THE BELL SYSTEM TECHNICAL JOURNAL
Vol. 55, No. 2, February 1976
*Printed in U.S.A.*

# Temperature Rise at a Constriction in a Current-Carrying Printed Conductor

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(Manuscript received September 29, 1975)

*This paper presents some basic equations for predicting the maximum temperature rise at an isolated constriction in a current-carrying printed conductor. The equations apply to general configurations of printed conductors, since they are based on the heat equation in the steady state. A variety of numerical results concerning the maximum temperature rise and the runaway or critical current are presented in tables for the case of printed conductors of nominal widths 8, 25, and 100 mils. The numerical results include the case of 1-, 2-, and 3-oz copper conductors at an ambient temperature of 20 or 50°C. A few experimental results are presented which show that the numerical results concerning the maximum temperature rise are conservative from the point of view of design. The results are useful for determining whether an isolated constriction in a printed conductor is of any significance. Also, the results can be used to help develop rational criteria for rejecting printed conductors when isolated nicks are present.*

## I. INTRODUCTION

During the design and manufacture of printed conductors to interconnect electrical circuits, one is often confronted with the task of determining whether an isolated constriction in a printed conductor is of any significance. A constriction is sometimes designed into a printed conductor to help alleviate some particular routing problem. Also, during the manufacturing process, such a constriction can arise in the form of an isolated nick in the printed conductor.

In general, the maximum allowable temperature rise at the isolated constriction imposes definite limits on the allowable dimensions of the constriction. The relationship between the dimensions of the isolated constriction and the maximum temperature at the constriction is useful for both design purposes and for determining the maximum allowable nick in a printed conductor. As the maximum allowable nick in a printed conductor is increased, the manufacturing yield increases and the time necessary to visually examine the printed conductor decreases. Thus, the cost of manufacturing printed wiring boards can perhaps be decreased by increasing the maximum allowable nick.

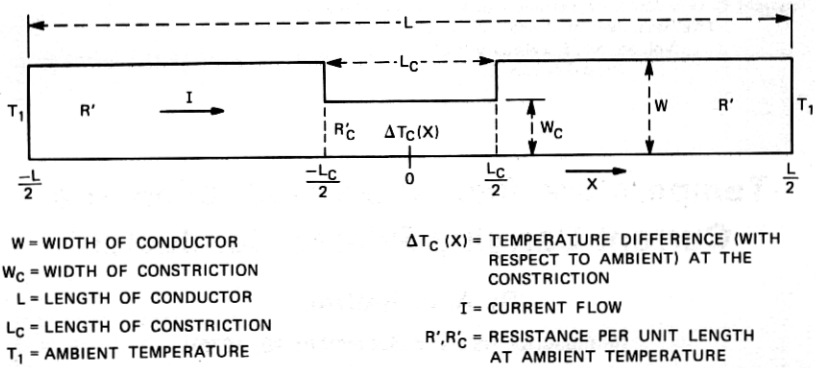


Fig. 1—A current-carrying printed conductor constricted in the middle and constrained to the ambient temperature at both ends.

The purpose of this paper is to develop some basic equations that are useful for predicting the maximum temperature rise at an isolated constriction in a current-carrying printed conductor. Figure 1 presents a sketch of an isolated constriction and some notation used in this paper. We only consider the problem of characterizing the steady-state thermal behavior of a current-carrying printed conductor that may contain a constriction. Some constrictions may produce such effects as impedance changes and mechanical vulnerability, and these are not considered in this paper.

## II. BASIC EQUATIONS

Consider the partitioning of the $x$ axis in Fig. 1 into the following three intervals:

$$\left[-\frac{L}{2}, -\frac{L_c}{2}\right], \quad \left[-\frac{L_c}{2}, \frac{L_c}{2}\right], \quad \text{and} \quad \left[\frac{L_c}{2}, \frac{L}{2}\right].$$

Let $T(x)$ denote the temperature distribution along the current-carrying conductor. In the steady state, the temperature difference $\Delta T(x) = [T(x) - T_1]$ in the first and last intervals must satisfy the linear differential equation[1] (a one-dimensional heat equation) of the form:

$$\frac{d^2\Delta T}{dx^2} - \frac{2H\Delta T}{kt_0} + \frac{I^2R'[1+\alpha_1\Delta T]}{kWt_0} = 0, \tag{1}$$

where

$H^*$ = coefficient of surface heat transfer
$k$ = thermal conductivity of the conductor
$t_0$ = thickness of the conductor
$I$ = current flow

* We shall follow Ref. 1 and denote the coefficient of surface heat transfer by the letter $H$. However, many other references use the letter $h$.

$R'$ = resistance of the conductor per unit length at ambient temperature

$\alpha_1$ = temperature coefficient of resistivity of the conductor at ambient temperature

$W$ = width of the conductor.

The second derivative in eq. (1) represents the rate of heat accumulation per unit volume. The negative term in eq. (1) accounts for the heat "radiated" per unit volume from both the top and bottom surfaces of the conductor.* The term involving the current $I$ represents the heat generated per unit volume.

At the isolated constriction, the temperature difference $\Delta T(x)$ must satisfy an equation similar to eq. (1) except that $W$ and $R'$ are replaced by $W_c$ and $R_c'$, respectively. Equation (1) has been applied to the case when the constriction is absent in Refs. 1 and 2.

After the boundary conditions are imposed that $\Delta T(x) = 0$ when $x = \pm L/2$, and $\Delta T(x)$ and its derivative† are matched at the two discontinuities located at $x = \pm L_c/2$, one can solve for the temperature difference in the region of the constriction which we shall denote as $\Delta T_c(x)$. The explicit result is that

$$\Delta T_c(x) = \frac{\gamma_1^2}{\beta_1^2} - \frac{\{(\gamma^2/\beta^2)\,\mathrm{sech}\,[(\beta/2)(L - L_c)] + [(\gamma_1^2/\beta_1^2) - (\gamma^2/\beta^2)]\}\cosh \beta_1 x}{(\beta_1/\beta)\sinh(\beta_1 L_c/2)\tanh[(\beta/2)(L - L_c)] + \cosh(\beta_1 L_c/2)}, \tag{2}$$

where

$$\gamma_1^2 = \frac{\rho}{k}\left(\frac{I}{W_c t_0}\right)^2$$

$$\gamma^2 = \frac{\rho}{k}\left(\frac{I}{W t_0}\right)^2$$

$$\beta_1^2 = \frac{2HW_c - \alpha_1\left(\frac{\rho}{W_c t_0}\right)I^2}{kW_c t_0}$$

$$\beta^2 = \frac{2HW - \alpha_1\left(\frac{\rho}{W t_0}\right)I^2}{kW t_0}$$

$k$ = thermal conductivity of the conductor

$\rho$ = resistivity of the conductor at ambient temperature.

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* In general, the amount of heat radiated from the top and bottom surfaces of the conductor will differ because of the substrate. This difference can be absorbed in the definition of the coefficient of surface heat transfer, $H$.

† Matching the derivative assures that the rate of heat accumulation per unit volume is finite for all $x$ (see Ref. 1, page 4).

The solutions in the other regions of the $x$ axis can be obtained in a similar manner. However, they are not of interest in this paper, and they are not presented here.

The maximum temperature difference, max $\Delta T_c$, at the constriction occurs at $x = 0$; thus,

$$\max \Delta T_c = \Delta T_c(0). \tag{3}$$

In the absence of a constriction, $L_c = 0$, the maximum temperature difference, max $\Delta T_{c0}$, is given by

$$\max \Delta T_{c0} \equiv \max \Delta T_c \bigg|_{L_c=0} = \frac{\gamma^2}{\beta^2}\left[1 - \operatorname{sech}\left(\frac{\beta L}{2}\right)\right]. \tag{4}$$

This latter result is convenient for normalization purposes.

## III. SOME SPECIAL CASES

### 3.1 Longest possible constriction

When $L_c = L$, eq. (2) yields

$$\Delta T_c(x) = \frac{\gamma_1^2}{\beta_1^2}\left[1 - \frac{\cosh \beta_1 x}{\cosh\left(\frac{\beta_1 L}{2}\right)}\right]. \tag{5}$$

This latter equation agrees with the result in Refs. 1 and 2.

### 3.2 Thermal runaway at the constriction

If the current flow through a printed conductor increases above a value called the critical current, $I_c$, thermal runaway results. That is, the temperature of the printed conductor increases beyond the tolerable limits of the substrate and permanent damage results. This phenomenon is discussed in Refs. 2 and 3. Let us now determine the value of $I_c$ for a printed conductor having a constriction.

In the case of the longest possible constriction, eq. (5) shows that max $\Delta T_c = \Delta T_c(0)$ increases without bound only when $\beta_1^2 < 0$. If we set $\beta_2^2 = -\beta_1^2 > 0$, we find that max $\Delta T_c$ increases without bound when

$$\frac{\beta_2 L}{2} = \frac{\pi}{2} \tag{6}$$

or

$$I = W_c \sqrt{\frac{2Ht_0 + (\pi/L)^2 k t_0^2}{\alpha_1 \rho}}. \tag{7}$$

In the absence of a constriction, eq. (4) shows that max $\Delta T_{c0}$ can increase without bound only when $\beta^2 < 0$. If we set $\beta_3^2 = -\beta^2 > 0$, we find that max $\Delta T_{c0}$ increases without bound when

$$\frac{\beta_3 L}{2} = \frac{\pi}{2} \tag{8}$$

or

$$I = W\sqrt{\frac{2Ht_0 + (\pi/L)^2kt_0^2}{\alpha_1\rho}}. \tag{9}$$

Thus, when the length of the constriction is bounded by $0 \leqq L_c \leqq L$, the runaway or critical current $I_c$ must be bounded by

$$W_c\sqrt{\frac{2Ht_0 + (\pi/L)^2kt_0^2}{\alpha_1\rho}} \leqq I_c \leqq W\sqrt{\frac{2Ht_0 + (\pi/L)^2kt_0^2}{\alpha_1\rho}}. \tag{10}$$

The value of $I_c$ can be found by setting $\beta_2^2 = -\beta_1^2 > 0$ in eq. (2) and solving for the current $I$ which makes $\max \Delta T_c = \Delta T_c(0)$ increase without bound. The result is that the critical current $I_c$ equals the value of $I$ that satisfies the transcendental equation

$$\frac{\beta_2}{\beta}\tan\left(\frac{\beta_2 L_c}{2}\right)\tanh\left[\frac{\beta}{2}(L - L_c)\right] = 1. \tag{11}$$

Some numerical results obtained from eqs. (2), (3), (4), and (11) are presented in Section 5.1.

### 3.3 Small* current flow in a long conductor

As $I \to 0$ and $L \to \infty$, eq. (2) yields

$$\Delta T_c(x) = \frac{\gamma_1^2}{\beta_1^2} - \left(\frac{\gamma_1^2}{\beta_1^2} - \frac{\gamma^2}{\beta^2}\right)\exp\left(-\frac{\beta_1 L_c}{2}\right)\cosh \beta_1 x. \tag{12}$$

Also, as $I \to 0$ and $L \to \infty$, eqs. (3), (4), and (12) yield the interesting relationship

$$\frac{\max \Delta T_c}{\max \Delta T_{c0}} = \left(\frac{W}{W_c}\right)^2 - \left[\left(\frac{W}{W_c}\right)^2 - 1\right]\exp\left[-\frac{L_c}{2}\sqrt{\frac{2H}{kt_0}}\right]. \tag{13}$$

Some numerical results obtained from eq. (13) are presented in Section 5.2.

### 3.4 Effects of the ambient temperature†

Equation (2) shows that the temperature difference $\Delta T_c(x)$ at the constriction depends on the ambient temperature $T_1$, since both $\alpha_1$ and $\rho$ depend on $T_1$. However, a somewhat unexpected result is that the critical current $I_c$, as defined by (11), is independent of the ambient temperature $T_1$. This result follows from the fact that both $\beta^2$ and $\beta_2^2 = -\beta_1^2$ are independent of $T_1$, since they are functions of the product $\alpha_1\rho$. This product is independent of $T_1$ as can be verified by using the temperature-dependent expressions for $\alpha_1$ and $\rho$ given in Table II in the appendix.

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* "Small" refers to currents that are less than about $(W_c/4)\sqrt{2Ht_0/\alpha_1\rho}$.

† In this paper, we are mainly interested in an ambient temperature, $T_1$, in the range $|T_1| \leqq 50°$C.

In a very similar manner, one can show that the ratio max $\Delta T_c/$ max $\Delta T_{c0}$ is also independent of the ambient temperature $T_1$, while the value of max $\Delta T_{c0}$ depends on the ambient temperature $T_1$.

It is difficult to predict these effects of the ambient temperature without a mathematical argument, because, as the ambient temperature $T_1$ increases, $\rho$ increases while $\alpha_1$ decreases.

## IV. THE COEFFICIENT OF SURFACE HEAT TRANSFER, *H*, FOR A PRINTED CONDUCTOR

### 4.1 Theoretical expression for H

Consider the case when $L \gg W$. For this case, the maximum temperature, max $\Delta T_{c0}$, in the absence of a constriction is approximately equal to the average temperature rise, $\overline{\Delta T}$, along the current-carrying conductor. Thus, by equating eq. (4) to the theoretical expression for $\overline{\Delta T}$, which was presented in Ref. 3, we have

$$\frac{\gamma^2}{\beta^2} = \frac{I^2 R_1 R_T}{1 - I^2 R_1 R_T \alpha_1}, \tag{14}$$

where

$R_1 = \rho L / W t_0$ = resistance of the conductor at ambient temperature
$R_T$ = thermal resistance of the conductor.

Equation (14) yields

$$H = \frac{1}{2WLR_T}. \tag{15}$$

Reference 3 also presents a theoretical expression for the thermal resistance $R_T$ as

$$R_T = \frac{1}{2\pi k_m L} \ln\left(\frac{4L}{W}\right), \tag{16}$$

where

$k_m$ = thermal conductivity of the medium surrounding the conductor.

Equations (15) and (16) yield a theoretical expression for $H$ as

$$H = \frac{\pi k_m}{W \ln (4L/W)}. \tag{17}$$

Since we have assumed that $L \gg W$, eq. (17) shows that $H$ is, approximately, inversely proportional to $W$. This inverse behavior together with eq. (13) shows that, as $I \to 0$ and $L \to \infty$, max $\Delta T_c/$max $\Delta T_{c0}$ remains constant when

$$\frac{W_c}{W} = \text{constant} \tag{18}$$

and

$$\frac{L_c}{\sqrt{W_c t_0}} = \text{constant}. \tag{19}$$

### 4.2 Experimental value of H

Some recent work[4] concerning the current-carrying capacities of various remreed backplane designs contains a table which gives the measured thermal resistances $R_T$ for a pair of parallel printed conductors. The conductors were each about 12-in. long and 8 mils wide, and they were spaced 9 mils apart. For this particular conductor configuration, $R_T$* turned out to be about 10°C/watt. By applying eq. (15) to this conductor configuration, we have

$$H = \frac{1}{2W_tLR_T} = \frac{1}{(2)(25)(12{,}000)10} = \left(\frac{1}{6}\right) 10^{-6} \frac{\text{watts}}{\text{mil}^2\,{}^\circ\text{C}}, \quad (20)$$

where

$W_t$ = total "radiating" width of the parallel conductor configuration = 25 mils.

This particular value of $H$, and some scaled values based on $H \sim 1/W$, will now be used to obtain some numerical results.

## V. NUMERICAL RESULTS

Tables I through XXVI are presented in Appendix A† of this paper. To help ease the task of locating the numerical results pertaining to a specific set of parameters, Table I contains a listing of the contents of all the numerical tables appearing in the appendix. For example, Table I indicates that Table II contains the parameter values that were used to obtain all the numerical results presented in this paper.

### 5.1 The general case [eqs. (2), (3), (4), (11)]

Tables III through V present values of the critical currents, $I_c$, as computed from eq. (11). For example, Table III shows that, for the case $t_0 = 2.8$ mils (2-oz Cu), any $T_1$, $W = 6$ mils, $W_c/W = 0.5$, $L_c = 4W = 24$ mils, and $L = 12{,}000$ mils, the critical current $I_c$ is about 6.1 A. If a current greater than the critical current is applied, max $\Delta T_c$ will increase without bound until permanent damage of the substrate results.

Tables VI, VII, and VIII present the values of max $\Delta T_{c0}$ as computed from eq. (4). For example, Table VI shows that, for the case of $t_0 = 2.8$ mils, $T_1 = 50$°C, $W = 6$ mils, $L = 12{,}000$ mils, and $I = 2$ amperes, the maximum temperature difference in the absence of a constriction, max $\Delta T_{c0}$, is about 32°C. This result agrees well with the corresponding result given in Table VIII of Ref. 4, when one takes into

* The value of $R_T$ varies somewhat depending on the type of covercoat, the type of substrate (rigid or flex), and the presence or absence of cooling lines. A detailed tabulation is given in Table 1 of Ref. 4.

† The numerical results presented in the appendix contain a few more decimal places than accuracy considerations justify. These additional decimals are useful for comparing the numerical evaluations resulting from eqs. (2) and (13).

account eq. (10) of Ref. 3, which implies that a current flow of 2 A in a single conductor produces the same temperature rise as a current flow of $\sqrt{2}$ A in both the tip and ring conductors of the remreed backplane.

Tables IX through XXIII present the values of the ratio max $\Delta T_c$/max $\Delta T_{c0}$ as computed from eqs. (2), (3), and (4). For example, Table XIII shows that, for the case of $t_0 = 2.8$ mils, any $T_1$, $W = 6$ mils, $W_c/W = 0.5$, $L_c = 4W = 24$ mils, $L = 12{,}000$ mils, and $I = 2$ A, the ratio max $\Delta T_c$/max $\Delta T_{c0}$ is about 1.23. Since, in the absence of a constriction, the maximum temperature difference, max $\Delta T_{c0}$, was seen to be about 32°C when $T_1 = 50$°C, the maximum temperature difference at this constriction, max $\Delta T_c$, is about (1.23)(32) = 39.4°C, above the ambient temperature of $T_1 = 50$°C.

### 5.2 The special case [$I \rightarrow 0$, $L \rightarrow \infty$, eq. (13)]

Tables XXIV, XXV, and XXVI present the values of the ratio max $\Delta T_c$/max $\Delta T_{c0}$ as computed from eq. (13). For example, Table XXIV shows that, for the case $t_0 = 2.8$ mils, $W = 6$ mils, $W_c/W = 0.5$, and $L_c = 4W = 24$ mils, the ratio max $\Delta T_c$/max $\Delta T_{c0}$ is about 1.21. This value agrees with the more accurate value 1.23 given above for the case $I = 2$ A in spite of the fact that this current is not really small.

In general, by comparing the numerical results for the special case (Tables XXIV, XXV, and XXVI) with the corresponding numerical results for the general case (Tables IX through XXIII), one can verify that the results for the special case serve as good approximations for a wide variety of parameter values. Notice that the numerical entries in Tables XXV and XXVI are identical in accordance with eqs. (18) and (19).

## VI. A FEW EXPERIMENTAL RESULTS

To obtain some experimental confirmation concerning the numerical results presented in the tables, a few experiments were performed on 2- and 3-oz copper conductors (no covercoat) having the approximate dimensions of $W = 30$ mils, $W_c/W = 0.5$, $L_c = 4W = 120$ mils, and $L = 8000$ mils. In these experiments, the maximum temperature difference, max $\Delta T_c$, at the constriction was estimated by observing the behavior of a thin coating of temperature-indicating paint of known melting temperature $T_m$. When the indicating paint first began to melt, the average temperature difference $\overline{\Delta T}$ along the current-carrying conductor was measured by using the resistance thermometer method described in Ref. 3. In this manner, the ratio max $\Delta T_c$/max $\Delta T_{c0}$ is given, approximately, by

$$\frac{\max \Delta T_c}{\max \Delta T_{c0}} \doteq \frac{T_m - T_1}{\overline{\Delta T}}. \tag{21}$$

For the 2-oz copper conductor (measured $t_0 = 3.6$ mils), we found that when $T_m = 52°C$, and $T_1 = 26.5°C$, a current flow of 2.75 A for a duration of 5 min produced an average temperature difference, $\overline{\Delta T}$, of 17.7 °C when the indicating paint first began to melt. Thus,

$$\frac{\max \Delta T_c}{\max \Delta T_{c0}} \doteq \frac{52 - 26.5}{17.7} = 1.44. \tag{22}$$

This experimental value is somewhat smaller than the corresponding value extrapolated from Tables XVI and XVII, which is about 1.52.

Similarly, for the case of the 3-oz copper conductor (measured $t_0 = 4.9$ mils), we found that, when $T_m = 52°C$ and $T_1 = 26°C$, a current flow of 3.5 A for a duration of 5 min produced an average temperature difference, $\overline{\Delta T}$, of 19.7 °C when the indicating paint began to melt. Thus,

$$\frac{\max \Delta T_c}{\max \Delta T_{c0}} \doteq \frac{52 - 26}{19.7} = 1.32. \tag{23}$$

This experimental value is again somewhat smaller than the corresponding value extrapolated from Tables XVII and XVIII, which is about 1.42.

Thus, it appears that the numerical values of $\max \Delta T_c / \max \Delta T_{c0}$ presented in the tables are conservative from the point of view of design.

## VII. SOME APPLICATIONS

### *7.1 Printed conductors of nominal widths 8, 25, 100 mils*

The numerical results presented in Tables III through XXVI are useful in helping to determine whether an isolated constriction in a printed conductor is of any significance. For example, if the current flow $I \geqq I_c$, the critical current listed in Tables III through V, then permanent damage of the substrate is certain to occur. Also, for the case of a small current flow in a long conductor, Table XXIV indicates that, for an isolated constriction of length $L_c = 4W$ and a constriction width $W_c = 0.5W$ in a fine-line printed conductor of width $W = 6$ mils and a thickness $t_0 = 2.8$ mils (2 oz Cu), the maximum temperature rise at the constriction will be about 1.21 times the maximum temperature rise when the constriction is absent. If a 1-oz copper conductor is used, then the corresponding result is 1.29.

The numerical results presented in the tables and eqs. (18) and (19) can also be used to help determine rational criteria for rejecting printed conductors when isolated nicks are present. If one can tolerate the presence of relatively large nicks in a printed conductor, then the manufacturing yield will increase and the time necessary to visually examine the printed conductors will decrease.

### 7.2 *Printed conductors of other dimensions*

Although we have only presented numerical results for the sets of parameters listed in Table II, the methods described in this paper also apply to other sets of parameters. The only elusive parameter one needs to determine is the value of $H$, the coefficient of surface heat transfer. An approximate value of $H$ can be calculated from eq. (17). Also, $H$ can be determined experimentally, as was described in Section 4.2. Finally, the value of $H$ used in this paper can be scaled to other widths by using the approximate law $H \sim 1/W$, which was discussed in Section 4.1. Once the value of $H$ is determined, eqs. (2), (3), (4), and (11) can be applied to obtain numerical results similar to those presented in Tables III through XXIII. Also, for the case of a small current flow in a long conductor, a simplified equation, (13), can be applied to obtain numerical results similar to those presented in Tables XXIV, XXV, and XXVI.

## VIII. SUMMARY

This paper presents some basic equations for predicting the maximum temperature rise at an isolated constriction (e.g., a nick) in a current-carrying printed conductor. A transcendental equation is also presented which can be used to predict the thermal runaway or critical current. The equations apply to general configurations of printed conductors, since the underlying differential equation is the heat equation in the steady state. Numerical results depend on a number of parameters which are readily available, and the value of the coefficient of surface heat transfer $H$. An equation is presented that can be used to estimate the value of $H$ for a relatively long conductor. A method is also described for determining the value of $H$ experimentally. $H$ was measured to be about $(1/6)10^{-6}$ watts/mil$^2$°C for a 25-mil-wide printed conductor. Based on this value of $H$, a variety of numerical results concerning the critical current and the maximum temperature rise at the constriction are presented in tables. A few experimental results are presented which show that the numerical results concerning the maximum temperature rise are conservative from the point of view of design. The results in this paper are useful for determining whether an isolated constriction in a printed conductor is of any significance. The results can also be used to help determine rational criteria for rejecting printed conductors when isolated nicks are present.

## IX. ACKNOWLEDGMENTS

In the course of carrying out this work, the author has received valuable support from A. G. Lubowe, A. P. Irwin, and J. J. Waltz.

The author also wishes to thank D. E. McCumber for many stimulating discussions concerning appropriate boundary conditions, and his preliminary results for the more difficult, two-dimensional analysis of this problem.

