# Julabo

# FP55-SL Ultra-Low Refrigerated / Heating Circulator

Ultra-Low Refrigerated Circulators with SL circulator impress with their high heating, cooling and pump capacities for external temperature control applications.

# **Product features**

- VFD COMFORT DISPLAY
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behavior
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump
- Proportional cooling control



## Performance values

208-230V/3PPE/60Hz (Without Plug)					
Heating capacity kW	3				
Viscosity max. cST	70				
Pump capacity flow rate I/min	22 26				
Pump capacity flow pressure psi	5.8 10.2				
Maximum suction psi	2.9 5.8				
Current Draw A	28				

Order No.			9352755.16	9352755.16.N		
Cooling capacity (Ethanol)						
°C	20	0	-20	-40	-50	
kW	5.2	4	1.95	0.67	0.26	

\*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	R452A
Filling volume g	2000
Global Warming Potential for R452A	2140
Carbon dioxide equivalent	t 4.28



# Technical data

Available voltage version	ns		Bath		
Order No.	9 352 755.N		Bath cover	integrated	
Available voltage versions:					
9352755.07.N	400V/3PNPE/50Hz (Plug 32A CEE) (R452A)				
9352755.S1.07.N	400V/3PNPE/50Hz (Plug 32A CEE) (R449A)				
9352755.16.N	208V/3PPE/60Hz (Without Plug) (R452A)				
Cooling			Other		
Cooling of compressor		1-stage Air	Classification	Classification III (FL)	
			IP Code	IP 21	
Electronics		Dimensions and volumes			
Digital interface		Profibus optional	Weight Ibs	396.8	
External pt100 sensor connection		integrated	Dimensions in. (W $\times$ L $\times$ H)	33.5 x 29.9 x 45.7	
Integrated programmer		6x60 steps	Filling volume l	27	
Temperature control		ICC	Pump connections	M16x1 male	
Absolute temperature calibrat	ion	3 Point Calibration			
Temperature display		VFD			
Temperature setting		Keypad			
Temperature values		Included in delivery			
Setting the resolution of the te display °C	emperature	0.01	2 each Barbed fittings for tubing 8 and 12 mm ID. (Pump connections M16x1 male)		
Working temperature range °C	:	-55 +100			
Temperature stability °C		±0.05			
Ambient temperature °C		+5 +40			
Temperature display resolutio	n °C	0.01			

# All Benefits



100% Checked.

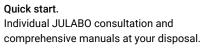
100% testing. 100% quality. Each JULABO Circulator undergoes thorough quality testing before leaving the factory.



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



Development consistently applied environmentally friendly materials and technologies.



Green technology.





# Satisfied customers.

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



Intelligent temperature control. Intelligent cascade control - automatic and self-

optimizing adaptation of the PID control parameters with external stability of +/- 0.05 °C.



Early warning system for high/low temperature limits

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



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



#### **Condensation and ice protection** A heated cover plate prevents condensation

A heated cover plate prevents condensation or ice build-up in the bath



# ATC3. Calibration.

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



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



**Connection of additional equipment** Stakei connections for solenoid valve, HSP booster pump and HST booster heater



Clever pump system Reliable and consistent pump capacity, electronically adjustable pump stages



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



## Energy saving cooling

Proportional cooling control for automatic adjustment of cooling power or temporary switchoff 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

