

## CORIO CP-310F Refrigerated / heating circulator

Refrigerated circulators from the CORIO CP range are suitable for applications with a temperature range up to +200°C. The enhanced pump performance ensures they are suitable for easy temperature control tasks in combination with external applications.

### With natural refrigerant

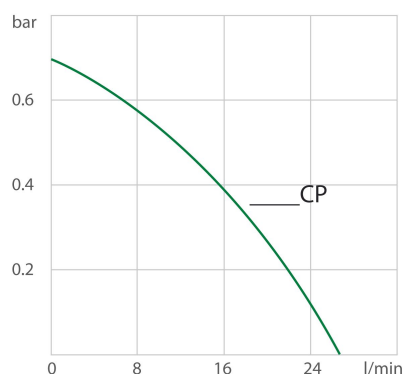
The CORIO CP-310F is available with natural refrigerant. Order No. 9 013 713.N1



### Product features

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- External pump connections
- Powerful and infinitely adjustable pressure pump
- USB connection
- RS232 interface for online communication
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Unique early warning system for low liquid level
- Class III (FL) according to DIN 12876-1

### Pump capacity



Medium: Water



## Performance values

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

Heating capacity kW	2
Viscosity max. cSt	50
Pump capacity flow rate l/min	8 ... 27
Pump capacity flow pressure bar	0.1 ... 0.7
Power consumption A	13

## Refrigerant variants

Order No. 9013713.N1.33

### Cooling capacity (Ethanol)

°C	20	0	-10	-20	-30
kW	0.3	0.27	0.21	0.12	0.02

\* Performance specifications measured in accordance with DIN 12876. Cooling capacities up to 20 °C measured with ethanol; over 20 °C with thermal oil unless otherwise specified. Performance specifications apply at an ambient temperature of 20 °C. Performance values may differ with other bath fluids.

#### Note about natural refrigerants:

Temperature control units using natural refrigerants are often subject to regulatory requirements regarding the installation site, operation, transport or disposal of the units. If you have any questions, we will be happy to advise you.

#### Refrigerant stage 1

Refrigerant	R290
Filling weight g	25
Global Warming Potential for R290	3
Carbon dioxide equivalent t	7.5E-5

Order No. 9013713.S1.33

### Cooling capacity (Ethanol)

°C	20	0	-10	-20	-30
kW	0.3	0.27	0.21	0.12	0.02

\* Performance specifications measured in accordance with DIN 12876. Cooling capacities up to 20 °C measured with ethanol; over 20 °C with thermal oil unless otherwise specified. Performance specifications apply at an ambient temperature of 20 °C. Performance values may differ with other bath fluids.

#### Refrigerant stage 1

Refrigerant	R449A
Filling weight g	60
Global Warming Potential for R449A	1397
Carbon dioxide equivalent t	0.08382

## Technical data

### Available voltage versions

Order No. 9 013 713

### Bath

Bath tank

Stainless steel

Available voltage versions:		Bath cover	integrated
9013713.N1.01	100V/50-60Hz (Nema N5-15 Plug) (R290)	Usable bath opening cm (W x L / D)	13 x 15 / 15
9013713.S1.01	100V/50-60Hz (Nema N5-15 Plug) (R449A)		
9013713.N1.02	115V/60Hz (Nema N5-15 Plug) (R290)		
9013713.S1.02	115V/60Hz (Nema N5-15 Plug) (R449A)		
9013713.N1.33	200-230V/50-60Hz (Schuko Plug - CEE 7/4 Plug Type F) (R290)		
9013713.S1.33	200-230V/50-60Hz (Schuko Plug - CEE 7/4 Plug Type F) (R449A)		
9013713.N1.33.chn	200-230V/50-60Hz (CN Plug) (R290)		
9013713.S1.33.chn	200-230V/50-60Hz (CN Plug) (R449A)		
9013713.33.chn	200-230V/50-60Hz (CN Plug) (R134a)		
9013713.04	200-230V/50-60Hz (UK Plug Type BS1363A)		
9013713.N1.04	200-230V/50-60Hz (UK Plug Type BS1363A) (R290)		
9013713.S1.04	200-230V/50-60Hz (UK Plug Type BS1363A) (R449A)		
9013713.N1.05	200-230V/50-60Hz (CH Plug Type SEV 1011) (R449A)		
9013713.S1.05	200-230V/50-60Hz (CH Plug Type SEV 1011) (R449A)		

Cooling		Other	
Cooling of compressor	1-stage Air	Classification	Classification III (FL)
		IP Code	IP 21
		Pump function	Pressure Pump
		Pump type	Immersion Pump

Electronics		Dimensions and volumes	
Interfaces	RS232, USB	Weight kg	25.6
Temperature control	PID1	Barbed fittings inner diameter	8/12 mm
Absolute temperature calibration	3 Point Calibration	Dimensions cm (W x L x H)	23 x 40 x 65
Temperature display	LED	Filling volume l	3 ... 4
Temperature setting	Keypad	Pump connections	M16x1 male
Electronic Timer hr:min	0 ... 999		

Temperature values		Included in delivery	
Setting the resolution of the temperature display °C	0.1	2 Barbed fittings for tubing 8 and 12 mm ID. (Pump connections M16x1 male)	
Working temperature range °C	-30 ... +200		
Temperature stability °C	±0.03		
Ambient temperature °C	+5 ... +40		
Temperature display resolution °C	0.01 ... 0.1		

## All Benefits



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



**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).



**Highest measuring accuracy**  
'Absolute Temperature Calibration' for manual compensation of a temperature difference, 3-point calibration



**Quick support**  
If an error occurs, the integrated Black-Box function permits fast diagnosis by the JULABO service team



**Brilliant.**  
Very bright display makes it easy to read even from a distance.



**Connection. Easy.**  
Inclined pump connections (M16×1) facilitate the connection of applications. Each unit includes 2 barbed fittings of 8/12 mm diameter each.



**Everything at the front.**  
All operating controls and safety functions are accessed easily and comfortably from the front.



**Exact.**  
You can rely on it. PID1 control and 'Active Cooling Control' make the new CORIO precise and perfect.



**Locked in.**  
The lockable power plug guarantees safe connection. More process safety.



**Switch on. And off you go.**  
Intelligent operating concept. Ready for operation with just a few quick and easy steps.



**Timer. Integrated.**  
CORIO circulators include an integrated timer function. When the set time has elapsed, a signal sounds and the device switches off. Setting range: 0 ... 999 minutes.



**Powerful. Adjustable.**  
Strong pressure pump, continuously adjustable.



**Early warning system for low liquid level.**  
Maximum safety for your application. Optical and audible alarm allows user to refill bath fluid in time.



**Connectivity.**  
Remote control made easy. CORIO CP circulators feature a USB connection and RS232 interface.