

## F12-ED Refrigerated/Heating Circulator

### The Base for routine laboratory applications.

JULABO Refrigerated & Heating Circulators for heating and cooling are suitable for external temperature tasks and for temperature applications directly in the bath. A model from three different series' with different capacities can be selected. Powerful circulating pump systems and high heating and cooling capacities guarantee short heat-up and cool-down times. The inevitable dust accumulation that occurs in refrigeration systems is solved by means of an easily removed venting grill, which allows for easy cleaning. Depending on the model, the units are equipped with handles or castors for an easy transportation. All models have a drain screw on the front allowing the fluid to be drained easily. The compact assembly of each unit enables a space to be saved in the laboratory.

### Your advantages

- Bright LED temperature display, resolution 0.1 °C
- Keypad for setpoint, switches automatically to the actual value
- PID1 temperature control
- Adjustable high temperature cut-out / dry-running protection



Made  
in Germany

### Technical Data

Order No.	9116612			
Model series	Economy			
Category	Refrigerated - Heating Circulators			
Working temperature range (°C)	-20 ... +100			
Temperature stability (°C)	±0.03			
Setting / display resolution	0.1 °C			
Temperature Display	LED			
Heating capacity (kW)	1			
Cooling capacity (Medium Ethanol)	°C	20	0	-20
	kW	0.2	0.12	0.02
Pump capacity flow rate (l/min)	15			
Pump capacity flow pressure (psi)	5.1			
Bath opening / bath depth (W x L / D inch)	5.1 x 5.9 / 5.1			
Pump connections	M10x1			
Barbed fittings diameter (inner dia. / mm)	8 / 10			
Filling volume liters	4.5			
Refrigerant	R134a			
Ambient temperature	5...40 °C			
Dimensions W x L x H (inch)	7.9 x 14.2 x 22			
Weight (LBS)	48			

Classification according to DIN12876-1	Classification I (NFL) according to DIN 12876-1
Included with each unit	2 barbed fittings suitable for tubing 8 and 10 mm inner dia. (pump connections M10x1 female)
Cooling of compressor	Air
Power requirement V / Hz / A	115/60/12
Available voltage versions	230 V / 50 Hz 115 V / 60 Hz 230 V / 60 Hz 100 V / 50-60 Hz

## Characteristics

### Display



#### Easy to read

Large LED temperature display for actual value and setpoint (resolution 0.1 °C)



#### 100 % Cooling capacity

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

### Operation



#### Clear and simple

3-key operation for easy setpoint adjustment



#### Protective functions

Adjustable high temperature cut-off or dry-running protection

### Temperature Control



#### Precise

PID Temperature control with set control parameters, temperature stability  $\pm 0.02 \dots \pm 0.2$  °C



#### Only for non-flammable bath fluids

Classification I (NFL) according to DIN 12876-1

### Refrigeration Technology



#### Consistent cooling capacity

Easily removable venting grid for quick and easy cleaning

#### JULABO Contact

JULABO USA Inc.  
884 Marcon Boulevard, Allentown, PA 18109  
Phone: 610-231-0250  
Phone: 800-458-5226 (Toll-Free)

info.us@julabo.com

#### JULABO Services

Product finder, Accessory search, 1 PLUS Warranty, Catalog download, Callback service, Operating manuals, Safety data sheets, Software and more

www.julabo.com