



Refrigerated Circulators

Yamato

"Thermo-Elite"

Model BH200/300

Model

200

300

Operating Temperature Range

-20°C~+80°C

-25°C~+80°C

Temp. Adjustment Accuracy

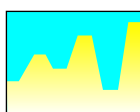
±0.01°C~±0.02°C

Reservoir Capacity

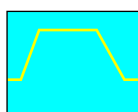
Approx. 13ℓ

Approx. 30ℓ

Control panel



Programming operation



Automatic start & stop

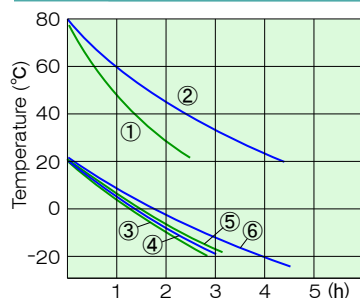
A range of low temperature is controlled also with high accuracy.

The models BH200/300 are precision low constant temperature circulator water baths which display high performance in constant temperature test in the low temperature range and have a built in refrigerator (which copes with regulation of specific Freon).

- Incorporating a freezer, temperature from low degrees to 80°C can be controlled with high accuracy. (different according to the conditions)

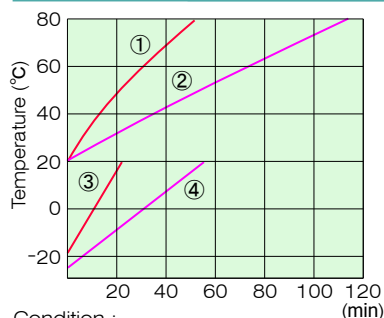


Temp.Descending Curve



Condition :
 ①BH200 ②BH300
 Solvent : Water, Room temp. : 5°C
 ③BH200 ④BH300
 Solvent : Ethanol 50% solution, Room temp. : 5°C
 ⑤BH200 ⑥BH300
 Solvent : Ethanol 50% solution, Room temp. : 30°C

Temp.Rising Curve



Condition :
 ①BH200 ②BH300
 Solvent : Water, Room temp. : 5°C
 ③BH200 ④BH300
 Solvent : Ethanol 50% solution, Room temp. : 5°C

Back View



BH300



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Specifications

Model	BH200	BH300
■ Performance		
Temp. setting range	-30.0~+100°C	
Operating temperature range	-20~+80°C	-25~+80°C
Temp. adjustment accuracy *1 Ability of circulating pump *2	±0.01°C~±0.02°C Max. stream flow : 16 (liter / min.) Max. pump head : 29kPa (3mH ₂ O)	
Cooling ability *3 (J/s · kcal / h)	174 · 150 · (at 20°C) 58 · 50(at-25°C)	232 · 200 · (at 20°C) 116 · 100(at-25°C)
■ Components		
Refrigerator	Air-cooled hermetically sealed type compressor	
	150W	400W
Refrigerant	R22	
Heater	Stainless pipe heater, 1.0kW	
Stirring mechanism Other composition	Stirring by jet stream Drain entrance (with stopping), Stainless flexibility tube with heat insulation for circulation	
■ Controller		
Temp. controller	PID control by microprocessor	
Temp. setting method	Digital setting with ▲▼ key	
Temp. display method	Digital display by LED	
Other display	Operation monitor (operation condition graphic display by LED patterns)	
Timer	1 min.~99 Hrs. 59 min. and 100 Hrs.~999 Hrs.	
Timer resolution	1 min. or 1 Hrs.	
Operation function	Fixed Temp. Operation : Continuous operation at setting temp. Automatic Start Operation : Continuous operation starts automatically at setting time. Automatic Stop Operation : Continuous operation stops automatically at setting time. Program Operation : Max. up to 16 segments (dividable, repetition, gradient operation, etc.) Refrigerator operating function : Automatic operation	
Supplementary Function	Backup memory, Key lock, Calculation time function (up to 49999 hours) Changeable function for Jet stream strength (10 steps changeable), Hold function, Calendar timer function, Time display, Analog output function *4, Outside warning output function *4, Time-up output function *4, Outside communication function (correspond to RS422A) *5	
Heater circuit control	Triac zero-cross control	
Temp. sensor	Pt resistance thermometer bulb, A-class(3 wire)	
■ Safe Device		
Safety countermeasures	Self-diagnosis function (Automatic overheat protector, Warning buzzer for sensor abnormal, Breaking of heater wire, Triac short circuit and Main relay trouble), Electric leakage breaker, Float type solvent level detector *6, Thermal protector (Stirring motor), Automatic stop function for refrigerator (more than 45°C)	
■ Standard		
Internal dimensions(W × D × Hmm)	389 × 266 × 150	296 × 501 × 200
Effective dimensions(W × D × Hmm)	160 × 190 × 150	240 × 335 × 200
External dimensions*7(W × D × Hmm)	654 × 492 × 614	385 × 590 × 1,150
Reservoir capacity	13 liter	30 liter
Circulation port	Rc1/2 (both IN and OUT)	Rc1/2 (both IN and OUT)
Power source 50/60Hz	AC100V / 230V, Single phase, 13A / 5.7 A	AC100V / 230V, Single phase, 14A / 6.1 A
Weight	Aprox.46 kg	Aprox.59 kg

■ Standard Accessories

Connection port for outside circulation hose(Rc1/2 × φ 14mm), 2 pcs.

■ Optional Accessories

- ① Exclusive Cable for Outputs (Analog / Outside warning / Time-up), Multi conductor cable model OBL10
Outside communication cable, model OBK10
- ② Interface for PC (RC23) with AC adapter
- ③ Independent overheat preventer (for BH400)
- ④ Bypass tube for outside circulation (O.D. 1.6mm φ), model OBH30
- ⑤ Outside circulation hose (2.1m × 2pcs.), model OBH40 *8

*1 : Solvent : Ethanol 50% solution, Temp. 25°C(unload)

*2 : Solvent : Water, Water temp. 25°C

*3 : For reference only. Please contact us if need further information.

*4 : All output is mixed into single output terminal (Cable is optional accessory).

*5 : Exclusive cable is optional accessory.

*6 : Detection for upper and lower level's limit of fluid (Heat-prevention function for empty bath operates by detecting lower level limit).

*7 : Overall dimension doesn't include the protection.

*8 : This hose can't be used for high temp. fluid circulation more than 100°C because this hose is insulation hose for cooling water circulation.



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