Chiller
(Recirculating Cooler)

General Application

· Sample thawing, and control of temperature of diverse experimental equipment.

· Analytical equipment requiring cooling. (rotary evaporator, vacuum oven, spectrophotometer, etc.)

· Plant, medical equipment, metalwork laser, injection machine.

	Description		Max. Temp. Stability (±℃/℉) at 50℃	Temp. Range (℃/℉)	Max. Cooling Capacity (W)	Model	Page
Ambient temp. type	General	• Superior durability and performance • Verified according to international standards	±1 / 1.18	3 to 40 / 37.4 to 104	29.0 at 20°C	HX	34
Low temp. type	General	• Applies Clear VFD Display • Includes temperature calibration function	±1 / 1.18	-20 to 40 / -4 to 104	7.1 at 20°C	HL	36
	Precision	• External temperature sensor control function • 0.2°C precision control	±0.2 / 0.36	-20 to 40 / -4 to 104	7.1 at 20°C	HS	38
	Small	• Optimization of rotary evaporator use • Compact design configuration	±1 / 1.18	-20 to 30 / -4 to 86	0.5 at 20°C	RC	40
High / Low temp. type	Precision	• Wide temperature zone control • 0.1°C precision control	±0.1 / 0.2	-20 to 80 / -4 to 176	6.5 at 20°C	HH	42

※ The contents of the above and the contents of this catalog may differ depending on the specific model and conditions of use. For the information about the features and specifications that applying to each models, please check the information on the corresponding page of each models.

CE — Satisfaction with the requirements of European regulations and guidelines.

LC Connected — Real-time equipment monitoring and control system using mobile app.

Green CFC-Free — Eco-friendly product that has passed environmental impact assessment tests.

Full / Strart Level Indicator — Indicator to ascertain water level.

Low Level — Alarm if the water is low level.

Over Temp. — Over temperature protection function.

Computer Interface — PC communication via RS-232 / RS-485 / USB port.

2 year Warranty — 2 year warranty Free A/S.

Innovative refrigeration system and dedicated controller for chiller Improved durability and stable control

> Innovative refrigeration system

Increased durability of refrigerant adjustment-type refrigeration system by minimizing compressor on/off operation.

> Verified by objective criteria

Designed and tested according to stringent international standards.
Proven performance specifications and high reliability.

> Heat absorption ability of excellent reproducibility

Convenient to select and use the optimal chiller with the heat absorption ability of each model verified by objective criteria.

> Variety of products optimized for their specified purpose of use

Available in 4 types and 35 models as a standard type according to temperature range, precision, and endothermic/pump ability.

> Chiller dedicated controller

Allows more stable control by using dedicated controller developed with Lab Companion's proprietary technology to optimize for chiller characteristics.

> Temperature calibration function

Controller with temperature calibration function allows for stable implementation of more accurate temperature control.

> On/Off of freezer and pump

The refrigeration system and pump can each be turned On/Off separately.
This is useful for maintenance and experiment setting, etc.

> Computer interface

Convenient device operation and data processing function using computer connection and dedicated software.

Bath inlet / outlet port.

Pressure Gauge.

Convenient bath fluid level checking.

Useful features and structural features in actual use
Easy maintenance

> Provision of remote equipment monitoring service (option)

Real-time monitoring of equipment operation status using smartphone.
(when purchased LC GreenBox)

> Convenient bath fluid level check

Convenient to check the level of bath fluid at the front of the instrument.
Level Indicator with LED backlight.

> Check pump pressure on the front of the instrument

Pump pressure can be confirmed from the front of the machine, so it is always convenient to check the operation status.

> Casters for easy installation

Convenient casters installed for easy moving and installation during initial installation and during use.

> Over temperature warning function

Over temperature warning function that generates an alarm when over temperature occurs.

> Low bath fluid warning

If the bath fluid is low, an alarm is generated so that fluid can be supplied when appropriate.

> Application support priority

Chiller operation continues to protect user application even when abnormal temperature or bath fluid is detected.

> Refrigeration system protection device

Refrigerator overload and over temperature protection.
Automatic stop when refrigerant pressure (high/low pressure) abnormality occurs.

※ Some of above contents are limited to specific models.

Bath filling inlet.

Includes drain valve.

Easy-to-install casters.

Chiller (Recirculating Cooler)
HX general type

Verified performance and durability according to international standards.

Structural Functional Features

- Designed and tested according to strict international standards.
- Provides proven performance specifications and high reliability.
- Optimized slim and compact design minimizes installation space.
- The conventional simple refrigerant compressor control method can cause the compressor life to be shortened by turning the refrigeration system on/off from time to time to control the temperature. However, the Lab Companion's Chiller is a unique refrigerant control type cooling system completed using our proprietary technology development. Compressor On/Off operation is minimized, and durability of the cooling system is greatly increased.
- Double service valve prevents refrigerant leakage.
- Easy installation with air-cooled type integrated refrigeration system.
- Easy to clean as it is easy to remove refrigerator condenser grill, making it convenient to maintain efficiency of refrigeration.
- Installation of refrigeration system using environmentally friendly refrigerant.
- Pump pressure can be confirmed from the front of the machine, so it is always convenient to check the operation status.
- Pressure-sensitive user application protection (H Type) due to by-pass function to reduce pump pressure.
- Bath fluid inlet is wide, making installation and maintenance convenient.
- Equipped with removable casters for easy movement and installation.

HX-65H HX-45H

Use Convenience Features

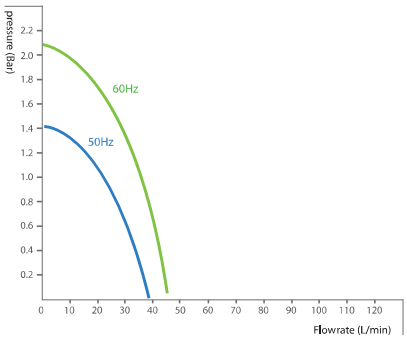
- Bright LCD display provides excellent visual perception.
- Identify all operations and operating conditions from the front panel.
- Simultaneously displays the set value and the current value, and settings can be changed during equipment use, making it convenient.
- Highly-reliable control through calibration.
- The refrigeration compressor and pump can be each turned On/Off.
- Level indicator with LED backlight for easy checking of bath fluid level.
- Easy to maintain as a drain valve is included.

