

# your success circulates at every degree



# Thermo Scientific temperature control products represent a giant leap forward in performance, features, configurability and technology.

Now you can configure the most flexible, cost-effective temperature control solutions for any application.

- Pharmaceutical
- BioTech
- Chemical/Petrochemical
- Food and Beverage
- QA/QC
- Research and Development
- Analytical Instruments



# **Environment-friendly Design**

Utilize the energy savings mode to save up to 80% on energy costs and thousands of kilowatt hours during the life of the system.

- All units are RoHS/WEEE compliant
- Recycled packaging

#### **Safe Operation**

Units are CE Compliant (UL pending) ensuring safe operation.

Optional IQ/OQ compliance

#### **Ease of Use**

All immersion circulators feature an intuitive user interface with bright display to view critical readings. Each system comes with a quick-start guide for simple set up and operation.

The controller can be indexed 90° for optimal viewing.

Tool-less setup

# Superior Warranty and Service

These products come with a 36-month warranty and are backed by Thermo Scientific service and support worldwide.

Swap Program: in the event the controller fails, it can be exchanged for a new controller at no cost to you for the life of the warranty.

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# Factors to consider before selecting your temperature control product

#### What is your application need?

Do you have an existing tank, vessel or bath and need to heat the fluids? Review the immersion circulators for the temperature control range and features that best suit your application requirements.

# Do you need to circulate to an external application such as a rotary evaporator or bio reactor, or need to add heating or cooling to your application?

Consider Thermo Scientific refrigerated/heated bath circulators. All systems and immersion circulators come standard with the external circulation connections. Whether you have present or future use for external circulation you can always modify your immersion circulator, refrigerated or heated bath circulator to accomplish this in a few simple steps.

# Does your temperature control application require a work area to place beakers or test tube racks?

We have a large selection of refrigerated bath circulators, heated stainless steel baths, as well as the economical PPO or Acrylic heated baths. These baths were designed to provide larger work areas to accommodate multiple beakers, test tube racks or incubation vessels.

# How much cooling capacity will your application require?

Choose from multiple temperature ranges and temperature ramp rates required for your application. The heating and cooling capacity are specified in watts for each system. The corresponding heating and cooling curves will give you insight into how fast a system can heat or cool the volume of fluid to your required temperature set point.

Temperature specifications for heating baths state a minimum temperature of 'Ambient  $+\ 13^{\circ}\text{C}$ '. This refers to the effect of 'heat soak' on the performance of these units that occurs when heat from the motor is conducted into the bath. Larger baths may lose heat quickly and may be able to accurately temperature control below the 'Amb  $+\ 13^{\circ}\text{C}$ ' threshold. Utilize a 'Cooling Coil' accessory or a refrigerated bath circulator to work in near ambient temperature conditions.

### **Frequently Asked Questions**

# Q: Does my unit come with external circulation connections?

**A:** Yes. The external circulation connections required to circulate the fluid from the bath to your application is a standard feature on all STANDARD, ADVANCED and PREMIUM controllers. Each ARCTIC refrigerated/heated bath and SAHARA heated bath is capable of circulating to an external application.

# Q: How do I achieve more heating capacity for my application?

**A:** When choosing an immersion circulator, you have the ability to choose from different versions and voltages. By understanding the flexibility of your electrical supply you can increase the amount of heating capacity for your application.

For applications in North America, the ADVANCED or PREMIUM Series can be utilized with 208V single phase electrical supply, and gain between 67% and 250% more in heating capacity.

The table below illustrates the different electrical capabilities and heating capacities:

Immersion Circulator			115V 60Hz	200-230V 50-60Hz	230V-50Hz	
SC100 SC150 SC150L	_	0.9kW @ 100V	1.2kW @ 115V	_	2kW @230V	
AC150 AC200	_	0.9kW @ 100V	1.2kW @ 115V	2kW @ 230V	2kW @230V	
PC200	© 115V		_	2kW @ 230V	-	
PC201 PC300			_	3kW @ 230V	_	

# Q: What is the difference between a refrigerated circulating bath and a refrigerated circulator?

**A:** A refrigerated circulating bath and a refrigerated circulator are very much alike. The defining attribute is that the work area of the refrigerated circulating bath is much larger than that of the refrigerated circulator. Accordingly, these types of systems are much larger overall than the refrigerated circulators due to the larger size of the bath (or work area).

- The refrigerated circulating bath design is focused on applications that
  require a large area within the bath to place samples, beakers and / or test
  tube racks, etc. Although the primary focus is the use of the bath, this
  system can still circulate externally.
- The refrigerated circulator can also be used for samples, test tube or beakers
  within its small bath. The difference is that the bath is much smaller and will
  not hold as many samples.

# Q: When using silicone oil how does fluid expansion affect my application?

**A:** It is very important to take special precaution to ensure that your system is filled to the appropriate level to avoid overflowing the silicone oil out of the stainless steel bath onto the lab bench or other areas. It is absolutely critical to take every safety precaution and confirm all aspects of your system before setting the temperature parameters for extreme heating applications. We anticipate that for every 100°C in temperature within the bath that the fluid will expand 10%. However, depending on which immersion circulator you are utilizing the fluid expansion can range from 10% to 30%.

Note: The SAHARA stainless steel baths have been designed to be filled to the low level fluid safety cut out to enable the system to power up and start to temperature control. If filled properly to the low level, the expansion of the silicone oil will not overflow the tank at the immersion circulator's maximum temperature set point.

# Q: How do I secure an immersion circulator to my tank or apparatus?

**A:** The model of immersion circulator will define the choices for your installation:

The STANDARD Series has a choice of the following:

- Stainless steel clamp that expands to 1" (25mm) and enables the installation of the immersion circulator to be installed on the lip of the tank or apparatus.
- Stainless steel bridge that allows the installation of a STANDARD Series immersion circulator to the legacy Haake stainless steel 'W' series baths.

The ADVANCED and PREMIUM immersion circulators are only available with a bridge.

An adjustable bridge that expands between 300mm and 800mm is available and will fit all immersion circulators. This kind of adjustable bridge is useful when the vessel is irregularly shaped.

# **Heated Immersion Circulator Comparison**

Use the table below to choose the immersion circulator that best fits your specific application requirements.

Then, match the immersion circulator to a refrigerated or heated bath.

