior	w740×d250×h265 mm	w1080×d250×h265 mm
	Support Frame	w760×h1000 mm	w1100×h1000 mm
Weight		18kg	23kg
Material	Interior	Stainless Steel 304	
	Exterior	Powder Coated Steel	
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz	
	Max Consumption	1.4 kW (6.4 A)	1.8 Kw (8.2 A)
	Power Line	Standard Plug	
Other	Drain	1/4" Hose Nipple Male	
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System	



Drain

Ext. sensor
& PC Communication port

Controller



RS485 to USB Cable



External Sensor



Support Kit

Digital Oil Bath

Cat. No	Model	Type	Capacity
B04-02-350	LO-BH206	PID Control	6 L
B04-02-400	LO-BH310		11 L
B04-02-450	LO-BH522		22 L

- Accurate temperature control by PID control method
- Temperature display by 0.01°C
- Installed ports for external sensor and RS485 for PC communication (communication program can be downloaded on www.lklab.com)
- Installing a drain tap for an easier drain from the bath
- Simple and intuitive user interface with graphic LCD display
- Embedded structure for protecting the controller from a running liquid
- Automatically save for frequently used temperature and timer
- Auto tuning and temperature calibration function installed
- 2 type timer function installed - start at the same time as driving or start after reaching the target temperature
- Automatic fault sensing system; bath itself can detect an unusual situation (patent registration)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit

Optional Accessory

Cat. No	Model	Description
B04-01-085	LI-USB	RS485 to USB Communication Cable
B04-91-471	ET101	External Sensor, Pt100, Φ4×L300 mm
H03-03-205	SL-HSKIT	Support Kit

Cat. No.		B04-02-350	B04-02-400	B04-02-450
Model		LO-BH206	LO-BH310	LO-BH522
Capacity		6 L	11 L	22 L
Controller	Control	PID Control, Auto-tuning		
	Display	GLCD (Graphic LCD)		
	Resolution	0.01°C		
	Timer	Run start / Wait start (99 hr 59 min)		
Temperature	Range	Ambient +10 to +250°C		
	Accuracy at 100°C	±0.3°C		
	Uniformity at 100°C	±2.66°C	±3.25°C	±3.87°C
Size	Interior	w200×d170×h180 mm	w300×d210×h180 mm	w400×d300×h180 mm
	Exterior	w300×d300×h355 mm	w400×d340×h355 mm	w500×d430×h355 mm
Weight		7kg	10kg	21kg
Material	Interior	304 Stainless Steel		
	Exterior	Powder Coated Steel		
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz		
	Max Consumption	1.5kW (6.8 A)	2 kW (9.1 A)	2.5 kW (11.4 A)
	Power Line	Standard Plug		
Other	Drain	1/4" Hose Nipple Male		



Digital Glass Oil Bath

Cat. No	Model	Type	Capacity
B04-811-249	LO-BG160	PID Control	2 L
B04-811-259	LO-BG200		4.5 L

- Easy observation through glass bath
- Easy clean through a detachable bath structure
- Available to use along with a magnetic stirrer for improving the temperature distribution
- Accurate temperature control by PID control method
- Temperature display by 0.01°C
- Installed ports for external sensor and RS485 for PC communication (communication program can be downloaded on www.lklab.com)
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- 2 type timer function installed; start at the same time as driving or start after reaching the target temperature
- Automatic fault sensing system; bath itself can detect an unusual situation
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit



Ext. sensor
& PC Communication port



External Sensor Installation



Controller



Disassembled product image



Spare Glass Bath



External Sensor



Support Kit

Spare Glass Bath

Cat. No.	Model	Capacity	Size (Ø×h)
B04-91-245	GB020	2 L	160×135 mm
B04-91-255	GB045	4.5 L	200×165 mm

Optional Accessory

Cat. No	Model	Description
B04-01-085	LI-USB	RS485 to USB Communication Cable
B04-91-471	ET101	External Sensor, Pt100, Φ4×L300 mm
H03-03-205	SL-HSKIT	Support Kit

Cat. No.		B04-811-249	B04-811-259
Model		LO-BG160	LO-BG200
Capacity		2.0 L	4.5 L
Size	Bath Size	Φ160×h135 mm	Φ200×h165 mm
	Control	PID control, Auto-tuning	
Controller	Display	GLCD (Graphic LCD)	
	Resolution	0.01°C	
	Timer	Run start / Wait start (99 hr 59 min)	
Temperature	Range	Ambient +10 to +250°C	
	Accuracy at 100°C	±0.3°C	
	Uniformity at 100°C	±0.85°C	±1.52°C
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz	
	Max Consumption	450 W (2.1 A)	550 W (2.5 A)
	Power Line	Standard Plug	
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System	



Inlet/outlet port



Controller



RS485 to USB Cable



External Sensor

Circulating Water Bath

Cat. No.	Model	Type	Capacity
B04-01-010	DCWB05	PID Control	5 L
B04-01-020	DCWB10		10 L
B04-01-030	DCWB20		20 L
B04-01-040	DCWB30		30 L

- Maintaining uniform temperature inside the bath with inner circulation function
- Suitable for use together with other instruments with a powerful circulation pump
- 10 steps pump power (flow rate) controller
- Precision control Implementation by 0.01°C
- Installing drain tap for an easier drain from bath
- Installed ports for external sensor and RS485 for PC communication (communication program can be downloaded on www.lklab.com)
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- 2 type timer function installed; start at the same time as driving or start after reaching the target temperature
- Automatic fault sensing system; bath itself can detect an unusual situation (patent registration)
- Low water alarm for heater's overheating avoiding due to lack of liquid inside a bath
- Double overheat safety device – 1st controller overheat alarm, 2nd overheat shut off a circuit

Optional Accessory

Cat. No.	Model	Description
B04-01-085	LI-USB	RS485 to USB Communication Cable
B04-91-483	ET101M	External Sensor, Pt100, Φ4×L300 mm

Cat. No.		B04-01-010	B04-01-020	B04-01-030	B04-01-040
Model		DCWB05	DCWB10	DCWB20	DCWB30
Capacity		5 L	10 L	20 L	30 L
Controller	Control	PID control, Auto-tuning			
	Display	GLCD (Graphic LCD)			
	Resolution	0.01°C			
	Timer	Run start / Wait start (99 hr 59 min)			
Temperature	Range	Ambient +10 to +100°C			
	Accuracy at 50°C	±0.3°C			
	Uniformity at 50°C	±0.25°C	±0.37°C	±0.58°C	±0.68°C
Pump	Capacity	22 L/min (at water 25°C)			
	Pressure	0.47 bar / 6.8 psi (at water 25°C)			
Size	Internal	w150×d230×h150 mm	w240×d300×h150 mm	w290×d480×h150 mm	w320×d470×h200 mm
	External	w215×d300×h415 mm	w290×d360×h415 mm	w350×d540×h415 mm	w370×d530×h465 mm
	Top Open	w150xd65 mm	w240xd125 mm	w290xd300 mm	w320xd290 mm
Material	Interior	Stainless Steel 304			
	Exterior	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz			
	Max Consumption	700 W (3.2 A)	1.1 kW (5 A)	2.1 kW (9.6 A)	2.8 kW (12.8 A)
	Power Line	Standard Plug			
Other	Drain	1/4" Hose Nipple Male			
	Circulating IN / OUT	1/2" Stainless Steel Tubing			
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System			



Inlet/outlet port



Controller



RS485 to USB Cable



External Sensor

Circulating Oil Bath

Cat. No.	Model	Type	Capacity
B04-01-050	COB10	PID Control	10 L
B04-01-060	COB20		20 L
B04-01-070	COB30		30 L

- Maintaining uniform temperature inside the bath with inner circulation function
- Suitable for use together with other instruments with a powerful circulation pump
- 10 steps pump power (flow rate) controller
- Precision control Implementation by 0.01°C
- Cooling coil can be installed on request (able to drop the temperature fast by circulating coolant from the outside)
- Installed drain tap easier to drain the solution from the inside of the bath
- Installed ports for external sensor and RS485 for PC communication (communication program can be downloaded on www.lklab.com)
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- 2 type timer function installed; start at the same time as driving or start after reaching the target temperature
- Automatic fault sensing system; bath itself can detect an unusual situation (patent registration)
- Low water alarm for heater's overheating avoiding due to lack of liquid inside a bath
- Double overheat safety device – 1st controller overheat alarm, 2nd overheat shut off a circuit

Optional Accessory

Cat. No	Model	Description
B04-01-085	LI-USB	RS485 to USB Communication Cable
B04-91-483	ET101M	External Sensor, Pt100, Φ4×L300 mm
C20-184-035	S050-U	1/2" Stainless Steel Tubing Connector

Cat. No.		B04-01-050	B04-01-060	B04-01-070
Model		COB10	COB20	COB30
Capacity		10 L	20 L	30 L
Controller	Control	PID control, Auto-tuning		
	Display	GLCD (Graphic LCD)		
	Resolution	0.01°C		
	Timer	Run start / Wait start (99 hr 59 min)		
Temperature	Range	Ambient +10 to +250°C		
	Accuracy at 100°C	±0.3°C		
	Uniformity at 100°C	±0.42°C	±0.85°C	±1.23°C
Pump	Capacity	22 L/min (at water 25°C)		
	Pressure	0.47 bar / 6.8 psi (at water 25°C)		
Size	Internal	w240×d300×h150 mm	w250×d450×h180 mm	w300×d450×h230 mm
	External	w310×d370×h425 mm	w320×d520×h465 mm	w370×d520×h505 mm
	Top Open	w240×d130 mm	w250×d270 mm	w300×d270 mm
Material	Interior	Stainless Steel 304		
	Exterior	Powder Coated Steel		
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz		
	Max Consumption	1.1 kW (5 A)	2.1 kW (9.6 A)	2.8 kW (12.8 A)
	Power Line	Standard Plug		
Other	Drain	1/4" Hose Nipple Male		
	Circulating IN / OUT	1/2" Stainless Steel Tubing		
Safety		Over Temp. & Current Protection, Automatic Fault Sensing System		



Inlet/outlet port



Controller



RS485 to USB Cable



External Sensor

Low Temp. Circulating Water Bath, - 20°C

Cat. No.	Model	Capacity	Temp. Range
B04-91-410	LC-LT208	8 L	-20°C ~ +150°C
B04-91-420	LC-LT212	12 L	
B04-91-430	LC-LT222	22 L	
B04-91-440	LC-LT230	30 L	

- Suitable for use together with other instruments with a powerful circulation pump
- 10 steps pump power (flow rate) controller
- Precision control Implementation by 0.01°C
- Maintaining uniform temperature inside the bath with inner circulation function
- Using fluid other than water (oil, alcohol, antifreeze) can be widely used to control the temperature environment
- Installed ports for external sensor and RS485 for PC communication (communication program can be downloaded on www.lklab.com)
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- 2 type timer function installed; start at the same time as driving or start after reaching the target temperature
- Automatic fault sensing system; bath itself can detect an unusual situation (patent registration)
- Low water alarm for heater's overheating avoiding due to lack of liquid inside a bath
- Double overheat safety device – 1st controller overheat alarm, 2nd overheat shut off a circuit

Optional Accessory

Cat. No.	Model	Description
B04-01-085	LI-USB	RS485 to USB Communication Cable
B04-91-483	ET101M	External Sensor, Pt100, Φ4×L300 mm
B04-91-489	LI-LT08C	Cart for LC-LT208

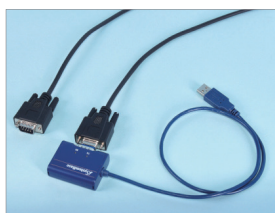
Cat. No.		B04-91-410	B04-91-420	B04-91-430	B04-91-440
Model		LC-LT208	LC-LT212	LC-LT222	LC-LT230
Capacity		8 L	12 L	22 L	30 L
Controller	Control	PID control, Auto-tuning			
	Display	GLCD (Graphic LCD)			
	Resolution	0.01°C			
	Timer	Run start / Wait start (99 hr 59 min)			
Temperature	Range	-20°C to +150°C			
	Cooling Range	-20°C ~ 40°C (activating cooling system at lower than 40°C)			
	Accuracy at 0°C	±0.3°C			
	Uniformity at 0°C	±0.12°C	±0.21°C	±0.28°C	±0.36°C
Pump	Capacity	22 L/min (at water 25°C)			
	Pressure	0.47 bar / 6.8 psi (at water 25°C)			
Size	Internal	w170×d320×h150 mm	w250×d320×h150 mm	w300×d370×h200 mm	w300×d460×h220 mm
	External	w250×d440×h645 mm	w330×d440×h725 mm	w440×d510×h835 mm	w460×d600×h920 mm
	Top Open	w170×d145 mm	w250×d145 mm	w300×d190 mm	w300×d290 mm
Weight		32kg	37kg	52kg	60kg
Material	Interior	Stainless Steel 304			
	Exterior	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz			
	Max Consumption	1.3 kW (5.9 A)	2 kW (9 A)	2.5 kW (11.4 A)	3 kW (13.7 A)
	Power Line	Standard Plug			
Other	Drain	1/4" Hose Nipple Male			
	Circulating IN / OUT	1/2" Stainless Steel Tubing			
	Caster	N/A	Leveling Caster		
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System			



Inlet/outlet port



Controller



RS485 to USB Cable



External Sensor

Low Temp. Circulating Water Bath, - 40°C

Cat. No.	Model	Capacity	Temp. Range
B04-91-510	LC-LT408	8 L	-40°C ~ +150°C
B04-91-520	LC-LT412	12 L	
B04-91-530	LC-LT422	22 L	
B04-91-540	LC-LT430	30 L	

- Suitable for use together with other instruments with a powerful circulation pump
- 10 steps pump power (flow rate) controller
- Precision control Implementation by 0.01°C
- Maintaining uniform temperature inside the bath with inner circulation function
- Using fluid other than water (oil, alcohol, antifreeze) can be widely used to control the temperature environment
- Installed ports for external sensor and RS485 for PC communication (communication program can be downloaded on www.lklab.com)
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- 2 type timer function installed; start at the same time as driving or start after reaching the target temperature
- Automatic fault sensing system; bath itself can detect an unusual situation (patent registration)
- Low water alarm for heater's overheating avoiding due to lack of liquid inside a bath
- Double overheat safety device – 1st controller overheat alarm, 2nd overheat shut off circuit

Optional Accessory

Cat. No	Model	Description
B04-01-085	LI-USB	RS485 to USB Communication Cable
B04-91-483	ET101M	External Sensor, Pt100, Φ4×L300 mm

Cat. No.		B04-91-510	B04-91-520	B04-91-530	B04-91-540
Model		LC-LT408	LC-LT412	LC-LT422	LC-LT430
Capacity		8 L	12 L	22 L	30 L
Controller	Control	PID control, Auto-tuning			
	Display	GLCD (Graphic LCD)			
	Resolution	0.01°C			
	Timer	Run start / Wait start (99 hr 59 min)			
Temperature	Range	-40°C to +150°C			
	Cooling Range	-40°C ~ 40°C (activating cooling system at lower than 40°C)			
	Accuracy at 0°C	±0.3°C			
	Uniformity at 0°C	±0.12°C	±0.21°C	±0.28°C	±0.36°C
Pump	Capacity	22 L/min (at water 25°C)			
	Pressure	0.47 bar / 6.8 psi (at water 25°C)			
Size	Internal	w170×d320×h150 mm	w250×d320×h150 mm	w300×d370×h200 mm	w300×d460×h220 mm
	External	w350×d460×h725 mm	w350×d460×h725 mm	w440×d510×h835 mm	w460×d600×h920 mm
	Top Open	w170×d145 mm	w250×d145 mm	w300×d190 mm	w300×d290 mm
Weight		35kg	41kg	55kg	66kg
Material	Interior	304 Stainless Steel			
	Exterior	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz			
	Max Consumption	1.5 kW (6.8 A)	2 kW (9.1 A)	2.5 kW (11.4 A)	3 kW (13.7 A)
	Power Line	Standard Plug			
Other	Drain	1/4" Hose Nipple Male			
	Circulating IN / OUT	1/2" Stainless Steel Tubing			
	Caster	Leveling Caster			
Safety		Over Temp. & Current Protection, Automatic Fault Sensing System			



Inlet/outlet port



Controller



RS485 to USB Cable



External Sensor

Wide Range Circulating Water Bath

Cat. No.	Model	Capacity	Temp. Range
B04-91-560	LC-HT412	12 L	-40°C ~ +250°C
B04-91-565	LC-HT422	22 L	

- Able to control a wide range of the temperature from -40 to 250°C
- Suitable for use together with other instruments with a powerful circulation pump
- 10 steps pump power (flow rate) controller
- Precision control Implementation by 0.01°C
- Maintaining uniform temperature inside the bath with inner circulation function
- Using fluid other than water (oil, alcohol, antifreeze) can be widely used to control the temperature environment
- Installed ports for external sensor and RS485 for PC communication (communication program can be downloaded on www.lklab.com)
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- 2 type timer function installed; start at the same time as driving or start after reaching the target temperature
- Automatic fault sensing system; bath itself can detect an unusual situation (patent registration)
- Low water alarm for heater's overheating avoiding due to lack of liquid inside a bath
- Double overheat safety device – 1st controller overheat alarm, 2nd overheat shut off a circuit

Optional Accessory

Cat. No	Model	Description
B04-01-085	LI-USB	RS485 to USB Communication Cable
B04-91-483	ET101M	External Sensor, Pt100, Φ4×L300 mm
C20-184-035	S050-U	1/2" Stainless Steel Tubing Connector

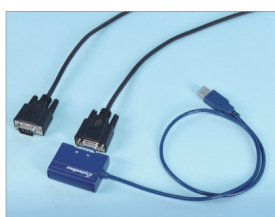
Cat. No.		B04-91-560	B04-91-565
Model		LC-HT412	LC-HT422
Capacity		12 L	22 L
Controller	Control	PID control, Auto-tuning	
	Display	GLCD (Graphic LCD)	
	Resolution	0.1°C	
	Timer	Run start / Wait start (99 hr 59 min)	
Temperature	Range	-40°C to +250°C	
	Cooling Range	-40°C ~ 40°C (activating cooling system at lower than 40°C)	
	Accuracy at 50°C	±0.3°C	
	Uniformity at 50°C	±0.21°C	±0.28°C
Pump	Capacity	22 L/min (at water 25°C)	
	Pressure	0.47 bar / 6.8 psi (at water 25°C)	
Size	Interior	w250×d320×h150 mm	w300×d370×h200 mm
	Exterior	w350×d460×h750 mm	w440×d510×h835 mm
	Top Open	w250×d145 mm	w300×d190 mm
Material	Interior	Stainless Steel 304	
	Exterior	Powder Coated Steel	
Electric Supply	Power	1 Phase, 220 Vac, 60 Hz	
	Max Consumption	2.2 kw (10A)	3 kw (13.6 A)
	Power Line	Standard Plug	
Other	Drain	1/4" Hose Nipple Male	
	Circulating IN / OUT	1/2" Stainless Steel Tubing	
	Caster	Leveling Caster	
Safety		Over Temp. & Current Protection, Automatic Fault Sensing System	



Inlet/outlet port



Controller



RS485 to USB Cable



External Sensor

Horizontal Low Temp. Circulating Water Bath

Cat. No.	Model	Capacity	Temp. Range
B01-91-610	LC-LT308	8 L	-20°C ~ +150°C

- Suitable for installation and use on the table by horizontal type
- Suitable for use together with other instruments with a powerful circulation pump
- 10 steps pump power (flow rate) controller
- Precision control Implementation by 0.01°C
- Maintaining uniform temperature inside the bath with inner circulation function
- Using fluid other than water (oil, alcohol, antifreeze) can be widely used to control the temperature environment
- Installed ports for external sensor and RS485 for PC communication (communication program can be downloaded on www.lklab.com)
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- 2 type timer function installed; start at the same time as driving or start after reaching the target temperature
- Automatic fault sensing system; bath itself can detect an unusual situation (patent registration)
- Low water alarm for heater's overheating avoiding due to lack of liquid inside a bath
- Double overheat safety device – 1st controller overheat alarm, 2nd overheat shut off a circuit

Optional Accessory

Cat. No	Model	Description
B04-01-085	LI-USB	RS485 to USB Communication Cable
B04-91-483	ET101M	External Sensor, Pt100, Φ4×L300 mm

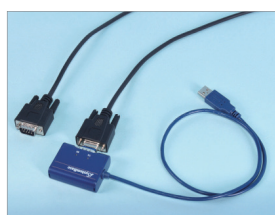
Cat. No		B01-91-610
Model		LC-LT308
Capacity		8 L
Controller	Control	PID control, Auto-tuning
	Display	GLCD (Graphic LCD)
	Resolution	0.01°C
	Timer	Run start / Wait start (99 hr 59 min)
Temperature	Range	-20°C to +150°C
	Cooling Range	-20°C ~ 40°C (activating cooling system at lower than 40°C)
	Accuracy at 0°C	±0.3°C
	Uniformity at 0°C	±0.3°C
Pump	Capacity	22 L/min (at water 25°C)
	Pressure	0.47 bar / 6.8 psi (at water 25°C)
Size	Interior	w170×d320×h150 mm
	Exterior	w480×d445×h475 mm
	Top Open	w170×d145mm
Material	Interior	Stainless Steel 304
	Exterior	Powder Coated Steel
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz
	Max Consumption	1.3 kW (5.9 A)
	Power Line	Standard Plug
Other	Drain	1/4" Hose Nipple Male
	Circulating IN / OUT	1/2" Stainless Steel Tubing
Safety		Over Temp. & Current Protection, Automatic Fault Sensing System



Inlet/outlet port



Controller



RS232 to USB Cable



External Sensor

Recirculating Chiller

Cat. No	Model	Temp. Range	Cooling Capacity
B04-02-705	LCH500	-20 ~ 60 °C	800 W
B04-02-710	LCH700		1200 W

- Control the temperature of equipment or user's facilities by circulating liquid (Water, Alcohol)
- Suitable to use for heat removal or controlling the temperature on lab equipment, medical devices, measuring instruments, and semiconductor equipment
- Able to control the temperature higher than the surrounding temperature by applying the heater
- Ability of strong circulation that 40 liters can be circulated in a minute
- High-temperature stability on $\pm 0.1^{\circ}\text{C}$
- Applied 4.3" touch panel controller
- Inserted exterior sensor and alarm port that can be connected directly with user's equipment
- Able to check the situation of the temperature changes with the graph
- Alarm function for low-water level and high temperature
- Installed ports for external sensor and RS485 for PC communication (communication program can be downloaded on www.lklab.com)
- No cooling water is necessary by an air cooling type structure
- Convenient maintenance by the clip-on structure of a freezer condenser grill

Optional Accessory

Cat. No	Model	Description
T23-140-102	SV-1727	Silicone tubing Id 17mm, Od 27mm, Length 10m
B04-91-483	ET101M	External Sensor, Pt100, $\Phi 4 \times L300$ mm
B04-02-720	LI-232	RS232 to USB Communication

Cat. No.		B04-02-705	B04-02-710
Model		LCH500	LCH700
Cooling Capacity	at 20°C	800 W	1200 W
	at 0°C	650 W	1000 W
	at -20°C	400 W	550 W
Filling Volume		14 L	23L
Pump	Flow Rate	40 l/min	
	Pressure	0.7 bar	
Temperature	Range	-20°C - 60°C	
	Stability	$\pm 0.1^{\circ}\text{C}$	
Controller	Control	PID control, Auto-tuning	
	Display	4.2" Touch Screen	
	Resolution	0.1 °C	
Material	Interior	Stainless Steel 304	
	Exterior	Power Coated Steel	
Size		w520×d795×h680 mm	w620×d875×h740 mm
Electric Supply	Power	1 Phase, 220 Vac, 60 Hz	
	Max Consumption	1.7 kw(7.7 A)	2.2 kw(10.0A)
	Power Line	Standard Plug	
Other	In/Out Tubing	20mm Hose Nipple male	
	Drain	1/4" Hose Nipple male	
	Caster	Leveling Caster	
Safety		Over Temp. & Current Protection	



Precise Viscosity Water Bath

Cat. No	Model	Temp. Range	Accuracy
B04-01-220	HVB40P	Ambient +10 ~ +100 °C	±0.1°C
B04-01-225	HVB40H	Ambient +10 ~ +150 °C	

- Maintaining uniform temperature inside the bath with inner circulation function
- Using high precision temperature sensor. Excellent temperature accuracy
- 10 steps flow rate control
- Precision control Implementation by 0.01°C
- Installing a drain tap for an easier drain from bath
- To control the temperature lower than the ambient temperature or to maintain the temperature precisely need to connect a separate cooler to a cooling line (optional)
- Lower temperature ranges are different depending on the capacity of the optional cooler connected
- Available to observe through tempered glass window installed front and rear of equipment
- Installed ports for external sensor and RS485 for PC communication (communication program can be downloaded on www.lklab.com)
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- Automatic fault sensing system; bath itself can detect an unusual situation (patent registration)
- Low water alarm for heater's overheating avoiding due to lack of liquid inside a bath
- Double overheat safety device – 1st controller overheat alarm, 2nd overheat shut off a circuit

Optional Accessory

Cat. No	Model	Description
B04-01-085	LI-USB	RS485 to USB Communication Cable
B04-91-483	ET101M	External Sensor, PT100, Φ4×L300 mm



Setup with cooler



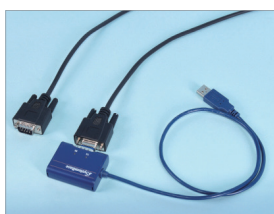
Viscometer Installed



Coolant inserting



Controller



RS485 to USB Cable



External Sensor

Cat. No.		B04-01-220	B04-01-225
Model		HVB40P	HVB40H
Capacity		21 L	
Controller	Control	PID control, Auto-tuning	
	Display	GLCD (Graphic LCD)	
	Resolution	0.01°C	
	Timer	Run start / Wait start (99 hr 59 min)	
Temperature	Range	Ambient +10 ~ +100°C	Ambient +10 ~ +150°C
	Accuracy	±0.1°C	
	Uniformity	±0.1°C at 50°C	
Size	Interior	w370×d200×h310 mm	
	Exterior	w440×d275×h600 mm	
	Top Open	w95×d95 mm, 2ea	
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz	
	Max Consumption	2.2 kW (10 A)	2.5 kW (11.4 A)
	Power Line	Standard Plug	
Other	Drain	1/4" Hose Nipple male	
	Cooling IN / OUT	for 9 mm Silicone Tubing	
Safety		Over Temp. & Current Protection, Automatic Fault Sensing System	



Cold Trap Bath

Cat. No.	Model	Capacity	Temp. Range
B04-01-230	CTB40	4.2 L	Down to -40°C
B04-01-240	CTB80		Down to -70°C

- To condensate of harmfulness substance or fume from the vacuum line
- Temperature control available
- Using 2 handy glass traps (including with delivery)
- Compact type cold trap with lower noise
- Handy with maintaining compressor with detachable front cover construct and good efficiency
- Installing drain tap for an easier drain from bath
- Simple and intuitive user interface with graphic LCD display
- Temperature calibration function
- Automatic fault sensing system; bath itself can detect an unusual situation (patent registration)

Optional Accessory

Cat. No	Model	Description
B04-01-A30	GCT01	Spare Glass Trap
B04-01-A40	GCT02	Spare Rubber Gasket



Drain



Glass Trap installed



Glass Trap



Rubber Gasket

Cat. No.		B04-01-230	B04-01-240
Model		CTB40	CTB80
Capacity		4.2 L	
Controller	Control	Digital Control	
	Resolution	0.1°C	
	Timer	Run start / Wait start (99 hr 59 min)	
Temperature	Range	Down to -40°C	Down to -70°C
	Accuracy	± 0.3°C	
Size	Interior	Ø210×h220 mm	
	Exterior	w340×d460×h640 mm	w450×d610×h750 mm
Material	Interior	Stainless Steel 304	
	Exterior	Powder Coated Steel	
	Cover	PMMA	
	Gasket	Silicon Rubber	
Electric Supply	Power	1 Phase, 220 Vac, 60 Hz	
	Max Consumption	400 W (1.9 A)	800 W (3.7 A)
	Power Line	Standard Plug	
Other	Drain	1/4" Hose Nipple Male	
	Caster	Leveling Caster	
Safety		Over Current Protection, Automatic Fault Sensing System	



Drain



Bath Cover



Rubber Gasket

Vacuum Cold Trap Bath

Cat. No.	Model	Capacity	Temp. Range
B04-01-310	VCT42	4.2 L	Down to -40°C
B04-01-320	VCT85		Down to -70°C

- To condensate of harmfulness substance or fume from the vacuum line
- No heating medium oil is necessary for eliquating the solvent by a direct cooling method using a cooling coil
- Convenient for use when the amount of trapping substance is large
- Unable temperature control
- Compact low-noise type cold trap bath
- Handy with maintaining compressor with detachable front cover construct and good efficiency.
- Installing drain tap for an easier drain from bath
- Simple and intuitive user interface with graphic LCD display
- Temperature calibration function
- Automatic fault sensing system; bath itself can detect an unusual situation (patent registration)

Optional Accessory

Cat. No.	Model	Description
B04-01-A40	GCT02	Spare Rubber Gasket

Cat. No.		B04-01-310	B04-01-320
Model		VCT42	VCT85
Capacity		4.2 L	
Controller	Control	Digital Control	
	Resolution	0.1°C	
	Timer	Run start / Wait start (99 hr 59 min)	
Temperature	Range	Down to -40°C	Down to -70°C
	Accuracy	±0.3°C	
Size	Interior	Ø210×h220 mm	
	Exterior	w340×d460×h640 mm	w450×d610×h750 mm
Material	Interior	Stainless Steel 304	
	Exterior	Powder Coated Steel	
	Cover	304 Stainless Steel	
	Gasket	Sillicon Rubber	
Electric Supply	Power	1 Phase, 220 Vac, 60 Hz	
	Max Consumption	400 W (1.9 A)	800 W (3.7 A)
	Power Line	Standard Plug	
Other	Drain	1/4" Hose Nipple Male	
	Caster	Leveling Caster (10 mm)	
Safety		Over Current Protection, Automatical Fault Sensing System	

TEST CHAMBER

Constant Temperature Chamber

Temp & Humi Chamber

Table Top Temp & Humi Chamber



Product	Constant Temperature Chamber	Temp & Humi Chamber	Table Top Temp & Humi Chamber
Model	LI-CTCxxxP	LH-TCxxx	LH-TPxxx
Capacity (L)	150, 250, 490	150, 250	35, 65
Temp. range (°C)	-40 ~ 180	0~150 / -20 ~ 150 / -40 ~ 150	-20 ~ 150
Temp. unifomity (°C)	±0.9 ~ ±1.9	±1.2 ~ ±1.5	±0.9 ~ ±1.0
Humidity range (%RH)	-	20 ~ 95	20 ~ 95
Program function	O	O	O
PC interface	O	O	O
Over temp. limit	O	O	O
Door open alarm	O	O	O
Low water alarm	-	O	O



Constant Temperature Chamber

Cat. No.	Model	Capacity	Temp. Range
C07-02-300	LI-CTC154P	150 L	-40 ~ +180 °C
C07-02-315	LI-CTC254P	250 L	
C07-02-320	LI-CTC494P	490 L	

- Programed touch screen controller
- Fast heating and cooling speed. Suitable for temperature and environment tests
- Available to set program of Max 120 Patterns / 1200 Segments
- Displaying temperature and humidity during operation
- Support external memory slot for SD card
- Provide cable port to give convenient test environment
- Pair Glass and LED Lamp applied for observation inside
- Fan stopping function with the door open minimizing temperature and humidity change, and considering user safety
- Available to temperature check by installing recorder (optional)
- Alarm for temperature variation
- Power failure compensation function
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off circuit
- Available to equip sign tower lamp(Optional)
- Applied industrial plug, need to check before purchase

Optional Accessory

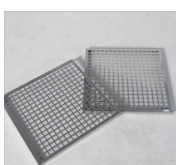
Cat. No.	Model	Description
C07-02-500	TRL-6	Paper Recorder
C07-02-341	LI-CTCSH01	Shelf for 150 L (LI-CTC154P)
C07-02-343	LI-CTCSH02	Shelf for 250 L (LI-CTC254P)
C07-02-344	LI-CTCSH04	Shelf for 490 L (LI-CTC494P)
O01-96-100	SI300	Sign Tower Lamp



Program temp. Controller



Cable Port



Wire Shelf



Paper Recorder



SI300

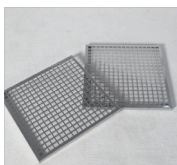
Cat. No.		C07-02-300	C07-02-315	C07-02-320
Model		LI-CTC154P	LI-CTC254P	LI-CTC494P
Capacity		150L	250L	490 L
Controller	Control	Program Touch Screen Control		
	Display	5.7" Color LCD		
	Resolution	0.01°C		
Temperature	Range	-40°C to +180°C		
	Accuracy at 50°C	±0.3 °C		
	Uniformity at 50°C	±0.82 °C	±1.13 °C	±1.88 °C
Size	Interior	w500×d500×h600 mm	w600×d600×h700 mm	w700×d700×h1000 mm
	Exterior	w720×d940×h1730 mm	w820×d1040×h1830 mm	w920×d1140×h2200 mm
Material	Interior	Stainless Steel 304		
	Exterior	Powder Coated Steel		
Electric Supply	Power	1 Phase, 220 Vac, 60 Hz		3 Phase, 380 Vac, 60 Hz
	Max Consumption	3 kW (13.6A)	4.3 kW (19.5 A)	7.3 kW (11.1 A)
	Power Line	Industrial Plug		
Other	Plate Shelf	SUS304 Punching Plate Shelves / 2ea		3ea
	Cable Port	Φ50 mm x 1ea		
	Caster	Leveling Caster		
Safety		Over Temp. & Current Protection, Emergency switch		