Outstanding Safety

- Over temperature alarm.
- Provides a warning when abnormal temperature or bath fluid shortage is detected, and keeps the chiller operating continuously to protect the user application.
- Over-current and short circuit protection of device.
- Auto stop when operating current of refrigerator is overloaded.

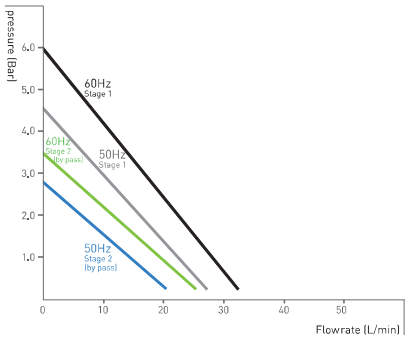
Pumping capacities

Submersible pump



※ Application model : HX-20, 25

Centrifugal pump



※ Application model : HX-20H, 25H, 35H, 45H, 55H

Specification

Model	HX-20	HX-25	HX-20H	HX-25H	HX-35H	HX-45H	HX-55H
Interior dimensions							
Max. filling volume (L / cu ft)	35 / 1.24	35 / 1.24	35 / 1.24	35 / 1.24	45 / 1.59	45 / 1.59	45 / 1.59
Refrigerator capacity (HP)	3/4	1	3/4	1	1.5	2	3
For tubing dia. (mm / inch)	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")
Filling inlet (Ø, mm / inch)	50 / 1.9	50 / 1.9	50 / 1.9	50 / 1.9	50 / 1.9	50 / 1.9	50 / 1.9
Exterior dimensions							
Width (mm / inch)	620 / 24.4	620 / 24.4	620 / 24.4	620 / 24.4	745 / 29.3	745 / 29.3	745 / 29.3
Depth (with drain valve), (mm / inch)	715 (785) / 28.1(30.9)	715 (785) / 28.1(30.9)	715 (785) / 28.1(30.9)	715 (785) / 28.1(30.9)	735 (800) / 28.9 (31.5)	735 (800) / 28.9 (31.5)	735 (800) / 28.9 (31.5)
Height (with lid), (mm / inch)	955 (990) / 37.6 (39.0)	955 (990) / 37.6 (39.0)	955 (990) / 37.6 (39.0)	955 (990) / 37.6 (39.0)	1060 (1095) / 41.7 (43.1)	1060 (1095) / 41.7 (43.1)	1060 (1095) / 41.7 (43.1)
Weight (kg / lbs)	93 / 205	101 / 223	97 / 214	105 / 231	120 / 265	130 / 287	140 / 309
Temperature data							
Working temperature range (℃ / ℉)	3 to 40 / 37.4 to 104	3 to 40 / 37.4 to 104	3 to 40 / 37.4 to 104	3 to 40 / 37.4 to 104	3 to 40 / 37.4 to 104	3 to 40 / 37.4 to 104	3 to 40 / 37.4 to 104
Temperature stability at 15℃ (±℃ / ℉)	1 / 1.18	1 / 1.18	1 / 1.18	1 / 1.18	1 / 1.18	1 / 1.18	1 / 1.18
Cooling capacity, Max							
at 20°C (kW)	2.2	2.8	2.2	2.8	4.2	5.5	8.1
at 10°C (kW)	1.6	2	1.6	2	3.6	4.2	5.9
at 5°C (kW)	1.2	1.6	1.2	1.6	2.8	3.4	4.8
Pump data							
Max. flow rate (L / min, gal / min)	40 / 10.6	40 / 10.6	32 / 8.5	32 / 8.5	32 / 8.5	32 / 8.5	32 / 8.5
Max. pressure (bar / psi)	2 / 29.0	2 / 29.0	6 / 87.0	6 / 87.0	6 / 87.0	6 / 87.0	6 / 87.0
Electrical data & Ordering information							
230V, 60Hz, A	8.5	9	9.3	9.8	15	19	
Cat. No.	**AAH64011K**	**AAH64021K**	**AAH64111K**	**AAH64121K**	**AAH64131K**	**AAH64141K**	**-**
230V, 50Hz, A	7	7.6	7.9	8.8	14		
Cat. No.	**AAH64012K**	**AAH64022K**	**AAH64112K**	**AAH64122K**	**AAH64132K**	**-**	**-**
120V, 60Hz, A	17	22					
Cat. No.	**AAH64013U**	**AAH64023U**	**-**	**-**	**-**	**-**	**-**
380V, 60Hz, A						10	11.5
Cat. No.	**-**	**-**	**-**	**-**	**-**	**AAH64149K**	**AAH64159K**
380V, 50Hz, A						7	8.5
Cat. No.	-	-	-	-	-	**AAH64148K**	**AAH64158K**

* According to DIN 12876
* Temperature stability / Cooling capacity / Pump data : Water
* Above specification value is recorded by 230V 60Hz. (HX-45H, 55H is recorded by 380V 60Hz)
* Product performance may be affected by ambient temperature.

Accessories Page 44 Fitting, Connector, Adapter, Tubing, Tube Clamp, Bath Fluid

Chiller (Recirculating Cooler)
HL low temperature general type

Low temperature-type general model controlled down to -20°C.

