

Air Coolers																																
Heat Removal (Watts), ΔT=0 °C, 35 °C Ambient																																
Heat Removal (Watts), ΔT=0 °C, 25 °C Ambient																																
Operating Voltage (V)																																
Operating Current (Amps), Typical																																
Internal Fan Current (Amps), Maximum																																
External Fan Current (Amps)																																
Terminal Block Location (External/Internal)																																
Overall Dimensions (mm), length X width X height																																
Can be Customized with Large Orders																																
Can be Used for Cooling and Heating																																
NEMA Rating Maintained																																
Weight (kg)																																
Heat Sink Airflow Parallel/Vertical *																																
TC-24-10																																
TC-36-25 RS485																																
TC-36-25 RS232 Series																																
TC-48-20 OEM																																
TC-48-20																																
TC-720 OEM																																
TC-720																																
PS-12-8.4A																																
PS-24-6.5																																
PS-24-12.5																																
PS-24-25																																
PS-48-10																																
AC-027	25	24	12	4.6	5.6	0.24	0.58	E	127 X 152 X 176	•	•	12	1.8	V	44	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
AC-046	44	42	24	4.5	5.4	0.14	0.34	E	127 X 178 X 176	•	•	12	2.5	V	44	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
AC-053	53	51	24	4.6	5.6	0.16	0.23	E	198 X 194 X 210	•	•	12	2.9	P	42	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
AC-055	58	55	12	5.6	7.28	0.19	0.40	I	203 X 127 X 152	•	•	4	2.7	V	45	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
AC-073	67	63	24	9.0	10.8	0.17	0.50	E	203 X 130 X 205	•	•	12	3.6	V	47	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
AC-140	141	139	24	4.7	6.9	0.22	1.0	I	259 X 176 X 258	•	•	4	7.8	V	55	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
AC-162	165	159	24	14.1	17.1	0.22	1.0	E	254 X 176 X 257	•	•	12	7.8	V	55	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
AC-194	197	185	48	7.7	9.5	0.14	0.5	I	259 X 176 X 259	•	•	4	7.8	V	55	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
AC-220	216	209	24	14.8	19.7	0.21	1.5	I	350 X 150 X 185	•	•	4	6.3	V	64	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Specifications																Temperature Controllers							Power Supplies					CE Marked RoHS Compliant				

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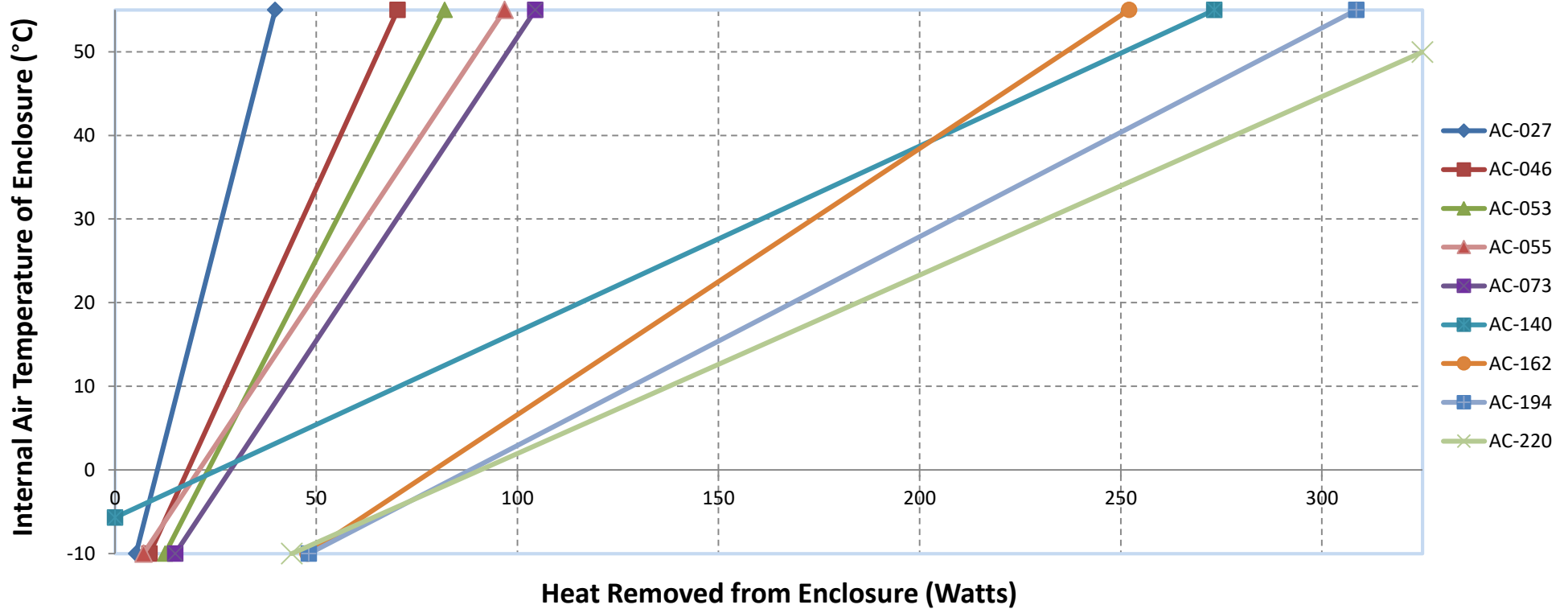
*Requires bipolar (heat/cool) controller.