Program temp. Controller



Cable Port



Wire Shelf



Paper Recorder



SI300

Temp & Humi Chamber, 150L

Cat. No.	Model	Capacity	Temp. Range
C07-02-110	LH-TC150	150 L	0 ~ 150 °C
C07-02-120	LH-TC152		-20 ~ 150 °C
C07-02-130	LH-TC154		-40 ~ 150 °C

- Programed touch screen controller
- Available to set program of Max 120 Patterns / 1200 Segments
- Displaying temperature and humidity during operation
- Support external memory slot for SD card
- Provide a cable port to give a convenient test environment
- Small water consumption with condensing and reusing steam for humidity control
- Available auto water supplying with connecting water supplying line
- No temperature changes by the humidifying heater
- Fan stopping function with the door open minimizing temperature and humidity change, and considering user safety
- Pair Glass and LED Lamp applied for observation inside
- Available to temperature check by installing a recorder (optional)
- Alarm for temperature variation
- Power failure compensation function
- Auto-tuning and temperature calibration functions
- Low water alarm for heater's overheating avoiding due to lack of liquid inside a bath
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off circuit
- Available to equip sign tower lamp(Optional)
- Applied industrial plug, need to check before purchase

Optional Accessory

Cat. No.	Model	Description
C07-02-500	TRL-6	Paper Recorder
C07-02-201	LH-TCSH01	Shelf for 150 L
O01-96-100	SI300	Sign Tower Lamp

Cat. No.		C07-02-110		C07-02-120		C07-02-130	
Model		LH-TC150		LH-TC152		LH-TC154	
Capacity		150 L					
Controller	Control	Program Touch Screen Control					
	Display	5.7" TFT LCD					
	Temp. Resolution	0.01 °C					
	Humi. Resolution	0.1% RH					
Temperature	Range	0°C to +150°C		-20°C to +150°C		-40°C to +150°C	
	Accuracy at 50°C	±0.3 °C					
	Uniformity at 50°C	±1.25 °C		±1.25 °C		±1.89 °C	
Humidity	Range	20 ~ 95% RH					
	Accuracy at 60%RH	2.0% RH					
	Uniformity at 60%RH	±3.0% RH		±3.0% RH		±3.4% RH	
Size	Interior	w500×d500×h600 mm					
	Exterior	w970×d930×h1460 mm				w1010×d950×h1685 mm	
Material	Interior	Stainless Steel 304					
	Exterior	Powder Coated Steel					
Electric Supply	Power	1 Phase, 220 Vac, 60 Hz					
	Heater(TEMP)	1.2kW(1ea)					
	Heater(HUMI)	1.2kW(1ea)					
	Max Consumption	1/3hp(1ea)		1/3hp(1ea), 3/4hp(1ea)		1/3hp(1ea), 3/4hp(2ea)	
	Other Consumption	300W					
	Power Line	Standard Plug					
Other	Plate Shelf	SUS304 Punching Plate Shelves / 2ea					
	Cable Port	Ø50 mm×1ea					
Safety		Over Temp. & Current Protection, Emergency switch					



Temp & Humi Chamber, 250L

Cat. No.	Model	Capacity	Temp. Range
C07-02-140	LH-TC250	250 L	0 ~ 150 °C
C07-02-150	LH-TC252		-20 ~ 150 °C
C07-02-160	LH-TC254		-40 ~ 150 °C

- Programed touch screen controller
- Available to set program of Max 120 Patterns / 1200 Segments
- Displaying temperature and humidity during operation
- Support external memory slot for SD card
- Provide a cable port to give a convenient test environment
- Small water consumption with condensing and reusing steam for humidity control
- Available auto water supplying with connecting water supplying line
- No temperature changes by the humidifying heater
- Fan stopping function with the door open minimizing temperature and humidity change, and considering user safety
- Pair Glass and LED Lamp applied for observation inside
- Available to temperature check by installing a recorder (optional)
- Alarm for temperature variation
- Power failure compensation function
- Auto-tuning and temperature calibration functions
- Low water alarm for heater's overheating avoiding due to lack of liquid inside a bath
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off circuit
- Available to equip sign tower lamp(Optional)
- Applied industrial plug, need to check before purchase

Optional Accessory

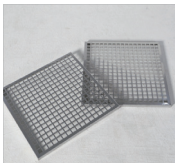
Cat. No.	Model	Description
C07-02-500	TRL-6	Paper Recorder
C07-02-205	LH-TCSH02	Shelf for 250 L
O01-96-100	SI300	Sign Tower Lamp



Program temp. Controller



Cable Port



Wire Shelf



Paper Recorder



SI300

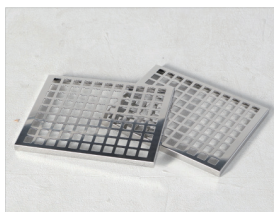
Cat. No		C07-02-140		C07-02-150		C07-02-160	
Model		LH-TC250		LH-TC252		LH-TC254	
Capacity		250 L					
Controller	Control	Program Touch Screen Control					
	Display	5.7" TFT LCD					
	Temp. Resolution	0.01 °C					
	Humi. Resolution	0.1% RH					
Temperature	Range	0°C to +150°C		-20°C to +150°C		-40°C to +150°C	
	Accuracy at 50°C	±0.3 °C					
	Uniformity at 50°C	±1.3°C					
Humidity	Range	20 ~ 95% RH					
	Accuracy at 60%RH	2.0% RH					
	Uniformity at 60%RH	±3.0% RH		±3.0% RH		±3.4% RH	
Size	Interior	w600×d600×h700 mm					
	Exterior	w1070×d1030×h1645 mm				w1110×d1050×h1785 mm	
Material	Interior	Stainless Steel 304					
	Exterior	Powder Coated Steel					
Electric Supply	Power	1 Phase, 220 Vac, 60 Hz					
	Heater(TEMP)	1.5kW(1ea)					
	Heater(HUMI)	1.5kW(1ea)					
	Max Consumption	1/2hp(1ea)		1/2hp(1ea), 1hp(1ea)		1/2hp(1ea), 1hp(2ea)	
	Other Consumption	300W					
	Power Line	Industrial Plug					
Other	Wire Shelf	SUS304 Punching Plate Shelves / 2ea					
	Cable Port	Ø50 mm×1ea					
Safety		Over Temp. & Current Protection, Emergency switch					



Program temp. Controller



Water in & Drain Port



Wire Shelf



Table for LHTB-35, 65

Table Top Temp & Humi Chamber

Cat. No.	Model	Capacity	Temp. Range
C07-02-180	LH-TP35	35 L	-20 ~ 150 °C
C07-02-185	LH-TP65	65 L	

- Excellent Compact size for limited space
- Provide a silent lab environment & Suitable for small test specimens
- No temperature changes by the humidifying heater
- Program Touch Screen Controller
- Available to set Max 120 Patterns / 1200 segments
- Temperature while driving/humidity graph displayed
- Support external memory slot for SD card
- Provide a convenient test environment, cable port provided as a standard
- Reduce water consumption by recycling the steam for humidity control
- Fan stopping function with the door open for minimizing temperature change(considering the safety of the operator)
- Temperature check available by installing recorder (option)
- Temperature deviation alarm function
- Auto tuning and temperature calibration function installed
- Power failure compensation function
- Bottom table production available upon request (option)
- Low water alarm, prevent heater overheating due to water shortages
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit

Optional Accessory

Cat. No	Model	Description
C07-02-230	LHTB-35	Table for LH-TP35
C07-02-233	LHTB-65	Table for LH-TP65
C07-02-193	LH-TPSH01	Shelf for 35 L (LH-TP35)
C07-02-195	LH-TPSH02	Shelf for 65 L (LH-TP65)
C07-02-640	LWP-2PUT	Water Pump for Temp. & Humidity Chamber
O01-96-100	SI300	Sign Tower Lamp
C07-02-510	TR2002	Compact Paper Recorder

Cat. No		C07-02-180	C07-02-185
Model		LH-TP35	LH-TP65
Capacity		35 L	65 L
Controller	Control	Program Touch Screen Control	
	Display	3.7" TFT LCD	
	Temp. Resolution	0.01 °C	
	Humi. Resolution	0.1% RH	
Temperature	Range	-20°C to +150°C	
	Accuracy at 50°C	±0.3°C	
	Uniformity at 50°C	±0.9 °C	
Humidity	Range	20 ~ 95% RH	
	Accuracy 70%RH	±1.0% RH	
	Uniformity 70%RH	±1.5% RH	±1.8% RH
Size	Interior	w370×d300×h350 mm	w420×d350×h450 mm
	Exterior	w550×d940×h940 mm	w600×d990×h1040 mm
Material	Interior	Stainless Steel 304	
	Exterior	Powder Coated Steel	
Electric Supply	Power	1 Phase / 220VAC / 60Hz	
	Max Consumption	2.1 kW (9.6 A)	2.6 kW (10.8 A)
	Power Line	Standard Plug	
Other	Plate Shelf	SUS304 Punching Plate Shelves / 2 ea	
	Cable Port	Φ50 mm × 1ea	
	Caster	Leveling Caster	
Safety		Over Temp. & Current Protection, Emergency switch	

CENTRIFUGE

Micro Centrifuge, LK Lab®



Product	Centrifuge
Model	MCF-6
Max. Speed	6200 rpm (Not Adjustable)
Max. Rcf	1800×g
Rotor	Circular Angle Rotor, Strip Rotor

COUNTER

LED Digital Colony Counter



Product	LED Digital Colony Counter
Model	CC-01
Capacity	0 ~ 999
Display	Digital LED Display
Petri Dish Holder	100 ~ 150 mm
Illumination	9W LED Lamp

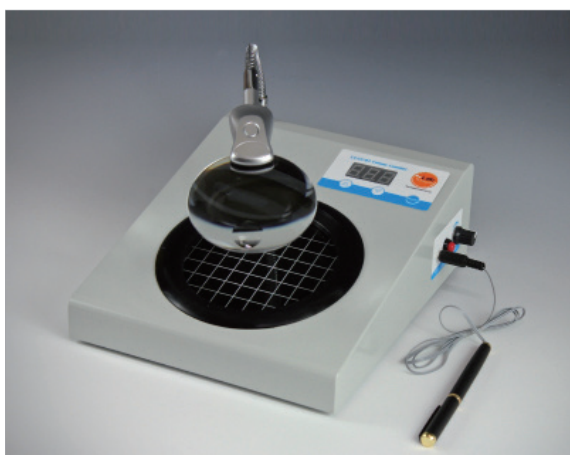


Micro Centrifuge, LK Lab®

Cat. No	Model	Max. Speed	Max. Rcf
C05-06-011	MCF-6	6200 rpm	1800×g

- Fixed speed Mini Centrifuge at up to 6200 rpm
- By closing and opening the lid, turn the device on/off
- Manufactured with rubber floor with center of gravity at the bottom
- No movement when operating, minimizing vibration and noise
- Component Rotor
 - Circular Angle Rotor : For 8×1.5/2.0 ml Tube, For Each 8ea×0.2/0.5 ml Tube Adapter
 - Strip Rotor : For 32×0.2 ml PCR Tube or 4×0.2 ml PCR 8-Strip

Cat. No.	C05-06-011
Model	MCF-6
Max. Speed / RCF	6200 rpm (Not Adjustable) / 1800×g
Component Rotor	Circular Angle Rotor, Strip Rotor
Run Time	Continuous Operation
Driving Motor	DC Motor
Size / Weight	w155×d183×h125 mm, 1.34 kg
Material	PC Lid, ABS Body & Rotor
Power	230V, 50/60 Hz, 8 W



LED Digital Colony Counter

Cat. No	Model	Description
C23-180-201	CC-01	Colony Counter Set

- Adjustable LED brightness and lens angle
- Beep sounds at the same time as counter to avoid incorrect coefficients
- Black/White background for easy counting
- Field of use : cultured E. coli and general bacteria, physiological research, hospitals, clinical tests, etc
- Component : Main body, Magnifying Lens, Counter Pen

Cat. No.	C23-180-201
Model	CC-01
Capacity	0 ~ 999
Display	Digital LED Display
Petri Dish Holder	100 ~ 150 mm
Reset Button	Yes
Illumination	9W LED Lamp
Size	w255×d210×h160 mm
Mode of Counting	Manual Push Button Counting, Marking Pen Probing
Power	220 V, 50/60 Hz

FURNACE

Muffle Furnace (PID-type)

Muffle Furnace (Program-type)

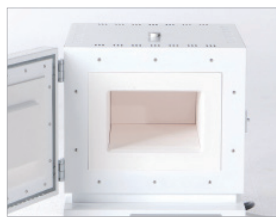
Tube Furnace, Program Control



Product	Muffle Furnace (PID-type)	Muffle Furnace (Program-type)	Tube Furnace, Program Control
Model	LF-MSxxx	LF-MSxxxP	LF-GTxxxx
Capacity	3, 4.5, 12, 14, 27 L	3, 4.5, 12, 14, 27 L	Φ60mm, L300/L600 mm Φ100mm, L300/L600 mm
Temp. range (°C)	Max. 1100 °C	Max. 1100 °C	Max. 1000 °C
Internal material	Ceramic fiber board	Ceramic fiber board	Ceramic fiber board
Program function	-	O	O
Gas Atmosphere	-	-	O
PC interface	O	O	O



Industrial Plug



Internal image



Vent hole



Safety



High Temp. Glove

Muffle Furnace

Cat. No.	Model	Capacity	Control
F08-02-110	LF-MS230	3 L	PID Control
F08-02-120	LF-MS350	4.5 L	
F08-02-130	LF-MS513	12 L	
F08-02-133	LF-MS550	14 L	
F08-02-135	LF-MS627	27 L	

- Suitable for researching with drying, plasticity, batch, measuring, new material, and ceramic sintering
- Preventing damage to the heater from the contact of vapor and corrosive gas by installing a fireproof molded heating element
- Installed duct hole for exhaust gas and vapor inside
- Simple and intuitive user interface with graphic LCD
- Installed port for RS485 for PC communication
- Auto tuning and temperature calibration available
- Two types of timer functions installed (start at the same time as driving or start after reaching target temperature)
- Automatic fault sensing system (by itself can detect an unusual situation)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit
- Digital over-temperature safety device
- Industrial plug applied for models LF-MS513, LF-MS550, LF-MS627 – Need to check before purchase

Optional Accessory

Cat. No.	Model	Description
F08-101-980	41103	High Temp. Glove Max. 600°C
F08-101-990	41101	High Temp. Glove Max. 900°C

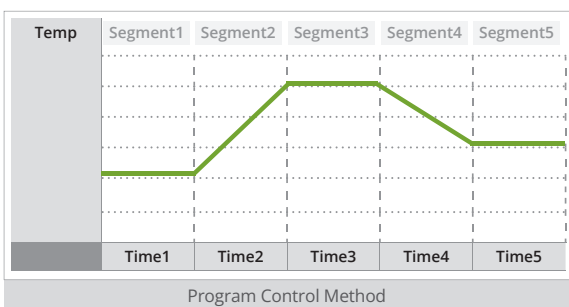
Cat. No.		F08-02-110	F08-02-120	F08-02-130	F08-02-133	F08-02-135
Model		LF-MS230	LF-MS350	LF-MS513	LF-MS550	LF-MS627
Capacity		3 L	4.5 L	12 L	14 L	27 L
Controller	Control	PID control, Auto-tuning				
	Display	GLCD (Graphic LCD)				
	Resolution	1°C				
	Timer	Run start / Wait start (99 hr 59 min)				
Temperature	Range	Max. 1100°C (Continuous Using Temperature 1000 °C)				
Size (mm)	Internal	w130×d250×h90	w150×d300×h100	w200×d300×h200	w250×d350×h160	w300×d300×h300
	External	w380×d470×h575	w390×d520×h585	w450×d520×h690	w500×d570×h650	w550×d540×h785
	Duct	Ø12				
Material	Internal	Ceramic Fiber Board				
	External	Powder Coated Steel				
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz				
	Max Consumption	1.8 kW (8.1 A)	2.8 kW (12.8 A)	4.5 kW (21 A)	5 kW (22.8 A)	6 kW (27.2 A)
	Power Line	Standard Plug			Industrial plug	
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System				



Industrial Plug



Internal image



High Temp. Glove

Muffle Furnace, Program Type

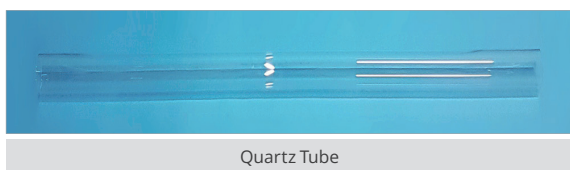
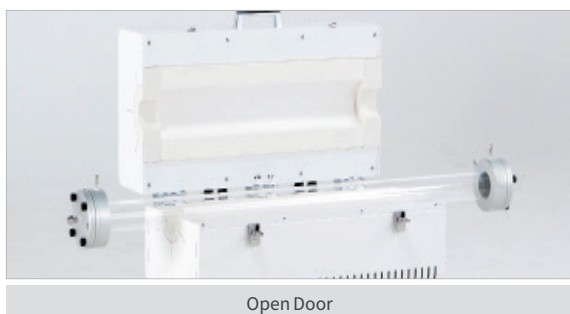
Cat. No.	Model	Capacity	Control
F08-02-140	LF-MS230P	3 L	Program Control
F08-02-150	LF-MS350P	4.5 L	
F08-02-160	LF-MS513P	12 L	
F08-02-173	LF-MS550P	14 L	
F08-02-175	LF-MS627P	27 L	

- Suitable for drying, firing, ash measurement, new materials, and ceramic sintering experiments
- Use of special fireproof molding heaters to prevent damage to the heater by blocking contact with steam and corrosive gases etc.
- Default installation of duct holes for internal steam and gas exhaust
- Graphic Display, Simple, and Intuitive Controller Operation
- Provides RS-485 PC communication capabilities (Download the program from our website)
- Auto-tuning and temperature calibration functions
- Two types of timers. Start at the same time as the drive, start after reaching the target temperature
- Automatic Fault Sensing System - Device Monitors Abnormalities on its own (Patent registration)
- Double Over Temperature Safety Unit, Primary Controller Over Temperature Alarm, and Secondary Over Temperature Blocking Circuit
- Digital overheating shut-off device
- Program Control
 - Store and select multiple stages of temperature rise and hold times to operate
 - Enables temperature overshoot suppression and precise control
 - 2 Patterns, 18 Segments of programs can be set
- * Industrial plug applied for models LF-MS513, LF-MS550, and LF-MS627 - Need to check before purchase

Optional Accessory

Cat. No.	Model	Description
F08-101-980	41103	High Temp. Glove Max. 600°C
F08-101-990	41101	High Temp. Glove Max. 900°C

Cat. No.		F08-02-140	F08-02-150	F08-02-160	F08-02-173	F08-02-175
Model		LF-MS230P	LF-MS350P	LF-MS513P	LF-MS550P	LF-MS627P
Capacity		3 L	4.5 L	12 L	14 L	27 L
Controller	Control	Program Control				
	Display	GLCD (Graphic LCD)				
	Program	2 Pattern 18 Segment				
	Resolution	1°C				
Temperature	Range	Max. 1100°C (Continuous Using Temperature 1000 °C)				
Size (mm)	Internal	w130×d250×h90	w150×d300×h100	w200×d300×h200	w250×d350×h160	w300×d300×h300
	External	w380×d470×h575	w390×d520×h585	w450×d520×h690	w500×d570×h650	w550×d540×h785
	Duct	Ø12				
Material	Internal	Ceramic Fiber Board				
	External	Powder Coated Steel				
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz				
	Max Consumption	1.8 kW (8.1 A)	2.8 kW (12.8 A)	4.5 kW (21 A)	5 kW (22.8 A)	6 kW (27.2 A)
	Power Line	Standard Plug			Industrial plug	
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System				



Tube Furnace, Program Control

Cat. No.	Model	Tube Size	Heating Zone
F08-02-280	LF-GT630	Ø 60mm	300 mm
F08-02-285	LF-GT660		600 mm
F08-02-290	LF-GT1030	Ø 100mm	300 mm
F08-02-295	LF-GT1060		600 mm

- Use for heating a sample at a high temperature by forming a gas atmosphere
- Program control
 - Store several steps of increasing temperature and maintaining times and choose it to run
 - Available precise controlling and inhibiting temperature overshoot
 - Available to set 2 patterns / 18 segment
- Convenient for tube installation by retractable between upper and lower parts
- Auto tuning, and temperature calibration available
- Installed port for RS485 for PC communication

Tube

Cat. No.	Model	Material	Size, od x L
T16-45-228	AT-060	Alumina	Ø60 × L1000mm
T16-45-270	AT-100		Ø100 × L1000mm
Q01-60-288	QTS1048	Quartz	Ø60 × L1200mm
Q01-60-312	QTS1052		Ø100 × L1200mm

- Please contact us if you need other sizes

Gas Mask

Cat. No.	Model	Tube Size
F08-02-810	TFGM060	for Ø60 mm Tube
F08-02-825	TFGM100	for Ø100 mm Tube

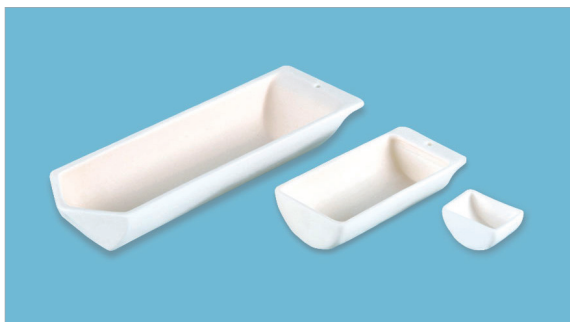
- Install it on both sides of the tube to seal the internal of the tube
- Gas can be injected into the tube via the gas injection port to create a gas atmosphere
- The vacuum pump removes internal air to create a vacuum atmosphere
- LF-GT660 and LF-GT1060 models require coolant circulation for gas mask protection when running at high temperature
- Gas filling port: 1/4 tubing lock, coolant filling port: 1/8 hose nipple
- Avoid sagging both ends of the tube due to the weight of the gas mask during a high-temperature drive

Tube Bracket

Cat. No.	Model	Tube Size	Model
F08-02-878	TFBK060	for Ø60 mm	LF-GT6XX
F08-02-888	TFBK100	for Ø100 mm	LF-GT10XX

- Avoid sagging both ends of the tube due to the weight of the gas mask during a high-temperature drive

Cat. No.		F08-02-280	F08-02-285	F08-02-290	F08-02-295
Model		LF-GT630	LF-GT660	LF-GT1030	LF-GT1060
Heat Zone		300mm	600mm	300mm	600mm
Tube Size		Ø60mm		Ø100mm	
Controller	Control	Program Control			
	Display	GLCD (Graphic LCD)			
	Program	2 Pattern 18 Segment			
Temperature		Max. 1000°C			
External Dimension (mm)		w400×d400×h580	w700×d400×h580	w400×d440×h620	w700×d440×h620
Material	Internal	Ceramic Fiber Board			
	External	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz			
	Max Consumption	1.8 kW (8.2 A)	2.5 kW (11.4 A)	2.2 kW (10 A)	3.2 kW (14.7 A)
	Power Line	Standard Plug			
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System			



Alumina Boat

- Using temperature: 1,600°C (Max. Temp: 1,750°C)
- As excellent chemical resistance, having a high resistivity to chemical erosion
- Hardly unaffected by acid, alkali, and organic solvent
- Having 15~20 times high Wear-resistance compared to general metal
- emiconductor, LCD, and general industry use

General Type

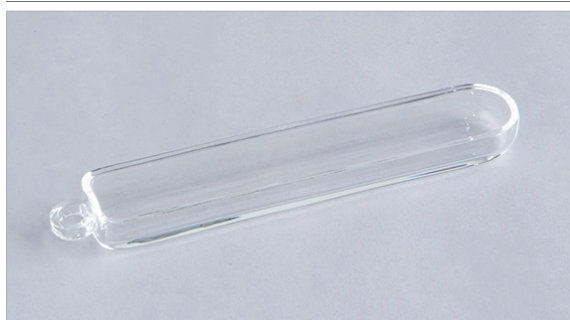
Cat. No	Model	Size
B07-110-010	LCB003	w10×d50×h9 mm
B07-110-020	LCB005	w13×d70×h10 mm
B07-110-040	LCB015	w20×d100×h13 mm
B07-110-070	LCB050	w40×d80×h32 mm
B07-110-075	LCB055	w33×d113×h20 mm
B07-110-080	LCB060	w30×d136×h21 mm
B07-110-090	LCB075	w44×d160×h31 mm

U-Shape Type

Cat. No	Model	Size
B07-110-110	ULCB003	w24×d32×h17 mm
B07-110-120	ULCB005	w45×d90×h22 mm
B07-110-140	ULCB015	w60×d180×h30 mm

Cover for U-Shape Boat

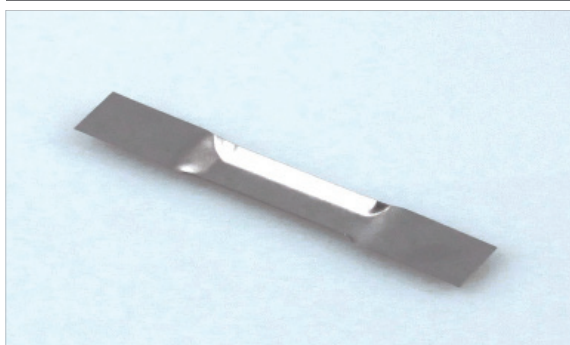
Cat. No	Model	Description
B07-110-210	ULCB003C	Cover for ULCB003
B07-110-220	ULCB005C	Cover for ULCB005
B07-110-230	ULCB015C	Cover for ULCB015



Quartz Boat

Cat. No	Model	capacity	Size
B07-60-009	LQB102	2ml	w15×d48×h8 mm
B07-60-018	LQB103	3ml	w16×d77×h10 mm
B07-60-027	LQB104	5ml	w20×d77×h11 mm
B07-60-036	LQB108	8ml	w20×d92×h11 mm
B07-60-045	LQB110	10ml	w20×d102×h11 mm
B07-60-053	LQB112	15ml	w27×d105×h11 mm

- Using temperature: 1,100°C (Max. Temp: 1,250°C)
- Using at dissolve nonferrous metal and high-temperature substance



Tungsten Boat

Cat. No	Model	Height	Width	Size
B07-142-100	LTB201	2.0 mm	8 mm	0.2 t
B07-142-110	LTB202	2.2 mm	10 mm	
B07-142-120	LTB203	3.0 mm	15 mm	
B07-142-130	LTB204	3.5 mm	20 mm	
B07-142-140	LTB205	4.0 mm	25 mm	
B07-142-150	LTB301	2.0 mm	8 mm	0.3 t
B07-142-160	LTB302	2.2 mm	10 mm	
B07-142-170	LTB303	3.0 mm	15 mm	
B07-142-180	LTB304	4.0 mm	20 mm	
B07-142-190	LTB305	4.5 mm	25 mm	
B07-142-200	LTB306	5.0 mm	30 mm	0.5 t
B07-142-210	LTB401	1.0 mm	8 mm	
B07-142-220	LTB402	2.2 mm	10 mm	
B07-142-230	LTB403	3.5 mm	15 mm	
B07-142-240	LTB404	4.0 mm	20 mm	
B07-142-250	LTB405	5.0 mm	25 mm	
B07-142-260	LTB406	5.3 mm	30 mm	

- Over-all length 100mm, intaglio length 50mm



Alumina Crucible

- Alumina(Al_2O_3) 99.8%
- Heat resistance temperature: 1,700°C
- The highest chemical resistance, heat resistance, and wear resistance

Cat. No	Model	capacity	Size
C24-45-714	LAC1926S	5 ml	Ø19×h26 mm
C24-45-721	LAC2929S	10 ml	Ø29×h30 mm
C24-45-735	LAC4030S	20 ml	Ø39×h29 mm
C24-45-742	LAC4637S	30 ml	Ø52×h39 mm
C24-45-756	LAC5745S	50 ml	Ø61×h49 mm
C24-45-763	LAC7055S	100 ml	Ø72×h58 mm
C24-45-770	LAC7658S	150 ml	Ø81×h67 mm
C24-45-777	LAC8164S	200 ml	Ø86×h70 mm
C24-45-784	LAC8574S	250 ml	Ø92×h75 mm
C24-45-791	LAC9280S	300 ml	Ø97×h76 mm
C24-45-798	LAC1110S	500 ml	Ø110×h105 mm
C24-45-805	LAC1412S	1 L	Ø140×h117 mm

Cover Only

Cat. No	Model	Description
C24-45-514	LAC1926C	5 ml
C24-45-521	LAC2929C	10 ml
C24-45-535	LAC4030C	20 ml
C24-45-542	LAC4637C	30 ml
C24-45-556	LAC5745C	50 ml
C24-45-563	LAC7055C	100 ml
C24-45-570	LAC7658C	150 ml
C24-45-577	LAC8164C	200 ml
C24-45-584	LAC8574C	250 ml
C24-45-591	LAC9280C	300 ml
C24-45-598	LAC1110C	500 ml
C24-45-605	LAC1412C	1 L

Body Only

Cat. No	Model	capacity
C24-45-014	LAC1926	5 ml
C24-45-021	LAC2929	10 ml
C24-45-035	LAC4030	20 ml
C24-45-042	LAC4637	30 ml
C24-45-056	LAC5745	50 ml
C24-45-063	LAC7055	100 ml
C24-45-070	LAC7658	150 ml
C24-45-077	LAC8164	200 ml
C24-45-084	LAC8574	250 ml
C24-45-091	LAC9280	300 ml
C24-45-098	LAC1110	500 ml
C24-45-105	LAC1412	1 L



Alumina Cylindrical Crucible

- Alumina(Al_2O_3) 99.8%
- Heat resistance temperature: 1,700°C
- The highest chemical resistance, heat resistance, and wear resistance

Body with Cover Set

Cat. No	Model	capacity	Size
C24-45-815	ACC001S	1 ml	Φ13×h21.5 mm
C24-45-820	ACC002S	2 ml	Φ13×h31.5 mm
C24-45-825	ACC028S	28 ml	Φ36×h48.5 mm
C24-45-830	ACC060S	60 ml	Φ44×h63.5 mm
C24-45-835	ACC170S	170 ml	Φ56×h98.5 mm
C24-45-840	ACC340S	340 ml	Φ72×h108.5 mm
C24-45-845	ACC400S	400 ml	Φ76×h113.5 mm

Cover Only

Cat. No	Model	capacity	Size
C24-45-905	ACC012C	1 ml, 2 ml	Φ13 mm
C24-45-915	ACC028C	28 ml	Φ36 mm
C24-45-920	ACC060C	60 ml	Φ44 mm
C24-45-925	ACC170C	170 ml	Φ56 mm
C24-45-930	ACC340C	340 ml	Φ72 mm
C24-45-935	ACC400C	400 ml	Φ76 mm

Body Only

Cat. No	Model	capacity	Size
C24-45-205	ACC001B	1 ml	Φ13×h20 mm
C24-45-210	ACC002B	2 ml	Φ13×h30 mm
C24-45-215	ACC028B	28 ml	Φ36×h45 mm
C24-45-220	ACC060B	60 ml	Φ44×h60 mm
C24-45-225	ACC170B	170 ml	Φ56×h95 mm
C24-45-230	ACC340B	340 ml	Φ72×h105 mm
C24-45-235	ACC400B	400 ml	Φ76×h110 mm



Quartz Crucible

Cat. No	Model	capacity	Size
C24-60-050	QC0015	15 ml	Ø38, Ø25×h28 mm
C24-60-150	QC0030	30 ml	Ø47, Ø25×h36 mm
C24-60-200	QC0050	50 ml	Ø54, Ø34×h42 mm
C24-60-250	QC0100	100 ml	Ø70, Ø34×h55 mm

- Heat resistance temperature: 1,250°C,
working temperature: 1,100°C
- Included lid



Zirconia Crucible SET

Cat. No	Model	capacity	Size
C24-45-941	LZC039029S	20ml	Ø39 x H33 mm
C24-45-943	LZC049036S	30ml	Ø49 x H39 mm
C24-45-945	LZC057044S	50ml	Ø57 x H47 mm
C24-45-947	LZC072059S	100ml	Ø72 x H62 mm
C24-45-949	LZC081065S	150ml	Ø81 x H68 mm
C24-45-951	LZC090069S	250ml	Ø90 x H73 mm
C24-45-953	LZC110101S	500ml	Ø110 x H105 mm

- Zirconium oxide(ZrO_2) 94.2%
- Heat resistance temperature: 1,700°C
- Under 1°C/min Heating and Cooling essential condition
- Suitable for high temperatures and chemical resistance environment



Alumina Dish

- Alumina(Al_2O_3) 99.7%
- Max. Temp. : 1,800°C

Alumina Dish, Round

Cat. No	Model	capacity	Size
D02-110-007	AD0005	5 ml	Ø36×h6 mm
D02-110-014	AD0010	10 ml	Ø42×h10 mm
D02-110-021	AD0020	20 ml	Ø46×h12 mm
D02-110-028	AD0030	30 ml	Ø51×h12 mm
D02-110-035	AD0050	50 ml	Ø61×h20 mm
D02-110-040	AD0080	80 ml	Ø66×h24 mm
D02-110-042	AD0100	100 ml	Ø76×h25 mm



Alumina Dish, Square

Cat. No	Model	Size
D02-110-049	ASC6050	w60×d60×h50 mm
D02-110-056	ASC9025	w90×d90×h25 mm
D02-110-063	ASC1030	w100×d100×h30 mm
D02-110-070	ASC1050	w100×d100×h50 mm
D02-110-077	ASC1360	w135×d135×h60 mm
D02-110-084	ASC1540	w155×d155×h40 mm
D02-110-091	ASC2055	w200×d100×h55 mm
D02-110-093	ASC2010	w200×d100×h100 mm



Alumina Dish, for square

Cat. No	Model	Size
D02-110-149	ASC6050C	Cover for ASC6050
D02-110-156	ASC9025C	Cover for ASC9025
D02-110-170	ASC1050C	Cover for ASC1030 & 1050
D02-110-177	ASC1360C	Cover for ASC1360
D02-110-184	ASC1540C	Cover for ASC1540
D02-110-193	ASC2010C	Cover for ASC2055 & 2010

FUME HOOD

Fume Hood

Table Top Fume Hood

Stainless Steel Fume Hood

Work-In Hood

Desktop Clean Hood

Ductless Fume Hood



Product	Fume Hood	Table Top Fume Hood	Stainless Steel Fume Hood
Model	FHB-xxxx	FHT-xxxx	FHxxxxSSS
External Width size (mm)	1200, 1500, 1800	1200, 1500, 1800	1200, 1500, 1800
Internal material	Phenol plate	Phenol plate	Stainless Steel 304
External material	Phenol plate	Phenol plate	Stainless Steel 304
Working plate material	Phenol plate	-	Stainless Steel 304
Air flow adjustment	0 ~ 2 m/s (Option)	-	-
Utility	Air cock, Gas cock, Water cock, 220V outlet	220V outlet	Air cock, Gas cock, Water cock, 220V outlet



Cabinet type

Exhaust type cabinet
(FH-CA900 + FH-CA600)

Support frame



Face velocity controller

Fume Hood

Cat. No.	Model	External Wide	Bottom Type
H02-26-030	FHB-1200	1200 mm	Frame Type
H02-26-060	FHB-1500	1500 mm	
H02-26-080	FHB-1800	1800 mm	
H02-26-035	FHD-1200	1200 mm	Cabinet Type
H02-26-065	FHD-1500	1500 mm	
H02-26-085	FHD-1800	1800 mm	

- Use for experiments where discharging of harmful gases occur
- Installed valve for water, gas, and air
- Available to add one extra valve among vacuum, gas, and air valve (option)
- Installed drainage of PVC material
- Installed 4 units 220V of rain proof type outlet (110V outlet available upon request)
- Available to add Internal blower on request (option)
- Door limit function: prevent to expose the harmful substances due to unexpected door position changes by stopping the hood door at the appropriate height
- Safety bumps on a working plate: preventing the spilled solvent from flowing to the outside
- Face velocity controller available (option)
 - Constantly controlling the Inhaled wind speed when the door opening height changes
 - Alarm occurs when wind speed drops below a reference value

Exhaust Cabinet

- Remove fumes from the stored specimen through a pipe on the rare of the cabinet connected to the fume hood exhaust
- Available to install only frame type
- Up to two can be used in combination depending on fume hood Size Example) 1500mm Hood: FH-CA600 + FH-CA900

Cat. No	Model	Description
H02-26-930	FH-CA600	600mm Exhaust Cabinet
H02-26-935	FH-CA900	900mm Exhaust Cabinet

Fume Hood Face Velocity Controller / Meter

- Constantly controlling the Inhaled wind speed when the door opening height changes
- Alarm occurs when wind speed drops below a reference value

Cat. No	Model	Description
H02-26-950	FH-VAV	Face Velocity Controller
H02-26-955	FH-ALM	Face Velocity Monitor Only

Support Frame

- Available to install the support frame to hang the laboratory equipment on the inside of Hume Hood
- Easy to install by screw type holder and excellent corrosion resistant by PP material
- Stainless steel rod and connection clamp set

Cat. No	Model	Description
H02-26-940	FH-SF12	Support Frame for 1200
H02-26-942	FH-SF15	Support Frame for 1500
H02-26-944	FH-SF18	Support Frame for 1800

Optional Accessory

Cat. No	Model	Description
H02-26-960	FH-AIRV	Air Valve Add
H02-26-963	FH-GASV	Gas Valve Add
H02-26-966	FH-VACV	Vacuum Valve Add
H02-26-825	FH-IF200	Internal Blower, ø250 (220V / 60Hz / 50W)

Continue to Fume Hood ...