	STANDARD series			ADVANC	ED series	PREMIUM series			
Model	SC100	SC150	SC150L	AC150	AC200	PC200	PC201	PC300	
Specifications									
Maximum temperature (°C)	100	150	150	150	200	200	200	300	
Temperature stability (°C)***	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	
Heater capacity (230V/115V)	2kW/1.2kW	2kW/1.2kW	2kW/1.2kW	2kW/1.2kW	2kW/1.2kW	2kW/1.2kW	3kW**	3kW**	
Maximum flow rate (I/min)	17	17	17	20	20	24	24	24	
Maximum pressure (mbar/psi)	300/4.35	300/4.35	300/4.35	475/6.89	475/6.89	560/8.12	560/8.12	560/8.12	
Maximum suction (mbar/psi)				330/4.85	330/4.85	380/5.51	380/5.51	380/5.51	
Flow rate / pump speed steps	2	2	2	3	3	Adjustable****	Adjustable****	Adjustable****	
Fill level from top of tank (mm)	6018	6018	10518	6318	6318	6318	6318	63 18	
Tank depth requirement (mm)	150	150	200	150	150	200	200	200	
Dimensions/Weight									
Overall dimensions (mm) H x W x D	336 x 138 x 199	336 x 138 x 199	384 x 138 x 199	372 x 165 x 199	372 x 165 x 199	421 x 189 x 233	421 x 189 x 233	421 x 189 x 233	
Overall dimensions (in) H x W x D	13.2 x 5.4 x 7.8	13.2 x 5.4 x 7.8	15.1 x 5.4 x 7.8	14.6 x 6.4 x 7.8	14.6 x 6.4 x 7.8	16.6 x 7.4 x 9.2	16.6 x 7.4 x 9.2	16.6 x 7.4 x 9.2	
Net weight (kg)	3.3	3.3	3.3	4.2	4.2	4.7	4.7	4.7	
Safety & Compliance									
Safety class acc. DIN12876	1 / NFL	3 / FL							
IQ/OQ	Optional								
Alarm Type									
High temperature alarm	•	•	•	•	•	•	•	•	
Low level alarm		•	•	•	•	•	•	•	
Refrigeration alarm	•	•	•	•	•	•	•	•	
Application threshold alarm				•	•	•	•	•	
Application alarm (external)*				Optional	Optional	Optional	Optional	Optional	
Alarm Indicators				optional	ориони	ориони	ориона	ораона	
Acoustic/Optical alarm	•	•	•	•	•	•	•	•	
Connectivity									
Remote sensor port				•	•	•	•	•	
USB port		•	•		•	•	•	•	
Multi function port					•	•	•	•	
RS232/RS485/Ethernet/LAN		Optional							
Analog I/O		Optional	Optional		Optional	Optional	Optional	Optional	
Information Displayed on Scree	en								
High temperature warning				•	•	•	•	•	
Low level warning		•	•	•	•	•	•	•	
High level warning				•	•	•	•	•	
Date & Time					•	•	•	•	
Features									
Energy saving mode	•	•	•	•	•	•	•	•	
RTA	•	•	•	•	•	•	•	•	
°C/°F/°K selection	•	•	•	•	•	•	•	•	
Auto restart	•	•	•	•	•	•	•	•	
System temperature limits	•	•	•	•	•	•	•	•	
Application temperature limits	•	•	•	•	•	•	•	•	
Solenoid valve for tap water	-				Optional	Optional	Optional	Optional	
On/Off timer	•	•	•	•	• Optional	Φιιοπαι	Φιιοπαι	Ф	
Preset setpoint temperatures	5	5	5	5	5	5	5	5	
Ramp programs	J	J	J	J	1	10	10	10	
Real time clock	•	•	•	•	•	•	•	•	
	3		3	3	3	7	7	<del>*</del> 7	
Multiple languages	3	3	3	3	3	/	1	/	

<sup>\*</sup>In combination with a PT100 sensor probe connected to the external application. \*\*Available only in 230V \*\*\*\*Temperature stability data measured according to DIN 12876. \*\*\*\*\*Adjustable from 40% to 100%.

### **Versatile in a Wide Range of Performance Levels**

The new STANDARD, ADVANCED, and PREMIUM Series heated immersion circulators offer outstanding, precise temperature control. Choose from three levels of performance with multiple features, options, and benefits. Whether used alone or matched up with one of the refrigerated or heated baths, we offer a temperature control solution that will meet your needs.

#### The STANDARD (SC) Series

#### Choose from three versions.

Designed for ease-of-use with powerful pumping and heating capacities for closed loop applications. This economical choice offers solid performance for applications ranging from ambient  $+13^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$ .

#### The ADVANCED (AC) Series

#### Choose from two versions.

The ADVANCED series offers greater pumping performance, ramp programming, application alarms, and temperature ranges from ambient  $+13^{\circ}$ C to  $+200^{\circ}$ C.

#### The PREMIUM (PC) Series

#### Choose from three versions.

Ideal for applications that require sophisticated control, multiple ramp programming, and extreme temperature performance ranging from ambient +13°C to +300°C.

#### What's included:

8mm and 12mm hose barbs with clamps or bridge, pump plug for external circulation, 6-ft. power cord, 3-year warranty.









#### **SC100**

- Maximum temperature: 100°C
- Five programmable set point temperatures
- RTA (Real Temperature Adjustment) for calibration
- Two levels of pump speed adjustment to increase flow or bath agitation
- Three languages (English, German, French)
- Change digital display resolution between 0.1 and 0.01 and between °C – °F – °K
- · Acoustic and visual alarm
- Auto-Restart feature after power failure

#### SC150

## All of the SC 100 immersion circulator features, PLUS-

- Maximum temperature: 150°C
- · Early-warning alert for fluid refill
- Automatic controller shut-down at detection of excessive high temperature, low liquid level, or motor overload
- Communication options for:

RS232

RS485

Ethernet/LAN

Analog I/O

#### **SC150L**

# All of the SC 150 immersion circulator features, PLUS-

- Maximum temperature: 150°C
- Increased immersion depth to accommodate larger or deeper baths

#### AC150

## All STANDARD immersion circulator features, PLUS-

- Maximum temperature: 150°C
- Pump speed adjustment to three levels for turbulence control
- Powerful force & suction pump for external open and closed applications
- Internal or external temperature control mode (Remote Sensor, NAMUR type)
- Programmable application temperature alarm with user selected alarm, go-safe-state or shut off option
- Fluid selection with predefined temperature limits
- Five languages (English, German, French, Spanish, Italian)

#### To purchase immersion circulators separately, please use the information below.

Immersion Circulator	Order No.							
Voltage	100-115V/ 50-60Hz	100V/50-60Hz	115V/60Hz	200-230V/ 50-60Hz	230V/50Hz			
SC 100		152-0006	152-0008		152-0001			
SC 100 w/clamp		152-0016	152-0018		152-0011			
SC 150		153-0006	153-0008		153-0001			
SC 150 w/clamp		153-0016	153-0018		153-0011			
SC 150L		154-0006	154-0008		154-0001			
SC 150L w/clamp		154-0016	154-0018		154-0011			
AC 150		155-0006	155-0008	155-0001	155-0001			
AC 150		155-0026	155-0028	155-0021	155-0021			
AC 200		156-0006	156-0008	156-0001	156-0001			
AC 200 w/bridge		156-0026	156-0028	156-0021	156-0021			
PC 200	157-0002			157-0005				
PC 200 w/bridge	157-0022			157-0025				
PC 201				158-0005				
PC 201 w/bridge				158-0025				
PC 300				159-0005				
PC 300 w/bridge				159-0025				

#### **Useful accessories:**

- · Tap water cooling coil
- · Solenoid valve for use with the tap water cooling coil (for AC200 controller and up)
- · Pump/heater coil cage (SC100, SC150, SC150L controller only)
- Universal adjustable bridge
- External temperature probe (for AC200 controller and up)

See page 20 for complete list of available accessories.