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Air Cooler Performance in a 25 °C Ambient Environment



How to use the Performance Graph:

1. Select Performance Line.

The diagonal lines shown represent cooling performance at the indicated ambient air temperature. Performance lines at other ambient temperatures can be seen on the data sheet for each specific cooler.

2. Select Desired Temperature.

Draw a horizontal line on the graph corresponding to your desired enclosure temperature until it intersects with the performance line corresponding to the ambient temperature at which the cooler is to operate.

NOTE: heating performance is not shown. Contact TE Technology, Inc. if you require this information.

3. Determine Cooling Capacity.

The maximum amount of heat that the cooler can remove is determined by the intersection point (determined in the previous step).

If the heat load exceeds the cooling capacity, then the cooler will not be able to maintain the desired temperature. If the heat load is less, then the cooler can operate with less input power.

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Cold Plate Coolers	Heat Pumping (Watts), ΔT=0 °C, 35 °C Ambient		Heat Pumping (Watts), ΔT=0 °C, 25 °C Ambient		Operating Voltage (Volts)		Operating Current (Amps), Typical		Hot-side Fan Current (Amps), Maximum		Overall Dimensions (mm) length X width X height		Can be Customized with Large Orders		Can be Used for Cooling and Heating		Weight (kg)		Heat Sink Airflow Parallel and Heating *		External Fan Airflow Parallel/Vertical		TC-24-10		TC-36-25 RS485		TC-36-25 RS232 Series		TC-48-20 OEM		TC-48-20		TC-T20 OEM		TC-T20		PS-12-8.44		PS-24-6.5		PS-24-12.5		PS-24-25	
	CP-031		CP-031HT		CP-036		CP-036HT		CP-040HT		CP-061		CP-061HT		CP-065		CP-110		CP-121		CP-200		CP-200HT		CP-200HTTT		CP-200TT																	
	30	28	12	4.5	5.5	0.24	102 X 80 X 91	•	•	0.9	V	35	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	30	28	12	4.5	5.5	0.24	102 X 80 X 91	•	•	0.9	V	35	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	33	32	12	4.7	5.7	0.58	152 X 127 X 114	•	•	1.8	V	44	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	32	31	12	4.7	5.7	0.58	152 X 127 X 114	•	•	1.8	V	44	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	41	40	24	2.7	3.3	0.24	140 X 67 X 89	•	•	0.8	V	47	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	65	62	24	4.6	5.7	0.23	198 X 194 X 127	•	•	2.3	P	39	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	59	56	24	4.5	5.4	0.23	198 X 194 X 127	•	•	2.3	P	39	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	60	57	24	4.5	5.5	0.34	178 X 127 X 114	•	•	2.2	V	44	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	105	101	24	9.0	10.9	0.50	203 X 130 X 140	•	•	3.0	V	47	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	128	123	24	9.2	11.1	0.46	198 X 188 X 119	•	•	4.2	P	42	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	206	198	24	14.1	17.3	1.00	254 X 176 X 165	•	•	6.3	V	55	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	204	196	24	14.1	17.4	1.00	254 X 176 X 165	•	•	6.3	V	55	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	204	196	24	14.1	17.4	1.00	254 X 176 X 206	•	•	6.7	V	55	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	206	198	24	14.1	17.3	1.00	254 X 176 X 206	•	•	6.7	V	55	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Specifications												Temperature Controllers										Power Supplies										CE Marked RoHS Compliant											

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*Requires bipolar (heat/cool) controller.