Continue to Fume Hood ...

Cat. No.		H02-26-030 / H02-26-035	H02-26-060 / H02-26-065	H02-26-080 / H02-26-085
Model		FHB-1200 / FHD-1200	FHB-1500 / FHD-1500	FHB-1800 / FHD-1800
Material	Internal / External	Phenol plate		
	Working Plate	Phenol Plate 25T		
	Frame	Power Coated Aluminum		
	Door	Tempered Glass		
Size	Internal	w981×d642×h1143 mm	w1281×d642×h1143 mm	w1581×d642×h1143 mm
	External, Normal	w1200×d815×h2357 mm	w1500×d815×h2357 mm	w1800×d815×h2357 mm
Power outlet		220V x 4ea		
Valve		Gas, Air, Water 각 1개		
Lamp		LED x 1ea		LED x 2ea
Exhaust Volume (Door Full Open)		1100 cmh	1400 cmh	1700 cmh
Exhausted Hole Φ (mm)		250		
Power		1 Phase, 220Vac, 60Hz		
Door Open Height	Limit	500 mm		
	Max.	800 mm		



Table Top Fume Hood, New Type

Cat. No	Model	External Wide
H02-26-500	FHT-1200	1200 mm
H02-26-510	FHT-1500	1500 mm
H02-26-520	FHT-1800	1800 mm

- Use for experiments where discharging of harmful gases occur
- Can be installed on any stand to use conveniently
- Both sides have a transparent glass structure
- Installed circuit breaker applied IP55 waterproof cover
- Installed 4 units 220V of rain proof type outlet (110V outlet available upon request)
- Available to add internal blower (option)
- Door lock function: prevent to expose the harmful substance due to unexpected door position changes by stopping the hood door at the appropriate height
- Support frame – refer to the model on page

Cat. No.		H02-26-500	H02-26-510	H02-26-520
Model		FHT-1200	FHT-1500	FHT-1800
Material	Internal	Phenol Plate		
	External			
	Frame			
	Door			
Size	Internal	w981×d577×h1203 mm	w1281×d577×h1203 mm	w1581×d577×h1203 mm
	External, Normal / Max	w1200×d750×h1526 / h1726 mm	w1500×d750×h1526 / h1726 mm	w1800×d750×h1526 / h1726 mm
Power outlet		220V x 4ea		
Lamp		LED x 1ea		LED x 2ea
Exhaust Volume (Door Full Open)		1100 cmh	1400 cmh	1700 cmh
Exhausted Hole Φ (mm)		250		
Power		1 Phase, 220Vac, 60Hz		
Door Open Height	Limit	500 mm		
	Max.	800 mm		



Stainless Steel Chamber Hood

Cat. No	Model	External Wide
H02-26-550	FHC1500SSS	1500 mm
H02-26-580	FHC1800SSS	1800 mm
H02-26-610	FHC2100SSS	2100 mm

- Material : Stainless Steel 304
- Can be installed on any stand to use conveniently
- Size : d750×h1500 mm



Stainless Steel Fume Hood

Cat. No	Model	External Wide
H02-26-220	FH1200SSS	1200 mm
H02-26-250	FH1500SSS	1500 mm
H02-26-270	FH1800SSS	1800 mm

- Material : Stainless Steel 304
- Application for hazardous gas emissions from experiments
- Provides a variety of utilities including valves, drains, and outlets
- Explosives prevent an explosion by flammable gases
- Various exhaust systems can be selected
- IP44 grade plug is waterproof and safe from various pollutants

Optional Accessory

Cat. No	Model	Description
H02-26-825	FH-IF200	Internal Blower
H02-26-827	FH-ID200	Damper
H02-26-830	FH-FD200	Fire Damper
H02-26-940	FH-SF12	Support Frame for 1200, 304SS
H02-26-942	FH-SF15	Support Frame for 1500, 304SS
H02-26-944	FH-SF18	Support Frame for 1800, 304SS

Cat. No.	H02-26-220	H02-26-250	H02-26-270
Model	FH1200SSS	FH1500SSS	FH1800SSS
Material	Internal	Stainless Steel 304	
	External	Stainless Steel 304	
	Working Plate	Stainless Steel 304	
Size	Internal	w1010×d630×h1340 mm	w1310×d630×h1340 mm
	External	w1200×d740×h2350 mm	w1500×d740×h2350 mm
Utility	Gas valve, Air valve, Water valve, Sink, 220V outlet 4ea		
Lamp	LED 1ea		LED 2ea
Exhausted Hole	Φ250 mm (Able to change)		
Power	1 Phase, 220 Vac, 60 Hz		

HEATING BLOCK

Heating block (Basic)

Heating block (High temp.)



Product	Heating block (Basic)	Heating block (High Temp.)
Model	LI-HB0xx	LI-HB1xx
Block capa. (ea)	1, 2	1, 2
Temp. range (°C)	Ambient +10 ~ 200 °C	Ambient +10 ~ 300 °C
External sensor	O	O
PC interface	O	O



LI-HB011



LI-HB001



Controller



External Sensor



Support Kit

Heating Block

Cat. No.	Model	Range	Block
H04-91-001	LI-HB001	200°C	1 ea
H04-91-011	LI-HB011		2 ea
H04-91-030	LI-HB101	300°C	1 ea
H04-91-040	LI-HB111		2 ea

- Suitable for an experiment of drying, heating, evaporating, and incubating the sample
- Available of various sizes of heating blocks for various sizes of tubes, micro-tubes, test tubes, cuvettes and etc.
- Various block components fit to tube size for a test tube, micro tube, cuvette and etc.
- Simple and intuitive user interface with graphic LCD display
- Auto Tuning, and temperature calibration available
- 2 types of timer functions installed (start at the same time as driving or start after reaching target temperature)
- Available to directly control the sample temperature by an external sensor and support kit
- Automatic fault sensing system by itself can detect an unusual situation (Patent Registration)
- If needed, the program function can be added as an optional

Optional Accessory

Cat. No.	Model	Description
H03-03-205	SL-HSKIT	Support Kit
B04-91-472	ET102	External Sensor, K-type, Φ4×L300 mm

Cat. No.	H04-91-001	H04-91-011	H04-91-030	H04-91-040
Model	LI-HB001	LI-HB011	LI-HB101	LI-HB111
Block	1 ea	2 ea	1 ea	2 ea
Controller	Control / Display	PID control, Auto-tuning / GLCD (Graphic LCD)		
	Resolution	0.1°C		
Temperature	Range	Ambient +10 to 200°C		Ambient +10 to 300°C
	Uniformity at 37°C	±0.52°C	±0.66°C	±0.52°C
Size	Interior	w121 x d91 x h60 mm	w181 x d121 x h60 mm	w121 x d91 x h60 mm
	Exterior	w190×d230×h170 mm	w 250×d280×h170 mm	w235×d250×h170 mm
Material	Interior	Stainless Steel 304		
	Exterior	Powder Coated Steel		
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz		
	Max Consumption	250 W (1.2 A)	350 W (1.6 A)	600 W (2.7A)
	Power Line	Standard Plug		



LI-HB167(20)



LI-HB143(20)



LI-HB187(12)



LI-HB175(12)



LI-HB197(6)



LI-HB153(5)

Conical Bottom Centrifuge Tube Block

Cat. No.	Model	Tube Vol.	Hole Size	Hole
H04-91-151	LI-HB151	15 ml	Φ17.1×h44.5 mm	12 ea
H04-91-153	LI-HB153	30 ml	Φ29×h47.6 mm	5 ea

Microcentrifuge Tube Block

Cat. No.	Model	Tube Dia.	Hole Size	Hole
H04-91-141	LI-HB141	0.5 ml	Φ7.9×h27.6 mm	30 ea
H04-91-143	LI-HB143	1.5 ml	Φ11.5×h36.9 mm	20 ea
H04-91-145	LI-HB145	2.0 ml	Φ11.5×h38.1 mm	20 ea

Test Tube Block

Cat. No.	Model	Tube Dia.	Hole Size	Hole
H04-91-161	LI-HB161	6 mm	Φ6.5×h50 mm	30 ea
H04-91-163	LI-HB163	10 mm	Φ10.7×h50 mm	20 ea
H04-91-165	LI-HB165	12 mm	Φ12.7×h50 mm	20 ea
H04-91-167	LI-HB167	13 mm	Φ13.7×h50 mm	20 ea
H04-91-169	LI-HB169	15 mm	Φ15.7×h50 mm	12 ea
H04-91-171	LI-HB171	16 mm	Φ16.7×h50 mm	12 ea
H04-91-173	LI-HB173	18 mm	Φ18.7×h50 mm	12 ea
H04-91-175	LI-HB175	20 mm	Φ20.7×h50 mm	12 ea
H04-91-177	LI-HB177	25 mm	Φ25.7×h50 mm	6 ea

Vial Block

Cat. No.	Model	Tube Dia.	Hole Size	Hole
H04-91-181	LI-HB181	12 mm	Φ12.7×h30 mm	20 ea
H04-91-183	LI-HB183	15 mm	Φ15.8×h35 mm	20 ea
H04-91-185	LI-HB185	16 mm	Φ16.4×h45 mm	15 ea
H04-91-187	LI-HB187	17 mm	Φ17.8×h45 mm	12 ea
H04-91-189	LI-HB189	19 mm	Φ19.7×h45 mm	12 ea
H04-91-191	LI-HB191	21 mm	Φ21.7×h45 mm	9 ea
H04-91-193	LI-HB193	23 mm	Φ23.8×h45 mm	8 ea
H04-91-195	LI-HB195	25 mm	Φ25.8×h45 mm	8 ea
H04-91-197	LI-HB197	28 mm	Φ28.8×h45 mm	6 ea

HEATING MANTLE

Heating Mantle without Controller / Flexible Heating Mantle without Controller

Analog Heating Mantle / Digital Heating Mantle

Analog Stirring Heating Mantle / Digital Stirring Heating Mantle

Extraction Multi Heating Mantle, Analog / Extraction Multi Heating Mantle, Digital

Heating Tape / Stirring Multi Heating Mantle, Analog / Digital Temperature Indicator

Digital Temperature Controller / Programmable Temperature Controller / Analog Temperature / Controller

Thermocouple / Temperature Sensor for Digital Heating Mantle



Product	Heating Mantle w/o Controller	Flexible Heating Mantle w/o Controller	Analog Heating Mantle	Digital Heating Mantle	Analog Stirring Heating Mantle
Model	MS-Cxx	MS-Axx	MS-Exx	MS-DMxx	MS-Esxx
Controller	-	-	O	O	O
Temp. range (°C)	Max. 450°C	Max. 450°C	Max. 450°C	Max. 450°C	Max. 450°C
Timer	-	-	-	99hr 59min	-
Power	220V, 50/60 Hz	220V, 50/60 Hz	220V, 50/60 Hz	220V, 50/60 Hz	220V, 50/60 Hz

Product	Digital Stirring Heating Mantle	Extraction Multi Heating Mantle, Analog	Extraction Multi Heating Mantle, Digital	Stirring Multi Heating Mantle, Analog
Model	MS-DMSxx	MS-EAMxx	MS-EAMDxx	MS-EAMDSxx
Controller	O	O	O	O
Temp. range (°C)	Max. 450°C	Max. 450°C	Max. 450°C	Max. 450°C
Timer	99hr 59min	-	99hr 59min	-
Power	220V, 50/60 Hz	220V, 50/60 Hz	220V, 50/60 Hz	220V, 50/60 Hz



Heating Mantle without Controller

- Excellent heat transfer and heat generation by knitted with glass fiber for Heating Element
- External surface insulation for user safety by adopting Ceramic Fiber Insulation
 - Max. Temp: up to 450°C
- Have to use with an external controller (refer to 54 page)
- 220V (110V available on requested), 50/60Hz

For Flask

Cat. No	Model	capacity	Watt
H04-03-007	MS-C050	50 ml	80 W
H04-03-014	MS-C401	100 ml	80 W
H04-03-021	MS-C402	250 ml	150 W
H04-03-028	MS-C403	500 ml	260 W
H04-03-035	MS-C404	1 L	380 W
H04-03-042	MS-C405	2 L	500 W
H04-03-049	MS-C406	3 L	600 W
H04-03-056	MS-C407	5 L	800 W
H04-03-063	MS-C408	10 L	1.3 Kw
H04-03-070	MS-C409	20 L	2.0 Kw

For Beaker

Cat. No	Model	capacity	Watt
H04-03-084	MS-CB401	100 ml	80 W
H04-03-091	MS-CB402	250 ml	150 W
H04-03-098	MS-CB403	500 ml	260 W
H04-03-105	MS-CB404	1 L	380 W
H04-03-112	MS-CB405	2L	500 W
H04-03-119	MS-CB406	3 L	600 W
H04-03-126	MS-CB407	5 L	800 W
H04-03-133	MS-CB408	10 L	1.3 Kw
H04-03-140	MS-CB409	20 L	2.0 Kw



Flexible Heating Mantle without Controller

- Excellent heat transfer and heat generation by knitted with glass fiber for Heating Element
- External surface insulation for user safety by adopting Ceramic Fiber Insulation
 - Max. Temp: up to 450°C
- Have to use with an external controller (refer to 54 page)
- 220V (110V available on requested), 50/60Hz

For Flask

Cat. No	Model	capacity	Watt
H04-03-829	MS-A201	100 ml	80 W
H04-03-833	MS-A202	250 ml	150 W
H04-03-837	MS-A203	500 ml	260 W
H04-03-841	MS-A204	1 L	380 W
H04-03-845	MS-A205	2 L	500 W
H04-03-851	MS-A206	3 L	600 W
H04-03-857	MS-A207	5 L	800 W

For Beaker

Cat. No	Model	capacity	Watt
H04-03-658	MS-AB201	100 ml	80 W
H04-03-662	MS-AB202	250 ml	150 W
H04-03-666	MS-AB203	500 ml	260 W
H04-03-670	MS-AB204	1 L	380 W
H04-03-674	MS-AB205	2 L	500 W
H04-03-678	MS-AB206	3 L	600 W
H04-03-682	MS-AB207	5 L	800 W

HEATING MANTLE



Analog Heating Mantle

- Analog Energy Regulator temperature control
- Excellent heat transfer and heat generation by knitted with glass fiber for Heating Element
 - Max. Temp: up to 450°C
- External surface insulation for user safety by adopting Ceramic Fiber Insulation
 - 220V (110V available on requested), 50/60Hz
- CE-certified product (except MS-EB model)

For Flask

Cat. No	Model	capacity	Watt
H04-03-189	MS-E050	50 ml	60 W
H04-03-196	MS-E101	100 ml	80 W
H04-03-203	MS-E102	250 ml	150 W
H04-03-210	MS-E103	500 ml	260 W
H04-03-217	MS-E104	1 L	380 W
H04-03-224	MS-E105	2 L	500 W
H04-03-231	MS-E106	3 L	600 W
H04-03-238	MS-E107	5 L	800 W
H04-03-245	MS-E108	10 L	1.3 Kw
H04-03-252	MS-E109	20 L	2.0 Kw

For Beaker

Cat. No	Model	capacity	Watt
H04-03-266	MS-EB100	100 ml	80 W
H04-03-273	MS-EB250	250 ml	150 W
H04-03-280	MS-EB503	500 ml	260 W
H04-03-287	MS-EB504	1 L	380 W
H04-03-294	MS-EB505	2 L	500 W
H04-03-291	MS-EB506	3 L	600 W
H04-03-298	MS-EB507	5 L	800 W
H04-03-305	MS-EB508	10 L	1.3 Kw
H04-03-312	MS-EB509	20 L	2.0 Kw

Digital Heating Mantle

- Digital PID Control, Auto-Tuning set temperature, actual temperature can be checked at the same time
- Excellent heat transfer and heat generation by knitted with glass fiber for Heating Element
 - Max. Temp: up to 450°C
- External surface insulation for user safety by adopting Ceramic Fiber Insulation
- Timer: 99hr 59min •220V (110V available on requested), 50/60Hz

For Flask

Cat. No	Model	capacity	Watt
H04-03-317	MS-DM601	100 ml	80 W
H04-03-319	MS-DM602	250 ml	150 W
H04-03-326	MS-DM603	500 ml	260 W
H04-03-333	MS-DM604	1 L	380 W
H04-03-340	MS-DM605	2 L	500 W
H04-03-347	MS-DM606	3 L	600 W
H04-03-354	MS-DM607	5 L	800 W
H04-03-358	MS-DM608	10 L	1.3 Kw
H04-03-359	MS-DM609	20 L	2.0 Kw

For Beaker

Cat. No	Model	capacity	Watt
H04-03-360	MS-DMB601	100 ml	80 W
H04-03-361	MS-DMB602	250 ml	150 W
H04-03-368	MS-DMB603	500 ml	260 W
H04-03-375	MS-DMB604	1 L	380 W
H04-03-382	MS-DMB605	2 L	500 W
H04-03-389	MS-DMB606	3 L	600 W
H04-03-396	MS-DMB607	5 L	800 W
H04-03-397	MS-DMB608	10 L	1.3 Kw
H04-03-398	MS-DMB609	20 L	2.0 Kw





Analog Stirring Heating Mantle

- Analog Energy Regulator temperature control, Feedback stirring speed control
 - Speed range: 100 ~1500rpm
- Available stirring and heating by 1 unit machine under individual control
 - Max. Temp: up to 450°C
- 220V (110V available on requested), 50/60Hz
- E-certified product (except MS-ESB model)

For Flask

Cat. No	Model	capacity	Watt
H04-03-400	MS-ES301	100 ml	80 W
H04-03-403	MS-ES302	250 ml	150 W
H04-03-410	MS-ES303	500 ml	260 W
H04-03-417	MS-ES304	1 L	380 W
H04-03-424	MS-ES305	2 L	500 W
H04-03-431	MS-ES306	3 L	600 W
H04-03-438	MS-ES307	5 L	800 W
H04-03-439	MS-ES308	10 L	1.3 Kw
H04-03-440	MS-ES309	20 L	2.0 Kw

For Beaker

Cat. No	Model	capacity	Watt
H04-03-444	MS-ESB301	100 ml	80 W
H04-03-445	MS-ESB302	250 ml	150 W
H04-03-452	MS-ESB303	500 ml	260 W
H04-03-459	MS-ESB304	1 L	380 W
H04-03-466	MS-ESB305	2 L	500 W
H04-03-473	MS-ESB306	3 L	600 W
H04-03-480	MS-ESB307	5 L	800 W
H04-03-482	MS-ESB308	10 L	1.3 Kw
H04-03-484	MS-ESB309	20 L	2.0 Kw



Digital Stirring Heating Mantle

- Excellent heat transfer and heat generation by knitted with glass fiber for Heating Element
- External surface insulation for user safety by adopting Ceramic Fiber Insulation
- Speed range: 100 ~1500rpm
 - Max. Temp: up to 450°C
- Timer: 99hr 59min
 - 220V (110V available on requested), 50/60Hz

With Analog Stirring Control

Cat. No	Model	capacity	Watt
H04-03-700	MS-DMS631	100 ml	80 W
H04-03-702	MS-DMS632	250 ml	150 W
H04-03-704	MS-DMS633	500 ml	260 W
H04-03-706	MS-DMS634	1 L	380 W
H04-03-708	MS-DMS635	2 L	500 W
H04-03-710	MS-DMS636	3 L	600 W
H04-03-712	MS-DMS637	5 L	800 W
H04-03-714	MS-DMS638	10 L	1300 W
H04-03-716	MS-DMS639	20 L	2000 W

With Digital Stirring Control

Cat. No	Model	capacity	Watt
H04-03-720	MS-DMSD631	100 ml	80 W
H04-03-722	MS-DMSD632	250 ml	150 W
H04-03-724	MS-DMSD633	500 ml	260 W
H04-03-726	MS-DMSD634	1 L	380 W
H04-03-728	MS-DMSD635	2 L	500 W
H04-03-730	MS-DMSD636	3 L	600 W
H04-03-732	MS-DMSD637	5 L	800 W
H04-03-734	MS-DMSD638	10 L	1300 W
H04-03-736	MS-DMSD639	20 L	2000 W





Extraction Multi Heating Mantle, Analog 3-places or 6-places, Flask EAM

- Each independent analog temperature control
- Excellent heat transfer and heat generation by knitted with glass fiber for Heating Element
- Max. Temp: up to 450°C
- External surface insulation for user safety by adopting Ceramic Fiber Insulation
- 220V (110V available on requested), 50/60Hz
- Ø12.7mm Support Rod included as a standard

3-places Analog Multi Heating Mantle

Cat. No	Model	capacity	Watt
H04-03-487	MS-EAM9201-03	100 ml	80 W×3 ea
H04-03-494	MS-EAM9202-03	250 ml	150 W×3 ea
H04-03-501	MS-EAM9203-03	500 ml	260 W×3 ea
H04-03-508	MS-EAM9204-03	1 L	380 W×3 ea

6-places Analog Multi Heating Mantle

Cat. No	Model	capacity	Watt
H04-03-515	MS-EAM9201-06	100 ml	80 W×6 ea
H04-03-522	MS-EAM9202-06	250 ml	150 W×6 ea
H04-03-529	MS-EAM9203-06	500 ml	260 W×6 ea
H04-03-536	MS-EAM9204-06	1 L	380 W×6 ea



Extraction Multi Heating Mantle, Digital 3-places or 6-places, Flask EAMD

- Each independent Digital PID Control type temperature control
- Excellent heat transfer and heat generation by knitted with glass fiber for Heating Element
- Max. Temp: up to 450°C
- External surface insulation for user safety by adopting Ceramic Fiber Insulation
- 220V (110V available on requested), 50/60Hz
- Ø12.7mm Support Rod included as a standard

3-places Digital Multi Heating Mantle

Cat. No	Model	capacity	Watt
H04-03-550	MS-EAMD9401-03	100ml	80 W x 3 ea
H04-03-554	MS-EAMD9402-03	250 ml	150 W×3 ea
H04-03-558	MS-EAMD9403-03	500 ml	260 W×3 ea
H04-03-562	MS-EAMD9404-03	1 L	380 W×3 ea

6-places Digital Multi Heating Mantle

Cat. No	Model	capacity	Watt
H04-03-564	MS-EAMD9401-06	100ml	80 W x 3 ea
H04-03-568	MS-EAMD9402-06	250 ml	150 W×6 ea
H04-03-572	MS-EAMD9403-06	500 ml	260 W×6 ea
H04-03-576	MS-EAMD9404-06	1 L	380 W×6 ea



Stirring Multi Heating Mantle

- Independent PID auto-tuning temperature controller
- Analog Stirring Speed Control
- Excellent heat generation by knitting with Glass fiber for the heating element
- Excellent external Surface insulation for user safety by adopting the Ceramic Fiber Insulation
- 220V (110V available on requested), 50/60Hz
- Ø12.7mm Support Rod included as a standard

3-places Analog Stirring Multi Heating Mantle

Cat. No	Model	capacity	Watt
H04-03-490	MS-EAMDS9601-03	100ml	80 W x 3 ea
H04-03-497	MS-EAMDS9602-03	250 ml	150 Wx3 ea
H04-03-504	MS-EAMDS9603-03	500 ml	260 Wx3 ea
H04-03-511	MS-EAMDS9604-03	1 L	380 Wx3 ea

6-places Analog Stirring Multi Heating Mantle

Cat. No	Model	capacity	Watt
H04-03-518	MS-EAMDS9601-06	100ml	80 W x 3 ea
H04-03-525	MS-EAMDS9602-06	250 ml	150 Wx6 ea
H04-03-532	MS-EAMDS9603-06	500 ml	260 Wx6 ea
H04-03-539	MS-EAMDS9604-06	1 L	380 Wx6 ea



Heating Tape

Cat. No	Model	Width	length	Watts
H04-03-601	MS-HT2506	25.4 mm (1")	0.6 m	200 W
H04-03-608	MS-HT2510	1 m	380 W	80 Wx3 ea
H04-03-615	MS-HT2515	1.5 m	300 W	80 Wx3 ea
H04-03-622	MS-HT2520	2 m	340 W	80 Wx3 ea
H04-03-629	MS-HT2525	2.5 m	460 W	80 Wx3 ea
H04-03-636	MS-HT2530	3 m	490 W	80 Wx3 ea

- Excellent Flexibility and heat generation by knitting with Glass fiber for the heating element
- Have to use with an external controller (separate purchase, refer to xxx page)

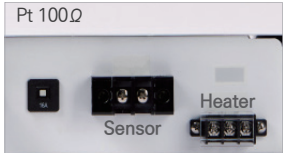
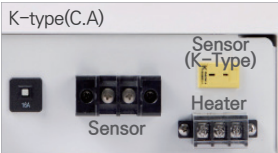


Digital Temperature Indicator

Cat. No	Model	Temp. Range
H04-03-811	HTI610K	K-type (0 ~ 1200°C)
H04-03-812	HTI610Pt	PT-type (-99.9 ~ 199.9°C)

- Convertible to manual/automatic temperature display on each point
- Point: 5 parts
- Automatic time adjustment function (1~10sec)
- Sensor purchase separately

HEATING MANTLE



Digital Temperature Controller

Cat. No	Model	Sensor Type	Max. control adjustable Temp.
H04-03-770	HTC210K	K-type(C.A)	1370°C(999.9°C)
H04-03-780	HTC210Pt	Pt 100Ω	650.0°C

- PID Type small and precise temperature controller (can be connected to all heaters)
- Output: 0~220Vac, Max.15A
- Adjustable output from 0 to 100% by adjusting the volume
- Auto-tuning function, temperature calibration function
- Can use HTC210(K-type) sensor connect omega plug
- 220V(Supply 110V upon request), 50/60Hz



Programmable Temperature Controller

Cat. No	Model	Sensor Type	Heater capacity
H04-03-790	HTC510	K- & PT-type	4 Kw

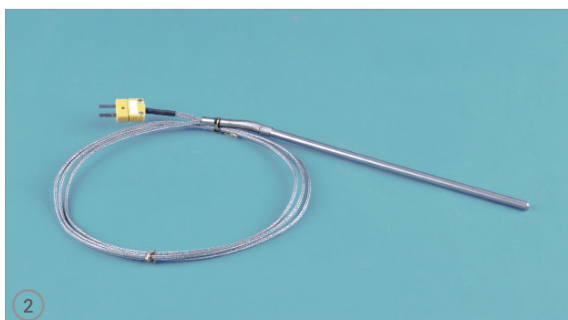
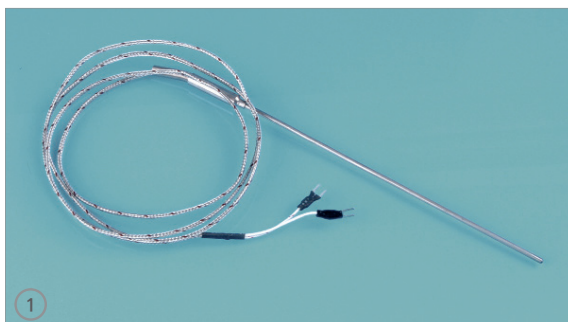
- Represent temperature program graph
- Can be used with 19types of input sensor (Pt100, K-type, and etc)
- Available 30 patterns with 300 segment program
- Adjustable output from 0~100%, available precise control
- Control the heating and cooling, available precise control by overshoot suppression
- Can be used with 1 channel of Alarm output Terminal
- Pt-Type, Φ6XL200mm sensor is included as a standard



Analog Temperature Controller

Cat. No	Model	Volts
H04-03-750	MS-ER100	220V AC 1200W
H04-03-760	MS-INF100	220V AC 2400W

- Control Type: On/Off(Bimetal)
- “On/Off” automatic control by time proportion
- Can be used with connecting various heated equipment such as a heating mantle, tape, cord and etc.