## APPENDIX A

### Numerical Results

Table I — Contents of the numerical tables

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| VI | Values of max $\Delta T_{c0}$ for $W$ = 6, 8, 10, and all $I$, $L$, $t_0$, $T_1$ |
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| XXII | Values of (max $\Delta T_c$/max $\Delta T_{c0}$) for $W$ = 80, 100, 120, $I$ = 6.0, and all $W_c/W$, $L_c$, $L$, $t_0$, $T_1$ |
| XXIII | Values of (max $\Delta T_c$/max $\Delta T_{c0}$) for $W$ = 80, 100, 120, $I$ = 8.0, and all $W_c/W$, $L_c$, $L$, $t_0$, $T_1$ |
| XXIV | Values of (max $\Delta T_c$/max $\Delta T_{c0}$) for the special case $I \to 0$, $L \to \infty$, for $W$ = 6, 8, 10, and all $W_c/W$, $L_c$, $t_0$, $T_1$ |
| XXV | Values of (max $\Delta T_c$/max $\Delta T_{c0}$) for the special case $I \to 0$, $L \to \infty$, for $W$ = 20, 25, 30, and all $W_c/W$, $L_c$, $t_0$, $T_1$ |
| XXVI | Values of (max $\Delta T_c$/max $\Delta T_{c0}$) for the special case $I \to 0$, $L \to \infty$, for $W$ = 80, 100, 120, and all $W_c/W$, $L_c$, $t_0$, $T_1$ |

### Table II — Parameter values

| Units | Set I | Set II | Set III |
|---|---|---|---|
| mils | $L = 1000, 6000, 12{,}000$ | $L = 1000, 6000, 12{,}000$ | $L = 1000, 6000, 12{,}000$ |
| mils | $L_c = 2W, 4W, 6W, 8W$ | $L_c = W, 2W, 3W, 4W$ | $L_c = 0.5W, W, 1.5W, 2W$ |
| mils | $W = 6, 8, 10$ | $W = 20, 25, 30$ | $W = 80, 100, 120$ |
| dimensionless | $W_c/W = 1, 0.8, 0.75, 0.50, 0.25$ | $W_c/W = 1, 0.8, 0.75, 0.50, 0.25$ | $W_c/W = 1, 0.8, 0.75, 0.50, 0.25$ |
| $\frac{\text{watts}}{\text{mil}^2\,^\circ\text{C}}$ | $H = \left(\frac{25}{8}\right)\left(\frac{1}{6}\right)10^{-6}$ | $H = \left(\frac{1}{6}\right)10^{-6}$ | $H = \left(\frac{25}{100}\right)\left(\frac{1}{6}\right)10^{-6}$ |
| $\frac{\text{watts}}{\text{mil}\,^\circ\text{C}}$ | $k = (1.0338)10^{-2}$ | $k = (1.0338)10^{-2}$ | $k = (1.0338)10^{-2}$ |
| mils | $t_0 = 4.2, 2.8, 1.4$ | $t_0 = 4.2, 2.8, 1.4$ | $t_0 = 4.2, 2.8, 1.4$ |
| ohm-mil | $\rho = (0.67878)10^{-3} \cdot [1 + 0.00393(T_1 - 20)]$ | $\rho = (0.67878)10^{-3} \cdot [1 + 0.00393(T_1 - 20)]$ | $\rho = (0.67878)10^{-3} \cdot [1 + 0.00393(T_1 - 20)]$ |
| per °C | $\alpha_1 = [T_1 + 234.45]^{-1}$ | $\alpha_1 = [T_1 + 234.45]^{-1}$ | $\alpha_1 = [T_1 + 234.45]^{-1}$ |
| °C | $T_1 = 20, 50$ | $T_1 = 20, 50$ | $T_1 = 20, 50$ |
| amperes | $I = 0.1, 0.5, 1.0, 1.5, 2.0$ | $I = 0.5, 1, 2, 3, 4$ | $I = 1, 2, 4, 6, 8$ |

# Table III — Values of critical currents $I_c$

T(0) =4.2 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 9.129 | 9.067 | 9.043 | 8.800 | 7.594 | 12.171 | 12.062 | 12.020 | 11.589 | 9.575 | 15.214 | 15.043 | 14.977 | 14.307 | 11.368 |
| L(C)=2W L= 6000 | 7.728 | 7.718 | 7.715 | 7.668 | 7.121 | 10.303 | 10.287 | 10.280 | 10.187 | 9.104 | 12.879 | 12.853 | 12.842 | 12.683 | 10.908 |
| L(C)=2W L=12000 | 7.695 | 7.690 | 7.688 | 7.655 | 7.121 | 10.260 | 10.251 | 10.247 | 10.177 | 9.104 | 12.825 | 12.810 | 12.804 | 12.674 | 10.908 |
| L(C)=4W L= 1000 | 9.129 | 9.005 | 8.958 | 8.479 | 6.506 | 12.171 | 11.953 | 11.869 | 11.033 | 7.980 | 15.214 | 14.873 | 14.743 | 13.467 | 9.290 |
| L(C)=4W L= 6000 | 7.728 | 7.708 | 7.700 | 7.575 | 6.281 | 10.303 | 10.268 | 10.252 | 9.993 | 7.763 | 12.879 | 12.823 | 12.796 | 12.338 | 9.077 |
| L(C)=4W L=12000 | 7.695 | 7.684 | 7.679 | 7.572 | 6.281 | 10.260 | 10.240 | 10.229 | 9.992 | 7.763 | 12.825 | 12.791 | 12.772 | 12.338 | 9.077 |
| L(C)=6W L= 1000 | 9.129 | 8.944 | 8.874 | 8.176 | 5.768 | 12.171 | 11.845 | 11.721 | 10.527 | 6.989 | 15.214 | 14.706 | 14.514 | 12.731 | 8.079 |
| L(C)=6W L= 6000 | 7.728 | 7.698 | 7.684 | 7.450 | 5.625 | 10.303 | 10.247 | 10.220 | 9.737 | 6.847 | 12.879 | 12.788 | 12.741 | 11.909 | 7.935 |
| L(C)=6W L=12000 | 7.695 | 7.677 | 7.668 | 7.450 | 5.625 | 10.260 | 10.225 | 10.204 | 9.737 | 6.847 | 12.825 | 12.765 | 12.727 | 11.909 | 7.935 |
| L(C)=8W L= 1000 | 9.129 | 8.883 | 8.790 | 7.895 | 5.242 | 12.171 | 11.738 | 11.576 | 10.078 | 6.316 | 15.214 | 14.543 | 14.294 | 12.103 | 7.281 |
| L(C)=8W L= 6000 | 7.728 | 7.686 | 7.665 | 7.303 | 5.136 | 10.303 | 10.224 | 10.183 | 9.456 | 6.207 | 12.879 | 12.748 | 12.676 | 11.468 | 7.167 |
| L(C)=8W L=12000 | 7.695 | 7.669 | 7.653 | 7.303 | 5.136 | 10.260 | 10.207 | 10.173 | 9.456 | 6.207 | 12.825 | 12.733 | 12.669 | 11.468 | 7.167 |

T(0) =2.8 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 7.082 | 7.034 | 7.016 | 6.822 | 5.827 | 9.443 | 9.357 | 9.324 | 8.980 | 7.315 | 11.803 | 11.670 | 11.618 | 11.080 | 8.652 |
| L(C)=2W L= 6000 | 6.298 | 6.290 | 6.287 | 6.242 | 5.653 | 8.397 | 8.383 | 8.377 | 8.284 | 7.155 | 10.496 | 10.474 | 10.464 | 10.299 | 8.505 |
| L(C)=2W L=12000 | 6.280 | 6.276 | 6.274 | 6.238 | 5.653 | 8.373 | 8.365 | 8.362 | 8.282 | 7.155 | 10.466 | 10.454 | 10.447 | 10.298 | 8.505 |
| L(C)=4W L= 1000 | 7.082 | 6.986 | 6.949 | 6.562 | 4.937 | 9.443 | 9.271 | 9.205 | 8.526 | 6.030 | 11.803 | 11.536 | 11.432 | 10.391 | 7.002 |
| L(C)=4W L= 6000 | 6.298 | 6.281 | 6.274 | 6.141 | 4.868 | 8.397 | 8.366 | 8.351 | 8.070 | 5.967 | 10.496 | 10.446 | 10.420 | 9.921 | 6.942 |
| L(C)=4W L=12000 | 6.280 | 6.270 | 6.265 | 6.141 | 4.868 | 8.373 | 8.354 | 8.343 | 8.069 | 5.967 | 10.466 | 10.434 | 10.412 | 9.921 | 6.942 |
| L(C)=6W L= 1000 | 7.082 | 6.938 | 6.882 | 6.314 | 4.352 | 9.443 | 9.186 | 9.087 | 8.111 | 5.259 | 11.803 | 11.403 | 11.250 | 9.790 | 6.072 |
| L(C)=6W L= 6000 | 6.298 | 6.271 | 6.258 | 6.003 | 4.311 | 8.397 | 8.346 | 8.319 | 7.796 | 5.220 | 10.496 | 10.412 | 10.363 | 9.479 | 6.032 |
| L(C)=6W L=12000 | 6.280 | 6.263 | 6.252 | 6.003 | 4.311 | 8.373 | 8.339 | 8.315 | 7.796 | 5.220 | 10.466 | 10.405 | 10.360 | 9.479 | 6.032 |
| L(C)=8W L= 1000 | 7.082 | 6.889 | 6.815 | 6.084 | 3.945 | 9.443 | 9.102 | 8.971 | 7.745 | 4.746 | 11.803 | 11.274 | 11.073 | 9.283 | 5.470 |
| L(C)=8W L= 6000 | 6.298 | 6.260 | 6.239 | 5.847 | 3.915 | 8.397 | 8.323 | 8.280 | 7.513 | 4.716 | 10.496 | 10.371 | 10.294 | 9.058 | 5.439 |
| L(C)=8W L=12000 | 6.280 | 6.254 | 6.236 | 5.847 | 3.915 | 8.373 | 8.319 | 8.278 | 7.513 | 4.716 | 10.466 | 10.368 | 10.293 | 9.058 | 5.439 |

T(0) =1.4 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 4.731 | 4.698 | 4.686 | 4.547 | 3.767 | 6.308 | 6.250 | 6.227 | 5.976 | 4.677 | 7.884 | 7.793 | 7.758 | 7.360 | 5.487 |
| L(C)=2W L= 6000 | 4.445 | 4.439 | 4.436 | 4.387 | 3.748 | 5.926 | 5.915 | 5.910 | 5.802 | 4.663 | 7.408 | 7.390 | 7.381 | 7.183 | 5.475 |
| L(C)=2W L=12000 | 4.438 | 4.435 | 4.433 | 4.387 | 3.748 | 5.918 | 5.911 | 5.907 | 5.802 | 4.663 | 7.397 | 7.386 | 7.378 | 7.183 | 5.475 |
| L(C)=4W L= 1000 | 4.731 | 4.665 | 4.639 | 4.350 | 3.112 | 6.308 | 6.190 | 6.143 | 5.627 | 3.771 | 7.884 | 7.700 | 7.625 | 6.828 | 4.360 |
| L(C)=4W L= 6000 | 4.445 | 4.431 | 4.424 | 4.263 | 3.107 | 5.926 | 5.900 | 5.884 | 5.547 | 3.767 | 7.408 | 7.362 | 7.333 | 6.756 | 4.356 |
| L(C)=4W L=12000 | 4.438 | 4.429 | 4.423 | 4.263 | 3.107 | 5.918 | 5.898 | 5.883 | 5.547 | 3.767 | 7.397 | 7.361 | 7.333 | 6.756 | 4.356 |
| L(C)=6W L= 1000 | 4.731 | 4.631 | 4.591 | 4.158 | 2.715 | 6.308 | 6.129 | 6.058 | 5.309 | 3.267 | 7.884 | 7.605 | 7.493 | 6.375 | 3.767 |
| L(C)=6W L= 6000 | 4.445 | 4.421 | 4.407 | 4.107 | 2.712 | 5.926 | 5.879 | 5.847 | 5.266 | 3.265 | 7.408 | 7.324 | 7.266 | 6.337 | 3.765 |
| L(C)=6W L=12000 | 4.438 | 4.420 | 4.406 | 4.107 | 2.712 | 5.918 | 5.878 | 5.847 | 5.266 | 3.265 | 7.397 | 7.324 | 7.266 | 6.337 | 3.765 |
| L(C)=8W L= 1000 | 4.731 | 4.597 | 4.543 | 3.981 | 2.450 | 6.308 | 6.069 | 5.973 | 5.036 | 2.944 | 7.884 | 7.512 | 7.363 | 6.009 | 3.398 |
| L(C)=8W L= 6000 | 4.445 | 4.409 | 4.385 | 3.949 | 2.448 | 5.926 | 5.852 | 5.800 | 5.009 | 2.943 | 7.408 | 7.276 | 7.184 | 5.985 | 3.396 |
| L(C)=8W L=12000 | 4.438 | 4.409 | 4.385 | 3.949 | 2.448 | 5.918 | 5.852 | 5.800 | 5.009 | 2.943 | 7.397 | 7.276 | 7.184 | 5.985 | 3.396 |

## Table IV — Values of critical currents $I_c$

T(0) =4.2 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 21.904 | 21.660 | 21.567 | 20.648 | 16.815 | 27.380 | 26.999 | 26.856 | 25.443 | 19.943 | 32.857 | 32.309 | 32.103 | 30.104 | 22.814 |
| L(C)=1W L= 6000 | 14.745 | 14.717 | 14.706 | 14.578 | 13.528 | 18.431 | 18.387 | 18.369 | 18.162 | 16.419 | 22.118 | 22.053 | 22.027 | 21.718 | 19.117 |
| L(C)=1W L=12000 | 14.553 | 14.539 | 14.533 | 14.457 | 13.520 | 18.192 | 18.169 | 18.159 | 18.031 | 16.414 | 21.830 | 21.737 | 21.783 | 21.582 | 19.114 |
| L(C)=2W L= 1000 | 21.904 | 21.420 | 21.240 | 19.528 | 13.986 | 27.380 | 26.629 | 26.350 | 23.777 | 16.279 | 32.857 | 31.781 | 31.385 | 27.827 | 18.366 |
| L(C)=2W L= 6000 | 14.745 | 14.687 | 14.664 | 14.370 | 12.010 | 18.431 | 18.340 | 18.302 | 17.814 | 14.199 | 22.118 | 21.984 | 21.928 | 21.187 | 16.190 |
| L(C)=2W L=12000 | 14.553 | 14.523 | 14.510 | 14.303 | 12.009 | 18.192 | 18.143 | 18.121 | 17.755 | 14.199 | 21.830 | 21.758 | 21.725 | 21.137 | 16.190 |
| L(C)=3W L= 1000 | 21.904 | 21.187 | 20.923 | 18.551 | 12.244 | 27.380 | 26.271 | 25.868 | 22.383 | 14.146 | 32.857 | 31.276 | 30.710 | 25.992 | 15.886 |
| L(C)=3W L= 6000 | 14.745 | 14.656 | 14.619 | 14.125 | 10.794 | 18.431 | 18.290 | 18.230 | 17.404 | 12.600 | 22.118 | 21.911 | 21.821 | 20.567 | 14.243 |
| L(C)=3W L=12000 | 14.553 | 14.506 | 14.483 | 14.091 | 10.794 | 18.192 | 18.114 | 18.076 | 17.379 | 12.600 | 21.830 | 21.714 | 21.655 | 20.549 | 14.243 |
| L(C)=4W L= 1000 | 21.904 | 20.961 | 20.620 | 17.707 | 11.056 | 27.380 | 25.929 | 25.413 | 21.220 | 12.734 | 32.857 | 30.800 | 30.083 | 24.513 | 14.279 |
| L(C)=4W L= 6000 | 14.745 | 14.624 | 14.572 | 13.853 | 9.873 | 18.431 | 18.238 | 18.153 | 16.960 | 11.452 | 22.118 | 21.834 | 21.706 | 19.919 | 12.896 |
| L(C)=4W L=12000 | 14.553 | 14.486 | 14.453 | 13.836 | 9.873 | 18.192 | 18.082 | 18.024 | 16.949 | 11.452 | 21.830 | 21.664 | 21.573 | 19.912 | 12.896 |

T(0) =2.8 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 16.121 | 15.941 | 15.873 | 15.188 | 12.296 | 20.152 | 19.870 | 19.764 | 18.710 | 14.562 | 24.182 | 23.778 | 23.625 | 22.132 | 16.637 |
| L(C)=1W L= 6000 | 11.970 | 11.947 | 11.937 | 11.824 | 10.755 | 14.963 | 14.926 | 14.911 | 14.724 | 12.957 | 17.955 | 17.902 | 17.880 | 17.596 | 14.991 |
| L(C)=1W L=12000 | 11.865 | 11.853 | 11.848 | 11.774 | 10.754 | 14.831 | 14.812 | 14.804 | 14.675 | 12.957 | 17.798 | 17.770 | 17.757 | 17.550 | 14.990 |
| L(C)=2W L= 1000 | 16.121 | 15.764 | 15.630 | 14.348 | 10.180 | 20.152 | 19.596 | 19.389 | 17.460 | 11.835 | 24.182 | 23.386 | 23.092 | 20.422 | 13.343 |
| L(C)=2W L= 6000 | 11.970 | 11.922 | 11.901 | 11.623 | 9.325 | 14.963 | 14.886 | 14.853 | 14.379 | 10.950 | 17.955 | 17.842 | 17.793 | 17.061 | 12.426 |
| L(C)=2W L=12000 | 11.865 | 11.839 | 11.827 | 11.605 | 9.325 | 14.831 | 14.789 | 14.768 | 14.366 | 10.950 | 17.798 | 17.734 | 17.702 | 17.052 | 12.426 |
| L(C)=3W L= 1000 | 16.121 | 15.591 | 15.395 | 13.615 | 8.895 | 20.152 | 19.331 | 19.031 | 16.414 | 10.271 | 24.182 | 23.012 | 22.590 | 19.050 | 11.532 |
| L(C)=3W L= 6000 | 11.970 | 11.895 | 11.862 | 11.374 | 8.284 | 14.963 | 14.842 | 14.788 | 13.959 | 9.625 | 17.955 | 17.778 | 17.695 | 16.430 | 10.848 |
| L(C)=3W L=12000 | 11.865 | 11.823 | 11.801 | 11.368 | 8.284 | 14.831 | 14.762 | 14.723 | 13.956 | 9.625 | 17.798 | 17.691 | 17.630 | 16.428 | 10.848 |
| L(C)=4W L= 1000 | 16.121 | 15.423 | 15.169 | 12.982 | 8.027 | 20.152 | 19.076 | 18.692 | 15.547 | 9.244 | 24.182 | 22.658 | 22.123 | 17.950 | 10.369 |
| L(C)=4W L= 6000 | 11.970 | 11.867 | 11.819 | 11.096 | 7.533 | 14.963 | 14.796 | 14.716 | 13.514 | 8.711 | 17.955 | 17.707 | 17.586 | 15.797 | 9.794 |
| L(C)=4W L=12000 | 11.865 | 11.804 | 11.771 | 11.094 | 7.533 | 14.831 | 14.729 | 14.669 | 13.513 | 8.711 | 17.798 | 17.640 | 17.542 | 15.797 | 9.794 |

T(0) =1.4 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 9.998 | 9.886 | 9.843 | 9.404 | 7.482 | 12.498 | 12.322 | 12.255 | 11.575 | 8.824 | 14.997 | 14.744 | 14.648 | 13.681 | 10.048 |
| L(C)=1W L= 6000 | 8.415 | 8.398 | 8.390 | 8.288 | 7.155 | 10.518 | 10.491 | 10.479 | 10.302 | 8.505 | 12.622 | 12.582 | 12.565 | 12.284 | 9.736 |
| L(C)=1W L=12000 | 8.378 | 8.368 | 8.364 | 8.282 | 7.155 | 10.472 | 10.457 | 10.449 | 10.298 | 8.505 | 12.566 | 12.544 | 12.532 | 12.281 | 9.736 |
| L(C)=2W L= 1000 | 9.998 | 9.774 | 9.689 | 8.853 | 6.120 | 12.498 | 12.149 | 12.017 | 10.755 | 7.095 | 14.997 | 14.497 | 14.308 | 12.558 | 7.986 |
| L(C)=2W L= 6000 | 8.415 | 8.378 | 8.361 | 8.070 | 5.967 | 10.518 | 10.459 | 10.430 | 9.921 | 6.942 | 12.622 | 12.533 | 12.488 | 11.694 | 7.830 |
| L(C)=2W L=12000 | 8.378 | 8.356 | 8.344 | 8.069 | 5.967 | 10.472 | 10.435 | 10.413 | 9.921 | 6.942 | 12.566 | 12.509 | 12.473 | 11.694 | 7.830 |
| L(C)=3W L= 1000 | 9.998 | 9.664 | 9.539 | 8.372 | 5.324 | 12.498 | 11.980 | 11.787 | 10.072 | 6.141 | 14.997 | 14.258 | 13.987 | 11.669 | 6.894 |
| L(C)=3W L= 6000 | 8.415 | 8.355 | 8.326 | 7.796 | 5.220 | 10.518 | 10.421 | 10.369 | 9.479 | 6.032 | 12.622 | 12.474 | 12.393 | 11.066 | 6.780 |
| L(C)=3W L=12000 | 8.378 | 8.340 | 8.315 | 7.796 | 5.220 | 10.472 | 10.406 | 10.360 | 9.479 | 6.032 | 12.566 | 12.461 | 12.386 | 11.066 | 6.780 |
| L(C)=4W L= 1000 | 9.998 | 9.558 | 9.394 | 7.961 | 4.798 | 12.498 | 11.818 | 11.571 | 9.515 | 5.528 | 14.997 | 14.033 | 13.688 | 10.971 | 6.207 |
| L(C)=4W L= 6000 | 8.415 | 8.330 | 8.284 | 7.513 | 4.716 | 10.518 | 10.377 | 10.297 | 9.058 | 5.439 | 12.622 | 12.406 | 12.281 | 10.505 | 6.111 |
| L(C)=4W L=12000 | 8.378 | 8.319 | 8.278 | 7.513 | 4.716 | 10.472 | 10.368 | 10.293 | 9.058 | 5.439 | 12.566 | 12.399 | 12.278 | 10.505 | 6.111 |

# Table V — Values of critical currents $I_c$

T(0) =4.2 — T(1) =20.0 (OR ANY OTHER VALUE)

| W(C)/W= | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 71.817 | 70.239 | 69.654 | 64.183 | 46.653 | 89.772 | 87.322 | 86.421 | 78.222 | 54.416 | 107.726 | 104.224 | 102.947 | 91.622 | 61.478 |
| L(C)=0.5W L= 6000 | 30.978 | 30.861 | 30.815 | 30.330 | 27.430 | 38.723 | 38.539 | 38.468 | 37.701 | 33.169 | 46.467 | 46.202 | 46.099 | 44.984 | 38.525 |
| L(C)=0.5W L=12000 | 29.490 | 29.434 | 29.411 | 29.156 | 27.056 | 36.863 | 36.774 | 36.738 | 36.324 | 32.837 | 44.236 | 44.107 | 44.055 | 43.436 | 38.233 |
| L(C)=1.0W L= 1000 | 71.817 | 68.751 | 67.653 | 58.389 | 37.059 | 89.772 | 85.056 | 83.399 | 70.058 | 42.692 | 107.726 | 101.051 | 98.748 | 80.997 | 47.855 |
| L(C)=1.0W L= 6000 | 30.978 | 30.742 | 30.649 | 29.640 | 24.134 | 38.723 | 38.352 | 38.206 | 36.608 | 28.493 | 46.467 | 45.932 | 45.721 | 43.394 | 32.462 |
| L(C)=1.0W L=12000 | 29.490 | 29.374 | 29.327 | 28.739 | 24.019 | 36.863 | 36.680 | 36.604 | 35.628 | 28.399 | 44.236 | 43.969 | 43.857 | 42.375 | 32.381 |
| L(C)=1.5W L= 1000 | 71.817 | 67.367 | 65.832 | 53.998 | 31.903 | 89.772 | 83.003 | 80.733 | 64.221 | 36.658 | 107.726 | 98.252 | 95.160 | 73.784 | 41.071 |
| L(C)=1.5W L= 6000 | 30.978 | 30.621 | 30.480 | 28.930 | 21.641 | 38.723 | 38.162 | 37.940 | 35.495 | 25.246 | 46.467 | 45.657 | 45.335 | 41.805 | 28.528 |
| L(C)=1.5W L=12000 | 29.490 | 29.312 | 29.238 | 28.250 | 21.587 | 36.863 | 36.580 | 36.459 | 34.808 | 25.201 | 44.236 | 43.822 | 43.642 | 41.135 | 28.487 |
| L(C)=2.0W L= 1000 | 71.817 | 66.095 | 64.193 | 50.605 | 28.621 | 89.772 | 81.170 | 78.411 | 59.906 | 32.908 | 107.726 | 95.830 | 92.140 | 68.652 | 36.939 |
| L(C)=2.0W L= 6000 | 30.978 | 30.499 | 30.309 | 28.219 | 19.778 | 38.723 | 37.971 | 37.671 | 34.409 | 22.933 | 46.467 | 45.380 | 44.945 | 40.295 | 25.819 |
| L(C)=2.0W L=12000 | 29.490 | 29.248 | 29.144 | 27.707 | 19.746 | 36.863 | 36.476 | 36.306 | 33.920 | 22.904 | 44.236 | 43.668 | 43.412 | 39.839 | 25.792 |

T(0) =2.8 — T(1) =20.0 (OR ANY OTHER VALUE)

| W(C)/W= | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 49.789 | 48.694 | 48.287 | 44.478 | 32.249 | 62.236 | 60.536 | 59.910 | 54.198 | 37.600 | 74.683 | 72.252 | 71.365 | 63.474 | 42.470 |
| L(C)=0.5W L= 6000 | 24.761 | 24.667 | 24.630 | 24.226 | 21.607 | 30.951 | 30.803 | 30.745 | 30.102 | 25.990 | 37.141 | 36.928 | 36.844 | 35.899 | 30.040 |
| L(C)=0.5W L=12000 | 23.940 | 23.893 | 23.875 | 23.649 | 21.509 | 29.925 | 29.852 | 29.822 | 29.448 | 25.915 | 35.910 | 35.803 | 35.759 | 35.192 | 29.981 |
| L(C)=1.0W L= 1000 | 49.789 | 47.660 | 46.896 | 40.441 | 25.594 | 62.236 | 58.962 | 57.809 | 48.513 | 29.483 | 74.683 | 70.048 | 68.446 | 56.079 | 33.050 |
| L(C)=1.0W L= 6000 | 24.761 | 24.570 | 24.494 | 23.627 | 18.670 | 30.951 | 30.651 | 30.530 | 29.140 | 21.915 | 37.141 | 36.706 | 36.530 | 34.488 | 24.864 |
| L(C)=1.0W L=12000 | 23.940 | 23.843 | 23.803 | 23.246 | 18.650 | 29.925 | 29.771 | 29.705 | 28.758 | 21.900 | 35.910 | 35.685 | 35.586 | 34.121 | 24.852 |
| L(C)=1.5W L= 1000 | 49.789 | 46.698 | 45.631 | 37.386 | 22.033 | 62.236 | 57.535 | 55.956 | 44.459 | 25.322 | 74.683 | 68.104 | 65.953 | 51.077 | 28.378 |
| L(C)=1.5W L= 6000 | 24.761 | 24.471 | 24.353 | 22.992 | 16.576 | 30.951 | 30.494 | 30.307 | 28.138 | 19.257 | 37.141 | 36.477 | 36.205 | 33.055 | 21.703 |
| L(C)=1.5W L=12000 | 23.940 | 23.790 | 23.724 | 22.748 | 16.568 | 29.925 | 29.684 | 29.575 | 27.918 | 19.250 | 35.910 | 35.555 | 35.390 | 32.861 | 21.697 |
| L(C)=2.0W L= 1000 | 49.789 | 45.815 | 44.492 | 35.032 | 19.772 | 62.236 | 56.263 | 54.344 | 41.470 | 22.742 | 74.683 | 66.423 | 63.858 | 47.529 | 25.539 |
| L(C)=2.0W L= 6000 | 24.761 | 24.369 | 24.209 | 22.351 | 15.071 | 30.951 | 30.334 | 30.079 | 27.161 | 17.427 | 37.141 | 36.245 | 35.872 | 31.707 | 19.592 |
| L(C)=2.0W L=12000 | 23.940 | 23.733 | 23.638 | 22.193 | 15.066 | 29.925 | 29.591 | 29.433 | 27.027 | 17.423 | 35.910 | 35.414 | 35.172 | 31.595 | 19.588 |

T(0) =1.4 — T(1) =20.0 (OR ANY OTHER VALUE)

| W(C)/W= | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 27.562 | 26.954 | 26.728 | 24.592 | 17.698 | 34.453 | 33.509 | 33.169 | 29.953 | 20.614 | 41.343 | 39.993 | 39.498 | 35.064 | 23.267 |
| L(C)=0.5W L= 6000 | 17.124 | 17.057 | 17.031 | 16.716 | 14.314 | 21.405 | 21.300 | 21.258 | 20.742 | 17.012 | 25.686 | 25.534 | 25.471 | 24.698 | 19.473 |
| L(C)=0.5W L=12000 | 16.829 | 16.795 | 16.781 | 16.577 | 14.310 | 21.037 | 20.983 | 20.959 | 20.605 | 17.010 | 25.244 | 25.165 | 25.129 | 24.568 | 19.471 |
| L(C)=1.0W L= 1000 | 27.562 | 26.379 | 25.952 | 22.323 | 14.012 | 34.453 | 32.632 | 31.987 | 26.763 | 16.139 | 41.343 | 38.764 | 37.868 | 30.924 | 18.095 |
| L(C)=1.0W L= 6000 | 17.124 | 16.987 | 15.929 | 16.193 | 11.934 | 21.405 | 21.187 | 21.095 | 19.882 | 13.883 | 25.686 | 25.368 | 25.230 | 23.419 | 15.660 |
| L(C)=1.0W L=12000 | 16.829 | 16.756 | 16.722 | 16.140 | 11.934 | 21.037 | 20.918 | 20.860 | 19.842 | 13.883 | 25.244 | 25.066 | 24.977 | 23.389 | 15.659 |
| L(C)=1.5W L= 1000 | 27.562 | 25.843 | 25.246 | 20.616 | 12.063 | 34.453 | 31.837 | 30.954 | 24.507 | 13.872 | 41.343 | 37.682 | 36.480 | 28.152 | 15.559 |
| L(C)=1.5W L= 6000 | 17.124 | 16.912 | 16.820 | 15.613 | 10.440 | 21.405 | 21.067 | 20.918 | 18.972 | 12.064 | 25.686 | 25.190 | 24.968 | 22.141 | 13.560 |
| L(C)=1.5W L=12000 | 16.829 | 16.711 | 16.651 | 15.593 | 10.440 | 21.037 | 20.842 | 20.738 | 18.958 | 12.064 | 25.244 | 24.949 | 24.785 | 22.131 | 13.560 |
| L(C)=2.0W L= 1000 | 27.562 | 25.351 | 24.611 | 19.309 | 10.834 | 34.453 | 31.129 | 30.057 | 22.858 | 12.476 | 41.343 | 36.749 | 35.317 | 26.204 | 14.027 |
| L(C)=2.0W L= 6000 | 17.124 | 16.834 | 16.705 | 15.036 | 9.431 | 21.405 | 20.941 | 20.731 | 18.121 | 10.878 | 25.686 | 25.003 | 24.691 | 21.014 | 12.222 |
| L(C)=2.0W L=12000 | 16.829 | 16.660 | 16.569 | 15.027 | 9.431 | 21.037 | 20.754 | 20.595 | 18.116 | 10.878 | 25.244 | 24.812 | 24.561 | 21.010 | 12.222 |

