



F70-ME



F81-ME

TopTech Series

for working temperatures from -90 °C to 100 °C

TopTech Ultra-low refrigerated circulators with dual-stage cascaded refrigeration technology are designed for internal and external temperature control applications. The units feature a bath opening for internal temperature applications directly in the bath.

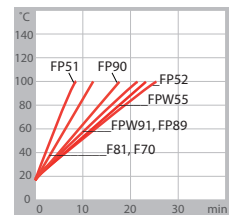
Models with ME circulators

- Active Cooling Control across the entire temperature range
- Heated bath cover plate to prevent condensation and ice build-up
- Pressure pump up to 0.45 bar, electronically adjustable in stages
- Compact design

FP models: energy saving proportional cooling control

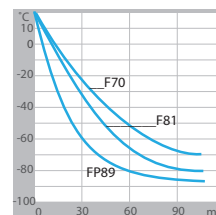
Heat-up times

Bath fluid: Thermal H55



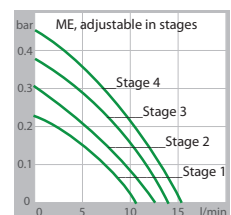
Cool-down times

Bath fluid: Ethanol



Pump capacity

Bath fluid: water



JULABO Order No.	JULABO Model	Working temp. range °C	Temp. stab. °C	Heat. cap. kW	Cooling capacity kW (Bath fluid: Ethanol)						Pump cap./Flow rate l/min.	Press. bar	Fill. vol. liters	Dimensions W x L x H cm
					20	0	-20	-40	-60	-80 °C				
9 162 670	F70-ME	-70 ... 100	±0.02	1.3	0.34	0.22	0.17	0.13	0.07	--	11-16	0.23-0.45	4.5	42 x 54 x 71
9 162 681	F81-ME	-81 ... 100	±0.02	1.3	0.45	0.38	0.36	0.32	0.27	0.07	11-16	0.23-0.45	6.5	50 x 58 x 88
9 162 689	FP89-ME	-90 ... 100	±0.02	1.3	1.0	0.92	0.88	0.75	0.58	0.20	11-16	0.23-0.45	8	55 x 60 x 90

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections with M16x1 male)



Applications

- Freezing point determination
- Calibration at low temperatures
- Petroleum testing
- Cell cultivation at low temperatures

HighTech Series

for working temperatures from -91 °C to 200 °C

HighTech ultra-low refrigerated circulators with the HL, SL circulators are equipped with a powerful pressure and suction pump. The units offer all functions of the superior HighTech circulator series.

Models with HL/SL circulator

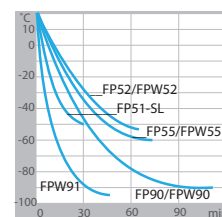
- Energy saving proportional cooling control
- Active Cooling Control across the entire temperature range
- Heated bath cover plate to prevent condensation / ice build-up
- Pressure and suction pump up to 1.1 bar, electronically adjustable in stages
- SL models with 3 kW heating capacity for rapid heating

Bath opening for internal temperature applications

JULABO Model	Dimensions bath opening W x L / Bath depth
F70	12 x 12 / 13 cm
FP51	18 x 12 / 20 cm
F81, FP89	13 x 15 / 16 cm
FP(W)52/55/90/91	28 x 23 / 22 cm

