

F70-ME Ultra-low refrigerated / heating circulator

The ultra-low refrigerated circulators of the TopTech series are equipped with a dual-stage cascade refrigeration system for continuous operation of internal and external temperature applications.

Models with ME circulator

- Heated bath cover plate to prevent condensation or ice build-up
- Pressure pump up to 0.45 bar, electronically adjustable in steps
- ACC Active Cooling Control across the entire temperature range
- Compact design Note: FP models feature an energy-saving proportional cooling control.



Product features

- PID3 cascade temperature control
- RS232 interface for online communication
- Integrated programmer for 10 program steps

Performance values

230V/50Hz (Schuko Plug - CEE 7/4 Plug Type F)	
Heating capacity kW	1.2
Viscosity max. cST	50
Pump capacity flow rate l/min	11 ... 16
Pump capacity flow pressure bar	0.23 ... 0.45
Power A	14

Order No.	9162670.03				
Cooling capacity (Ethanol)					
°C	20	0	-20	-40	-60
kW	0.34	0.22	0.17	0.13	0.07

* Performance specifications measured in accordance with DIN12876. 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	R404A
Filling volume g	300
Global Warming Potential for R404A	3922
Carbon dioxide equivalent t	1.177

Technical data

Available voltage versions		Bath	
Order No.	9 162 670	Bath tank	Stainless steel
Available voltage versions:		Bath cover	integrated
9162670.03	230V/50Hz (Schuko Plug - CEE 7/4 Plug Type F) (R404A)	Usable bath opening cm (W x L / D)	12 x 12 / 13
Cooling		Other	
Cooling of compressor	2-stage Air	Sound pressure level dbA	56
		Classification	Classification III (FL)
		IP Code	IP 21
		Pump type	Immersion Pump
Electronics		Dimensions and volumes	
Digital interface	RS232, Alarm output	Weight kg	63
External pt100 sensor connection	integrated	Barbed fittings inner diameter	8/12 mm
Integrated programmer	1x10 steps	Dimensions cm (W x L x H)	42 x 54 x 71
Temperature control	PID3	Filling volume l	3.5 ... 4.5
Absolute temperature calibration	3 Point Calibration	Pump connections	M16x1 male
Temperature display	VFD		
Temperature setting	Keypad		
Temperature values		Included in delivery	
Setting the resolution of the temperature display °C	0.01	2 barbed fittings suitable for tubing 8 and 10 mm inner dia. (pump connections M10x1 female)	
Working temperature range °C	-70 ... +100		
Temperature stability °C	±0.02		
Ambient temperature °C	+5 ... +40		
Temperature display resolution °C	0.01		

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.



Early warning system for high/low temperature limits

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



For higher demands

PID Temperature control with drift compensation and adjustable parameters, improved temperature stability for external applications, temperature stability ± 0.01 °C internal, $< \pm 0.1$ °C external.



Clever pump system

Reliable and consistent pump capacity, electronically adjustable pump stages



For flammable bath fluid

Classification III (FL) according to DIN 12876-1



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



Control of the external application

External Pt100 sensor connection for precise measurement and control directly in the external application



ATC3. Calibration.

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