Section 2 General Information

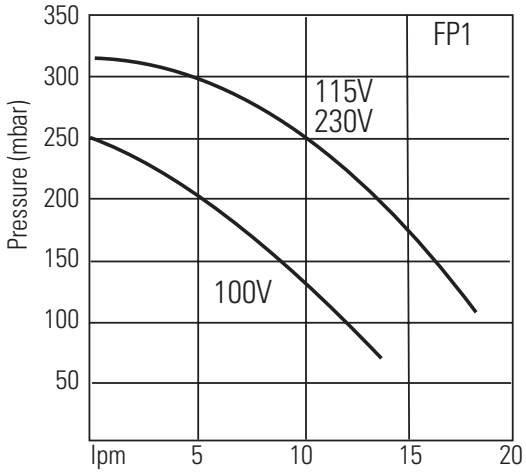
Description

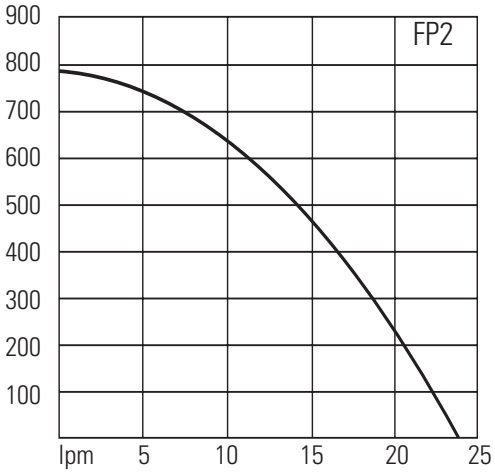
The Fisher Scientific Isotemp® Heated Immersion Circulators are used with refrigerated and heated baths. All circulators can pump to an external system. All have a digital display and easy-to-use touch pad, five programmable setpoint temperatures, acoustic and optical alarms, and offer adjustable high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

Specifications

	4100	5150	6200
Process Fluid Temperature °C **and Setpoint Range** °F	Ambient +10° to 100 Ambient +18° to 212	Ambient +10° to 150 Ambient +18° to 302	Ambient +10° to 200 Ambient +18° to 392
Temperature Stability °C	±0.05	±0.05	±0.025
Heater Capacity KWatts 230V 115V 100V	1.2 1.0 0.9	1.2 1.0 0.9	2.0 1.2 0.9
Overall Dimensions (H x W x D) mm Inches	320.0 x 111.8 x 205.7 12.6 x 4.4 x 8.1	320.0 x 111.8 x 205.7 12.6 x 4.4 x 8.1	340.4 x 144.8 x 218.4 13.4 x 5.7 x 8.6
Net Weight kg/lb	4.1/9.0	4.1/9.0	5.0/11.0
Pump Type	FP1 Force	FP1 Force	FB2 Force/Suction

Pumping Capacity



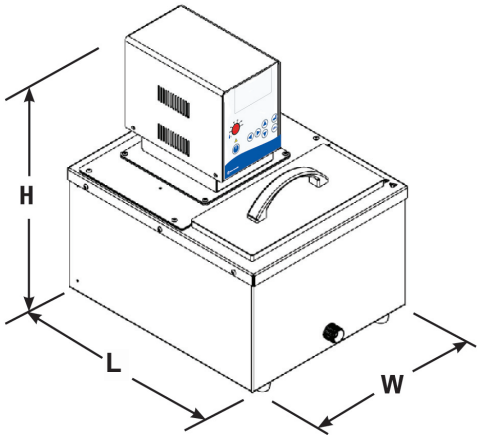


- Lower process fluid temperature ranges available with supplemental cooling.
- Stability is measured as follows:
  Heated baths – Fluid is water at 70°C, work area cover is on. Baths run in factory ambient at nominal line voltage. Pump speed set to high with no external pumping.
  Refrigerated baths – Fluid (specific heat of 0.55 Btu/lb-F) at -10°C, work area cover is on. Baths run in factory ambient at nominal line voltage. Pump speed set to high with short insulated loop on pump lines.
  Stability is defined as ½ the total span of measured data over approximately 30 minutes.
- Pump testing is done with water at 20°C bath at nominal line voltage on high pump speed. Approximately one meter loop on pump with flow transducer and (2) pressure transducers with a ball valve to adjust the flow rate. FP2 pump curve reflects the differential pressure between the supply and return.
- Fisher Scientific reserves the right to change specifications without notice.

