APPENDIX A
List of Symbols Used in the 96 Legibility Equations

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$\Delta E$  Color contrast
$\Delta L^*$  Color difference at $L^*$ coordinates of CIELUV
$\Delta u^*$  Color difference at $u^*$ coordinates of CIELUV
$\Delta v^*$  Color difference at $v^*$ coordinates of CIELUV
$\phi$  Horizontal viewing angle, $\pm 0^\circ$-$90^\circ$
$\alpha$  Vertical viewing angle, $\pm 0^\circ$-$90^\circ$
$\xi$  Incident angle between display normal and the viewing line, $0^\circ$-$90^\circ$
$\omega$  Solid angle
$A$  Target area
$A_c$  Visual acuity
$A_g$  Age
$A_{horz}$  Horizontal area
$A_{LC}$  Letter copy area in a sign design
$A_S$  Snellen visual acuity
$A_V$  Vistech visual acuity
$A_{vert}$  Vertical area
$C$  Luminance contrast
$C_a$  Absolute luminance contrast
$C_r$  Luminance ratio
$C_m$  Luminance modulation
\( C_{\text{min}} \) Minimum perceptible contrast
\( C_{\infty} \) Minimum perceptible contrast for target luminance \( L_t \) approaching infinity
\( C_{\text{th}} \) Threshold contrast of luminance
\( C_{\%} \) Luminance contrast percent
\( d \) Size of graphic details
\( dL' \) Color difference at \( L' \) coordinates of CIELAB
\( du' \) Color difference at \( u' \) coordinates of CIELAB
\( dv' \) Color difference at \( v' \) coordinates of CIELAB
\( D \) Viewing distance
\( D_L \) Legible distance
\( D_0 \) Viewing distance when characters are viewed perpendicularly to the display
\( D_e \) No-error viewing distance
\( D_{ER} \) Expected recognition or clear sight distance
\( D_{\text{min}} \) Minimum required visibility distance
\( D_{op} \) Optimum viewing distance
\( D_p \) Preferred viewing distance
\( E \) Error rates
\( f_h \) Horizontal fundamental spatial frequency
\( f_v \) Vertical fundamental spatial frequency
\( G \) Acceptable glare
\( H \) Character height
\( H' \) Character height of upper case letters
\( H_r \) Required letter size
\( H_{\text{min}} \) Minimum height of legible character
\( H/S_w \) Height to strokewidth ratio
\( I_t \) Target illuminance
\( I_a \) Ambient illuminance level
\( k \) \hspace{1cm} \text{Constants, } k_1, k_2, \ldots \\
\( L \) \hspace{1cm} \text{Luminance level} \\
\( L_a \) \hspace{1cm} \text{Adaptation luminance} \\
\( L_b \) \hspace{1cm} \text{Background luminance} \\
\( L_g \) \hspace{1cm} \text{The greater luminance of two} \\
\( L_d \) \hspace{1cm} \text{The lesser luminance of two} \\
\( L_{\text{max}} \) \hspace{1cm} \text{Maximum luminance} \\
\( L_{\text{min}} \) \hspace{1cm} \text{Minimum luminance} \\
\( L_s \) \hspace{1cm} \text{Surrounding luminance} \\
\( L_t \) \hspace{1cm} \text{Target luminance} \\
\( LI \) \hspace{1cm} \text{Legibility Index} \\
\( LI_{th} \) \hspace{1cm} \text{Threshold Legibility Index} \\
\( LI_p \) \hspace{1cm} \text{Preferred Legibility Index} \\
\( LP \) \hspace{1cm} \text{Legibility potential} \\
\( NSp \) \hspace{1cm} \text{Negative space in signage design} \\
\( P \) \hspace{1cm} \text{Percentage of correct reading performance} \\
\( r \) \hspace{1cm} \text{Height-to-width ratio of character} \\
\( RS \) \hspace{1cm} \text{Reading speed} \\
\( RT \) \hspace{1cm} \text{Response time} \\
\( S \) \hspace{1cm} \text{General size of target viewed not perpendicularly to the display} \\
\( Sp \) \hspace{1cm} \text{Spacing between characters within word} \\
\( S_d \) \hspace{1cm} \text{Denominator in the Snellen ratio} \\
\( S_w \) \hspace{1cm} \text{Strokewidth of the character} \\
\( s/p \) \hspace{1cm} \text{Scotopic to photopic output ratio} \\
\( T \) \hspace{1cm} \text{Target exposure time or observer’s performance time} \\
\( T_{\text{glance}} \) \hspace{1cm} \text{Glance time} \\
\( T_{\text{long}} \) \hspace{1cm} \text{Long target exposure time}
$T_p$ Perception time

$T_R$ Reading time

$T_S$ Searching time

$v$ Visual angle of text stroke width or graphic details

$V$ Visual angle of whole character

$VI$ Visibility Index as the reading of visibility meter in density units

$V_{min}$ Minimum perceptible visual angle

$W$ Character width

$y$ Fraction of number of correct answers to the total number