# Table VI — Values of max delta $T_{c0}$

T(0)=4.2 T(1)=20.0

| | I=0.1 | | | I=0.5 | | | I=1.0 | | | I=1.5 | | | I=2.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W= | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 |
| L= 1000 | 0.036 | 0.020 | 0.013 | 0.896 | 0.503 | 0.322 | 3.617 | 2.023 | 1.291 | 8.270 | 4.593 | 2.922 | 15.046 | 8.270 | 5.238 |
| L= 6000 | 0.043 | 0.024 | 0.016 | 1.082 | 0.608 | 0.388 | 4.384 | 2.448 | 1.561 | 10.081 | 5.574 | 3.539 | 18.492 | 10.081 | 6.361 |
| L=12000 | 0.043 | 0.024 | 0.016 | 1.082 | 0.608 | 0.388 | 4.384 | 2.448 | 1.561 | 10.081 | 5.574 | 3.539 | 18.492 | 10.081 | 6.361 |

T(0)=2.8 T(1)=20.0

| | I=0.1 | | | I=0.5 | | | I=1.0 | | | I=1.5 | | | I=2.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W= | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 |
| L= 1000 | 0.058 | 0.033 | 0.021 | 1.463 | 0.821 | 0.525 | 5.948 | 3.314 | 2.112 | 13.755 | 7.572 | 4.798 | 25.441 | 13.755 | 8.648 |
| L= 6000 | 0.065 | 0.036 | 0.023 | 1.626 | 0.912 | 0.583 | 6.633 | 3.689 | 2.349 | 15.427 | 8.454 | 5.346 | 28.783 | 15.427 | 9.662 |
| L=12000 | 0.065 | 0.036 | 0.023 | 1.626 | 0.912 | 0.583 | 6.633 | 3.689 | 2.349 | 15.427 | 8.454 | 5.346 | 28.783 | 15.427 | 9.662 |

T(0)=1.4 T(1)=20.0

| | I=0.1 | | | I=0.5 | | | I=1.0 | | | I=1.5 | | | I=2.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W= | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 |
| L= 1000 | 0.126 | 0.071 | 0.045 | 3.177 | 1.778 | 1.135 | 13.184 | 7.258 | 4.599 | 31.633 | 16.910 | 10.579 | 61.967 | 31.633 | 19.411 |
| L= 6000 | 0.129 | 0.073 | 0.047 | 3.274 | 1.831 | 1.169 | 13.621 | 7.487 | 4.741 | 32.846 | 17.488 | 10.922 | 64.909 | 32.846 | 20.088 |
| L=12000 | 0.129 | 0.073 | 0.047 | 3.274 | 1.831 | 1.169 | 13.621 | 7.487 | 4.741 | 32.846 | 17.488 | 10.922 | 64.909 | 32.846 | 20.088 |

T(0)=4.2 T(1)=50.0

| | I=0.1 | | | I=0.5 | | | I=1.0 | | | I=1.5 | | | I=2.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W= | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 |
| L= 1000 | 0.040 | 0.022 | 0.014 | 1.001 | 0.562 | 0.360 | 4.043 | 2.261 | 1.444 | 9.245 | 5.135 | 3.267 | 16.820 | 9.245 | 5.855 |
| L= 6000 | 0.048 | 0.027 | 0.017 | 1.210 | 0.679 | 0.434 | 4.901 | 2.736 | 1.745 | 11.270 | 6.231 | 3.957 | 20.672 | 11.270 | 7.111 |
| L=12000 | 0.048 | 0.027 | 0.017 | 1.210 | 0.679 | 0.434 | 4.901 | 2.736 | 1.745 | 11.270 | 6.231 | 3.957 | 20.672 | 11.270 | 7.111 |

T(0)=2.8 T(1)=50.0

| | I=0.1 | | | I=0.5 | | | I=1.0 | | | I=1.5 | | | I=2.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W= | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 |
| L= 1000 | 0.065 | 0.037 | 0.023 | 1.636 | 0.918 | 0.587 | 6.650 | 3.705 | 2.361 | 15.377 | 8.464 | 5.364 | 28.441 | 15.377 | 9.667 |
| L= 6000 | 0.072 | 0.041 | 0.026 | 1.818 | 1.020 | 0.652 | 7.415 | 4.124 | 2.626 | 17.246 | 9.450 | 5.977 | 32.177 | 17.246 | 10.802 |
| L=12000 | 0.072 | 0.041 | 0.026 | 1.818 | 1.020 | 0.652 | 7.415 | 4.124 | 2.626 | 17.246 | 9.450 | 5.977 | 32.177 | 17.246 | 10.802 |

T(0)=1.4 T(1)=50.0

| | I=0.1 | | | I=0.5 | | | I=1.0 | | | I=1.5 | | | I=2.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W= | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 | 6.0 | 8.0 | 10.0 |
| L= 1000 | 0.140 | 0.079 | 0.051 | 3.552 | 1.987 | 1.269 | 14.739 | 8.113 | 5.142 | 35.363 | 18.904 | 11.826 | 69.272 | 35.363 | 21.700 |
| L= 6000 | 0.145 | 0.081 | 0.052 | 3.660 | 2.047 | 1.307 | 15.227 | 8.369 | 5.300 | 36.718 | 19.550 | 12.210 | 72.562 | 36.718 | 22.456 |
| L=12000 | 0.145 | 0.081 | 0.052 | 3.660 | 2.047 | 1.307 | 15.227 | 8.369 | 5.300 | 36.718 | 19.550 | 12.210 | 72.562 | 36.718 | 22.456 |

# Table VII — Values of max delta $T_{c0}$

T(0)=4.2 T(1)=20.0

| | I=0.5 | | | I=1.0 | | | I=2.0 | | | I=3.0 | | | I=4.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 |
| L= 1000 | 0.160 | 0.103 | 0.071 | 0.643 | 0.411 | 0.285 | 2.587 | 1.651 | 1.144 | 5.886 | 3.740 | 2.587 | 10.629 | 6.716 | 4.631 |
| L= 6000 | 0.303 | 0.194 | 0.135 | 1.217 | 0.778 | 0.540 | 4.940 | 3.140 | 2.172 | 11.391 | 7.175 | 4.940 | 20.980 | 13.041 | 8.917 |
| L=12000 | 0.303 | 0.194 | 0.135 | 1.218 | 0.778 | 0.540 | 4.943 | 3.141 | 2.173 | 11.398 | 7.179 | 4.943 | 20.994 | 13.048 | 8.922 |

T(0)=2.8 T(1)=20.0

| | I=0.5 | | | I=1.0 | | | I=2.0 | | | I=3.0 | | | I=4.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 |
| L= 1000 | 0.294 | 0.188 | 0.130 | 1.178 | 0.753 | 0.522 | 4.770 | 3.035 | 2.101 | 10.957 | 6.919 | 4.770 | 20.065 | 12.532 | 8.590 |
| L= 6000 | 0.455 | 0.291 | 0.202 | 1.831 | 1.169 | 0.811 | 7.486 | 4.741 | 3.274 | 17.486 | 10.921 | 7.486 | 32.841 | 20.086 | 13.620 |
| L=12000 | 0.455 | 0.291 | 0.202 | 1.831 | 1.169 | 0.811 | 7.487 | 4.741 | 3.274 | 17.488 | 10.922 | 7.487 | 32.846 | 20.088 | 13.621 |

T(0)=1.4 T(1)=20.0

| | I=0.5 | | | I=1.0 | | | I=2.0 | | | I=3.0 | | | I=4.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 |
| L= 1000 | 0.747 | 0.478 | 0.332 | 3.014 | 1.921 | 1.331 | 12.453 | 7.845 | 5.402 | 29.650 | 18.287 | 12.453 | 57.358 | 34.227 | 22.924 |
| L= 6000 | 0.912 | 0.583 | 0.405 | 3.689 | 2.349 | 1.626 | 15.427 | 9.662 | 6.633 | 37.557 | 22.824 | 15.427 | 75.428 | 43.619 | 28.783 |
| L=12000 | 0.912 | 0.583 | 0.405 | 3.689 | 2.349 | 1.626 | 15.427 | 9.662 | 6.633 | 37.557 | 22.824 | 15.427 | 75.428 | 43.619 | 28.783 |

T(0)=4.2 T(1)=50.0

| | I=0.5 | | | I=1.0 | | | I=2.0 | | | I=3.0 | | | I=4.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 |
| L= 1000 | 0.179 | 0.115 | 0.080 | 0.718 | 0.459 | 0.319 | 2.892 | 1.845 | 1.279 | 6.580 | 4.181 | 2.892 | 11.882 | 7.507 | 5.177 |
| L= 6000 | 0.339 | 0.217 | 0.151 | 1.361 | 0.869 | 0.603 | 5.522 | 3.510 | 2.428 | 12.734 | 8.021 | 5.522 | 23.453 | 14.578 | 9.968 |
| L=12000 | 0.339 | 0.217 | 0.151 | 1.362 | 0.870 | 0.604 | 5.525 | 3.512 | 2.429 | 12.741 | 8.025 | 5.525 | 23.469 | 14.587 | 9.974 |

T(0)=2.8 T(1)=50.0

| | I=0.5 | | | I=1.0 | | | I=2.0 | | | I=3.0 | | | I=4.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 |
| L= 1000 | 0.328 | 0.210 | 0.146 | 1.317 | 0.842 | 0.584 | 5.333 | 3.393 | 2.349 | 12.249 | 7.735 | 5.333 | 22.430 | 14.009 | 9.602 |
| L= 6000 | 0.509 | 0.326 | 0.226 | 2.047 | 1.307 | 0.906 | 8.369 | 5.300 | 3.660 | 19.548 | 12.209 | 8.369 | 36.713 | 22.454 | 15.226 |
| L=12000 | 0.509 | 0.326 | 0.226 | 2.047 | 1.307 | 0.906 | 8.369 | 5.300 | 3.660 | 19.550 | 12.210 | 8.369 | 36.718 | 22.456 | 15.227 |

T(0)=1.4 T(1)=50.0

| | I=0.5 | | | I=1.0 | | | I=2.0 | | | I=3.0 | | | I=4.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 | W= 20.0 | 25.0 | 30.0 |
| L= 1000 | 0.836 | 0.534 | 0.371 | 3.369 | 2.148 | 1.488 | 13.921 | 8.770 | 6.039 | 33.145 | 20.443 | 13.921 | 64.121 | 38.263 | 25.627 |
| L= 6000 | 1.020 | 0.652 | 0.452 | 4.124 | 2.626 | 1.818 | 17.246 | 10.802 | 7.415 | 41.985 | 25.515 | 17.246 | 84.321 | 48.762 | 32.177 |
| L=12000 | 1.020 | 0.652 | 0.452 | 4.124 | 2.626 | 1.818 | 17.246 | 10.802 | 7.415 | 41.985 | 25.515 | 17.246 | 84.321 | 48.762 | 32.177 |

# Table VIII — Values of max delta $T_{c0}$

T(0)=4.2 T(1)=20.0

| | I=1.0 | | | I=2.0 | | | I=4.0 | | | I=6.0 | | | I=8.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 |
| L= 1000 | 0.061 | 0.039 | 0.027 | 0.242 | 0.155 | 0.108 | 0.972 | 0.621 | 0.431 | 2.195 | 1.401 | 0.972 | 3.925 | 2.500 | 1.732 |
| L= 6000 | 0.294 | 0.188 | 0.131 | 1.179 | 0.754 | 0.523 | 4.781 | 3.040 | 2.104 | 11.007 | 6.941 | 4.781 | 20.221 | 12.596 | 8.622 |
| L=12000 | 0.303 | 0.194 | 0.135 | 1.217 | 0.778 | 0.540 | 4.940 | 3.140 | 2.172 | 11.391 | 7.175 | 4.940 | 20.980 | 13.041 | 8.917 |

T(0)=2.8 T(1)=20.0

| | I=1.0 | | | I=2.0 | | | I=4.0 | | | I=6.0 | | | I=8.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 |
| L= 1000 | 0.126 | 0.080 | 0.056 | 0.503 | 0.322 | 0.224 | 2.024 | 1.292 | 0.896 | 4.592 | 2.923 | 2.024 | 8.261 | 5.235 | 3.616 |
| L= 6000 | 0.450 | 0.288 | 0.200 | 1.808 | 1.154 | 0.801 | 7.387 | 4.680 | 3.232 | 17.234 | 10.773 | 7.387 | 32.300 | 19.789 | 13.430 |
| L=12000 | 0.455 | 0.291 | 0.202 | 1.831 | 1.169 | 0.811 | 7.486 | 4.741 | 3.274 | 17.486 | 10.921 | 7.486 | 32.841 | 20.086 | 13.620 |

T(0)=1.4 T(1)=20.0

| | I=1.0 | | | I=2.0 | | | I=4.0 | | | I=6.0 | | | I=8.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 |
| L= 1000 | 0.407 | 0.261 | 0.181 | 1.637 | 1.045 | 0.725 | 6.656 | 4.226 | 2.922 | 15.406 | 9.680 | 6.656 | 28.533 | 17.655 | 12.042 |
| L= 6000 | 0.911 | 0.582 | 0.404 | 3.683 | 2.345 | 1.624 | 15.399 | 9.646 | 6.622 | 37.467 | 22.778 | 15.399 | 75.157 | 43.506 | 28.721 |
| L=12000 | 0.912 | 0.583 | 0.405 | 3.689 | 2.349 | 1.626 | 15.427 | 9.662 | 6.633 | 37.557 | 22.824 | 15.427 | 75.428 | 43.619 | 28.783 |

T(0)=4.2 T(1)=50.0

| | I=1.0 | | | I=2.0 | | | I=4.0 | | | I=6.0 | | | I=8.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 |
| L= 1000 | 0.068 | 0.043 | 0.030 | 0.271 | 0.173 | 0.120 | 1.086 | 0.694 | 0.482 | 2.454 | 1.566 | 1.086 | 4.387 | 2.795 | 1.936 |
| L= 6000 | 0.329 | 0.210 | 0.146 | 1.318 | 0.842 | 0.585 | 5.345 | 3.399 | 2.352 | 12.305 | 7.759 | 5.345 | 22.605 | 14.081 | 9.638 |
| L=12000 | 0.339 | 0.217 | 0.151 | 1.361 | 0.869 | 0.603 | 5.522 | 3.510 | 2.428 | 12.734 | 8.021 | 5.522 | 23.453 | 14.578 | 9.968 |

T(0)=2.8 T(1)=50.0

| | I=1.0 | | | I=2.0 | | | I=4.0 | | | I=6.0 | | | I=8.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 |
| L= 1000 | 0.141 | 0.090 | 0.062 | 0.563 | 0.360 | 0.250 | 2.262 | 1.444 | 1.002 | 5.133 | 3.267 | 2.262 | 9.235 | 5.853 | 4.043 |
| L= 6000 | 0.503 | 0.322 | 0.223 | 2.021 | 1.291 | 0.895 | 8.258 | 5.232 | 3.613 | 19.266 | 12.043 | 8.258 | 36.108 | 22.122 | 15.013 |
| L=12000 | 0.509 | 0.326 | 0.226 | 2.047 | 1.307 | 0.906 | 8.369 | 5.300 | 3.660 | 19.548 | 12.209 | 8.369 | 36.713 | 22.454 | 15.226 |

T(0)=1.4 T(1)=50.0

| | I=1.0 | | | I=2.0 | | | I=4.0 | | | I=6.0 | | | I=8.0 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 | W= 80.0 | 100.0 | 120.0 |
| L= 1000 | 0.456 | 0.291 | 0.202 | 1.830 | 1.169 | 0.811 | 7.441 | 4.724 | 3.267 | 17.223 | 10.821 | 7.441 | 31.898 | 19.736 | 13.462 |
| L= 6000 | 1.018 | 0.651 | 0.452 | 4.117 | 2.622 | 1.815 | 17.214 | 10.783 | 7.403 | 41.884 | 25.463 | 17.214 | 84.018 | 48.636 | 32.107 |
| L=12000 | 1.020 | 0.652 | 0.452 | 4.124 | 2.626 | 1.818 | 17.246 | 10.802 | 7.415 | 41.985 | 25.515 | 17.246 | 84.321 | 48.762 | 32.177 |

# Table IX — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 0.1 T(0) =4.2 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 1.000 | 1.019 | 1.027 | 1.103 | 1.517 | 1.000 | 1.026 | 1.036 | 1.137 | 1.685 | 1.000 | 1.032 | 1.044 | 1.170 | 1.852 |
| L(C)=2W L= 6000 | 1.000 | 1.016 | 1.023 | 1.087 | 1.434 | 1.000 | 1.022 | 1.030 | 1.115 | 1.576 | 1.000 | 1.027 | 1.037 | 1.143 | 1.717 |
| L(C)=2W L=12000 | 1.000 | 1.016 | 1.023 | 1.087 | 1.434 | 1.000 | 1.022 | 1.030 | 1.115 | 1.576 | 1.000 | 1.027 | 1.037 | 1.143 | 1.717 |
| L(C)=4W L= 1000 | 1.000 | 1.038 | 1.053 | 1.204 | 2.018 | 1.000 | 1.050 | 1.070 | 1.269 | 2.344 | 1.000 | 1.062 | 1.086 | 1.333 | 2.663 |
| L(C)=4W L= 6000 | 1.000 | 1.032 | 1.044 | 1.171 | 1.856 | 1.000 | 1.042 | 1.059 | 1.226 | 2.131 | 1.000 | 1.052 | 1.073 | 1.280 | 2.400 |
| L(C)=4W L=12000 | 1.000 | 1.032 | 1.044 | 1.171 | 1.856 | 1.000 | 1.042 | 1.059 | 1.226 | 2.131 | 1.000 | 1.052 | 1.073 | 1.280 | 2.400 |
| L(C)=6W L= 1000 | 1.000 | 1.056 | 1.078 | 1.301 | 2.505 | 1.000 | 1.074 | 1.102 | 1.395 | 2.977 | 1.000 | 1.091 | 1.126 | 1.487 | 3.435 |
| L(C)=6W L= 6000 | 1.000 | 1.047 | 1.066 | 1.253 | 2.266 | 1.000 | 1.062 | 1.086 | 1.333 | 2.664 | 1.000 | 1.077 | 1.106 | 1.410 | 3.050 |
| L(C)=6W L=12000 | 1.000 | 1.047 | 1.066 | 1.253 | 2.266 | 1.000 | 1.062 | 1.086 | 1.333 | 2.664 | 1.000 | 1.077 | 1.106 | 1.410 | 3.050 |
| L(C)=8W L= 1000 | 1.000 | 1.074 | 1.102 | 1.395 | 2.977 | 1.000 | 1.097 | 1.134 | 1.517 | 3.585 | 1.000 | 1.119 | 1.164 | 1.634 | 4.169 |
| L(C)=8W L= 6000 | 1.000 | 1.062 | 1.086 | 1.333 | 2.664 | 1.000 | 1.082 | 1.113 | 1.435 | 3.177 | 1.000 | 1.100 | 1.138 | 1.534 | 3.669 |
| L(C)=8W L=12000 | 1.000 | 1.062 | 1.086 | 1.333 | 2.664 | 1.000 | 1.082 | 1.113 | 1.435 | 3.177 | 1.000 | 1.100 | 1.138 | 1.534 | 3.669 |

I= 0.1 T(0) =2.8 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 1.000 | 1.022 | 1.030 | 1.117 | 1.586 | 1.000 | 1.029 | 1.040 | 1.155 | 1.777 | 1.000 | 1.036 | 1.050 | 1.193 | 1.965 |
| L(C)=2W L= 6000 | 1.000 | 1.020 | 1.028 | 1.106 | 1.530 | 1.000 | 1.026 | 1.036 | 1.141 | 1.703 | 1.000 | 1.033 | 1.045 | 1.175 | 1.873 |
| L(C)=2W L=12000 | 1.000 | 1.020 | 1.028 | 1.106 | 1.530 | 1.000 | 1.026 | 1.036 | 1.141 | 1.703 | 1.000 | 1.033 | 1.045 | 1.175 | 1.873 |
| L(C)=4W L= 1000 | 1.000 | 1.043 | 1.060 | 1.230 | 2.151 | 1.000 | 1.057 | 1.079 | 1.303 | 2.517 | 1.000 | 1.070 | 1.097 | 1.375 | 2.873 |
| L(C)=4W L= 6000 | 1.000 | 1.039 | 1.054 | 1.208 | 2.042 | 1.000 | 1.051 | 1.071 | 1.275 | 2.373 | 1.000 | 1.064 | 1.088 | 1.339 | 2.696 |
| L(C)=4W L=12000 | 1.000 | 1.039 | 1.054 | 1.208 | 2.042 | 1.000 | 1.051 | 1.071 | 1.275 | 2.373 | 1.000 | 1.064 | 1.088 | 1.339 | 2.696 |
| L(C)=6W L= 1000 | 1.000 | 1.064 | 1.088 | 1.339 | 2.697 | 1.000 | 1.083 | 1.115 | 1.444 | 3.222 | 1.000 | 1.102 | 1.141 | 1.546 | 3.729 |
| L(C)=6W L= 6000 | 1.000 | 1.058 | 1.080 | 1.307 | 2.536 | 1.000 | 1.075 | 1.104 | 1.402 | 3.012 | 1.000 | 1.093 | 1.128 | 1.494 | 3.471 |
| L(C)=6W L=12000 | 1.000 | 1.058 | 1.080 | 1.307 | 2.536 | 1.000 | 1.075 | 1.104 | 1.402 | 3.012 | 1.000 | 1.093 | 1.128 | 1.494 | 3.471 |
| L(C)=8W L= 1000 | 1.000 | 1.083 | 1.115 | 1.444 | 3.223 | 1.000 | 1.109 | 1.150 | 1.579 | 3.894 | 1.000 | 1.133 | 1.183 | 1.707 | 4.534 |
| L(C)=8W L= 6000 | 1.000 | 1.075 | 1.104 | 1.402 | 3.013 | 1.000 | 1.098 | 1.136 | 1.524 | 3.621 | 1.000 | 1.120 | 1.166 | 1.640 | 4.201 |
| L(C)=8W L=12000 | 1.000 | 1.075 | 1.104 | 1.402 | 3.013 | 1.000 | 1.098 | 1.136 | 1.524 | 3.621 | 1.000 | 1.120 | 1.166 | 1.640 | 4.201 |

I= 0.1 T(0) =1.4 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 1.000 | 1.029 | 1.040 | 1.153 | 1.767 | 1.000 | 1.038 | 1.053 | 1.203 | 2.013 | 1.000 | 1.047 | 1.065 | 1.251 | 2.256 |
| L(C)=2W L= 6000 | 1.000 | 1.028 | 1.039 | 1.149 | 1.745 | 1.000 | 1.037 | 1.051 | 1.197 | 1.985 | 1.000 | 1.046 | 1.063 | 1.244 | 2.220 |
| L(C)=2W L=12000 | 1.000 | 1.028 | 1.039 | 1.149 | 1.745 | 1.000 | 1.037 | 1.051 | 1.197 | 1.985 | 1.000 | 1.046 | 1.063 | 1.244 | 2.220 |
| L(C)=4W L= 1000 | 1.000 | 1.056 | 1.078 | 1.299 | 2.496 | 1.000 | 1.073 | 1.102 | 1.392 | 2.961 | 1.000 | 1.090 | 1.125 | 1.482 | 3.410 |
| L(C)=4W L= 6000 | 1.000 | 1.054 | 1.075 | 1.290 | 2.453 | 1.000 | 1.071 | 1.099 | 1.381 | 2.905 | 1.000 | 1.088 | 1.121 | 1.468 | 3.342 |
| L(C)=4W L=12000 | 1.000 | 1.054 | 1.075 | 1.290 | 2.453 | 1.000 | 1.071 | 1.099 | 1.381 | 2.905 | 1.000 | 1.088 | 1.121 | 1.468 | 3.342 |
| L(C)=6W L= 1000 | 1.000 | 1.082 | 1.113 | 1.437 | 3.189 | 1.000 | 1.107 | 1.147 | 1.569 | 3.846 | 1.000 | 1.130 | 1.180 | 1.694 | 4.471 |
| L(C)=6W L= 6000 | 1.000 | 1.080 | 1.110 | 1.425 | 3.127 | 1.000 | 1.104 | 1.143 | 1.553 | 3.766 | 1.000 | 1.126 | 1.175 | 1.674 | 4.373 |
| L(C)=6W L=12000 | 1.000 | 1.080 | 1.110 | 1.425 | 3.127 | 1.000 | 1.104 | 1.143 | 1.553 | 3.766 | 1.000 | 1.126 | 1.175 | 1.674 | 4.373 |
| L(C)=8W L= 1000 | 1.000 | 1.107 | 1.148 | 1.569 | 3.848 | 1.000 | 1.138 | 1.190 | 1.734 | 4.674 | 1.000 | 1.167 | 1.230 | 1.889 | 5.446 |
| L(C)=8W L= 6000 | 1.000 | 1.104 | 1.143 | 1.553 | 3.768 | 1.000 | 1.134 | 1.185 | 1.713 | 4.570 | 1.000 | 1.162 | 1.224 | 1.864 | 5.320 |
| L(C)=8W L=12000 | 1.000 | 1.104 | 1.143 | 1.553 | 3.768 | 1.000 | 1.134 | 1.185 | 1.713 | 4.570 | 1.000 | 1.162 | 1.224 | 1.864 | 5.320 |

# Table X — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 0.5 T(0)=4.2 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 1.000 | 1.019 | 1.027 | 1.104 | 1.519 | 1.000 | 1.026 | 1.036 | 1.137 | 1.687 | 1.000 | 1.032 | 1.044 | 1.171 | 1.854 |
| L(C)=2W L= 6000 | 1.000 | 1.016 | 1.023 | 1.087 | 1.436 | 1.000 | 1.022 | 1.030 | 1.115 | 1.578 | 1.000 | 1.027 | 1.037 | 1.144 | 1.718 |
| L(C)=2W L=12000 | 1.000 | 1.016 | 1.023 | 1.087 | 1.436 | 1.000 | 1.022 | 1.030 | 1.115 | 1.578 | 1.000 | 1.027 | 1.037 | 1.144 | 1.718 |
| L(C)=4W L= 1000 | 1.000 | 1.038 | 1.053 | 1.204 | 2.024 | 1.000 | 1.050 | 1.070 | 1.269 | 2.349 | 1.000 | 1.062 | 1.086 | 1.333 | 2.668 |
| L(C)=4W L= 6000 | 1.000 | 1.032 | 1.045 | 1.172 | 1.861 | 1.000 | 1.042 | 1.059 | 1.227 | 2.135 | 1.000 | 1.053 | 1.073 | 1.280 | 2.404 |
| L(C)=4W L=12000 | 1.000 | 1.032 | 1.045 | 1.172 | 1.861 | 1.000 | 1.042 | 1.059 | 1.227 | 2.135 | 1.000 | 1.053 | 1.073 | 1.280 | 2.404 |
| L(C)=6W L= 1000 | 1.000 | 1.057 | 1.078 | 1.302 | 2.516 | 1.000 | 1.074 | 1.103 | 1.396 | 2.987 | 1.000 | 1.091 | 1.126 | 1.488 | 3.444 |
| L(C)=6W L= 6000 | 1.000 | 1.048 | 1.066 | 1.254 | 2.275 | 1.000 | 1.062 | 1.086 | 1.333 | 2.672 | 1.000 | 1.077 | 1.106 | 1.411 | 3.058 |
| L(C)=6W L=12000 | 1.000 | 1.048 | 1.066 | 1.254 | 2.275 | 1.000 | 1.062 | 1.086 | 1.333 | 2.672 | 1.000 | 1.077 | 1.106 | 1.411 | 3.058 |
| L(C)=8W L= 1000 | 1.000 | 1.074 | 1.103 | 1.397 | 2.995 | 1.000 | 1.097 | 1.134 | 1.518 | 3.601 | 1.000 | 1.119 | 1.164 | 1.635 | 4.184 |
| L(C)=8W L= 6000 | 1.000 | 1.063 | 1.086 | 1.334 | 2.679 | 1.000 | 1.082 | 1.113 | 1.436 | 3.190 | 1.000 | 1.100 | 1.139 | 1.535 | 3.682 |
| L(C)=8W L=12000 | 1.000 | 1.063 | 1.086 | 1.334 | 2.679 | 1.000 | 1.082 | 1.113 | 1.436 | 3.190 | 1.000 | 1.100 | 1.139 | 1.535 | 3.682 |

