

F32-HL HighTech HL Refrigerated - Heating Circulator

The top-of-the-line models with HL circulators offer professional technology and maximum functionality. The additional LCD dialog display interactively assists the user in setting circulator parameters. Intelligent Cascade Control (ICC) and Temperature Control Features (TCF) ensure optimal control behavior. HL circulators also have a Stakei connection.

Your advantages

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- · 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 pressure and suction pump
- · Adjustable high temperature cut-out, visible via display
- Active Cooling Control
- RS232/RS485 interface for online communication
- Optional: analogue interfaces
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump



Technical data

Temperature values

Order No. 9 312 632	
	Bath cover integrated
Available voltage versions:	Usable bath opening cm (W x L / D) 18 x 12 / 15
9 312 632.01 100V/50-60Hz (Nema N5-15 Plug)	
9 312 632.02 115V/60Hz (Nema N5-15 Plug)	
9 312 632.04 230V/50-60Hz (UK Plug Type BS1363A)	
9 312 632.05 230V/50-60Hz (CH Plug Type SEV 1011)	
9 312 632.33 230V/50-60Hz (Schuko Plug - CEE 7/4 Plu Type F)	g
Cooling	Other
Cooling of compressor 1-stage Air	Sound pressure level dbA 53
	Classification III (FL)
	IP Code IP 21
	Pump type Immersion Pump
Electronics	Dimensions and volumes
Digital interface Profibus optional	Weight kg 38
External pt100 sensor connection integrated	Barbed fittings inner diameter 8/12 mm
Integrated programmer 6x60 steps	Dimensions cm (W × L × H) 31 x 42 x 66
Temperature control ICC	Filling volume I 5.5 8
Absolute temperature calibration 3 Point Calibratio	n Pump connections M16x1 male
Temperature display VFD	
Temperature setting Keypad	



Setting the resolution of the temperature display °C	0.01
Working temperature range °C	-35 +200
Temperature stability °C	±0.01
Ambient temperature °C	+5.0 +40.0
Temperature display resolution °C	0.01

Performance values

100V/50-60Hz (Nema N5-15 Plug)

100V/50Hz		100V/60Hz		
Heating capacity kW	0.8	Heating capacity kW	0.8	
Cooling capacity (Ethanol)		Cooling capacity (Ethanol)		
°C 20 0 -20 -30		°C 20 0 -20 -30		
kW 0.45 0.39 0.15 0.06		kW 0.45 0.39 0.15 0.06		
Viscosity max. cST	70	Viscosity max. cST	70	
Refrigerant	R134a	Refrigerant	R134a	
Filling volume g 166		Filling volume g	166	
Global Warming Potential for R134a 1430		Global Warming Potential for R134a	1430	
Carbon dioxide equivalent t 0.237		Carbon dioxide equivalent t	0.237	
Pump capacity flow rate I/min	22 26	Pump capacity flow rate l/min	22 26	
Pump capacity flow pressure bar	0.4 0.7	Pump capacity flow pressure bar	0.4 0.7	
Maximum suction bar	0.2 0.4	Maximum suction bar	0.2 0.4	

115V/60Hz (Nema N5-15 Plug)

115V/60Hz

Heating capacity kW						1	
Cooling capacity (Ethanol)							
°C	20	0	-20	-30			
kW	0.45	0.39	0.15	0.06			
Visco	sity ma	ax. cST				70	
Refrigerant						R134a	
Filling volume g						166	
Global Warming Potential for R134a					34a	1430	
Carbon dioxide equivalent t						0.237	
Pump capacity flow rate I/min						22 26	
Pump capacity flow pressure bar					ar	0.4 0.7	
Maximum suction bar						0.2 0.4	

230V/50-60Hz (UK Plug Type BS1363A)

230V/50Hz		230V/60Hz		
Heating capacity kW	2	Heating capacity kW	2	

Julabo

Cooling capacity (Ethanol)		Cooling capacity (Ethanol)		
°C 20 0 -20 -30		°C 20 0 -20 -30		
kW 0.45 0.39 0.15 0.06		kW 0.45 0.39 0.15 0.06		
Viscosity max. cST	70	Viscosity max. cST	70	
Refrigerant	efrigerant R134a		R134a	
Filling volume g	illing volume g 166		166	
Global Warming Potential for R134a 1430		Global Warming Potential for R134a	1430	
Carbon dioxide equivalent t 0.237		Carbon dioxide equivalent t	0.237	
Pump capacity flow rate I/min 22 26		Pump capacity flow rate l/min	22 26	
Pump capacity flow pressure bar	0.4 0.7	Pump capacity flow pressure bar	0.4 0.7	
Maximum suction bar	0.2 0.4	Maximum suction bar	0.2 0.4	

230V/50-60Hz (CH Plug Type SEV 1011)

230V/50Hz		230V/60Hz			
Heating capacity kW	2	Heating capacity kW	2		
Cooling capacity (Ethanol)	Cooling capacity (Ethanol)		Cooling capacity (Ethanol)		
°C 20 0 -20 -30		°C 20 0 -20 -30			
kW 0.45 0.39 0.15 0.06		kW 0.45 0.39 0.15 0.06			
Viscosity max. cST	70	Viscosity max. cST	70		
Refrigerant	R134a	Refrigerant	R134a		
Filling volume g	166	Filling volume g	166		
Global Warming Potential for R134a 1430		Global Warming Potential for R134a	1430		
Carbon dioxide equivalent t	arbon dioxide equivalent t 0.237		0.237		
Pump capacity flow rate l/min	22 26	Pump capacity flow rate l/min	22 26		
Pump capacity flow pressure bar 0.4 0.7		Pump capacity flow pressure bar	0.4 0.7		
Maximum suction bar	0.2 0.4	Maximum suction bar	0.2 0.4		

230V/50-60Hz (Schuko Plug - CEE 7/4 Plug Type F)

230V/50Hz		230V/60Hz	
Heating capacity kW	2	Heating capacity kW	2
Cooling capacity (Ethanol)	Cooling capacity (Ethanol)		
°C 20 0 -20 -30		°C 20 0 -20 -30	
kW 0.45 0.39 0.15 0.06		kW 0.45 0.39 0.15 0.06	
Viscosity max. cST	70	Viscosity max. cST	70
Refrigerant	R134a	Refrigerant	R134a
Filling volume g 166		Filling volume g	166
Global Warming Potential for R134a 1430		Global Warming Potential for R134a	1430
Carbon dioxide equivalent t 0.237		Carbon dioxide equivalent t	0.237
Pump capacity flow rate I/min 22 26		Pump capacity flow rate l/min	22 26
Pump capacity flow pressure bar 0.4 0.7		Pump capacity flow pressure bar	0.4 0.7
Maximum suction bar	0.2 0.4	Maximum suction bar	0.2 0.4

life.



All Benefits



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



Satisfied customers.

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



Quick start. Individual JULABO consultation and comprehensive manuals at your disposal.



°C.

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



Early warning system for high/low temperature limits Maximum safety for applications, optical and

audible alarm, convertible to automated cut-off function



Control from 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.



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



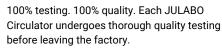
Condensation and ice protection A heated cover plate prevents condensation or ice build-up in the bath



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



100% Checked.





Services 24/7.

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



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



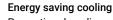
Clever pump system Reliable and consistent pump capacity, electronically adjustable pump stages



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



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



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