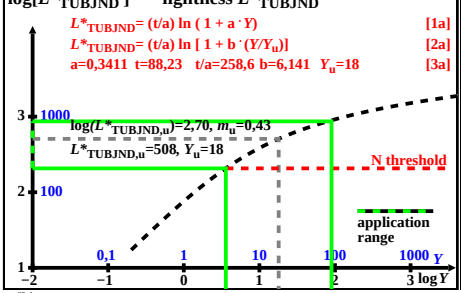
log[L^*_{TUBJND}] lightness L^*_{TUBJND}

L^*_{TUBJND}= (t/a) ln (1 + a · Y) [1a]

L^*_{TUBJND}= (t/a) ln [1 + b · (Y/Y_u)] [2a]

a=0,3411 t=88,23 t/a=258,6 b=6,141 Y_u=18 [3a]



eea60−1a

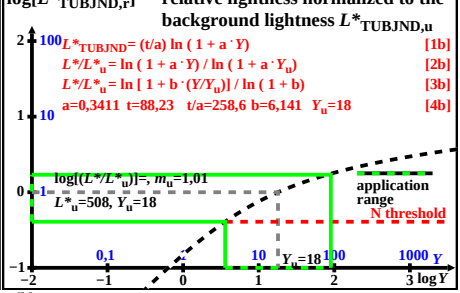
log[$L^*_{TUBJND,r}$] relative lightness normalized to the background lightness $L^*_{TUBJND,u}$

L^*_{TUBJND}= (t/a) ln (1 + a · Y) [1b]

L^*/L^*_u= ln (1 + a · Y) / ln (1 + a · Y_u) [2b]

L^*/L^*_u= ln [1 + b · (Y/Y_u)] / ln (1 + b) [3b]

a=0,3411 t=88,23 t/a=258,6 b=6,141 Y_u=18 [4b]



eea60−2a

log[ΔY] ΔY_{TUBJND} tristimulus-value difference

L^*_{TUBJND}= (t/a) ln [1 + b · (Y/Y_u)] [1c]

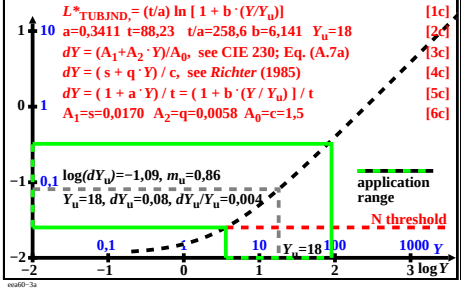
a=0,3411 t=88,23 t/a=258,6 b=6,141 Y_u=18 [2c]

dY = (A_1+A_2 · Y)/A_0, see CIE 230; Eq. (A.7a) [3c]

dY = (s + q · Y) / c, see *Richter* (1985) [4c]

dY = (1 + a · Y) / t = (1 + b · (Y / Y_u)] / t [5c]

A_1=s=0,0170 A_2=q=0,0058 A_0=c=1,5 [6c]



eea60−3a

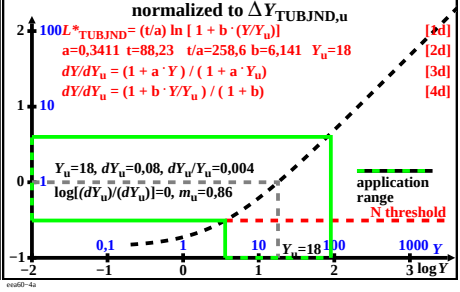
log[$\Delta Y/\Delta Y_u$] ΔY_{TUBJND} tristimulus-value difference normalized to $\Delta Y_{TUBJND,u}$

L^*_{TUBJND}= (t/a) ln [1 + b · (Y/Y_u)] [2d]

a=0,3411 t=88,23 t/a=258,6 b=6,141 Y_u=18 [2d]

dY/dY_u = (1 + a · Y) / (1 + a · Y_u) [3d]

dY/dY_u = (1 + b · Y/Y_u) / (1 + b) [4d]



