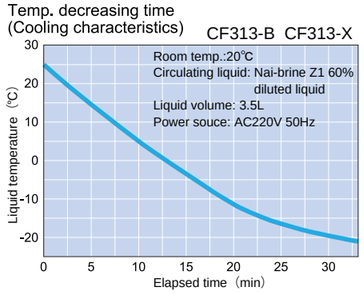
Specifications

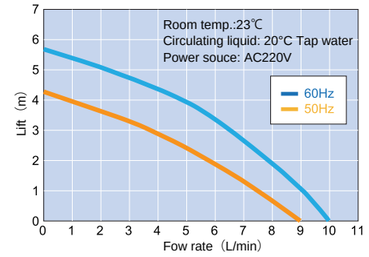
		221712	221713	221714	221715
Product code					
Model		**CF303-Y**	**CF313-B**	**CF313-Y**	**CF313-X**
Circulation type		Closed circulation			
Circulating water		Tap water, nybrine (liquid temperature below 10℃)			
Operation temperature range		5℃ to 35℃			
Performance	Temperature control range*1	−20℃ to 30℃			
	Temperature adjustment accuracy*2	JTM K05±1.0℃ (≧0℃) JTM K05±1.5℃ (<0℃)			
	Temperature fluctuation*2	JIS 2.0℃ (≧0℃) JIS 3.0℃ (<0℃)			
	Cooling capacity*2	Approx. 450W at 10℃ liquid temp. Approx. 330W at −10℃ liquid temp.			
	Max. flow rate*3	Approx. 10 L/min (60Hz)	Approx. 9 L/min (50Hz)	Approx. 10 L/min (60Hz)	Approx. 9 L/min (50Hz)
	Max. lift*3	Approx. 5.7m (60Hz)	Approx. 4.3m (50Hz)	Approx. 5.7m (60Hz)	Approx. 4.3m (50Hz)
Configuration	Temperature control	Refrigerator ON/OFF control			
	Temperature sensor	Pt100Ω			
	Temperature setting/display	White LED digital display, key input, minimum digit 1℃			
	Refrigerator and refrigerant	Air-cooling 450W, R452A			
	External circulation nozzle	One-touch connector (Flexible rotary L type) Top rear, 1 system Outer diameter ϕ10 mm rigid hose connection (Inner diameter ϕ9 mm flexible hose mountable with attached hose nozzle)			
	Water circulating pump	Magnet pump 15W (60Hz)	Magnet pump 15W (50Hz)	Magnet pump 20W (60Hz)	Magnet pump 15W (50Hz)
Safety features		Overcurrent leakage breaker, temperature sensor abnormality, Temperature upper/lower limit warning, Temperature upper/lower limit abnormality, Refrigerator overload relay, Fan motor protection, Circulation pump protection, Refrigerator protection delay timer, Refrigeration high pressure switch			
Other features		Drainage hose, Circulation port condensation water drainage hose, Intake port dustproof filter, Cooling operation switch, Circulation pump switch, Calibration offset, Power failure recovery function (selectable)			
Standard	Inner tank material	Stainless steel			
	Inner tank capacity	Approx. 3.9L (liquid volume 3.5L)			
	External dimensions (W×D×Hmm)	205×396×535 When including protrusions: (225×434×564)			
	Weight	Approx. 30 kg			
	Power source*4	AC115V 60Hz Single-phase	AC220V 50Hz Single-phase	AC220V 60Hz Single-phase	AC220V 50Hz Single-phase
	Capacity	6.8A	3.8A	4A	3.8A
Accessories*5		Two hose nozzles (for flexible hose connection), One condensation waterdrainage hose 1m (inner diameter ϕ12 mm), Two clamps for hose fixing			
		–	–	C-type conversion power plug	

Performance Curve

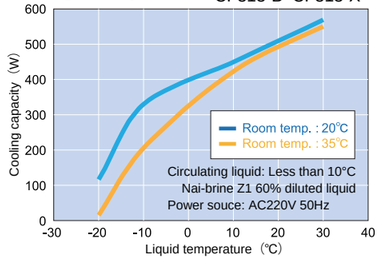
Temp. decreasing time
(Cooling characteristics)



Flow/Lift



Cooling capacity



*1 This model is not equipped with the heating function. Depending on the ambient temperature and connection conditions, -20°C may not be reached.
*2 Ambient temperature: 20 °C, circulating volume: max. No external load
Varies depending on operating conditions such as room temperature, circulating volume, type of circulating fluid, external load, etc.
The cooling capacity, power supply voltage/frequency is as follows
CF303-Y: AC115V/60Hz, CF313-B and X: AC220V/50Hz, CF313-Y: AC220V/60Hz. Also, ±10% of the displayed capacity.
Temperature control accuracy is the standard value calculated using JTM K05 and temperature fluctuation is the standard value calculated using the JIS standard (Amended 2020).
*3 Capacity values are based on tap water at a liquid temperature of 20°C. *4 The length of the power cord is approximately 2m outside the unit. *5 Circulation insulated hose is not included.