I= 0.5 T(0)=2.8 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 1.000 | 1.022 | 1.030 | 1.118 | 1.590 | 1.000 | 1.029 | 1.040 | 1.156 | 1.780 | 1.000 | 1.035 | 1.050 | 1.193 | 1.968 |
| L(C)=2W L= 6000 | 1.000 | 1.020 | 1.028 | 1.106 | 1.534 | 1.000 | 1.026 | 1.037 | 1.141 | 1.706 | 1.000 | 1.033 | 1.045 | 1.175 | 1.876 |
| L(C)=2W L=12000 | 1.000 | 1.020 | 1.028 | 1.106 | 1.534 | 1.000 | 1.026 | 1.037 | 1.141 | 1.706 | 1.000 | 1.033 | 1.045 | 1.175 | 1.876 |
| L(C)=4W L= 1000 | 1.000 | 1.043 | 1.060 | 1.231 | 2.163 | 1.000 | 1.057 | 1.079 | 1.304 | 2.527 | 1.000 | 1.070 | 1.097 | 1.375 | 2.883 |
| L(C)=4W L= 6000 | 1.000 | 1.039 | 1.054 | 1.209 | 2.052 | 1.000 | 1.052 | 1.071 | 1.275 | 2.382 | 1.000 | 1.064 | 1.088 | 1.340 | 2.704 |
| L(C)=4W L=12000 | 1.000 | 1.039 | 1.054 | 1.209 | 2.052 | 1.000 | 1.052 | 1.071 | 1.275 | 2.382 | 1.000 | 1.064 | 1.088 | 1.340 | 2.704 |
| L(C)=6W L= 1000 | 1.000 | 1.064 | 1.088 | 1.341 | 2.718 | 1.000 | 1.083 | 1.115 | 1.446 | 3.242 | 1.000 | 1.102 | 1.142 | 1.547 | 3.747 |
| L(C)=6W L= 6000 | 1.000 | 1.058 | 1.080 | 1.309 | 2.555 | 1.000 | 1.076 | 1.105 | 1.404 | 3.029 | 1.000 | 1.093 | 1.128 | 1.495 | 3.487 |
| L(C)=6W L=12000 | 1.000 | 1.058 | 1.080 | 1.309 | 2.555 | 1.000 | 1.076 | 1.105 | 1.404 | 3.029 | 1.000 | 1.093 | 1.128 | 1.495 | 3.487 |
| L(C)=8W L= 1000 | 1.000 | 1.084 | 1.116 | 1.447 | 3.258 | 1.000 | 1.109 | 1.150 | 1.581 | 3.926 | 1.000 | 1.133 | 1.184 | 1.709 | 4.563 |
| L(C)=8W L= 6000 | 1.000 | 1.076 | 1.105 | 1.405 | 3.044 | 1.000 | 1.098 | 1.136 | 1.526 | 3.649 | 1.000 | 1.120 | 1.166 | 1.642 | 4.227 |
| L(C)=8W L=12000 | 1.000 | 1.076 | 1.105 | 1.405 | 3.044 | 1.000 | 1.098 | 1.136 | 1.526 | 3.649 | 1.000 | 1.120 | 1.166 | 1.642 | 4.227 |

I= 0.5 T(0)=1.4 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 1.000 | 1.029 | 1.040 | 1.155 | 1.779 | 1.000 | 1.038 | 1.053 | 1.204 | 2.024 | 1.000 | 1.047 | 1.065 | 1.252 | 2.266 |
| L(C)=2W L= 6000 | 1.000 | 1.028 | 1.039 | 1.150 | 1.756 | 1.000 | 1.037 | 1.051 | 1.198 | 1.995 | 1.000 | 1.046 | 1.063 | 1.245 | 2.230 |
| L(C)=2W L=12000 | 1.000 | 1.028 | 1.039 | 1.150 | 1.756 | 1.000 | 1.037 | 1.051 | 1.198 | 1.995 | 1.000 | 1.046 | 1.063 | 1.245 | 2.230 |
| L(C)=4W L= 1000 | 1.000 | 1.056 | 1.078 | 1.302 | 2.533 | 1.000 | 1.074 | 1.102 | 1.395 | 2.994 | 1.000 | 1.091 | 1.125 | 1.484 | 3.441 |
| L(C)=4W L= 6000 | 1.000 | 1.055 | 1.076 | 1.293 | 2.489 | 1.000 | 1.072 | 1.099 | 1.383 | 2.937 | 1.000 | 1.083 | 1.122 | 1.470 | 3.372 |
| L(C)=4W L=12000 | 1.000 | 1.055 | 1.076 | 1.293 | 2.489 | 1.000 | 1.072 | 1.099 | 1.383 | 2.937 | 1.000 | 1.088 | 1.122 | 1.470 | 3.372 |
| L(C)=6W L= 1000 | 1.000 | 1.083 | 1.114 | 1.443 | 3.262 | 1.000 | 1.107 | 1.148 | 1.573 | 3.912 | 1.000 | 1.131 | 1.180 | 1.698 | 4.531 |
| L(C)=6W L= 6000 | 1.000 | 1.080 | 1.111 | 1.430 | 3.197 | 1.000 | 1.104 | 1.144 | 1.557 | 3.829 | 1.000 | 1.127 | 1.175 | 1.678 | 4.430 |
| L(C)=6W L=12000 | 1.000 | 1.080 | 1.111 | 1.430 | 3.197 | 1.000 | 1.104 | 1.144 | 1.557 | 3.829 | 1.000 | 1.127 | 1.175 | 1.678 | 4.430 |
| L(C)=8W L= 1000 | 1.000 | 1.108 | 1.149 | 1.577 | 3.967 | 1.000 | 1.138 | 1.191 | 1.741 | 4.779 | 1.000 | 1.167 | 1.231 | 1.894 | 5.540 |
| L(C)=8W L= 6000 | 1.000 | 1.104 | 1.145 | 1.560 | 3.882 | 1.000 | 1.134 | 1.186 | 1.720 | 4.671 | 1.000 | 1.162 | 1.225 | 1.869 | 5.411 |
| L(C)=8W L=12000 | 1.000 | 1.104 | 1.145 | 1.560 | 3.882 | 1.000 | 1.134 | 1.186 | 1.720 | 4.671 | 1.000 | 1.162 | 1.225 | 1.869 | 5.411 |

# Table XI — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 1.0 T(0) =4.2 T(1) =20.0 (OR ANY OTHER VALUE)

| W(C)/W= | W= 6.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | W= 8.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | W= 10.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L(C)=2W L= 1000 | 1.000 | 1.020 | 1.027 | 1.104 | 1.525 | 1.000 | 1.026 | 1.036 | 1.138 | 1.693 | 1.000 | 1.032 | 1.044 | 1.171 | 1.859 |
| L(C)=2W L= 6000 | 1.000 | 1.016 | 1.023 | 1.088 | 1.441 | 1.000 | 1.022 | 1.030 | 1.116 | 1.582 | 1.000 | 1.027 | 1.037 | 1.144 | 1.722 |
| L(C)=2W L=12000 | 1.000 | 1.016 | 1.023 | 1.088 | 1.441 | 1.000 | 1.022 | 1.030 | 1.116 | 1.582 | 1.000 | 1.027 | 1.037 | 1.144 | 1.722 |
| L(C)=4W L= 1000 | 1.000 | 1.039 | 1.053 | 1.206 | 2.042 | 1.000 | 1.051 | 1.070 | 1.271 | 2.365 | 1.000 | 1.063 | 1.087 | 1.334 | 2.683 |
| L(C)=4W L= 6000 | 1.000 | 1.032 | 1.045 | 1.173 | 1.876 | 1.000 | 1.043 | 1.059 | 1.228 | 2.149 | 1.000 | 1.053 | 1.073 | 1.281 | 2.416 |
| L(C)=4W L=12000 | 1.000 | 1.032 | 1.045 | 1.173 | 1.876 | 1.000 | 1.043 | 1.059 | 1.228 | 2.149 | 1.000 | 1.053 | 1.073 | 1.281 | 2.416 |
| L(C)=6W L= 1000 | 1.000 | 1.057 | 1.079 | 1.305 | 2.551 | 1.000 | 1.075 | 1.103 | 1.399 | 3.018 | 1.000 | 1.092 | 1.127 | 1.490 | 3.473 |
| L(C)=6W L= 6000 | 1.000 | 1.048 | 1.066 | 1.257 | 2.305 | 1.000 | 1.063 | 1.087 | 1.335 | 2.699 | 1.000 | 1.077 | 1.107 | 1.412 | 3.082 |
| L(C)=6W L=12000 | 1.000 | 1.048 | 1.066 | 1.257 | 2.305 | 1.000 | 1.063 | 1.087 | 1.335 | 2.699 | 1.000 | 1.077 | 1.107 | 1.412 | 3.082 |
| L(C)=8W L= 1000 | 1.000 | 1.075 | 1.104 | 1.401 | 3.052 | 1.000 | 1.098 | 1.135 | 1.522 | 3.652 | 1.000 | 1.119 | 1.165 | 1.638 | 4.230 |
| L(C)=8W L= 6000 | 1.000 | 1.063 | 1.087 | 1.338 | 2.727 | 1.000 | 1.082 | 1.114 | 1.439 | 3.233 | 1.000 | 1.100 | 1.139 | 1.537 | 3.721 |
| L(C)=8W L=12000 | 1.000 | 1.063 | 1.087 | 1.338 | 2.727 | 1.000 | 1.082 | 1.114 | 1.439 | 3.233 | 1.000 | 1.100 | 1.139 | 1.537 | 3.721 |

I= 1.0 T(0) =2.8 T(1) =20.0 (OR ANY OTHER VALUE)

| W(C)/W= | W= 6.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | W= 8.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | W= 10.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L(C)=2W L= 1000 | 1.000 | 1.022 | 1.031 | 1.119 | 1.602 | 1.000 | 1.029 | 1.041 | 1.157 | 1.791 | 1.000 | 1.036 | 1.050 | 1.194 | 1.978 |
| L(C)=2W L= 6000 | 1.000 | 1.020 | 1.028 | 1.108 | 1.545 | 1.000 | 1.027 | 1.037 | 1.142 | 1.715 | 1.000 | 1.033 | 1.046 | 1.176 | 1.885 |
| L(C)=2W L=12000 | 1.000 | 1.020 | 1.028 | 1.108 | 1.545 | 1.000 | 1.027 | 1.037 | 1.142 | 1.715 | 1.000 | 1.033 | 1.046 | 1.176 | 1.885 |
| L(C)=4W L= 1000 | 1.000 | 1.044 | 1.061 | 1.235 | 2.199 | 1.000 | 1.057 | 1.079 | 1.307 | 2.559 | 1.000 | 1.071 | 1.098 | 1.378 | 2.912 |
| L(C)=4W L= 6000 | 1.000 | 1.040 | 1.055 | 1.212 | 2.085 | 1.000 | 1.052 | 1.072 | 1.278 | 2.411 | 1.000 | 1.064 | 1.088 | 1.342 | 2.731 |
| L(C)=4W L=12000 | 1.000 | 1.040 | 1.055 | 1.212 | 2.085 | 1.000 | 1.052 | 1.072 | 1.278 | 2.411 | 1.000 | 1.064 | 1.088 | 1.342 | 2.731 |
| L(C)=6W L= 1000 | 1.000 | 1.065 | 1.089 | 1.347 | 2.790 | 1.000 | 1.084 | 1.116 | 1.451 | 3.305 | 1.000 | 1.103 | 1.142 | 1.551 | 3.805 |
| L(C)=6W L= 6000 | 1.000 | 1.058 | 1.081 | 1.314 | 2.619 | 1.000 | 1.076 | 1.105 | 1.408 | 3.086 | 1.000 | 1.093 | 1.129 | 1.499 | 3.539 |
| L(C)=6W L=12000 | 1.000 | 1.058 | 1.081 | 1.314 | 2.619 | 1.000 | 1.076 | 1.105 | 1.408 | 3.086 | 1.000 | 1.093 | 1.129 | 1.499 | 3.539 |
| L(C)=8W L= 1000 | 1.000 | 1.085 | 1.117 | 1.456 | 3.375 | 1.000 | 1.110 | 1.152 | 1.588 | 4.028 | 1.000 | 1.133 | 1.184 | 1.715 | 4.656 |
| L(C)=8W L= 6000 | 1.000 | 1.077 | 1.106 | 1.412 | 3.148 | 1.000 | 1.099 | 1.137 | 1.532 | 3.741 | 1.000 | 1.121 | 1.167 | 1.647 | 4.311 |
| L(C)=8W L=12000 | 1.000 | 1.077 | 1.106 | 1.412 | 3.148 | 1.000 | 1.099 | 1.137 | 1.532 | 3.741 | 1.000 | 1.121 | 1.167 | 1.647 | 4.311 |

I= 1.0 T(0) =1.4 T(1) =20.0 (OR ANY OTHER VALUE)

| W(C)/W= | W= 6.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | W= 8.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | W= 10.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L(C)=2W L= 1000 | 1.000 | 1.030 | 1.041 | 1.159 | 1.820 | 1.000 | 1.039 | 1.053 | 1.207 | 2.059 | 1.000 | 1.048 | 1.066 | 1.255 | 2.297 |
| L(C)=2W L= 6000 | 1.000 | 1.029 | 1.040 | 1.154 | 1.795 | 1.000 | 1.038 | 1.052 | 1.201 | 2.028 | 1.000 | 1.046 | 1.064 | 1.247 | 2.260 |
| L(C)=2W L=12000 | 1.000 | 1.029 | 1.040 | 1.154 | 1.795 | 1.000 | 1.038 | 1.052 | 1.201 | 2.028 | 1.000 | 1.046 | 1.064 | 1.247 | 2.260 |
| L(C)=4W L= 1000 | 1.000 | 1.058 | 1.080 | 1.312 | 2.662 | 1.000 | 1.075 | 1.104 | 1.403 | 3.106 | 1.000 | 1.091 | 1.127 | 1.491 | 3.542 |
| L(C)=4W L= 6000 | 1.000 | 1.056 | 1.078 | 1.303 | 2.613 | 1.000 | 1.073 | 1.101 | 1.391 | 3.044 | 1.000 | 1.089 | 1.123 | 1.477 | 3.469 |
| L(C)=4W L=12000 | 1.000 | 1.056 | 1.078 | 1.303 | 2.613 | 1.000 | 1.073 | 1.101 | 1.391 | 3.044 | 1.000 | 1.089 | 1.123 | 1.477 | 3.469 |
| L(C)=6W L= 1000 | 1.000 | 1.085 | 1.117 | 1.460 | 3.526 | 1.000 | 1.109 | 1.151 | 1.588 | 4.136 | 1.000 | 1.132 | 1.182 | 1.710 | 4.731 |
| L(C)=6W L= 6000 | 1.000 | 1.082 | 1.114 | 1.447 | 3.451 | 1.000 | 1.106 | 1.146 | 1.570 | 4.045 | 1.000 | 1.128 | 1.177 | 1.689 | 4.623 |
| L(C)=6W L=12000 | 1.000 | 1.082 | 1.114 | 1.447 | 3.451 | 1.000 | 1.106 | 1.146 | 1.570 | 4.045 | 1.000 | 1.128 | 1.177 | 1.689 | 4.623 |
| L(C)=8W L= 1000 | 1.000 | 1.111 | 1.153 | 1.603 | 4.409 | 1.000 | 1.141 | 1.195 | 1.762 | 5.148 | 1.000 | 1.169 | 1.234 | 1.912 | 5.863 |
| L(C)=8W L= 6000 | 1.000 | 1.107 | 1.149 | 1.585 | 4.308 | 1.000 | 1.136 | 1.189 | 1.740 | 5.027 | 1.000 | 1.164 | 1.227 | 1.886 | 5.723 |
| L(C)=8W L=12000 | 1.000 | 1.107 | 1.149 | 1.585 | 4.308 | 1.000 | 1.136 | 1.189 | 1.740 | 5.027 | 1.000 | 1.164 | 1.227 | 1.886 | 5.723 |

# Table XII — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 1.5 T(0)=4.2 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 1.000 | 1.020 | 1.027 | 1.106 | 1.536 | 1.000 | 1.026 | 1.036 | 1.139 | 1.702 | 1.000 | 1.032 | 1.045 | 1.172 | 1.867 |
| L(C)=2W L= 6000 | 1.000 | 1.017 | 1.023 | 1.089 | 1.451 | 1.000 | 1.022 | 1.030 | 1.117 | 1.590 | 1.000 | 1.027 | 1.037 | 1.145 | 1.729 |
| L(C)=2W L=12000 | 1.000 | 1.017 | 1.023 | 1.089 | 1.451 | 1.000 | 1.022 | 1.030 | 1.117 | 1.590 | 1.000 | 1.027 | 1.037 | 1.145 | 1.729 |
| L(C)=4W L= 1000 | 1.000 | 1.039 | 1.054 | 1.209 | 2.075 | 1.000 | 1.051 | 1.071 | 1.273 | 2.393 | 1.000 | 1.063 | 1.087 | 1.336 | 2.708 |
| L(C)=4W L= 6000 | 1.000 | 1.033 | 1.045 | 1.176 | 1.903 | 1.000 | 1.043 | 1.059 | 1.230 | 2.172 | 1.000 | 1.053 | 1.073 | 1.283 | 2.437 |
| L(C)=4W L=12000 | 1.000 | 1.033 | 1.045 | 1.176 | 1.903 | 1.000 | 1.043 | 1.059 | 1.230 | 2.172 | 1.000 | 1.053 | 1.073 | 1.283 | 2.437 |
| L(C)=6W L= 1000 | 1.000 | 1.058 | 1.080 | 1.310 | 2.614 | 1.000 | 1.075 | 1.104 | 1.403 | 3.073 | 1.000 | 1.092 | 1.127 | 1.493 | 3.523 |
| L(C)=6W L= 6000 | 1.000 | 1.049 | 1.067 | 1.261 | 2.358 | 1.000 | 1.063 | 1.087 | 1.339 | 2.745 | 1.000 | 1.078 | 1.107 | 1.415 | 3.124 |
| L(C)=6W L=12000 | 1.000 | 1.049 | 1.067 | 1.261 | 2.358 | 1.000 | 1.063 | 1.087 | 1.339 | 2.745 | 1.000 | 1.078 | 1.107 | 1.415 | 3.124 |
| L(C)=8W L= 1000 | 1.000 | 1.076 | 1.105 | 1.409 | 3.155 | 1.000 | 1.098 | 1.136 | 1.528 | 3.741 | 1.000 | 1.120 | 1.166 | 1.643 | 4.311 |
| L(C)=8W L= 6000 | 1.000 | 1.064 | 1.088 | 1.344 | 2.813 | 1.000 | 1.083 | 1.114 | 1.444 | 3.308 | 1.000 | 1.101 | 1.140 | 1.542 | 3.789 |
| L(C)=8W L=12000 | 1.000 | 1.064 | 1.088 | 1.344 | 2.813 | 1.000 | 1.083 | 1.114 | 1.444 | 3.308 | 1.000 | 1.101 | 1.140 | 1.542 | 3.789 |

I= 1.5 T(0)=2.8 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 1.000 | 1.023 | 1.031 | 1.122 | 1.625 | 1.000 | 1.030 | 1.041 | 1.159 | 1.809 | 1.000 | 1.037 | 1.051 | 1.196 | 1.994 |
| L(C)=2W L= 6000 | 1.000 | 1.021 | 1.028 | 1.110 | 1.564 | 1.000 | 1.027 | 1.037 | 1.144 | 1.731 | 1.000 | 1.033 | 1.046 | 1.177 | 1.899 |
| L(C)=2W L=12000 | 1.000 | 1.021 | 1.028 | 1.110 | 1.564 | 1.000 | 1.027 | 1.037 | 1.144 | 1.731 | 1.000 | 1.033 | 1.046 | 1.177 | 1.899 |
| L(C)=4W L= 1000 | 1.000 | 1.045 | 1.062 | 1.241 | 2.266 | 1.000 | 1.058 | 1.080 | 1.312 | 2.616 | 1.000 | 1.071 | 1.098 | 1.382 | 2.963 |
| L(C)=4W L= 6000 | 1.000 | 1.040 | 1.056 | 1.217 | 2.143 | 1.000 | 1.052 | 1.073 | 1.282 | 2.461 | 1.000 | 1.064 | 1.089 | 1.345 | 2.776 |
| L(C)=4W L=12000 | 1.000 | 1.040 | 1.056 | 1.217 | 2.143 | 1.000 | 1.052 | 1.073 | 1.282 | 2.461 | 1.000 | 1.064 | 1.089 | 1.345 | 2.776 |
| L(C)=6W L= 1000 | 1.000 | 1.066 | 1.091 | 1.357 | 2.924 | 1.000 | 1.085 | 1.118 | 1.459 | 3.419 | 1.000 | 1.104 | 1.144 | 1.558 | 3.907 |
| L(C)=6W L= 6000 | 1.000 | 1.060 | 1.082 | 1.322 | 2.738 | 1.000 | 1.077 | 1.106 | 1.415 | 3.188 | 1.000 | 1.094 | 1.130 | 1.505 | 3.630 |
| L(C)=6W L=12000 | 1.000 | 1.060 | 1.082 | 1.322 | 2.738 | 1.000 | 1.077 | 1.106 | 1.415 | 3.188 | 1.000 | 1.094 | 1.130 | 1.505 | 3.630 |
| L(C)=8W L= 1000 | 1.000 | 1.087 | 1.120 | 1.471 | 3.599 | 1.000 | 1.111 | 1.154 | 1.600 | 4.216 | 1.000 | 1.134 | 1.186 | 1.725 | 4.823 |
| L(C)=8W L= 6000 | 1.000 | 1.078 | 1.108 | 1.425 | 3.348 | 1.000 | 1.100 | 1.139 | 1.542 | 3.910 | 1.000 | 1.122 | 1.168 | 1.656 | 4.460 |
| L(C)=8W L=12000 | 1.000 | 1.078 | 1.108 | 1.425 | 3.348 | 1.000 | 1.100 | 1.139 | 1.542 | 3.910 | 1.000 | 1.122 | 1.168 | 1.656 | 4.460 |

I= 1.5 T(0)=1.4 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 1.000 | 1.031 | 1.043 | 1.167 | 1.899 | 1.000 | 1.039 | 1.055 | 1.213 | 2.123 | 1.000 | 1.048 | 1.067 | 1.260 | 2.354 |
| L(C)=2W L= 6000 | 1.000 | 1.030 | 1.041 | 1.161 | 1.870 | 1.000 | 1.038 | 1.053 | 1.206 | 2.089 | 1.000 | 1.047 | 1.065 | 1.252 | 2.314 |
| L(C)=2W L=12000 | 1.000 | 1.030 | 1.041 | 1.161 | 1.870 | 1.000 | 1.038 | 1.053 | 1.206 | 2.089 | 1.000 | 1.047 | 1.065 | 1.252 | 2.314 |
| L(C)=4W L= 1000 | 1.000 | 1.060 | 1.084 | 1.331 | 2.936 | 1.000 | 1.077 | 1.106 | 1.417 | 3.323 | 1.000 | 1.093 | 1.129 | 1.503 | 3.730 |
| L(C)=4W L= 6000 | 1.000 | 1.058 | 1.081 | 1.321 | 2.874 | 1.000 | 1.074 | 1.103 | 1.405 | 3.253 | 1.000 | 1.090 | 1.125 | 1.488 | 3.649 |
| L(C)=4W L=12000 | 1.000 | 1.058 | 1.081 | 1.321 | 2.874 | 1.000 | 1.074 | 1.103 | 1.405 | 3.253 | 1.000 | 1.090 | 1.125 | 1.488 | 3.649 |
| L(C)=6W L= 1000 | 1.000 | 1.089 | 1.123 | 1.493 | 4.137 | 1.000 | 1.112 | 1.155 | 1.613 | 4.600 | 1.000 | 1.134 | 1.186 | 1.731 | 5.121 |
| L(C)=6W L= 6000 | 1.000 | 1.086 | 1.119 | 1.478 | 4.037 | 1.000 | 1.108 | 1.150 | 1.594 | 4.491 | 1.000 | 1.130 | 1.180 | 1.710 | 4.999 |
| L(C)=6W L=12000 | 1.000 | 1.086 | 1.119 | 1.478 | 4.037 | 1.000 | 1.108 | 1.150 | 1.594 | 4.491 | 1.000 | 1.130 | 1.180 | 1.710 | 4.999 |
| L(C)=8W L= 1000 | 1.000 | 1.116 | 1.161 | 1.653 | 5.540 | 1.000 | 1.144 | 1.200 | 1.800 | 5.954 | 1.000 | 1.172 | 1.238 | 1.944 | 6.518 |
| L(C)=8W L= 6000 | 1.000 | 1.112 | 1.156 | 1.632 | 5.396 | 1.000 | 1.140 | 1.194 | 1.776 | 5.805 | 1.000 | 1.167 | 1.231 | 1.916 | 6.355 |
| L(C)=8W L=12000 | 1.000 | 1.112 | 1.156 | 1.632 | 5.396 | 1.000 | 1.140 | 1.194 | 1.776 | 5.805 | 1.000 | 1.167 | 1.231 | 1.916 | 6.355 |

# Table XIII — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 2.0 T(0) =4.2 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 1.000 | 1.020 | 1.028 | 1.108 | 1.553 | 1.000 | 1.026 | 1.036 | 1.141 | 1.716 | 1.000 | 1.032 | 1.045 | 1.173 | 1.879 |
| L(C)=2W L= 6000 | 1.000 | 1.017 | 1.023 | 1.091 | 1.464 | 1.000 | 1.022 | 1.031 | 1.118 | 1.601 | 1.000 | 1.027 | 1.038 | 1.146 | 1.739 |
| L(C)=2W L=12000 | 1.000 | 1.017 | 1.023 | 1.091 | 1.464 | 1.000 | 1.022 | 1.031 | 1.118 | 1.601 | 1.000 | 1.027 | 1.038 | 1.146 | 1.739 |
| L(C)=4W L= 1000 | 1.000 | 1.040 | 1.055 | 1.214 | 2.124 | 1.000 | 1.052 | 1.071 | 1.277 | 2.434 | 1.000 | 1.063 | 1.088 | 1.340 | 2.745 |
| L(C)=4W L= 6000 | 1.000 | 1.033 | 1.046 | 1.180 | 1.944 | 1.000 | 1.043 | 1.060 | 1.233 | 2.206 | 1.000 | 1.053 | 1.074 | 1.286 | 2.468 |
| L(C)=4W L=12000 | 1.000 | 1.033 | 1.046 | 1.180 | 1.944 | 1.000 | 1.043 | 1.060 | 1.233 | 2.206 | 1.000 | 1.053 | 1.074 | 1.286 | 2.468 |
| L(C)=6W L= 1000 | 1.000 | 1.059 | 1.081 | 1.318 | 2.712 | 1.000 | 1.076 | 1.105 | 1.409 | 3.155 | 1.000 | 1.093 | 1.128 | 1.499 | 3.596 |
| L(C)=6W L= 6000 | 1.000 | 1.049 | 1.068 | 1.267 | 2.439 | 1.000 | 1.064 | 1.088 | 1.344 | 2.813 | 1.000 | 1.078 | 1.108 | 1.420 | 3.185 |
| L(C)=6W L=12000 | 1.000 | 1.049 | 1.068 | 1.267 | 2.439 | 1.000 | 1.064 | 1.088 | 1.344 | 2.813 | 1.000 | 1.078 | 1.108 | 1.420 | 3.185 |
| L(C)=8W L= 1000 | 1.000 | 1.077 | 1.107 | 1.421 | 3.317 | 1.000 | 1.099 | 1.138 | 1.537 | 3.876 | 1.000 | 1.121 | 1.167 | 1.651 | 4.430 |
| L(C)=8W L= 6000 | 1.000 | 1.065 | 1.090 | 1.353 | 2.951 | 1.000 | 1.084 | 1.116 | 1.452 | 3.422 | 1.000 | 1.102 | 1.141 | 1.548 | 3.891 |
| L(C)=8W L=12000 | 1.000 | 1.065 | 1.090 | 1.353 | 2.951 | 1.000 | 1.084 | 1.116 | 1.452 | 3.422 | 1.000 | 1.102 | 1.141 | 1.548 | 3.891 |