Thermocouple

K-type temperature sensor, SUS 316 ①

Cat. No	Model	Size	Lead Line Length
H04-03-902	TC-K162	Φ1.6×200 mm	2 m
H04-03-906	TC-K163	Φ1.6×300 mm	
H04-03-910	TC-K322	Φ3.2×200 mm	
H04-03-912	TC-K3225	Φ3.2×250 mm	
H04-03-914	TC-K323	Φ3.2×300 mm	
H04-03-917	TC-K3245	Φ3.2×450 mm	
H04-03-918	TC-K324	Φ3.2×400 mm	
H04-03-920	TC-K325	Φ3.2×500 mm	
H04-03-922	TC-K642	Φ6.4×200 mm	
H04-03-926	TC-K643	Φ6.4×300 mm	
H04-03-930	TC-K644	Φ6.4×400 mm	

- The range of use temperature: Max. 800 °C

K-type temperature sensor, Omega Jack Type ②

Cat. No	Model	Size	Lead Line Length
H04-03-934	TC-K162O	Φ1.6×200 mm	2 m
H04-03-938	TC-K163O	Φ1.6×300 mm	
H04-03-942	TC-K322O	Φ3.2×200 mm	
H04-03-946	TC-K323O	Φ3.2×300 mm	
H04-03-950	TC-K324O	Φ3.2×400 mm	
H04-03-951	TC-K3245O	Φ3.2×450 mm	
H04-03-954	TC-K642O	Φ6.4×200 mm	
H04-03-956	TC-K643O	Φ6.4×300 mm	
H04-03-958	TC-K644O	Φ6.4×400 mm	

- The range of use temperature: Max. 800 °C

Pt-type temperature sensor, SUS 316 ③

Cat. No	Model	Size	Lead Line Length
H04-03-962	TC-PT322	Φ3.2×200 mm	2 m
H04-03-968	TC-PT323	Φ3.2×300 mm	
H04-03-974	TC-PT324	Φ3.2×400 mm	
H04-03-980	TC-PT642	Φ6.4×200 mm	
H04-03-986	TC-PT643	Φ6.4×300 mm	
H04-03-992	TC-PT644	Φ6.4×400 mm	
H04-03-998	TC-TEFC	change to a Teflon-coated temperature sensor	

- The range of use temperature: Max. 250 °C



Temperature Sensor for Digital Heating Mantle

Stainless Steel ①

Cat. No	Model	Size	Lead Line Length
H04-03-738	MS-K162C	Φ1.6×200 mm	1.5 m
H04-03-739	MS-K163C	Φ1.6×300 mm	
H04-03-740	MS-K164C	Φ1.6×400 mm	
H04-03-741	MS-K322C	Φ3.2×200 mm	
H04-03-742	MS-K323C	Φ3.2×300 mm	
H04-03-743	MS-K324C	Φ3.2×400 mm	
H04-03-744	MS-K620C	Φ6×200 mm	
H04-03-745	MS-K630C	Φ6×300 mm	
H04-03-746	MS-K640C	Φ6×400 mm	

Teflon Coated Stainless Steel ②

Cat. No	Model	Size	Lead Line Length
H04-03-747	MS-K620CF	Φ6×200 mm	1.5 m
H04-03-748	MS-K630CF	Φ6×300 mm	
H04-03-749	MS-K640CF	Φ6×400 mm	

HOTPLATE

Digital Hotplate Stirrer

Analog Hotplate Stirrer

Digital Multi Hotplate Stirrer

Jumbo Hotplate

Precision Jumbo Hotplate



Product	Digital Hotplate Stirrer	Analog Hotplate Striier	Digital Multi Hotplate Stirrer	Jumbo Hotplate	Precision Jumbo Hotplate
Model	HS-20	HS-10	HS20-Mx	DLPxxx	PDLPxxx
Plate size (mm)	180 x 180	180 x 180	140 x 140 (3ea, 6ea)	250x250, 300x300 400x300, 600x300	250x250, 300x300 400x300, 600x300
Temp. range (°C)	Max. 400	Max. 400	Max. 350	Max 320	Max 320
Temp. Uniformity (°C)	-	-	-	±1.5 ~ ±2.4	±0.8 ~ ±1.5
Temp. control	Digital PID	Analog	Digital PID	Digital PID	Digital PID
Stirring control	Digital feedback	Analog feedback	Digital Feedback	-	-
External sensor	O	-	O(HS20-M3-Set)	-	O
PC interface	-	-	-	-	O
Over temp. limit	O	-	O	-	O



Digital Hotplate Stirrer

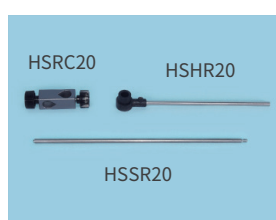
Cat. No	Model	Type	Plate Size
H03-06-010	HS-20	Hotplate & Stirrer	180 x 180 mm
H03-06-110	HS-20-Set	HS-20, ET106, SKIT20	

- Applied ceramic coated top plate with high heat resistance, chemical resistance, and convenient to clean
- High-spec controller
- Digital feedback controller provides accurate temperature and RPM control
- Convenient operation of jog dial and touch switch
- Back Light LCD Display with great visibility and easy to monitor various conditions
- Two independent sensors applied for temperature control and overheating prevention
- Brushless shade motor with excellent durability and less noise
- Actual sample temperature can be controlled by the external sensor(option)
- Prevent leaving of magnetic bar
- Magnetic bar leaving prevention function.
- Component Set: Main Product, External sensor, Support Kit (Support rod, holding rod, and Rod Clamp)

Cat. No.		H03-06-010
Model		HS-20
Temperature	Range	Max. 400 °C
	Resolution	Display 0.1°C / Control 0.5°C
Stirring	Capacity(water)	20 L
	Speed	80 ~ 1500 rpm
	Resolution	5 rpm
Material	Plate	Ceramic Coated Aluminum
	Body	Powder Coated Aluminum
Display		Digital LCD with Back-Light
Timer		99hr 59min
Safety		Over Temp. Protection
Motor		Brushless Shade Motor
Environmental Conditions		Temp. 5 ~ 40 °C, Humidity < 80 %
Size	Plate	180 x 180 mm
	Exterior	w180 x d310 x h110 mm
Electric Supply	Power	1 Phase, 220Vac, 50/60Hz
	Consumption	650W



External Sensor



SKIT20

Optional Accessory

Cat. No	Model	Description
H03-06-141	ET106	External Sensor
H03-06-192	HSSR20	Support Rod
H03-06-193	HSRC20	Rod Clamp
H03-06-194	HSHR20	Holding Rod
H03-06-195	SKIT20	Support Kit (Support Rod, Rod Clamp, Holding Rod)



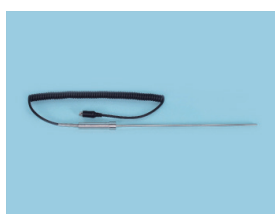
Analog Hotplate Stirrer

Cat. No	Model	Type	Plate Size
H03-06-200	HS-10(60Hz)	Hotplate & Stirrer	180 x 180 mm
H03-06-205	HS-10(50Hz)	Hotplate & Stirrer	180 x 180 mm

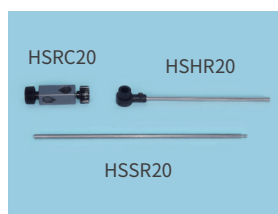
- Economical heating magnetic stirrer with analog control system
- Applied ceramic coated top plate with high heat resistance, chemical resistance, and convenience to clean.
- Brushless shade motor with excellent durability and less noise
- For more information, please refer to the digital type



Controller



External Sensor



SKIT20

Digital Multi Hotplate Stirrer

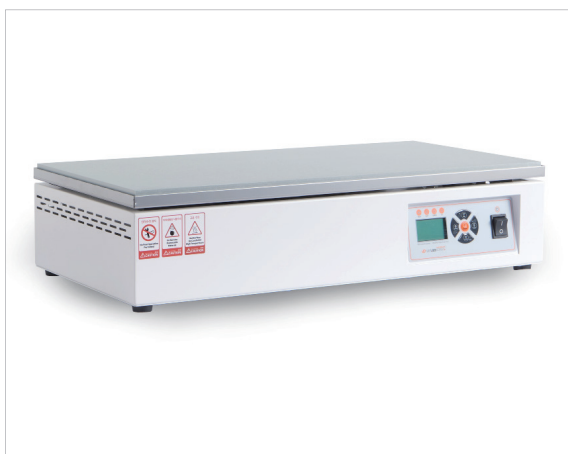
Cat. No	Model	Position	Plate Size
H03-06-300	HS20-M3	3	140 x 140 mm
H03-06-305	HS20-M3-Set	3	
H03-06-310	HS20-M6	6 (3x2)	

- Applied ceramic coated top plate with high heat resistance, chemical resistance, and convenience to clean
- High-spec controller
 - Digital feedback controller provides accurate temperature and RPM control
 - Convenient operation of jog dial and touch switch
 - Back Light LCD Display with great visibility and easy to monitor various conditions
- Two independent sensors applied for temperature control and overheating prevention
- Brushless shade motor with excellent durability and less noise
- Actual sample temperature can be controlled by the external sensor(option); Product Item: HS20-M3-Set
- HS20-M3-Set components: Main product, External sensor, and Support Kit
- Magnetic bar leaving prevention function.

Optional Accessory

Cat. No	Model	Description
H03-06-141	ET106	External Sensor, Ø3.2 x L 250mm
H03-06-192	HSSR20	Support Rod
H03-06-193	HSRC20	Rod Clamp
H03-06-194	HSHR20	Holding Rod
H03-06-195	SKIT20	Support Kit (Support Rod, Rod Clamp, Holding Rod)

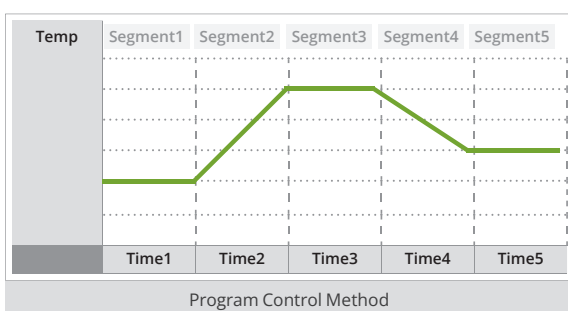
Cat. No.		H03-06-300	H03-06-305	H03-06-310
Model		HS20-M3	HS20-M3-Set	HS20-M6
Plate	Position	3ea		6ea (3x2)
	Size	140 x 140 mm		
Temperature	Range	Max. 350 °C		
	Resolution	Display 0.1°C / Control 0.1°C		
Stirring	Capacity(water)	20 L		
	Speed	80 ~ 1500 rpm		
	Resolution	5 rpm		
Material	Plate	Ceramic Coated Aluminum		
	Body	Powder Coated Aluminum		
Display		Digital LCD with Back-Light		
Timer		99hr 59min		
Safety		Over Temp. Protection		
Motor		Brushless Shade Motor		
Environmental Conditions		Temp. 5 ~ 40 °C, Humidity < 80 %		
Size	Plate	w500 x d240 x h110 mm		w500 x d430 x h130 mm
Electric Supply	Power	1 Phase, 230Vac, 50/60Hz		
	Consumption	400w x 3 (5.5A)		400w x 6 (10.9A)



Controller



Top plate



Program Control Method

Jumbo Hotplate

- Suitable for general heating, titration, wafer baking
- Great heat distribution and flatness of the plate
- Great heat and chemical resistance with an anodized heating plate
- Simple and intuitive user interface with graphic LCD display
- Auto tuning, and temperature calibration available
- 2 types of timer functions installed (start at the same time as driving or start after reaching target temperature)
- Low risk of fire and high user safety by protection mask around the plate
- Automatic fault sensing system; the product itself can detect an unusual situation (Patent Registration)
- Plate Max. load weight: 5kg
- Program control
 - Available precise controlling and inhibiting temperature overshoot
 - Available to set 2 patterns / 18 segments program
- For CE-certified model, available to provide as per request
- For CE-certified model, added Over Temp. Limiter

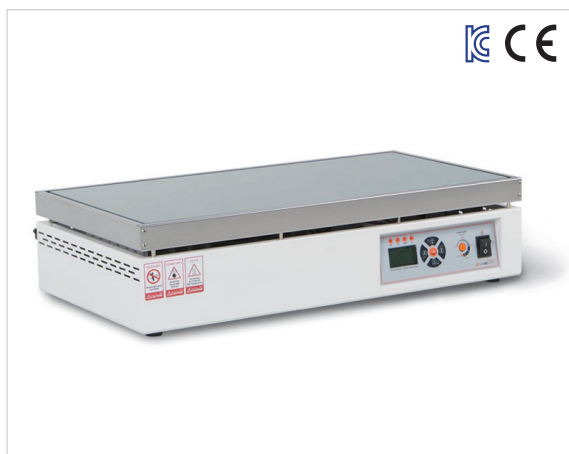
PID Control

Cat. No.	Model	Plate Size
H03-04-050	DLP250	w250×d250 mm
H03-04-060	DLP300	w300×d300 mm
H03-04-080	DLP430	w400×d300 mm
H03-04-090	DLP630	w600×d300 mm

Program Control

Cat. No.	Model	Plate Size
H03-04-055	DLP250P	w250×d250 mm
H03-04-065	DLP300P	w300×d300 mm
H03-04-087	DLP430P	w400×d300 mm
H03-04-095	DLP630P	w600×d300 mm

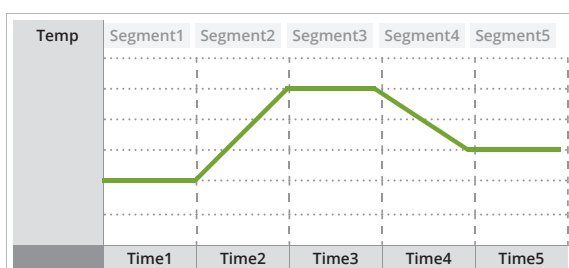
Cat. No.		H03-04-050 / H03-04-055	H03-04-060 / H03-04-065	H03-04-080 / H03-04-087	H03-04-090 / H03-04-095
Model		DLP250 / DLP250P	DLP300 / DLP300P	DLP430 / DLP430P	DLP630 / DLP630P
Plate Size		w250×d250 mm	w300×d300 mm	w400×d300 mm	w600×d300 mm
Controller	Control	PID Control, Auto-tuning / Program Control			
	Display	GLCD (Graphic LCD)			
	Resolution	0.1°C			
	Timer	Run start / Wait start (99hr 59min)			
Temperature	Range	Ambient +10 to +320°C			
	Accuracy at 100°C	±0.8°C			
	Uniformity at 100°C	±1.5°C	±1.7°C	±1.9°C	±2.4°C
Size		w258×d258×h150 mm	w308×d308×h150 mm	w408×d308×h150 mm	w608×d308×h150 mm
weight		6.7kg	9.5kg	12.5kg	15.3kg
Material	Plate	Anodized Aluminium			
	Exterior	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz			
	Max Consumption	1.2 Kw (5.5 A)	1.5 Kw (6.8 A)	1.8 Kw (8.2 A)	2.4 Kw (11 A)
	Power Line	Standard Plug			



Controller



Top plate



Program Control Method



RS485 to USB Cable



External Sensor



Support Kit

Precision Jumbo Hotplate

- Suitable for general heating, titration, wafer baking
- Great heat distribution and flatness of the plate & applied double overheat safety device
- Great heat and chemical resistance with an anodized heating plate
- Simple and intuitive user interface with graphic LCD display
- Auto tuning, and temperature calibration available
- 2 types of timer functions installed (start at the same time as driving or start after reaching the target temperature)
- Installed ports for external sensor and RS485 for PC communication (communication program can be downloaded on www.lklab.com)
- Low risk of fire and high user safety by protection mask around the plate
- Automatic fault sensing system; the product itself can detect an unusual situation (Patent Registration)
- Plate Max. load weight: 5kg
- Program control
 - Available precise controlling and inhibiting temperature overshoot
 - Available to set 2 patterns / 18 segments program

PID Control

Cat. No.	Model	Plate Size
H03-04-150	PDLP250	w250×d250 mm
H03-04-160	PDLP300	w300×d300 mm
H03-04-180	PDLP430	w400×d300 mm
H03-04-190	PDLP630	w600×d300 mm

Program Control

Cat. No.	Model	Plate Size
H03-04-155	PDLP250P	w250×d250 mm
H03-04-165	PDLP300P	w300×d300 mm
H03-04-185	PDLP430P	w400×d300 mm
H03-04-195	PDLP630P	w600×d300 mm

Optional Accessory

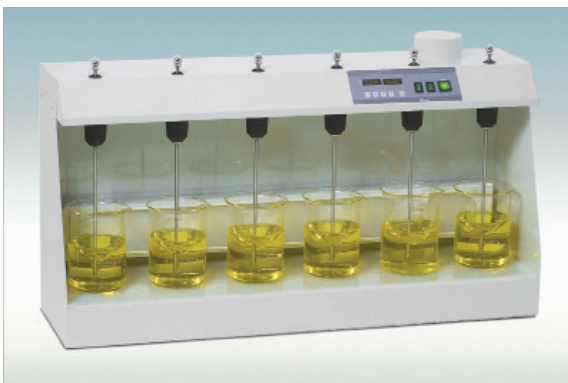
Cat. No.	Model	Description
B04-01-085	LI-USB	RS485 to USB Communication Cable
H03-03-205	SL-HSKIT	Support Kit
B04-91-472	ET102	External Sensor, K-type, Ø4×L300 mm

Cat. No.		H03-04-150 / H03-04-155	H03-04-160 / H03-04-165	H03-04-180 / H03-04-185	H03-04-190 / H03-04-195
Model		PDLP250 / PDLP250P	PDLP300 / PDLP300P	PDLP430 / PDLP430P	PDLP630 / PDLP630P
Plate Size		w250×d250 mm	w300×d300 mm	w400×d300 mm	w600×d300 mm
Controller	Control	PID Control, Auto-tuning / Program Control			
	Resolution	0.1°C			
Temperature	Range	Ambient +10 to +320°C			
	Accuracy at 100°C	±0.3°C			
	Uniformity at 100°C	±0.8°C	±1.0°C	±1.1°C	±1.5°C
Size		w280×d280×h155 mm	w330×d330×h155 mm	w430×d330×h155 mm	w630×d330×h155 mm
weight		6.7kg	9.5kg	12.5kg	15.3kg
Material	Plate	Anodized Aluminium			
	Exterior	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz			
	Max Consumption	1.2 kW (5.5 A)	1.5 kW (6.8 A)	1.8 kW (8.2 A)	2.4 kW (11 A)
	Power Line	Standard Plug			

JAR

Jar Tester

Product	Jar Tester	Jar Tester
Model	MS-SF4	MS-SF6
Number of stirring	4 Place	6 Place
Speed	20 to 300 R.P.M	20 to 300 R.P.M
Timer	99 hr 59 min	99 hr 59 min



Jar Tester

Cat. No.	Model	Capacity	Number of Stirring
J03-03-130	MS-SF4	Max. 2 L	4 Place
J03-03-140	MS-SF6		6 Place

- Used for water agglutination experiments
- 4 Place is portable type, so it's easy to move around
- Illumination devices fixed to the lower and rear allow light to be diffused into the sample without intensity, making it easier to observe the sample accurately
- Durable Brushless DC Motor has a long and stable life
- Speed control keeps the paddle's rotational speed accurately by feedback control
- Speed display of stirring is digital display, with built-in timer function (up to 99 hr 59 min)
- Setting rpm and actual rpm are displayed on a clear LED screen, respectively, so you can check it at the same time
- Selective mode function that allows you to select forward rotation, reverse rotation, and automatic forward and reverse rotation according to the timer setting

Cat. No.	J03-03-130	J03-03-140
Model	MS-SF4	MS-SF6
Number of stirring	4 Place	6 Place
Stirring Capacity	Max. 2 L	
Motor	Brushless DC Motor 60 W	
Speed	20 to 300 R.P.M	
Speed Accu.	±5 rpm at 20 ~ 49 rpm / ±1 rpm at 50 ~ 300 rpm	
Controller	Feedback Control	
Rotation	Right / Left / Auto Reverse	
Timer	99 hr 59 min	
Size	w320×d320×h390 mm	w900×d250×h450 mm
Power	220V, 50/60 Hz	
Weight	9 kg	21.5 kg

PUMP

Digital Peristaltic Pump



Product	Digital Peristaltic Pump	Digital Peristaltic Pump
Model	TPT6035	TPE3043
Speed	0.1 ~ 600 rpm	0.01 ~ 600 rpm
Display	LED	Touch Screen
Interface	-	RS-485 (Modbus-RTU)



Digital Peristaltic Pump

- Use an elastic tube
- Convey a certain amount of liquid continuously by rotating the roller
- Conveyed quantity of liquid is determined by tubing size and motor rpm
- Can use the rotating direction of the motor to clockwise or counter-clockwise
- Able to install Masterflex® Easy Load®, Easy Load®II
- Can connect 4 heads (depending on tubing)

Digital Precision Peristaltic Pump Set

Cat. No	Model	Flow Rate	Speed
P06-602-050	TPT6035	0.06 ~ 2900 ml/min	0.1 ~ 600 rpm

- Component: Digital Drive 1ea, Pump Head (TPH-1000) 1ea
- can be set to 0.1rpm range from 0.1~100rpm, set to 1 rpm range from 100~600rpm (can be set in up to 50 rpm)
- Can interlock the water leak detection sensor (Leak Detector)
- Can choose the power failure recovery function (Use Auto Start Function after recovery of power failure)

Program Peristaltic Pump Set

Cat. No	Model	Flow Rate	Touch Screen
P06-602-160	TPE3043	0.01 ~ 3400 ml/min	5.6"

- Component: Programmable Drive 1ea, Pump Head (TPH-1000) 1ea.
- Pump Master Software: Possible to simultaneous-control up to 8 pumps and real-time data logging(option)
- Can connect 4 heads (depending on tubing)
- Can connect the water leak detection sensor (Option): alarm and stopping motion function

Liquid leak-Proof

Cat. No	Model	Description
P06-602-610	LD-TP	Liquid Leak Detector
P06-602-620	LPP-TP	Leak-Proof Pad without Sensor

Accessory for TPT6035

Cat. No	Model	Description
P06-602-721	980089	Lock Type Foot Switch

Accessory for TPE3043

Cat. No	Model	Description
P06-602-600	980055	Software - Possible to simultaneous-control up to 8 pumps
P06-602-723	980090	Lock Type Foot Switch

Optional Accessory

Spare Pump Head

Cat. No	Model	Description
P06-602-500	TPH-1000	For LS13, LS14, LS25, LS17, LS18

- can compatible with Masterflex Pump Head

Mounting Hardware

Cat. No	Model	Pump Head	Pump Head
P06-602-950	980065	2 ea	TPH-1000
P06-602-953	980069	3 ea	
P06-602-956	980072	4 ea	

Cat. No	P06-602-050	P06-602-160
Model	TPT6035	TPE3043
Motor Type	Stepping Servo Motor	Stepping Servo Motor
Speed	0.1 ~ 600 rpm	0.01 ~ 600 rpm
Flow Capacity	0.06 ~ 2900 ml/min (Full Range)	0.01 ~ 3400 ml/min (Full Range)
Accuracy	-	± 2% of FSR or Better
Motor voltage pressure / electric current	-	DC24V ± 10%/3.4A
using temperature / conservation temperature	0 ~ 50°C / -	0 ~ 40°C / -20 ~ 60°C (Condensation caution)
Housing Material	ABS Case / PET liquid crystal protection film	
Proper humidity	80%RH under	90%RH under
Operating System	-	Embedded System
Display	4 Digit LED Display (RPM or Timer)	5.6" Touch Screen
Power	220 ~ 240V, 60Hz only	
Size	180×264×200 mm (Excluding pump head)	210×260×270 mm (Excluding pump head)
External Interface	-	RS-485 (Modbus-RTU)
external control - pressure	Start/Stop, CW/CCW, Speed(4~20mA or 1~5V), Leak Sensor	Start/Stop, CW/CCW, PRIME, 4 ~ 20mA (option)
operating mode	RPM : 0.1 ~ 600, Timer : 00:01 ~ 99:59	Flow Rate / Volume / Time / RPM

STIRRER

Digital Overhead Stirrer

Analog OverHead Stirrer

High Performmace Overhead Stirrer



Product	Digital Overhead Stirrer	Analog OverHead Stirrer	High Performance Overhead Stirrer
Model	OSD-xx	OSA-xx	OSH-xx
Max. Speed	800 ~ 2000 rpm	800 ~ 2000 rpm	800 ~ 2000rpm
Max. Capacity	25L ~ 60L	25L ~ 60L	25L ~ 60L
Speed Control	Digital	Analog	Digital
Display	LCD	-	Touch LCD



Universal Clamp



R3320



R3420

Digital Overhead Stirrer

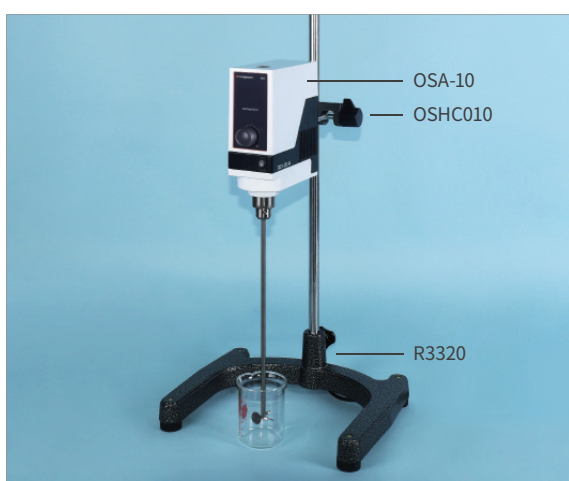
Cat. No	Model	Capacity	RPM
S04-02-100	OSD-10	25L	100 ~ 2000
S04-02-105	OSD-20	40L	80 ~ 1200
S04-02-110	OSD-30	60L	50 ~ 800

- High-spec Controller
 - Digital Feedback Controller with the exact rpm control
 - Jog dial switch with easy-to-set the rpm
 - Great visibility Backlight LCD display & available to monitor the product status
- Prevent the sample from splashing by applying the Slow Start/ Stop function
- Rust-free during long-term use by applying chromium coating Chuck.
- Facility to adjustable impeller height and less shaking by applying penetrated shaft
- Excellent space utilization through slim and compact design
- Applied device for motor overheating prevention
- Impeller not included; available to purchase on request

Optional Accessory

Cat. No	Model	Description
C09-04-010	OSHC010	Universal Clamp
H01-05-968	R1822	Plate Stand 200×315×800 mm
S09-53-555	R1890	Plate Stand 300×400×1000 mm
S09-53-567	R3320	U-Type Stand 380×321×843 mm
S09-53-574	R3420	H-Type Stand 630×455×1275 mm

Cat. No.	S04-02-100	S04-02-105	S04-02-110
Model	OSD-10	OSD-20	OSD-30
Capacity(water)	25 L	40 L	60 L
Max. Viscosity	70,000 mPas	100,000 mPas	150,000 mPas
Max. Torque	120 Ncm	180 Ncm	270 Ncm
Speed Range	100 ~ 2000 rpm	80 ~ 1200 rpm	50 ~ 800 rpm
Resolution	5 rpm		
Material	ABS and Aluminum		
Max. Impeller Shaft Dia.	10 mm		
Display	Digital LCD with Back-Light		
Timer	99hr 59min		
Safety	Overload & Heat Protector for Motor		
Environmental Conditions	Temp. 5 ~ 40 °C, Humidity < 80 %		
Electric Supply	Power	1 Phase, 220Vac, 50/60Hz	
	Consumption	150 W	170 W 200 W



Analog Overhead Stirrer

Cat. No	Model	Capacity	RPM
S04-02-115	OSA-10	25L	100 ~ 2000
S04-02-120	OSA-20	40L	80 ~ 1200
S04-02-125	OSA-30	60L	50 ~ 800

- Overhead Stirrer, an economic type of analog adjustable system
- Rust-free during long-term use by applying chromium coating Chuck
- Facility to adjustable impeller height and less shaking by applying penetrated shaft
- Applied device for motor overheating prevention



SR-OSH10



Universal Clamp



R3320



R3420

High Performance Overhead Stirrer

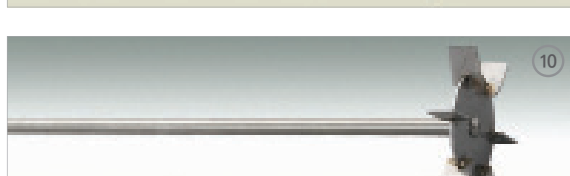
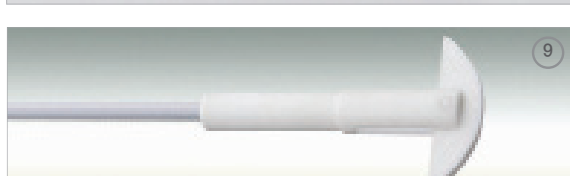
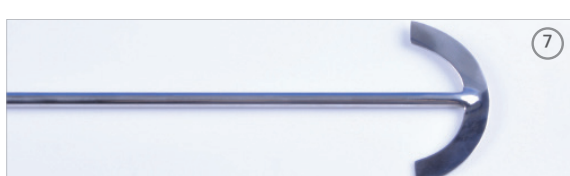
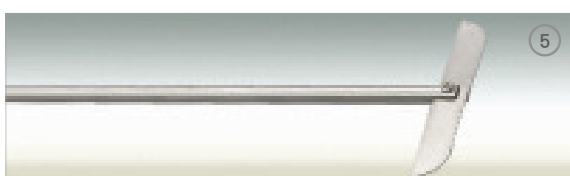
Cat. No	Model	Capacity	RPM
S04-02-300	OSH-10	25L	100 ~ 2000
S04-02-305	OSH-20	40L	80 ~ 1200
S04-02-310	OSH-30	60L	50 ~ 800

- High-spec Controller
 - Digital Feedback Controller with the exact rpm control
 - jog dial switch with easy-to-set the rpm
 - Great visibility Backlight LCD display & available to monitor the product status
- Real-time torque indicated
- Viscosity measurement function – available to measure real-time viscosity by using a dedicated impeller(SR-OSH10)
- Target viscosity setting function – automatically driving stops after reaching the target viscosity
- Prevent the sample from splashing by applying the Slow Start/ Stop function
- Rust-free during long-term use by applying chromium coating Chuck.
- Facility to adjustable impeller height and less shaking by applying penetrated shaft
- Excellent space utilization through slim and compact design
- Applied device for motor overheating prevention
- Standard 1ea Impeller included

Optional Accessory

Cat. No	Model	Description
S09-03-140	SR-S070	Impeller/Propeller/Φ70mm, Φ8 x L500 mm
C09-04-010	OSHC010	Universal Clamp
H01-05-968	R1822	Plate Stand 200×315×800 mm
S09-53-555	R1890	Plate Stand 300×400×1000 mm
S09-53-567	R3320	U-Type Stand 380×321×843 mm
S09-53-574	R3420	H-Type Stand 630×455×1275 mm

Cat. No.		S04-02-300	S04-02-305	S04-02-310
Model		OSH-10	OSH-20	OSH-30
Capacity(water)		25 L	40 L	60 L
Max. Viscosity		70,000 mPas	100,000 mPas	150,000 mPas
Max. Torque		120 Ncm	180 Ncm	270 Ncm
Speed Range		100 ~ 2000 rpm	80 ~ 1200 rpm	50 ~ 800 rpm
Resolution		5 rpm		
Material		ABS and Aluminum		
Max. Impeller Shaft Dia.		10 mm		
Display		Touch Color LCD		
Timer		99hr 59min		
Safety		Overload & Heat Protector for Motor		
Environmental Conditions		Temp. 5 ~ 40 °C, Humidity < 80 %		
Electric Supply	Power	1 Phase, 220Vac, 50/60Hz		
	Consumption	150 W	170 W	200 W



Stirrer Rod / Impeller, 304 Stainless Steel

• Material: 304 Stainless Steel

Clover-type Impeller, 3-Blade ①

Cat. No.	Model	Blade Size	Rod Size
S09-03-111	SR-C040	Φ40 mm	Φ8×L300 mm
S09-03-118	SR-C060	Φ60 mm	Φ8×L500 mm
S09-03-125	SR-C080	Φ80 mm	1.5 m
S09-03-132	SR-C100	Φ100 mm	Φ8×L650 mm

Propeller-type Impeller - Stainless Steel ②

Cat. No.	Model	Blade Size	Rod Size
S09-03-140	SR-S070	Φ70 mm	Φ8×L500 mm
S09-03-148	SR-S100	Φ90 mm	
S09-03-156	SR-S120	Φ120 mm	Φ8×L650 mm

Diamond-type Impeller ③

Cat. No.	Model	Blade Size	Rod Size
S09-03-170	SR-M090	Φ90 mm	Φ8×L500 mm

Centrifugal-type Impeller Stainless Steel, Type 1 ④

Cat. No.	Model	Blade Size	Rod Size
S09-03-177	SR-F075	Φ100 mm	Φ8×L500 mm

Stainless Steel, Type 2 ⑤

Cat. No.	Model	Blade Size	Rod Size
S09-03-179	SR-F080	Φ80 mm	Φ8×L500 mm
S09-03-185	SR-F100	Φ100 mm	Φ8×L650 mm

Anchor-type Impeller ⑥

Cat. No.	Model	Blade Size	Rod Size
S09-03-201	SR-A050	Φ50×h50 mm	Φ8×L500 mm
S09-03-207	SR-A070	Φ70×h70 mm	
S09-03-209	SR-A080	Φ80×h80 mm	
S09-03-213	SR-A090	Φ90×h90 mm	Φ8×L650 mm
S09-03-214	SR-A100	Φ100×h100 mm	

Round Anchor-type Impeller ⑦

Cat. No.	Model	Blade Size	Rod Size
S09-03-222	SR-A150	Φ70×h30 mm	Φ8×L500 mm
S09-03-229	SR-A170	Φ90×h40 mm	
S09-03-236	SR-A190	Φ110×h50 mm	Φ8×L650 mm

Half-round Impeller

Fixed type ⑧

Cat. No.	Model	Blade Size	Rod Size
S09-03-274	SR-H1080	Φ80×h30 mm	Φ8×L500 mm
S09-03-281	SR-H1100	Φ100×h40 mm	
S09-03-288	SR-H1120	Φ120×h50 mm	Φ8×L650 mm

• Lower Blade is fixed on Impeller

Rotation type ⑨

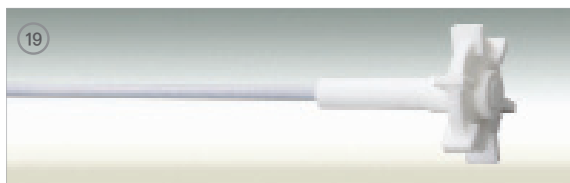
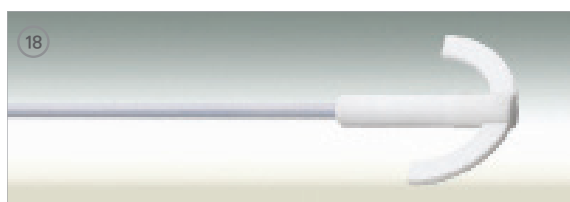
Cat. No.	Model	Blade Size	Rod Size
S09-03-653	SR-TH060	Φ60×h19 mm	Φ8×L500 mm
S09-03-660	SR-TH080	Φ80×h19 mm	
S09-03-667	SR-TH100	Φ100×h23 mm	

Turbin-type Impeller ⑩

Cat. No.	Model	Blade Size	Rod Size
S09-03-315	SR-T040	Φ40 mm	Φ8×L300 mm
S09-03-322	SR-T070	Φ70 mm	Φ8×L500 mm

ACCESSORY for STIRRER

Continue to String Rod-impeller ...



