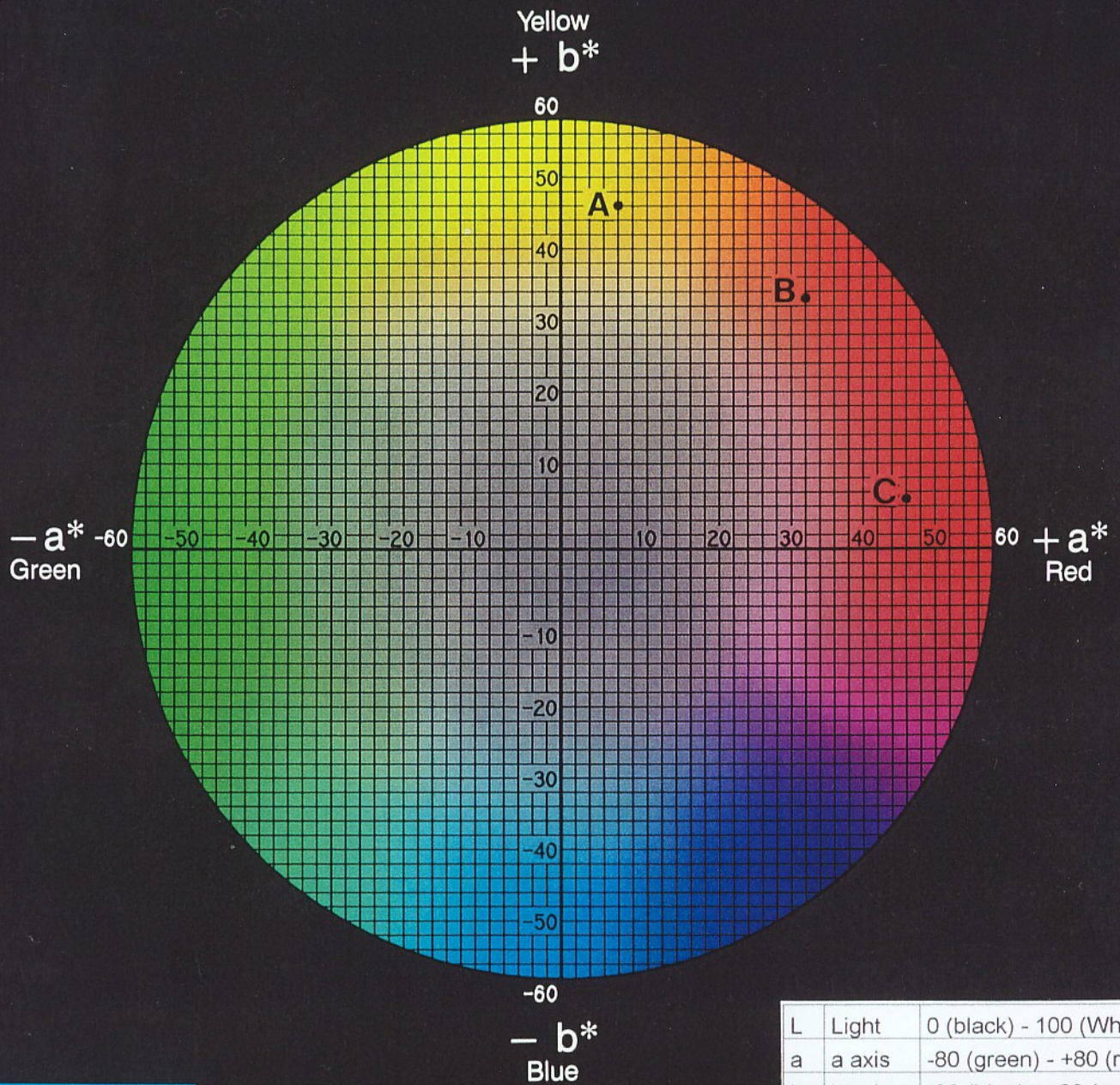


CIELAB Tolerancing



L	Light	0 (black) - 100 (White)
a	a axis	-80 (green) - +80 (red)
b	b axis	-80 (blue) - +80 (yellow)

CIELAB tolerancing uses rectangular coordinates based on the following formulas:

$L^* = 116 (Y/Y_n)^{1/3} - 16$

$a^* = 500[(X/X_n)^{1/3} - (Y/Y_n)^{1/3}]$

$b^* = 200[(Y/Y_n)^{1/3} - (Z/Z_n)^{1/3}]$

$\Delta E^*_{ab} = [(\Delta L^*)^2 + (\Delta a^*)^2 + (\Delta b^*)^2]^{1/2}$

$\Delta L^* = L^*_T - L^*_S$

$\Delta a^* = a^*_T - a^*_S$

$\Delta b^* = b^*_T - b^*_S$

(If X/X_n , Y/Y_n , or Z/Z_n is $\leq .008856$, modified formulas are applied)

(Subscript T indicates trial and subscript S indicates standard.)