Structural Functional Features

- Low-temperature chiller controlled from -20°C to 40°C has proven performance specifications and high reliability.
- Optimized slim and compact design minimizes installation space.
- The conventional simple refrigerant compressor control method can cause the compressor life to be shortened by turning the refrigeration system on/off from time to time to control the temperature. However, the Lab Companion's Chiller is a unique refrigerant control type cooling system completed using our proprietary technology development. Compressor On/Off operation is minimized, and durability of the cooling system is greatly increased.
- Double service valve prevents refrigerant leakage.
- Easy installation with air-cooled type integrated refrigeration system.
- Easy to clean as it is easy to remove refrigerator condenser grill, making it convenient to maintain efficiency of refrigeration.
- Installation of refrigeration system using environmentally friendly refrigerant.
- Pump pressure can be confirmed from the front of the machine, so it is always convenient to check the operation status.
- Bath fluid inlet is wide, making installation and maintenance convenient.
- Equipped with removable casters for easy movement and installation.

HL-25 HL-20H

Use Convenience Features

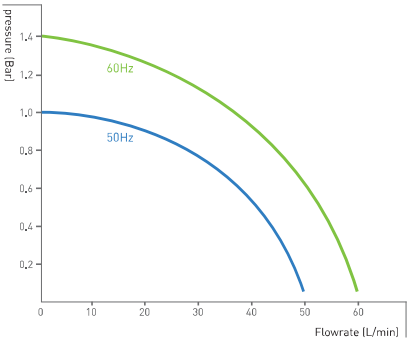
- Clear VFD display provides excellent visual perception.
- Identify all operations and operating conditions from the front panel.
- Simultaneously displays the set value and the current value, and settings can be changed during equipment use, making it convenient.
- Highly-reliable control through calibration.
- The refrigeration compressor and pump can be each turned On/Off.
- Level indicator with LED backlight for easy checking of bath fluid level.
- Easy to maintain as a drain valve is included.

Outstanding Safety

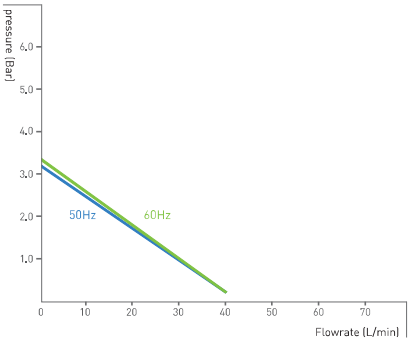
- Over temperature alarm.
- Provides a warning when abnormal temperature or bath fluid shortage is detected, and keeps the chiller operating continuously to protect the user application.
- Over-current and short circuit protection of device.
- Automatic stop in case of over temperature of the compressor.
- Malfunction prevented by controller lock function.

Pumping capacities

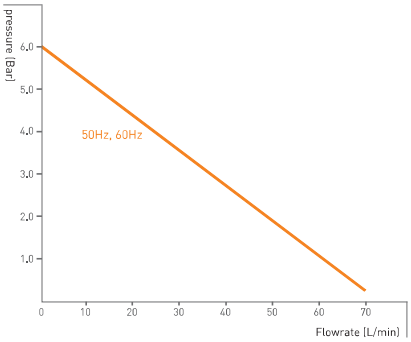
Submersible pump



※ Application model : HL - 05, 10, 15, 20



※ Application model : HL - 15H, 20H, 25H, 35H



※ Application model : HL - 45H, 55H

Specification

Model	HL-05	HL-10	HL-15	HL-20	HL-15H	HL-20H	HL-25H	HL-35H	HL-45H	HL-55H
Interior dimensions										
Max. filling volume (L / cu ft)	8 / 0.28	8 / 0.28	14 / 0.49	14 / 0.49	14 / 0.49	14 / 0.49	25 / 0.88	25 / 0.88	39 / 1.38	39 / 1.38
Refrigerator capacity (HP)	1/5	1/3	1/2	3/4	1/2	3/4	1	1.5	2	3
For tubing dia. (mm / inch)	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")
Filling inlet (Ø, mm / inch)	120 / 4.7	120 / 4.7	120 / 4.7	120 / 4.7	120 / 4.7	120 / 4.7	120 / 4.7	120 / 4.7	120 / 4.7	120 / 4.7
Exterior dimensions										
Width (mm / inch)	405 / 15.9	405 / 15.9	515 / 20.3	515 / 20.3	515 / 20.3	515 / 20.3	550 / 21.7	550 / 21.7	605 / 23.8	605 / 23.8
Depth (with drain valve), (mm / inch)	550 (620) / 21.7 (24.4)	550 (620) / 21.7 (24.4)	645 (715) / 25.4 (28.1)	645 (715) / 25.4 (28.1)	645 (715) / 25.4 (28.1)	645 (715) / 25.4 (28.1)	830 (900) / 32.7 (35.4)	830 (900) / 32.7 (35.4)	975 (1045) / 38.4 (41.1)	975 (1045) / 38.4 (41.1)
Height (with lid), (mm / inch)	675 (710) / 26.6 (10.6)	675 (710) / 26.6 (10.6)	800 (835) / 31.5 (32.9)	800 (835) / 31.5 (32.9)	800 (835) / 31.5 (32.9)	800 (835) / 31.5 (32.9)	1105 (1140) / 43.5 (44.9)	1105 (1140) / 43.5 (44.9)	1265 (1300) / 49.8 (51.2)	1265 (1300) / 49.8 (51.2)
Weight (kg / lbs)	62.9 / 138.7	64.9 / 143.1	86.5 / 190.7	87.4 / 192.7	91.8 / 202.4	92.7 / 204.4	141.3 / 311.5	146.3 / 322.5	171±10 / 377±20.1	176±10 / 388±20.1
Temperature data										
Working temperature range (°C / °F)	-20 to 40 / -4 to 104	-20 to 40 / -4 to 104	-20 to 40 / -4 to 104	-20 to 40 / -4 to 104	-20 to 40 / -4 to 104	-20 to 40 / -4 to 104	-20 to 40 / -4 to 104	-20 to 40 / -4 to 104	-20 to 40 / -4 to 104	-20 to 40 / -4 to 104
Temperature stability at 15°C (±°C / °F)	1 / 1.8	1 / 1.8	1 / 1.8	1 / 1.8	1 / 1.8	1 / 1.8	1 / 1.8	1 / 1.8	1 / 1.8	1 / 1.8
Cooling capacity, Max										
at 20°C (kW)	0.7	0.76	1.7	1.85	1.7	1.85	2.8	3.5	6.5	7.1
at 10°C (kW)	0.6	0.65	1.35	1.6	1.35	1.6	2.2	2.5	4.5	6
at 0°C (kW)	0.4	0.5	0.87	1.2	0.87	1.2	1.3	1.8	3	4.1
at -10°C (kW)	0.2	0.36	0.67	0.87	0.67	0.87	0.9	1.1	2.1	2.5
at -20°C (kW)	0.06	0.16	0.32	0.45	0.32	0.45	0.45	0.6	1.2	1.5
Pump data										
Max. flow rate (L / min, gal / min)	60 / 15.9	60 / 15.9	60 / 15.9	60 / 15.9	40 / 10.6	40 / 10.6	40 / 10.6	40 / 10.6	70 / 18.5	70 / 18.5
Max. pressure (bar / psi)	1.4 / 20.3	1.4 / 20.3	1.4 / 20.3	1.4 / 20.3	3.3 / 47.9	3.3 / 47.9	3.3 / 47.9	3.3 / 47.9	6 / 87.0	6 / 87.0
Electrical data & Ordering information										
230V, 60Hz, A	5	5.5	6.5	7.5	6.5	7.5	9.5	13.5		
Cat. No.	**AAH65001K**	**AAH65011K**	**AAH65021K**	**AAH65031K**	**AAH65121K**	**AAH65131K**	**AAH65141K**	**AAH65151K**	-	-
230V, 50Hz, A	4.5	5	6	7	6	7	7.5	12.5		
Cat. No.	**AAH65002K**	**AAH65012K**	**AAH65022K**	**AAH65032K**	**AAH65122K**	**AAH65132K**	**AAH65142K**	**AAH65152K**	-	-
120V, 60Hz, A	10	11	13	15						
Cat. No.	**AAH65003U**	**AAH65013U**	**AAH65023U**	**AAH65033U**	-	-	-	-	-	-
380V, 60Hz, A									5.5	7
Cat. No.	-	-	-	-	-	-	-	-	**AAH65169K**	**AAH65179K**
380V, 50Hz, A									5	6
Cat. No.	-	-	-	-	-	-	-	-	**AAH65168K**	**AAH65178K**