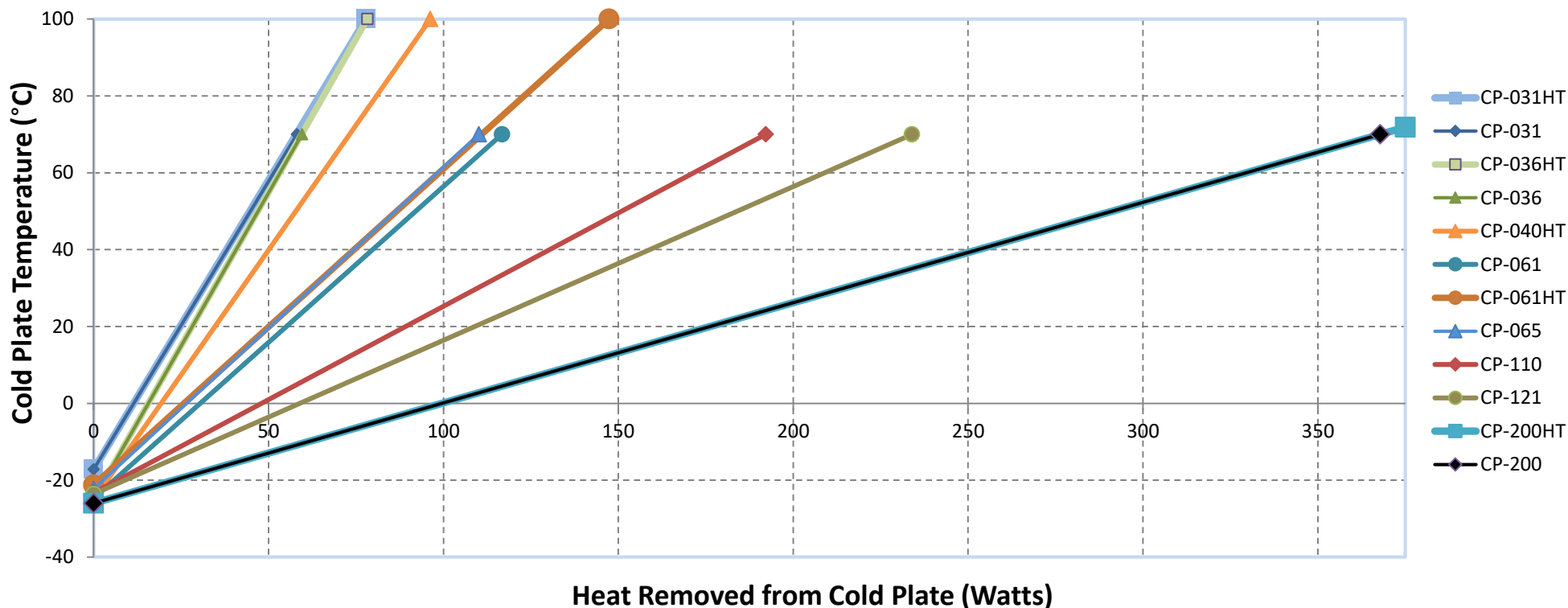
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Cold Plate Cooler Performance in a 25 °C Ambient Environment



How to use the Performance Graph:

1. Select Performance Line.

The diagonal lines shown represent cooling performance at the indicated ambient air temperature. Performance lines at other ambient temperatures can be seen on the data sheet for each specific cooler.

2. Select Desired Temperature.

Draw a horizontal line on the graph corresponding to your desired enclosure temperature until it intersects with the performance line corresponding to the ambient temperature at which the cooler is to operate.

