

## FL1203 Recirculating Coolers for installation below a lab bench

The compact FL models are suited for a wide variety of cooling tasks. Installation under a lab bench saves valuable space. 2 variants: Air-cooled (FL) and water-cooled (FLW).

### Your advantages

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line +80°C
- Easy filling and Drain tap easily accessible
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable ventilation grid
- Front drain
- No side vents, instruments can be placed right next to other equipment
- RS232 interface for PC connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)



### Technical data

<b>Available voltage versions</b>		<b>Bath</b>	
Order No.	9 663 012	Bath tank	Stainless steel
<b>Available voltage versions:</b>			
9 663 012.03	230V/50Hz (Schuko Plug - CEE 7/4 Plug Type F)		
9 663 012.04	230V/50Hz (UK Plug Type BS1363A)		
9 663 012.13	230V/60Hz (Schuko Plug - CEE 7/4 Plug Type F)		
<b>Cooling</b>		<b>Other</b>	
Cooling of compressor	1-stage Air	Sound pressure level dbA	61
		Classification	Classification I (NFL)
		IP Code	IP 21
		Pump type	Centrifugal Pump
<b>Electronics</b>		<b>Dimensions and volumes</b>	
Temperature control	PID1	Weight kg	91
Temperature display	LED	Barbed fittings inner diameter	¾"
Temperature setting	Keypad	Dimensions cm (W × L × H)	50 x 76 x 64
		Filling volume l	12 ... 17
		Pump connections	G¾" male
<b>Temperature values</b>			
Setting the resolution of the temperature display °C	0.1		
Return flow temperature max. °C	80		
Working temperature range °C	-20 ... +40		
Temperature stability °C	±0.5		
Ambient temperature °C	5 ... 40		

Temperature display resolution °C	0.1
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## Performance values

### 230V/50Hz (Schuko Plug - CEE 7/4 Plug Type F)

#### 230V/50Hz

Cooling capacity (Water Glycol)

°C	20	10	0	-10	-20
kW	1.2	0.9	0.8	0.5	0.2

Refrigerant R452A

Filling volume g 690

Global Warming Potential for R452A 2140

Carbon dioxide equivalent t 1.477

Pump capacity flow rate l/min 40

Pump capacity flow pressure bar 0.5 ... 3

### 230V/50Hz (UK Plug Type BS1363A)

#### 230V/50Hz

Cooling capacity (Water Glycol)

°C	20	10	0	-10	-20
kW	1.2	0.9	0.8	0.5	0.2

Refrigerant R452A

Filling volume g 690

Global Warming Potential for R452A 2140

Carbon dioxide equivalent t 1.477

Pump capacity flow rate l/min 40

Pump capacity flow pressure bar 0.5 ... 3

### 230V/60Hz (Schuko Plug - CEE 7/4 Plug Type F)

#### 230V/60Hz

Cooling capacity

°C	20	10	0	-10	-20
kW	1.2	1	0.9	0.6	0.2

Refrigerant R449A

Filling volume g 590

Global Warming Potential for R449A 1397

Carbon dioxide equivalent t 0.824

Pump capacity flow rate l/min 40

Pump capacity flow pressure bar 0.5 ... 3

## All Benefits



**100% Checked.**  
100% testing. 100% quality. Each JULABO Circulator undergoes thorough quality testing before leaving the factory.



**Green technology.**  
Development consistently applied environmentally friendly materials and technologies.



**JULABO. Quality.**  
Highest standards of quality for a long product life.



**Quick start.**  
Individual JULABO consultation and comprehensive manuals at your disposal.



**Satisfied customers.**  
11 subsidiaries and more than 100 partners worldwide guarantee fast and qualified JULABO support.



**Services 24/7.**  
Around the clock availability. You can find suitable accessories, data sheets, manuals, case studies, and more at [www.julabo.com](http://www.julabo.com).



**Precise**  
PID Temperature control with set control parameters, temperature stability  $\pm 0.02 \dots \pm 0.2$  °C