I= 2.0 T(0) =2.8 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 1.000 | 1.023 | 1.032 | 1.126 | 1.659 | 1.000 | 1.030 | 1.042 | 1.162 | 1.837 | 1.000 | 1.037 | 1.051 | 1.198 | 2.018 |
| L(C)=2W L= 6000 | 1.000 | 1.021 | 1.029 | 1.113 | 1.594 | 1.000 | 1.027 | 1.038 | 1.146 | 1.755 | 1.000 | 1.033 | 1.046 | 1.179 | 1.920 |
| L(C)=2W L=12000 | 1.000 | 1.021 | 1.029 | 1.113 | 1.594 | 1.000 | 1.027 | 1.038 | 1.146 | 1.755 | 1.000 | 1.033 | 1.046 | 1.179 | 1.920 |
| L(C)=4W L= 1000 | 1.000 | 1.046 | 1.064 | 1.250 | 2.374 | 1.000 | 1.059 | 1.082 | 1.319 | 2.703 | 1.000 | 1.072 | 1.100 | 1.388 | 3.040 |
| L(C)=4W L= 6000 | 1.000 | 1.041 | 1.057 | 1.225 | 2.238 | 1.000 | 1.053 | 1.074 | 1.288 | 2.538 | 1.000 | 1.065 | 1.090 | 1.350 | 2.844 |
| L(C)=4W L=12000 | 1.000 | 1.041 | 1.057 | 1.225 | 2.238 | 1.000 | 1.053 | 1.074 | 1.288 | 2.538 | 1.000 | 1.065 | 1.090 | 1.350 | 2.844 |
| L(C)=6W L= 1000 | 1.000 | 1.068 | 1.094 | 1.373 | 3.150 | 1.000 | 1.087 | 1.120 | 1.471 | 3.599 | 1.000 | 1.105 | 1.145 | 1.568 | 4.062 |
| L(C)=6W L= 6000 | 1.000 | 1.061 | 1.085 | 1.336 | 2.939 | 1.000 | 1.078 | 1.108 | 1.425 | 3.348 | 1.000 | 1.095 | 1.131 | 1.513 | 3.770 |
| L(C)=6W L=12000 | 1.000 | 1.061 | 1.085 | 1.336 | 2.939 | 1.000 | 1.078 | 1.108 | 1.425 | 3.348 | 1.000 | 1.095 | 1.131 | 1.513 | 3.770 |
| L(C)=8W L= 1000 | 1.000 | 1.089 | 1.124 | 1.494 | 3.994 | 1.000 | 1.113 | 1.157 | 1.618 | 4.522 | 1.000 | 1.136 | 1.188 | 1.740 | 5.082 |
| L(C)=8W L= 6000 | 1.000 | 1.081 | 1.112 | 1.445 | 3.703 | 1.000 | 1.102 | 1.141 | 1.558 | 4.185 | 1.000 | 1.123 | 1.170 | 1.669 | 4.694 |
| L(C)=8W L=12000 | 1.000 | 1.081 | 1.112 | 1.445 | 3.703 | 1.000 | 1.102 | 1.141 | 1.558 | 4.185 | 1.000 | 1.123 | 1.170 | 1.669 | 4.694 |

I= 2.0 T(0) =1.4 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 6.00 | | | | | W= 8.00 | | | | | W= 10.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=2W L= 1000 | 1.000 | 1.033 | 1.045 | 1.179 | 2.043 | 1.000 | 1.041 | 1.056 | 1.222 | 2.228 | 1.000 | 1.049 | 1.068 | 1.267 | 2.442 |
| L(C)=2W L= 6000 | 1.000 | 1.032 | 1.044 | 1.173 | 2.006 | 1.000 | 1.039 | 1.055 | 1.215 | 2.199 | 1.000 | 1.048 | 1.066 | 1.259 | 2.397 |
| L(C)=2W L=12000 | 1.000 | 1.032 | 1.044 | 1.173 | 2.006 | 1.000 | 1.039 | 1.055 | 1.215 | 2.189 | 1.000 | 1.048 | 1.066 | 1.259 | 2.397 |
| L(C)=4W L= 1000 | 1.000 | 1.064 | 1.089 | 1.363 | 3.520 | 1.000 | 1.079 | 1.110 | 1.440 | 3.716 | 1.000 | 1.095 | 1.132 | 1.521 | 4.046 |
| L(C)=4W L= 6000 | 1.000 | 1.062 | 1.086 | 1.350 | 3.432 | 1.000 | 1.077 | 1.107 | 1.426 | 3.630 | 1.000 | 1.092 | 1.128 | 1.505 | 3.953 |
| L(C)=4W L=12000 | 1.000 | 1.062 | 1.086 | 1.350 | 3.432 | 1.000 | 1.077 | 1.107 | 1.426 | 3.630 | 1.000 | 1.092 | 1.128 | 1.505 | 3.953 |
| L(C)=6W L= 1000 | 1.000 | 1.095 | 1.132 | 1.550 | 5.755 | 1.000 | 1.116 | 1.161 | 1.653 | 5.540 | 1.000 | 1.137 | 1.191 | 1.764 | 5.827 |
| L(C)=6W L= 6000 | 1.000 | 1.092 | 1.128 | 1.530 | 5.591 | 1.000 | 1.112 | 1.156 | 1.632 | 5.396 | 1.000 | 1.133 | 1.185 | 1.740 | 5.680 |
| L(C)=6W L=12000 | 1.000 | 1.092 | 1.128 | 1.530 | 5.591 | 1.000 | 1.112 | 1.156 | 1.632 | 5.396 | 1.000 | 1.133 | 1.185 | 1.740 | 5.680 |
| L(C)=8W L= 1000 | 1.000 | 1.125 | 1.174 | 1.740 | 9.493 | 1.000 | 1.150 | 1.209 | 1.861 | 7.809 | 1.000 | 1.177 | 1.245 | 1.993 | 7.798 |
| L(C)=8W L= 6000 | 1.000 | 1.120 | 1.168 | 1.714 | 9.209 | 1.000 | 1.145 | 1.202 | 1.834 | 7.595 | 1.000 | 1.171 | 1.238 | 1.963 | 7.592 |
| L(C)=8W L=12000 | 1.000 | 1.120 | 1.168 | 1.714 | 9.209 | 1.000 | 1.145 | 1.202 | 1.834 | 7.595 | 1.000 | 1.171 | 1.238 | 1.963 | 7.592 |

# Table XIV — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 0.5 T(0) =4.2 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.026 | 1.035 | 1.137 | 1.683 | 1.000 | 1.032 | 1.044 | 1.170 | 1.850 | 1.000 | 1.038 | 1.053 | 1.203 | 2.016 |
| L(C)=1W L= 6000 | 1.000 | 1.015 | 1.021 | 1.082 | 1.411 | 1.000 | 1.019 | 1.027 | 1.102 | 1.511 | 1.000 | 1.023 | 1.032 | 1.122 | 1.611 |
| L(C)=1W L=12000 | 1.000 | 1.015 | 1.021 | 1.082 | 1.410 | 1.000 | 1.019 | 1.026 | 1.102 | 1.511 | 1.000 | 1.023 | 1.032 | 1.122 | 1.611 |
| L(C)=2W L= 1000 | 1.000 | 1.050 | 1.070 | 1.269 | 2.345 | 1.000 | 1.062 | 1.086 | 1.333 | 2.668 | 1.000 | 1.074 | 1.103 | 1.397 | 2.985 |
| L(C)=2W L= 6000 | 1.000 | 1.030 | 1.042 | 1.162 | 1.810 | 1.000 | 1.038 | 1.052 | 1.201 | 2.006 | 1.000 | 1.045 | 1.062 | 1.239 | 2.198 |
| L(C)=2W L=12000 | 1.000 | 1.030 | 1.042 | 1.162 | 1.810 | 1.000 | 1.038 | 1.052 | 1.201 | 2.005 | 1.000 | 1.045 | 1.062 | 1.239 | 2.198 |
| L(C)=3W L= 1000 | 1.000 | 1.074 | 1.103 | 1.397 | 2.987 | 1.000 | 1.092 | 1.127 | 1.490 | 3.453 | 1.000 | 1.109 | 1.151 | 1.581 | 3.909 |
| L(C)=3W L= 6000 | 1.000 | 1.045 | 1.062 | 1.240 | 2.199 | 1.000 | 1.056 | 1.077 | 1.296 | 2.483 | 1.000 | 1.066 | 1.091 | 1.352 | 2.761 |
| L(C)=3W L=12000 | 1.000 | 1.045 | 1.062 | 1.240 | 2.199 | 1.000 | 1.056 | 1.077 | 1.296 | 2.483 | 1.000 | 1.066 | 1.091 | 1.352 | 2.760 |
| L(C)=4W L= 1000 | 1.000 | 1.098 | 1.135 | 1.521 | 3.609 | 1.000 | 1.120 | 1.166 | 1.641 | 4.209 | 1.000 | 1.142 | 1.196 | 1.757 | 4.789 |
| L(C)=4W L= 6000 | 1.000 | 1.059 | 1.082 | 1.315 | 2.578 | 1.000 | 1.073 | 1.101 | 1.389 | 2.945 | 1.000 | 1.086 | 1.119 | 1.460 | 3.302 |
| L(C)=4W L=12000 | 1.000 | 1.059 | 1.082 | 1.315 | 2.578 | 1.000 | 1.073 | 1.101 | 1.388 | 2.944 | 1.000 | 1.086 | 1.119 | 1.460 | 3.301 |

I= 0.5 T(0) =2.8 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.027 | 1.038 | 1.145 | 1.725 | 1.000 | 1.034 | 1.047 | 1.180 | 1.902 | 1.000 | 1.040 | 1.056 | 1.215 | 2.078 |
| L(C)=1W L= 6000 | 1.000 | 1.019 | 1.026 | 1.100 | 1.501 | 1.000 | 1.023 | 1.032 | 1.125 | 1.624 | 1.000 | 1.028 | 1.039 | 1.149 | 1.745 |
| L(C)=1W L=12000 | 1.000 | 1.019 | 1.026 | 1.100 | 1.501 | 1.000 | 1.023 | 1.032 | 1.125 | 1.624 | 1.000 | 1.028 | 1.039 | 1.149 | 1.745 |
| L(C)=2W L= 1000 | 1.000 | 1.053 | 1.074 | 1.285 | 2.426 | 1.000 | 1.066 | 1.091 | 1.353 | 2.765 | 1.000 | 1.079 | 1.109 | 1.419 | 3.099 |
| L(C)=2W L= 6000 | 1.000 | 1.037 | 1.051 | 1.197 | 1.987 | 1.000 | 1.046 | 1.063 | 1.244 | 2.223 | 1.000 | 1.054 | 1.075 | 1.291 | 2.454 |
| L(C)=2W L=12000 | 1.000 | 1.037 | 1.051 | 1.197 | 1.987 | 1.000 | 1.046 | 1.063 | 1.244 | 2.222 | 1.000 | 1.054 | 1.075 | 1.291 | 2.454 |
| L(C)=3W L= 1000 | 1.000 | 1.079 | 1.109 | 1.420 | 3.103 | 1.000 | 1.097 | 1.134 | 1.517 | 3.591 | 1.000 | 1.115 | 1.159 | 1.612 | 4.066 |
| L(C)=3W L= 6000 | 1.000 | 1.055 | 1.075 | 1.291 | 2.457 | 1.000 | 1.067 | 1.093 | 1.359 | 2.797 | 1.000 | 1.080 | 1.110 | 1.425 | 3.129 |
| L(C)=3W L=12000 | 1.000 | 1.055 | 1.075 | 1.291 | 2.457 | 1.000 | 1.067 | 1.093 | 1.359 | 2.797 | 1.000 | 1.080 | 1.110 | 1.425 | 3.129 |
| L(C)=4W L= 1000 | 1.000 | 1.103 | 1.142 | 1.550 | 3.755 | 1.000 | 1.126 | 1.175 | 1.675 | 4.380 | 1.000 | 1.149 | 1.206 | 1.795 | 4.981 |
| L(C)=4W L= 6000 | 1.000 | 1.071 | 1.099 | 1.381 | 2.912 | 1.000 | 1.088 | 1.121 | 1.469 | 3.349 | 1.000 | 1.104 | 1.143 | 1.553 | 3.771 |
| L(C)=4W L=12000 | 1.000 | 1.071 | 1.099 | 1.381 | 2.912 | 1.000 | 1.088 | 1.121 | 1.469 | 3.348 | 1.000 | 1.104 | 1.143 | 1.553 | 3.770 |

I= 0.5 T(0) =1.4 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.032 | 1.044 | 1.169 | 1.847 | 1.000 | 1.039 | 1.054 | 1.210 | 2.051 | 1.000 | 1.047 | 1.065 | 1.250 | 2.252 |
| L(C)=1W L= 6000 | 1.000 | 1.026 | 1.037 | 1.141 | 1.706 | 1.000 | 1.033 | 1.045 | 1.175 | 1.876 | 1.000 | 1.039 | 1.054 | 1.209 | 2.044 |
| L(C)=1W L=12000 | 1.000 | 1.026 | 1.037 | 1.141 | 1.706 | 1.000 | 1.033 | 1.045 | 1.175 | 1.876 | 1.000 | 1.039 | 1.054 | 1.209 | 2.044 |
| L(C)=2W L= 1000 | 1.000 | 1.062 | 1.086 | 1.330 | 2.657 | 1.000 | 1.076 | 1.106 | 1.407 | 3.043 | 1.000 | 1.090 | 1.125 | 1.483 | 3.419 |
| L(C)=2W L= 6000 | 1.000 | 1.052 | 1.071 | 1.275 | 2.382 | 1.000 | 1.064 | 1.088 | 1.340 | 2.704 | 1.000 | 1.075 | 1.104 | 1.403 | 3.019 |
| L(C)=2W L=12000 | 1.000 | 1.052 | 1.071 | 1.275 | 2.382 | 1.000 | 1.064 | 1.088 | 1.340 | 2.704 | 1.000 | 1.075 | 1.104 | 1.403 | 3.019 |
| L(C)=3W L= 1000 | 1.000 | 1.091 | 1.125 | 1.484 | 3.432 | 1.000 | 1.111 | 1.154 | 1.593 | 3.979 | 1.000 | 1.131 | 1.181 | 1.699 | 4.507 |
| L(C)=3W L= 6000 | 1.000 | 1.076 | 1.105 | 1.404 | 3.029 | 1.000 | 1.093 | 1.128 | 1.495 | 3.487 | 1.000 | 1.109 | 1.151 | 1.584 | 3.929 |
| L(C)=3W L=12000 | 1.000 | 1.076 | 1.105 | 1.404 | 3.029 | 1.000 | 1.093 | 1.128 | 1.495 | 3.487 | 1.000 | 1.109 | 1.151 | 1.584 | 3.929 |
| L(C)=4W L= 1000 | 1.000 | 1.118 | 1.163 | 1.630 | 4.172 | 1.000 | 1.144 | 1.199 | 1.768 | 4.862 | 1.000 | 1.169 | 1.233 | 1.900 | 5.519 |
| L(C)=4W L= 6000 | 1.000 | 1.098 | 1.136 | 1.526 | 3.649 | 1.000 | 1.120 | 1.166 | 1.642 | 4.227 | 1.000 | 1.141 | 1.195 | 1.752 | 4.778 |
| L(C)=4W L=12000 | 1.000 | 1.098 | 1.136 | 1.526 | 3.649 | 1.000 | 1.120 | 1.166 | 1.642 | 4.227 | 1.000 | 1.141 | 1.195 | 1.752 | 4.778 |

# Table XV — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 1.0 T(0)=4.2 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.026 | 1.035 | 1.137 | 1.685 | 1.000 | 1.032 | 1.044 | 1.170 | 1.852 | 1.000 | 1.038 | 1.053 | 1.203 | 2.017 |
| L(C)=1W L= 6000 | 1.000 | 1.015 | 1.021 | 1.082 | 1.412 | 1.000 | 1.019 | 1.027 | 1.102 | 1.512 | 1.000 | 1.023 | 1.032 | 1.122 | 1.612 |
| L(C)=1W L=12000 | 1.000 | 1.015 | 1.021 | 1.082 | 1.412 | 1.000 | 1.019 | 1.027 | 1.102 | 1.512 | 1.000 | 1.023 | 1.032 | 1.122 | 1.612 |
| L(C)=2W L= 1000 | 1.000 | 1.050 | 1.070 | 1.269 | 2.350 | 1.000 | 1.063 | 1.087 | 1.334 | 2.672 | 1.000 | 1.074 | 1.103 | 1.397 | 2.990 |
| L(C)=2W L= 6000 | 1.000 | 1.030 | 1.042 | 1.162 | 1.814 | 1.000 | 1.038 | 1.052 | 1.201 | 2.009 | 1.000 | 1.045 | 1.062 | 1.240 | 2.201 |
| L(C)=2W L=12000 | 1.000 | 1.030 | 1.042 | 1.162 | 1.814 | 1.000 | 1.038 | 1.052 | 1.201 | 2.009 | 1.000 | 1.045 | 1.062 | 1.240 | 2.201 |
| L(C)=3W L= 1000 | 1.000 | 1.075 | 1.103 | 1.398 | 2.997 | 1.000 | 1.092 | 1.127 | 1.491 | 3.463 | 1.000 | 1.109 | 1.151 | 1.582 | 3.918 |
| L(C)=3W L= 6000 | 1.000 | 1.045 | 1.062 | 1.240 | 2.207 | 1.000 | 1.056 | 1.077 | 1.297 | 2.490 | 1.000 | 1.066 | 1.091 | 1.352 | 2.768 |
| L(C)=3W L=12000 | 1.000 | 1.045 | 1.062 | 1.240 | 2.206 | 1.000 | 1.056 | 1.077 | 1.297 | 2.489 | 1.000 | 1.066 | 1.091 | 1.352 | 2.767 |
| L(C)=4W L= 1000 | 1.000 | 1.098 | 1.135 | 1.522 | 3.626 | 1.000 | 1.120 | 1.166 | 1.642 | 4.224 | 1.000 | 1.142 | 1.196 | 1.758 | 4.804 |
| L(C)=4W L= 6000 | 1.000 | 1.059 | 1.082 | 1.316 | 2.590 | 1.000 | 1.073 | 1.101 | 1.389 | 2.956 | 1.000 | 1.086 | 1.119 | 1.461 | 3.312 |
| L(C)=4W L=12000 | 1.000 | 1.059 | 1.082 | 1.316 | 2.589 | 1.000 | 1.073 | 1.101 | 1.389 | 2.955 | 1.000 | 1.086 | 1.119 | 1.460 | 3.311 |

I= 1.0 T(0)=2.8 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.027 | 1.038 | 1.145 | 1.729 | 1.000 | 1.034 | 1.047 | 1.181 | 1.906 | 1.000 | 1.040 | 1.056 | 1.216 | 2.081 |
| L(C)=1W L= 6000 | 1.000 | 1.019 | 1.026 | 1.101 | 1.504 | 1.000 | 1.023 | 1.032 | 1.125 | 1.626 | 1.000 | 1.028 | 1.039 | 1.149 | 1.747 |
| L(C)=1W L=12000 | 1.000 | 1.019 | 1.026 | 1.101 | 1.504 | 1.000 | 1.023 | 1.032 | 1.125 | 1.626 | 1.000 | 1.028 | 1.039 | 1.149 | 1.747 |
| L(C)=2W L= 1000 | 1.000 | 1.054 | 1.074 | 1.286 | 2.437 | 1.000 | 1.066 | 1.092 | 1.354 | 2.775 | 1.000 | 1.079 | 1.109 | 1.420 | 3.108 |
| L(C)=2W L= 6000 | 1.000 | 1.037 | 1.051 | 1.198 | 1.995 | 1.000 | 1.046 | 1.063 | 1.245 | 2.230 | 1.000 | 1.055 | 1.075 | 1.291 | 2.461 |
| L(C)=2W L=12000 | 1.000 | 1.037 | 1.051 | 1.198 | 1.995 | 1.000 | 1.046 | 1.063 | 1.245 | 2.230 | 1.000 | 1.055 | 1.075 | 1.291 | 2.461 |
| L(C)=3W L= 1000 | 1.000 | 1.079 | 1.109 | 1.421 | 3.123 | 1.000 | 1.097 | 1.134 | 1.519 | 3.610 | 1.000 | 1.115 | 1.159 | 1.614 | 4.084 |
| L(C)=3W L= 6000 | 1.000 | 1.055 | 1.076 | 1.292 | 2.473 | 1.000 | 1.067 | 1.093 | 1.360 | 2.811 | 1.000 | 1.080 | 1.110 | 1.426 | 3.142 |
| L(C)=3W L=12000 | 1.000 | 1.055 | 1.076 | 1.292 | 2.472 | 1.000 | 1.067 | 1.093 | 1.360 | 2.811 | 1.000 | 1.080 | 1.110 | 1.426 | 3.142 |
| L(C)=4W L= 1000 | 1.000 | 1.103 | 1.143 | 1.552 | 3.789 | 1.000 | 1.127 | 1.175 | 1.677 | 4.411 | 1.000 | 1.149 | 1.206 | 1.797 | 5.010 |
| L(C)=4W L= 6000 | 1.000 | 1.072 | 1.099 | 1.383 | 2.937 | 1.000 | 1.088 | 1.122 | 1.470 | 3.372 | 1.000 | 1.104 | 1.144 | 1.555 | 3.792 |
| L(C)=4W L=12000 | 1.000 | 1.072 | 1.099 | 1.383 | 2.937 | 1.000 | 1.088 | 1.122 | 1.470 | 3.372 | 1.000 | 1.104 | 1.144 | 1.555 | 3.792 |

I= 1.0 T(0)=1.4 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.032 | 1.044 | 1.170 | 1.858 | 1.000 | 1.039 | 1.055 | 1.211 | 2.061 | 1.000 | 1.047 | 1.065 | 1.251 | 2.262 |
| L(C)=1W L= 6000 | 1.000 | 1.027 | 1.037 | 1.142 | 1.715 | 1.000 | 1.033 | 1.046 | 1.176 | 1.885 | 1.000 | 1.039 | 1.054 | 1.209 | 2.052 |
| L(C)=1W L=12000 | 1.000 | 1.027 | 1.037 | 1.142 | 1.715 | 1.000 | 1.033 | 1.046 | 1.176 | 1.885 | 1.000 | 1.039 | 1.054 | 1.209 | 2.052 |
| L(C)=2W L= 1000 | 1.000 | 1.062 | 1.086 | 1.333 | 2.691 | 1.000 | 1.077 | 1.106 | 1.410 | 3.074 | 1.000 | 1.091 | 1.125 | 1.485 | 3.449 |
| L(C)=2W L= 6000 | 1.000 | 1.052 | 1.072 | 1.278 | 2.411 | 1.000 | 1.064 | 1.088 | 1.342 | 2.731 | 1.000 | 1.076 | 1.105 | 1.405 | 3.044 |
| L(C)=2W L=12000 | 1.000 | 1.052 | 1.072 | 1.278 | 2.411 | 1.000 | 1.064 | 1.088 | 1.342 | 2.731 | 1.000 | 1.076 | 1.105 | 1.405 | 3.044 |
| L(C)=3W L= 1000 | 1.000 | 1.091 | 1.126 | 1.489 | 3.499 | 1.000 | 1.112 | 1.154 | 1.598 | 4.041 | 1.000 | 1.131 | 1.182 | 1.703 | 4.564 |
| L(C)=3W L= 6000 | 1.000 | 1.076 | 1.105 | 1.408 | 3.086 | 1.000 | 1.093 | 1.129 | 1.499 | 3.539 | 1.000 | 1.110 | 1.152 | 1.587 | 3.977 |
| L(C)=3W L=12000 | 1.000 | 1.076 | 1.105 | 1.408 | 3.086 | 1.000 | 1.093 | 1.129 | 1.499 | 3.539 | 1.000 | 1.110 | 1.152 | 1.587 | 3.977 |
| L(C)=4W L= 1000 | 1.000 | 1.119 | 1.164 | 1.637 | 4.282 | 1.000 | 1.145 | 1.200 | 1.775 | 4.962 | 1.000 | 1.169 | 1.234 | 1.905 | 5.611 |
| L(C)=4W L= 6000 | 1.000 | 1.099 | 1.137 | 1.532 | 3.741 | 1.000 | 1.121 | 1.167 | 1.647 | 4.311 | 1.000 | 1.141 | 1.196 | 1.757 | 4.855 |
| L(C)=4W L=12000 | 1.000 | 1.099 | 1.137 | 1.532 | 3.741 | 1.000 | 1.121 | 1.167 | 1.647 | 4.311 | 1.000 | 1.141 | 1.196 | 1.757 | 4.855 |

## Table XVI — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 2.0 T(0)=4.2 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.026 | 1.036 | 1.138 | 1.692 | 1.000 | 1.032 | 1.044 | 1.171 | 1.858 | 1.000 | 1.038 | 1.053 | 1.204 | 2.023 |
| L(C)=1W L= 6000 | 1.000 | 1.016 | 1.021 | 1.083 | 1.417 | 1.000 | 1.019 | 1.027 | 1.103 | 1.517 | 1.000 | 1.023 | 1.032 | 1.123 | 1.617 |
| L(C)=1W L=12000 | 1.000 | 1.016 | 1.021 | 1.083 | 1.417 | 1.000 | 1.019 | 1.027 | 1.103 | 1.517 | 1.000 | 1.023 | 1.032 | 1.123 | 1.616 |
| L(C)=2W L= 1000 | 1.000 | 1.051 | 1.070 | 1.271 | 2.372 | 1.000 | 1.063 | 1.087 | 1.336 | 2.692 | 1.000 | 1.075 | 1.103 | 1.399 | 3.008 |
| L(C)=2W L= 6000 | 1.000 | 1.031 | 1.042 | 1.164 | 1.830 | 1.000 | 1.038 | 1.052 | 1.203 | 2.023 | 1.000 | 1.045 | 1.062 | 1.241 | 2.215 |
| L(C)=2W L=12000 | 1.000 | 1.031 | 1.042 | 1.164 | 1.829 | 1.000 | 1.038 | 1.052 | 1.203 | 2.023 | 1.000 | 1.045 | 1.062 | 1.241 | 2.214 |
| L(C)=3W L= 1000 | 1.000 | 1.075 | 1.104 | 1.401 | 3.040 | 1.000 | 1.092 | 1.128 | 1.494 | 3.502 | 1.000 | 1.109 | 1.151 | 1.585 | 3.954 |
| L(C)=3W L= 6000 | 1.000 | 1.045 | 1.063 | 1.243 | 2.237 | 1.000 | 1.056 | 1.077 | 1.299 | 2.518 | 1.000 | 1.066 | 1.092 | 1.354 | 2.794 |
| L(C)=3W L=12000 | 1.000 | 1.045 | 1.063 | 1.243 | 2.237 | 1.000 | 1.056 | 1.077 | 1.299 | 2.517 | 1.000 | 1.066 | 1.092 | 1.354 | 2.793 |
| L(C)=4W L= 1000 | 1.000 | 1.099 | 1.136 | 1.528 | 3.694 | 1.000 | 1.121 | 1.167 | 1.647 | 4.287 | 1.000 | 1.143 | 1.197 | 1.762 | 4.862 |
| L(C)=4W L= 6000 | 1.000 | 1.060 | 1.083 | 1.320 | 2.639 | 1.000 | 1.073 | 1.101 | 1.393 | 3.001 | 1.000 | 1.087 | 1.120 | 1.464 | 3.354 |
| L(C)=4W L=12000 | 1.000 | 1.060 | 1.083 | 1.320 | 2.638 | 1.000 | 1.073 | 1.101 | 1.392 | 3.000 | 1.000 | 1.087 | 1.120 | 1.463 | 3.353 |