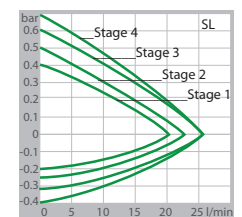
Cool-down time

Bath fluid: Ethanol



Pump capacity

Bath fluid: water



JULABO Order No.	JULABO Model	Working temperature range °C	Temp. stab. °C	Heat. cap. kW	Cooling capacity kW (Bath Fluid: Ethanol)					Pump cap./Flow rate Press. Suct.			Fill. vol. liters	Dimensions W x L x H cm	
					20	0	-20	-40	-60	-80 °C	l/min.	bar	bar		
9 352 751	FP51-SL	-51 ... 200	±0.05	3	2.0	1.5	1.0	0.26	--		22-26	0.4-0.7	0.2-0.4	11	46 x 55 x 89
9 352 752	FP52-SL	-60 ... 100	±0.05	3	3.0	2.8	1.6	0.65	0.1		22-26	0.4-0.7	0.2-0.4	24	59 x 76 x 116
9 352 753	FPW52-SL	-60 ... 100	±0.05	3	3.0	2.8	1.6	0.65	0.1		22-26	0.4-0.7	0.2-0.4	24	59 x 76 x 116
9 352 755	FP55-SL	-60 ... 100	±0.05	3	5.2	4.1	2.2	0.70	0.13		22-26	0.4-0.7	0.2-0.4	27	85 x 76 x 116
9 352 756	FPW55-SL	-60 ... 100	±0.05	3	5.5	4.1	2.2	1.0	0.13		22-26	0.4-0.7	0.2-0.4	27	59 x 76 x 116
9 312 681	F81-HL	-81 ... 100	±0.02	1.3	0.45	0.38	0.36	0.32	0.27	0.07	22-26	0.4-0.7	0.2-0.4	6.5	50 x 58 x 89
9 312 689	FP89-HL	-90 ... 100	±0.02	1.3	1.0	0.92	0.88	0.75	0.58	0.20	22-26	0.4-0.7	0.2-0.4	8	55 x 60 x 92
9 352 790	FP90-SL	-90 ... 100	±0.05	3	1.8	1.7	1.6	1.35	0.75	0.15	22-26	0.4-0.7	0.2-0.4	22	59 x 76 x 116
9 352 791	FPW90-SL	-90 ... 100	±0.05	3	1.8	1.7	1.6	1.35	0.75	0.15	22-26	0.4-0.7	0.2-0.4	22	59 x 76 x 116
9 352 793	FPW91-SL	-91 ... 100	±0.2	3	5.2	4.7	4.0	3.5	2.3	0.8	22-26	0.4-0.7	0.2-0.4	22	85 x 76 x 116

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections with M16x1 male)



FP55-SL



FP90-SL

HighTech Series

for working temperatures from -95 °C to 150 °C
upgradable with additional heating and pump capacity

HighTech ultra-low refrigerated instruments in combination with SL circulators feature high heating, cooling and pump capacities and are used for external temperature control applications.

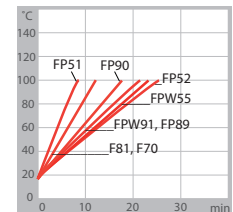
- Cooling capacities up to 5.5 kW, heating capacities up to 9 kW
- Insulated filling port (70 mm dia.) to prevent condensation/ice build-up
- Heated bath cover plate
- Upgradable with booster heater and pump
- Energy saving proportional cooling control
- Pressure and suction up to 1.1 bar, electronically adjustable

FP: Energy saving proportional cooling control

FPW: For cooling water connection

Heat-up times

Bath fluid: Thermal H55

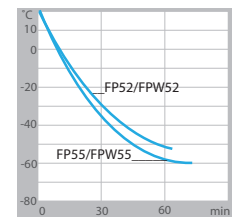


Filling port with insulated cover



Cool-down time

Bath fluid: Ethanol



JULABO Order No.	JULABO Model	Working temp. range °C	Temp. stab. °C	Heat. cap. kW	Cooling capacity kW (bath fluid: Ethanol)					Pump cap./Flow rate			Fill. vol. liters	Dimensions W x L x H cm
					20	0	-20	-40	-60 °C	l/min.	Press. bar	Suct. bar		
9 352 752N	FP52-SL	-60 ... 100	±0.05	3	3.0	2.8	1.6	0.65	0.1	22-26	0.4-0.7	0.2-0.4	24	59 x 76 x 116
9 352 753N	FPW52-SL	-60 ... 100	±0.05	3	3.0	2.8	1.6	0.65	0.1	22-26	0.4-0.7	0.2-0.4	24	59 x 76 x 116
9 352 755N	FP55-SL	-60 ... 100	±0.05	3	5.2	4.1	2.2	0.7	0.13	22-26	0.4-0.7	0.2-0.4	27	85 x 76 x 116
9 352 756N	FPW55-SL	-60 ... 100	±0.05	3	5.5	4.1	2.2	1.0	0.13	22-26	0.4-0.7	0.2-0.4	27	59 x 76 x 116
9 352 752N150	FP52-SL	-60 ... 150	±0.05	3	3.0	2.8	1.6	0.65	0.1	22-26	0.4-0.7	0.2-0.4	24	59 x 76 x 116
9 352 753N150	FPW52-SL	-60 ... 150	±0.05	3	3.0	2.8	1.6	0.65	0.1	22-26	0.4-0.7	0.2-0.4	24	59 x 76 x 116
9 352 755N150	FP55-SL	-60 ... 150	±0.05	3	5.2	4.1	2.2	0.7	0.13	22-26	0.4-0.7	0.2-0.4	27	85 x 76 x 116
9 352 756N150	FPW55-SL	-60 ... 150	±0.05	3	5.5	4.1	2.2	1.0	0.13	22-26	0.4-0.7	0.2-0.4	27	59 x 76 x 116

