

# 45 Liter Refrigerated Circulator, -25°C



AP45R-20

## Key Specifications

<b>Description</b>	-25, 45 L Ref. Circulator
<b>Controller Type</b>	Advanced Programmable
<b>Display</b>	4.3" SmartTouch Touchscreen
<b>Connectivity</b>	Ethernet, USB A & B, RS232/addressable RS485, Remote On/Off, External Temperature Probe
<b>Languages Supported</b>	11: French, German, Spanish, Chinese, Portuguese, Russian, Hindi, Arabic, Italian, Korean, English
<b>Time/Temperature Programs &amp; Steps</b>	Open Mode: No restriction on the number of programs or steps
<b>Swivel 180 Rotating Controller</b>	Yes
<b>Working Temperature Range °C</b>	-25° to 135°
<b>Temperature Stability °C</b>	±0.005°
<b>Fluid Optimization/Specific Heat Tuning</b>	Automatic and/or user-adjustable
<b>Temperature Calibration Capability</b>	10-point
<b>Working Access (L x W x D) (cm)</b>	54.9 x 39.8 x 14 cm
<b>Pump Type</b>	Pressure/Suction
<b>External Temperature Control Capability</b>	Yes

**Flammability Class (DIN 12876-1)** III (FL)

### Electrical Plug Options

Part numbers listed are Standard U.S. and European types. [Country specific plug types available.](#) Contact your [regional distributor to order.](#)

## Key Features

### Advanced Programmable Controller

#### Key Features

- OpenMode time time/temperature programming (no restrictions on number of programs or steps)
- Intuitive 4.3" (10.9 cm) SmartTouch display
- 11 languages: French, German, Spanish, Chinese, Portuguese, Russian, Hindi, Arabic, Italian, Korean, English
- Variable speed pump with open- and closed-loop external circulation capability
- Swivel 180™ Rotating Controller
- On-board connectivity: USB-A & B, Ethernet, RS-232/RS-485, remote on/off and external temperature probe
- Event scheduling (time & date) with real-time clock
- Review temperature trends for up to 10 days
- Multiple selectable "home" screens
- On-screen help
- Automatic and/or user-adjustable performance optimization
- 10-point calibration capability
- Includes Enhanced Performance Hardware & Software Package (Pt100 temperature probe, USB flash drive for data logging, stainless steel fittings and tubing adapters, PolyScience LabVIEW Virtual Instrument, iPhone application download)

## Common Specifications

<b>Working Temperature Range °F</b>	-13° to 275°
<b>Working Temperature Range °C</b>	-25° to 135°
<b>Nominal Cooling Capacity @ +20C (W)</b>	1400
<b>Reservoir Capacity (gallons)</b>	11.88
<b>Reservoir Capacity (liters)</b>	45
<b>Reservoir/Tank Material</b>	Stainless Steel
<b>Reservoir Cover</b>	Included
<b>DuraTop</b>	Yes
<b>Cleanable Air Filter</b>	Yes
<b>Working Access (L x W x D) (inches)</b>	21.6 x 15.68 x 5.5 in
<b>Working Access (L x W x D) (cm)</b>	54.9 x 39.8 x 14 cm
<b>Temperature Stability °F</b>	±0.02°

<b>Temperature Stability °C</b>	±0.005°
<b>Display</b>	4.3" SmartTouch Touchscreen
<b>Display Resolution (Set)</b>	0.01
<b>Display Resolution (Read)</b>	0.001
<b>Pump Type</b>	Pressure/Suction
<b>Pump Speed</b>	Variable
<b>Process Connections</b>	1/4" (F) NPT
<b>External Temperature Control Capability</b>	Yes
<b>Flammability Class (DIN 12876-1)</b>	III (FL)
<b>Over-Temperature Protection / Failsafe Heater Control</b>	Yes
<b>Low Liquid Level Protection</b>	Yes
<b>WhisperCool Environmental Control Technology</b>	Yes
<b>Cool Command Refrigeration Technology</b>	Yes
<b>Reservoir Drain</b>	Yes
<b>Included Software</b>	PolyTemp Viewer, TDMS file viewer, USB driver, Time/Temperature Program Generator, PolyTemp Remote iPhone application
<b>Maximum Ambient Temperature °F</b>	95°
<b>Maximum Ambient Temperature °C</b>	35°
<b>Overall Dimensions (L x W x H) (inches)</b>	35.8 x 22.4 x 42.1 in
<b>Overall Dimensions (L x W x H) (cm)</b>	90.9 x 56.8 x 107 cm
<b>Refrigerant</b>	R134a
<b>Environmental Compliance</b>	RoHS, WEEE
<b>Shipping Weight (pounds)</b>	180.0
<b>Shipping Weight (kilograms)</b>	81.5
<b>Catalog Page Number</b>	36-37

## 60 Hz Only

<b>Part Number</b>	AP45R-20-A13D
<b>Maximum Pressure (psi)</b>	4.3
<b>Maximum Pressure (bar)</b>	0.30
<b>Maximum Pressure Flow Rate (gpm)</b>	5.30
<b>Maximum Pressure Flow Rate (l/min)</b>	20.1
<b>Maximum Suction Flow Rate (gpm)</b>	3.9
<b>Maximum Suction Flow Rate (l/min)</b>	14.7

<b>Cooling Capacity @ -20°C (W)</b>	250
<b>Cooling Capacity @ 0°C (W)</b>	800
<b>Cooling Capacity @ +20°C (W)</b>	1400
<b>Cooling Capacity @ +100°C (W)</b>	1400
<b>Included Hardware</b>	Nylon hose adapters for 3/8", 1/4", and 3/16"
<b>Heater Wattage</b>	2200
<b>Electrical Requirements (VAC/Hz/Ph/A)</b>	208-230/60/1/13
<b>Regulatory Approvals</b>	ETL

## 50 Hz Only

<b>Part Number</b>	AP45R-20-A12E
<b>Maximum Pressure (psi)</b>	3.6
<b>Maximum Pressure (bar)</b>	0.25
<b>Maximum Pressure Flow Rate (gpm)</b>	4.40
<b>Maximum Pressure Flow Rate (l/min)</b>	16.7
<b>Maximum Suction Flow Rate (gpm)</b>	3.2
<b>Maximum Suction Flow Rate (l/min)</b>	12.2
<b>Cooling Capacity @ -20°C (W)</b>	250
<b>Cooling Capacity @ 0°C (W)</b>	800
<b>Cooling Capacity @ +20°C (W)</b>	1400
<b>Cooling Capacity @ +100°C (W)</b>	1400
<b>Included Hardware</b>	Nylon hose adapters for 3/8", 1/4", and 3/16", and 1/4" NPT to M16 adapter
<b>Heater Wattage</b>	2200
<b>Electrical Requirements (VAC/Hz/Ph/A)</b>	208-240/50/60/1/13
<b>Regulatory Approvals</b>	CE



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