Certification: **(€** 











#### **AC200**

#### All of the AC 150 immersion circulator features, PLUS-

- Maximum temperature: 200°C
- One ramp program
- On/Off timer with real time clock for time-critical applications
- USB port

#### **PC200**

#### All of the ADVANCED immersion circulator features, PLUS-

- Maximum temperature: 200°C
- · Incremental pump speed adjustment
- · Seven languages (English, German, French, Spanish, Italian, Chinese, and Japanese)
- Ten ramp programs

#### **PC201**

#### All of the PC 200 immersion circulator features, PLUS-

- Maximum temperature: 200°C
- 3.0 Kw heater for faster time to temperature
- All stainless steel pump with ceramic rotors

#### **PC300**

#### All of the PC 201 immersion circulator features, PLUS-

- Maximum temperature: 300°C
- 3.0 Kw heater for faster time to temperature
- All stainless steel pump with ceramic rotors

### Thermo Scientific ARCTIC Series Refrigerated/Heated Bath Circulators

#### Multiple configurations allow the perfect fit for your external circulation applications.

Superior cooling power, expansive temperature ranges, powerful force/suction pumps, and sophisticated digital control technology to ensure accuracy and reproducibility of your liquid temperature control procedures. Six controller options allow you the flexibility to choose the right model for your application.

- Drain port at the front for operator convenience.
- Advanced design allows two sides of the unit to be blocked, allowing placement in a corner while maintaining full refrigeration performance.
- For less demanding applications, power consumptions can be lowered by utilizing the energy savings mode.
- Swap Program: in the event the controller fails, it can be exchanged for a new controller at no cost to you for the life of the warranty.
- The controller can be indexed 90° for easier viewing.



#### **Typical applications:**

- Calibration
- Bioreactors
- Rotary Evaporators
- Condensers
- Sample/Material Testing
- Sample/Material Preparation

What's Included: control cables, bridge with gasket and thumbscrews, 8mm and 12mm hose barbs with clamps, external circulation plumbing, 6-ft. power cord, work area cover, 3-year warranty



Controller ▼ Bath ►	A10				
SC100	-10 to 100°C				
SC150	-10 to 100°C				
SC150L	_				
AC150	-10 to 100°C				
AC200	-10 to 100°C				
PC200	_				
Cooling capacity at 20°C 230V/115V	240W				
Maximum bath volume (liters)*	6				
Work area (DxWxL) mm/in	150 x 136.7 x 123.5 / 5.9 x 5.4 x 4.9				
Net weight (kg/lb)	27.5/60.6				
Compliance	CE/ROHS/WEEE				

Ordering information:

Model		A10	
Voltages	115V/60Hz	230V/50Hz	100V/50-60Hz
SC100 plus Bath	152-5108	152-5101	152-5106
SC150 plus Bath	153-5108	153-5101	153-5106
SC150L plus Bath	-	-	-
AC150 plus Bath	155-5108	155-5101	155-5106
AC200 plus Bath	156-5108	156-5101	156-5106
PC200 plus Bath			

<sup>\*</sup>Fluid volume varies depending on the fluid used, temperature range, and items inserted in the reservoir.

# Bath Circulators ies: -40°C to +20°C

#### **Useful Accessories:**

- Fluid Displacement Block
- Auto-refill (AC200 controller and above)
- Trolley (A25, A28, and A40 models only)
- External Temperature Probe (AC150 controller and above)
- Fluids

See page 20 for complete list of available accessories. Overall dimensions can be found on page 24-25.



### Thermo Scientific ARCTIC Series Refrigerated/Heated Bath Circulators, continued

# Large work area enables high throughput and work flow efficiency.

Stainless steel reservoir, offered in multiple capacities with a variety of reservoir openings and depth dimensions for maximum application flexibility.

- Advanced design allows two sides of the unit to be blocked, allowing placement in a corner while maintaining full refrigeration performance.
- For less demanding applications, power consumption can be lowered by utilizing the energy savings mode.
- Up to six different controller heads can be selected to best fit your application needs.
- The controller can be indexed 90° for easier viewing.
- Drain port at the front for operator convenience.

**What's Included:** Control cables, bridge with gasket and thumbscrews, 8mm and 12mm hose barbs with clamps, external circulation plumbing, 6-ft. power cord, A24B and A25B models include the work area cover, 3-year warranty



- Calibration
- Bioreactors
- Rotary Evaporators
- Condensers
- Sample/Material Testing
- Sample/Material Preparation

Controller ▼ Bath ▶	
SC100	
SC150	
SC150L	
AC150	
AC200	
PC 200	
Cooling capacity at 20°C 230V/115V	
Maximum bath volume (liters)*	
Work area (DxWxL) mm/in	
Net weight (kg/lb)	
Compliance	_
Ordering information:	
Model	
Voltages	
SC100 plus Bath	
SC150 plus Bath	
SC150L plus Bath	
AC150 plus Bath	
AC200 plus Bath	
PC200 plus Bath	
*Fluid volume varies depending on the fluid used, temperature	

<sup>\*</sup>Fluid volume varies depending on the fluid used, temperature range, and items inserted in the reservoir.

<sup>\*\*</sup> Work area cover must be purchased separately

# Bath Circulators -25°C to +200°C

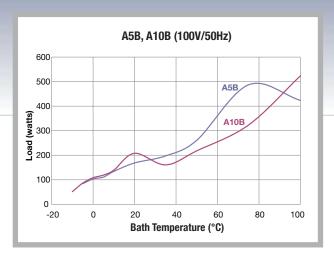
- Useful Accessories:
- Auto-refill (AC200 controller and above)
- External Temperature Probe (AC150 controller and above)
- Work Area Cover
- Lifting Platform
- Test Tube Racks
- Fluids

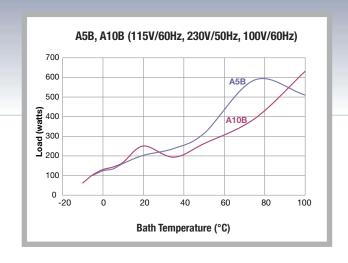
See page 20 for complete list of available accessories. Overall dimensions can be found on page 24-25.

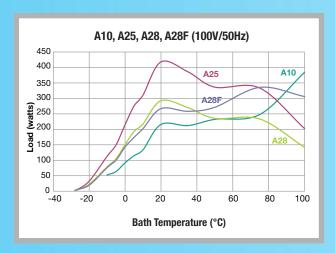


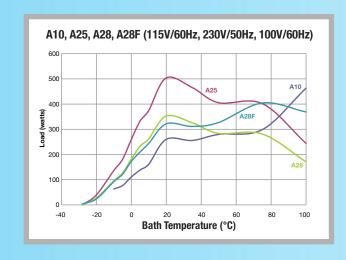
## **Performance Curves for Refrigerated Baths and Circulators**