Dissolver-type Impeller ⑪

Cat. No.	Model	Blade Size	Rod Size
S09-03-337	SR-D040	Φ30 mm	Φ8×L300 mm
S09-03-344	SR-D055	Φ50 mm	Φ8×L500 mm
S09-03-351	SR-D075	Φ70 mm	
S09-03-357	SR-D100	Φ100 mm	

Movable Propeller Blade, Dual impeller ⑫

Cat. No.	Model	Blade Size	Rod Size
S09-03-366	SR-DB070	Φ70 mm	Φ8×L500 mm
S09-03-372	SR-DB10	Φ100 mm	
S09-03-378	SR-DB120	Φ120 mm	Φ8×L650 mm

Spare Blade Only ⑬

Cat. No.	Model	Blade Size
S09-03-911	SR-DB075	Φ70 mm
S09-03-918	SR-DB105	Φ100 mm
S09-03-925	SR-DB125	Φ120 mm

Centrifugal-type Impeller

Type 1 ⑭

Cat. No.	Model	Blade Size	Rod Size
S09-03-579	SR-TF080	Φ80 mm	Φ8×L500 mm
S09-03-585	SR-TF100	Φ120 mm	Φ8×L650 mm

Half-Round Impeller

Fixed Type ⑮

Cat. No.	Model	Blade Size	Rod Size
S09-140-111	SR-T1080	Φ80×h30 mm	Φ8×L500 mm
S09-140-115	SR-T1100	Φ100×h40 mm	
S09-140-119	SR-T1120	Φ120×h50 mm	Φ8×L650 mm

• Lower Blade is fixed on Impeller

Rotation Type ⑯

Cat. No.	Model	Blade Size	Rod Size
S09-03-253	SR-H060	Φ60×h19 mm	Φ8×L500 mm
S09-03-260	SR-H080	Φ80×h19 mm	
S09-03-267	SR-H100	Φ100×h23 mm	

• there is a groove in the middle of the rod to make it rotating 360°C

Anchor-type Impeller ⑰

Cat. No.	Model	Blade Size	Rod Size
S09-03-601	SR-TA060	Φ60×h60 mm	Φ8×L500 mm
S09-03-607	SR-TA080	Φ80×h60 mm	
S09-03-613	SR-TA100	Φ100×h100 mm	Φ8×L650 mm

Round Anchor-type Impeller

Type 1 ⑱

Cat. No.	Model	Blade Size	Rod Size
S09-03-622	SR-TA160	Φ60×h30 mm	Φ8×L500 mm
S09-03-629	SR-TA180	Φ80×h40 mm	
S09-03-636	SR-TA200	Φ100×h50 mm	Φ8×L650 mm

Turbin-type Impeller ⑲

Cat. No.	Model	Blade Size	Rod Size
S09-03-715	SR-TF040	Φ40 mm	Φ8×L300 mm
S09-03-722	SR-TF070	Φ70 mm	Φ8×L500 mm



Flexible Coupling

Cat. No.	Model	Clamping Range	Max. Torque
S09-03-522	FK2	Φ6 ~ 8 mm	10 Ncm

- using for connecting Glass Stirring Rod and Stirrer
- ensure safety by reacting to sudden movement of the stirrer shaft.



Flexible Coupling, SS Spring

Cat. No.	Model	Applied shaft
S09-03-525	FK8	for Φ8 mm SS Shaft
S09-03-527	FK10	for Φ10 mm SS Shaft

- using for connecting Stirrer and Stainless Impeller



Teflon Stirring Seal

Cat. No.	Model	Joint	Applied shaft
S09-140-222	TSS-24	24/40	Φ8 mm
S09-140-230	TSS-29	29/42	
S09-140-238	TSS-34	34/45	
S09-140-246	TSS-45	45/50	
S09-140-250	TSS-2410	24/40	Φ10 mm
S09-140-233	TSS-2912	29/42	Φ12 mm

- Component: PTFE Body, Viton O-ring



Magnetic Drive / Vacuum and Pressure Seal

Cat. No.	Model	Specification	O-ring
R06-30-254	VPS-24	for ST24/40	P-017
R06-30-260	VPS-29	for ST29/42	AN-117
R06-30-268	VPS-34	for ST34/45	AN-120
R06-30-275	VPS-45	for ST45/50	AN-126

- For Vacuum or Pressure Reaction (Stirring Seal using a magnet)
- Suitable for use with Glass Reactor
- can be used in conjunction with an Overhead Stirrer
- Outer Magnet and Inner Magnet are REE (Rare Earth Element) Magnet that realizing high torque by forming strong magnetism
- Lower vibration and high-speed rotation even in closed space
- Cooling line is included as standard which is convenient to connect to an external cooling device
- The part connecting to the Ground Joint of the glassware can be disassembled using PTFE Nut



Viton O-ring Only ③

Cat.No.	Model	Applied model	Description
R06-30-296	OP-VPS-24	VPS-24	P-017
R06-30-297	OP-VPS-29	VPS-29	AN-117
R06-30-298	OP-VPS-34	VPS-34	AN-120
R06-30-299	OP-VPS-45	VPS-45	AN-126

Common Specification

material	Body / Housing	STS 316 / Cr-plate
	Body / Seal	PTFE / Viton
Max. Torque		6 kgf-cm
Driving	Pressure	1×10 ⁻⁴ mmHg to 5 kg/cm ²
	Temp. (with Cooling)	70°C after Cooling / Max 300°C
Shaft Size		Ø8 mm (Impeller Shaft)

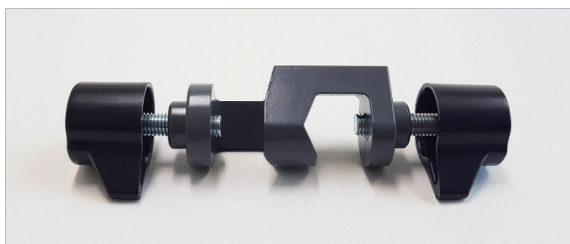
PTFE Stirring Seal Body Only ①

Cat.No.	Model	Joint Size	Applied model
R06-30-280	24B-VPS	24/40	VPS-24
R06-30-282	29B-VPS	29/42	VPS-29
R06-30-284	34B-VPS	34/45	VPS-34
R06-30-286	45B-VPS	45/50	VPS-45

PTFE Stirring Seal Nut Only ②

Cat.No.	Model	Joint Size	Applied model
R06-30-281	24N-VPS	24/40	VPS-24
R06-30-283	29N-VPS	29/42	VPS-29
R06-30-285	34N-VPS	34/45	VPS-34
R06-30-287	45N-VPS	45/50	VPS-45

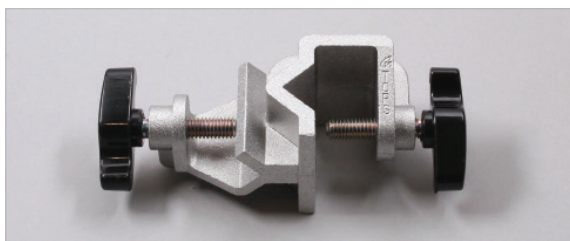
ACCESSORY for STIRRER



Universal Jumbo Clamp Holder

Cat. No.	Model	Max. Grip	Full Length
C09-04-010	OSHC010	23 mm	143 ~ 183 mm

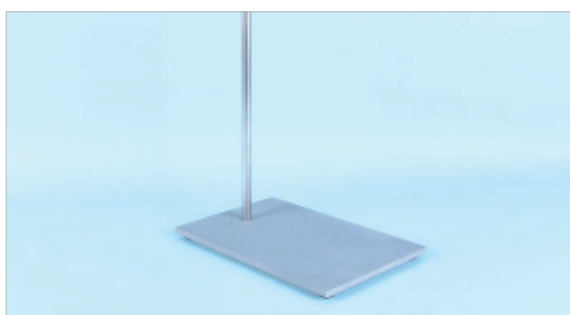
- Suitable for use together with Stirrer, Homogenizer, and Support Frame



Universal Large Clamp

Cat. No.	Model	Max. Grip	Full Length
C09-03-095	LCP-SS22	30 mm	L140 ~ 190 mm

- can be firmly fixed with various sizes
- Suitable to fix the stirrer or Homogenizer
- Up to 30mm size of rod can be fixed



Stainless Steel Plate Stand for Overhead Stirrer

Cat. No.	Model	Rod	Size (w×d×h, mm)
S09-02-444	R1822S	Ø16 mm	150×220×800
S09-02-448	R1823S		200×315×800
S09-02-452	R1824S	Ø23 mm	300×400×1000

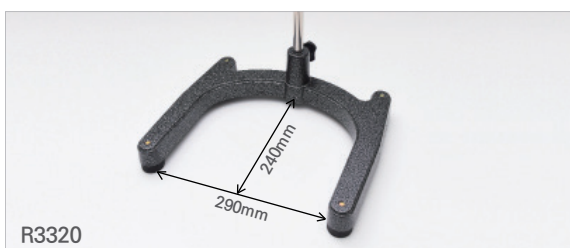
- Material: Stainless Steel 304
- Available by selecting one of the two holes to connect the rod



Plate Stand for Overhead Stirrer

Cat. No.	Model	Plate Size	Rod Size
H01-05-968	R1822	w200×d315 mm	Ø16×h800 mm
S09-53-555	R1890	w300×d400 mm	Ø23×h1000 mm

- Suitable for use together with Stirrer and Homogenizer
- Non-slip Silicon Plate and Boss Head are included as standard



Heavy Duty Stand for Overhead Stirrer

- Material: Coated Steel
- Included Stainless Steel Support
- H-Type Stand can be widened both sides from side to side

U-Type Stand

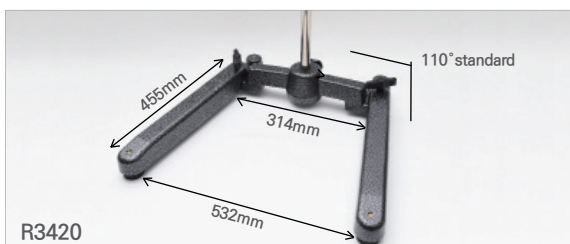
Cat.No.	Model	Inner Size	Rod Size
S09-53-567	R3320	w290×d240 mm	Ø20×h800 mm

- Outer size: w380×d321

H-Type Stand

Cat.No.	Model	Inner Size	Rod Size
S09-53-574	R3420	w532×d308.5 mm (110° standard)	Ø23×h1200 mm

- Outer size: w630×d455



SHAKER & MIXER & HOMOGENIZER

Digital Shaker

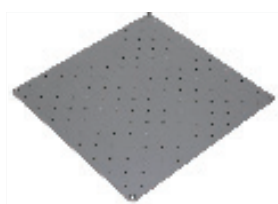
Vortex Mixer

Digital Homogenizer

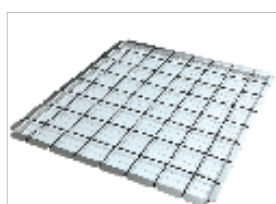
Analog Homogenizer



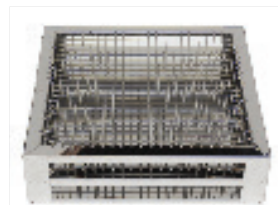
Product	Digital Shaker	Vortex Mixer	Digital Homogenizer	Analog Homogenizer
Model	SHx-10	VM-10	HGD-10	HGA-10
Max. Speed	10-70 / 10-300 rpm	3300 rpm	27000 rpm	27000 rpm
Max. Capacity	10kg	500g	2.5L	2.5L
Speed Control	Digital	Analog	Digital	Analog
Display	LCD	-	FND (3 digit)	-



Universal Platform



Rubber Mat Platform



Spring Rack



Flask Holder(ABS material)

Digital Shaker

Cat. No.	Model	Motion	Speed
S04-02-200	SHO-10	Orbital	10 ~ 300 rpm
S04-02-205	SHR-10	Reciprocating	
S04-02-210	SHD-10	3D Orbital	10 ~ 70 rpm

- Digital LCD Display. Indicate real-time shaking speed & target shaking speed
- Jog dial switch with easy-to-set the rpm
- Applied strong power & long-lifetime BLDC motor
- Slow Start function applied for minimizing the impact of a sample when driving
- Available to set Program control with 6 patterns & 10 steps
- Universal Platform - Available to apply various volumes of the flask (option)
- Rubber Mat Platform – convenient to use with culture bottle, petri dish (option)
- Platforms & flask holders not included
- Overload protector for motor protection applied

Optional Accessory

Cat. No.	Model	Description
S04-02-215	SHUP-10	Universal Platform, w350 × d350 mm
S04-02-220	SHRP-10	Rubber Mat Platform, w370 × d370 mm
I03-91-865	LI-LUS010	Universal Spring Rack
S04-02-004	LI-F100	Flask Holder, 50 ~ 100 mL
S04-02-005	LI-F250	Flask Holder, 200 ~ 300 mL
S04-02-006	LI-F500	Flask Holder, 500 ~ 1000 mL

Cat. No.		S04-02-200	S04-02-205	S04-02-210
Model		SHO-10	SHR-10	SHD-10
Shaking System	Motion	Orbital	Reciprocating	3D Orbital
	Speed Range	10 ~ 300 rpm		10 ~ 70 rpm
	Stroke	20mm		9° Tilt angle
	Max. Load	10 kg		
Controller	Control	Digital Control with Touch Button & Rotary Switch		
	Display	Digital LCD with Back-Light Function		
	Timer	99h 59m		
	Program Function	6 Pattern 10 Steps		
Exterior Size		w404 × d503 × h117 mm		w404 × d503 × h177 mm
Material	Exterior	ABS		
	Platform	Anodized Aluminium		
Motor Type		Brushless DC Motor		DC Motor
Safety		Overload Protector		
Environmental Conditions		Temp. 5 ~ 40 °C, Humidity < 80 %		
Electric Supply	Power	1 Phase, 220Vac, 50/60Hz		
	Consumption	45 W		
Flask Capa. (Universal Platform)	50 ~ 100 mL	20 ea		
	200 ~ 300 mL	16 ea		
	500 ~ 1000 mL	9 ea		



Vortex Mixer

Cat. No	Model	Speed
M04-06-100	VM-10	Max. 3300 rpm

- Able to adjust shaking speed
- Minimized the slipping and vibration by applying a rubber squeeze feet
- 3 steps of activating switches: stop, continuous operation, and Touch on mode
- Dials for intuitive and convenient Touch on mode and adjusting the speed
- Able to use various tube shapes & capacities by applying 2 types of head platforms
- Applied quiet and durable brushless shade motor
- Components: Mixer, Rubber Platform Head, Pop-off Cup Head, Remove Applicator

Spare Accessory

Cat. No	Model	Description
M04-06-190	VM10RP	3 Inch Rubber Platform Head
M04-06-195	VM10PC	Pop-off Cup Head
M04-06-200	VM10RA	Remove Applicator



3 Inch Rubber Platform Head

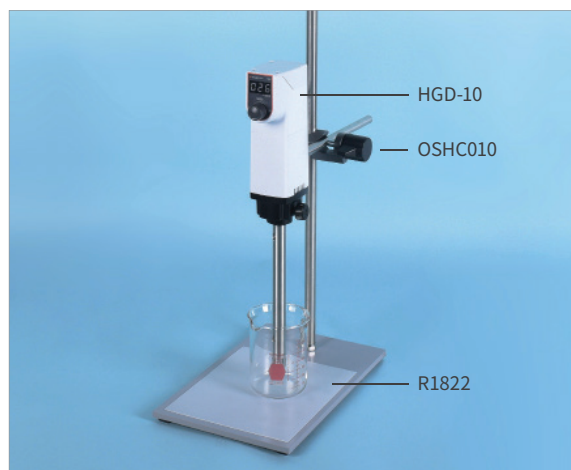


Pop-off Cup Head



Remove Applicator

Cat. No.	M04-06-100	
Model	VM-10	
Motion	Orbital	
Speed Range	0 ~ 3,300 rpm	
Material	Powder Coated Aluminum	
Size	w131xd185xh125 mm(except size of pop off cup head)	
Operating Mode	Touch or Continuous	
Motor	Brushless Shade motor	
Max. Load	500 g	
Environmental Conditions	Temp. 5 ~ 40 °C, Humidity < 80 %	
Electric Supply	Power	1 Phase, 220Vac, 50/60Hz
	Consumption	30 W



Homogenizer

Cat. No	Model	Type	Speed
H01-02-001	HGD-10	Digital	2,000 ~ 27,000 rpm
H01-02-002	HGA-10	Analog	About 27,000 rpm

- Applied High-speed and less-noise motor (Maximum no-load rpm: 27000rpm)
- Digital display showing the current RPM, set RPM, parameter, and so on (Digital Type)
- Jog dial switch with easy-to-set the rpm
- Able to apply Homogenizer Tool of varying capacities
- Overheat protector for motor protection applied

Optional Accessory

Cat. No	Model	Description
C09-04-010	OSHC010	Universal Clamp
H01-05-968	R1822	Plate Stand 200×315×800 mm
S09-53-555	R1890	Plate Stand 300×400×1000 mm
S09-53-567	R3320	U-Type Stand 380×321×843 mm

Homogenizer Tool

Cat. No	Model	Description
H01-04-190	HG1008	Homogenizer Tool, Rotor Φ6.1, Stator Φ8, 1 ~ 50 ml
H01-04-191	HG1010	Homogenizer Tool, Rotor Φ7.5, Stator Φ10, 1 ~ 100 ml
H01-04-192	HG1018	Homogenizer Tool, Rotor Φ12.7, Stator Φ18, 10 ~ 1000 ml
H01-04-193	HG1025	Homogenizer Tool, Rotor Φ17, Stator Φ25, 50 ~ 2500 ml



Cat. No.		H01-02-001	H01-02-002
Model		HGD-10	HGA-10
Capacity		2.5 L	
Speed Range		2000 ~ 27,000 rpm	About 27,000 rpm
Display		3 Digit FND	-
Safety		Motor Over Heat Protector	
Material		ABS & Powder Coated Aluminum	
Dispersing Tool Dia.		8, 10, 18, 25 mm	
Extension Arm Size		Φ12.7 x L250 mm	
Environmental Conditions		Temp. 5 ~ 40 °C, Humidity < 80 %	
Electric Supply	Power	1 Phase, 220Vac, 50/60Hz	
	Consumption	400 W	

INCUBATOR

Incubator

Low Temp. Incubator

4-Room Incubator

Shaking Incubator (Table Top)

Shaking Incubator(Top Door-Type)

CO₂ Incubator



Product	Incubator	Low Temp. Incubator	4-Room Incubator	Shaking Incubator (Table Top)	Shaking Incubator (Top Door type)	CO ₂ Incubator
Model	LI-ISxxx	LI-ILxxx	LI-BMxxx	LI-BS100x	LI-BS200x	Celltec Clxxxx
Capacity (L)	60, 100, 150, 200	60, 150, 250, 450	125 x 4	100	200	150, 250
Temp. range (°C)	Ambient +5 ~ 70	0 ~ 70	0 ~ 70	0 ~ 70	0 ~ 70	+5 ~ 50
Temp. Uniformity (°C)	±0.6 ~ ±0.7	±0.6 ~ ±1.0	± 0.7	±0.9 ~ ±1.0	± 1.1 ~ ±1.2	± 0.5
Fan speed	1 ~ 5 step	1 ~ 5 step	1 ~ 5 step	-	-	-
PC interface	O	O	-	-	-	-



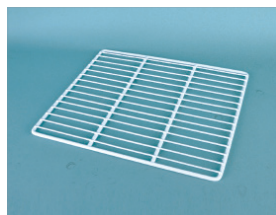
Door Open



Controller



RS485 to USB Cable



Epoxy Coated Shelf

Incubator

Cat. No.	Model	Capacity	Range
I03-91-015	LI-IS060	60 L	Ambient +5 ~ 70°C
I03-91-020	LI-IS100	100 L	
I03-91-025	LI-IS150	150 L	
I03-91-035	LI-IS200	200 L	

- Suitable for quality maintenance of microbiological tests and food process
- Precision temperature distribution inside with the internal circulating fan
- Fan stopping function with door open for minimizing temperature change
- 5 steps of flow controls prevent the spreading sample
- Available to observe inside with installed internal glass door without temperature changes
- Precision control implementation by 0.01°C
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- Installed ports RS485 for PC communication (Download communication program on <http://eng.lklab.com>)
- Automatic fault sensing system by itself can detect an unusual situation (Patent Registration)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit
- Power failure compensation function
- Available to add a cable port or inside power socket on request (option)

Optional Accessory

Cat. No.	Model	Type
B04-01-085	LI-USB	RS485 to USB Communication Cable
I03-91-800	LI-SSH060	Spare Shelf for 60 L
I03-91-805	LI-SSH100	Spare Shelf for 100 L
I03-91-810	LI-SSH150	Spare Shelf for 150 L
I03-91-815	LI-SSH200	Spare Shelf for 200 L

Cat. No.		I03-91-015	I03-91-020	I03-91-025	I03-91-035
Model		LI-IS060	LI-IS100	LI-IS150	LI-IS200
Capacity		60 L	100 L	150 L	200 L
Controller	Control	PID Control, Auto-tuning			
	Display	GLCD (Graphic LCD)			
	Resolution	0.01°C			
	Timer	Run start / Wait start (99 hr 59 min)			
Fan Speed		1 ~ 5 Step			
Temperature	Range	Ambient +5 ~ 70°C			
	Accuracy at 37°C	±0.3°C			
	Uniformity at 37°C	±0.54°C	±0.65°C	±0.63°C	±0.68°C
Size	Interior	w420×d350×h450 mm	w480×d410×h520 mm	w505×d505×h600 mm	w630×d515×h630 mm
	Exterior	w580×d560×h780 mm	w640×d620×h850 mm	w670×d715×h930 mm	w790×d720×h960 mm
Material	Interior	Stainless Steel 304			
	Exterior	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz			
	Max Consumption	400 W (1.9 A)	600 W (2.8 A)		800 W (3.7 A)
	Power Line	Standard Plug			
Other	Wire shelf	1ea	2ea		
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System			



Low Temp. Incubator / B.O.D Incubator

Cat. No	Model	Capacity	Temp. Range
I03-91-045	LI-IL060	60 L	0 ~ 70°C
I03-91-055	LI-IL150	150 L	
I03-91-065	LI-IL250	250 L	
I03-91-075	LI-IL450	450 L	

- Suitable for quality maintenance of microbiological tests and food process
- Precision temperature distribution inside with the internal circulating fan
- Fan stopping function with the door open for minimizing temperature changes
- 5 steps of flow controls prevent spreading of a sample
- Available to observe inside with installed internal glass door without temperature changes
- Precision control implementation by 0.01°C
- Simple and intuitive user interface with graphic LCD display
- 2 types of timer functions installed (start at the same time as driving or start after reaching target temperature)
- Auto tuning and temperature calibration function installed
- Installed ports RS485 for PC communication (Download communication program on <http://eng.lklab.com>)
- Automatic fault sensing system by itself can detect an unusual situation (Patent Registration)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit
- Power failure compensation function
- Available to add a cable port or inside power socket on request (option)



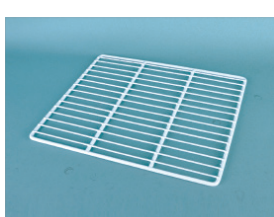
Door Open



Controller



RS485 to USB Cable



Epoxy Coated Shelf

Optional Accessory

Cat. No.	Model	Type
B04-01-085	LI-USB	RS485 to USB Communication Cable
I03-91-800	LI-ISSH060	Spare Shelf for 60 L
I03-91-810	LI-ISSH150	Spare Shelf for 150 L
I03-91-820	LI-ISSH250	Spare Shelf for 250 L
I03-91-825	LI-ISSH450	Spare Shelf for 450 L

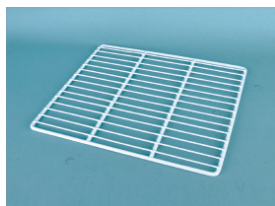
Cat. No.		I03-91-045	I03-91-055	I03-91-065	I03-91-075
Model		LI-IL060	LI-IL150	LI-IL250	LI-IL450
Capacity		60 L	150 L	250 L	450 L
Controller	Control	PID Control, Auto-tuning			
	Display	GLCD (Graphic LCD)			
	Resolution	0.01°C			
	Timer	Run start / Wait start (99 hr 59 min)			
Fan Speed		1 ~ 5 Step			
Temperature	Range	0 ~ 70°C			
	Accuracy at 37°C	±0.3°C			
	Uniformity at 37°C	±0.60°C	±0.63°C	±0.76°C	±0.98°C
Size	Interior	w420×d350×h450 mm	w505×d505×h600 mm	w505×d505×h1000 mm	w720×d620×h1000 mm
	Exterior	w580×d640×h1080 mm	w665×d810×h1300 mm	w665×d810×h1700 mm	w880×d920×h1700 mm
Material	Interior	Stainless Steel 304			
	Exterior	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 60 Hz			
	Max Consumption	1.2 kW (5.5 A)	1.6 kW (7.3 A)	1.8 kW (8.2 A)	2.3 kW (10.5 A)
	Power Line	Standard Plug			
Other	Wire Shelf	1ea	2ea		3ea
	Caster	Leveling Caster			
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System			



Internal image



Controller



Epoxy Coated Shelf

4-Room Incubator

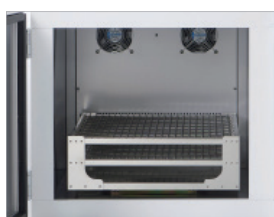
Cat. No.	Model	Capacity	Range
I03-02-085	LI-BM360	125 Lx4	Ambient +5 ~ 70°C
I03-02-115	LI-BM850		0 ~ 70°C

- Individual temperature control for all rooms (4 each room)
- Suitable for comparing experiments under the same temperature condition
- Great efficient spacing
- Precision temperature distribution inside with the internal circulating fan
- Fan stopping function with the door open for minimizing temperature changes
- 5 steps of flow controls prevent spreading a sample
- Installed internal glass
- Precision control implementation by 0.01°C
- Simple and intuitive user interface with graphic LCD display
- Auto tuning, and temperature calibration available
- 2 types of timer functions installed (start at the same time as driving or start after reaching target temperature)
- Automatic fault sensing system by itself can detect an unusual situation (Patent Registration)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off circuit
- Power failure compensation function
- Available to add Cable port or power socket inside on request (option)

Optional Accessory

Cat. No.	Model	Type
I03-02-125	LI-BMSH01	Shelf for 4 Room Incubator

Cat. No.		I03-02-085	I03-02-115
Model		LI-BM360	LI-BM850
Capacity		125 Lx4	
Controller	Control	PID Control, Auto-tuning	
	Display	GLCD (Graphic LCD)	
	Resolution	0.01°C	
	Timer	Run start / Wait start (99 hr 59 min)	
Fan Speed		1 ~ 5 Step	
Temperature	Range	Ambient +5 ~ 70°C	0 ~ 70°C
	Accuracy at 37°C	±0.3°C	
	Uniformity at 37°C	±0.63°C	
Size	Interior	w500×d500×h500 mm	
	Exterior	w1600×d800×h1730 mm	
Material	Interior	Stainless Steel 304	
	Exterior	Powder Coated Steel	
Electric Supply	Power	1 Phase, 220 Vac, 60 Hz	
	Max Consumption	500 W×4ea (9.1 A)	800 W×4ea (14.6 A)
	Power Line	Standard Plug x 2ea	
Other	Shelves	Room×2ea (8ea)	
	Caster	Leveling Caster	
Safety		Over Temp. & Current Protection, Automatic Fault Sensing System	



Spring rack Installed



Controller

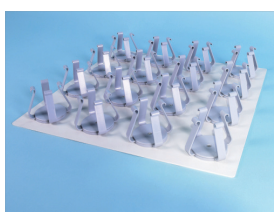


Plate Platform



Flask Holder(ABS material)

Shaking Incubator (Table Top)

Cat. No.	Model	Capacity	Range
I03-02-240	LI-BS100	125 L	Ambient +5 ~ 70°C
I03-02-245	LI-BS100L		10 ~ 70°C

- Suitable for incubating aerobic microorganisms through temperature control and shaking functions
- Available to observe inside with sight glass without temperature changes
- Available to put and fix inside for various volumes of flasks
- Suitable for quality maintenance of microbiological tests food process
- Precision temperature distribution inside with the internal circulating fan
- Fan stopping function with the door open for minimizing temperature changes
- Slow Start function applied for minimizing the impact of a sample
- Timer function (99 hours 59 min)
- Auto tuning, and temperature calibration available
- Over temp. Alarm, over RPM alarm
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off circuit
- Universal Spring rack included
- Paper Recorder can be added on request (Option)
- Max. Shaking speed may change depending on a loading weight

Spare Accessory

Cat. No.	Model	Description
S04-02-004	LI-F100	Flask Holder, 50 ~ 100 mL
S04-02-005	LI-F250	Flask Holder, 200 ~ 300 mL
S04-02-006	LI-F500	Flask Holder, 500 ~ 1000 mL
I03-02-715	PP100-S	50 ~ 100 ml Platform Set Plate Platform + Flask Holder(LI-F100) 36 ea
I03-02-720	PP110-S	200 ~ 300 ml Platform Set Plate Platform + Flask Holder(LI-F250) 16 ea
I03-02-725	PP120-S	500 ~ 1000 ml Platform Set Plate Platform + Flask Holder(LI-F500) 16 ea
I03-91-835	LI-LUS100	Spare Universal Spring Rack

- Universal Spring Rack: Suitable to use with various sizes of flasks together
- Plate Platform Set: Suitable to use for multiple flasks of one type

Cat. No.		I03-02-240	I03-02-245
Model		LI-BS100	LI-BS100L
Capacity		125 L	
Controller	Temp. Control	PID Control, Auto-tuning	
	Display	LED Segment	
Temperature	Range	Ambient +5 ~ 70°C	10 ~ 70°C
	Resolution	0.1°C	
	Accuracy at 37°C	0.3°C	
	Uniformity at 37°C	±0.5°C	±0.6°C
Shaking System	Range	20 ~ 350 rpm	
	Motion	Orbital	
	Stroke	20 mm	
	Max Load	25 kg	
Size	Interior	w560xd560xh500 mm	
	Exterior	w890xd810xh730 mm	
Material	Interior	Stainless Steel 304	
	Exterior	Powder Coated Steel	
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz	
	Max Consumption	650 W (2.6 A)	1.4 kW (6.4 A)
	Power Line	Standard Plug	



Internal image



Controller

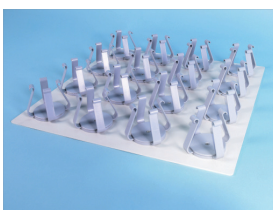


Plate Platform



Flask Holder(ABS material)

Shaking Incubator (Top Door-type)

Cat. No.	Model	Capacity	Range
I03-02-250	LI-BS200	200 L	Ambient +5 ~ 70°C
I03-02-255	LI-BS200L		10 ~ 70°C

- Suitable for incubating aerobic microorganisms through temperature control and shaking functions
- Easy handling with top door open type
- Available to put and fix inside for various volumes of flasks
- Suitable for quality maintenance of microbiological tests food process
- Precision temperature distribution inside with the internal circulating fan
- Fan stopping function with the door open for minimizing temperature changes
- Slow Start function applied for minimizing the impact of a sample
- Timer function (99 hours 59 min)
- Auto tuning, and temperature calibration available
- Over temp. Alarm, over RPM alarm
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off circuit
- Universal Spring rack included
- Paper Recorder can be added on request (Option)
- Max. Shaking speed may change depending on a loading weight

Spare Accessory

Cat. No.	Model	Description
S04-02-004	LI-F100	Flask Holder, 50 ~ 100 mL
S04-02-005	LI-F250	Flask Holder, 200 ~ 300 mL
S04-02-006	LI-F500	Flask Holder, 500 ~ 1000 mL
I03-02-701	PP200-S	50 ~ 100 ml Platform Set Plate Platform + Flask Holder(LI-F100) 60 ea
I03-02-705	PP210-S	200 ~ 300 ml Platform Set Plate Platform + Flask Holder(LI-F250) 30 ea
I03-02-710	PP220-S	500 ~ 1000 ml Platform Set Plate Platform + Flask Holder(LI-F500) 21 ea
I03-91-845	LI-LUS200	Spare Universal Spring Rack

- Universal Spring Rack: Suitable to use with various sizes of flasks together
- Plate Platform Set: Suitable to use for multiple flasks of one type

