log (L^*/L^*_u) — TUBsRGB lightness L^* normalized to the background lightness L^*_u

L^*/L^*_u

$L^* = s\,(Y/Y_n)^n - d$ (Y_n=100, Y_u=18, s=100, n=1/ln(10), d=0) [1a]

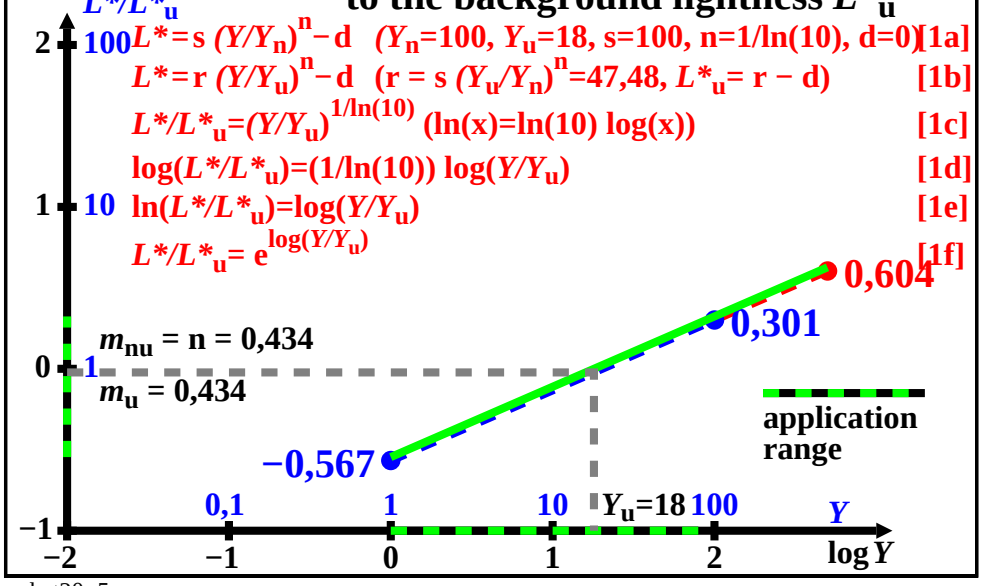
$L^* = r\,(Y/Y_u)^n - d$ ($r = s\,(Y_u/Y_n)^n$=47,48, $L^*_u = r - d$) [1b]

$L^*/L^*_u = (Y/Y_u)^{1/\ln(10)}$ (ln(x)=ln(10) log(x)) [1c]

$\log(L^*/L^*_u) = (1/\ln(10))\,\log(Y/Y_u)$ [1d]

$\ln(L^*/L^*_u) = \log(Y/Y_u)$ [1e]

$L^*/L^*_u = e^{\log(Y/Y_u)}$ [1f]



het20−5a

log ($\Delta Y/\Delta Y_u$) — TUBsRGB tristimulus value difference ΔY normalized to ΔY_u

$\Delta Y/\Delta Y_u$

$L^* = s\,(Y/Y_n)^n - d$ (Y_n=100, Y_u=18, s=100, n=1/ln(10), d=0) [1a]