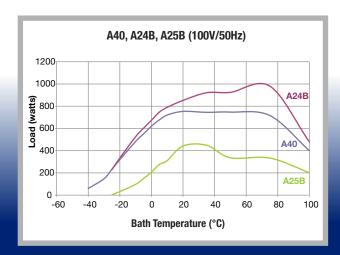
# Cooling Capacity

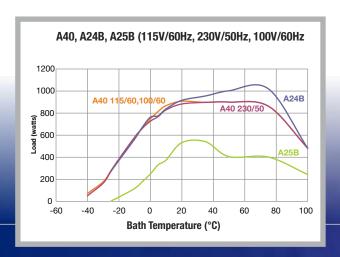






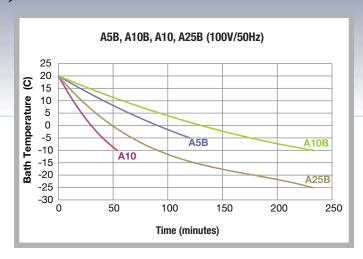


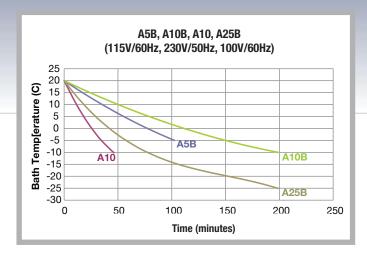


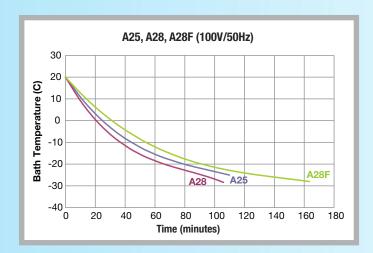


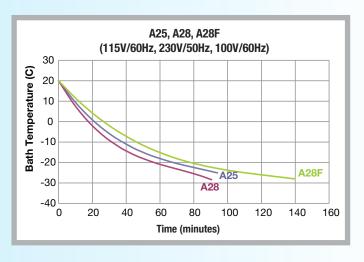
# Performance Curves

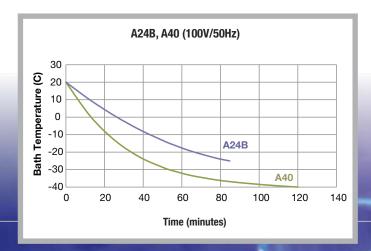
### Time to Temperature – Cooling

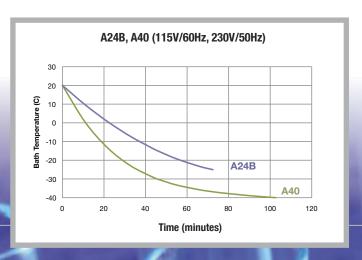




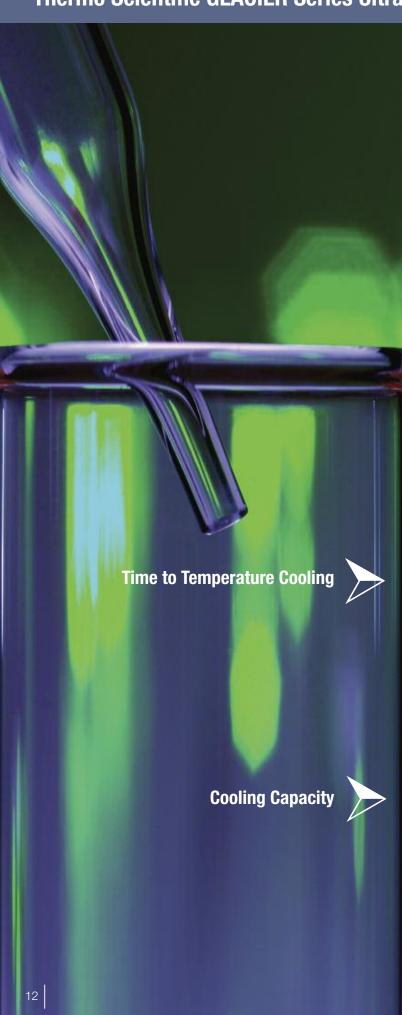








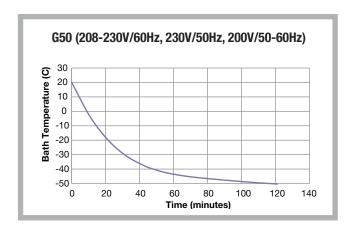
## Thermo Scientific GLACIER Series Ultra-low Temperature Refrigerated Bath Circ

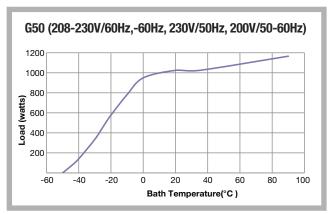


# A cost effective ultra-low temperature refrigerated circulator with extreme temperature performance.

This circulator delivers high heating and cooling capacities for rapid heat-up and cool-down times. Fitted with locking castors, drainport, and handles — a perfect fit for any environment.

- Designed with heated tank top to avoid ice build up.
- Effective cooling capacity at ultra low temperatures allows you to reach your specific application temperature requirement.
- Clamped work area cover.
- Insulated supply and return ports eliminate ice build up and process temperature variatio.





Specifications obtained at sea level using water (above  $\pm 5^{\circ}$ C to  $\pm 90^{\circ}$ C) or a fluid with a specific heat of 2.3 kJ/kg-K or 0.55 Btu/lb-F less than  $5^{\circ}$ C) as the recirculating fluid at a  $\pm 20^{\circ}$ 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  $\pm 10\%$ . Specifications are for reference only and are subject to change.



#### > Typical applications:

- Jacketed Reaction Vessels
- Material Testing
- Analytical Instrumentation
- Calibration
- Condensers
- Crystallization

What's Included: Control cables, bridge with gasket and thumbscrews, 8mm and 12mm hose barbs with clamps, external circulation plumbing, 6-ft. power cord, sealed work area cover, 3-year warranty



	A						
Controller ▼ Bath ▶	G	50					
AC200	-50 to	200°C					
PC200	-50 to 200°C						
Maximum bath volume (liters)*		12					
Cooling capacity at 20°C	10	1000W					
Work area (DxWxL) (mm/in)	200 x 208.5 x 104	200 x 208.5 x 104.2 / 7.9 x 8.8 x 4.75					
Net Weight (kg/lb)	62	/137					
Compliance	CE/ROI	HS/WEEE					
Ordering Information							
Model	G50						
Voltages	230V/50Hz	200-230V/60Hz; 200V/50Hz					
AC200 plus Bath	156-6501 156-6509						

model						
Voltages	230V/50Hz	200-230V/60Hz; 200V/50Hz				
AC200 plus Bath	156-6501	156-6509				
PC200 plus Bath	157-6501	157-6509				

 $<sup>^{\</sup>star}$ Fluid volume varies depending on the fluid used, temperature range, and items inserted in the reservoir.

### **Thermo Scientific SAHARA Series Heated Bath Circulators**

When your application requires high temperature, rely on these durable, seamless stainless steel baths.

Available in capacities from 5 to 51 liters with a variety of work area dimensions to meet your application needs.