* According to DIN 12876
* Temperature stability / Pump data : Water, Cooling capacity : Ethanol
* Above specification value is recorded by 230V 60Hz. (HL-45H, 55H is recorded by 380V 60Hz)
* Product performance may be affected by ambient temperature.

Accessories Page 44

Fitting, Connector, Adapter, Tubing, Tube Clamp, Bath Fluid

Chiller (Recirculating Cooler)
HS low-temperature precision type

Precise control with ±0.2°C stability utilizing external temperature sensor.

Structural Functional Features

- It is low temperature type able to control from -20°C to 40°C, and with precise temperature control-type chiller with ±0.2°C stability, has proven performance specifications and high reliability.
- Optimized slim and compact design minimizes installation space.
- The conventional simple refrigerant compressor control method can cause the compressor life to be shortened by turning the refrigeration system on/off from time to time to control the temperature. However, the Lab Companion's Chiller is a unique refrigerant control type cooling system completed using our proprietary technology development. Compressor On/Off operation is minimized, and durability of the cooling system is greatly increased.
- Double service valve prevents refrigerant leakage.
- Easy installation with air-cooled type integrated refrigeration system.
- Easy to clean as it is easy to remove refrigerator condenser grill, making it convenient to maintain efficiency of refrigeration.
- Installation of refrigeration system using environmentally friendly refrigerant.
- Pump pressure can be confirmed from the front of the machine, so it is always convenient to check the operation status.
- Bath fluid inlet is wide, making installation and maintenance convenient.
- Equipped with removable casters for easy movement and installation.

HS-25 HS-55H

Use Convenience Features

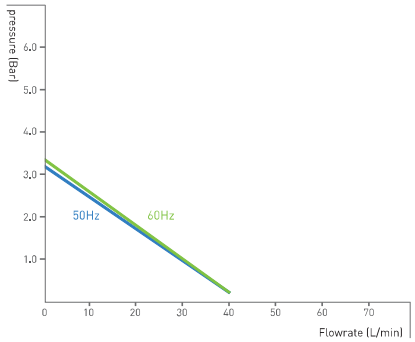
- Can be controlled by connecting external temperature sensor. (option)
- Convenient control and easy data processing with computer connection and dedicated software.
- Alarm output port provided as standard.
- Clear VFD display provides excellent visual perception.
- Identify all operations and operating conditions from the front panel.
- Simultaneously displays the set value and the current value, and settings can be changed during equipment use, making it convenient.
- Highly-reliable control through calibration.
- The refrigeration compressor and pump can be each turned On/Off.
- Level indicator with LED backlight for easy checking of bath fluid level.
- Easy to maintain as a drain valve is included.
- Monitor via mobile app anytime, anywhere with LC Connected. (mobile monitoring system) (when purchased LC GreenBox)

Outstanding Safety

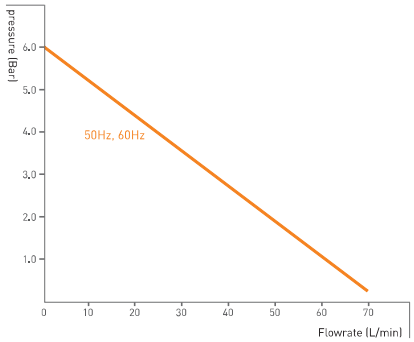
- Over temperature alarm.
- Provides a warning when abnormal temperature or bath fluid shortage is detected, and keeps the chiller operating continuously to protect the user application.
- Over-current and short circuit protection of device.
- Malfunction prevented by controller lock function.
- Automatic stop in case of over temperature of the compressor.