Refrigerated/Heated Bath Circulator Specifications

Stainless Steel Refrigerated/Heated Bath Circulator with 4100 Circulator				
	R20	**R20F**	**R28**	**R35**
Temperature Range °C °F	-20 to 100 -4 to 212	-20 to 100 -4 to 212	-28 to 100 -18 to 212	-35 to 100 -31 to 212
Bath Volume liters gallons	5.4 - 6.5 1.4 - 1.7	5.4 - 6.5 1.4 - 1.7	6.8 - 8.6 1.8 - 2.3	6.8 - 8.6 1.8 - 2.3
Cooling Capacity watts @20°C	250 200 (100V/50Hz)	250 200 (100V/50Hz)	500 415 (100V/50Hz)	800 665 (100V/50Hz)
Refrigerant	R134a	R134a	R134a	R404a
Dimensions (H x W x L)* mm inches	622.3 x 203.2 x 416.6 24.5 x 8.0 x 16.4	426.7 x 467.4 x 416.6 16.8 x 18.4 x 16.4	650.2 x 259.1 x 490.2 25.6 x 10.2 x 19.3	688.3 x 370.8 x 528.3 27.1 x 14.6 x 20.8
Net Weight kg lb	26.3 58.0	29.0 64.0	35.8 79.0	54.9 121.0

Stainless Steel Refrigerated/Heated Bath Circulator with 5150 Circulator		
	R28	**R35**
Temperature Range °C °F	-28 to 150 -18 to 302	-35 to 150 -31 to 302
Bath Volume liters gallons	6.8 - 8.6 1.8 - 2.3	6.8 - 8.6 1.8 - 2.3
Cooling Capacity watts @20°C	500 415 (100V/50Hz)	800 665 (100V/50Hz)
Refrigerant	R134a	R404a
Dimensions (H x W x L)* mm inches	650.2 x 259.1 x 490.2 25.6 x 10.2 x 19.3	688.3 x 370.8 x 528.3 27.1 x 14.6 x 20.8
Net Weight kg lb	35.4 78.0	54.9 121.0

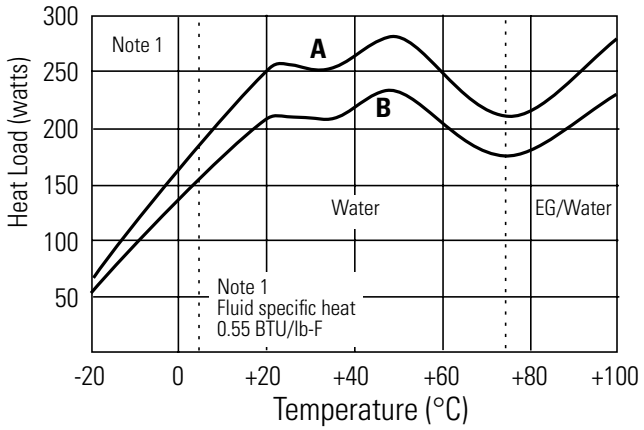


Stainless Steel Refrigerated/Heated Bath Circulator with 6200 Circulator				
	R20	**R20F**	**R28**	**R35**
Temperature Range °C °F	-20 to 100 -4 to 212	-20 to 100 -4 to 212	-28 to 200 -18 to 392	-35 to 200 -31 to 392
Bath Volume liters gallons	5.4 - 6.5 1.4 - 1.7	5.4 - 6.5 1.4 - 1.7	6.8 - 8.6 1.8 - 2.3	6.8 - 8.6 1.8 - 2.3
Cooling Capacity watts @20°C	250 200 (100V/50Hz)	250 200 (100V/50Hz)	500 415 (100V/50Hz)	800 665 (100V/50Hz)
Refrigerant	R134a	R134a	R134a	R404a
Dimensions (H x W x L)* mm inches	640.0 x 203.2 x 416.6 25.2 x 8.0 x 16.4	444.5 x 467.4 x 416.6 17.5 x 18.4 x 16.4	655.3 x 259.1 x 490.2 25.8 x 10.2 x 19.3	706.1 x 370.8 x 528.3 27.8 x 14.6 x 20.8
Net Weight kg lb	27.2 60.0	29.9 66.0	36.3 80.0	55.8 123.0