NOTE: heating performance is not shown. Contact TE Technology, Inc. if you require this information.

3. Determine Cooling Capacity.

The maximum amount of heat that the cooler can remove is determined by the intersection point (determined in the previous step).

If the heat load exceeds the cooling capacity, then the cooler will not be able to maintain the desired temperature. If the heat load is less, then the cooler can operate with less input power.

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Liquid Coolers																																													
	Heat Pumping (Watts), ΔT=0 °C, 35 °C Inlet Water Temperature		Heat Pumping (Watts), ΔT=0 °C, 25 °C Inlet Water Temperature		Operating Voltage (Volts)		Operating Current (Amps), Typical		Hot-side Fan Current (Amps), Maximum		Overall Dimensions (mm), length X width X height		Can be Customized with Large Orders		Can be Used for Cooling and Heating		Weight (kg)		Heat Sink Air-flow Parallel/Vertical		External Fan Noise (dBA) *		TC-24-10		TC-36-25 RS-485		TC-36-25 RS-232 Series		TC-48-20 OEM		TC-48-20		TC-720 OEM		TC-720		PS-12-8.4A		PS-24-6.5		PS-24-12.5		PS-24-25		
LC-061	56	54	24	4.5	5.5	0.34	178 X 127 X 97	●	●	2.0	V	44	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
LC-200	192	185	24	14.1	17.3	1.00	254 X 176 X 155	●	●	5.8	V	55	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
CP-061 + SSX1	62	58	24	4.6	4.7	0.23	198 X 194 X 139	●	●	2.7	P	39	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
CP-065 + SSX1	57	53	24	4.5	5.5	0.34	178 X 127 X 127	●	●	2.7	V	44	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
CP-110 + SSX1	99	104	24	9.0	10.9	0.50	203 X 130 X 153	●	●	3.4	V	47	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
CP-121 + SSX1	118	113	24	9.2	11.1	0.46	198 X 188 X 136	●	●	4.6	P	42	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
CP-200 + SSX1	183	176	24	14.1	17.4	1.00	254 X 176 X 178	●	●	6.7	V	55	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
CP-200 + 2 SSX1's	193	185	24	14.1	17.4	1.00	254 X 176 X 178	●	●	7.1	V	55	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Specifications												Temperature Controllers										Power Supplies			CE Marked RoHS Compliant																			

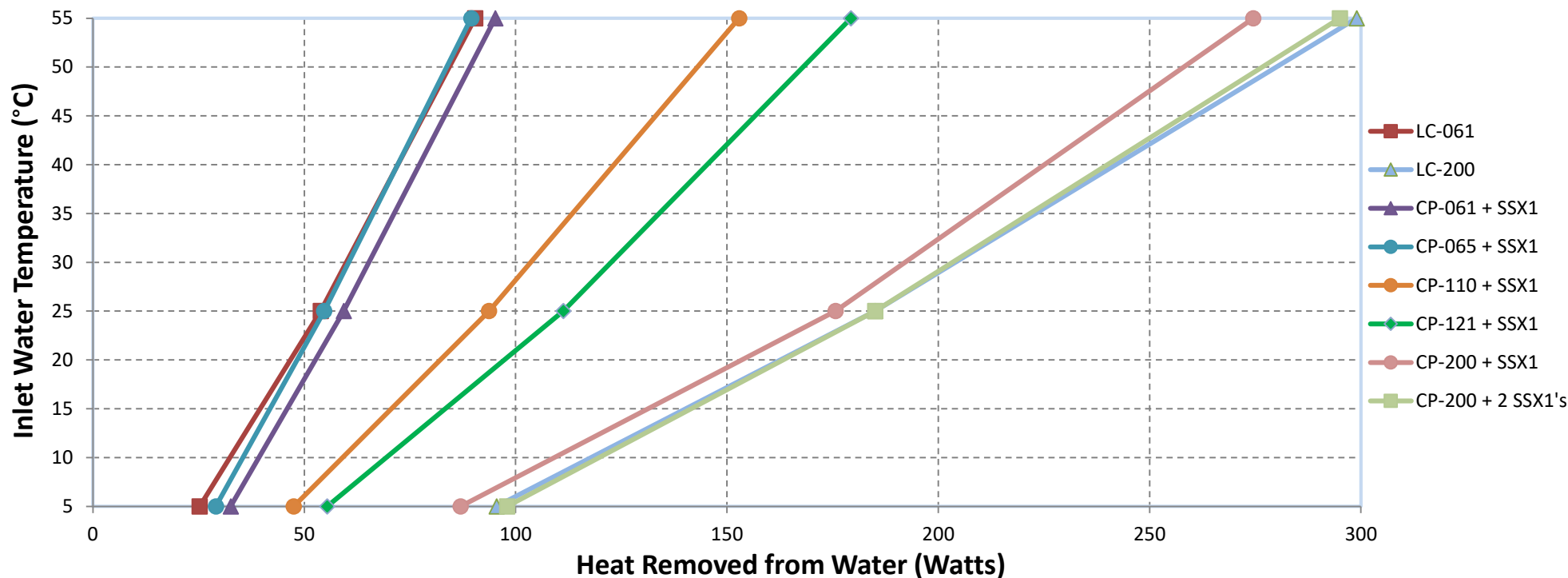
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*Requires bipolar (heat/cool) controller.
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Liquid Cooler Performance in a 25 °C Ambient Environment



