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Find the *Espec LHU-113* at our website: ***Click HERE***

LH·LHL·LHU·LU

(Low) Temperature & Humidity Cabinet & Low Temperature Cabinet



LU-113, LHU-113

Temperature & humidity indicator-controller (for LHU-113)	
Model	ES-102
Operating mode	Program operation, constant operation
Display	7 segment LED display
Setting	Mechanical key input
Program memory capacity	9 steps per pattern (Repetition: 1to 99 times)
Setting and indication ranges	Temperature: −25 to +90℃ (−13 to +194°F) Humidity: 0 to 100%rh Time: 0 to 99hrs 59min. 100 to 999hrs.
Setting and indication resolution	Temperature: 0.1℃ (0.18°F) Humidity: 1%rh Time: 1minute (1hour for 100hrs. or more)
Indication accuracy	Temperature: ±0.5℃ (typ.) (±0.9°F) Humidity: ±2%rh (typ.) Time:within 30 seconds per month
Input	Thermocouple type T (Copper/ Copper-Nickel)
Control	PID control
Communications (Options)	RS-485, GPIB, RS-232C
Auxiliary functions	・Input burn-out detection function ・Upper and lower temp. & humid. limit alarm function ・Self-diagnostic function (watchdog timer) ・Alarm indication function ・Power cut protection function ・Refrigerator capacity automatic control

*Specifications differ according to the models. For further information, please contact us.

A stable internal environment

These bench-top temperature and humidity cabinets are ideal for laboratories and research facilities (LH/ LHL/ LHU). They have a wide temperature and humidity control range, and their temperature and humidity uniformity create a precise internal environment.

Refrigeration unit achieves temperatures down to −20℃

The low temperature (& humidity) cabinets incorporate an air-cooled refrigerator (LHU/ LU). It delivers a wide temperature range from −20℃ to +85℃. They also have an insulated cabinet, a circulating fan, and efficient heaters to ensure a stable temperature environment.

PID control temperature (& humidity) controller

The PID controlled electronic temperature (& humidity) controller provides automatic control of all operations once the desired temperature (& humidity) is set.

Program operation

'Constant' or 'program' operation can be selected on the installed instrumentation. Program operation can run up to 9 steps per pattern and can specify ramp time for each step. A display is equipped to show the conditions and remaining time during operation.

Upper temperature limit deviation warning

When the temperature is set, the warning function is automatically set to activate at +10℃ (adjustable) above the preset temperature.

Complete safety features

In addition to a ground leakage breaker, which also protects against overcurrent, every model features an overheat protector or thermal fuse as a secondary safety device to provide added protection.

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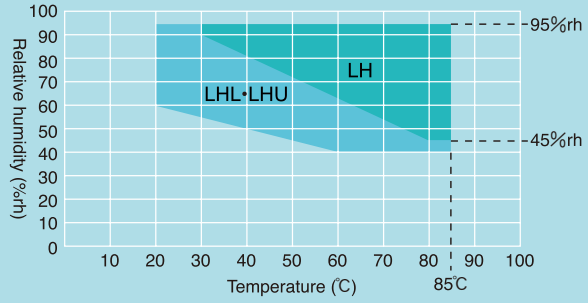
SPECIFICATIONS

Model		LH-113	LHL-113	LHU-113	LU-113
System		Balanced temperature & humidity control system (BTHC system)			Balanced temperature control system (BTC system)
Power supply/ Maximum current		100V AC 1φ 50/60Hz 15A, 115V AC 1φ 60Hz 13A, 220V AC 1φ 50/60Hz 7A, 230V AC 1φ 50/60Hz 6.5A			100V AC 1φ 50/60Hz 9A, 115V AC 1φ 60Hz 8A, 220V AC 1φ 50/60Hz 4.1A, 230V AC 1φ 50/60Hz 3.9A
Operating temperature		0 to +40℃ (+32 to +104°F)			
Performance *1	Temp. (& humid.) control range	(Ambient+10)℃ to +85℃ (185°F)/ 45 to 95%rh	+5 to +85℃ (+41 to +185°F)/ 40 to 95%rh	−20 to +85℃ (−4 to +185°F)/ 40 to 95%rh	−20 to +85℃ (−4 to +185°F)
	Temp. (& humid.) fluctuation	±0.5℃ (±0.9°F)/ ±3%rh			±0.5℃ (±0.9°F)
	Temp. (& humid.) uniformity	±2.0℃ (±3.6°F)/ ±6%rh			±2.0℃ (±3.6°F)
	Temp. pull-down time *2	———		+20 to −20℃ within 130min.	
	Lowest attainable temp. *2	———		−20℃ (−4°F)	
Construction	External material	Painted steel (melamine coating)			
	Internal material	18-8 Cr-Ni stainless steel plate (2B polish)			
Air circulator		Propeller fan			
Heater		Sheathed heater with fin			
Humidifier		Sheathed heater			———
Refrigerator		———	Air-cooled hermetically sealed compressor (HFC134a)		
Fittings		Drain port filter, cable port (φ25mm), power cord			
Accessories		(2)Shelf (Stainless steel wire), (2)Shelf bracket (18-8 Cr-Ni stainless steel), Water supply and drain hose *4 (Hose with quick coupling φ8mm), Wet-bulb wick *4 (24pcs/ box), Brush *4 (for cleaning humidifying tray), Socket adapter (100V,115V AC spec. only), User's Manual			
Capacity		105L			
Inside dimensions *3		500W×600H×390D mm (19.7W×23.6H×15.4D inch)			
Outside dimensions *3		650W×1090H×805D mm (25.6W×42.9H×31.7D inch)			
Weight		85kg	95kg	100kg	90kg
Safety devices		Leakage breaker for power supply, Boil dry protector *4, Thermal fuse, Refrigerator overload relay *5, Upper and lower temperature & humidity limit alarms, Burn-out detection circuit, Watchdog timer, Air circulator temperature switch, Refrigerator automatic delay circuit *5, Overheat protector, Float switch for protecting electromagnetic pump *4			

*1 Figures for an ambient temperature of +23°C with no specimen in the chamber. The performance is according to JTM K 01-1998 of Japan Testing Machinery Association.
*2 At ambient temperatures above +30°C, temperature pull-down performance decreases and the difference between individual chambers increases. It is recommended to keep ambient temperature to a maximum +28°C.
*3 Excluding protrusions. *4 Except LU type. *5 Except LH type.

TEMPERATURE & HUMIDITY CONTROL RANGE

● LH·LHL·LHU



* At +23℃ ambient temperature.

[NOTE] The LH-113 is not equipped with a dehumidifying refrigerator. Therefore, the temperature and humidity control range, especially the low humidity range shown here, may fluctuate depending on the installed conditions and environment (such as ventilation, fluctuations in ambient temperature, and other factors).

OPTIONS

- Specimen power supply control terminal
- Communication functions (RS-485, GPIB, RS-232C)
- Thermocouple
- Inner door
- Shelf/ Shelf bracket
- Chamber stand
- Caster
- Cable port
- Rubber plug for cable port
- Portable water supply tank (except LU)
- Wet-bulb wick (except LU)
- Special spare parts

■This product can be customized for your needs. For further information, please contact us.

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