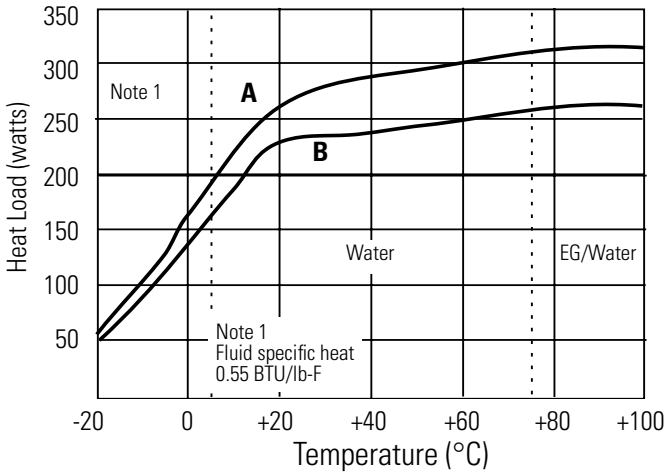
*Overall dimensions. Add ~15 mm to L for drain fitting

Performance Curves for Refrigerated/Heating Circulating Baths

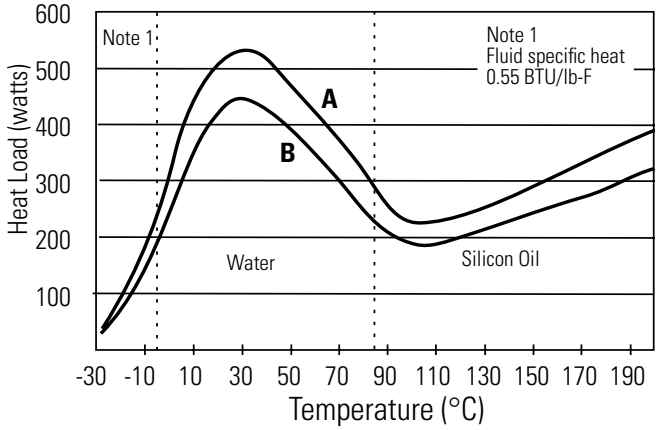
R20 Cooling Capacity



R20F Cooling Capacity

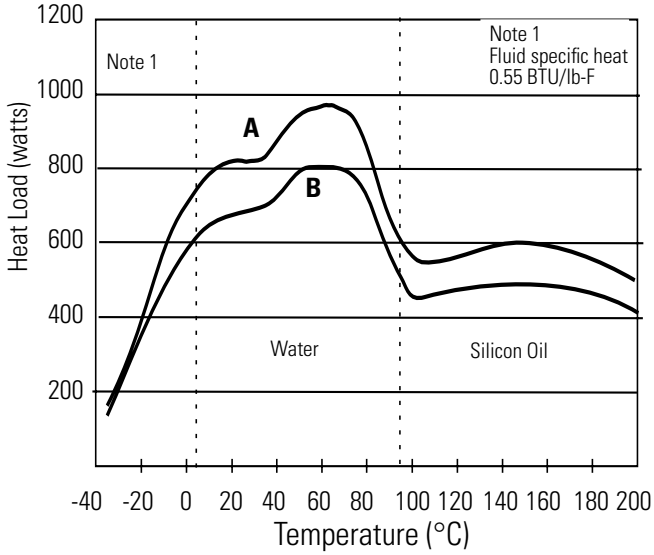


R28 Cooling Capacity



Conditions:
A = 115, 230, 100/60
B = 100/50
Sea Level
20°C Ambient
Nominal Voltage
Fluid
Water from 5°C to 90°C
Ethanol from 5°C to low end
Silicon Oil 90°C to high end
Pump speed (high)
4100/5150/6200 Circulator