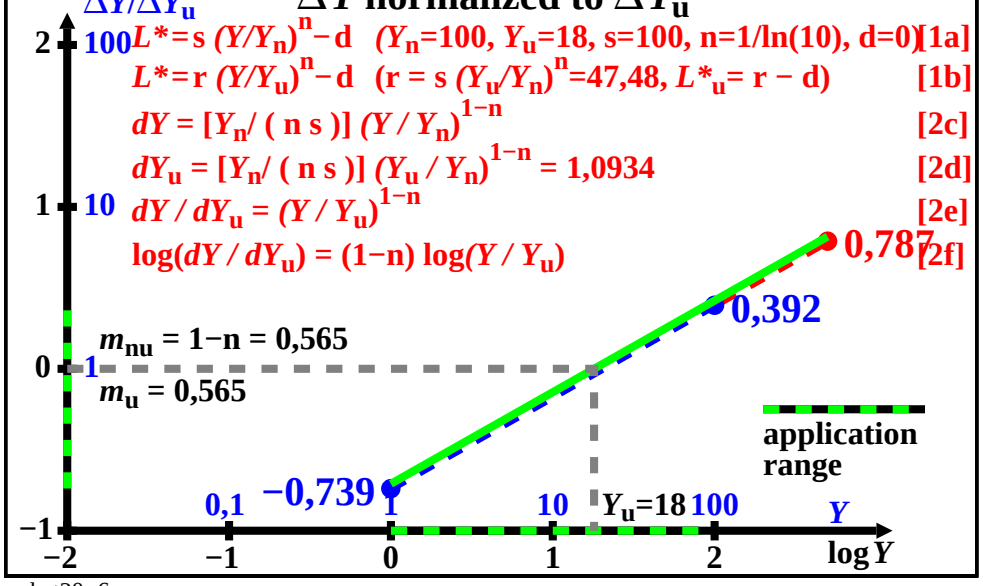
$L^* = r\,(Y/Y_u)^n - d$ ($r = s\,(Y_u/Y_n)^n$=47,48, $L^*_u = r - d$) [1b]

$dY = [Y_n/(n\,s)]\,(Y/Y_n)^{1-n}$ [2c]

$dY_u = [Y_n/(n\,s)]\,(Y_u/Y_n)^{1-n} = 1{,}0934$ [2d]

$dY/dY_u = (Y/Y_u)^{1-n}$ [2e]

$\log(dY/dY_u) = (1-n)\,\log(Y/Y_u)$ [2f]



het20−6a

log [($\Delta Y/Y$) / ($\Delta Y/Y$)$_u$] — TUBsRGB-Y sensitivity normalized to ($\Delta Y/Y$)$_u$

$S_r/S_{ru} = (\Delta Y/Y)/(\Delta Y/Y)_u$

$L^* = s\,(Y/Y_n)^n - d$ (Y_n=100, Y_u=18, s=100, n=1/ln(10), d=0) [1a]

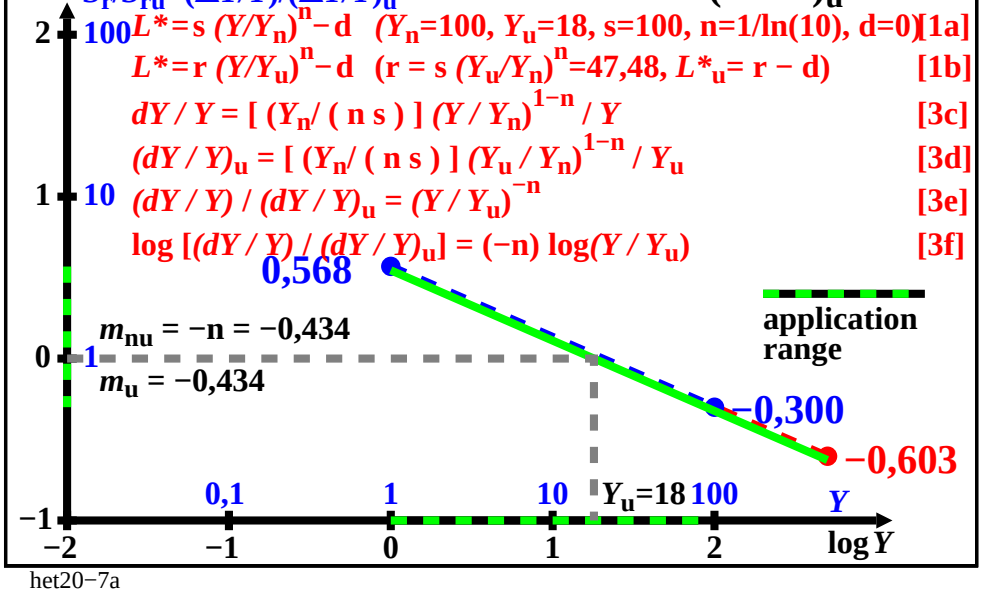
$L^* = r\,(Y/Y_u)^n - d$ ($r = s\,(Y_u/Y_n)^n$=47,48, $L^*_u = r - d$) [1b]

