Section 2 General Information

Description and Intended Use

The Thermo Scientific ADVANCED Series of Heated Immersion Circulators are used with refrigerated and heated baths. All immersion circulators can pump to an external system. All circulators have a digital display and easy-to-use touch pad, five programmable setpoint temperatures, acoustic and optical alarms, and offer adjustable high temperature protection.

The circulator is designed for use in a clean laboratory environment and in accordance with the Letter of Compliance located at the end of this manual.

ADVANCED Heated Immersion Circulators

	AC150	AC200
Temperature Range °C* °F	Ambient +13 to +150 Ambient +23 to +302	Ambient +13 to +200 Ambient +23 to +392
Temperature Stability °C	±0.01	±0.01
Heater Capacity 230V/115V watts	2000/1200	2000/1200
Circulator Dimensions (H x W x D) mm inches	372 x 165 x 199 14.6 x 6.4 x 7.8	372 x 165 x 199 14.6 x 6.4 x 7.8
Reservoir Depth Requirement mm inches	150 5.9	150 5.9
Fill Level mm (from top of reservoir)	57..22	57..22
Required Reservoir Depth mm	150	150
Net Weight kg/lb	4.2/9.3	4.2/9.3
Pumping Capacity		
Max flow rate lpm/gpm	20/5.3	20/5.3
Max pressure (mbar/psi)	475/6.89	475/6.89
Max suction	330/4.85	330/4.85
Pump speed steps	3	3
Electrical Requirements (Voltage ±10%)	100 V/50 Hz 100 V/60 Hz or 115 V/60 Hz or 230 V/50..60 Hz	100 V/50 Hz 100 V/60 Hz or 115 V/60 Hz or 230 V/50..60 Hz
Connectivity		
Remote sensor port	Yes	Yes
USB port	No	Yes
Multi function port	No	Yes
RS232/RS485/Ethernet/LAN	Optional	Optional
Analog I/O	No	Optional

- Performance specifications established in accordance with DIN 12876 (using water at 70°C).
- * The lowest usable temperature may be 13°C (23°F) warmer than room temperature, lower temperature ranges require supplemental cooling.
- The maximum bath wall thickness for circulators that have a factory installed clamp is 26 mm.
- Thermo Fisher Scientific reserves the right to change specifications without notice.

SAHARA Heated Bath Circulator Specifications

Stainless Steel Bath Circulators		
	S7	**S13**
AC150 Temperature Range °C* °F*	Ambient +13 to 150 Ambient +23 to 302	Ambient +13 to 150 Ambient +23 to 302
AC200 Temperature Range °C* °F*	Ambient +13 to 200 Ambient +23 to 392	Ambient +13 to 200 Ambient +23 to 392
Bath Volume liters gallons	4 - 8 1.1 - 2.1	7 - 12 1.8 - 3.2
Overall Dimensions (H x W x D)** mm inches	494 x 235 x 428 19.5 x 9.2 x 16.7	494 x 321 x 428 19.5 x 12.6 x 16.7
Work Area Dimensions (D x W x L)** mm inches	200 x 154 x 112 7.9 x 6.1 x 4.4	200 x 293 x 112 7.9 x 9.4 x 4.4
Net Weight kg/lb	10.6/23.4	12.3/27.0

Stainless Steel Bath Circulators			
	S21	**S45**	**S49**
AC150 Temperature Range °C* °F*	Ambient +13 to 150 Ambient +23 to 302	Ambient +13 to 150 Ambient +23 to 302	Ambient +13 to 150 Ambient +23 to 302
AC200 Temperature Range °C* °F*	Ambient +13 to 200 Ambient +23 to 392	Ambient +13 to 150 Ambient +23 to 302	Ambient +13 to 200 Ambient +23 to 392
Bath Volume liters gallons	7 - 19 1.8 - 5.0	30 - 41 7.9 - 10.8	29 - 53 7.7 - 14.0
Overall Dimensions (H x W x D)** mm inches	447 x 381 x 628 17.6 x 15.0 x 24.7	594 x 381 x 628 23.4 x 15.0 x 24.7	494 x 579 x 746 19.5 x 22.8 x 29.4
Work Area Dimensions (D x W x L)** mm inches	150 x 297 x 312 5.9 x 11.7 x 12.3	300 x 298 x 312 11.8 x 11.7 x 12.3	200 x 498 x 430 7.9 x 19.6 x 16.9
Net Weight kg/lb	14.2/31.2	20.3/44.7	24.3/53.4

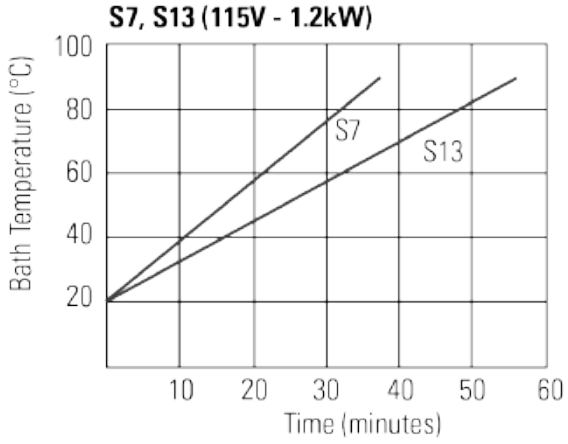
*The lowest usable temperature may be 13°C (23°F) warmer than room temperature, lower temperature ranges require supplemental cooling