I= 2.0 T(0)=2.8 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.028 | 1.038 | 1.147 | 1.744 | 1.000 | 1.034 | 1.047 | 1.182 | 1.919 | 1.000 | 1.041 | 1.056 | 1.217 | 2.093 |
| L(C)=1W L= 6000 | 1.000 | 1.019 | 1.026 | 1.102 | 1.515 | 1.000 | 1.024 | 1.033 | 1.126 | 1.636 | 1.000 | 1.028 | 1.039 | 1.150 | 1.757 |
| L(C)=1W L=12000 | 1.000 | 1.019 | 1.026 | 1.102 | 1.515 | 1.000 | 1.024 | 1.033 | 1.126 | 1.636 | 1.000 | 1.028 | 1.039 | 1.150 | 1.756 |
| L(C)=2W L= 1000 | 1.000 | 1.054 | 1.075 | 1.290 | 2.481 | 1.000 | 1.067 | 1.092 | 1.357 | 2.815 | 1.000 | 1.079 | 1.109 | 1.423 | 3.145 |
| L(C)=2W L= 6000 | 1.000 | 1.038 | 1.052 | 1.201 | 2.028 | 1.000 | 1.046 | 1.064 | 1.247 | 2.260 | 1.000 | 1.055 | 1.076 | 1.293 | 2.489 |
| L(C)=2W L=12000 | 1.000 | 1.038 | 1.052 | 1.201 | 2.028 | 1.000 | 1.046 | 1.064 | 1.247 | 2.260 | 1.000 | 1.055 | 1.076 | 1.293 | 2.489 |
| L(C)=3W L= 1000 | 1.000 | 1.080 | 1.110 | 1.428 | 3.210 | 1.000 | 1.098 | 1.135 | 1.525 | 3.689 | 1.000 | 1.116 | 1.160 | 1.619 | 4.157 |
| L(C)=3W L= 6000 | 1.000 | 1.055 | 1.077 | 1.297 | 2.538 | 1.000 | 1.068 | 1.094 | 1.364 | 2.871 | 1.000 | 1.080 | 1.111 | 1.430 | 3.197 |
| L(C)=3W L=12000 | 1.000 | 1.055 | 1.077 | 1.297 | 2.538 | 1.000 | 1.068 | 1.094 | 1.364 | 2.871 | 1.000 | 1.080 | 1.111 | 1.430 | 3.197 |
| L(C)=4W L= 1000 | 1.000 | 1.105 | 1.145 | 1.562 | 3.931 | 1.000 | 1.128 | 1.177 | 1.686 | 4.539 | 1.000 | 1.150 | 1.208 | 1.805 | 5.129 |
| L(C)=4W L= 6000 | 1.000 | 1.073 | 1.101 | 1.391 | 3.044 | 1.000 | 1.089 | 1.123 | 1.477 | 3.469 | 1.000 | 1.104 | 1.145 | 1.560 | 3.882 |
| L(C)=4W L=12000 | 1.000 | 1.073 | 1.101 | 1.391 | 3.044 | 1.000 | 1.089 | 1.123 | 1.477 | 3.469 | 1.000 | 1.104 | 1.145 | 1.560 | 3.882 |

I= 2.0 T(0)=1.4 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.033 | 1.045 | 1.175 | 1.907 | 1.000 | 1.040 | 1.056 | 1.215 | 2.104 | 1.000 | 1.048 | 1.066 | 1.255 | 2.301 |
| L(C)=1W L= 6000 | 1.000 | 1.027 | 1.038 | 1.146 | 1.755 | 1.000 | 1.033 | 1.046 | 1.179 | 1.920 | 1.000 | 1.040 | 1.055 | 1.212 | 2.085 |
| L(C)=1W L=12000 | 1.000 | 1.027 | 1.038 | 1.146 | 1.755 | 1.000 | 1.033 | 1.046 | 1.179 | 1.920 | 1.000 | 1.040 | 1.055 | 1.212 | 2.085 |
| L(C)=2W L= 1000 | 1.000 | 1.064 | 1.089 | 1.345 | 2.845 | 1.000 | 1.078 | 1.108 | 1.420 | 3.210 | 1.000 | 1.092 | 1.127 | 1.494 | 3.573 |
| L(C)=2W L= 6000 | 1.000 | 1.053 | 1.074 | 1.288 | 2.538 | 1.000 | 1.065 | 1.090 | 1.350 | 2.844 | 1.000 | 1.077 | 1.106 | 1.412 | 3.148 |
| L(C)=2W L=12000 | 1.000 | 1.053 | 1.074 | 1.288 | 2.538 | 1.000 | 1.065 | 1.090 | 1.350 | 2.844 | 1.000 | 1.077 | 1.106 | 1.412 | 3.148 |
| L(C)=3W L= 1000 | 1.000 | 1.094 | 1.130 | 1.510 | 3.811 | 1.000 | 1.114 | 1.157 | 1.615 | 4.315 | 1.000 | 1.133 | 1.184 | 1.718 | 4.813 |
| L(C)=3W L= 6000 | 1.000 | 1.078 | 1.108 | 1.425 | 3.348 | 1.000 | 1.095 | 1.131 | 1.513 | 3.770 | 1.000 | 1.111 | 1.154 | 1.600 | 4.187 |
| L(C)=3W L=12000 | 1.000 | 1.078 | 1.108 | 1.425 | 3.348 | 1.000 | 1.095 | 1.131 | 1.513 | 3.770 | 1.000 | 1.111 | 1.154 | 1.600 | 4.187 |
| L(C)=4W L= 1000 | 1.000 | 1.122 | 1.170 | 1.669 | 4.806 | 1.000 | 1.147 | 1.204 | 1.801 | 5.415 | 1.000 | 1.172 | 1.238 | 1.929 | 6.016 |
| L(C)=4W L= 6000 | 1.000 | 1.102 | 1.141 | 1.558 | 4.185 | 1.000 | 1.123 | 1.170 | 1.669 | 4.694 | 1.000 | 1.143 | 1.198 | 1.776 | 5.199 |
| L(C)=4W L=12000 | 1.000 | 1.102 | 1.141 | 1.558 | 4.185 | 1.000 | 1.123 | 1.170 | 1.669 | 4.694 | 1.000 | 1.143 | 1.198 | 1.776 | 5.199 |

# Table XVII — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 3.0 T(0) =4.2 T(1) =20.0 (OR ANY ƆTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.026 | 1.036 | 1.139 | 1.705 | 1.000 | 1.032 | 1.045 | 1.172 | 1.870 | 1.000 | 1.038 | 1.053 | 1.205 | 2.034 |
| L(C)=1W L= 6000 | 1.000 | 1.016 | 1.022 | 1.084 | 1.427 | 1.000 | 1.019 | 1.027 | 1.104 | 1.526 | 1.000 | 1.023 | 1.032 | 1.124 | 1.624 |
| L(C)=1W L=12000 | 1.000 | 1.016 | 1.022 | 1.084 | 1.427 | 1.000 | 1.019 | 1.027 | 1.104 | 1.525 | 1.000 | 1.023 | 1.032 | 1.124 | 1.624 |
| L(C)=2W L= 1000 | 1.000 | 1.051 | 1.071 | 1.275 | 2.410 | 1.000 | 1.063 | 1.087 | 1.339 | 2.727 | 1.000 | 1.075 | 1.104 | 1.401 | 3.040 |
| L(C)=2W L= 6000 | 1.000 | 1.031 | 1.043 | 1.167 | 1.858 | 1.000 | 1.038 | 1.053 | 1.205 | 2.048 | 1.000 | 1.045 | 1.063 | 1.243 | 2.237 |
| L(C)=2W L=12000 | 1.000 | 1.031 | 1.043 | 1.167 | 1.857 | 1.000 | 1.038 | 1.053 | 1.205 | 2.047 | 1.000 | 1.045 | 1.063 | 1.243 | 2.237 |
| L(C)=3W L= 1000 | 1.000 | 1.076 | 1.105 | 1.408 | 3.114 | 1.000 | 1.093 | 1.129 | 1.499 | 3.569 | 1.000 | 1.110 | 1.152 | 1.589 | 4.016 |
| L(C)=3W L= 6000 | 1.000 | 1.046 | 1.064 | 1.248 | 2.292 | 1.000 | 1.056 | 1.078 | 1.303 | 2.566 | 1.000 | 1.067 | 1.092 | 1.358 | 2.838 |
| L(C)=3W L=12000 | 1.000 | 1.046 | 1.064 | 1.247 | 2.291 | 1.000 | 1.056 | 1.078 | 1.303 | 2.566 | 1.000 | 1.067 | 1.092 | 1.358 | 2.837 |
| L(C)=4W L= 1000 | 1.000 | 1.100 | 1.138 | 1.536 | 3.816 | 1.000 | 1.122 | 1.168 | 1.654 | 4.397 | 1.000 | 1.143 | 1.198 | 1.769 | 4.963 |
| L(C)=4W L= 6000 | 1.000 | 1.061 | 1.084 | 1.327 | 2.729 | 1.000 | 1.074 | 1.102 | 1.398 | 3.081 | 1.000 | 1.087 | 1.121 | 1.469 | 3.427 |
| L(C)=4W L=12000 | 1.000 | 1.061 | 1.084 | 1.327 | 2.728 | 1.000 | 1.074 | 1.102 | 1.398 | 3.080 | 1.000 | 1.087 | 1.121 | 1.468 | 3.426 |

I= 3.0 T(0) =2.8 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.028 | 1.039 | 1.150 | 1.771 | 1.000 | 1.035 | 1.048 | 1.185 | 1.942 | 1.000 | 1.041 | 1.057 | 1.219 | 2.114 |
| L(C)=1W L= 6000 | 1.000 | 1.019 | 1.027 | 1.104 | 1.535 | 1.000 | 1.024 | 1.033 | 1.128 | 1.654 | 1.000 | 1.028 | 1.039 | 1.152 | 1.772 |
| L(C)=1W L=12000 | 1.000 | 1.019 | 1.027 | 1.104 | 1.535 | 1.000 | 1.024 | 1.033 | 1.128 | 1.653 | 1.000 | 1.028 | 1.039 | 1.152 | 1.772 |
| L(C)=2W L= 1000 | 1.000 | 1.055 | 1.076 | 1.297 | 2.562 | 1.000 | 1.068 | 1.093 | 1.363 | 2.887 | 1.000 | 1.080 | 1.110 | 1.428 | 3.210 |
| L(C)=2W L= 6000 | 1.000 | 1.038 | 1.053 | 1.206 | 2.089 | 1.000 | 1.047 | 1.065 | 1.252 | 2.314 | 1.000 | 1.055 | 1.077 | 1.297 | 2.538 |
| L(C)=2W L=12000 | 1.000 | 1.038 | 1.053 | 1.206 | 2.089 | 1.000 | 1.047 | 1.065 | 1.252 | 2.314 | 1.000 | 1.055 | 1.077 | 1.297 | 2.538 |
| L(C)=3W L= 1000 | 1.000 | 1.081 | 1.113 | 1.440 | 3.372 | 1.000 | 1.099 | 1.137 | 1.535 | 3.832 | 1.000 | 1.117 | 1.161 | 1.628 | 4.287 |
| L(C)=3W L= 6000 | 1.000 | 1.057 | 1.078 | 1.307 | 2.662 | 1.000 | 1.069 | 1.095 | 1.372 | 2.979 | 1.000 | 1.081 | 1.112 | 1.437 | 3.296 |
| L(C)=3W L=12000 | 1.000 | 1.057 | 1.078 | 1.307 | 2.662 | 1.000 | 1.069 | 1.095 | 1.372 | 2.979 | 1.000 | 1.081 | 1.112 | 1.437 | 3.296 |
| L(C)=4W L= 1000 | 1.000 | 1.107 | 1.148 | 1.580 | 4.201 | 1.000 | 1.129 | 1.179 | 1.701 | 4.775 | 1.000 | 1.152 | 1.210 | 1.818 | 5.342 |
| L(C)=4W L= 6000 | 1.000 | 1.074 | 1.103 | 1.405 | 3.253 | 1.000 | 1.090 | 1.125 | 1.488 | 3.650 | 1.000 | 1.106 | 1.146 | 1.570 | 4.045 |
| L(C)=4W L=12000 | 1.000 | 1.074 | 1.103 | 1.405 | 3.253 | 1.000 | 1.090 | 1.125 | 1.488 | 3.649 | 1.000 | 1.106 | 1.146 | 1.570 | 4.045 |

I= 3.0 T(0) =1.4 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.034 | 1.047 | 1.185 | 2.002 | 1.000 | 1.041 | 1.057 | 1.223 | 2.184 | 1.000 | 1.048 | 1.067 | 1.261 | 2.372 |
| L(C)=1W L= 6000 | 1.000 | 1.028 | 1.039 | 1.154 | 1.835 | 1.000 | 1.034 | 1.048 | 1.185 | 1.986 | 1.000 | 1.040 | 1.056 | 1.217 | 2.144 |
| L(C)=1W L=12000 | 1.000 | 1.028 | 1.039 | 1.154 | 1.834 | 1.000 | 1.034 | 1.048 | 1.185 | 1.986 | 1.000 | 1.040 | 1.056 | 1.217 | 2.143 |
| L(C)=2W L= 1000 | 1.000 | 1.067 | 1.093 | 1.369 | 3.172 | 1.000 | 1.080 | 1.111 | 1.439 | 3.481 | 1.000 | 1.094 | 1.130 | 1.510 | 3.811 |
| L(C)=2W L= 6000 | 1.000 | 1.056 | 1.077 | 1.307 | 2.815 | 1.000 | 1.067 | 1.093 | 1.365 | 3.072 | 1.000 | 1.078 | 1.108 | 1.425 | 3.348 |
| L(C)=2W L=12000 | 1.000 | 1.056 | 1.077 | 1.307 | 2.815 | 1.000 | 1.067 | 1.093 | 1.365 | 3.072 | 1.000 | 1.078 | 1.108 | 1.425 | 3.348 |
| L(C)=3W L= 1000 | 1.000 | 1.099 | 1.137 | 1.550 | 4.547 | 1.000 | 1.117 | 1.163 | 1.648 | 4.900 | 1.000 | 1.136 | 1.189 | 1.746 | 5.314 |
| L(C)=3W L= 6000 | 1.000 | 1.082 | 1.114 | 1.458 | 3.977 | 1.000 | 1.098 | 1.136 | 1.540 | 4.267 | 1.000 | 1.114 | 1.157 | 1.623 | 4.612 |
| L(C)=3W L=12000 | 1.000 | 1.082 | 1.114 | 1.458 | 3.977 | 1.000 | 1.098 | 1.136 | 1.540 | 4.267 | 1.000 | 1.114 | 1.157 | 1.623 | 4.612 |
| L(C)=4W L= 1000 | 1.000 | 1.129 | 1.179 | 1.729 | 6.180 | 1.000 | 1.153 | 1.212 | 1.850 | 6.451 | 1.000 | 1.176 | 1.244 | 1.970 | 6.875 |
| L(C)=4W L= 6000 | 1.000 | 1.107 | 1.149 | 1.608 | 5.369 | 1.000 | 1.127 | 1.176 | 1.709 | 5.582 | 1.000 | 1.147 | 1.203 | 1.811 | 5.933 |
| L(C)=4W L=12000 | 1.000 | 1.107 | 1.149 | 1.608 | 5.369 | 1.000 | 1.127 | 1.176 | 1.709 | 5.582 | 1.000 | 1.147 | 1.203 | 1.811 | 5.933 |

# Table XVIII — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 4.0 T(0)=4.2 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.026 | 1.037 | 1.142 | 1.724 | 1.000 | 1.033 | 1.045 | 1.174 | 1.886 | 1.000 | 1.039 | 1.053 | 1.207 | 2.049 |
| L(C)=1W L= 6000 | 1.000 | 1.016 | 1.022 | 1.086 | 1.441 | 1.000 | 1.020 | 1.027 | 1.105 | 1.538 | 1.000 | 1.023 | 1.032 | 1.125 | 1.635 |
| L(C)=1W L=12000 | 1.000 | 1.016 | 1.022 | 1.086 | 1.441 | 1.000 | 1.020 | 1.027 | 1.105 | 1.537 | 1.000 | 1.023 | 1.032 | 1.125 | 1.635 |
| L(C)=2W L= 1000 | 1.000 | 1.052 | 1.072 | 1.280 | 2.467 | 1.000 | 1.064 | 1.088 | 1.343 | 2.777 | 1.000 | 1.076 | 1.104 | 1.405 | 3.086 |
| L(C)=2W L= 6000 | 1.000 | 1.032 | 1.044 | 1.171 | 1.900 | 1.000 | 1.039 | 1.054 | 1.208 | 2.085 | 1.000 | 1.046 | 1.063 | 1.246 | 2.270 |
| L(C)=2W L=12000 | 1.000 | 1.032 | 1.044 | 1.171 | 1.899 | 1.000 | 1.039 | 1.054 | 1.208 | 2.084 | 1.000 | 1.046 | 1.063 | 1.246 | 2.270 |
| L(C)=3W L= 1000 | 1.000 | 1.077 | 1.107 | 1.416 | 3.228 | 1.000 | 1.094 | 1.130 | 1.507 | 3.670 | 1.000 | 1.111 | 1.153 | 1.596 | 4.108 |
| L(C)=3W L= 6000 | 1.000 | 1.047 | 1.065 | 1.254 | 2.377 | 1.000 | 1.057 | 1.079 | 1.309 | 2.640 | 1.000 | 1.067 | 1.093 | 1.363 | 2.905 |
| L(C)=3W L=12000 | 1.000 | 1.047 | 1.065 | 1.254 | 2.376 | 1.000 | 1.057 | 1.079 | 1.308 | 2.639 | 1.000 | 1.067 | 1.093 | 1.362 | 2.904 |
| L(C)=4W L= 1000 | 1.000 | 1.101 | 1.140 | 1.549 | 4.007 | 1.000 | 1.123 | 1.170 | 1.665 | 4.564 | 1.000 | 1.144 | 1.200 | 1.778 | 5.114 |
| L(C)=4W L= 6000 | 1.000 | 1.062 | 1.086 | 1.337 | 2.872 | 1.000 | 1.075 | 1.104 | 1.407 | 3.204 | 1.000 | 1.088 | 1.122 | 1.476 | 3.538 |
| L(C)=4W L=12000 | 1.000 | 1.062 | 1.086 | 1.336 | 2.871 | 1.000 | 1.075 | 1.104 | 1.406 | 3.203 | 1.000 | 1.088 | 1.122 | 1.475 | 3.537 |

I= 4.0 T(0)=2.8 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.029 | 1.040 | 1.155 | 1.811 | 1.000 | 1.035 | 1.049 | 1.188 | 1.976 | 1.000 | 1.041 | 1.057 | 1.222 | 2.144 |
| L(C)=1W L= 6000 | 1.000 | 1.020 | 1.028 | 1.108 | 1.567 | 1.000 | 1.024 | 1.034 | 1.131 | 1.680 | 1.000 | 1.029 | 1.040 | 1.154 | 1.795 |
| L(C)=1W L=12000 | 1.000 | 1.020 | 1.028 | 1.108 | 1.567 | 1.000 | 1.024 | 1.034 | 1.131 | 1.680 | 1.000 | 1.029 | 1.040 | 1.154 | 1.795 |
| L(C)=2W L= 1000 | 1.000 | 1.057 | 1.079 | 1.308 | 2.690 | 1.000 | 1.069 | 1.095 | 1.372 | 2.996 | 1.000 | 1.081 | 1.112 | 1.436 | 3.308 |
| L(C)=2W L= 6000 | 1.000 | 1.039 | 1.055 | 1.215 | 2.189 | 1.000 | 1.048 | 1.066 | 1.259 | 2.398 | 1.000 | 1.056 | 1.078 | 1.303 | 2.613 |
| L(C)=2W L=12000 | 1.000 | 1.039 | 1.055 | 1.215 | 2.189 | 1.000 | 1.048 | 1.066 | 1.259 | 2.397 | 1.000 | 1.056 | 1.078 | 1.303 | 2.613 |
| L(C)=3W L= 1000 | 1.000 | 1.084 | 1.116 | 1.459 | 3.641 | 1.000 | 1.101 | 1.140 | 1.550 | 4.058 | 1.000 | 1.118 | 1.164 | 1.641 | 4.488 |
| L(C)=3W L= 6000 | 1.000 | 1.058 | 1.081 | 1.321 | 2.874 | 1.000 | 1.070 | 1.097 | 1.384 | 3.155 | 1.000 | 1.082 | 1.114 | 1.447 | 3.451 |
| L(C)=3W L=12000 | 1.000 | 1.058 | 1.081 | 1.321 | 2.874 | 1.000 | 1.070 | 1.097 | 1.383 | 3.155 | 1.000 | 1.082 | 1.114 | 1.447 | 3.451 |
| L(C)=4W L= 1000 | 1.000 | 1.110 | 1.152 | 1.607 | 4.674 | 1.000 | 1.132 | 1.183 | 1.723 | 5.163 | 1.000 | 1.154 | 1.213 | 1.837 | 5.680 |
| L(C)=4W L= 6000 | 1.000 | 1.077 | 1.107 | 1.426 | 3.630 | 1.000 | 1.092 | 1.128 | 1.505 | 3.954 | 1.000 | 1.107 | 1.149 | 1.585 | 4.308 |
| L(C)=4W L=12000 | 1.000 | 1.077 | 1.107 | 1.426 | 3.630 | 1.000 | 1.092 | 1.128 | 1.505 | 3.953 | 1.000 | 1.107 | 1.149 | 1.585 | 4.308 |

I= 4.0 T(0)=1.4 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 20.00 | | | | | W= 25.00 | | | | | W= 30.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=1W L= 1000 | 1.000 | 1.037 | 1.051 | 1.201 | 2.176 | 1.000 | 1.043 | 1.060 | 1.235 | 2.318 | 1.000 | 1.050 | 1.069 | 1.271 | 2.486 |
| L(C)=1W L= 6000 | 1.000 | 1.030 | 1.042 | 1.167 | 1.982 | 1.000 | 1.036 | 1.049 | 1.195 | 2.098 | 1.000 | 1.041 | 1.057 | 1.225 | 2.238 |
| L(C)=1W L=12000 | 1.000 | 1.030 | 1.042 | 1.167 | 1.982 | 1.000 | 1.036 | 1.049 | 1.195 | 2.098 | 1.000 | 1.041 | 1.057 | 1.225 | 2.238 |
| L(C)=2W L= 1000 | 1.000 | 1.072 | 1.100 | 1.407 | 3.887 | 1.000 | 1.084 | 1.117 | 1.468 | 3.993 | 1.000 | 1.097 | 1.134 | 1.534 | 4.229 |
| L(C)=2W L= 6000 | 1.000 | 1.060 | 1.083 | 1.338 | 3.436 | 1.000 | 1.070 | 1.097 | 1.389 | 3.509 | 1.000 | 1.081 | 1.112 | 1.445 | 3.703 |
| L(C)=2W L=12000 | 1.000 | 1.060 | 1.083 | 1.338 | 3.436 | 1.000 | 1.070 | 1.097 | 1.389 | 3.509 | 1.000 | 1.081 | 1.112 | 1.445 | 3.703 |
| L(C)=3W L= 1000 | 1.000 | 1.106 | 1.148 | 1.618 | 6.580 | 1.000 | 1.123 | 1.171 | 1.700 | 6.171 | 1.000 | 1.141 | 1.195 | 1.789 | 6.283 |
| L(C)=3W L= 6000 | 1.000 | 1.088 | 1.123 | 1.515 | 5.792 | 1.000 | 1.102 | 1.142 | 1.583 | 5.371 | 1.000 | 1.117 | 1.163 | 1.658 | 5.446 |
| L(C)=3W L=12000 | 1.000 | 1.088 | 1.123 | 1.515 | 5.792 | 1.000 | 1.102 | 1.142 | 1.583 | 5.371 | 1.000 | 1.117 | 1.163 | 1.658 | 5.446 |
| L(C)=4W L= 1000 | 1.000 | 1.140 | 1.195 | 1.835 | 11.388 | 1.000 | 1.160 | 1.223 | 1.929 | 9.096 | 1.000 | 1.182 | 1.253 | 2.036 | 8.718 |
| L(C)=4W L= 6000 | 1.000 | 1.116 | 1.162 | 1.697 | 10.214 | 1.000 | 1.134 | 1.186 | 1.776 | 7.920 | 1.000 | 1.152 | 1.211 | 1.865 | 7.538 |
| L(C)=4W L=12000 | 1.000 | 1.116 | 1.162 | 1.697 | 10.214 | 1.000 | 1.134 | 1.186 | 1.776 | 7.920 | 1.000 | 1.152 | 1.211 | 1.865 | 7.538 |

# Table XIX — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 1.0 T(0) =4.2 T(1) =20.0 (OR ANY OTHER VALUE)

| W(C)/W= | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 1.000 | 1.046 | 1.063 | 1.244 | 2.220 | 1.000 | 1.057 | 1.079 | 1.303 | 2.515 | 1.000 | 1.068 | 1.094 | 1.361 | 2.808 |
| L(C)=0.5W L= 6000 | 1.000 | 1.016 | 1.022 | 1.085 | 1.423 | 1.000 | 1.020 | 1.027 | 1.105 | 1.527 | 1.000 | 1.024 | 1.033 | 1.126 | 1.630 |
| L(C)=0.5W L=12000 | 1.000 | 1.015 | 1.021 | 1.082 | 1.411 | 1.000 | 1.019 | 1.027 | 1.102 | 1.511 | 1.300 | 1.023 | 1.032 | 1.122 | 1.611 |
| L(C)=1.0W L= 1000 | 1.000 | 1.089 | 1.123 | 1.476 | 3.383 | 1.000 | 1.110 | 1.153 | 1.588 | 3.943 | 1.000 | 1.131 | 1.181 | 1.698 | 4.489 |
| L(C)=1.0W L= 6000 | 1.000 | 1.031 | 1.043 | 1.167 | 1.836 | 1.000 | 1.039 | 1.054 | 1.207 | 2.037 | 1.000 | 1.046 | 1.064 | 1.247 | 2.236 |
| L(C)=1.0W L=12000 | 1.000 | 1.030 | 1.042 | 1.162 | 1.810 | 1.000 | 1.038 | 1.052 | 1.201 | 2.006 | 1.000 | 1.045 | 1.062 | 1.239 | 2.198 |
| L(C)=1.5W L= 1000 | 1.000 | 1.131 | 1.181 | 1.698 | 4.491 | 1.000 | 1.161 | 1.222 | 1.856 | 5.285 | 1.000 | 1.189 | 1.262 | 2.009 | 6.047 |
| L(C)=1.5W L= 6000 | 1.000 | 1.046 | 1.064 | 1.247 | 2.237 | 1.000 | 1.057 | 1.079 | 1.306 | 2.530 | 1.000 | 1.068 | 1.094 | 1.363 | 2.816 |
| L(C)=1.5W L=12000 | 1.000 | 1.045 | 1.062 | 1.240 | 2.199 | 1.000 | 1.056 | 1.077 | 1.296 | 2.483 | 1.000 | 1.066 | 1.091 | 1.352 | 2.761 |
| L(C)=2.0W L= 1000 | 1.000 | 1.170 | 1.235 | 1.908 | 5.545 | 1.000 | 1.208 | 1.287 | 2.108 | 6.542 | 1.000 | 1.243 | 1.336 | 2.296 | 7.485 |
| L(C)=2.0W L= 6000 | 1.000 | 1.061 | 1.084 | 1.325 | 2.628 | 1.000 | 1.075 | 1.104 | 1.401 | 3.006 | 1.000 | 1.089 | 1.123 | 1.474 | 3.374 |
| L(C)=2.0W L=12000 | 1.000 | 1.059 | 1.082 | 1.315 | 2.578 | 1.000 | 1.073 | 1.101 | 1.389 | 2.945 | 1.000 | 1.086 | 1.119 | 1.460 | 3.302 |

I= 1.0 T(0) =2.8 T(1) =20.0 (OR ANY OTHER VALUE)

| W(C)/W= | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 1.000 | 1.047 | 1.064 | 1.248 | 2.241 | 1.000 | 1.058 | 1.080 | 1.308 | 2.542 | 1.000 | 1.069 | 1.095 | 1.368 | 2.838 |
| L(C)=0.5W L= 6000 | 1.000 | 1.019 | 1.026 | 1.101 | 1.508 | 1.000 | 1.024 | 1.033 | 1.126 | 1.632 | 1.000 | 1.028 | 1.039 | 1.151 | 1.754 |
| L(C)=0.5W L=12000 | 1.000 | 1.019 | 1.026 | 1.100 | 1.501 | 1.000 | 1.023 | 1.032 | 1.125 | 1.624 | 1.000 | 1.028 | 1.039 | 1.149 | 1.745 |
| L(C)=1.0W L= 1000 | 1.000 | 1.091 | 1.125 | 1.484 | 3.423 | 1.000 | 1.112 | 1.155 | 1.598 | 3.990 | 1.000 | 1.133 | 1.184 | 1.708 | 4.542 |
| L(C)=1.0W L= 6000 | 1.000 | 1.037 | 1.052 | 1.200 | 1.999 | 1.000 | 1.046 | 1.064 | 1.247 | 2.238 | 1.000 | 1.055 | 1.076 | 1.294 | 2.472 |
| L(C)=1.0W L=12000 | 1.000 | 1.037 | 1.051 | 1.197 | 1.987 | 1.000 | 1.046 | 1.063 | 1.244 | 2.223 | 1.000 | 1.054 | 1.075 | 1.291 | 2.454 |
| L(C)=1.5W L= 1000 | 1.000 | 1.133 | 1.184 | 1.708 | 4.546 | 1.000 | 1.163 | 1.225 | 1.868 | 5.347 | 1.000 | 1.192 | 1.265 | 2.022 | 6.115 |
| L(C)=1.5W L= 6000 | 1.000 | 1.055 | 1.076 | 1.294 | 2.475 | 1.000 | 1.068 | 1.094 | 1.363 | 2.819 | 1.000 | 1.081 | 1.112 | 1.430 | 3.155 |
| L(C)=1.5W L=12000 | 1.000 | 1.055 | 1.075 | 1.291 | 2.457 | 1.000 | 1.067 | 1.093 | 1.359 | 2.797 | 1.000 | 1.080 | 1.110 | 1.425 | 3.129 |
| L(C)=2.0W L= 1000 | 1.000 | 1.173 | 1.239 | 1.921 | 5.611 | 1.000 | 1.210 | 1.291 | 2.121 | 6.614 | 1.000 | 1.246 | 1.340 | 2.311 | 7.561 |
| L(C)=2.0W L= 6000 | 1.000 | 1.072 | 1.100 | 1.386 | 2.936 | 1.000 | 1.089 | 1.123 | 1.475 | 3.378 | 1.000 | 1.105 | 1.145 | 1.560 | 3.805 |
| L(C)=2.0W L=12000 | 1.000 | 1.071 | 1.099 | 1.381 | 2.912 | 1.000 | 1.088 | 1.121 | 1.469 | 3.349 | 1.000 | 1.104 | 1.143 | 1.553 | 3.771 |