- Up to 8 different controllers can be selected that best fit your application needs
- The controller can be indexed 90° for easier viewing



#### **Typical applications:**

- Viscometers
- Spectrophotometers
- Refractometers
- Metrology









Controller ▼ Bath ►	<b>S</b> 3	<b>\$7</b>	<b>S</b> 13	\$15					
SC100	Amb +13 to 100°C								
SC150	Amb +13 to 150°C								
SC150L	_	Amb +13 to 150°C	Amb +13 to 150°C	Amb +13 to 150°C					
AC150	Amb +13 to 150°C								
AC200	Amb +13 to 200°C								
PC200	_	Amb +13 to 200°C	Amb +13 to 200°C	Amb +13 to 200°C					
PC201	_	Amb +13 to 200°C	Amb +13 to 200°C	Amb +13 to 200°C					
PC300	_	Amb +13 to 300°C	Amb +13 to 300°C	Amb +13 to 300°C					
Maximum bath volume (liters)*	6	8	12	17					
Work area (DxWxL) mm (in)	150 x 154.2 x 111.9 (5.9 x 6.1 x 4.4)	200 x 154.2 x 111.9 (7.3 x 6.1 x 4.4)	200 x 111.9 x 239.3 (7.9 x 4.4 x 9.4)	200 x 299.5 x 140.9 (7.9 x 11.8 x 5.5)					
Net weight (kg/lb)	9.8/21.5	10.6/23.4	12.3/27	13.7/30.1					
Compliance	CE/ROHS/WEEE	CE/ROHS/WEEE	CE/ROHS/WEEE	CE/ROHS/WEEE					
Ordering information	Ordering information								

Model	S3			<b>S7</b>			S13			S15		
Voltages	115V/60Hz	230V/50Hz	100V/50-60Hz	115V/60Hz	230V/50H	łz 100V/50-60Hz	115V/60Hz	230V/50Hz	100V/50-60Hz	115V/60Hz	230V/50H	Iz 100V/50-60Hz
SC100 plus Bath	152-1038	152-1031	152-1036	152-1078	152-107 <sup>-</sup>	1 152-1076	152-1138	152-1131	152-1136	152-1158	152-1151	152-1156
SC150 plus Bath	153-1038	153-1031	153-1036	153-1078	153-107	1 153-1076	153-1138	153-1131	153-1136	153-1158	153-1151	153-1156
SC150L plus Bath	-	_	-	154-1078	154-107	1 154-1076	154-1138	154-1131	154-1136	154-1158	154-1151	154-1156
AC150 plus Bath	155-1038	155-1031	155-1036	155-1078	155-107	1 155-1076	155-1138	155-1131	155-1136	155-1158	155-1151	155-1156
AC200 plus Bath	156-1038	156-1031	156-1036	156-1078	156-107	1 156-1076	156-1138	156-1131	156-1136	156-1158	156-1151	156-1156
Voltages	100-115V/5	0-60Hz 200	0-230V/50-60Hz	100-115V/5	0-60Hz 20	00-230V/50-60Hz	100-115V/5	0-60Hz 200	-230V/50-60Hz	100-115V/5	0-60Hz 20	0-230V/50-60Hz

Voltages	100-115V/50-60Hz	200-230V/50-60Hz	100-115V/50-60Hz	200-230V/50-60Hz	100-115V/50-60Hz	200-230V/50-60Hz	100-115V/50-60Hz	200-230V/50-60
PC200 plus Bath	-	-	157-1072	157-1075	157-1132	157-1135	157-1152	157-1155
PC201 plus Bath	_	_	-	158-1075	_	158-1135	_	158-1155
PC300 plus Bath	-	_	-	159-1075	-	159-1135	-	_

<sup>\*</sup>Fluid volume varies depending on the fluid used, temperature range, and items inserted into the reservoir. For applications utilizing these baths from temperatures of 50°C and below, please see page 2.

Whether you need internal or external circulation, choose from a wide selection of heating bath circulators for efficient heating. Rugged and corrosion-resistant for high temperature applications up to 300°C.

**What's Included:** Control cables, bridge with gasket and thumbscrews, 8mm and 12mm hose barbs with clamps, external circulation plumbing 6-ft power cord, work area cover (not included with models S45 and S49), 3-year warranty

#### **Useful accessories:**

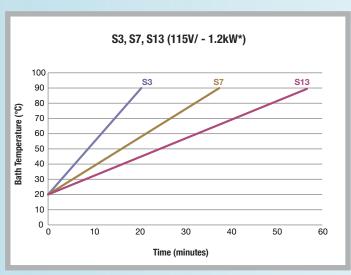
- Tap Water Cooling Coil
- Solenoid Valve for Tap Water Cooling Coil (AC200 controller and above)
- Auto-refill (AC200 controller and above)
- External Temperature Probe (AC150 controller and above)
- Work Area Cover (S45 and S49 models only)
- Lifting Platform
- Test Tube Racks
- Fluids

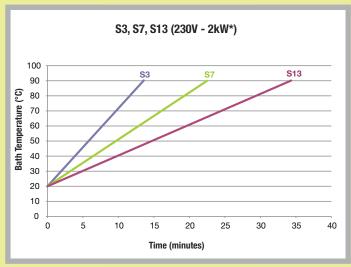
See page 20 for complete list of available accessories. Overall dimensions can be found on page 24-25.



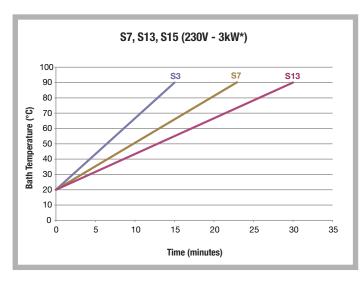
### **Performance Curves for Heated Bath Circulators**



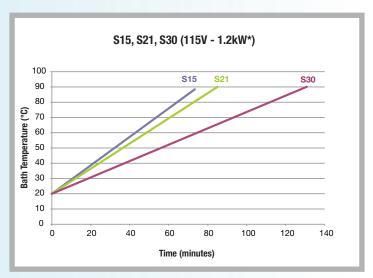


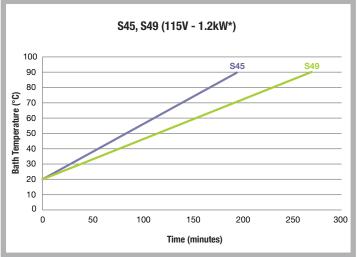


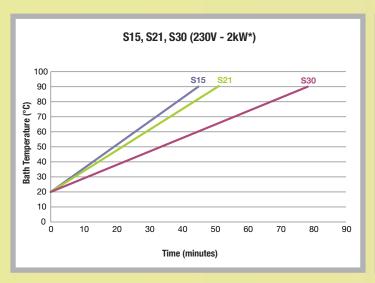
Immersion Circulator	100-115V 50-60Hz	100V 50-60Hz	115V 60Hz	200-230V 50-60Hz	230V-50Hz
SC100 SC150 SC150L	_	0.9kW @ 100V	1.2kW @ 115V	-	2kW @230V
AC150 AC200	-	0.9kW @ 100V	1.2kW @ 115V	2kW @ 230V	2kW @230V
PC200	1.2kW @ 115V	-	-	2kW @ 230V	-
PC201 PC300	-	-	-	3kW @ 230V	-

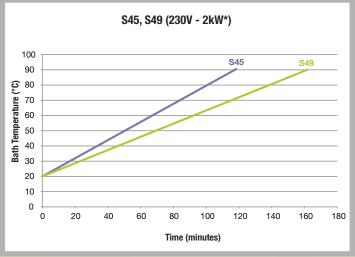


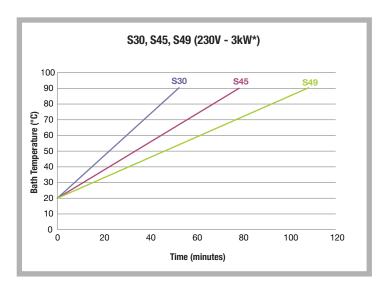
\*See page 14/15 for available controller











# Thermo Scientific SAHARA Series Heated Bath Circulators, continued



#### **Transparent Acrylic Baths**

These baths are ideal when visibility of your application is required. Temperatures are maintained from ambient plus 13°C to a maximum of 80°C.

