

## 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.



### Product features

- Ergonomic design and easy operation
- 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
- Unique early warning system for low liquid level
- ATC3 3-Point-Calibration
- TCF Temperature Control Features
- Adjustable high temperature cut-out, visible via display
- Pump connections for external temperature applications
- Bath opening for temperature control of small objects in the bath
- Front drain
- Extra bright displays, easy to read from a distance
- Precise temperature control
- Class III (FL) according to DIN 12876-1

### Performance values

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

Heating capacity kW	2
Viscosity max. cSt	70
Pump capacity flow rate l/min	22 ... 26
Pump capacity flow pressure bar	0.4 ... 0.7
Maximum suction bar	0.2 ... 0.4
Power consumption A	13

Order No. 9400341.03

#### Cooling capacity (Ethanol)

°C	20	0	-20	-30
kW	0.47	0.4	0.28	0.12

\* 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 R452A

Filling weight g 153

Global Warming Potential 2140  
for R452A

Carbon dioxide equivalent 0.327  
t

## Technical data

### Available voltage versions

Order No. 9 400 341

#### Available voltage versions:

9400341.13	230V/60Hz (Nema N6-20 Plug) (R449A)
9400341.02	115V/60Hz (Nema N5-20 Plug) (R449A)
9400341.03	230V/50Hz (Schuko Plug - CEE 7/4 Plug Type F) (R452A)
9400341.04	230V/50Hz (UK Plug Type BS1363A) (R452A)

### Bath

Bath tank Stainless steel

Bath cover integrated

Usable bath opening cm (W x L / D) 19 x 3 / 19

### Cooling

Cooling of compressor 1-stage Air

### Other

Classification Classification III (FL)

IP Code IP 21

Pump type Immersion Pump

### Electronics

Interfaces Alarm output optional,  
REG/EPROG optional,  
RS485, Standby-Input  
optional

External pt100 sensor connection integrated

Integrated programmer 6x60 steps

Temperature control ICC

Absolute temperature calibration 3 Point Calibration

Temperature display LCD

### Dimensions and volumes

Weight kg 44

Barbed fittings inner diameter 8/12 mm

Dimensions cm (W x L x H) 28 x 46 x 46

Filling volume l 4 ... 5.5

Pump connections M16x1 male

### Temperature values

Working temperature range °C -40 ... +200

Temperature stability °C ±0.02

Ambient temperature °C +5 ... +40

Temperature display resolution °C 0.01

### Included in delivery

2 Barbed fittings for tubing 8 and 12 mm ID. (Pump connections M16x1 male)

## All Benefits



### 100% Checked.

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



### Early warning system for high/low temperature limits

Maximum safety for applications, optical and audible alarm, convertible to automated cut-off function



### 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).



### Intelligent temperature control.

Intelligent cascade control - automatic and self-optimizing adaptation of the PID control parameters with external stability of  $\pm 0.05^\circ\text{C}$ .



### 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