Pumping capacities

Submersible pump



※ Application model : HS -15, 20, 25, 35



※ Application model : HS - 45H, 55H

Specification

Model	HS-15	HS-20	HS-25	HS-35	HS-45H	HS-55H
Interior dimensions						
Max. filling volume (L / cu ft)	14 / 0.49	14 / 0.49	25 / 0.88	25 / 0.88	39 / 1.37	39 / 1.37
Refrigerator capacity (HP)	1/2	3/4	1	1.5	2	3
For tubing dia. (mm / inch)	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")
Filling inlet (Ø, mm / inch)	120 / 4.7	120 / 4.7	120 / 4.7	120 / 4.7	120 / 4.7	120 / 4.7
Exterior dimensions						
Width (mm / inch)	515 / 20.3	515 / 20.3	550 / 21.7	550 / 21.7	605 / 23.8	605 / 23.8
Depth (with drain valve), (mm / inch)	645 (715) / 25.4 (28.1)	645 (715) / 25.4 (28.1)	830 (900) / 32.7 (35.4)	830 (900) / 32.7 (35.4)	975 (1045) / 38.4 (41.4)	975 (1045) / 38.4 (41.4)
Height (with lid), (mm / inch)	800 (835) / 31.5 (32.9)	800 (835) / 31.5 (32.9)	975 (1045) / 38.4 (41.1)	975 (1045) / 38.4 (41.1)	1265 (1300) / 49.8 (51.2)	1265 (1300) / 49.8 (51.2)
Weight (kg / lbs)	91.8 / 202.4	92.7 / 204.4	141.3 / 311.5	146.3 / 322.5	171±10 / 377±20.1	176±10 / 388±20.1
Temperature data						
Working temperature range (°C / °F)	-20 to 40 / -4 to 104	-20 to 40 / -4 to 104	-20 to 40 / -4 to 104	-20 to 40 / -4 to 104	-20 to 40 / -4 to 104	-20 to 40 / -4 to 104
Temperature stability at 15°C (±°C / °F)	0.2 / 0.36	0.2 / 0.36	0.2 / 0.36	0.2 / 0.36	0.2 / 0.36	0.2 / 0.36
Cooling capacity, Max						
at 20°C (kW)	1.7	1.85	2.8	3.5	6.5	7.1
at 10°C (kW)	1.35	1.6	2.2	2.5	4.5	6
at 0°C (kW))	0.87	1.2	1.3	1.8	3	4.1
at -10°C (kW)	0.67	0.87	0.9	1.1	2.1	2.5
at -20°C (kW)	0.32	0.45	0.45	0.6	1.2	1.5
Pump data						
Max. flow rate (L / min, gal / min)	40 / 10.6	40 / 10.6	40 / 10.6	40 / 10.6	70 / 18.5	70 / 18.5
Max. pressure (bar / psi)	3.3 / 47.86	3.3 / 47.86	3.3 / 47.86	3.3 / 47.86	6 / 87	6 / 87
Electrical data & Ordering information						
230V, 60Hz, A	6.5	7.5	9.5	13.5		
Cat. No.	**AAH66011K**	**AAH66021K**	**AAH66031K**	**AAH66041K**	**-**	**-**
230V, 50Hz, A	6	7	7.5	12.5		
Cat. No.	**AAH66012K**	**AAH66022K**	**AAH66032K**	**AAH66042K**	**-**	**-**
380V, 60Hz, A					5.5	7
Cat. No.	**-**	**-**	**-**	**-**	**AAH66359K**	**AAH66569K**
380V, 50Hz, A					5	6
Cat. No.	**-**	**-**	**-**	**-**	**AAH66358K**	**AAH66568K**

* According to DIN 12876
* Temperature stability / Pump data : Water, Cooling capacity : Ethanol
* Above specification value is recorded by 230V 60Hz. (HS-45H, 55H is recorded by 380V 60Hz)
* Product performance may be affected by ambient temperature.

Accessories Page 44 LC GreenBox, Fitting, Connectors , Adapters, Tubing, Tube Clamp, Bath Fluid

Chiller (Recirculating Cooler)
Compact type

Optimized for Use with Rotary Evaporators

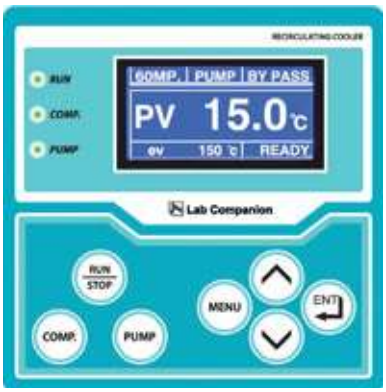
Structural Functional Features

- Optimized for use with rotary evaporator.
- Pump In/Out port is located at the top, making it easy to connect and disassemble with the evaporator set.
- Optimized slim and compact design minimizes installation space.
- The conventional simple refrigerant compressor control method can cause the compressor life to be shortened by turning the refrigeration system on/off from time to time to control the temperature. However, the Lab Companion's Chiller is a unique refrigerant control type cooling system completed using our proprietary technology development. Compressor On/Off operation is minimized, and durability of the cooling system is greatly increased.
- Double service valve prevents refrigerant leakage.
- Easy installation with air-cooled type integrated refrigeration system.
- Easy to clean as it is easy to remove refrigerator condenser grill, making it convenient to maintain efficiency of refrigeration.
- Installation of refrigeration system using environmentally friendly refrigerant.
- Pump pressure can be confirmed from the front of the machine, so it is always convenient to check the operation status.
- Bath fluid inlet is wide, making installation and maintenance convenient.