#### **Useful accessories:**

- Lifting Platform
- Tap Water Cooling Coil
- Test Tube Racks

See page 20 for complete list of available accessories.



Controller ▼ Bath ▶	S6T	\$12T	S19T
SC100	Amb +13 to 80°C	Amb +13 to 80°C	Amb +13 to 80°C
SC150	Amb +13 to 80°C	Amb +13 to 80°C	Amb +13 to 80°C
AC150	_	Amb +13 to 80°C	Amb +13 to 80°C
AC200	_	Amb +13 to 80°C	Amb +13 to 80°C
Bath volume (liters)	6	12	19
Work area (DxWxL) mm/in	150 x 138 x 223 / 5.9 x 5.4 x 8.8	150 x 302 x 148.9 / 5.9 x 11.9 x 5.9	150 x 302 x 326.9 / 9 x 11.9 x 12.9
Net weight (kg/lb)	6.3 / 13.9	7.3 / 16.1	8.7 / 19.1
Compliance	CE/ROHS/WEEE	CE/ROHS/WEEE	CE/ROHS/WEEE
Ordering information:			

ordoring information.									
Model	S6T		S12T		\$19T				
Voltages	115V/60Hz	230V/50Hz	100V/50-60Hz	115V/60Hz	230V/50Hz	100V/50-60Hz	115V/60Hz	230V/50Hz	100V/50-60Hz
SC100 plus Bath	152-2068	152-2061	152-2066	152-2128	152-2121	152-2126	152-2198	152-2191	152-2196
SC150 plus Bath	153-2068	153-2061	153-2066	153-2128	153-2121	153-2126	153-2198	153-2191	153-2196
AC150 plus Bath	-	-	-	155-2128	155-2121	155-2126	155-2198	155-2191	155-2196
AC200 plus Bath	_	_	_	156-2128	156-2121	156-2126	156-2198	156-2191	156-2196



#### Polyphenylene Oxide (PPO)

An economical alternative to stainless steel, these polyphenylene oxide baths are thermally resistant up to 100°C and deliver exceptional temperature performance with operational savings. Temperatures are maintained from ambient plus 13°C to 100°C.

See page 20 for complete list of available accessories.

Overall dimensions can be found on page 24-25.

#### **Useful accessories:**

- Tap Water Cooling Coil
- Solenoid Valve for Tap Water Cooling Coil (AC200 controller and above)
- Auto-refill (AC200 controller and above)
- External Temperature Probe (AC150 controller and above)
- Work Area Cover
- Lifting Platform
- Test Tube Racks



Controller ▼ Bath ▶	S5P	S14P	S21P
SC100	Amb +13 to 100°C	Amb +13 to 100°C	Amb +13 to 100°C
SC150	Amb +13 to 100°C	Amb +13 to 100°C	Amb +13 to 100°C
AC150	_	Amb +13 to 100°C	Amb +13 to 100°C
AC200	_	Amb +13 to 100°C	Amb +13 to 100°C
Bath volume (liters)*	5	14	21
Work area (DxWxL) mm/in	160 x 132 x 132 / 6.3 x 5.2 x 5.2	160 x 300 x 163 / 6.3 x 11.8 x 6.4	160 x 300 x 353 / 6.3 x 11.8 x 13.9
Net weight (kg/lb)	5.1 / 11.2	6.3 / 13.9	6.6 / 14.5
Compliance	CE/ROHS/WEEE	CE/ROHS/WEEE	CE/ROHS/WEEE

Urdering information:									
Model S5P		S14P		S21P					
Voltages	115V/60Hz	230V/50Hz	100V/50-60Hz	115V/60Hz	230V/50Hz	100V/50-60Hz	115V/60Hz	230V/50Hz	100V/50-60Hz
SC100 plus Bath	152-3058	152-3051	152-3056	152-3148	152-3141	152-3146	152-3218	152-3211	152-3216
SC150 plus Bath	153-3058	153-3051	153-3056	153-3148	153-3141	153-3146	153-3218	153-3211	153-3216
AC150 plus Bath	-	-	-	155-3148	155-3141	155-3146	155-3218	155-3211	155-3216
AC200 plus Bath	_	_	-	156-3148	156-3141	156-3146	156-3218	156-3211	156-3216

# Accessories



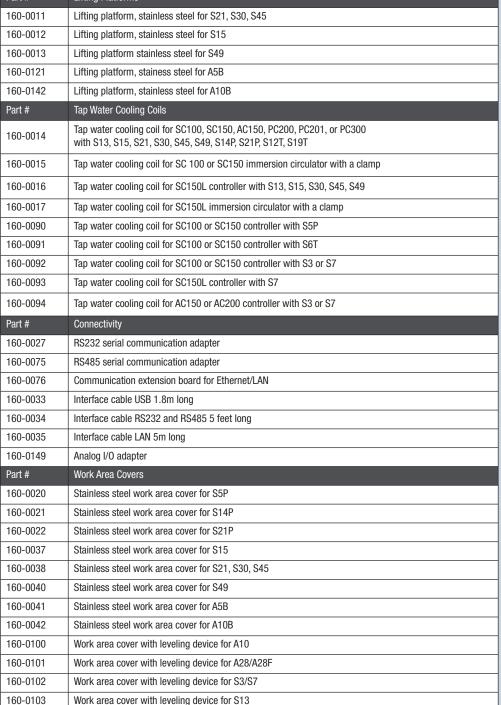














# Accessories

Part #	Tubing and Accessories
160-0028	Adapter M16x1 female/1/4"NPTF male
160-0029	Adapter M16x1 male/1/4"NPTF male
160-0146	Plumbing Package – includes (4) clamps and (2) 5' Viton tubing (insulated), temperature range of -30°C to +200°C, 12mm ø
160-0147	Plumbing Package – includes (4) clamps and (2) 5' Viton tubing (uninsulated), temperature range of -30°C to +200°C, 12mm ø
Part #	Temperature Sensors
333-0818	BT Pt100 sensor, teflon coated, flexible, 300 mm long, Ø 3 mm, cable length 3 m
333-0429	Pt 100 sensor, 18/8 stainless steel tubing, 150mm long, 3mm Ø, 3m cable, up to 600°C
Part #	Heat Transfer Fluids
999-0201	Sil 100 Silicone oil bath liquid, temperature range -75 to 75°C , 5L
999-0202	Sil 100 Silicone oil bath liquid, temperature range -75 to 75°C , 10L
999-0203	Sil 180 Silicone oil bath liquid, temperature range -40 to 200°C, 5L
999-0204	Sil 180 Silicone oil bath liquid, temperature range -40 to 200°C, 10L
999-0205	Sil 300 Silicone oil bath liquid, temperature range +80 to 300°C, 5L
999-0206	Sil 300 Silicone oil bath liquid, temperature range +80 to 300°C, 10L
999-0213	Synth 260 bath liquid, temperature range +40 to 250°C, 5L
999-0214	Synth 260 bath liquid, temperature range +40 to 250°C, 10L
999-0225	Synth 200 bath liquid, temperature range +20 to +210°C, 5L
999-0226	Synth 200 Bbath liquid, temperature range +20 to +210°C, 10L
128-0019	Ethylglycol, 5 gallons (approx. 19 liters) for low temperature applications to -30°C
Part #	Software
422000000004	NEScom 4.0 software package
Part #	Miscellaneous Accessories
160-0070	Trolley w/castors for A40
160-0071	Trolley w/castors for A28/A25
160-0088	Cage for SC100/SC150 immersion circulator
160-0089	Cage for SC150L immersion circulator
160-0045	Fluid displacement box for A10 bath
160-0105	Fluid displacement box for A25/A40 bath
160-0106	Fluid displacement box for A28 bath
160-1000	Solenoid valve (100-230V/50-60Hz) for tap water cooling coil (AC200 and up)
160-3000	Autorefill (100-230V/50-60Hz) (AC200 and up)