Optional Items

No.	Product name	Specifications	Model	Product code
①	Heat insulated circulation hose	Inner diameter 9mm, ethylene propylene (soft) hose (2m) 2 pcs., clamps 4pcs.	OCF12	221581
②	Heat insulated circulation hose	High heat insulation, inner diameter 9mm, silicone (soft) hose (2m) 2pcs., clamps 4pcs.	OCF62	221599
③	Heat insulated circulation hose	Outer diameter 10mm, polyurethane (hard) tube (2m) 2pcs.	OCF78	281475
④	L shaped circulation nozzle	ϕ8mm R3/8 SUS304	OCF80	281476
⑤	L shaped circulation nozzle	ϕ10.5mm R3/8 SUS304	OCL30	221396
⑥	L shaped circulation nozzle	ϕ13mm R3/8 SUS304	OCL40	221397
⑦	L shaped circulation nozzle	ϕ16mm R3/8 SUS304	OCL50	221398
⑧	Flow control valve	R3/8	OCF82	281477
⑨	External linkage input terminal*2	Operation/stop by no-voltage A contact input	OCF96	281484
⑩	One touch connector	Straight one-touch connector R3/8×outer diameter ϕ10mm for hard tubes	OCF88	281480
⑪	One touch connector	L-shaped swivel type one-touch connector R3/8×outer diameter ϕ10mm for hard tubes	OCF90	281481
⑫	Strainer set	Y-type strainer (20 mesh, Rc3/8) +Outlet connection tube	OCF92	281482
⑬	Hose nozzle	Connection from outer diameter 10mm hard tube to inner diameter 9mm soft hose*3	OCF94	281483

*2 Please specify the external linkage input terminal when ordering the main unit. *3 Standard accessories

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For the development of scientific technologies
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SINCE 1889
Yamato

Cooling Water Circulator

(Externally Closed Circulation)

CF303-Y
CF313-B/CF313-Y/CF313-X

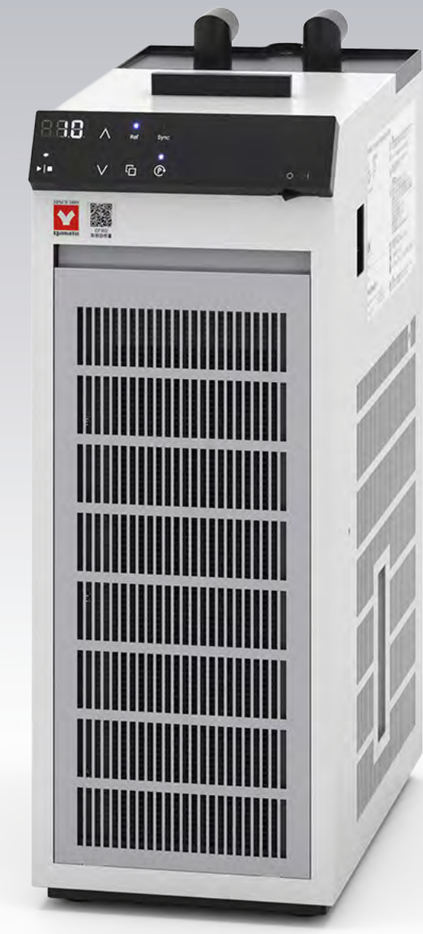
Amazing Price, High Performance, Design・Operability

Same size as the previous model, but with even greater cooling capacity.

The dimensions are the same as the previous model (CF302L) in a compact size, but the cooling capacity has been further improved.

More environmentally friendly.

The type of refrigerant used in our refrigeration equipment has been changed, making it more environmentally friendly than ever before.



CF303-Y
CF313-B/CF313-Y/CF313-X

Improved cooling capacity further reduces GWP

GWP value: 2140

Temperature control range: −20℃ to 30℃

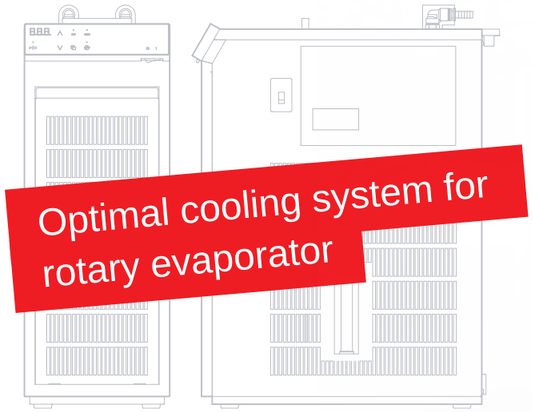
Yamato Scientific Co., Ltd.

Cooling Water Circulator

(Externally Closed Circulation)

CF303-Y/CF313-B/CF313-Y/CF313-X

Cooling of the heat generating parts by closed circulation in various applications such as research equipment, industrial machinary, analysis and measuring instruments!



Optimal cooling system for rotary evaporator

CF303-Y
CF313-B/CF313-Y/CF313-X

Temperature control range: −20℃ to 30℃

Installed under the table

Installed on the table

Easy maintenance of the inlet filter

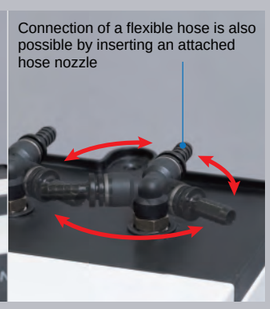
The front filter mounting plate is only fixed by a magnet, so it can be easily removed by pulling for cleaning. The sheet filter is easy to clean and remount.

New user friendly controller

A new controller with high visibility and improved operability with a high brightness white LED is adopted. Switching between measured temperature display and set temperature display is possible. The design is simple and easy to use.

Stress-free circulation connection

Connection is completed by inserting a hard tube (outer diameter of ϕ10mm) only. The connector part is rotatable, so it can be turned freely and does not apply stress to the hose.
Connection to a flexible hoses such as silicone hose (inner diameter of ϕ9mm) is also possible by inserting the supplied hose nozzle.



Safe drainage of condensation water

A drain for condensation water is provided near the connector on the upper rear side. Connect the provided drainage hose and utilize it to drain condensation water.