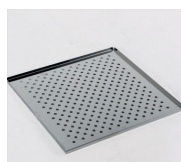
Cat. No.		I03-02-250	I03-02-255
Model		LI-BS200	LI-BS200L
Capacity		200 L	
Controller	Temp. Control	PID Control, Auto-tuning	
	Display	LED Segment	
Temperature	Range	Ambient +5 ~ 70°C	10 ~ 70°C
	Resolution	0.1°C	
	Accuracy at 37°C	0.3°C	
	Uniformity at 37°C	±1.2°C	±1.1°C
Shaking System	Range	30 ~ 350 rpm	
	Motion	Orbital	
	Stroke	20 mm	
	Max Load	25 kg	
Size	Interior	w750×d720×h400 mm	
	Exterior	w1070×d900×h980 mm	
Material	Interior	Stainless Steel 304	
	Exterior	Powder Coated Steel	
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz	
	Max Consumption	800 W (3.7 A)	1.8 kW (8.2 A)
	Power Line	Standard Plug	



선반 설치



Controller



Shelf



Humidification Tray



Gas Regulator

CO₂ Incubator

Cat. No.	Model	Capacity	O ₂ Control
I03-91-100	Celltec CI150S	150L	-
I03-91-105			1 ~ 21%
I03-91-110	Celltec CI250S	250L	-
I03-91-115			1 ~ 21%

- Incubator for cell culture that can control the temperature and CO₂ concentration
- Using in tissue engineering, external fertilization, cancer cell, and mammary cell research
- Cell culture contamination prevention
 - As a seamless chamber structure, the prevention of other germs growing at the gap
 - Able to simply sterilize and disinfect through cleaning by very easy attachable and detachable shelf
- Realization of uniform temperature distribution without circulation fan, simplified internal structure
- Applied color touch panel display (Touchable with gloves on)
- Applied NDIR type of CO₂ sensor applied, less impact from humidity, temperature, dust and etc., and able to measure the accurate CO₂ concentration
- Available to get alarms regarding deviation of temperature and CO₂ concentration, door open, etc. •One cable port included

Optional Accessory

Cat. No	Model	Description
S04-650-010	CPS-20	CO ₂ Shaker, with Spring rack
I03-91-201	LCI-15SH	Spare Shelf for 150 L
I03-91-204	LCI-25SH	Spare Shelf for 250 L
I03-91-207	LCI-HT01	Humidification Tray for 150 L
I03-91-209	LCI-HT02	Humidification Tray for 250 L
I03-91-211	LCI-GR01	Gas Regulator
I03-91-213	LCI-SB01	Stacking Bracket
I03-91-220	LCI-15CF	Caster frame for 150 L double chamber, High 210 mm
I03-91-223	LCI-25CF	Caster frame for 250 L double chamber, High 210 mm

Cat. No.		I03-91-100	I03-91-105	I03-91-110	I03-91-115
Model		Celltec CI150S		Celltec CI250S	
Capacity		150 L		250 L	
Temperature	Range	Ambient +5 ~ 50°C			
	Control	0.1°C			
	Stability at 37°C	± 0.1°C			
	Uniformity at 37°C	± 0.5°C			
CO ₂	Range	1 ~ 20%			
	Control	0.1%			
	Stability at 5%	± 0.1%			
	Inlet pressure	12 ~ 15 PSI (0.8 ~ 1 bar)			
	Inlet	6 mm one-touch fitting			
O ₂	Range	-	1 ~ 21%	-	1 ~ 21%
	Control	-	0.1%	-	0.1%
	Stability at 5%	-	± 0.1%	-	± 0.1%
	Inlet pressure	-	12 ~ 15 PSI (0.8 ~ 1 bar)	-	12 ~ 15 PSI (0.8 ~ 1 bar)
	Inlet	-	6 mm one-touch fitting	-	6 mm one-touch fitting
Humidity at 37°C		90%RH			
Material	Interior	Stainless Steel 304			
	Exterior	Powder Coated Steel			
	Inner door	Glass			
Size	Interior	w500 x d500 x h600 mm		w600 x d630 x h670 mm	
	Exterior	w693 x d781 x h927 mm		w793 x d912 x h997 mm	
Electric	Power	1 Phase, 220 Vac, 50/60 Hz			
	Current	2.3 A		3.2 A	
Shelves	Size	w480 x d450 mm		w580 x d580 mm	
	Material	Stainless Steel 304			
	Number(Include/maximun)	2/5 ea		2/8 ea	
Other	Cable Port	Ø48 mm×1ea			

BALL MILL

Desktop Ball Mill

2 Layer Ball Mill

Cabinet Ball Mill



Product	Desktop Ball Mill	2 Layer Ball Mill	Cabinet Ball Mill
Model	LM-BDxxxx	LM-BSxxx	LM-BCxxx
Roller size (mm)	Φ50 x L300 (2ea) Φ50 x L300 (3ea)	Φ50 x L300 Φ70 x L700	Φ50 x L400 Φ70 x L700
Roller layer	1 layer	2 layer	1 layer (LM-BC540) 2 layer (LM-BC740)
Roller speed (rpm)	30 ~ 350	30 ~ 350	30 ~ 350
Control	Digital feedback	Digital feedback	Digital feedback
Timer	O	O	O



Desktop Ball Mill

Cat. No	Model	Roller	R.P.M
M03-02-130	LM-BD4530	Φ50× L300 mm (2ea)	30 ~ 350
M03-02-135	LM-BD6030	Φ50× L300 mm (3ea)	

- Compact type tabletop ball mill
- Suitable for experiments
- With crushing and mixing of solid samples such as mineral, grain, and pigment
- Great chemical resistance and durability of abrasion with the installation of NBR-rubber roller
- Adjustable space between rollers depending on jar sizes (LM-VD4530 only)
- Emergency shutdown switch Installed
- LM-BD4530: Roller Min. spacing 85mm / Max. spacing 210mm
- LM-BD6030: Fixed roller spacing 110mm
- Max. load weight: 20kg including ball mill jar
- Prevent the risk of damage to a device when leaking a sample by mounting an auxiliary shelf
- Applied less noise and durable BLDC motor

Cat. No.		M03-02-130	M03-02-135
Model		LM-BD4530	LM-BD6030
Controller	Control	Digital Feedback Control	
	Display	GLCD (Graphic LCD)	
	Resolution	1 rpm	
RPM	Range	30 ~ 350 rpm	
	Accuracy	2 rpm	
Size		w538 x d300 x h277 mm	
Electric Supply	Power	1 Phase, 220 VAC, 50/60 Hz	
	Max Consumption	50 W (0.2 A)	
	Power Line	Standard Plug	
Roller		Φ50×L300 mm, 2ea	Φ50×L300 mm, 3ea
Max. Load Weight		20kg	
Jar Size		Φ50 ~ Φ200 mm	Φ70 ~ Φ150 mm



2 Layer Ball Mill

Cat. No	Model	Roller	R.P.M
M03-02-105	LM-BS605	Φ50×L300 mm	30 ~ 350
M03-02-115	LM-BS750	Φ70×L700 mm	

- Suitable equipment for crushing solid samples by rotating the media balls with high durability materials such as zirconia, alumina, and glass
- Available double operation with double construction
- Great chemical resistance and durability of abrasion with installation of NBR-rubber roller
- Adjustable space between rollers depending on jar sizes
- Emergency shutdown switch Installed
- Max. load weight: 20kg including ball mill jar
- Range of adjusting space: Min. 85mm / Max. 210mm

Cat. No.		M03-02-105	M03-02-115
Model		LM-BS605	LM-BS750
Controller	Control	Digital Feedback Control	
	Display	GLCD (Graphic LCD)	
	Resolution	1 rpm	
RPM	Range	30 ~ 350 rpm	
	Accuracy	2 rpm	
Size		w630 x d350 x h496 mm	w1160 x d350 x h496 mm
Electric Supply	Power	1 Phase, 220 VAC, 50/60 Hz	
	Max Consumption	150 W (0.7 A)	
	Power Line	Standard Plug	
Roller		Φ50×h300 mm (2 layer 2 row)	Φ70×h700 mm (2 layer 2 row)
Max. Load Weight		30kg	
Jar Size		Φ50 ~ Φ300 mm	



LM-BC540

Cabinet Ball Mill

Cat. No	Model	Roller
M03-02-119	LM-BC540	Φ50×L400 mm (2 layer 1 row)
M03-02-120	LM-BC740	Φ70×L700 mm (2layer 2 row)

- Suitable equipment for crushing solid samples by rotating the media balls with high durability materials such as zirconia, alumina, and glass
- Considering for safety and less noise by ball mill installed cabinet
- Great chemical resistance and durability of abrasion with the installation of NBR-rubber roller
- Adjustable space between rollers depending on jar sizes
- Range of adjusting space: Min. 85mm / Max. 210mm
- Max. load weight: 20kg including ball mill jar
- Timer function and emergency shutdown switch installed
- Emergency shutdown switch Installed
- Available to apply the sign tower lamp on request (option, SI300)
- Applied less noise and durable BLDC motor
- Prevents motor overload

Cat. No.		M03-02-119	M03-02-120
Model		LM-BC540	LM-BC740
Controller	Control	Digital Feedback Control	
	Display	GLCD (Graphic LCD)	
	Resolution	1 rpm	
Speed	Range	30 ~ 350 rpm	
	Accuracy	2 rpm	
Size	Internal	w420xd525xh440 mm	w820xd520xh420 mm x 2ea
	External	w740xd585xh570 mm	w1100xd550xh1165 mm
Material	Case	Power coated Steel	
	Frame	Aluminum	
	Window	Polycarbonate(PC)	
Electric Supply	Power	1 Phase, 220 VAC, 50/60 Hz	
	Max Consumption	150 W (0.7 A)	
Roller		Φ50×L400 mm (2 layer 1row)	Φ70×L700 mm (2 layer 2row)
Max. Load Weight		30kg	
Available Jar Size		Φ50 ~ Φ300 mm	
Caster		-	Leveling Caster

OVEN

Forced Convection Oven (Standard-type)

Forced Convection Oven (Program-type)

Forced Convection Oven (Large-type)

High Temp. Forced Convection Oven (350°C)

High Temp. Forced Convection Oven (450°C)

Industrial Oven

Electronic Drying Rack



Product	Forced Convection Oven	Forced Convection Oven (Program-type)	Large Size Oven	Large Size Oven (Program type)	High Temp. Oven, 350°C
Model	LO-FSxxx	LO-FPxxx	LO-USxxxS	LO-USxxxP	LO-HSxxx
Capacity (L)	60, 100, 150, 250	60, 100, 150, 250	360, 588	360, 588	100, 150
Temp. range (°C)	Ambient +10 ~ 250	Ambient +10 ~ 250	Ambient +10 ~ 250	Ambient +10 ~ 250	Ambient +10 ~ 350
Temp. Uniformity (°C)	±1.5 ~ ±1.8	±1.5 ~ ±1.8	±1.8 ~ ±2.2	±1.8 ~ ±2.2	±2.3 ~ ±3.7
Program function	-	O	-	O	-
Fan speed	1 ~ 5 step	1 ~ 5 step	1 ~ 5 step	1 ~ 5 step	1 ~ 5 step
PC interface	O	O	O	O	O

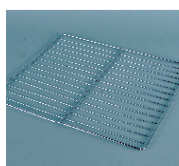
Product	High Temp. Oven, 350°C (Program type)	High Temp. Oven, 450°C	High Temp. Oven, 450°C (Program type)	Industrial Oven	Electronic Drying Rack
Model	LO-HPxxx	LO-USxxx	LO-Upxxx	LO-FSxxx	LD-xxx
Capacity (L)	100, 150	100, 150	100, 150	720, 960, 1800	w700xd450xh1600 w900xd450xh1600
Temp. range (°C)	Ambient +10 ~ 350	Ambient +10 ~ 450	Ambient +10 ~ 450	Ambient +10 ~ 250	Ambient +10 ~ 50
Temp. Uniformity (°C)	±2.3 ~ ±3.7	±2.3 ~ ±3.7	±2.3 ~ ±3.7	±2.0 ~ ±2.8	-
Program function	O	-	O	-	-
Fan speed	1 ~ 5 step	1 ~ 5 step	1 ~ 5 step	-	-
PC interface	O	O	O	-	-



Controller



Shelf installed



Wire Shelf



RS485 to USB Cable



SI300

Forced Convection Oven, Standard-type

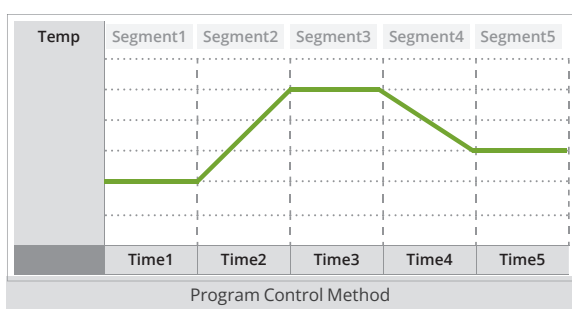
Cat. No.	Model	Type	Capacity
O01-02-020	LO-FS050	PID Control	60 L
O01-02-024	LO-FS100		100 L
O01-02-032	LO-FS150		150 L
O01-02-040	LO-FS250		250 L

- Uniform temperature distribution by forced convection of heat flow
- 5-step flow control prevents spreading a sample
- Fan stopping function with the door open to minimize temperature change and consider the safety of the operator
- Observation inside through triple tempered glass window without the door open
- Upper vent hole for venting gases
- Simple and intuitive user interface with graphic LCD display
- 2 type timer function installed (start at the same time as driving or start after reaching target temperature)
- Auto tuning, and temperature calibration available
- Installed ports RS485 for PC communication (communication program can download on www.lklab.com)
- Automatic fault sensing system by itself can detect an unusual situation (Patent Registration)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit

Optional Accessory

Cat. No.	Model	Description	
O01-96-100	SI300	Sign Tower Lamp	
B04-01-085	LI-USB	RS485 to USB Communication Cable	
O01-02-401	LO-FSSH01	Spare Wire Shelf	for 60 L
O01-02-403	LO-FSSH02		for 100 L
O01-02-405	LO-FSSH03		for 150 L
O01-02-407	LO-FSSH04		for 250 L
O01-02-411	LO-FSSH11	Optional Perforated Plate Shelf	for 60 L
O01-02-413	LO-FSSH12		for 100 L
O01-02-415	LO-FSSH13		for 150 L
O01-02-417	LO-FSSH14		for 250 L

Cat. No.		O01-02-020	O01-02-024	O01-02-032	O01-02-040
Model		LO-FS050	LO-FS100	LO-FS150	LO-FS250
Capacity		60 L	100 L	150 L	250 L
Controller	Control	PID control, Auto-tuning			
	Display	GLCD (Graphic LCD)			
	Resolution	0.01 °C			
	Timer	Run start / Wait start (99 hr 59 min)			
Fan Speed		1 ~ 5 Step			
Temperature	Range	Ambient +10 to +250°C			
	Accuracy at 100°C	±0.3 °C			
	Uniformity at 100°C	±1.5 °C	±1.5 °C	±1.7 °C	±1.8 °C
Size	Interior	w400×d350×h420 mm	w480×d400×h530 mm	w550×d460×h600 mm	w700×d600×h600 mm
	Exterior	w530×d625×h745 mm	w610×d675×h855 mm	w680×d735×h925 mm	w830×d875×h940 mm
Weight		55kg	63kg	75kg	90kg
Material	Interior	304 Stainless Steel			
	Exterior	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz			
	Max Consumption	900 W (4.1 A)	1.5 kW (6.8 A)	1.8 kW (8.2 A)	2.6 kW (11.9 A)
	Power Line	Standard Plug			
Other	Wire Shelf	1 ea	2 ea	3 ea	3 ea
	Vent Hole	Φ38 mm × 2 ea			
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System			



Forced Convection Oven, Program-type

Cat. No.	Model	Type	Capacity
O01-02-022	LO-FP505	Program Control	60 L
O01-02-026	LO-FP510		100 L
O01-02-034	LO-FP515		150 L
O01-02-042	LO-FP525		250 L

- Available to set and drive-by selecting several segments of Temperature increasing, maintaining, and decreasing time
- Available to prevent temperature overshoot and precision temperature control
- Uniform temperature distribution by forced convection of heat flow
- Fan stopping function with the door open for minimizing temperature change (considering the safety of the operator)
- Observation inside through triple tempered glass window without door open
- Upper vent hole for venting gases
- Available to set 2 patterns / 18 segment
- Auto tuning and temperature calibration function installed
- Installed ports RS485 for PC communication (communication program can download on www.lklab.com)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit
- Automatic fault sensing system by itself can detect an unusual situation (Patent Registration)

Optional Accessory

Cat. No.	Model	Description	
O01-96-100	SI300	Sign Tower Lamp	
B04-01-085	LI-USB	RS485 to USB Communication Cable	
O01-02-401	LO-FSSH01	Spare Wire Shelf	for 60 L
O01-02-403	LO-FSSH02		for 100 L
O01-02-405	LO-FSSH03		for 150 L
O01-02-407	LO-FSSH04		for 250 L
O01-02-411	LO-FSSH11	Optional Perforated Plate Shelf	for 60 L
O01-02-413	LO-FSSH12		for 100 L
O01-02-415	LO-FSSH13		for 150 L
O01-02-417	LO-FSSH14		for 250 L

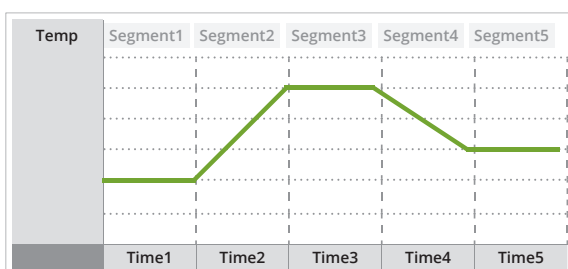
Cat. No.		O01-02-022	O01-02-026	O01-02-034	O01-02-042
Model		LO-FP505	LO-FP510	LO-FP515	LO-FP525
Capacity		60 L	100 L	150 L	250 L
Controller	Control	Program Control			
	Display	GLCD (Graphic LCD)			
	Program	2 Pattern, 18 Segment			
	Resolution	0.01 °C			
Fan Speed		1 ~ 5 Step			
Temperature	Range	Ambient +10 to +250°C			
	Accuracy at 100°C	±0.3 °C			
	Uniformity at 100°C	±1.5°C	±1.5°C	±1.7°C	±1.8°C
Size	Interior	w400×d350×h420 mm	w480×d400×h530 mm	w550×d460×h600 mm	w700×d600×h600 mm
	Exterior	w530×d625×h745 mm	w610×d675×h855 mm	w680×d735×h925 mm	w830×d875×h940 mm
Material	Interior	304 Stainless Steel			
	Exterior	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz			
	Max Consumption	900 W (4.1 A)	1.5 kW (6.8 A)	1.8 kW (8.2 A)	2.6 kW (11.9 A)
	Power Line	Standard Plug			
Other	Wire Shelf	1 ea	2 ea		3 ea
	Vent Hole	Φ38 mm × 2 ea			
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System			



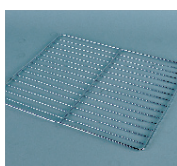
Forced Convection Oven, Large-type

Cat. No.	Model	Type	Capacity
O01-02-045	LO-US280S	PID Control	360 L
O01-02-047	LO-US300S		588 L
O01-02-055	LO-US280P	Program Control	360 L
O01-02-057	LO-US300P		588 L

- Uniform temperature distribution by forced convection of heat flow
- 5-step flow controls prevent spreading a sample
- Fan stopping function with door open for minimizing temperature changes and considering safety of operator
- Observation inside through triple tempered glass window without door open
- Upper vent hole for venting gases
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- Installed ports RS485 for PC communication (communication program can download on www.lklab.com)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit
- Program control
 - Available precise controlling and inhibiting temperature overshoot
 - Available to set and drive by selecting several segments of Temperature increasing, maintaining, and decreasing time



Program Control Method



Wire Shelf



RS485 to USB Cable



SI300

Optional Accessory

Cat. No.	Model	Description	
O01-96-100	SI300	Sign Tower Lamp	
B04-01-085	LI-USB	RS485 to USB Communication Cable	
O01-02-421	LO-USSH01	Spare Wire Shelf	for 360 L
O01-02-423	LO-USSH02		for 588 L
O01-02-431	LO-USSH11	Optional Perforated Plate Shelf	for 360 L
O01-02-433	LO-USSH12		for 588 L

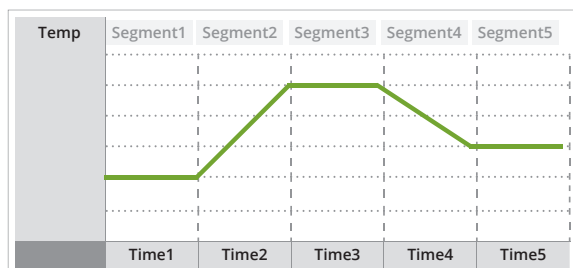
Cat. No.		O01-02-045	O01-02-047	O01-02-055	O01-02-057
Model		LO-US280S	LO-US300S	LO-US280P	LO-US300P
Capacity		360 L	588 L	360 L	588 L
Controller	Control	PID Control		Program Control	
	Display	GLCD (Graphic LCD)			
	Resolution	0.01°C			
	Timer	Run start / Wait start (99 hr 59 min)			
Fan Speed		1 ~ 5 Step			
Temperature	Range	Ambient +10 ~ +250°C			
	Accuracy at 100°C	±0.3°C			
	Uniformity at 100°C	±1.8°C	±2.2°C	±1.8°C	±2.2°C
Size	Interior	w600×d600×h1000 mm	w700×d700×h1200 mm	w600×d600×h1000 mm	w700×d700×h1200 mm
	Exterior	w740×d875×h1470 mm	w840×d975×h1670 mm	w740×d875×h1470 mm	w840×d975×h1670 mm
Material	Interior	Stainless Steel 304			
	Exterior	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz			
	Max Consumption	3.6 kw (16.4A)	5.2 kw (23.7A)	3.6 kw (16.4A)	5.2 kw (23.7A)
	Power Line	Industrial Plug			
Other	Wire Shelf	4ea			
	Vent Hole	Ø38 mm×2ea			
	Caster	Leveling Caster			
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System			



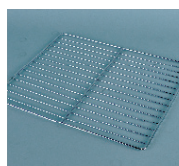
High Temp. Forced Convection Oven, 350°C

Cat. No.	Model	Type	Capacity
O01-02-065	LO-HS480	PID Control	100 L
O01-02-073	LO-HS600		150 L
O01-02-067	LO-HP485	Program Control	100 L
O01-02-075	LO-HP605		150 L

- Uniform temperature distribution by forced convection of heat flow
- Fan stopping function with door open for minimize temperature change(considering safety of operator)
- Highly thermal resistant ceramic packing applied
- 50T ceramic temperature can be raised quickly through insulation and high heat capacity
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- 2 type timer function installed (start at the same time as driving or start after reaching target temperature)
- 5-step air volume controls prevent the spreading of a sample
- Installed ports RS485 for PC communication (communication program can download on www.lklab.com)
- Program control
 - Available precise controlling and inhibiting temperature overshoot
 - Available to set and drive by selecting several segments of Temperature increasing, maintaining, and decreasing time



Program Control Method



Wire Shelf



RS485 to USB Cable



SI300

Optional Accessory

Cat. No.	Model	Description	
O01-96-100	SI300	Sign Tower Lamp	
B04-01-085	LI-USB	RS485 to USB Communication Cable	
O01-02-441	LO-HSSH01	Spare Wire Shelf	for 100 L
O01-02-443	LO-HSSH02		for 150 L
O01-02-451	LO-HSSH11	Optional Perforated Plate Shelf	for 100 L
O01-02-453	LO-HSSH12		for 150 L

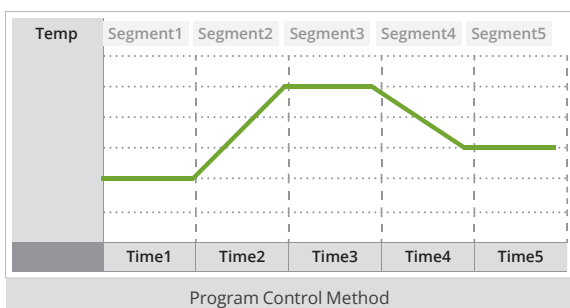
Cat. No.	O01-02-065	O01-02-073	O01-02-067	O01-02-075
Model	LO-HS480	LO-HS600	LO-HP485	LO-HP605
Capacity	100 L	150 L	100 L	150 L
Controller	Control	PID Control		Program Control
	Display	GLCD (Graphic LCD)		
	Resolution	0.1°C		
	Timer	Run start / Wait start (99 hr 59 min)		
Fan Speed		1 ~ 5 Step		
Temperature	Range	Ambient +15 ~ +350°C		
	Accuracy at 100°C	±0.3°C		
	Uniformity at 100°C	±2.3°C	±3.7°C	±2.3°C
Size	Interior	w480×d400×h520 mm	w600×d500×h520 mm	w480×d400×h520 mm
	Exterior	w670×d675×h930 mm	w790×d780×h930 mm	w670×d675×h930 mm
Material	Interior	Stainless Steel 304		
	Exterior	Powder Coated Steel		
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz		
	Max Consumption	2.5 kw (11.3 A)	3.1 kW (14.1 A)	2.6 kw (11.3 A)
	Power Line	Standard Plug		
Other	Wire Shelf	2ea		
	Vent Hole	Ø38 mm×2ea		
Safety		Over Temp. & Current Protection, Automatic Fault Sensing System		



High Temp. Forced Convection Oven, 450°C

Cat. No.	Model	Type	Capacity
O01-02-081	LO-US100	PID Control	100 L
O01-02-089	LO-US165		150 L
O01-02-091	LO-UP200	Program Control	100 L
O01-02-093	LO-UP350		150 L

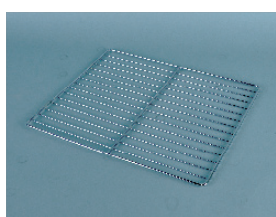
- Uniform temperature distribution by forced convection of heat flow
- Fan stopping function with the door open for minimizing temperature change(considering the safety of operator)
- Highly thermal resistant ceramic packing applied
- 50T ceramic temperature can be raised quickly through insulation and high heat capacity
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- 2 type timer function installed (start at the same time as driving or start after reaching target temperature)
- 5-step flow controls prevent the spreading of a sample
- Installed ports RS485 for PC communication (communication program can download on www.lklab.com)
- Program control
 - available precise controlling and inhibiting temperature overshoot
 - Available to set and drive by selecting several segments of Temperature increasing, maintaining, and decreasing time
 - Available to set 2 patterns / 18 segments program
- Notice: This product is applied with an industrial plug. Please check before purchasing.



Optional Accessory

Cat. No.	Model	Description	
O01-96-100	SI300	Sign Tower Lamp	
B04-01-085	LI-USB	RS485 to USB Communication Cable	
O01-02-421	LO-USSH01	Spare Wire Shelf	for 100 L
O01-02-423	LO-USSH02		for 150 L
O01-02-431	LO-USSH11	Optional Perforated Plate Shelf	for 100 L
O01-02-433	LO-USSH12		for 150 L

Cat. No.	O01-02-081	O01-02-089	O01-02-091	O01-02-093
Model	LO-US100	LO-US165	LO-UP200	LO-UP350
Capacity	100 L	150 L	100 L	150 L
Controller	Control	PID Control		Program Control
	Display	GLCD (Graphic LCD)		
	Resolution	0.1°C		
	Timer	Run start / Wait start (99 hr 59 min)		
Fan Speed		1 ~ 5 Step		
Temperature	Range	Ambient +15 ~ +450°C		
	Accuracy at 100°C	±0.3°C		
	Uniformity at 100°C	±2.3°C	±3.7°C	±2.3°C
Size	Interior	w480×d400×h520 mm	w600×d500×h520 mm	w480×d400×h520 mm
	Exterior	w670×d675×h930 mm	w790×d780×h930 mm	w670×d675×h930 mm
Material	Interior	Stainless Steel 304		
	Exterior	Powder Coated Steel		
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz		
	Max Consumption	2.8 kw (12.7 A)	3.0 Kw (13.6 A)	2.8 kw (12.7A)
	Power Line	Industrial Plug		
Other	Wire Shelf	2ea		
	Vent Hole	Ø38 mm×2ea		
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System		



Wire Shelf



SI300

Industrial Oven

Cat. No.	Model	Type	Capacity
O01-02-195	LO-FS720	PID Controller	720 L
O01-02-197	LO-FS960		960 L
O01-02-199	LO-FS1800		1800 L

- Uniform temperature distribution by forced convection of heat flow
- Fan stopping function with the door open for minimizing temperature change (considering the safety of the operator)
- Emergency stop button. Can be stopped immediately in case of an urgent situation
- Observation inside through triple tempered glass window without door open
- Upper vent hole for venting gases
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- Automatic fault sensing system by itself can detect an unusual situation (Patent Registration)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit
- Possible to make custom-made type; changing the size or changing to program control type
- Notice: This product is applied with an industrial plug. Please check before purchasing.

Optional Accessory

Cat. No.	Model	Description	
O01-96-100	SI300	Sign Tower Lamp	
O01-02-461	LO-FSSH51	Spare Wire Shelf	for 720 L
O01-02-463	LO-FSSH52		for 960 L
O01-02-465	LO-FSSH53		for 1800 L
O01-02-471	LO-FSSH55	Optional Perforated Plate Shelf	for 720 L
O01-02-473	LO-FSSH56		for 960 L
O01-02-475	LO-FSSH57		for 1800 L

Cat. No.		O01-02-195	O01-02-197	O01-02-199
Model		LO-FS720	LO-FS960	LO-FS1800
Capacity		720 L	960 L	1800 L
Controller	Control	PID control, Auto-tuning		
	Display	GLCD (Graphic LCD)		
	Resolution	0.01 °C		
	Timer	Run start / Wait start (99 hr 59 min)		
Temperature	Range	Ambient +10°C to +250°C		
	Accuracy at 100°C	±0.3°C		
	Uniformity at 100°C	±2.0 °C	±2.4 °C	±2.8 °C
Size	Interior	w1000×d800×h900 mm	w1100×d910×h1000 mm	w1300×d1000×h1200 mm
	Exterior	w1480×d1000×h1180 mm	w1580×d1110×h1280 mm	w1780×d1200×h1480 mm
Material	Interior	304 Stainless Steel		
	Exterior	Powder Coated Steel		
Electric Supply	Power	3 phase, 380Vac, 60 Hz		
	Max Consumption	4.5 kW (6.8 A)	6 kW (9.1 A)	8 kW (12.2 A)
	Power Line	Industrial Plug		
Other	Damper	Φ100 mm Internal Steam, Damper & Duct Hole Base Installation		
	Wire Shelf	SUS 304 Punching plate sheles , 6 ea		8 ea
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System		



w/ Fan Heater

Electronic Wire Drying Rack

- Able to dry quickly and conveniently with hot wind
- As an assembly, it is adjustable the height of the shelf and facilitates assembly and decomposition
- Prevent contamination from the dust by using translucent curtains which are included as standard
- Water trap, wheel, and 4 shelves which have different sizes of the hole are included as standard
- Able to set drying temperature
- Able to set the timer

Wire Drying Rack w/ Fan Heater

Cat. No.	Model	Description
C04-02-100	LD-700	w700 x d450 x h1600 mm
C04-02-150	LD-900	w900 x d450 x h1600 mm

Wire Drying Rack w/o Fan Heater

Cat. No.	Model	Description
R01-11-160	LWRM001N	w700 × d450 × h1600 mm
R01-11-166	LWRM002N	w900 × d450 × h1600 mm

Optional Accessory

Cat. No.	Model	Description
R01-11-920	LWRM011	Spare Curtain for LD-700
R01-11-926	LWRM012	Spare Curtain for LD-900



w/o Fan Heater



Bottom plate



Spare curtain



Controller



Shelf

Cat. No.		C04-02-100	C04-02-150
Model		LD-700	LD-900
Size		w700 x d450 x h1600 mm	w900 x d450 x h1600 mm
Controller	Temp Range	Ambient +10 °C ~ 50 °C	
	Temp Resolution	0.1 °C	
	Timer	Run start / Wait start (99 hr 59 min)	
Material	Main Frame	304 Stainless Steel	
	Control Box	Powder Coated Steel	
Electric Supply	Power	1 Phase / 220Vac / 50/60 Hz	
	Max Consumption	500 W (2.3 A)	
	Power Line	Standard Plug	
Shelf Hole (mm)		1st(85 x 85), 2nd(50 x 50), 3rd(36 x 36), 4th(25 x 25)	
Safety		Over Temp. & Over Current Protection	

VACUUM OVEN

Vacuum Oven

Vacuum Oven (Program-type)

Process Vacuum Oven System

High Temp. Vacuum Oven

High Temp. Process Vacuum Oven System



Product	Vacuum Oven	Vacuum Oven (Program-type)	Process Vacuum Oven System	High Temp. Vacuum Oven	High Temp. Process Vacuum Oven System
Model	LO-VSxxxN	LO-VPxxxN	LO-VSxxxSN	LO-VSxxxN LO-VPxxxN	LO-VSxxxSN
Capacity (L)	8, 28, 65, 125	8, 28, 65, 125	8, 28, 65, 125	28, 65	28, 65
Temp. range (°C)	50 ~ 250	50 ~ 250	50 ~ 250	50 ~ 300	50 ~ 300
Vacuum range (torr)	7.0 ~ 760	7.0 ~ 760	7.0 ~ 760	7.0 ~ 760	7.0 ~ 760
Program function	-	O	-	O (LO-VPxxxN)	-
PC interface	O	O	O	O	O
Cooling water line	-	-	-	O	O
Additional compoent	-	-	Vacuum oven, Cold trap, Vacuum pump, Rack	-	Vacuum oven, Cold trap, Vacuum pump, Circulator, Rack



Vacuum Oven

Cat. No.	Model	Type	Capacity
O01-02-302	LO-VS232N	PID Control	8 L
O01-02-310	LO-VS313N		28 L
O01-02-318	LO-VS424N		65 L
O01-02-321	LO-VS525N		125L

- Controlling of physical & chemical changing of sample by heated oxygen with maintaining vacuum status of inside chamber
- Spreading prevention valve installed. Prevent spreading a sample from external air inflow after vacuum released
- Consist with DU-AL shelf for excellent heat conductivity
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- 2 type timer function installed (start at the same time as driving or start after reaching target temperature)
- Installed ports RS485 for PC communication (communication program can download on www.lklab.com)
- Automatic fault sensing system by itself can detect an unusual situation (Patent Registration)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit
- LO-VS525N (125L) does not have KC & CE certificates.