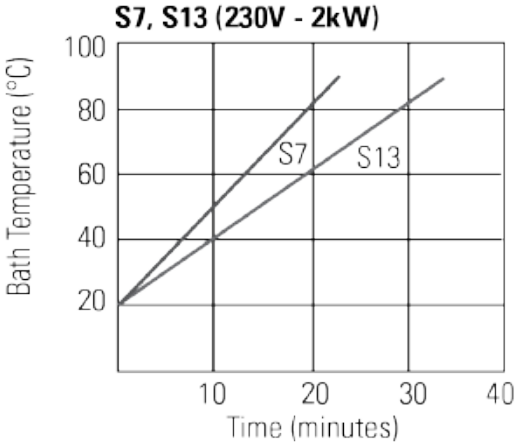
**See page 2-5. Add ~26 mm (1 inch) to D for drain fitting.

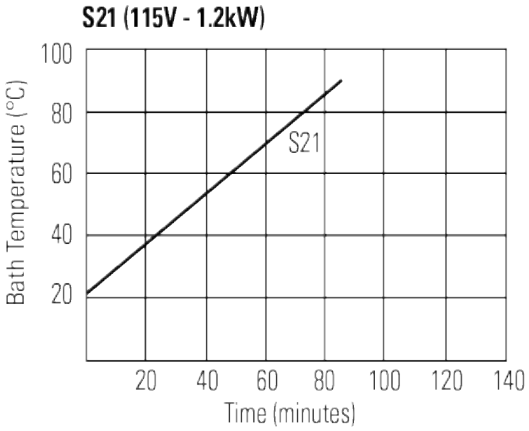
***See Section 3 for additional information.

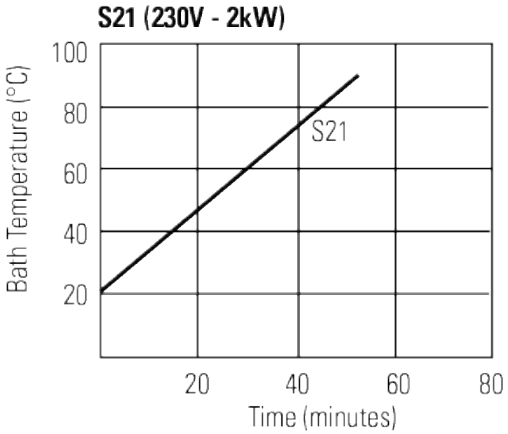
- Thermo Fisher Scientific reserves the right to change specifications without notice.

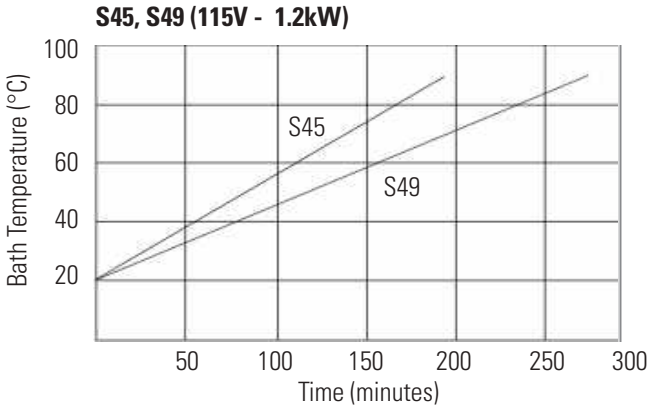
Time to Temperature

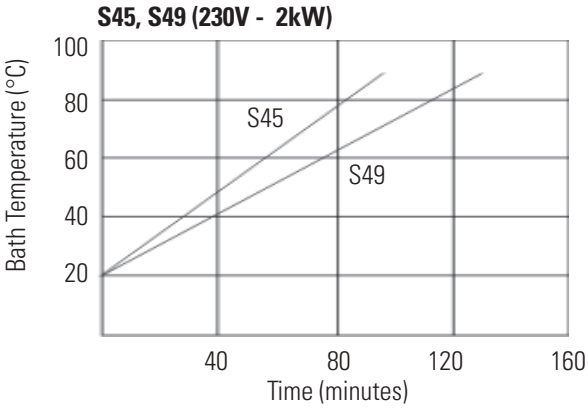












Specifications obtained at sea level using water (above +5°C to +90°C) or a fluid with a specific heat of 2.3 kJ/kg-K or 0.55 Btu/lb-F (less than 5°C) as the recirculating fluid at a +20°C ambient condition, at nominal operating voltage. Other fluids, process temperatures, ambient temperatures, altitude or operating voltage will affect performance. Pump specifications are nominal values of ±10%. Specifications are for reference only and are subject to change. Heat-up rates for the 100V baths will take approximately 25% longer than the 115V.