RC-05

Use Convenience Features

- Bright LCD display provides excellent visual perception.
- Identify all operations and operating conditions from the front panel.
- Simultaneously displays the set value and the current value, and settings can be changed during equipment use, making it convenient.
- Highly-reliable control through calibration.
- The refrigeration compressor and pump can each be turned On/Off.
- Level indicator with LED backlight for easy checking of bath fluid level.
- Easy to maintain as a drain valve is included.



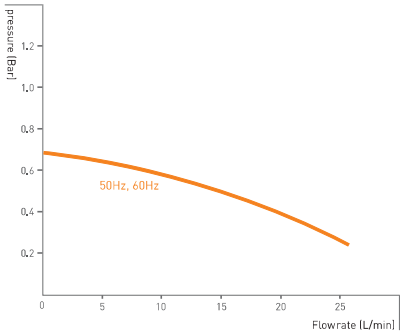
Outstanding Safety

- Over temperature alarm.
- Provides a warning when abnormal temperature or bath fluid shortage is detected, and keeps the chiller operating continuously to protect the user application.
- Over-current and short circuit protection of device.
- Malfunction prevented by controller lock function.
- Automatic stop in case of over temperature of the compressor

Green CFC-Free | Full Strart Level Indicator | Low Level | Over Temp. | 2 year Warranty

Pumping capacities

Submersible pump



※ Application model : RC-05

RC-05 Rotary Evaporator

Specification

Model	RC-05
Interior dimensions	
Max. filling volume (L / cu ft)	5 / 0.18
Refrigerator capacity (HP)	1/3
For tubing dia. (mm / inch)	9.5 / (3/8")
Filling inlet (Ø, mm / inch)	37 / 1.46
Exterior dimensions	
Width (mm / inch)	300 / 11.8
Depth (with drain valve), (mm / inch)	550 / 21.7
Height (with lid), (mm / inch)	530 / 20.9
Weight (kg / lbs)	45 /99.2
Temperature data	
Working temperature range (°C / °F)	-20 to 30 / -4 to 86
Temperature stability at 15°C (±°C / °F)	1 / 1.8
Cooling capacity, Max	
at 20°C (W)	580
at 10°C (W)	450
at 0°C (W)	350
at -10°C (W)	270
at -20°C (W)	110
Pump data	
Max. flow rate (L / min, gal / min)	26 / 6.87
Max. pressure (bar / psi)	0.7 / 10.15
Electrical data & Ordering information	
230V, 60Hz, A	4
Cat. No.	**ACH651011K**
230V, 50Hz, A	4
Cat. No.	**ACH651012K**

* According to DIN 12876
* Temperature stability / Cooling capacity / Pump data : Ethanol
* Above specification value is recorded by 230V 60Hz.

Custom-made chillers produced according to customer needs

Customized design, production and installation services with optimized performance for your application

◆ **Expert technical consultation**
We provide professional consultation based on our accumulated skills and experience centered on actual customer requirements.

◆ **Optimized proposal**
We provide optimized proposals that comprehensively consider the intended use and required performance / conditions.

Accessories Page 44 Fitting, Connector, Adapter, Tubing, Tube Clamp, Bath Fluid

Chiller (Recirculating Cooler)
HH high-temperature precision type

Precise control with ±0.1°C stability up to 80°C

Structural Functional Features

- It is low temperature type able to control from -20°C to 80°C, and with precise temperature control-type chiller with ±0.1°C stability, has proven performance specifications and high reliability.
- Optimized slim and compact design minimizes installation space.
- The conventional simple refrigerant compressor control method can cause the compressor life to be shortened by turning the refrigeration system on/off from time to time to control the temperature. However, the Lab Companion's Chiller is a unique refrigerant control type cooling system completed using our proprietary technology development. Compressor On/Off operation is minimized, and durability of the cooling system is greatly increased.
- Double service valve prevents refrigerant leakage.
- Easy installation with air-cooled type integrated refrigeration system.
- Easy to clean as it is easy to remove refrigerator condenser grill, making it convenient to maintain efficiency of refrigeration.
- Installation of refrigeration system using environmentally friendly refrigerant.
- Pump pressure can be confirmed from the front of the machine, so it is always convenient to check the operation status.
- Bath fluid inlet is wide, making installation and maintenance convenient.
- Equipped with removable casters for easy movement and installation.

HH-20

HH-25H

Use Convenience Features

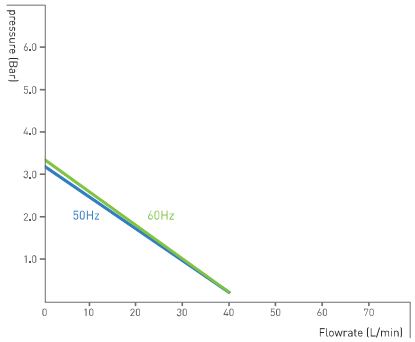
- Can be controlled by connecting external temperature sensor. (option)
- Convenient control and easy data processing with computer connection and dedicated software.
- Alarm output port provided as standard.
- Clear VFD display provides excellent visual perception.
- Identify all operations and operating conditions from the front panel.
- Simultaneously displays the set value and the current value, and settings can be changed during equipment use, making it convenient.
- Highly-reliable control through calibration.
- The refrigeration compressor and pump can be each turned On/Off.
- Level indicator with LED backlight for easy checking of bath fluid level.
- Easy to maintain as a drain valve is included.
- Over temperature alarm.
- Monitor via mobile app anytime, anywhere with LC Connected. (mobile monitoring system) (when purchased LC GreenBox)

Outstanding Safety

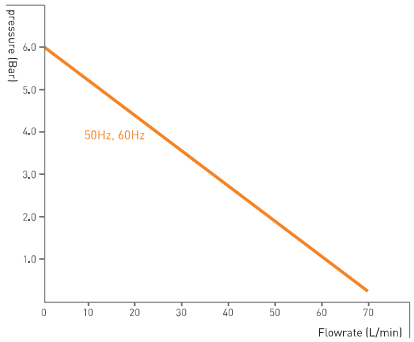
- Over temperature alarm.
- Provides a warning when abnormal temperature or bath fluid shortage is detected, and keeps the chiller operating continuously to protect the user application.
- Over-current and short circuit protection of device.
- Malfunction prevented by controller lock function.
- Automatic stop in case of over temperature of the compressor.