R35 Cooling Capacity

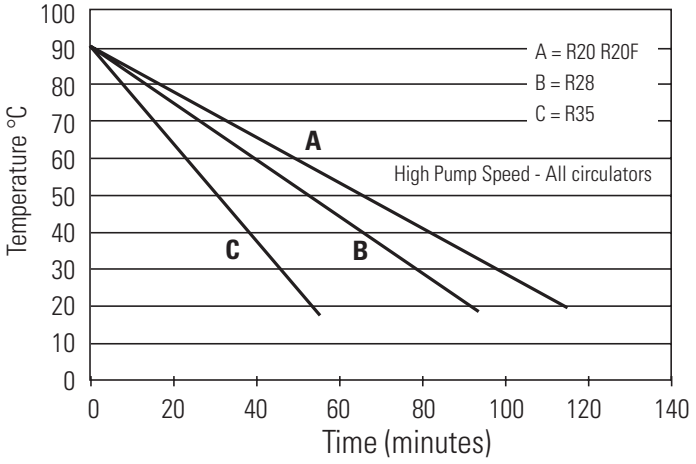


Other fluids, process temperatures, ambient temperatures, altitude or operating voltage will affect performance. The bath was operating with the lid closed and no heat load lid or any external circulation.

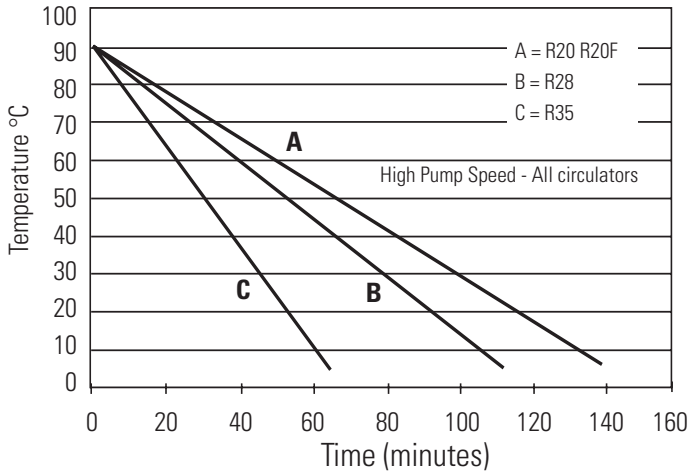
Minimum temperatures are only achieved with the above conditions. If your conditions vary from above, minimum temperature will most likely not be achieved.

Specifications are for reference only and are subject to change.

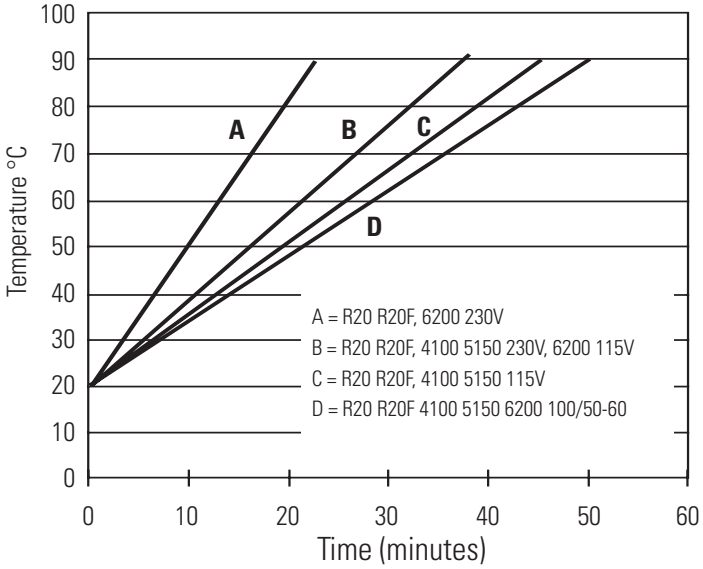
R20 R20F R28 R35 Cool Down - Water



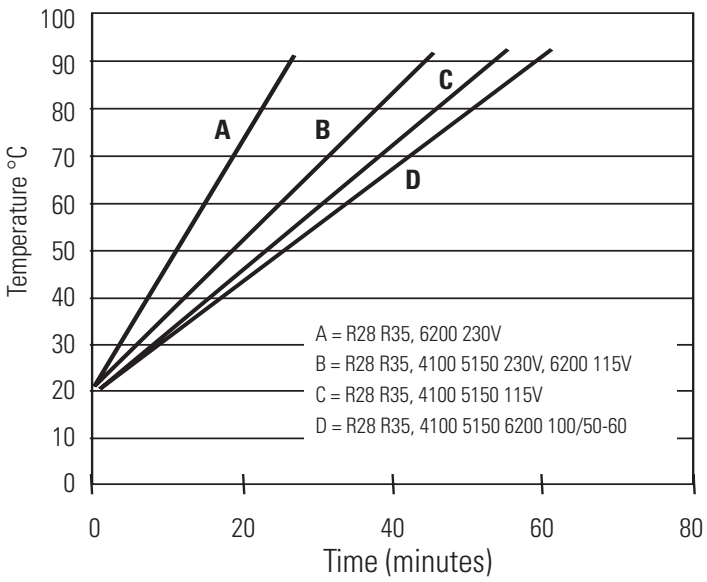
R20 R20F R28 R35 Cool Down - Water (100/50)