How to use the Performance Graph:

1. Select Performance Line.

The diagonal lines shown represent cooling performance at the indicated ambient air temperature. Performance lines at other ambient temperatures can be seen on the data sheet for each specific cooler.

2. Select Desired Temperature.

Draw a horizontal line on the graph corresponding to your desired enclosure temperature until it intersects with the performance line corresponding to the ambient temperature at which the cooler is to operate.

NOTE: heating performance is not shown. Contact TE Technology, Inc. if you require this information.

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Temperature Controllers																				
	Maximum Input Voltage (V)	Maximum Output Current (Thermoelectric/Peltier)	PWM Output Frequency (Hz)	PWM Output	Temperature Resolution	Output Power Resolution	Signal Level Analog Output	Cool or Heat Control Only	Bipolar Cool and Heat Control	Communication	Ramp/Soak Capability	Optional Second Thermistor Input (for Alarm/Data)	Number of Alarm Signals	Maximum Alarm Current	Over current Protection	Fan Speed Control	Display & Keyboard (Integrated)	Display & Keyboard (Optional)	Thermistor Compatibility	Software Source Code Available
TC-24-10	26	10	1000	•	0.1	50 steps		•										15K		
TC-36-25 RS485	36	25	2700	•	0.01 °C	512 steps		•	RS485		•	3	25 mA	•			•	5K, 10K, 15K, 50K, 230K	•	
TC-36-25 RS232	36	25	2700	•	0.01 °C	512 steps		•	RS232		•	3	25 mA	•			•	5K, 10K, 15K, 50K, 230K	•	
TC-36-25 RS232-UL	36	25	2700	•	0.01 °C	512 steps		•	RS232		•	3	25 mA	•			•	5K, 10K, 15K, 50K, 230K	•	CE Marked; MET-Labs Listed
TC-48-20 OEM	50	20	337	•	0.1 °C	512 steps	0 - 5 VDC	•	RS232		•	2	1 A					10K, 15K	•	
TC-48-20	50	20	337	•	0.1 °C	512 steps	0 - 5 VDC	•	RS232		•	2	1 A			•		10K, 15K	•	
TC-720 OEM	36	20	337	•	0.01 °C	512 steps	0 - 10 VDC		•	USB	•	•	2	2 A	•	•		5K, 10K-1, 10K-2, 15K, 50K, 230K, user	•	•
TC-720	36	20	337	•	0.01 °C	512 steps	0 - 10 VDC		•	USB	•	•	2	2 A	•	•	•	5K, 10K-1, 10K-2, 15K, 50K, 230K, user	•	•

Control Range for Thermistors	
5K	-60 °C to 70 °C *
10K	-20 °C to 85 °C
15K	-20 °C to 100 °C
50K	0 °C to 150 °C
230K	25 °C to 199 °C

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* Control range is -40 °C to +199 °C on TC-720 controllers with firmware revision J or older.

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