



# MATERIAL TYPE: C7.4

## AVAILABLE PRODUCTS: CL

Data for material type : C7.4

Temp Range (°C)	Ratio	Beta
0 to 50	7.10	3460
0 to 70	13.37	3472
25 to 50	2.47	3490
25 to 85	7.17	3506
25 to 100	10.70	3516
25 to 125	19.66	3536
37.8 to 104.4	7.43	3531

To calculate Rt/R25 at temperatures other than those listed in the table, use the following equation:

$$Rt/R25 = \exp\{A + B/T + C/T^2 + D/T^3\}$$

where T = temperature in K

Temp Range (°C)	A	B	C	D
-50 to 0	-1.4098282 x 10 <sup>01</sup>	5.1037583 x 10 <sup>03</sup>	-3.2954464 x 10 <sup>05</sup>	1.8036808 x 10 <sup>07</sup>
0 to 50	-1.3400041 x 10 <sup>01</sup>	4.7377345 x 10 <sup>03</sup>	-2.8421057 x 10 <sup>05</sup>	1.8733004 x 10 <sup>07</sup>
50 to 100	-1.3356781 x 10 <sup>01</sup>	4.8009468 x 10 <sup>03</sup>	-3.2985753 x 10 <sup>05</sup>	2.5422994 x 10 <sup>07</sup>
100 to 150	-1.2440303 x 10 <sup>01</sup>	3.9733403 x 10 <sup>03</sup>	-1.0544654 x 10 <sup>05</sup>	9.3025568 x 10 <sup>06</sup>

To calculate the actual thermistor temperature as a function of the thermistor resistance, use the following equation:

$$1/T = a + b(\ln Rt/R25) + c(\ln Rt/R25)^2 + d(\ln Rt/R25)^3$$

Rt/R25 range	a	b	c	d
43.75 to 2.871	3.3560906 x 10 <sup>-03</sup>	2.8535925 x 10 <sup>-04</sup>	3.6244289 x 10 <sup>-06</sup>	-8.8098132 x 10 <sup>-08</sup>
2.871 to 0.4044	3.3540169 x 10 <sup>-03</sup>	2.8872982 x 10 <sup>-04</sup>	2.2993258 x 10 <sup>-06</sup>	-9.4237626 x 10 <sup>-07</sup>
0.4044 to 0.09344	3.3557380 x 10 <sup>-03</sup>	2.9029094 x 10 <sup>-04</sup>	1.9016207 x 10 <sup>-06</sup>	-1.1907227 x 10 <sup>-07</sup>
0.09344 to 0.0297	3.3397829 x 10 <sup>-03</sup>	2.7936829 x 10 <sup>-04</sup>	2.9649440 x 10 <sup>-07</sup>	-5.0212128 x 10 <sup>-08</sup>

†The deviation resulting from the tolerance on the material constant, Beta. The deviation must be added to the resistance tolerance of the part as specified at 25°C.

Temperature (°C)	Rt/R25 nominal	Temp Coef (%/°C)	β Deviation† (±%)
-50	43.750000	6.50	9.6727291
-45	31.810000	6.25	8.6850372
-40	23.400000	6.02	7.7733561
-35	17.420000	5.80	6.9311936
-30	13.100000	5.60	6.152735
-25	9.951000	5.40	5.4328463
-20	7.631000	5.22	4.7668131
-15	5.904000	5.05	4.1504603
-10	4.607000	4.88	3.5800039
-5	3.623000	4.73	3.0520216
0	2.871000	4.57	2.5634108
5	2.293000	4.42	1.9842532
10	1.845000	4.28	1.4406463
15	1.495000	4.15	0.9301762
20	1.219000	4.02	0.450635
25	1.000000	3.90	0
30	0.825400	3.78	0.4235852
35	0.685100	3.67	0.8218271
40	0.571800	3.57	1.1962971
45	0.479700	3.46	1.5484444
50	0.404400	3.34	1.8796071
55	0.342900	3.25	2.2321667
60	0.292200	3.16	2.5693466
65	0.250000	3.08	2.891974
70	0.214800	3.00	3.20082
75	0.185300	2.92	3.4966035
80	0.160400	2.84	3.7799959
85	0.139400	2.77	4.0516248
90	0.121600	2.70	4.3120775
95	0.106400	2.64	4.5619041
100	0.093440	2.59	4.8016204
105	0.082220	2.53	5.107526
110	0.072580	2.46	5.3822998
115	0.064280	2.40	5.6276543
120	0.057100	2.34	5.8451781
125	0.050860	2.28	6.0363464
130	0.045440	2.23	6.202531
135	0.040700	2.18	6.3450088
140	0.036550	2.12	6.4649702
145	0.032910	2.08	6.5635256
150	0.029700	2.03	6.6417123