# Service and Support



#### **Support and Maintenance**

#### **Technical Questions**

Our technical service team is ready to answer any of your questions on your existing systems.

#### **Customer Service**

Let our professional and experienced customer service representatives guide you when choosing your temperature control needs. They will evaluate your needs, develop a system recommendation, and coordinate your order and shipment.

#### **New Lab Construction**

We offer the most comprehensive line of temperature control products in the world. We can configure the temperature control system that is a perfect fit for your new lab's needs.

#### **Service and Support**

Maintaining your temperature control system is crucial to the overall productivity of your laboratory, the long-term performance of the system and the total cost of ownership. We offer a variety of services to suit your individual needs. Professional service delivers improved productivity, convenience, peace-of-mind, and budget control.

#### Installation

Factory-trained technicians can install your system to ensure it operates with precision. With our services you will receive:

- Installation scheduled at your convenience
- Assurance that all technical specifications are met
- Practical hands-on instructions

#### **Onsite and Depot Repair**

Should an unexpected repair event occur, you will be covered with our on-site and depot repair services. Certified and experienced technicians conduct rapid failure detection and analysis. Prior to return, performance tests are conducted to insure factory specifications are met.

#### **Extended Warranty and Repair Services**

Control your cost of ownership by securing an extended warranty or repair service plan. Continue to receive the same benefits as the original warranty, giving you piece of mind.

Controller Swap Program: in the event that the controller fails, it can be exchanged for a new controller – at no cost to you – for the life of the warranty.

#### **Preventative Maintenance/Calibration**

Extend the functional integrity of your system via a scheduled preventative maintenance and calibration service. Regularly scheduled preventative maintenance can help prevent premature failure of critical components like pumps, compressors and fan motors.

# Dimensions

#### **Thermo Scientific SAHARA Acrylic Heated Baths**

Model	Millimeters (H x W x L)	Inches (H x W x L)
SC100-S 6T	352.7 x 188.8 x 407	13.9 x 5.9 x 16
SC150-S 6T	352.7 x 188.8 x 407	13.9 x 5.9 x 16
SC100-S 12T	354.7 x 356.1 x 348	14 x 14 x 13.7
SC150-S 12T	354.7 x 356.1 x 348	14 x 14 x 13.7
AC150-S 12T	392.7 x 356.1 x 348	15.5 x 14 x 13.7
AC200-S 12T	392.7 x 356.1 x 348	15.5 x 14 x 13.7
SC100-S 19T	354.7 x 356.1 x 526	14 x 14 x 20.7
SC150-S 19T	354.7 x 356.1 x 526	14 x 14 x 20.7
AC150-S 19T	392.7 x 356.1 x 526	15.5 x 14 x 20.7
AC200-S 19T	392.7 x 356.1 x 526	15.5 x 14 x 20.7

#### Thermo Scientific SAHARA Stainless Steel Heated Baths

Model	Millimeters (H x W x L)	Inches (H x W x L)
SC100-S 3	406.2 x 234.8 x 428.4	16 x 9.2 x 16.7
SC150-S 3	406.2 x 234.8 x 428.4	16 x 9.2 x 16.7
AC150-S 3	444.2 x 234.8 x 428.4	17.5 x 9.2 x 16.7
AC200-S 3	444.2 x 234.8 x 428.4	17.5 x 9.2 x 16.7
SC100-S 7	456.2 x 234.8 x 428.4	18 x 9.2 x 16.7
SC150-S 7	456.2 x 234.8 x 428.4	18 x 9.2 x 16.7
AC150-S 7	494.2 x 234.8 x 428.4	19.5 x 9.2 x 16.7
AC200-S 7	494.2 x 234.8 x 428.4	19.5 x 9.2 x 16.7
PC200-S 7	494.2 x 234.8 x 428.4	19.5 x 9.2 x 16.7
PC201-S 7	494.2 x 234.8 x 428.4	19.5 x 9.2 x 16.7
PC300-S 7	494.2 x 234.8 x 428.4	19.5 x 9.2 x 16.7
SC100-S 13	456.2 x 320.8 x 428.4	18 x 12.6 x 16.7
SC150-S 13	456.2 x 320.8 x 428.4	18 x 12.6 x 16.7
AC150-S 13	494.2 x 320.8 x 428.4	19.5 x 12.6 x 16.7
AC200-S 13	494.2 x 320.8 x 428.4	19.5 x 12.6 x 16.7
PC200-S 13	494.2 x 320.8 x 428.4	19.5 x 12.6 x 16.7
PC201-S 13	494.2 x 320.8 x 428.4	19.5 x 12.6 x 16.7
PC300-S 13	494.2 x 320.8 x 428.4	19.5 x 12.6 x 16.7
SC100-S 15	456.2 x 380.8 x 457.4	18 x 15 x 18
SC150-S 15	456.2 x 380.8 x 457.4	18 x 15 x 18
SC150L- S 15	456.2 x 380.8 x 457.4	18 x 15 x 18
AC150-S 15	494.2 x 380.8 x 457.4	19.5 x 15 x 18
AC200-S 15	494.2 x 380.8 x 457.4	19.5 x 15 x 18
PC200-S 15	494.2 x 380.8 x 457.4	19.5 x 15 x 18
PC201-S 15	494.2 x 380.8 x 457.4	19.5 x 15 x 18
SC150-S 21	408.5 x 380.8 x 628.4	16.1 x 15 x 24.7
SC150- S 21	408.5 x 380.8 x 628.4	16.1 x 15 x 24.7
AC150-S 21	446.5 x 380.8 x 628.4	17.6 x 15 x 24.7
AC200-S 21	446.5 x 380.8 x 628.4	17.6 x 15 x 24.7

#### **Thermo Scientific SAHARA PPO Heated Baths**

Model	Millimeters (H x W x L)	Inches (H x W x L)
SC100-S 5P	359.5 x 190 x 388	14.2 x 7.5 x 15.3
SC150-S 5P	359.5 x 190 x 388	14.2 x 7.5 x 15.3
SC100-S 14P	360.5 x 358 x 452	14.2 x 14.1 x 17.8
SC150-S 14P	360.5 x 358 x 452	14.2 x 14.1 x 17.8
AC150-S 14P	398.5 x 358 x 452	15.7 x 14.1 x 17.8
AC200-S 14P	398.5 x 358 x 452	15.7 x 14.1 x 17.8
SC100-S 21P	360.5 x 358 x 642	14.2 x 14.1 x 25.3
SC150-S 21P	360.5 x 358 x 642	14.2 x 14.1 x 25.3
AC150-S 21P	398.5 x 358 x 642	15.7 x 14.1 x 25.3
AC200-S 21P	398.5 x 358 x 642	15.7 x 14.1 x 25.3