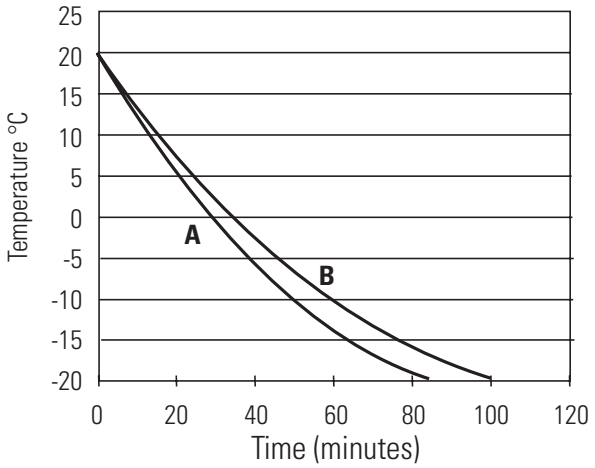
R20 R20F Heat Up - Water



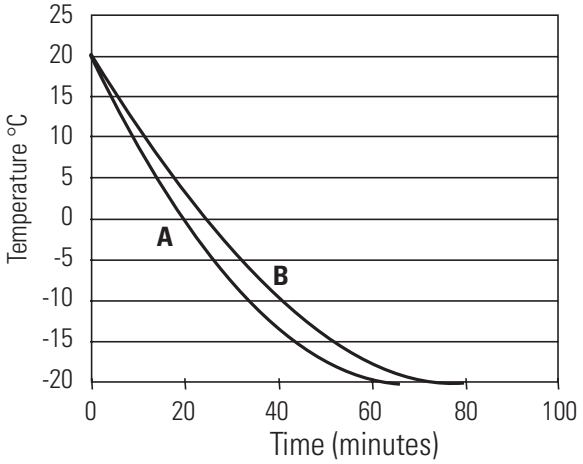
R28 R35 Heat Up - Water



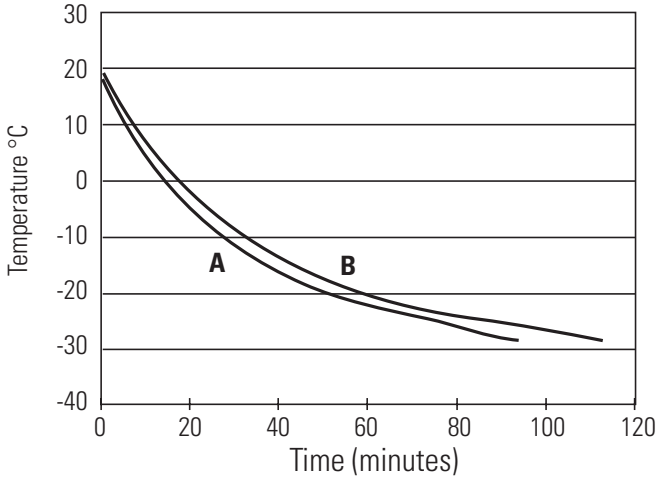
R20 Time to Temperature



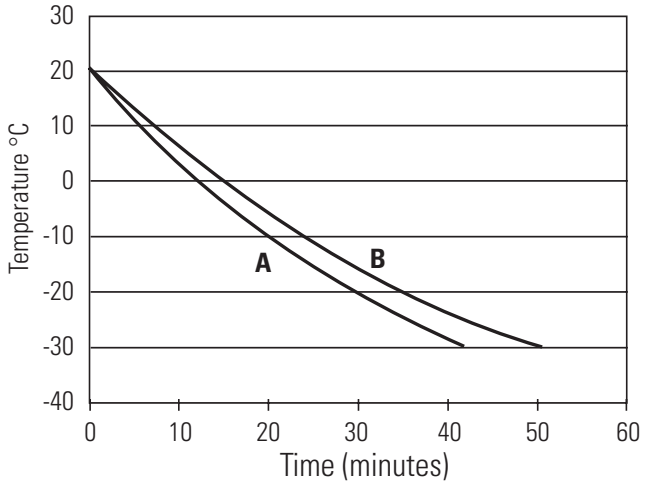
R20F Time to Temperature



R28 Time to Temperature

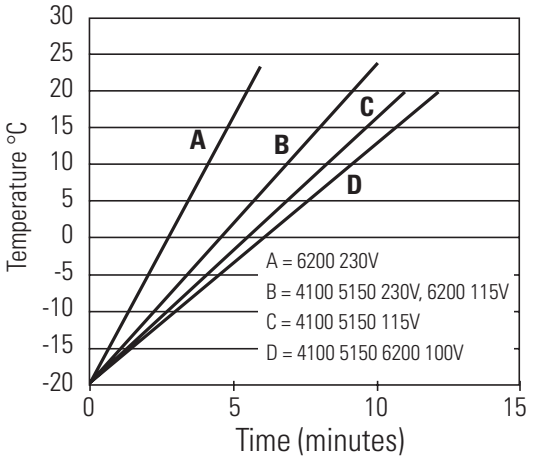


R35 Time to Temperature

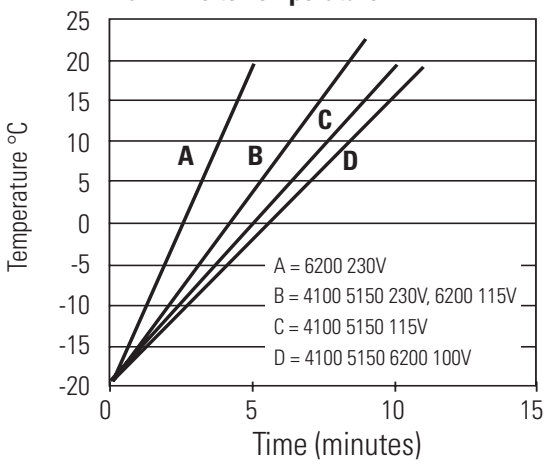