Pumping capacities

Submersible pump



※ Application model : HH - 15, 20, 25, 35



※ Application model : HH - 45H, 55H

Specification

Model	HH-15	HH-20	HH-25	HH-35	HH-45H	HH-55H
Interior dimensions						
Max. filling volume (L / cu ft)	14 / 0.49	14 / 0.49	25 / 0.88	25 / 0.88	39 / 1.38	39 / 1.38
Refrigerator capacity (HP)	1/2	3/4	1	1.5	2	3
For tubing dia. (mm / inch)	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")	20 / (3/4")
Filling inlet (Ø, mm / inch)	120 / 4.7	120 / 4.7	120 / 4.7	120 / 4.7	120 / 4.7	120 / 4.7
Exterior dimensions						
Width (mm / inch)	515 / 20.3	515 / 20.3	550 / 21.7	550 / 21.7	605 / 23.8	605 / 23.8
Depth (with drain valve), (mm / inch)	645 (715) / 25.4 (28.1)	645 (715) / 25.4 (28.1)	830 (900) / 32.7 (35.4)	830 (900) / 32.7 (35.4)	975 (1045) / 38.4 (41.4)	975 (1045) / 38.4 (41.4)
Height (with lid), (mm / inch)	800 (835) / 31.5 (32.9)	800 (835) / 31.5 (32.9)	975 (1045) / 38.4 (41.1)	975 (1045) / 38.4 (41.1)	1265 (1300) / 49.8 (51.2)	1265 (1300) / 49.8 (51.2)
Weight (kg / lbs)	92 / 202.8	93 / 205	142 / 313	147 / 324	171±10 / 377±20.1	176±10 / 388±20.1
Temperature data						
Working temperature range (°C / °F)	-20 to 80 / -4 to 176	-20 to 80 / -4 to 176	-20 to 80 / -4 to 176	-20 to 80 / -4 to 176	-20 to 80 / -4 to 176	-20 to 80 / -4 to 176
Temperature stability at 15°C (±°C / °F)	0.1 / 0.2	0.1 / 0.2	0.1 / 0.2	0.1 / 0.2	0.1 / 0.2	0.1 / 0.2
Heating capacity (kW)	2	2	4	4	8.4	8.4
Cooling capacity, Max						
at 20°C (kW)	1.3	1.6	2.7	3	5	6.5
at 0°C (kW)	0.9	1.2	1.3	1.8	3	4.1
at -20°C (kW)	0.2	0.3	0.5	0.6	1	1.3
Pump data						
Max. flow rate (L / min, gal / min)	40 / 10.6	40 / 10.6	40 / 10.6	40 / 10.6	70 / 18.5	70 / 18.5
Max. pressure (bar / psi)	3.3 / 47.9	3.3 / 47.9	3.3 / 47.9	3.3 / 47.9	6 / 87.02	6 / 87.02
Electrical data & Ordering information						
230V, 60Hz, A	15	16	27	31		
Cat. No.	**AAH67011K**	**AAH67021K**	**AAH67031K**	**AAH67041K**	-	-
230V, 50Hz, A	14.5	15.5	25	30		
Cat. No.	**AAH67012K**	**AAH67022K**	**AAH67032K**	**AAH67042K**	-	-
380V, 60Hz, A					18.3	19.8
Cat. No.	-	-	-	-	**AAH67159K**	**AAH67169K**
380V, 50Hz, A					17.8	19.3
Cat. No.	-	-	-	-	**AAH67158K**	**AAH67168K**

* According to DIN 12876
* Temperature stability / Pump data : Water, Cooling capacity : Ethanol
* Above specification value is recorded by 230V 60Hz. (HH-45H, 55H is recorded by 380V 60Hz)
* Product performance may be affected by ambient temperature.
* Under the condition of no-load operation, cooling capacity should be lower than heating capacity.

Accessories Page 44 LC GreenBox, Fitting, Connectors , Adapters, Tubing, Tube Clamp, Bath Fluid

Accessories

Proven reliability & reproducibility

Made and tested according to international standards

◆ Meets safety requirements, including electrical safety standards for chillers.
◆ Conduction of device performance tests required as per the standards to provide reliable product performance.
◆ Verified test results provided as specification to allow for selection of the suitable model for the user.

Barbed Fittings

Cat. No.	Description
00HXE0001066	3/4" Male to barbed fitting for tubing 1" inner dia
00HXE0001067	3/4" Male to barbed fitting for tubing 3/4" inner dia
00HXE0001068	3/4" Male to barbed fitting for tubing 5/8" inner dia
00HXE0001069	3/4" Male to barbed fitting for tubing 1/2" inner dia
00HXE0001070	3/4" Male to barbed fitting for tubing 3/8" inner dia
AAA64501	1" Barbed fittings set with Ball valve
AAA64502	3/4" Barbed fittings set with Ball valve
AAA64503	5/8" Barbed fittings set with Ball valve
AAA64504	1/2" Barbed fittings set with Ball valve
AAA64505	3/8" Barbed fittings set with Ball valve
AAA64506	1" Barbed fittings set with Gate valve
AAA64507	3/4" Barbed fittings set with Gate valve
AAA64508	5/8" Barbed fittings set with Gate valve
AAA64509	1/2" Barbed fittings set with Gate valve
AAA64510	3/8" Barbed fittings set with Gate valve

Barbed Fittings
· Suitable for connecting tubes of various sizes.
· Pipe fittings, tube fittings, hose fittings, etc. can be fitted without tools.