LO-VS232N (8L)



Internal shelf installed



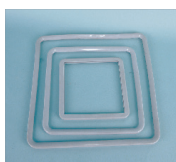
Controller



Vacuum & Vent Valve

Optional Accessory

Cat. No.	Model	Description	
O01-96-100	SI300	Sign Tower Lamp	
B04-01-085	LI-USB	RS485 to USB Communication Cable	
O01-02-381	LO-VSSG01	Spare Silicon Gasket	for 8 L
O01-02-383	LO-VSSG02		for 28 L
O01-02-385	LO-VSSG03		for 65 L
O01-02-387	LO-VSSG04		for 125 L



Silicon Gasket

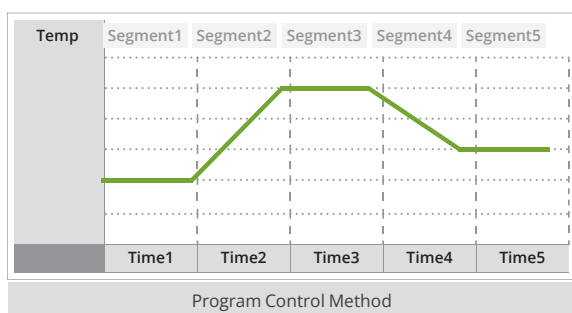


RS485 to USB Cable



SI300

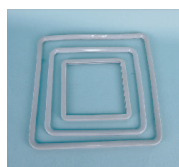
Cat. No.		001-02-302	001-02-310	001-02-318	001-02-321
Model		LO-VS232N	LO-VS313N	LO-VS424N	LO-VS525N
Capacity		8 L	28 L	65 L	125 L
Controller	Control	PID control, Auto-tuning			
	Display	GLCD (Graphic LCD)			
	Resolution	0.01 °C			
	Timer	Run start / Wait start (99 hr 59 min)			
Temperature	Range	50 to 250°C			
Vacuum Range		7.0 ~ 760 torr			
Size	Interior	w200×d200×h200 mm	w300×d300×h300 mm	w400×d400×h400 mm	w500×d500×h500 mm
	Exterior	w370×d350×h510 mm	w470×d460×h615 mm	w570×d560×h720 mm	w770×d650×h830 mm
Material	Interior	Stainless Steel 304			
	Exterior	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz			
	Max Consumption	600 W (2.8 A)	600 W (2.8 A)	1.6 kW (7.3 A)	2.5 kW (11.2 A)
	Power Line	Standard Plug			
Other	Aluminum Shelf	1 ea	2 ea		
	Vacuum Port	1/4" Hose Nipple Male			
	Vent Port	1/4" Hose Nipple Male			
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System			



LO-VS232N (8L)



Internal shelf installed



Silicon Gasket



RS485 to USB Cable



SI300

Vacuum Oven, Program Type

Cat. No.	Model	Type	Capacity
O01-02-304	LO-VP232N	Program Control	8 L
O01-02-312	LO-VP313N		28 L
O01-02-320	LO-VP424N		65 L
O01-02-322	LO-VP525N		125L

- Controlling physical & chemical changing of a sample by heated oxygen with maintaining the vacuum status of the inside chamber
- Spreading prevention valve installed. Prevent spreading a sample from external air inflow after vacuum released
- Consist with DU-AL shelf for excellent heat conductivity
- Available to set and drive by selecting several segments of Temperature increasing, maintaining, and decreasing time
- Available precise controlling and inhibiting temperature overshoot
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- Installed ports RS485 for PC communication (communication program can download on www.lklab.com)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit
- LO-VP525N (125L) does not have KC & CE certificates.

Optional Accessory

Cat. No.	Model	Description	
O01-96-100	SI300	Sign Tower Lamp	
B04-01-085	LI-USB	RS485 to USB Communication Cable	
O01-02-381	LO-VSSG01	Spare Silicon Gasket	for 8 L
O01-02-383	LO-VSSG02		for 28 L
O01-02-385	LO-VSSG03		for 65 L
O01-02-387	LO-VSSG04		for 125 L

Cat. No.		O01-02-304	O01-02-312	O01-02-320	O01-02-322
Model		LO-VP232N	LO-VP313N	LO-VP424N	LO-VP525N
Capacity		8 L	28 L	65 L	125L
Controller	Control	Program Control, Auto-tuning			
	Display	GLCD (Graphic LCD)			
	Resolution	0.01 °C			
Temperature	Range	50 to 250°C			
Vacuum Range		7.0 ~ 760 torr			
Size	Interior	w200×d200×h200 mm	w300×d300×h300 mm	w400×d400×h400 mm	w500×d500×h500 mm
	Exterior	w370×d350×h510 mm	w470×d460×h615 mm	w570×d560×h720 mm	w770×d650×h830 mm
Material	Interior	Stainless Steel 304			
	Exterior	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz			
	Max Consumption	600 W (2.8 A)	600 W (2.8 A)	1.6 kW (7.3 A)	2.5 kW (11.2 A)
	Power Line	Standard Plug			
Other	Aluminum Shelf	1 ea	2 ea		
	Vacuum Port	1/4" Hose Nipple Male			
	Vent Port	1/4" Hose Nipple Male			
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System			

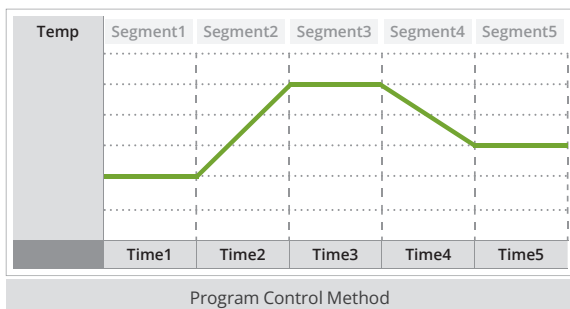


Process Vacuum Oven System

Cat. No.	Model	Type	Capacity
O01-02-335	LO-VS232SN	PID Control	8 L
O01-02-339	LO-VS313SN		28 L
O01-02-343	LO-VS424SN		65 L
O01-02-347	LO-VS525SN		125L

- Product components: vacuum oven, cold trap bath, pump, table rack)
- Controlling of physical & chemical changing of sample by heated oxygen with maintaining vacuum status of inside chamber
- Consist with DU-AL shelf for excellent heat conductivity
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- 2 type timer function installed (start at the same time as driving or start after reaching target temperature)
- Installed ports RS485 for PC communication (communication program can download on www.lklab.com)
- Automatic fault sensing system by itself can detect an unusual situation (Patent Registration)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off a circuit
- Program type available upon request

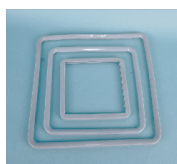
Cat. No.		O01-02-335	O01-02-339	O01-02-343	O01-02-347
Model		LO-VS232SN	LO-VS313SN	LO-VS424SN	LO-VS525SN
Capacity		8 L	28 L	65 L	125L
Controller	Control	PID control, Auto-tuning			
	Display	GLCD (Graphic LCD)			
	Resolution	0.01 °C			
	Timer	Run start / Wait start (99 hr 59 min)			
Vacuum Range		7.0 ~ 760 torr			
Temperature	Range	50 to 250°C			
Size	Interior	w200×d200×h200 mm	w300×d300×h300 mm	w400×d400×h400 mm	w500×d500×h500 mm
	Exterior	w370×d350×h510 mm	w470×d460×h615 mm	w570×d560×h720 mm	w770×d650×h830 mm
Material	Interior	304 Stainless Steel			
	Exterior	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz			
	Max Consumption	600 W (2.8 A)	600 W (2.8 A)	1.6 kW (7.3 A)	2.5 kW (11.2 A)
	Power Line	Standard Plug			
Other	Aluminum Shelf	1 ea	2 ea		
	Vacuum Port	1/4" Hose Nipple Male			
	Vent Port	1/4" Hose Nipple Male			
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System			
Cold Trap Bath	Cat. No. / Model	B04-01-230 / CTB40			
	Temp. Range	Down to -40°C			
	Capacity	4.8 L			
	Trap	Glass Trap (2ea)			
Vacuum Pump	Cat. No. / Model	P06-121-105/ED-RV5	P06-121-108/ED-RV8		P06-121-112/ED-RV12
	Pumping Speed	103 L/min	167 L/min		238 L/min
	Check Valve	Check Valve			
	Gas Ballast Valve	2 Stage Rotary Vane Pump			
	Ultimate Pressure	1.5×10 ⁻³ Torr			
	(- GB 1)	2.3×10 ⁻² Torr			
	(- GB 2)	7.5×10 ⁻² Torr	4.6×10 ⁻² Torr		
	Oil Mist Trap	EMF10			EMF20
Rack	Material	Powder Coated Steel With Caster			
	Size	w620×d600×h900 mm	w720×d600×h900 mm	w820×d600×h900 mm	w920×d690×h900 mm



Controller



Water IN/OUT port (left side)



Silicon Gasket



RS485 to USB Cable



SI300

HighTemp. Vacuum Oven, 300°C

Cat. No.	Model	Type	Capacity
O01-02-357	LO-VS330N	PID Control	28 L
O01-02-365	LO-VS380N		65 L
O01-02-359	LO-VP330N	Program Control	28 L
O01-02-369	LO-VP380N		65 L

- Controlling of physical & chemical changing of a sample by heated oxygen with maintaining vacuum status of the inside chamber
- Cooling line installed to allow the gasket to withstand high temperatures
- Spreading prevention valve installed. Prevent spreading a sample from external air inflow after vacuum released
- Consist with DU-AL shelf for excellent heat conductivity
- Simple and intuitive user interface with graphic LCD display
- Auto tuning and temperature calibration function installed
- Automatic fault sensing system by itself can detect an unusual situation (Patent Registration)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off circuit
- Installed ports RS485 for PC communication (communication program can download on www.lklab.com)
- Program control
 - Available precise controlling and inhibiting temperature overshoot
 - Available to set and drive by selecting several segments of Temperature increasing, maintaining, and decreasing time

Optional Accessory

Cat. No.	Model	Description	
O01-96-100	SI300	Sign Tower Lamp	
B04-01-085	LI-USB	RS485 to USB Communication Cable	
O01-02-383	LO-VSSG02	Spare Silicon Gasket	for 28 L
O01-02-385	LO-VSSG03		for 65 L

Cat. No.		O01-02-357	O01-02-365	O01-02-359	O01-02-369
Model		LO-VS330N	LO-VS380N	LO-VP330N	LO-VP380N
Capacity		28 L	65 L	28 L	65 L
Controller	Control	PID Control		Program Control	
	Display	GLCD (Graphic LCD)			
	Resolution	0.01°C			
	Timer	Run start / Wait start (99 hr 59 min)			
Temperature	Range	50 to 300°C			
Vacuum Range		7.0 ~ 760 torr			
Size	Interior	w300×d300×h300 mm	w400×d400×h400 mm	w300×d300×h300 mm	w400×d400×h400 mm
	Exterior	w470×d460×h615 mm	w570×d560×h720 mm	w470×d460×h615 mm	w570×d560×h720 mm
Material	Interior	Stainless Steel 304			
	Exterior	Powder Coated Steel			
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz			
	Max Consumption	1.2 kW (5.5 A)	2.5 kW (11.4 A)	1.2 kW (5.5 A)	2.5 kW (11.4 A)
	Power Line	Standard Plug			
Other	Aluminum Shelf	2ea			
	Vacuum Port	1/4" Hose Nipple male			
	Vent Port	1/4" Hose Nipple male			
	Water Line Port	1/4" Hose Nipple male			
Safety		Over Temp. & Current Protection, Automatical Fault Sensing System			



High Temp. Process Vacuum Oven System

Cat. No.	Model	Type	Capacity
O01-02-372	LO-VS330SN	PID Control	28 L
O01-02-375	LO-VS380SN		65 L

- Product components: High temp. vacuum oven, cold trap, vacuum pump, low temp. circulating bath table rack
- In case of driving over 250°C, Coolant for Door gasket protection is needed to be supplied. (low temp. circulating bath)
- Controlling of physical & chemical changing of a sample by heated oxygen with maintaining vacuum status of the inside chamber
- Consist with DU-AL shelf for excellent heat conductivity
- Auto tuning and temperature calibration function installed
- Installed ports RS485 for PC communication (communication program can download on www.lklab.com)
- Double overheat safety device - 1st controller overheat alarm, 2nd overheat shut off circuit
- Program type available upon request

Cat. No.		O01-02-372	O01-02-375
Model		LO-VS330SN	LO-VS380SN
Capacity		28 L	65 L
Controller	Control	PID control, Auto-tuning	
	Display	GLCD (Graphic LCD)	
	Resolution	0.01 °C	
Vacuum Range		7.0 ~ 760 torr	
Temperature	Range	50 to 300°C	
Size	Interior	w300×d300×h300 mm	w400×400×h400 mm
	Exterior	w470×d460×h615 mm	w570×d560×h720 mm
Material	Interior	304 Stainless Steel	
	Exterior	Powder Coated Steel	
Electric Supply	Power	1 Phase, 220 Vac, 50/60 Hz	
	Max Consumption	1.2 Kw (5.5 A)	2.5 Kw (11.4 A)
	Power Line	Standard Plug	
Other	Shelves	2 ea	
	Vacuum Port	1/4" Hose Nipple Male	
	Vent Port	1/4" Hose Nipple Male	
Safety		Over Temp. & Current Protection, Automatic Fault Sensing System	
Cold Trap Bath	Cat. No. / Model	B04-01-230 / CTB40	
	Temp. Range	Down to -40°C	
	Capacity	4.8 L	
	Trap	Glass Trap (2ea)	
Low Temp. Circulating Bath	Cat. No. / Model	B04-91-410 / LC-LT208	
	Temp. Range	-20 ~ + 150°C	
	Capacity	8 L	
	Pumping Capa.	22 L/min, 6.8 psi	
Vacuum Pump	Cat. No. / Model	P06-121-105 / ED-RV5	
	Pumping Speed	103 L/min	
	Check Valve	Check Valve	
	Gas Ballast Valve	2 Stage Rotary Vane Pump	
	Ultimate Pressure	1.5×10 ⁻³ Torr	
	(- GB 1)	2.3×10 ⁻² Torr	
	(- GB 2)	7.5×10 ⁻² Torr	
	Oil Mist Trap	EMF10	
Rack	Material	Powder Coated Steel With Caster	
	Size	w820×d600×h900 mm	

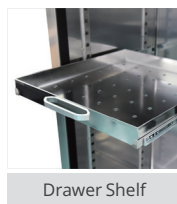
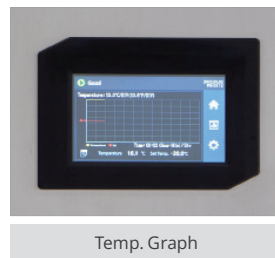
REFRIGERATOR & FREEZER

Laboratory Refrigerator

Laboratory Freezer



Product	Laboratory Refrigerator	Laboratory Freezer
Model	LRGxxxx LRSxxxx	LFSxxxx
Capacity (L)	560, 1040	560, 1040
Temp. range (°C)	0 ~ 10	-20 ~ 0
Temp. uniformity (°C)	± 3.0	±5.0
Defrost system	Heater Defrost	Heater Defrost
Door	Glass (LRGxxxx) Solid (LRSxxxx)	Solid
Drawer shelf	O (option)	O (option)
Auto remote alarm	O (option)	O (option)
Recorder	O (option)	O (option)



Laboratory Refrigerator

- Excellent temperature distribution by the air circulation cooling method (Indirect cooling method)
- Excellent speed of cooling and temperature recovery
- Satisfy with ICH Stability Testing Guidelines(Q1A(R2))
- Applied 4.3" touch panel controller
- Able to check temperature graphs and alarm Log
- Various alarm functions – alarm for high and low temperature, and alarm for door opens, etc.
- Prevent arbitrary changes for set value or malfunction through controller Lock function
- Minimized temperature changes by applying an automatic defrosting system
- No dew forms on the exterior door as the heater is inserted outside the door
- Provide a safe environment through the installed Door Lock
- Able to add Paper Recorder (Optional)
- Easy to check the contents through the internal lamp
- Excellent durability and ability to use a convenient drawer-type shelf (Optional)
- Wi-Fi temperature monitoring system (optional)
 - Alarm sending to a smartphone when temperature desorption occurs
 - Wireless router for Wi-Fi at the installation place and download the mobile app are necessary

Glass Door Type

Cat. No	Model	Capacity	Door
R07-91-500	LRG1000	560 L	1 Door
R07-91-502	LRG2000	1040 L	2 Door

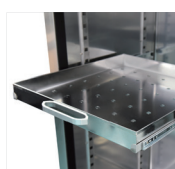
Solid Door Type

Cat. No	Model	Capacity	Door
R07-91-510	LRS1000	560 L	1 Door
R07-91-512	LRS2000	1040 L	2 Door

Optional Accessory

Cat. No.	Model	Description
C07-02-510	TR2002	Compact Paper Recorder
R07-91-850	RWSH1000	Wire Shelf for 560 L
R07-91-852	RWSH2000	Wire Shelf for 1040 L
R07-91-854	RSSH1000	Drawer Shelf for 560 L
R07-91-856	RSSH2000	Drawer Shelf for 1040 L
C07-91-090	RMAL01	wifi temp. monitoring system

Cat. No.		R07-91-500	R07-91-510	R07-91-502	R07-91-512
Model		LRG1000	LRS1000	LRG2000	LRS2000
Capacity		560 L (1 Door)		1040 L (2 Door)	
Controller	Display	4.3" Touch Panel			
	Resolution	0.1°C			
Temperature	Range	0 ~ 10°C			
	Uniformity at 5°C	±3.0°C			
Size	Interior	w600×d630×h1350 mm		w1220×d630×h1350 mm	
	Exterior	w740×d803×h1910 mm		w1260×d803×h1910 mm	
Weight		130kg		180kg	
Air Circulation		Forced Circulation			
Defrost		Automatic, Electric Defrost			
Material	Interior / External	Stainless Steel			
	Door	Glass	Stainless Steel	Glass	Stainless Steel
Electrical Supply	Power	1 Phase, 220 Vac, 60 Hz			
	Consumption	292 W/h		368 W/h	
Safety		Door Lock, Over Current Protection, Sensor Error Detection			
Shelf	Wire, Epoxy Coated	3ea		6ea	



Laboratory Freezer

Cat. No	Model	Capacity	Door
R07-91-520	LFS1000	560 L	1 Door
R07-91-522	LFS2000	1040 L	2 Door

- Excellent temperature distribution by the air circulation cooling method (Indirect cooling method)
- Excellent speed of cooling and temperature recovery
- Satisfy with ICH Stability Testing Guidelines(Q1A(R2))
- Applied 4.3" touch panel controller
- Able to check temperature graphs and alarm Log
- Various alarm functions – alarm for high and low temperature, and alarm for door opens, etc.
- Prevent arbitrary changes for set value or malfunction through controller Lock function
- Minimized temperature changes by applying an automatic defrosting system
- No dew forms on the exterior door as the heater is inserted outside the door
- Provide a safe environment through the installed Door Lock
- Able to add Paper Recorder (Optional)
- Excellent durability and ability to use a convenient drawer-type shelf (Optional)
- Easy to check the contents through the internal lamp
- Wi-Fi temperature monitoring system (optional)
 - Alarm sending to a smartphone when temperature desorption occurs
 - Wireless router for Wi-Fi at the installation place and download the mobile app are necessary

Optional Accessory

Cat. No.	Model	Description
C07-02-510	TR2002	Compact Paper Recorder
R07-91-850	RWSH1000	Wire Shelf for 560 L
R07-91-852	RWSH2000	Wire Shelf for 1040 L
R07-91-854	RSSH1000	Drawer Shelf for 560 L
R07-91-856	RSSH2000	Drawer Shelf for 1040 L
C07-91-090	RMAL01	wifi temp. monitoring system

Cat. No.		R07-91-520		R07-91-522	
Model		LFS1000		LFS2000	
Capacity		560 L (1 Door)		1040 L (2 Door)	
Controller	Control Display	4.3" Touch Panel			
	Resolution	0.1°C			
Temperature	Range	-25 ~ 0°C			
	Uniformity at -25°C	±5.0°C			
Size	Interior	w600×d630×h1350 mm		w1220×d630×h1350 mm	
	Exterior	w740×d803×h1910 mm		w1260×d803×h1910 mm	
Weight		120kg		190kg	
Air Circulation		Forced Circulation			
Defrost		Automatic, Electric Defrost			
Material	Internal / External	Stainless Steel			
	Door	Stainless Steel			
Electrical Supply	Power	1 Phase, 220 Vac, 60 Hz			
	Consumption	454 W/h		905 W/h	
Safety		Door Lock, Over Current Protection, Sensor Error Detection			
Shelf	Wire, Epoxy Coated	3ea		6ea	

Ultra-Low Temperature Freezer

Ultra-Low Temperature Freezer(Upright Type)

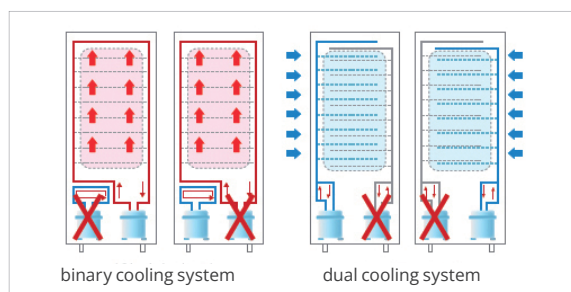
Ultra-Low Temperature Freezer(Tabletop Type)

Ultra-Low Temperature Freezer(Chest Type)

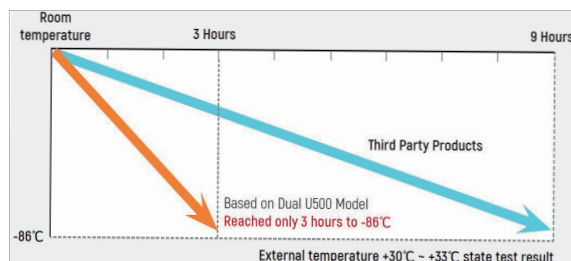


Product	Ultra-Low Temperature Freezer Upright Type	Ultra-Low Temperature Freezer Tabletop type	Ultra-Low Temperature Freezer Chest Type
Temp. range(°C)	-95 ~ -30	-86 ~ -65	-86 ~ -30
Capacity(L)	83 ~ 870	30	132 ~ 306
Compression System	Dual/Single	Single	Single
Recorder	O(option)	-	-
CO2 Back Up System	O(option)	-	-

Ultra-Low Temperature Freeze



Dual Cooling System (Compressor backup)



Fast Temp. Recovering Speed



Controller



Temp. Graph



Chart Recorder



Wifi Monitoring System

Ultra-Low Temperature Freezer, Upright Type

- Dual Compressor System
 - Two units of Compressor operate independently, freezer system structure simplified, decrease of failure rate
 - Cool-down temperature Implementation by Max -95°C
 - Fast temperature recovery through boost function
 - Eco Mode: cross-operating of the Compressor, reducing power consumption, and extending its life
- Exhaustive Backup System
 - In case one of the Compressors fails, the temperature maintains down to -80°C by the other Compressor (Dual Cooling System)
 - Each function conducts by operating temperature and alarm controllers independently even if one controller fails
 - Each function conducts by operating control and alarm sensors independently even if one sensor fails
 - Temperature monitoring and alarm functions conduct through an internal battery under power outages
 - Internal temperature maintains -60°C when the problem occurs through the CO₂ backup system (Optional)
- Auto-diagnose system and alarm system
 - Able to take action before the problem occurs through the Compressor, temperature sensor, and power supply observation function
 - Temperature leaving alarm, temperature sensor abnormal alarm, Compressor abnormal alarm, input voltage abnormal alarm, Door Open alarm, and machine room temperature alarm
 - Able to check the alarm outside in case of a problem occurs through Wi-Fi Monitoring System
- Auto Door (Optional, Except for UFS2083 model)
 - Automatic opening and shutting through the button on the controller
 - User record management function
 - Able to security maintenance through password entry function
- Condenser has no pin structure, so cleaning is not required and maintenance is convenient
- Negative pressure release function of the Door opening and shutting
- Temperature graph, even Log check and download function

Dual Cooling System / Upright Type -95°C~-65°C

Cat. No	Model	Capacity	Temp. Range
F06-91-103	UFD2310	310 L	-95°C ~ -65°C
F06-91-105	UFD2400	400 L	
F06-91-107	UFD2510	510 L	
F06-91-109	UFD2730	730 L	-90°C ~ -65°C
F06-91-111	UFD2870	870 L	

Single Cooling System / Upright Type -86°C~-65°C

Cat. No	Model	Capacity	Temp. Range
F06-91-131	UFS2083	83 L	-86°C ~ -65°C
F06-91-133	UFS2310	310 L	
F06-91-135	UFS2400	400 L	
F06-91-137	UFS2510	510 L	-80°C ~ -65°C
F06-91-139	UFS2730	730 L	
F06-91-141	UFS2870	870 L	

Optional Accessory

Cat. No.	Model	Description
F06-91-401	KT6P2	7 Days Chart Recorder, -100°C to 50°C
F06-91-403	KT6P2-60	Chart Recorder paper, 60ea
F06-91-405	SRP01	Spare Red Pen for Chart Recorder, 6ea
F06-91-411	LCO2-B5	LCO2 Back up System
F06-91-415	ERA-WF	Wifi Monitoring System
F06-91-419	UF-Autodoor	Auto Door System



Sliding Drawer Rack



Horizontal Rack



Paper Storage Box



PP Storage Box

Rack for Upright Type Freezer, Stainless Steel(optional)

Cat. No.	Model	Type	적용 모델
F06-91-331	DFR34	Sliding Drawer, 3 x 4 w140 x d423 x h240 mm	UFS2083
F06-91-333	DFR35	Sliding Drawer 3 x 5 w140 x d423 x h300 mm	UFD2310/2400 UFS2310/2400
F06-91-335	DFR45	Sliding Drawer 4 x 5 w140 x d560 x h300 mm	UFD2510/2730 UFS2510/2730
F06-91-336	DFR55	Sliding Drawer 5 x 5 w140 x d700 x h300 mm	UFD2870 UFS2870
F06-91-337	HFR34	Horizontal 3 x 4 w136 x d444 x h226 mm	UFS2083
F06-91-339	HFR35	Horizontal 3 x 5 w136 x d444 x h282 mm	UFD2310/2400 UFS2310/2400
F06-91-341	HFR45	Horizontal 4 x 5 w136 x d585 x h282 mm	UFD2510/2730 UFS2510/2730
F06-91-343	HFR55	Horizontal, 5 x 5, w136 x d725 x h282 mm	UFD2870 UFS2870

Storage Box (optional)

Cat. No.	Model	Type
C25-74-100	FB-C81	Paper, 9x9 holes, w130 x d130 x h51 mm
C25-46-321	T524010-W	PP, 9x9 holes, w133 x d133 x h52 mm

Dual Compression System, -95°C / -90°C ~ -65°C

Cat. No.	F06-91-103	F06-91-105	F06-91-107	F06-91-109	F06-91-111
Model	UFD2310	UFD2400	UFD2510	UFD2730	UFD2870
Capacity	310 L	400 L	510 L	730 L	870 L
Temp. Range	-95°C ~ -65°C (External Conditions : Temperature 30°C & Humidity 70%)			-90°C ~ -65°C	
Controller	7" Full Touch Screen TFT LCD, Auto checking Own System				
Temp. Probe	Control 1ea, Alarm 1ea				
Interior Size (w x d x h)	470×515×1310 mm	600×515×1310 mm	600×655×1310 mm	880×635×1310 mm	880x760x1310 mm
Exterior Size (w x d x h)	800×892×1990 mm	930×892×1990 mm	930×1032×1990 mm	1210×1021×1990 mm	1210x1029x1990 mm
Compressor	Dual Compression System, independent				
Condenser	Block Condenser, No Pin & Filter-free Mechanism				
Refrigerant	CFC-Free Refrigerant				
Power Consumption	1.2 kW	1.6 kW			
Rack Type	DFR35(HFR35) x 12	DFR35(HFR35) x 16	DFR45(HFR45) x 16	DFR45(HFR45) x 24	DFR55(HFR55)x 24
2" Cryo Box	180 ea	240 ea	320 ea	480 ea	600ea
Weight	220 kg	260 kg	285 kg	325 kg	385kg
Power	AC220V, 50/60Hz				

Single Compression System, -86°C / -80°C ~ -55°C

Cat. No.	F06-91-131	F06-91-133	F06-91-135	F06-91-137	F06-91-139	F06-91-141
Model	UFS2083	UFS2310	UFS2400	UFS2510	UFS2730	UFS2870
Capacity	83 L	310 L	400 L	510 L	730 L	870 L
Temp. Range	-86°C ~ -65°C (External Conditions : Temperature 30°C & Humidity 70%)				-80°C ~ -65°C	
Controller	7" Full Touch Screen TFT LCD					
Temp. Probe	Control 1ea, Alarm 1ea					
Interior Size (w x d x h)	340×485×520 mm	470×515×1310 mm	600×515×1310 mm	600×655×1310 mm	880×635×1310 mm	880x760x1310 mm
Exterior Size (w x d x h)	572×830×1147 mm	800×892×1990 mm	930×892×1990 mm	930×1032×1990 mm	1210×1021×1990 mm	1210x1029x1990 mm
Compressor	Single					
Condenser	Block Condenser, No Pin & Filter-free Mechanism					
Refrigerant	CFC-Free Refrigerant					
Power Consumption	520 W	600 W	800 W			
Rack Type	DFR34(HFR34) x 4	DFR35(HFR35) x 12	DFR35(HFR35) x 16	DFR45(HFR45) x 16	DFR45(HFR45) x 24	DFR55(HFR55)x 24
2" Cryo Box	48 ea	180 ea	240 ea	320 ea	480 ea	600ea
Weight	102 kg	190 kg	220 kg	245 kg	285 kg	335 kg
Power	AC220V, 50/60Hz					

Ultra-Low Temperature Freeze



Ultra-Low Temperature Freezer, Tabletop Type

Cat. No	Model	Capacity	Power Consumption	Temp. Range
F06-91-130	UFS2030	30 L	250 W	-86°C ~ -65°C

- Cool-down system simplification by 1 compressor, energy efficiency increase, failure rate decrease
- Condenser has no pin structure, so cleaning is not required and maintenance is convenient
- No required an inconvenient filter cleaning by using no pin structure condenser
- Has key lock function by a strong door handle
- Maximization insulation rate using hard polyurethane (PU) through a high-pressure foam maker
- Equipped warning & alarm function • CFC free refrigerant applied

Cat. No.	F06-91-130
Model	UFS2030
Capacity	30 L
Temp. Range	-86°C ~ -65°C (External Conditions : Temperature 30°C & Humidity 70%)
Interior Size (w x d x h)	240 × 425 × 300 mm
Exterior Size (w x d x h)	435 × 727 × 845 mm
Compressor	Single Compression System
Power Consumption	250 W
Weight	52 kg
Power	AC220V, 50/60Hz



CB1132

Ultra-Low Temperature Freezer, Chest Type

Temperature Range -60°C ~ -86°C, Basic Chest Type

Cat. No	Model	Capacity	Power Consumption	Temp. Range
F06-91-180	CB1132	132 L	300 W	-60°C ~ -86°C
F06-91-183	CB1232	232 L	400 W	
F06-91-186	CB1306	306 L	450 W	

- Multipurpose ultra-low temperature freezer with low noise and low power consumption
- Able to use in a broad range of disciplines such as various specimen preservation, quality assurance, examination, research, etc.
- No required an inconvenient filter cleaning by using no pin structure condenser
- Minimization losing chill by using high-quality vacuum insulation material
- Minimization maintenance by simple structure
- Equipped warning & alarm function

Rack for Chest Type Freezer, Stainless Steel(optional)

Cat. No.	Model	Type	Size, w x d x h
F06-91-352	VFR07	Vertical 1 x 7	143 x 140 x 400 mm
F06-91-355	VFR11	Vertical 1 x 11	143 x 140 x 620 mm



