

CF31 Cryo-Compact Circulator

The Cryo-Compact Circulators of the CF Series provide powerful cooling and heating capabilities in a space-saving, compact design. The instruments feature 2 kW heating capacity and classification III according to DIN 12876-1. The Cryo-Compact Circulators have pump connections for external temperature control applications and a bath opening for temperature control of small objects.



Your advantages

- Small overall dimensions for lowest space requirement
- Splash-proof keypad
- Bright VFD display and interactive LCD dialog display
- Highly precise ICC cascade temperature control
- RS232/RS485 interface for PC connection
- SMART PUMP, electronically adjustable pump stages
- Pt100 External sensor connection for measurement and control
- Integrated programmer for 6 x 60 program steps
- ATC3 3-Point-Calibration
- TCF Temperature Control Features
- Adjustable high temperature cut-out, visible via display
- Classification 3 according to DIN12876-1
- Pump connections for external temperature applications
- Bath opening for temperature control of small objects in the bath
- Front drain

Technical data

Available voltage versions		Bath	
Order No.	9 400 331	Bath tank	Stainless steel
Available voltage versions:		Bath cover	integrated
9 400 331.13	230V/60Hz (Nema N6-20 Plug)	Usable bath opening cm (W x L / D)	16 x 3 / 14
9 400 331.02	115V/60Hz (Nema N5-20 Plug)		
9 400 331.03	230V/50Hz (Schuko Plug - CEE 7/4 Plug Type F)		
9 400 331.04	230V/50Hz (UK Plug Type BS1363A)		
Cooling		Other	
Cooling of compressor	1-stage Air	Classification	Classification III (FL)
		Pump type	Immersion Pump
Electronics		Dimensions and volumes	
Digital interface	RS485	Weight kg	35
External pt100 sensor connection	integrated	Barbed fittings inner diameter	8/12 mm
Integrated programmer	6x60 steps	Dimensions cm (W x L x H)	24 x 46 x 40
Temperature control	ICC	Filling volume l	2 ... 3
Absolute temperature calibration	3 Point Calibration	Pump connections	M16x1 male
Temperature display	LCD		
Temperature values			
Working temperature range °C	-30 ... +200		
Temperature stability °C	±0.02		
Ambient temperature °C	+5 ... +40		
Temperature display resolution °C	0.01		

Performance values

230V/60Hz (Nema N6-20 Plug)

230V/60Hz				
Heating capacity kW	2			
Cooling capacity (Ethanol)				
°C	20	0	-20	
kW	0.32	0.25	0.15	
Viscosity max. cST	70			
Refrigerant	R134a			
Filling volume g	150			
Global Warming Potential for R134a	1430			
Carbon dioxide equivalent t	0.215			
Pump capacity flow rate l/min	22 ... 26			
Pump capacity flow pressure bar	0.4 ... 0.7			
Maximum suction bar	0.2 ... 0.4			

115V/60Hz (Nema N5-20 Plug)

115V/60Hz				
Heating capacity kW	1			
Cooling capacity (Ethanol)				
°C	20	0	-20	
kW	0.32	0.25	0.15	
Viscosity max. cST	70			
Refrigerant	R134a			
Filling volume g	150			
Global Warming Potential for R134a	1430			
Carbon dioxide equivalent t	0.215			
Pump capacity flow rate l/min	22 ... 26			
Pump capacity flow pressure bar	0.4 ... 0.7			
Maximum suction bar	0.2 ... 0.4			

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

230V/50Hz				
Heating capacity kW	2			
Cooling capacity (Ethanol)				
°C	20	0	-20	
kW	0.32	0.25	0.15	
Viscosity max. cST	70			
Refrigerant	R134a			
Filling volume g	150			
Global Warming Potential for R134a	1430			
Carbon dioxide equivalent t	0.215			
Pump capacity flow rate l/min	22 ... 26			
Pump capacity flow pressure bar	0.4 ... 0.7			

Maximum suction bar	0.2 ... 0.4
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230V/50Hz (UK Plug Type BS1363A)

230V/50Hz	
Heating capacity kW	2
Cooling capacity (Ethanol)	
°C	20 0 -20
kW	0.32 0.25 0.15
Viscosity max. cST	70
Refrigerant	R134a
Filling volume g	150
Global Warming Potential for R134a	1430
Carbon dioxide equivalent t	0.215
Pump capacity flow rate l/min	22 ... 26
Pump capacity flow pressure bar	0.4 ... 0.7
Maximum suction bar	0.2 ... 0.4

All Benefits



Early warning system for high/low temperature limits
Maximum safety for applications, optical and audible alarm, convertible to automated cut-off function



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



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



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



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.



Services 24/7.
Around the clock availability. You can find suitable accessories, data sheets, manuals, case studies, and more at www.julabo.com.



Intelligent temperature control.
Intelligent cascade control - automatic and self-optimizing adaptation of the PID control parameters with external stability of +/- 0.05 °C.



For flammable bath fluid
Classification III (FL) according to DIN 12876-1



ATC3. Calibration.
'Absolute Temperature Calibration' for compensating a physically caused temperature difference, 3-point calibration.



Process. Under control.
Full regulation of the dynamics control, access to all important control parameters for individual process optimization.



100 % Cooling capacity
'Active Cooling Control' for cooling available throughout the entire working temperature range, fast cool-down even at higher temperatures



Energy saving cooling
Proportional cooling control for automatic adjustment of cooling power or temporary switch-off of compressor as needed to save up to 90 % energy in comparison to unregulated cooling machines