

## CF41 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

<b>Available voltage versions</b>		<b>Bath</b>	
Order No.	9 400 341	Bath tank	Stainless steel
Available voltage versions:		Bath cover	integrated
9 400 341.13	230V/60Hz (Nema N6-20 Plug)	Usable bath opening cm (W x L / D)	19 x 3 / 19
9 400 341.02	115V/60Hz (Nema N5-20 Plug)		
9 400 341.03	230V/50Hz (Schuko Plug - CEE 7/4 Plug Type F)		
9 400 341.04	230V/50Hz (UK Plug Type BS1363A)		
<b>Cooling</b>		<b>Other</b>	
Cooling of compressor	1-stage Air	Classification	Classification III (FL)
		IP Code	IP 21
		Pump type	Immersion Pump
<b>Electronics</b>		<b>Dimensions and volumes</b>	
Digital interface	RS485	Weight kg	44
External pt100 sensor connection	integrated	Barbed fittings inner diameter	8/12 mm
Integrated programmer	6x60 steps	Dimensions cm (W x L x H)	28 x 46 x 46
Temperature control	ICC	Filling volume l	4 ... 5.5
Absolute temperature calibration	3 Point Calibration	Pump connections	M16x1 male
Temperature display	LCD		
<b>Temperature values</b>			
Working temperature range °C	-40 ... +200		
Temperature stability °C	±0.02		
Ambient temperature °C	+5 ... +40		

Temperature display resolution °C	0.01
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## Performance values

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

#### 230V/60Hz

Heating capacity kW	2
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#### Cooling capacity (Ethanol)

°C	20	0	-20	-30
kW	0.47	0.4	0.28	0.12

Viscosity max. cST	70
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Refrigerant	R449A
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Filling volume g	153
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Global Warming Potential for R449A	1397
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Carbon dioxide equivalent t	0.214
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Pump capacity flow rate l/min	22 ... 26
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Pump capacity flow pressure bar	0.4 ... 0.7
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Maximum suction bar	0.2 ... 0.4
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### 115V/60Hz (Nema N5-20 Plug)

#### 115V/60Hz

Heating capacity kW	1
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#### Cooling capacity (Ethanol)

°C	20	0	-20	-30
kW	0.47	0.4	0.28	0.12

Viscosity max. cST	70
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Refrigerant	R449A
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Filling volume g	153
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Global Warming Potential for R449A	1397
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Carbon dioxide equivalent t	0.214
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Pump capacity flow rate l/min	22 ... 26
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Pump capacity flow pressure bar	0.4 ... 0.7
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Maximum suction bar	0.2 ... 0.4
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### 230V/50Hz (Schuko Plug - CEE 7/4 Plug Type F)

#### 230V/50Hz

Heating capacity kW	2
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#### Cooling capacity (Ethanol)

°C	20	0	-20	-30
kW	0.47	0.4	0.28	0.12

Viscosity max. cST	70
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Refrigerant	R452A
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Filling volume g	153
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Global Warming Potential for R452A	2140
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Carbon dioxide equivalent t	0.327
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 (UK Plug Type BS1363A)

230V/50Hz				
Heating capacity kW	2			
Cooling capacity (Ethanol)				
°C	20	0	-20	-30
kW	0.47	0.4	0.28	0.12
Viscosity max. cST	70			
Refrigerant	R452A			
Filling volume g	153			
Global Warming Potential for R452A	2140			
Carbon dioxide equivalent t	0.327			
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](http://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