VFR07

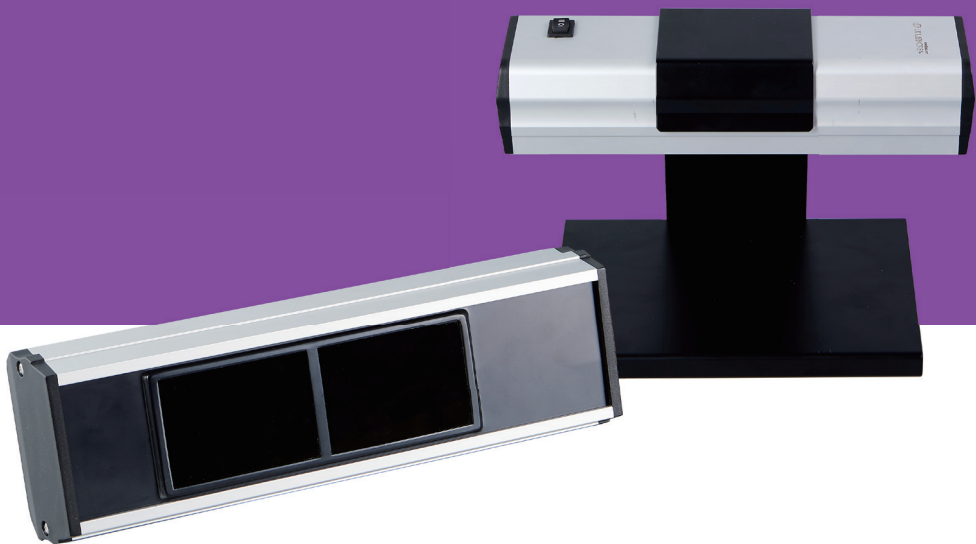


VFR11

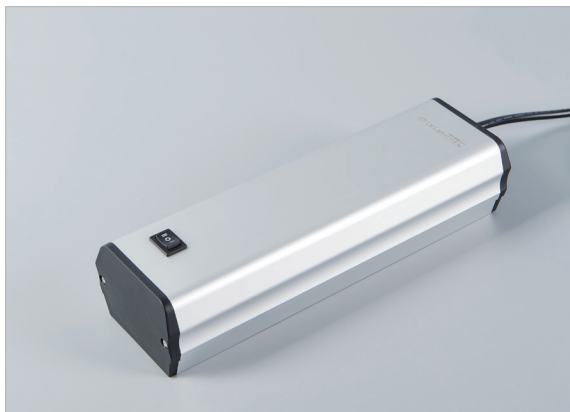
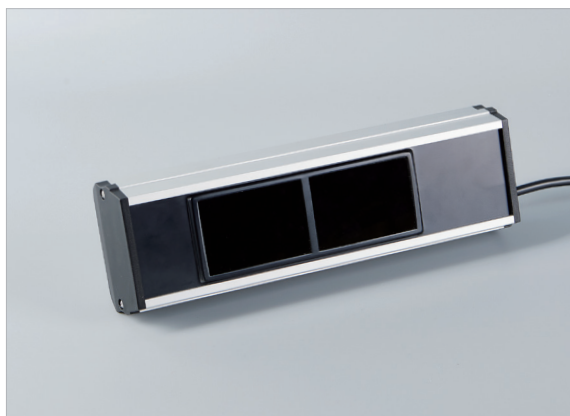
Cat. No.	F06-91-180	F06-91-183	F06-91-186
Model	CB1132	CB1232	CB1306
Temp. Range	Temperature Range -60°C ~ -86°C (External Conditions : Temperature 30°C & Humidity 70%)		
Capacity	132 L	232 L	306 L
Temp. Range	-50°C ~ -86°C or -35°C ~ -55°C		
Interior Size (w x d x h)	520 × 450 × 660 mm	850 × 450 × 660 mm	1100 × 450 × 660 mm
Exterior Size (w x d x h)	720 × 730 × 860 mm	1050 × 730 × 860 mm	1300 × 730 × 860 mm
Compressor	Single		
Power Consumption	300 W	400 W	450 W
Rack(2" Cryo Box)	VFR11 X 6 + VFR07 X 3	VFR11 X 12 + VFR07 X 3	VFR11 X 18 + VFR07 X 3
2" Cryo Box	87 ea	153 ea	219 ea
Weight	45 kg	55 kg	67 kg
Power	AC220V, 50/60Hz		

UV Lamp

- UV handy Lamp
- UV Ultraviolet Lamp
- UV Lamp Stand & Handle Bracket
- UV Viewing Cabinet



Product	UV Lamp	UV Lamp	UV Lamp
Model	LT-4xx	LT-6xx	LT-15xx
Wavelength	365nm / 312nm / 254nm	365nm / 312nm / 254nm	365nm / 312nm / 254nm
Intensity	340 / 400	400 / 580 / 610	930 / 1100 / 1350 / 1780 / 2300 / 3000



UV Handy Lamp, LK Lab®

- UV Lamp with single or dual wavelength
- Intensity is measured value at a distance of 15cm
- All lamps are filtered and suitable to use in fluorescence detection
- Unfiltered Lamp, the same wavelength can be produced upon request

4W UV Lamp

Cat. No.	Model	Tubes (watt)	Wavelength (nm)	Intensity ($\mu\text{W}/\text{cm}^2$)
U01-02-101	LT-4L	1×4 W	365	400
U01-02-105	LT-4M		312	400
U01-02-109	LT-4C		254	340
U01-02-121	LT-4LC	2×4 W	365/254	400/340
U01-02-125	LT-4LM		365/312	400/400
U01-02-129	LT-4MC		312/254	400/340

6W UV Lamp

Cat. No.	Model	Tubes (watt)	Wavelength (nm)	Intensity ($\mu\text{W}/\text{cm}^2$)
U01-02-141	LT-6L	1×6 W	365	610
U01-02-145	LT-6M		312	580
U01-02-149	LT-6C		254	400
U01-02-161	LT-6LC	2×6 W	365/254	610/400
U01-02-165	LT-6LM		365/312	610/580
U01-02-169	LT-6MC		312/254	580/400

15W UV Lamp

Cat. No.	Model	Tubes (watt)	Wavelength (nm)	Intensity ($\mu\text{W}/\text{cm}^2$)
U01-02-181	LT-115L	1×15 W	365	1350
U01-02-185	LT-115M		312	1100
U01-02-189	LT-115C		254	930
U01-02-201	LT-215LC	2×15 W	365/254	1350/930
U01-02-205	LT-215LM		365/312	1350/1100
U01-02-209	LT-215MC		312/254	1100/930
U01-02-221	LT-215L	2×15 W	365	2300
U01-02-225	LT-215M		312	2200
U01-02-229	LT-215C		254	1780



UC-A (365 nm)

Cat. No	Model	Lamp	Size (Ø×L, mm)	UV output
U01-133-488	T-4L	4 W	15.5×134.5	0.8
U01-133-496	T-6L	6 W	15.5×210.5	1.7
U01-133-500	T-8L	8 W	15.5×287	2.5
U01-133-504	T-15L	15 W	25.5×436	4.9

UV Ultraviolet Lamp

- Spare Lamp of UV Lamp with the same capacity
- Can use together with fluorescent light fixtures for lighting

UV-C(254nm), sterilization Lamp

Cat. No	Model	Lamp	Size (Ø×L, mm)	UV output
U01-133-264	T-4C	4 W	15.5×134.5	0.8
U01-133-285	T-6C	6 W	15.5×210.5	1.7
U01-133-290	T-8C	8 W	15.5×287	2.5
U01-133-296	T-10C	10 W	25.5×330	2.7
U01-133-306	T-15C	15 W	25.5×436	4.9
U01-133-322	T-20C	20 W	32.5×580	7.5
U01-133-340	T-30C	30 W	25.5×893	13.4
U01-133-365	T-40C	40 W	32.5×1198	19.8

- emit the wavelength range (UV-C) of ultraviolet rays 254nm
- UV rays destroy DNA, extinct(break down / kill) germs/bacteria

UC-B (312 nm)

Cat. No	Model	Lamp	Size (Ø×L, mm)	UV output
U01-133-464	T-4M	4 W	15.5×134.5	0.8
U01-133-470	T-6M	6 W	15.5×210.5	1.7
U01-133-478	T-15M	15 W	25.5×436	4.9



ULS-046 (Lamp 별매)



ULS-150



Handle & Bracket

UV Lamp Stand & Handle Bracket, LK Lab®

Cat. No	Model	Type	applied model
U01-02-241	ULS-046	Stand	LT-4, 6
U01-02-245	ULS-150		LT-115, 215
U01-02-249	UHB-046	Handle & Bracket	LT-4, 6



UV Viewing Cabinet Only, LK Lab®

Cat. No.	Model	Size
U01-02-253	UVC-6	w300×d280×h240 mm

- Cabinet Only (purchase UV Lamp separately)
- Can be used as a Darkroom for TLC

ULTRASONIC CLEANER



Ultrasonic Cleaner, Digital Type

Product	Ultrasonic Cleaner Digital type		
Model	LK-U065D	LK-U105D	LK-U225D
Capacity	6 L	10 L	22 L
Ultrasonic Frequency	40 kHz	40 kHz	40 kHz
Timer	0 ~ 60 min	0 ~ 60 min	0 ~ 60 min
Tank size	290×150×150	290×240×150	500×300×150

Ultrasonic Cleaner, Analog Type

Product	Ultrasonic Cleaner Analog type					
Model	LK-U012N	LK-U020N	LK-U035N	LK-U065N	LK-U105N	LK-U225N
Capacity	1.2 L	1.8 L	3.3 L	6 L	10 L	22 L
Ultrasonic Frequency	28 kHz	40 kHz	40 kHz	40 kHz	40 kHz	40 kHz
Timer	None	0 ~ 30 min	0 ~ 40 min (Can be set in 5-minute increments)			
Tank size	150×135×60	150×135×100	240×140×100	290×150×150	290×240×150	500×300×150



Ultrasonic Cleaner, Digital Type

Cat. No.	Model	Capacity	Tank Size (w×d×h)
U02-56-243	LK-U065D	6 L	290×150×50 mm
U02-56-249	LK-U105D	10 L	290×240×150 mm
U02-56-255	LK-U225D	22 L	500×300×150 mm

- Strong cleaning power: Low noise using BLT vibrator, strong cleaning power
- Durability against chemicals is strong due to special painting treatment on the body made of stainless material
- Can't be used with acids and bases
- Strong durability due to silicone water resistance
- Cleaning time can be selected as sec/min, and can be set up to 60 minutes (LCD Display)
- Current temperature/set temperature displayed in LCD window during Heater operation
- Can adjust the output of ultrasonic waves from 20 to 100%
- Built-in Degas (Emission gas in the water tank) and Sweep (Expanding ultrasonic cleaning range) functions
- Included Basket (purchase Cleaning Concentrate separately)

Cat. No.	U02-56-243	U02-56-249	U02-56-255
Model	LK-U065D	LK-U105D	LK-U225D
Controller	Digital Type (LCD Display)		
Tank Size	w290×d150×h150 mm	w290×d240×h150 mm	w500×d300×h150 mm
Capacity	6 L	10 L	22 L
Output Power	150 W	200 W	400 W
Ultrasonic Frequency	40 kHz		
Timer	0 ~ 60 min		
Drain Valve	None	1/2" NPT	
Temp.	30 ~ 85℃ ±10%		
Body Material	SUS430 Special painting treatment		
Weight	6 kg	8.5 kg	14.5 kg
Power	220V, 50/60 Hz		

Optional Basket

Cat. No	Model	Capacity	Size (w×d×h)
U02-56-829	LK-BA065	6.5 L	274×123×96 mm
U02-56-835	LK-BA105	10.5 L	262×206×93 mm
U02-56-841	LK-BA225	22.5 L	452×263×93 mm



Ultrasonic Cleaner, Analog Type

Cat. No.	Model	Capacity	Tank Size (w×d×h)
U02-56-125	LK-U012N	1.2 L	150 × 135 × 60 mm
U02-56-131	LK-U020N	1.8 L	150 × 135 × 100 mm
U02-56-137	LK-U035N	3.3 L	240 × 140 × 100 mm
U02-56-143	LK-U065N	6 L	290 × 150 × 150 mm
U02-56-149	LK-U105N	10 L	290 × 240 × 150 mm
U02-56-155	LK-U225N	22 L	500 × 300 × 150 mm

- Strong cleaning power: Low noise using BLT vibrator, strong cleaning power
- Durability against chemicals is strong due to special painting treatment on the body made of stainless material
- Can't be used with acids and bases
- The 30-minute timer switch allows simple operation of ultrasonic waves (except 1.2 Lit.)
- Temperature control sensors are attached to keep warm at the desired temperature (except 1.2 Lit. and 1.8 Lit.)
- Purchase Basket separately

Cat. No.	U02-56-125		U02-56-131	U02-56-137	U02-56-143	U02-56-149	U02-56-155
Model	LK-U012N	LK-U020N		LK-U035N	LK-U065N	LK-U105N	LK-U225N
Controller	Analog Type (Dial)						
Tank Size (w×d×h)	150×135×60	150×135×100		240×140×100	290×150×150	290×240×150	500×300×150
Capacity	1.2 L	1.8 L		3.3 L	6 L	10 L	22 L
Output Power	50 W			100 W	150 W	250 W	400 W
Ultrasonic Frequency	28 kHz	40 kHz					
Timer	None	0 ~ 30 min	0 ~ 40 min (Can be set in 5-minute increments)				
Drain Valve	None					1/2" NPT	
Temp.	65°C Fixed (±10%)			45 ~ 80°C			
Body Material	SUS430 Special painting treatment						
Weight	1.7 kg	2.7 kg		4.2 kg	5.7 kg	7.8 kg	12 kg
Power	220V, 60 Hz						

Optional Basket

Cat. No	Model	Capacity	Size (w×d×h)
U02-56-817	LK-BA020	1.8 L	120×105×65 mm
U02-56-823	LK-BA035	3.3 L	215×115×65 mm
U02-56-829	LK-BA065	6.5 L	274×123×96 mm
U02-56-835	LK-BA105	10.5 L	262×206×93 mm
U02-56-841	LK-BA225	22.5 L	452×263×93 mm

CONSUMABLE

Membrane Filter / Syringe Filter

Polystyrene Petri Dish / Square Petri Dish

Alumina Mortar

Pipet Aid

Stopper / Sleeve Septa

Clamp

Support Ring

Stand



Adapter, PTFE Thermometer Holder

Cat. No	Model	Cone	applied OD
A01-143-100	TH1420	14/20	Ø6 ~ 7 mm
A01-143-300	TH2440	24/40	
A01-143-400	TH1420/32	14/20	Ø3 ~ 4 mm
A01-143-500	TH2440/32	24/40	

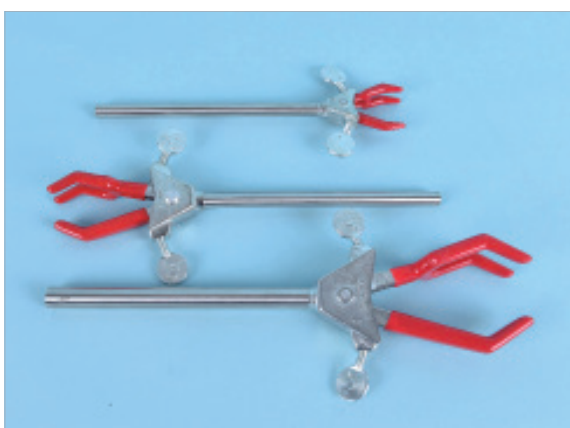
- Material : PTFE Teflon, Viton O-ring
- Include upper cap and O-ring to hold thermometer



2-Prong Extension Clamp / 2-P Clamp

Cat. No	Model	Max. Grip	Length
C09-143-005	L2P-40	60 mm	250 mm
C09-143-006	L2P-40L	60 mm	605 mm

- Chromium plating after die casting
- Rod : Ø12.7 mm
- Plastic coating of gripping parts to prevent slipping



3-Prong Extension Clamp/3-P Clamp

Cat. No	Model	Specification	Max. Grip	Length
C09-143-010	L3P-20	Small	30 mm	210 mm
C09-143-015	L3P-40	Medium	60 mm	245 mm
C09-143-020	L3P-70	Large/Long	80 mm	270 mm
C09-143-022	L3P-70L			615 mm

- Chromium plating after die casting
- Plastic coating of gripping parts to prevent slipping
- Sturdier and more stable than 2-P clamp



Swivel Clamp

Cat. No	Model	Specification	Max. Grip	Length
C09-143-025	L2P-40S	2-P	60 mm	195 mm
C09-143-030	L3P-40S	3-P		175 mm

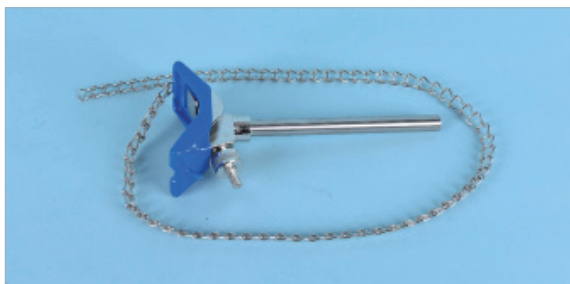
- Chromium plating after die casting
- Plastic coating of gripping parts to prevent slipping
- Clamp and holder integrated
- 360° Rotatable



Flexible Long Clamp

Cat. No	Model	Specification	Max. Grip	Major Axis Length
C09-102-300	L2P-50FH	2-P	60 mm	360 mm
C09-102-400	L3P-60FH	3-P		

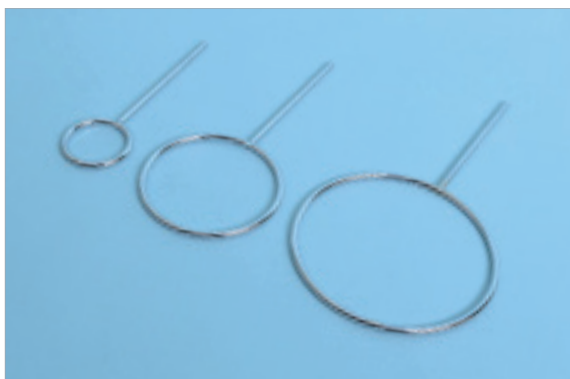
- Holder attachment type



Chain Clamp

Cat. No	Model	Max. Grip	Length
C09-143-038	LCP-C100	165 mm	180 mm
C09-143-040	LCP-C200	280 mm	

- Chromium plating after die casting
- Plastic coating of gripping parts to prevent slipping
- Used to fix large-diameter objects that cannot be fixed with regular clamps



Support Ring, Extension

Cat. No	Model	Ring I.D.	Stem Length
C09-143-045	LCP-S050	50 mm	150 mm
C09-143-050	LCP-S070	70 mm	
C09-143-055	LCP-S090	90 mm	
C09-143-060	LCP-S110	110 mm	
C09-143-065	LCP-S130	130 mm	
C09-143-070	LCP-S150	150 mm	

- Material : Stainless Steel
- For holding of separatory funnel or funnel



Support Ring Clamp

Cat. No	Model	Ring I.D.	Length
C09-143-075	LCP-SH50	50 mm	L170 mm
C09-143-080	LCP-SH70	70 mm	L170 mm
C09-143-085	LCP-SH90	90 mm	L190 mm

- Iron Casting
- Holder is attached
- For holding of separatory funnel or funnel



Cork Ring Support

Cat. No	Model	Description	Size (id×od)	Thickness
C09-143-115	LCP-FL05	for 50 ml	25×60 mm	27 mm
C09-143-120	LCP-FL10	for 100 ml	29×72 mm	
C09-143-125	LCP-FL25	for 250 ml	37×90 mm	
C09-143-130	LCP-FL50	for 500 ml	54×106 mm	
C09-143-135	LCP-FL56	for 1 L	68×118 mm	
C09-143-140	LCP-FL58	for 2 L	83×144 mm	
C09-143-142	LCP-FL70	for 3 L/5 L	110×170 mm	30 mm
C09-143-144	LCP-FL80	for 10 L/20 L	215×282 mm	40 mm

- For support of round flask or reaction vessel



Ball Joint Clamp

Cat. No	Model	Specification	Material
C09-83-108	LBJ-13	SJ 13	Stainless Steel
C09-83-114	LBJ-19	SJ 19	
C09-83-120	LBJ-28	SJ 29	
C09-83-126	LBJ-35	SJ 35	
C09-83-132	LBJ-50	SJ 51	
C09-83-138	LBJ-65	SJ 65	
C09-83-144	LBJ-75	SJ 75	

- There is a screw at the back, so it's easy to fix it



Tripod Support Stand

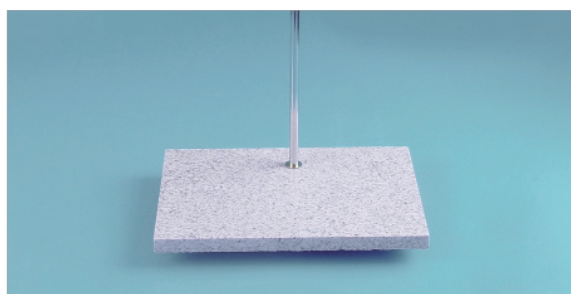
Cat. No	Model	Rod	Size (w×d×h, mm)
B13-11-800	LTR115	Φ9 mm	115×115×600
B13-11-810	LTR150		150×150×800

- Anti-slip rubber packing attachment



Iron Support Stand

Cat. No	Model	Rod	Size (w×d×h, mm)
B13-11-700	LRE130	Φ9 mm	180×120×600
B13-11-710	LRE230		220×150×800



Burette Stand

Cat. No	Model	Rod	Size, w×d×h
B13-11-600	LMA300	Φ9 mm	300×200×600 mm

- Suitable for use with Burett
- Attaching rubber packing to prevent vibration and slip



Economic Septum Stopper / Sleeve Septa

Cat.No.	Model	Joint Size	Color
S12-11-321	SS-E1420	14/20	White
S12-11-327	SS-E1922	19/22	
S12-11-335	SS-E2440	24/40	

- Resistant to solvents as it is made of natural rubber
- Built exactly for Joint Size



Membrane Filter

CA (Cellulose Acetate) Membrane Filter

Cat. No	Model	Diameter	Pore Size
F13-61-151	CA020025	Φ25 mm	0.20 μm
F13-61-154	CA045025		0.45 μm
F13-61-157	CA080025		0.8 μm
F13-61-161	CA020047	Φ47 mm	0.20 μm
F13-61-164	CA045047		0.45 μm
F13-61-167	CA080047		0.8 μm

- Hydrophilic property
- Adsorption of a low level of protein
- Used in the filtering of water solubility solution, alcoholic, cytodiagnosis, enzyme solution
- Able to germ removal and filtration sterilization

MCE (Mixed Cellulose Esters) Membrane Filter

Cat. No	Model	Diameter	Pore Size
F13-61-701	MCE02025	Φ25 mm	0.20 μm
F13-61-703	MCE04525		0.45 μm
F13-61-705	MCE50025		5.0 μm
F13-61-711	MCE02047	Φ47 mm	0.20 μm
F13-61-713	MCE04547		0.45 μm
F13-61-715	MCE04547		5.0 μm

- Suitable for hydrophilic property / Use in microorganisms and minute particles experimental
- Suitable for gravimetric analysis
- Hydrophilic property filter, 121°C heat resistance (autoclavable)

PES (Polyethersulfone) Membrane Filter

Cat. No	Model	Diameter	Pore Size
F13-61-123	PES02025A	Φ25 mm	0.20 μm
F13-61-125	PES04525A		0.45 μm
F13-61-127	PES02047A	Φ47 mm	0.20 μm
F13-61-129	PES04547A		0.45 μm

- High heat resistance and chemical resistance
- Ultrapure Water Flush
- Adsorption of a low level of protein, stable to alkalinity
- Using an water solubility solution (culture medium, additive, and buffer) filtration and alcoholic medium liquid
- Hydrophilic property filter, 121°C heat resistance (autoclavable)

PTFE Membrane Filter, Hydrophobic

Cat. No	Model	Diameter	Pore Size
F13-61-413	PTFE020025S	Φ25 mm	0.20 μm
F13-61-416	PTFE045025S		0.45 μm
F13-61-414	PTFE100025S		1.0 μm
F13-61-419	PTFE020047S	Φ47 mm	0.20 μm
F13-61-422	PTFE045047S		0.45 μm
F13-61-423	PTFE100047S		1.0 μm

- Supported PTFE type: simple setting at the holder
- Hydrophobic membrane: suitable for most solvent
- Thermal stability up to 145°C
- Water repellency: pass through oil and organic solvent, does not pass through water
- Filter after soaking in appropriate solvents such as isopropyl alcohol and ethylene alcohol before starting filtration
- Major use: electro materials, chemistry, electricity, medical etc. recovery of filter residue, air vent

PVDF Membrane Filter, Hydrophilic

Cat. No	Model	Diameter	Pore Size
F13-61-741	PVDF02025	Φ25 mm	0.20 μm
F13-61-743	PVDF04525		0.45 μm
F13-61-751	PVDF02047	Φ47 mm	0.20 μm
F13-61-753	PVDF04547		0.45 μm

- Excellent heat resistance and chemical resistance
- Ultrapure Water Flush
- Liquid does not permeate in low differential pressure
- Available to use at fat-soluble and water-soluble
- Air, gas filtration, and protein contained liquid
- Suitable for an water solubility solution and mild-organic solvent
- Thickness: 0.2μm: 110±15μm, 0.45μm: 125±15μm

PTFE Membrane Filter, Hydrophilic

Cat. No	Model	Diameter	Pore Size
F13-61-401	PTFE020025A	Φ25 mm	0.20 μm
F13-61-404	PTFE045025A		0.45 μm
F13-61-407	PTFE020047A	Φ47 mm	0.20 μm
F13-61-410	PTFE045047A		0.45 μm

- Special treated Hydrophilic PTFE Membrane
- Excellent chemical resistance
- Hydrophilic PTFE Membrane becomes transparent while wet and easy to observe by microscope
- No need for hydrophilic treatment which was conducted on PTFE type membrane
- Membrane filter for use with both water and organic solvent
- Filtration for Flocculant of acid and alkali, and for water and liquid mixture for use at HPLC

Nylon Membrane Filter

Cat. No	Model	Diameter	Pore Size
F13-61-721	NY02025	Φ25 mm	0.20 μm
F13-61-723	NY04525		0.45 μm
F13-61-731	NY02047	Φ47 mm	0.20 μm
F13-61-733	NY04547		0.45 μm

- Maximum Temperature: 135°C
- No Fiber Releasing
- Bubble Point: 40~49 psi (0.2 μm), 34~42 psi (0.45μm)



PTFE Syringe Filter, Hydrophilic

Cat. No	Model	Diameter	Pore Size
F14-61-320	PT13020	Ø13 mm	0.20 µm
F14-61-323	PT13045		0.45 µm
F14-61-326	PT25020	Ø25 mm	0.20 µm
F14-61-329	PT25045		0.45 µm

- Hydrophilic
- Excellent tolerance to acid, alkali and organic solvent
- For preprocessing filtration of HPLC liquid mixed solvents
- Suitable for water solubility mixed solvents and organic solvent

PTFE Syringe Filter, Hydrophobic

Cat. No	Model	Diameter	Pore Size
F14-61-340	PF13020	Ø13 mm	0.20 µm
F14-61-343	PF13045		0.45 µm
F14-61-345	PF25010	Ø25 mm	0.10 µm
F14-61-346	PF25020		0.20 µm
F14-61-349	PF25045		0.45 µm
F14-61-352	PF25100		1.00 µm

- As a water-repellent, allowing oil and organic products to pass through, and water does not pass through at all
- No deteriorate or deteriorate under a wide range of conditions and not affected by UV rays
- Having a univiscous and fissility by low friction, easy to remove the filter residue
- Available air vent filter as a hydrophobic filter

Glass Prefilter 1.6µm + Main Membrane Filter, Ø25mm

Cat. No	Model	Filter Materials	Filter	Pore Size
F14-61-460	GFMCE25020	GF - MCE	MCE	1.6 / 0.20 µm
F14-61-463	GFMCE25045	GF - MCE		1.6 / 0.45 µm
F14-61-470	GFPE25020	GF - PES	PES	1.6 / 0.20 µm
F14-61-473	GFPE25045	GF - PES		1.6 / 0.45 µm
F14-61-480	GFCA25020	GF - CA	CA	1.6 / 0.20 µm
F14-61-483	GFCA25045	GF - CA		1.6 / 0.45 µm
F14-61-490	GFPPV25020	GF - PVDF	PVDF	1.6 / 0.20 µm
F14-61-493	GFPPV25045	GF - PVDF		1.6 / 0.45 µm
F14-61-500	GFNY25020	GF - Nylon	Nylon	1.6 / 0.20 µm
F14-61-503	GFNY25045	GF - Nylon		1.6 / 0.45 µm
F14-61-506	GFPT25020	GF - PTFE	PTFE	1.6 / 0.20 µm
F14-61-509	GFPT25045	GF - PTFE		1.6 / 0.45 µm

- Combined 1.6µm glass fiber preprocessing filter and Membrane filter
 - Size: Ø25mm
- Increased approximately 2~4 times amount of filtration than the standard Syringe Filter
- Material: Glass Fiber + Membrane Filter, PP Housing
- Maximum allowable pressure: 5.1bar
- Major uses: hydrophilic (MCE), organic solvent (PTFE), Alcohol (CA), mild organic solvent (PES, PVDF, Nylon)

Syringe Filter

- Made in Korea
- PP Housing
- Filtration capacity: 13mm≤10ml, 25mm≤100ml
- Non-standard products are also available upon request

MCE (Mixed Cellulose Ester) Syringe Filter

Cat. No	Model	Diameter	Pore Size
F14-61-380	MCE13020	Φ13 mm	0.20 µm
F14-61-383	MCE13045		0.45 µm
F14-61-386	MCE25020	Φ25 mm	0.20 µm
F14-61-389	MCE25045		0.45 µm

- Hydrophilic
- For filtration of general water solubility liquid
- Flocculant filtration

Cellulose Acetate (CA) Syringe Filter

Cat. No	Model	Diameter	Pore Size
F14-61-410	CA13020	Ø 13 mm	0.20 µm
F14-61-413	CA13045		0.45 µm
F14-61-416	CA25020	Ø 25 mm	0.20 µm
F14-61-419	CA25045		0.45 µm

- Hydrophilic
- Filtration of biological high molecule
- Low protein adsorptive power

Nylon Syringe Filter

Cat. No	Model	Diameter	Pore Size
F14-61-300	NY13020	Ø13 mm	0.20 µm
F14-61-303	NY13045		0.45 µm
F14-61-306	NY25020	Ø25 mm	0.20 µm
F14-61-309	NY25045		0.45 µm

- Strong mechanical strength and high adsorptive power
- Close to hydrophilic Membrane
- Available in most organic solvents and a medium polar solvent
- Stable at pH 6 ~ 13

PES (Polyethersulfone) Syringe Filter

Cat. No	Model	Diameter	Pore Size
F14-61-420	PES13020	Ø 13 mm	0.20 µm
F14-61-423	PES13045		0.45 µm
F14-61-426	PES25020	Ø 25 mm	0.20 µm
F14-61-429	PES25045		0.45 µm

- Hydrophilic
- Fast filtration of additive, buffer etc. general water solubility liquid
- Low protein adsorptive and best biological filtration
- Mild organic solvent

PVDF Syringe Filter

Cat. No	Model	Diameter	Pore Size
F14-61-360	PV13020	Ø13 mm	0.20 µm
F14-61-363	PV13045		0.45 µm
F14-61-366	PV25020	Ø25 mm	0.20 µm
F14-61-369	PV25045		0.45 µm

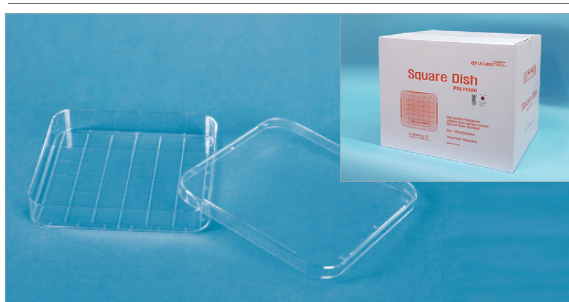
- Excellent thermal and chemical resistance
- Pass through air or gas at low differential pressure, and impervious to liquids
- Available to use at a polar and nonpolar solution



Polystyrene Petri Dish

Cat. No	Model	Size	packaging
D02-510-006	PSL10060	Ø60×h15 mm	500ea/box
D02-510-012	PSL10090	Ø90×h15 mm	500ea/box
D02-510-018	PSL10150	Ø150×h20 mm	120ea/box

- Suitable for all types of culture
- Easy to observe the contents by high transparency as polystyrene
- Good horizontality by uniformity ground
- Perfect sterilization effect by excellent electron beam treatment
- Minimization of distortion during microscope observation by multi-purpose examination use such as a bacteriological and gonococcus culture examination
- Minimization of contamination that may occur during manual work with an unmanned automation production system
- Having a non-slip bump for stacking dishes



Square Petri Dish

Cat. No	Model	Size	packaging
D02-61-206	PSL11120	w125×d125×h20 mm	240ea/box

- Transparency polystyrene dish by special surface treated for culture
- Minimization of contamination that may occur during manual work with an unmanned automation production system
- Perfect sterilization effect by excellent electron beam treatment



Alumina Mortar

Cat. No	Model	OD	ID
M05-110-032	ALP120	120 mm	105 mm
M05-110-040	ALP150	150 mm	125 mm
M05-110-048	ALP170	170 mm	135 mm
M05-110-056	ALP210	210 mm	170 mm

- Material: Al₂O₃ 99.6%
- Pestle is included as standard
- Mortar and Pestle can be purchased separately upon request



P03-11-020

Pipet Aid

Cat. No	Model	capacity	Size
P03-11-020	PA10	1 ~ 100ml	w125×h137×d27 mm

- Small and light, suitable for one-handed use
- Useful and convenient bench & wall mount holder
- Suction speed can be adjusted in 9 steps
- 0.45um hydrophobic filter installed
- Can use over 24 hours continuously with fully charged 2,500mAH large capacity battery
- Strong suction power to fill 25ml pipet in 4 seconds
- Component: main body, charger, filter, stand, name label

Optional Accessory

Cat. No	Model	Diameter	Pore Size
F14-61-349	PF25045	Ø25 mm	0.45 um