#### Thermo Scientific SAHARA Stainless Steel Heated Baths

Model	Millimeters (H x W x L)	Inches (H x W x L)
SC100-S 30	456.2 x 380.8 x 628.4	18 x 15 x 24.7
SC150-S 30	456.2 x 380.8 x 628.4	18 x 15 x 24.7
SC150L-S 30	456.2 x 380.8 x 628.4	18 x 15 x 24.7
AC150-S 30	494.2 x 380.8 x 628.4	19.5 x 15 x 24.7
AC200-S 30	494.2 x 380.8 x 628.4	19.5 x 15 x 24.7
PC200-S 30	494.2 x 380.8 x 628.4	19.5 x 15 x 24.7
PC201-S 30	494.2 x 380.8 x 628.4	19.5 x 15 x 24.7
SC100-S 45	556.2 x 380.8 x 628.4	21.9 x 15 x 24.7
SC150-S 45	556.2 x 380.8 x 628.4	21.9 x 15 x 24.7
SC150L-S 45	556.2 x 380.8 x 628.4	21.9 x 15 x 24.7
AC150-S 45	594.2 x 380.8 x 628.4	23.4 x 15 x 24.7
AC200-S 45	594.2 x 380.8 x 628.4	23.4 x 15 x 24.7
PC200-S 45	594.2 x 380.8 x 628.4	23.4 x 15 x 24.7
PC201-S 45	594.2 x 380.8 x 628.4	23.4 x 15 x 24.7
SC100-S 49	456.2 x 578.8 x 746.4	18 x 22.8 x 29.4
SC150-S 49	456.2 x 578.8 x 746.4	18 x 22.8 x 29.4
SC150L-S 49	456.2 x 578.8 x 746.4	18 x 22.8 x 29.4
AC150-S 49	494.2 x 578.8 x 746.4	19.5 x 22.8 x 29.4
AC200-S 49	494.2 x 578.8 x 746.4	19.5 x 22.8 x 29.4
PC200-S 49	494.2 x 578.8 x 746.4	19.5 x 22.8 x 29.4
PC201-S 49	494.2 x 578.8 x 746.4	19.5 x 22.8 x 29.4

#### **Thermo Scientific ARCTIC Refrigerated Baths**

Model	Millimeters (H x W x L)	Inches (H x W x L)
SC100-A 5B	470.7 x 428.5 x 738	18.5 x 16.9 x 29.1
SC150-A 5B	470.7 x 428.5 x 738	18.5 x 16.9 x 29.1
AC150-A 5B	508.7 x 428.5 x 738	20 x 16.9 x 29.1
AC200-A 5B	508.7 x 428.5 x 738	20 x 16.9 x 29.1
SC100-A 10B	470.7 x 428.5 x 913	18.5 x 16.9 x 35.9
SC150-A 10B	470.7 x 428.5 x 913	18.5 x 16.9 x 35.9
AC150-A 10B	508.7 x 428.5 x 913	20 x 16.9 x 35.9
AC200-A 10B	508.7 x 428.5 x 913	20 x 16.9 x 35.9
SC100-A 24B	573.7 x 765 x 610	22.6 x 30.1 x 24
SC150-A 24B	573.7 x 765 x 610	22.6 x 30.1 x 24
SC150L-A 24B	573.7 x 765 x 610	22.6 x 30.1 x 24
AC150-A 24B	611.7 x 765 x 610	24.1 x 30.1 x 24
AC200-A 24B	611.7 x 765 x 610	24.1 x 30.1 x 24
PC200-A 24B	611.7 x 765 x 610	24.1 x 30.1 x 24
SC100-A 25B	739.7 x 324 x 541	29.1 x 12.8 x 21.3
SC150-A 25B	739.7 x 324 x 541	29.1 x 12.8 x 21.3
AC150-A 25B	777.7 x 324 x 541	30.6 x 12.8 x 21.3
AC200-A 25B	777.7 x 324 x 541	30.6 x 12.8 x 21.3

# Thermo Scientific GLACIER Ultra Low Temperature Refrigerated Circulators

Model	Millimeters (H x W x L)	Inches (H x W x L)
AC200-G 50	851.1 x 418.8 x 554	33.5 x 16.5 x 21.8
PC200-G 50	851.1 x 418.8 x 554	33.5 x 16.5 x 21.8

#### **Thermo Scientific ARCTIC Refrigerated Circulators**

Model	Millimeters (H x W x L)	Inches (H x W x L)
SC100-A 10	631.7 x 220 x 414	24.9 x 8.7 x 16.3
SC150- A 10	631.7 x 220 x 414	24.9 x 8.7 x 16.3
AC150- A 10	669.7 x 220 x 414	26.4 x 8.7 x 16.3
AC200- A 10	669.7 x 220 x 414	26.4 x 8.7 x 16.3
SC100-A 25	710.7 x 273 x 483	28 x 10.7 x 19
SC150-A 25	710.7 x 273 x 483	28 x 10.7 x 19
SC150L-A 25	710.7 x 273 x 483	28 x 10.7 x 19
AC150-A 25	748.7 x 273 x 483	29.5 x 10.7 x 19
AC200-A 25	748.7 x 273 x 483	29.5 x 10.7 x 19
PC200-A 25	748.7 x 273 x 483	29.5 x 10.7 x 19
SC100-A 28	710.7 x 273 x 483	28 x 10.7 x 19
SC150- A 28	710.7 x 273 x 483	28 x 10.7 x 19
SC150L-A 28	710.7 x 273 x 483	28 x 10.7 x 19
AC150-A 28	748.7 x 273 x 483	29.5 x 10.7 x 19
AC200-A 28	748.7 x 273 x 483	29.5 x 10.7 x 19
PC200- A 28	748.7 x 273 x 483	29.5 x 10.7 x 19
SC100-A 28F	519.7 x 514 x 426	20.5 x 20.2 x 16.8
SC150-A 28F	519.7 x 514 x 426	20.5 x 20.2 x 16.8
SC150L-A 28F	519.7 x 514 x 426	20.5 x 20.2 x 16.8
AC150-A 28F	557.7 x 514 x 426	22 x 20.2 x 16.8
AC200-A 28F	557.7 x 514 x 426	22 x 20.2 x 16.8
PC200-A 28F	557.7 x 514 x 426	22 x 20.2 x 16.8
SC150-A 40	748.7 x 385 x 519	29.5 x 15.2 x 20.4
SC150L-A 40	748.7 x 385 x 519	29.5 x 15.2 x 20.4
AC150-A 40	786.7 x 385 x 519	31 x 15.2 x 20.4
AC200-A 40	786.7 x 385 x 519	31 x 15.2 x 20.4
PC200-A 40	786.7 x 385 x 519	31 x 15.2 x 20.4





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