I= 1.0 T(0) =1.4 T(1) =20.0 (OR ANY OTHER VALUE)

| W(C)/W= | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 1.000 | 1.049 | 1.068 | 1.261 | 2.307 | 1.000 | 1.061 | 1.084 | 1.324 | 2.620 | 1.000 | 1.072 | 1.100 | 1.385 | 2.929 |
| L(C)=0.5W L= 6000 | 1.000 | 1.026 | 1.037 | 1.141 | 1.707 | 1.000 | 1.033 | 1.045 | 1.175 | 1.877 | 1.000 | 1.039 | 1.054 | 1.209 | 2.046 |
| L(C)=0.5W L=12000 | 1.000 | 1.026 | 1.037 | 1.141 | 1.706 | 1.000 | 1.033 | 1.045 | 1.175 | 1.876 | 1.000 | 1.039 | 1.054 | 1.209 | 2.044 |
| L(C)=1.0W L= 1000 | 1.000 | 1.095 | 1.131 | 1.507 | 3.544 | 1.000 | 1.117 | 1.162 | 1.625 | 4.130 | 1.000 | 1.138 | 1.191 | 1.738 | 4.699 |
| L(C)=1.0W L= 6000 | 1.000 | 1.052 | 1.071 | 1.276 | 2.384 | 1.000 | 1.064 | 1.088 | 1.340 | 2.707 | 1.000 | 1.076 | 1.105 | 1.403 | 3.022 |
| L(C)=1.0W L=12000 | 1.000 | 1.052 | 1.071 | 1.275 | 2.382 | 1.000 | 1.064 | 1.088 | 1.340 | 2.704 | 1.000 | 1.075 | 1.104 | 1.403 | 3.019 |
| L(C)=1.5W L= 1000 | 1.000 | 1.139 | 1.192 | 1.739 | 4.714 | 1.000 | 1.169 | 1.234 | 1.904 | 5.534 | 1.000 | 1.199 | 1.275 | 2.060 | 6.318 |
| L(C)=1.5W L= 6000 | 1.000 | 1.076 | 1.105 | 1.404 | 3.033 | 1.000 | 1.093 | 1.128 | 1.496 | 3.491 | 1.000 | 1.110 | 1.151 | 1.585 | 3.934 |
| L(C)=1.5W L=12000 | 1.000 | 1.076 | 1.105 | 1.404 | 3.029 | 1.000 | 1.093 | 1.128 | 1.495 | 3.487 | 1.000 | 1.109 | 1.151 | 1.584 | 3.929 |
| L(C)=2.0W L= 1000 | 1.000 | 1.179 | 1.248 | 1.958 | 5.818 | 1.000 | 1.218 | 1.301 | 2.162 | 6.836 | 1.000 | 1.254 | 1.351 | 2.353 | 7.791 |
| L(C)=2.0W L= 6000 | 1.000 | 1.099 | 1.136 | 1.527 | 3.653 | 1.000 | 1.120 | 1.166 | 1.643 | 4.232 | 1.000 | 1.141 | 1.195 | 1.753 | 4.784 |
| L(C)=2.0W L=12000 | 1.000 | 1.098 | 1.136 | 1.526 | 3.649 | 1.000 | 1.120 | 1.166 | 1.642 | 4.227 | 1.000 | 1.141 | 1.195 | 1.752 | 4.778 |

# Table XX — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 2.0 T(0) =4.2 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 1.000 | 1.046 | 1.063 | 1.244 | 2.221 | 1.000 | 1.057 | 1.079 | 1.303 | 2.517 | 1.000 | 1.068 | 1.094 | 1.362 | 2.809 |
| L(C)=0.5W L= 6000 | 1.000 | 1.016 | 1.022 | 1.085 | 1.425 | 1.000 | 1.020 | 1.027 | 1.106 | 1.529 | 1.000 | 1.024 | 1.033 | 1.126 | 1.632 |
| L(C)=0.5W L=12000 | 1.000 | 1.015 | 1.021 | 1.082 | 1.412 | 1.000 | 1.019 | 1.027 | 1.102 | 1.512 | 1.000 | 1.023 | 1.032 | 1.122 | 1.612 |
| L(C)=1.0W L= 1000 | 1.000 | 1.089 | 1.124 | 1.477 | 3.388 | 1.000 | 1.110 | 1.153 | 1.589 | 3.948 | 1.000 | 1.131 | 1.181 | 1.698 | 4.494 |
| L(C)=1.0W L= 6000 | 1.000 | 1.031 | 1.043 | 1.167 | 1.840 | 1.000 | 1.039 | 1.054 | 1.208 | 2.041 | 1.000 | 1.046 | 1.064 | 1.247 | 2.239 |
| L(C)=1.0W L=12000 | 1.000 | 1.030 | 1.042 | 1.162 | 1.814 | 1.000 | 1.038 | 1.052 | 1.201 | 2.009 | 1.000 | 1.045 | 1.062 | 1.240 | 2.201 |
| L(C)=1.5W L= 1000 | 1.000 | 1.131 | 1.181 | 1.699 | 4.502 | 1.000 | 1.161 | 1.222 | 1.857 | 5.294 | 1.000 | 1.189 | 1.262 | 2.010 | 6.057 |
| L(C)=1.5W L= 6000 | 1.000 | 1.046 | 1.064 | 1.248 | 2.245 | 1.000 | 1.057 | 1.079 | 1.306 | 2.537 | 1.000 | 1.068 | 1.094 | 1.364 | 2.823 |
| L(C)=1.5W L=12000 | 1.000 | 1.045 | 1.062 | 1.240 | 2.207 | 1.000 | 1.056 | 1.077 | 1.297 | 2.490 | 1.000 | 1.066 | 1.091 | 1.352 | 2.768 |
| L(C)=2.0W L= 1000 | 1.000 | 1.170 | 1.236 | 1.909 | 5.562 | 1.000 | 1.208 | 1.287 | 2.109 | 6.557 | 1.000 | 1.243 | 1.336 | 2.297 | 7.500 |
| L(C)=2.0W L= 6000 | 1.000 | 1.061 | 1.084 | 1.326 | 2.640 | 1.000 | 1.075 | 1.104 | 1.402 | 3.017 | 1.000 | 1.089 | 1.123 | 1.475 | 3.385 |
| L(C)=2.0W L=12000 | 1.000 | 1.059 | 1.082 | 1.316 | 2.590 | 1.000 | 1.073 | 1.101 | 1.389 | 2.956 | 1.000 | 1.086 | 1.119 | 1.461 | 3.312 |

I= 2.0 T(0) =2.8 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 1.000 | 1.047 | 1.064 | 1.249 | 2.245 | 1.000 | 1.058 | 1.080 | 1.309 | 2.545 | 1.000 | 1.069 | 1.095 | 1.368 | 2.841 |
| L(C)=0.5W L= 6000 | 1.000 | 1.019 | 1.026 | 1.102 | 1.510 | 1.000 | 1.024 | 1.033 | 1.127 | 1.634 | 1.000 | 1.028 | 1.039 | 1.151 | 1.757 |
| L(C)=0.5W L=12000 | 1.000 | 1.019 | 1.026 | 1.101 | 1.504 | 1.000 | 1.023 | 1.032 | 1.125 | 1.626 | 1.000 | 1.028 | 1.039 | 1.149 | 1.747 |
| L(C)=1.0W L= 1000 | 1.000 | 1.091 | 1.126 | 1.485 | 3.435 | 1.000 | 1.112 | 1.155 | 1.598 | 4.000 | 1.000 | 1.133 | 1.184 | 1.709 | 4.552 |
| L(C)=1.0W L= 6000 | 1.000 | 1.038 | 1.052 | 1.200 | 2.007 | 1.000 | 1.046 | 1.064 | 1.248 | 2.245 | 1.000 | 1.055 | 1.076 | 1.295 | 2.479 |
| L(C)=1.0W L=12000 | 1.000 | 1.037 | 1.051 | 1.198 | 1.995 | 1.000 | 1.046 | 1.063 | 1.245 | 2.230 | 1.000 | 1.055 | 1.075 | 1.291 | 2.461 |
| L(C)=1.5W L= 1000 | 1.000 | 1.133 | 1.184 | 1.710 | 4.569 | 1.000 | 1.163 | 1.225 | 1.870 | 5.368 | 1.000 | 1.192 | 1.265 | 2.023 | 6.134 |
| L(C)=1.5W L= 6000 | 1.000 | 1.055 | 1.077 | 1.296 | 2.491 | 1.000 | 1.068 | 1.094 | 1.364 | 2.834 | 1.000 | 1.081 | 1.112 | 1.431 | 3.169 |
| L(C)=1.5W L=12000 | 1.000 | 1.055 | 1.076 | 1.292 | 2.473 | 1.000 | 1.067 | 1.093 | 1.360 | 2.811 | 1.000 | 1.080 | 1.110 | 1.426 | 3.142 |
| L(C)=2.0W L= 1000 | 1.000 | 1.173 | 1.239 | 1.923 | 5.648 | 1.000 | 1.210 | 1.291 | 2.123 | 6.648 | 1.000 | 1.246 | 1.340 | 2.313 | 7.592 |
| L(C)=2.0W L= 6000 | 1.000 | 1.073 | 1.100 | 1.388 | 2.961 | 1.000 | 1.089 | 1.123 | 1.476 | 3.401 | 1.000 | 1.105 | 1.145 | 1.561 | 3.827 |
| L(C)=2.0W L=12000 | 1.000 | 1.072 | 1.099 | 1.383 | 2.937 | 1.000 | 1.088 | 1.122 | 1.470 | 3.372 | 1.000 | 1.104 | 1.144 | 1.555 | 3.792 |

I= 2.0 T(0) =1.4 T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 1.000 | 1.049 | 1.068 | 1.262 | 2.320 | 1.000 | 1.061 | 1.084 | 1.325 | 2.632 | 1.000 | 1.072 | 1.100 | 1.386 | 2.941 |
| L(C)=0.5W L= 6000 | 1.000 | 1.027 | 1.037 | 1.142 | 1.716 | 1.000 | 1.033 | 1.046 | 1.176 | 1.886 | 1.000 | 1.039 | 1.054 | 1.210 | 2.054 |
| L(C)=0.5W L=12000 | 1.000 | 1.027 | 1.037 | 1.142 | 1.715 | 1.000 | 1.033 | 1.046 | 1.176 | 1.885 | 1.000 | 1.039 | 1.054 | 1.209 | 2.052 |
| L(C)=1.0W L= 1000 | 1.000 | 1.095 | 1.132 | 1.510 | 3.585 | 1.000 | 1.117 | 1.162 | 1.627 | 4.168 | 1.000 | 1.139 | 1.192 | 1.741 | 4.735 |
| L(C)=1.0W L= 6000 | 1.000 | 1.052 | 1.072 | 1.278 | 2.413 | 1.000 | 1.064 | 1.089 | 1.342 | 2.733 | 1.000 | 1.076 | 1.105 | 1.405 | 3.047 |
| L(C)=1.0W L=12000 | 1.000 | 1.052 | 1.072 | 1.278 | 2.411 | 1.000 | 1.064 | 1.088 | 1.342 | 2.731 | 1.000 | 1.076 | 1.105 | 1.405 | 3.044 |
| L(C)=1.5W L= 1000 | 1.000 | 1.139 | 1.192 | 1.745 | 4.795 | 1.000 | 1.170 | 1.235 | 1.908 | 5.608 | 1.000 | 1.199 | 1.275 | 2.065 | 6.386 |
| L(C)=1.5W L= 6000 | 1.000 | 1.076 | 1.105 | 1.408 | 3.089 | 1.000 | 1.093 | 1.129 | 1.500 | 3.543 | 1.000 | 1.110 | 1.152 | 1.588 | 3.982 |
| L(C)=1.5W L=12000 | 1.000 | 1.076 | 1.105 | 1.408 | 3.086 | 1.000 | 1.093 | 1.129 | 1.499 | 3.539 | 1.000 | 1.110 | 1.152 | 1.587 | 3.977 |
| L(C)=2.0W L= 1000 | 1.000 | 1.180 | 1.249 | 1.966 | 5.948 | 1.000 | 1.218 | 1.302 | 2.169 | 6.954 | 1.000 | 1.254 | 1.352 | 2.360 | 7.899 |
| L(C)=2.0W L= 6000 | 1.000 | 1.099 | 1.137 | 1.533 | 3.745 | 1.000 | 1.121 | 1.167 | 1.648 | 4.316 | 1.000 | 1.142 | 1.196 | 1.758 | 4.861 |
| L(C)=2.0W L=12000 | 1.000 | 1.099 | 1.137 | 1.532 | 3.741 | 1.000 | 1.121 | 1.167 | 1.647 | 4.311 | 1.000 | 1.141 | 1.196 | 1.757 | 4.855 |

# Table XXI — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 4.0 T(0) =4.2 T(1) =20.0 (OR ANY OTHER VALUE)

| W(C)/W= | W= 80.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | W=100.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | W=120.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L(C)=0.5W L= 1000 | 1.000 | 1.046 | 1.063 | 1.245 | 2.228 | 1.000 | 1.057 | 1.079 | 1.304 | 2.523 | 1.000 | 1.068 | 1.094 | 1.362 | 2.815 |
| L(C)=0.5W L= 6000 | 1.000 | 1.016 | 1.022 | 1.086 | 1.431 | 1.000 | 1.020 | 1.028 | 1.106 | 1.534 | 1.000 | 1.024 | 1.033 | 1.127 | 1.636 |
| L(C)=0.5W L=12000 | 1.000 | 1.016 | 1.021 | 1.083 | 1.417 | 1.000 | 1.019 | 1.027 | 1.103 | 1.517 | 1.000 | 1.023 | 1.032 | 1.123 | 1.617 |
| L(C)=1.0W L= 1000 | 1.000 | 1.090 | 1.124 | 1.479 | 3.410 | 1.000 | 1.111 | 1.153 | 1.590 | 3.968 | 1.000 | 1.131 | 1.181 | 1.699 | 4.513 |
| L(C)=1.0W L= 6000 | 1.000 | 1.032 | 1.044 | 1.169 | 1.856 | 1.000 | 1.039 | 1.054 | 1.209 | 2.056 | 1.000 | 1.047 | 1.064 | 1.249 | 2.253 |
| L(C)=1.0W L=12000 | 1.000 | 1.031 | 1.042 | 1.164 | 1.830 | 1.000 | 1.038 | 1.052 | 1.203 | 2.023 | 1.000 | 1.045 | 1.062 | 1.241 | 2.215 |
| L(C)=1.5W L= 1000 | 1.000 | 1.131 | 1.182 | 1.702 | 4.545 | 1.000 | 1.161 | 1.223 | 1.860 | 5.334 | 1.000 | 1.189 | 1.262 | 2.012 | 6.094 |
| L(C)=1.5W L= 6000 | 1.000 | 1.047 | 1.065 | 1.251 | 2.277 | 1.000 | 1.058 | 1.080 | 1.309 | 2.566 | 1.000 | 1.068 | 1.095 | 1.366 | 2.850 |
| L(C)=1.5W L=12000 | 1.000 | 1.045 | 1.063 | 1.243 | 2.237 | 1.000 | 1.056 | 1.077 | 1.299 | 2.518 | 1.000 | 1.066 | 1.092 | 1.354 | 2.794 |
| L(C)=2.0W L= 1000 | 1.000 | 1.171 | 1.236 | 1.914 | 5.632 | 1.000 | 1.208 | 1.288 | 2.112 | 6.621 | 1.000 | 1.243 | 1.337 | 2.301 | 7.559 |
| L(C)=2.0W L= 6000 | 1.000 | 1.062 | 1.085 | 1.330 | 2.692 | 1.000 | 1.076 | 1.105 | 1.405 | 3.064 | 1.000 | 1.089 | 1.124 | 1.478 | 3.428 |
| L(C)=2.0W L=12000 | 1.000 | 1.060 | 1.083 | 1.320 | 2.639 | 1.000 | 1.073 | 1.101 | 1.393 | 3.001 | 1.000 | 1.087 | 1.120 | 1.464 | 3.354 |

I= 4.0 T(0) =2.8 T(1) =20.0 (OR ANY OTHER VALUE)

| W(C)/W= | W= 80.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | W=100.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | W=120.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L(C)=0.5W L= 1000 | 1.000 | 1.047 | 1.065 | 1.250 | 2.260 | 1.000 | 1.058 | 1.080 | 1.310 | 2.559 | 1.000 | 1.069 | 1.096 | 1.369 | 2.854 |
| L(C)=0.5W L= 6000 | 1.000 | 1.019 | 1.027 | 1.103 | 1.522 | 1.000 | 1.024 | 1.033 | 1.128 | 1.644 | 1.000 | 1.028 | 1.039 | 1.152 | 1.766 |
| L(C)=0.5W L=12000 | 1.000 | 1.019 | 1.026 | 1.102 | 1.515 | 1.000 | 1.024 | 1.033 | 1.126 | 1.636 | 1.000 | 1.028 | 1.039 | 1.150 | 1.757 |
| L(C)=1.0W L= 1000 | 1.000 | 1.091 | 1.126 | 1.489 | 3.482 | 1.000 | 1.113 | 1.156 | 1.602 | 4.044 | 1.000 | 1.133 | 1.184 | 1.712 | 4.593 |
| L(C)=1.0W L= 6000 | 1.000 | 1.038 | 1.053 | 1.204 | 2.041 | 1.000 | 1.047 | 1.065 | 1.251 | 2.276 | 1.000 | 1.056 | 1.077 | 1.297 | 2.508 |
| L(C)=1.0W L=12000 | 1.000 | 1.038 | 1.052 | 1.201 | 2.028 | 1.000 | 1.046 | 1.064 | 1.247 | 2.260 | 1.000 | 1.055 | 1.076 | 1.293 | 2.489 |
| L(C)=1.5W L= 1000 | 1.000 | 1.134 | 1.185 | 1.716 | 4.663 | 1.000 | 1.164 | 1.226 | 1.875 | 5.453 | 1.000 | 1.192 | 1.266 | 2.028 | 6.214 |
| L(C)=1.5W L= 6000 | 1.000 | 1.056 | 1.078 | 1.301 | 2.558 | 1.000 | 1.069 | 1.095 | 1.369 | 2.895 | 1.000 | 1.081 | 1.112 | 1.435 | 3.225 |
| L(C)=1.5W L=12000 | 1.000 | 1.055 | 1.077 | 1.297 | 2.538 | 1.000 | 1.068 | 1.094 | 1.364 | 2.871 | 1.000 | 1.080 | 1.111 | 1.430 | 3.197 |
| L(C)=2.0W L= 1000 | 1.000 | 1.174 | 1.241 | 1.933 | 5.800 | 1.000 | 1.211 | 1.292 | 2.132 | 6.786 | 1.000 | 1.247 | 1.341 | 2.320 | 7.718 |
| L(C)=2.0W L= 6000 | 1.000 | 1.074 | 1.102 | 1.396 | 3.071 | 1.000 | 1.090 | 1.124 | 1.483 | 3.500 | 1.000 | 1.106 | 1.146 | 1.567 | 3.918 |
| L(C)=2.0W L=12000 | 1.000 | 1.073 | 1.101 | 1.391 | 3.044 | 1.000 | 1.089 | 1.123 | 1.477 | 3.469 | 1.000 | 1.104 | 1.145 | 1.560 | 3.882 |

I= 4.0 T(0) =1.4 T(1) =20.0 (OR ANY OTHER VALUE)

| W(C)/W= | W= 80.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | W=100.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | W=120.00 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L(C)=0.5W L= 1000 | 1.000 | 1.050 | 1.069 | 1.268 | 2.376 | 1.000 | 1.061 | 1.085 | 1.329 | 2.682 | 1.000 | 1.073 | 1.101 | 1.390 | 2.987 |
| L(C)=0.5W L= 6000 | 1.000 | 1.027 | 1.038 | 1.146 | 1.757 | 1.000 | 1.033 | 1.046 | 1.180 | 1.921 | 1.000 | 1.040 | 1.055 | 1.213 | 2.086 |
| L(C)=0.5W L=12000 | 1.000 | 1.027 | 1.038 | 1.146 | 1.755 | 1.000 | 1.033 | 1.046 | 1.179 | 1.920 | 1.000 | 1.040 | 1.055 | 1.212 | 2.085 |
| L(C)=1.0W L= 1000 | 1.000 | 1.097 | 1.134 | 1.524 | 3.763 | 1.000 | 1.119 | 1.164 | 1.638 | 4.328 | 1.000 | 1.140 | 1.193 | 1.751 | 4.882 |
| L(C)=1.0W L= 6000 | 1.000 | 1.053 | 1.074 | 1.288 | 2.541 | 1.000 | 1.065 | 1.090 | 1.351 | 2.847 | 1.000 | 1.077 | 1.106 | 1.413 | 3.152 |
| L(C)=1.0W L=12000 | 1.000 | 1.053 | 1.074 | 1.288 | 2.538 | 1.000 | 1.065 | 1.090 | 1.350 | 2.844 | 1.000 | 1.077 | 1.106 | 1.412 | 3.148 |
| L(C)=1.5W L= 1000 | 1.000 | 1.142 | 1.196 | 1.768 | 5.155 | 1.000 | 1.172 | 1.238 | 1.928 | 5.928 | 1.000 | 1.201 | 1.278 | 2.082 | 6.677 |
| L(C)=1.5W L= 6000 | 1.000 | 1.078 | 1.108 | 1.426 | 3.352 | 1.000 | 1.095 | 1.132 | 1.514 | 3.774 | 1.000 | 1.111 | 1.154 | 1.601 | 4.192 |
| L(C)=1.5W L=12000 | 1.000 | 1.078 | 1.108 | 1.425 | 3.348 | 1.000 | 1.095 | 1.131 | 1.513 | 3.770 | 1.000 | 1.111 | 1.154 | 1.600 | 4.187 |
| L(C)=2.0W L= 1000 | 1.000 | 1.184 | 1.255 | 2.000 | 6.546 | 1.000 | 1.221 | 1.306 | 2.198 | 7.475 | 1.000 | 1.257 | 1.355 | 2.385 | 8.364 |
| L(C)=2.0W L= 6000 | 1.000 | 1.102 | 1.142 | 1.559 | 4.190 | 1.000 | 1.123 | 1.171 | 1.670 | 4.700 | 1.000 | 1.144 | 1.199 | 1.777 | 5.206 |
| L(C)=2.0W L=12000 | 1.000 | 1.102 | 1.141 | 1.558 | 4.185 | 1.000 | 1.123 | 1.170 | 1.669 | 4.694 | 1.000 | 1.143 | 1.198 | 1.776 | 5.199 |

# Table XXII — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 6.0     T(0) =4.2     T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 1.000 | 1.046 | 1.064 | 1.246 | 2.241 | 1.000 | 1.057 | 1.079 | 1.305 | 2.534 | 1.000 | 1.068 | 1.094 | 1.363 | 2.825 |
| L(C)=0.5W L= 6000 | 1.000 | 1.016 | 1.022 | 1.087 | 1.441 | 1.000 | 1.020 | 1.028 | 1.107 | 1.543 | 1.000 | 1.024 | 1.033 | 1.128 | 1.644 |
| L(C)=0.5W L=12000 | 1.000 | 1.016 | 1.022 | 1.084 | 1.427 | 1.000 | 1.019 | 1.027 | 1.104 | 1.526 | 1.000 | 1.023 | 1.032 | 1.124 | 1.624 |
| L(C)=1.0W L= 1000 | 1.000 | 1.090 | 1.124 | 1.482 | 3.448 | 1.000 | 1.111 | 1.153 | 1.593 | 4.003 | 1.000 | 1.131 | 1.182 | 1.702 | 4.545 |
| L(C)=1.0W L= 6000 | 1.000 | 1.032 | 1.044 | 1.172 | 1.886 | 1.000 | 1.039 | 1.055 | 1.212 | 2.082 | 1.000 | 1.047 | 1.065 | 1.251 | 2.277 |
| L(C)=1.0W L=12000 | 1.000 | 1.031 | 1.043 | 1.167 | 1.858 | 1.000 | 1.038 | 1.053 | 1.205 | 2.048 | 1.000 | 1.045 | 1.063 | 1.243 | 2.237 |
| L(C)=1.5W L= 1000 | 1.000 | 1.132 | 1.182 | 1.707 | 4.619 | 1.000 | 1.161 | 1.223 | 1.864 | 5.402 | 1.000 | 1.190 | 1.263 | 2.016 | 6.157 |
| L(C)=1.5W L= 6000 | 1.000 | 1.048 | 1.066 | 1.256 | 2.334 | 1.000 | 1.058 | 1.081 | 1.313 | 2.617 | 1.000 | 1.069 | 1.095 | 1.369 | 2.897 |
| L(C)=1.5W L=12000 | 1.000 | 1.046 | 1.064 | 1.248 | 2.292 | 1.000 | 1.056 | 1.078 | 1.303 | 2.566 | 1.000 | 1.067 | 1.092 | 1.358 | 2.838 |
| L(C)=2.0W L= 1000 | 1.000 | 1.172 | 1.238 | 1.922 | 5.753 | 1.000 | 1.209 | 1.289 | 2.119 | 6.731 | 1.000 | 1.244 | 1.338 | 2.307 | 7.659 |
| L(C)=2.0W L= 6000 | 1.000 | 1.063 | 1.087 | 1.337 | 2.785 | 1.000 | 1.076 | 1.106 | 1.411 | 3.148 | 1.000 | 1.090 | 1.125 | 1.484 | 3.505 |
| L(C)=2.0W L=12000 | 1.000 | 1.061 | 1.084 | 1.327 | 2.729 | 1.000 | 1.074 | 1.102 | 1.398 | 3.081 | 1.000 | 1.087 | 1.121 | 1.469 | 3.427 |