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections with M16x1 male)

FPW: Cooling water connection G 3/4" male with barbed fittings for tubing 1/2" inner dia.



FPW91-SL

Applications

- Jacketed reactor vessels
- Autoclaves, Mini plants
- Kilo labs
- Process development

External Temperature Control Applications only

Upgradable for increased heating and pump capacity

All models on this double-page are upgradable (exception: F95-SL and FW95-SL).

- HST booster heater ① with additional 6 kW heating capacity results in a total heating capacity of 9 kW
- HSP booster pump ② max. 3 bar – 30 l/min. (reduces cooling capacity by 0.4 kW)

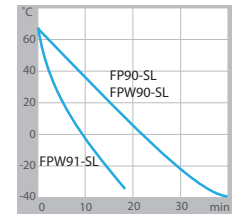
Upgradable

with booster heater and pump



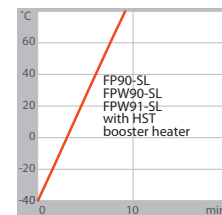
Cool-down times

Bath fluid: Thermal H5S



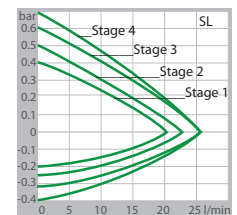
Heat-up time

Bath fluid: Thermal H5S



Pump capacity

Bath fluid: water



JULABO Order No.	JULABO Model	Working temp. range °C	Temp. stab. °C	Heat. cap. kW	Cooling capacity kW (bath fluid: Ethanol)						Pump cap./Flow rate			Fill. vol. liters	Dimensions W x L x H cm
					20	0	-20	-40	-60	-80	°C	l/min.	Press. bar		
9 352 790 N	FP90-SL	-90 ... 100	±0.05	3	1.8	1.7	1.6	1.35	0.75	0.15	22-26	0.4-0.7	0.2-0.4	22	59 x 76 x 116
9 352 791 N	FPW90-SL	-90 ... 100	±0.05	3	1.8	1.7	1.6	1.35	0.75	0.15	22-26	0.4-0.7	0.2-0.4	22	59 x 76 x 116
9 352 793 N	FPW91-SL	-91 ... 100	±0.2	3	5.2	4.7	4.0	3.5	2.3	0.8	22-26	0.4-0.7	0.2-0.4	22	85 x 76 x 116
9 352 795 N	F95-SL	-95 ... 0	±0.05	3	--	1.7	1.5	1.3	1.1	0.36	22-26	0.4-0.7	0.2-0.4	22	59 x 76 x 116
9 352 796 N	FW95-SL	-95 ... 0	±0.05	3	--	1.7	1.5	1.3	1.1	0.36	22-26	0.4-0.7	0.2-0.4	22	59 x 76 x 116
9 352 790N150	FP90-SL	-90 ... 150	±0.05	3	1.8	1.7	1.6	1.35	0.75	0.15	22-26	0.4-0.7	0.2-0.4	22	59 x 76 x 116
9 352 791N150	FPW90-SL	-90 ... 150	±0.05	3	1.8	1.7	1.6	1.35	0.75	0.15	22-26	0.4-0.7	0.2-0.4	22	59 x 76 x 116

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections with M16x1 male)
 FPW: Cooling water connection G 3/4 male with barbed fittings for tubing 1/2" inner dia.