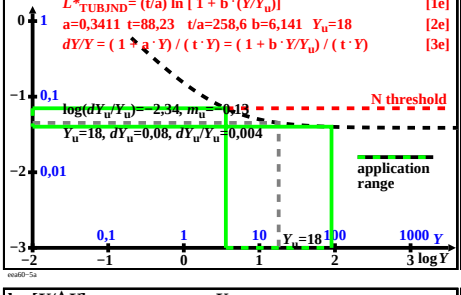
eea60−4a

log[Y/Y] Y_{TUBJND} sensitivity

L^*_{TUBJND}= (t/a) ln [1 + b · (Y/Y_u)] [1e]

a=0,3411 t=88,23 t/a=258,6 b=6,141 Y_u=18 [2e]

dY/Y = (1 + a · Y) / (t · Y) = (1 + b · Y/Y_u) / (t · Y) [3e]



eea60−5a

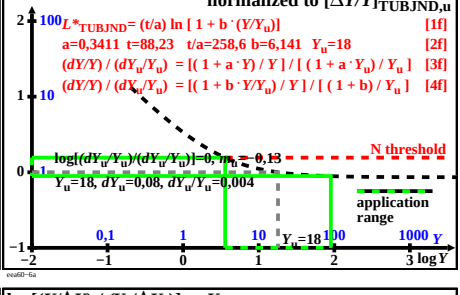
log[($\Delta Y/Y$) / ($\Delta Y_u/Y_u$)] Y_{TUBJND} sensitivity normalized to $[\Delta Y/Y]_{TUBJND,u}$

L^*_{TUBJND}= (t/a) ln [1 + b · (Y/Y_u)] [1f]

a=0,3411 t=88,23 t/a=258,6 b=6,141 Y_u=18 [2f]

(dY/Y) / (dY_u/Y_u) = [(1 + a · Y) / Y] / [(1 + a · Y_u) / Y_u] [3f]

(dY/Y) / (dY_u/Y_u) = [(1 + b · Y/Y_u) / Y] / [(1 + b) / Y_u] [4f]



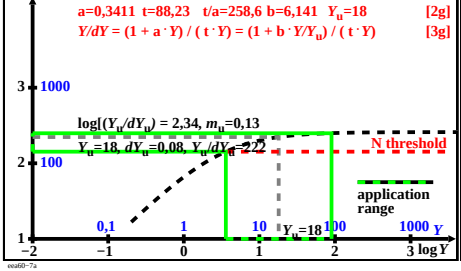
eea60−6a

log[$Y/\Delta Y$] Y_{TUBJND} contrast

L^*_{TUBJND}= (t/a) ln [1 + b · (Y/Y_u)] [1g]

a=0,3411 t=88,23 t/a=258,6 b=6,141 Y_u=18 [2g]

Y/dY = (1 + a · Y) / (t · Y) = (1 + b · Y/Y_u) / (t · Y) [3g]



eea60−7a

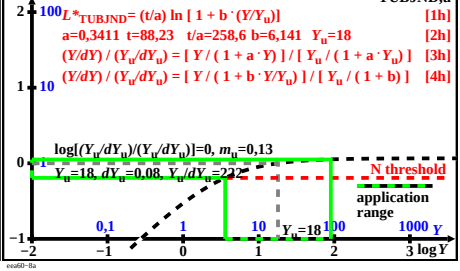
log[($Y/\Delta Y$) / ($Y_u/\Delta Y_u$)] Y_{TUBJND} contrast normalized to $[Y/\Delta Y]_{TUBJND,u}$

L^*_{TUBJND}= (t/a) ln [1 + b · (Y/Y_u)] [1h]

a=0,3411 t=88,23 t/a=258,6 b=6,141 Y_u=18 [2h]

(Y/dY) / (Y_u/dY_u) = [Y / (1 + a · Y)] / [Y_u / (1 + a · Y_u)] [3h]

(Y/dY) / (Y_u/dY_u) = [Y / (1 + b · Y/Y_u)] / [Y_u / (1 + b)] [4h]



eea60−8a