I= 6.0     T(0) =2.8     T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 1.000 | 1.047 | 1.065 | 1.253 | 2.287 | 1.000 | 1.058 | 1.081 | 1.312 | 2.583 | 1.000 | 1.069 | 1.096 | 1.371 | 2.876 |
| L(C)=0.5W L= 6000 | 1.000 | 1.020 | 1.027 | 1.106 | 1.543 | 1.000 | 1.024 | 1.033 | 1.130 | 1.662 | 1.000 | 1.029 | 1.040 | 1.154 | 1.782 |
| L(C)=0.5W L=12000 | 1.000 | 1.019 | 1.027 | 1.104 | 1.535 | 1.000 | 1.024 | 1.033 | 1.128 | 1.654 | 1.000 | 1.028 | 1.039 | 1.152 | 1.772 |
| L(C)=1.0W L= 1000 | 1.000 | 1.092 | 1.128 | 1.495 | 3.565 | 1.000 | 1.113 | 1.157 | 1.607 | 4.120 | 1.000 | 1.134 | 1.185 | 1.716 | 4.663 |
| L(C)=1.0W L= 6000 | 1.000 | 1.039 | 1.054 | 1.209 | 2.104 | 1.000 | 1.047 | 1.066 | 1.255 | 2.331 | 1.000 | 1.056 | 1.078 | 1.301 | 2.558 |
| L(C)=1.0W L=12000 | 1.000 | 1.038 | 1.053 | 1.206 | 2.089 | 1.000 | 1.047 | 1.065 | 1.252 | 2.314 | 1.000 | 1.055 | 1.077 | 1.297 | 2.538 |
| L(C)=1.5W L= 1000 | 1.000 | 1.135 | 1.187 | 1.727 | 4.830 | 1.000 | 1.165 | 1.228 | 1.885 | 5.604 | 1.000 | 1.193 | 1.267 | 2.037 | 6.353 |
| L(C)=1.5W L= 6000 | 1.000 | 1.057 | 1.079 | 1.311 | 2.684 | 1.000 | 1.070 | 1.097 | 1.377 | 3.005 | 1.000 | 1.082 | 1.114 | 1.442 | 3.326 |
| L(C)=1.5W L=12000 | 1.000 | 1.057 | 1.078 | 1.307 | 2.662 | 1.000 | 1.069 | 1.095 | 1.372 | 2.979 | 1.000 | 1.081 | 1.112 | 1.437 | 3.296 |
| L(C)=2.0W L= 1000 | 1.000 | 1.176 | 1.243 | 1.949 | 6.077 | 1.000 | 1.213 | 1.294 | 2.146 | 7.031 | 1.000 | 1.248 | 1.343 | 2.332 | 7.940 |
| L(C)=2.0W L= 6000 | 1.000 | 1.075 | 1.104 | 1.410 | 3.283 | 1.000 | 1.091 | 1.126 | 1.495 | 3.684 | 1.000 | 1.107 | 1.148 | 1.578 | 4.084 |
| L(C)=2.0W L=12000 | 1.000 | 1.074 | 1.103 | 1.405 | 3.253 | 1.000 | 1.090 | 1.125 | 1.488 | 3.650 | 1.000 | 1.106 | 1.146 | 1.570 | 4.045 |

I= 6.0     T(0) =1.4     T(1) =20.0 (OR ANY OTHER VALUE)

| | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 1.000 | 1.051 | 1.071 | 1.277 | 2.479 | 1.000 | 1.063 | 1.087 | 1.337 | 2.772 | 1.000 | 1.074 | 1.102 | 1.397 | 3.068 |
| L(C)=0.5W L= 6000 | 1.000 | 1.028 | 1.039 | 1.154 | 1.836 | 1.000 | 1.034 | 1.048 | 1.186 | 1.988 | 1.000 | 1.040 | 1.056 | 1.218 | 2.145 |
| L(C)=0.5W L=12000 | 1.000 | 1.028 | 1.039 | 1.154 | 1.835 | 1.000 | 1.034 | 1.048 | 1.185 | 1.986 | 1.000 | 1.040 | 1.056 | 1.217 | 2.144 |
| L(C)=1.0W L= 1000 | 1.000 | 1.100 | 1.139 | 1.547 | 4.118 | 1.000 | 1.121 | 1.168 | 1.658 | 4.633 | 1.000 | 1.142 | 1.196 | 1.768 | 5.155 |
| L(C)=1.0W L= 6000 | 1.000 | 1.056 | 1.077 | 1.307 | 2.819 | 1.000 | 1.067 | 1.093 | 1.366 | 3.076 | 1.000 | 1.078 | 1.108 | 1.426 | 3.352 |
| L(C)=1.0W L=12000 | 1.000 | 1.056 | 1.077 | 1.307 | 2.815 | 1.000 | 1.067 | 1.093 | 1.365 | 3.072 | 1.000 | 1.078 | 1.108 | 1.425 | 3.348 |
| L(C)=1.5W L= 1000 | 1.000 | 1.146 | 1.203 | 1.809 | 5.931 | 1.000 | 1.176 | 1.243 | 1.962 | 6.571 | 1.000 | 1.204 | 1.283 | 2.112 | 7.239 |
| L(C)=1.5W L= 6000 | 1.000 | 1.082 | 1.114 | 1.459 | 3.983 | 1.000 | 1.098 | 1.136 | 1.541 | 4.273 | 1.000 | 1.114 | 1.158 | 1.624 | 4.619 |
| L(C)=1.5W L=12000 | 1.000 | 1.082 | 1.114 | 1.458 | 3.977 | 1.000 | 1.098 | 1.136 | 1.540 | 4.267 | 1.000 | 1.114 | 1.157 | 1.623 | 4.612 |
| L(C)=2.0W L= 1000 | 1.000 | 1.190 | 1.264 | 2.062 | 7.934 | 1.000 | 1.226 | 1.314 | 2.249 | 8.575 | 1.000 | 1.261 | 1.361 | 2.429 | 9.295 |
| L(C)=2.0W L= 6000 | 1.000 | 1.108 | 1.149 | 1.609 | 5.379 | 1.000 | 1.127 | 1.177 | 1.711 | 5.590 | 1.000 | 1.147 | 1.204 | 1.812 | 5.942 |
| L(C)=2.0W L=12000 | 1.000 | 1.107 | 1.149 | 1.608 | 5.369 | 1.000 | 1.127 | 1.176 | 1.709 | 5.582 | 1.000 | 1.147 | 1.203 | 1.811 | 5.933 |

# Table XXIII — Values of (max delta $T_c$)/(max delta $T_{c0}$)

I= 8.0 T(0)=4.2 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 1.000 | 1.046 | 1.064 | 1.248 | 2.258 | 1.000 | 1.057 | 1.079 | 1.306 | 2.550 | 1.000 | 1.068 | 1.094 | 1.364 | 2.840 |
| L(C)=0.5W L= 6000 | 1.000 | 1.017 | 1.023 | 1.089 | 1.456 | 1.000 | 1.020 | 1.028 | 1.109 | 1.555 | 1.000 | 1.024 | 1.033 | 1.129 | 1.656 |
| L(C)=0.5W L=12000 | 1.000 | 1.016 | 1.022 | 1.086 | 1.441 | 1.000 | 1.020 | 1.027 | 1.105 | 1.538 | 1.000 | 1.023 | 1.032 | 1.125 | 1.635 |
| L(C)=1.0W L= 1000 | 1.000 | 1.091 | 1.125 | 1.486 | 3.502 | 1.000 | 1.111 | 1.154 | 1.597 | 4.052 | 1.000 | 1.132 | 1.182 | 1.705 | 4.591 |
| L(C)=1.0W L= 6000 | 1.000 | 1.033 | 1.045 | 1.177 | 1.931 | 1.000 | 1.040 | 1.055 | 1.215 | 2.120 | 1.000 | 1.047 | 1.065 | 1.254 | 2.312 |
| L(C)=1.0W L=12000 | 1.000 | 1.032 | 1.044 | 1.171 | 1.900 | 1.000 | 1.039 | 1.054 | 1.208 | 2.085 | 1.000 | 1.046 | 1.063 | 1.246 | 2.270 |
| L(C)=1.5W L= 1000 | 1.000 | 1.133 | 1.184 | 1.714 | 4.729 | 1.000 | 1.162 | 1.224 | 1.871 | 5.501 | 1.000 | 1.191 | 1.264 | 2.022 | 6.248 |
| L(C)=1.5W L= 6000 | 1.000 | 1.049 | 1.067 | 1.263 | 2.423 | 1.000 | 1.059 | 1.082 | 1.319 | 2.694 | 1.000 | 1.070 | 1.096 | 1.374 | 2.967 |
| L(C)=1.5W L=12000 | 1.000 | 1.047 | 1.065 | 1.254 | 2.377 | 1.000 | 1.057 | 1.079 | 1.309 | 2.640 | 1.000 | 1.067 | 1.093 | 1.363 | 2.905 |
| L(C)=2.0W L= 1000 | 1.000 | 1.173 | 1.239 | 1.932 | 5.933 | 1.000 | 1.210 | 1.290 | 2.128 | 6.891 | 1.000 | 1.245 | 1.339 | 2.315 | 7.805 |
| L(C)=2.0W L= 6000 | 1.000 | 1.064 | 1.089 | 1.348 | 2.935 | 1.000 | 1.078 | 1.107 | 1.420 | 3.276 | 1.000 | 1.091 | 1.126 | 1.491 | 3.620 |
| L(C)=2.0W L=12000 | 1.000 | 1.062 | 1.086 | 1.337 | 2.872 | 1.000 | 1.075 | 1.104 | 1.407 | 3.204 | 1.000 | 1.088 | 1.122 | 1.476 | 3.538 |

I= 8.0 T(0)=2.8 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 1.000 | 1.048 | 1.066 | 1.257 | 2.326 | 1.000 | 1.059 | 1.081 | 1.315 | 2.617 | 1.000 | 1.070 | 1.097 | 1.374 | 2.908 |
| L(C)=0.5W L= 6000 | 1.000 | 1.020 | 1.028 | 1.109 | 1.575 | 1.000 | 1.025 | 1.034 | 1.133 | 1.689 | 1.000 | 1.029 | 1.040 | 1.156 | 1.806 |
| L(C)=0.5W L=12000 | 1.000 | 1.020 | 1.028 | 1.108 | 1.567 | 1.000 | 1.024 | 1.034 | 1.131 | 1.680 | 1.000 | 1.029 | 1.040 | 1.154 | 1.795 |
| L(C)=1.0W L= 1000 | 1.000 | 1.093 | 1.129 | 1.505 | 3.691 | 1.000 | 1.114 | 1.158 | 1.615 | 4.231 | 1.000 | 1.135 | 1.186 | 1.723 | 4.765 |
| L(C)=1.0W L= 6000 | 1.000 | 1.040 | 1.055 | 1.218 | 2.207 | 1.000 | 1.048 | 1.067 | 1.262 | 2.417 | 1.000 | 1.057 | 1.079 | 1.307 | 2.634 |
| L(C)=1.0W L=12000 | 1.000 | 1.039 | 1.055 | 1.215 | 2.189 | 1.000 | 1.048 | 1.066 | 1.259 | 2.398 | 1.000 | 1.056 | 1.078 | 1.303 | 2.613 |
| L(C)=1.5W L= 1000 | 1.000 | 1.137 | 1.190 | 1.744 | 5.092 | 1.000 | 1.166 | 1.230 | 1.899 | 5.833 | 1.000 | 1.194 | 1.269 | 2.049 | 6.559 |
| L(C)=1.5W L= 6000 | 1.000 | 1.059 | 1.082 | 1.325 | 2.902 | 1.000 | 1.071 | 1.099 | 1.389 | 3.185 | 1.000 | 1.083 | 1.115 | 1.453 | 3.483 |
| L(C)=1.5W L=12000 | 1.000 | 1.058 | 1.081 | 1.321 | 2.874 | 1.000 | 1.070 | 1.097 | 1.384 | 3.155 | 1.000 | 1.082 | 1.114 | 1.447 | 3.451 |
| L(C)=2.0W L= 1000 | 1.000 | 1.178 | 1.247 | 1.973 | 6.521 | 1.000 | 1.215 | 1.297 | 2.166 | 7.411 | 1.000 | 1.250 | 1.345 | 2.350 | 8.276 |
| L(C)=2.0W L= 6000 | 1.000 | 1.078 | 1.108 | 1.432 | 3.669 | 1.000 | 1.093 | 1.129 | 1.512 | 3.994 | 1.000 | 1.109 | 1.151 | 1.593 | 4.352 |
| L(C)=2.0W L=12000 | 1.000 | 1.077 | 1.107 | 1.426 | 3.630 | 1.000 | 1.092 | 1.128 | 1.505 | 3.954 | 1.000 | 1.107 | 1.149 | 1.585 | 4.308 |

I= 8.0 T(0)=1.4 T(1)=20.0 (OR ANY OTHER VALUE)

| | W= 80.00 | | | | | W=100.00 | | | | | W=120.00 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W(C)/W= | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 | 1.00 | 0.80 | 0.75 | 0.50 | 0.25 |
| L(C)=0.5W L= 1000 | 1.000 | 1.053 | 1.074 | 1.292 | 2.651 | 1.000 | 1.064 | 1.089 | 1.349 | 2.914 | 1.000 | 1.075 | 1.104 | 1.407 | 3.194 |
| L(C)=0.5W L= 6000 | 1.000 | 1.030 | 1.042 | 1.167 | 1.984 | 1.000 | 1.036 | 1.050 | 1.195 | 2.101 | 1.000 | 1.042 | 1.058 | 1.226 | 2.241 |
| L(C)=0.5W L=12000 | 1.000 | 1.030 | 1.042 | 1.167 | 1.982 | 1.000 | 1.036 | 1.049 | 1.195 | 2.098 | 1.000 | 1.041 | 1.057 | 1.225 | 2.238 |
| L(C)=1.0W L= 1000 | 1.000 | 1.104 | 1.145 | 1.583 | 4.795 | 1.000 | 1.124 | 1.173 | 1.687 | 5.163 | 1.000 | 1.145 | 1.200 | 1.793 | 5.607 |
| L(C)=1.0W L= 6000 | 1.000 | 1.060 | 1.083 | 1.339 | 3.443 | 1.000 | 1.070 | 1.097 | 1.390 | 3.515 | 1.000 | 1.061 | 1.112 | 1.446 | 3.708 |
| L(C)=1.0W L=12000 | 1.000 | 1.060 | 1.083 | 1.338 | 3.436 | 1.000 | 1.070 | 1.097 | 1.389 | 3.509 | 1.000 | 1.061 | 1.112 | 1.445 | 3.703 |
| L(C)=1.5W L= 1000 | 1.000 | 1.153 | 1.213 | 1.874 | 7.658 | 1.000 | 1.181 | 1.251 | 2.014 | 7.808 | 1.000 | 1.208 | 1.289 | 2.156 | 8.236 |
| L(C)=1.5W L= 6000 | 1.000 | 1.089 | 1.123 | 1.517 | 5.805 | 1.000 | 1.103 | 1.143 | 1.584 | 5.381 | 1.000 | 1.117 | 1.163 | 1.660 | 5.454 |
| L(C)=1.5W L=12000 | 1.000 | 1.088 | 1.123 | 1.515 | 5.792 | 1.000 | 1.102 | 1.142 | 1.583 | 5.371 | 1.000 | 1.117 | 1.163 | 1.658 | 5.446 |
| L(C)=2.0W L= 1000 | 1.000 | 1.200 | 1.278 | 2.162 | 11.625 | 1.000 | 1.233 | 1.325 | 2.329 | 10.922 | 1.000 | 1.267 | 1.370 | 2.496 | 11.068 |
| L(C)=2.0W L= 6000 | 1.000 | 1.116 | 1.163 | 1.699 | 10.239 | 1.000 | 1.134 | 1.186 | 1.777 | 7.935 | 1.000 | 1.152 | 1.211 | 1.867 | 7.551 |
| L(C)=2.0W L=12000 | 1.000 | 1.116 | 1.162 | 1.697 | 10.214 | 1.000 | 1.134 | 1.186 | 1.776 | 7.920 | 1.000 | 1.152 | 1.211 | 1.865 | 7.538 |

Table XXIV — Values of (max $\Delta T_c$)/(max $\Delta T_{c0}$) for the special case of a small current in a long conductor

| | $W = 6$ | | | | | $W = 8$ | | | | | $W = 10$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $L_c$ | $W_c/W = 1$ | 0.8 | 0.75 | 0.50 | 0.25 | 1 | 0.8 | 0.75 | 0.50 | 0.25 | 1 | 0.8 | 0.75 | 0.50 | 0.25 |
| $t_0 = 1.4$ (1-oz Cu) | | | | | | | | | | | | | | | |
| $2W$ | 1.000 | 1.028 | 1.039 | 1.149 | 1.744 | 1.000 | 1.037 | 1.051 | 1.197 | 1.984 | 1.000 | 1.046 | 1.063 | 1.244 | 2.220 |
| $4W$ | 1.000 | 1.054 | 1.075 | 1.290 | 2.452 | 1.000 | 1.071 | 1.099 | 1.381 | 2.904 | 1.000 | 1.088 | 1.121 | 1.468 | 3.341 |
| $6W$ | 1.000 | 1.080 | 1.110 | 1.425 | 3.124 | 1.000 | 1.104 | 1.143 | 1.553 | 3.763 | 1.000 | 1.126 | 1.175 | 1.674 | 4.371 |
| $8W$ | 1.000 | 1.104 | 1.143 | 1.553 | 3.763 | 1.000 | 1.134 | 1.185 | 1.713 | 4.566 | 1.000 | 1.162 | 1.224 | 1.863 | 5.317 |
| $t_0 = 2.8$ (2-oz Cu) | | | | | | | | | | | | | | | |
| $2W$ | 1.000 | 1.020 | 1.028 | 1.106 | 1.530 | 1.000 | 1.026 | 1.036 | 1.141 | 1.703 | 1.000 | 1.033 | 1.045 | 1.175 | 1.873 |
| $4W$ | 1.000 | 1.039 | 1.054 | 1.208 | 2.042 | 1.000 | 1.052 | 1.071 | 1.275 | 2.373 | 1.000 | 1.064 | 1.088 | 1.339 | 2.696 |
| $6W$ | 1.000 | 1.058 | 1.080 | 1.307 | 2.535 | 1.000 | 1.075 | 1.104 | 1.402 | 3.011 | 1.000 | 1.093 | 1.128 | 1.494 | 3.471 |
| $8W$ | 1.000 | 1.075 | 1.104 | 1.402 | 3.011 | 1.000 | 1.098 | 1.136 | 1.524 | 3.620 | 1.000 | 1.120 | 1.166 | 1.640 | 4.201 |
| $t_0 = 4.2$ (3-oz Cu) | | | | | | | | | | | | | | | |
| $2W$ | 1.000 | 1.016 | 1.023 | 1.087 | 1.434 | 1.000 | 1.022 | 1.030 | 1.115 | 1.576 | 1.000 | 1.027 | 1.037 | 1.143 | 1.717 |
| $4W$ | 1.000 | 1.032 | 1.044 | 1.171 | 1.856 | 1.000 | 1.042 | 1.059 | 1.226 | 2.131 | 1.000 | 1.053 | 1.073 | 1.280 | 2.400 |
| $6W$ | 1.000 | 1.048 | 1.066 | 1.253 | 2.266 | 1.000 | 1.062 | 1.086 | 1.333 | 2.664 | 1.000 | 1.077 | 1.106 | 1.410 | 3.050 |
| $8W$ | 1.000 | 1.062 | 1.086 | 1.333 | 2.664 | 1.000 | 1.082 | 1.113 | 1.435 | 3.176 | 1.000 | 1.100 | 1.138 | 1.534 | 3.669 |

Table XXV — Values of (max $\Delta T_c$)/(max $\Delta T_{c0}$) for the special case of small current in a long conductor

$t_0 = 1.4$ (1-oz Cu)

| $L_c$ | $W = 20$ | | | | | $W = 25$ | | | | | $W = 30$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $W_c/W = 1$ | 0.8 | 0.75 | 0.50 | 0.25 | 1 | 0.8 | 0.75 | 0.50 | 0.25 | 1 | 0.8 | 0.75 | 0.50 | 0.25 |
| $W$ | 1.000 | 1.026 | 1.036 | 1.141 | 1.703 | 1.000 | 1.033 | 1.045 | 1.175 | 1.873 | 1.000 | 1.039 | 1.054 | 1.208 | 2.042 |
| $2W$ | 1.000 | 1.052 | 1.071 | 1.275 | 2.373 | 1.000 | 1.064 | 1.088 | 1.339 | 2.696 | 1.000 | 1.075 | 1.104 | 1.402 | 3.011 |
| $3W$ | 1.000 | 1.075 | 1.104 | 1.402 | 3.011 | 1.000 | 1.093 | 1.128 | 1.494 | 3.471 | 1.000 | 1.109 | 1.151 | 1.583 | 3.914 |
| $4W$ | 1.000 | 1.098 | 1.136 | 1.524 | 3.620 | 1.000 | 1.120 | 1.166 | 1.640 | 4.200 | 1.000 | 1.141 | 1.195 | 1.751 | 4.753 |

$t_0 = 2.8$ (2-oz Cu)

| $L_c$ | $W = 20$ | | | | | $W = 25$ | | | | | $W = 30$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $W_c/W = 1$ | 0.8 | 0.75 | 0.50 | 0.25 | 1 | 0.8 | 0.75 | 0.50 | 0.25 | 1 | 0.8 | 0.75 | 0.50 | 0.25 |
| $W$ | 1.000 | 1.019 | 1.026 | 1.100 | 1.501 | 1.000 | 1.023 | 1.032 | 1.125 | 1.623 | 1.000 | 1.028 | 1.039 | 1.149 | 1.744 |
| $2W$ | 1.000 | 1.037 | 1.051 | 1.197 | 1.984 | 1.000 | 1.046 | 1.063 | 1.244 | 2.220 | 1.000 | 1.054 | 1.075 | 1.290 | 2.452 |
| $3W$ | 1.000 | 1.054 | 1.075 | 1.290 | 2.452 | 1.000 | 1.067 | 1.093 | 1.359 | 2.792 | 1.000 | 1.080 | 1.110 | 1.425 | 3.124 |
| $4W$ | 1.000 | 1.071 | 1.099 | 1.381 | 2.904 | 1.000 | 1.088 | 1.121 | 1.468 | 3.341 | 1.000 | 1.104 | 1.143 | 1.553 | 3.763 |

$t_0 = 4.2$ (3-oz Cu)

| $L_c$ | $W = 20$ | | | | | $W = 25$ | | | | | $W = 30$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $W_c/W = 1$ | 0.8 | 0.75 | 0.50 | 0.25 | 1 | 0.8 | 0.75 | 0.50 | 0.25 | 1 | 0.8 | 0.75 | 0.50 | 0.25 |
| $W$ | 1.000 | 1.015 | 1.021 | 1.082 | 1.410 | 1.000 | 1.019 | 1.027 | 1.102 | 1.511 | 1.000 | 1.023 | 1.032 | 1.122 | 1.611 |
| $2W$ | 1.000 | 1.030 | 1.042 | 1.162 | 1.809 | 1.000 | 1.038 | 1.052 | 1.201 | 2.004 | 1.000 | 1.045 | 1.062 | 1.239 | 2.196 |
| $3W$ | 1.000 | 1.045 | 1.062 | 1.239 | 2.196 | 1.000 | 1.056 | 1.077 | 1.296 | 2.480 | 1.000 | 1.066 | 1.091 | 1.352 | 2.758 |
| $4W$ | 1.000 | 1.059 | 1.082 | 1.315 | 2.574 | 1.000 | 1.073 | 1.101 | 1.388 | 2.941 | 1.000 | 1.086 | 1.119 | 1.460 | 3.297 |

Table XXVI — Values of (max $\Delta T_c$)/(max $\Delta T_{c0}$) for the special case of small current in a long conductor

$t_0 = 1.4$ (1-oz Cu)

| $L_c$ | $W = 80$ | | | | | $W = 100$ | | | | | $W = 120$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $W_c/W = 1$ | 0.8 | 0.75 | 0.50 | 0.25 | 1 | 0.8 | 0.75 | 0.50 | 0.25 | 1 | 0.8 | 0.75 | 0.50 | 0.25 |
| $W/2$ | 1.000 | 1.026 | 1.036 | 1.141 | 1.703 | 1.000 | 1.033 | 1.045 | 1.175 | 1.873 | 1.000 | 1.039 | 1.054 | 1.209 | 2.042 |
| $W$ | 1.000 | 1.052 | 1.071 | 1.275 | 2.373 | 1.000 | 1.064 | 1.088 | 1.339 | 2.696 | 1.000 | 1.075 | 1.104 | 1.402 | 3.011 |
| $3W/2$ | 1.000 | 1.075 | 1.104 | 1.402 | 3.011 | 1.000 | 1.093 | 1.128 | 1.494 | 3.471 | 1.000 | 1.109 | 1.151 | 1.583 | 3.914 |
| $2W$ | 1.000 | 1.098 | 1.136 | 1.524 | 3.620 | 1.000 | 1.120 | 1.166 | 1.640 | 4.200 | 1.000 | 1.141 | 1.195 | 1.751 | 4.753 |

$t_0 = 2.8$ (2-oz Cu)

| $L_c$ | $W = 80$ | | | | | $W = 100$ | | | | | $W = 120$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $W_c/W = 1$ | 0.8 | 0.75 | 0.50 | 0.25 | 1 | 0.8 | 0.75 | 0.50 | 0.25 | 1 | 0.8 | 0.75 | 0.50 | 0.25 |
| $W/2$ | 1.000 | 1.019 | 1.026 | 1.100 | 1.501 | 1.000 | 1.023 | 1.032 | 1.125 | 1.623 | 1.000 | 1.028 | 1.039 | 1.149 | 1.744 |
| $W$ | 1.000 | 1.037 | 1.051 | 1.197 | 1.984 | 1.000 | 1.046 | 1.063 | 1.244 | 2.220 | 1.000 | 1.054 | 1.075 | 1.290 | 2.452 |
| $3W/2$ | 1.000 | 1.054 | 1.075 | 1.290 | 2.452 | 1.000 | 1.067 | 1.093 | 1.359 | 2.792 | 1.000 | 1.080 | 1.110 | 1.425 | 3.124 |
| $2W$ | 1.000 | 1.071 | 1.099 | 1.381 | 2.904 | 1 000 | 1.088 | 1.121 | 1.468 | 3.341 | 1.000 | 1.104 | 1.143 | 1.553 | 3.763 |

$t_0 = 4.2$ (3-oz Cu)

| $L_c$ | $W = 80$ | | | | | $W = 100$ | | | | | $W = 120$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $W_c/W = 1$ | 0.8 | 0.75 | 0.50 | 0.25 | 1 | 0.8 | 0.75 | 0.50 | 0.25 | 1 | 0.8 | 0.75 | 0.50 | 0.25 |
| $W/2$ | 1.000 | 1.015 | 1.021 | 1.082 | 1.410 | 1.000 | 1.019 | 1.027 | 1.102 | 1.511 | 1.000 | 1.023 | 1.032 | 1.122 | 1.611 |
| $W$ | 1.000 | 1.030 | 1.042 | 1.162 | 1.809 | 1.000 | 1.038 | 1.052 | 1.201 | 2.004 | 1.000 | 1.045 | 1.062 | 1.239 | 2.196 |
| $3W/2$ | 1.000 | 1.045 | 1.062 | 1.239 | 2.196 | 1.000 | 1.056 | 1.077 | 1.296 | 2.480 | 1.000 | 1.066 | 1.091 | 1.352 | 2.758 |
| $2W$ | 1.000 | 1.059 | 1.082 | 1.315 | 2.574 | 1.000 | 1.073 | 1.101 | 1.388 | 2.941 | 1.000 | 1.086 | 1.119 | 1.460 | 3.297 |

## APPENDIX B

### *Comments on the Conservative Nature of the Results*

D. E. McCumber has suggested[5] that the boundary conditions appropriate to eq. (1) at the step discontinuity in conductor width are:

(*i*) $\Delta T(x)$ be continuous.
(*ii*) $[d\Delta T(x)/dx]$ be discontinuous such that $W(x)[d\Delta T(x)/dx]$ be continuous.

These boundary conditions derive from the one-dimensional heat continuity equation:

$$kt_0 \frac{d}{dx}\left(W(x)\frac{d\Delta T(x)}{dx}\right) - 2HW(x)\Delta T(x) + I^2R'[1 + \alpha_1\Delta T(x)] = 0. \quad (24)$$

Equation (24) is identical to eq. (1) in the regions away from the discontinuity. McCumber's boundary conditions conserve integrated heat flux but neglect fringing in the transition region. These lead to a solution

$$\Delta T_c(x) = \frac{\gamma_1^2}{\beta_1^2} - \frac{\{(\gamma^2/\beta^2)\operatorname{sech}[(\beta/2)(L-L_c)] + [(\gamma_1^2/\beta_1^2) - (\gamma^2/\beta^2)]\}\cosh\beta_1 x}{(W_c/W)(\beta_1/\beta)\sinh(\beta_1 L_c/2)\tanh[(\beta/2)(L-L_c)] + \cosh(\beta_1 L_c/2)}, \quad (25)$$

which is identical to eq. (2) except for the factor $W_c/W$ in the first term of the denominator.

McCumber has shown by a full two-dimensional analysis of a simplified system similar to that considered here that eq. (25) is more accurate than eq. (2) but tends slightly to underestimate the temperature rise $\Delta T_c(x)$, whereas eq. (2) is conservative and always overestimates $\Delta T_c(x)$. As the results reported in this paper show, even these conservative estimates of $\Delta T_c(x)$ indicate substantial thermal latitude for nicks or constrictions in printed wiring circuits.

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