Conditions:
A = 115, 230, 100/60
B = 100/50
Sea Level
22°C - 24°C Ambient
Fluid specific heat 0.55 BTU/lb-F

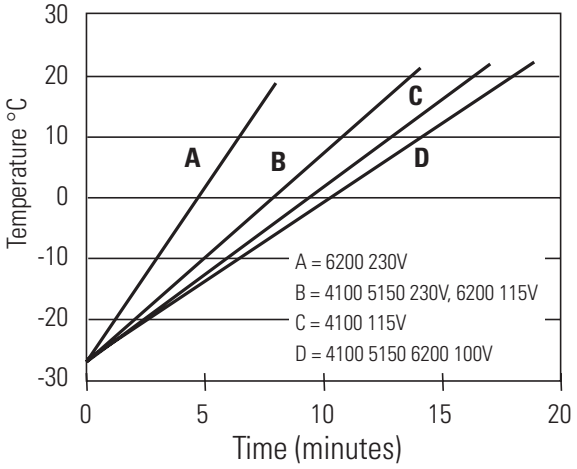
R20 Time to Temperature



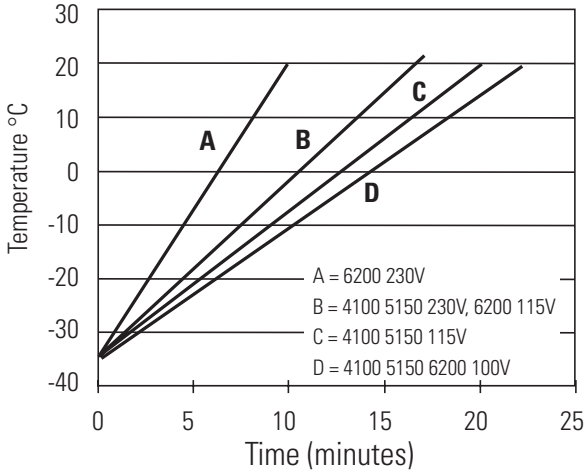
R20A Time to Temperature



R28 Time to Temperature



R35 Time to Temperature



Conditions:
Sea Level
22°C - 24°C Ambient
Fluid specific heat 0.55 BTU/lb-F