Connectors / Adapters

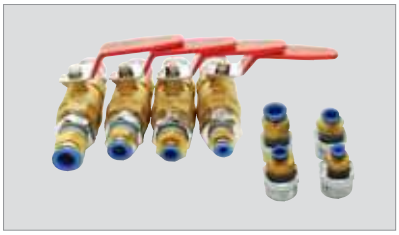
Cat. No.	Description
00HXE0001105	3/4" Male to 3/4" Female
00HXE0001106	3/4" Male to 5/8" Female
00HXE0001107	3/4" Male to 1/2" Female
00HXE0001108	3/4" Male to 3/8" Female
00HXE0001109	3/4" Male to 3/4" Male
00HXE0001110	3/4" Male to 5/8" Male
00HXE0001111	3/4" Male to 1/2" Male
00HXE0001112	3/4" Male to 3/8" Male

Connectors / Adapters
· Used when connecting tubes and devices.

One Touch Adapters Set

Cat. No.	Description	
00HXE0001075	12 mm One touch adapter	ID 9.0 mm, OD 12.0 mm
00HXE0001076	10 mm One touch adapter	ID 6.5 mm, OD 10.0 mm
00HXE0001077	8 mm One touch adapter	ID 5.5 mm, OD 8.0 mm
00HXE0001078	6 mm One touch adapter	ID 4.0 mm, OD 6.0 mm
AAA64531	12 mm Adapters set with Ball valve	
AAA64532	10 mm Adapters set with Ball valve	
AAA64533	8 mm Adapters set with Ball valve	
AAA64534	6 mm Adapters set with Ball valve	

※ Temperature Range : -15°C to 60°C



One Touch Adapters Set
· Easy to connect or replace tubing.

Flexible Fittings

Cat. No.	Description
00GBA0008589	3/4" Male to 3/4" Flexible fitting
00HXE0001072	3/4" Male to 1/2" Female with 1/2" Male to 1/2" Flexible fitting
AAA64521	3/4" Flexible fittings set with Ball valve
AAA64522	1/2" Flexible fittings set with Ball valve
AAA64523	3/4" Flexible fittings set with Gate valve
AAA64524	1/2" Flexible fittings set with Gate valve

Flexible Fittings
· Tubing is made of stainless steel material.

Tubings

Cat. No.	Description	
00HXE0001079	1 m 12 mm Urethane tubing	ID 9.0 mm, OD 12.0 mm
00HXE0001080	1 m 10 mm Urethane tubing	ID 6.5 mm, OD 10.0 mm
00HXE0001081	1 m 8 mm Urethane tubing	ID 5.5 mm, OD 8.0 mm
00HXE0001082	1 m 6 mm Urethane tubing	ID 4.0 mm, OD 6.0 mm
00HXE0001083	1 m 1" PVC tubing with thread	ID 25.0 mm, OD 31.0 mm
00HXE0001084	1 m 3/4" PVC tubing with thread	ID 19.0 mm, OD 24.0 mm
00HXE0001085	1 m 5/8" PVC tubing with thread	ID 16.0 mm, OD 20.5 mm
00HXE0001086	1 m 1/2" PVC tubing with thread	ID 12.0 mm, OD 16.0 mm
00HXE0001087	1 m 3/8" PVC tubing with thread	ID 10.0 mm, OD 14.0 mm
00HXE0001088	1 m 1" PVC tubing with wire	ID 25.0 mm, OD 33.0 mm
00HXE0001089	1 m 3/4" PVC tubing with wire	ID 19.0 mm, OD 26.0 mm
00HXE0001090	1 m 5/8" PVC tubing with wire	ID 15.0 mm, OD 22.0 mm
00HXE0001091	1 m 1/2" PVC tubing with wire	ID 12.0 mm, OD 18.0 mm
00HXE0001092	1 m 3/8" PVC tubing with wire	ID 9.0 mm, OD 15.0 mm

※ Temperature Range : -15°C to 60°C

Tubing Insulations

Cat. No.	Description
00FEA0001453	EPDM Insulation, 25 mm inner dia. (13T)

Flexible Tubing

Cat. No.	Description
00HXE0001128	3/4" Flexible tubing
00HXE0001074	1/2" Flexible tubing

Tube Clamps

Cat. No.	Description
00HXE0001098	1" Clamp
00HXE0001099	3/4" Clamp
00HXE0001100	5/8" Clamp
00HXE0001101	1/2" Clamp
00HXE0001102	3/8" Clamp

Bath Fluid

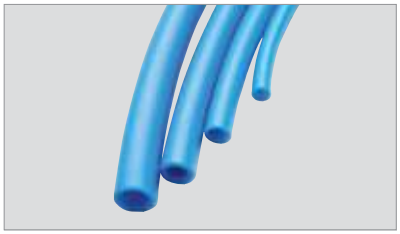
Cat. No.	Description
00HXE0001113	Distilled water (20 L)
00HXE0001114	Ethylene glycol (4 L)
00HXE0001115	Ethylene glycol (20 L)

Distributing Fittings

Cat. No.	Description
AAA64541	3-Way distributing barbed fittings set (1/4")
AAA64542	3-Way distributing barbed fittings set (3/8")

LC GreenBox

Cat. No.	Model	Description	Dimension (W x D x H, mm)
AAAQ1011	HS, HH	Mobile monitoring system	156 x 94 x 34



Tubings

· Excellent flexibility compared to PVC tubing.
· Excellent heat and corrosion resistance.

Tubing Insulations

· Made from EPDM material, which has excellent flame resistance / oxidation resistance.
· Excellent flexibility at low temperatures.

Tube Clamps

· Clamp is made from stainless steel material less susceptible to rust and corrosion.

Distributing Fittings

· Multiple tubes can be connected simultaneously.

LC GreenBox

· Monitor and control the operation status of the device in real time via mobile app with simple internet connection.