$dY/Y = [(Y_n/(n\,s))]\,(Y/Y_n)^{1-n}/Y$ [3c]

$(dY/Y)_u = [(Y_n/(n\,s))]\,(Y_u/Y_n)^{1-n}/Y_u$ [3d]

$(dY/Y)/(dY/Y)_u = (Y/Y_u)^{-n}$ [3e]

$\log[(dY/Y)/(dY/Y)_u] = (-n)\,\log(Y/Y_u)$ [3f]



het20−7a

log[($Y/\Delta Y$) / ($Y/\Delta Y$)$_u$)] — TUBsRGB-Y contrast normalized to ($Y/\Delta Y$)$_u$

$C_r/C_{ru} = (Y/\Delta Y)/(Y/\Delta Y)_u$

$L^* = s\,(Y/Y_n)^n - d$ (Y_n=100, Y_u=18, s=100, n=1/ln(10), d=0) [1a]

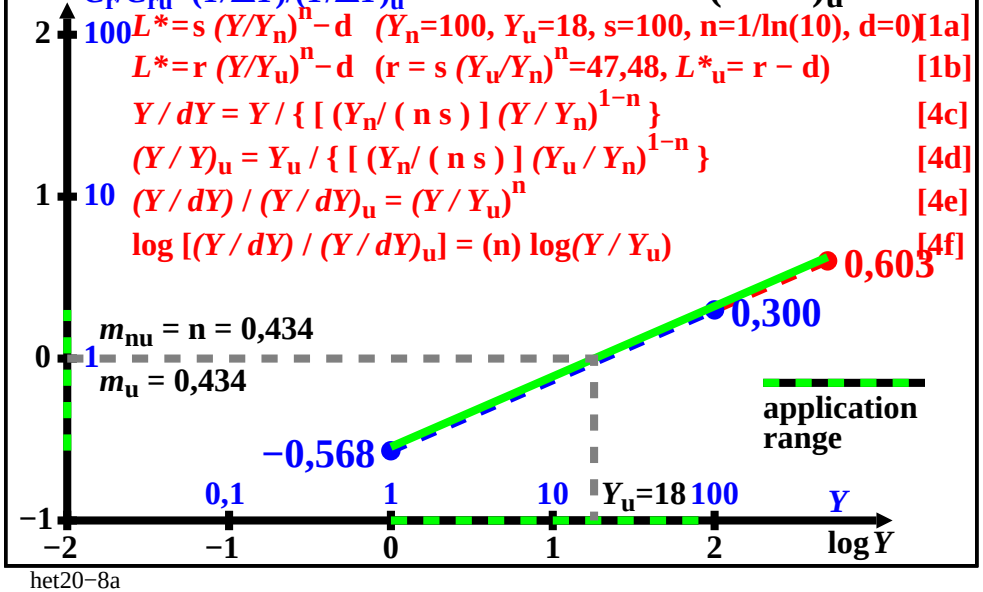
$L^* = r\,(Y/Y_u)^n - d$ ($r = s\,(Y_u/Y_n)^n$=47,48, $L^*_u = r - d$) [1b]

$Y/dY = Y/\{[(Y_n/(n\,s))]\,(Y/Y_n)^{1-n}\}$ [4c]

$(Y/Y)_u = Y_u/\{[(Y_n/(n\,s))]\,(Y_u/Y_n)^{1-n}\}$ [4d]

$(Y/dY)/(Y/dY)_u = (Y/Y_u)^n$ [4e]

$\log[(Y/dY)/(Y/dY)_u] = (n)\,\log(Y/Y_u)$ [4f]



het20−8a

het20−7n